



Final Report to NHS Estates

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**Designing for Health: Architecture, Art and Design at
the James Cook University Hospital**

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Acronyms

A&E	Accident and Emergency
AEDET	Achieving Excellence – Design Evaluation Tool
CABE	Commission for Architecture and the Built Environment
CCU	Critical Care Unit
ENT	Ears, nose and throat
FBC	Full Business Case
FM	Facilities Management
HDU	High Dependency Unit
ITN	Invitation to Negotiate
ITU	Intensive Therapy Unit
JCUH	James Cook University Hospital
KPI	Key Performance Indicator
MAU	Medical Assessment Unit
MGH	Middlesbrough General Hospital
NEAT	NHS Environmental Assessment Tool
NHS	National Health Service
NPV	Net Present Value
NRH	North Riding Hospital
NNTHA	Newcastle and North Tyneside Health Authority
OBC	Outline Business Case
OPD	Out Patients Department
PFI	Private Finance Initiative
PSC	Public Sector Comparator
RIBA	Royal Institute of British Architects
SACL	Stress and Arousal Checklist
SPV	Special Purpose Vehicle

Summary of the Research

This report details the research carried out over a two year period in two hospitals, Middlesbrough General Hospital and the James Cook University Hospital, both serving the town of Middlesbrough in the UK. The research compared hospital accommodation before and after the move into a newly developed building (the JCUH). The work was carried out by a multidisciplinary team using a mixed qualitative and quantitative methodological approach.

The study team addressed three main questions:

1. How was the design brief for the new JCUH developed and what were the main principles encapsulated in the brief?
2. Were those principles realised and valued in any noticeable way by patients, visitors and staff of the new hospital and did they think the new accommodation was a better environment for patient care than the old?
3. What was the impact on patients, visitors and staff of the artwork commissioned for and placed within the new hospital?

Although this study did employ qualitative methods in the survey, our main focus was qualitative. As a result of our open research approach, the study allowed additional themes and questions to be uncovered such as 'what are the features of hospital design that users most value?' Some of these additional questions have also been addressed in the report.

Key Findings

1. The main aspects of the South Tees Hospitals NHS Trust's¹ design philosophy included
 - Patient centred care
 - the Institute concept (a hospital within a hospital)
 - a Mall ('village street' idea to provide a community feel)

These aspirations were not lost sight of during the PFI process because of the commitment of the NHS Trust's Chief Executive and his planning team.
2. Clinical staff were involved in meetings throughout the whole design process and this was seen as very positive as clinicians took ownership of the design proposals. Despite this close involvement there were difficulties for clinicians in understanding the 3D implications of some design decisions. This led to some rooms falling short of expectations.
3. Although clinical staff were involved in planning the perception in interviews was that there was little involvement of local people and patients in decisions about the new building, except on the art commissioning side.
4. Key positive values for patients in hospital environments are rooms with natural light, control over their immediate environment (heating, lighting and ventilation) and a sense of 'feeling at home'.
5. The quality of the patient environment had improved and the good design outcomes were related to the general appearance of the JCUH, décor and patients' privacy.
6. Patients value the impact that a high quality environment has on their care but they maintain that the most important element in high quality care is the staff.
7. Staff were less satisfied that their needs had been taken into account in the new hospital. This dissatisfaction related less to patient areas than to staff offices, changing and recreation areas. Comparison of the staff spaces with adjacent, high quality public spaces heightened this feeling.
8. The Institute Concept, one of the three design principles in the brief had some success in reducing travel distances for patients and staff.

¹ The South Tees Hospitals NHS Trust is the Trust in charge of the design and development of JCUH. Hereafter referred to as 'the Trust'.

9. The Mall (the third key design feature) contributed to the impression that JCUH was a high quality hospital and a matter of pride for the Middlesbrough community. The presence of artworks in the Mall assisted in creating this impression.
10. There was some confusion about the function of the Mall area. Patients and staff were not sure whether they were permitted to make use of the seating areas. This confusion is thought to derive partly from the high quality of the Mall and partly from the fact that as a 'village street' it was, at the time of the study, not fully functioning as shops and coffee areas were not yet open.
11. The Trust recognised the value of continuity with the three hospitals superseded by the JCUH. In order to signal this to patients and staff a series of historical murals were created for one of the main corridors. These were very successful and were positively commented upon by both patients and staff.
12. The Trust also recognised the importance of community 'ownership' and connectedness for the hospital and the theme of Captain James Cook and his voyages was chosen for the JCUH as Cook was born in the area. At the time of the study this theme – represented largely by the commissioned artworks – had less impact than the historical murals in connecting the hospital to its community.
13. The Trust explicitly intended the artworks to have a wider function than that of providing a 'therapeutic environment'. The works were intended to provide hospital community-links (see key finding 12), to signal that JCUH was a quality hospital (see key finding 9) and to assist with wayfinding.
14. The artworks on display were largely valued as providing colour, distraction and a sense of calm within the public areas of the JCUH.
15. Some patients valued the artworks because they made the hospital seem less 'hospitally' (see key finding no. 4). The Mall and Atrium areas were variously compared to an airport and an art gallery.
16. The presence of artworks was valued by some hospital users who would not normally see themselves as consumers of art.
17. The main commissioned artworks were used as emblems to assist in wayfinding within the JCUH, as were local landmarks. Unfortunately, these emblems were put in place too late for the research team to assess their impact (see key finding 20).

18. The artists felt engaged and inspired by the James Cook theme and felt that there was added value to their art in supporting the therapeutic environment.
19. The Trust set up a successful structure in-house for selecting and funding the commissioned artworks, and for maintaining positive public relations and ownership of the process.
20. The timing of the post-build research, which was carried out less than 6 months after the move to the new accommodation, may have adversely affected some results. The Stress and Arousal Scores for staff in one of the units showed a deterioration after the move. We suspect that this can be attributed to the settling-in period. We were unable to assess the Mall area in its fully functioning state as the shops and coffee areas were not yet open. We suspect that the impact of the Cook theme would take time to develop through hospital users increasing familiarity and affection for the key associated artworks as emblems of their hospital. These assumptions are derived from the importance both staff and patients gave to a sense of familiarity and 'homeliness' as features they valued about an ideal hospital environment.
21. Further comparative research of this kind would be more valuable if undertaken in two separate, well established (and therefore familiar to staff and patients) and similar hospitals, one having been designed and decorated explicitly in order to support a therapeutic environment and the other not explicitly designed in this way. Such a study would help eliminate the bias towards the familiar which may have affected this research.

For a summary of the research approach and methodologies see Ch.3 and for more detail on the conclusions and a list of key recommendations see Ch.8.

Structure of the Report

Chapter 3 outlines the rationale for the research methodologies used and describes those methods in summary form. The results of the research study are reported in Chapters 4, 5, 6 and 7 of this report. . Each chapter gives more details of the methods used for the aspect of the study described in that chapter. Chapter 4 outlines what we have called the 'Process Research', that is the study of the briefing process for the design of the JCUH, what it contained and how staff and others were involved in that process. Chapters 5, 6 and 7 report upon what we have called the 'Outcomes Research', that is the outcome of the move from the old hospital accommodation to the new JCUH on hospital users (patients, staff and visitors).

In order to achieve coherence of reporting between the different elements of the study, and to facilitate comparisons between the findings, the results in each chapter are given under 8 headings as follows:

- Visions and aspirations
- The hospital environment
- The Institute concept
- The Architectural concept (the horizontal plan and Mall)
- Input into planning the new JCUH
- Wayfinding
- Space: public and private
- Hospital/community connections.

For an account of how these headings were arrived at see Ch.6 (section 6.2). Not all chapters report results under all headings and some chapters include additional headings. For example, Ch.4 discusses 'Financial Issues', and Ch.7 has sections on 'Awareness of artworks' and 'Artists involvement'.

Finally, Ch.8 summarises the results under these 8 headings and reports the key recommendations of this study.

3.1 Overview

There is a national and international concern about the quality, efficiency and design of health care environments in the context of greater emphasis on patient-centred care. This was reflected in the 2nd International Conference on Health and Design held in Stockholm in June 2000. In addition the UK government in its focus on patient-centred care in the NHS is putting greater emphasis on health care environments. The NHS plan from July 2000 advocated the principle of 'high quality care centred on patients' and integral to this is the quality of the environment in which that care is delivered. At the First European Forum on the Arts in Hospitals and Health Care in Strasbourg in February 2001, Chris Smith, then UK Secretary of State for Culture, Media and Sport said 'increasingly, there has rightly been a focus on the commissioning of hospitals and other healthcare buildings of quality, durability and style'. The Nuffield Trust has long been interested in the built environment in health care and the Commission for the Built Environment (CABE) has been working with NHS Estates and the Prince's Foundation to review hospital design.

The South Tees Acute Hospitals NHS Trust responded to this issue in the planning of its major reconstruction of the South Cleveland Hospital under a PFI contract of £120 million. The reconstruction involved the disposal of Middlesbrough General Hospital (MGH) and North Riding Infirmary, and creation of a single site hospital on the South Cleveland Hospital (SCH) site. The hospital has been renamed the James Cook University Hospital (JCUH) in honour of Captain James Cook, who came from the region. In view of its commitment to the delivery of high quality 'patient-centred care'; however, the Trust recognised a number of challenges in relation to this project. The first was related to the large scale of the project. How can such a large hospital achieve any sense of intimacy for the individual patient? The second related to the ownership of the hospital by the local

community. As the three buildings were brought into a single site would the local communities served by this hospital see it as in any sense 'theirs'?

The Chief Executive of South Tees Hospitals NHS Trust and his planning team believed that the solution to these challenges lay in high quality architectural design and the integration of public art - commissioned and created regionally - into the health care environment. The development of JCUH has paid special attention to building design, therapeutic colour schemes, materials, lighting, space, and acoustics. The design features and colour schemes are intended to individualise departments within the hospital to help create a sense of intimacy within the whole. In addition, £250,000 from the building budget was ring-fenced for the purpose of commissioning artwork for the hospital. The Trust set up a 'Healing Arts' Committee to seek further funding for art works and also to fund artists residencies to create works appropriate to this hospital environment. The Trust introduced to the building a theme of Captain James Cook and his voyages, and some of the artwork reflects the chosen theme. The theme is intended to link the hospital with the local area and to give the hospital a sense of coherence as a single building.

This new hospital development comprised a number of elements that made it an interesting focus for research. Firstly, it was built on a PFI contract and this represented a challenge for the Trust and architects to stick to their stated aims of achieving and maintaining a high quality building which was in fact owned and serviced by private companies who would not necessarily share the values of the NHS. Secondly, the development was to incorporate three hospitals within the new one which was at the time of building the largest tertiary care facility in Europe containing over 1000 in patient beds. We have already suggested that the large scale represented a challenge for the Trust's idea of patient-centred care but, in addition, patients and staff were to be uprooted from familiar surroundings which had a history within the community to a building that might appear to swallow up what had been familiar territory for them. Thirdly, the Trust explicitly intended to use art to link the JCUH with its community. It was interesting that they viewed the art works as having a wider role than purely one of assisting in creating a 'healing environment'. Finally, but linked to the third point, the community served by the JCUH is the town of Middlesbrough which is one of the most deprived in England. For all measures of social and economic deprivation at

least half of its population regularly falls into the 10% most deprived in England (Northern and Yorkshire Public Health Observatory, 2001). This was of significance as it was one of the stated aims of the architects that JCUH should be an 'aspirational' building (Chris Liddle, Managing Director of HLM Architects, quoted from presentation at RIBA, March 2003). The government has hinted that the new hospital building programme should assist with regeneration by contributing to a sense of community and civic pride. Alan Milburn, while still Secretary of State for Health has said:

'One hundred years ago public buildings were often the pride of Britain's towns and cities...I believe passionately that in this generation we need to rediscover a renewed sense of community and civic pride.' (Milburn, 2001).

