



Title      User Satisfaction in PFI and Non-PFI Hospitals  
in the UK: In Particular the Outpatients'  
Department Reception/Waiting Areas

Name      Wendy M Henderson

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USER SATISFACTION IN PFI AND NON-PFI HOSPITALS IN  
THE UK: IN PARTICULAR THE OUTPATIENTS'  
DEPARTMENT RECEPTION/WAITING AREAS.

by

Wendy M. Henderson

A thesis submitted for the degree of Doctor of Philosophy of the  
University of Bedfordshire

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USER SATISFACTION IN PFI AND NON-PFI HOSPITALS IN THE UK:  
IN PARTICULAR THE OUTPATIENTS' DEPARTMENT RECEPTION/  
WAITING AREAS

W. M. Henderson

ABSTRACT

Few studies have been undertaken which examine the correlation between design of the reception/waiting areas of the outpatients' departments and the implications for Private Finance Initiative (PFI) and non-PFI hospitals, in particular the interior environment with reference to user satisfaction. This study investigates to what degree user satisfaction has been achieved in the design of the reception/waiting areas in PFI and non-PFI hospitals.

The aim of the investigation is to determine whether user satisfaction can be achieved in PFI or non-PFI hospital environments, particular in the outpatients' department. To ascertain whether hospital environments facilitate user friendly and therapeutic characteristics/attributes conducive to user satisfaction, two strands of investigation were undertaken; a) investigation and analysis of PFI and non-PFI hospital design; b) the study of users (PFI and non-PFI) via questionnaire surveys and analysis of their

perceptions. The research methods utilised combinations of qualitative information from interviews, discussions with hospital end users, architects/designers and Consortium executives. The surveys undertaken with patients, hospital staff and NHS Trust Managers provided quantitative data to measure the degree to which user satisfaction had been achieved.

The main findings of the design analysis identify the strengths and weaknesses in the design of the 'main' and 'sub' reception/waiting areas respectively. The results of the patient surveys, discussions and interviews revealed more positive perceptions of the hospital facilities for PFI hospitals and a general acceptance of the hospital facilities in the non-PFI hospitals. However, the *other* comments section of the questionnaires reveals some *psychological needs* of the user were not being met. The hospital staff surveys, discussions and interviews revealed the *spatial planning* was not ideal for their functional needs. The survey of NHS Trust Managers, Architects/Designers and Building Contractors revealed the difficulties associated with the collaborative process and the implications for the design development process, when reflecting upon 'cost effectiveness' and 'value for money' issues.

The conclusions drawn from the study suggest that there is a case for the standardisation of therapeutic environments in the development of 'new build' hospital projects via the design development and collaborative process. The recommendation (see p. 313) provides a *design protocol* that enhance and aids the design development process via selective expertise, which addresses the functional and psychological needs of the hospital end user.

*By the Grace of God...*

*The gods did not reveal, from the beginning,  
All things to us, but in the course of time  
Through seeking we may learn and know things better,  
But as for certain truth, no man has known it,  
Nor shall he know it, neither of the gods  
Nor yet of all the things of which I speak.  
For even if by chance he were to utter  
The final truth, he would himself not know it:  
For all is but a woven web of guesses.*

**Xenophanes**

## **DEDICATION**

*In loving memory of a beloved brother...*

*Brian.*

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## AUTHOR'S DECLARATION

I declare that this thesis is my own unaided work. It is being submitted for the degree of Doctor of Philosophy at the University of Bedfordshire. It has not been submitted before for any degree or examination in any other University.



.....  
Wendy M. Henderson

Date: November 2008  
.....



## **GLOSSARY**

The terms listed below have been provided to aid in the recognition of abbreviations and worded references, which appear in this study.

***CABE*** – The Commission for Architecture and the Built Environment

***DoH*** – Department of Health

***Hospital Street (or Harness Zones)*** – term use to describe how the different departments are linked via the main corridor

***High Design*** – Innovative designs responsive to user needs

***HPH*** – Health Promoting Hospitals

***New Build*** – recently constructed

***NHS*** – National Health Service

***NHS LIFT***– National Health Service Local Improvement Finance Trust

***Output Specifications*** – a detailed activity and service database (e.g. spatial planning, equipment, departments, etc.) in order to facilitate client's current and future needs.

***PFI*** – Private Finance Initiative

***PPP*** – Public/Private Partnerships

***PSBR*** – Public Sector Borrowing Requirements

***SPSS*** – Statistical Package for Social Sciences

***WHO*** – World Health Organisation

## **CHAPTER ONE - INTRODUCTION**

This chapter outlines an overview of the study and the nature of the problem. The study articulates the 'aims and objectives', 'significance' and 'scope' of the research in addition to the structure of the thesis. Further definitions of hospital design, the development/procurement process and the main use and interpretation of the design guidelines, the working relationship between architect/designers, building contractors, client(s) are also discussed in order to establish the implications for user satisfaction.

### **1.1 DESIGN OF RECEPTION/WAITING AREAS OF THE OUTPATIENTS' DEPARTMENT – THE PROBLEM**

By their nature, hospitals are considered therapeutic environments (i.e. healing, caring, nursing, etc.). Yet the ambient settings (colour, light, sounds and smells) and physical qualities (shape/s, fixtures and fittings) of the internal environment[1] which generally influence human behaviour differ from hospital to hospital and from location to location. Ancient philosophers referred to the human senses as "*...the windows to the soul*".[2] These human senses can be a

useful tool, in determining whether the design of reception/waiting areas can address the psychological needs of the user. Empirical evidence indicates that a sense of well being[3] plays a considerable part in the healing process and has a significant role in the process of human reactions to the environment.[4] Research on human reactions to the internal environment suggest that user opinions could be a useful tool for incorporating user needs in the design development of hospital environments. In the USA, this progressive approach to healthcare design development has accelerated over the last fifteen years. The results have shown an increased interest in a number of patient-focus research projects.[5] [6] The National Health Service (NHS) Plan[7] (see pp. 67 to 69), outlines several targets for investment and reform such as addressing the clinical needs of the user, in addition to the operational and economic needs of the hospital, but, there is no reference to a design strategy for 'new build' hospital projects. There are several Health Department reports produced, such as those by NHS Estates[8] and the Treasury Taskforce[9], to encourage better design development practice for 'new build' hospital projects. Hosking and Haggard believed that when a choice had to be made between spending money on patient treatment or improving the quality of the hospital environment, the option would inevitably be the former.[10] Considering their comments, this could explain why the existing ageing hospital

buildings have not received substantial investment until now in the 21st Century. However, before an assessment of current 'new build' (recently constructed) hospital building schemes can be assessed it is necessary to understand the significant influences on hospital development in the past. The last fifty years have seen many changes in the way public sector hospitals have developed.[11] By the mid 1970s, a significant decline in capital investment for government departments, estimated to have fallen from an annual net average of £28.8 billion between 1974 and 1998 to £3.3 billion (in 1998 prices),[12] had serious implications for hospital development. Set against a background of decaying facilities, increasing costs and declining investments,[12] successive governments reviewed possible solutions for the improvement of hospital buildings and services[13] [14] (see pp. 26 to 32). Consequently, the lack of substantive funding meant other forms and sources of financial input were being considered by the late twentieth century. In 1991, the Conservative administration published[15] their 'green paper'<sup>a</sup> supporting Health Promoting Hospitals (HPH),<sup>b</sup> as one of the keys to public health. In 1992, a 'white paper'<sup>c</sup> identified a strategy for hospital environments,[16]

---

<sup>a</sup> Consultation documents containing formal policy proposals to initiate deliberative debate. It usually contains several policies as a basis for firmer recommendations.

<sup>b</sup> Programme initiated by the World Health Organisation (WHO) in 1988. The European network was established in 1990.

<sup>c</sup> Statements of proposed government policy for a specific area of concern and intended to spark debate. They frequently contain a plan of intent and often pave the way for legislation, but there is no obligation to proceed along the lines proposed. Green and White Papers are also known as Command Papers.

which would incorporate the policies of health and well being for hospital users.[17] By December 1997, a change in Administration (to Labour) had occurred and a subsequent 'white paper' revealed a ten-year programme to rebuild the NHS.[18] Several months later a further 'white paper'[19] outlined government targets for public expenditure, estimated to be 4.7% a year above inflation for the next three years.[19] Investment in new hospital facilities was estimated to be worth over £16 billion since 1997.[20] While several months earlier, two 'green papers' outlined the government's proposals to affect change in hospital environments[21] and the populations' health via the causes of ill health (whether it is environmental or social).[22] These papers emphasised the government's commitment to modernise and provide an improved NHS service.

Traditional procurement methods in an environment of escalating costs had pushed the traditional procurement development process beyond the affordability of the 'public purse'.[23] Some researchers questioned the contentions and compared the economical validity between traditional procurement via the Public Sector Borrowing Requirements (PSBR) and Public Private Partnerships (PPP), i.e. private investment via the Private Finance Initiative (PFI).[12] The PSBR is the amount required by government public expenditure. This process involves selling stocks, bonds and Treasury bills to

organisations such as banks, insurance companies, pension and trust funds. The funds obtained are then spent on public projects.[24] In contrast, PPP and PFI are quite similar in terms of process. The PPP is a generic term used to describe partnerships, which involves additional methods of financing and operating facilities/services. While PFI is a particular form of investment requiring the private sector to design, build, finance and/or operate facilities.[25] The procurement process for private investment requires a Consortium (comprising of a construction company, financier or banker, facilities manager and *specialist consultant/s*), to bid for public projects.<sup>d</sup>

The Private Finance Initiative (PFI) introduced in 1993 by the Conservative government was later continued by the Labour Administration. The Government stated their intention to involve private investment in public projects, such as hospitals, schools and roads.[26] [27] Before the introduction of the PFI, most National Health Service hospitals (NHS) were built from public funds. They were designed and built to the Department of Health and Social Services (DHSS) and the Ministry of Health (MoH) guidelines.[28] Some of the popular hospitals, built under these guidelines, were the *Best Buy, Harness and Nucleus* hospital systems[29] [30] (see pp. 28 to 32). The development of these hospitals was subject to

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<sup>d</sup> The *specialist consultant(s)* is generally an architect.

external influences, which were sometimes beyond the control of the designers and building contractors since the design process was centrally controlled and subject to state planning (see pp. 42 to 60). The *Best Buy* hospitals were developed after a period of affluence and hope.[31] Prior to these developments, the first generation of NHS hospitals accommodated on average approximately 800 beds. However, by 1967 the government's growing financial problems meant a revision in the spatial planning of hospital facilities, were under consideration.[31] The first *Best Buy* hospitals (*Mark 1*) usually accommodated approximately 550 beds and proved that sufficient hospital facilities were achievable on a budget. For example, the West Suffolk Hospital on Bury St., Edmunds (Figure 1) and Frimley Park Hospital (Surrey) were completed in 1974. The *Mark 2* hospitals (e.g. King's Lynn Hospital) in Norfolk incorporate metric modifications and develop from the experiences of the *Mark 1*.



**Figure 1:** An Example of a Best Buy development, West Suffolk Hospital <sup>e</sup>

<sup>e</sup> [www.wsufftrust.org.uk/A&E/default.htm](http://www.wsufftrust.org.uk/A&E/default.htm) (2004)

Hospital developments continued. Subsequent buildings (initially designed for rural and suburban sites)[32] revealed a lack of flexibility and adaptability of internal environments when developed in urban settings. The *Harness* hospitals (based on output specifications and high design – see *glossary*) were meant to address the need for flexible expanding facilities in addition to known costs, by utilising regional specialist expertise. However, although a prototype was developed, at East Birmingham Hospital 1972 (Figure 2), the recession in the 1970s resulted in the completion of only a further two complete hospitals (in Dudley and Stafford).[30] [33]



**Figure 2:** An Example of a Harness Prototype, East Birmingham Hospital in the West Midlands

The change in government expenditure policies, due to the fuel crisis in 1974, meant further hospital developments (*Nucleus*

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<sup>f</sup> [www.heartsol.wmids.nhs.uk/about/history.asp](http://www.heartsol.wmids.nhs.uk/about/history.asp) (2004)



hospitals) were based on standardised format and fixed maximum budgets of £6 million for each nucleus department.[34] Considering hospitals are major consumers of energy due to their size and continuous occupancy, the Nucleus hospital developments became popular for their energy saving attributes (reduced by 45%) and running costs (estimated to be 33% of capital cost).[35] St. Mary's Hospital in the Isle of Wight became the first prototype for low energy hospitals (Figure 3), with Wansbeck Hospital in Ashington, Northumberland being the second and estimated build cost of £25 million.[36] The hospital schemes also tested the use of design requirements, as financial constraints compromised the spatial planning.



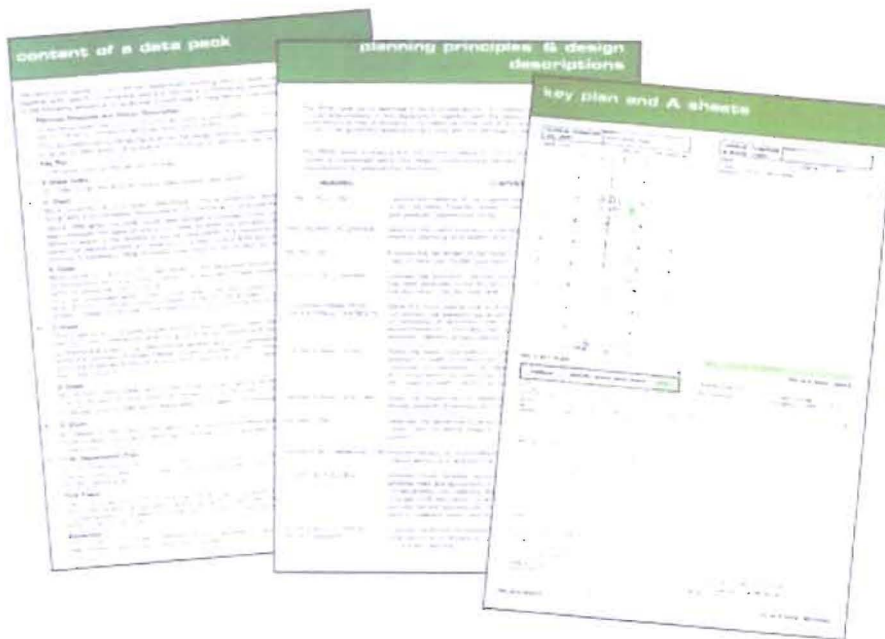
**Figure 3:** An Example of a Nucleus Prototype, St. Mary's Hospital in the Isle of Wight

There are standard guidelines for design and construction, produced by various government departments that document

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8 [www.abklondon.com/docs/ideas\\_energy.html](http://www.abklondon.com/docs/ideas_energy.html) (2004)

architectural output specifications. The guidelines are usually adhered to when developing hospital design schemes (discussed further in section 2.2.2). However, the influence of the recession in the 1970s continued to effect the spatial development of hospital facilities. The systematic design development process for hospital schemes were strengthened during the era of *Nucleus* hospitals. Specific building and procurement packs (Figure 4) were considered essential reading for hospital projects in order to achieve a level of consistency in design (*Planning Principles and Design Description*), as well as the economic and energy saving attributes (*Capricode Health Building Procedures*).[37]



**Figure 4:** An Example of a Procurement Pack taken from a Department of Health Publication<sup>h</sup>

<sup>h</sup> NHS Estates & Hospital Development, (1998), *50 Years of Health Buildings 1948-1998*, pg. 18-19, Department of Health & Wimington Publishing.

Consecutive years have shown the difficulties faced by designers and building contractors, where design excellence is often constrained by finance. Prior to the PFI, the commission of new hospital buildings meant the design and construction were two separate undertakings. The architects would design the building in collaboration with the client (the Health Authority) using the stated guidelines and then the client employed the construction company to build the hospital. Although time consuming, the process was generally viewed as flexible.[38] The architects were also responsible for the supervision of the project.

With the introduction of private investment, the PFI procurement process also initiated a change in the designers and building contractors working relationship (see pp. 36 to 41). The PFI procurement projects were generally considered less flexible as design and construction were undertaken simultaneously and within the same contract thereby placing a premium on cost to the detriment of design.[39] Any alterations made after the 'agreed' design scheme had financial implications. The building contractors were also responsible for the project as a whole, which generally meant that construction was faster and cheaper.[40] For such private investment schemes, this new attitude to procurement and direct funding was also initially expected to represent 'value for money'.[41]

The Government announced in June 2001 their full commitment to Public Private Partnerships (PPP), as a vehicle to improve public services.[27] The lengthy, bid and complicated application process can exceed 18 months although efforts by the Labour Administration to reduce the time scale is currently under review.[42] The design and construction complexities meant that smaller building companies questioned the fairness of the PFI procurement system. They believe the current bidding process favours larger construction companies because a number of smaller 'new build' hospital projects were grouped together and considered as a single contractual project.[43] The PPP Consortium undertakes to design and construct the property for an agreed price. The PFI built hospital is rented to the NHS Trust for a period of 25 to 30 years approximately.[44]

Within the procurement process, there are a variety of different possible arrangements, tailored to suit different/particular situations. These are - design & build; design & finance; and build & operate. There has been an increase in the use of *design and build* procurement for public services. In particular in the short-term, 'new build' PFI hospital building schemes appear to have twin benefits of shorter construction times and reduced costs. The process is further complicated as there are several types of contractual arrangement known, or referred to, within *design and build*

procurement, as, for example *'turnkey'*, *'design & construct'* and *'package deal'*.<sup>[38]</sup> The *package deal* encompasses all aspects of design, finance and construction, and is the most used contractual arrangement to date. In contrast, smaller businesses were competing for contracts that required a considerable amount of time and financial investment before any contractual agreements were finalised.

The European Union (EU) announced in 2001 its intention to 'outlaw' the preferred bidder contract in two years due to its 'anti-competitive' nature,<sup>[23]</sup> even though PFI/PPP has been operating in Europe for some time. This appears not to have materialised however, a "...consultation process" to examine the legal framework for European PPP Projects has been undertaken.<sup>[45]</sup> <sup>[46]</sup> There has been a dramatic increase in private investment for public projects over the last few years. Clause four of the Health and Social Care Act (2001) enables the Government to "...invest in and provide loans to" private companies,<sup>[47]</sup> consolidating the government's position in support of public/private partnerships.<sup>[48]</sup> The Government have anticipated and put into place a 'legal framework', which ensures private investment remains part of the funding process for public services for at least the next four years.<sup>[48]</sup> However, the promised measured considerations for design excellence have not materialised.

In the U.K., the political and public arenas continue to question the viability of private investment for public projects.[49] Recently (approx. 2003) another form of procurement initiative, NHS Local Improvement Finance Trust (NHS LIFT), has become increasingly popular for capital investment for public health projects.[50] The LIFT Initiative is a Department of Health (DoH) programme that supports local authorities in the delivery of health services, which encourages cost efficiencies and end user benefits. Over the years (post 2000), criticisms have been levelled at some completed first wave PFI hospital buildings. In particular, two first wave hospitals did not meet the initial criteria.[51] The Cumberland Infirmary and Dartford & Gravesham NHS Trust[52] were poorly designed and suffered structural defects in the first 4 to 6 months.[53] The NHS Trust Executives' were concerned that the hospitals did not meet modern needs in terms of design, user satisfaction and sustainability.[53] A watchdog committee was set up after several other PFI schemes received criticisms regarding design excellence. The Commission for Architecture and the Built Environment (CABE) and NHS Estates, in collaboration with the Prince's Foundation for Architecture and the Built Environment, appointed the Prince of Wales to champion the future design development of hospital building design schemes.[54]

The consistent influence throughout the changes in hospital development appears to have been finances. Firstly, when design appears to have achieved its optimum position with *Harness hospitals*, it was severely compromised by government policy due to the recession in the 1970s. Secondly, little value was placed on design in the subsequent years as design guidelines were defined by minimum requirements and interpretations. Thirdly, the introduction of private investment appears to have continued the trend of minimum design requirements. Emphasis is placed on contractual arrangements and the delivery of new hospital buildings. Finally, there has been a lack of a current long-term coherent design strategy, which balances the need for effective design practices with productive hospital environments.

Generic data are often used in the hospital development process. Designers and building contractors have sometimes relied upon published ergonomic data[55] and design guidelines to address user needs. In some cases, research undertaken utilising experimental situations and/or user participation, may result in the information being considered and sometimes incorporated into the design development process. An example of user feedback can be found in project's like the Doctors' surgery in Hammersmith, London.[56] Several studies suggest the effect of short-term solutions for the design of hospital environments, have long-term

implications for spatial planning and user satisfaction.[57] [58] [59] Users' experiences are not generally part of the collaborative process in the development of hospital interior environments. Yet, the necessity for long-term design strategies, which anticipate and address user satisfaction, become important when compared to the scale of investment and development of 'new build' hospital building projects. For most design projects, budgets are usually adhered to when establishing boundaries for expenditure and serve as a reality check for finances if or when changes occur within the construction process. However, this could also be a useful indicator to ascertain whether design quality is marginalised in the differing procurement processes. The Labour Administration public forums have generally stressed hopes for better hospital facilities in the United Kingdom, which meet user needs. Their support for PFI/PPP projects to improve public services already has a significant role in the future development of new hospital facilities. Yet, the guidelines that support the development of hospital environments are subject to interpretations by designers and building contractors once the mandatory requirements are met. This raises the question of uniformity. To what degree does the future of 'new build' PFI hospitals development meet user functional and psychological needs, since it appears that user experiences have little input into the PFI design development process. This thesis explores whether design quality is marginalised in the hospital development process,



by evaluating the ideology behind the traditional and PFI/PPP procurement methods. It assesses whether user satisfaction has been achieved by examining the aspirations of the client, developers and end user. In turn, these aspirations are then measured and compared to each other via quantitative and qualitative data acquired from the client, developers and end user of hospital facilities. The thesis explores whether these aspirations have implications for the design development process and how hospital environments can be conducive to the well-being of end users. Previous observational and investigatory studies undertaken by the author involving users' reactions to 'selected' physical features revealed that a sense of well-being was subject to psychological interpretations of the internal and external attributes.[60]

This interest continued when opportunities (via building projects) arose to develop therapeutic environments/homes for community residential care. The experiences and knowledge ascertained from these developments highlighted the working relationships and aspirations of the design development process between client and developers, in order to facilitate a *sense of well-being* via user satisfaction. This study explores hospital environments provision for treatments (spatially) and also whether they provide user friendly and therapeutic attributes conducive to user satisfaction. This study

has done this by developing research methods that accommodates an 'holistic' approach to the characteristics of the building development process (see pp. 87 to 123).

### 1.1.1 AIMS AND OBJECTIVES OF THE STUDY

As private investment becomes the main source of funding in the development of 'new build' hospital building,[61] the aim of the investigation is to *examine and evaluate the collaborative process of the traditional and PFI/PPP procurement process, their impact on hospital design development process and the implications for user satisfaction* via selected case studies. Design in this study is defined as an arrangement of lines and shapes created to define the form and appearance of the internal environment, particular of the hospital reception/waiting area of the outpatients' department. This location and department was considered ideal for the study, since it enabled the soliciting of information from short and long-term users of the hospital facilities. In order to ascertain whether hospital environments facilitate user friendly and therapeutic characteristics/attributes conducive to user satisfaction, several tasks were undertaken to achieve the stated **objectives**:

- An examination of the key issues relating to the design of PFI and non-PFI hospitals reception/waiting areas of the outpatients' departments.

- An assessment of PFI and non-PFI hospitals plans in order to identify the degree to which the design guidelines were being met and to evaluate the spatial planning.
- Surveys of user responses to PFI and non-PFI hospitals to establish whether existing hospital facilities fulfil user requirements, and whether PFI is an important factor.

### **1.1.2 SIGNIFICANCE AND PURPOSE OF THE STUDY**

As an Interior Designer, the author has experience in developing environments, which address users' psychological and functional well-being in domestic and commercial properties. For example, as a preliminary part of this study a paper examining human responses to the internal environment was undertaken.[60] It investigated user emotional reaction to the internal environment via surveys and computer simulation. This interest continued when the development of a nursing home resulted in an informal forum of hospital users expressing their reaction to the hospital environment. On-going discussions with hospital staff, patient groups and the public generated further interest in the design of hospital interior environments. The reception/waiting area of outpatients' departments is usually the first point of contact for most users and often the first impression of the hospital building.[62] It is a link to

the internal and external environment and therefore was an ideal place to undertake a pilot study to test some of the theories acquired from the preliminary investigations relating to design development and user satisfaction. In particular the perceived spatial awareness of the hospital reception/waiting areas, its functional and psychological affect on the end user and the sensory attributes/elements, which may contribute to user satisfaction were considered. It was also an opportunity, to discover some of the complexities involved in the day to day operations of the hospital environment (see pp. 61 to 86).<sup>i</sup> In some European countries, efforts are made to use artworks in hospital facilities as a therapeutic aid to the recovery process.[3] While in other cases, in Australia[63] and the United States,[64] some health centres and institutions promote design as contributing to the well-being of the users psychological and physical needs. Yet, the UK's response to design in hospital and healthcare buildings continues to be subject to debates and discussions with little resulting legislative support. In order to ascertain whether the user's (in this case hospital staff and patients) physical and psychological needs are being met, it is necessary to determine the correlation between the design of hospital interiors and user satisfaction. Initial studies revealed little analytical and statistical research has been undertaken, examining the relationship between user satisfaction (of hospital staff and

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<sup>i</sup> Appendix 1, W. Henderson & J. Amoah-Nyako, (2000), *Summary: Design Implications of the Patients' Charter* was highlighted in an online magazine ([www.connectingHealthcare.com](http://www.connectingHealthcare.com)).

patients) and 'new build' Private Finance Initiative (PFI) projects. There has been extensive research examining the *value for money and economic* issues,[65] [12] [48] as well as the varying opinions on public and private procurement.[38] The studies revealed the potential difficulties with communication and secrecy between the Consortium executives and NHS Trust Management team during the development of 'new build' hospital development projects.[66]

This investigation explores the impact of the lack of a recognised and uniform design strategy in the design development process for 'new build' hospital building projects. By evaluating user perception and attitudes of the hospital reception/waiting areas in relation to building contractors and designers remits, useful information is provided to inform a *design protocol* for 'new build' hospital buildings. The intention is to identify the philosophies and explore the underlying concepts relating to spatial planning and user satisfaction by examining the correlation between the design (functional) and user impression/s (psychological) of the hospital environment. Studies suggest the inclusion of long-term goals for the design of hospital interiors and the input of user experiences relating to the spatial planning of these environments, has beneficial implications for the psychological needs of the end user.[67] [68] [69] There have been a number of interesting research projects undertaken by various research and academic

organisations. In particular the Medical Architecture Research Unit (MARU), have undertaken a series of collaborative projects with NHS Estates,[70] Macmillan Cancer Relief[71] and Kings Fund.[72] Each have their merits in terms of individual issues related to the hospital building. However, they do not link the interactive nature of the different influences (as discussed previously), that may have an affect on the design process in the development of hospital environments, which this research project has undertaken to do. This study also discusses and establishes the degree to which a sense of *well-being* has been achieved by identifying the differences between PFI and non-PFI hospitals spatially, demographically and geographically (see pp. 146 to 210). A product of the research is a *design protocol* that incorporates the elements of design, which applies to building contractors and designers (subsequently 'new build' construction process), in order to create hospital facilities that address users functional and psychological needs. The author's *design protocol* incorporates a holistic approach to user satisfaction by utilising specialist skills, which address user needs within the boundary of the design development process. For example, patients' functional (environmental settings) and psychological (ambient settings) needs are stimulated by utilising user senses such as sight, sound, smell, taste and touch to encourage positive impressions of the hospital environment. By examining the spatial planning and user needs in parallel to specific

working tasks, the '*design protocol*' utilises the expertise of specific design areas, which incorporates and standardises the elements (ambient and functional) associated with therapeutic environments. In contrast to the Department of Health, 'design development protocol' for 'new build' hospital building projects,[73] it does not rely solely on the philosophical design aspirations. In view of the author's expertise in developing internal environments that address users' functional and psychological aspirations, the author's *design protocol* supports the ideology with the practical implementation skills of the proposed concepts through specialist consultation and user participation.

### **1.1.3 SCOPE OF THE INVESTIGATION**

The study interprets the results of the empirical studies, in the context of the psychological and therapeutic issues of the hospital reception/waiting areas of the outpatients' department. It encompasses user perception and attitudes of the internal environment by evaluating the influencing variables, plus building contractors and designers use and interpretation of the design guidelines. The focus of the study identifies to what degree user satisfaction is achieved in PFI and non-PFI hospital environments, by evaluating data undertaken from surveys acquired from the selected hospitals (discussed further in Chapter 5). Twenty-two

hospitals (ten built through PFI and twelve via PSBR procurement) were approached for the research project. Seven responded positively to enquiries. Six were initially surveyed (but wished to remain anonymous) however one withdrew their participation in the study. Four hospitals were selected for further investigation due to their demographic and geographical locations as each pair of hospitals were close enough to be used by the same population. One hospital (of each pair) was built through PFI and the other through traditional procurement. Both PFI hospitals are first wave, design and build hospital development projects, with the design development schemes achieved through output specifications. The older existing hospitals were built through traditional procurement (PSBR), originating from the same era and were similar in design concept and layouts. Finally, the information acquired from the various sources were analysed and evaluated to identify the essential issues for spatial planning and user satisfaction.

#### **1.1.4 THE STRUCTURE OF THE THESIS**

The thesis has been structured as follows. **CHAPTER ONE** is a general introduction of the study. An overview of the problem is discussed, followed by the aims and objectives of the study. The significance and purpose of the study highlights the reasons for the investigation, followed by the scope of the investigation and the



orientation of the thesis. The design development of hospital buildings, its main influences and definition of the design guidelines are defined in addition to discussing the working relationship between architect/designers, building contractors and client(s) via the traditional procurement process. Lastly, the remaining subsections outlines the implications of private investment in design development of new build hospital buildings projects and the PFI general effect on the working relationship between architect/designers, building contractors and client(s) as well as the influences on spatial planning and the implications for user satisfaction. **CHAPTER TWO** discuss the key issues of the literature review and its contribution to the development of the pilot study. The preparatory investigation reveals the results and interpretation of the pilot study. The initial findings and theories ascertained from the study enabled a preliminary framework for the research project. **CHAPTER THREE** focuses on the research methods undertaken, the selection process for PFI and non-PFI hospitals and an outline of the methods devised to measure user satisfaction of PFI and non-PFI hospital environments. Examples of the questionnaire design, the official application process and the limitations are also discussed, in addition to methods undertaken (via surveys) to acquire information from users of hospital environments, in particular the reception/waiting areas in the outpatients' department. **CHAPTER FOUR** presents the results of

the research and interprets the findings in relation to; the results of the architectural plans of PFI and non-PFI hospitals with the design guidelines; and NHS Trust managers/designers/building contractors responses of the hospital environments with the surveys undertaken in PFI and non-PFI hospitals. **CHAPTER FIVE** highlights and discusses the salient points of the hospital surveys; reviewing existing selected hospital building projects, puts the outcome of the research into context. **CHAPTER SIX** comments on the original problem identified in Chapter one and considers (where appropriate) recommendations.

## **1.2 DESIGN DEVELOPMENT OF HOSPITAL BUILDING ENVIRONMENTS AND THE ROLE OF THE DESIGN GUIDELINES**

This section expands on the discussion in section 1.1 and focuses on the three main types of hospital building design developments *Best Buy, Harness and Nucleus*. It highlights the general layout of the internal environment in relation to the reception/waiting areas of the outpatients' department. The definitions of the design guidelines are discussed and its effects on the working relationship between designers and building contractors.

## **1.2.1 DEFINING THE MAIN INFLUENCES OF HOSPITAL DESIGN DEVELOPMENT**

Spatial forms, the human condition and psychological character it is said can influence users reactions to particular environments.[74] [75] These reactions can sometimes be triggered simply by the look, style, colour and overall atmosphere of a space. There have been numerous studies on the psychological implications of the built environment,[1] [76] [77] in which the approach for commercial and public buildings has seen some diverse and creative design solutions: examples studied include the Lloyds' building and Canary Wharf Underground public space in London. Whether it is public or private money, these buildings have to conform to certain design and safety specifications. In contrast, hospital building environments in general tend to be composed of sterile clinical spaces; functional and practical. Little character is incorporated or found in these environments compared to their domestic counterparts whereby different designs are utilised to varying degrees to add character to the same functional and practical bathroom spaces.

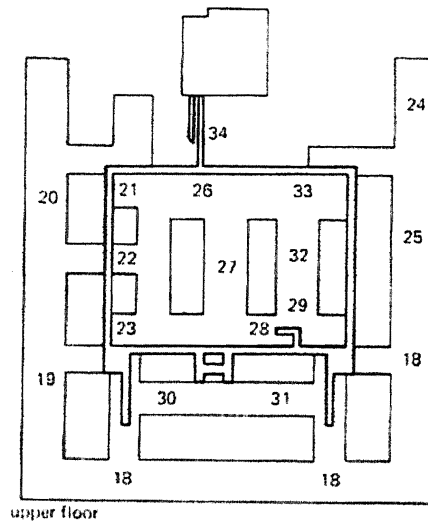
In section 1.1., it is highlighted that hospital design development has generally been influenced by financial constraints. Prior to the setting up of the National Health Service (NHS) in 1948, government funding was generally appropriated for schools and

houses after the war.[78] Limited financial considerations were extended to hospitals needing refurbishment and small extension to existing facilities. New hospital buildings were scarce and any schemes requiring funding of £10,000 needed government approval although teaching hospitals appeared to have received additional funding considerations with the extra capital provided by the educational authorities.[78] Before the 1960s, hospital facilities were designed around the causes of infectious disease. The successive years of International and European wars (late 1800s) changed the perception of U.K. hospital facilities. Once it was proved that low mortality could be achieved in multi-storey buildings (considered an alternative template to single-storey hospital facilities), if it was well-run and had good ventilation (achieved with extensive fenestration) higher rise hospitals became the norm.[79]

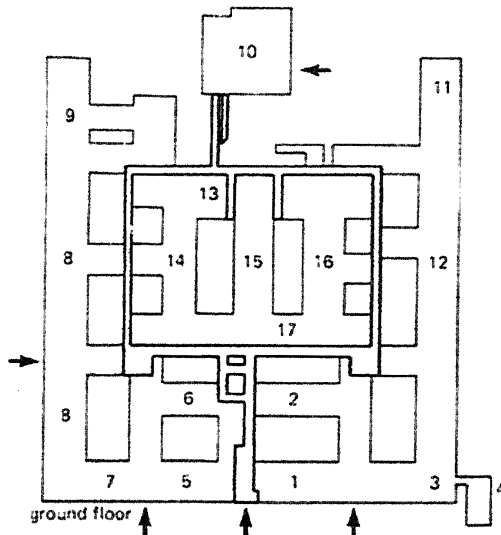
Multi-storey constructions only became popular in the 1870s in response to the development of the elevator and an alternative solution from workhouse infirmaries in crowded cities.[80] Two examples, which best describe the above were the original Edinburgh Royal Infirmary in Scotland and the Norfolk and Norwich Hospital in England. With further medical and technological innovations, hospital building design continued to provide environments that address ventilation and circulation issues. However, further proposals for larger facilities to accommodate

approximately eight hundred patients were considered in addition to refunding issues, in relation to re-development of hospital facilities. The subsequent years revealed three main types of hospital development and unlike their predecessors, finance was becoming more of a central issue.

The **Best Buy** hospitals (1960s) – were generally two storey buildings (accommodating approximately 550 beds) employing simple construction methods, in a landscaped setting (Figure 5). The building maximised natural light and ventilation by utilising courtyards. The first generation of ‘new build’ hospitals applied design innovations and spatial standards of its time. The name amplified its value for money status, which suggested that sufficient facilities could be achieved without it being expensive. However, these buildings did not facilitate expansion because the designs were based on a rectangular orientation. Costs were conserved mainly through the reliance on natural light and ventilation. Further cost reductions were achieved by omitting a number of service departments in favour of sourcing other medical facilities in the area and implementing a network for shared resources. The *Best Buys* hospitals lived up to their initial economical expectations, however the demands on hospital facilities meant the buildings could not facilitate expansion adequately to accommodate future growth.



- 1 out-patients
- 2 gynaecological/ante-natal
- 3 physical medicine
- 4 gymnasium
- 5 accident and emergency
- 6 orthopaedic/fracture
- 7 records
- 8 administration
- 9 psychiatric ward
- 10 central supply/disposal etc.
- 11 isolation ward
- 12 geriatric ward
- 13 mortuary
- 14 education/library
- 15 X-ray
- 16 pathology
- 17 pharmacy
- 18 general acute ward
- 19 gynaecological ward
- 20 maternity ward
- 21 special baby unit
- 22 labour suite
- 23 maternity admissions
- 24 children's ward
- 25 ENT/eye ward
- 26 TSSU
- 27 operating
- 28 recovery
- 29 intensive care
- 30 central treatment
- 31 shortstay/day unit
- 32 staff dining
- 33 kitchen
- 34 ramps

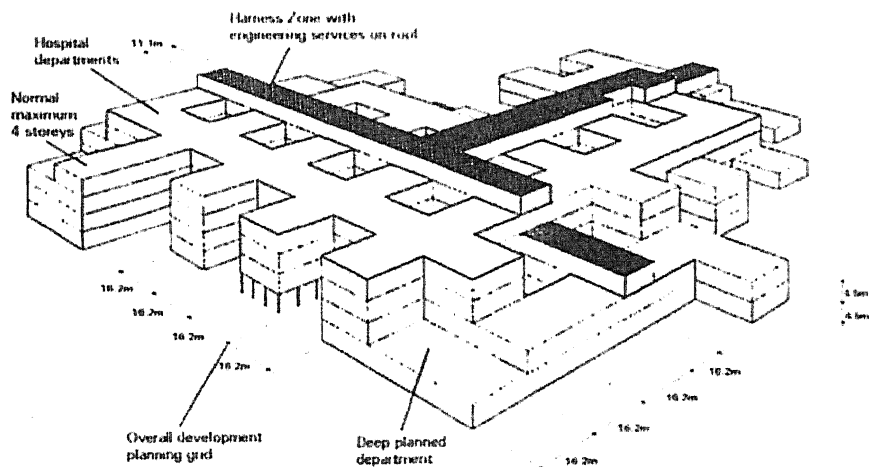


**Figure 5:**  
An Example of a  
Best Buys Hospital  
Plan taken from  
Cox and Groves<sup>j</sup>

**Harness hospitals** (late 1960s) – provided the flexibility, in terms of expansion (up to a maximum of four storeys enabling 500 to 1100 beds) and location. They utilised an activity database for design development for spatial planning from research and specialist experiences (Figure 6). The modular designs (incorporating courtyards) adhered to strict spatial and building specifications that facilitated specific areas for different activities. The layout (its name

<sup>j</sup> A. Cox & P. Groves, (1994), *Hospitals and Health-Care Facilities*, Butterworth Architecture.

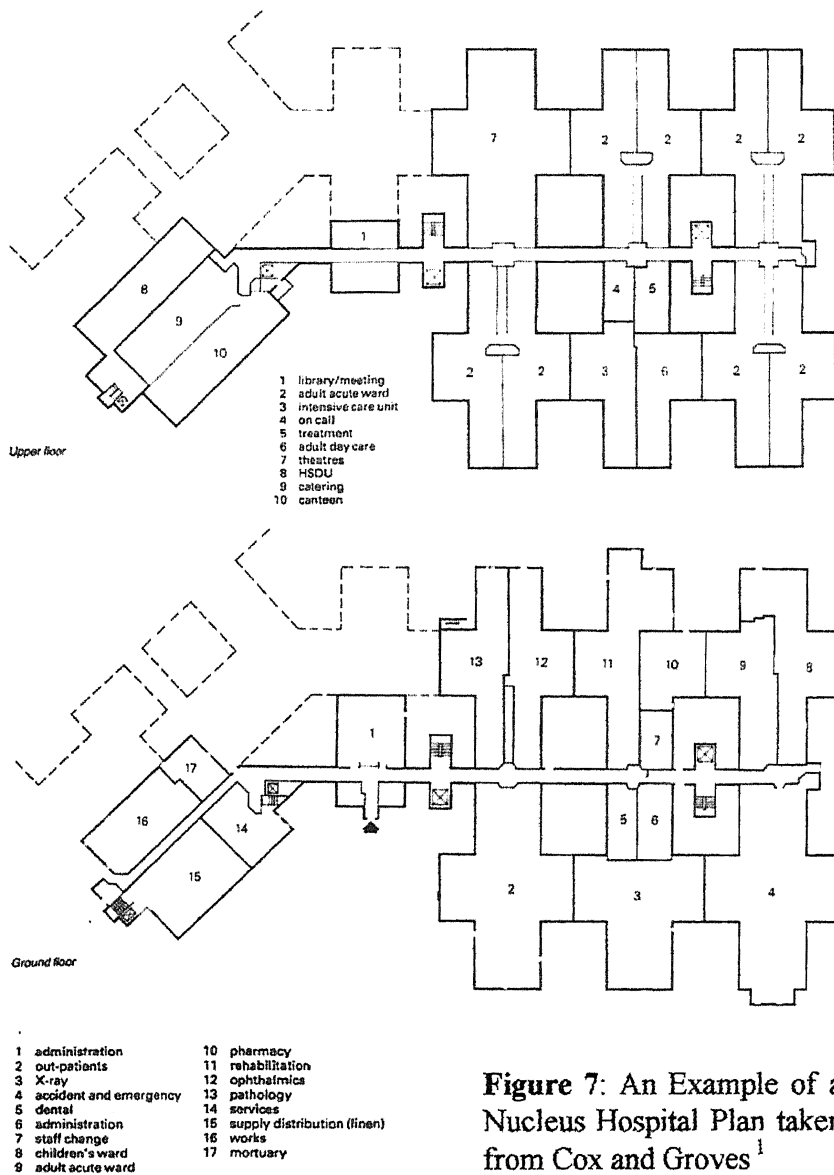
said to have derived from the wiring in cars) has a particular circulation orientation, which was open-ended in order to facilitate further expansion. Each area linked to a major communication and distribution route (e.g. electrical and mechanical services), while specialists designed the internal environment and storage systems. High design and construction standards had the bonus of known costs due to the user activity database. It paved a new approach to 'new build' hospital building projects whereby the 'activity database' could possibly minimise the lengthy design process. However, the economic recession in the 1970s meant a considerable reduction in capital funding, and consequently a financially driven alternative was sought.



**Figure 6:** An Example of a Harness Hospital Plan taken from Francis et al.<sup>k</sup>

<sup>k</sup> S. Francis, R. Glanville, A. Noble & P. Scher, (1999), *50 Years of Ideas in Health Care Buildings*, pg. 30-38, The Nuffield Trust.

The **Nucleus hospitals** (mid 1970s) – developed with a maximum budget of £6 million for each Nucleus department. These moderate sized (initially 300 beds with the additional expansion possibilities to 900 beds) low cost hospitals, received additional capital for expansion if specific hospital services were proved inadequate.



**Figure 7:** An Example of a Nucleus Hospital Plan taken from Cox and Groves<sup>1</sup>

<sup>1</sup> A. Cox & P. Groves, (1994), *Hospitals and Health-Care Facilities*, Butterworth Architecture.



Designed geometrically similarly to *Harness* hospitals, financial constraints and political intervention meant a major reduction in spatial provisions. The standard layout of a *Nucleus* hospital was shaped like a crucifix (Figure 7). Blocks and courtyards led off from a main corridor known as '*Hospital Street*', which accommodated further expansion requirements with limited dimensions. These designs tested user requirements as successive years showed a reduction in hospital beds, while user needs increased.

Through out the hospital building developments, in most cases the outpatients departments were located near the main entrances off the main corridor. Often a reception check-in booth was usually the first point of contact for outpatients. They were then directed to waiting areas, which were either, a central waiting area (like in a doctor's surgery) or ante-rooms (along corridors) near the consultation rooms. The layout of the outpatients' reception/waiting areas has changed little over the last two decades. In the majority of cases the design development process for hospital building projects were subject to external influences, which were mainly economic. These influences had implications for the interpretation of the design guidelines and the measurement of user needs, in terms of user satisfaction.

## **1.2.2 DEFINITION OF THE DESIGN GUIDELINES AND THE IMPLICATIONS FOR USER SATISFACTION**

There are a number of design guidelines in place to ensure that 'good' design is part of the development process for hospital building projects. However, 'good' design is a broad and varied term that is subject to preference and interpretation. In terms of hospital building design as described in this chapter, design was secondary to the clinical needs of the user. This did not mean it was ignored. Once thought of as a place where the sick go to die (circa 1800) subsequently hospitals were slowly being considered as a place of healing.

From the humble single storey type barracks to the multi-storey buildings, it is an achievement in itself. Yet like any building development, guidelines were in place to ensure the safety of the development and the appropriateness of its use. Some design guidelines are statutory, but many are recommended guidelines and as a result careful investigations are undertaken by designers and building contractors to ensure the appropriate design guidelines are applicable to the relevant building project. Those that are applicable to the hospital building project generally relate to construction regulations and spatial planning, which usually consist of minimum requirements for the users. The following guidelines give an indication of what is required from designers and building

contractors when embarking on a major hospital building project. The **Statutory Requirements**[81] provide building regulations, water bylaws, Health and Safety at Work Act and the requirements of the Fire Authority.[82] The **British Standards and British Standards Codes of Practice**[81] require bidders to comply with all British Standards and Codes of Practice directly applicable to the project.[82] **Health Technical Memoranda (HTM)**[83] provide advice and guidance on the design, installation and operation of particular building and engineering technology employed in the delivery of health care facilities. It includes fire code layout, design construction and fire safety management.[82] **Health Building Notes (HBN)**[83] provide advice on the design guidelines (ergonomic data, activity dimension etc.) and their implications on departmental policies.[82] Supplemented by **Health Guidance Notes (HGN)**[83] which highlight new legislation and departmental policy reflecting revisions in NHS operational requirements.[82] **Health Facility Notes (HFN)**[83] provide guidance on particular issues relating to hospital planning such as the impact of space on crime and security, whereby design is used to prevent crime.[82] **Encode Guidance**[81] assists in the planning of energy saving proposals.[82] Other **NHS Estates guidance**[84] and sources of information relates to hazards and safety usually developed from field experiences. It also includes provisions for minimum standards (i.e. single sex wards, privacy and access for the *physically*

*impaired*). Inconsistencies with current legislation may occur depending at what time and/or section the legislation was written.<sup>m</sup> Bidders should make this clear in documentation.[82] More recent additions are **Achieving Excellence in Design Evaluation Toolkit (AEDET)**[84], which is an appraisal procedure to enable 'Trusts' to monitor and evaluate "...*high design quality*" in the design development process for public buildings, in addition to the non-financial assessment of the various design bids submitted to the Consortia.[82] **The NHS Environmental Assessment Tool (NEAT)**[84] is intended to provide a "...*holistic approach*" for evaluating potential risks associated with environmental issues (e.g. pollution).[82] Additional publications like **Neufert Architects' Data**[85] and **The Metric Handbook: Planning and Design Data**[86] assist in the spatial and ergonomic planning of the structural environments.

The design guidelines are also meant to ensure designers and building contractors maintain a consistent standard of building development, making effective communication between the two parties essential. This is not an easy task as interpretations of design briefs can vary considerably between each designer and building contractor. Generally a balance or compromise is sought when collaborating on hospital building projects as previously

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<sup>m</sup> Usually, current legislation takes precedence over earlier codes/requirements

described, for example the type and function of construction, the character or shape of the building and the expression of the interior environment. All these issues have implications for working practices and the development of a building project since the ideal situation is to produce a product that address user requirements in the hope that it will fulfil the users functional and psychological needs.

### **1.2.3 DEFINING THE WORKING RELATIONSHIP BETWEEN ARCHITECT/ DESIGNERS, BUILDING CONTRACTORS AND CLIENT(S) VIA TRADITIONAL PROCUREMENT**

When embarking on a major design and build project several factors (as described previously) come into the equation, and those in turn are influenced by the design guidelines. As different fields of expertise generally have their own interpretation of the 'required' minimum standards for construction, this can become a problem when conventional and tested methods meet contemporary and experimental views.

Throughout history the challenges of modernisation (e.g. industrial revolution, computer technology or globalisation), have usually been met with suspicion and/or the act of self-preservation. However, as society evolves and the demands on the infrastructure increase some of these changes become inevitable. In the

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case of hospital building development, these changes appear inevitable when we consider the impact of financial investment from private companies as previously discussed. Commercial companies generally measure success with profit margins, when design is measured in financial terms, it is sometimes with the view of producing environments that adhere to the 'practical' needs of the user. Although private investment appears to have impacted on the procurement process by becoming the main source of funding for 'new build' hospital building projects, this influence has also extended to the working relationship between designers and building contractors. Traditional procurement working practices between designers and building contractors changed with the introduction and implementation of PFI/PPP, as described in this chapter (discussed further in section 1.3). Prior to this change the design and construction of hospital buildings were separate undertakings and had separate roles.[38]

Traditional procurement involves the appointment of an architect/design team who in turn responds to a design brief formalised by the client. This brief includes tender documents,<sup>n</sup> which describe the nature/needs of the hospital project, specifications, contract of employment and budget. The designer(s) are responsible for the design of the hospital scheme, appointment

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<sup>n</sup> Tender documents – specifies the requirements of the hospital project and also serves as the necessities for the development of the hospital scheme.

of contractor(s) and supervision of work to completion. When a designer is appointed to a project, they begin to familiarise themselves with the brief and the clients needs. A feasibility study is usually undertaken to establish the viability of the budget, the options available to the client and provider as well as the key issues relating to the nature and size of the hospital project.

Beng Tech Oh's comparative analysis of the different procurement methods[38] (Table 1) highlighted by Clamp and Cox[87], describes the differences in the nature of works as well as the financial cost of the build (discussed in section 1.1). However, the table also reveals the intimacies of the communication process and the implications on time between client, designer(s) and building contractor(s). These changes reveal a shift in the control of the development of the hospital project between designer(s) and building contractor(s). In particular the *Factors* relating to '*speed*' (construction of the building project), '*complexity*' (contractual responsibility of the building project), '*quality*' (design development of the building project), '*flexibility*' (contractual and design arrangements of the building project), '*responsibility*' (control of the building project) have implications for the liaison process between client(s), architect/designers and building contractor. This control (via PFI/PPP) is significant, as it appears to have affected the communicative process/relationship negatively between client and



provider, while simultaneously benefiting the construction process development positively (i.e. time scale).

Factors	Traditional method	Design and Build method
Speed	Not the fastest of methods Desirable to have all information at tender stage.	Relatively fast method Pre-tender time largely depends on the amount of detail in the employer's requirements. Construction time reduced because design and building proceed in parallel
Complexity	Basically straightforward, but complications can arise if employer requires that certain sub-contractors are used	An efficient single contractual arrangement integrating design and construction expertise within one accountable organisation
Quality	Employer requires certain standards to be shown or described. Contractor is wholly responsible for achieving the stated quality on site	Employer has no direct control over the contractor's performance. Contractor's design expertise may be limited. Employer has little say in the sub-contractor
Flexibility	Employer controls design and variations to a large extent	Virtually none for the employer once the contract is signed, without heavy cost penalties. Flexibility in developing details making substitutions is to the contractor's advantage.
Certainty	Certainty in cost and time before commitment to build. Clear accountability and cost monitoring at all stages.	There is a guaranteed cost and completion date.
Competition	Competitive tenders are possible for all items. Negotiated tenders reduced competitive element.	Difficult for the employer to compare proposals which include for both price and design. Direct Design and Build very difficult to evaluate for competitiveness. No benefit passes to employer if contractor seeks greater competitiveness for specialist work and materials.
Responsibility	Confusion possible where there is some design input from contractor or specialist sub-contractor and suppliers.	Can be clear division, but confused where the employer's requirements are detailed as this reduces reliance on the contractor for design or performance. Limited role for the employer's representative during construction
Risk	Generally fair and balanced between the parties	Can lie almost wholly with the contractor

**Table 1** Clamp and Cox Comparisons of the Different Procurement Methods

° Beng Teck Oh, (1990), Comparative Analysis of Traditional and Design and Build Methods of Procurement for Public Sector Hospitals, University of Dundee.

The traditional procurement communicative process between client and provider is particularly sensitive as outline proposals for detailed briefs and design proposals, are developed in conjunction with the client. This involves a considerable amount of interaction and consultation. Once there is a general agreement from all parties, full-scale drawings are produced that detail the specifics of the design proposal. Further preparations are undertaken to establish the type of services to be used for the development of the structure. The planning and co-ordination of the project enables the architect(s) to appoint the appropriate building contractor for the hospital building scheme.

When the specifics of the design are resolved and an estimation of cost is tallied (in order to evaluate the possible cost of the project and act as a tender guideline), working drawings are produced with written information (tender documents). This provides details of all aspects of the hospital building project for the bidders (building contractors). It is worth noting that pricing in this instance only relates to construction cost and not necessarily to the design of the internal environment. It is possible that tender prices are unaffordable and therefore reductions in costs may result in re-designing aspects of the build, to accommodate revisions (or reductions) in building costs. Alternatively, costs could also incur if the client wishes to make revisions/alterations to the original

design. In general, this type of procurement affords a degree of flexibility within the construction process. However, in some cases the disadvantage may result in delays in the completion of the hospital building project.

The most interesting insight of the traditional procurement working relationship between client, designer and building contractor is the communicative and control aspects of the proposed projects. The responsibility and success of the project lies ultimately with the architect(s)/designer(s). They negotiate, liaise and lead the project to its final conclusion in order to make the transition to the new facilities less stressful for end users. However, this relationship changed with the introduction of the PFI, which is discussed further in section 1.3.

#### **1.2.4 CONCLUDING REMARKS**

To summarise, the *Best Buys* hospitals relied on natural resources and the omission of some service departments to reduce financial costs. However, they did not adequately facilitate expansion requirements. *Harness* hospitals utilised modular designs that were flexible for future expansion, had high design attributes with known cost, but initially thought to be too expensive. While the *Nucleus* hospitals were subject to a fixed budget, which encouraged shared

medical resources. If specific needs were not being met additional financial aid was available, but it was generally a long and bureaucratic process. The process is further hampered by the many varying design guidelines, which are meant to ensure designers and building contractors maintain a consistent standard of building development. However, hospital building projects may be influenced by personal preference or subject to interpretations once the mandatory requirements are met.

Effective communication between the participating client(s) and contractor(s) would appear essential since the degree of flexibility may also heighten expectations. Nevertheless, this expectation requires meticulous handling in order to ensure design visions are achievable and simultaneously, they do not go beyond the affordability of the public purse.

### **1.3 IMPLICATIONS OF PRIVATE INVESTMENT IN THE DEVELOPMENT OF NEW BUILD HOSPITAL BUILDING PROJECTS**

The PFI has become one of the most popular forms of investment for 'new build' hospital building development in the UK. With that change a shift in the relationship between client, architect/designer and building contractor has also occurred. Usually, the

architect/designers collaborated with the client(s) and lead the development of hospital building projects. With the introduction of the PFI,<sup>P</sup> the roles reversed, partly due to the lengthy and expensive application process. The change in leadership appears to have influenced the design development and communication process between client(s) and architect/designers. This chapter explores the extent of this change and the implications for the collaborative and design development process for 'new build' hospital building projects, with reference to the spatial planning and user satisfaction.

### **1.3.1 PFI: GENERAL EFFECT ON THE WORKING RELATIONSHIP BETWEEN ARCHITECT/DESIGNERS, BUILDING CONTRACTORS AND CLIENT(S)**

The evolution of spatial planning was subject to a number of external influences in addition to the varying design guidelines to aid the design development process. The collaborative process between client, designer and building contractor is generally a contemplative process since communications are subject to concepts (ideas), necessities (statutory requirements) and/or constraints (limitations) of the hospital build.

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<sup>P</sup> The contractual emphasis for public projects was construction and materials specifications.

This chapter has argued that the treatment of certain factors '*speed*', '*complexity*', '*quality*', '*flexibility*', '*responsibility*' had implied negative implications for the collaborative process between client(s), architect/designers and building contractor, but positive connotations (time span) for the construction process. The 4ps<sup>9</sup> assessment (Table two),[39] provides an overview of the design development and construction process by comparing the different procurement methods. However the 'notional' timeline indicates how the PFI procurement process may have influenced the hospital building process and the relationship between the client(s), architect/designers and building contractor(s).

The PFI procurement process shows that from the outset the Health Authority (client) appraises the key issues of the build, to establish the viability and risk assessment of the project. By the third month 'output specifications' (based on minimal requirements of the intended use of the facilities), are drafted and the initial assessments of cost (based on the proposed scheme) are calculated. When authorisation has been given to proceed with the project, by the seventh month bidders (usually building contractors) have already submitted their interest.

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<sup>9</sup> 4ps (Public, Private, Partnerships Programme) is not to be confused with the Department of Health modernisation initiative 4Ps (Preparing Professionals for the Partnership with the Public)

<b>Conventional Procurement<sup>†</sup></b>		<b>Timeline (notional)</b>	<b>PFI Procurement</b>	
		<b>Project Initiation</b>		
<b>A: Inception</b>	Designers appointed and begin familiarisation with brief and stakeholders	Month 1	<b>Outline business case</b>	Authority analyses viability appraisal of options, and thorough review of risk to project
<b>B: Feasibility</b>	Study to establish viability, options, key issues and order of cost	Month 2	<b>Feasibility</b>	Study to establish viability of preferred project and key issues
		Month 3	<b>Reference scheme</b>	Output specification developed, and order of cost established for conventional procurement based on 'sketch scheme'
<b>Authority decision to proceed</b>		Month 4		
<b>C: Outline proposals</b>	Detailed brief developed with stakeholders and design progressed	Month 5	<b>Authority decision to proceed</b>	
		Month 6	<b>OJEC advert</b>	
<b>D: Scheme design</b>	Larger scale drawings, detailed aspects of design and co-ordination with structure, services, etc.	Month 7	<b>Expressions of interest received from bidders</b>	Design teams named by bidders
		Month 8	<b>Pre-qualification</b>	
<b>E: Detail design</b>	Development of specialist aspects, resolving critical issues	Month 9	<b>Long-listed bidders invited to submit outline proposals</b>	Designers appointed by bidders. Outline proposals developed (equivalent Stage C), without reference to stakeholders. However, scheme and costings are developed alongside contractor and FM provider
<b>F: Working drawings</b>	Production of information suitable for contractor to build	Month 10		
		Month 11	<b>Bidders short-listed</b>	Authority evaluates approach and quality of design
<b>G: Specification</b>	Detailed written requirements for each element of building	Month 12	<b>Invitation to negotiate documents issued</b>	Output specification sets out Authority's requirements on design approach and brief
<b>Cost check</b>	Not the only one, but a key stage at which an accurate estimation of tender prices should be possible	Month 13		Bidders produce scheme design (equivalent Stage D), and develop detailed costings for bid, with contractor and FM provider
<b>H: Tender</b>	Assembly of all drawn and written information required for bidders to price	Month 14	<b>Tender evaluation</b>	Authority analyses quality and detail of bid schemes, and life-cycle cost bid

<sup>†</sup> Conventional Procurement defined as Traditional Procurement

		Month 15	<b>Negotiation</b>	If bid prices unaffordable, cost reductions may be negotiated in several areas of the project
<b>J: Evaluation</b>	Analysis of bid prices and rates possibly including design (construction costs only). If tenders unaffordable, cost reductions and possible re-design required	Month 16		
	Contractors re-price changes	Month 17		
<b>Contractor appointed</b>		Month 18	<b>Preferred bidder appointed</b>	Design team engaged on detail design and working drawings (equivalent Stages E and F), but competitive tender arrangements not required, as contractor already part of bid team
<b>K: Construction commences/ Site activity</b>		Month 19		Technical due diligence carried out – possible minor changes in design may result
		Month 20	<b>Contract close</b>	
		Month 21	<b>Construction commences/ Site activity</b>	

**Table 2: 4ps Comparative Analysis of Traditional and PFI Procurement Methods<sup>s</sup>**

In comparison, the conventional procurement process shows the architect/designers work closely with the client (stakeholders) and building contractors during the design development process. By the ninth month in the PFI procurement process the building contractor is working with architect/designer to develop an outline design proposal (equal to the fifth month of the traditional procurement process), and costs with various specialist suppliers. The client(s) or end users are unlikely to be contributing to the design development process.

<sup>s</sup> 4ps Guidance for Local Authorities, (2001), *Achieving Quality in Local Authority PFI Building Projects*, APS Know-How



Usually by the eleventh month the bidders are short-listed and during the twelfth and thirteenth months, the Authority appraises and compares the design specifications against the output specifications submitted in the earlier months. It is worth noting that the production of output specifications, were generally the minimum requirements/specifications for the facilities at the time. Anticipating future needs may well have been incorporated into the spatial planning specifications by the use of 'flexible' facilities.

Unlike the PFI procurement process, the traditional method allows the client or end user the possibility of having an input into the design development process, although it does increase the possibility of delays to the hospital building project. During the fourteenth and fifteenth months of the PFI evaluation and negotiation, the bidders design schemes and construction costs are considered. When the preferred bidder is finally appointed (usually in the eighteenth month) the final design specifications are almost a foregone conclusion and only minor design changes are possible from this point. However, in the case of traditional procurement, revision of the design specifications and negotiations are still possible as late as the sixteenth month, in contrast to the PFI procurement method whereby proceedings are heading to a close. The contrasting procurement methods reveal the PFI consultation process is limited to particular time slots in the procurement

programme. The time slots may well influence the relationship between architect/designers and building contractors, as it appears to regulate the collaborative process. The collaborative process may also be limited by the constraints of the output specifications as it does not facilitate, client(s) or end user input to the design development process. In theory the choice of procurement rests with the client. Their choice is usually based on the most reasonable and cost effective submission of design specification.[38] However, as indicated in earlier chapters (and discussed further in the next section) the 'new build' PFI projects cost-effective submission has not always been the most reasonable long-term solution in terms of life cycle and design. While the construction and design process for traditional procurement is sometimes time consuming.

### **1.3.2 SPATIAL PLANNING OF NEW BUILD HOSPITAL BUILDING PROJECTS AND THE IMPLICATIONS FOR USER SATISFACTION**

The main purpose of the PFI was viewed as an additional, or alternative source of funding for the delivery of improved services for the public sector.[88] In the case of the National Health Service (NHS), this additional source of funding would facilitate a perceived speedier and cost effective development process to replace some of the declining hospital buildings facilities and services.

The current development of PFI hospital buildings seems to have drawn its influence from the key features of past hospital building projects in terms of design attributes. For instance, cost effectiveness has *Best Buys* attributes, modular designs and output specifications have *Harness* attributes and centralising resources are indicative of *Nucleus* attributes. Yet PFI projects have generally been criticised for the design quality[51] as well as caution, the lack of trust and co-operation between NHS Trust Managers and the Consortium consultant(s).[66] In addition, procurement agencies[89] have voiced concern regarding the lack of design control within projects carried out under PFI. Their concerns relate primarily to ensuring '*... that the highest quality design solutions for buildings or equipment are submitted and delivered within bids...*'[41]. However, aspiring to quality design is difficult when the benchmark is subject to 'value for money' issues. Furthermore, the controversy surrounding PFI expenditure began to alienate some members of the public when the perceived long-term costs appeared not to reflect the long-term needs of the user. For instance, the continuing revelations concerning design faults for new hospital building facilities[51] set against the development of smaller hospital facilities that did not appear to service the increasing population compared to its predecessors.[90]

To address some of the public and parliamentary concerns, from the year 2000 additional help (in the form of guidelines and consultation) for architect/designers and building contractors emerged from the Labour Administration, to ensure that 'good' design was part of the development process of PFI procurement. For instance, the **Treasury Taskforce Technical Notes** [9] are a series of papers providing practical guidance on key technical issues, which may arise from the implementation of the Private Finance Initiative (PFI). While the **4ps Guidance for Local Authorities** [39] is a Local Government agency set up to help Local Authorities develop and deliver high design standards for Public and Private Partnerships (PPP) and Private Finance Initiative (PFI) schemes. They provide/offer impartial, expert advisory services and project support. In order to assess the criticisms levelled at 'new build' hospital development, the author acquired plans from architects such as Keppie Design, Nightingale Associates and Anshen Dryer of completed first wave 'new build' PFI hospital projects, in order to examine the relationship between spatial planning and the design guidelines. An examination of the architectural plans of completed 'new build' PFI hospital building scheme, shows a preference for modular designs.

Overall some of the schemes are remarkably similar incorporating large glass atriums and mezzanine features. The PFI schemes

often produce courtyards but few had access for the user, while some were stark (low maintenance – gravel, pebbles, bark etc.) in comparison to the original design concept (trees, shrubbery, flowers etc.). Most schemes have standard, or adhere to the minimum, requirements as outlined in the design guidelines (i.e. space planning, fixtures and fittings).

Several visits to PFI and non-PFI hospital buildings in addition to other refurbished healthcare facilities, funded via private and public investment, revealed some interesting similarities and some striking differences. This task was undertaken to experience the physical characteristics and psychological effect of the hospital environments with reference to the acquired plans. In addition, the visits to the non-PFI hospitals enabled comparisons to be made between 'new build' and existing hospital environments, location and transportation. A number of PFI 'new build' projects entrance façades were quite dramatic and gave an initial positive impression of the hospital building. In some case the main walkway/corridor, traditionally known as *Hospital Street* (see p. 32), were more spacious than their non-PFI counterpart however, the orientation and circulation layout shared similar characteristics in so much that sub-waiting areas, consultation and clinic rooms led off the central walkway/corridor. The locations of a number of PFI 'new build'

hospital facilities enabled larger parking facilities, which came at a cost to all users (patient and staff members).

An indicative survey of public transport links to seven PFI and eight non-PFI hospitals was undertaken by the author. A qualitative analysis of the types of transport (bus, trains/tubes, walking) was ascertained to calculate the time/duration (via a timepiece) for each mode of transport, with distances evaluated from central locations (e.g. shopping centre or train station), to some of the PFI and non-PFI hospital facilities. In addition, discussions with hospital staff revealed similar time-spans as observed by the author. The times varied approximately between 20 to 60 minutes for PFI hospitals, depending on traffic. In comparison, non-PFI hospitals average time ranged from 15 to 40 minutes approximately depending on location and traffic. For the author, the noticeable characteristics became apparent after several journeys to different hospital facilities.

The initial visual impression of PFI and non-PFI hospital buildings (e.g. historical/contemporary, worn/new) with the 'perceived' psychological impact meant the user perceptions (e.g. uplifting/depressing, warm/cold), could influence the 'relationship' the user has with its environment. Two PFI 'new build' facilities in particular evoked different reactions regarding their initial impressions. For example, the overall appearance and entrance fascia of one PFI hospital building was dynamic while the other was

featureless. The building materials set against the landscape for one PFI hospital building was 'earthy' while the other was bleak. On both occasions the weather was misty and showery, yet one PFI hospital building evoked a sense of 'optimism and expectation' while the other had a sense of 'duty and obligation'.

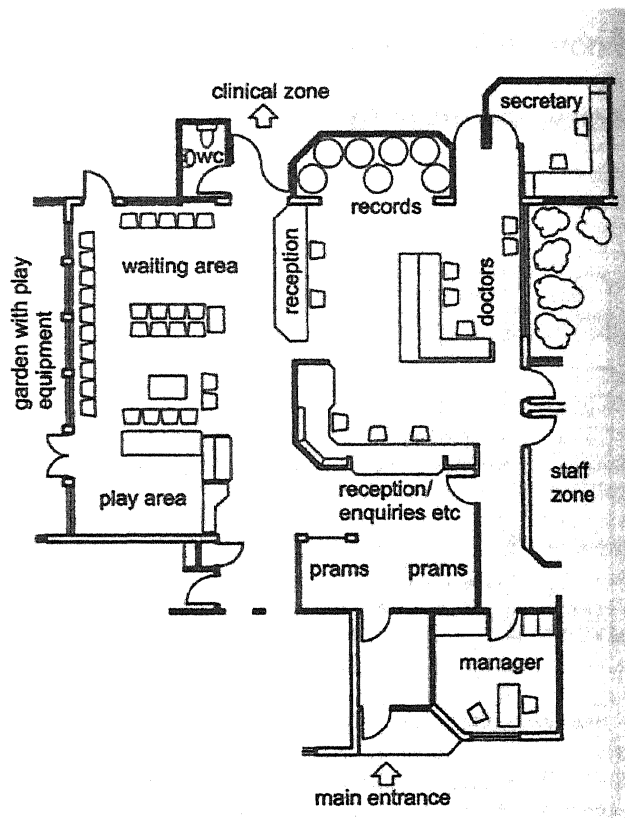
The initial enthusiasm for the 'dynamic' hospital diminished somewhat (in terms of signage and layout) but not to the extent that it was regarded as totally disappointing. The use of colour was important although more use could have been made to incorporate blocks of colour with the signage system such as locating clinics, departments and wards (at times were difficult to find). The main waiting area furniture was contemporary in style and colourful, but the sub-waiting areas had wooden table and chairs mixed with single seated fabric upholstered chairs. Health information and magazines were located on tables, examples of art hung on the walls and a few abstract sculptures were situated near front and rear entrances. In contrast, the 'bleak' PFI hospital building entrance fascia was particularly sterile in colour palette and was similar in layout to non-PFI hospital environments. The main entrance was the primary source of colour, which became muted when walking through the rest of the hospital building. The furniture style was traditional in terms of metal framed chairs with plastic upholstered seating. There appeared to be no evidence of artwork

on the walls only health information and pamphlets on noticeboards. Both walkway/corridors were spacious but the 'bleak' PFI hospital building fixtures and fittings were indicative of industrial 'contemporary factory style' fittings rather than the commercial 'touches' exhibited in the other PFI buildings.

As discussed in section 1.1, "*...a sense of well-being plays a considerable part and a significant role in the process of human reactions to the environment*", therefore it is interesting that some Consortium hospital design proposals appear to suggest an approach (via architectural plans) conducive to some aspects or in accordance with governmental design guidance and architect/designers aspirations, but in practice the design scheme implemented are mild interpretations of the envisaged design proposals (e.g. landscaping). Research suggests (particularly with regard to the external/internal psychological interpretation of a given hospital/healthcare environments)[91] [92] that it is achievable for visual stimuli from the reception/waiting areas for 'new build' hospital/healthcare building projects,[93] considering strides made in some healthcare facilities[56]. A number of refurbished healthcare facilities reception/waiting areas utilised curved configuration to soften the appearance of angled and/or squared foyers. There were less regimented 'row' seating found in the new or refurbished facilities compared to older/exiting ones.



Considerable attention was paid to health information points, children play areas and artificial planting. Neutral colours were found in some central foyers except in children play areas. There also appears to have been an interesting amalgamation of healthcare and hospital building reception/waiting areas.

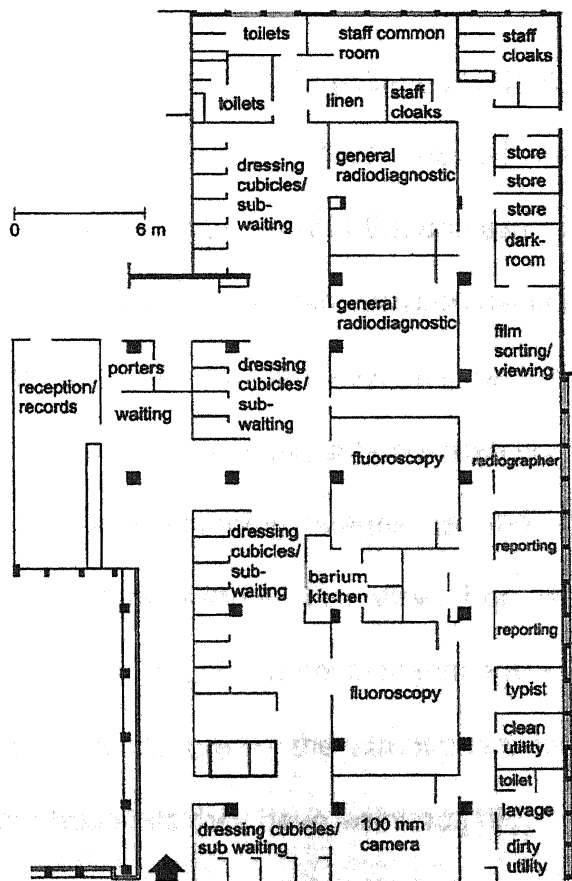


**Figure 8: An Example of the Reception/Waiting Area for an Healthcare Facility taken from the Metric Handbook**

Generally in healthcare facilities reception/waiting areas are larger to accommodate a greater number of visitors and to serve as a central meeting point for shared services or resources in the general medical practice for the local community. For example, the

<sup>†</sup> D. Adler, (2203), Metric Handbook, Planning and Design Data, 2<sup>nd</sup> Edition, pg. 16-4.