This unique cluster of challenges and ambitions made the JCUH a rich potential source of information about some important themes in the development of new hospital buildings. A multidisciplinary team headed by the Centre for Arts and Humanities in Health and Medicine (CAHHM) at the University of Durham received funding from NHS Estates to evaluate the quality of environment at the new James Cook University Hospital. The study focussed on two main aims: firstly, to examine the process by which the concept of patient-centred care was incorporated into the design brief; and secondly, to discover whether that concept was realised in any noticeable and meaningful way by users of the hospital buildings (patients and visitors) and by staff. The study commenced before the move to the new accommodation took place so the research team had the opportunity to carry out pre-build and post-build analysis in order that a comparison could be made.

3.2 Rationale for team approach

A number of studies have now been carried out into the impact of improved design features in NHS hospitals. Specifically, we reviewed the approach and methodologies used by Scher and Senior (1999), Leather (2002), Douglas, Steele et al. (2002) and Lawson and Phiri (2003). All made some use of mixed qualitative and quantitative methodologies in their studies. Lawson and Phiri's approach was to look at patient's outcomes from an architectural perspective, that of Douglas et al. was from psychology and Leather, from occupational

health. In view of our broad research aims we needed the insights of a range of disciplines to inform our questions, methodology and results. Firstly, we needed knowledge of how a design brief was compiled and executed; secondly, we required expertise in quantitative methodologies in order to make clear comparisons between hospital users satisfaction levels before and after the move to the new accommodation; thirdly, in making no assumptions about the value of the new accommodation to the hospitals users, we needed an open research approach that would allow themes of importance to users to emerge in interviews; and finally, we wished to understand how the commissioned artists were briefed and their perspective on the process and potential impact of producing work for a hospital context.

We therefore brought together a research team comprising two architects, a researcher (appointed full time on the project) who had experience of quantitative research methodologies in the health context, two social anthropologists, an arts administrator and researcher and a clinician with a research interest in arts and humanities in health. The architects were interested in the development of the design brief, and in looking at who was involved. Our researcher led on the quantitative questionnaire study. Both anthropologists had interests and research experience in the interactions between people and place. The arts administrator was concerned with the art work that was being developed in the hospital and in particular focussed on the commissioning process for the artists who were creating works specifically for the building. The clinician took the role of co-ordinating the team and keeping the focus of all these different interests on the key research questions that we had set out in our original proposal.

With this team in place we have adopted a complex approach to the study employing both quantitative and qualitative methodologies. The approach of the questionnaire study drew upon some of the work already done (especially that by Leather) and has replicated some of his work. In the qualitative part of the study we adopted an ethnographic approach in order to allow the context to guide the development of our research themes and conclusions. It was not possible to do in depth participant observation in the traditional sense of anthropological field work, but both our anthropologists come from this tradition of research and their interviews reflect the detailed observation that this approach requires. There was considerable input also from one of the architects into the interview study led by

the anthropologists assisting us in our aim of trying to achieve an interdisciplinary research style. Although sections of this report have been compiled by individuals from their own disciplinary perspectives, at each stage of the process, including planning and executing the research and discussing the conclusions, all members of the team have had input in monthly team meetings chaired by the clinical team leader.

3.3 Aims

The research had two main aims.

- 1) To examine the process by which the concept of patient-centred care was incorporated into the design brief.
- 2) To discover whether that concept was realised in any noticeable and meaningful way by users of the hospital buildings (patients and visitors) and by staff.

In order to achieve these aims the research was carried out under two subheadings:

- 1) Research on the process of developing the brief (Process Research).
- 2) Research on outcomes for patients, staff and other users (Outcomes Research).

Preliminary research questions and outcome measures were identified under both subheadings as follows.

3.3.1 Process Research

Objective:

The purpose is to investigate the briefing and design processes to assess how the visions for 'patient-centred care' were carried through into the design of the new hospital.

Underlying assumptions:

1. It is possible to define a 'Patient-Centred Care Strategy' in the brief.

2. If 'Patient-Centred Care' is appropriately articulated in the brief it will be possible to identify the benefits in the completed building.

Research questions:

1. How were 'patient-centred care' concerns articulated in the brief? How was the design process managed to ensure that these priorities were maintained?
2. How closely does the completed building reflect the 'patient-centred' aspirations of the brief?

Outcome measures:

The aim is to understand

- how 'patient-centred' principles are reflected in the built environment,
- how the design quality issues are conceptualised, documented and realised throughout the process, and
- how and why Arts projects were integrated within the design process.

Methodologies Employed

- Examination of documentation prepared to guide the briefing process.
- Interviews with key respondents in the design and planning process.

3.3.2 Outcomes Research

Objective:

The purpose of this part of the study is to investigate the effect of the new JCUH environment on patients' and visitors' experience of care, the experience of staff in giving care, and on hospital users' satisfaction and sense of well-being.

Underlying assumptions:

1. A high quality hospital environment can, through a 'patient-centred care' strategy, improve patients' and visitors' experience of care, staff's experience of giving care, and increase user satisfaction and sense of well-being.

2. A high quality hospital environment is one that is accessible, functional and comfortable for all its users. This can be achieved by a building design that takes into account the needs of, and interactions among, all of its users.
3. Good design quality relates to user-friendly colour schemes, materials, lighting, ventilation, layout, space utilisation, logistics and acoustics, and features such as artwork that can provide a 'positive distraction'. These aspects should be built into every stage of the briefing process and in the design brief.

Research questions:

1. What is the impact of the new hospital environment on patients' and visitors' experience of care, staff's experience of giving care, and user satisfaction and sense of well-being compared to the old environment?
2. Does the new building design take into account the needs of, and interactions among, its users better than the old design?
3. What is the user response to the art work placed or integrated within the new hospital building?

Outcome measures

- Level of satisfaction with the physical environment
- Level of satisfaction with wayfinding and accessing the hospital
- Level of satisfaction with the quality of care
- Self-perceived stress and health state

Methodologies employed

- Questionnaire survey of all hospital users, including patients, staff and visitors.
- Interviews with staff and patients in each study area.
- Interviews with commissioned artists.
- Photographic survey.
- Brief questionnaire survey carried out in situ in the Mall.
- Direct observation of passers by in general areas.

3.4 Approach

The research was carried out under the two subheadings by different members of the team. The research on the briefing process was being led by the architects and addressed aim (1). The research on outcomes for patients, staff and visitors was led by the anthropologists and addressed aim (2). The arts administrator and clinician (team members from CAHHM) assisted the outcomes team on researching the impact of the commissioned and other art works and their integration within the hospital environment. Our research associate (employed specifically for the project) was responsible for co-ordination of the research. She led on the questionnaire survey as she had extensive experience of this kind of research. Although team members had their discrete roles, there was discussion and development of all aspects of the project by the entire research team.

3.5 Research Organisation

The entire research team met once a month. Meetings were minuted by CAHHM's secretary and action points circulated afterwards. All aspects of research approach, methodology and conclusions were discussed by the whole team. A small group was convened to discuss the particular approach to studying responses to the art works. A member of the South Tees Trust's planning team regularly attended the research meetings to assist with liaison at the JCUH and to keep the Trust in touch with our progress. For the first 18 months of the study our research associate worked full time at the JCUH co-ordinating the qualitative research study as well as carrying out the questionnaire survey.

3.6 Ethical Considerations

The research team obtained an approval for the study from the Local Research Ethics Committee (LREC) in June 2002, and has discussed the sampling and recruiting strategy with Dr John Drury, the chair of the LREC. The research project was registered with The National Research Register (NRR) which provides a record of Research and Development

projects within or of interest to the NHS, and the research team follows the guidelines set out by the 'The Research Governance Framework for Health and Social Care' Health (2001). Specifically, written consent was given for each interview carried out and anonymity of respondents has been preserved except when explicit permission was given to use titles or names. Interview tapes are stored in locked premises in the University office. Before photographs were taken at the hospital premises, permission was sought and given by the Trust and no individuals can be identified in any photograph taken by the project team.

3.7 Study Areas

The project commenced before the completion of the new accommodation at JCUH and, therefore, we were able to carry out a comparison study looking at hospital users' views of the new accommodation compared with the old. What we referred to as 'pre-build' and 'post-build' analysis was carried out in both process and outcomes research with the exception of the analysis of responses to the art works, which had relevance only in the new hospital context.

The process research element of the study was carried out largely independently of the study areas and focussed attention on the planning team and key members of clinical and administrative staff who had special knowledge and involvement in the design and planning process.

The outcomes research element involved respondents in four inpatient units, six outpatient units and general areas in MHG and JCUH. The corresponding units and areas were examined again in the post-build phase in their new accommodation in the JCUH. The ten patient areas included two units from Children's Services and eight units involving adult patients. However, within the Children's Services the study only targeted parents and no children were surveyed or interviewed. All members of staff in the four inpatient and six outpatient units were asked to take part in the study, and all potential user groups (patients, visitors and staff) were involved in the questionnaire targeting the general areas. The

questionnaires included a request to take part in an interview and respondents for the qualitative part of the study were recruited in this way.

The selection of the study areas was based on the original funding proposal that identified five service areas involved in the redevelopment programme: the Children's Services, Special Cancer Services, Neurosciences, Cardiothoracic Services and the Pain Services. The Trust and the research team identified these areas as potential study areas because their clinical environment would change significantly through the single site development. However, by the time the study commenced, the building works within the Cardiothoracic Services were well advanced and study areas for the pre-build evaluation were no longer available. Furthermore, the Pain Services opted out due to a heavy workload and pressure on the service delivery. The negotiations continued with the Children's Services, Special Cancer Services and the Neurosciences, and the Trauma Division replaced the two withdrawn service areas. The Trust and the research team also identified a number of general areas where significant changes in hospital design and installation of new artwork would take place.

3.8 Summary of methodology

Table 1 below, summarises the timing of the research methodologies used in the outcomes phase of the study and the sites where each were employed. The numbers of questionnaires and interviews carried out in each site are also given.

A full description and rationale for the methodologies used is described in the appropriate chapters of this report.

3.8.1 Scope

In this study we confined ourselves to investigating user satisfaction by triangulating material from the survey and the semi-structured interviews. Our initial proposal included the suggestion that material on clinical outcomes such as patient length of stay and use of analgesics would also be included. The original proposal was, however, for a two year

study and funding was only secured for the equivalent of a one year project. In order to expand upon the work done by Lawson and Phiri (2003) in this field we would have required greater resource and a focus on this field. Further work has been done on clinical outcomes in relation to an arts project at the Chelsea and Westminster Hospital in London (Kirklin and Richardson, 2003), although not in the context of a pre- and post-build study. A detailed economic evaluation was also beyond the scope of this study for the same reasons.

Outcomes Research										
SITE	METHOD									
	Survey		Interview		Mall Questionnaire		Direct Observation		Photography	
UNITS	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Chemotherapy	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par						
Child Outpatients	S/Par	S/Par	S/Par	S/Par						
Child Surgical	S/Par	S/Par	S/Par	S/Par						
Disablement Services	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par						
Neurology Day	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par						
Neurology Outpatients	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par						
Trauma 34	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par						
Trauma 36	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par						
Trauma Outpatients	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par	S/V/Pat/Par						
Total ~ surveys issued	780	670								
Total ~ interviews			60*	54*						
"PLANNING PROCESS"			Pre	Post						
Planning Staff/Officials			Snr	Snr						
Total no. of interviews			13*	9*						
GENERAL AREAS						Post				
The Mall						VAP/SB/P		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Atrium						VAP/SB/P		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
"Artworks"						VAP/SB/P		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
External areas								<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Total ~ interviewed						41				
* Willing to be interviewed from survey										

Table 3.1: KEY: S – Staff / SB – Staff Business Visitor / P – Patient / VAP – Visitor Accompanying Patient / Par – Parent / Snr – Senior Staff

3.9 Constraints upon the study

We were aware that our study design was not perfect and that there are a number of potential problems that might lead to distortion of our results. The main problem was the timing of the study. Our pre-build study took place in the few months prior to the move to new accommodation. Staff, patients and visitors may, therefore, have been experiencing disruption in preparation for the move or, for those units already on the South Cleveland Hospital site, they would be working in the midst of a building site. The post-build study took place just two months after all units had relocated. Ideally, we would have waited at least six months before carrying out this study to allow for staff to settle in and adopt new working practices. It is clear from the drop off in our response rate in the post-build phase that staff were not as willing to participate, and this is unsurprising in view of the additional stress of the move.