'doctors' station situated behind the reception counters would lead onto consultation rooms located in the staff zone (Figure 8).[94] In comparison, hospital reception/waiting areas are usually located nearer the surgeon's consultation room, situated off lengthy corridors (Figure 9).[95]. In some cases like the Cumberland Infirmary, the use of glass walls has been used to great effect, since the visual appearance of the external environment and the landscape it overlooks, represent a pleasant distraction.



**Figure 9** An Example of the Reception/Waiting Area for an Hospital Facility taken from the Metric Handbook<sup>u</sup>

<sup>u</sup> D. Adler, (2203), Metric Handbook, Planning and Design Data, 2<sup>nd</sup> Edition, pg. 17-25

Studies suggest a holistic approach to design development process and appropriate art(s) installations for health facilities may have therapeutic benefits for the end user.[96] Further studies have highlighted the benefits of innovative design,[97] with extensive national and international contributions[3]. With the estimated increase in longevity in the human population,[98] the implications for patient care and the facilities that accommodate this requirement becomes evident considering the billions being spent on hospital developments.

Peter Senior of the Manchester Metropolitan University and Director for Arts for Health has stated that hospital managers and administrators have their part to play in the process of effective and appropriate design within health care environments.[96] Although supported by Marily Cintra,[99] an advocate of the collaborative process between hospital manager, arts co-ordinator and the local community during the planning stages of the design, other researchers do not fully support this view. For example, Sarah Hosking and Liz Haggard<sup>v</sup> believe hospital managers may not have the time or knowledge to create the atmosphere they have seen achieved in other hospitals they have admired.[100]

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<sup>v</sup> Sarah Hosking is an advisor and consultant on the design of healthcare environments working in the private and public sectors while Liz Haggard worked in the NHS for 15 years as a manager, then with the Office for Public Management in London.

In 1983, D. Thompson believed several healthcare facilities were considered innovative for their time because of their use of material technology and design attributes,[28] in particular 'Lightwood House' in Sheffield (a community care and accommodation facility) and Kendray Hospital in Barnsley (therapeutic and residential accommodation for the mentally ill). In an interview with Professor Tony Monk, one of the architects of 'Lightwood House', [101] (pers.comm.2001) he stated that he found the project particularly interesting in contrast to many health care facilities being constructed at the time. In light of the current development of PFI 'new build' hospital projects, the author enquired about the design characteristics that led D. Thompson to consider the building 'innovative' of its time. He stated that in the past most were built from prefabricated concrete slabs unlike 'Lightwood House', which was a single-storey brick building with clay tiled roofs. Leading on from the initial success of the project, commissions for larger establishment ensued. However Professor Tony Monk stated that:

*"...sometimes it is more difficult to create a similar atmosphere, in a bigger scale".[102]*

It seems ironic that material innovations were taking place for the structural betterment of hospital design, yet those same changes were less rigorous for internal spatial designs. Both healthcare facilities were considered to have adopted the 'therapeutic' qualities

required for mentally impaired and ill patients. These qualities related to care and mental stimuli process even though the latter was subject to more financial constraints in favour of NHS staff resources.[79] Vostrov believes stimulating hospital environments can facilitate a sense of well-being by incorporating therapeutic attributes, which in turn contribute to the healing process.[103] There have also been suggestions that well designed hospital interiors could have medicinal benefits, such as pain and stress relief.[104] [105] Too often the relationship between the patient and their environment is ignored, which sometimes results in poor or unrealistic design solutions. Proshansky, Ittelson and Rivlin believed that in most cases designers address solutions to design problems through personal preference, rather than responding to the questions that may have arisen from the building or environment.[76] Human emotions experience many changes,[106] yet current research methods respond sluggishly to the changes. Despite the culmination of design ideology, user participation remains on the discursive platforms of seminars and conferences.

### **1.3.3 CONCLUDING REMARKS**

To conclude, past hospital building developments appear to have influenced or provided a template for the current 21st Century PFI hospital building projects. The current PFI hospital development

consists of some of the main elements of past hospital building schemes like the cost effectiveness of the *Best Buys*, the attributes of modular designs and output specifications are reflective of *Harness* schemes and the moderate size resources are indicative of *Nucleus* schemes. The evolved designs conform to the statutory guidelines, yet the additional guidelines that have been produced to aid the design development process is subject to interpretation. European and International studies[69] suggest user experience/opinions of hospital and healthcare environments may have significant implications for the initial design development process, with regard to the spatial planning and the attributes that encourage a '*sense of well-being*' for end users. Empirical research revealed that patients and hospital staff welcome the investment in new facilities.[107] [108] However, end users also believe that the spatial planning should address the needs of the user and reflect the caring nature of its profession. Initial investigations suggest an overall acceptance of circulation and orientation of the spatial planning, but misgivings are still voiced regarding the general dissatisfaction with the functionality and the practicalities of the spatial arrangements.

## CHAPTER TWO – INVESTIGATION AND THEORIES DEVELOPED TO MEASURE USER SATISFACTION IN HOSPITAL ENVIRONMENTS

The information gathered from the initial background research reveals a number of key issues for the development of hospital facilities. The rapid decline in funding for new hospital building in the 1970s meant that a quick and cost-effective solution was required. This had already been initiated in the past with the *Best Buys* approach to hospital development however; finance and time have played a major role in the new generation of hospital development. Although the design development process appears to have had more input in the traditional procurement method (see pp. 43 to 48), when costs were an issue, the spatial planning was marginalised. With the introduction of PFI, the design development process for the first wave hospital building projects appears to rely heavily on modular and output specifications. The design principles reflect the *Best Buys* and *Harness* hospital attributes. This chapter identifies the key issues of the literature review and puts into context its contribution to the development of the pilot study. The findings of the pilot study explore the underlying issues of the

design development and spatial planning process, in order to develop a framework for the research project.

## **2.1 KEY ISSUES OF THE LITERATURE REVIEW**

Traditional forms of investigative research are usually scrutinised around a single variable, which in turn is examined in a definitive way outside of influencing variables. According to Van Dalen,[109] traditional forms of study have their uses for particular types of research. For example, medicine has established guidelines to enable a consistent recognised format of rhetoric for scientific purposes. Van Dalen's research method however, which recommends a standardised formulaic format is rigid and can distance itself from the creative thinking process with regard to design. This systematic approach relies heavily on the quantitative form of investigative research and less on the qualitative input. In the author's view this approach leaves little opportunity to create alternative interpretations and often results in issues taken out of context from influencing variables, in this case user comments benefiting the design development process.

In contrast, Popper believed that drowning the conceptual expressive process with stringent terminology defeats the overall thinking process.[110] An example of this type of thinking is



perhaps best expressed in Polly Matzinger's '*Danger Model*'.<sup>[111]</sup> She believed and experimented that the body's immune system responded to danger and not simply foreign bodies.<sup>[112]</sup> <sup>[113]</sup> The latter belief for a long period of time was the accepted norm, until her discovery and interpretation of the '*Danger Model*' was taken seriously by other researchers and scientists (in the same field of research) as being credible once tested.<sup>[114]</sup>

With this insight, the author felt a balanced combination of quantitative and qualitative research would benefit this type of research project.<sup>[115]</sup> The *Positivist* attributes could deal with the functional implications of the spatial planning, while the *Realist* approach could address the psychological connotations of the spatial environment (Appendix 2). The progressive approach during the unstructured stage of the literature review enabled the identification of the key areas of the research, which contributed to a structured format in the development of the questionnaires for patients and hospital staff discussed further in the next section.

The literature review showed the differences in the design development processes for PFI and non-PFI hospitals. In addition, it also compared the design of hospital buildings by the following two categories (a) Pre 1997 (The NHS procurement process 1945-1997) and (b) Post 1997 (PFI procurement process). The research

revealed that few studies has been undertaken which specifically examines the correlation between the design of PFI and non-PFI hospitals with reference to user satisfaction. There was also little standardisation of the therapeutic elements in the development of hospital building projects as a factor in the creation of a 'total healing environment'. The review highlighted a growing dissatisfaction with the lack of transparency and dialogue shown by the Government to consider public opinion critiques in the development of 'new build' PFI hospital building projects,[116] [117] particularly spatial planning issues.[118] In addition, the varied and contrasting opinions between commercial enterprise, governing bodies and public interest groups revealed the complexities of the communicative process between the different agencies.[119] [120] As discussed in Chapter one, the Government's agenda (NHS Plan) outlines plans for the National Health Service (NHS)[7], describes the aspiration and proposals for patient care and clinical needs. Since economic considerations were already taking place, the importance of a design strategy seems to be significant. The literature review revealed eight main trends in PFI/PPP procured hospital building projects. These trends were:

- 1) The centralisation of hospitals and hospital departments –** often when a new PFI hospital is proposed, a number of smaller local hospitals are closed as part of the local authority policy, in

favour of one major hospital which facilitates several needs of the user (i.e. accident and emergency, outpatients' clinics etc.).[13] [90] [121]

- 2) **Reduction in 'in-patients' beds** – although several hospitals merge the number of beds are downsized with a view that the outpatients' clinics consultations will provide the appropriate treatment and monitor the availability of inpatient beds. [65] [90]
- 3) **Reduction in staff numbers** – public sector workers (for example cleaners, catering staff etc.) were being replaced by private contractor workers.[65] [122]
- 4) **Reduction in building cost and construction times** – 'new build' hospital projects were being built faster and to budget.[23] [40]
- 5) **Differences in communication between the public and private sectors procurement** – communication and secrecy were flagged as potential difficulties between the Consortia and NHS Management team as the expertise/knowledge were not passed on to other teams involved in PFI development projects.[66] [123]
- 6) **PFI funded hospitals are financially biased towards economic considerations rather than based on the hospital clinical needs** – profits of the Consortiums were disproportionate to NHS Trust financial servicing profile.[12] [14] [65]

- 7) In the long-term PFI schemes cost more than traditional procurement methods** – high interest rates and repayment scheme are negotiated at a less favourable rate than traditional procurement rates through the Public Sector Borrowing Requirements (PSBR) scheme.[48] [124]
- 8) Public opinion and national debates appear to support the consensus that PFI schemes in the NHS did not have long-term benefits** – even though some PFI ‘new build’ hospital schemes have received nominations for ‘design excellence’ award, there is a view that the quality of the construction and the practicalities of the facilities did not provide adequate provisions for users.[14] [125] [126]

The review revealed a variety of opinions on the PFI route. Points (1) and (2) above identified the implications of land acquisition for hospital building projects, which were generally located on or near green belt land and had the potential/scope for further design/planning development. Points (3) and (6) highlight the downsizing of the clinical workforce and the commercial differences in pay between the public and private workforce. Long-term repayment forecast was considered high compared to traditional procurement costs (points (4) and (7)). However, these economic factors were given a lower priority in order to achieve the government’s target projections of providing new hospitals facilities

for the next ten years, to replace existing out-moded hospital buildings. Communication issues shown in points (5) and (8) between the NHS Trust and the Consortium meant some aspects of the project management criteria relating to user issues were not being met or articulated effectively. In light of the above, a framework for the pilot study was developed in order to contextualise some of the issues raised in the literature review. For example, the main questions focussed on the centralisation of hospital facilities that may have long-term implications on patient care, or the spatial planning may have psychological implications for the end user. These issues may influence user perception or response to the hospital facilities and/or environment.

## **2.2 PILOT STUDY**

In evaluating the eight trends revealed through the literature review, it was appropriate to set them against the framework of the existing Patients' Charter, which was first introduced in 1991.[127] It focussed generally on patients' rights and easily-measured administrative targets,[128] then later was modified to emphasise informed choices for patients' health[128] and quality of care within hospital environments.[129] Although hospitals are required to 'display the Patients Charter in hospital waiting areas',[130] this requirement, from previous observations, has not been met in most

hospitals visited. Furthermore, a number of studies have shown that few patients' were aware of the Patients' Charter.[127] Even though many consultants were in favour of some of the principles, they argued that it raised "...expectations without providing the means to meet them".[62] The problem is further compounded by hospitals being encouraged to have their own 'hospital charter', which inevitably creates some inconsistencies. In addition there appears to be conflicting incentives for the measurement of patients care and services[129] [130] with available resources.

Most studies in this area deal with facilities and resource implications, with very little on the relationship between the decision-making and the design process. Over the past decade, several studies and models of the concept of the *Total Healing Environment*[57] were explored and developed.[3] [96] They encompassed projects such as the integration of the arts, interior and landscape design as well as graphics and information systems in hospital environments. In spite of the Patient's Charter being abolished in 2000, it was replaced by the Labour Administration's ten year NHS Plan (updated in 2004) which implemented some of its predecessor objectives in addition to new practices. The feedback from the hospitals, which implemented some of these ideas, has been positive,[96] especially with respect to the reception areas. The design objectives stated in the modified

Patients' Charter[128] (which was also part of the NHS Plan) formed the basis of the initial study, which were:

- Enquiry points and clear sign posting in all hospitals to help visitors find their way
- Patients are to be cared for in an environment, which is clean and safe.

The patients' charter was used as a starting point to develop a pilot study from which areas of concern to patients were identified and further investigated. These related to design issues and function, spatial planning and user satisfaction.

The main reception and waiting areas are usually where most patients are introduced to a hospital, and it is argued that a pleasant, welcoming atmosphere[131] would enable patients to feel confident about their hospital treatment. In order to ascertain users response to the hospital facilities and environment, the pilot study[132] was undertaken in two hospitals. Furthermore, the exercise enabled an evaluation and familiarity with activities associated with the day to day operations of the hospital environment like *administration, ethics, communication, clinical and physical needs, care and design (refurbishment)* in addition to the *spatial planning (building extensions)* and *user satisfaction*. In particular, to measure the degree to which the design expectations

were being met. The two selected hospitals (Table 3) were selected for preliminary investigation based on their demographic and geographic locations. They were of different sizes, layout and finishes. Hospital 'A' reflected traditional approach (not modernised) and Hospital 'B' was recently modernised.

Hospital	Type of hospital	Hospital location	Setting	Beds (approx.)	Position	Surveys	Built (circa)
A	Reflected Traditional Approach	South	Urban (Res./Com.)	550	Town	52	1939
B	Recently Modernised	South	Urban (Res./Ind.)	520	Town	29	1900

**Table 3:** Location of Pilot Study Hospitals

In order to undertake a survey at the hospitals, permission was sought from the outpatients' department manager by the author's research supervisor. Once the contacts had been established, the author took charge of the project, explaining the project outline, what would be done on the day as well as re-assured any confidentially and ethical issues. Prior to the surveys, the author presented the 'modified' questionnaire to the outpatients' managers for their perusal. The outpatients' departments (clinics) selection process was undertaken by the outpatients' department manager who liaised with the consultant(s), to identify suitable outpatients departments for the pilot study. This method of selection minimise embarrassment for mentally vulnerable individuals and potentially



'sensitive' departments like 'Accident and Emergency' and safety issues.<sup>w</sup>

The urban location of Hospital 'A' (built circa 1939) is situated within residential and commercial setting. The medium size general hospital accommodates 550 in-patient beds serving a population over 300,000 approximately. Presently it is an associated teaching facility for London University with future plans to develop into a fully fledged teaching hospital in new premises. The general layout of the Hospital 'A' comprised a moderate reception area with four members of staff located in a central position in a large rectangular space. The receptionists were surrounded by other departmental accommodation that was within easy reach of doctors' surgeries and examination rooms. It had a high ceiling and a significant amount of artificial lighting punctuated by a limited amount of natural light, penetrating parts of the space from an adjacent corridor glazed on both sides.

Hospital 'B' was built prior to the turn of the 19<sup>th</sup> century is also located within an urban environment and near residential properties. However, it is also situated near industrial buildings. The acute hospital accommodates 520 in-patient beds, with some general hospital specialities undertaken with associate local

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<sup>w</sup> This method was modified slightly for the main study (discussed in Chapter 5).

hospitals as well as working closely with *Tertiary* centres.<sup>x</sup> Serving a population of 373,000 approximately, there is currently an ongoing development programme for improving resources (e.g. clinical care, diagnostic, therapeutic and treatment services). Hospital 'B' had separate reception areas with adjacent waiting areas catering for the different departments with a central corridor linking the doctors' surgeries and examination rooms. The ceiling height compared to the first hospital was considerably lower with a greater reliance on artificial lighting.

A sample of 52 patients in Hospital 'A' and 29 in Hospital 'B' participated in the survey. Patients were selected during an afternoon outpatient' clinic and asked, when they checked-in for their appointment, to complete a questionnaire generated from the Patients' Charter (Appendix 3). This process proved an efficient use of time for gathering information and ensured queries were dealt with immediately. The questions related to patients' access to written and verbal information from hospital staff, attitude to medical staff, quality of care, perceptions of the signage, and impressions of the hospital (internal and external) environment. The results were analysed using Statistical Package for Social Sciences (SPSS) software, which identified the significant variables. The data

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<sup>x</sup> Tertiary Centres – provides specialised skills, technology and support services

(Appendix 3) highlighted the main concerns of the patients relating to the hospital environment, and user satisfaction.

Interviews were undertaken in conjunction with the surveys, to enable cross-referencing of questionnaire material and to minimise the misinterpretation of some of the terms in the Charter. The unstructured nature of these interviews allowed patients to express the views informally which provided relevant information beyond the scope of this preliminary study, but was beneficial in the analysis of their perception of the built environment. It also enabled the confirmation of their attitude towards the 'hello nurses'- who are used to greet new patients in areas such as the accident and emergency departments, possibly used to conceal long waits for treatment.[127] It is generally agreed that the function of the outpatients department is to "...diagnose and to treat home-based clients and if necessary to accept them as in-patients".[131] For some patients it may be their first visit to the outpatients department and therefore it is important to provide environments that are welcoming, comfortable and humane.[131] It is also argued [131] that a pleasant, welcoming atmosphere where positive relationships could be developed very quickly with staff, will enable patients to feel significantly confident about their hospital treatment. This was evident in both hospitals.

The survey findings showed that in Hospital 'A', 95.2% of the respondents considered the outpatients department to be welcoming although 68.2% thought the overall impression of the building was old. In Hospital 'B', all the patients who responded to the question felt the outpatients department was welcoming although their overall impression of the building was modern. However information obtained during the interviews, seems to suggest that most of them 75% perceived modern hospitals as unwelcoming. In Hospital 'A' 86.2% of the participants expressed the view that the signage was clear, 95.9% indicated that the reception area was quite pleasant and 60.7% thought it was generally tidy although 39.3% felt the building appeared cluttered. Similar percentages were achieved in Hospital 'B', however their responses differed from Hospital 'A' when the question of appearance was raised. Unlike Hospital 'A', 85% of the patients in Hospital 'B' felt the building was sufficiently tidy. In general, the respondents in both hospitals, found the reception area accessible, and felt it had adequate toilet facilities. However interviews undertaken suggest that wheelchair bound patients found accessibility and the layout of the spatial arrangement sometime hampered their movements.

Concerning the patients' wellbeing, the study showed that over 98% of the patients in both hospitals felt they were put at ease, by

hospital staff. Over 96% in both hospitals indicated that they were treated with courtesy and sympathy. Over 96% of the patients in both hospitals 'expect' and feel they have a confidential, caring and courteous relationship with consultants and other professional staff. In both hospitals, 81.6% of patients in Hospital 'A' and 91.7% in Hospital 'B' expressed confidence about the personal health care they receive from consultants. This was slightly lower for the medical staff at 78.4% in Hospital 'A' and 96.2% in Hospital 'B'. A sizeable percentage, 83.7% in Hospital 'A' and all the patients interviewed in Hospital 'B', were content with the quality of care they received. Some concerns were raised regarding assistance for patients with 'special needs', especially for hard of hearing and partially sighted patients. Bolder signs and clearer/slower diction were recommended as being beneficial in assisting these patients. Sixty-two percent (62%) of patients in Hospital 'A' felt the information provided prior to an appointment was adequate compared to 48% in Hospital 'B'. However over 77% in both hospitals wanted clearer and in-depth information and explanation of their condition.

The survey results suggest in Hospital 'A', the combination of renovation and part modern facilities appealed to most of the patients, who expressed the view that it looked cosy rather than sterile. Hospital 'B' participants had different opinions, they

associated terms like “...quite modern”, “...cold”, “...sterile” and “...nice, but uncoordinated” (decor) with the newer facilities. Questions on the choice of colours provided interesting comments from patients, especially in Hospital ‘A’. Participants felt that a homely feeling could be created with pastel colours. Patients in Hospital ‘B’ felt the chosen colours, also pastels, reminded them of the term ‘hospital green’ associated with the surgeons gowns, which might have influenced their perception of the hospital. Other requirements outlined in the Patients’ Charter, concerns ‘signage’, this indicates that patients can “...expect enquiry points and clear sign posting in all hospitals to help you and your visitors to find your way” and “...to be cared for in an environment which is clean and safe”. [130]

The question of ‘special needs’ raised an interesting observation. In Hospital ‘A’, where the patients’ perception of the hospital was welcoming, ‘special needs’ were considered secondary. Whereas in Hospital ‘B’, statistically were positive but users overall perception (opinions) of the building was less welcoming, ‘special needs’ were primary. Waiting times, lack of information when consultants were delayed and last minute cancellations were some of the growing concerns highlighted by the patients (Appendix 4).

The problems identified by the survey revealed hospitals environments, which are free and devoid of institutional characteristics can ease patients' fears and increase confidence in hospital treatment.[133] Research suggests the main reason for the difficulty in satisfying user needs is the lack of empathy and identifying patient needs, which results in unrealistic solutions:

*"Designers should be put in a hospital bed, trundled around and frightened out of their wits.... and may be we might then get better hospitals." [58]*

Alternatively in order to understand the relationship between a hospital and the human being, it is necessary to undertake a 'longitudinal study' involving following a patient through a complete hospital experience. Such a study should begin at home, when an individual becomes aware by appointment or going into hospital. Several variables are critical such as an individual's perception of the hospital including the meaning and reason for going into hospital, the psychological state of mind or the possibility of accompaniment.

The assumptions for the design of these areas are made by the majority of design teams based on the importance, availability, and use of design guides produced by the Department of Health. Most design teams assume that these guides are based on extensive research and development work undertaken by the Department of Health and that their adoption will lead to a closer match between

the design and user requirements. These standards, recommendations and or operational policies have rarely been adopted wholly in most of the National Health Service hospitals designed to date.

It has been argued that it is necessary to:

*“...understand the work activities and operational policies, but the most difficult problem for an interior designer is to reverse his role and become the patient and relate to their requirements”.*[58]

In view of the numerous guidelines and ‘selective’ approach to the totality of the guidance there are considerable differences, deviations and modifications by the individual architects and designers, in order to satisfy the demand of individual projects for local regulations and requirements. The main reception and waiting areas continue to be one of the areas which are often modified to suit changing needs. In spite of these deviations and modifications, the hospital environment struggles to adapt to the changing user needs, whether they be non-medical (atmospheric and satisfying social needs), technological (modern information systems) and/or political (competing with other hospitals). The reasons for these frequent modifications argued by most of the members of hospital staff interviewed are threefold:



- Firstly, the user requirements are not fully understood. Where they are understood they are not always incorporated in the guidance. Where they are incorporated in the guidance they have not been clearly stated in design terms for easy understanding and implementation. For example, the provision of a satisfactory level of amenity is stated as one of the user requirements. The form, layout or type(s) of amenity are not clearly stated. One expects that the basic amenities such as toilets, waiting area, reception desk to be clearly stated and optional ones such as snack bar, shops, telephones, banks, newsagents, florists, crèche, post office, children play areas are often mentioned for possible inclusion in a phased development. Having listed these amenities, no mention is made in the guidance of why they are required and the context in which they are required. An examination of another of the user requirements in the guidance highlights the problem, 'the provision of a pleasant, welcoming, non-institutional atmosphere', includes subjective concepts subject to different interpretations by different designers. There is no doubt that some patients continue to complain of reception and waiting areas as being depressing, dull, unwelcoming, unfriendly, drab and dark, (even though in most cases the design guidance lighting standards are met).

Other requirements indicated in the guidance of the Patients' Charter are the need to provide 'privacy' and 'security' in such a 'public building', which is difficult to cater for.[134] The guidance and literature also offer suggestions for the use of soft pastel colours, soft furnishing and use of plants. The hues or shades of these soft pastel colours have not been specified in any way. No wonder in one of the hospitals surveyed the patients referred to some colours as 'hospital green'. Most designers often rely on personal experience such as likes or dislikes, rather than on empirically verified colours in order to achieve the guidance objectives of a reduction in the level of anxiety, fear and stress experienced by some of the users both staff and patients. The design guidance is also inadequate in explanation and/or provision of the appropriate solutions for most of these subjective concepts.

- Secondly, the technological advancement in medicine, information collection and storage has not in the past been anticipated accurately by the research and development group responsible for the design guidance and accordingly has not been incorporated. Remarkable changes have had to be made at design briefings by designers, in order to satisfy or accommodate these changes.

- Thirdly, the standards, building regulations and requirements are different for the various locations where these hospitals are to be sited. Standardised hospitals, although cost effective might not necessarily be appropriate for all sites.

Another aspect is the attitude towards hospital patients. Whether they are being treated privately or under the National Health Service, it is apparent that whereas the private sector hospitals consider the patients as clients and customers, the public sector patients are often considered as "*...fodder to be processed in the hospital machinery*" or "*...experimental guinea pigs*".[59] [135]

The users, especially the patients, were selected for study because they have often had no representation on the design team. One of the common mistakes of design teams is that they are typically composed mainly of hospital management, administrative and medical staff, who do not often work specifically in this area. Consequently, it is likely that they will be less conversant with the patient's requirements in this area compared with the porters, reception staff and the ambulance persons. The porters and especially the receptionists who work in these areas are barely consulted about their understanding of design and its use. It is inappropriate to assume that hospital users are sick human beings

'patiently' waiting for treatment or death. The word 'patient' might therefore have evolved from these early concepts as well as the word 'hospices', since according to the 'Collins' dictionary means "...a person under medical treatment" (1990).

The outpatient needs in the main reception and waiting area will be more difficult to cater for, since they often display among others a wide range of illness, injuries, age, attendance and, accompaniment differences. Each of these groups has its own requirements in its respective clinics, but the common area where they share facilities either for entering the hospital, relaxing, waiting to attend clinics or transport will be the main reception and waiting area. Although their medical needs will be different in the various clinics, their non-medical and social needs will be similar in the main reception and waiting area. A further factor is due to the current and future trend of health care towards outpatient rather than inpatient treatment, the reduction of ward beds and an increase in the accommodation for outpatient departments in most of the National Health Service hospitals is now evident.

Surprisingly, in the private sector it has been argued that 'once past the post-modernist entrances, the rest of the hospital often has the same image as the National Health Service hospitals.' [135] [136] Although some hospital administrators often dispute this argument,

there is general agreement among most professionals suggesting, rather sarcastically, that private hospitals are generally 'hotels with oxygen masks on', or 'they are Holiday Inns with oxygen, meant to kid the patient that he or she is not in a hospital'[135] [136].

### **2.3 CONCLUDING REMARKS**

The key issues of the literature review revealed the difference of opinions on the PFI route. It highlighted the downsizing of the clinical workforce, the commercial differences in pay between the public and private workforce, the long-term high repayment forecast for PFI procurement compared to traditional procurement, the Labour Administration's drive to achieve its public services targets for new hospital facilities and the complexities of the communicative process between the difference agencies. The pilot study revealed that generally both hospitals were considered welcoming. However when compared separately, the hospital considered modern was perceived as less welcoming compared with the older and traditional type. In both hospitals patients' indicated that the signage was clear, reception area was pleasant and generally tidy. The toilet facilities were considered adequate but some patients questioned their accessibility and practicality. Some 'special needs' concerns were expressed, which related to assisting the hard of hearing and partially sighted patients. Bolder signs, clearer and

slower diction was identified has a basic requirements by patients companions as being beneficial to user orientation and participation in medical discussion within hospital environments. In spite of studies indicating that the concept of the creation of a 'healing environment' or the provision of 'the total hospital experience' (which incorporates the arts and interior design principles), as being beneficial for hospital patients, it has not been incorporated in the Patients' Charter. As one observer notes:

*"...lets face it, by the time you end up in a 'health care building' as a patient or companion, architecture and design are likely to be the last things on your mind. Far more important are the nursing care, pain relief and general attention available and because none of these come cheap, hospitals tend to be design free zones. That's the way things are: The reality of health care funding means its either/or situation – either healthcare or design – which is often a terrible choice to make, since endless research show that both are contributory factors to a patients response and co-operation with the health care system".[136]*

The salient points of the literature review identified areas of studies that would assist in the framework for the study. These were:

- The methods and types of procurement for PFI/PPP 'new build' hospital building projects.

- The location of the 'new build' hospital development projects and the implications on local hospital services.
- The effect on the hospital workforce for clinical services and implications of commercial enterprise.
- The long-term financial implications of PBSR and PFI/PPP for hospital building projects.
- The differences in the working relationship between the Consortium and architect/designers.
- The differences in the collaborative process between the Consortium, client and architect/designers via PBSR and PFI/PPP procurement.
- The implications for spatial planning via PBSR and PFI/PPP for hospital building projects.

In addition, the key points of the pilot study revealed:

- The lack of awareness and understanding of the Patients' Charter.
- Patients' varying perception of the reception/waiting areas (e.g. spatial planning, physical qualities and ambient settings) of the older (traditional) and modern hospitals.
- The degree to which user satisfaction have been achieved in the perceived older (traditional) and modern hospitals.
- Patients' perceptions of the hospitals' social and 'special needs' considerations.
- The degree to which patients expressed their views via additional comments in the blank space provided.

The findings of the literature review and pilot study provided useful information to undertake further investigations (Chapter 3) to identify the main causes of dissatisfaction for users. In addition, ensuring that design decisions are empirically verifiable and could be incorporated in future hospital developments.



## **CHAPTER THREE - METHODS**

This chapter discuss the methods undertaken to develop a holistic research framework for the study, based on previous investigations from the literature review and information acquired from the pilot study from patient surveys in the selected hospitals.

### **3.1 DEVELOPMENT OF RESEARCH FRAMEWORK TO ASCERTAIN USER SATISFACTION OF PFI AND NON-PFI HOSPITAL ENVIRONMENTS**

The main conclusions drawn from the pilot study suggest there are some requirements of the Patients' Charter which were not being met. The design of the built environment, especially interiors, does not seem to be stated clearly in the Charter and it is assumed that designers used their expertise based on available design guidelines and hospital policies. The design variables highlight the conflicting views of some patients when the information or data are compared. The results showed that questions relating to the patients' perception of the built environment generated an average response on the aesthetics and functional aspects of the hospital. Whereas,

questions relating to their immediate well-being and personal relationship with medical and professional staff generated a more positive response from patients. It was this difference that led me to investigate the difference in perception when dealing with the functional and visual aspects of well-being (conscious interaction with the hospital environment), compared to the psychological and visual aspects of well-being (sub-conscious interaction with the hospital environment). As previously discussed in section 1.1, 'sensory' considerations are an integral part of interiors designers work and the response (based on previous experience) seemed to be at odds with some of the issues raised by users of hospital and residential care environments. Unlike facilities which are designed for extended or permanent periods of stay such as convalescent and residential care homes or hospices and tertiary centres, for the author it raised the question as to whether the perception was based on necessity (time – frequency of visit/s and length of stay), expectation (relevance – functional and psychological interaction with the hospital environment) and/or on opportunity (evaluation – forum for critique/opinions of the hospital environment and facilities). Since there appears to be a trend to centralise hospital facilities (see pp. 64 to 67), there could be an opportunity to ascertain whether the development of 'new build' hospital buildings/projects would have a less or greater degree of influence on user functional and psychological needs, when compared to

non-PFI hospitals. A template of the variables that influence users perception of a 'given' environment, could establish whether the above issues are related to necessity or practicalities.

The study develops the theories and methods for measuring user satisfaction of PFI and non-PFI hospital environments, as well as the selection process for PFI and non-PFI hospitals. In addition, acquiring the appropriate information gathered from users of hospital environments, in particular the reception/waiting areas in the outpatients' department. The salient points from the pilot study were used to develop the questionnaires for the research project, in addition to other modifications based on information gathered from various sources as discussed in previous chapters. It is important to develop questionnaires, which target two groups, patients and hospital staff. Users that had access to and utilised the same facility would have a unique perspective and opinion on their use of the hospital facilities. By sourcing information in this fashion enables a degree of cross-referencing. Huge investments have been made in the development of new hospital facilities. Identifying inconsistencies in the existing design guidelines revealed possible areas of improvement in the development of new hospital buildings. Subsequently, it may well raise the image of National Health Service hospitals, which has generally received little praise from some design bodies and the public press.

### **3.2 INTRODUCTION TO THE RESEARCH FRAMEWORK**

The research methods were approached 'holistically' (characterised by understanding the parts which are intimately interconnected to the whole),[137] to provide enough flexibility to accommodate alternative solutions to this study relating to hospital building design and user satisfaction.[129] As described in Chapter one, the aim of the investigation was to evaluate the different procurement processes and their impact on the design and development process for hospital construction as well as the implications for user satisfaction. The research methods outlined in this chapter were developed to address the inter-relationship of the varying design variables.

To identify the key issues relating to the design of PFI and non-PFI hospitals waiting areas of the outpatients department, information was acquired from various sources to determine the scale of the issues and comprehend the extent of the differences. Data were analysed using quantitative (Statistical Package for Social Sciences [SPSS]) and qualitative methods, in order to measure and ascertain user responses to the hospital environment. Literary sources (Table 4) were obtained from several libraries which provided significant amounts of information via written and audio publications. It enabled the development of the initial research project.

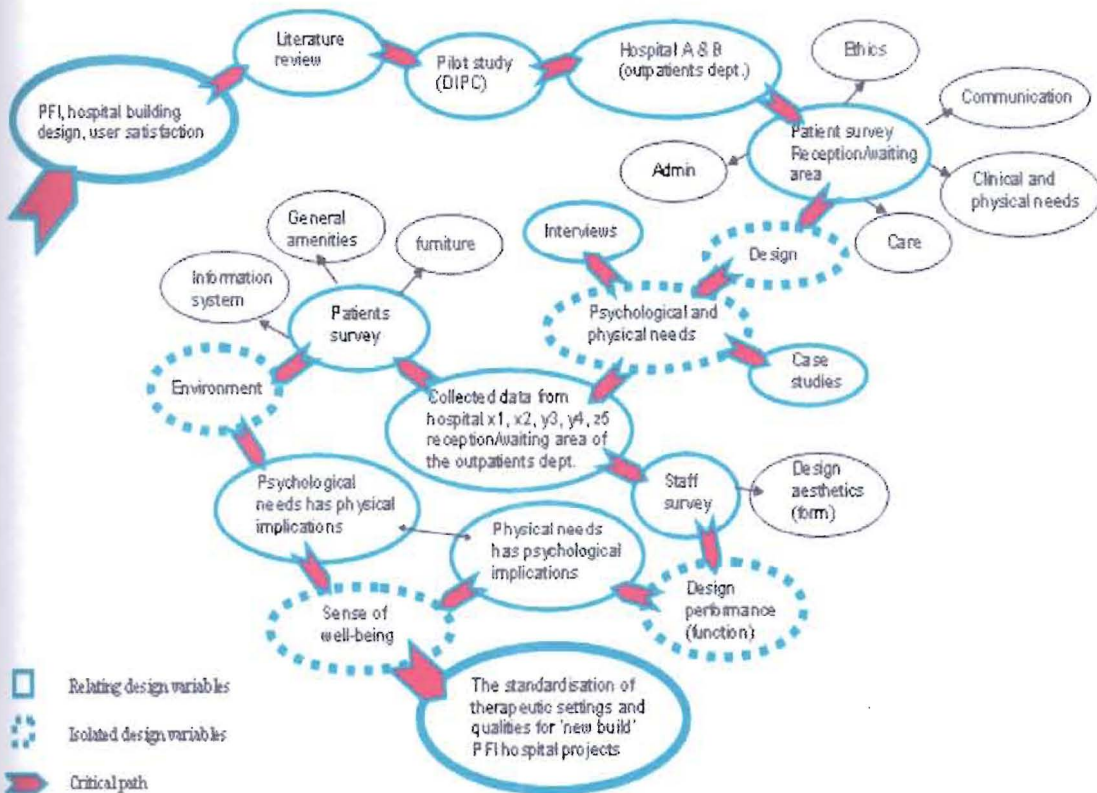
<b>The University of Luton</b>	Interlibrary loans, online and published journals, medical journals and general design information from subject specialist advisor.
<b>De Montfort University</b>	Design catalogues and visual/audio design publications, slides and tapes.
<b>Leicester Reference Library</b>	Journals, periodicals and news bulletins.
<b>Birmingham Central Library</b>	Range of newspapers, bulletins and reference material (i.e. government and design policies) etc.
<b>British Library</b>	Articles, journals and referred publications
<b>Internet</b>	Government and NGO documents, access to online journals and articles, etc.

**Table 4: Literary Sources**

Other sources mainly consist of online computer catalogues such as the 'Institute for Public Policy Research' ([www.ippr.org.uk](http://www.ippr.org.uk)), 'Treasury Taskforce' ([www.treasury-projects-taskforce.gov.uk](http://www.treasury-projects-taskforce.gov.uk)), 'NHS Procure21' ([www.nhs-procure21.gov.uk](http://www.nhs-procure21.gov.uk)), and 'Connecting Healthcare' ([www.connectingHealthcare.com](http://www.connectingHealthcare.com)), in order to gain specialist information. A number of online sources ([www.findarticles.com](http://www.findarticles.com) and [www.theses.com](http://www.theses.com)) were undertaken to develop the research study ideology. Reports, magazines and commercial articles were also acquired from design organisations (Ashen Dryer, AMEC, Nightingale Associates and Keppie Design).

Architectural plans of PFI and non-PFI hospitals were also acquired in order to ascertain the degree to which the design guidelines were being met and to assess the spatial planning of the reception/waiting areas. This source of information proved useful

when liaising with designers and building contractors, ascertaining their opinions in the achievements of their designs and hospital development goals revealed the use and interpretation of the design guidelines. Due to the time constraint and the issues surrounding the design development process via PFI, it was difficult to acquire the necessary information to setup an observation whereby all parties would be reconciled to the author's presence. Figure 10, outlines the framework of the research project and illustrates the investigations undertaken to identify the key issues influencing the design development process for hospital buildings projects and user satisfaction.



**Figure 10:** Bubble Chart of the Research Framework

It also indicates the path chosen for the direction of the research project, which is highlighted by the red arrows. The simplicity of the diagram denotes the systematic approach in terms of the perceived influences in the design development of a hospital project, while Table 5 shows the general time-line for the collection of the data.

	2000	2001	2002	2003	2004	2005	2006
Literature Review	Ongoing						
Interviews/ Discussions		Conference & Symposiums (Glasgow, London, Luton)		Feedback – Hospitals, Architect/Designers, Building Contractors			
Case Studies	PFI & Non PFI Hospitals						
Questionnaires			Patients & Staff				
Ethics Committees			LREC/MREC (Feb. to Jul)				
Data Collection			PFI & Non PFI Hospitals			Hospital PY4	

**Table 5:** Sources and Dates for Data Collection

The design variables identified from the initial investigation formed the basis of the questionnaire design as it addressed the spatial planning and user satisfaction issues. The information gathered from the *interviews* and *case studies* generated questions relating to the psychological and functional needs of the user. Their inclusion would identify the degree to which the architect/designers and building contractors' aspirations have been met. To determine whether users of the hospital environment functional and psychological needs were being met, several surveys (subject to official permission) were undertaken in PFI and non-PFI hospitals in the North and South of the United Kingdom.

### 3.3 RESULTS AND ASSESSMENT OF PATIENTS AND STAFF SURVEYS (HOSPITAL AB)

For the purposes of feedback, a few hospitals were known to undertake surveys to gauge user response to the hospital facilities. As discussed in section 1.1, there have been a number of criticisms levelled at 'new build' hospital developments and as a result, there appears to be (of late) an ongoing trend to establish some form of feedback from users of hospital facilities.[138] [139] [140] [104] As to what happens to the information once it is acquired is generally at the discretion of the instigator(s) of the feedback. In this instance, Hospital AB provided information in 2002 (for research purposes) of their own *Post Project Evaluation* from patients and staff. In Hospital AB, over 90 patients and almost 600 staff took part in the survey. Further enquiries revealed the 'new build' hospital development project had not sought end user input in the design development process. Hospital AB was one of the first PFI redevelopments that included the design, construction and finance of new buildings and extensions. Costing in excess of £90 million, the facilities were operational in circa 2001. The survey undertaken by the research department for Hospital AB developed a patient questionnaire, which consisted of approximately twenty-five questions that required a tick in a square box to several possible responses (i.e. Agree Strongly, Agree, Do not Know, Disagree,



Disagree Strongly) with a comments section. The staff questionnaire (consisting of approximately thirty questions) followed the same format with the exception of one question that required an item to be circled, in addition to including a comments section. The questions for the patients and staff (administrative, managerial and clinical) questionnaires were phrased from a positive standpoint, which then required the response to also agree and the extent of that agreement or 'do not know', 'disagree', 'disagree strongly'. A summary of patients and staff perceptions (Table 6) highlight the key points of the surveys. The patient questionnaires revealed that the overall impression of the new hospital was good (63% approx. – 'agree'), it was pleasantly decorated (70% approx. – 'agree'), the layout was convenient (60% approx. – 'agree') and the signs enabled easy navigation around the hospital facilities (57% approx. – 'agree'). Although approximately 33% ('agree') and 12% ('agree strongly') was achieved for patients who believed the hospital building accommodated the "...disabled..." [sic] users. However, approximately 37% 'did not know', 13% 'did not answer', 3% 'disagreed' and 2% 'disagreed strongly' that the hospital building signage did not accommodate the "...disabled user". Considering that 20% of the respondents were physically impaired, the remaining figures are significant in so much that the percentage of those who felt is catered for the impaired is likely to have been impressions from the 'able-bodied' users.

Hospital AB Surveys		Statistics*				
		AS	A	DnK	D	DS
<b>Patients</b>	Environment					
	Overall impressions of the new hospital good	22%	63%	3%	8%	2%
	Pleasantly decorated	19%	70%	1%	9%	1%
	Layout convenient	9%	60%	21%	4%	3%
	Signage					
	Easy navigation	20%	57%	11%	8%	2%
	Accommodated the disabled (20% registered disabled)	12%	33%	37%	3%	2%
	Catering					
	Provisions adequate	3%	22%	46%	18%	9%
	Hygienic/Neat					
	Overall clean/tidy	19%	60%	9%	11%	1%
	Transport	Preference levels N/A				
	Ambulance			14%		
	Car			54%		
	Cycle			1%		
	Pedestrian			1%		
	Public Transport			28%		
Parking						
Adequate	2%	28%	23%	33%	14%	
Parking charges reasonable	0%	14%	28%	37%	21%	
<b>Staff</b>	Functional Use of Space					
	Provisions for each department satisfactory	1%	14%	23%	40%	22%
	Appropriateness of Space					
	Generally well lit and ventilated	3%	40%	27%	24%	5%
	Clinical work area aids efficiency	2%	32%	26%	25%	13%
	Clinical departments logically situated	3%	40%	27%	24%	5%
	Accommodated the disabled	4%	50%	25%	16%	5%
	Signage					
	Easy navigation	3%	29%	3%	47%	17%
	High quality decoration, fixtures and fittings	3%	40%	27%	24%	5%
	Hygienic/Neat					
	Good cleaning services	3%	39%	7%	34%	17%
	Storage					
	Adequate provisions for safe and secure storage (materials and equipment).	1%	24%	21%	35%	18%
	Transport	Preference levels N/A				
	Car			58%		
	Cycle			2%		
Motorbike			2%			
Pedestrian			7%			
Public Transport			30%			
Parking						
Adequate	0%	12%	10%	29%	48%	
Parking charges reasonable	0%	7%	12%	26%	54%	

\* AS = Agree Strongly, A = Agree, DnK = Do not kKnow, D = Disagree, DS = Disagree Strongly

Table 6: Summary of Hospital AB Research Findings

The catering provisions did not fare as decisively as some previous impressions. Approximately 46% did not have an opinion, 18% was achieved for 'disagree' and 9% for 'disagree strongly' compared to 22% for 'agree' and 3% for 'agree strongly', with a further 2% not answering. Patients' impressions of the hospital building appearing clean and tidy achieved approximately 60%. Lastly, most patients' mode of transport was by car (54% approx.), public transport (28% approx.) and ambulance (14% approx). However, when asked to respond to whether the parking charges were reasonable approximately 14% 'agree' they were, in contrast 37% ('disagree') and 21% ('disagree strongly') believing they were not, with a further 28% who did not answer. In addition, approximately 28% ('agree') and 2% ('agree strongly') believed parking facilities were adequate compared to 33% ('disagree') and 14% ('disagree strongly') who believed the opposite revealing a degree of dissatisfaction with the parking arrangements and facilities.

The staff questionnaire revealed a general dis-satisfaction with the provision of rooms for functional use gaining approximate figures of 40% and 22% respectively in the 'disagree' and 'disagree strongly' preference levels. In addition, the clinical areas that aid efficiency achieved approximately 25% and 13% in the 'disagree' and 'disagree strongly' respectively, compared to 32% ('agree') and 2% ('agree strongly') suggesting varying opinions. However,

approximately 40% perceived that the clinical departments were logically situated in relation to one another. A further 50% ('agree') and 4% ('agree strongly') believed the hospital building accommodated the "...disabled..." users whereas 16% (disagree) and 5% ('disagree strongly') perceived the opposite leaving 25% that did not answer. Overall signage achieved less favourable responses in the 'disagree' (47% approx.) and 'disagree strongly' (17% approx.) preference levels while decoration, fixtures and fittings received approximately 40% in the 'agree' and 3% in the 'agree strongly' preference levels as well as a general consensus (40% approx – 'agree') that the rooms were well lit and ventilated.

Storage facilities to accommodate equipment and materials generally attained less favourable responses with staff believing they were not adequate, safe and secure provisions (35% approx. - 'disagree' and 18% approx. - 'disagree strongly'). In comparison, 24% in the 'agree' and 1% in the 'agree strongly' believe the opposite even though 27% of participants did not answer. Significantly approximately 34% ('disagree') and 17% ('disagree strongly') of staff believed good quality cleaning services were not provided compared to 39% ('agree') and 3% ('agree strongly') who disagreed. Only 7% did not answer. The dispersion of the results indicates a degree of dissatisfaction. Finally, the staff mode of transport was mainly by car (58% approx.) with public transport

(30% approx.) and pedestrian (7% approx) being the subsequent ways to travel to the hospital. However, like patients, staff believed the parking charges were unreasonable with approximately 54% achieved in the 'disagree strongly' and 26% in the 'disagree' preference levels. Only 7% approximately ('agree') believed they were not. Revealing decisively that the majority of staff were unhappy with the parking arrangements, which is further indicated in their response to whether the parking facilities were adequate. Approximately 29% of staff 'disagree' with a further 48% 'disagree strongly', only 12% 'agree' and 1% 'agree strongly' they were adequate.

Similarly, the results of the patients and staff surveys (Table 6) reveal a pattern that is generally positive from the patients and less positive, as well as varying criticisms from the staff. Considering the 'perceived' nature of the activities undertaken by end users, the results suggest the immediate needs of patients allows for some compromises but generates more varying opinions. While the constant and multi-tasking activities of the staff highlight immediate concerns and generates more criticisms, which may have long-term implications for the hospital environment.

### **3.4 QUESTIONNAIRE DESIGN PROCESS AND OFFICIAL APPLICATION PROCEDURES REQUIRED FOR SURVEYS IN HOSPITAL ENVIRONMENTS**

The purpose of the questionnaire was to assess users' responses and impressions of the hospital environment, including evaluating the facilities provided for patients and staff. The next stage of the questionnaire development required additional information (case studies) from architects, building contractors, hospital managers and executives of PFI and non-PFI facilities. A greater degree of information was ascertained from interviewing (where possible) people who attended hospital development conferences and PFI seminars. As a result, several plans were also acquired of completed first wave 'new build' hospital building projects. The acquisition of the additional plans contributed (in part) to identifying the relationship between spatial planning and the design guidelines. In addition, the collated information identified the degree to which past and existing design guidelines had been incorporated in the design of hospital environments (i.e. interpretation, use and compliance of the design guidelines). Attempts by the author to solicit information from the Health Minister for the research project failed, despite an invitation to contact the Government Administration Department. After several failed attempts, this course of action was abandoned when the attendance of MPs speaking at PFI conferences proved more useful for the

development of the questionnaires. Prior to the completion of the questionnaires, the results of the pilot study and a preliminary evaluation of the hospital plans were assessed. The data revealed the physical characteristics of the hospital environments might have an influence on human behaviour. Therefore, in order to test the extent of this influence, the *psychological and functional* aspects of the hospital environment, variables relating to user satisfaction and spatial planning were incorporated in the next set of questionnaires. Two styles and formats were developed for the questionnaires, which were based on the findings of the published literature and pilot study (previously discussed). The separate questionnaires for patients, hospital staff<sup>y</sup> and managers (Appendices 5, 6, & 7) were designed to ensure that the different roles and activities of hospital end users were representative of their interaction and their knowledge of the hospital facility. The different language employed in the design and style of the separate questionnaires, responds to users needs and availability. The 'direct contact' component and some graphic elements were modified and utilised as suggested by Van Dalen.[109] The Likert method seemed more appropriate for the design lead questionnaire as suggested by Oppenheim,[141] as it enabled the respondent to provide a qualitative response in a statistical format. While Kennon, Jay, Bauer & Parshall's[142] succinct analysis of design lead appraisals completed the format.

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<sup>y</sup> Hospital staff – includes medical, administrative and support staff (unless otherwise indicated).

Strongly agree	Agree	Slightly agree	(Slightly agree)	(Agree)	(Strongly agree)	= Key
1	2	3	4	5	6	= SPSS Ordinal Values
(3)	(2)	(1)	(1)	(2)	(3)	= Value of Preference
<b>Neutral</b>						

**Table 7.1:** Patient Questionnaire Six Point Scoring System (Semantic Differential Scale)

Please tick <b>one</b> box only									
 Light	Strongly agree with	1	2	3	4	5	6	Strongly agree with	 (dark)
<b>Key:</b> 1= strongly agree      2 = agree      3= slightly agree 4= (slightly agree)      5= (agree)      6= (strongly agree)									

**Table 7.2:** Patient Questionnaire Six Point Scoring System for SPSS Statistical Programme

The patient questionnaire utilised a *Semantic Differential Scale* with a six point scoring system (Table 7.1). This table was modified as seen in Table 7.2 to allow statistical analysis to be carried out using the SPSS statistical programme. The focus of the questionnaire was *Appearance and Aesthetics*, which was sub-divided into four sections; reception/waiting area; furniture; information systems and general amenities/retail features (Table 8, 9, 10 and 11). The first question (Table 8) has sub-questions, which has been arranged in a sequence to address the psychological[143] and functional aspects of the hospital environment.



**Questions for Patients - Appearance and Aesthetics (Please answer all questions).**

*The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.*

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)	Small	Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with	Large
b)	Light	Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with	Dark
c)	Spacious	Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with	Cramped
d)	Welcoming	Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with	Unwelcoming
e)	Tidy	Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with	Untidy
f)	Other comments.....									
	.....									
	.....									
	.....									
	.....									

**Table 8: Patient Questionnaire – Question 1**

The order of the questions relates to the users' movement and initial impressions of the hospital environment. They mimicked

users' awareness of the hospital internal environment, as identified from the design elements of the pilot study. The second question (Table 9) sub-questions, relates to users impressions of the hospital 'furniture' and whether it facilitate users' functional needs.

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Strongly agree with Strongly agree with Dull

b) Hard Strongly agree with Strongly agree with Soft

c) Comfortable Strongly agree with Strongly agree with Uncomfortable

d) Feels Solid Strongly agree with Strongly agree with Feels Hollow

e) 'Modern' Strongly agree with Strongly agree with 'Old'

f) Other comments .....

.....

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**Table 9:** Patient Questionnaire – Question 2

3. What are your observations of the information systems?

a) Signs:

(i) **Clear** (able to read letters/pictures/graphics) Strongly agree with        Strongly agree with **Unclear** (not able to read letters/pictures/graphics)

(ii) **Visible** (able to see signs) Strongly agree with        Strongly agree with **Not visible** (not able to see signs)

(iii) **Other comments** .....

.....

.....

.....

b) Directions:

(i) **Understandable** Strongly agree with        Strongly agree with **Difficult to understand**

(ii) **Other comments** .....

.....

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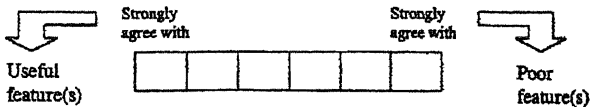
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**Table 10: Patient Questionnaire – Question 3**

The third question (Table 10) sub-questions, ascertains users impressions of the hospital 'information systems', by utilising terminology to identify 'special needs' features, as identified in the pilot study.

Questions four, five and six (Table 11) solicits users' opinions of the retail facilities. The questions were intended to elicit information to identify what was considered useful, desirable, their preferences, as well as feature(s) they would like to change or keep.

4. The reception/waiting area has features that you find useful.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s)  Poor feature(s)

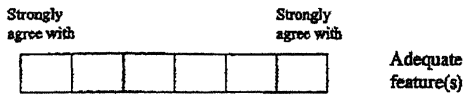
b) Please state feature(s) .....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s)  Adequate feature(s)

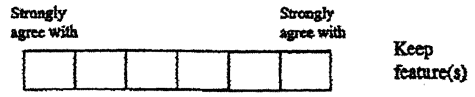
b) Please state feature(s) .....

.....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s)  Keep feature(s)

b) Please state feature(s) .....

.....

.....

.....

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Table 11: Patient Questionnaire – Question 4, 5 and 6

The hospital staff questionnaire utilised a *Semantic Differential Scale* with a ten point scoring system (Table 12) in preference of a lesser range, in order to test whether staff selections were based on specific or general opinions.

<b>Key:</b>	<b>1</b>	= Complete failure	<b>6</b>	= Good
	<b>2</b>	= Critically Bad	<b>7</b>	= Very Good
	<b>3</b>	= Far Below Acceptable	<b>8</b>	= Excellent
	<b>4</b>	= Poor	<b>9</b>	= Superior
	<b>5</b>	= Acceptable	<b>10</b>	= Perfect

**Table 12:** Staff Questionnaire Ten Point Scoring System

The focus of the questionnaire was *Environment and Context*, which was divided into two sections relating to design aesthetics (form) and design performance (function). Since the questionnaire was designed with hospital staff in mind, the questions targeted sophisticated knowledge and awareness of the spatial elements of the hospital environment.

The first question on the staff questionnaire (Table 13) expands on the specific details associated with 'design aesthetics and excellence in design'. Due to the amount of time staff spends in hospital environments, the implicit nature of the questions is intended to draw upon those experiences.

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

1. Form

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a											
b											
c											
d											
e											

f) Other comments .....

.....

.....

.....

.....

Table 13: Staff Questionnaire – Question 1

The second question on the staff questionnaire (Table 14) refers to the design performance of the internal environment of the hospital facilities.

Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

		Complete failure <span style="float: right;">Perfect</span>									
		1	2	3	4	5	6	7	8	9	10
2.	<b>Function</b>										
	a) Arrangement of spaces (activities and relationship to function)	a									
	b) Circulation (entry, orientation, flow)	b									
	c) Allocation of spaces (parking)	c									
	d) Response to user physical needs (comfort, safety, convenience)	d									
	e) Response to user social needs (privacy, interaction, sense of community)	e									
	f) Other comments .....										
	.....										
	.....										
	.....										

**Table 14: Staff Questionnaire – Question 2**

Lastly, the manager questionnaire also utilised a *Semantic Differential Scale* with a ten point scoring system (Table 12) and reflect on the perceived achievements of the hospital facilities, with reference to *Finance and building Systems* (Table 15).

Questions for NHS Trust Manager - Finance and Building Systems (Please answer all questions).

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to the design goals as set against the original design criteria. (Please tick one box in each row).

		Complete failure					Perfect				
		1	2	3	4	5	6	7	8	9	10
1. Economy											
a)	Realistic solution to budget requirements (initial cost control)	a									
b)	Maximum effect with minimal means (elegance, multi purpose)	b									
c)	Efficient plan and shape (allocated and unallocated areas, volume)	c									
d)	Ease of building maintenance (fixtures and fittings, building systems)	d									
e)	Cost effective operations (energy efficiency, minimum upkeep)	e									
f)	Other comments .....										
	.....										
	.....										
	.....										
	.....										

Table 15: Manager Questionnaire – Question 1

The first question of the manager questionnaire examines the 'design goals' as set against the original design criteria, in order to review whether the hospital facilities have achieved their targets.



Finance and Building Systems (cont.) Please answer all questions

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to sustainability and user satisfaction.*  
 (Please tick one box in each row).

2. Life Cycle

- a) Multi purpose spaces for changes in function (dynamic activities, variety of usage)
- b) Fixed spaces for specific activities (major static activities)
- c) Contingency for growth (expandable, shell space)
- d) Vitality and validity over time (sustaining quality, holding power)
- e) Use of material and technology (existing or advanced systems)

	Complete failure <span style="float: right;">Perfect</span>									
	1	2	3	4	5	6	7	8	9	10
a										
b										
c										
d										
e										

f) Other comments .....

.....

.....

.....

**Table 16: Manager Questionnaire – Question 2**

The second question of the manager questionnaire (Table 16) evaluates the 'sustainability' and 'user satisfactions' issues relating to the life cycle of the hospital facilities, which reflects on spatial planning/flexibility, material and building technology.

The questions were targeted to ascertain staff perception and opinions of the practicalities of the hospital facilities. The sets of questionnaires had an additional '...comments' section to facilitate further remarks and utilised a numeric variable with ordinal measures for SPSS. The qualitative analyse was undertaken by comparing the individual responses of PFI and non-PFI hospital end users. The patients, hospital staff and managers had to consider the design of the hospital reception/waiting area of the outpatients' department and record the degree to which they were satisfied against the 6 and 10 point scoring system, respectively. The staff questionnaires were selected for further investigation even though the sample size was less than the patients' data. The information utilised, provided a holistic viewpoint of the issues relating to the reception/waiting area environment. They were a valuable source of secondary information for data and comments relating to spatial planning and sustainability issues. In addition, it enabled the author to examine the influence the hospital environment had on hospital staff since they need to have an environment which fits its practical purpose. Interviews with hospital staff were also sourced for relevant information, in order to assess whether their aspirations were similar or dissimilar to patient views.

Prior to the use of the questionnaires, a number of sources were approached to test the structure and format of the questionnaires.

Patient groups from various local hospitals (East/West Midlands, South East of England and North West of Britain) were solicited for opinions. Comments were also sought from hospital staff, members of the public and the University of Luton Academic Colleagues. In the case of feedback from medical institutes, although they were happy to assist with verbal comments, they chose not to be individually identified for this report for reasons of privacy. The general consensus was positive and subsequently documents were prepared to proceed to the next stage of the research project.

### **3.5 SURVEY PROCEDURES AND METHODS UNDERTAKEN TO ACQUIRE INFORMATION FROM USERS OF THE RECEPTION/WAITING AREAS IN THE OUTPATIENTS' DEPARTMENT**

Approval for the research project was sought through the Multi Research Ethics Committee (MREC) based in Peterborough. Even though patient medical records were not required, the application process was fundamental in terms of agreement from the participating hospitals. Each hospital had its own executive and Local Research Ethics Committees (LREC). The application document required information about the research project, such as the scientific relevance, the purpose, validity, of intended target group and contacts. After several refinements of protocol and a

change in procedures mid-way through the application process, the document was finally accepted in July 2002, five months after the initial application. The approval was significant in so much as subsequent queries or procedures were dealt with quickly. Once the written permission had been received from the MREC and LREC committees approving the research project protocol, PFI and non-PFI hospital were sourced for permission to undertake surveys in the outpatients' department.

Twenty-two hospitals (ten built through PFI and twelve by PSBR) were approached for the research project. Seven responded positively resulting in approximately 600 participants taking part in the survey. Four hospitals (X1, X2, Y3, and Y4) were selected for detailed comparison on the basis of their demographic and geographical locations, as well as their willingness for greater use of the information obtained. Statistics on age and gender were sourced and explored but interpretation was limited due to constraints placed on their use. The reason for this exclusion was based on feedback from PFI and non-PFI hospitals. One hospital did not want the information to be included on the questionnaires, while another preferred the data not to be used and subsequently was also excluded. The remaining two hospitals (PFI hospital in the South – X2 and non-PFI hospital in the North – Y3) had no objections and the results are discussed in sections 4.4.1 & 4.5.1.

In addition, they were of similar size, were centralised resources and operational (open to the public) in the same year. Hospital (AB) provided survey details, *Post Project Evaluation*, enabling an assessment of patient and staff responses (see pp. 94 to 99), as well as contributing to the development of the new questionnaires. The two hospitals that had participated in the pilot study (Hospitals 'A'<sup>z</sup> and 'B') were re-surveyed with the new questionnaires. However, one hospital (Hospital 'B') later withdrew their participation in the study and requested that they would prefer the results not to be used. The re-surveyed Hospital 'A' sample size consisted of 64 patients as well as 7 hospital staff and followed similar procedures undertaken in the selected PFI and non-PFI hospitals. Observations of the 'new build' PFI hospital building project PY4<sup>aa</sup> (on the site of the non-PFI Hospital Y4) revealed implications for further hospital development collaborations (see pp. 263 to 265). Although at the time of the survey, the author was not aware of the future development for the new hospital facilities.

Prior to the surveys, the author presented the 'new' questionnaire to the outpatients' managers for their perusal. Like the steps undertaken in the pilot study, the author explained the project outline, the proposed procedures for the day as well as re-assured any confidentially and ethical issues. The selection of the

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<sup>z</sup> Hospital 'A' re-named Z5, to differentiate between the modified questionnaire and pilot study.

<sup>aa</sup> Re-named PY4, to distinguish it from the non-PFI hospital (Y4)

outpatients departments (clinics) was undertaken by the NHS Trust Manager who made the initial contact with the consultant(s), in order to identify suitable outpatients departments for the study. This decision was based on excluding potentially 'sensitive' clinics in order to minimise embarrassment and safety issues. An exclusion criteria was used for the '*Accident and Emergency*' departments, children (minimum age of 16), physically infirm, mentally disorientated and participants with learning difficulties. It was not the intention of the author to exclude any willing participant. However, it was necessary to allow for possible exclusion for those who did not wish, or were unable to take part in the survey since it may prove to be inappropriate or distressing.

The distribution of the questionnaires for the hospital staff was undertaken by the outpatients' department manager, while the author circulated copies to the outpatients' department receptionists/administrative staff. Several months were spent at PFI and non-PFI hospitals in the distribution and collection of data. This approach/method proved successful for patients and hospital staff, as queries were dealt with personally and quickly. The results of the surveys were compared with the qualitative data from the same questionnaires, in order to compare the data acquired from the statistical information. Due to confidentiality, participating hospitals have expressed a wish to remain anonymous.

Each pair of hospitals was close enough to be used by the same population (Table 17). One hospital in each pair was built through PFI and the other through traditional procurement. Both PFI hospitals (X1 and X2) were first wave hospital developments of design and build projects, with the design development schemes achieved through output specifications and had been operating for approximately for two years.

Hospital	Type of hospital	Hospital location	Setting	Beds (approx.)	Position	Surveys	Built (circa)
X1	PFI	North	Urban (Landscaped)	480	Town	109	2000
X2	PFI	South	Semi Rural	410	Edge of Town	194	2000
Y3	Traditional	North	Semi Rural	380	Coastal Town	112	1964
Y4	Traditional	South	Urban	500	Town	75	*1854
Z5	Traditional	South	Urban	550	Town	71	1939

\* = Y4, re-developed by the 1880s via voluntary contribution then later via PBSR

**Table 17:** Location of Participating PFI and non-PFI Hospitals

Hospital X1 has a capital value of approximately £70 million with a contract term for over 30 years. While Hospital X2 has a capital value of approximately £98 million with a contract term for more than 25 years. The older existing hospitals (Y3 and Y4) were built through traditional procurement (PBSR). Hospital Y3 was the first post war development built in England following the National Health Service. Hospital Y4 replaced a small dispensary that administered medicine free of charge to the poor.

The hospital was run and maintained via charitable contributions. The sample size for the outpatients department was determined based on the figures acquired from the pilot study and information ascertained from NHS Trust Management staff.

The next stage of the research (questionnaire survey) explores the implications of 'good' design and user satisfaction and how the initial findings relate to a *sense of well-being*. Five sub-variables (patient surveys) associated with the internal environment of the hospital reception/waiting area were isolated (*implications of the environment and psychological perceptions*) for focussed analysis. While the remaining questions were summarised in order to maintain a 'holistic' viewpoint. The staff surveys focussed on the spatial variable (design performance) and examined in detail the response to the 'specific' preference labels. The remaining questions were summarised to maintain a 'holistic' viewpoint. The variables were tested (utilising the 'scoring systems' described for patients [p. 102] and staff [p. 107]) to assess the relationship between the design of PFI and non-PFI hospital environments with reference to user satisfaction. The bar charts show the percentages within the identity code (e.g. X1, X2, etc.), while the crosstabulation tables (utilised for the patient surveys) reveal the count and percentages within the sub-variables reception/waiting areas preference levels (e.g. 'strongly agree', 'agree' etc.).



Lastly, for the analysis of the *hospital design* (in particular the reception/waiting areas of the outpatients department), a simple *relative* scoring system (*rank-order scale*)[109] [144] was devised to calculate the 'characteristic/attributes' variables of the selected PFI and non-PFI hospitals (Table 17.2). The 'characteristics/attributes' variables were features from the architectural plans, as well as on site observations recorded (via clipboard) during the time of the visit to the hospital.

The variables were sub-divided further into two sections (function/physical and psychological) in order to maintain a consistent framework similar to the format of the surveys. This design enabled the results of the two aspects of the research; a) the study of users (PFI and non-PFI) via questionnaire surveys and analysis of perceptions; b) investigation and analysis of the PFI and non-PFI hospital design to be readily compared. The selected PFI and non-PFI hospitals was paired ('calculations' section) in order to analyse separately the general differences between the hospitals in the North and South as well as continuing the framework similar to the format of the surveys. The *relative* rank scoring system consists of the following:

Characteristics/ Attributes	Non-PFI		PFI		CALCULATIONS	
	Pre 1980s		Post 1980s		$\frac{\text{Post} - \text{Pre}}{\text{Pre}} \%$	
	Hospital Y4	Hospital Y3	Hospital X2	Hospital X1	$\frac{X2 - Y4}{Y4} \%$	$\frac{X1 - Y3}{Y3} \%$
<b>function/physical</b>	CATEGORIES					
<b>Column Total</b> (within hospital identity code) main sub	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	$\frac{\text{Post} - \text{Pre}}{\text{Pre}} \%$	
<b>psychological</b>	CATEGORIES					
<b>Column Total</b> (within hospital identity code)	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		

**Table 17.1:** Scoring System for Characteristics/Attributes of Selected PFI and non-PFI Hospital Reception/Waiting Areas

- For the characteristic/attributes section under 'categories', the values are compared within each 'characteristic/attributes' variable of the PFI and non-PFI hospitals. The highest mark that can be achieved for the individual PFI and non-PFI hospitals is **four points** (very good), while the lowest is **one point** (poor). If several hospitals share the same or similar characteristic/attributes, then the marks are also similar in order to **maintain distinct values**. This ensures a consistent method of calculation for each of the *function/physical* and *psychological* sub-sections.

2. The column *calculations* in the 'categories' section was totalled for the identity code of each PFI and non-PFI hospital, in order to measure the correlation between the two aspects of research as previously stated. In the *function/physical* section, the 'column total' was sub-divided further ('main' and 'sub' totals) enabling additional analysis of the main and sub-reception/waiting areas.

Bringing together the information acquired from the two aspects of the research (see p. 119), contributes to the development of the final criteria for a design protocol for designers and builders of hospital building projects. The design protocol addresses the functional and psychological needs of the user. These guidelines would incorporate the functional, psychological, interpretative and social/spiritual aspects of the hospital environment that relates to specific work-related activities of the provider.

### **3.6 CONCLUDING REMARKS**

To summarise, the *design* variables from the pilot study were isolated and compared with the information acquired from the literature review to form the basis of the research framework. Discussions undertaken with hospital groups, architects and building contractors together with an initial evaluation of PFI

hospital plans enabled the development and refinement of the final questionnaires, for hospital patients and staff, which was used for the research project. The *hospital design* analysis reveals the strength and weaknesses ('main' and 'sub' reception/waiting areas) of the PFI and non-PFI hospital environments. This is achieved by calculating the individual, main and sub-totals, in addition to the overall sum of the *function/physical* and *psychological* 'characteristics/attributes' variables. The environment variables from the questionnaire surveys were selected for focus analysis, in order to compare the results with *hospital design* analysis. The data acquired from the two strands of research was compared to the information acquired from the design guidelines and *other stakeholders*. The interpretation of the isolated environment variables and subsequent influencing variables was analysed with reference to on-going research. It examined to what degree user satisfaction has been achieved in the design of reception/waiting areas in PFI and non-PFI hospitals of the outpatients' department. The study discussed whether there is a case for the standardisation of therapeutic environments, which incorporates ambient settings and physical qualities within the design development process for current hospital building projects. The investigations establish whether the PFI procurement process support or reveal inadequacies in the design development and collaborative process for 'new build' hospital building projects.

## CHAPTER FOUR – RESULTS OF INVESTIGATIONS FOR SELECTED PFI AND NON-PFI HOSPITALS

This chapter presents the results of the research undertaken in the PFI and non-PFI hospital facilities. It also incorporates analysis of the architectural plans for PFI hospitals and compares the results with non-PFI hospital design in relation to the design guidelines. The research also presents the results of the *hospital design* analysis in selected PFI and non-PFI 1980s hospital, as well as the surveys undertaken in PFI and non-PFI hospitals. The lack of 'effective' long-term goals for the design of hospital interior environments and the input of user experiences relating to the spatial planning of these environments, has long-term implications for patients and staff in terms of user satisfaction (see pp. 62 to 67). This study reveals the extent to which the design of the reception/waiting areas of the outpatients department meets the functional and psychological needs of the user and whether a *sense of well-being* has been achieved. It also examines to what degree there is a correlation, between design (functional) and user satisfaction (psychological).

#### **4.1 ASSESSMENT OF THE ARCHITECTURAL PLANS FOR PFI AND NON-PFI HOSPITALS**

An examination of the architectural plans for the two completed 'new build' PFI hospital building schemes showed a preference for modular designs. Overall some of the schemes were remarkably similar incorporating glass atriums and mezzanine levels. The two selected PFI schemes support courtyards with limited access for the user. The landscaping (in-part) was generic of other PFI low maintenance schemes utilising gravel, pebbles and bark, in comparison to the original design concept (trees, shrubbery, flowers etc.). In the guidelines provided for hospital building projects particular to PFI schemes, views of the external landscape via the reception area is considered a beneficial addition to design of the hospital environment. In the allocation of private spaces, there were less common rooms and private smoking areas for hospital patients than for the non-PFI hospitals. However, by 2006 new government policies meant smoking was no longer permitted within or at the entrances of hospital and healthcare facilities. There were common rooms for staff that were usually located off reception/waiting areas. However the central theme revolved around a main or central corridor that branched off to adjacent departments/wards. The innovative features related mainly to the entrance/foyer and/or lattice structure of the separate floor levels (i.e. use of mezzanines

and columns). Another noticeable feature of the hospital building layout is the use of land space. Some PFI hospital buildings were located and built on 'green site' areas (although not welcomed by environmentalists) it did have the potential for further growth and was less likely to involve further purchasing costs in terms of land acquisitions. In comparison, the traditional hospitals were more likely to be situated in built-up or inner city areas (see pp. 48 to 52 and 115), (Appendix 8) which generally had good transport links (Appendix 9). However, at times parking was considered an issue particularly when hospitals were situated near residential areas. The PFI hospital plans revealed similar characteristics/attributes as outlined in section 1.3.2. The two selected PFI hospital schemes also adhere to set standards and the minimum requirements as outlined in the design guidelines for 'new build' hospital development projects (i.e. space planning, fixtures and fittings) also discussed in section 1.3.2. The architectural plans indicated a design preference for modularity (Appendix 10). The design characteristics were similar with large glass atriums and mezzanines featured throughout the designs schemes for which some patients commented favourably (Appendix 11).

In general, the reception areas were larger than traditional built hospitals as they were designed to accommodate an increased number of patients due to the trend for the centralisation of

hospitals (see pp. 52 and 64 to 66). However, the sub-waiting areas were usually the same size or smaller than their predecessors. Combining this with the ceiling heights of PFI and non-PFI built hospitals, the findings revealed that the smallest detail could give the impression that a room is smaller or cramped, just by its ambient settings and/or spatial planning.

## **4.2 DESCRIPTION OF RECEPTION/WAITING AREAS IN SELECTED PFI AND NON-PFI HOSPITALS**

This section details the features/characteristics of the reception/waiting areas of the PFI and non-PFI hospitals. It describes the spatial layout, functional aspects and ambient settings of the selected hospital environments.

### **4.2.1 PFI HOSPITALS**

Hospital X1 (Figure 11) outpatients' department has a large reception area within an atrium, which has a large glass ceiling that floods the central corridor with natural light. At the end of the main corridor is a glass wall, which has external views to the landscape (with low maintenance gardening features). It also has several ante-rooms (with no access to natural light) and waiting areas of varying sizes off the main corridors.





**Figure 11:** Hospital X1  
Reception/Waiting areas.

Hospital X2 (Figure 12) outpatients' department has a large reception area and waiting areas that serviced all clinics. The end wall was made of glass and had external views to the landscape garden providing visual stimuli for users. The adjacent wall had windows which were situated approximately one metre in length from the ceiling and was five metres approximately in width. Some clinics had a further waiting area directly adjacent to attending consultation/treatment rooms, however like Hospital X1 it had little or in some cases, no natural light.



**Figure 12:** Hospital X2  
Reception/Waiting Areas

#### 4.2.2 NON-PFI HOSPITALS

Hospital Y3 (Figure 13) outpatients' department had a medium sized reception area which comprised of a refreshment booth and cold drinks machine with three large windows (2m x 3m approx.) facing the entrance. Waiting areas were allocated to each outpatient's clinic but only one clinic had access to natural light as the window was located on an end wall near an access and exit point. All waiting areas had high (3m to 3.5m approx.) ceilings.



**Figure 13:** Hospital Y3  
Reception/Waiting Areas.

In Hospital Y4 (Figure 14) the main reception area was an office booth (3.5m x 2.5m approx.) with no access to natural light or windows. It was used only for booking-in and housed patient's records for the day. It also served the 'minor injuries' and accident & emergency department. Three waiting areas were located on the ground floor while a fourth was on the first floor. Three waiting areas had access to natural light (two had windows approximately a half metre down from the ceiling) and one did not. However, all

waiting areas had high ceilings ranging from 3m to 3.5m approx. Hospital Y4 will be replaced by a 'new build' PFI facility due to be completed circa 2005. However by 2006, the hospital building project was still undergoing the final stages of completion.



**Figure 14:** Hospital Y4  
Reception/Waiting Areas.

The trends identified (section 2.1 points 1 and 2), indicate that the centralisation of hospital departments and facilities have implications for the users functional needs. If the spatial planning does not adequately facilitate the practicalities of circulation and orientation for the user, then the experience of the hospital environment for the patient will be one of two things, calm/relaxing or stressful (see pp. 18 to 22 and 48 to 59). Although hospital environments for some patients can be a stressful experience, the author believes that a proportion of this emotional reaction (which will be tested) can be controlled to a certain degree by providing environments, which address the functional and psychological needs of the user.

### **4.3 RESULTS OF THE HOSPITAL DESIGN ANALYSIS IN SELECTED PFI AND NON-PFI HOSPITALS**

To measure the characteristics/attributes variables in selected PFI and non-PFI hospital environments, a simple *relative* scoring system with distinct values was devised to calculate the two sub-sections; a) *function/physical* and b) *psychological*. The research presents the results of the calculations for the reception/waiting areas of the selected PFI and non-PFI hospital environments. Further analysis was also undertaken of the geographic and demographic differences, between the selected PFI and non-PFI hospital reception/waiting areas.

#### **4.3.1 GENERAL INDIVIDUAL DIFFERENCES IN SELECTED PFI AND NON-PFI HOSPITALS**

Studies have alluded to the premise that simple mathematics or basic formulas can aid the evaluation process[144] [145]. However, it also reveals the different proposals and the complexities of implementing an appropriate method to evaluate various building projects and the designs of these environments (pp.34 to 35), are on-going. In order to measure the characteristics/attributes of selected PFI and non-PFI hospitals, a simple *relative* scoring system (pp. 119 to 121) was devised to assess the score rating of the hospital environments. The importance and simplicity of this

method enables a layman and/or professional to comprehend the statistical nuances of the hospital rating levels.

The results ('calculation section') of the characteristics/attributes variables (*function/physical* section) were scored separately to show the general differences between the selected PFI and non-PFI hospitals in the North and South. The results of characteristics/attributes variables for the *function/physical* section (Table 17.2) reveal that the PFI hospital in the South (X2) the main reception/waiting areas, achieved three times better (300%) results than the non-PFI hospital (Y4). While the PFI hospital in the North (X1) the main reception/waiting areas, achieved a third better (33%) than the non-PFI hospital (Y3). For the sub-reception/waiting areas, both PFI hospitals (X1 & X2) had a lower rating by -33%.

The ceilings in the main reception/waiting areas for both the PFI hospitals in the South (X2) and North (X1) maintained the same level of rating as the non-PFI hospitals (Y4 & Y3). Yet, the ceilings in the sub-reception/waiting areas had lower scores achieving -50% and -33% respectively for Hospital X2 and Hospital X1.



Characteristics/ Attributes	Non-PFI		PFI		CALCULATIONS	
	Pre 1980s		Post 1980s		Post - Pre %	
	Hospital Y4	Hospital Y3	Hospital X2	Hospital X1	$\frac{\text{Post} - \text{Pre}}{\text{Pre}} \%$	
<b>function/physical</b>	<b>CATEGORIES</b>				$\frac{\text{X2} - \text{Y4}}{\text{Y4}} \%$	$\frac{\text{X1} - \text{Y3}}{\text{Y3}} \%$
*Reception/waiting area (main)	Small (booth) (1)	Medium (3)	Large (4)	Large (4)	300%	33%
Sub-reception/waiting area (sub)	Medium (3)	Medium/narrow (3)	Medium/small (2)	Medium/small (2)	-33%	-33%
*Ceiling (main)	High (4)	High (4)	High (4)	High (4)	0%	0%
Ceiling (sub)	High (4)	High/moderate (3)	Moderate/low (2)	Moderate/low (2)	-50%	-33%
*Light (main) (main source)	Artificial (1)	Natural (4)	Natural (4)	Natural (4)	300%	0%
Light (sub)	Natural/artificial (3)	Natural/artificial (3)	Artificial/light well (2)	Artificial (1)	-33%	-66%
*Layout/orientation (main)	Vicinity (different floors) (3)	Centralised (department) (4)	Localise (in the area) (3)	Semi-localised (off corridors) (1)	0%	-75%
*Windows (main)	None (1)	Medium (3)	Large (4)	Large (4)	300%	33%
Windows(sub)	Large/medium (4)	Medium (3)	Medium/small (2)	Light well (1)	-50%	-66%
<b>Column Total</b> (within hospital identity code)	<b>24</b>	<b>30</b>	<b>27</b>	<b>23</b>		
main	10	18	19	17		
sub	14	12	8	6		
<b>psychological</b>	<b>CATEGORIES</b>				$\frac{\text{X2} - \text{Y4}}{\text{Y4}} \%$	$\frac{\text{X1} - \text{Y3}}{\text{Y3}} \%$
Windows external view	Sky/hospital building (some seating positioned away from or have no view) (1)	Sky/hospital and residential buildings (some seating positioned away from or have no view) (2)	Semi-rural landscape/residential buildings (some seating positioned away from the view) (4)	Urban - landscape (majority of the seating positioned away from the view) (3)	300%	50%
Technology	None (1)	None (1)	TV and electronic 'tic-a-tape' information (4)	Electronic information points, but some not installed at time of survey (3)	300%	200%
Refreshment	Water and still soft drinks provided by staff (3)	Food kiosk, drinks and confectionary machine (4)	None (1)	None (1)	-100%	-75%
Décor perceptions	Dated (Character) (2)	Dated (Functional) (1)	Modern (Functional) (3)	Modern (Contemporary) (4)	50%	300%
<b>Column Total</b> (within hospital identity code)	<b>7</b>	<b>8</b>	<b>12</b>	<b>11</b>		

red = denotes a decrease in PFI and non-PFI hospital characteristics/attributes performance

green = identifies main and secondary (sub) totals to aid further analysis

\* = main areas

Table 17.2: Results of Characteristics/Attributes Performance of Selected PFI and non-PFI Hospital Reception/Waiting Areas

The result for the lighting in the main reception/waiting area for the PFI hospital in the South (X2) reveals a score, three times more (300%) than the non-PFI hospital (Y4). While the PFI hospital in the North (X1) maintained the same score level as its non-PFI hospital (Y3). However, the score for lighting in the sub-reception/waiting areas was lower for both PFI hospitals. Hospital X2 by a third (-33%) and Hospital X1 (-66%) by two thirds.

For the 'layout/orientation' variable, Hospital X2 in the South maintained the same score level as its non-PFI counterpart (Hospital Y4), whereas Hospital X1 in the North was lower by -75%.

The results for the 'windows' in the main reception/waiting areas of the PFI hospital in the South (X2), score three times more (300%) than the non-PFI hospital (Y4). While the score for the 'windows' variable in the PFI hospital in the North (X1) is a third higher than its non-PFI counterpart (Y3). However, the 'windows' results in the sub-reception/waiting areas show a low score by -50% and -66% respectively for Hospital X2 and Hospital X1.

The results of the individual characteristics/attributes variables for the *psychological* section (Table 17.2) show the PFI hospital in the South (X2) 'windows external view', score three times more (300%) than the non-PFI hospital (Y4). For the PFI hospital in the North (X1), 50% was achieved above the non-PFI hospital (Y3).

The 'technology' variable for the PFI hospital in the South (X2) is three times above (300%) that of the non-PFI hospital (Y4), whereas Hospital X1 in the North was two times that of its non-PFI counterpart (Y3).

The 'refreshment' variable results were lower for both PFI hospitals than its non-PFI counterparts (by -100% and -75% respectively for Hospital X2 and Hospital X1).

The results for 'décor perception' of the PFI hospital in the South (X2), was 50% higher than its non-PFI counterpart (Y4). While the 'décor perception' in the PFI hospital in the North (X1) is three times (300%) higher than Hospital Y4.

Further analysis of the results was undertaken to assess if there were any further general individual differences between the characteristic/attributes variables, for the PFI and non-PFI hospitals (Figures 10.1 & 10.2). To calculate these differences, the following formula was used:

$$\frac{x + y}{2}$$



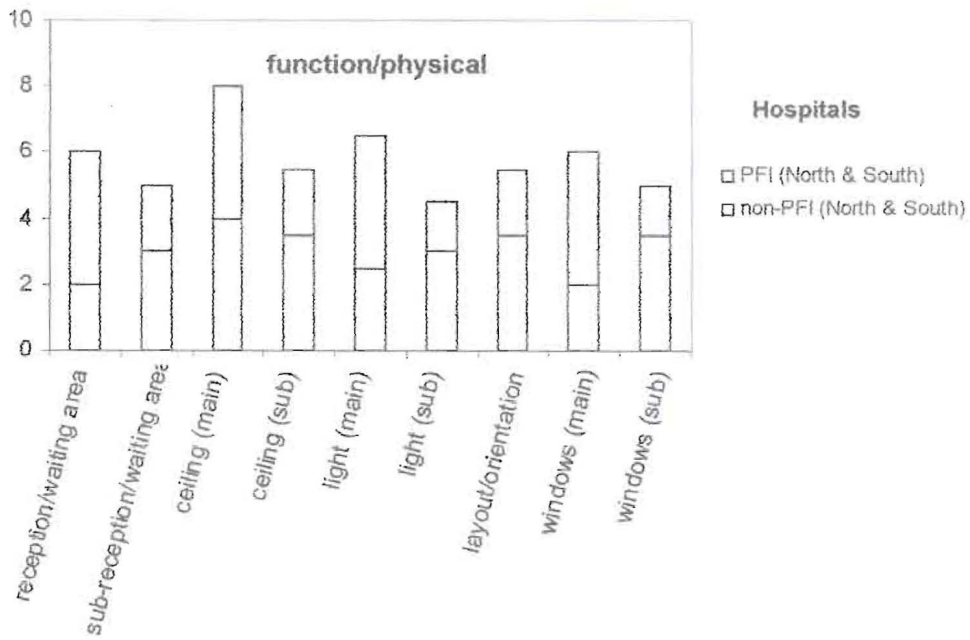


Figure 14.1: Function/Physical Differences between Selected PFI and non-PFI Hospitals

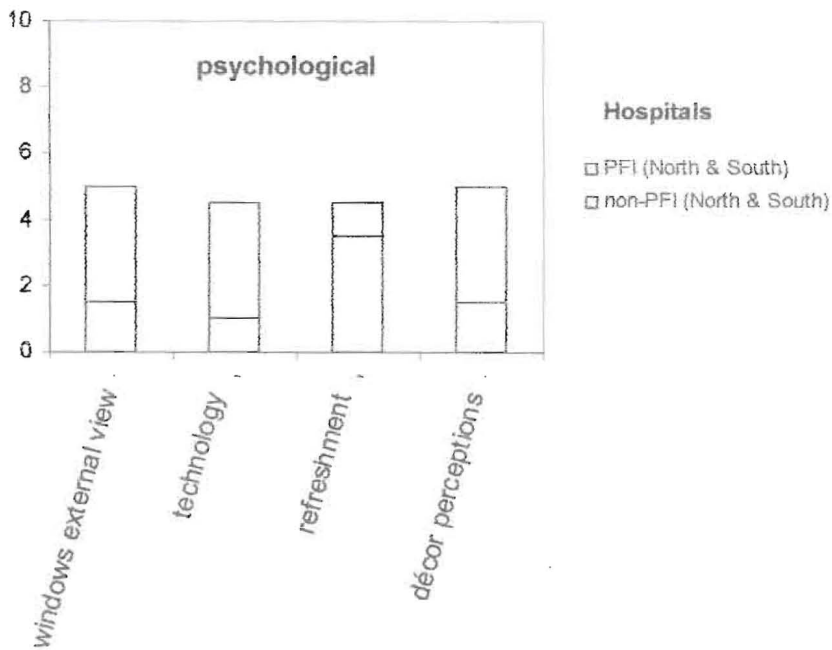


Figure 14.2: Psychological Differences between Selected PFI and non-PFI Hospitals

For the *function/physical* characteristics/attributes (Figure 14.1) variables, the non-PFI hospitals achieved good results for the 'sub-reception/waiting areas', 'ceiling (sub)', 'light (sub)' and 'windows (sub)'. They also did well in the 'layout/orientation' variable. The PFI hospitals achieve better results in the main 'reception/waiting area', 'light (main)', and 'windows (main)'. However, they achieve the same results for the 'ceiling (main)' variable. For the *psychological* characteristics/attributes (Figure 14.2) variables, the non-PFI hospitals only did well in the 'refreshment' variable. The PFI hospitals achieve better results in the main 'windows external view', 'technology', and 'décor perceptions' variables.

In general, the *function/physical* section results for the non-PFI hospitals indicate a better score rating in the sub-reception/waiting areas than the PFI hospitals. While the PFI hospitals did well in the main reception/waiting areas variables. The 'layout/orientation' variable results are interesting in so much that the non-PFI hospitals, on the whole achieved better score rating than its PFI counterpart. The *psychological* section results for the non-PFI hospitals only did well in the 'refreshment' variable. While the PFI hospitals did well in several; 'windows external view'; 'technology' and 'décor perception' variables.

#### 4.3.2 GENERAL SCORE DIFFERENCES IN PFI AND NON-PFI HOSPITALS

Subsequent analysis focussed on the 'column total' scores within the identity codes (Table 17.2). The calculations identifies if there are any significant differences between the selected PFI and non-PFI hospitals, as well as the degree to which the differences occur.

##### a) **Function/Physical**

The results of the characteristics/attributes variables in the *function/physical* section indicate a higher score of 27 points for the PFI hospital in the South (X2) versus 24 points for the non-PFI hospital, a difference of 3 points. While the PFI hospital in the North (X1) has a lower score of 23 points compared to the non-PFI hospital (Y3) score of 30, a difference of 7 points.

General observations reveal in spite of the similarities in the design characteristics/attributes of the PFI hospitals overall, the PFI hospital in the South (X2) still achieved a higher score rating than the PFI hospital in the North (X1).

## b) Psychological

For the *psychological* section, both PFI hospitals show higher scores than the non-PFI hospitals. The PFI hospital in the South (X2) achieved 12 points while the non-PFI hospital (Y4) gained 7 points, a difference of 5 points. The non PFI hospital in the North (X1) scored 11 points while its non-PFI counterpart (Y3) achieved 8 points, a difference of 3 points.

Generally, the data for the *psychological* characteristics/ attributes variables indicate significantly better results, for the PFI hospitals in the North (X1) and South (X2). The findings show for the most part Hospital X2 (PFI in the South) has a higher score rating than the PFI hospital in the North (X1).

### 4.3.3 MAIN AND SUB-TOTAL SCORES IN SELECTED PFI AND NON-PFI HOSPITALS

Further investigation focussed on additional analysis of the column 'main' and 'sub' totals characteristics/attributes variables in the *function/physical* and *psychological* sections (Table 17.2). The calculations identify the degree to which the 'main and sub-totals' sums (specifically the *function/physical* section) distinguishes the score levels between the PFI and non-PFI hospitals. The 'main total' represents characteristics/attributes variables associated with

the main features of the reception/waiting areas. While the 'sub-totals' (with the exception of the *psychological* section), represent characteristics/attributes variables associated with the sub features of the reception/waiting areas.

**a) Function/Physical**

**i) PFI and non-PFI hospitals (main totals)**

The 'main' total for the characteristics/attributes variables in the *function/physical* section indicates a total score of 36 points for the PFI hospitals in the North (X1) and South (X2). While the non-PFI hospitals in the North (Y3) and South (Y4) achieved a lower score of 28 points. When the PFI and non-PFI hospitals scores were averaged, the PFI hospitals sum was 18 points while the non-PFI hospitals had a lower score of 14 points, a difference of 4 points.

**ii) PFI and non-PFI hospitals (sub-totals)**

When the 'sub' totals of the characteristics/attributes variables in the *function/physical* section were calculated, the results reveal lower scores of 14 points for the PFI hospitals in the North (X1) and South (X2). While the non-PFI

hospitals in the North (Y3) and South (Y4) achieved a lower score of 26 points. When the PFI and non-PFI hospitals scores were averaged, the PFI hospitals achieved a total of 7 points while the non-PFI hospitals had a higher score of 13 points, a difference of 6 points.

In general, the results reveal a better score rating for the main reception/waiting areas for the PFI hospitals in the North (X1) and South (X2). However, the findings also show a significant lower level of scores associated with the sub-waiting/reception areas for both PFI hospitals in the North (X1) and South (X2).

**b) Psychological**

**i) PFI and non-PFI hospitals (main totals)**

For the *psychological* section, the results reveal significantly higher scores for both PFI hospitals than the non-PFI hospitals. The PFI hospitals in the North (X1) and South (X2) show a total of 23 points, compared to the non-PFI hospitals in the North (Y3) and South (Y4) with a lower score of 7.5 points, a difference of 4 points.

#### 4.3.4 GLOBAL (MAIN AND SUB-TOTAL) SCORES IN SELECTED PFI AND NON-PFI HOSPITALS

The final stage of the analysis focussed on the global column 'main' and 'sub' totals scores whereby the *function/physical* and *psychological* variables are calculated as a whole (Table 17.2). For example, the first set of calculations utilise the 'main' totals –

1) *function/physical* + *psychological* characteristics/attributes variables = sum

while the second set of calculations utilise the 'sub' totals –

2) *function/physical* + *psychological* characteristics/attributes variables = sum

The scores identify the degree to which the global 'main' and 'sub' total sums distinguish the level of rating between the PFI and non-PFI hospitals. The global 'main' total represents characteristics/attributes variables associated with the main features of the reception/waiting areas. While the global 'sub' totals (with the exception of the *psychological* section), represents the sub-features of the reception/waiting areas.

##### a) **Function/Physical and Psychological**

The global calculations for the *function/physical* and *psychological* sections enable an overall statistical viewpoint

the PFI hospitals were 18.5 points and 20.5 points for the non-PFI counterparts, a difference of 2 points.

Overall, the findings reveal the PFI hospitals (X1 & X2) in the North and South respectively show a degree of a better score rate when the 'main' totals are used. However, the results also show a lower score rate when the 'sub' totals are considered.

#### **4.3.5 SUMMARY OF THE HOSPITAL DESIGN ANALYSIS IN SELECTED PFI AND NON-PFI HOSPITALS**

This section outline the findings acquired from the selected PFI and non-PFI hospital characteristics/attributes variables from the *function/physical* and *psychological* sections.

##### **4.3.5.1 NON-PFI HOSPITALS**

###### **a) Function/Physical**

- The non-PFI hospitals indicate a higher score rate in the sub-reception/waiting areas than the PFI hospitals.
- The 'layout/orientation' variable results indicate the non-PFI hospitals, on the whole achieved higher score rate than its PFI counterpart.



- The non-PFI hospital in the North (Y3) overall achieved a higher score rate for the *function/physical* section than its PFI counterpart (X1).

**b) Psychological**

- The non-PFI hospitals only performed well in the 'refreshment' variable.

#### **4.3.5.2 PFI HOSPITALS**

**a) Function/Physical**

- The PFI hospitals did well in the main reception/waiting areas variables.
- Generally, the PFI hospital in the South (X2) characteristics/attributes variables show a moderately higher value.
- The PFI hospitals in the North (X1) and South (X2) show a somewhat better rating for the main reception/waiting areas. While the sub-reception/waiting areas show a significant poorer.

**b) Psychological**

- The PFI hospitals did well in several variables; 'windows external view'; 'technology' and 'décor perception'.
- Generally, the PFI hospital in the South (X2) characteristics/ attributes variables show a significant result in the *psychological* section.
- Both PFI hospitals in the North (X1) and South (X2) achieved significantly better rating.

Overall, the PFI hospitals (X1 & X2) in the North and South respectively, show a degree of improvement in score levels when the 'main' totals are used. However, when the 'sub' totals are considered the results show a poorer rating.

#### **4.4 RESULTS OF PATIENT SURVEYS IN SELECTED PFI AND NON-PFI HOSPITALS**

To ascertain statistical information of users' response to hospital environments, a survey was undertaken to examine if participants expressed a preference for certain characteristics/attributes in PFI and non-PFI hospital environments. The results (Appendices 12 & 14) revealed a difference in response to the spatial planning demographically and geographically. As discussed in section 3.5, five sub-variables associated with the internal environment were selected for further examination. The figures and crosstabulation tables below highlight the approximate percentages and counts of patients' response to the selected sub-variables. The subsequent questions were summarised in order to maintain a 'holistic' viewpoint of the implications of the contributing variables.

##### **4.4.1 AGE AND GENDER**

As discussed in section 3.5, (see p. 114) the data on *age and gender* are limited because two of the participating hospitals (X1 and Y4) did not want the information disclosed. The results for the PFI hospital in the South – X2 and the non-PFI hospital in the North – Y3 reveal patients who responded to the survey in the PFI hospital in the South (X2) consist of approximately 45% males and

55% females (Figure 14.3). While in the non-PFI hospital in the North (Y3), approximately 41% were males and 59% females. The findings also show that generally more females visited the outpatients departments than males in the PFI and non-PFI hospitals.

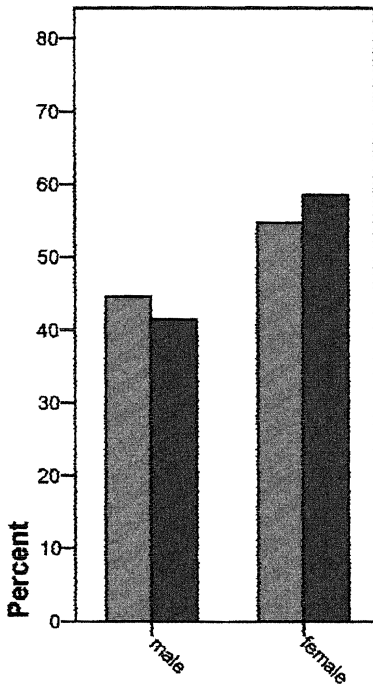


Figure 14.3: Direct Comparison of PFI and non-PFI Patients Response to Gender

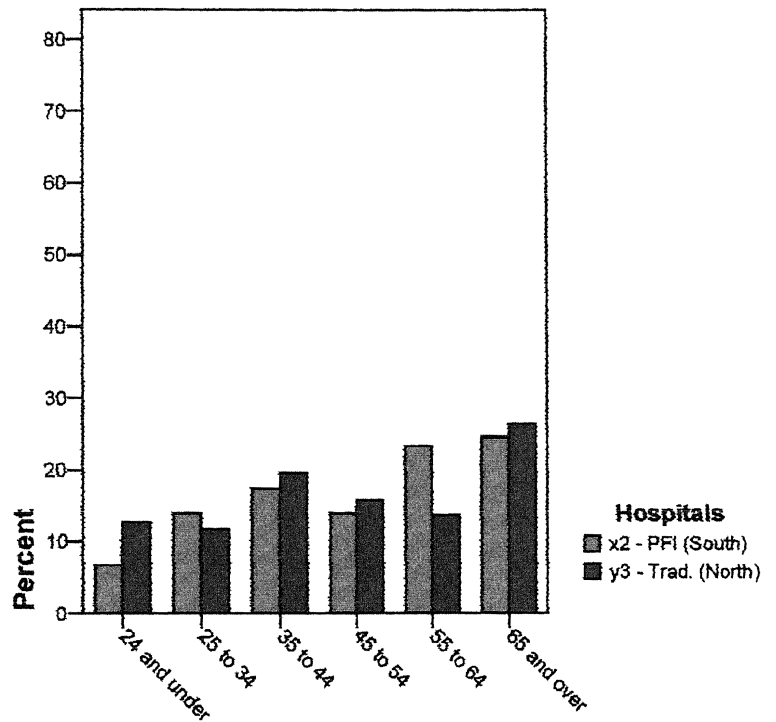


Figure 14.4: Direct Comparison of PFI and non-PFI Patients Response to Age

When participants were asked to choose a category that best described their age group (Figure 14.4), in the PFI hospital in the South (X2) the most selected age range was the '65 and over' with approximately 25%. The second highest group was the '55 to 64' age range (23% approx.) with the '35 to 44' (17%) coming third. In the non-PFI hospital in the North (Y3) the most selected age range was also the '65 and over' with approximately 27%, with the '35 to

44' age range (20% approx.) coming second. The third highest group was the '45 to 54' with approximately 16%. The similarity in the demographic data between the *age* and *gender* samples indicates a degree of confidence in the results since there is no evidence that the population is not comparable.

#### **4.4.2 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL ENVIRONMENT**

The surveys undertaken in the PFI and non-PFI hospital revealed that in general, most patients felt the reception/waiting areas were large (Figure 15) with the exception of Hospital Y4. In the PFI hospital in the North (X1) the highest percentage (69% approx.) was achieved in the '(strongly agree)' preference level (Table 18). In contrast, its non-PFI counterpart (Y3) highest percentage of approximately 30% was also gained in the '(strongly agree)' preference level. However, patients responses in the PFI hospital (X1) show more consistent results as the figures indicate a tighter dispersion towards the *large* variable than the non-PFI (Y3) hospital patients response, whereby a wider dispersion of the result indicate less consistency (Figure 15).

In the Southern PFI and non-PFI hospitals, the results reveal similar distribution of the results (Table 18). In the PFI hospital (X2) the highest percentage was achieved in the '(strongly agree)'

preference level (57% approx). In contrast, its non-PFI counterpart (Y4) highest percentage was approximately 27%, gained in the 'slightly agree' preference level of the *small* variable.

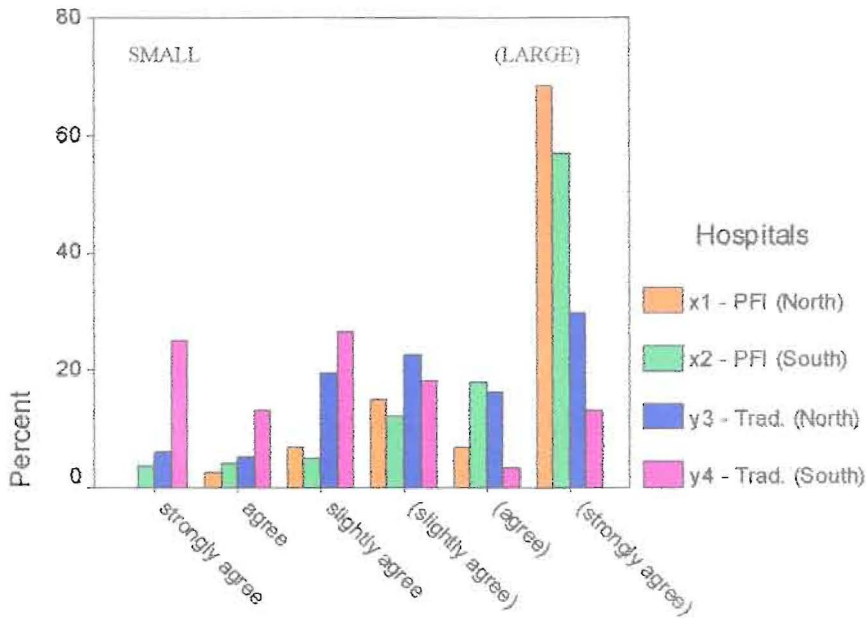


Figure 15: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Small or (Large)

			identity code				Total
			x1	x2	y3	y4	
reception/waiting area - small or (large)	strongly agree	Count	0	5	6	15	26
		% within identity code	0%	3.6%	6.2%	25.0%	7.0%
	agree	Count	2	6	5	8	21
		% within identity code	2.7%	4.3%	5.2%	13.3%	5.7%
	slightly agree	Count	5	7	19	16	47
		% within identity code	6.8%	5.0%	19.6%	26.7%	12.7%
	(slightly agree)	Count	11	17	22	11	61
		% within identity code	15.1%	12.1%	22.7%	16.3%	16.5%
	(agree)	Count	5	25	16	2	48
		% within identity code	6.8%	17.9%	16.5%	3.3%	13.0%
	(strongly agree)	Count	50	80	29	8	167
		% within identity code	68.5%	57.1%	29.9%	13.3%	45.1%
Total	Count	73	140	97	60	370	
	% within identity code	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 18: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Small or (Large) Crosstabulation

Patients' responses in the PFI hospital (X2) also showed more consistent results (Figure 15). The figures revealed a tighter dispersion of the data towards the *large* variable than the non-PFI (Y4) hospital patients' response, revealing a wider dispersion of the result and indicating less consistency in opinions.

Further information from the *other comments* section (Appendix 14) of the questionnaires reveals some patients concerns relating to the main reception/waiting areas and the sub-waiting areas. As indicated in sections 1.2.1 and 2.1, these concerns may be a reflection of the different reception/waiting areas, their function and duration of the visit. The similarities are consistent in so much that the main reception areas were considered *large* (except for Y4) to accommodate a centralised 'check-in' point for the different departments. However, the sub-waiting rooms (ante-rooms sometimes situated along and/or off corridors), were generally smaller and relied more on artificial lighting.

The patients' perception that the main reception areas were considered 'airier' than ante-rooms could be a reflection of the variation in the results. Some patients in the PFI hospital in the North (X1) perceived the main reception/waiting area reminiscent of airport reception/waiting areas and although the impression may be attractive, they question the viability of the space. Patients in the

non-PFI hospital (Y3) perceived some sub-waiting areas, less spacious than the main reception/waiting area (Appendix 14).

In the PFI hospital in the South (X2) some patients perceived the main reception/waiting area as "...*fairly good*" and functional, while others impressions suggest the reception/waiting areas were not suitable for users with prams as doors were "...*big and bulky*" and some areas were limited in size. Patients in the non-PFI hospital (Y4) perceived the reception area "...*inadequate for its use*" while others impressions indicate that the Victorian building utilised the space to its "...*best advantage*" (Appendix 14).

Although some of the waiting areas were similar in size to the traditional hospitals, the ceiling heights in the non-PFI hospitals waiting areas were generally higher than the PFI hospitals. As previously stated, most of the clinics situated in the PFI hospitals were in ante-rooms off the main corridors, which did not have as much access to natural light as the non-PFI hospitals (as discussed in section 4.1). In general most patients perceived the PFI and non-PFI hospital to be light (Figure 16). However, further examination of the results revealed a greater degree of preference was achieved in the PFI than the non-PFI hospitals in the North and South.



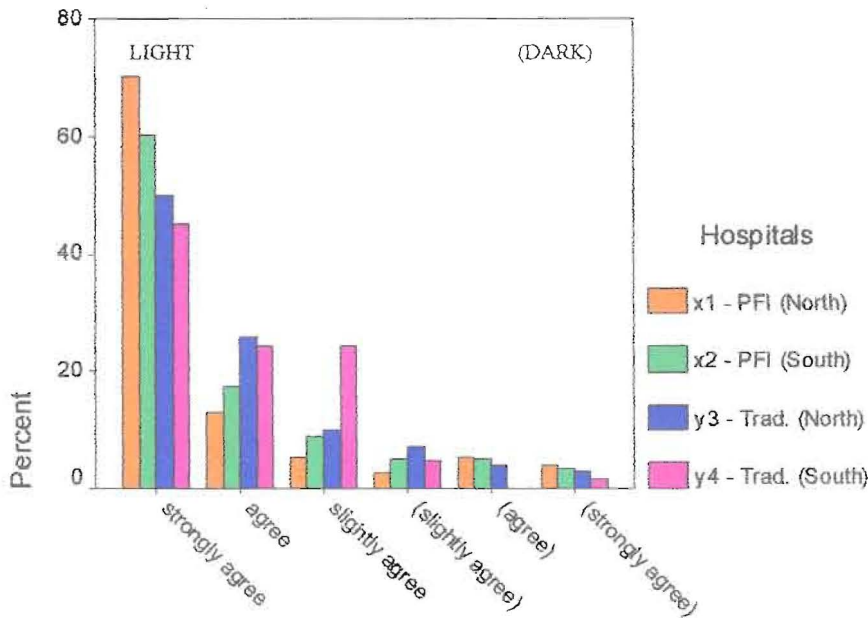


Figure 16: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Light or (Dark)

		identity code				Total	
		x1	x2	y3	y4		
reception/waiting area - light or (dark)	strongly agree	Count	54	86	50	28	218
		% within identity code	70.1%	60.1%	50.0%	45.2%	57.1%
	agree	Count	10	25	26	15	76
		% within identity code	13.0%	17.5%	26.0%	24.2%	19.9%
	slightly agree	Count	4	13	10	15	42
		% within identity code	5.2%	9.1%	10.0%	24.2%	11.0%
	(slightly agree)	Count	2	7	7	3	19
		% within identity code	2.6%	4.9%	7.0%	4.8%	5.0%
	(agree)	Count	4	7	4	0	15
		% within identity code	5.2%	4.9%	4.0%	0%	3.9%
	(strongly agree)	Count	3	5	3	1	12
		% within identity code	3.9%	3.5%	3.0%	1.6%	3.1%
Total	Count	77	143	100	62	382	
	% within identity code	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 19: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Light or (Dark) Crosstabulation

In the PFI hospital in the North (X1) the highest percentage (70% approx.) was achieved in the 'strongly agree' preference level (Table 19). Similarly, the non-PFI hospital in the North (Y3) highest percentage was also gained in the 'strongly agree' preference level (50% approx.). However, patients responses in the PFI hospital (X1) show more consistency in opinions as the results indicate a tighter dispersion towards the *light* variable than the non-PFI (Y3) hospital patients response, whereby a slightly wider dispersion of the result indicate slightly less uniformity (Figure 16).

In the South, the PFI and non-PFI hospitals results reveal similar distribution of the results (Table 19). In the PFI hospital (X2) the highest percentage was gained in the 'strongly agree' preference level (60% approx.). While the non-PFI counterpart (Y4) highest percentage was achieved in the 'strongly agree' preference level (45% approx.) also in the *light* variable. Patients' responses in the PFI hospital (X2) also show a greater degree of consistency (Figure 16) and therefore preference since the results show a tighter dispersion of the figures towards the *light* variable than the non-PFI (Y4) hospital patients' response, which show a wider dispersion of the figures indicating less consistency and a degree of indecision.

The most striking similarity for lighting came from the reception areas in X1 and X2 compared to the waiting areas in Y3 and Y4.

The PFI hospitals main access to natural light was achieved via windows situated nearer the ceiling and on an end walls. In the non-PFI hospitals, these features were achieved in some of the waiting areas. These features/attributes may have contributed to non-PFI hospitals waiting areas appearing bigger like its PFI counterpart. Significantly, features/attributes utilised in PFI reception areas enabled patients to have access to external landscape views.

In view of previous comments made regarding the spatial planning for hospitals and the effectiveness of natural light considerations for the reception/waiting areas, the results appear to suggest that the appropriate application of particular design attribute/features may have beneficial contributions for the end user. This implies that in-part, a given set of criteria has the potential to manipulate an end user perception of a 'given' internal space, by producing therapeutic elements (attributes/features), which addresses the human senses that contributes to a sense of well-being as described in section 1.1 Additional information from the *other comments* section (Appendix 14) of the questionnaires shows some concerns relating to lighting in the reception/waiting areas and ante-rooms. Some patients in the Northern PFI hospital (X1) indicated that lighting could be improved in the *ophthalmic*<sup>bb</sup> area (Appendix 14).

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<sup>bb</sup> Of or pertaining to the eye(s), care of eye(s) or eyesight.

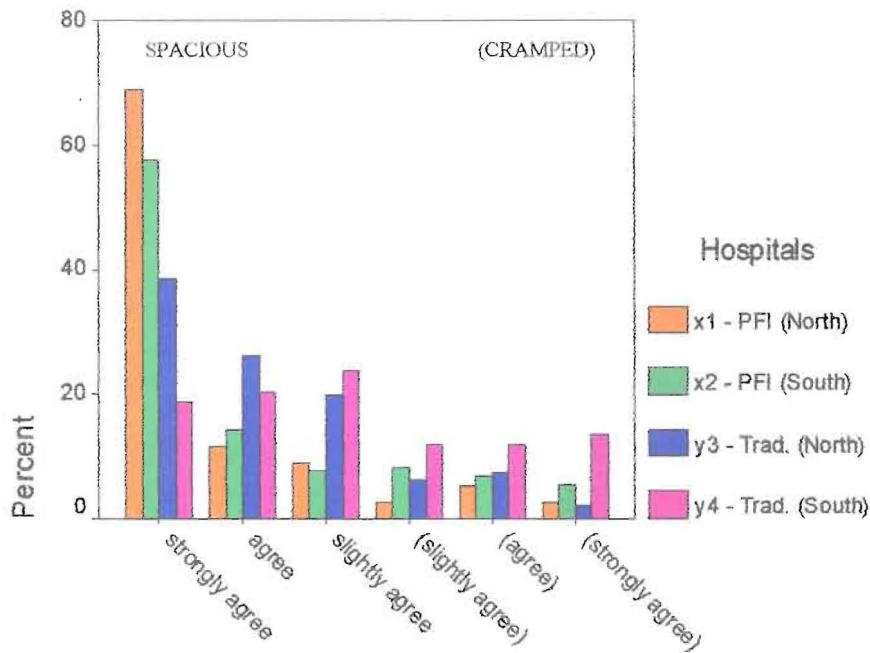


Figure 17: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Spacious or (Cramped)

			identity code				
			x1	x2	y3	y4	Total
reception/waiting area - spacious or (cramped)	strongly agree	Count	53	84	37	11	185
		% within identity code	68.8%	57.5%	38.5%	18.6%	48.9%
	agree	Count	9	21	25	12	67
		% within identity code	11.7%	14.4%	26.0%	20.3%	17.7%
	slightly agree	Count	7	11	19	14	51
		% within identity code	9.1%	7.5%	19.8%	23.7%	13.5%
	(slightly agree)	Count	2	12	6	7	27
		% within identity code	2.6%	8.2%	6.3%	11.9%	7.1%
	(agree)	Count	4	10	7	7	28
		% within identity code	5.2%	6.8%	7.3%	11.9%	7.4%
	(strongly agree)	Count	2	8	2	8	20
		% within identity code	2.6%	5.5%	2.1%	13.6%	5.3%
Total	Count	77	146	96	59	378	
	% within identity code	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 20: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Area – Spacious or (Cramped) Crosstabulation

In the Northern hospitals, patients' perceptions suggest more favourable responses in the PFI than the non-PFI hospitals for the *spacious* variable (Figure 17). In the PFI hospital (X1) the highest

percentage (69% approx.) was achieved in the 'strongly agree' with a further 12% approximately in the 'agree' preference level (Table 20). In contrast, its non-PFI counterpart (Y3) attained approximately 39% also in the 'strongly agree', but with a further 26% approximately in the 'agree' preference level. However, patients responses in the PFI hospital (X1) reveal a greater degree of consistency as the results indicate a tighter dispersion towards the *spacious* variable than the non-PFI hospital patients response (Y3), whereby a wider dispersion of the result indicate some variation in opinions for the *spacious* variable (Figure 17).

In the Southern PFI and non-PFI hospitals, the results reveal similar distribution of the results (Table 20). In the PFI hospital (X2) the highest percentage was achieved in the 'strongly agree' preference level (58% approx.) and a further 15% approximately in the 'agree'. In contrast, its non-PFI counterpart (Y4) highest percentage of approximately 24% was gained in the 'slightly agree' preference level and a further 20% approximately in the 'agree', still in the *spacious* variable, but less decisive. Patients' responses in the PFI hospital (X2) show more consistent results (Figure 17) since the figures show a tighter dispersion of the data towards the *spacious* variable than the non-PFI hospital (Y4) patients' response, which revealed a wider dispersion of the result indicating a degree of variation in opinions.

This is particularly interesting considering earlier comments about the 'natural light' attributes and ante-rooms. The statistics suggest that even though the psychological feeling is one of 'airiness', the structural aspects of the environment may still permeate the functional needs of the user depending on the length of stay. Further information from the *other comments* section (Appendix 14) of the questionnaires reveals some patients in the PFI hospital (X1) indicated that facilities were "...too far from the door", while in Hospital Y3 (non-PFI) patients consider the main reception/waiting areas to be more spacious than some of the sub-waiting areas. For patients in Hospital X2, some concerns suggest the limited room sizes had implications for additional rooms/facilities for patients with children.

In most cases, the respondents believed the reception/waiting areas were welcoming (Figure 18). In the PFI hospital in the North (X1) the highest percentage (44% approx.) was achieved in the 'strongly agree' preference level (Table 21) with a further 22% approximately in the 'agree' and 14% in the 'slightly agree'. Interestingly, the non-PFI hospital (Y3) highest percentage was also gained in the 'strongly agree' preference level (40% approx.) making a difference of approximately 4%. However, patients responses in the PFI hospital (X1) subsequent figures show more consistent results indicating a tighter dispersion towards the *welcoming* variable than

the non-PFI (Y3) hospital patients response, whose subsequent results of approximately 30% and 16% respectively in the 'agree' and 'slightly agree' preference levels meant the wider dispersion of the result indicated slightly less uniformity (Figure 18).

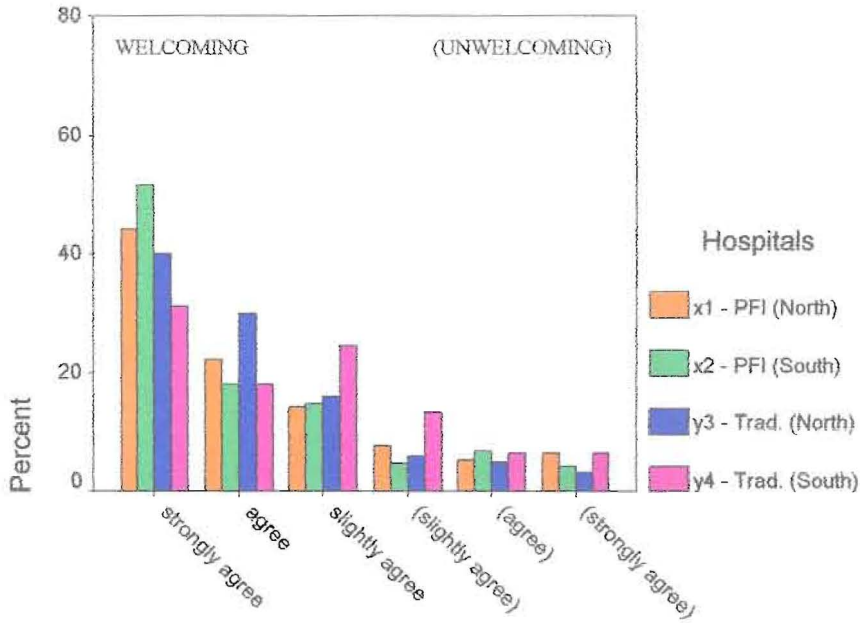


Figure 18: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Welcoming or (Unwelcoming)

			identity code				Total
			x1	x2	y3	y4	
reception waiting area - welcoming or (unwelcoming)	strongly agree	Count	34	77	40	19	170
		% within identity code	44.2%	51.7%	40.0%	31.1%	43.9%
	agree	Count	17	27	30	11	85
		% within identity code	22.1%	18.1%	30.0%	18.0%	22.0%
	slightly agree	Count	11	22	16	15	64
		% within identity code	14.3%	14.8%	16.0%	24.6%	16.5%
	(slightly agree)	Count	6	7	6	8	27
		% within identity code	7.8%	4.7%	6.0%	13.1%	7.0%
	(agree)	Count	4	10	5	4	23
		% within identity code	5.2%	6.7%	5.0%	6.6%	5.9%
	(strongly agree)	Count	5	6	3	4	18
		% within identity code	6.5%	4.0%	3.0%	6.6%	4.7%
Total	Count	77	149	100	61	387	
	% within identity code	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 21: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Welcoming or (Unwelcoming)

In the South, the PFI and non-PFI hospitals results reveal similar distribution of the results (Table 21). In the PFI hospital (X2) the highest percentage was gained in the 'strongly agree' preference level (52% approx.) with a further 18% and 15% approximately in the 'agree' and 'slightly agree' preference levels respectively. While the non-PFI counterpart (Y4) highest percentage was also gained in the 'strongly agree' preference level (31% approx.) in the *welcoming* variable. There was a dip of approximately 18% in the 'agree' preference level then a rise of approximately 25% in the 'slightly agree'. Patients' responses in the PFI hospital (X2) show a greater degree of consistency (Figure 18) and a decisive preference for the upper level of the *welcoming* variable than the non-PFI (Y4) hospital patients' response. The results show a wider dispersion of the figures, which indicate less consistency and a degree of variation in opinions.

The most striking similarity is evident when comparing the information with that of the initial findings of the pilot study (see pp. 67 to 82). In the first instance patients generally viewed the modern and traditional built hospitals as welcoming but when closer examination of the result was undertaken, the figures suggest there was a perception that the traditional built hospital was more welcoming. The results of the PFI and non-PFI study shows that despite the considerable investment being made in the 'new build'



hospital projects, there is an improvement but not a significant difference in patients' perceptions of the 'new build' hospital environment appearing 'welcoming or unwelcoming'. Further information from the *other comments* section (Appendix 14) revealed some patients in Hospital X1 (PFI) perceived the main reception/waiting area as "...*stressful*", while in the non-PFI hospital (Y3) some patients considered the environment had a "...*good atmosphere*". In the South, some patients in the PFI hospital (X2) felt the "...*atmosphere*" was dry, while the non-PFI hospital (Y4) patients perceived some reception/waiting areas had dull walls, and they would welcome "...*inviting colour [sic] paintwork*" rather than the cream/off white.

When patients were asked to assess the cleanliness of the hospital facilities, the general consensus of the respondents in the PFI and non-PFI hospitals suggests that the reception/waiting areas tidiness were considered satisfactory (Figure 19). In the PFI hospital in the North (X1) the highest percentage (70% approx.) was achieved in the 'strongly agree' with a further 12% approximately in the 'agree' preference levels (Table 22). The non-PFI hospital (Y3) highest percentage of 56% was also gained in the 'strongly agree' preference level, with a further 27% in the 'agree'. Patients' responses in the PFI hospital (X1) reveal a decisive response and the results also indicate a tighter dispersion towards the *tidy*

variable than the non-PFI (Y3) hospital patients' response, since there is a wider dispersion of the result indicating some variation in opinions (Figure 19).

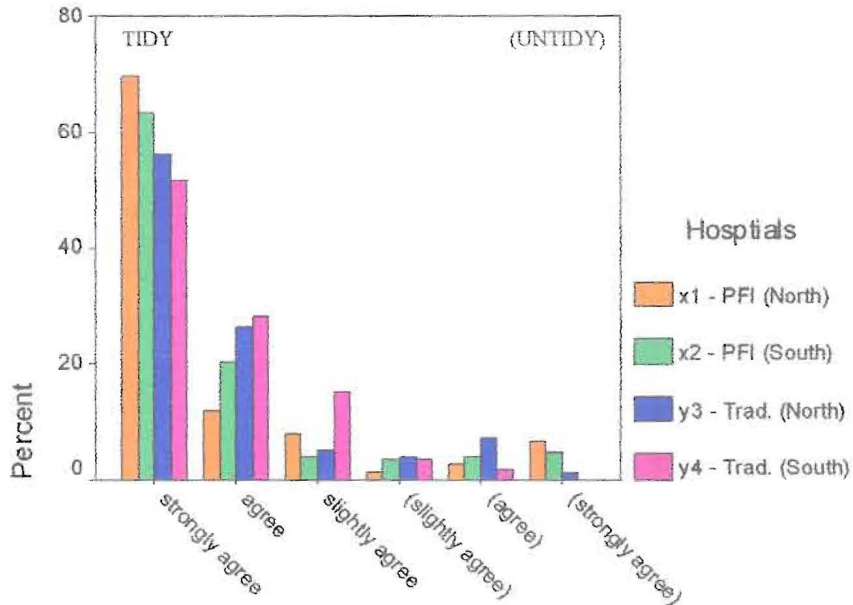


Figure 19: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Tidy or (Untidy)

			identity code				Total
			x1	x2	y3	y4	
reception waiting area - tidy or (untidy)	strongly agree	Count	53	93	55	31	232
		% within identity code	69.7%	63.3%	56.1%	51.7%	60.9%
	agree	Count	9	30	26	17	82
		% within identity code	11.8%	20.4%	26.5%	28.3%	21.5%
	slightly agree	Count	6	6	5	9	26
		% within identity code	7.9%	4.1%	5.1%	15.0%	6.8%
	(slightly agree)	Count	1	5	4	2	12
		% within identity code	1.3%	3.4%	4.1%	3.3%	3.1%
	(agree)	Count	2	6	7	1	16
		% within identity code	2.6%	4.1%	7.1%	1.7%	4.2%
	(strongly agree)	Count	5	7	1	0	13
		% within identity code	6.6%	4.8%	1.0%	0%	3.4%
Total	Count	76	147	98	60	381	
	% within identity code	100.0%	100.0%	100.0%	100.0%	100.0%	

Table 22: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas – Tidy or (Untidy)

The Southern PFI and non-PFI hospitals results reveal similar distribution of the results (Table 22). In the PFI hospital (X2) the highest percentage was achieved in the 'strongly agree' preference level (63% approx) compared to its non-PFI counterpart (Y4) highest percentage of approximately 52% also in the 'strongly agree' preference level of the *tidy* variable. Patients' responses in the PFI hospital (X2) also show more consistent results (Figure 19). The figures show a tighter dispersion of the data towards the *tidy* variable (20% and 4% approx. respectively in the 'agree' and 'slightly agree') than the non-PFI (Y4) hospital patients' response. The findings revealed a wider dispersion of the result (28% and 15% approx. respectively in the 'agree' and 'slightly agree') indicating slightly less consistency.

Further information from the *other comments* section (Appendix 14) of the questionnaires supports some of the patients' findings relating to the reception/waiting. In Hospital X1 (PFI), a patient states that the area is "...*always very clean*", while some patients in Hospital Y3 (non-PFI) consider the environment to be "...*very clean and well kept*", but less so in some of the "...*sub-waiting area*". Similarly, in the South (X2) the PFI hospital patients also perceived the reception/waiting as clean in addition to Hospital Y4 (non-PFI) considering the environment to be "...*clean and warm*".

The results presented thus far indicate that the relationship between the physical characteristics (design attributes/features) has an influence on users psychological reaction (*sense of well-being* via user preference levels) to their surroundings.

The degree to which the *sense of well-being* determines user satisfaction suggests the *interpretative* analysis of the user, may well be enhanced by its *social/spiritual* settings. In section 2.1, an observation by Popper was presented which suggested that a creative approach to the investigative process could reveal some interesting results compared to the traditional forms of research, which may be limited. Some aspects of a *sense of well-being* have been achieved in the aesthetic qualities of the hospital environment, particularly in the PFI hospitals and to a greater degree in Hospital X1 (North). However, the additional information from the *other comments* section of the questionnaires suggests improvements could be made to some areas of the spatial planning (e.g. PFI – location of department, allocation of space/rooms for the sub-waiting areas, lighting and atmospheric qualities) as well as some aesthetics qualities in the non-PFI hospitals (e.g. colour and ambient attributes/features). In this case, the results thus far reveal the influencing variables have the potential to influence patients' reaction to the internal environment.

#### 4.4.3 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL FURNITURE

The survey reveals the affect of the physical characteristics, arrangement of spatial planning and the psychological implications for the end user. This section examines further contributing variables that may influence end users interpretation of the hospital environment. This mental activity may determine the degree to which the end user attains satisfaction in the PFI and non-PFI hospital environment and the degree to which a *sense of well-being* have been achieved. The results present an overall view of end users perceptions of the hospital provisions (i.e. services).

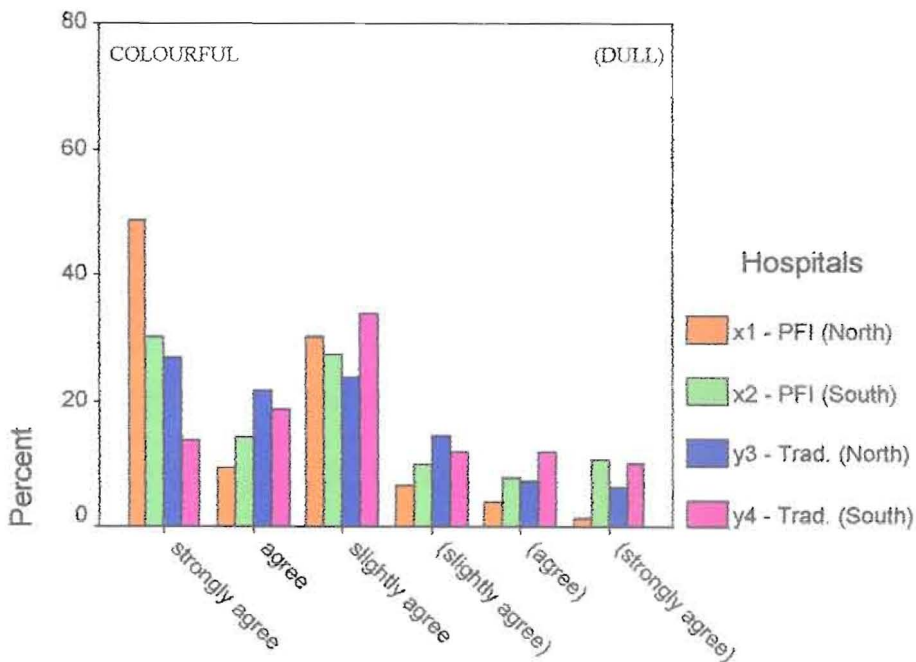
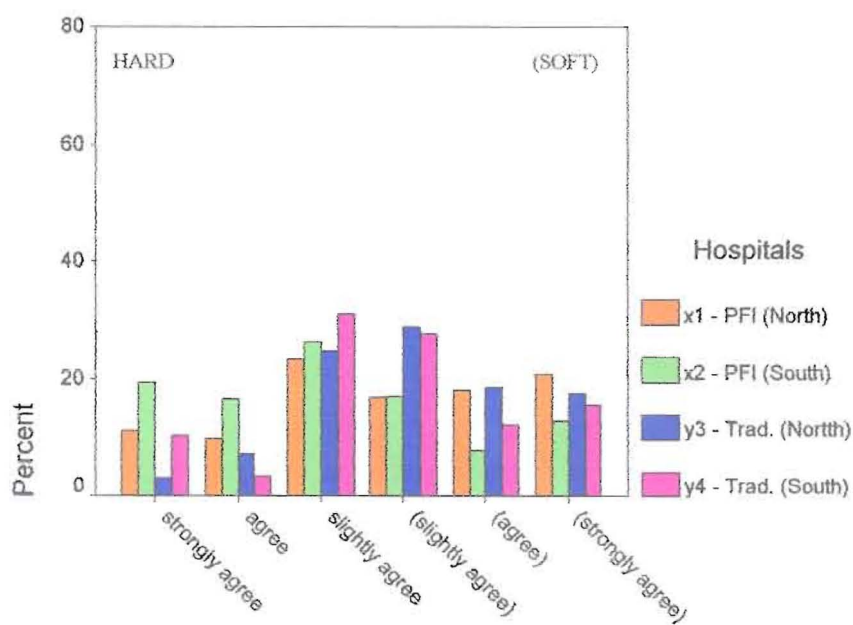


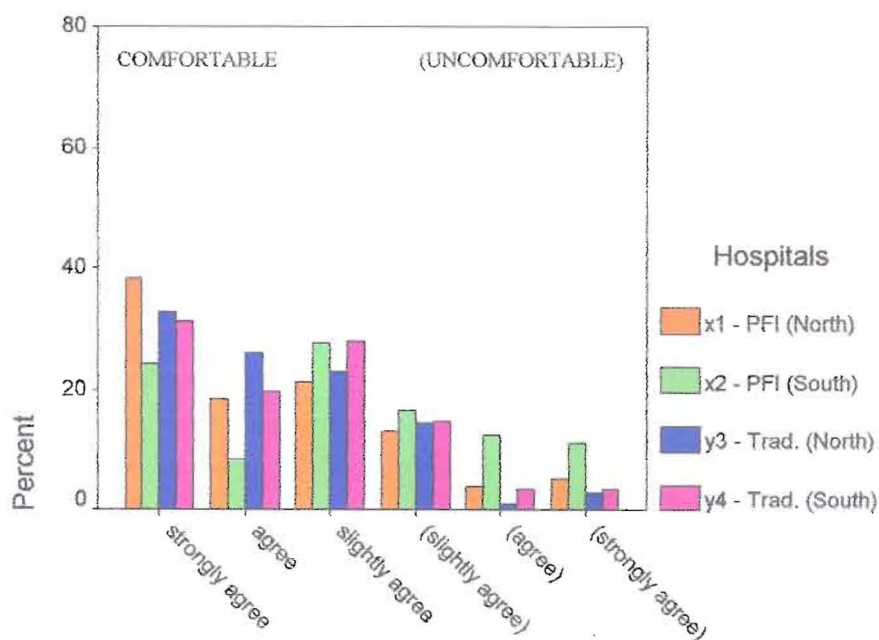
Figure 20: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Furniture – Colourful or (Dull)

In Figure 20, patients in the PFI hospital in the North (X1) 'strongly agree' (49% approx.) that the furniture was *colourful*, while the non-PFI hospital (Y3) highest percentage was also gained in the 'strongly agree' preference level (27% approx.) of the *colourful* variable. The subsequent results reveal that patients' responses in the PFI hospital (X1) were more consistent than the non-PFI (Y3) hospital patients' response, as the dispersion of the results indicated a greater degree of uniformity. In the South, the PFI and non-PFI hospitals results reveal a similar distribution of the results. In the PFI hospital (X2) the highest percentage was gained in the 'strongly agree' (30% approx.) of the *colourful* variable, while its non-PFI counterpart (Y4) highest percentage was gained in the 'slightly agree' preference level (34% approx.) at the lower end of the *colourful* variable preference levels (Figure 20). Patients' responses in the PFI hospital (X2) revealed some consistency but a wider variation in the results. In contrast, the non-PFI hospital (Y4) showed a tighter dispersion of the figures, which indicated more uniformity and less variation but at the lower end of the preference level of the *colourful* variable. Additional information from the *other comments* section (Appendix 14) of the questionnaires reveals that some patients in Northern PFI hospital (X1) consider the colour to be in "...*poor taste*" and that the solid colour required some "...*relief*", while some non-PFI hospital (Y3) patients comments also suggested more colours in addition to "...*arm rests*". In the PFI

hospital in the South, some patients perceived the furniture as "...sterile" and more practical compromise for armchair to create and enable a "...homely, friendly atmosphere". Whereas some of the patients in the non-PFI hospital (Y4) viewed some of the furniture as "...impersonal". With regard to other aspects of the furniture (Figure 21), patients in the PFI hospitals had varying perceptions. Hospital X1 patients mainly perceived the furniture as soft despite the statistics peaking in the 'slightly agree' preference level (24% approx.) of the *hard* variable. While the non-PFI hospital (Y3), also achieved similar perceptions with 29% approximately in the '(slightly agree)' preference level of the *soft* variable. However, the results reveal a greater degree of consistency in the non-PFI than the PFI. In Hospital X2 the opposite occurs as patient perceptions indicate they were hard (26% approx) in the 'slightly agree' preference level. For the non-PFI hospital (Y4), 31% was achieved in the 'slightly agree' preference level, however subsequent results indicated a degree of preference for the *soft* variable. Information from the *other comments* section reveal that some patients in the PFI hospital (X2) consider the seating was "...good if you have a bad back" but prefer more comfortable chairs with "...arms to assist the elderly persons to stand", compared to non-PFI patients (Y4) responses that the furniture may be older but some were "...very comfortable, not hard plastic chairs".

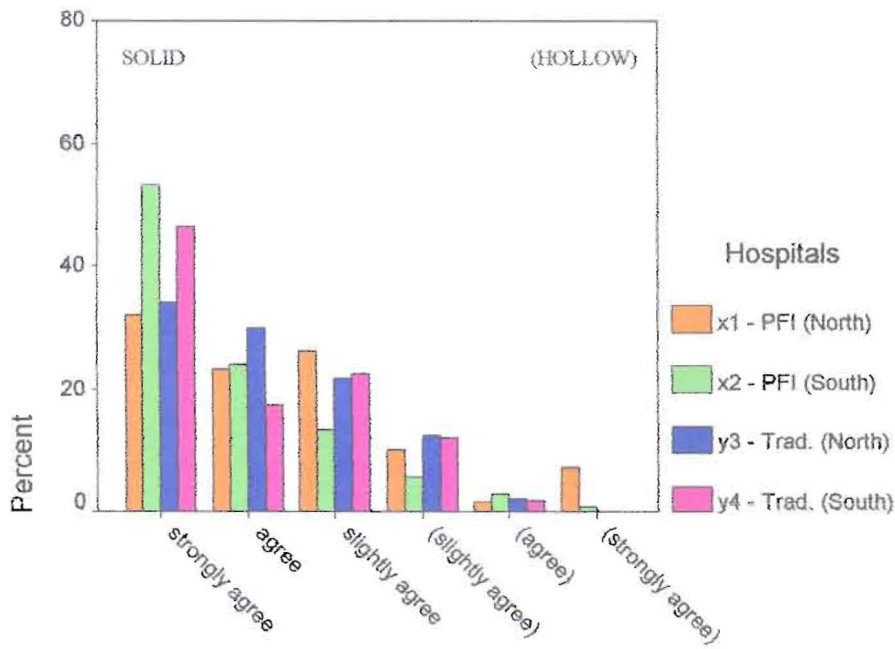


**Figure 21:** Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Furniture – Hard or (Soft)

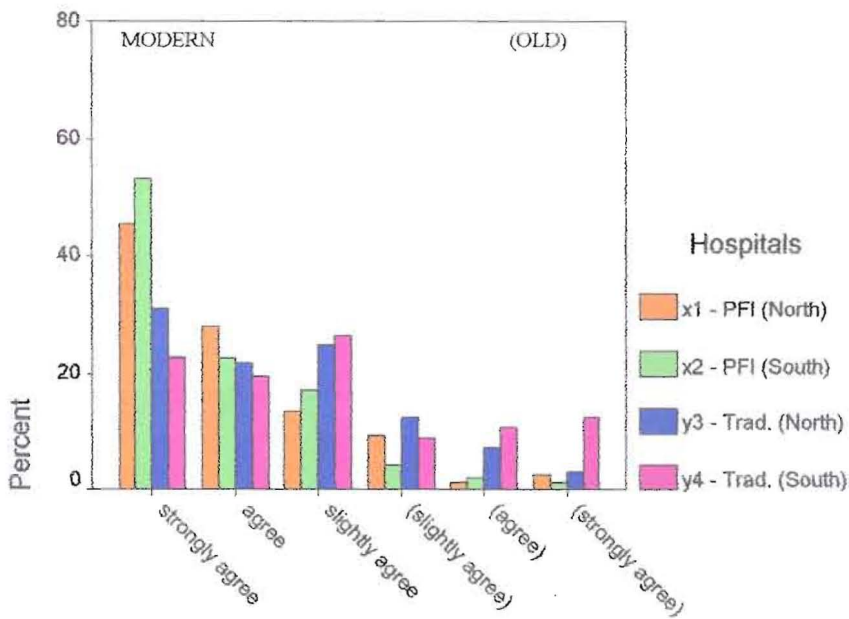


**Figure 22:** Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Furniture – Comfortable or (Uncomfortable)





**Figure 23:** Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Furniture – Solid or (Hollow)



**Figure 24:** Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Furniture – Modern or (Old)

In general both PFI and non-PFI hospitals in the North and South believed the furniture to be *comfortable* as shown in Figure 22, with the highest figures achieved in the 'strongly agree' (38% approx) preference level for the PFI hospital in the North (X1) and its non-PFI counterpart (Y3) gaining approximately 33% for the same preference level. Hospital X2 gained approximately 28% in the 'slightly agree' in contrast to its non-PFI counterpart (Hospital Y4), which achieved approximately 31% in the 'strongly agree' preference level. Patients also perceived the furniture as solid (Figure 23) and modern (Figure 24), with the exception of Y4 since the results suggest a degree of variation, which was at the lower end of the preference scale of the *modern* variable. Further information from the *other comments* section of the questionnaire suggest that some patients (PFI – X1) would like additional seating that accommodate users with "...*restricted mobility*", while others (PFI – X2) prefer single seats. A few patients (non-PFI – Y4) consider the furniture to be "...*functional...hard wearing...easy to clean*". The data suggest that despite reservations (less so in PFI hospitals) features intended to provide a measure of comfort for users are significant, it is of lesser importance when compared to immediate clinical needs of the patients. However, these features appear to derive a certain level of importance since it is an attribute that has been commented on by patients in the pilot study and by patients in both PFI and non-PFI hospitals (Appendices 4 and 14).

of the score levels currently being delivered in the selected PFI and non-PFI hospitals in the North and South. The results also identify the degree to which the 'main' and 'sub' totals influence the final outcome of 'perceived' rating levels.

**i) PFI and non-PFI hospitals (main totals)**

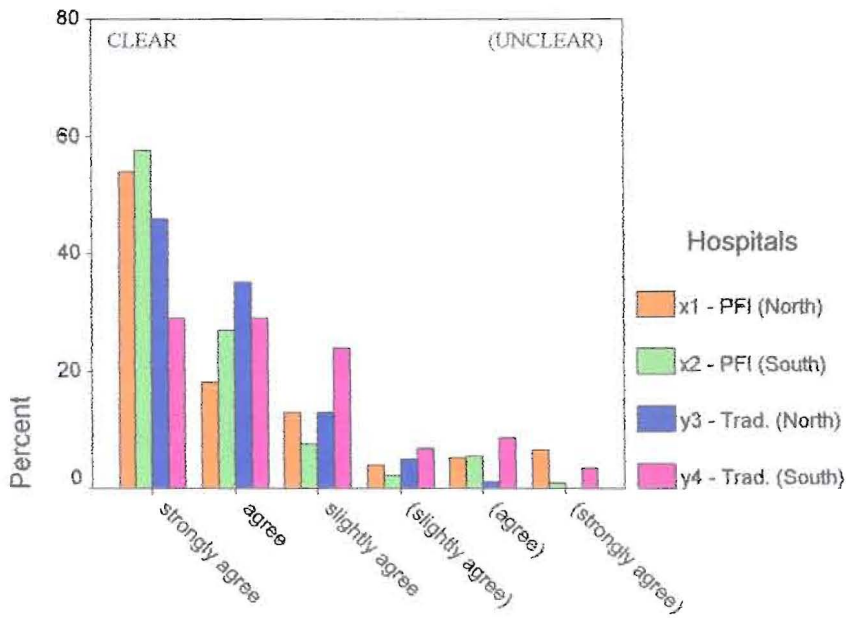
The characteristics/attributes variables results 'main' totals for the *function/physical* and *psychological* sections reveal a score of 28 points for the PFI hospitals in the North (X1) and 31 points for the South (X2). Whereas the non-PFI hospitals had lower scores of 26 points for the North (Y3) and 17 points for the South (Y4). The global scores for the PFI hospitals were 29.5 points and 21.5 points for the non-PFI counterparts, a difference of 8 points.