We had intended to collect data on staff absences pre- and post build to compare with our SACL measures for the staff. However, this proved impossible as the post-build data was not directly comparable with that for the pre-build hospitals.

4.1 Context

The process research section of this evaluation set out to consider the methods used at the JCUH to establish the brief for the new hospital and how this was controlled during the design and construction phases of the development. This section of the report relies largely on current journals and periodicals where there is an ongoing discussion about the advantages and disadvantages of the Private Finance Initiative (PFI) procurement approach for public sector buildings including hospitals. The Full Business Case (FBC) documents the development of the design philosophy. It also sets out the financial and contractual framework together with the management techniques used to monitor progress. The timetable of key events in the PFI process is shown in Appendix 4.1.

The PFI procurement route places the design team within the Consortium (and therefore responsible to the Contractor) selected to provide and run the new hospital facilities. The relationship of the design team including the architect is therefore different to traditional contracting arrangements within the NHS where the architect is normally engaged directly by the Client (usually an NHS Trust). There was an acknowledgement that new hospital facilities should be procured using the Government PFI initiative by the South Tees NHS Trust.

We had a public sector comparator but we could never have got the money to build the public sector comparator, that was where it was a bit of a nonsense ...
So as the only show in town, we had to make it work and there were certain rules by which we had to play by.

[Senior Administrator]

The importance of retaining tight and effective control over the design process was recognised by the Trust when they embarked on commissioning new facilities using the PFI.

We knew that if we compromised on size and volume and standards, and we didn't specify both very precisely we wouldn't get them, so we were very careful in getting our principles sorted out, which was patient centred care but delivering high quality clinical services, which meant you get the adjacencies right which meant studying the world for what was the best markets but keeping it very patient centred and if you look in our ITN (Invitation to Negotiate) document we talk a lot about that, what is patient centred care, what is clinical efficiency.

[Senior Administrator]

In addition to the Full Business Case a range of other documents was made available by the Trust (see Documentation/review of documents examined). During the period of the research regular meetings have been held with senior members of the administrative team who have willingly commented upon a wide range of design process issues.

An important part of this section of the study has been the interviewing of key members of staff (administrative and clinical) and the design team. A total of 22 taped interviews have been conducted at both pre-build (13) and post-build (9) stages of the contract.

The research team has also been given access to the Post Project Evaluation report, prepared by the Trust's Consultants, Anshen Dyer. We include the main findings of this report (Appendix 4.5), which can be considered alongside the work of this study.

4.2 Background

The completion of the new James Cook University Hospital comes at a time when there is particularly close scrutiny underway about the effectiveness of the PFI process. Set against a range of evaluation tools (AEDET, NEAT, KPIs and others) a number of reports seem to have difficulty in reaching a common set of conclusions about the quality and effectiveness of PFIs

(Gates, 2004). Politically, the Government has come up against resistance to PFI projects from trade unions (Privatisation and the NHS, 2001). Most PFI projects have been delivered on time but the Major Contractors Group are concerned that timing of bids needs to be managed carefully if bid costs are not to rise.

This debate is illustrated by a wide range of views expressed about the design of the new Royal London Hospital. Reported in the Architectural Press the Government's PFI strategy is being challenged over the quality of the design solution (Building Design, 6 August 2004). Criticism of the procurement system is made by both the interim Chairman of CABE (Paul Finch) and the President elect of the RIBA (Jack Pringle), as reported in Building Design (6 August 2004).

There are major lessons we have to learn from the way the Royal London has been procured ... the fact that the result is, in our view, a failure in significant aspects is as much a criticism of the process of hospital procurement in this country as of the efforts of the trust or its preferred bidder.

[Finch, P, 2004]

CABE's coruscating criticism of this project's strategic design decisions made early in the procurement process and the quality of the resultant design puts another nail in the coffin of this crude type of PFI mechanism Architects and their clients need to work with the real client, the hospital trust.

[Jack Pringle, RIBA President elect, 2004]

This section of the study examines the Trust's aspirations and the architect's approach to accommodating those requirements as set out in the brief. This study has not considered or assessed the value for money factors but the Full Business Case from the Trust demonstrates a financial advantage over the public sector comparator (PSC) taking into account the benefits of risk transfer.

The following table summarises the PSC/PFI capital cost comparison and is taken from the Full Business Case (p83).

Table 4.1: Summary of PSC/PFI Cost Comparison¹

	£million
PFI GMP at 1998/99 prices	116.4
PSC at MIPS 311 (risk adjusted)	115.2
Difference	1.2

After undertaking the risk analysis the results of the NPV (net present value) exercise are summarised in the following tables (Full Business Case, p88) for the 35 and 60 year periods.

Table 4.2: Summary of NPV Analysis ~ Risk Adjusted NPV (35 years)

	PSC	PFI	Difference
	£000	£000	£000
Cumulative NPV at 2057/58	186,796	215,568	28,772
Cost of risk associated	41,660	910	-40,750
	228,456	216,478	-11,978

Risk Adjusted NPV (60 years)

	PSC	PFI	Difference
	£000	£000	£000
Cumulative NPV at 2057/58	201,725	230,500	28,772
Cost of risk associated	44,250	920	-43,330
	245,975	231,420	-14,555

The Full Business Case states (p89)

- the costs of the privately funded option exceed the cost of the publicly funded option by £28.772 million in net present value terms before any benefits attached to risk transfer are taken into account over a 35 year time frame, and
- after adding the benefits of risk transfer into the equation, the costs of the publicly funded option exceed the costs of the PFI option by £11.978 million in net present value terms over the same 35 year time frame.

The conclusion of the FBC (page 95) is that ‘through rigorous analysis it is clear that the Consortium’s proposal is the preferred option’. This conclusion is based on the following grounds:

- it delivers additional overall benefits, providing a better design solution and services that match the quality of existing facilities services,
- the PFI option is the more affordable solution: it increases prices to purchasers by £1.7 million in 2003/04 reducing to £1.281 million in 2004/05 and £0.879 million by 2007/08, representing a saving of £3.143 million in 2007/08. the PFI option benefits from the guaranteed maximum price concept, and further, the Trust believes there is a potential for affordability to be further enhanced post FBC – e.g. through the interest rate buffer and through further refinements to the financial model,
- the economic analysis indicates that in overall terms the solution delivers better value for money and demonstrates a significant transfer of risk to the private sector. The 35 years cumulative net present value of the PFI option is £11.978 million less than the publicly funded option after risk is taken into account. The 60 year cumulative net present value of the PFI option is £14.5 million less than the publicly funded option after risk is taken into account.
- it maintains the physical environment to Condition B², through life cycle asset investment, throughout the 30 year contract. The contract guarantees that the building will be at Condition B at the end of that period.

² Condition B

Property is assessed under 3 categories, A, B, and C.

A Brand new

B Fit for purpose but used

C Not acceptable (may have adverse effect on health issues)

The trust was responsible for bringing the existing estate up to Condition B before it was taken over by the Consortium (Endeavour). The Consortium is responsible for handing back the Estate in Condition B at the end of the 30 year head lease. During the lease period the FM services will be sub-contracted by Endeavour (the Special Purpose Vehicle or SPV) to Aquamen Services Ltd.

Although consideration of value for money issues does not form a critical part of this study, it is worth noting that there is a growing body of evidence which casts doubt on the criteria used by the Treasury to compare the PSC with PFI. Nisbet (2004) reviews two recent audit reports³ which have looked at the assessment of value for money offered by a PFI project. He states that 'it can only be concluded from these reports that the PFI/PSC comparison is an expensive farce'. He finds that 'nor was there much evidence that 'value for money' was not to be taken as the lowest price.'

Both reports found that construction costs and operating costs for PFI projects were more expensive before an adjustment for risk. The estimates for risk in the PFI projects were nearly always less than the allowance for risk in the PSC estimates. It was this adjustment that tipped the PFI estimate below that of the PSC.

[Nisbet, 2004]

This appears to be the case at JCUH. From interviews with senior members of the Trust there was also a presumption that a PFI procurement route was the only solution that would enable development work to proceed without considerable delay. The FBC concludes (p95) that

The current amount of discretionary capital available to the NHS would mean a delay to the start of the public sector option of a minimum of three years even in the most optimistic scenario.

4.3 Development of the design philosophy

The Trust's programme is set out in the PFI timetable (Appendix 4.1). The Outline Business Case (OBC) had confirmed that the PFI option would provide the best procurement route to secure the new health facilities required on the South Tees site. There was strong leadership from the Chief Executive and support from the succeeding Chairmen. The Chief Executive had travelled widely to look at the best hospital facilities then being built in both Europe and the USA. In preparation for undertaking this major redevelopment of the site, and consolidation of

³ 'Taking the Initiative', Audit Scotland (June 2002)
'PFI in Schools', Audit Commission (January 2003)

services from other sites, the Trust commissioned a firm of consultants, Anshen Dyer, to work with the Trust during the development of the Outline Business Case. This team used its extensive experience of hospital planning from America where there was a tradition of deep plan design, which limited the amount of natural light to some parts of the hospital. From the outset, the Trust at JCUH wished to maximise the advantages of the parkland setting and introduce as much natural light as possible. The design brief for the new South Tees Hospital, soon to be called the James Cook University Hospital, was set out in a design philosophy statement.

In summary it stated that:

‘The Trust’s design philosophy reflects the core values of the organisation and incorporates the principles of “Better by Design” (NHS Estates, 1994). It is our intention to create a hospital which:

- functions well
- looks attractive
- improves the locality’

[FBC, Appendix 14]

4.3.1 Patient Centred Care

The Trust's design philosophy statement expands on the importance it places on patient centred care as follows:-

The Trust's aim is to deliver patient centred healthcare which is appropriate, accessible and of high quality. This is underpinned by seven core values which provide a statement of the Trust's commitment to its patients:

- we aim to offer our patients the best possible clinical care by sustaining staff skills and technology at the leading edge of their respective fields,
- we aim to give patients the opportunity to play a real part in their own care through informed choices and decision making,
- we aim to ensure all staff exchange mutual respect and support in working together for patients,
- we aim to protect each patient's right to courtesy and dignity at all times as well as their spiritual and cultural needs,
- we aim to deliver our services in the way which is most convenient to patients,
- we aim to provide an environment that promotes patients' comfort, security and wellbeing,
- we aim to run the Trust in a way that empowers staff to work efficiently in the patients interests,

The design therefore must reflect these values so that it produces a hospital which will help patients recover more quickly, encourage staff to work better together, reduce long term running costs and improve the image of the Trust and the NHS.

[FBC, Appendix 14]

It is interesting to note the high relative weighting given to the delivery of high quality patient centred care (25%) as shown in the criteria and weightings of Trust's evaluation (FBC p48).

Table 4.3: Criteria and Weighting of Trust's Evaluation

Criteria	Relative weighting
Efficiency of clinical operations	35%
Delivery of high quality, patient-centred care	25%
Delivery of project services	10%
Technical suitability of service	10%
Consortium organisation	5%
Financial viability	5%
Delivery of project construction	5%
Transfer of staff	5%
Total weighting	100%

After further financial appraisals were undertaken the Mowlem consortium was nominated as the Trust's preferred bidder and invited to develop a full business case.

This process highlights the importance attached by the Trust to achieving their design aspirations for a high level of patient centred care. The preferred bidder also reflected the Trust's aspirations for an institute philosophy for clinical adjacencies. The design report which accompanied the Full Business Case submission (dated November 1998) sets out the key elements of the brief developed through the design and user consultation process. It is important to note that at all stages during this design process there was involvement by the senior clinicians working with the senior administrators in the Trust's planning team⁴. The design of the new hospital embodied the following key criteria:

⁴ The design was developed through regular, usually fortnightly, meetings. Pre financial close the meetings consisted of representatives of: Mowlem plc /Trust Project Team/Individual User Groups (3 or 4 user groups per day would separately discuss their departmental requirements)

User groups would normally be represented by a senior clinician or technician. The Trust would be represented by a senior manager from the Project Team. The Architect took the minutes and they formed part of the Contract.