**ii) PFI and non-PFI hospitals (sub-totals)**

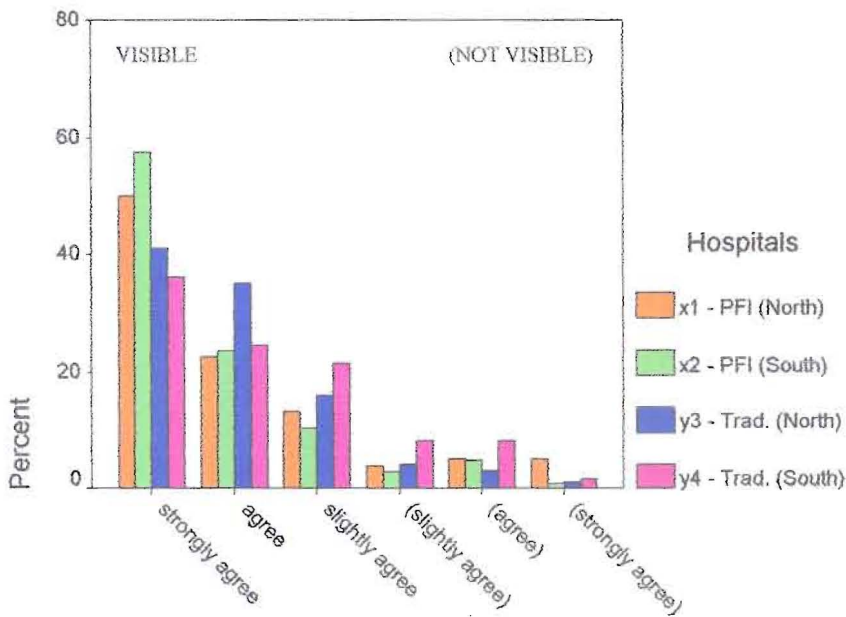
When the 'sub' totals characteristic/attributes variables were calculated, the results reveal a significantly lower score of 17 points for the PFI hospitals in the North (X1) and 20 points for the South (X2). Whereas the non-PFI hospitals had a lower score of 20 points for the North (Y3) and a higher score of 21 points for the South (Y4). The global scores for

#### 4.4.4 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL INFORMATION SYSTEMS

The previous section examined the contributing variables that may influence patients' interpretation of the provisions for the hospital internal environment. This section investigates the variables identified in the pilot study, regarding instructions for finding one's way around the hospital facilities. In Figure 25, patients in the PFI hospital in the North (X1) 'strongly agree' (54% approx.) that the signage was *clear*, while the non-PFI hospital (Y3) highest percentage was also gained in the 'strongly agree' preference level (46% approx.) of the *clear* variable. The subsequent results reveal that patients' responses in the PFI hospital (X1) had a greater degree of consistency than the non-PFI (Y3) hospital patients' response, as the dispersion of the result revealed more uniformity. In the South, the PFI and non-PFI hospitals results reveal a similar distribution of the results. In the PFI hospital (X2) the highest percentage was also gained in the 'strongly agree' (58% approx.) of the *clear* variable. While its non-PFI counterpart (Y4) highest percentage (29% approx.) were achieved in each of the preference levels 'strongly agree' and 'agree' of the *clear* variable. Patients' responses in the PFI hospital (X2) revealed more consistency and a tighter dispersion of the figures, indicating uniformity and less variation compared to its non-PFI (Y4) counterpart, which showed slightly wider variation of the results in the *clear* variable.

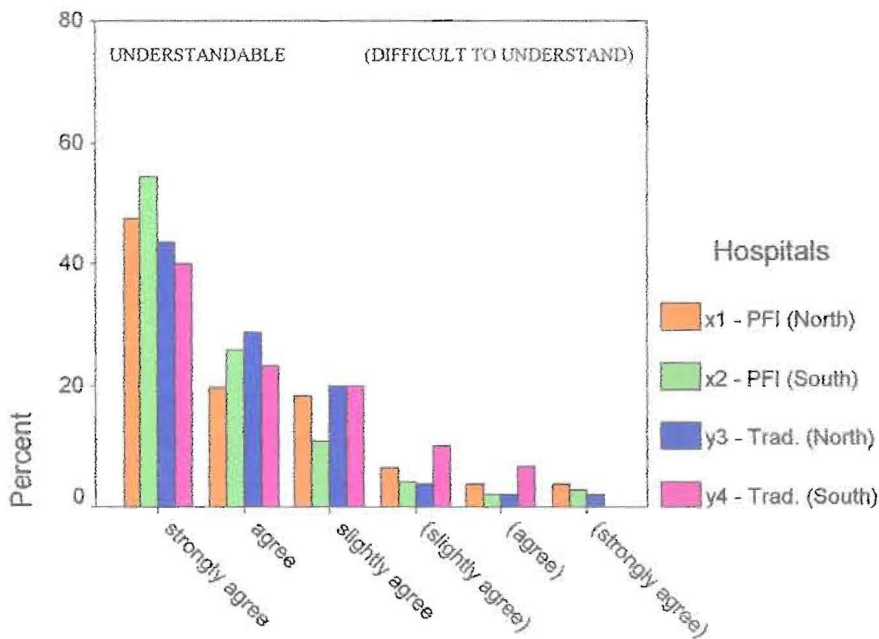


**Figure 25: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Information Systems – Clear or (Unclear)**



**Figure 26: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Information Systems – Visible or (Not Visible)**

Similar figures occur for the *visible/not visible* (Figure 26) and *understandable/difficult to understand* variables (Figure 27), for the PFI and non-PFI hospitals. In the pilot study (see pp. 67 to 82) there were indications that some patients felt an improvement in the 'information systems' would help users to successfully navigate around the hospital building. The highest figure achieved in the PFI hospital in the North (X1) was approximately 50% in contrast to the non-PFI hospital (Y3) figure of 41% of the *visible* variable in the 'strongly agree' preference level. Patients' responses in the PFI hospital in the South (X2) gained approximately 58% compared to its non-PFI hospital result of 36% for the same preference level.



**Figure 27:** Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Information Systems – Understandable or Difficult to Understand

For understanding the directions (Figure 27), patients in the PFI hospital in the North (X1) 'strongly agree' (47% approx.) that they were. The non-PFI hospital (Y3) achieved a similar response of approximately 44% for the same preference level and variable. In the PFI and non-PFI hospitals in the South, patients also considered the direction to be *understandable* gaining approximately 54% (X2) and 40% (Y3) respectively in the 'strongly agree' preference level. The data indicate a greater degree of consistency was attained in the PFI hospitals than the non-PFI hospitals (in particular the PFI hospital X2). In spite of the results, additional information from the *other comments* section of the questionnaire suggests some patients have underlying concerns associated with the appropriateness of the 'information systems' for patients who are elderly, mentally and/or physically impaired. Some patients (X1), state they often find "...lost people" therefore "...signs clearly do not work". There is "...difficulty to find stairs" and others believe the speed of some of the electrical signs "...move too quickly to read thoroughly". Some consider information in lifts should have "...absolute clarity", while other patients (Y3) are advised to use 'short-cuts', which were not for public use and were "...not really well signposted" but "...why do staff suggest using them". Some patients indicate (X2) that a floor plan may be helpful, while others (Y4) suggest a combination of signage (arrows and sign pods) would be useful.

#### 4.4.5 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL EXISTING FEATURES

When patients were asked to consider features (such as toilets, cafés, shops, special needs facilities and/or artwork) provided by the hospital, the Northern patients in Hospital X1 (50% approx.), Hospital Y3 (40% approx.) and the Southern patients in Hospital X2 (55% approx.), Hospital Y4 (24% approx.) 'strongly agree' they were 'useful' (Figure 28). However Hospital Y4 patients results also spread across the scaling system with a further 20% approximately in the '(strongly agree)' preference level in the 'poor' variable. The dispersion of the results reveals the PFI hospitals attained a greater degree of uniformity in patients' responses than their non-PFI counterparts (particularly Hospital X2).

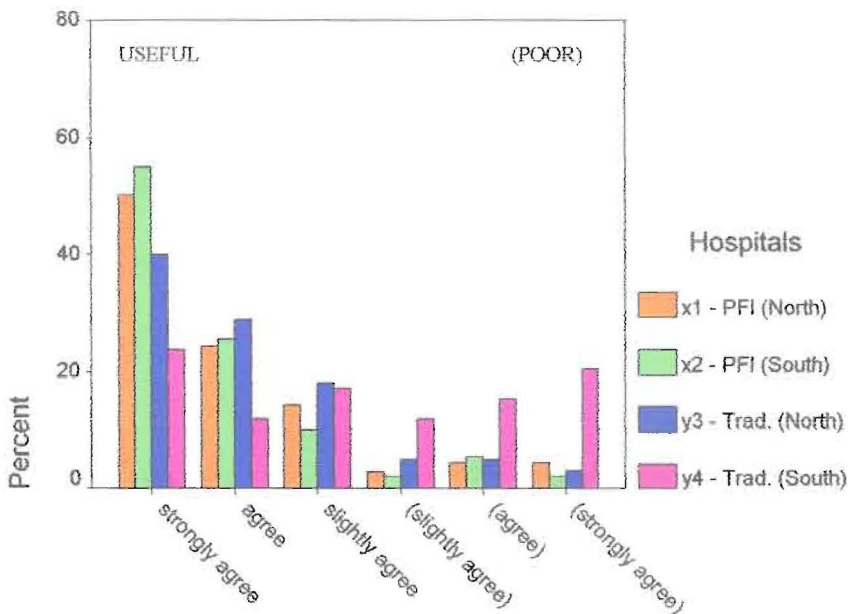


Figure 28: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Features – Useful or Poor



Further information from the *other comments* section of the questionnaire indicates the most common useful features were the cafés, shops and toilets. Some patients' state (X1) additional toilets are preferable as "...there are always people waiting" and "...always far away" particularly for the "...less able" user. Others suggests (Y3) that more artwork and "...information stands/boards would be nice", in addition to current newspapers and magazines. Some patients (X2) considered the shop and special needs facilities as good, but the café was perceived as "...expensive". While Hospital Y4 patients were appreciative of the free confectionary provisions, they stated "...information about the hospital shop and its location, magazines and information leaflets" would be useful.

When patients were asked to consider if they would like additional features in the reception/waiting area, in most cases patients in the PFI and non-PFI hospital perceived them as *adequate* (Figure 29), with the exception of Hospital Y4 which had a degree of variation in the results. Patients in the PFI hospital in the North (X1) '(strongly agree)' that the existing facilities were *adequate* (54% approx.). The non-PFI hospital (Y3) achieving a similar response of approximately 30% for the same preference level and variable. In the PFI and non-PFI hospitals in the South, the highest figures of approximately 43% (X2) and 29% (Y3) respectively were gained in the '(strongly agree)' preference level of the *adequate* variable.

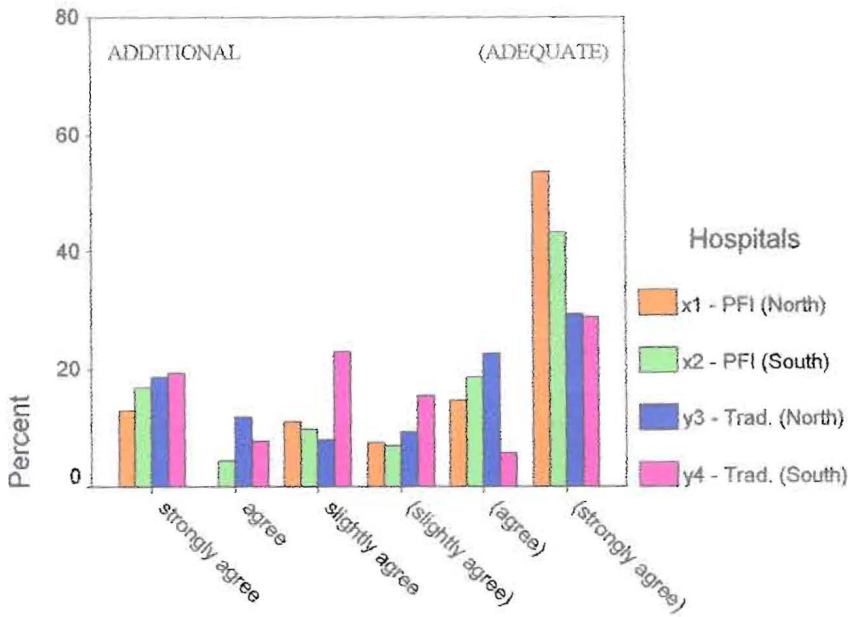


Figure 29: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Features – Additional or (Adequate)

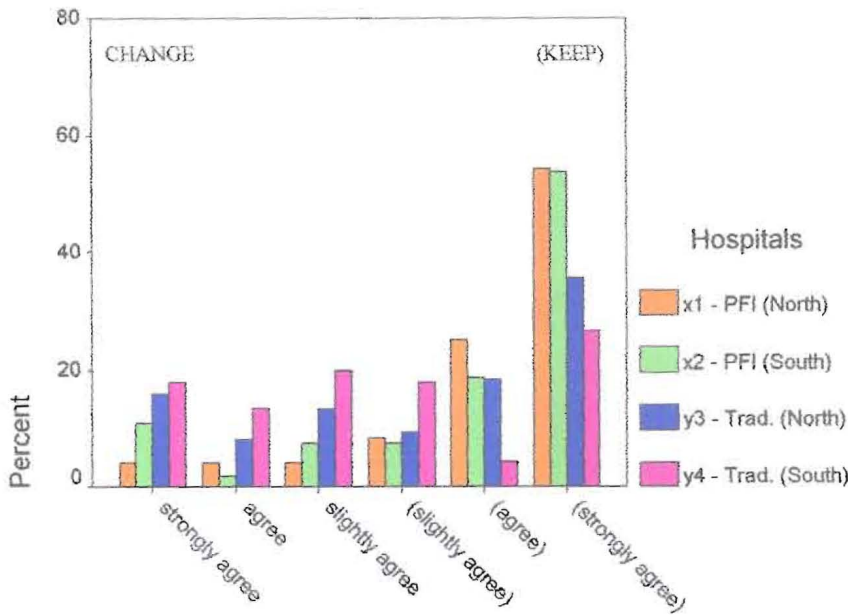


Figure 30: Direct Comparison of PFI and non-PFI Hospital Reception/Waiting Areas Features – Change or (Keep)

The data indicate a greater degree of preferences were attained in the PFI hospitals than the non-PFI hospital (in particular the PFI

Hospital X1). However, additional information from the *other comments* section (Appendix 14) of the questionnaires reveals that some patients in Northern PFI hospital (X1) would like an initial information point such as an "...*helpdesk*" and "...*disabled loo*". The non-PFI hospital patients (Y3) indicate more ambient attributes/features such as a television "...*showing healthy living video...music*", in addition to a visual intercom system that "...*tells each patient when it is going to be their turn to see the doctor*". For the PFI hospital in the South (X2) some patients believe not only would the television and/or radio serve as a distraction, but on occasions provide "...*information (e.g. channel 1)*". Other comments reveal information boards that project "...*public and private transport information...hospital problems*" would be useful. Whereas some patients in the non-PFI hospital (Y4) would like drinks and snack machines within the reception/waiting area, in addition to some 'earthy' visual stimulation such as "...*plants or flowers to reduce the medical appearance... make more relaxing*".

Similar figures occur for the *change/keep* variables for the PFI and non-PFI hospitals (Figure 30). The highest figure achieved in the PFI hospital in the North (X1) was approximately 54% in contrast to the non-PFI hospital (Y3) figure of 36% in the '(strongly agree)' preference level of the *keep* variable. Patients' responses in the PFI hospital in the South (X2) gained approximately 54% compared to

its non-PFI hospital result of 27% for the same preference level and variable. The data also reveal a greater degree of uniformity was attained in the PFI hospitals than the non-PFI hospital, as well as a wider dispersion of the result for Hospital Y4 indicating less consistent opinions. However, additional information from the *other comments* section of the questionnaire reveal that some Northern PFI patients (X1) would like improvements to the environmental controls stating it was "...*too hot and uncomfortable especially in hot weather*", in addition to the installation of coffee machines and "...*telephone cubicles*" for privacy. In the non-PFI hospital (Y3) other suggestions related to repositioning the reception desk in order to facilitate "...*privacy for patients talking to reception staff*" and a contemporary coffee bar with "...*adequate seating*". While some patients in the Southern PFI hospital (X2) request suitable baby facilities for "...*feeding and changing*", repositioning seats to face clinics and "...*text information to assist hard of hearing*". Other comments indicate an alternative "...*appointment system*" that assist patients to make 'informed' choices (times and dates) would reduce cancellations. Whereas Hospital Y4 suggests "...*larger*" facilities and more vibrant colours on the walls would enhance hospital facilities. The results of the surveys and the opinions expressed by patients in PFI and non-PFI hospitals show a level of tolerance and a degree of consistency with some of the findings and conclusions drawn from the pilot study.

#### **4.4.6 SUMMARY OF PATIENTS AGE AND GENDER IN SELECTED PFI AND NON-PFI HOSPITALS**

This section outlines the information acquired from the *age and gender* category of the patients' questionnaires. The salient points of the patient surveys:

##### **4.4.6.1 GENDER BALANCE**

- More females visit the outpatients departments than males

##### **4.4.6.2 AGE PROFILE**

- Patients in age groups 35 to 44, 45 to 54, 55 to 64 as well as 65 and over were more likely to visit the outpatients' department reception/waiting areas more frequently than the younger age groups.

#### **4.4.7 SUMMARY OF PATIENTS PERCEPTIONS IN SELECTED PFI AND NON-PFI HOSPITALS**

This section summarise the findings of the patient surveys in the selected PFI and non-PFI hospitals, in relation to the opinions acquired from the *other comments* section of the questionnaires.

#### 4.4.7.1 PFI HOSPITALS

The salient points of the patient surveys in the PFI hospitals revealed:

- The main reception/waiting area was perceived as large and light while having access to natural light was viewed as beneficial.
- Visually, there was access to some external views of the landscaped gardens/scenery.
- The sub-waiting areas were considered to be less spacious than the main reception/waiting area and the lack of natural light for some environments meant they were perceived as small and slightly cramped.
- Generally the reception/waiting areas were considered welcoming and usually tidy.
- The perceptions of the furniture varied from colourful (main reception area) to slightly dull (sub-waiting area) and slightly soft (X1) to somewhat hard (X2). However both hospitals were perceived to be comfortable, solid and modern.
- The information systems were generally perceived as clear, visible and understandable. However, some figures and *other comments* section suggest patients consider improvements could be made.

- Features like toilets, café and special needs facilities were view as useful and generally adequate. However, *other comments* highlight additional features/services like music, television and/or telephones would be beneficial.

#### 4.4.7.2 NON- PFI HOSPITALS

The key points of the patient surveys in the non-PFI hospitals show:

- The main reception/waiting area (Y3) was generally *large* with access to natural light. The exception was Hospital Y4, which was small and relied on artificial lighting.
- Hospital Y3 had external views to residential buildings in comparison to Hospital Y4, which had no view at all from the main reception area.
- The sub-waiting areas were considered to be spacious with reasonably high ceilings that had access to natural light.
- The reception/waiting areas were considered welcoming and generally tidy.
- The perceptions of the furniture were almost evenly spread with the general consensus viewed as slightly colourful (Y3) and marginally dull (Y4). However both hospitals perceived them to be mainly soft, comfortable, solid and generally modern (with the exception of Hospital Y4, since the results indicate more variation in opinions).

- The information systems were mainly perceived as clear, visible and understandable. However, some figures and *other comments* suggest patients would welcome improvements to the signage.
- Patient views varied regarding features like toilets, café and special needs facilities. Opinions varied for *useful* (Y3) and *poor* (Y4), a general acceptance for *adequate* and split views on *keep* (Y3) or *change* (Y4) variables. The findings reveal a consensus for more immediate improvements to the facilities and services, as well as providing music and/or television.

The main differences between the PFI and non-PFI patient surveys relates to the perception of spatial planning and ambience settings. In the PFI hospitals there was a general impression of space and lightness in the main reception areas. However, the sub-waiting areas received less satisfactory responses. The difference in the settings meant the level of critique from the patients became more systematic and critical, which became apparent via some of the preference levels and in the *other comments* section.

It appears that access to external views enhances patients' perception of a light and welcoming environment, yet the physical features of the sub-waiting areas appear not to lift patients' spirit in spite of a general acceptance of the new facilities. However, the



evaluation of some of the physical features in the PFI hospitals reception/waiting areas reveals the ambient characteristics were more modern than the non-PFI hospitals. Hospital patient results (non-PFI) revealed awareness and measured consideration of the spatial planning and ambient settings. In the non-PFI hospitals the overall impressions indicate medium proportions for the main reception area and generally spacious for the sub-waiting areas.

The change in environment to the sub-waiting areas appeared to have less dramatic variations in the figures than the PFI hospitals. The difference in the settings and the level of critique from the patients were sometimes more positive than the PFI hospital however statistically, the PFI hospital performed well compared to the non-PFI hospitals.

Considering the lack of landscaped views for some non-PFI reception/waiting areas, this did not appear to have diminished some patients' perception of a light and welcoming environment. The familiarity of the physical characteristics and ambient attributes of the reception/waiting areas appears to maintain positive impressions of the non-PFI hospital environments.

## **4.5 RESULTS OF HOSPITAL STAFF SURVEYS IN SELECTED PFI AND NON-PFI HOSPITALS**

To ascertain statistical information of staff response to hospital environments, a survey was undertaken to examine if users' expressed a preference for certain characteristics/attributes in PFI and non-PFI hospital environments since staff needs are different to patients due to the nature and requirements of their profession. The findings (Appendices 13 & 15) revealed a difference in response to the 'spatial planning', 'subconscious needs', 'physical attributes' and 'life cycle' perceptions; demographically and geographically. Similar to the format discussed in section 3.5, the spatial planning sub-variables associated with the internal environment (*physical needs and arrangement of spaces*) were selected for further examination. The subsequent questions were summarised in order to maintain a 'holistic' viewpoint of the implications of the contributing variables. The figures highlight hospital staff response (percentages) to the sub-variables in the selected PFI and non-PFI hospitals.

### **4.5.1 AGE AND GENDER**

Due to the limited size of the 'gender' and 'age group' data, as well as the geographic nature of the PFI and non-PFI hospitals involved, meant only general observations were made.

The results of the 'gender' category (Figure 30.1.3) indicate at least 77% of staff in the PFI hospital in the South (X2) were female. A further 23% did not answer and therefore gender identification could not be established. However, 100% replied in the non-PFI hospital in the North (Y3) of which all were female. When participants were asked to choose a category that best described their age group (Figure 30.2), in the PFI hospital in the South (X2) the most selected age range was the '45 to 54' with 44%.

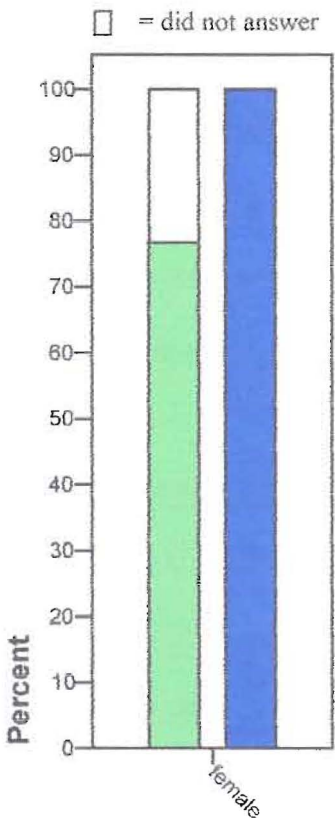


Figure 30.1: Direct Comparison of PFI and non-PFI Staff Response to Gender

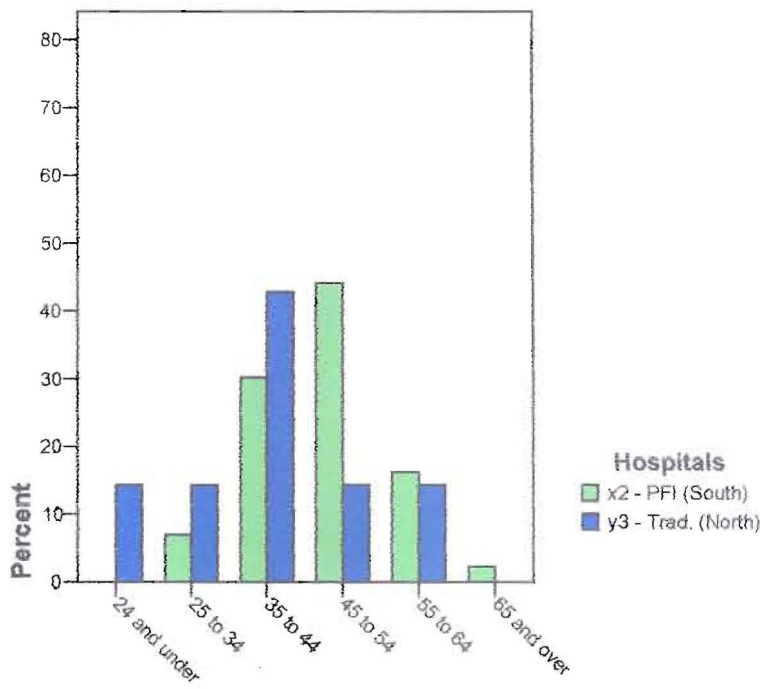


Figure 30.2: Direct Comparison of PFI and non-PFI Staff Response to Age

The second highest group was the '35 to 44' age range (30% approx.) with the '55 to 64' (16%) coming third. In the non-PFI hospital in the North (Y3) the most selected age range was also the '35 to 44' category with approximately 43%. The remaining age groups (except '65 and over') achieved approximately 14%.

The staff surveyed in Hospital X2 (PFI) and Y3 (non-PFI) reveal mainly females answered the 'gender' category in the outpatients' department reception/waiting areas questionnaire. The results also show a preference for the 35 to 44 and 45 to 54 age groups in Hospital X2 (PFI). Hospital Y3 (non-PFI) age groups was mainly in the 35 to 44 category. The other responses were spread evenly across the remaining age groups (except 65 and over). This indicates the two *age* and *gender* characteristics were similar in the two hospitals who allowed access to their data.

#### **4.5.2 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL SPATIAL PLANNING**

When hospital staff responses were compared with the data acquired from of the staff questionnaires, section 2 – *Design Performance* sub-section 'd' *response to user physical needs* (Appendix 6), the results revealed that the non-PFI hospitals received less criticisms than their PFI counterparts in addition to achieving more favourable and decisive preferences (Figure 31).

In the PFI hospital in the North (X1) the highest percentage (27% approx.) was achieved in the 'poor' preference level, with a further 23% approximately in the 'acceptable'. In contrast, the non-PFI hospital (Y3) highest percentage of approximately 33% was gained in both the 'acceptable' and 'very good' preference levels. Staff responses in the PFI hospital (X1) reveal a less decisive response as the selection of preference levels range from 'very good' to 'complete failure'. Whereas the non-PFI (Y3) hospital staff response results were more positive in spite of the wider dispersion across the preference levels from 'acceptable' to 'superior' (Figure 31).

The Southern PFI hospital (X2) highest percentage was achieved in the 'acceptable' preference level (49% approx), with a further 23% approximately in the 'poor'. While its non-PFI counterpart (Y4) highest percentage of approximately 50% was gained in the 'good' preference level as well as a further 25% in the 'poor'. Staff responses in the PFI hospital (X2) revealed variation in results since the figures show a wider dispersion of the data than the non-PFI (Y4) hospital staff response, which revealed a tighter dispersion of the results indicating slightly more consistency (Figure 31).

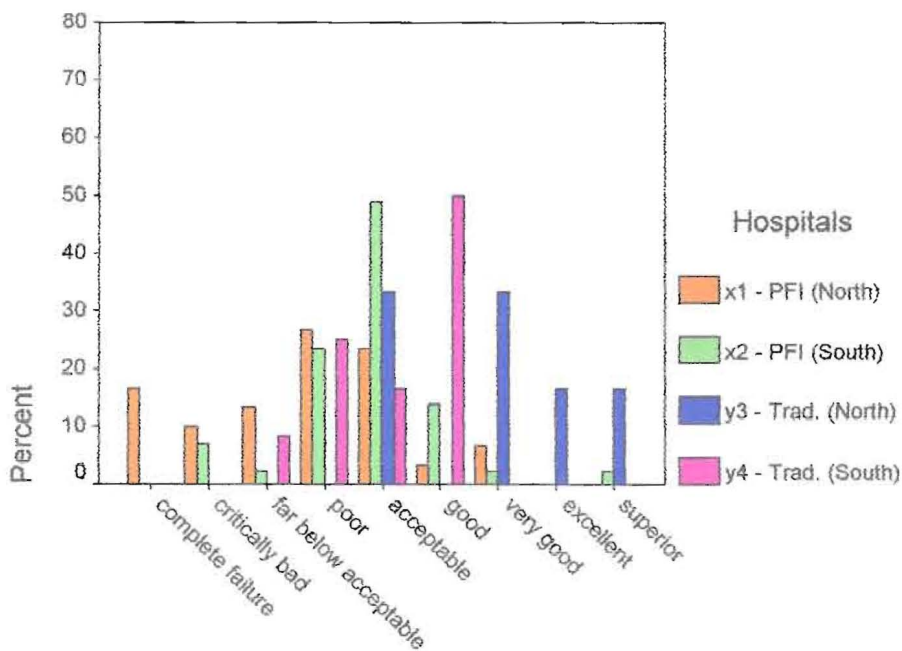
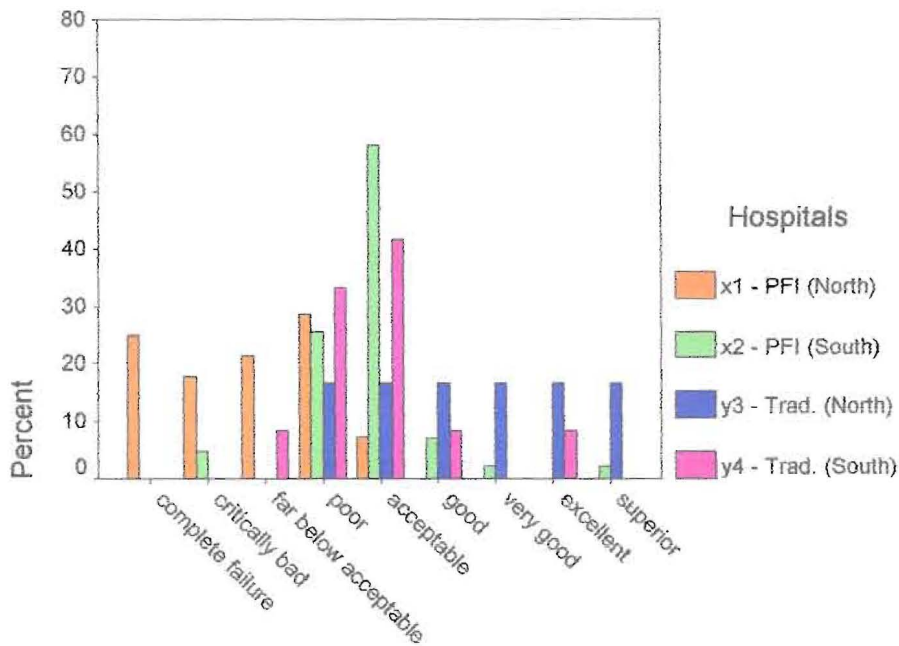


Figure 31: Direct Comparison of PFI and non-PFI Hospital Staff Response to the Physical Needs of the User

Further information from the *other comments* section (Appendix 15) of the staff questionnaires reveal some concerns relating to the main reception/waiting areas and the sub-waiting areas. Some staff in the PFI hospital in the North (X1) believed their previous hospital facilities provided better accommodation and "...privacy for patients and staff". While others acknowledge the attractiveness of the atrium, but state if it was at the expense of other areas of the hospital facilities such as "...windows only in outer aspects of hospital therefore lots with none [sic]", which would explain why some staff found environments to be "...oppressive and depressing" (Appendix 15). Some staff commented that a number of patients (on crutches and/or in plaster) have to consider distances because of the location of some outpatients clinics, which were "...at back of

*the hospital*". The main responses from staff in the non-PFI hospital (Y3) were "...good sized rooms with wider doors and corridors for easy wheelchair access". In the South, criticisms were mainly from staff (Appendix 15) in the non-PFI hospital (Y4). Some staff acknowledge that the building was very old and "...in great need of modernisation" and expressed a view that some reception/waiting areas should consider private spaces that are less open plan and conducive for "...nervous patients" that want to sit alone.

The data reveal some concerns relating to the *Arrangement of Spaces* variable in the Northern PFI hospital compared to the non-PFI staff response (Figure 32). In the PFI hospital in the North (X1) the highest percentage (29% approx.) was achieved in the 'poor' preference level, with a further 21%, 18% and 25% approximately in the 'far below acceptable', 'critically bad' and 'complete failure' respectively. In contrast, the non-PFI hospital (Y3) highest percentage (17% approx.) was gained in each of the 'poor', 'acceptable', 'good', 'very good', 'excellent' and 'superior' preference levels. Although staff responses in the PFI hospital (X1) reveal more uniformity than the non-PFI hospital, the results show that responses were mainly less favourable than the non-PFI respondents. Hospital Y3 staff response were more positive in spite of a wider dispersion of the results across the preference levels.



**Figure 32:** Direct Comparison of PFI and non-PFI Hospital Staff Response to the Arrangement of the Space for Users

The PFI hospital in the South (X2) highest percentage was achieved in the 'acceptable' preference level (58% approx), with a further 26% approximately in the 'poor'. In the non-PFI hospital (Y4) the highest percentage (42% approx.) was gained in the 'acceptable' preference level, with a further 33% in the 'poor' (Figure 32). Staff responses in the PFI hospital (X2) revealed less variation and a tighter dispersion of the data than the non-PFI hospital (Y4) staff response, revealing a slightly wider dispersion of the result indicating slightly less consistency. Further information from the *other comments* section (Appendix 15) of the questionnaires reveals some concerns regarding the spatial planning. For example some staff in the PFI hospital (X1) question the spatial planning of some treatment rooms designated "...for



*specific purposes*” were not “...*thought out*” for staff functional needs (e.g. manoeuvring patients and/or equipment), which some believed the previous hospital facilities did. A further observation from staff indicate additional “...*toilets for patient use*” in or near the outpatients department would be beneficial. A few members of staff in the Southern non-PFI hospital also indicated that future plans for the hospital facilities may account for the building “...*not being maintained*”. However, it appears that the character of the building fostered some positive impressions between patients and staff “...*although this hospital is very old, patients are always saying what a happy place this is to come to*”. Significantly, the PFI and non-PFI hospital figures in the North and South suggest that despite the modernity of the ‘new build’ facility, hospital staff in the non-PFI hospital building perceptions overall were more positive and believed their reception/waiting area (particular Hospital Y3) provided more adequate accommodation for their functional needs. Figure 32 also reveals that there is a greater degree of preference at opposite ends of the preference levels for the PFI and non-PFI hospitals in the North and South. In addition, some staff in the PFI hospital in the North (X1) believed that a number of rooms (such as fracture units or physical treatment clinics) were too small for manoeuvring equipment consultation and treatment purposes (Figure 32) suggesting long-term implications for flexibility of the reception/waiting areas (Appendix 15).

### 4.5.3 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL SUBCONSCIOUS NEEDS

The data acquired from hospital staff in the PFI and non-PFI hospitals revealed the psychological attributes/features of the hospitals in the North and South were 'perceived' more favourably in the non-PFI than the PFI hospitals (Figure 33). Hospital X1 (PFI) peaked at approximately 27% in the 'complete failure' preference level, with a further 23% and 17% in the 'poor' and 'critical bad' respectively. Only 7% of hospital staff believed it was 'good' with a further 3% each for the 'excellent' and 'superior' preference levels. In comparison, the non-PFI hospital (Y3) highest percentage (29% approx.) was gained in the 'acceptable' preference level in addition to approximately 14% achieved in each of the 'good', 'very good', and 'excellent' preference levels.

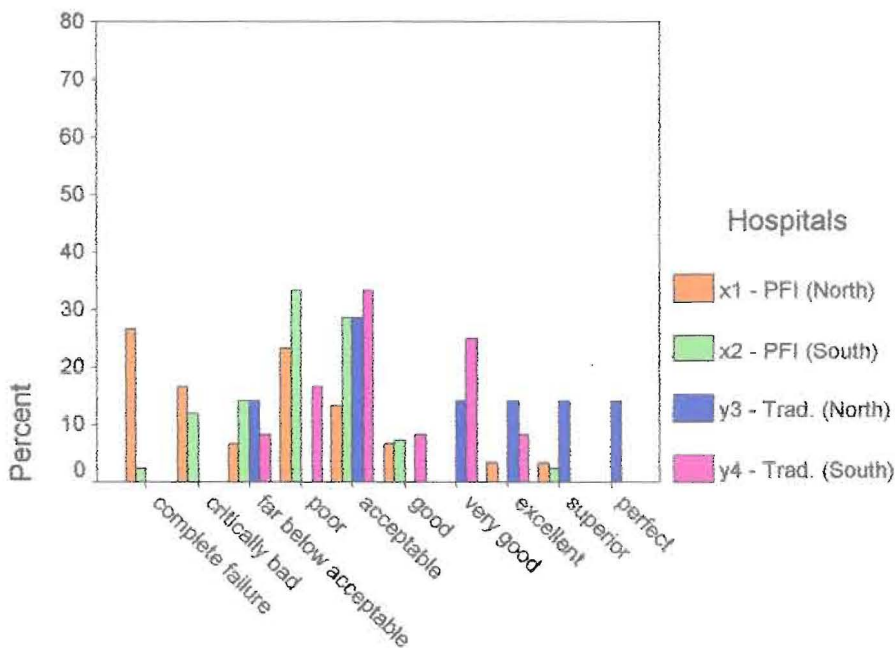


Figure 33: Direct Comparison of PFI and non-PFI Hospital Staff Response to User Psychological Needs

The dispersion of the results reveals less consistency and more variation in the PFI hospital (X1) than the non-PFI hospital staff response (Y3). There is also a greater degree of preference for the favourable preference levels in the non-PFI hospital (Y3) than the PFI hospital (X1). The PFI hospital in the South (X2) also achieved less favourable responses peaking at approximately 33% in the 'poor' preference level with a further 14% and 12% respectively in the 'far below acceptable' and 'critically bad' preference levels, despite achieving approximately 29% in the 'acceptable' preference level. The non-PFI hospital (Y4) staff results were more favourable with approximately 33% and 25% in the 'acceptable' and 'very good' preference levels, but also with a further 17% and 8% respectively in the 'poor' and 'far below acceptable'. Although staff responses in the PFI hospital (X2) revealed some variation and a tighter dispersion of the data, their responses were not as positive as the non-PFI (Y4) hospital staff responses.

Further information from the *other comments* section of the questionnaires reveals that some staff in the Northern PFI hospital find privacy is an issue as "*...confidentially a problem, walls thin also sound travels via roof cavity*" indicating a degree of physiological discomfort. For the non-PFI hospital in the South, staff stated that the "*...character and friendliness*" of the Victorian hospital evoked a degree of sentiment.

The chart (Figure 34) also highlights the difference of opinion between the PFI (X1) and non-PFI (Y3) hospital in the North and the PFI (X2) and non-PFI (Y4) hospitals in the South. The levels of preference are relatively diverse in the hospitals in the North compared to that of the South. The PFI hospital in the North (X1) reveals a general dissatisfaction with the 'social needs' of the user achieving a response of approximately 40% and 30% respectively in the 'poor' and 'complete failure' preference levels. However, some favourable replies were gained in the 'acceptable' (13% approx.) and 'good' (6% approx.) preference levels. While its non-PFI counterpart (Y3), acquired mainly favourable responses (33% approx.) for each of the 'acceptable', 'very good' and 'superior' preference levels.

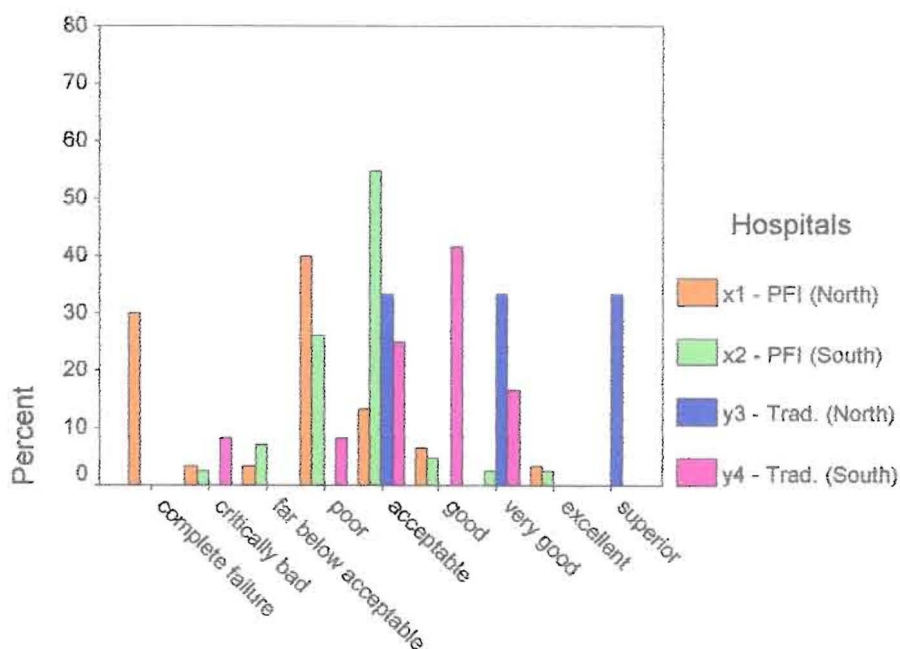


Figure 34: Direct Comparison of PFI and non-PFI Hospital Staff Response to User Social Needs

The PFI hospital in the South (X2) results were more favourable with the highest figure achieved in the 'acceptable' (55% approx.) with subsequent gains in the 'good' to 'excellent' preference levels. Less favourable results were achieved in the 'poor' (26% approx.) as well as the 'far below acceptable' and 'critically bad' preference levels. The non-PFI hospital (Y4) results were mainly favourable with approximately 25%, 41% and 17% respectively achieved in the 'acceptable', 'good' and 'very good' preference levels. However, some staff replies ('poor' and 'critically bad') reveal a degree of concern related to the *social needs* variable. The dispersion of the results in the Southern PFI (X2) and non-PFI (Y4) hospitals show a degree of uniformity however, the non-PFI hospital (Y4) reveal more significant favourable responses.

Further information from the *other* comments section of the questionnaire (Appendix 15) reveal staff in the Northern PFI hospital (X1) believed the current hospital environment facilitates less "...a sense of community within the Trust", compared to its predecessor. This may (in-part) be due to the location of the PFI and non-PFI hospital sites (see pp. 113 to 121). The centralisation of facilities and the location of the hospital buildings indicate some users may be restricted to services provided by the hospital, which may be limited or expensive. Overall, the non-PFI hospitals have gained more favourable responses, particularly Hospital Y3.

#### 4.5.4 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL PHYSICAL ATTRIBUTES

The staff surveys revealed mixed responses in the *Energy and Environment* Performance variable. There is a general spread of criticism from PFI and non-PFI hospitals (Figure 35) with the exception of Hospital Y4 (non-PFI in the South). Hospital X1 staff mainly perceived the *energy and environment performance* as a 'complete failure' (27% approx.) with a further 23% approximately in the 'critically bad' preference level. While the non-PFI hospital (Y3) achieved approximately 29% approximately in each of the 'acceptable', 'good' and 'very good' preference levels. The dispersion of the results reveals a greater degree of consistency was attained in the non-PFI (Y3) than the PFI (X1).

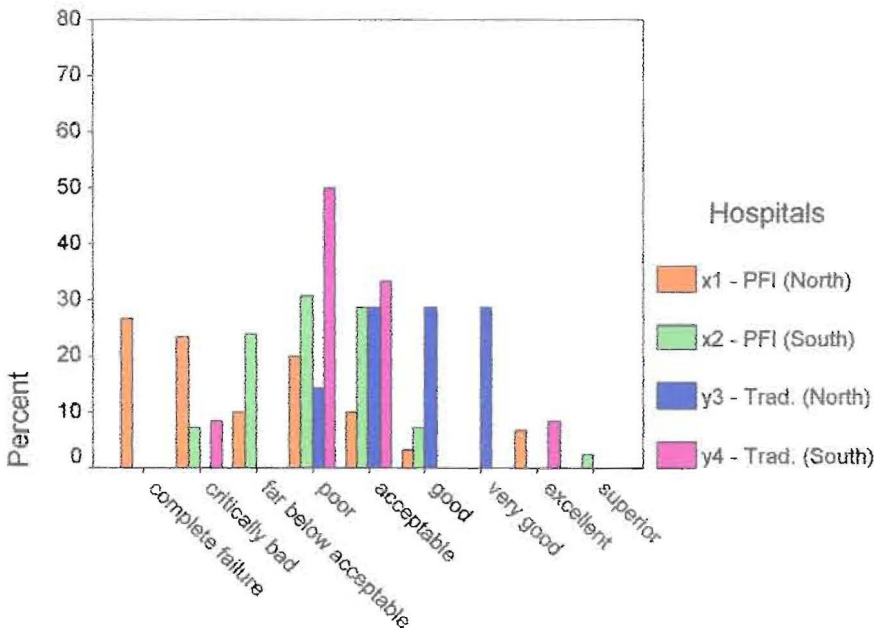


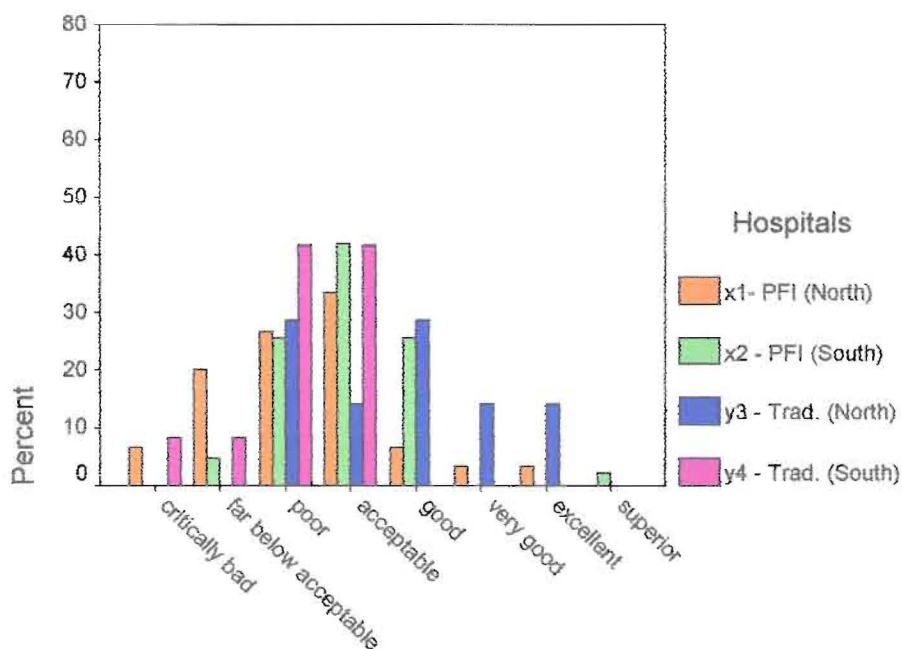
Figure 35: Direct Comparison of PFI and non-PFI Hospital Staff Response to Energy and Environment Performance

The Southern PFI hospital (X2) highest percentage was achieved in the 'poor' preference level (31% approx), with a further 29% approximately in 'acceptable'. While its non-PFI counterpart (Y4) highest percentage (50% approx.) was gained in the 'poor' preference level, with a further 33% in the 'poor'. Staff responses in the PFI hospital (X2) revealed variation in results since the figures show a wider dispersion of the data than the non-PFI hospital (Y4). Staff response showed a tighter dispersion of the results indicating slightly more consistency in opinions. Additional information from the *other comments* section (Appendix 15) of the questionnaires highlights potential seasonal problems with the PFI hospital in the North main reception/waiting area. Some hospital staff (X1) commented that the light and 'airy' main reception/waiting area belies some of the problems associated with the climate controls "...in summer – very hot, in winter – very cold". Overall, the non-PFI hospitals in the North and South (Y3 and Y4) have gained more favourable responses, particularly Hospital Y3.

The staff impression and appropriateness of the surroundings were more decisive and forthright (Figure 36) with reference to *construction quality*. This could also be a reflection of the day to day operations of the hospital environment, multi-tasking with patients, equipment/technology as well as the cumulative influences of the hospital procedures and/or situations. Hospital X1 staff perceived



the *construction quality* as 'acceptable' (33% approx.) but with a further 27% approximately gained in the 'poor' preference level. The non-PFI hospital (Y3) achieved approximately 29% in each of the 'poor' and 'good' preference levels. However, the subsequent results were gained in the favourable preferences. The variation of the results reveals a greater degree of positive preferences were achieved in the non-PFI (Y3) than the PFI (X1).



**Figure 36:** Direct Comparison of PFI and non-PFI Hospital Staff Response to Construction Quality

The PFI hospital in the South (X2) highest percentage was achieved in the 'acceptable' preference level (41% approx) however a further 26% approximately were gained in each of the 'good' and 'poor' preference levels. In contrast, its non-PFI counterpart (Y4) highest percentage of approximately 42% was gained in each of the 'acceptable' and 'poor' preference levels (Figure 36). Staff



responses in the PFI hospital (X2) were more favourable despite having a wider dispersion of the data than the non-PFI (Y4), which were slightly less favourable. The results reveal varying opinions in relation to the functionality of the spatial environment, and the appropriateness of the spatial requirements. The findings are also a further indication of the appropriateness of 'informed' choices and a form of protocol to inform the design development process as previous indicated in Chapter one (see pp. 18 to 22) as additional information suggest (*other comments* section) that hospital staff (X1) are dissatisfied with the working spaces "...often small – equipment kept in corridors".

#### **4.5.5 RECEPTION/WAITING AREA HOSPITAL LIFE CYCLE PERCEPTIONS**

When hospital staff were asked to consider whether the design of the hospital was *innovative* (Figure 37), approximately 35% of PFI hospital (X1) staff believed it was 'poor'. A further 14% each perceived it as a 'complete failure' and 'far below acceptable' compared to 10% and 14% respectively at the opposite ends of the preference scale ('acceptable' and 'good'). In the non-PFI hospital (Y3), the perceptions were varied with over 28% approximately achieved in the 'poor', 'very good' and 'excellent' preference levels.

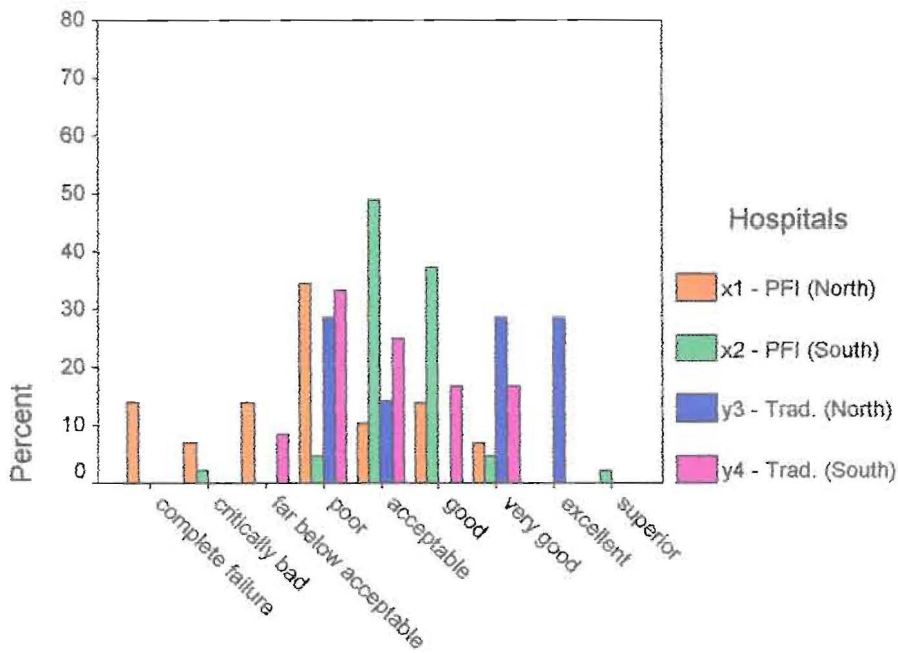
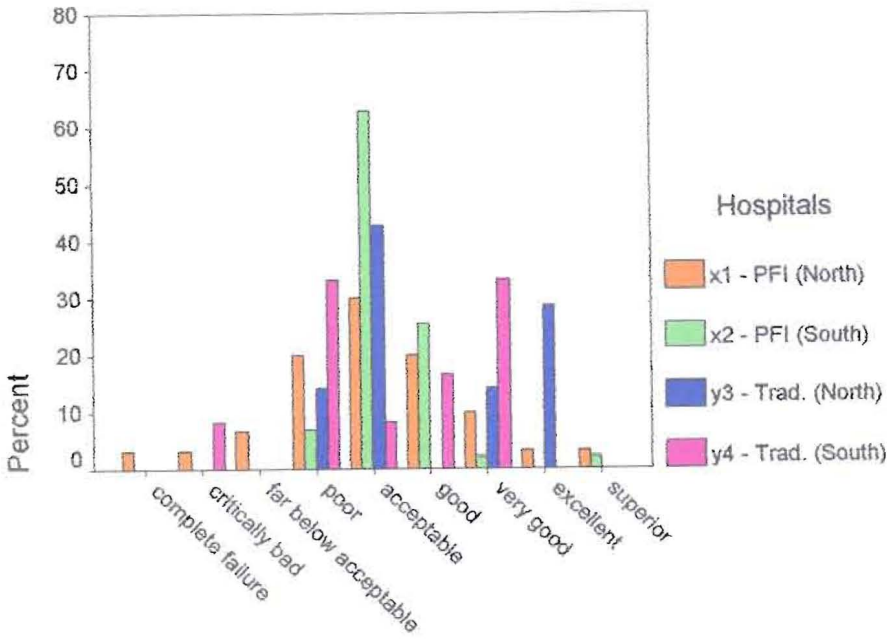


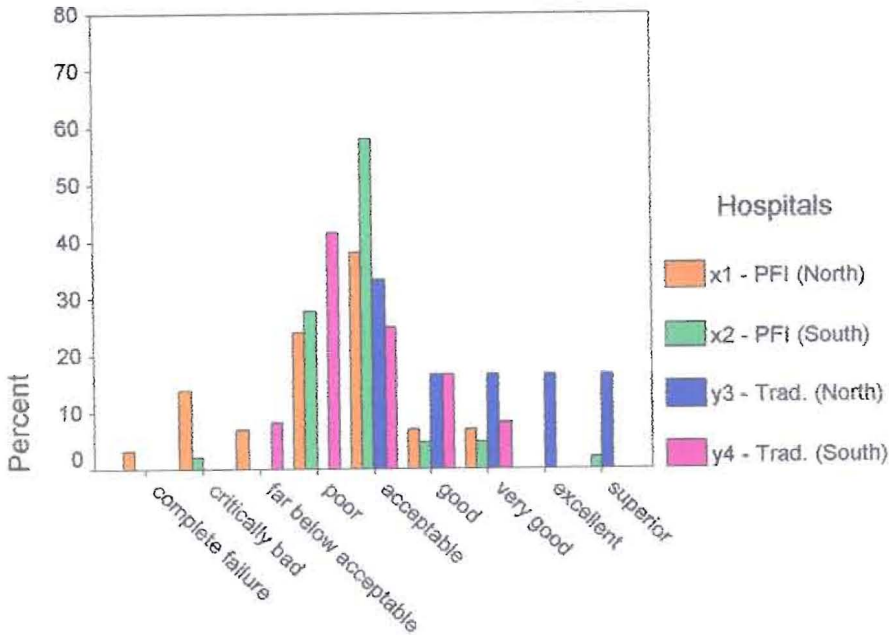
Figure 37: Direct Comparison of PFI and non-PFI Hospital Staff Response to Innovative Design

For the PFI and non-PFI hospitals in the South, the PFI hospital (X2) had favourable preferences with over 48% approximately for 'acceptable' and 37% approximately for 'good'. The non-PFI hospital (Y4) was amongst the mid position, achieving 33% approximately for 'poor' and 25% for 'acceptable'. The dispersion of the results suggests that the non-PFI hospital in the North (Y3) achieved more favourable perceptions than the PFI hospital (X1). Whereas in the South the opposite occurs, the dispersion of the results indicates that the PFI hospital (X2) staff perceptions were slightly more favourable than the non-PFI hospital (Y4).

Despite the PFI hospital staff (X1) having reservations about the design of the hospital, they were slightly more decisive but had less favourable responses (Figure 38) than the non-PFI hospital (Y3). Hospital X1 achieved approximately 30% for 'acceptable' but a further 20% each for 'good' and 'poor' preference levels. The PFI hospital in the South (X2) also gained slightly more favourable responses (63% approx. in the 'acceptable' preference level) for *response to hospital site* variable. While the non-PFI hospital (Y4) had varied results with approximately 33% for each of the 'very good' and 'poor' preference levels, as well as approximately 16% for 'good'. The dispersion of the results indicates that the PFI hospital in the North (X1) achieved less favourable perceptions than the non-PFI hospital (Y3). While in the South the opposite occurs once again, revealing the PFI hospital (X2) staff perceptions were slightly more favourable than the non-PFI hospital (Y4). Further information from the *other comments* section of the questionnaire revealed some hospital staff (X1) felt the location of the hospital on a hill, meant some patients were sometimes "...breathless" by the time they reached the outpatients department. Interestingly, considering Hospital Y3 (non-PFI – North) and X2 (PFI – South) semi-rural locations (see p. 117) as well as different eras of building designs, the external landscaping may (in-part) have contributed to staff positive perceptions of the *response to hospital site* variable.



**Figure 38:** Direct Comparison of PFI and non-PFI Hospital Staff Response to Hospital Site



**Figure 39:** Direct Comparison of PFI and non-PFI Hospital Staff Response to Circulation

Issues of circulation (Figure 39) did not fair as favourably with the hospital staff in the PFI hospital (X1) in the North compared to its

non-PFI counterpart (Y3). The PFI hospital (X1) achieved approximately 38% in the 'acceptable' preference level, while the non-PFI hospital (Y3) gained approximately 33% also in the 'acceptable' preference level. In the main the PFI hospitals achieved less favourable results, as a further 24% approximately was gained in the 'poor' and 13% in the 'critically bad' preference levels. The results in the South varied with the PFI hospital (X2) peaking in the 'acceptable' (58% approx.) preference level, while the non-PFI hospital (Y4) gained approximately 41% in the 'poor' preference level. The dispersion of the results and the variation of the data indicate there are some circulation issues for the PFI hospital (X1) in the North than the non-PFI hospital (Y3), whose results were considerable more positive. Hospital X2 (PFI in the South) data reveals mainly positive perceptions. However, the subsequent results indicate some concerns compared to its non-PFI counterpart (Y4). Parking facilities for hospital staff were generally considered to be important and was reflected in the information acquired from the pilot study (see pp. 67 to 82) and hospital staff surveys (Appendix 15). A summary of the findings have been included as an additional source of information since it relates (in-part) to a *sense of well-being* with regard to the psychological implications between the user and the hospital site. The results of the study show that there is a preference for the less favourable preference levels when the question of allocation of

parking spaces was considered (Figure 40). For the hospitals in North, the PFI hospital (X1) preference peaks at 30% approximately in the 'acceptable' preference level but goes onto achieve less favourable preferences in the 'poor' (23% approx.) and 'far below acceptable' (20% approx.). The non-PFI hospital (Y3) maintains a less favourable perception with approximately 50% peaking in the 'far below acceptable' and a further 33% in the 'poor'.

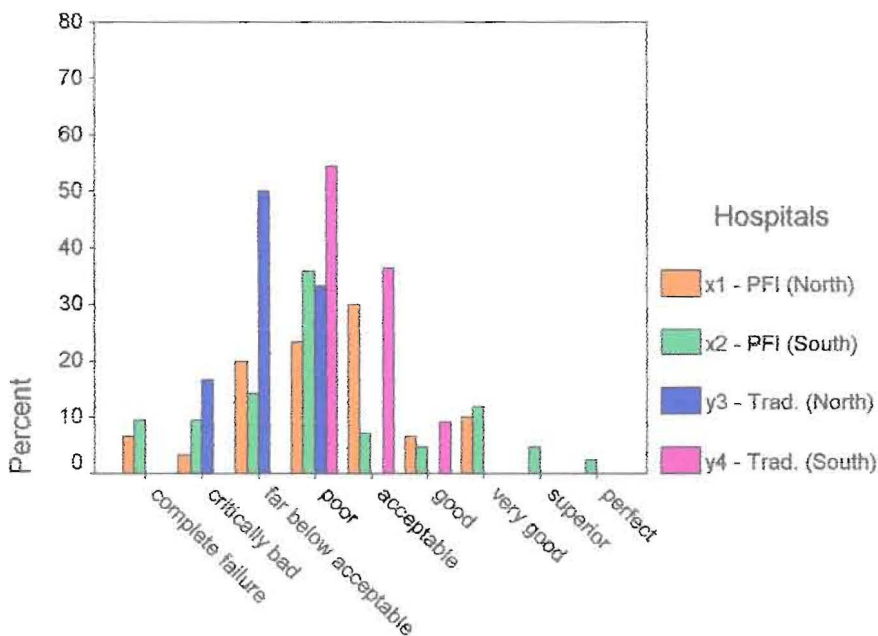


Figure 40: Direct Comparison of PFI and non-PFI Hospital Staff Response to Parking Spaces

The PFI and non-PFI hospitals in the South achieved a similar pattern with the PFI hospital (X2), achieving 36% approximately in the 'poor' preference level and a subsequent figure of 14% in the 'far below acceptable'. However, an opposite figure of approximately 11% was achieved in the 'very good' preference level. In contrast, the non-PFI hospital (Y4) peaks at approximately

55% in the 'poor' preference level but then gains approximately 35% for 'acceptable'. The results reveal a degree of variation for the PFI hospitals in the North (X1) compared to the non-PFI hospital (Y3), while the non-PFI hospital in the South (Y4) responses were more consistent and more positive than its PFI counterpart (X2). Further information (*other comments* section) reveals that hospital staff in the PFI hospital in the North (X1) believes the car parking facilities are insufficient and charges are disproportionate to previous expenses (Appendix 15), while the non-PFI hospital (Y3) consider it is inadequate for the locale.

#### **4.5.6 SUMMARY OF STAFF AGE AND GENDER IN SELECTED PFI AND NON-PFI HOSPITALS**

This section summarise the information acquired form the *age and gender* category. The key points of the staff surveys were:

##### **4.5.6.1 GENDER BALANCE**

- All who completed this aspect of the questionnaire indicated they were female. However, approximately 23% did not answer and therefore gender identification could not be established.

##### **4.5.6.2 AGE PROFILE**

- The staff surveyed were aged between the 35 to 44 and 45 to 54.

#### **4.5.7 SUMMARY OF STAFF PERCEPTIONS IN SELECTED PFI AND NON-PFI HOSPITALS**

This section summarise the findings of the staff surveys in the selected PFI and non-PFI hospitals, in relation to the opinions acquired from the *other comments* section of the questionnaires.



#### 4.5.7.1 PFI HOSPITALS

The salient points of the staff surveys in the PFI hospitals revealed:

- The spatial and physical arrangement of the hospital environment performed poorly for hospital staff functional needs, particularly for Hospital X1 in spite of a few positive results. Overall figures show significant concerns in the development of spatial planning.
- Hospital staff generally expressed negative opinions for the *psychological and social needs variables* (although Hospital X2 achieved slightly less critical responses). The results reveal particular concerns regarding communal interaction within public and private spaces.
- Considerable criticisms were made by hospital staff of the *energy and environmental* performance. Although some positive perceptions were achieved, the staff in Hospital X2 were slightly more optimistic. The *construction quality* perceptions were generally more negative in Hospital X1 than X2.
- The *life cycle* issues were generally positive in Hospital X2 (with the exception of the parking) and negative in Hospital X1 (with the exception of the hospital site setting).

#### 4.5.7.2 NON- PFI HOSPITALS

The key points of the staff surveys in the non-PFI hospitals were:

- The spatial and physical arrangement of the hospital environment received mainly positive comments for staff functional needs. However, some figures suggest concerns and highlight the need for improvements to the hospital environments.
- There were generally positive opinions for the *psychological* and *social* needs of the user expressed by most hospital staff (although Hospital Y3 had less critical responses particularly with regard to *social needs*). The results also reveal some concerns with communal public and private spaces.
- Staff were generally positive about the *energy and environmental* performance of the hospital facilities. Hospital staff in Y4 raised concerns regarding the *construction quality* of the hospital environment.
- Hospital staff perceived the *life cycle* issues as generally positive in Hospital Y3 (with the exception of the parking). Some concerns were raised regarding design aesthetics and circulation issues.

The results of the PFI hospital staff surveys reveal a general negative consensus for the spatial planning of the reception/waiting areas. In particular, the degree of criticisms (also identified in the *other comments* section) was levelled at the PFI hospital in the North (X1) indicates major concerns relating to the flexibility of the working environments.

In the PFI hospital in the South the criticisms were less and relate to some *psychological, energy and environmental performance* as well as additional features and/or services. In the non-PFI hospitals in the North and South, Hospital Y3 staff responses have generally been more positive while Hospital Y4 (South) critiques have generally been more advisory. The subsequent variables of the staff surveys relating to the psychological needs of the users show a degree of preference for the social and community liaisons, achieved in the non-PFI hospitals in the North and South.

The staff in Hospital X1 indicates the psychological benefit of this interaction was needed as a sense of isolation had impeded negatively on the impression of the outpatients department. In contrast, the staff surveys in the non-PFI hospitals (*other comments* section) identify the degree to which the character of the building (particular in Hospital Y4) evoke sentimental relationship with some of the hospital end users.

In view of the staff response to the function and appropriateness of the spatial planning, the findings also show that hospital staff in the PFI hospitals are generally less satisfied with the new facilities and articulate precisely where they feel the 'design in place' has been less successful. The non-PFI hospital staff comments identify the level of expectations for the 'perceived' new hospital facilities.

Lastly the cumulative effects of the remaining 'life cycle' variables indicate hospital staff primary concerns relate to the physical and functional appropriateness of the spatial planning. The results reveal that overall the non-PFI hospital in the North (Y3) performed particularly well in the surveys compared to the PFI hospital.

## **4.6 OTHER STAKEHOLDERS**

This section reveals the key issues of the data, discussed with some hospital staff and follow-up interviews with some administrative staff in PFI and non-PFI hospitals, NHS Trust managers, designers and building contractors. The findings relate to the PFI and non-PFI hospital building facilities, in particular, the perceptions of the outcome of hospital provisions and whether these perceptions has implications for user satisfaction.

### **4.6.1 HOSPITAL STAFF DISCUSSION/INTERVIEWS**

Initial perusal of the results revealed some significant concerns relating to the appropriateness of the spatial planning for the outpatients department, therefore it was important to establish the degree to which the dis-satisfaction impede on their day to day operations. Follow-up discussions (clinical) and interviews (administrative/receptionist) with some PFI and non-PFI hospital staff provided an additional source of information, which validated the concerns of the respondents' views. In addition, information acquired from surveys undertaken with hospital staff in PFI and non-PFI hospitals enabled a cross-reference of responses for the 'given' environments (Appendix 15).

The surveys undertaken with staff in PFI and non-PFI hospitals ascertain whether the claims made in the *other comments* section of the questionnaire (with reference to perceptions of the reception/waiting areas) reveal the degree to which satisfaction is attained by hospital staff. Significantly, the interviews explore some of the points raised in the *Literature Review* (see pp. 62 to 67) and *Pilot Study* (see pp. 67 to 82) by comparing hospital staff and designers/architects responses to the findings. The discussions with staff in the PFI hospitals in the North and South examine whether departments facilities (i.e. outpatients' clinics and wards) were compromised in order to make the main entrance and corridor appear dramatic in scale and proportions. Discussions with hospital staff in the PFI hospital in the South, felt its predecessor (non-PFI hospital it replaced) no longer facilitated modern needs such as small consultation/treatment rooms, lack of storage for materials/equipment (Appendix 15) and the number of patients attending were considerably more than the building could accommodate. However, the majority responded positively and were less critical with their impression of the reception/waiting areas being dark and less welcoming. Nevertheless staff expressed a view that they were less satisfied with the design outcome of the waiting areas (see pp. 186 to 191). The hospital staff interviewed in the traditional built hospitals in the North and South echoed similar responses to the survey findings in section 4.4.1, with regard to

older hospital facilities. They believed that the internal architecture of the hospital environment was built to last over a number of decades. However, as hospital buildings began to decay due to lack of investment and maintenance by the consecutive governments, they believed it was inevitable that new hospital buildings and facilities would be needed to accommodate modern medicine and machines. In both the PFI hospitals, some staff questioned the appropriateness of the large windows commenting on ventilation as it was warm in the summer and cold in the winter (Appendix 15).

Administrative staff were solicited for their views, particular those responsible for the 'administration' and 'customer service' issues relating to the 'outpatients departments'. Considering the logistic implications of the new hospital facilities (see pp. 36 to 41), their observations provided a unique insight of the current realities for completed 'new build' PFI hospital building projects. Some clinical and administrative staff in the North (X1) had expressed their concerns regarding the move to the new hospital building. They felt the transition from the old building to the new facilities could have been less stressful if they had received adequate information and earlier notification about the move. The most vocal opinions related to 'relocation information' and 'design development' of the new hospital. Some administrative staff members in the North (X1) felt that there was no effort made to inform or consult staff about the

design of the new hospital and the inevitable move. They also expressed a view that some facilities were "...*compromised*" for effect, resulting in a number of rooms being too small for the purpose intended while some did not have access to natural light.

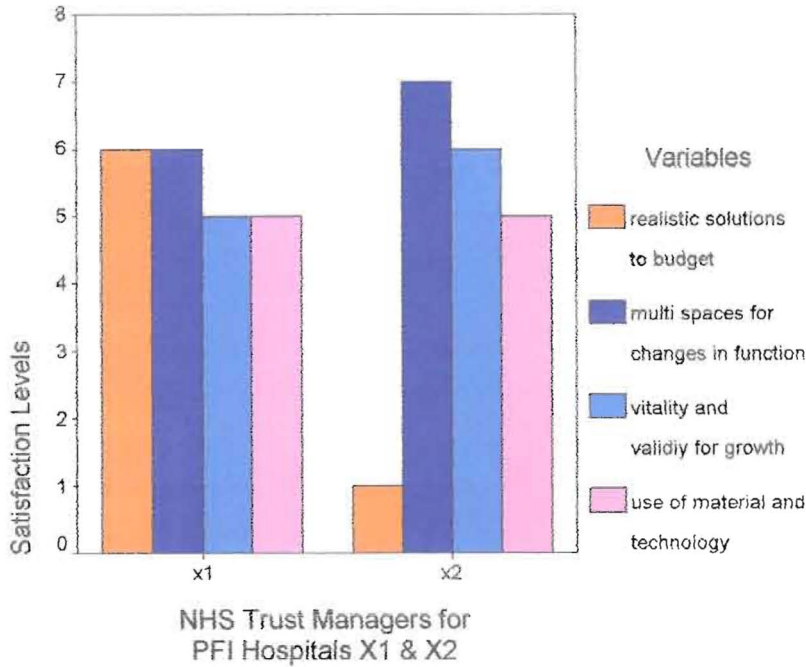
With regard to the facilities issues, some receptionists felt that no task lighting, screen savers and the feeling of being unprotected in a large area were all points for concern. In addition, an electronic 'data stream' that provided information to patients when checking-in for an appointment had not been installed at the main reception desk. These concerns could have contributed to the less favourable results attributed to the PFI hospital in the North (X1) and South (see pp. 192 to 195), whereby the *subconscious needs* of the user were generally viewed as poor compared to their non-PFI counterparts. Yet, there were two administrative staff (X1) who believed the move to the new hospital was worthwhile as its predecessor was old and in need of considerable repair. They liked the modern hospital and believed some people (especially older workers) were resistant to change. However, they felt the local amenities were less accessible in the new location (i.e. access to public transport) and hospital provisions (e.g. food, shop) were more expensive than the original services provided in the old hospital. Some staff (X1) also believed the new position of the main reception desk distanced itself from the rest of the hospital



community. A feeling of segregation was expressed as well as a loss of 'communal spirit' (Appendix 15). This was particularly evident in the psychology of the new hospital uniforms. Each hospital department uniform was colour coded and as a result (whether consciously or unconsciously), hospital staff members were drawn to their respective groups during breaks. Several trips to the canteen throughout the visit confirmed their observations.