Post financial close there were regular fortnightly design development meetings to discuss and 'sign off' the fully loaded 1:50 drawings. Attendance at these meetings normally consisted of representatives of the SPV (often including someone from Crown House to cover M&E services), Architect, and a Senior Administrator. The clinicians attended meetings less regularly at this stage, but issues were normally discussed with them beforehand by the Project Team member.

- Patient centred care
- The institute concept (a hospital within a hospital)
- The mall concept (to provide a social and cultural focus for the whole hospital)
- Incorporation of an arts strategy for the new hospital (see Ch. 7)

The design report states (Section 4.5 – Better by Design) that ‘the guiding principles which have been adopted for the design of the new South Tees Acute Hospital are summarised in the publication *Better by Design: Pursuit of excellence in health care buildings*, (NHS Estates, 1994) to raise standards in the design of hospital buildings and avoid the institutional and ad hoc approach to planning and design which is evident on many hospital sites in this country’.

The successful Consortium (Mowlem Facilities Management Ltd) responded to these requirements. Their approach is set down in the Design Report which was included as an appendix to the Full Business Case. Under key elements of the brief (Section 1.00- Introduction) they state:

The design proposals for the new Single Site hospital development on the existing South Cleveland Hospital site reflect the key elements of the employers Requirements originally stipulated by the Trust as follows:-

- a) Optimum functional and clinical adjacencies between new and existing departments.
- b) Provision of facilities to maximise the development of ‘Patient Centred’ services.
- c) Zoning of the new hospital to ensure a cohesive Single Site Development and the appropriate environment for specific functions within it.
- d) Emphasis on the provision of ‘state of the art’ day care facilities, essential for the achievement of planned efficiency targets.
- e) Creation of a non-institutional and therapeutic environment in a manner which creates a cohesive and high quality image for the new hospital.
- f) Enhancement of the level of FM services provision in the new hospital.

4.3.2 Institute Concept

This idea is central to patient centred care and is described as follows:-

As well as promoting the efficient flow of patients through the hospital, the design reflects the fact that many patients have needs which centre on one particular specialty or group of specialties. The Institute concept recognises this pattern of care. Within Neurosciences, for example, Inpatients, Outpatients, Rehabilitation and Neuro-radiology are immediately adjacent. This minimises travel but also maximises opportunities for patients to identify with particular groups of staff and remain within a familiar environment throughout their episode of care. It attempts to maintain some of the sense of individuality and personality, which a small hospital might offer, within a large hospital setting. The Institute concept of 'A Hospital within the Hospital' applies also to:

- Cardiothoracic services linking Surgery, ITU, Coronary Care, Catheter Laboratories and general cardiac testing facilities with good links into designated Cardiothoracic Theatres.
- Neurosciences; linking Neurology/Neurosurgery outpatient and inpatient services, Neuroradiology, Neurophysiology, Neuropsychology, Neurorehabilitation and Disablement Services.
- Specialist Cancer Services; grouping Radiotherapy/Oncology and Haematology inpatient function, Chemotherapy Day Unit, specialist Radiotherapy treatment facilities and outpatient facilities.

Each Institute will be given an individual identity and ambience as part of the overall Interior Design Strategy.

[FBC, Design Report, 1.3 Patient Centred Care]

4.3.3 The 'Mall' Concept

Similarly, the 'Mall' concept is explained by the following:

The Single Site Development Control Plan originates in the concept of the 'Hospital Village', at whose heart is located the central Mall, a public space which provides a focal point for the operation of the hospital from the patients' perspective and creates the artery of access to most of the departmental accommodation which springs from it.

The Mall has been designed as a series of interlinked spaces which form a transition between internal and external environments. It is largely naturally lit and ventilated space, punctuated by a sequence of interesting interior spaces and the landscaped inner courtyards of the hospital.

The Mall provides a social and cultural focus for the whole hospital, and links the new and existing hospital buildings in a clear manner which is welcoming and facilitates orientation for all visitors to the Hospital.

The arrangement of the key departments around the Mall is patient centred in essence, and reflects the normal processes through which patient's progress in terms of diagnostic, treatment and inpatient services.

The simplicity and clarity of the Mall space and the incorporation of various support and commercial functions along its length help to maximise security throughout the hospital, as a result of the informal policing inherent in a well lit and easily supervised space of this nature.

The Mall is also the focal point for the Interior Design Strategy for the whole hospital. By careful design, an impressive multi-use space has been provided which offers significant potential for the various social and cultural activities which form an important part of the caring environment prerequisite in a major hospital.

It is envisaged that a number of possible functions could take place in the Mall without major fire engineering systems being required.

In this way, the integration of the new hospital within the fabric of the local community will be reinforced and hopefully provide a model for the provision of a similar flexible public space in other new hospitals in the UK.

[FBC, Appendix 14, 3.2 Development of the Mall Concept]

4.3.4 Incorporation of an Arts Strategy

The Design Report sets out a series of ideas for incorporating artwork 'as part of the Therapeutic Environment', particularly in the Mall. It envisages

- purpose designed graphics to supplement internal signage
- stained glass panels
- patchwork/needlework wall hanging
- works of art
- floor patterns
- stencil frieze designs
- sculpture

These ideas are considered in Ch.7.

4.3.5 Managing the PFI Process

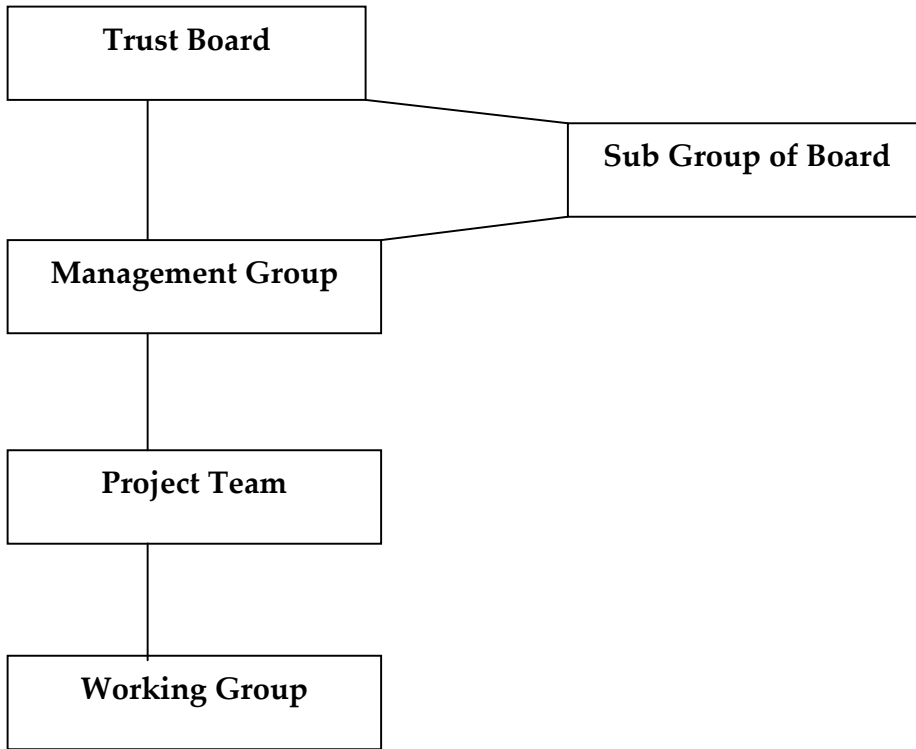
The management of the PFI process is described in the FBC (p44).

The management structure for this project was established in accordance with the Capital Investment Manual with the Chief Executive acting as Project Owner and the Project Director role being fulfilled by the Director of Planning. Key internal advice was provided by the Director of Finance and the Director of Facilities Management. The project was managed by the Trust's PFI Project Team which comprises of Trust's full Management Group (including eleven senior clinicians) and also additional senior clinicians who have had a detailed involvement with the project for some time. The Project Team was accountable via the Management Group to the Trust Board (see Table 4.4 below). This ensured full integration of the project management into the normal management process of the Trust. In addition a Trust Board Subgroup was set up to ensure Board awareness of the project and seek any approvals for action between meetings. The Trust also established a weekly working Group, including representation from corporate directors, senior clinicians and operational managers. This group had day-to-day responsibility for managing the Project and undertaking all its associated tasks in detail. The Trust has used a number of external advisors in progressing the project, principally PriceWaterhouse Coopers for corporate finance and project management advice and Beachcroft Stanley for legal advice. Aspects of this process are further explored through the interviews in the following section.

The consortium structure and reporting relationships are shown in Table 4.5.

It is also interesting to note that the PFI design solution is achieved using 194.1 m² less than the PSC design (FBC, p81). This is shown in more detail in Appendix 4.4.

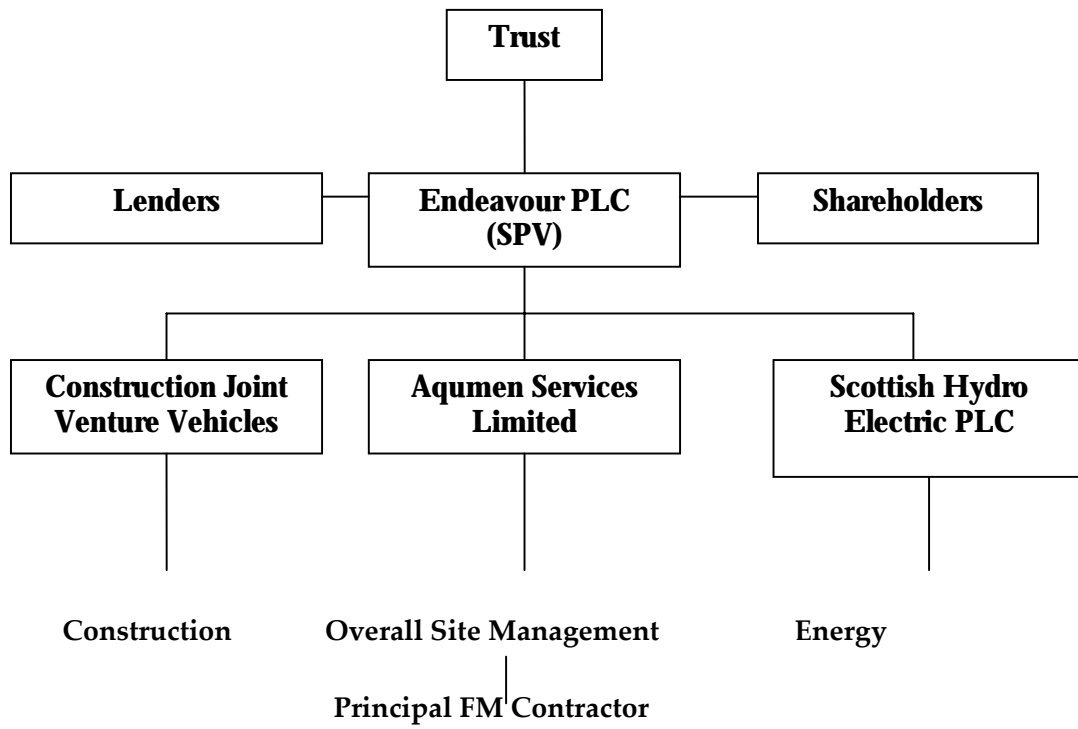
Table 4.4: PFI project Team (from FBC pp 44, 45)



Notes

- | | | |
|--------------------|---|---|
| Sub Group of Board | - | to ensure board awareness of the project and to sanction approvals for action between meetings |
| Management Group | - | Senior Trust Administrators including the Chief Executive and Director of Planning |
| Project Team | - | the Trust's PFI Project team including the Management Group and 11 Senior Clinicians. The Project Team was accountable via the Management Group to the Trust Board. |
| Working Groups | - | A weekly meeting including representation from corporate directors, senior clinicians and operational managers. This group had day to day responsibility for managing the project and undertaking all its associated tasks in detail. |

Table 4.5: Consortium Structure and Reporting Relationships



4.4 Documents Reviewed

1. Full Business Case and Appendices, version 2.1, South Tees Acute Hospitals Trust, 8 January 1999.
2. Post Project Evaluation for South Tees Hospitals NHS Trust, The James Cook University PFI Project, Anshen Dyer, April 2004.
3. Overview Evaluation Report, Evaluation Process and Choice of Preferred Partner.
4. Annual Report, 2002/2003, South Tees Hospitals NHS Trust.
5. Your Guide to the James Cook University Hospital.
6. Outline Business Case for the Single Site Development, South Tees Acute Hospitals NHS Trust, October 1994.
7. Design Report, Full Business Case – Estates Appendix, South Tees Hospital, Middlesbrough, November 1998.