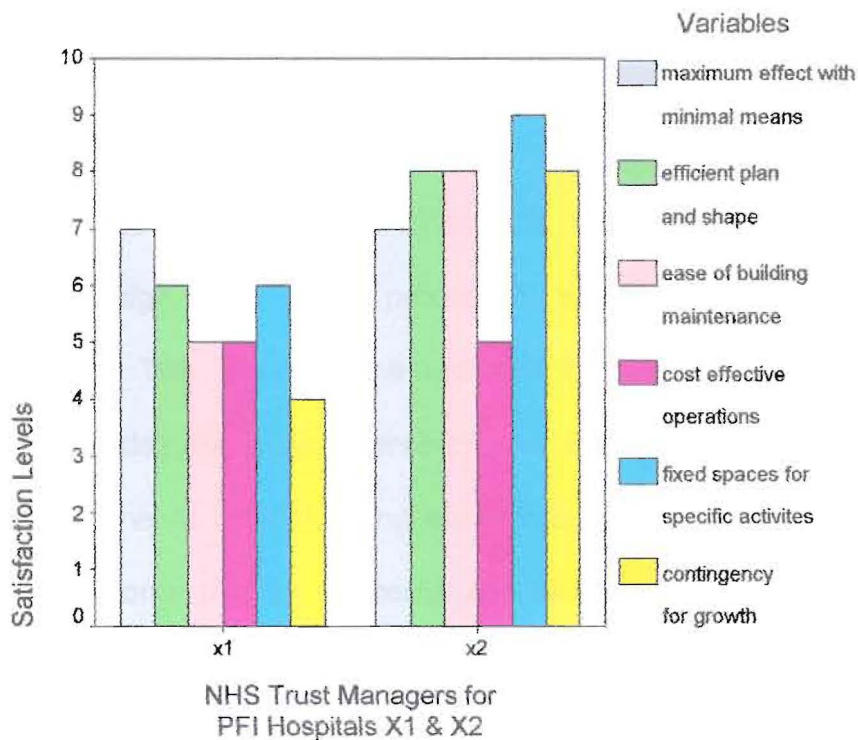
#### **4.6.2 NHS TRUST MANAGER PERCEPTIONS**

Discussions with hospital staff and NHS managerial executives highlighted a growing concern identified in section 1.2.3 regarding the communicative process between client and contractor. Figure 36, emphasises the differences in perception regarding construction quality, while Figure 41 facilities perception differences between the hospital staff and NHS Trust Managers. Two NHS Trust managers from the PFI hospitals (X1 and X2) completed survey forms relating to their perceptions of the hospital facilities. The information was ascertained from direct observations due to the size of the sample. However, the findings presented highlight the fragility of the communicative process when perceptions are formulated on interpretations as discussed in section 1.3.1. The data from the staff surveys were examined in parallel with the responses of the managerial staff, the information inferred mixed opinions of the 'perceived' performance of both parties.



**Figure 41:** NHS Trust Managers Response to the PFI Hospital (X1 & X2) Facilities

Some senior members of the management committee for the selected NHS Trust were asked to respond to questions relating to *finance and building systems*. Two respondents in the PFI hospitals in the North and South felt that the hospital building was acceptable in terms of ease of building maintenance, cost effectiveness (energy efficiency and upkeep), sustainability and material/technology related issues. The participant in the PFI hospital in the South believed that cost control (budget requirements), volume, variety of spaces for multi purpose, fixed and specific activities were good (Appendix 16). The overall effect with minimal means was viewed as very good although some concerns were expressed regarding the contingency for growth. This was viewed as poor (Figure 42 and Appendix 16).



**Figure 42:** Additional NHS Trust Managers Response to the PFI Hospital (X1 & X2) Facilities

Likewise for the PFI hospitals in the North and South, hospital staff (X1) perceived the *arrangement of spaces* low on the preference levels whereas Hospital X2 were slightly more satisfied. In contrast the NHS Trust managers in Hospital X1 perceived *efficient plan and shape* and *fixed spaces for specific activities* as 'good'. Whereas the NHS Trust manager for X2 perceived the same variables (*efficient plan and shape* and *fixed spaces for specific activities*) as 'excellent' and 'superior' respectively. The opinions of the NHS Trust managers are interesting as it gives an insight into the 'perceived' effectiveness of the communicative process between hospital staff and management.

The results revealed varying opinions in relation to the functionality of the spatial environment and the appropriateness of the spatial requirements. The findings are a further indication of appropriateness of 'informed' choices and a form of protocol to inform the design development process as previously indicated in section 1.3.1. The views of the two PFI NHS Trust Managers revealed that despite some diverse criticisms from users (patients and staff) of the reception/waiting areas (see pp. 130 to 183 and 184 to 210) some of their concerns appear to be reflected in X2 opinions of the internal environment (Appendix 16 – Question 1.a.).

Further information via the *other comments* section revealed a preference for dialogue at the design and construction stage of the hospital build (Appendix 15). Significantly, whereby X1 end users were more critical of their surrounding, in general the PFI NHS Trust Manager believed it provided adequate facilities for their immediate needs. Further comments (Appendix 16 – Question 2.f.) reveal there is room for improvement for long-term spatial planning issues. The envisaged flexibility specified in the original contract by a PFI NHS Trust manager was believed not to have materialised in accordance with subsequent discussions. With hindsight the respondent in the North (PFI) indicate they would not use *output-based specifications* again (Appendix 16 – Question 1.f.).

#### **4.6.3 ARCHITECT/DESIGNERS AND BUILDING CONTRACTORS PERCEPTIONS**

This section highlights the key issues of the information acquired from architect/designers and building contractors. The findings relate to the PFI and non-PFI hospital building facilities, specifically the perceived outcome of hospital provisions and whether the facilities addressed the needs of the end user.

An interview with the architects of the PFI hospital (X1) was well received compared to others which were cancelled on the day arranged, or in transit. One to one interviews were difficult to organise with building contractors when they were informed that the discussion would be related to the design development process (between designer and building contractors) for 'new build' hospital building projects. The author's most successful approach to acquire information from designers and building contractor were obtained from attending seminars and conferences. The data acquired related to:

- Form and Function
  - Design Aesthetics
  - Design Performance
- Design Development Process
  - Client, Architect/Designers and Consortium
  - Design vs, Budget

When architect/designers and building contractors were approached to discuss their undertaking in developing 'new build' hospital building projects and aspirations in terms of user satisfaction, the findings were quite revealing. The collaborative process and control of the design process appear to be the main concern with regard to design aspirations. Some designers felt the shift in dynamics, whereby the building contractors' liaison with the clients for the design development process, affected the effectiveness of their input in terms of user needs and subsequently user satisfaction. This was a point of concern identified in section 1.2.3., whereby the PFI/PPP meant the working relationship between the architect/designers and Consortium place the procurement of design development in a subcontract role/position. In terms of the 'new build' hospital projects selected for this study, the findings reveal concerns relating to the ambient attributes (patients) as well as the function and performance (staff) of the hospital environments (see pp. 130 to 210).

Some building contractors believed 'new build' hospital projects were designed, built and completed on time within the 'agreed' design and build framework, contrary to some international observer opinions.[146] Some building contractors also suggested that initial 'teething problems' were inevitable due the newness of the programme and the structure of different contracted

collaborations. However as the previous results indicate (section 4.4), the effects of minimal requirements via output specifications has implications for the design aspirations of the 'new build' hospital projects. The implications are particularly importance in light of the findings of the hospital staff surveys (Appendix 15) and the PFI NHS Trust Managers perceptions (Appendix 16).

section 1.3.1 indicates that the lack of an effective dialogue and/or collaboration has implications for the end user in terms of user satisfaction levels. The combination of 'minimum requirements' and 'collaborative process' is significant as these variables -used unwisely- have financial implications (e.g. additional departments/ facilities) for future hospital developments. For the moment, the necessity for new hospital facilities is one of the Labour Administration's programmes for improving health public services (see pp. 1 to 17). However, with the cost of 'new build' hospital building projects escalating,[147] there is a danger that 'design excellence' could be compromised before past criticisms are addressed considering the decline of capital investment for public services in the 1970s (see p. 3).

When the designers and building contractors were presented with the initial findings of the research project (Appendix 17), they expressed concerns relating to the nature of the collaboration

process in terms of 'time', 'user feedback' and 'design expectations'.<sup>cc dd</sup> Subsequent discussions with building contractors and architects revealed that time was considered to be a premium, since revisions in building specifications usually incur additional charges. User feedback was generally ascertained when 'teething problems' materialised, once the project had been completed. Repairs were in line with contractual agreement.

User participation or collaboration in the design development process was unusual and not generally undertaken. Design specifications were developed with designers/architects. For designers/architects time related to the framework for completing design drafts before final design concepts and specifications were agreed. User feedback usually did not occur since information was obtained via building contractors and *output specifications*. They relied on past collaborative processes, experiences and design forums relating to current practices. The general consensus was that design expectations were carefully considered in accordance with financial considerations.

The patients and staff surveys from the selected PFI and non-PFI hospitals reveal the lack of input has implications for user satisfaction. In particular, the selected PFI hospitals perceptions

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<sup>cc</sup> Conference, (2001), *Building a 2020 Vision: Future Healthcare Environments*, London

<sup>dd</sup> Conference: (2002), Public, Private Finance Congress, Sponsors – Lovells, London



indicate the lack of 'informed' contribution distance the design development process from implementing 'realistic' solutions targeted to the needs of the end user and the hospital site community. Ervin Pütsep states:

*"...A sound general design can always be modified in detail: a perfect detail does not guarantee a perfect whole. Unless the basic nature of a problem is understood, there is a danger that time will be spent in obtaining knowledge of relatively unimportant details". [148]*

The complexity of the design development and collaborative process reveals it is not always possible to find an exact solution to a problem that requires multiple considerations. Generating a criteria that enables compromise, which applies a holistic solution to a given set of circumstance generated by specific knowledge, is likely to address user satisfaction issues.

#### **4.6.4 SUMMARY OF OTHER STAKEHOLDERS PERCEPTIONS**

This section summarise the findings of the PFI and non-PFI hospital staff discussions and interviews as well as the key issues of NHS Trust managers (PFI), architect/designers and building contractors in relation to the information acquired from the *other comments* section of the questionnaires.

#### 4.6.4.1 SUMMARY OF HOSPITAL STAFF DISCUSSION/INTERVIEWS

The salient points of the discussion/interviews undertaken with PFI and non-PFI hospital staff revealed:

- The internal/external visual setting was aesthetically pleasing via the main reception entrance and general waiting area.
- The main reception/waiting area was bright and spacious.
- The appropriateness of the large windows in view of the lack of climate control when experiencing seasonal weather conditions was perceived as inefficient.
- The 'new build' hospital environment did not facilitate the physical and functional needs of their clinical activities (e.g. small working areas and lack of adequate storage space).
- Staff perceived some design outcomes compromised the size and operation of clinical rooms.
- Limited implementation of intended technology (e.g. data stream information point).
- Local amenities were less accessible and limited staff to services/amenities provided at the hospital site.
- A sense of community and social interaction perceived to be minimised or lost.
- Relocation information relating to the date and logistics of the move was perceived as inadequate, which caused

unnecessary stress when making preparations for the move to the new hospital facilities.

#### **4.6.4.2 SUMMARY OF NHS TRUST MANAGERS PERCEPTIONS**

The key points of the discussion/interviews undertaken with NHS Trust managers (PFI) show:

- The building maintenance were acceptable
- The life cycle finances, sustainability and material/technology related issues were cost effective.
- The variety of fixed and multi purpose spaces were adequate.
- Managers raised concerns relating to the contingency for growth of spatial planning.
- Concerns that the use of *output-based* specifications limited the contingency for growth.
- A PFI NHS Trust Manager perceived the installed design outcome, did not meet the envisaged flexibility as specified in the original contract.
- Some hospital managers questioned the effectiveness of the collaborative process, as consultation of the 'specific' needs of the hospital end user was sometimes loss in translation.

#### 4.6.4.3 SUMMARY OF ARCHITECT/DESIGNERS AND BUILDING CONTRACTORS PERCEPTIONS

The main points of the discussions/interviews undertaken with architect/designers and building contractors highlight:

- Architect/designers believed the shift in the collaborative process whereby the building contractor liaised more with the client, jeopardised the design development process.
- The input from architect/designers at the initial stages of the design development process did not support the level of input needed to communicate design aspirations of the client(s) profile.
- Architect/designers perceived *time* was considered of primary importance by building contractors at the expense of design aspirations.
- Building contractors believe the new hospital facilities were designed, built and completed on time.
- Building contractors indicate the use of modular designs and *output* specifications were beneficial formats to meet the specific requirements of the client(s) and the general needs for hospital services.
- Building contractors felt the collaborative process in place generally aided the construction process by reducing the timescale of the hospital building projects and in turn costs.

In view of the PFI and non-PFI hospital surveys, the staff and manager interviews reveal the spatial planning and the functional needs of the user were acceptable in the short term but not ideal in the long-term. The findings demonstrate the specific concerns of the hospital end user and highlight issues associated with designs, which do not sufficiently accommodate its intended purpose. The managers (PFI), architect/designer and building contractor findings also indicated the additional concerns associated with the collaborative process between client and provider. These concerns reveal implications for design development process and emphasised the importance of balance and compromise when dealing with cost effectiveness and value for money issues, in terms of the spatial planning enhancing user satisfaction levels (discussed further in the next chapter).

#### **4.7 HOSPITAL 'A' REVISITED (SURVEY)**

With the information acquired from the surveys undertaken in PFI and non-PFI hospitals, further investigations were employed to establish whether ongoing modifications to Hospital 'A' (non-PFI) facilities (reception/waiting areas) had influenced user perception of the hospital environment. This is particularly pertinent as information from end users suggests that renovation was undertaken without end user participation in the hospital re-

construction design process. In addition, the re-survey serves as a microcosm of a larger project that may reveal either the benefits or inadequacies in the design development and collaborative process between hospital client(s) and building contractors. The new questionnaires (see pp. 102 to 108 or Appendices 5 and 6) were utilised in Hospital 'A' in order to evaluate end users satisfaction levels. Hospital 'A' was also renamed Hospital Z5 for identification purposes (in order to distinguish between the questionnaires and re-survey) as well as enabling an assessment of the findings with the pilot study.

#### **4.7.1 RESULTS OF PATIENT SURVEYS (Z5) COMPARED WITH THE PILOT STUDY**

The data acquired from patients in Hospital 'Z5' are based on observations from the statistical information and the *other comments* section of the questionnaire. In addition, when appraising the patients' surveys the first five sub-variables relating to the internal environment were selected for further examination. The figures below highlight the approximate percentage of patients' response to the selected sub-variables. The remaining supplemental variables were summarised in order to maintain a holistic viewpoint and uniformity of the implications of the contributing variables.

#### 4.7.1.1 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL ENVIRONMENT

In the pilot study, patients' perception of the hospital reception/waiting area related generally to the spatial planning. In particular, wheelchair users felt the arrangement of the space sometimes hampered movement. In the re-surveyed study, information from the 'additional comments' sections suggests this opinion had not changed as wheelchair users still believe consideration should be taken into account to accommodate their needs. Patients 'slightly agree' (25% approx.) that the reception/waiting area was *small* (Figure 43).

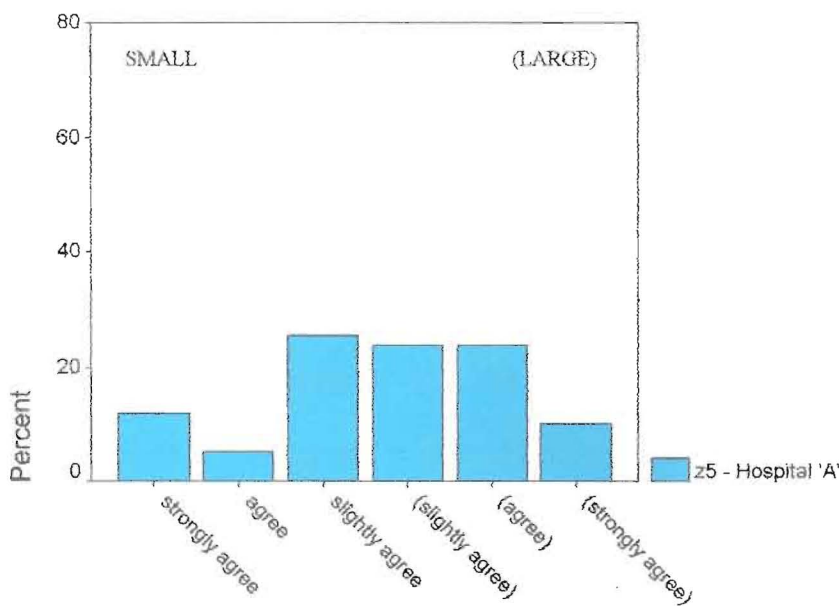


Figure 43: Hospital Z5 Reception/Waiting Areas – Small or (Large)

However a further 23% approximately in each of the '(slightly agree)' and '(agree)' preference levels perceived it as *large* revealing varying opinions. The information in the *other comments* section of the questionnaire reveals that the on-going building work may be an indication of the varying perceptions.

The lighting aspects in the pilot study were a combination of artificial and natural light. When the re-survey was undertaken, there was an increase in use of artificial lights near the reception/waiting 'check-in' point due to the renovations in the corridor/walkway near the reception/waiting area of the outpatients department. The bar chart (Figure 44), shows that approximately 29% of the patients surveyed in Hospital Z5 'agree' that the reception/waiting area was light with a further 22% in the 'strongly agree' preference level. However, the chart also reveals a varied spread across the preference levels that extend to the *dark* variable '(slightly agree)'. The variable for the reception/waiting area appearing *spacious/cramped* may in-part support an earlier view as stated in the *small/large* variable. The response from patients in Hospital Z5 (Figure 45) suggests a preference for *spacious* in the 'slightly agree' (26% approx.) preference level, with approximately a further 25% and 18% respectively in the 'agree' and 'strongly agree' preference levels.



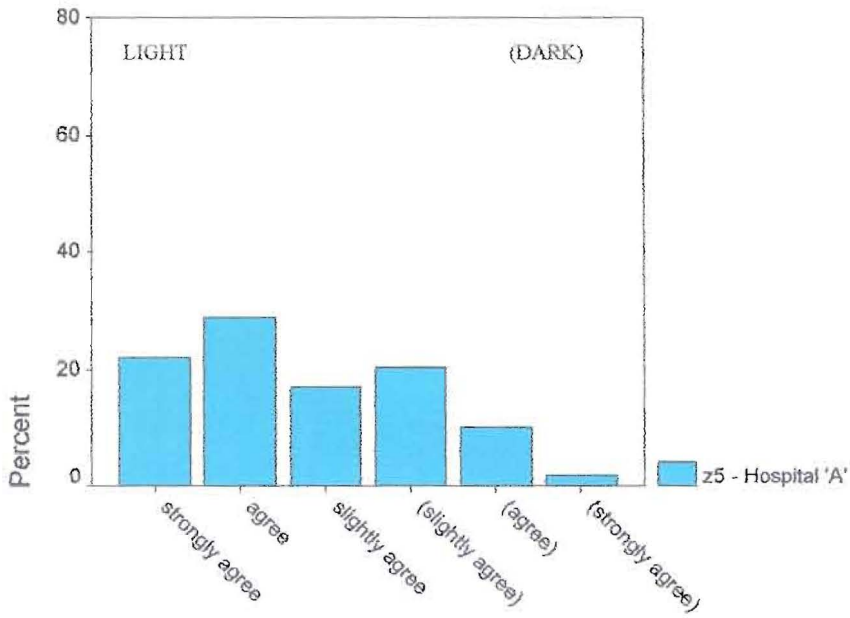


Figure 44: Hospital Z5 Reception/Waiting Areas – Light or (Dark)

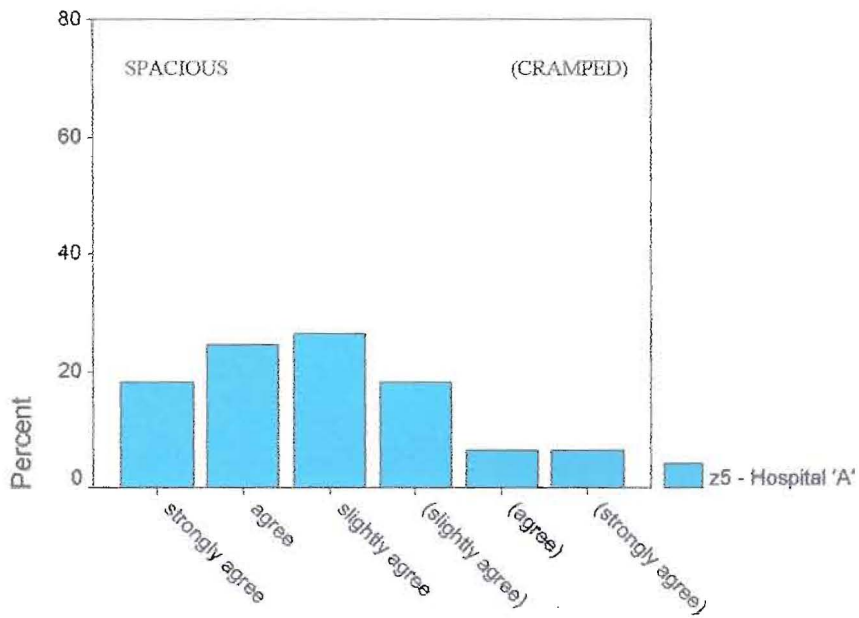


Figure 45: Hospital Z5 Reception/Waiting Areas – Spacious or (Cramped)

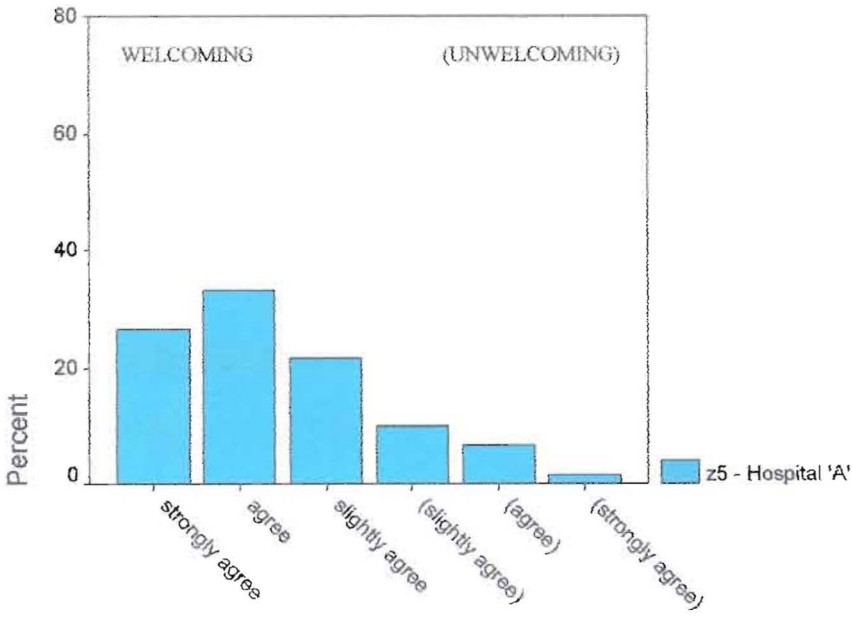


Figure 46: Hospital Z5 Reception/Waiting Areas – Welcoming or (Unwelcoming)

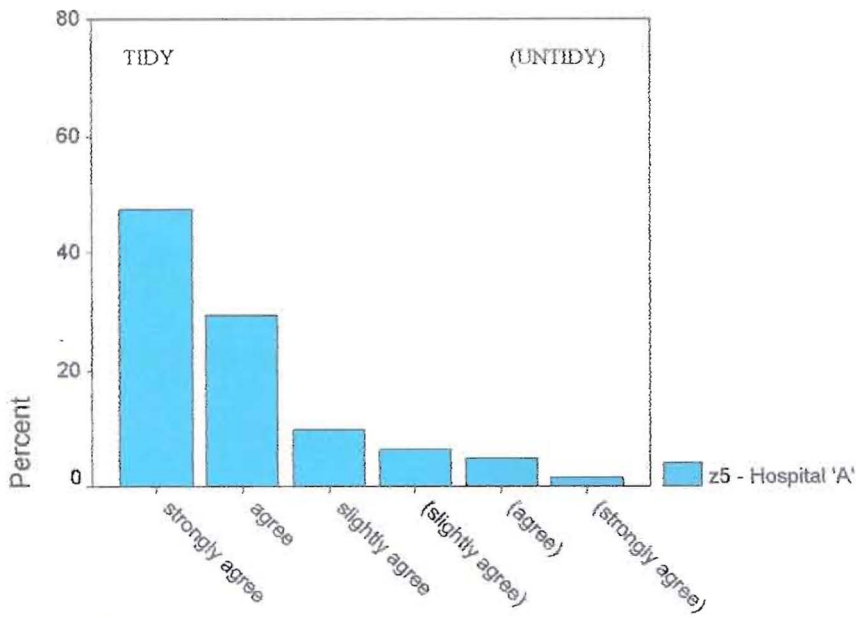


Figure 47: Hospital Z5 Reception/Waiting Areas – Tidy or (Untidy)

Hospital Z5 had achieved favourable opinions in the pilot study relating to the hospital reception/waiting area. Most patients perceived the environment to be welcoming and this had not changed in the re-survey (Figure 46) with approximately 33% and 27% respectively achieved in the 'agree' and 'strongly agree' preference levels. Information from the *other comments* section of the questionnaire reveals patients' positive impressions of the staff and the *welcoming* environment of the reception/waiting areas. However, some patients believe further modifications (more colourful interiors) would be appreciated. The pilot study revealed that most patients perceived the reception/waiting area to be tidy, although approximately a third of participants perceived it to be cluttered. In the re-surveyed findings, the preference were more definitive (Figure 47) with approximately 48% achieved in the 'strongly agree' preference level and a further 30% in the 'agree'. Additional information from the *other comments* section of the questionnaire indicate that some patients would like "...cleaner" outpatients departments and toilets.

In view of the building work that was taking place, patients' perceptions were relatively similar to the findings of the pilot study. However, more views were expressed regarding elderly and physically impaired users whereby requests for more provision and consideration for their needs.

#### 4.7.1.2 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL FURNITURE

Respondents in Hospital Z5 were asked to consider whether the furniture was *colourful* or *dull* (Figure 48). Most participants perception were marginally positive with approximately 28% in the 'slightly agree' and 14% in the 'strongly agree' preference levels. However, on further examination of the results the second highest figure was achieved in the *dull* variable with approximately 25% for the '(agree)' and 16% for the '(slightly agree)' preference levels, suggesting a varying degree of opinions.

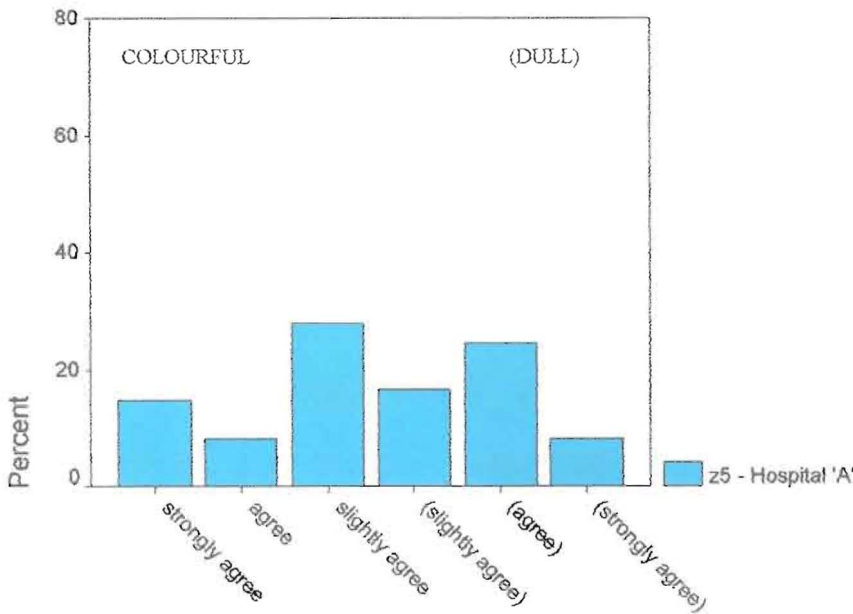


Figure 48: Hospital Z5 Reception/Waiting Areas Furniture – Colourful or (Dull)

Additional information from the *other comments* section of the questionnaire suggest some patients would like the clinics to be colour co-ordinated to differentiate between the outpatients department. They also perceived the furniture as "...clean" but also the arrangement "...could be more wheelchair friendly".

Patients in the Hospital Z5 were asked to consider the tactile qualities of the furniture (Figure 49). Although the highest figure was achieved in the *hard* variable 'slightly agree' (30% approx.) a further figure of 13% was gained in the 'agree' preference level. The results also reveal that patients mainly perceive the furniture to be *soft* achieving approximately 27% in the '(slightly agree)' preference level and a further 15% in the '(agree)'. Hospital Z5 results show a degree of variation, but indicate a preference for the *soft* variable.

When patients had to consider to what degree the furniture provided comfort, the results reveal a preference for the *comfortable* variable (Figure 50). The findings show approximately 30%, 25% and 21% respectively was achieved in the 'slightly agree' 'agree' and 'strongly agree' preference levels. Hospital Z5 patients expressed a view that sofa(s) could be a welcome addition to the reception/waiting area.

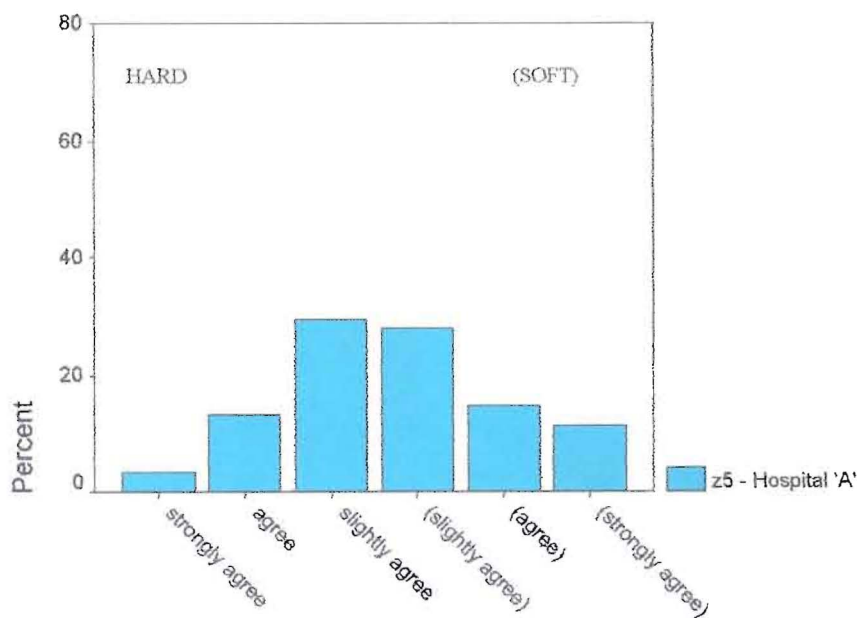


Figure 49: Hospital Z5 Reception/Waiting Areas Furniture – Hard or (Soft)

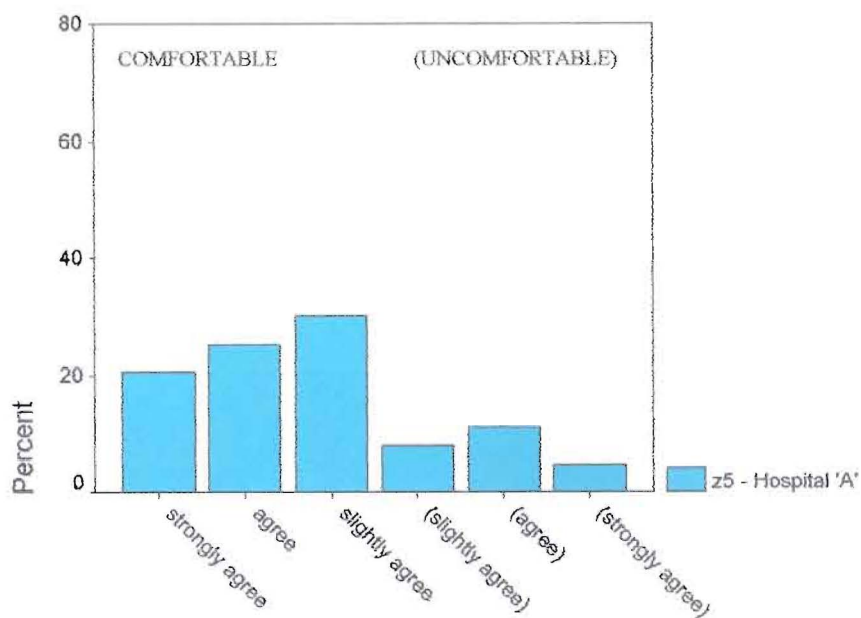


Figure 50: Hospital Z5 Reception/Waiting Areas Furniture – Comfortable or (Uncomfortable)

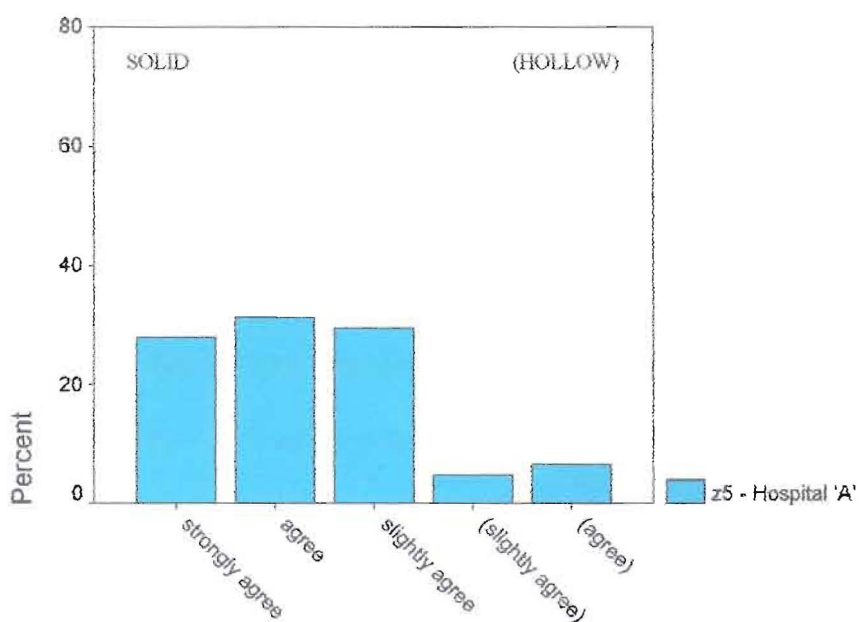


Figure 51: Hospital Z5 Reception/Waiting Areas Furniture – Solid or (Hollow)

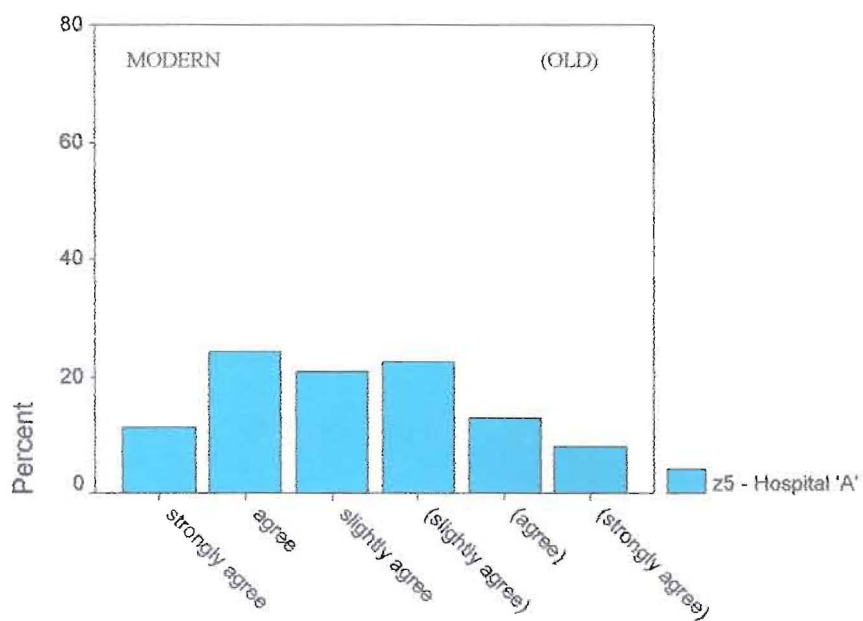


Figure 52: Hospital Z5 Reception/Waiting Areas Furniture – Modern or (Old)

Figure 51 reveals patients generally perceived the furniture to be *solid* achieving the highest figure of approximately 31% in the 'agree' preference level. A further 28% and 30% respectively was gained in the 'strongly agree' and 'agree' preference levels. When patients were asked to consider whether the reception/waiting area furniture was *modern* or *old*, there was a range of opinions (Figure 52). The highest figure was achieved in the *modern* variable with approximately 24% in the 'agree' preference level. Marginally behind was a figure of approximately 23% but in the '(slightly agree)' preference level of the *old* variable. The dispersion of the data indicates a degree of inconsistency in patients' opinions for the *modern* or *old* variable.

Some evidence from the *other comments* section of the questionnaire suggest some patients perceived the furniture as "...clean" but also believed some "...could do with a bit of *modernisation*". Compared to findings of the pilot study, in the re-survey patients expressed more stylised and practical solutions for the reception/waiting areas of the outpatients department, particularly for 'special needs' users.



#### 4.7.1.3 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL INFORMATION SYSTEMS

In the pilot study, patients expressed a view that the signage was generally *clear* and as a result achieved a preference percentage of approximately 95% even though additional information highlighted patients' views for further improvements. The re-survey results (Figure 53) maintain a similar preference; however the level of preference in the modified questionnaires for the *clear* variable is interesting. The highest figure has been achieved in the 'strongly agree' (36% approx.) preference level with subsequent figures of approximately 22% for the 'agree' and 16% for the 'slightly agree'.

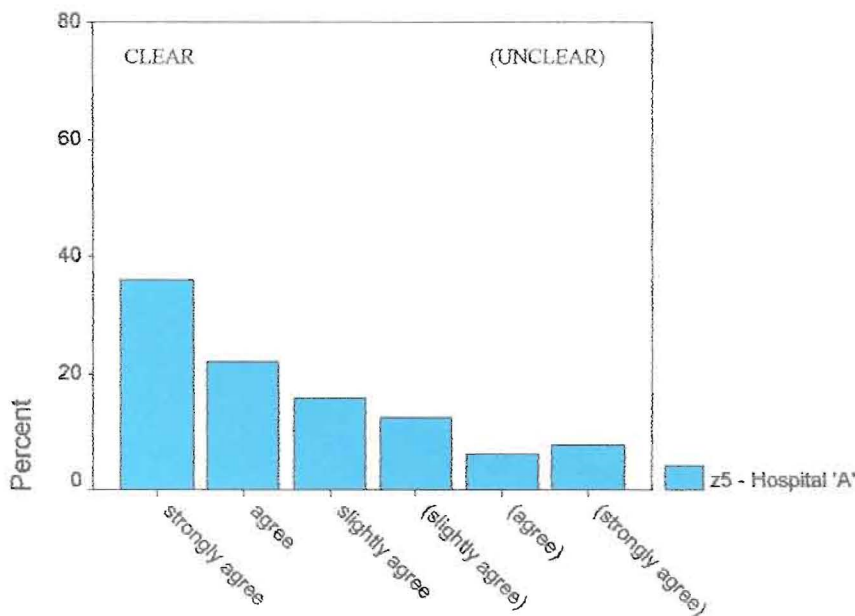


Figure 53: Hospital Z5 Reception/Waiting Areas Information Systems – Clear or (Unclear)

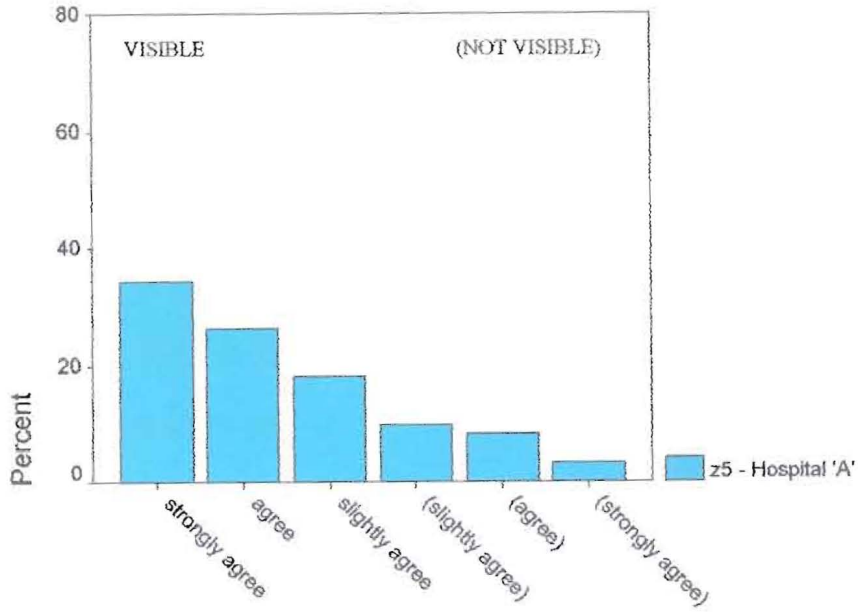


Figure 54: Hospital Z5 Reception/Waiting Areas Information Systems – Visible or (Not Visible)

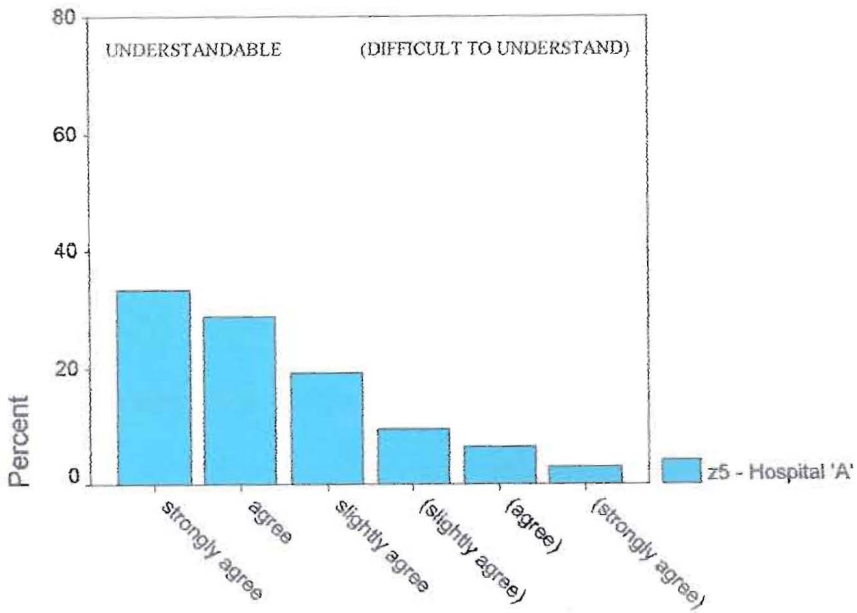


Figure 55: Hospital Z5 Reception/Waiting Areas Information Systems – Understandable or (Difficult to Understand)

However, additional information from the *other comments* section of the questionnaire supports and re-states the concerns highlighted in the pilot study regarding clearer information to the different departments and bolder signs. Some patients still believe the signage is not clear because they "...wander about" until someone (usually staff) directs them to the right place. Other patients suggest that all entrances should have "...clear direction/signs for reception...lift...on each floor".

The patients showed a preference for the *visible* variable (Figure 54) with approximately 34% in the 'strongly agree' preference level and a further 26% and 18% respectively in the 'agree' and 'slightly agree' preference levels. Information from the *other comments* section suggests that the placement and sometimes incomplete directions "...signs...run out" at times hampered understanding and caused un-necessary confusion. The results in Figure 55 show a significant preference for the *understandable* variable achieving 33%, 29% and 19% respectively, in the 'strongly agree', 'agree' and 'slightly agree' preference levels. Despite the 'information systems' gaining positive preferences, feedback suggests some concerns regarding the navigation for the reception/waiting area outpatients department. Some patients expressed a view that they would like additional and/or completed directional signage for awkwardly placed clinics, even though they found staff to be helpful.

#### 4.7.1.4 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL EXISTING FEATURES

Patients in Hospital Z5 were solicited for information regarding their impression(s) of the existing features (such as toilets, cafés, shops, special needs facilities and/or artwork) in the reception/waiting area. Patients overall view were for the *useful* variable (Figure 56) achieving approximately 24% in each of the 'strongly agree' and 'slightly agree' preference levels as well as a further 22% for 'agree'. The feedback from the questionnaire indicate that in spite of several useful features in the reception/waiting area, some patients had reservations about the cleanliness of the toilet facilities for special needs users and the water machine that was either empty or broken-down.

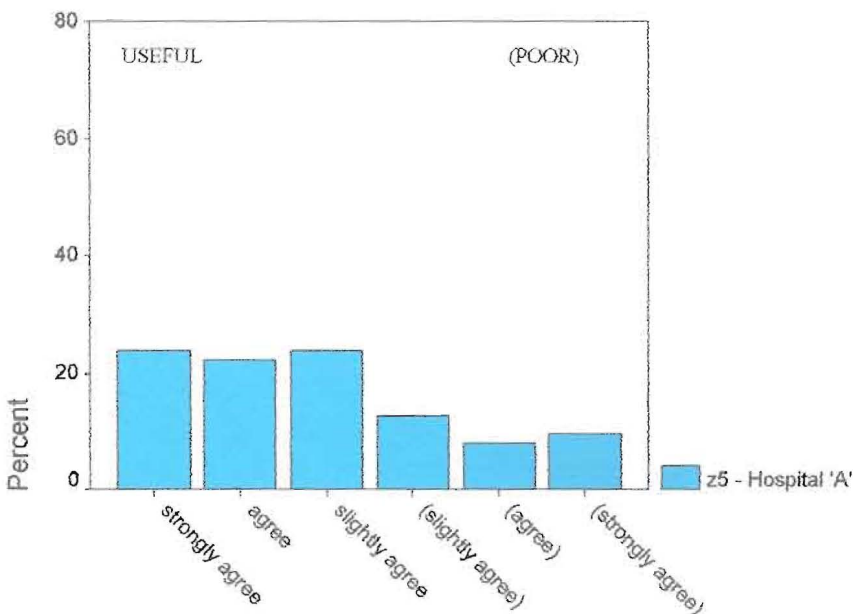


Figure 56: Hospital Z5 Reception/Waiting Areas Features – Useful or (Poor)

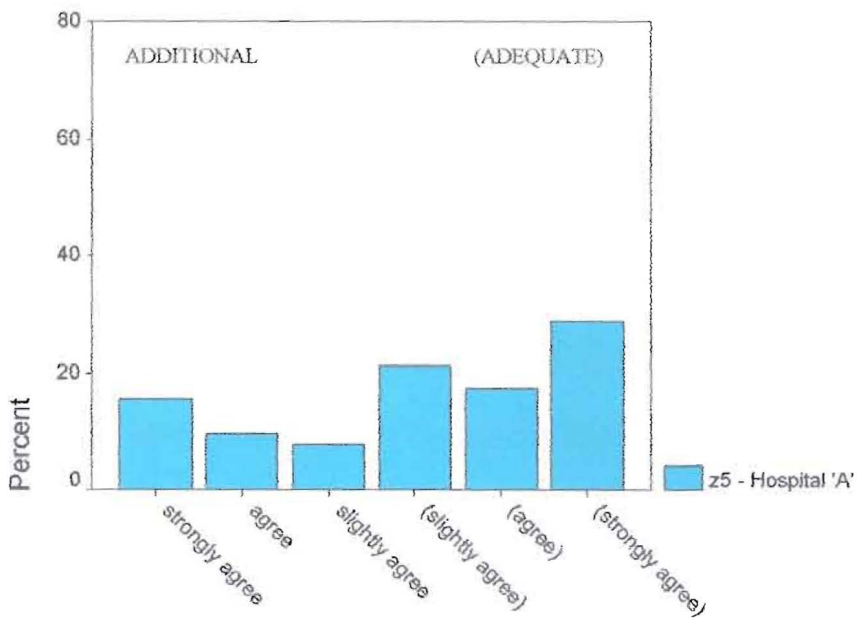


Figure 57: Hospital Z5 Reception/Waiting Areas Features – Additional or (Adequate)

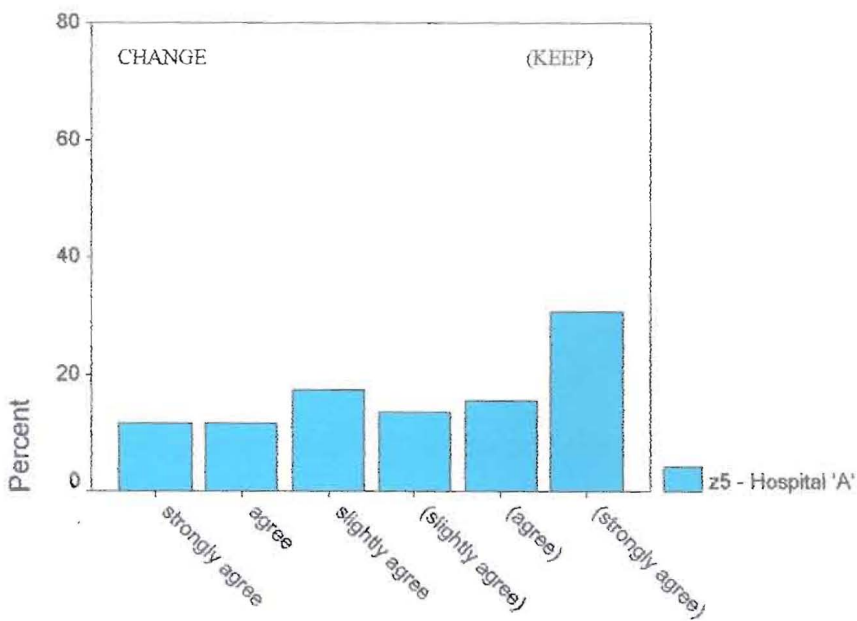


Figure 58: Hospital Z5 Reception/Waiting Areas Features – Change or (Keep)

Further general consensus was achieved for the *adequate* features (Figure 57) with the highest statistics attained in the '(strongly agree)' preference level (29% approx.). A further 17% in the '(slightly agree)' and 21% '(slightly agree)', substantiate patients preference for the *adequate* variable. However, the *additional* variable, managed to attract 15% in the 'strongly agree' preference level indicating some patients may desire more features. The feedback from the questionnaires reveal additional features would be welcomed like relaxing music, snack area or machine and if possible more access to natural light.

The *keep* variable (Figure 58) achieved the highest figure of approximately 31% in the '(strongly agree)' preference level, with a further 15% and 14% respectively in the '(agree)' and '(slightly agree)'. However, the chart also indicate a degree of variation whereby the *change* variable gained approximately 12% in both the 'strongly agree' and 'agree' preference levels with a further 17% in the 'slightly agree'. The feedback acquired from the questionnaires reveals that some patients would like to add to the existing features in the reception/waiting areas. Furthermore, preferences for a 'considered' layout and possibly, the inclusion of a lift have being suggested. The results show that patients reflect upon the appropriateness of the physical layout and ambient attributes/features of the reception/waiting areas.

#### 4.7.1.5 SUMMARY OF HOSPITAL Z5 PATIENTS PERCEPTIONS

This section summarise the results of the patients perceptions. The re-survey revealed:

- The reception/waiting area was perceived as *large* and mainly *light* considering there was more reliance on artificial light due to the building work.
- Access to external views was limited to hospital buildings.
- The sub-waiting areas were perceived as generally *spacious* with reasonable high ceilings that had access to both artificial and natural light.
- Patients perceived the reception/waiting area as *welcoming* and tidy
- The furniture was generally considered *dull* yet *soft* enough to be comfortable and generally solid, implying sturdiness. However, there were varying opinions regarding the age of the furniture being *old* or *modern*.
- Patients perceived the information systems as clear, visible and understandable. Some concerns were raised regarding bolder and clearer signs for 'special needs' users.
- Patients generally perceived the features (toilets, café and special needs facilities.) to be useful and adequate. However there were some varying opinions between change and keeping particular features. The overall consensus in light of the feedback suggests a preference for some change.

## **4.7.2 RESULTS OF STAFF SURVEY (Z5)**

The data acquired from staff in Hospital 'Z5' are based on observations from the statistical information and *other comments* sections of the questionnaire (Appendix 6). Staff needs differed to patients due to the nature and requirements of their profession. The spatial planning sub-variables associated with the internal environment (*physical needs and arrangement of spaces*) were selected for further examination. The figures highlight the approximate percentage of staff response to the selected sub-variables. The subsequent questions were summarised in order to maintain a 'holistic' viewpoint of the implications of the contributing variables and to maintain uniformity.

### **4.7.2.1 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL SPATIAL PLANNING**

When the pilot study was undertaken, there had not been an opportunity to ascertain staff perceptions of the reception/waiting area, other than through discussion. However, since acquiring the data from the patients in the pilot study, the new questionnaires (see pp. 108 to 109) have enabled staff to input their perceptions via the re-survey. Their responses were valuable for gauging staff perceptions of the reception/waiting area.



For the response to user physical needs variable, staff were generally positive (Figure 59) of the reception/waiting environment. The results reveal approximately 50% and 33% respectively were achieved in the 'good' and 'acceptable' preference levels. However, approximately 17% of staff believed the physical needs of the reception/waiting area was 'far below acceptable'.

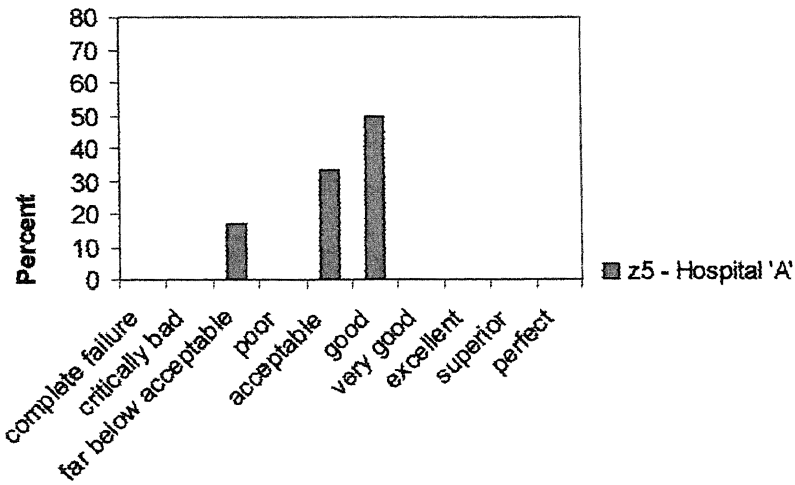


Figure 59: Hospital Z5 Staff Response to the Physical Needs of the User

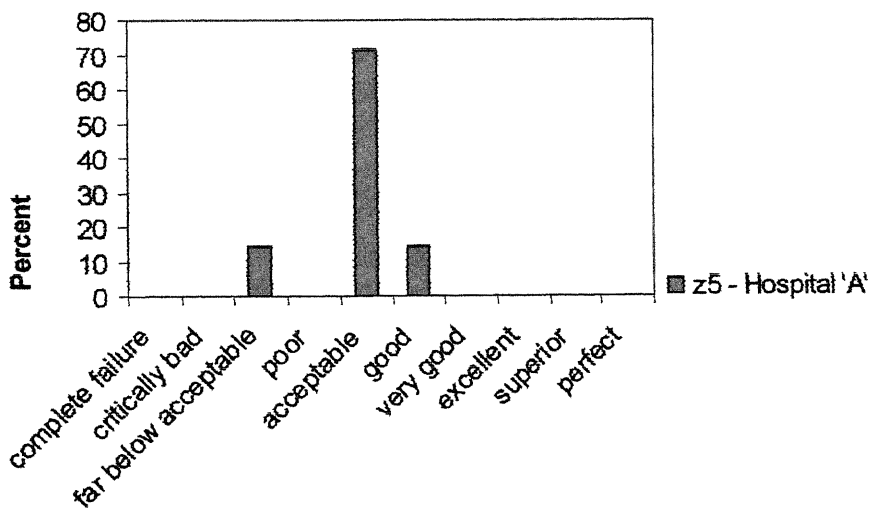


Figure 60: Hospital Z5 Staff Response to the Arrangement of Space for Users

When staff were solicited for information regarding *arrangement of spaces* (Figure 60), a significant percentage was in the 'acceptable' (71% approx.) preference level and 14% in the 'good'. However, approximately 14% was also achieved in the 'far below acceptable'. Information acquired from a doctor suggests particular concerns with this variable, indicating there was a lack of adequate spatial facilities. The feedback from the *other comments* section of the questionnaire reveals staff were particularly concerned with the relationship between activities and the working spaces in the *urology* department. This section highlights the positive and varying degree of reservation relating to the appropriateness of the spatial planning of the outpatients department.

#### **4.7.2.2 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL SUBCONSCIOUS NEEDS**

When examining the findings of the staff results relating to the *psychological needs* of the reception/waiting area, the statistics reveal some mixed views (Figure 61). Generally the hospital staff perceived the reception/waiting area in positive terms achieving approximately 33% in the 'good' preference level and a further 17% each in the 'acceptable' and 'very good' preference levels. Statistical figures suggest that staff had some concerns relating to the reception/waiting area with approximately a third opting for 'far below acceptable' and 'poor' preferences.

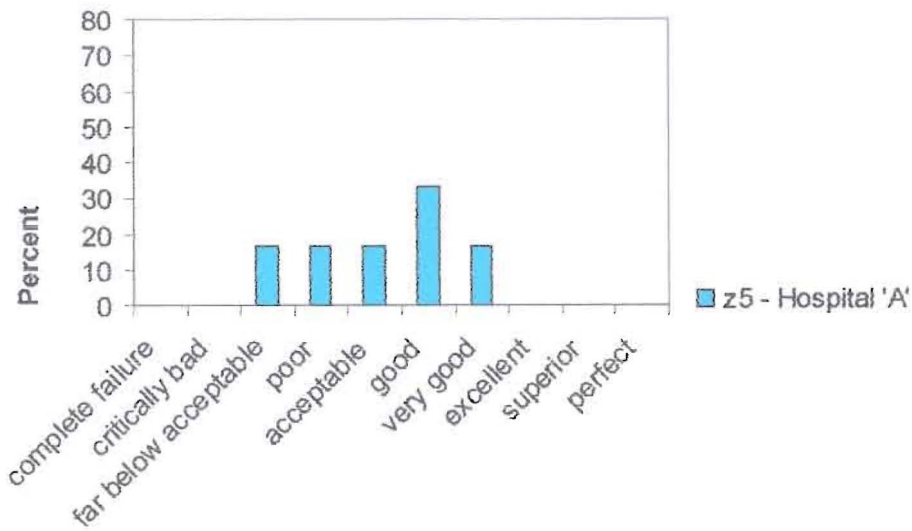


Figure 61: Hospital Z5 Staff Response to User Psychological Needs

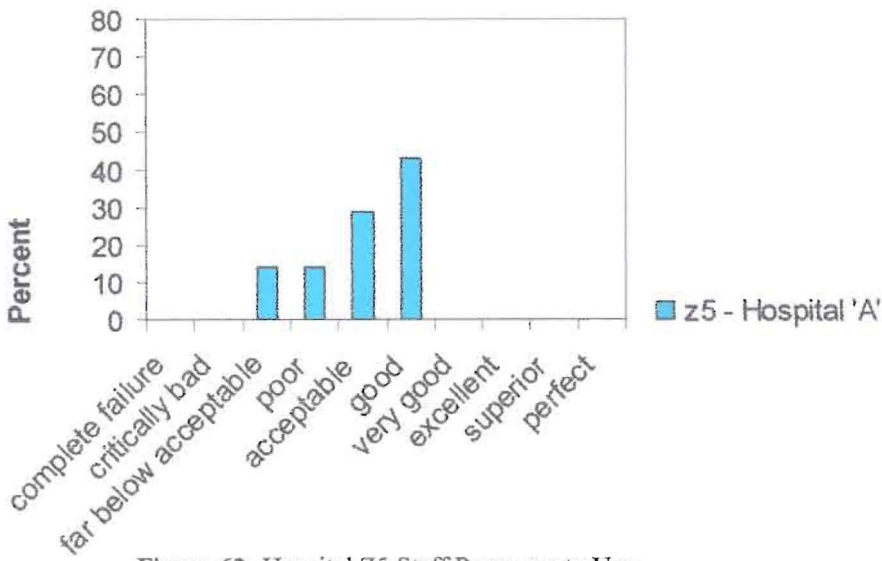


Figure 62: Hospital Z5 Staff Response to User Social Needs

The *social needs* of the reception/waiting area achieved approximately 43% for the 'good' and a further 28% in the 'acceptable' preference levels (Figure 62). A few negative responses in the 'far below acceptable' and 'poor' preference levels attained approximately 14% each.

#### 4.7.2.3 RECEPTION/WAITING AREA PERCEPTION OF THE HOSPITAL PHYSICAL ATTRIBUTES

For the *energy/environment* variable (Figure 63), the highest figure was achieved in the 'acceptable' preference level (43% approx.) with approximately 14% each in the 'good' and 'very good' preference levels.

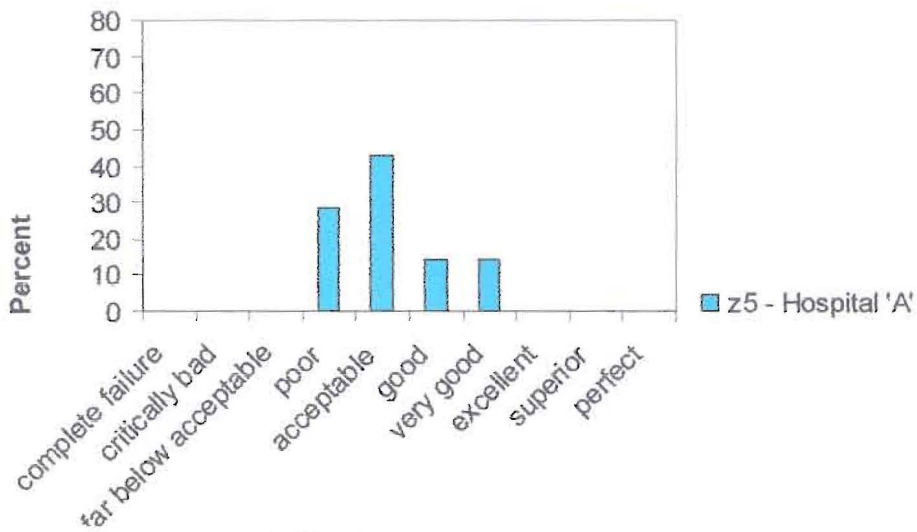


Figure 63: Hospital Z5 Staff Response to Energy and Environment Performance

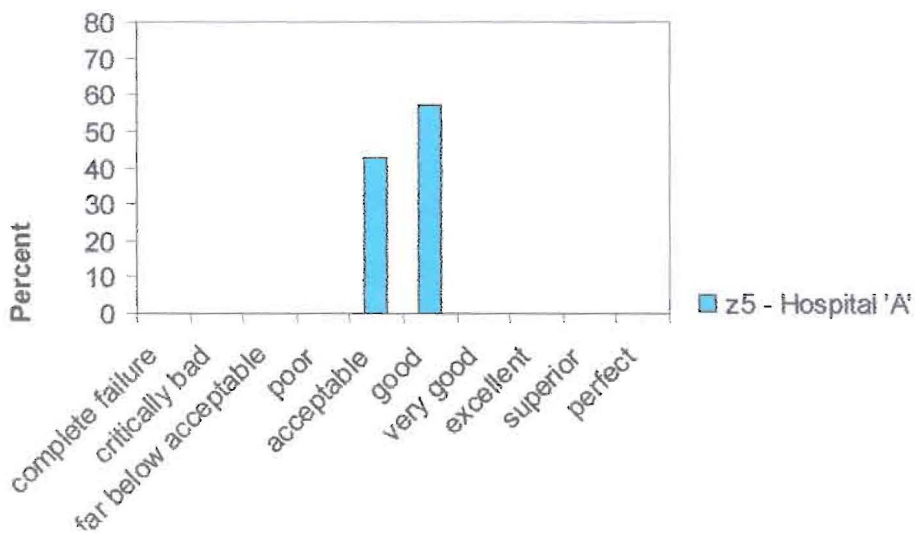


Figure 64: Hospital Z5 Staff Response to Construction Quality

A further 29% approximately was also gained in the 'poor' preference level indicating some concerns with the spatial form and fixtures of the reception/waiting area. However, the information solicited from the staff for *construction quality* were decisive and favourable (Figure 64). Only two selections were made, approximately 57% and 43% respectively were achieved in the 'good' and 'acceptable' preference levels. The results indicate mainly positive preferences from staff for the functional needs of the reception/waiting areas.

#### **4.7.2.4 RECEPTION/WAITING AREA HOSPITAL LIFE CYCLE PERCEPTIONS**

For *innovative design* variable (Figure 65) Hospital Z5 staff were quite decisive with approximately 43% being achieved in both the 'good' and 'acceptable' preference levels. However, approximately 14% had also been gained in the 'poor' preference revealing some reservations regarding the perception of *innovative design*. Hospital Z5 also achieved mainly favourable results for the *response to site* variable. Figure 66 revealed an overall response of approximately 29% each in the 'acceptable' and 'very good' preference levels, with a further 14% in the 'good'. However, a significant 29% was also achieved in the 'poor' preference level suggesting some hospital staff believed there were limitations to the appropriateness of the *hospital site*.

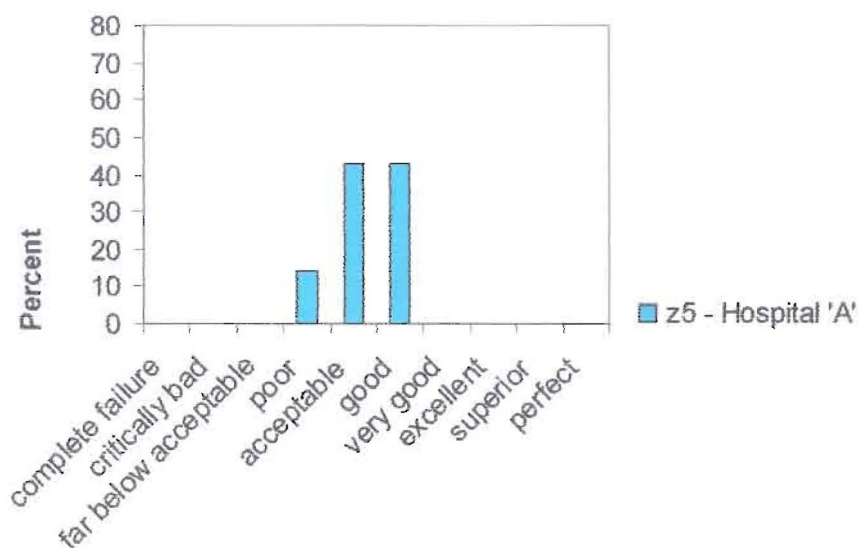


Figure 65: Hospital Z5 Staff Response to Innovative Design

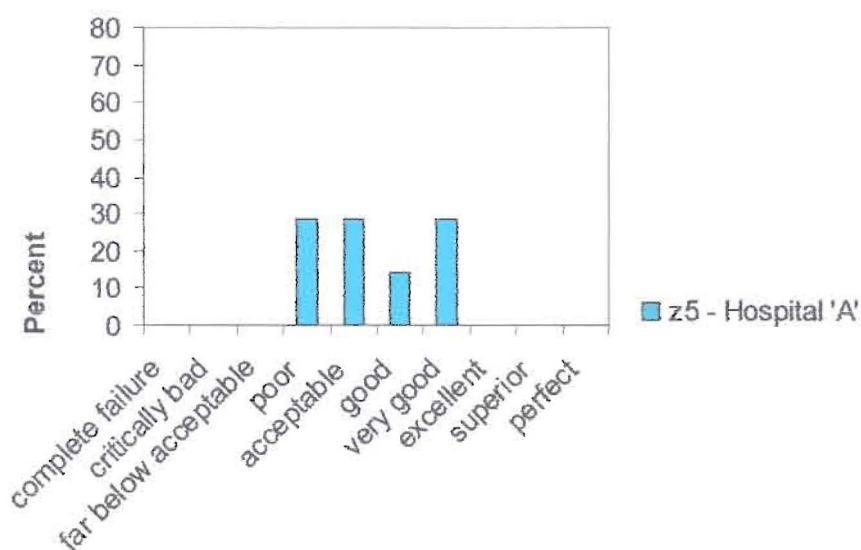


Figure 66: Hospital Z5 Staff Response to Hospital Site

Circulation issues (Figure 67) for staff in Hospital Z5 favoured the 'acceptable' and 'good' preference levels, achieving approximately 57% and 14% respectively. Significantly there were a few members of staff who perceived the circulation issue as 'far below acceptable' (29% approx.) indicating some concerns.

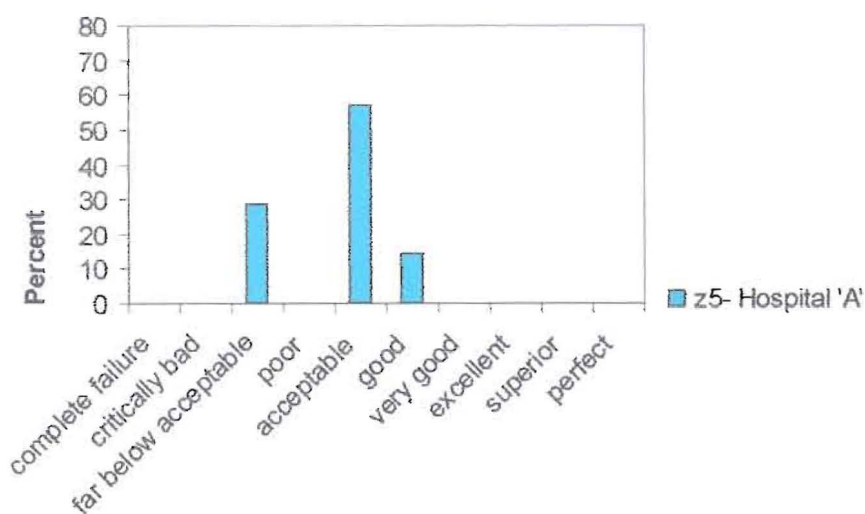


Figure 67: Hospital Z5 Staff Response to Circulation

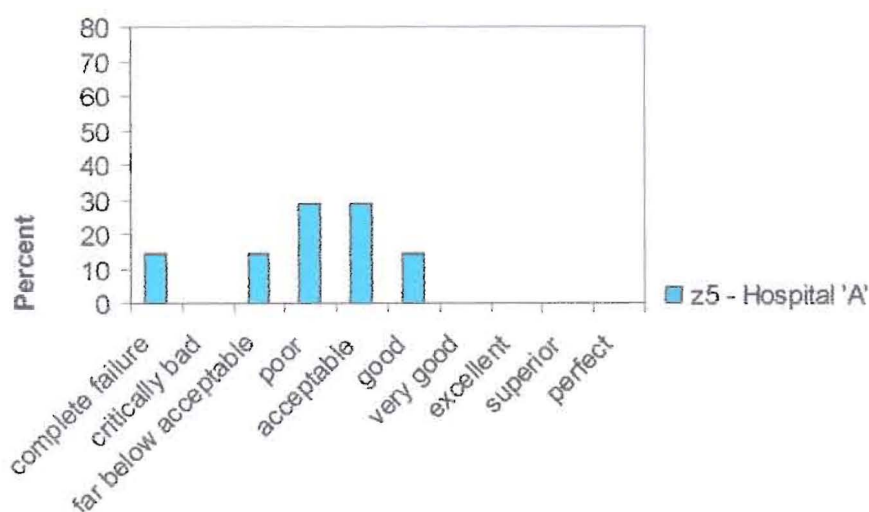


Figure 68: Hospital Z5 Staff Response to Parking Spaces

Hospital staff responses regarding the *allocation of parking spaces* were generally in the less favourable preference levels (Figure 68), which achieved results in the 'poor' (29% approx.), 'far below acceptable' (14% approx.) and 'complete failure' (14% approx.) preferences. Nevertheless, some staff considered it to be 'acceptable' (29% approx.) and 'good' (14% approx.). The data

reveal there may be particular points of concern with the appropriateness of the allocation of parking facilities due its location and size, which may have implications for further development of the hospital site.

#### **4.7.2.5 SUMMARY OF HOSPITAL Z5 STAFF PERCEPTIONS**

This section summarise the results of the staff perceptions. The re-survey revealed:

- The spatial and physical arrangement of the hospital environment received mainly positive comments. The feedback from the *other comments* section suggests further improvements to staff working spaces would be beneficial.
- Staff perceptions were mainly positive for the *social* needs of the user and they were fairly encouraging regarding issues associated with the *psychological* needs of the user. Figures suggest some concerns, which could be related to the on-going renovations.
- Staff were overall accepting of the *energy and environmental* performance and were particularly positive about the *construction quality* of the reception/waiting areas.
- The *life cycle* issues were generally positive (with the exception of parking facilities), while *circulation* and *hospital site* outcomes were mainly encouraging.



## 4.8 CONCLUDING REMARKS

The findings suggest that effective design development cannot be achieved in isolation of user consultation and/or participation. The results of the *hospital design* analysis (see pp. 143 to 145) reveal the strengths and weakness in the functional and psychological aspects of the spatial planning for the reception/waiting areas, and the degree to which hospital end users were prepared to respect their perspective environments. The user survey results also show the varying requirements of patients and staff needs (discussed further in Chapter 5). For example, patients in the PFI hospitals were generally positive about the hospital facilities and were willing to tolerate a certain amount of discomfort if it did not impede on their functional and psychological needs. However, the feedback from the questionnaires shows patients become less tolerant of their surroundings if inadequacies are not rectified. This could in-part reflect earlier investigations discussed in Chapter 1 (see pp. 1 to 2 and 73 to 78) whereby the duration of the stay determines the degree of tolerance and perception. The main points drawn from the non-PFI patients' surveys suggest more consideration for an environment that is conducive to their psychological needs in terms of internal space (sub-waiting areas) and ambient settings which enhances the hospital experience since they assume their physical (clinical) needs would be met by the hospital.

For hospital staff in the PFI hospitals the findings and feedback from the questionnaires suggest the physical aspects and their functional needs were more immediate. The staff in the PFI hospitals were prepared to tolerate a certain amount of inflexibility, but not at the cost of efficient and effective healthcare practices. The staff concerns relate to the function and usability of the space whereby the quality of the build, effect the day to day operation(s). For instance, the flexibility of the spaces allows staff to manoeuvre patients comfortably as well as accommodating machinery within 'given' internal environments.

The noticeable difference between the perceptions of the PFI and non-PFI responses is the degree to which the preference levels enabled staff to voice their concerns for future expectations. The tolerance reflected in the non-PFI hospitals staff surveys compared to the PFI hospitals critical perceptions suggest the reality of the modern facility does not live up to the 'perceived' expectations. This perception is particularly evident from staff responses of the PFI hospital in the North (X1). Their results have proven to be predominantly critical of the design outcomes for the reception/waiting area. Yet the PFI hospital in the South (X2) achieve less criticism, but could also be a reflection of the design of the outpatients department as the clinical rooms are generally more centralised somewhat locally like the non-PFI hospitals.

Some PFI hospital staff would like to see more consideration taken into account in terms of the functionality of the spaces in relation to the activities taking place. They believed that as more hospitals amalgamate, more departments and wards were likely to be rationalised (outpatients' clinics etc.). This issue of short-term results would have to be justified against the long-term benefits, in addition to sustainability issues which were paramount in terms of use and function. The staff and manager interviews also support several perceptions. The results reveal the decisions undertaken within the PFI/PPP procurement and hospital development process (see pp. 48 to 60) appears to influence the method of engagement between the design development and collaborative process (see pp.43 to 47). This in-turn affects the implementation of 'informed' consultation, by minimising the contact/input between the client(s), architect/designers and building contractors (see pp. 36 to 42) and leads to design outcomes that affect hospital end users (see pp. 130 to 227). The influences are further compounded when the emphasis is placed on deliverance (see pp. 1 to 17 and 219 to 223) rather than the appropriateness of the new hospital facilities.

In medical institutions, design can sometimes be reduced to constraints such as finance, function and the practicalities of the site. At times it is understandable that design stimulation may be considered a secondary element in creating a pleasant and relaxing

atmosphere (usually resulting in art installations). However, since our senses are constantly affected by our surroundings the findings show that creative thinking in the design of reception/waiting areas could enhance users' response to the internal environment, which in-turn could have positive implications for end users sense of well-being for a new generation of hospitals. In view of the investigation undertaken in PFI and non-PFI hospital environments, the perception is somewhat marred when some staff favoured the space and durability of the non-PFI hospitals over some 'perceived' smaller spaces of the PFI hospital facilities. Like some patients, staff appreciates stimulating environments that address the psychological needs of the user but as previously indicated (see pp. 130 to 210), this belief is perceived as an unrealistic expectation since little effort had been undertaken by the NHS Executives and Consortium to solicit users' views. Considering the findings of the selected PFI and non-PFI hospitals, the summarised results reveal (Table 23) that Hospital Z5, the traditional built facility undergoing modifications can in-part out perform some key features of a 'new build' hospital facility as well as show that patients and staff were less critical of the reception/waiting areas of the outpatients department. While others features/attributes are essentially similar is somewhat significant as it raise the question of viability, which has implications regarding the justification of the expenditure, if end users needs are not sufficiently being met.

User Surveys			
	PFI Hospitals	Non-PFI Hospitals	Hospital Z5
<b>Patients</b>	<b>Reception/Waiting Area Perception of Hospital Environment</b>		
	<p>The main reception/waiting area was perceived as large and light having access to natural light was considered beneficial.</p> <p>Visually, there was access to some external views of the landscaped gardens/scenery.</p> <p>The sub-waiting areas were considered to be less spacious than the main reception/waiting area and the lack of natural light for some environments were perceived as small and slightly cramped.</p> <p>Generally the reception/waiting areas were considered welcoming and usually tidy.</p>	<p>The main reception/waiting area was generally perceived as large and light with access to natural light. The exception was Hospital Y4 which was perceived as small and relied on artificial lighting.</p> <p>Hospital Y3 had external views to residential buildings in comparison to Hospital Y4, which had no view at all from the main reception area.</p> <p>The sub-waiting areas were considered to be spacious with reasonable high ceilings that had access to natural light.</p> <p>The reception/waiting areas were considered welcoming and generally tidy.</p>	<p>The main reception/waiting area was perceived a generally large and mainly light considering there was more reliance on artificial light due to renovations.</p> <p>Access to external views was limited to the hospital buildings</p> <p>The sub-waiting areas were perceived as generally spacious with reasonable high ceilings that had access to both artificial and natural light.</p> <p>The reception/waiting area was considered welcoming and tidy.</p>
	<b>Reception/Waiting Area Perception of Hospital Furniture</b>		
	<p>The perceptions of the furniture varied from colourful (main reception area) to slightly dull (sub-waiting area) and slightly soft (X1) to somewhat hard (X2). However both hospitals perceived them to be comfortable, solid and modern.</p>	<p>The perceptions of the furniture were almost evenly spread with the general consensus viewed as slightly colourful (Y3) and marginally dull (Y4). However both hospitals perceived them to be mainly soft, comfortable, solid and generally modern (with the exception of Hospital Y4 perceptions are more varying to the <i>old</i> variable).</p>	<p>The furniture was mainly perceived as dull yet soft enough to be comfortable and generally solid, implying sturdiness. However, there were varying views regarding the age of the furniture being <i>old</i> or <i>modern</i>.</p>
	<b>Reception/Waiting Area Perception of Hospital Information Systems</b>		
	<p>The information systems were generally perceived as clear, visible and understandable. However, some figures and <i>other comments</i> suggest patients would like improvements to the speed of the output information for <i>special needs</i> users.</p>	<p>The information systems were mainly perceived as clear, visible and mainly understandable. However, some figures and <i>other comments</i> suggest patients welcome improvements to the signage.</p>	<p>The general perceptions of the information systems were clear, visible and understandable. Some concerns were raised via the <i>other comments</i> section suggesting bolder and clearer signs for 'special needs' users.</p>
	<b>Reception/Waiting Area Perception of Hospital Existing Features</b>		
	<p>Features like toilets, café and special needs facilities were viewed as useful and generally</p>	<p>Patient views varied regarding features like toilets, café and special needs facilities. Opinions</p>	<p>Patients generally perceived the features (toilets, café and special needs facilities.) to be useful and</p>

	adequate. However, figures indicated additional features/services would be an improvement.	were divided for <i>useful</i> (Y3) and <i>poor</i> (Y4), a general acceptance for <i>adequate</i> and split views on <i>keep</i> (Y3) or <i>change</i> (Y4) variables suggesting a consensus for more immediate improvements of the facilities and services.	adequate. However there were some varying opinions between <i>change</i> and <i>keeping</i> particular features. The overall consensus in light of the <i>other comments</i> suggests a preference to change some of the facilities.
<b>Staff</b>	<b>Reception/Waiting Area Perception of Spatial Planning</b>		
	The spatial and physical arrangement of the hospital environment performed poorly for hospital staff needs, particularly Hospital X1 in spite of a few positive results. Overall figures indicate significant concerns in the development of spatial planning.	The spatial and physical arrangement of the hospital environment received mainly positive comments. However, some figures suggest concerns and highlights the need for future improvements to the hospital environments	The spatial and physical arrangement of the hospital environment received mainly positive comments. Additional information from the <i>other comments</i> section suggests further improvements to accommodate additional working spaces.
	<b>Reception/Waiting Area Perception of Subconscious Needs</b>		
	There were generally negative opinions for the <i>psychological</i> and <i>social</i> needs of the user expressed by most hospital staff (although Hospital X2 achieved slightly less critical responses). The results reveal particular concerns regarding communal interaction within public and private spaces.	There were generally positive opinions for the <i>psychological</i> and <i>social</i> needs of the user expressed by most hospital staff (although Hospital Y3 had less critical responses particularly with regard to <i>social needs</i> ). The results also reveal some concerns with communal public and private spaces.	Mainly positive perceptions for the <i>social</i> needs of the user and fairly encouraging opinions regarding the <i>psychological</i> needs of the user. Figures suggest some concerns, which could be related to the on-going renovations.
	<b>Reception/Waiting Area Perception of Physical Attributes</b>		
	Considerable criticisms were made by hospital staff of the <i>energy and environmental</i> performance. Although some positive perceptions were achieved, the staff in Hospital X2 were slightly more optimistic. The <i>construction quality</i> perceptions were generally negative in Hospital X1 than X2.	Staff were generally positive about the <i>energy and environmental</i> performance of the hospital facilities. Hospital staff in Y4 raised concerns regarding the <i>construction quality</i> of the hospital environment.	Staff were overall accepting of the <i>energy and environmental</i> performance and were particularly positive regarding the <i>construction quality</i> of the reception/waiting areas.
<b>Reception/Waiting Area Life Cycle Perceptions</b>			
The <i>life cycle</i> issues were generally positive in Hospital X2 (with the exception of the parking) and negative in Hospital X1 (with the exception of the <i>hospital site</i> setting).	Hospital staff perceived the <i>life cycle</i> issues as generally positive in Hospital Y3 (with the exception of the parking). Some concerns were raised regarding design aesthetics and circulation issues.	The <i>life cycle</i> issues were mainly positive (with the exception of the parking), while <i>circulation</i> and <i>hospital site</i> outcomes were generally encouraging.	

**Table 23:** Summary of Patients and Staff Surveys in Selected PFI and non-PFI Hospitals Compared with Patients and Staff Surveys from Hospital Z5

The research reveals that in spite of users' preference for new hospital facilities for modern needs[149], overall the patients surveyed in the PFI hospitals were generally more positive about the reception/waiting areas than their non-PFI counterparts and the feedback reveal the ambient attributes/features were of primary concern. While staff in the PFI hospitals were more critical of the reception/waiting areas than the non-PFI staff and feedback show the physical aspects and functional needs were of primary concern.

The author believes if little consideration is undertaken to ascertain the functional and psychological needs of patients and hospital staff, then it is inevitable that hospital end users will continue to voice their displeasure regarding the lack of some input towards the communicative/collaborative design process that would accommodate the significant differing expectations of patients and staff. The findings reveal that input (feedback/consultation) from hospital end users could have an effective outcome on users' satisfaction levels, discussed further in Chapter 5.

## CHAPTER FIVE – DISCUSSION OF THE RESULTS

This chapter discusses and assesses the 'new build' PFI hospital (PY4) building project (on the non-PFI Hospital Y4 site), worth approximately over £20 million. It highlights the implications of end users 'participation' (in-part) in the development process as well as interprets the data acquired from patients, staff surveys and *other stakeholders* in selected PFI and non-PFI hospitals. It also articulates the implications for the communicative process aiding 'new build' hospital building projects by bringing together the two strands of the research; a) questionnaire *surveys* and analysis of perceptions (patients, staff and other stakeholders); b) investigation of selected PFI and non-PFI *hospital design* analysis, and comparing the findings of the study to establish if the PFI process constrains or aids the working relationship between the client, consortium and architect/designers. Lastly, the *hospital design* analysis of the selected PFI and non-PFI hospitals characteristics/attributes variables, identifies the degree to which Public Private Partnership have contributed to the betterment and/or detriment of the design development process by contextualising the outcome of the research via the two strand of the investigation.



## **5.1 PFI AND NON-PFI HOSPITAL DEVELOPMENT CHARACTERISTICS/ ATTRIBUTES AND THE IMPLICATIONS OF THE RESEARCH FOR 'NEW BUILD' HOSPITAL BUILDING PROJECTS**

A recent undertaking for a 'new build' PFI hospital (PY4) shows the implications of user input contributing to the development process as well as highlighting the differences in collaboration by some NHS Trusts and Consortium Executives. The design process for building Hospital PY4, on the site of the non-PFI Hospital Y4 involved consultation from end users. Before building Hospital PY4, several investigations and surveys were undertaken to ascertain the needs of the community prior to the development of the new PFI 'new build' hospital project. Data gained from the author's survey, focus groups and the local community via Council members were fed into the design and procurement process. This information sourced provided a template for talks between the Local Council, NHS Trust Executives and the Consortium. It also enabled constructive feedback/criticisms in the refinement of the construction project that enabled the final contract to be 'signed off' in what has been described (by Local Councillors) in a 'speedy and efficient' way.

The findings suggest that far from being considered a lengthy and time-consuming process (as discussed in previous chapters) the collaborations between the various groups appear to have influenced the development of the construction process and in-part

the design development process.<sup>ee</sup> Information acquired thus far (from a hospital administrator) suggests that the design of the hospital facilities has initially generated some positive responses (via end user feedback/forums) from the local community and NHS Trust Executives. However, the real test will be in 12-18 months time when surveys can be undertaken to ascertain hospital end users responses to the functional and psychological features/attributes of the hospital environment/facilities.

Significantly, the design of the layout for this particular hospital building indicates some interesting features/attributes of the reception/waiting areas, which highlight subtle departures from the PFI hospital designs examined for this study. The common feature (like most hospitals) is the central corridor that runs throughout the length of the building. The PFI 'new build' hospital (PY4) floor layout aids the user to navigate the hospital. The corridor either leads to one point or returns to the main sub-area, which in-turn leads to the main corridor. The sub-corridors lead off to blocks that house particular areas of care such as physiotherapy, intermediate care and so forth. The main reception/waiting and sub-waiting areas generally have access to natural light in addition to a central courtyard reminiscent of some urban convalescent homes using access to nature to stimulate the healing process.[150] Considering

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<sup>ee</sup> For reasons of anonymity (discussed in section 3.5), Hospital PY4 have allowed only some information to be used for research purposes.

the central urban location of the hospital, the scale, shape and height of the building appear to maximise the use of windows in order to create a brighter environment. In contrast, the characteristics/attributes of PFI and non-PFI hospital designs featured in this study reveal several similarities and variations in the design and layout of the reception/waiting areas of PFI and non-PFI hospitals (X1, X2, Y3 and Y4), in addition to the on-going modernisation (Hospital Z5) and modernised (Hospital 'B') reception/waiting areas of the pilot study (Table 23). Table 24 summarises the physical characteristics/attributes of the internal environment in the selected hospital facilities. Table 24 was generated from hospital architectural plans and on site observations recorded via a clipboard.

The similarities of the PFI and non-PFI hospitals reveal the efforts made to make the reception/waiting areas inviting and welcoming with emphasis on bright and spaciousness (with the exception of Y4 whose main reception area is akin to an 'office booth with no access to natural light or windows') of the reception/waiting area. This has been significantly beneficial for patients surveyed in the PFI hospitals. Particularly the response in Hospital X1 revealed how the aesthetic qualities of the main reception/waiting area of the outpatients department, contributed to positive perceptions (Figure 15 and 16).

Characteristics/ Attributes	Pilot Study		Non-PFI		PFI	
	Post 1980s	Pre 1980s		Post 1980s		
	Hospital B	Hospital A (Hospital Z5)	Hospital Y4	Hospital Y3	Hospital X2	Hospital X1
<b>Description</b>	Traditional Modernised	On-going modernisation	Traditional	Traditional	New build	New build
<b>Status</b>	Non-PFI	Non-PFI	Non-PFI	Non-PFI	PFI	PFI
<b>Reception/ waiting Area</b>	Medium	Medium	Small (booth)	Medium	Large	Large
<b>Sub- reception/waiting area</b>	Medium	Medium	Medium	Medium/ narrow	Medium/ small	Medium/ small
<b>Ceiling (main)</b>	Low	High	High	High	High	High
<b>Ceiling (sub)</b>	Moderate/ low	High/ moderate	High	High/ moderate	Moderate/ low	Moderate/ low
<b>Light (main) (main source)</b>	Artificial	Artificial	Artificial	Natural	Natural	Natural
<b>Light (sub)</b>	Natural/ artificial	Natural/ artificial	Natural/ artificial	Natural/ artificial	Artificial/ light well*	Artificial
<b>Layout/ orientation</b>	Centralised (department)	Centralised (department)	Vicinity (different floors)	Centralised (department)	Localise (in the area)	Semi-localised (off corridors)
<b>Windows (main)</b>	Medium	Medium	None	Medium	Large	Large
<b>Windows(sub)</b>	Medium/ small	Medium/ small	Large/ medium	Medium	Medium/ small	Light well*
<b>Windows external view</b>	Hospital building (seating positioned away from view)	Hospital building (seating positioned away from view)	Sky/hospital building (some seating positioned away from or have no view)	Sky/hospital and residential buildings (some seating positioned away from or have no view)	Semi-rural landscape/ residential buildings (some seating positioned away from the view)	Urban – landscape (majority of the seating positioned away from the view)
<b>Technology</b>	None	None	None	None	TV and electronic 'tic-a-tape' information	Electronic Information points, but some not installed at time of survey
<b>Refreshment</b>	Drinks machine	Drinks machine	Water and still soft drinks provided by staff	Food kiosk, drinks and confectionary machine	None	None
<b>Décor Perceptions</b>	Modern (Sterile)	Pre- modernisation (Homely)	Dated (Character)	Dated (Functional)	Modern (Functional)	Modern (Contemporary)

\* = Light drawn from adjacent rooms/corridors

Table 24 Characteristics/Attributes of Selected PFI and non-PFI Hospital Reception/Waiting Areas

Patients also stated the amenities and services were *useful* and *adequate* (Figure 28 and 29). However the results were sometimes contradicted by patients' feedback on the questionnaires. This contradiction could be due to the nature of the questionnaires as the feedback section allows patients the opportunity to reflect fully upon the answer they have given. The necessity for more amenities were prevalent in both PFI and non-PFI hospitals. Overall surprisingly, it was clear from the preference levels that patients preferred the PFI hospital facilities more than the non-PFI hospitals.

Several possibilities could explain this preference, the contemporary feel, ambient settings, brighter environments and landscape views from the main reception/waiting areas. Unlike in the patient surveys, the hospital staff responses (particularly in the Hospital X1 with results of approximately 29% and 25% respectively in the 'poor' and 'complete failure' preference levels) revealed their functional needs was not sufficiently been met by the PFI hospitals spatial planning (Figure 32). This compares with the non-PFI hospitals (particularly Hospital Y3 with approximately 33% respectively in the 'acceptable' and 'very good' preference levels). The results and comments were generally more positive with non-PFI at the higher end of the preference levels (Figure 31). Due to the specific nature of the critique, the author believes the feedback is not a matter of disenchanted views resulting from a lack of contribution in the design

development process for the new PFI hospital facilities. Rather this was due to the size of rooms, smaller corridors in the sub-waiting areas and lack of storage, all of which contributed to the functional needs of the hospital staff. In general this pattern continued to a greater or lesser degree throughout the sub-variables with the varying differences of opinions supplied in the feedback section of the questionnaires. This clearly indicates that staff were more influenced by the functionality of the space rather than aesthetic considerations. The success of the 'selected' PFI hospitals buildings has been the implementation of contemporary attributes which have aesthetical visual impact for the patients, but its failure has been the lack of physical spatial flexibility to accommodate the functional needs of hospital staff.

In an era where the Labour Administration is evolving policies for NHS facilities and services to accommodate patients needs and choices, the same emphasis has not been placed on hospital staff needs, until recently.[138] [139] [140] [104] On-going debates indicate new hospital facilities should be able to address the differing needs of patients and hospital staff [151] as both end users utilise the same environment. Taking into account the variation of the results of the patients and staff surveys, the findings could contribute to exploring a unifying method of user participation in the design development process, as discussed in section 1.3.1. The

nuances of the 'main' and 'sub' totals highlight the importance of analysing variables in the context of the supporting influences (e.g. attributes/features of the environment). In this case due to the implications of the results, designer(s) and/or client(s) could use the above information to develop appropriate solutions (i.e. internal facilities) for the benefit of all end users.

The patients and staff surveys reveal the ambient settings of the outpatients department influence end users perceptions of the reception/waiting areas. The PFI 'new build' hospitals in particular have wide walkways and large windows, which attract natural light. They also had high ceilings compared to the sub-reception/waiting areas (ante-rooms) and the implementation of technology as information points for patients. The non-PFI hospitals sub-reception/waiting areas were generally of larger proportions than the PFI hospitals, and had access to natural light.

The most striking similarity for lighting came from the reception areas in X1 and X2 compared to the waiting areas in Y3 and Y4 (Figure 16). The PFI hospitals main access to natural light was achieved via windows situated nearer the ceiling and on an end walls (Figure 11 and 12). In the non-PFI hospitals, these features were achieved in some of the sub-waiting areas (Figure 13 and 14). These characteristics have contributed to non-PFI hospitals sub-

waiting areas appearing bigger like its PFI counterpart. Significantly, features/attributes utilised in PFI reception areas enabled patients to have access to external landscape views. This implies that in-part, a given set of criteria has the potential to manipulate an end user perception of a 'given' internal space (attributes/features), by producing therapeutic environments, which addresses the human senses thus contributing to a sense of well-being as described in section 1.1.

The differences were more visible in terms of the trend in design, with reference to layout and size of some of the clinical rooms (Appendices 10 & 11). For the PFI 'new build' hospitals, there was less centralisation within the outpatients department for clinics that were either in, near to, or off the main corridor of the reception/waiting areas. This in-part could account for the increased use of ante-rooms, which is generally less in the non-PFI hospitals (Appendix 9). The outpatients clinics in the non-PFI hospitals (with the exception of Hospital Y4 as some were situated on a different floor), were centralised and located within a specific block of the outpatients department. The sub-reception/waiting areas also differed in terms of size as the PFI hospitals ranged from medium to small and the non-PFI range from medium to narrow (Table 24). The patient surveys reveals the latter arrangement is preferable since it minimises the navigation around the hospital (particularly for



older and 'special needs' users), and signage is likely to be easier and more direct to follow (Figure 25 and 27). The PFI staff surveys/interviews indicate centralised resources and adequate accommodation (Figure 31) would improve efficiency as well as patient contact (Figure 34, see pp. 207 and 224 to 225). There was a consistent theme of the feedback contradicting some of the results in the surveys; this point was picked up at an early stage of the survey. However, on questioning patients about the discrepancy the replies they gave generally indicated that the difference was due to the fact that they had more time to reflect on the survey questions. On this basis it can be argued that their responses to the survey was an initial 'gut feeling' rather than an in-depth consideration, which was given later on the feedback section. There also appeared to be a qualitative difference between patients which have visited the hospital many times and those that have only visited the hospital a few times. Long stay patients and patients who frequently visited the hospital tended to give more weight to the function aspect of the space thereby reflecting more the concerns of the staff (see pp. 150 to 151).

Refreshments in the PFI hospitals were located in the canteen and/or hospital shops, whereas the non-PFI hospitals, in addition to canteen and/or hospital shops, provided drinks or confectionary machines for patients and staff to utilise within the reception/waiting

areas. In the case of Hospital Y4 automated provisions were not available therefore staff provided cold refreshments (soft drinks/water) for patients from a petty cash fund. Although the patients feedback in the PFI hospitals indicates the duration of the visit to the outpatients departments determined the level of acceptability. The staff interviews state improvements could be made regarding the location of some of the amenities (café/shop) had implications for staff breaks as the distance travelled to and from locations, in addition to waiting to be served meant time was limited (see p. 214). In contrast, the non-PFI hospital patients and staff responses were more positive, suggesting the location of the confectionery/drinks machines were beneficial and useful.

The hospital furniture was perceived as *modern* (Figure 24) in the PFI hospitals (X1 = 41% approx. and X2 = 54% approx.) and surprisingly also in the non-PFI hospital (Y3 = 30% approx.) in the North. The patients' perceptions of the reception/waiting areas décor revealed two categories but with different traits. The PFI hospitals were perceived as modern, however the terms 'functional' and 'contemporary' were used by hospital end users to described the different environments (Table 24). Whereas, the feedback for the non-PFI hospitals were described as dated with 'homely' and having 'character'. Considering that Hospital X2 (PFI in the South) was a 'new build' facility, it was interesting to note that Hospital Y3

(non-PFI in the North) shared similar perceptions of the décor. In the case of the hospitals that participated in the pilot study, Hospital 'A' and 'B' revealed almost identical characteristics in terms of the spatial planning and internal features. The only difference appears to be with the décor and ceiling height. Hospital 'A' (Z5) was considered to be 'homely' prior to the on-going modernisations, while Hospital 'B' (already modernised) perceived as 'sterile'. Indications from the re-surveyed Hospital Z5 do not indicate any overtly negative response to the reception/waiting area décor, considering it temporary situation.

The hospital staff surveys feedback highlights the consistency of the critique in light of their responses to the questions. For example, the hospital staff preference level selections were also backed up by specific areas of concerns (Appendix 15). The surveys and discussions/interviews reveal that the differences between the modern and traditional facilities, are two-fold for patients and staff; firstly the traditional ambient settings achieved a greater degree of consistency and some positive responses in the preference levels (Figure 33) for the non-PFI hospital (Y3 = 29% approx and Y4 = 33% approx.) than the PFI hospitals (Appendices 14 & 15); secondly the initial modern impression of the main reception/waiting areas in the PFI hospitals gained some complementary responses for its contemporary approach compared to the non-PFI hospitals.

In section 4.5.5, the Southern PFI hospital (X2) and the Northern non-PFI hospital (Y3) gained positive responses in the *innovative design* variable (Figure 37) considering both are from different eras and design. However, both settings are in semi-rural locations thereby supporting earlier statements regarding landscape views (see pp. 48 to 60) being a feature and/or attribute that in-part contributes to a *sense of well-being*. Interestingly, the seating arrangement/positions sometimes obscured external views.

Although Hospital 'B' was built prior to the turn of the 1900s, it has undergone extensive modernisation enabling observations for the different types of modernisation post 1980s. It is not known whether the differences were significant in terms of the pre 1980s spatial planning. The only differences between Hospital 'A' and Hospital 'B' were with the ceiling heights in the sub-reception/waiting areas (Table 24). The ambient settings and the access to some natural light (Figure 44) has a less critical effect on patients despite some of the interiors being described as 'dated' (Table 24). In view of the feedback in the PFI hospitals it appears that the combination of the low ceilings and in some cases no access to natural light in the sub-waiting areas (in spite of the main reception/waiting area being described as contemporary, light and spacious) does not sufficiently override patients lasting impressions.

The pre 1980s highlight significant differences in the locations as well as the setting of some hospital sites (Figure 38), which differed from their PFI counterparts in terms of man-made and/or natural landscaping. From observations by the author the internal environments, natural foliage (potted plants) were more evident in the pre 1980s (non-PFI) hospitals than the post 1980s, (PFI) which facilitated more artificial plants in the foyer of the reception/waiting areas. The feedback from patients in the PFI hospitals reveals that the installation of more natural foliage would improve the less colourful appearance of some of the reception/waiting areas and subsequently stress. It is interesting to note that the selected PFI hospitals in the semi-rural and landscape settings are more likely to install artificial planting in the outpatients' departments.

Another difference was the lack of technology in the non-PFI hospitals, since information (electronic) for patients (particularly 'special needs' users) indicated additional solutions were needed. The concerns raised in the pilot study were also reflected in the PFI and non-PFI surveys. Other comments imply the implementation of music and/or a television would be beneficial to patients. The inclusion of the extra amenities show patients *sense of well-being* can be enhanced by provisions, which stimulate positive impressions of the hospital environment while distracting patients from their clinical concerns. Deductions from the patient and staff

surveys/interviews reveals it is not just a matter of what is important to patients and staff within the outpatients' reception/waiting areas but the degree to which the important issues relate to 'informed' and appropriate choices/compromises that could determine user satisfaction (see pp. 255 to 261).

In the past, design solutions were undertaken via extensive communication and redesigning specific aspects of the hospital facility to address current issues of the day and possibly future demands (see pp. 36 to 41). This aspect, as discussed in section 1.3.1, could be an expensive undertaking. However, the author believes that a compromise could be achieved, which would be beneficial to the time scale and design development process (as previously indicated in this Chapter) in addition to ensuring that the mistakes of the past are 'effectively' evaluated and not repeated (pp. 3 to 4), considering the scale of the government investment. With the change in the working relationship between architects/designers and building contractors (see pp. 43 to 48) the findings reveals the communicative and collaborative process has suffered (see pp. 225 to 227) with the resulting implications influencing the design development process (see pp. 211 to 227). In addition, the subsequently perceptions and preference levels for hospital staff have been more critical of the spatial arrangements in the 'new build' hospital facilities particularly Hospital X1 (Figure 31 and 32)

than the non-PFI hospitals, whereas Hospital Y3 show significant positive preference levels. The study reveals that consumers of PFI and non-PFI hospital environments are knowledgeable individuals who have specific concerns when developments in their name (public money) do not meet their expectations, especially when the costs are revealed.

Initially the perception of public and private monies takes on different connotations in terms of user input. When a private company invests in 'new build' projects there is a general belief that a certain amount of research is undertaken involving literature review and user input to ensure the investment is spent wisely therefore providing a service or product, which is considered a viable project. In the case of public expenditure, a public forum generally triggers debate whereby public opinion sometimes contributes to the thought processes. This may lead to a national debate and thereby facilitating a 'perceived' sense of inclusion and transparency. With the selected PFI and non-PFI hospital developments the above criteria have generated similar queries. However, the lack of transparency have fuelled a dislike for the procurement system that has been marketed by the Labour Administration as a means to meeting targets set for 'new build' hospital development programmes.

Even though other studies indicate the investment in public services has less to do with supplying appropriate modern hospital facilities, but more to do with providing facilities to accommodate efficient privatised services.[152] [153] This study in-part explains why there has been more emphasis on finance and timescale negotiations rather than design communication/collaborations. Organisational and academic scrutiny has also raised questions regarding the viability and scale of the development, which 'appear' to favour private sector requirements, particularly when the government has intervened to assist with hospital debts.[147] [154] [155] However, the results of the patients and staff surveys reveal that there is a further possibility of increase expenditure and debts if alterations have to be made to modify hospital layouts.

In Europe the infrastructure of PFI/PPP project implementation delivers a greater degree of flexibility (in terms of financing) than the British contingency.[156] Even though PFI/PPP is considered to be one of the most expensive forms of borrowing compared to the expenditures of the state system, there is a belief that particular projects like sewage systems can benefit from 25 to 30 year maintenance schemes.[156] However, the costs of bureaucracy are still a major point of concern as the time scale to implement and finalise projects discourages some of the most experienced Consortiums in hospital development projects.[157] European and



International studies suggest and encourage user input in the development of hospital and healthcare environments at the initial design development process, in order to enable a '*sense of well-being*' for end users.[158] [159] This view is collaborated by this research which also reveals that patients and hospital staff welcome the investment in new facilities (see pp. 211 to 215), which reflect the caring nature of the profession.

The Labour Administrations targets for new hospital facilities are progressive, while the complexities of the collaboration process between the different agencies is moving towards a less bureaucratic undertaking. However, as discussed previously this undertaking is not as progressive as some of the Consortiums would like it to be. The combination of the government's justification for the PFI hospital development programme contrasted with some public failures of design/construction applications and sometimes the dismissal of academics scrutiny has contributed to the public suspicions of the 'new build' hospital development programme via private sector investment. In view of the aims and objectives outlined in section 1.1.1, this study shows that the procurement process has some affect, on the communicative and collaborative process for the first wave PFI hospital development schemes.

The shift in dynamics from architect/designers to building contractors appears to have resulted in 'time' being placed at a premium to the detriment of the design development performance and 'selective' collaborative process. Although on reflection the current public perception of this shift has resulted in some 'new build' hospital facilities being built relatively on time or late (see pp. 263 to 265). Other studies suggest that overall user satisfaction in 'new build' PFI facilities were generally viewed as very good and PFI was the preferred option for further 'new build' hospital facilities.[160] [161] However, the findings of this survey reveal the subtleties of the additional information from the sub-variables, which identifies the levels of satisfaction expressed by end users of hospital environments. For example, this study reveals that while the patients generally were positive about the PFI facilities (which related to ambient qualities), the hospital staff were mainly dissatisfied with the PFI facilities that hampered efficient working practices. Whereas other studies suggest hospital Trust managers are generally pleased with the outcome of the PFI facilities, this study reveals that Trust managers who took part in this study have some concerns relating to the 'design in place' compared to the design originally envisaged. In addition, this study shows that the proposed contributions from end users enable a point of reference whereby architect/designers and building contractors can utilise particular expertise to develop environments, which meets the

holistic needs of hospital end users. The research also reveals the extent of the different requirements between patients and staff in PFI and non-PFI hospitals and the degree to which positive preferences were achieved in the PFI hospitals for patients and less so for staff, while the non-PFI hospitals (particularly Y3) attained more positive response by staff.

General observations from the 'gender balance' surveys (sections 4.4.6.1 & 4.5.6.1) indicate that the most vocal or specific opinions, may predominately be from females respondents (via *other comments* section of the questionnaire). The 'age profile' surveys (sections 4.4.6.2 & 4.5.6.2) ranging from 35 to 65 and over reveal the older age groups were more likely to frequent the outpatients department, and subsequently have 'informed' knowledge of various hospital facilities and services.

The findings of this research show that despite the utilisation of various 'perceived' beneficial features from each era of hospital design development process (see pp. 48 to 60) the use of modularity in creating expandable and flexible spaces, leaves little scope for flexibility when time is the deciding factor. Alternative solutions may not reach a satisfactory conclusion if the collaborative process is not able to accommodate alternative solutions (see pp. 225 to 227) for end users 'current' requirements for the 'new build'

hospital development requisites. The commonalities between the patient and staff comments are the specific nature of the preferred environments. For the patients in PFI and non-PFI hospitals it appears the ambient settings are of primary concern for a sense of *well-being*, as it may detract/calm their thoughts for the clinical appointment (as highlighted in section 4.8). The functional characteristics of the environment are at the forefront of PFI and non-PFI hospital staff concerns due to the specifics of their comments and the nature of their work. This is clearly illustrated by PFI and non-PFI patients and staff response to the surveys.

So how can the *hospital design* analysis contribute to the investigation? As discussed in section 3.5, a *relative* scoring system was devised to measure the 'characteristic/ attributes' variables of the PFI and non-PFI hospitals (see p. 120). This was sub-divided further into two sections (*function/physical and psychological*) in order to maintain consistency as well as retain a similar uniformity to the PFI and non-PFI hospital surveys. The numerical values were applied to the 'characteristic/attributes' variables of the hospital reception/waiting area environments (Table 17.2). The importance of the scoring system is that it establishes whether there is a correlation between the PFI and non-PFI hospitals 'characteristic/ attributes' variables, and the findings of the hospital end user surveys (PFI and non-PFI) in addition to the analysis of perceptions.

The *hospital design* findings of the 'characteristic/attributes' variables under the *function/physical* section for the PFI hospital in the North (X1), revealed a lower rating than its non-PFI (Y3) counterpart (section 4.3.2). The Southern PFI hospital (X2) shows a moderately higher rating for the *function/physical* section (section 4.3.2). The feedback from *patient* surveys for the PFI hospitals was positive about some aspects of the ambient settings and physical features in the 'main' reception/waiting areas (section 4.4.7.1). The *staff surveys* was more positive and less critical of the non-PFI reception/waiting areas spatial environments (see pp. 207 to 210). Further views from *other stakeholders* (section 4.6) reveal the *NHS Trust managers* (PFI) both believed (to a greater extent in Hospital X2) the spatial planning addressed end user needs (see pp. 215 to 218). However, the architect/designers thought the 'dynamics' of the working relationship limit the effectiveness of their design input (see p. 220). While the *building contractors* felt the current format met client(s) needs (see p. 226). Yet, additional analysis of the 'main' and 'sub' totals shows that the PFI hospitals had a higher score rate for the 'main' reception/waiting areas than for the sub-reception/waiting areas (section 4.3.3). The findings of the *patient surveys* show the sub-reception/waiting areas were less spacious than the 'main' reception/waiting area (see p. 180). The feedback from the *staff surveys*, highlight some similarities (in terms of perceptions) and a degree of user satisfaction for the PFI 'main'

reception/waiting areas (lesser degree in Hospital X1) and the non-PFI hospitals sub-reception/waiting areas (see pp. 207 to 210). However, the sub-reception/waiting areas in the PFI hospital received considerable criticisms (see pp. 186 to 191). The architect/designers believe the emphasis on 'time' compromised the design development process (see p. 226). One *NHS Trust manager* (Hospital X1) raised concerns regarding the appropriateness of the use of output specifications (p. 218) to determine the needs of the hospital end user, and the effectiveness of the collaboration process (see p. 225). The *building contractors* feedback reveal a preference for modular designs and output specifications to meet the 'specific' requirements of the hospital end user (see p. 226).

The *hospital design* analysis of the *psychological* section for the non-PFI hospitals achieved a higher rating only in the 'refreshment' variable (section 4.3.1). However, *patient surveys* also show a degree of positive comments for some of the physical features and ambient settings (see p. 183). Whereas the *staff surveys* (PFI), reveal the *psychological* and *social needs* were perceived less favourably (see p. 207) in spite of the PFI hospitals gaining more points in the 'windows external view', 'technology' and 'décor perception' variables (Table 17.2). The contradiction of the *hospital design* results could be due to its format since the analysis was based on the features of the architectural plans and on site observations (see p.119).

Even though from the *hospital design* analysis the PFI hospitals may share similar 'characteristic/attributes' scores for the *function/physical and psychological sections*, the sums reveal a marked difference in spatial preference (Table 17.2). The individual characteristics/attributes variables of the non-PFI hospitals (Y3 & Y4) revealed a higher score rate (*function/physical* section) for the sub-reception/waiting areas than the PFI hospitals (X1 & X2) reception/waiting areas (section 4.3.1). The *hospital design* analysis of the *function/physical* section reveal both PFI hospitals have the same marks for most of the variables except the 'layout/orientation', 'lighting (sub)' and 'windows (sub)' where the scores differs.

On the whole, the 'column total' for the non-PFI hospitals (Y3 & Y4) gained a higher score rate than their PFI (X1 & X2) counterparts (section 4.3.1). In comparison, the non-PFI hospitals have varying marks (and higher points) with only three 'characteristic/attributes' having the same marks, which were the sub-reception/waiting areas, 'ceiling (main)' and 'light (sub)' variables. Further views from *other stakeholders* (section 4.6) reveal some hospital staff believed the 'new build' hospital environments did not sufficiently address the needs of their clinical activities (see p.224). While a *NHS Trust managers* believed the envisage flexibility specified in the original contract did not materialised (see p. 225). The *architect/designers* felt their initial input did not support the design aspirations of the

client(s) profile (see p. 226). Whereas the *building contractors*, considered the collaborative process in place overall aided the construction process and costs.

The *hospital design* results clearly show overall the *function/physical* section (Table 17.2) for the non-PFI hospitals out performs the PFI hospitals ('column total' and 'sub' totals). However, the global 'main and 'sub' totals results also identify the key areas that requires further attention (section 4.3.4). Particularly when considering the useful and/or the appropriateness of the spatial planning for the 'main' and 'sub' reception/waiting areas, which are reflected in the individual characteristics/attributes variables (Table 17.2) and substantiated in the 'main and sub-totals' calculations (section 4.3.1). There are clearly concerns (*NHS Trust managers* and *architect/designers*) in the design of the PFI hospitals 'main and sub' reception/waiting areas, which from the results of the end user *surveys* and *hospital design* analysis show a preference and design emphasis on the initial interface ('main' reception/waiting area) of the hospital environment. This view is also supported the *literature review* findings whereby other PFI hospital schemes share similar design features (section 1.3.2) and settings (see p. 85). These scores reflect and substantiate the findings of the PFI and non-PFI user surveys, which revealed that staff believed the non-PFI hospitals addressed their functional and physical needs (such



as storage, activities and relationship to function), while the PFI hospitals were more conducive to patients' psychological needs (*sense of well-being*) and ambient settings (*décor* perceptions, bright and spacious 'main' reception/waiting area). The results of Table 17.2 also support earlier findings of the investment being made in 'new build' hospital development projects (see pp. 2 to 5) raised from questions (*literature review* – centralisation of hospitals facilities & services and *Patients Charter* – environment & user perceptions), which informed the research project's framework (Figure 10). The development of the quantitative and qualitative questionnaires (end user *surveys*) in addition to the input of the influencing variables (*other stakeholders*) provided *unique* data for the study. In particular, with reference to the *hospital design* analysis results and the column sub-totals in the *function/physical* sections (Table 17.2).

Drawing on the two aspects of the research; a) the study of users (PFI and non-PFI) via questionnaire surveys and analysis of perceptions; b) investigation and analysis of the PFI and non-PFI hospital design, Table 25 was devised to show how the contribution from the different measurements can inform the design development and collaborative process. In addition, Table 25 also allows the two different but consistent methods of investigation to inform one another. Merging the analysis of the two studies reveals the key issues that could aid 'new build' hospital building projects.

Characteristics/ Attributes	Non-PFI			PFI		
	Patients	Staff	Hospital Design Results	Patients	Staff	Hospital Design Results
	<b>function/physical</b>					
<b>Reception/ waiting area</b>	Generally perceived as large  Hospital Y4 was the exception, which was perceived as small	Spatial planning received mainly positive comments. However, some figures suggest concerns and highlights the need for future improvements to the hospital environments	<b>Y3 (North)</b> Above average score (Good)  <b>Y4 (South)</b> Lowest score (Poor)	Perceived as large	Spatial planning performed poorly for hospital staff needs, particularly Hospital X1 in spite of a few positive results. Overall figures indicate significant concerns in the development of spatial planning	<b>X1 (North)</b> Highest score (Very Good)  <b>X2 (South)</b> Highest score (Very Good)  Overall PFI hospitals achieved higher rating levels
<b>Sub-reception/ waiting area</b>	Considered spacious	Generally positive about the <i>energy and environmental</i> performance. Staff in Hospital Y4 raised concerns regarding the <i>construction quality</i>	<b>Y3 (North)</b> Above average score (Good)  <b>Y4 (South)</b> Above average score (Good)  Overall Non-PFI hospitals show higher rating levels	Considered to be less spacious than the main reception/ waiting area	Considerable criticisms made about the <i>energy and environmental</i> performance. Some positive perceptions were achieved, the staff in (Hospital X2). The <i>construction quality</i> perceptions were generally negative in Hospital X1 than X2	<b>X1 (North)</b> Below average score (Acceptable)  <b>X2 (South)</b> Below average score (Acceptable)
<b>Ceiling (main)</b>	High	High	<b>Y3 (North)</b> Highest score (Very Good)  <b>Y4 (South)</b> Highest score (Very Good)	High	High	<b>X1 (North)</b> Highest score (Very Good)  <b>X2 (South)</b> Highest score (Very Good)  Overall PFI hospitals maintained acceptable rating levels
<b>Ceiling (sub)</b>	Reasonable high ceilings	High/moderate	<b>Y3 (North)</b> Above average score (Good)  <b>Y4 (South)</b> Highest score (Very Good)  Overall Non-PFI hospitals achieved higher rating levels	Moderate/low	Moderate/low	<b>X1 (North)</b> Below average score (Acceptable)  <b>X2 (South)</b> Below average score (Acceptable)

<b>Light (main) (main source)</b>	Perceived as light Hospital Y4 relied on artificial lighting.	Natural	<b>Y3 (North) Highest score (Very Good)</b> <b>Y4 (South) Lowest score (Poor)</b>	Perceived light Having access to natural light was considered beneficial	Natural	<b>X1 (North) Highest score (Very Good)</b> <b>X2 (South) Highest score (Very Good)</b> Overall PFI hospitals achieved high results
<b>Light (sub)</b>	Have access to natural light	Natural & artificial	<b>Y3 (North) Above average score (Good)</b> <b>Y4 (South) Above average score (Good)</b> Overall Non-PFI hospitals achieved higher rating levels	The lack of natural light for some environments were perceived as small and slightly cramped	Artificial & light well	<b>X1 (North) Low score (Poor)</b> <b>X2 (South) Below average score (Acceptable)</b>
<b>Layout/ orientation</b>	Views varied regarding features like toilets, café and special needs facilities. Opinions were divided for <i>useful</i> (Y3) and <i>poor</i> (Y4), a general acceptance for <i>adequate</i> and split views on <i>keep</i> (Y3) or <i>change</i> (Y4) variables suggesting a consensus for more immediate improvements of the facilities and services	Hospital staff perceived the <i>life cycle</i> issues as generally positive in Hospital Y3 (with the exception of the parking). Some concerns were raised regarding circulation issues	<b>Y3 (North) Highest score (Very Good)</b> <b>Y4 (South) Above average score (Good)</b> Overall Non-PFI hospitals achieved higher rating levels	Features like toilets, café and special needs facilities were viewed as useful and generally adequate. However, figures indicated additional features/services would be an improvement	The <i>life cycle</i> issues were generally positive in Hospital X2 (with the exception of the parking) and negative in Hospital X1 (with the exception of the <i>hospital site</i> setting).	<b>X1 (North) Low score (Poor)</b> <b>X2 (South) Above average score (good)</b>
<b>Windows (main)</b>	Medium (with the exception of Hospital Y4 who had none)	Medium (with the exception of Hospital Y4)	<b>Y3 (North) Above average score (Good)</b> <b>Y4 (South) Low score (Poor)</b>	Large	Large	<b>X1 (North) Highest score (Very Good)</b> <b>X2 (South) Highest score (Very Good)</b> Overall PFI hospitals show higher rating levels



Windows (sub)	Large & medium	Large & medium	<p><b>Y3 (North)</b> Above average score (Good)</p> <p><b>Y4 (South)</b> Highest score (Very Good)</p> <p>Overall Non-PFI hospitals gained high results</p>	Medium, small & light well	Medium, small & light well (with the exception of some areas in Hospital X1)	<p><b>X1 (North)</b> Low score (Poor)</p> <p><b>X2 (South)</b> Below average score (Acceptable)</p>
Characteristics/Attributes	psychological					
Windows external view	Hospital Y3 had external views to residential buildings in comparison to Hospital Y4, which had no view at all from the main reception area	Sky, hospital and residential buildings (some seating positioned away or had no view)	<p><b>Y3 (North)</b> Below average score (Acceptable)</p> <p><b>Y4 (South)</b> Low score (Poor)</p>	Visually, there was access to some external views of the landscaped gardens/scenery	Semi-rural (X2) and urban (X1) landscapes (majority of seating positioned away from view – X1)	<p><b>X1 (North)</b> Above average score (Good)</p> <p><b>X2 (South)</b> Highest score (Very Good)</p> <p>Overall PFI hospitals achieved higher rating levels</p>
Technology	Information systems were mainly perceived as clear, visible and mainly understandable. Some figures and other comments suggest patients welcome improvements to the signage	none	<p><b>Y3 (North)</b> Low score (Poor)</p> <p><b>Y4 (South)</b> Low score (Poor)</p>	Information systems were generally perceived as clear, visible and understandable. Some figures and other comments suggest patients would like improvements to the speed of the output information for special needs users	TV and electronic 'tic-a-tape' information (X2)  Electronic information points, but some not installed at time of survey	<p><b>X1 (North)</b> Above average score (Good)</p> <p><b>X2 (South)</b> Highest score (Very Good)</p> <p>Overall PFI hospitals achieved good results</p>
Refreshment	Water and still soft drinks provided by staff (Hospital Y4). Food kiosk, drinks and confectionary machine (Hospital Y3)	Food kiosk, drinks and confectionary machine (Hospital Y3)	<p><b>Y3 (North)</b> Highest score (Very good)</p> <p><b>Y4 (South)</b> Above average score (Good)</p> <p>Overall Non-PFI hospitals gained good results</p>	None	None	<p><b>X1 (North)</b> Low score (Poor)</p> <p><b>X2 (South)</b> Low score (Poor)</p>

<p>The reception/waiting areas were considered welcoming and generally tidy</p> <p>General consensus of furniture perceptions viewed as slightly colourful (Y3) and marginally dull (Y4). However both hospitals perceived them to be mainly soft, comfortable, solid and generally modern (with the exception of Hospital Y4 perceptions are more varying to the old variable)</p>	<p>There were generally positive opinions for the psychological and social needs of the user expressed by most hospital staff (although Hospital Y3 had less critical responses particularly with regard to social needs). The results also reveal some concerns with communal public and private spaces</p> <p>Some concerns were raised regarding design aesthetics</p>	<p><b>Y3 (North)</b> <b>Low score (Poor)</b></p> <p><b>Y4 (South)</b> <b>Below average score (Acceptable)</b></p>	<p>Generally the reception/ waiting areas were considered welcoming and usually tidy.</p> <p>Furniture perceptions varied from colourful (main reception area) to slightly dull (sub-waiting area) and slightly soft (X1) to somewhat hard (X2). However both hospitals perceived them to be comfortable, solid and modern</p>	<p>There were generally negative opinions for the psychological and social needs of the user expressed by most hospital staff (although Hospital X2 achieved slightly less critical responses). The results reveal particular concerns regarding communal interaction within public and private spaces.</p>	<p><b>X1 (North)</b> <b>Highest score (Very good)</b></p> <p><b>X2 (South)</b> <b>Above average score (Good)</b></p> <p><b>Overall</b> <b>PFI hospitals achieved higher rating levels</b></p>
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**Summary of the Scoring Levels for PFI Hospitals**

Hospital X1 (North)		Hospital X2 (South)	
Function/Physical		Function/Physical	
General		General	
Significantly lower rating than non-PFI (Y3)		Higher rating than non-PFI (Y4)	
Main totals	Sub-totals	Main totals	Sub-totals
Marginally lower rating than non-PFI (Y3)	Significantly lower rating than non-PFI (Y3)	Significantly higher rating than non-PFI (Y4)	Significantly lower rating than non-PFI (Y4)
Psychological		Psychological	
General		General	
Higher rating than non-PFI (Y3)		Higher rating than non-PFI (Y4)	
Function/Physical and Psychological		Function/Physical and Psychological	
Main totals	Sub-totals	Main totals	Sub-totals
Higher rating than non-PFI (Y3)	Lower rating than non-PFI (Y3)	Significantly higher rating than non-PFI (Y4)	Marginally lower rating than non-PFI (Y4)
Function/Physical and Psychological		Function/Physical and Psychological	
Overall		Overall	
Lower rating than non-PFI (Y3)		Significantly higher rating than non-PFI (Y4)	

**blue text** = relates the results of the PFI and non-PFI hospitals characteristics/attributes in order to contextualise the findings of the patient and staff surveys particularly where a *higher, lower or maintained* results has been achieved.

**Table 25:** Summary of Patients and Staff Surveys Compared with Results of Characteristics/Attributes Scoring Levels for PFI and non-PFI Hospital Reception/Waiting Areas

The visual representation of the two strands of investigation summarises the findings of the user *surveys* and *hospital design* analysis. The *Summary of the Scoring Levels for PFI Hospitals* gives a graphical overview of the PFI hospitals attainment levels (higher or lower ratings) compared with their non-PFI counterparts. The comparison of the results reveals the nuances of *hospital design* analysis, which calculates the strengths and weaknesses in the design of the PFI and non-PFI hospital reception/waiting areas. While the input from patients and staff surveys measures the degree to which user satisfaction has been achieved and articulates the key concerns of hospital end users

For instance, for the *function/physical* section (*hospital design* analysis) the sub-reception/waiting areas show lower scores in both PFI hospitals (Table 17.2) than the non-PFI hospitals. The staff primary concerns (revealed via surveys) have been clear and succinct about their perceptions of the sub-reception/waiting areas not meeting their clinical needs (see p. 288). They have identified key areas requiring improvements such as spatial planning, social needs with reference to communal interaction with public and private spaces (Table 23). They believe these aspects would address their functional needs in order to achieve a *sense of well-being* (pp. 207 to 210). Additionally, the spatial perceptions (information from the *other comments* section of the questionnaire)

have also contributed to the impression of smaller and darker sub-environments (see p.288). These findings are also reflected in the score levels (revealed via the *hospital design* analysis) of the characteristics/attributes variables (pp.148 to 163). Table 25 reveal the lower score rating for the PFI hospitals 'ceiling (sub)', 'light (sub)' and 'windows (sub)' variables, which is reflected in the *Summary of Scoring Levels for PFI Hospital* section.

For patients, their primary concerns relate to the aesthetic qualities and ambient settings of the reception/waiting areas (revealed via surveys) such as external views and décor, which is supported by the *hospital design* analysis results (Table 17.2). However, the secondary concerns (information from the *other* comment section of the questionnaire) such as toilets, café amenities, special needs facilities and services (Table 23) are not reflected in the psychological section of the *hospital design* results (17.2) as a whole, but in-part with reference to the 'refreshment' variable. Possibly further refinement (additional variables) of the psychological section may reveal further information for this category (discussed previously on p. 284). The data revealed a *sense of well-being* had been achieved in the main reception/waiting area (pp. 207 to 210). Although there were similar perceptions of the sub-waiting areas, overall Table 17.2 show the non-PFI hospitals maintained a credible level of rating comparable

with its PFI counterparts (revealed via the *hospital design* analysis). The PFI hospital results for the *psychological* section did significantly well in the characteristics/ attributes variables (pp.148 to 163) supporting patients and staff positive perceptions of the main reception/waiting areas, revealed via the surveys. However, *patients* and *staff surveys* also show additional improvements could be made to the 'window external view', 'technology' and 'décor perceptions' variables (Table 25), which was supported by the *hospital design* scores in the *psychological* section (Table 17.2).

With reference to end users concerns of the *environmental performance* and *construction quality* issues (Table 25), the *hospital design* results reflect (in-part) the differing perceptions of the staff (Figure 35 & 36) and NHS Trust managers (Figure 41 & 42), surveys as well as NHS Trust managers discussion/interviews (see p. 225). The results of the staff surveys reflect some of the NHS Trust managers concerns relating to the effectiveness of the collaborative process. Consultation between the client and Consortium of specific design needs was "...sometimes loss in translation" (section 4.5.4.2), with reference to *output specifications*, *contingency for growth* and *design outcome* lacking the envisaged flexibility as specified in the original contract. Comparing the two strands of the investigation reveal the *hospital design* analysis scores reflect some of the NHS Trust managers observations of the



spatial planning in so much that the key differences between the 'main' and 'sub' reception/waiting areas (*function/physical section*) is also highlighted in *staff surveys* perceptions (as previously discussed) of their clinical working areas.

Fundamentally, the findings show the correlation between the two strands of research and the specific nature of end users praise or concerns (via the surveys) is reflected in the *hospital design* analysis score levels. Whether it is of primary or secondary concern for staff and patients respectively, the results enable a point of reference for those participating in the design development and collaborative process for 'new build' hospital projects. Additionally, Table 25 overview (*Summary of the Scoring Levels for PFI Hospitals*) facilitates the architect/designers, the client and building contractors' to liaise on the key points of concern by utilising the; 'general'; 'main and sub-totals'; as well as the 'overall' findings in a constructive and 'informed' way via the graphical representation. Therefore, developing 'new build' hospitals facilities that service the specific needs of the hospital end user (patients and staff) simultaneously.

The results reveal the importance of the collaborative consultation process and the justification for informed choices (section 4.8) via the design development process. Architect/ designers are usually

excluded from the hospital construction process (Table 2), once they have submitted their designs to the Consortium (section 4.6.3).

Previously architect/designers would be involved in the hospital project from concept to completion (section 1.3.1) and participating throughout the design development and collaborative process between client and building contractor. The building contractor sourced by the architect/designers (section 1.2.3) would generally have a closer working relationship and more input in the design development of hospital building projects. This has been reflected in the pre-PFI hospitals life-span, which has endured decades of under funding but has remained in-service (partly) due to its spatial planning. However, the current PFI procurement process limits consultation between architect/ designers, building contractors and client. As a result, PFI/PPP influence the design development and collaborative process (section 1.3.2) negatively with its reliance on output specification and modular designs to deliver 'new build' hospital building quickly and to budget (section 1.3.3).

The two strands of the investigation can contribute and aid the design development as well as the collaborative process by utilising the *hospital design* analysis to reveal the strengths and weaknesses (see pp. 143 to 145) in the 'main' and 'sub' reception/waiting areas respectively via the *function/physical* and

*psychological* sections (Table 25) of the 'new build' hospital facilities. While the user *surveys* highlight the specific requirements of patient and staff needs. If the collaborative process was to extend beyond the tender submission stage, it is likely that some of the flaws in the design of 'new build' hospital projects would have been anticipated considering the previous procurement method (although considered lengthy) was contemplative (between architects/designers, building contractors and client) in its approach to the design development process (section 1.2.3). In addition, the emphasis on 'budget' and the constraints on 'time' in the current PFI procurement system have a negative influence on the interaction between architect/designers and building contractors (section 4.6.4.3).

The hospital end user investigations and the *hospital design* analysis of the selected PFI and non-PFI hospitals reveal the necessity for a holistic approach to the 'new build' design development and collaborative process. This study clearly identifies and shows the necessity for the architect/designers contributing **from** the initial stages of the design development process, **throughout** the duration of the hospital construction process, to the **final** completion of the 'new build' hospital facilities (discussed further in Chapter 6).

## CHAPTER SIX - CONCLUSIONS AND RECOMMENDATIONS

As has been discussed, earlier, the modified patient charter and the subsequent NHS Plan have increased patient expectations and demands. At the same time the hospital charter demands certain expectations. There is a need to fulfil the expectations of both patients and staff. The main conclusions drawn from the PFI and non-PFI hospital studies highlights the need for research undertaken by designers and developers, which links variables that address user functional and psychological needs by means of feedback that enable 'holistic' solutions for the design development process. The extent to which design has been marginalised and whether a *sense of well-being* (ambient settings and physical features/attributes) have been achieved measured by hospital end users preference levels has been investigated. The recommendations reflects upon the research findings and the results of users' response to the investigations, suggesting a number of key factors that address the functional and psychological needs of the user.

## 6.1 CONCLUSION

When reflecting upon the aims and objectives of the study (see pp. 17 to 18), there were a number of key issues undertaken to ascertain the different procurement processes, the implications on the hospital design development process and the degree to which user satisfaction has been achieved. As discussed in Chapter five (see pp. 1 to 5 and 10 to 22) the significance and scope of the study, focussed on NHS policies pertaining to the design process and development of 'new build' hospital building design, (including economic considerations). Due to the size and time-scale of the project, only influencing factors that had a direct effect on sub-variables were considered appropriate for further research. Some of the wider NHS policies (with regard to current debates, targets and performance management processes), were considered and excluded either because they did not have direct bearing/relation on, or had no implications for the PPP/PFI and 'new build' hospital buildings projects, as discussed in Chapters five and six (see pp. 268, 276 to 280 and 299 to 312).

There have been a number of limitations placed on the research as discussed earlier (see pp. 1 to 5, 10 to 18, 22 to 23, 100 to 101 and 113 to 114), as well as the data allowed for use by PFI and non-PFI hospitals (see pp. 114 to 117 and 264). In summary the main

limitations of the survey were two-fold. Of the 22 hospitals contacted, only four were selected to take part in the final survey due to the geographical locations and their willingness for greater use of the information obtained. These four hospitals also set certain stringent conditions as to how the data could be used and reserved the right to have information withdrawn that they viewed to be sensitive.

With reference to information received from the NHS Trust Managers (such as departments, anticipated scheduled appointments for days of the week and size of population served), the questionnaires (patients and staff) were limited to 200 for the PFI and 120 for the non-PFI hospitals (see p. 117 for quantity of respondents). Ethnicity and social class variables were not included in the surveys (as advised by previous supervisors as well as the reluctance of the hospitals for such data to be included) and beyond the focus of the study (see pp.22 to 23). Nevertheless, the findings of this study have exposed the underlying issues associated with the 'new build' design development and collaborative process, between client and the Consortium. In addition, key issues (spatial planning and ambient settings) relating to user satisfaction and a *sense of well-being* for the reception/waiting areas of the selected PFI and non-PFI hospital environments.

The conclusions drawn from this study reveal that the preferred option (for *building contractors*) was the *Private Finance Initiative* when building new hospital facilities even though alternative forms of financing such as LIFT may be more appropriate. In addition, there is still considerable debate regarding the feasibility of the PFI procurement process expenditure and long-term financial implications [162] [163] as well as the on-going NHS financial crisis [164] [165]. The study reveals the primary concerns for the PFI hospital development projects are swayed in favour of timescale, contractual services and financial considerations. The design development and collaborative process are secondary to the overall development of appropriate 'new build' hospital facilities.

Discussions with NHS Trust Managers in the PFI hospitals, architect/designers and Consortium Executives reveal the intricacies of interpretation within the collaborative process as well as the influence of time and budget driving the design development process. The meetings reveal how easily perceptions and misunderstandings may lead to tense exchanges and lack of contribution and/or co-operation towards the communicative/collaborative process in the development of new hospital facilities. However, the re-visit to Hospital 'A' (Z5) and the 'new build' hospital project of Hospital PY4 highlighted the different strategies undertaken for the design development process and the initial

perceived 'successful' outcome of the communicative/collaborative process, attributed to the collective input of the local council, hospital staff and patient forums. The current PFI process would constrain this and jeopardise different member of the team working effectively together (sections 1.3.1, 4.6.3 and pp. 282 to 296).

In terms of the degree to which the design guidelines achieve the desired requirements for spatial planning of hospital buildings, this survey reveals that there is significant variation in the interpretation of the design guidelines in the present climate of the procurement process especially with regard to the reception/waiting areas. The outpatients' departments differ in layout with regard to the clinical departments but are similar in terms of ambient features/attributes. It was certainly beneficial to experience the layout, character and impressions of the entire hospital site, in order to appreciate the nuances of the design for the internal environment.

For the PFI hospitals studied a *sense of well-being* has been achieved because overall in this survey patients prefer PFI to non-PFI hospitals environments (pp. 183 & 255). However a greater level of user satisfaction can be achieved by incorporating the feedback (*other comments* section) highlighted in the surveys, via the design development process. For example, the *patient surveys* reveal the non-PFI hospitals results highlight a preference that



suggest a degree of a *sense of well-being* has been achieved with ambient attributes and physical characteristics of the reception/waiting areas (pp.182 to 183), but not to the same degree as the PFI hospitals (p.183). The *hospital design* results reveal the 'new' hospital buildings (X1 & X2) highlighted in this study, which were developed to facilitate modern requirements (pp. 211 to 213) show that significant improvements (sub-reception/waiting areas) are necessary in order to address the functional and psychological needs of hospital staff (section 4.5.7).

Another significant difference between the PFI and non-PFI hospitals is the use of open spaces at the initial point of service for the outpatients department (pp. 126 to 129). For the PFI hospital the main 'check-in' areas were considerably larger than the non-PFI hospital reception/waiting areas (Table 23). Walls of glass were used to exploit the use of natural light and views in the PFI environments, even though some of the views were obscured (Table 25). This aspect rated strongly in both the *patient surveys* (Table 23) and in the *hospital design* analysis (Table 17.2). The non-PFI hospitals tend to have more windows in the sub-waiting areas and generally perceived as more spacious than the PFI hospitals (p. 232). For the patients this was beneficial, the staff however felt that undue emphasis was placed at the initial point of contact, which in-turn compromised other areas such as sub-

waiting areas and clinical rooms (section 4.6.1). The *hospital design* analysis ('main' and 'sub' totals) identifies and supports this view (Table 17.2 & 24.1)

The *patient and staff surveys* also reveal a desire to have some input in the hospital development process, whereby hospital end users contributions have a positive effect on the 'new build' hospital projects, the environment in which it is placed and on the local community (successfully achieved with Hospital PY4). The distinctive issues between PFI and non-PFI hospital *patient surveys* highlight users (PFI) preference of the reception/waiting areas (meeting some of their initial expectations) by justifying that their immediate physical needs (clinical) were being met by hospital staff. However, their perceptions of the reception/waiting area reveal their psychological observations have some bearing on the degree of satisfaction they experience within the reception/waiting area of the outpatients department after several visits (pp. 209 to 210).

In the non-PFI hospitals, patients were more accepting of the shortcomings of the outpatient department environment; in so much that the familiarity of the reception/waiting area layout evoked sentimentality (p. 183). In addition, the sub-waiting areas were generally more spacious than the PFI hospital environments, but user satisfaction (patients) was less in the non-PFI reception/

waiting areas. The *hospital design* results support the perceptions of the *patient surveys* and reveal the strengths and weaknesses in the spatial planning, via the nuances of the 'main' and 'sub' totals for the *function/physical* calculations (Table 17.2), for PFI and non-PFI hospitals.

For the staff (PFI), the spatial planning had implications (function and usability) for the day to day operations undertaken within the outpatients department (p.207). They were more critical and less accepting as they perceived their previous hospital environment (non-PFI) to be more spacious and accommodated their clinical needs more effectively (pp. 211 to 213). This lack of consultation led to alienation whereby staff needs or perception of needs had not been sufficiently addressed and therefore a *sense of well-being* has not been achieved (pp. 213 to 215). The flexibility of the internal spaces whereby staff were able to manoeuvre patients and equipment more easily was of primary concern. The *staff surveys* revealed concerns, which were specific and related to current expectations of their clinical needs (pp. 211 to 217). The non-PFI hospital *staff surveys* also raise concerns regarding the age and appropriateness of some of the rooms as new machinery were sometimes larger than what the facilities could accommodate (pp. 217 to 218), but were more accepting and positive of the reception/waiting areas facilities (p. 183).

The response to the patients and *staff surveys* shows the current realities of reception/waiting areas features/attributes and place into context the practicalities of the day to day operations and experiences from patients and staff points of view (Table 23). The *hospital design* analysis scores the physical features and attributes of the spatial planning as well as identifying the strengths and weaknesses of the PFI and non-PFI hospitals. Comparisons the two strands of the investigation 'informs' the design development process (via architect/designers), whereby the differing needs/requirements of the patients and staff are addressed **simultaneously**.

The observation of the collaborative design process between client and Consortium is particularly interesting as it has the potential to be a powerful tool for positive change, if undertaken in a holistic manner (section 5.1). This is one area that the author would like to have had the opportunity to investigate further and to explore the issues via a 'live' design development project with other collaborative parties involved. Nevertheless, the information gathered from the PFI and non-PFI participants went some way toward establishing the main concerns of the communicative and collaborative process between architects/ designers, NHS Trust managers and the Consortium executives.

This study has confirmed the importance of undertaking a 'holistic' and 'measured' approach to the design development and collaborative process of 'new build' hospital facilities. The effects of PFI procurement process reveal the lack of 'value for money' (p.10), when newly constructed facilities are in discussions for spatial improvements approximately three years after being completed and operational (Hospitals X1). Based on the analysis of the surveys (patients and staff), user perceptions and the *hospital design* analysis, the findings of the two strands of the investigation reveal:

1. There are differences between PFI and non-PFI hospitals.
  - a) *Patients* and *staff surveys* reveal there have been aesthetic and physical advancements to the main reception/waiting areas of both PFI hospitals, which have been conducive to patients and some staff needs. The analysis of the *hospital design* supports these findings.
  - b) The *hospital design* analysis high scores for the PFI hospitals have also been achieved in the *psychological* section. The results show they were 'significant' in the 'windows external view' 'technology' and 'décor' variables. The findings of the *patients* and *staff surveys* support this and reveal areas for future improvements.

- c) Other *hospital design* results show high scores (the main reception/waiting areas) for the lighting (X2) and windows characteristics/attributes variables. Again, supported by *patients* and *staff surveys*.
- d) Sustained ratings for PFI hospitals (characteristics/attributes variables) have been the main 'ceiling' heights, lighting (X1) and layout/orientation (X2) of the *hospital design* analysis. The *patient* and *staff surveys* refer to the orientation and quality of the light source.
- e) Areas where PFI hospitals showed lower ratings in the *hospital design* analysis were mainly in the sub-reception/waiting areas (also sub 'ceiling', 'light' and 'windows') as well as the 'layout/orientation' variable (X1). The *patients* and *staff surveys* reveal the extent of their concerns and in some cases, dissatisfaction.
- f) The non-PFI hospitals received positive perceptions in the sub-reception/waiting areas according to the *hospital design* analysis in addition to the main 'ceiling' heights (Y3 & Y4), 'light' (Y3), 'windows (sub)', 'layout/orientation (Y4) and 'refreshments' (Y3 & Y4). The *patients* and *staff surveys* reveal the spatial planning and ambient settings have reinforced their positive perceptions, in spite of the main reception/

waiting areas being better rated in the PFI hospitals by both user *surveys* and *hospital design* results.

2. The importance of carrying out surveys of hospital users, to determine patients and staff *function/physical* as well as *psychological* requirements.
  - a) The conclusions drawn from this study reveal the main reception/waiting area aesthetic and *psychological* qualities are conducive to patients' primary needs. Although aspects of sub-reception/waiting areas, extra facilities (toilets, televisions, music) and services (*special needs* users, refreshments) have raised a degree of criticism, the modern facilities (PFI) of the main reception/waiting area have provided an environment that is bright and spacious distracting patients from their immediate medical requirements. However, the sub-reception/waiting areas of the PFI hospitals have not facilitated the primary needs of the hospital staff. The staff's positive perceptions for the aesthetic qualities of the main reception/waiting areas, is tempered by the smaller and cramped working environments, which have impeded on their *function/physical* needs.

3. *Hospital design* analysis need to be undertaken in order to determine the requirements of the 'new build' hospital facility.
  - a) The *hospital design* analysis statistical indicator is a useful tool in evaluating the nuances of the hospital rating levels, which is not subject to interpretation.
  
4. The results should feed back into the design development and procurement process at all stages of the build process so the final results reflect the needs of the community.
  - a) The *patients* and *staff surveys* as well as the *hospital design* analysis inform the design development and collaborative process for 'new build' hospital projects.
  