4.5 Results of Interviews

The research team drew up two questionnaires to be used as a basis for the interviews – one for the senior management and clinicians and the second for members of the design and construction team (see Appendix 4.2).

Interviews were conducted over a period from June 2003 to July 2004 at times convenient to the interviewee and held in their offices at the hospital, or in the case of the design team in their offices in London. Generally the interview lasted about 1 hour. When setting up the framework

for this study it was planned to carry out pre-build interviews only as part of the process research. However, it became clear that it was important to see how the hospital was working. This led the study team to interview staff and also to investigate their views on the design consultation process in the light of their experience of the new working environment. Based on the themes agreed by the research team a number of key issues emerged.

4.5.1 Visions and Aspirations

There were many planning meetings in the early stages of the briefing process and the overall impression is that the advantages outweighed the disadvantages of a heavy commitment of senior staff time. It also had the advantage of ensuring that the senior clinicians took ownership of the policy of patient care which had a high priority.

All the Clinical Directors were involved. It was the Clinical Directors who signed off the plans, not the Chiefs. Well the Chiefs did sign it off but it was basically down to the individual Clinical Directors to say 'this design is what we want'.

[Chief of Services/Clinical Director]

The Chief Executive is credited with being the driving force behind the briefing process for the new hospital. This includes making patient focused care a central theme of the brief and also involving senior clinicians in the early discussions about the plans.

I think one of the main drivers was Bill Murray, without question, and his vision, as he had done a lot of work and a lot of travelling, here and abroad, particularly in the States and had read widely and visited several hospitals ... His view of healthcare is human scale buildings, as non institutional as possible, so either two, three storeys at the most.

[Senior Administrator]

Earlier in this chapter the key issues are noted which were central to the design concept. These visions and aspirations are captured in a diagram prepared by the architects (FBC – Estates Appendix Design Report, November 1998) which they consider are important to promote well-being.

The Trust also involved patients in a series of meetings when shaping the brief.

PFI at that time was politically sort of a hot potato so the Trust had to undertake extensive public consultation, so there were probably several scores of public meetings around Teesside and beyond because our services run out to the West Coast and Cumbria, up to Durham, down close to York. So there were a number of public consultation meetings about it. We also work very closely with the Community Health Council and met with the CHC on a regular basis to take them through the designs that were being developed and to get their comments and their views as they are the group best able to represent the patients.

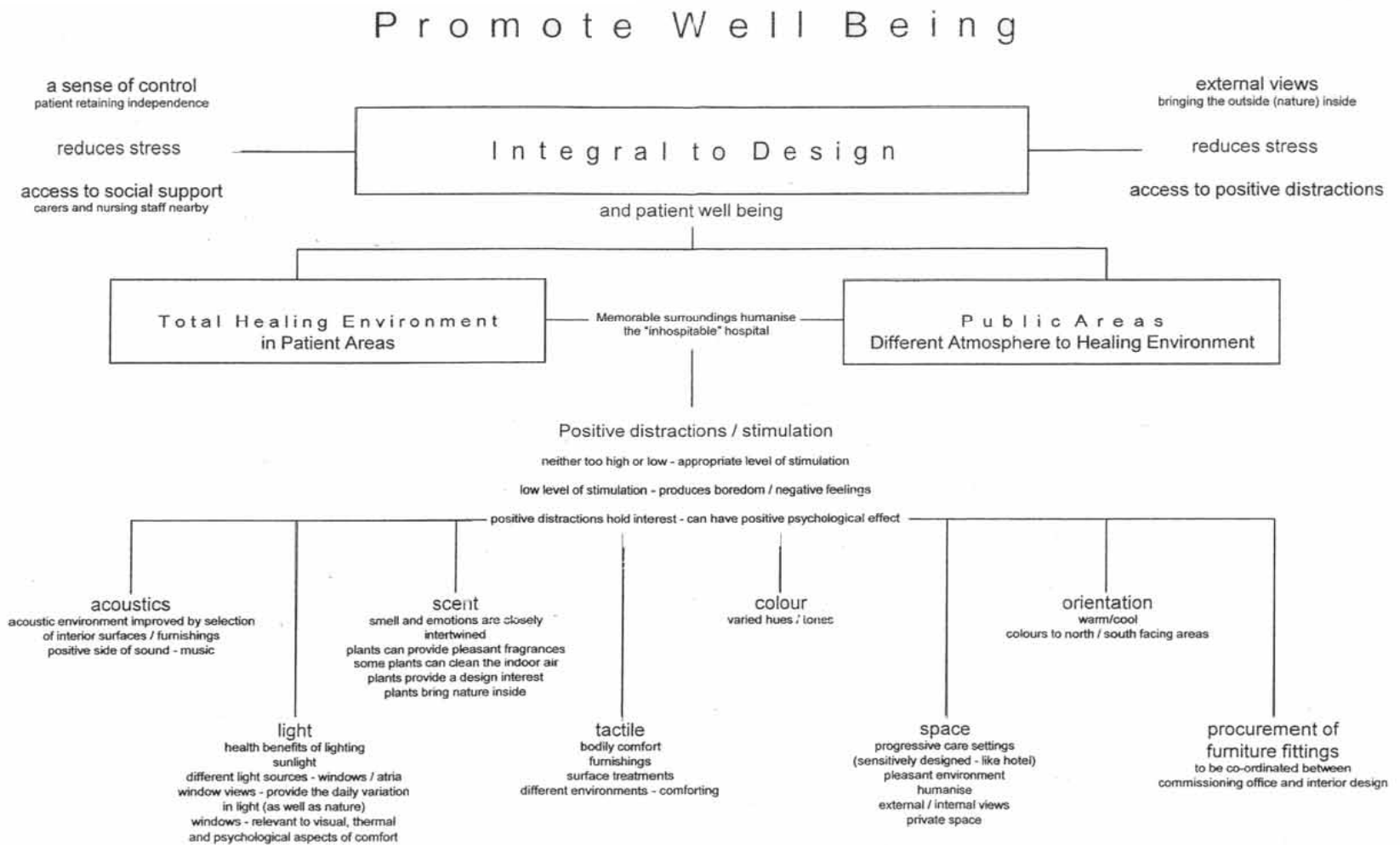
[Senior Administrator]

However, a more cautious view of the patient contribution to the briefing process was expressed by another member of the planning team:

I mean I have to say it was limited, I mean, in the early days, I mean, we used, we used the CHC consistently as a sort of proxy for the patients both testing out some of the initial designs and in some of the scoring of the sort of proposals that we got back from the people that we involved in that process. We've used them certainly in terms of wayfinding layout, signage, those things but, I mean, the teams that were most actively involved in the designs were the clinical teams and where the clinical teams had strong patient involvement they drew patients in but it was dependent on how those teams were set up really so it was probably patchy. Some areas were very good, some areas less so, much more clinically driven than patient ...

[Senior Administrator]

Fig 4.1: (Design Report, FBC, November 1998)



The art and science of creating environments that prevent illness, speed healing and promote well being

South Tees Hospital Single Site Development



South Tees Acute Hospitals NHS Trust

4.5.2 The Hospital Environment

a) *What is an ideal hospital environment?*

The Full Business Case identifies a number of objectives to enhance the target of patient centred care. There is little evidence specifically establishing criteria for environmental conditions but 'through sympathetic architectural design, the whole building will have the appearance of a brand new facility. Features such as landscaped courtyards, maximised natural light and the essential communication space will all contribute to the provision of a non-institutional healing environment that places the needs of the patient above all else' (FBC, p79). Some of the post build interviews indicate that administrative staff and clinicians have a perception that the building is high quality and appropriate.

I think that the quality is a lot due to Bill Murray and his vision of the hospital would be this place where patients would come in and it wouldn't be like a hospital really.

[Clinical Director]

Another comment was made in response to a question about the feel of the new wards in terms of homeliness and level of friendliness.

They're lovely you walk on and you just think this is fantastic, because what we've been used to: I mean my husband had an operation at Christmas and I was appalled, just horrified at the conditions.

[Divisional Manager]

Another Divisional manager also used the word 'homely' when describing the many meetings so that 'the brief really was to make things as patient positive as possible ... and, you know we actually got it right for the patients – homely.'

b) *Does this environment work for patients, staff and visitors?*

There was widespread satisfaction about the new working conditions with one significant proviso. There was concern about the quality of offices which were regarded as unsatisfactory in many cases, particularly, consultants with windowless rooms who were extremely unhappy. This reflects the focus of the design brief on patient centred

care, the institute concept, and the intention to provide a hospital with welcoming public spaces. A divergence of satisfaction between the public or 'front of house' spaces and the private offices or 'back of house' spaces for clinical staff is a factor which was not identified until the post build stage. The shortcomings in recognising this issue are supported by the difficulties experienced by some members of staff in visualising spaces in 3-D during the design period when parts of the building were discussed in 2-D using conventional architectural drawings.

The very satisfied view is represented by the following comment from a member of the planning team.

And universally the staff have been absolutely delighted with the accommodation that they have moved into. I think the reasons for that are first and foremost the involvement that they have had in designing it which I think has been more than any other PFI projects in the country and we have clinicians who work at neighbouring Trusts, PFI Trusts, who had nothing like the involvement in the design like we have had here. Also the impact that the environment has had, the work we have done on creating a patient centre environment as well has meant that the departments are absolutely superb and we have had staff in tears of joy when they have walked in to look at their new A&E or their new ITU or their new CCU units.

[Senior Administrator]

The 'back of house' dissatisfaction identified during the post build interviews concerning disappointment with staff office accommodation including Consultants offices was mentioned by several Clinicians. Their disappointment seemed to be heightened because their expectations for the rooms had been greater. In some cases there had been misunderstandings about the size and design of the offices despite close involvement with the design team during the development and signing off of the drawings before construction work commenced.

You will find all consultants are very, very dissatisfied with their offices at the moment. If the team are not particularly happy with what they're going to get they won't co-operate in various ways.

[Divisional Manager]

From the Senior Administrators and Clinicians interviewed for the process research (see Appendix 4.2) there seems to be the general perception that patients are very happy with the new accommodation.

For in patients the wards are really good, the two main wards are really good, the third ward is not quite as good but the two main wards, the two acute wards are really good; lots of single bays, lots of bathing and toilet facilities, separate toilet facilities, really very good. I can't quibble on those they are really pretty impressive by all accounts.

[Divisional Manager]

4.5.3 Institute Concept

At a very early stage in the briefing process proposals were developed to group clinical specialities that worked closely together, thereby reducing travel patient distances. This was a key factor in the early planning stages of the overall site plan.

We have what you call an institute concept. If you take neuro sciences for example, the departments and wards within neuro sciences are in the south east corner of the new developments: neuro outpatients, psychology, neurology, radiology, neurosurgery and neurology wards are all clustered together so when you are referred as a patient, you stay in this institute. We did that for neuro sciences, for trauma, cancer services, cardio, paediatric so the hospital's an amalgam of mini institutes that deliver patient centre care in the sense that all the services relating to a particular problem are being concentrated in one part of the site.

[Senior Administrator]

4.5.4 Architectural Concept

a) Low Rise Plan Form

As noted in 5.3 Development of the design philosophy the JCUH is a low rise group of buildings developed on a grid of circulation routes (including a central spine known as the Mall) with a network of courtyards and open spaces to give as much opportunity as possible for natural light to penetrate internal rooms and to provide views onto green spaces.

Well we had, we did what one might call the planned American thinking although it was done with a twist – I think that's important – and we had lots of courtyards patched into it but we thought of it ... there are obviously lots of ways of approaching these things but one way is to

take up a series of small shapes and add them together, if you get the sort of effect. The other is to start with a great big pancake and then cut holes in and ... the problem is conceptual, I mean, it could be that you end up with as much, as many courtyards in this thing as you might get out of that thing ...

But you approach it in different ways, you kind of think about this as a big piece with things cut out of it and again you think about it as a series of small pieces put together. We always thought of it as a big piece with things cut out of it and in our drawings you'll see that – you get courtyards that came down to the ground, letting light and air in.

[Trust Adviser]

b) *The Mall Concept*

The process research section of this study did not question the senior administrators or clinicians about the Mall during pre-build interviews. However, views were expressed post-build as follows:

If you go down the main mall people who come on there for the first time appreciate it, by and large it's light, it's airy and people appear to enjoy the space.

[Divisional Manager]

People do feel that it's a lot more relaxed when they first come into the hospital, which is what we wanted.

[Senior Administrator]

4.5.5 Input into planning the hospital

A recurring problem was misunderstandings between designers and clinicians regarding the users' perception of spaces at the design stage.

This issue was raised by several senior administrators and clinicians. Despite frequent meetings, and reaching agreement on drawings there was dissatisfaction with the end result in some cases. This revolves round the difficulty of visualising spaces in 3-D when looking at them on 2-D drawings. Several references were made suggesting that computer visualisations would have been a great benefit. It may also have helped to eliminate misunderstandings about internal rooms with no windows. This seems to be a very important issue of communication during the early stages of the briefing process. Although there were some promotional 3-D videos produced there was very limited use of computer 3-D visualisation for the design development meetings.

My staff had difficulty visualising what three dimension would look like.

[Divisional Manager]

I also think at the end of the day some of the problems they had were that they probably didn't, they couldn't translate the plans to what was actually going to be built.

[Clinical Director]

4.5.6 Wayfinding

Wayfinding was a problematic issue which was raised in several of the interviews. The Trust recognises that patients have difficulties in navigating themselves around the hospital and have commenced further work on investigating it and to seek improvements in how signage works. Volunteers are used in the hospital to guide people to their correct destination. One problem, highlighted by a Senior Clinician, was confusion between medical terminology and common words used for the same purpose, for example, 'Radiology Department' and 'X-Rays'. If a patient is sent to another department for an x-ray he/she may not know that they must find the Radiology Department.

I see patients every morning, every evening and at regular intervals during the day just as part of walking round in the hospital and from time to time, you know, I do stop and I do talk to them. I know the downside will say well it's a big hospital and you know some of the areas might be difficult to find, I know we've put a lot of time and effort into signposting, it's something we've got to work on and I often stop and show patients where to go and the directions, well, I think generally from what've seen and heard from the patients I think they're very pleased with it.

[Senior Administrator]

I think that is not very good. The second difficult thing with signing is really the language that we use, it's just possible that we probably have not done sufficient homework to define the areas we're looking at. I'll give you a classical one, that is if we wanted to take an x-ray of your chest we will say you're going to get a chest x-ray. I think that on the sign we should be saying "X-ray Department" but you may find that in some areas it is "Radiology Department".

[Clinical Director]

4.5.7 Space: Public and Private

An important point has emerged during the post-build interviews about the development of patient routes which minimise contact with staff and public routes to give better privacy and dignity to very ill patients. The gynaecology department was finding that it was very much more convenient to convey patients from ward to theatre and back again more quickly and with better privacy for the patient in the new facilities – this involved about 3000 cases per year.

Yes but I mean things like our gynae ward with the link to theatre that's fantastic. The idea that you keep all the surgical wards on the first floor and the outpatients on the ground floor is fantastic because you know I used to hate patients coming back from the theatre who were feeling really rough maybe even vomiting or whatever and they'd be wheeled along the main thoroughfare, so I think that's a fantastic idea to keep the two parts separate as much as possible.

[Divisional Manager]

4.5.8 Hospital/Community Connections

The point was made that personal interaction was an important component in the wellbeing of patient recovery.

Patients of mine I've dealt with for many years say why can't we go back to the General, you know, it was nice there, we got on with everybody ... I have to say I think the wards are much nicer here, the wards are nice and light and airy.

[Clinical Director]

The level of interaction with patients during the design stage was also identified as a weakness:

And I would have said that at the end with hindsight if there's a weakness in what we did, compared to what's acknowledged should be done now, we didn't consult patients enough. If I was doing it again I'd have a lot more, I'd have a much more formal way of involving patients at all levels. Having said that we've got exemplar ways of showing how we've done it, the spinal injuries unit here I think is an exemplar of how you involve patients. We had the Chief Executive of the National Spinal Injuries Association on our project, we had regional groups of spinal injured patients who were given more generic advice and then we tried and did communicate with nearly all the tetraplegics and paraplegics in and around the north of England. I would say if I was doing it again I would do that much more.

[Trust Board Member]

4.5.9 Financial Issues

A wide range of views were expressed about the PFI system from complete support to strong objections. The objections were based largely on points of principle about the old-style NHS and objections to private finance. Another argument was that the financial policy was put ahead of the decision as to what is required. New research (see earlier section 2) suggests that the Treasury rules for evaluating 'value for money' are open to question and may be misleading. However, politically, the Trust was heavily influenced by the availability of funding through the PFI process.

Well there was a financial constraint, I mean I think you know obviously if doctors had their way they'd have built something much larger you know. Even though I think we have a good deal here and compared to looking at other schemes I think we've done extremely well. There are some little areas here which need to be addressed and I think the Trust is aware of those, but in the main I think we've got a nice hospital which looks well built and I think that it's going to be something we're going to be proud of for the next thirty years. I think we'll attract good people here to come and work here and I think the people of Teesside will benefit enormously.

[Clinical Chief of Services]

4.5.10 Performance of PFI Contract

Again, a wide of range of views were expressed and a number of interesting points emerged. Overall, the views seem to be that PFI provided services which would otherwise not have been made available through the traditional NHS finance arrangements but that there was room to improve some aspects of the PFI form of contract. It was felt that JCUH represented an unusual approach to design which was more successful than with some other earlier PFI contracts. This was manifested by strong initial design aspirations which were followed through the design process by close monitoring by the senior management of the hospital.

We had some difficulties in the early stages because of serving, trying to serve two masters, you're working closely with the Trust in terms of users and commissions and yet you're being paid by someone else.

[Architect]

[Note: The architect was being paid by the Consortium at that stage of the PFI process.]

We were very angry that they changed them after we'd signed them off.

[Divisional Manager]

In general it is good but in some areas we did have a good design and then I believe it was changed to a worse design without my agreement.

[Divisional Manager]

Some problems did arise. The clinicians were less closely involved in the design development meetings after Financial Close and the senior management team made decisions to ensure programme dates were met and costs were controlled.

The PFI has got to be right. It gives you access to funds which you wouldn't normally have had.

[Trust Board member]

But obviously the two clients are quite a different emphasis, the consortium client is always the concern more of the whole life cost.

[Architect]

4.6 Post Project Evaluation

A post project evaluation has been completed by Anshen Dyer, the same firm commissioned by the Trust at the commencement of the PFI process to prepare a feasibility study. The executive summary and key learning points for the NHS sections of their report is included at Appendix 4.9. Their comments should be read in conjunction with the key points listed in the conclusion to this chapter.

4.7 Conclusions

The following is a list of key points which have emerged from looking at the aims of the architects and the Trust and the way they went about achieving them.

- There was clear leadership from the Chief Executive of the Trust which ensured that there was a robust management system achieved by continuous involvement during the design stage of the project by senior administrators and clinicians. This helped considerably to ensure that the

design philosophy of the Trust was maintained and developed during both the design and construction stages of the project.

- When originally planning the new hospital facilities the Trust accepted the need to use the PFI procurement route and willingly embraced the methodology this imposed. The PFI solution was tested alongside the public sector comparator model.
- The management team involved senior clinicians throughout the whole design process by continuous involvement in meetings up to Financial Close, and seeking their opinions during the design development stage. It ensured they took ownership of the design proposals.
- Key aspects of the Trust's design philosophy included:
 - patient centred care
 - the institute concept (a hospital within a hospital)
 - a mall

These aspirations were not lost sight of during the design process.

The Trust was determined not to lose control of design quality after the appointment of the preferred bidder and was prepared to invest in senior staff time continuing to be allocated to progress meetings during the detailed design stage of the project.

- Although senior clinicians were involved from an early stage of the design process there were difficulties in understanding the 3D implications of some design decisions. This has led to some rooms falling short of expectations and better use of 3D visualisation techniques would improve the communication of design ideas between architects and users.
- Generally, there is satisfaction with the ward areas and patient areas. However, there is some dissatisfaction with staff areas, including consultants' offices.

- Problems have been experienced with wayfinding throughout the hospital and further work is being undertaken in this area.
- The mall is generally seen as a successful part of the new design but it is inviting questions from some senior staff who are looking for new definitions of public space and activities in a hospital environment. The interaction of these spaces with the “art” in the hospital is also challenging traditional attitudes.
- The brief required provision to be made for the spiritual needs of patients. A multi faith chapel and a holistic care centre are provided.
- The design of the new facilities has given a higher profile to the use of art and other activities in the hospital. This has raised questions about the ownership of public spaces – is it a hospital corridor or a community space – and are retail and entertainment activities beneficial to a hospital environment.
- Privacy and dignity – there has been some improvement in travel distances between wards and operating theatres, and in some cases these routes do not use main public routes. Should greater consideration be given to separating patient routes between bed and treatment area than is at present provided?
- The institute concept has reduced travel distances for patients and staff.
- Some problems are being experienced with the Facilities Management (FM) services. The cost of minor alteration works is higher than anticipated and the work is taking longer to carry out than is desirable. Discussions and negotiations are currently underway between the Trust and Aquamen to find acceptable solutions to these difficulties.
- The transfer of responsibility for design decisions has created tension. With the architect being accountable to the contractor after the selection of the preferred bidder there is the potential for

design standards to be diluted. In the case of JCUH the strong management team used by the Trust minimised this potential difficulty.

- There was limited consultation with patients during the design stage.

5. Patient, Visitor and Staff surveys on the Quality of the Hospital Environment

The research team conducted a number of self-administered questionnaire surveys in the chosen study areas to examine patient, visitor (parents of young patients) and staff satisfaction with the quality of the hospital environment. The purpose of the surveys was to weigh the old and familiar, though disjointed, hospital complex with facilities spread across Middlesbrough (Phase 1 pre-build), against the new and modern single-site hospital built on the former South Cleveland site (Phase 2 post-build). The research team also wanted to examine how successful the new hospital was from the different study areas' point of view and whether there were any significant differences within the inpatient and outpatient areas.

5.1 Rationale and Research Questions

The purpose of the questionnaire surveys was to explore the tangible and practical aspects of the hospital environment which are reasonably easy to assess. User satisfaction was measured by how respondents rated the hospital in the survey, and an assumption was made that the results would give a good indication of the quality of the hospital environment. The focus of the patient and visitor surveys was on the general appearance, décor, comfort, privacy, relaxation and wayfinding. The staff questionnaires covered similar topics but also included sections more specific to a hospital as a working environment, such as cleanliness, security and ease of control, and workflows and logistics. The patient survey included questions on self-perceived general health, stress and arousal to detect any changes between the pre- and post-build samples of respondents, while the visitor and staff questionnaires only included questions on stress and arousal.

The research team developed a set of questionnaires targeting the various user groups and service areas involved in the study, aiming at finding answers to the following three questions:

1. *Has the change in the physical environment increased user satisfaction?*
2. *Which aspects of the new hospital come forward as particularly successful and are there any obvious shortcomings?*
3. *Can we detect a relationship between the change in the physical environment and the levels of self-perceived stress and arousal in the old and the new hospital?*

The underlying assumptions were drawn from architectural literature on the design of health care facilities and previous research exploring user-friendly and functional hospital environments. The basic assumption was that good design relates to user-friendly décor, materials, lighting, room temperatures and air quality, layout, space utilisation, logistics and acoustics, and features such as artwork that can provide a positive distraction. Furthermore, a good design should result in a comfortable, functional and accessible hospital environment which can increase user satisfaction and sense of well-being.