5. The 'design team' will know how to incorporate the requirements of the user (patients and staff) into the design process from the beginning to the end of the hospital project.
  - a) The input from hospital patients and staff will 'inform' (*function/physical* and *psychological* requirements) and contribute to the design development process for the betterment of the collaborative process.



The consultation process has been more successful in the design development of the main reception/waiting areas than the sub-reception/ waiting areas. The end user surveys and *hospital design* analysis reveal the *NHS Trust managers, architect/designers* and *building contractors* communicative as well as collaborative working relationship is limited in the current PFI procurement process. Considering the design input is not sought once final designs have been submitted to the *Consortium*, this could explain the poor results of the sub-reception/waiting areas if emphasis was placed on the initial interface and impressions of the hospital environment, rather than balancing the needs of the hospital end user after extensive consultation with the client(s).

Issues, such as PFI/PPP investment; spatial planning; a *sense of well-being* for hospital end users, identified in this study regarding the development of PFI and non-PFI hospitals buildings have begun to capture similar international scrutiny whereby organisations are currently encouraging the implementation of political policies that enable the development of patient-orientated hospital facilities, which aids the healing process and is conducive to hospital staff needs.[138] [139] [140] [104] The initial excitement is over for 'new build' hospital development projects, and has been replaced by a keen sense of evaluation by hospital end users, public and political observers. The degree of variation in patients'

acceptance compared to the staff criticisms highlights the need for a design protocol, which address users functional and psychological needs and utilises a holistic approach to the design development process considering the need not to mimic the mistakes of the past.[166]

When reviewing the historical nature and expectation of hospitals, the prevailing commentary continues to instil the belief to do 'no harm' to those seeking help (whether it is functional or psychological). Just like the human internal physiology, the hospital building provides a skeleton (frame) that supports internal organs (sub-frames), which is conducive to internal and external physical stimuli. The hospital skin (surface) and tissues (fixtures/fittings) is sensitive to mental and physical stimuli.

At times there are unexpected events which require our bodies to react in a pleasurable or protective way in order to assist and/or facilitate our functional or psychological needs. It is fundamental that stress and anxiety is kept to a minimum by maintaining a *sense of well-being* in addition to providing appropriate environments which address and aids the functional needs of end users, in order to maintain positive psychological and physical interaction of the hospital environment/facilities.

## 6.2 RECOMMENDATIONS

Approaching the design development process in a multidisciplinary and holistic collaboration will improve long-term aspirations in terms of user satisfaction, and financially the spatial planning. Considering the PFI (X1) interior facility is set to be redesigned therefore incurring an additional cost and disruption that may not have been necessary if the consultative process incorporated the *hospital design analysis* and end user input. In contrast Hospital Y4 (non-PFI) hospital facilities have maintained routine maintenance/services since 1994 and operating as the outpatients and minor injuries department, the new hospital facilities (PY4) was completed by 2006. The collaborative process (user input) seemed to have benefited in its development since the facilities (i.e. departments/clinics) were developed with end users in mind, compared to the experiences of its PFI counterpart (X2). The Member of Parliament (MP)<sup>ff</sup> has commented positively on the public forum, which enabled a constructive conclusion to the consultation process. The significance of this work becomes evident when the holistic approach is compared to the single variable situation. The conventional PFI procurement 'design team' consists solely of the architect/designer (*specialist consultant*) whose only function is to submit a set of drawings for tender. These are then taken up by the building contractor with no further input from the architect/designer.

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<sup>ff</sup> The identity has been omitted to protect the identity of the hospital.

One of the findings of the research reveal the PFI hospitals utilise the main reception/waiting areas as a 'showcase' to promote positive impressions of the hospital environment. However, in the sub-reception/waiting areas, which are the operational areas, there are deficiencies in the design that show they are not as effective in meeting the clinical needs of hospital staff. This could have been dealt with if there had been consultation at this critical stage.

As a consequence of the research findings, the author believes a new 'design team' should be formed composing of an *architect*, *interior designer*, *arts co-ordinator* and *landscape designer* led by a *design manager*. They will have a continual input from the beginning of the design development process to the end of the build (Figure 69). The author believes this knowledge is pertinent to the success or failure of the design development process for 'new build' hospital projects. In addition, the communicative and collaborative process should be extended to include specialist expertise for the 'given' areas of the design development process in order to facilitate the simultaneous functional and psychological needs of the end user.

The following tasks could be undertaken as a way of standardising the characteristics/attributes associated with therapeutic environments. Figure 69 outlines a *design protocol* that

incorporates the functional, psychological, interpretative and social/ spiritual aspects of the hospital environment, which in turn relate to the specific work-related activity of the provider. There has to be a mechanism which gathers, collates, and feeds user requirements throughout the procurement and design process. The users (patients and hospital staff) views can be incorporated into the design development process by undertaking surveys within the hospital environment. The procedures to acquire the necessary information should reflect the steps listed below:

1. The responsibility for distribution and collection of the surveys (patients and hospital staff) should be undertaken by senior members of staff (such as department manager or executives).
2. The information sourced from patients and hospital staff, should be collected by the *design manager* who in-turn is responsible for the distribution of the relevant information which should be fed to all the relevant participants in the 'design team' and in so doing help provide hospital environments that is more conducive to the individual needs of patients and hospital staff.
3. The individual members of the 'design team' will produce working drawings or concepts that reflects the concerns of the patients and hospital staff, as well as adhere to the requirements of the design and development briefs.

4. The collaborative and consultation process between the *Consortium, client, design manager* and designers would be more informative, as users (patients and hospital staff) views and perceptions are included at an early stage of the design development process.

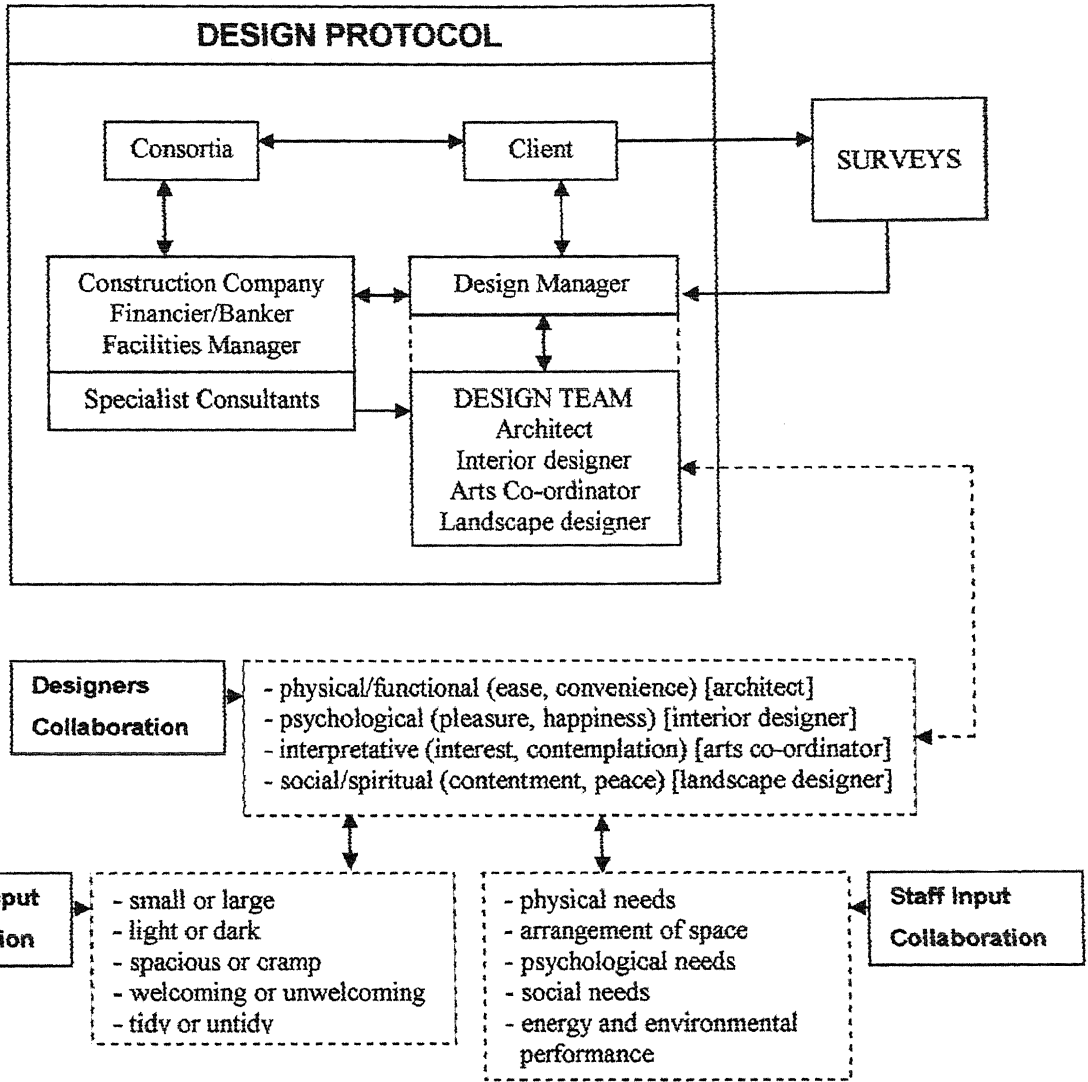
The user surveys (patients and hospital staff), which is best carried out by the hospital should be done at an early stage of the design development process. Thus the information gathered can be used to it optimum effect in building hospitals based on appropriate and 'informed' design solutions. This is achieved by each member of the 'design team' who have specific areas of expertise and responsibilities.

The ***Design Manager*** ensures that effective communication is maintained and managed within the 'design team' (i.e. the 'holistic' approach to the design development process) and the Consortium. This communication must be maintained from the beginning of the bidding stage to the signing off of the finished hospital because; architect/designers are usually excluded from the hospital construction process once they have submitted their designs to the Consortium. The *design manager* should also makes sure attainable design goals and targets are achievable for the client and are in line with the design brief and financially targets for the

hospital building project. The *design manager* consults and updates the Consortium and clients of the design and provides feedback to other members of the 'design team'. In addition, consultation between the *Consortia* and client should have in attendance the *design manager* in order to answer queries relating to the design concept, to elucidate the nuances of the 'design team' proposals and visions for the new hospital facilities and pre-empt perceived difficulties that may arise between the collaborations. The 'design team' should have four designers each allocated to undertake specific design tasks that relates to user functional and psychological needs:

- The architect – *PHYSICAL/FUNCTIONAL* – ease, convenience.
- The Interior design – *PSYCHOLOGICAL* – pleasure, happiness.
- The Arts Co-ordinator – *INTERPRETATIVE* – interest, contemplation.
- The Landscape Designer – *SOCIAL/SPIRITUAL* – contentment, peace.

This approach is unique in so much that it utilise specific skills to address the overall ideal requirements of design standards which; at best enable inspired innovative design solutions that details functional and practical characteristics/attributes that address users *sense of well-being*; or at least enables design solutions that incorporates functional and practical characteristics/attributes which address the basic elements of users *sense of well-being*.



**Figure 69:** Proposed Design Protocol Developed to Enhance the Collaborative Process that Incorporate a Holistic Approach to User Satisfaction

To put the main concerns into context with reference to the *design protocol specialist skills* area, the following criteria has been devised to address the key points of the research findings. The above criteria obtained from the findings of this study are intended to address the *design performance and aesthetics*, simultaneously for patients and staff, as identified in PFI and non-PFI hospitals:



To put the main concerns into context with reference to the *design protocol specialist skills* area, the following criteria has been devised to address the key points of the research findings. The above criteria obtained from the findings of this study are intended to address the *design performance and aesthetics*, simultaneously for patients and staff, as identified in PFI and non-PFI hospitals:

**The Architect** (PHYSICAL/FUNCTIONAL – ease, convenience) like the interior designer generally interprets client's needs, evaluates the site and researches the mechanics (e.g. form and function) of the proposed project. Architecturally, inspiration is sometimes drawn from the surrounding and/or historical value of the proposed site. For some architects the architectural importance relies on the physical attributes of the space and how the 'soul' of the building interacts with its physical surroundings and the dialogue it creates with the innate forms (materials). The relationship with the function of the building dictates the characteristics of the structure. The spatial arrangements and the functional needs of the clinical staff highlighted the importance of flexible and spacious environments, which sufficiently accommodates modern machinery, materials and storage issues.

**The Interior Designer** (PSYCHOLOGICAL – pleasure, happiness) task differs slightly in so much that the 'soul' of the building is manipulated to conform more to the desires of end users while

'stimulating' sub-conscious levels of well-being. The findings have suggested that the ambient settings and physical features/attributes of the hospital environment have implications for the psychological well-being of the hospital end users, particularly patients. Organic lines/shapes are also alternative forms of spatial arrangements, in addition to less sterile forms of colours and hues.

**The Arts Co-ordinator** (INTERPRETATIVE – interest, contemplation) skills have an interpretative role that extends from isolationist to community collaborations. Depending on the local influence of the community, contemporary, traditional and historical/cultural interests can be incorporated/implemented as art installations, murals (e.g. surface or frescos) and/or paintings. The comments from the surveys suggest users prefer some form of distraction while waiting to be seen by consultant/doctor. The questioning and reasoning aspects of life can be expressed through artworks, which can be permanent or temporary installations as described in sections 1.1 and 1.3.2 in addition to the suggested music or television installations.

**The Landscape Designer** (SOCIAL/SPIRITUAL – contentment, peace) utilise nature and man-made materials to maintain a dialogue with the internal and external environment. The collaborations of the specialist skills areas addresses the main concerns as identified in Chapter four, whereby the physical and

psychological aspirations of hospital end user needs are realised. The patients and staff comments suggested that some of the reception/waiting area environments were sterile and clinical in appearance. Hospital end users visual, sensory and physical abilities could be enhanced by developing the external landscape to reflect the gardens of convalescent homes. These features are also likely to improve the sense of community and social interaction, which some hospital staff believed they have lost since relocating to new hospital facilities. The internal/external experience could be further enhanced by incorporating 'selective' foliages, to complement surrounding ambient settings and physical features/attributes.

The experiences of the proposed 'design team' would contribute to the overall success of the 'new build' hospital building projects, by providing information relevant to the build (i.e. skill area data and observations). These activities are specifically targeted to address, encourage and maintain users' positive impressions of the hospital environment by utilising the user senses such as sight, sound, smell, taste and touch. By examining the spatial planning and user needs in parallel to specific working tasks the results (final criteria) forms the basis of a 'design protocol' for the development of 'new build' PFI hospital building projects. In order to address user satisfaction, the 'design protocol' utilises the expertise of specific

design areas, that incorporates and standardises the elements (ambient settings and physical features/attributes) associated with therapeutic environments. More needs to be done to address failing internal environments of newly constructed hospital facilities, in order to reduce future expenditure for correcting or redeveloping spatial arrangements as discussed previously.

At a time when PFI/PPP projects are under constant scrutiny to justify their large expenditure and the insufficient use of the proposed 1% allocation for the design budget (total 'new build' costs), it seems insightful to address the shortcomings of some areas of the design development process, which appears to have a direct bearing on users' impression of the hospital environment. By adopting/implementing these measures, the author believes hospital buildings can be more than just treatment facilities, but also provide user friendly and therapeutic attributes conducive to user satisfaction.

Further studies could be undertaken whereby the second and third wave hospital facilities are subjected to the same sub-variables in order to identify whether there is any significant variation in the levels of user satisfaction. This could promote the benefits of a design policy, which implements a standardised design protocol for the design development process that minimise interpretations of the design guidelines in the UK.

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USER SATISFACTION IN PFI AND NON-PFI HOSPITALS IN  
THE UK: IN PARTICULAR THE OUTPATIENTS'  
DEPARTMENT RECEPTION/WAITING AREAS

by

Wendy M. Henderson

A thesis submitted for the degree of Doctor of Philosophy of the  
University of Bedfordshire

November 2008

## **APPENDICES**

- 1. Summary: Design Implications of the Patients Charter**
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- 5. Patient Questionnaire**
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- 8. Hospital Y4 Partial Site View**
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## **AUTHOR'S DECLARATION**

I declare that this thesis is my own unaided work. It is being submitted for the degree of Doctor of Philosophy at the University of Bedfordshire. It has not been submitted before for any degree or examination in any other University.

.....  
Wendy M. Henderson



Date: November 2008  
.....

**APPENDIX 1.**      Summary: Design Implications of the  
Patients Charter

## Research published on 'design implications of the Patients Charter'

04 December 2000

Dr Joseph Amoah-Nyako Wendy M Henderson, based at the design and architecture unit at Luton University, recently undertook research at various hospitals to ascertain patients' responses to their environment. This report is a brief summary of a pilot survey on the design implications of the patients' charter in selected hospitals to identify whether the objectives were being met with a view of providing design or other possible solutions.

Patients were randomly selected on an afternoon in an outpatients department and asked to respond to a pilot questionnaire. The questions included various topics relating to their perception of the built environment – internal and external, signage, verbal and written information and their relationship with medical staff, doctors and consultant identified in the patients charter. There were 52 patients in the sample.

In general patients found the outpatients department welcoming. The participants felt that the overall impression of the building was 'old', however the respondents expressed the view that the signage was clear, the reception area was quite pleasant and generally tidy. The toilet facilities were regarded as adequate, but some reservations were made about accessibility (Appendix A).

Some 'special needs' concerns were raised regarding the hard of hearing and partially sighted patients, since 'carers' bolder signs and clearer/slower diction would assist these patients. Several significant variables were identified during this study survey which require in depth study to satisfy the objectives of the patients' charter.

For the full report ("The Patients Charter – Design Implications"), contact the Design and Architecture Research Unit, University of Luton, Park Square, Luton, LU1 3JU, tel 01582 734111 ext 2532 email: joseph.amoah-nyako@luton.ac.uk or wendy.henderson@luton.ac.uk



**APPENDIX 2. Positives and Realist Handouts**

## Research Methods Course

PH13 PP3  
Fiona Lacey

## Objectives of Course

- To promote the use of systematic and rigorous research practices.
- To provide a basic insight into a range of pharmacy practice-related research methods
- To develop the ability to select suitable methods for research projects.

## Course Contents

- Lectures:
  - Introduction to research
  - Quantitative methods
  - Qualitative methods
  - A Research Project  
Clinical Research *JFM*
- Workshop:
  - Criticising published research methods

## Do I need to attend?

- Course aims to provide understanding not facts
  - How much understanding do you get from overheads?
- You will have a project to do next year  
YOUR research abilities and understanding will be tested
- You have an exam to pass this year  
-- *Up to you really!*

## Introduction to Research

PH13 PP3  
Fiona Lacey

## What is research?

- Something people in white coats do?
- A way of thinking, examining critically various aspects of something
- Understanding and formulating guiding principals, developing and testing theories.
- A HABIT of questioning, then empirical examination to find answers or "results".
- A set of skills, but more: an approach to life!

## Why do research

- For the sake of knowledge itself  
Academic or fundamental research
- For a practical reason (e.g. To develop the knowledge base for IBM)  
Applied research
- Part of the MPharm requirements!

## The Scientific method

- Systematic observation, classification and interpretation of data  
Everyone does this all the time on an ad hoc basis... how we learn to survive!
- Formalised, rigorous, verifiable, valid
- **SYSTEMATIC** investigation to find answers to a problem or question.  
Who is a scientist? Who can do research?  
Pharmacist, sociologist, psychologist....

## The scientific method

- Uses **CONVENTIONAL** procedures
- Process undertaken within a framework of a set of philosophies
- Uses procedures, methods, techniques that have been tested for reliability and validity  
Or develops such procedures!
- Is an activity designed to be **OBJECTIVE** and **UNBIASED**

- N.B.
- Well conducted research from various philosophies is **SCIENTIFIC** research!

Sociology  
Psychology  
Medicine  
Pharmacy Practice

## Differing attitudes

- Method of investigation chosen depends on researchers own assumptions about the world
- **DEDUCTION**: develop a theory, define a hypothesis, test it by research data
- **INDUCTION**: collect data, build up observations, formulate ideas and testable hypothesis, repeat to see if hypothesis valid.
- Depends on **PHILOSOPHY** of researcher  
Positivist philosophy, positivist paradigm.

## Paradigms

- Theoretical perspectives or **PARADIGMS**
- Set of assumptions on which research is based:  
– A way of looking at the world
- Provide frameworks for interpreting results  
Sociologist: focuses on social structure  
Psychologist: focuses on interpersonal differences or behaviour  
Pharmacist????? How do you see the world?

## Positivist vs Realist

- Phenomena only real if can be measured, quantified through evidence
- Hypothesis, experiment or investigation, cause and effect
- Based on measurement, statistical analysis, large data sets.
- Objective, unbiased, apolitical. (*value free?*)
- Study individuals and organisations, NOT physical world
- NATURALISTIC enquiry, questions value of preconceived hypothesis, emphasis on qualitative research.
- Small numbers: case studies, narratives, descriptions valid.
- Researchers ADMIT subjective influences

## Paradigm shift

- Does our view of the world always stay the same? Is the "Truth" constant?
- *The world is flat*
- *Ulcers are NOT caused by bacteria*
- Some conflict inevitable when a shift in perspective, in the current paradigm occurs.

## Qualitative vs Quantitative

- QUALITATIVE:
  - Description, in depth studies, HOW?, WHY?
  - Observation, in depth interview, focus group, case study, narrative
- QUANTITATIVE:
  - Large numbers, analysed by statistics
  - Surveys, RCT
  - Answers, How many???

## The research process

- Define research problem
  - Mind mapping, hypothesis
  - Check existing knowledge
- Develop approach
  - Aims and objectives, decide on methods
- Design study
- Data gathering
- Data entry and analysis
- Interpretation of results and report

## Which method?

- Depends on the question!
- Main QUANTITATIVE METHODS
  - Survey (Questionnaire, structured interview)
  - Randomised Controlled Trial
- Main QUALITATIVE methods
  - Focus groups
  - In depth interviews
  - Case studies, narratives

## Some concepts

- Validity
  - Internal: study design
    - "Am I measuring what I think I am measuring?"
  - External: can the results be GENERALISED?
- Replicability: can someone else replicate the study?
- Reliability:
  - Easy for lab based work, more problematic for social science based studies
  - Ethically and practically difficult to recreate precise social conditions and interactions

## More concepts

- Research should be undertaken **WITHOUT** introducing vested interests  
OR such interests should be declared and made obvious, not hidden from reader.
- **UNBIASED:**  
Bias is a deliberate attempt to conceal or highlight something. Affects interpretation.
- **OBJECTIVE:**  
- Subjectivity is an integral part of your thinking, conditioned by who and what you are. Leave yourself behind when you do research!

## What is "bad" research

- Pointless or unanswerable question  
Aims and objectives, previous work  
Ethics!
- Inappropriate method  
- Useless results!
- Bad design: ditto
- Inappropriate analysis
- Biased interpretation passing as objective
- Unpublished if valid!

## Ethics

- Ethical issues
  - Professional integrity of researcher
  - Relations with and responsibility to participants
    - Anonymity, privacy, confidentiality
  - Informed consent: willing and **AWARE**
  - Relations with and responsibility to sponsors
  - Privileged information: be aware of political or social impact of report of findings.
- Research involving patients, premises, staff  
NHS must get Local Regional Ethics Committee (LREC) permission

## Some things to think about

- Knowledge as a social construct
  - Do we always interpret things based on our cultural understandings?
  - Profession has own culture, language and methods which affect our view of the world.
- How do pharmacists interpret the world?  
Positivist philosophical approach  
- Need to develop a "social scientist" approach
- What do we mean by "values"?  
Are researchers ever really "value free"?  
Do "values" affect how we interpret results?

## Two final thoughts

- Testing a hypothesis:
  - You can never prove anything, you can only disprove something.
- "The truth is out here"

# SOC103

## Social Research Methods

### Lecture 2

#### Epistemology and Methodology

1

## Plan of the Lecture

- Definitions.
- Positivism and the quantitative tradition.
- Critiques of positivism.
- Objectivity in a post-modern world?
- Epistemological underpinnings to methods.
- Quantitative *versus* qualitative methods?
- Combining quantitative and qualitative approaches.

2

## Definitions

Ontology = what exists? what is the nature of the social world? what may be known?

Epistemology = how can we know the world? how dependable is that knowledge?

Methodology = the theoretical and philosophical assumptions underpinning particular research, methods or disciplines.

3

## Definitions (continued)

Naturalists advocate the use of scientific methods to study the social world. (N.B. different from ethnographic naturalism)

Interpretivists oppose the use of 'scientific' methods.

Validity = whether research is 'true'.

Generalisability = whether research findings are true in general / can be applied to the whole population.

4

## Characteristics of Positivism

- Product of the Enlightenment.
- Expectation that social science would guide the evolution of societies.
- Comte – 'the positive philosophy'.
- Empiricist epistemology - the observation and recording of 'social facts' (Durkheim)
- Naturalist approach modelled on the natural sciences.
- Not concerned with interpretation or meaning.

5

## Different views of 'science'

- What criteria demarcate science from other knowledge enterprises?
- True science is based on deduction, falsification and a rationalist epistemology (Popper) => 'hypothetico-deductive' development of theory.
- Normal conduct of science is uncritical of basic assumptions; revolutions in theory proceed by shifts in paradigm (Kuhn).
- There is no single scientific method; progress occurs through the attempted contradiction of theories (counter-induction) and 'epistemological anarchy' (Feyerherband).

6

## Broader questions

- Is there really an external world 'out there' from which we can obtain 'true' knowledge?
- Categories and representations are socially and culturally constructed. Can we talk of a single true version of reality? Especially when exploring a social rather than physical reality.
- The search for predictive rules deals with structure but denies agency.
- All knowledge is reflexive.

7

## Hermeneutics

- 'Verstehen' = 'to understand' (Dilthey)
- Social science is concerned with understanding human consciousness. Exploring meanings for people and groups rather than identifying causal laws.
- Shared experience requires researcher empathy.
- Delineating the "rules of the game" (Wittgenstein).
- Rules are public/social. To understand the rules, we must participate in the social game. The researcher is at the centre of the research process.
- Social science is therefore always historically and spatially located.

8

## Postmodernism & Social Construction

- Do our propositions reflect the world as it is or do they construct it?
- "The world is lots of ways... because people have lots of ways of constructing it".
- But... *"The claim 'everything is subjective' must be nonsense, for it would itself have to be either subjective or objective. But it can't be objective, since in that case it would be false if true. And it can't be subjective, because then it would not rule out any objective claim, including the claim that it is objectively false"* (Nagel 1997).
- Relativism - all viewpoints of equal value, no differentiation between good and bad research.

9

## Epistemological underpinnings to the use of different methods

- Anti-realist, idealist, post-modern, social constructionist, interpretative orientations tend to employ qualitative methods.
- Rationalist, positivist, empiricist, realist orientations tend to employ quantitative methods.

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## Quantitative & Qualitative Methods

### Quantitative Methods

- Uses numbers & stats.
- Formalised methods.
- Many observations.
- Little information.
- Makes inferences from specific to general.
- Replicable analyses.
- Seeks social 'regularities' or 'laws'.

### Qualitative Methods

- Uses 'text'.
- Less formalised methods.
- Few observations.
- Much information.
- Not so concerned with inference.
- Not necessarily replicable.
- Seeks 'understanding' & interpretation.

11

## Quantitative & Qualitative Methods

### Quantitative Methods

- Uses numbers & statistics.
- Formalised methods.
- Many observations.
- Little information on each.
- Makes inferences from the specific to the general.
- Replicable analyses.
- Seeks social 'regularities' or 'laws'.
- Theory mainly comes from deduction.

### Qualitative Methods

- Uses 'text'.
- Less formalised methods.
- Few observations.
- Much information.
- Not so concerned with inference.
- Not necessarily replicable.
- Seeks 'understanding' & interpretation.
- Theory mainly comes from induction.

12

## Quantitative & Qualitative Methods

### Quantitative Methods

- Censuses.
- Surveys.
- Official & administrative statistics.
- Content analysis
- Summarising and descriptive statistics.
- Inferential statistics.

### Qualitative Methods

- Unstructured/depth interviews.
- Focus groups.
- Participant observation.
- Case studies.
- Semiotics.
- Discourse analysis.

13

## Qualitative researchers' criticisms of quantitative methods

- Objectifies humans and human activities.
- Seeks power and control through 'knowledge of' people. Whereas qualitative research gives a 'voice' to and thus empowers the researched.
- Imposes the researcher's conceptual and interpretative framework.
- Too shallow & structured to capture true complexity of social life & experience.
- Data collection is abstracted from the true social contexts in which people live.
- Seeks the impossible goal of causal laws of social life.

## Quantitative researchers' criticisms of qualitative methods

- No real consensus on appropriate methods of data collection & analysis.
- Studies based on too few observations to generalise to broader population. Yet...
- Much qualitative research tries to make generalisations that cannot be justified on account of the small size of sample.
- Samples are biased through researcher assumptions and non-random recruitment of respondent self-selection strategies.

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## Quantitative researchers' criticisms of qualitative methods (continued)

- Informant accounts are not so much uncovered as created. Co-authorship of narratives between the researcher and interviewee.
- Neither interview nor analysis may be replicated.
- No single research method or approach can claim a monopoly on interpretation, 'authenticity' or empowerment.

16

## Combining quantitative and qualitative approaches

- Mutually exclusive philosophical assumptions do not preclude mixed method research strategies in practice.
- Qualitative research may assist in the development of research questions and tools for surveys or illustrate, explain or add depth to quantitative findings.
- Quantitative/qualitative research provides a 'macro'/'micro' level view of the social world. Patterns of occurrence / meaning for those involved.

17

## Summary

- Opinion is divided over the scientific status of social science – how far it can and whether it should be modelled on the physical sciences; what that model actually is.
- Above derives from differences of opinion concerning the existence of an external reality and our ability to know it through observation (ontology and epistemology).
- Epistemological divides tend to translate into methodological ones although not inevitable.
- In practice, research strategies often require both quantitative and qualitative methods.
- Answer = qualitative research for the context of discovery (induction) and quantitative research for the context of justification (deduction)?

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**APPENDIX 3.** Questionnaire Developed from the  
Patients Charter

## OUT-PATIENT QUESTIONNAIRE

- 1) When attending an Out-patient appointment, is suitable/clear information provided in advance.

Yes   
No

If NO, would you have preferred:-

.....basic information Yes   
No   
.....detailed information Yes   
No

- 2) Do you feel the Out-patient department assists in special needs such as physical, mental or communication needs?

Yes   
No

- 3) What are your first impressions of the building and grounds? Tick relevant boxes.

Unwelcoming  Modern   
Welcoming  Old   
Tidy  Clear, Understandable Signs (directions)   
Cluttered  Under, difficult to understand directions/Signs

- 4) Do staff welcome or put you at ease?

Yes   
No

- 5) Are you always treated with courtesy and sympathetically?

Yes   
No

- 6) Do you think your personal details are dealt in a confidential way by staff?

Yes   
No   
Sometimes

- 7) Is the Reception area:-

a) Pleasant Yes  No

b) Accessible Yes  No

c) Adequate facilities such as toilets etc. Yes  No

8) Do the medical staff treat you as an individual and explain your medical condition and aftercare clearly?

- Yes
- No
- Sometimes

9) Do you expect a confidential, caring and courteous relationship with your consultant and other professional staff?

- Yes
- No
- Sometimes

10) Do you feel you are getting a confidential, caring and courteous relationship from your consultant and other professional staff?

- Yes
- No
- Sometimes

11) Do you feel the consultant provides you and explains the medical procedures/technical information etc. before prior to an appointment?

- Yes
- No
- Sometimes

12) Would you like the consultant to provide written information or handouts?

- Yes
- No
- Maybe

13) Do you feel that the medical staff instill confident with your personal health care?

- Yes
- No
- Maybe

14) Do you feel that the consultant instill confident with your personal health care?

- Yes
- No
- Maybe

15) How would you categorise the care you have received?

- Bad
- Fair
- Excellent

16) Does your GP received full and prompt information or report after your visits to the Out-patients Department.

- Yes
- No
- Sometimes

17) Are you happy with the quality of care you receive form the Out-patients Department?

- Yes
- No
- Maybe

18) Do you feel confident about future care in relation to the Out-patients Department?

- Yes
- No
- Maybe

19) Do you feel the Out-patients Department provide a safe and secure environment?

- Yes
- No
- Maybe

If NO what improvements should they consider?

**APPENDIX 4.**

**Pilot Study: Design Implications of the  
Patients Charter**

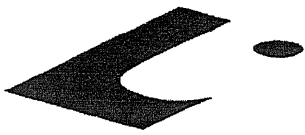


**University of Luton**  
Education that works

## **Department of Design and Architecture**

Design and Architecture Research Unit

### **The Design Implications of the Patients' Charter**



**University of Luton**  
Education that works

## **The Design Implications of the Patients' Charter**

**Dr Joseph Amoah-Nyako AGIA, RIBA**  
Senior Lecturer and Research Consultant

**Miss Wendy Henderson MA (Int)**  
MPhil/PhD student

**July 2001**

Park Square, Luton,  
Bedfordshire, LU1 3JU  
United Kingdom

Telephone +44 (0)1582 734111 ext 2532  
Email: [joseph.amoah-nyako@luton.ac.uk](mailto:joseph.amoah-nyako@luton.ac.uk)  
[wendy.henderson@luton.ac.uk](mailto:wendy.henderson@luton.ac.uk)

## **Aim**

The aim of this study is to identify whether the design requirements stated in the Patients' Charter were being met in two selected hospitals.

## **Background**

Patients were randomly selected during an afternoon outpatients' clinic, in two hospitals and asked to complete questions generated from the Patients' Charter. The questions incorporated related to their medical and design expectations as well as their perception and attitude to signage, the built environment (internal and external), availability of written or verbal information and attitude to the medical staff.

## **Findings**

The results show that in general both hospitals were considered to be welcoming. However when compared separately, the hospital considered to be modern was perceived as less welcoming compared with the old and traditional type which was perceived as welcoming.

In both hospitals patients indicated that the signage was clear, the reception area was pleasant and generally tidy. The toilet facilities were considered to be adequate but some patients questioned their accessibility and practicality. Some 'special needs' concerns relating to assistance for the hard of hearing and partially sighted patients. Bolder signs, clearer and slower diction were identified by their companions as being beneficial to assist patients in this category.

## **Conclusions**

The main conclusion drawn from this pilot study seem to suggest that although studies have indicated that the concept of the creation of a 'healing environment' or the provision of 'the total hospital experience' (which incorporates the arts and interior design principles), as being beneficial for hospital patients, have not been incorporated in the Patients' Charter. The findings also confirm the assertion that "...more often than not, architecture and design are likely to be the last things on patients' minds when going into a hospital. Far more important to the patients are nursing care, pain relief and general attention available".



## Introduction

The Patients' Charter was introduced in 1991<sup>1</sup> and focused generally on patients' rights and easily measured administrative targets.<sup>2</sup> It was later modified to emphasise patients' responsibilities to the health service and provide more information to enable patients to make an informed choice about their health<sup>3</sup> and quality of care. The modifications encompassed three main objectives, to listen, set priorities and provide information.

Although hospitals are required to 'display the Patients' Charter in hospital waiting areas',<sup>4</sup> this requirement, from observation, has not been met in most hospitals. In addition a number of studies have shown that few patients are aware of the Patients' Charter.<sup>5</sup> Although many consultants were in favour of some of the principles, they argued that it raised "...expectations without providing the means to meet them".<sup>6</sup> The problem is compounded by hospitals being encouraged to have their own 'hospital charter', which inevitably creates some inconsistencies.

In addition there seems to be conflicting incentives for the measurement of patients' care and services<sup>7</sup> with available resources. Most studies in this area deals with facilities and resource implications, with very little on the relationship between the decision-making and the design processes. Over the past decade, several studies and models of the concept of the *Total Healing Environment*<sup>8</sup> that encompasses the integration of the arts, interior and landscape design, graphics and information systems, have been developed and explored. The feedback from these hospitals which have implemented some of these ideas have been positive especially with respect to the reception areas.

The design objectives stated in the modified Patients' Charter, which form the basis for this study are that:

- enquiry points and clear sign posting in all hospitals to help visitors find their way
- patients are to be cared for in an environment, which is clean and safe.

The outpatients' department is often the first point of contact for most patients, more often than a patients' co-operation with treatment or health care systems, with regard to the initial impressions of the built environment.

## Methodology

In order to measure the degree to which the design expectations were being met, two hospitals with different sizes, layout and finishes were selected. The general layout of the first, Hospital 'A' comprises of a moderate reception area with four members of staff located in a central position in a large rectangular space. The receptionists were surrounded by other departmental accommodation that is within easy reach of doctors' surgeries and examination rooms. It had a high ceiling and a significant amount of artificial lighting punctuated by a limited amount of natural light, penetrating parts of the space from an adjacent corridor glazed on both sides.

The second Hospital, 'B' had separate reception areas with adjacent waiting areas catering for the different departments, with a central corridor linking the doctors' surgeries and examination rooms. The ceiling height compared to the first hospital was considerably lower with a greater reliance on artificial lighting.

A sample of 52 patients in Hospital 'A' and 29 in Hospital 'B' were selected to respond to a simple structured questionnaire generated from the Patients' Charter. It was necessary to undertake interviews simultaneously to enable cross referencing of questionnaire material and to minimise the misinterpretation of some of the terms in the Charter.

The unstructured nature of these interviews allowed patients to express the views informally which provided relevant information beyond the scope of this preliminary study, but was beneficial in the analysis of their perception of the built environment. It also enabled the confirmation of their attitude towards the 'hello nurses'- who are used to greet new patients in areas such as the accident and emergency departments, possibly used to conceal long waits for treatment".<sup>9</sup>

## Survey findings

It is generally agreed that the function of the outpatients' department is to "...diagnose and to treat home-based clients and if necessary to accept them as in-patients".<sup>10</sup> For some patients it may be their first visit to the outpatients' department, as a result it is important to provide a "...welcoming, comfortable and humane environment".<sup>11</sup>

The main reception and waiting areas, are usually where most patients are introduced into a hospital, and it is argued that a pleasant, welcoming atmosphere where positive relationships could be developed very quickly with staff, will enable patients to feel significantly confident about their hospital treatment. This was evident in both hospitals.

In Hospital 'A', 95.2% of the respondents considered the outpatients department to be welcoming although 68.2% thought the overall impression of the building was old. In Hospital 'B', all the patients who responded to the question felt the outpatients department was welcoming although their overall impression of the building was modern. However anecdotal information obtained during the interviews, seem to suggest that most of them 75% perceived modern hospitals as unwelcoming.

In Hospital 'A' 86.2% of the participants expressed the view that the signage was clear, 95.9% indicated that the reception area was quite pleasant and 60.7% thought it was generally tidy although 39.3% felt the building appeared cluttered. Similar percentages were achieved in Hospital 'B', however their responses differed from Hospital 'A' when the question of appearance was raised.

Unlike Hospital 'A', 85% of the patients in Hospital 'B' felt the building was sufficiently tidy. In general, the respondents in both hospitals, found the reception area accessible, and felt it had adequate toilet facilities. However interviews undertaken suggest that wheelchair bound patients found accessibility and the layout of the spatial arrangements, sometimes hampered their movements.

With regard to the patients' wellbeing, this study shows that over 98% of the patients in both hospitals felt they were put at ease, by hospital staff and over 96% in both hospitals indicated that they were treated with courtesy and sympathy.

Over 96% of the patients in both hospitals 'expect' and feel they have a confidential, caring and courteous relationship with consultants and other professional staff. In both hospitals, 81.6% of patients in Hospital 'A' and 91.7% in Hospital 'B' expressed confidence about the personal health care they receive from consultants. This was slightly lower for the medical staff at 78.4% in Hospital 'A' and 96.2% in Hospital 'B'.

A sizeable percentage, 83.7% in Hospital 'A' and all the patients interviewed in Hospital 'B', were content with the quality of care they received. Some concerns were raised regarding assistance for patients with 'special needs', especially for hard of hearing and partially sighted patients. Bolder signs and clearer/slower diction were recommended as being beneficial in assisting these patients.

Sixty-two percent (62%) of patients in Hospital 'A' felt the information provided prior to an appointment was adequate compared to 48% in Hospital 'B'. However over 77% in both hospitals wanted clearer and in-depth information and explanation of their condition.

## Survey interpretation

In Hospital 'A', the combination of renovation and part modern facilities appealed to most of the patients, who expressed the view that it looked cosy rather than sterile. Hospital 'B' participants had different opinions, they associated terms like "quite modern", "cold", "sterile" and "nice, but uncoordinated" with the decor.

Questions on the choice of colours provided interesting comments from patients, especially in Hospital 'A'. Participants felt that a homely feeling could be created with pastel colours. Patients in Hospital 'B' felt the chosen colours, also pastels, reminded them of the term 'hospital green' associated with the surgeons' gowns, which might have influenced their perception of the hospital.

Other requirements outlined in the Patients' Charter, concerns 'signage', this indicates that patients can "...expect enquiry points and clear sign posting in all hospitals to help you and your visitors to find your way" and "...to be care for in an environment which is clean and safe".<sup>12</sup>

The question of 'special needs' raised an interesting observation. In Hospital 'A', where the patients' perception of the hospital was welcoming, 'special needs' were considered secondary. Whereas in Hospital 'B', were the users overall perception of the building was less welcoming, 'special needs' were primary. Waiting times, lack of information when consultants were delayed and last minute cancellations were some of the growing concerns highlighted by the patients. Further examples can be scrutinised in the following 'Crosstabs' summary table (see Appendix 1).<sup>13</sup>

## Hospital design - a problem identified

Designing whole hospitals is quite a complex process but to design areas such as the main reception and waiting areas that satisfies patients' and staff needs, which can be difficult to achieve. It is expected that the design of these areas 'free and devoid of an institutional atmosphere will contribute to the patients confidence in the hospital treatment and allay fears'.<sup>14</sup>

The main reason for the difficulty in satisfying user needs is the identification of patient needs, the lack of empathy by design teams and the lack of 'informed' knowledge when designing pleasant and workable interiors may contribute to unrealistic solutions. 'Designers should be put to a hospital bed, trundled around and frightened out of their wits.... and may be we might then get better hospitals.'<sup>15</sup> Alternatively in order to understand the relationship between a hospital and the human being, it is necessary to undertake a 'longitudinal study' involving following a patient through a complete hospital experience. Such a study should begin at home, when an individual becomes aware by appointment or going into hospital. Several variables are critical such as an individual's perception of the hospital including the meaning and reason for going into hospital, the psychological state of mind or the possibility of accompaniment.

The assumptions for the design of these areas are made by the majority of design teams based on the importance, availability, and use of design guides produced by the Department of Health. Most design teams assume that these guides are based on extensive research and development work has undertaken by the Department of Health and that their adoption will lead to a closer match between the design and user requirements. These standards, recommendations and or operational policies have rarely been adopted wholly in most of the National Health Service hospitals designed to date.

It has been argued that, 'You have to understand the work activities and operational policies, but the most difficult problem for an interior designer is to reverse his role and become the patient and relate to their requirements'.<sup>16</sup> As a result of the non-adoption of the totality of the guidance, there are considerable differences, deviations and modifications by the individual architects and designers to satisfy the demands of individual projects, and local regulations and requirements. In spite of these deviations and modifications from the guidance by designers before commissioning, the main reception and waiting areas continue to be one of the areas which is often modified to suit the changing needs. Such as, non-medically (the creation of a non-medical atmosphere and satisfying social needs), technologically (the use of modern information technologies) and politically (in order to make them competitive with other hospitals).

The reasons for these frequent modifications argued by most of the members of hospital staff interviewed are threefold:

- Firstly, the user requirements are not fully understood. Where they are understood they are not always incorporated in the guidance. Where they are incorporated in the guidance they have not been clearly stated in design terms for easy understanding and implementation. For example, 'the provision of a satisfactory level of amenity is stated as one of the user requirements. The form, layout or type(s) of amenity are not clearly stated. One expects that the basic amenities such as toilets, waiting area, reception desk to be clearly stated and optional ones such as snack bar, shops, telephones, banks, newsagents, florists, crèche, post office, children play areas are often mentioned for possible inclusion in a phased development. Having listed these amenities, no mention is made in the guidance of why they are required and the context in which they are required. An examination of another of the user requirements in the guidance highlights the problem, 'the provision of a pleasant, welcoming, non-institutional atmosphere', includes subjective concepts subject to different interpretations by different designers. There is no doubt that most patients continue to complain of reception and waiting areas as being depressing, dull, unwelcoming, unfriendly, drab and dark, (even though in most cases the design guidance lighting standards are met).

Other requirements indicated in the guidance of the Patients' Charter is the need to provide 'privacy' and 'security' in such a 'public building', which is difficult to cater for.<sup>17</sup> The guidance and literature also offer suggestions for the use of soft pastel colours, soft furnishing and landscaping. The chroma, values or hue of these soft pastel colours have not been specified in any way. No wonder in one of the hospitals surveyed the patients referred to some colours as 'hospital green'. Most designers often rely on personal experience, likes or dislikes, rather than on empirically verified colours in order to achieve the guidance objectives of a reduction in the level of anxiety, fear and stress experienced by some of the users both staff and patients. The design guidance is also inadequate in explanation and/or provision of the appropriate solutions for most of these subjective concepts.

- Secondly, the technological advancement in medicine, information collection and storage have not in the past been anticipated accurately by the research and development group responsible for the design guidance and accordingly have not been incorporated. Remarkable changes have had to be made at design briefings by designers, in order to satisfy or accommodate these changes.
- Thirdly, the standards, building regulations and requirements are different for the various locations where these hospitals are to be sited. Standardised hospitals, although cost effective might not necessarily be appropriate for all sites.

Another aspect is the attitudes towards hospital patients. Whether they are being treated privately or under the National Health Service, it is apparent that whereas the private sector hospitals consider the patients as clients and customers, the public sector patients are often considered as “fodder to be processed in the hospital machinery” or “experimental guinea pigs”.<sup>18 19</sup>

Due to the lack of empirical evaluation of the main reception and waiting area in existing buildings as well as the apparent lack of understanding of the user requirements, the design of several aspects of this area in most National Health Service hospitals appear to be unsatisfactory.

The users, especially the patients, were selected for study because they have often had no representation on the design team. One of the common mistakes made by design teams, often comprise mainly of hospital management, administrative and medical staff, who do not often work specifically in this area. As a result it is likely that they will be less conversant with the patients requirements in this area compared with the porters, reception staff and the ambulance persons. The porters and especially the receptionists who work in these areas are barely consulted about their understanding of design and its use. Most of the design guides can thus be argued, have been based on the incorrect assumptions of the design team.

It is inappropriate to assume that hospital users are sick human beings ‘patiently’ waiting for treatment or death. The word ‘patient’ might therefore have evolved from these early concepts as well as the word ‘hospices’, since according to the ‘Collins’ dictionary means “...a person under medical treatment” (1990).

The outpatient needs in the main reception and waiting area will be more difficult to cater for, since they often display among others a wide range of illness, injuries, age, attendance and, accompaniment differences. Each of these groups has its own requirements in its respective clinics, but the common area where they share facilities either for entering the hospital, relaxing, waiting to attend clinics or transport will be the main reception and waiting area. Although their medical needs will be different in the various clinics, their non-medical and social needs will be the similar in the main reception and waiting area. A further factor is due to the current and future trend of health care towards outpatient rather than inpatient treatment, the reduction of ward beds and an increase in the accommodation for outpatient departments in most of the National Health Service hospitals is now evident.

Surprisingly, in the private sector it has been argued that ‘once past the postmodernists entrances, the rest of the hospital often has the same image as the National Health Service hospitals.’ Although some hospital administrators often dispute this argument, there is general agreement among most professionals suggesting, rather sarcastically, that private hospitals are generally ‘hotels with oxygen masks on’, or ‘they are Holiday Inns with oxygen, meant to kid the patient that he or she is not in a hospital’.

## Conclusions and recommendations

Based on the findings and problems identified, it seems appropriate to undertake further investigations in order to identify the main causes of user dissatisfaction to ensure that design decisions are empirically verifiable and could be incorporated in the Patients’ Charter.

Huge investments have been made in PFI and other hospitals and identifying existing mistakes in the guidance and in the existing buildings will enable their improvement and subsequently the image of future National Health Service hospitals. The reception and waiting areas in hospitals are slowly taking on a design image. There is now an arena for the presentation of the new-look health care system, with the appropriate visual information systems and a front line providing an interface with the community. There is no reason why the NHS cannot adopt a similar approach to the design of reception and waiting areas as the private hospitals’.

The main conclusions drawn from this pilot study were namely, that:

- 1 In general some requirements of the Patients' Charter were not being met.
- 2 The design of the built environment, especially interiors, does not seem to be stated clearly in the Charter. It is assumed that architects and designers use their expertise based on available design guidelines and hospital policies.
- 3 The design variables highlight the conflicting views of some patients when comparing information or data. The results showed that questions relating to the patients' perception of the built environment generated an average response on the aesthetics and functional aspects of the hospital. Where as questions relating to their immediate wellbeing and personal relationship with medical and professional staff generated a higher response from patients.

As one observer notes, "...let's face it, by the time you end up in a 'health care building' as a patient or companion, architecture and design are likely to be the last things on your mind. Far more important are the nursing care, pain relief and general attention available and because none of these come cheap, hospitals tend to be design free zones. That's the way things are: The reality of health care funding means its either/or situation - either healthcare or design - which is often a terrible choice to make, since endless research show that both are contributory factors to a patient's response and co-operation with the health care system".<sup>20</sup> It seems the satisfaction level of the occasional visitor, compared to the frequent visitor of the outpatients department is minimal in terms of their perception of the built environment.

Finally, most of the design and other variables identified were beyond the scope of this study and require empirical and in-depth study to compliment and satisfy their stated objectives of the Patients' Charter.

## References

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- 2 Jacqui Wise, 'Patient's Charter Will Emphasise Patients', *BMJ* 315: 967-972, (1997).
- 3 *Ibid.*,
- 4 [www.doh.gov.uk/pcharter/patients4.htm](http://www.doh.gov.uk/pcharter/patients4.htm).
- 5 Ann Kent, 'Few Patients Are Aware Of Contents Of Patient's Charter', *BMJ* 317:1543, (1998).
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- 9 Ann Kent, 'Few Patients Are Aware Of Contents Of Patient's Charter', *BMJ* 317:1543, (1998).
- 10 A Cox and P Groves, 'Hospitals And Health-Care Facilities', (1981), Butterworth-Heinemann.
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- 13 R Corston and A Colman, 'A Crash Course in SPSS for Windows', (2000), Blackwell Publishers.
- 14 J Amoah-Nyako, 'The Relationship Between the Design of Reception and Waiting Areas in Hospitals and their Appropriateness in Use', (1990), PhD Thesis, School of Architecture, Oxford Brookes University, Oxford.
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- 16 *Ibid.*,
- 17 J Amoah-Nyako, 'The Behavioural, Perceptual and Design Aspects of Hospital Accidents and Emergency Departments', (1984), MA Dissertation, De Montfort University.
- 18 P Ullathorne, July/August, (1987), pg. 40, 42.
- 19 J Malkin, 'The Design of Medical and Dental Facilities', (1982), Van Nostrand Reinhold
- 20 Naomi Stungo, 'Peace and Light', (2000), pg. 32-34, RIBA Interiors Dec.

# Appendices

## Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
was clear information given when attending OPD * hospital type	80	98.8%	1	1.2%	81	100.0%
would have preferred basic information * hospital type	8	9.9%	73	90.1%	81	100.0%
would have preferred detail information * hospital type	6	7.4%	75	92.6%	81	100.0%
assist special needs, physical, mental, communication * hospital type	64	79.0%	17	21.0%	81	100.0%
impression welcoming buildings * hospital type	38	46.9%	43	53.1%	81	100.0%
impression tidy buildings * hospital type	48	59.3%	33	40.7%	81	100.0%
impression modern building * hospital type	34	42.0%	47	58.0%	81	100.0%
clear signs building * hospital type	45	55.6%	36	44.4%	81	100.0%
staff put patients at ease * hospital type	79	97.5%	2	2.5%	81	100.0%
always treated sympathetically * hospital type	79	97.5%	2	2.5%	81	100.0%
dealt with details confidentially * hospital type	77	95.1%	4	4.9%	81	100.0%
reception area pleasant * hospital type	77	95.1%	4	4.9%	81	100.0%
reception area accessible * hospital type	60	74.1%	21	25.9%	81	100.0%
reception area facilities adequate * hospital type	69	85.2%	12	14.8%	81	100.0%
clearly explain medical condition aftercare * hospital type	75	92.6%	6	7.4%	81	100.0%
expect confidential relationship with consultant * hospital type	78	96.3%	3	3.7%	81	100.0%
getting confidential relationship from consultant * hospital type	75	92.6%	6	7.4%	81	100.0%
explain medical techniques before appointment * hospital type	75	92.6%	6	7.4%	81	100.0%
consultant to provide written information * hospital type	77	95.1%	4	4.9%	81	100.0%
medical staff instill confidence personal health * hospital type	77	95.1%	4	4.9%	81	100.0%
consultant instill confidence personal healthcare * hospital type	73	90.1%	8	9.9%	81	100.0%
personal categorisation of care received * hospital type	75	92.6%	6	7.4%	81	100.0%
gp received full, prompt information after visit * hospital type	59	72.8%	22	27.2%	81	100.0%
happy with quality care from OPD * hospital type	73	90.1%	8	9.9%	81	100.0%
confident with future care of OPD * hospital type	75	92.6%	6	7.4%	81	100.0%
OPD safe, secure environment * hospital type	75	92.6%	6	7.4%	81	100.0%

\* = design variables

Department of Design and Architecture  
Faculty of Creative Arts and Technologies  
University of Luton, Park Square  
Luton LU1 3JU Bedfordshire  
United Kingdom

T +44 (0) 1582 743185  
F +44 (0) 1582 489212

[www.luton.ac.uk](http://www.luton.ac.uk)  
[angela.dearmer@luton.ac.uk](mailto:angela.dearmer@luton.ac.uk)



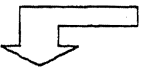
**APPENDIX 5. Patient Questionnaire**

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

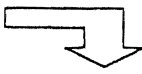
1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

--	--	--	--	--	--

--	--	--	--	--	--

 Large 

b) Light 

--	--	--	--	--	--

 Dark

c) Spacious 

--	--	--	--	--	--

 Cramped

d) Welcoming 

--	--	--	--	--	--

 Unwelcoming

e) Tidy 

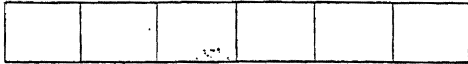
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 Untidy

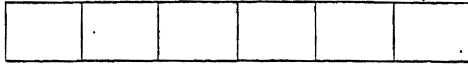
f) Other comments.....  
 .....  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

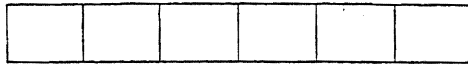
a) Colourful Strongly agree with Strongly agree with Dull



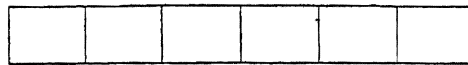
b) Hard Strongly agree with Strongly agree with Soft



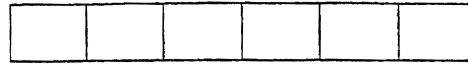
c) Comfortable Strongly agree with Strongly agree with Uncomfortable



d) Feels Solid Strongly agree with Strongly agree with Feels Hollow



e) 'Modern' Strongly agree with Strongly agree with 'Old'



f) Other comments .....

.....

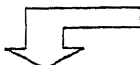
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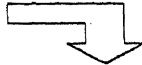
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3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

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 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

--	--	--	--	--	--

 Not visible (not able to see signs)

(iii) Other comments .....  
.....  
.....  
.....

b) Directions:

(i) Understandable 

--	--	--	--	--	--

 Difficult to understand

(ii) Other comments .....  
.....  
.....  
.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

--	--	--	--	--	--

b) Please state feature(s) .....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

--	--	--	--	--	--

b) Please state feature(s) .....

.....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

--	--	--	--	--	--

b) Please state feature(s) .....

.....

.....

.....

**APPENDIX 6. Staff Questionnaire**

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*The following relates to design aesthetics and excellence in design.*

(Please tick **one** box in each row).

Complete failure

Perfect

1.

Form

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a										
b										
c										
d										
e										

f) Other comments .....

.....

.....

.....

.....

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

2.

**Function**

Complete failure

Perfect

- a) Arrangement of spaces  
(activities and relationship to function)
- b) Circulation  
(entry, orientation, flow)
- c) Allocation of spaces  
(parking)
- d) Response to user physical needs  
(comfort, safety, convenience)
- e) Response to user social needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a										
b										
c										
d										
e										

f) Other comments .....

.....

.....

.....

.....



**APPENDIX 7.     Manager Questionnaire**

Questions for NHS Trust Manager - Finance and Building Systems (Please answer all questions).

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to the design goals as set against the original design criteria. (Please tick one box in each row).

1. Economy

Complete failure Perfect

- a) Realistic solution to budget requirements  
(initial cost control)
- b) Maximum effect with minimal means  
(elegance, multi purpose)
- c) Efficient plan and shape  
(allocated and unallocated areas, volume)
- d) Ease of building maintenance  
(fixtures and fittings, building systems)
- e) Cost effective operations  
(energy efficiency, minimum upkeep)

	1	2	3	4	5	6	7	8	9	10
a										
b										
c										
d										
e										

f) Other comments .....

.....

.....

.....

.....

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to sustainability and user satisfaction.*  
 (Please tick one box in each row).

2. Life Cycle

Complete failure Perfect

- a) Multi purpose spaces for changes in function (dynamic activities, variety of usage)
- b) Fixed spaces for specific activities (major static activities)
- c) Contingency for growth (expandable, shell space)
- d) Vitality and validity over time (sustaining quality, holding power)
- e) Use of material and technology (existing or advanced systems)

	1	2	3	4	5	6	7	8	9	10
a										
b										
c										
d										
e										

f) Other comments .....

.....

.....

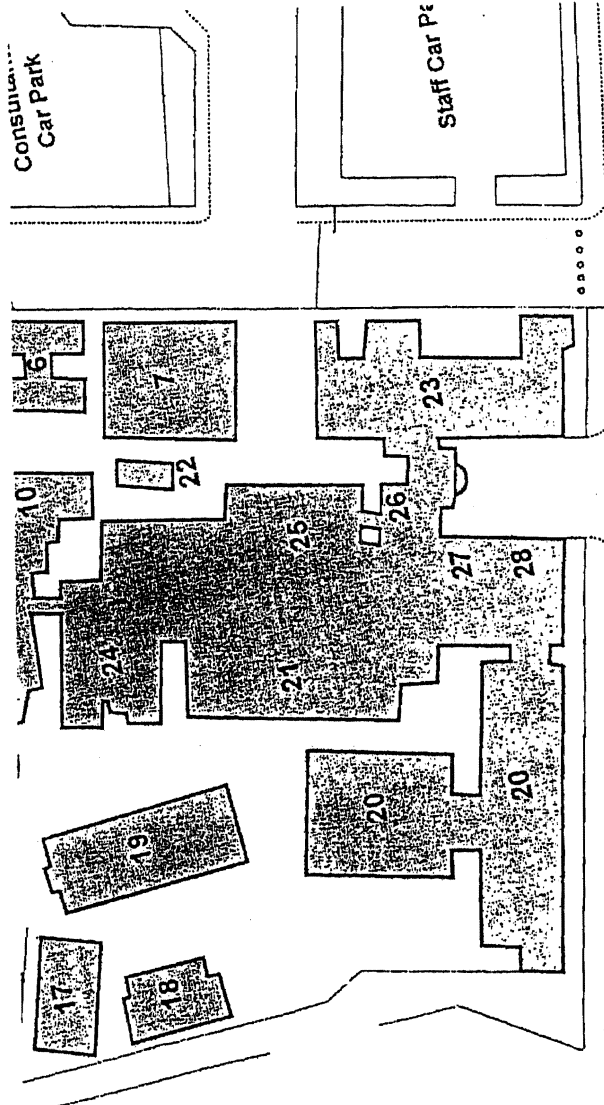
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**APPENDIX 8. Hospital Y4 Partial Site View**



**APPENDIX 9. Hospital Y3 Partial Site Plan**



**APPENDIX 10. Hospital X2 Partial Site Plan**





**APPENDIX 11. Hospital X1 Partial Site Plan**



**APPENDIX 12. Patients Case Summary**

### Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
reception/waiting area - small or (large) * identity code	429	92.9%	33	7.1%	462	100.0%
reception/waiting area - light or (dark) * identity code	441	95.5%	21	4.5%	462	100.0%
reception/waiting area - spacious or (cramped) * identity code	439	95.0%	23	5.0%	462	100.0%
reception waiting area - welcoming or (unwelcoming) * identity code	447	96.8%	15	3.2%	462	100.0%
reception waiting area - tidy or (untidy) * identity code	442	95.7%	20	4.3%	462	100.0%
furniture - colourful or (dull) * identity code	435	94.2%	27	5.8%	462	100.0%
furniture - hard or (soft) * identity code	428	92.6%	34	7.4%	462	100.0%
furniture - comfortable or (uncomfortable) * identity code	449	97.2%	13	2.8%	462	100.0%
furniture - feels solid or (hollow) * identity code	426	92.2%	36	7.8%	462	100.0%
furniture - modern or (old) * identity code	438	94.8%	24	5.2%	462	100.0%
signs - clear or (unclear) * identity code	447	96.8%	15	3.2%	462	100.0%
signs - visible or (not visible) * identity code	442	95.7%	20	4.3%	462	100.0%
directions - understandable or (difficult to understand) * identity code	447	96.8%	15	3.2%	462	100.0%
features - useful or (poor) * identity code	441	95.5%	21	4.5%	462	100.0%
features - additional or (adequate) * identity code	346	74.9%	116	25.1%	462	100.0%
features - change or (keep) * identity code	340	73.6%	122	26.4%	462	100.0%

**APPENDIX 13. Staff Case Summary**

### Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
innovative design * identity code	98	99.0%	1	1.0%	99	100.0%
construction quality * identity code	99	100.0%	0	.0%	99	100.0%
response to site * identity code	99	100.0%	0	.0%	99	100.0%
energy and environment performance * identity code	98	99.0%	1	1.0%	99	100.0%
response to user psychological needs * identity code	97	98.0%	2	2.0%	99	100.0%
arrangement of spaces * identity code	96	97.0%	3	3.0%	99	100.0%
circulation * identity code	97	98.0%	2	2.0%	99	100.0%
allocation of spaces (parking) * identity code	96	97.0%	3	3.0%	99	100.0%
response to user physical needs * identity code	97	98.0%	2	2.0%	99	100.0%
response to user social needs * identity code	97	98.0%	2	2.0%	99	100.0%

**APPENDIX 14.** Completed Questionnaires by PFI  
and non-PFI Patients


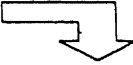


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with Strongly agree with  Large

					✓
--	--	--	--	--	---

b) Light Strongly agree with Strongly agree with Dark

✓					
---	--	--	--	--	--

c) Spacious Strongly agree with Strongly agree with Cramped

✓					
---	--	--	--	--	--

d) Welcoming Strongly agree with Strongly agree with Unwelcoming

✓					
---	--	--	--	--	--

e) Tidy Strongly agree with Strongly agree with Untidy

✓					
---	--	--	--	--	--

f) Other comments.....

.....

.....

.....

.....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with Strongly agree with

		✓			
--	--	---	--	--	--

b) Hard Soft

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

c) Comfortable Uncomfortable

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

d) Feels Solid Feels Hollow

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

e) 'Modern' 'Old'

Strongly agree with Strongly agree with

✓					✓
---	--	--	--	--	---

f) Other comments .....

.....

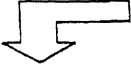
.....

.....


.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

				✓	
--	--	--	--	---	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

				✓	
--	--	--	--	---	--

 Not visible (not able to see signs)

(iii) Other comments *Quite hard to understand for older people.*

.....

.....

.....

b) Directions:

(i) Understandable 

				✓	
--	--	--	--	---	--

 Difficult to understand

(ii) Other comments *Again quite hard to work out for older people or if you are in a rush and panicking*

.....

.....

4. The reception/waiting area has features that you find **useful**.  
 (e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

✓						
---	--	--	--	--	--	--

b) Please state feature(s) Toilets, Shop.....  
 .....  
 .....  
 .....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

--	--	--	--	--	--	--

b) Please state feature(s) .....  
 .....  
 .....  
 .....

6. Having answered 1 to 5 are there are features that you would like to **change** in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

--	--	--	--	--	--	--

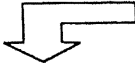
b) Please state feature(s) The reception/waiting area  
is too hot and uncomfortable especially  
in hot weather. The glass roof is too big  
of an area. A lot of wasted space in  
reception area could have been put to  
better use.

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

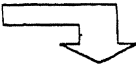
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

					<input checked="" type="checkbox"/>
--	--	--	--	--	-------------------------------------

 Large

b) Light 

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

 Dark

c) Spacious 

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

 Cramped

d) Welcoming 

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

 Unwelcoming

e) Tidy 

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

 Untidy

f) Other comments... ALWAYS VERY CLEAN AND...  
RECEPTIONISTS VERY HELPFUL...  
.....  
.....  
.....

What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with Strongly agree with

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

b) Hard Soft

Strongly agree with Strongly agree with

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------

c) Comfortable Uncomfortable

Strongly agree with Strongly agree with

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

d) Feels Solid Feels Hollow

Strongly agree with Strongly agree with

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

e) 'Modern' 'Old'

Strongly agree with Strongly agree with

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

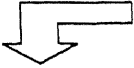
f) Other comments THE SEATS ARE COMFORTABLE  
AND YOU CAN ALWAYS FIND A  
VACANT SEAT, WHICH IS VERY GOOD.

.....

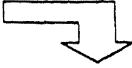
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

Strongly agree with						Strongly agree with
---------------------	--	--	--	--	--	---------------------

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

Strongly agree with	✓					Strongly agree with
---------------------	---	--	--	--	--	---------------------

 Not visible (not able to see signs)

(iii) Other comments *VERY GOOD YOU CANNOT GET LOST, BRIGHT @ CLEAR TO SEE*

b) Directions:

(i) Understandable 

Strongly agree with	✓					Strongly agree with
---------------------	---	--	--	--	--	---------------------

 Difficult to understand

(ii) Other comments *VERY GOOD DIRECTIONS*

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

✓					
---	--	--	--	--	--

 Poor feature(s)

b) Please state feature(s) THE TOILETS ARE VERY GOOD AND ALWAYS CLEAN MAYBE A COUPLE MORE ON THE GROUND FLOOR WOULD BE GOOD BECAUSE THERES ALWAYS PEOPLE WAITING

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

					✓
--	--	--	--	--	---

 Adequate feature(s)

b) Please state feature(s) IT IS ADEQUATE THE WAY IT IS AND ~~TO~~ IT HELPS WHEN THE RECEPTIONISTS ARE SO HELPFUL

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

					✓
--	--	--	--	--	---

 Keep feature(s)

b) Please state feature(s) JUST ADD SOME MORE TOILETS PLEASE

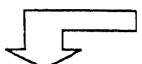
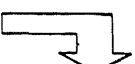


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with Strongly agree with  Large

					✓
--	--	--	--	--	---

b) Light Strongly agree with Strongly agree with Dark

✓					
---	--	--	--	--	--

c) Spacious Strongly agree with Strongly agree with Cramped

✓					
---	--	--	--	--	--

d) Welcoming Strongly agree with Strongly agree with Unwelcoming

	✓				
--	---	--	--	--	--

e) Tidy Strongly agree with Strongly agree with Untidy

✓					
---	--	--	--	--	--

f) Other comments. THE HUGE WAITING ARE IS  
 ATTRACTIVE BUT SEEMS TO BE A  
 BIT OF A WASTE OF SPACE  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

b) Hard Soft

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

c) Comfortable Uncomfortable.

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

d) Feels Solid Feels Hollow

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

e) 'Modern' 'Old'

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

f) Other comments .....

.....

.....

.....

.....

3. What are your observations of the information systems?

a) Signs:

(i) **Clear** (able to read letters/pictures/graphics) Strongly agree with Strongly agree with **Unclear** (not able to read letters/pictures/graphics)

✓					
---	--	--	--	--	--

(ii) **Visible** (able to see signs) Strongly agree with Strongly agree with **Not visible** (not able to see signs)

		✓			
--	--	---	--	--	--

(iii) Other comments SOME ELECTRICAL SIGNS  
MOVE TO QUICK TO READ  
THOROUGHLY

.....

.....

.....

b) Directions:

(i) **Understandable** Strongly agree with Strongly agree with **Difficult to understand**

	✓				
--	---	--	--	--	--

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find **useful**.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

✓					
---	--	--	--	--	--

 Strongly agree with 

Strongly agree with
---------------------

 Poor feature(s)

b) Please state feature(s) .....  
.....  
.....  
.....

5. There are features that you **would like** in the reception/waiting area.

a) Additional feature(s) 

			✓		
--	--	--	---	--	--

 Strongly agree with 

Strongly agree with
---------------------

 Adequate feature(s)

b) Please state feature(s) .....  
.....  
.....  
.....

6. Having answered 1 to 5 are there are features that you would like to **change** in the reception/waiting area.

a) Change feature(s) 

					/
--	--	--	--	--	---

 Strongly agree with 

Strongly agree with
---------------------

 Keep feature(s)

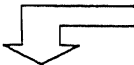
b) Please state feature(s) I THINK YOU SHOULD STOP SPENDING MONEY ON THE RECEPTION/WAITING AREA AND PUT IT TO BETTER USE.

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

			<input checked="" type="checkbox"/>		
--	--	--	-------------------------------------	--	--

			<input checked="" type="checkbox"/>		
--	--	--	-------------------------------------	--	--

 Large

b) Light 

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

--	--	--	--	--	--

 Dark

c) Spacious 

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

--	--	--	--	--	--

 Cramped

d) Welcoming 

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

--	--	--	--	--	--

 Unwelcoming

e) Tidy 

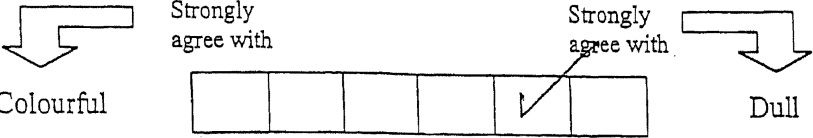
					<input checked="" type="checkbox"/>
--	--	--	--	--	-------------------------------------

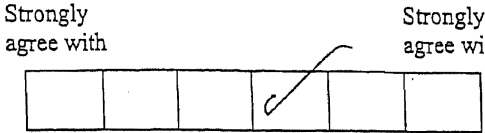
--	--	--	--	--	--

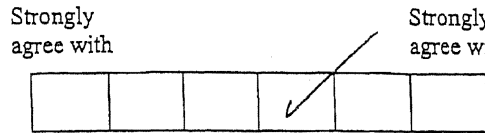
 Untidy

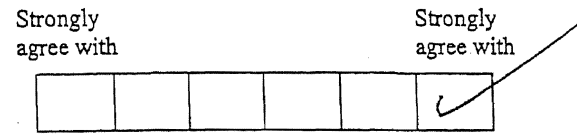
f) Other comments... *lighting could be improved in optician area*  
.....  
.....  
.....

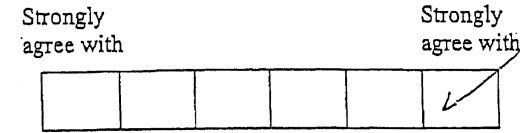
2. What are your impressions of the reception/waiting area furniture?

a) Colourful  Dull

b) Hard  Soft

c) Comfortable  Uncomfortable.

d) Feels Solid  Feels Hollow

e) 'Modern'  'Old'

f) Other comments .....

.....

.....

.....

.....

3. What are your observations of the information systems?

a) Signs:

(i) **Clear**  
(able to read letters/pictures/graphics)

Strongly agree with

Strongly agree with

**Unclear**  
(not able to read letters/pictures/graphics)

(ii) **Visible**  
(able to see signs)

Strongly agree with

Strongly agree with

**Not visible**  
(not able to see signs)

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) **Understandable**

Strongly agree with

Strongly agree with

**Difficult to understand**

(ii) Other comments .....