5.2 Methodology

5.2.1 Study areas, target groups and fieldwork timetable

The assessment of the change in the physical environment involved four inpatient units and six outpatient units in The James Cook University Hospital (JCUH, the former South Cleveland Hospital) and Middlesbrough General Hospital (MGH), and the main entrance areas and the mall in the JCUH. The ten patient areas consisted of two units from the Children's Services and eight units involving adult patients. However, within the Children's Services the study only targeted adults escorting the young patients (categorised as visitors) and therefore no children were surveyed or interviewed. All members of staff apart from the domiciliary teams in the ten patient areas were asked to take part in the study. The selection of the study areas is explained in detail in Appendix 5.1.

The chosen inpatient units involving adult patients included the Oncology and Haematology ward and two Trauma wards. However, the Oncology and Haematology ward was withdrawn from the study after Phase 1 baseline assessment due to a low survey response among the patients. The outpatient units included the Chemotherapy Day Unit, Trauma Outpatients Department (OPD),

Neurology Outpatients Department (OPD), Neurology Ward day case services, and the Disablement Services Centre. In the new single site hospital the Neurology OPD was integrated into the Neurosciences OPD, and as a consequence the post-build survey involved patients visiting any of the specialities within this department.

The chosen study areas from the Children's Services were the Outpatients Department and the Surgical Ward. As mentioned earlier, within the Children's Services only adults escorting the young patients were approached for the study. This group of respondents included parents, grandparents, relatives, family friends and guardians, and from here onwards they will be labelled as 'visitors' to simplify the reporting of the results.

All staff involved in patient care (nursing and medical staff, allied health professionals, technical staff) and the administrative staff based at the ten patient areas were asked to take part in the study. The general areas included the North Entrance, the South Entrance, the atrium and the mall in the JCUH, and a set of questions concerning these general areas were included in the outpatients' and visitors' questionnaires. Table 5.1 presents the study areas, their location and the user groups involved in the study.

Table 5.1: The study areas and user groups involved.

Study area/unit	Location	Patients	Visitors	Staff
Children's Services				
Children's Outpatients Department	JCUH	-	√	√
Children's Surgical Ward	MG/JCU H	-	√	√
Cancer Services				
Chemotherapy Day Case Unit	JCUH	√	-	√
Oncology/Haematology ward (withdrawn after Phase 1)	JCUH	√	-	√
Trauma				
Trauma Outpatients Department	MG/JCU H	√	-	√
Trauma wards 34 and 36	MG/JCU H	√	-	√
Neurosciences				
Neurology (later Neurosciences) Outpatients Department	MG/JCU H	√	-	√
Disablement Services Centre	MG/JCU H	√	-	√
Neurology ward day case services	MG/JCU H	√	-	√
General areas				
North Entrance and main reception: old unaltered entrance areas	JCUH	√	√	-
South Entrance and main reception, the mall: newly built areas	JCUH	√	√	-

The fieldwork was carried out in two stages: Phase 1 baseline (pre-build) assessment of the study areas took place in February-July 2003 in the old location in the MGH and the JCUH (former South Cleveland Hospital). Phase 2 post-build assessment of the corresponding areas was conducted in December 2003 – June 2004 after the study areas had moved into their new accommodation in the JCUH. The settling-in time was relatively short as the units only moved in August 2003 and the post-build surveying in most areas began in December.

5.2.2 Sampling

The selection of respondents was not randomised. The outpatients departments were given a number of randomly chosen dates to hand out the survey questionnaires, but only in the Trauma Outpatients Department was the volume of patients large enough to achieve the targeted sample size within the time given for the fieldwork. In other OPDs and day case units the recruiting was first done on randomly selected dates, and if the turnover was low the recruiting continued on a daily basis until further notice. In ward areas the staff were asked to approach all suitable respondents in certain specified multi-bed rooms (either 4 or 6 beds per room). The staff in all units were asked to exclude patients who might be too unwell or too distraught to be approached to take part in the study. The planned two-month fieldwork period was extended due to low response rates, and in most study areas the surveys took three to five months in each Phase.

In most patient areas there were no exclusion criteria other than the general rules set in the recruitment strategy (in Appendix 5.2). However, in certain areas the scope of the study was limited to certain client groups only. In the Trauma wards and the Trauma OPD the sample was limited to orthopaedics and trauma excluding plastic surgery and burns in order to achieve a more homogeneous sample. In the Haematology and Oncology ward the sample excluded oncology patients who were deemed by the staff to be too unwell to take part. Correspondingly, in the Disablement Services Centre the staff only recruited established clients attending the Prosthetic Services. In the Children's Services the survey targeted the adults (including parents, grandparents, relatives, family friends and guardians) visiting the Children's OPD with the child, or visiting or staying overnight at the Children's Surgical Ward with the child. Similar samples of respondents in each of the ten study areas were recruited in Phase 1 and Phase 2, and some respondents may have

participated in the research in both environments. Finally, the nursing, medical, allied health and technical staff involved in patient care, and the administrative staff in the ten study areas were approached and asked to complete a questionnaire assessing the quality of the environment in their unit.

5.2.3 Questionnaire design

The development of the survey questionnaires is described in detail in Appendix 5.3 (see Appendices 5.11-5.13 for examples). The patients' and visitors' survey included questions about general appearance, décor, comfort, privacy, relaxation, artwork and wayfinding. The assessment of the general appearance was based on the questionnaire developed by Leather (2002) for a study carried out in the Leeds General Infirmary. However, the individual questionnaire items were slightly altered and the research team decided not to use the scoring system introduced with the tool. Questions relating to the physical comfort were partly based on the Poole Hospital study by Lawson and Phiri (2003), and questions on the wayfinding were adapted from the 'NHS Wayfinding Research Project' by Miller and Lewis (1998).

The staff questionnaires had separate sections on the quality of the patient environment and the quality of the working environment. Both sections involved questions with reference to décor, comfort, light, sound, air quality and room temperatures, and staff control of heating and ventilation. Additional aspects of the patient environment covered in the staff questionnaires were privacy, relaxation and self-care. Furthermore, the assessment of the working environment included sections on workflows and logistics, cleanliness, security and ease of control, and staff facilities. The staff questionnaires were influenced by the NHS Estates AEDET tool, but the research team decided to focus on fewer topics and used a different scale for the answer options.

The study involved two different self-reported quality of life measures: Stress Arousal Checklist (SACL) developed by the University of Nottingham (Gotts & Cox, 1988), and the five dimensional EQ-5D general health questionnaire (University of York). Both EQ-5D and SACL are self-administered questionnaires asking the respondent to assess their health or mood today, i.e. 'here and now', and were included in the questionnaires in order to measure and compare respondents' self-perceived

general health, stress and arousal in the pre- and post-build environments. Both measures were included in the patient questionnaire but the visitors and the staff were only asked to assess their state of mood using the SACL.

The purpose of the EQ-5D questions was to check that the pre- and post-build samples of patients were similar in terms of their general health. The research team wanted to distinguish any changes between the pre- and post-build survey results which might be affected by a post-build sample of respondents enjoying significantly better or worse general health, rather than reflecting the changes in the environment. The rationale for including the stress and arousal questions was to see whether we could establish a link between the change in the physical environment, and the levels of stress and arousal among the pre- and post-build respondents. Stress and arousal scores were perceived as a measure of respondents' well-being, and the purpose of the study was to explore if the scores would reflect the survey response on the physical environment.

5.2.4 Sample size calculations

The sample size calculations for the patient and visitor survey were conducted using the Stress Arousal Checklist (SACL) scoring. The calculations were based on the assumption that an average movement of half a category, i.e. a total change of nine points or more for stress and six points or more for arousal, is significant. Assuming a significance level of 5% and a power of 80%, such a difference can be detected with a minimum of 29 respondents for stress and 28 for arousal, but the sample sizes were doubled to 58 (2 groups of 29) for stress and to 56 (2 groups of 28) for arousal to leave scope for the analysis. Therefore the target was to achieve a sample of at least 30 but preferably 60 survey respondents from each study area.

5.2.5 Statistical analysis

Patients and visitors survey: patient areas

The statistical analysis of the patient and visitor survey data concentrated on the following topics: General Appearance, Décor, Comfort, Privacy, Relaxation and Satisfaction with the Staff. These topics, the sub-items included in them, and the method of analysis are presented in Appendix 5.4.

The data were analysed using the average score for each of these five topics, and two reliability measures were calculated to test how well the sub-set of items within each average score measured that topic. The reliability measures were calculated separately for all nine study areas, and the results indicated good reliability for General Appearance, Décor, Comfort, Relaxation and Satisfaction with the Staff. As the reliability measures for Privacy were low, the analysis examined either the average score or the individual sub-items under this heading.

The comparison of average scores, individual sub-items, EQ-5D and SACL were carried out using the independent samples t-test or Mann-Whitney U test. The analysis also compared the characteristics of the pre- and post-build samples using a χ^2 – test and the variables included:

- Visit pre-arranged or an emergency (outpatients only)
- Visited the unit before (outpatients only)
- How many days stayed (in wards only)
- Age, Gender, Skills and Qualifications, Economic Activity.

Staff survey: patient and staff areas

The staff were asked to assess the quality of the patient environment and the working environment separately. The analysis focussed on the following aspects of the patient environment: Privacy, Light, Colour Schemes, Materials and Furniture, Acoustics and Sound Insulation, and Air Quality and Room Temperatures. The topics for the working environment included Workflows and Logistics, Cleanliness, Security and Ease of Control, and quality of various staff areas and facilities. These topics, the sub-items included in them and the method of analysis are presented in Appendix 5.5. As with the patient survey, the analysis involved average scores and reliability measures. The reliability measures for Privacy were low in most of the study areas, and therefore the analysis examined either the average score or the individual sub-items under this heading.

The comparison of average scores, individual sub-items and SACL scores from each of the nine study areas were conducted using the independent samples t-test, Mann-Whitney U test, ANOVA or Kruskal-Wallis test. The sample characteristics were analysed using a χ^2 – test and the variables included age, gender, job role, work experience and contracted hours of work.

Patient and visitor survey: general areas

The analysis of the post-build patient and visitor survey concerning the main entrance areas, artwork and wayfinding was descriptive and based on cross tabulations and bar charts. The research team also examined the answers given to the open-ended questions.

5.3 Description of the sample

Patients and visitors

The achieved samples consisted of 454 patients and 113 visitors⁵ (escorting a young patient) from Phase 1, and 318 patients and 119 visitors from Phase 2. Table 5.2 presents the number of respondents from each of the ten study areas. Three units (Chemotherapy Day Unit, Trauma OPD and Disablement Services Centre) managed to achieve the set target of at least 60 patients in both Phases and four units (Trauma Ward 36, Neurology Ward day case services and both Children's units) achieved the set minimum of approximately 30 respondents. Trauma Ward 34 achieved less than 30 respondents in both Phases and the Neurology/Neurosciences OPD in Phase 2. One unit, the Haematology and Oncology Ward, was withdrawn from the study after Phase 1 due to a low response rate.

⁵ This group of respondents included parents, grandparents, relatives, family friends and guardians, but they are categorised as 'visitors' to simplify the reporting of the results.

Table 5.2: Patients and Visitors: Number of respondents in study areas

	Phase 1 Baseline	Phase 2 Post-build
PATIENTS		
Cancer Services		
Chemotherapy Day Unit	60	67
Haematology/Oncology Ward	11	-
Trauma		
Trauma OPD	115	61
Trauma Ward 36	52	43
Trauma Ward 34	24	23
Neurosciences		
Neurology/Neurosciences OPD	37	18
Neurology Ward day case services	55	34
Disablement Services Centre	100	72
Total	454	318
VISITORS ESCORTING A YOUNG PATIENT		
Children's OPD	73	47
Children's Surgical Ward	40	72
Total	113	119

There were only a few differences between the pre- and post-build samples of patients within the study areas. In the

- Neurosciences OPD the post-build patients were older and less likely to hold formal qualifications
- Trauma Ward 34 the results indicated that more women took part in the post-build survey
- Children's OPD the post-build visitors escorting the child were less likely to be in employment
- Children's Surgical Unit the pre-build sample of visitors only included respondents who had stayed overnight in the ward, while the post-build sample involved day visits as well.