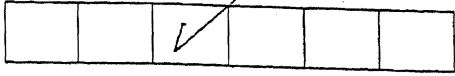
.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.  
 (e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s)  Poor feature(s)

b) Please state feature(s) .....

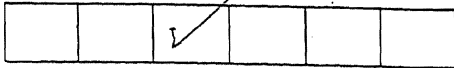
.....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s)  Adequate feature(s)

b) Please state feature(s) .....

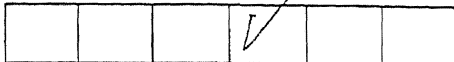
.....

.....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s)  Keep feature(s)

b) Please state feature(s) .....

.....

.....

.....

.....

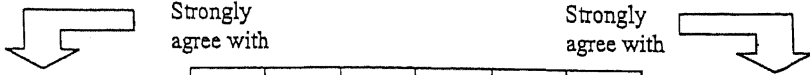


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small       Strongly agree with      Large

b) Light       Strongly agree with      Dark

c) Spacious       Strongly agree with      Cramped

d) Welcoming       Strongly agree with      Unwelcoming

e) Tidy       Strongly agree with      Untidy

f) Other comments.....  
.....  
.....  
.....  
.....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

b) Hard Soft

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

c) Comfortable Uncomfortable

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

d) Feels Solid Feels Hollow

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

e) 'Modern' 'Old'

Strongly agree with Strongly agree with

			✓		
--	--	--	---	--	--

f) Other comments .....

.....

.....

.....

.....

3. What are your observations of the information systems?

a) Signs:

(i) **Clear** (able to read letters/pictures/graphics) Strongly agree with Strongly agree with **Unclear** (not able to read letters/pictures/graphics)

		✓			
--	--	---	--	--	--

(ii) **Visible** (able to see signs) Strongly agree with Strongly agree with **Not visible** (not able to see signs)

		✓			
--	--	---	--	--	--

(iii) Other comments .....

.....

.....

.....

b) Directions:

(i) **Understandable** Strongly agree with Strongly agree with **Difficult to understand**

		✓			
--	--	---	--	--	--

(ii) Other comments *Ortho clinic should have been nearer front of atrium as patients are confused and the elderly have difficulty, not always wheelchair available.*

.....

.....

4. The reception/waiting area has features that you find useful.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

--	--	--	--	--	--	--

 Poor feature(s)

Strongly agree with Strongly agree with

b) Please state feature(s) .....  
.....  
.....  
.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

--	--	--	--	--	--	--

 Adequate feature(s)

Strongly agree with Strongly agree with

b) Please state feature(s) .....  
.....  
.....  
.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

--	--	--	--	--	--	--

 Keep feature(s)

Strongly agree with Strongly agree with

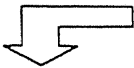
b) Please state feature(s) .....  
.....  
.....  
.....

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

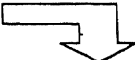
1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

					<input checked="" type="checkbox"/>
--	--	--	--	--	-------------------------------------

--	--	--	--	--	--

 Large

b) Light 

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

--	--	--	--	--	--

 Dark

c) Spacious 

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

--	--	--	--	--	--

 Cramped

d) Welcoming 

					<input checked="" type="checkbox"/>
--	--	--	--	--	-------------------------------------

--	--	--	--	--	--

 Unwelcoming

e) Tidy 

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

--	--	--	--	--	--

 Untidy

f) Other comments... Too like an airport Stressful.  
Facilities too far from door.  
.....  
.....  
.....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

--	--	--	--	--	--

Strongly agree with Strongly agree with

b) Hard Soft

--	--	--	--	--	--

Strongly agree with Strongly agree with

c) Comfortable Uncomfortable

--	--	--	--	--	--

Strongly agree with Strongly agree with

d) Feels Solid Feels Hollow

--	--	--	--	--	--

Strongly agree with Strongly agree with

e) 'Modern' 'Old'

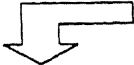
--	--	--	--	--	--

Strongly agree with Strongly agree with

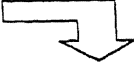
f) Other comments *need more seating with arms to help those with restricted mobility. claw in poor taste - solid claw needs relief*

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

		✓			
--	--	---	--	--	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

		✓			
--	--	---	--	--	--

 Not visible (not able to see signs)

(iii) Other comments *I always meet "lost" people so signs clearly do not work. Difficult to find stairs!*

b) Directions:

(i) Understandable 

		✓			
--	--	---	--	--	--

 Difficult to understand

(ii) Other comments *Absolute clarity needed in information in signs*

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork)  
*where??*

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------

b) Please state feature(s) *useful because they exist*  
*poor because they are always too far away.*  
*The less able one is at movement the further one has to walk eg. fractures!*  
*Lack of private phones*

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

b) Please state feature(s) *Some graciousness somewhere*  
*some welcoming feature - a "Can I help you?" desk*  
*Telephone availability is a priority*  
*A disabled (oo at the door please!!)*

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

b) Please state feature(s) *Grateful for the shop which was being*  
*when we arrived in October 2000 - but nothing*  
*has replaced the volunteer coffee makers!!*  
*Urgent need for telephone cubicles for private*  
*and an indoor area for use of mobiles - It*  
*isn't well standing outside in the snow!!*  
*Also an indoor area for wilful naughty smokers*

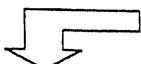


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

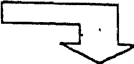
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

					✓	
--	--	--	--	--	---	--

 Large

b) Light 

					✓	
--	--	--	--	--	---	--

 Dark

c) Spacious 

		✓				
--	--	---	--	--	--	--

 Cramped

d) Welcoming 

✓						
---	--	--	--	--	--	--

 Unwelcoming

e) Tidy 

	✓					
--	---	--	--	--	--	--

 Untidy

f) Other comments..... *The reception/waiting area is fairly good. But just a couple of small changes could be better.*

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with Strongly agree with

		✓				
--	--	---	--	--	--	--

b) Hard Soft

Strongly agree with Strongly agree with

				✓		
--	--	--	--	---	--	--

c) Comfortable Uncomfortable

Strongly agree with Strongly agree with

		<del>✓</del>	✓			
--	--	--------------	---	--	--	--

d) Feels Solid Feels Hollow

Strongly agree with Strongly agree with

		✓				
--	--	---	--	--	--	--

e) 'Modern' 'Old'

Strongly agree with Strongly agree with

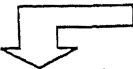
✓						
---	--	--	--	--	--	--

f) Other comments ..... The seats could be better. The seating is sterile. Keep half of them and bring in more comfortable ~~seats~~ single seats. Ok but um chairs something inbetween.

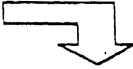
Create a more homely, friendly atmosphere

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

		✓			
--	--	---	--	--	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

		✓			
--	--	---	--	--	--

 Not visible (not able to see signs)

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) Understandable 

		✓			
--	--	---	--	--	--

 Difficult to understand

(ii) Other comments .....

.....

.....

.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

	Strongly agree with	Strongly agree with				
	✓					

 Poor feature(s)

b) Please state feature(s) .....  
.....  
.....  
.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

Strongly agree with	Strongly agree with				
✓					

 Adequate feature(s)

b) Please state feature(s) ..... you have ~~television~~ television  
How about turning the channel  
One for information one to  
watch at low volume of course  
Or maybe a little music  
pass the radio

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

Strongly agree with	Strongly agree with				

 Keep feature(s)

b) Please state feature(s) ..... SAME AS ABOVE .....  
.....  
.....  
.....

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a) Strongly agree with Strongly agree with

--	--	--	--	--	--	--

Small Large

b) Strongly agree with Strongly agree with

--	--	--	--	--	--	--

Light Dark

c) Strongly agree with Strongly agree with

--	--	--	--	--	--	--

Spacious Cramped

d) Strongly agree with Strongly agree with

--	--	--	--	--	--	--

Welcoming Unwelcoming

e) Strongly agree with Strongly agree with

--	--	--	--	--	--	--

Tidy Untidy

f) Other comments.....

could do with more seats  
 it becomes crowded with lots of  
 consultants available and when packed  
 people have to stand!!

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Strongly agree with Strongly agree with Dull

			✓		
--	--	--	---	--	--

b) Hard Strongly agree with Strongly agree with Soft

✓					
---	--	--	--	--	--

c) Comfortable Strongly agree with Strongly agree with Uncomfortable

					✓
--	--	--	--	--	---

d) Feels Solid Strongly agree with Strongly agree with Feels Hollow

✓					
---	--	--	--	--	--

e) 'Modern' Strongly agree with Strongly agree with 'Old'

		✓			
--	--	---	--	--	--

f) Other comments .....

.....

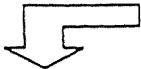
.....

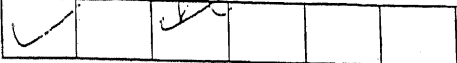
.....

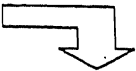
.....

3. What are your observations of the information systems?

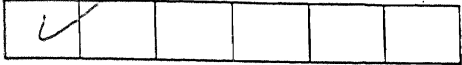
a) Signs:

(i)  Clear  
(able to read letters/pictures/graphics)

Strongly agree with  Strongly agree with

 Unclear  
(not able to read letters/pictures/graphics)

(ii) Visible  
(able to see signs)

Strongly agree with  Strongly agree with

Not visible  
(not able to see signs)

(iii) Other comments .....

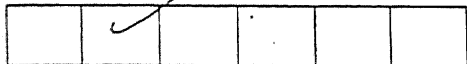
.....

.....

.....

.....

b) Directions:

(i) Understandable  Difficult to understand

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.  
 (e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

					✓
--	--	--	--	--	---

b) Please state feature(s) .....

.....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

✓					
---	--	--	--	--	--

b) Please state feature(s) .....

Television / Music to keep

younger patients occupied

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

			✓		
--	--	--	---	--	--

b) Please state feature(s) .....

.....

.....

.....

.....

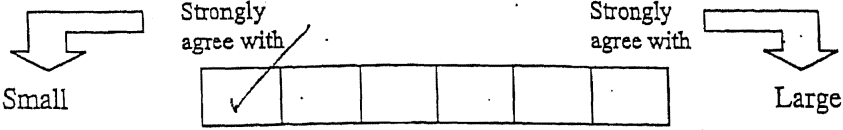


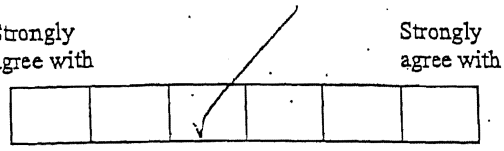
Questions for Patients - Appearance and Aesthetics (Please answer all questions).

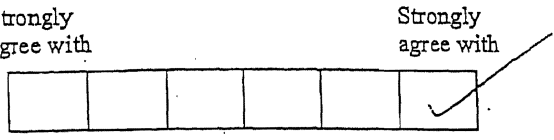
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

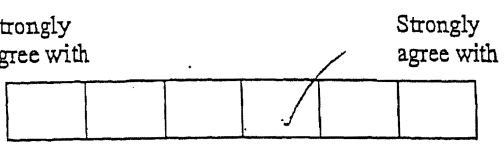
1. What are your impressions of the reception/waiting area?

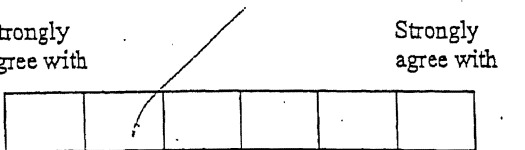
(For each, please tick one box only)

a) 

b) 

c) 

d) 

e) 

f) Other comments.....

Areas are not suitable or friend  
for mothers with prams (no)  
doors are big and bulky  
limited room - no mother  
and baby facilities for

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Strongly agree with Strongly agree with Dull

						✓
--	--	--	--	--	--	---

b) Hard Strongly agree with Strongly agree with Soft

--	--	--	--	--	--	--

c) Comfortable Strongly agree with Strongly agree with Uncomfortable

						✓
--	--	--	--	--	--	---

d) Feels Solid Strongly agree with Strongly agree with Feels Hollow

--	--	--	--	--	--	--

e) 'Modern' Strongly agree with Strongly agree with 'Old'

						✓
--	--	--	--	--	--	---

f) Other comments .....

.....

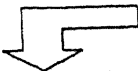
.....

.....

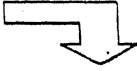
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

			✓		
--	--	--	---	--	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

			✓		
--	--	--	---	--	--

 Not visible (not able to see signs)

(iii) Other comments .....  
*Direction system can be confusing, must be aware for old people*  
.....  
.....

b) Directions:

(i) Understandable 

			✓		
--	--	--	---	--	--

 Difficult to understand

(ii) Other comments .....  
.....  
.....  
.....

4. The reception/waiting area has features that you find useful.  
 (e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

--	--	--	--	--	--

b) Please state feature(s) .....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

--	--	--	--	--	--

b) Please state feature(s) *as per question* .....

*15* .....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

--	--	--	--	--	--

b) Please state feature(s) *as above* .....

.....

.....

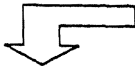
.....

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

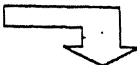
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

Strongly agree with	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with
---------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	---------------------

 Large

b) Light 

Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with
---------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	---------------------

 Dark

c) Spacious 

Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Strongly agree with
---------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	---------------------

 Cramped

d) Welcoming 

Strongly agree with	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with
---------------------	--------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	---------------------

 Unwelcoming

e) Tidy 

Strongly agree with	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Strongly agree with
---------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	---------------------

 Untidy

f) Other comments.....

*More colouring marks would be nice while waiting for a long time. There is drinking water machine would be very welcome because it is summer in so dry*

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

b) Hard Soft

Strongly agree with Strongly agree with

	✓					
--	---	--	--	--	--	--

c) Comfortable Uncomfortable

Strongly agree with Strongly agree with

				✓		
--	--	--	--	---	--	--

d) Feels Solid Feels Hollow

Strongly agree with Strongly agree with

✓						
---	--	--	--	--	--	--

e) 'Modern' 'Old'

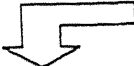
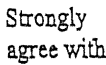
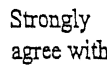
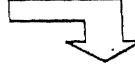
Strongly agree with Strongly agree with

	✓					
--	---	--	--	--	--	--

f) Other comments ..... *good if you have got a*  
*best look*  
.....  
.....  
.....

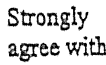
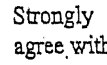
3. What are your observations of the information systems?

a) Signs:

(i)  Clear    Unclear

(able to read letters/pictures/graphics) (not able to read letters/pictures/graphics)

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(ii) Visible   Not visible

(able to see signs) (not able to see signs)

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(iii) Other comments .....

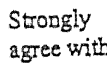
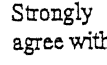
.....

.....

.....

.....

b) Directions:

(i) Understandable   Difficult to understand

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

✓					
---	--	--	--	--	--

 Poor feature(s)

b) Please state feature(s) TOILETS  
CAFÉ TOO EXPENSIVE SHOP GOOD  
SPECIAL NEEDS FACILITIES VERY GOOD

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

✓					
---	--	--	--	--	--

 Adequate feature(s)

b) Please state feature(s) CALMING MUSIC

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

					✓
--	--	--	--	--	---

 Keep feature(s)

b) Please state feature(s) .....

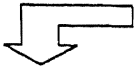
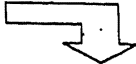


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with Strongly agree with  Large

		/			
--	--	---	--	--	--

b) Light Strongly agree with Strongly agree with Dark

		/			
--	--	---	--	--	--

c) Spacious Strongly agree with Strongly agree with Cramped

				/	
--	--	--	--	---	--

d) Welcoming Strongly agree with Strongly agree with Unwelcoming

/					
---	--	--	--	--	--

e) Tidy Strongly agree with Strongly agree with Untidy

		/			
--	--	---	--	--	--

f) Other comments.....  
.....  
.....  
.....  
.....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

*(A checkmark is present in the 5th box from the left.)*

b) Hard Soft

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

*(A checkmark is present in the 1st box from the left.)*

c) Comfortable Uncomfortable

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

*(A checkmark is present in the 6th box from the left.)*

d) Feels Solid Feels Hollow

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

*(A checkmark is present in the 1st box from the left.)*

e) 'Modern' 'Old'

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

*(A checkmark is present in the 1st box from the left.)*

f) Other comments .....

*Some chairs should have arms*

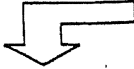
*to assist elderly persons to stand*

.....

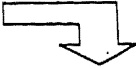
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

Strongly agree with						Strongly agree with
---------------------	--	--	--	--	--	---------------------

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

Strongly agree with						Strongly agree with
---------------------	--	--	--	--	--	---------------------

 Not visible (not able to see signs)

(iii) Other comments .....  
.....  
.....  
.....

b) Directions:

(i) Understandable 

Strongly agree with						Strongly agree with
---------------------	--	--	--	--	--	---------------------

 Difficult to understand

(ii) Other comments .....  
*Layout plan might be helpful i main reception.*  
.....  
.....

4. The reception/waiting area has features that you find useful.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

--	--	--	--	--	--	--	--

b) Please state feature(s) .....

.....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

--	--	--	--	--	--	--	--

b) Please state feature(s) .....

*Text information for patients*

*needed for treatment*

.....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

--	--	--	--	--	--	--	--

b) Please state feature(s) .....

*Sp. Security should have*

*panels and there*

*should be visible text*

*information to assist hard of*

*hearing know when they*

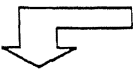
*are called.*

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

					✓
--	--	--	--	--	---

--	--	--	--	--	--

 Large

b) Light 

✓					
---	--	--	--	--	--

 Dark

c) Spacious 

✓					
---	--	--	--	--	--

 Cramped

d) Welcoming 

✓					
---	--	--	--	--	--

 Unwelcoming

e) Tidy 

✓					
---	--	--	--	--	--

 Untidy

f) Other comments..... THE AREA IS AS IT SHOULD BE CLEAN, FUNCTIONAL WITH EFFICIENT FRIENDLY STAFF.....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

b) Hard Soft

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

c) Comfortable Uncomfortable

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

d) Feels Solid Feels Hollow

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

e) 'Modern' 'Old'

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

f) Other comments .....

.....

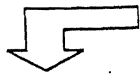
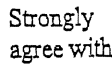
.....

.....

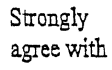
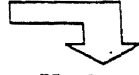
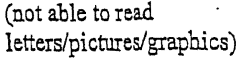
.....

3. What are your observations of the information systems?

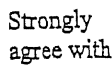
a) Signs:

(i)  Clear 

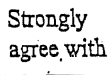
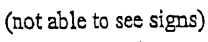
✓					
---	--	--	--	--	--

  Unclear 

(able to read letters/pictures/graphics)

(ii) Visible 

✓					
---	--	--	--	--	--

 Not visible 

(able to see signs)

(iii) Other comments .....

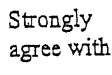
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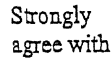
.....

.....

b) Directions:

(i) Understandable 

✓					
---	--	--	--	--	--

 Difficult to understand

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

Strongly agree with						Strongly agree with
---------------------	--	--	--	--	--	---------------------

 Poor feature(s)

b) Please state feature(s) ..... THE CLINIC RECEPTION  
HAS ALL THE FEATURES REQD  
e.g. TOILET. THE OTHER FACILITIES  
ARE WITHIN THE HOSP. ENTRANCE  
.....  
.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

Strongly agree with						Strongly agree with
---------------------	--	--	--	--	--	---------------------

 Adequate feature(s)

b) Please state feature(s) ..... AS STATED ABOVE  
.....  
.....  
.....  
.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

Strongly agree with						Strongly agree with
---------------------	--	--	--	--	--	---------------------

 Keep feature(s)

b) Please state feature(s) .....  
.....  
.....  
.....

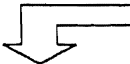


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

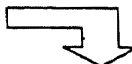
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

 Large

b) Light 

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

 Dark

c) Spacious 

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

 Cramped

d) Welcoming 

			<input checked="" type="checkbox"/>		
--	--	--	-------------------------------------	--	--

 Unwelcoming

e) Tidy 

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

 Untidy

f) Other comments *clean and well kept - good atmosphere*  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Strongly agree with Strongly agree with Dull

			✓		
--	--	--	---	--	--

b) Hard Strongly agree with Strongly agree with Soft

				✓	
--	--	--	--	---	--

c) Comfortable Strongly agree with Strongly agree with Uncomfortable

				✓	
--	--	--	--	---	--

d) Feels Solid Strongly agree with Strongly agree with Feels Hollow

			✓		
--	--	--	---	--	--

e) 'Modern' Strongly agree with Strongly agree with 'Old'

				✓	
--	--	--	--	---	--

f) Other comments *Need for more armrests and better colour!*

.....

.....

.....

.....

3. What are your observations of the information systems?

a) Signs:

(i) **Clear** (able to read letters/pictures/graphics) Strongly agree with Strongly agree with **Unclear** (not able to read letters/pictures/graphics)

			✓		
--	--	--	---	--	--

(ii) **Visible** (able to see signs) Strongly agree with Strongly agree with **Not visible** (not able to see signs)

				✓	
--	--	--	--	---	--

(iii) Other comments *Perhaps need some of those signs that change and give information e.g. name of patient*

b) Directions:

(i) **Understandable** Strongly agree with Strongly agree with **Difficult to understand**

				✓	
--	--	--	--	---	--

(ii) Other comments *Receptionist gave directions which my mother found difficult to follow and the signs didn't really help her*

4. The reception/waiting area has features that you find useful.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

				/	
--	--	--	--	---	--

b) Please state feature(s) Café

.....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

--	--	--	--	--	--

b) Please state feature(s) Perhaps a small T.V. for children and also more range of food.

.....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

	✓				
--	---	--	--	--	--

b) Please state feature(s) The room that are unbalanced and in the small room the layout of the furniture - maybe grouped differently.

.....

.....

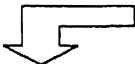
.....

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

			✓		
--	--	--	---	--	--

--	--	--	--	--	--

 Large

b) Light 

	✓				
--	---	--	--	--	--

 Dark

c) Spacious 

		✓			
--	--	---	--	--	--

 Cramped

d) Welcoming 

	✓				
--	---	--	--	--	--

 Unwelcoming

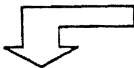
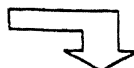
e) Tidy 

		✓			
--	--	---	--	--	--

 Untidy

f) Other comments.....  
 .....  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

		Strongly agree with						Strongly agree with		
a)	Colourful					✓				Dull
b)	Hard	Strongly agree with				✓			Strongly agree with	Soft
c)	Comfortable	Strongly agree with			✓				Strongly agree with	Uncomfortable
d)	Feels Solid	Strongly agree with				✓			Strongly agree with	Feels Hollow
e)	'Modern'	Strongly agree with					✓		Strongly agree with	'Old'

f) Other comments .....

.....

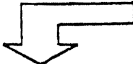
.....

.....

.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

		✓			
--	--	---	--	--	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

		✓			
--	--	---	--	--	--

 Not visible (not able to see signs)

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) Understandable 

		✓			
--	--	---	--	--	--

 Difficult to understand

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

	✓				
--	---	--	--	--	--

 Poor feature(s)

b) Please state feature(s) TOILET & CAFE  
.....  
.....  
.....  
.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

	✓				
--	---	--	--	--	--

 Adequate feature(s)

b) Please state feature(s) PUBLIC & PRIVATE  
TRANSPORT INFORMATION (more off)  
FOR THOSE NOT ENTITLED TO HOSPITAL  
TRANSPORT i.e. electronic based easily changed  
PATIENT INFORMATION BASED (HOSPITAL problems)  
(waiting etc etc)

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

	✓				
--	---	--	--	--	--

 Keep feature(s)

b) Please state feature(s) As per (5) + Some sort  
of FACILITIES TO HELP The patient to  
Choose an appointment time rather than  
agree one from reception (for future appointments)  
A lot of people accept appointments then change  
or cancel total (ie lack of info at the time or pressure  
in the ~~rush~~ rush to get here etc etc

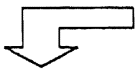
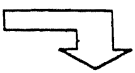


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with Strongly agree with  Large

				✓	
--	--	--	--	---	--

b) Light Strongly agree with Strongly agree with Dark

	✓				
--	---	--	--	--	--

c) Spacious Strongly agree with Strongly agree with Cramped

	✓				
--	---	--	--	--	--

d) Welcoming Strongly agree with Strongly agree with Unwelcoming

	✓				
--	---	--	--	--	--

e) Tidy Strongly agree with Strongly agree with Untidy

	✓				
--	---	--	--	--	--

f) Other comments... *These ticks relate to the reception area - waiting area is less spacious / welcoming / tidy.*

.....

.....

.....

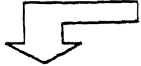
2. What are your impressions of the reception/waiting area furniture?

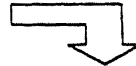
	Strongly agree with		Strongly agree with										
a) Colourful	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">✓</td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						✓			Dull			
		✓											
b) Hard	Strongly agree with	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">✓</td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>							✓			Strongly agree with	Soft
			✓										
c) Comfortable	Strongly agree with	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">✓</td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						✓				Strongly agree with	Uncomfortable
		✓											
d) Feels Solid	Strongly agree with	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">✓</td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						✓				Strongly agree with	Feels Hollow
		✓											
e) 'Modern'	Strongly agree with	<table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px; text-align: center;">✓</td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>						✓				Strongly agree with	'Old'
		✓											

f) Other comments ..... Are you seriously telling me pfi money has been used on furniture? I find the notion ridiculous - although I know the same situation applies to the construction of the new police station in Watlington!

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

	Strongly agree with	✓					Strongly agree with	
--	---------------------	---	--	--	--	--	---------------------	---

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

	Strongly agree with	✓					Strongly agree with
--	---------------------	---	--	--	--	--	---------------------

 Not visible (not able to see signs)

(iii) Other comments *Clarity & visibility should not be confused with usefulness!*

b) Directions:

(i) Understandable 

	Strongly agree with		✓				Strongly agree with
--	---------------------	--	---	--	--	--	---------------------

 Difficult to understand

(ii) Other comments *Can't say I brought about it - however some of the 'short-cuts' are not really well signposted. It might be argued that the public aren't meant to use them - so the counter argument would be why do staff support using them?*

4. The reception/waiting area has features that you find useful.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

 Poor feature(s)

b) Please state feature(s) ..... DIDN'T SPOT much  
..... ARTWORK. COULD BE MORE  
.....  
.....  
.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

 Adequate feature(s)

b) Please state feature(s) ..... → music — NOT MUZAK  
..... THOUGH  
..... → BETTER FACILITIES FOR  
..... CHILDREN  
.....  
.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

 Keep feature(s)

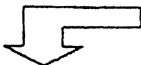
b) Please state feature(s) ..... AN IMPROVEMENT TO THE SYSTEM TO  
..... THAT IF SOMETHING ELSE IS REQUIRED E.G.  
..... X-RAY, IT IS DEALT WITH ON ARRIVAL  
..... INSTEAD OF SITTING FOR A HOUR TO THEN  
..... BE TOLD TO GO TO X-RAY TO WAIT ANOTHER  
..... HOUR. APPOINTMENTS SHOULD BE ADHERED  
..... OR PATIENTS TEND TO BECOME IMPATIENTS

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

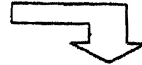
1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

			✓		
--	--	--	---	--	--

--	--	--	--	--	--

 Large

b) Light 

	✓				
--	---	--	--	--	--

--	--	--	--	--	--

 Dark

c) Spacious 

	✓				
--	---	--	--	--	--

--	--	--	--	--	--

 Cramped

d) Welcoming 

	✓				
--	---	--	--	--	--

--	--	--	--	--	--

 Unwelcoming

e) Tidy 

	✓				
--	---	--	--	--	--

--	--	--	--	--	--

 Untidy

f) Other comments.....  
 ..... Good - No problems!  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

	Strongly agree with						Strongly agree with
	✓						

b) Hard Soft

	Strongly agree with						Strongly agree with
				✓			

c) Comfortable Uncomfortable

	Strongly agree with						Strongly agree with
				✓			

d) Feels Solid Feels Hollow

	Strongly agree with						Strongly agree with
				✓			

e) 'Modern' 'Old'

	Strongly agree with						Strongly agree with
	✓						

f) Other comments .....

*fine!*

.....

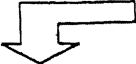
.....


.....

.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

	Strongly agree with	<input checked="" type="checkbox"/>						Strongly agree with	 Unclear (not able to read letters/pictures/graphics)
--	---------------------	-------------------------------------	--	--	--	--	--	---------------------	--

(ii) Visible (able to see signs) 

	Strongly agree with			<input checked="" type="checkbox"/>				Strongly agree with	Not visible (not able to see signs)
--	---------------------	--	--	-------------------------------------	--	--	--	---------------------	-------------------------------------

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) Understandable 

	Strongly agree with	<input checked="" type="checkbox"/>						Strongly agree with	Difficult to understand
--	---------------------	-------------------------------------	--	--	--	--	--	---------------------	-------------------------

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.  
 (e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

		✓			
--	--	---	--	--	--

b) Please state feature(s) .....  
 ..... *all* .....  
 .....  
 .....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

--	--	--	--	--	--

b) Please state feature(s) .....  
 ..... *T.V. - Showing healthy living video* .....  
 ..... *or* .....  
 ..... *pleasant music* .....  
 ..... *or* .....  
 ..... *visual - water feature* .....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

✓					
---	--	--	--	--	--

b) Please state feature(s) .....  
 ..... *More privacy for patient walking to reception staff. by way reception desk positioning and position of patients queuing to see reception staff.* .....

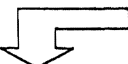


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

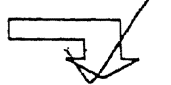
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with

					✓
--	--	--	--	--	---

Strongly agree with  Large

b) Light Strongly agree with

			✓		
--	--	--	---	--	--

Strongly agree with Dark

c) Spacious Strongly agree with

	✓				
--	---	--	--	--	--

Strongly agree with Cramped

d) Welcoming Strongly agree with

	✓				
--	---	--	--	--	--

Strongly agree with Unwelcoming

e) Tidy Strongly agree with

		✓			
--	--	---	--	--	--

Strongly agree with Untidy

f) Other comments.....  
 .....  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

b) Hard Soft

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

c) Comfortable Uncomfortable

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

d) Feels Solid Feels Hollow

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

e) 'Modern' 'Old'

Strongly agree with Strongly agree with

--	--	--	--	--	--	--

f) Other comments .....

.....

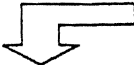
.....

.....

.....

3. What are your observations of the information systems?

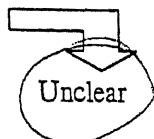
a) Signs:

(i)  **Clear**  
(able to read letters/pictures/graphics)

Strongly agree with

			✓		
--	--	--	---	--	--

Strongly agree with

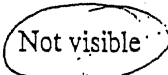
 **Unclear**  
(not able to read letters/pictures/graphics)

(ii) **Visible**  
(able to see signs)

Strongly agree with

			✓		
--	--	--	---	--	--

Strongly agree with

 **Not visible**  
(not able to see signs)

(iii) Other comments .....

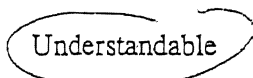
.....

.....

.....

.....

b) Directions:

(i)  **Understandable**

Strongly agree with

		✓			
--	--	---	--	--	--

Strongly agree with

**Difficult to understand**

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

				✓	
--	--	--	--	---	--

 Poor feature(s)

b) Please state feature(s) ... No artwork, dull more information stands/boards would be nice updated newspapers and magazines, needed.

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

✓					
---	--	--	--	--	--

 Adequate feature(s)

b) Please state feature(s) ... Clock, a system that tells each patient when it is going to be their turn to see the doctor or how long they will still have to wait, like an airport information board or intercom system

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

✓					
---	--	--	--	--	--

 Keep feature(s)

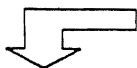
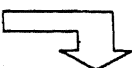
b) Please state feature(s) ... Stop smokers from smoking at the entrance to reception. More car parking.

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with Strongly agree with  Large

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

b) Light Strongly agree with Strongly agree with Dark

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

c) Spacious Strongly agree with Strongly agree with Cramped

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------

d) Welcoming Strongly agree with Strongly agree with Unwelcoming

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

e) Tidy Strongly agree with Strongly agree with Untidy

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------

f) Other comments.....  
 .....  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

Strongly agree with						Strongly agree with
	✓					

b) Hard Soft

Strongly agree with						Strongly agree with
			✓			

c) Comfortable Uncomfortable

Strongly agree with						Strongly agree with
			✓			

d) Feels Solid Feels Hollow

Strongly agree with						Strongly agree with
	✓					

e) 'Modern' 'Old'

Strongly agree with						Strongly agree with
	✓					

f) Other comments .....

.....

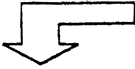
.....

.....

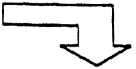
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

		✓			
--	--	---	--	--	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

		✓			
--	--	---	--	--	--

 Not visible (not able to see signs)

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) Understandable 

		✓			
--	--	---	--	--	--

 Difficult to understand

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find **useful**.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

--	--	--	--	--	--

b) Please state feature(s) .....

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

--	--	--	--	--	--

b) Please state feature(s) *Waiting area should be made larger and tea & coffee facilities should be more readily available and not just at restricted times.*

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

--	--	--	--	--	--

b) Please state feature(s) *Buffet area is old*

*facilities should incorporate a flat top*

*table with adequate seating*

.....

.....

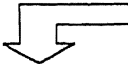
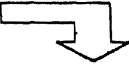


Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with Strongly agree with  Large

		✓			
--	--	---	--	--	--

b) Light Strongly agree with Strongly agree with Dark

	✓				
--	---	--	--	--	--

c) Spacious Strongly agree with Strongly agree with Cramped

		✓			
--	--	---	--	--	--

d) Welcoming Strongly agree with Strongly agree with Unwelcoming

			✓		
--	--	--	---	--	--

e) Tidy Strongly agree with Strongly agree with Untidy

	✓				
--	---	--	--	--	--

f) Other comments... *Basically furnished, clean and warm.*  
*Chldes area a good idea.*

.....

.....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

				✓	
--	--	--	--	---	--

b) Hard Soft

			✓		
--	--	--	---	--	--

c) Comfortable Uncomfortable

				✓	
--	--	--	--	---	--

d) Feels Solid Feels Hollow

	✓				
--	---	--	--	--	--

e) 'Modern' 'Old'

				✓	
--	--	--	--	---	--

f) Other comments *Functional & hard wearing*  
*Easy to clean. - But impersonal.*

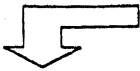
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.....

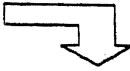
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

	✓				
--	---	--	--	--	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

				✓	
--	--	--	--	---	--

 Not visible (not able to see signs)

(iii) Other comments *Appeared to be in English only.*

b) Directions:

(i) Understandable 

	✓			
--	---	--	--	--

 Difficult to understand

(ii) Other comments *All in one area, so no need for detailed directions.*

4. The reception/waiting area has features that you find useful.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

--	--	--	--	--	--

b) Please state feature(s) *Not really applicable only in it for 15 minutes*

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

		✓			
--	--	---	--	--	--

b) Please state feature(s) *Drinks machine*

*T.V. Vides? Some distraction*

.....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

	✓				
--	---	--	--	--	--

b) Please state feature(s) *More comfortable seats - already trying to make bottom go down numb. Also covered in plastic cover - quite sweaty in summer!*

.....

.....

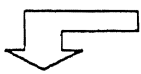
.....

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

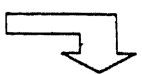
1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

			<input checked="" type="checkbox"/>		
--	--	--	-------------------------------------	--	--

--	--	--	--	--	--

 Large 

b) Light 

	<input checked="" type="checkbox"/>				
--	-------------------------------------	--	--	--	--

--	--	--	--	--	--

 Dark

c) Spacious 

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

--	--	--	--	--	--

 Cramped

d) Welcoming 

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

--	--	--	--	--	--

 Unwelcoming

e) Tidy 

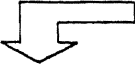
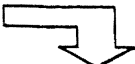
		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

--	--	--	--	--	--

 Untidy

f) Other comments.....  
 .....  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

		Strongly agree with							Strongly agree with		
a) Colourful				/							Dull
		Strongly agree with							Strongly agree with		
b) Hard				✓							Soft
		Strongly agree with							Strongly agree with		
c) Comfortable				/							Uncomfortable
		Strongly agree with							Strongly agree with		
d) Feels Solid			/								Feels Hollow
		Strongly agree with							Strongly agree with		
e) 'Modern'			/								'Old'
		Strongly agree with							Strongly agree with		

f) Other comments .....

.....


.....

.....

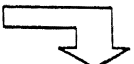
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

<input checked="" type="checkbox"/>					
-------------------------------------	--	--	--	--	--

 Not visible (not able to see signs)

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) Understandable 

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

 Difficult to understand

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find **useful**.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

	✓				
--	---	--	--	--	--

 Poor feature(s)

b) Please state feature(s) ..... I know layout of hospital  
..... Signs are up if you know  
..... where to look  
.....  
.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

--	--	--	--	--	--

 Adequate feature(s)

b) Please state feature(s) ..... I think really nice maybe  
..... plants as flowers to make the medical  
..... appearance and make more relaxing  
.....  
.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

--	--	--	--	--	--

 Keep feature(s)

b) Please state feature(s) ..... none above  
.....  
.....  
.....




Questions for Patients - Appearance and Aesthetics (Please answer all questions).

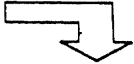
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small 

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------


--

 Large

b) Light 

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

 Dark

c) Spacious 

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------

 Cramped

d) Welcoming 

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------	--------------------------	--------------------------

 Unwelcoming

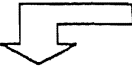
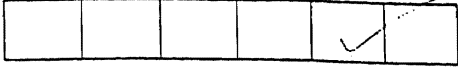
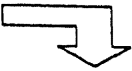
e) Tidy 

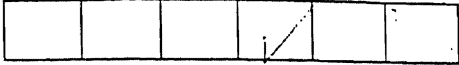
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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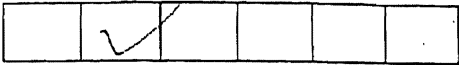
 Untidy

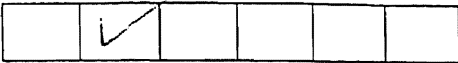
f) Other comments... There are no toys for children to play with - This is very important when you have young children

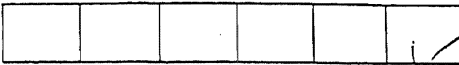
2. What are your impressions of the reception/waiting area furniture?

a) Colourful  Strongly agree with  Strongly agree with  Dull

b) Hard Strongly agree with  Strongly agree with Soft

c) Comfortable Strongly agree with  Strongly agree with Uncomfortable

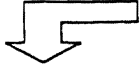
d) Feels Solid Strongly agree with  Strongly agree with Feels Hollow

e) 'Modern' Strongly agree with  Strongly agree with 'Old'

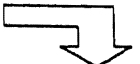
f) Other comments ..... I dont mind the  
furniture. Appearance of the  
area is more imp eg space, light  
.....  
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

--	--	--	--	--	--

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

--	--	--	--	--	--

 Not visible (not able to see signs)

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) Understandable 

--	--	--	--	--	--

 Difficult to understand

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

						✓
--	--	--	--	--	--	---

 Poor feature(s)

b) Please state feature(s) only toilets  
.....  
.....  
.....  
.....

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

	✓				
--	---	--	--	--	--

 Adequate feature(s)

b) Please state feature(s) eg toys, snacks machine  
chairs machine  
.....  
.....  
.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

			✓		
--	--	--	---	--	--

 Keep feature(s)

b) Please state feature(s) .....  
.....  
.....  
.....

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a) Strongly agree with Strongly agree with

			<input checked="" type="checkbox"/>		
--	--	--	-------------------------------------	--	--

Large

b) Strongly agree with Strongly agree with

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

Dark

c) Strongly agree with Strongly agree with

		<input checked="" type="checkbox"/>			
--	--	-------------------------------------	--	--	--

Cramped

d) Strongly agree with Strongly agree with

				<input checked="" type="checkbox"/>	
--	--	--	--	-------------------------------------	--

Unwelcoming

e) Strongly agree with Strongly agree with

	<input checked="" type="checkbox"/>				
--	-------------------------------------	--	--	--	--

Untidy

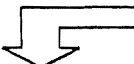
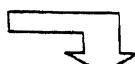
f) Other comments.....

INVITING COLOUR PAINTWORK NOT THE  
DULL CREAM / OFF WHITE

.....

.....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful  Strongly agree with       Strongly agree with  Dull

b) Hard Strongly agree with       Strongly agree with Soft

c) Comfortable Strongly agree with       Strongly agree with Uncomfortable

d) Feels Solid Strongly agree with       Strongly agree with Feels Hollow

e) 'Modern' Strongly agree with       Strongly agree with 'Old'

f) Other comments .....

.....

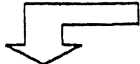
.....

.....

.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear  
(able to read letters/pictures/graphics)

Strongly agree with

Strongly agree with

			✓		
--	--	--	---	--	--

Unclear  
(not able to read letters/pictures/graphics)

(ii) Visible  
(able to see signs)

Strongly agree with

Strongly agree with

			✓		
--	--	--	---	--	--

Not visible  
(not able to see signs)

(iii) Other comments .....

.....

.....

.....

.....

b) Directions:

(i) Understandable

Strongly agree with

Strongly agree with

		✓		
--	--	---	--	--

Difficult to understand

(ii) Other comments .....

.....

.....

.....

.....

4. The reception/waiting area has features that you find useful.

(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) 

				✓	
--	--	--	--	---	--

 Poor feature(s)

b) Please state feature(s) .....

ART WORK BLAND

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) 

✓					
---	--	--	--	--	--

 Adequate feature(s)

b) Please state feature(s) .....

DRINKING WATER MACHINE

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) 

	✓				
--	---	--	--	--	--

 Keep feature(s)

b) Please state feature(s) .....

COLOUR SCHEME OF WALLS

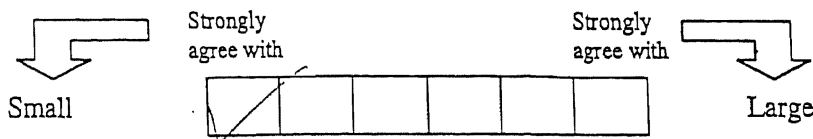


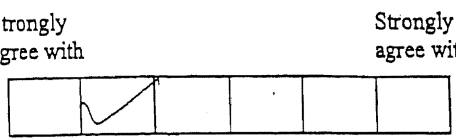
Questions for Patients - Appearance and Aesthetics (Please answer all questions).

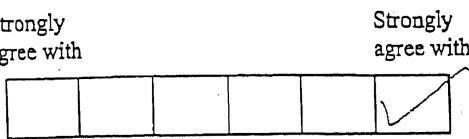
The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

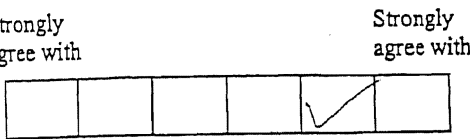
1. What are your impressions of the reception/waiting area?

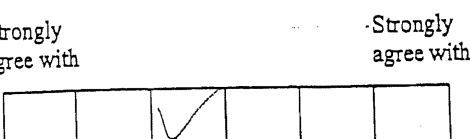
(For each, please tick one box only)

a)  Strongly agree with Strongly agree with Large

b)  Strongly agree with Strongly agree with Dark

c)  Strongly agree with Strongly agree with Cramped

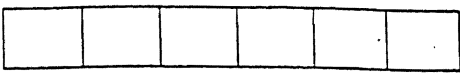
d)  Strongly agree with Strongly agree with Unwelcoming

e)  Strongly agree with Strongly agree with Untidy

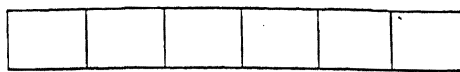
f) Other comments. RECEPTION IS TOTALLY INADEQUATE FOR ITS USE!  
 .....  
 .....  
 .....

2. What are your impressions of the reception/waiting area furniture?

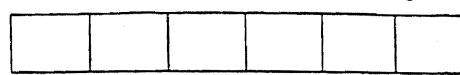
a) Colourful Strongly agree with Strongly agree with Dull



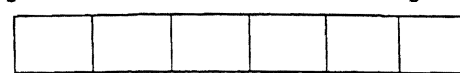
b) Hard Strongly agree with Strongly agree with Soft



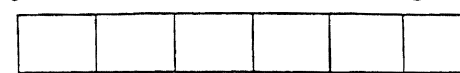
c) Comfortable Strongly agree with Strongly agree with Uncomfortable



d) Feels Solid Strongly agree with Strongly agree with Feels Hollow



e) 'Modern' Strongly agree with Strongly agree with 'Old'



f) Other comments .....

.....

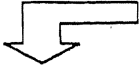
.....

.....

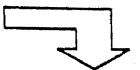
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) Strongly agree with

	✓				
--	---	--	--	--	--

Strongly agree with  Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) Strongly agree with

		✓			
--	--	---	--	--	--

Strongly agree with Not visible (not able to see signs)

(iii) Other comments SIGNS ARE MALHAZARD AND DO NOT APPEAR TO BE IN ANY PARTICULAR ORDER OR DEPARTMENTAL GROUPING. E.G. MATERNITY ADVICE NEXT TO DOMESTIC VIOLENCE OR NEXT TO FRACTURE CLINIC.

b) Directions:

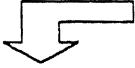
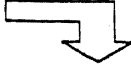
(i) Understandable Strongly agree with

				✓	
--	--	--	--	---	--

Strongly agree with Difficult to understand

(ii) Other comments NO ARROWS ONLY SIGNS  
Pool  
.....  
.....  
.....

4. The reception/waiting area has features that you find **useful**.  
(e.g. toilets, café, shop, special needs facilities, artwork).


Strongly agree with
Strongly agree with


a) Useful feature(s) 

				✓	
--	--	--	--	---	--

 Poor feature(s)

b) Please state feature(s) NOT CLEAN & SLOW WHAT IS AVAILABLE ON WHEEL OR WHEEL

.....

.....

.....

5. There are features that you would like in the reception/waiting area.

Strongly agree with
Strongly agree with

a) Additional feature(s) 

			✓		
--	--	--	---	--	--

 Adequate feature(s)

b) Please state feature(s) .....

.....

.....

.....

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

Strongly agree with
Strongly agree with

a) Change feature(s) 

✓					
---	--	--	--	--	--

 Keep feature(s)

b) Please state feature(s) MORE ORGANISED, LARGER BETTER FACILITIES.

.....

.....

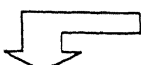
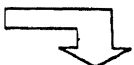
.....

Questions for Patients - Appearance and Aesthetics (Please answer all questions).

The aim of this questionnaire is to assess the user's response and impression of the hospital environment, as well as evaluating the facilities provided for patients.

1. What are your impressions of the reception/waiting area?

(For each, please tick one box only)

a)  Small Strongly agree with       Strongly agree with  Large

b) Light Strongly agree with       Strongly agree with Dark

c) Spacious Strongly agree with       Strongly agree with Cramped

d) Welcoming Strongly agree with       Strongly agree with Unwelcoming

e) Tidy Strongly agree with       Strongly agree with Untidy

f) Other comments.....  
 It is in a victorian building but  
 the space has been used to the  
 best advantage.  
 .....

2. What are your impressions of the reception/waiting area furniture?

a) Colourful Dull

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

b) Hard Soft

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

c) Comfortable Uncomfortable

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

d) Feels Solid Feels Hollow

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

e) 'Modern' 'Old'

--	--	--	--	--	--	--

Strongly agree with Strongly agree with

f) Other comments .....

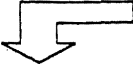
The furniture is 'older' but very comfortable — not hard plastic chairs!

.....

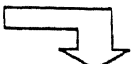
.....

3. What are your observations of the information systems?

a) Signs:

(i)  Clear (able to read letters/pictures/graphics) 

Strongly agree with	✓							Strongly agree with
---------------------	---	--	--	--	--	--	--	---------------------

 Unclear (not able to read letters/pictures/graphics)

(ii) Visible (able to see signs) 

Strongly agree with	✓							Strongly agree with
---------------------	---	--	--	--	--	--	--	---------------------

 Not visible (not able to see signs)

(iii) Other comments .....  
.....  
.....  
.....  
.....

b) Directions:

(i) Understandable 

Strongly agree with	✓							Strongly agree with
---------------------	---	--	--	--	--	--	--	---------------------

 Difficult to understand

(ii) Other comments .....  
The directions given by reception staff were clear and concise .....  
.....  
.....

4. The reception/waiting area has features that you find useful.  
(e.g. toilets, café, shop, special needs facilities, artwork).

a) Useful feature(s) Strongly agree with Strongly agree with Poor feature(s)

			✓		
--	--	--	---	--	--

- b) Please state feature(s) *There is a lift to access this level.*  
*Water and juice available*  
*free of charge (information about the*  
*hospital shop + its location.*  
*Magazines + information leaflets*

5. There are features that you would like in the reception/waiting area.

a) Additional feature(s) Strongly agree with Strongly agree with Adequate feature(s)

				✓	
--	--	--	--	---	--

- b) Please state feature(s) *I think the features are adequate*  
*after all it is a hospital waiting*  
*area!*

6. Having answered 1 to 5 are there are features that you would like to change in the reception/waiting area.

a) Change feature(s) Strongly agree with Strongly agree with Keep feature(s)

			✓		
--	--	--	---	--	--

- b) Please state feature(s) *None.*



**APPENDIX 15.** Completed Questionnaires by PFI  
and non-PFI Staff

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

1. Form

	1	2	3	4	5	6	7	8	9	10
a) Innovative Design (image, character, scale/proportion)					✓					
b) Construction Quality (structure, fixtures and fittings)					✓					
c) Response to site (location, access, aesthetics)			✓		<del>✓</del>					
d) Energy and environmental performance (light, sound, temperature, ventilation)	✓									
e) Response to user psychological needs (privacy, interaction, sense of community)	✓									

f) Other comments *The collection of old buildings provided better accommodation and privacy for patients and staff. There was a greater sense of community within the inst before moving to the new building*

Environment and Context (cont.) Please answer all questions.

<b>Key:</b> 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure <span style="float: right;">Perfect</span>									
	1	2	3	4	5	6	7	8	9	10
a) Arrangement of spaces (activities and relationship to function)	✓									
b) Circulation (entry, orientation, flow)				✓						
c) Allocation of spaces (parking)					✓					
d) Response to user physical needs (comfort, safety, convenience)	✓									
e) Response to user social needs (privacy, interaction, sense of community)	✓									

f) Other comments .....

.....

.....

.....

.....

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

1. Form

Complete failure

Perfect

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a						✓				
b			✓							
c						✓				
d	✓									
e	✓									

f) Other comments .....  
 Although entry to Hospital appears light + airy,  
 in Summer = very Hot, in winter = very cold.  
 Entrance difficult for visually impaired  
~~difficult~~ to access.

Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

2.

Function	Complete failure										Perfect	
	1	2	3	4	5	6	7	8	9	10		
a) Arrangement of spaces (activities and relationship to function)		✓										
b) Circulation (entry, orientation, flow)			✓									
c) Allocation of spaces (parking)							✓					
d) Response to user physical needs (comfort, safety, convenience)			✓									
e) Response to user social needs (privacy, interaction, sense of community)			✓									

f) Other comments .....  
*Ward areas very cramped & very hot. Not clearly signposted internally. Some areas have no natural lighting / windows.*

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Innovative Design (image, character, scale/proportion)	✓										
b) Construction Quality (structure, fixtures and fittings)			✓								
c) Response to site (location, access, aesthetics)				✓							
d) Energy and environmental performance (light, sound, temperature, ventilation)	✓										
e) Response to user psychological needs (privacy, interaction, sense of community)	✓										

f) Other comments *Size and design of rooms designated for specific purposes ie Treatment rooms, very functional not thought out at all, total complete failure*

Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)			✓								
b) Circulation (entry, orientation, flow)				✓							
c) Allocation of spaces (parking)					✓						
d) Response to user physical needs (comfort, safety, convenience)				✓							
e) Response to user social needs (privacy, interaction, sense of community)	✓										

f) Other comments Not thought out at all  
 .....  
 .....  
 .....  
 .....

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

**Form**

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	Complete failure					Perfect				
	1	2	3	4	5	6	7	8	9	10
a			✓							
b					✓					
c					✓					
d		✓								
e		✓								

f) Other comments .....

.....

.....

.....

.....



Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

2.

**Function**

Complete failure

Perfect

- a) Arrangement of spaces  
(activities and relationship to function)
- b) Circulation  
(entry, orientation, flow)
- c) Allocation of spaces  
(parking)
- d) Response to user physical needs  
(comfort, safety, convenience)
- e) Response to user social needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a			✓							
b					✓					
c				✓						
d				✓						
e				✓						

f) Other comments ..... IN OUR DEPARTMENT WE HAVE NO WINDOVS IN OUR ROOMS AT ALL AND VENTILATION IS VERY POOR ALSO. GENERALLY OUR WORKING ENVIRONMENT IS OPPRESSIVE AND DEPRESSING. PREVIOUS DEPT WAS MUCH BETTER.

X 1

(S)

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

1. Form

	1	2	3	4	5	6	7	8	9	10
a) Innovative Design (image, character, scale/proportion)					✓					
b) Construction Quality (structure, fixtures and fittings)					✓					
c) Response to site (location, access, aesthetics)				✓	SS					
d) Energy and environmental performance (light, sound, temperature, ventilation)					✓					
e) Response to user psychological needs (privacy, interaction, sense of community)				✓	SS					

f) Other comments

① Confidentiality a problem walls thin also sound travels via roof cavity

② The Atrium looks lovely but is thin at the expense of ward space allocation!

③ Hospital built on top of a hill - patients get breathless!

④ No windows or air con - windows only - only air flow system

... other aspects of hospital ∴ lots with none

Q: How  
 hospital  
 built  
 on top  
 of a  
 hill  
 -  
 patients  
 get  
 breathless!  
 No  
 windows  
 or  
 air  
 con -  
 windows  
 only  
 -  
 only  
 air  
 flow  
 system

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

This section relates to design performance.

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)				✓	<del>5</del>						
b) Circulation (entry, orientation, flow)					✓						
c) Allocation of spaces (parking)			✓								
d) Response to user physical needs (comfort, safety, convenience)					✓						
e) Response to user social needs (privacy, interaction, sense of community)					✓						

- f) Other comments
- ① There are never enough staff parking spaces.
  - ② Working spaces often small - equipment kept in corridors etc - proves H&S safety issue
  - ③ Car park charges to double - but hospital only getting fraction of profit.
  - ④ Now accepted not large enough - bed shortage + shortage of offices + working

X2

(S)

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Form

Complete failure

Perfect

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a					✓					
b				✓						
c					✓					
d				✓						
e				✓						

f) Other comments .....

.....

.....

.....

.....

Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)				✓							
b) Circulation (entry, orientation, flow)					✓						
c) Allocation of spaces (parking)				✓							
d) Response to user physical needs (comfort, safety, convenience)				✓							
e) Response to user social needs (privacy, interaction, sense of community)				✓							

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure <span style="float: right;">Perfect</span>									
	1	2	3	4	5	6	7	8	9	10
a) Arrangement of spaces (activities and relationship to function)				✓						
b) Circulation (entry, orientation, flow)					✓					
c) Allocation of spaces (parking)				✓						
d) Response to user physical needs (comfort, safety, convenience)				✓						
e) Response to user social needs (privacy, interaction, sense of community)				✓						

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

1.

Form

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	Complete failure					Perfect				
	1	2	3	4	5	6	7	8	9	10
a				✓						
b			✓							
c							✓			
d				✓						
e			✓							

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

2.

**Function**

Complete failure

Perfect

- a) Arrangement of spaces  
(activities and relationship to function)
- b) Circulation  
(entry, orientation, flow)
- c) Allocation of spaces  
(parking)
- d) Response to user physical needs  
(comfort, safety, convenience)
- e) Response to user social needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a					✓					
b				✓						
c	✓									
d						✓				
e					✓					

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Form

Complete failure

Perfect

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a					✓					
b					✓					
c					✓					
d				✓						
e				✓						

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)				✓							
b) Circulation (entry, orientation, flow)					✓						
c) Allocation of spaces (parking)			✓								
d) Response to user physical needs (comfort, safety, convenience)			✓								
e) Response to user social needs (privacy, interaction, sense of community)			✓								

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

Form

	1	2	3	4	5	6	7	8	9	10
a) Innovative Design (image, character, scale/proportion)							✓			
b) Construction Quality (structure, fixtures and fittings)						✓				
c) Response to site (location, access, aesthetics)						✓				
d) Energy and environmental performance (light, sound, temperature, ventilation)						✓				
e) Response to user psychological needs (privacy, interaction, sense of community)				✓						

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)					✓						
b) Circulation (entry, orientation, flow)					✓						
c) Allocation of spaces (parking)			✓								
d) Response to user physical needs (comfort, safety, convenience)						✓					
e) Response to user social needs (privacy, interaction, sense of community)					✓						

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

<b>Key:</b> 1 = Complete failure 2 = Critically Bad 3 = Far Below Acceptable 4 = Poor 5 = Acceptable	6 = Good 7 = Very Good 8 = Excellent 9 = Superior 10 = Perfect
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*The following relates to design aesthetics and excellence in design.*

(Please tick one box in each row).

1. Form

Complete failure Perfect

	1	2	3	4	5	6	7	8	9	10
a) Innovative Design (image, character, scale/proportion)						✓				
b) Construction Quality (structure, fixtures and fittings)					✓					
c) Response to site (location, access, aesthetics)						✓				
d) Energy and environmental performance (light, sound, temperature, ventilation)			✓							
e) Response to user psychological needs (privacy, interaction, sense of community)				✓						

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

2.

**Function**

Complete failure

Perfect

- a) Arrangement of spaces  
(activities and relationship to function)
- b) Circulation  
(entry, orientation, flow)
- c) Allocation of spaces  
(parking)
- d) Response to user physical needs  
(comfort, safety, convenience)
- e) Response to user social needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a					✓					
b					✓					
c							✓			
d					✓					
e					✓					

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

Form

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a							✓			
b						✓				
c							✓			
d						✓				
e							✓			

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure Perfect

Form

	1	2	3	4	5	6	7	8	9	10
a								✓		
b						✓				
c								✓		
d							✓			
e									✓	

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

Form

	1	2	3	4	5	6	7	8	9	10
a								✓		
b						✓				
c								✓		
d							✓			
e								✓		

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)								✓			
b) Circulation (entry, orientation, flow)								✓			
c) Allocation of spaces (parking)			✓								
d) Response to user physical needs (comfort, safety, convenience)								✓			
e) Response to user social needs (privacy, interaction, sense of community)								✓			

f) Other comments ..... *The department could benefit*  
 ..... *from more toilets for patient use.*  
 .....  
 .....  
 .....

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Form

Complete failure Perfect

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a								✓		
b								✓		
c								✓		
d						✓				
e										✓

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)								✓			
b) Circulation (entry, orientation, flow)								✓			
c) Allocation of spaces (parking)				✓							
d) Response to user physical needs (comfort, safety, convenience)								✓			
e) Response to user social needs (privacy, interaction, sense of community)										✓	

f) Other comments: ② PARKING insufficient for area

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

Form

	1	2	3	4	5	6	7	8	9	10
a) Innovative Design (image, character, scale/proportion)					✓					
b) Construction Quality (structure, fixtures and fittings)				✓						
c) Response to site (location, access, aesthetics)				✓						
d) Energy and environmental performance (light, sound, temperature, ventilation)				✓						
e) Response to user psychological needs (privacy, interaction, sense of community)			✓							

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)				✓							
b) Circulation (entry, orientation, flow)					✓						
c) Allocation of spaces (parking)		✓									
d) Response to user physical needs (comfort, safety, convenience)					✓						
e) Response to user social needs (privacy, interaction, sense of community)					✓						

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Form	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Innovative Design (image, character, scale/proportion)								✓			
b) Construction Quality (structure, fixtures and fittings)								✓			
c) Response to site (location, access, aesthetics)					✓						
d) Energy and environmental performance (light, sound, temperature, ventilation)								✓			
e) Response to user psychological needs (privacy, interaction, sense of community)											✓

f) Other comments Good sized rooms with wide  
doors + corridors for easy  
wheelchair access



Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

1. Form

Complete failure

Perfect

	1	2	3	4	5	6	7	8	9	10
a) Innovative Design (image, character, scale/proportion)							✓			
b) Construction Quality (structure, fixtures and fittings)							✓			
c) Response to site (location, access, aesthetics)					✓					
d) Energy and environmental performance (light, sound, temperature, ventilation)							✓			
e) Response to user psychological needs (privacy, interaction, sense of community)										✓

f) Other comments ... Good Sized rooms with wide  
doors + corridors for easy  
wheelchair access

Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)											✓
b) Circulation (entry, orientation, flow)											✓
c) Allocation of spaces (parking)			✓								
d) Response to user physical needs (comfort, safety, convenience)											✓
e) Response to user social needs (privacy, interaction, sense of community)											✓

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)											✓
b) Circulation (entry, orientation, flow)											✓
c) Allocation of spaces (parking)			✓								
d) Response to user physical needs (comfort, safety, convenience)											✓
e) Response to user social needs (privacy, interaction, sense of community)											✓

f) Other comments .....

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

1.

Form

	1	2	3	4	5	6	7	8	9	10
a				✓						
b				✓						
c				✓						
d					✓					
e						✓				

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

f) Other comments THE BUILDING IS VERY OLD + IN GREAT NEED OF MODERNISATION

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure.	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)					✓						
b) Circulation (entry, orientation, flow)					✓						
c) Allocation of spaces (parking)					✓						
d) Response to user physical needs (comfort, safety, convenience)						✓					
e) Response to user social needs (privacy, interaction, sense of community)						✓					

f) Other comments .....

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94

(S)

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Complete failure

Perfect

Form

	1	2	3	4	5	6	7	8	9	10
a							✓			
b				✓						
c							✓			
d				✓						
e							✓			

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

f) Other comments ALTHOUGH THIS HOSPITAL  
IS VERY OLD PATIENTS ARE ALWAYS  
SAYING WHAT A HAPPY PLACE THIS  
IS TO COME TO

Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)				✓							
b) Circulation (entry, orientation, flow)					✓						
c) Allocation of spaces (parking)											
d) Response to user physical needs (comfort, safety, convenience)							✓				
e) Response to user social needs (privacy, interaction, sense of community)								✓			

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)						✓					
b) Circulation (entry, orientation, flow)				✓							
c) Allocation of spaces (parking)				✓							
d) Response to user physical needs (comfort, safety, convenience)					✓						
e) Response to user social needs (privacy, interaction, sense of community)		✓									

f) Other comments .....

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94

(S)

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

1. Form

Complete failure

Perfect

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a					✓					
b			✓							
c						✓				
d				✓						
e					✓					

f) Other comments ..... Old Building not being maintained  
 ..... as a whole as ? being pulled  
 ..... down in future  
 .....  
 .....

Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure <span style="float: right;">Perfect</span>									
	1	2	3	4	5	6	7	8	9	10
a) Arrangement of spaces (activities and relationship to function)			✓							
b) Circulation (entry, orientation, flow)			✓							
c) Allocation of spaces (parking)					✓					
d) Response to user physical needs (comfort, safety, convenience)				✓						
e) Response to user social needs (privacy, interaction, sense of community)					✓					

f) Other comments ..... *Good sense of space* .....  
 ..... *but again for relationships of* .....  
 ..... *areas not really kept up at* .....  
 ..... *present due to forthcoming changes* .....

**APPENDIX 16.** Completed Questionnaires by PFI  
NHS Trust Managers

Questions for NHS Trust Manager - Finance and Building Systems (Please answer all questions).

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to the design goals as set against the original design criteria. (Please tick one box in each row).

		Complete failure					Perfect				
		1	2	3	4	5	6	7	8	9	10
1.	<b>Economy</b>										
a)	Realistic solution to budget requirements (initial cost control)						✓				
b)	Maximum effect with minimal means (elegance, multi purpose)							✓			
c)	Efficient plan and shape (allocated and unallocated areas, volume)						✓				
d)	Ease of building maintenance (fixtures and fittings, building systems)					✓					
e)	Cost effective operations (energy efficiency, minimum upkeep)					✓					

f) Other comments ..... MANY LESSONS NOW LEARNT BY  
 ..... BOTH PUBLIC + PRIVATE SECTOR.  
 ..... WOULD NOT USE OUTPUT BASED SPECIFICATION  
 ..... AGAIN AS THIS GOES AGAINST RISK TRANSFER PRINCIPLES  
 ..... PRIVATE SECTOR CONSORTIUM DID NOT WORK AS ONE ;  
 ..... THIS SHOWS IN DETAIL DESIGN / MAINTENANCE ISSUES..

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to sustainability and user satisfaction.*  
 (Please tick one box in each row).

2.

**Life Cycle**

Complete failure

Perfect

- a) Multi purpose spaces for changes in function (dynamic activities, variety of usage)
- b) Fixed spaces for specific activities (major static activities)
- c) Contingency for growth (expandable, shell space)
- d) Vitality and validity over time (sustaining quality, holding power)
- e) Use of material and technology (existing or advanced systems)

	1	2	3	4	5	6	7	8	9	10
a						✓				
b						✓				
c				✓						
d					✓					
e					✓					

f) Other comments VIEWS OF MAINTENANCE STAFF / FM  
COMPANY NOT FULLY CONSIDERED BY  
DESIGN + CONSTRUCTION PART OF THE CONSORTIUM.  
WHILE THE PREMISES ARE FLEXIBLE THE CONTRACT  
IN PLACE IS NOT.

Questions for NHS Trust Manager - Finance and Building Systems (Please answer all questions).

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to the design goals as set against the original design criteria. (Please tick one box in each row).

Economy	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Realistic solution to budget requirements (initial cost control)	✓										
b) Maximum effect with minimal means (elegance, multi purpose)								✓			
c) Efficient plan and shape (allocated and unallocated areas, volume)									✓		
d) Ease of building maintenance (fixtures and fittings, building systems)									✓		
e) Cost effective operations (energy efficiency, minimum upkeep)					✓						

f) Other comments ..... *The Trust and its staff/patients are happy with the design and layout of the hospital*

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YH

(S)

Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

Form

Complete failure Perfect

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a						✓				
b					✓					
c						✓				
d					✓					
e			✓							

f) Other comments .....

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Environment and Context (cont.) Please answer all questions.

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

*This section relates to design performance.*

(Please tick one box in each row).

Function	Complete failure										Perfect
	1	2	3	4	5	6	7	8	9	10	
a) Arrangement of spaces (activities and relationship to function)					✓						
b) Circulation (entry, orientation, flow)						✓					
c) Allocation of spaces (parking)						✓					
d) Response to user physical needs (comfort, safety, convenience)						✓					
e) Response to user social needs (privacy, interaction, sense of community)						✓					

f) Other comments OLD HOSPITAL WITH A LOT OF CHARACTER AND FRIENDLYNESS LACKS FACILITIES IE TOILETS

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Questions for Staff - Environment and Context. (Please answer all questions)

Key: 1	= Complete failure	6	= Good
2	= Critically Bad	7	= Very Good
3	= Far Below Acceptable	8	= Excellent
4	= Poor	9	= Superior
5	= Acceptable	10	= Perfect

The following relates to design aesthetics and excellence in design.

(Please tick one box in each row).

1.

Form

Complete failure

Perfect

- a) Innovative Design  
(image, character, scale/proportion)
- b) Construction Quality  
(structure, fixtures and fittings)
- c) Response to site  
(location, access, aesthetics)
- d) Energy and environmental performance  
(light, sound, temperature, ventilation)
- e) Response to user psychological needs  
(privacy, interaction, sense of community)

	1	2	3	4	5	6	7	8	9	10
a					✓					
b					✓					
c					✓					
d					✓					
e					✓					

f) Other comments No space for 'nervous' patients to sit alone/corner - too open, not enough privacy in waiting area.

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**APPENDIX 17.**

The Implications of the PFI on Hospital  
Building Design and User Satisfaction

# The Impact of the Private Finance Initiative (PFI) on Hospital Building Design and User Satisfaction

W. M. Henderson M.A., Dr. K. Ahmet, S. Mortimer & Dr. A. Lamont.

## Abstract

This study investigates the impact of the Private Finance Initiative (PFI) on hospital building design and its relationship to user satisfaction. The research will identify to what degree PFI influences the design of 'new build' hospital buildings and its psychological implications on the user. The study will identify to what degree the existing design guidelines support the design development of PFI hospital.

## Background

There have been many changes in the development of hospital buildings over the last fifty years some of the popular hospitals which emerged based on these guidelines were the *Best Buys, Harness and Nucleus* hospital systems.<sup>1</sup> There has also been a steady decline in investment for hospital buildings. Consecutive governments debated possible solutions for the improvement of hospital buildings and services, but argued that traditional procurement methods escalated costs beyond the affordability of the 'public purse'.<sup>2</sup>

In 1993 the Labour Administration stated their intention to involve private investment for public projects.<sup>3</sup> This new source of funding was initially expected to build hospitals quickly and to budget and that it should represent 'value for money'.<sup>4</sup> The first wave of hospital development fell short of the initial criteria<sup>5</sup> previously mentioned. Some were considered to be poorly designed and suffered structural defects in the first 4 to 6 months.<sup>6</sup> The NHS Trust Executives main concerns was that it did not facilitate modern needs in terms of design, user satisfaction and sustainability.

The Labour Administration commitment to private investment for public services,<sup>7</sup> is further supported by recent statistics from the Department of Health (see tables 1 and 2), over a lesser time period up to 30% more investment has been envisaged with another 31 major acute schemes announced in February 2001.<sup>8</sup> In addition the government's appointment of Prince Charles to champion the future of hospital building design in collaboration with NHS Estates and the Commission for Architecture and the Built Environment,<sup>9</sup> indicates a change in design philosophy for hospital buildings in terms of modern and traditional architecture and implies that 'value for money' will become an increasingly important issue.

## Summary of Research

\* PFI Literature Review - Identified 8 main trends which were the centralisation of hospitals and hospital departments, reduction in in-patients beds, reduction in staff members, reduction in building cost and construction times, differences between the public and private sectors, that PFI funded hospitals are financially biased and not based on clinical needs, PFI schemes cost more than traditional procurement methods and little evidence supporting the benefits of PFI schemes in the NHS (results presented at the 'Design to Care' seminar, University of Luton-2000).

\* Design Implications of the Patients' Charter (DIPC) - a pilot study to compare some of the design issues raised in the PFI literature review concerning existing and new build projects relating to user satisfaction (results presented at the 'Design to Care' seminar, University of Luton 2000).

\* 3D Virtual Reality Route Identification System - in response to patients concerns identified in the DIPC report regarding the lack of signage. A computer simulation was developed and presented at the 'Facets and Faces' symposium, the Society of Black Architects (SOBA) and the Design and Architecture Research Unit (DARU), the University of Luton (2001).

\* Artwork, Design and Health Care Facilities - a paper investigating the relationship between artworks and the design of health care environments, establishing the psychological benefits of 'therapeutic environments'.

Major Hospitals Built and Operational	£ million
Bartford	115
Carlisle	87
North & Norwich	194
Durham	95
South Essex	38
Cheshire	77
South Manchester	76
Greenwich	35
Worcester	91
Harlow	53
<b>Total Value</b>	<b>622</b>

Table 1: PFI hospitals which are completed and fully operational (1997-2002).

Hospitals in Construction	£ million
Urmey	120
Widnes	45
Swinton	148
South Tees	106
North Durham	34
King's	84
St George's	29
Ulster	200
Leeds	47
Dudley	137
West Middlesex	30
West Berks	40
<b>Total Value</b>	<b>1250</b>

Table 2: PFI hospitals under construction from 2000 and expected to be completed by 2005.

## References

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