The pre- and post-build results for the type of visit (re-arranged or emergency) and previous visits (visited the unit before) showed no differences for the outpatients areas (not included in the inpatients' questionnaires). The Appendix 5.6 presents the percentages for age, gender, economic activity, skills and qualifications for the total number of pre- and post-build respondents.

Only one study area showed a statistically significant change in the general health score for the five sub-items, but the health thermometer (VAS) showed no change in any of the study areas. The EQ-5D score was statistically significantly higher among the post-build survey respondents in the Neurology OPD ($t(29)=0.276$, $p=0.01$, $U=116.00$, $p=0.04$, $d=0.85$), despite the fact that the respondents were older than their counterparts who took part in the pre-build survey. This means that the respondents' general health in this study area was better in Phase 2. Furthermore, the EQ-5D scores from Trauma Ward 34 showed very low reliability (Cronbach's α was negative and reliability coefficient $\theta = 0.43$), and our conclusion was that the EQ-5D was not a reliable measure of the general health state. Since both the pre- and post-build samples of patients were below 30, Trauma Ward was excluded from the analysis.

Staff

The achieved sample in the staff survey consisted of 138 respondents in both Phases. The response rate was 42% for the pre-build and 55% for the post-build survey, and the figures from the individual study areas are presented in table 5.3 below. There were only a few differences between the pre- and post-build samples of staff. There were relatively more

- full-time staff, and staff other than medical and nursing staff, among the Trauma OPD post-build respondents
- medical and nursing staff among the Neurosciences OPD post-build respondents.

Appendix 5.7 presents the percentages for age, gender, job role, length of work experience and contracted hours of work for the total number of pre- and post-build respondents.

Table 5.3: Staff: Number of respondents and response rates in study areas

	Phase 1 baseline		Phase 2 post-build	
	Total	Response rate %	Total	Response rate %
Cancer Services				
Chemotherapy Day Unit	21	30	5	83
Haematology/Oncology Ward			-	-
Trauma				
Trauma OPD	22	61	35	86
Trauma Ward 36	13	31	17	46
Trauma Ward 34	16	47	10	32
Neurosciences				
Neurology/Neurosciences OPD	17	44	18	69
Neurology Ward day case services	8	26	9	36
Disablement Services Centre	20	54	16	47
Children's Services				
Children's OPD	10	53	15	83
Children's Surgical Ward	11	55	13	37
Total staff	138	42	138	55

5.3 Results

5.3.1 The Hospital Environment

Quality of the environment for patients

This section presents the results from the patient/visitor and staff surveys on the quality of the patient environment. The purpose is to answer the following questions:

1. *Has the change in the physical environment in the patient areas increased user satisfaction?*
2. *Which aspects of the new patient areas come forward as particularly successful and whether we can recognise any obvious shortcomings?*
3. *Can we detect a relationship between the change in the physical environment and the levels of self-perceived stress and arousal among the patients and visitors in the old and the new hospital?*

We present the comparison of the pre- and post-build average scores from the patient and visitor survey for General Appearance, Décor, Comfort, Relaxation, Privacy and Satisfaction with the Staff, as well as the results for the self-reported SACL stress and arousal scores. The method of the patient survey analysis is presented in 5.2.5 and the composition of average scores in Appendix 5.4. This chapter will also present the results from the staff survey on the quality of the patient environment, and the topics included are Privacy and Dignity, Light, Colour Schemes, Materials and Furniture, Air Quality and Room Temperatures, and Sound Insulation and Acoustics. The method of the staff survey analysis is presented in 5.2.5 and the composition of average scores in Appendix 5.5.

Change in the physical environment and user satisfaction

Table 5.4 (p. 76) shows that, according to the patients and the visitors, the quality of the patient environment had improved considerably in two of the study areas. In the Children's OPD the results indicated clear improvement in General Appearance and Décor, moderate improvement in Relaxation and weak improvement in Comfort. In the Neurosciences OPD the results showed that the patient environment had clearly improved in terms of General Appearance, Décor and Relaxation. Furthermore, in Trauma OPD the average score for Décor showed moderate improvement, and there

was weak evidence that the privacy for confidential conversations had improved. In the Children's Surgical Ward the results indicated moderate improvement in patients' privacy.

The results were quite the opposite for the Neurology Ward day case services where the patient survey indicated that the environment had deteriorated. In this area the average scores for General Appearance and Relaxation had declined, and there was some evidence that Décor was not as good as in the old hospital. As for the rest of the study areas, the patient and visitor survey showed no change in the pre-build and post-build average scores.

An interesting finding was that in the three study areas where the ratings in the patient/visitor survey had changed most (Children's OPD, Neurosciences OPD and Neurology Ward day case services), the change was consistently positive or negative across the average scores for General Appearance, Décor and Relaxation.

The staff survey confirmed the positive results for the Neurosciences OPD. The average scores for Privacy, Colour Schemes, Materials and Furniture, and Sound Insulation and Acoustics showed apparent improvement. Furthermore, Air Quality and Room Temperatures showed moderate improvement and the results indicated that artificial lighting was better in the new hospital.

The patient environment received very good ratings from the staff in the Children's Surgical Ward, and the average scores from the staff survey for all items listed in Table 4 show significant improvement. Also in the Disablement Services Centre (DSC) the staff ratings for the patient environment were very good in terms of Privacy, Light and Colour Schemes. In the Trauma OPD the staff survey indicated that Materials and Furniture and patients' privacy for confidential conversations had improved, which support the findings from the patient survey. The remaining study areas showed improvement for only one average score but otherwise no change.

Comparison of the post-build staff survey results

In general the results show that the physical environment in the patient areas had improved. However, there were differences between the study areas and some of them showed very little change

from the pre-build to the post-build survey. This can be partly explained by the method of analysis which used average scores combining a number of variables, and which did not take into account how high or low the ratings were initially. Next we will explore the post-build survey results across the study areas, but focus on the staff survey only as the sample characteristics for patients and visitors varied significantly across the units.

The comparison of the post-build staff survey results on the quality of the patient environment confirmed some of the earlier findings, but also brought out new information. Among the four outpatient departments the average scores for

- patients' Privacy and Dignity were higher in the Neurosciences OPD and Disablement Services Centre ($F(3,79)=3.16$, $p=0.03$, $f=0.35$), and a significant contributing factor was the quality of the toilet facilities
- Light were highest in the Disablement Services Centre ($F(3,79)=5.12$, $p<0.01$, $f=0.44$)
- Colour Schemes were highest in the Neurosciences OPD ($F(3,76)=4.16$, $p=0.01$, $f=0.41$)
- Materials and Furniture were higher in the Neurosciences OPD and Children's OPD ($F(3,77)=5.93$, $p<0.01$, $f=0.48$)
- Air Quality and Room Temperatures were lower in the Trauma OPD ($F(3,78)=2.61$, $p=0.06$, $f=0.32$).

The sample sizes for the Chemotherapy day Unit and the Neurology Ward day case services were below 10 in the post-build survey, and therefore the data were not examined statistically. The open-ended questions from the Chemotherapy Day Unit indicated that the staff were feeling very anxious about the lack of space in the waiting area, treatment room and the dayroom. The discussions with the Neurology Ward staff revealed that the décor in the dayroom (which was used by the day case patients) had not been completely finished, and that teething problems were still evident at the time of the patient and staff surveys.

The comparison of the post-build staff survey results from the wards showed that the average scores for the Children's Surgical Ward were significantly higher for Privacy and Dignity ($F(2,35)=17.7$, $p<0.01$, $f=1.01$), Light ($F(2,35)=5.83$, $p=0.01$, $f=0.58$), Materials and Furniture ($F(2,35)=3.84$, $p=0.03$,

f=0.47) and Sound Insulation and Acoustics ($F(2,32)=7.8$, $p<0.01$, $f=0.70$). The scores were lowest for the Trauma Ward 36 with Trauma Ward 34 in between.

These results confirm the earlier very positive findings from the Neurosciences OPD. Furthermore, they showed that the post-build average scores from the staff survey in the Children's Surgical Ward were considerably higher compared with the two adult wards. Among the outpatients departments, the Children's OPD received better ratings for Materials and Furniture, and the Disablement Services Centre for Light and patients' Privacy and Dignity.

Table 5.4: Comparison of pre- and post-build survey results: quality of the hospital environment for patients

AREA	PATIENT AND VISITOR SURVEY				
	General Appearance	Decor	Comfort	Privacy	Relaxation
Children's OPD	++	++	(+)		+
Trauma OPD		+		Conf. conversations (+)	
Neurosciences OPD	++	++			++
DSC					
Neurology day cases	-	(-)			-
Chemo Day Unit					
Trauma Ward 36					
Trauma Ward 34	Study area excluded from the analysis				
Children's Surgical Wd				Privacy for conf. conversations + Privacy in toilets/bathrooms +	

STAFF SURVEY				
Privacy and Dignity	Light	Colour Schemes	Materials and Furniture	[Air Quality and Room Temperatures] [Acoustics and Sound insulation]
++				
Conf. conversations in consulting/treatment rooms +			+	
Personal privacy in toilets -				
++	(+) NB: low reliability	++	++	Air and Temps + Acoustics and Sound Insulation ++
++	++	++		
Sample sizes below 10 in both Phases				
Sample size below 10 in Phase 2				
			++	
		++		
++	++	++	++	Air and Temps ++ Acoustics and Sound Insulation ++

KEY:

A statistically significant* positive change in the ratings and the effect size is moderate (0.50 ≤ d ≤ 0.80)	+
A statistically significant* positive change and the effect size is large (d > 0.80)	++
A statistically significant* negative change in the ratings and the effect size is moderate (0.50 ≤ d ≤ 0.80)	-
A statistically significant* negative change and the effect size is large (d > 0.80)	--

* p < 0.05 ** d ≥ 0.50

Statistical results presented in Appendix 5.8 and Appendix 5.9

SACL scores for patients

SACL measures self-reported stress and arousal with 30 mood describing adjectives and provides a single score for both items. A statistically significant increase in the stress score from the pre- to post-build survey would indicate that the respondents feel more stressed and anxious and less calm and content in the new environment. An increase in the arousal scores would indicate that the respondents feel more inspired and energized and less dreary and damped down in the new environment.

Only one of the nine study areas showed any change in the SACL scores. In the Neurology Ward day case services the SACL arousal score for patients was statistically significantly lower in the JCUH than in the MGH ($t(55)=-2.53$, $p=0.01$, $d=0.60$), which means that the respondents in the JCUH were feeling less inspired and energized than the respondents in the old hospital.

The results concerning the deterioration in the SACL arousal scores seem to coincide with the poor patient survey results on the physical environment in the Neurology Ward day case services. Whether the lower arousal scores were a result of the change in the hospital environment, or whether the post-build respondents were less inspired and energized in the first place and therefore gave lower ratings, is difficult to determine. Since the survey respondents were not selected randomly, it is possible that the results were biased due to differences in sample characteristics that were not detected in the analysis. However, in the Neurology Ward day case services there were no statistically significant differences in the sample characteristics and we assume that at least some of the respondents took part in the survey in both environments. Therefore our conclusion is that while the results should be treated with caution, the deterioration in SACL arousal scores in the Neurology Ward may reflect the impact of the quality of the environment on respondents' well-being.

Patients' and visitors' satisfaction with the staff

This topic was included in the survey to examine whether the SACL scores or the ratings for the physical environment were associated with the way the patients were treated by the staff. The ratings for the satisfaction with the staff were generally very good, and only one study area showed change in the pre- and post-build ratings. In the Trauma Ward 36, which showed very little change in the ratings

on the physical environment, the staff in the JCUH were rated better than the staff in the old hospital ($t(73)=3.44$, $p<0.01$, $d=0.70$). Therefore our conclusion is that no significant association was found between the ratings for the satisfaction with the staff and the SACL scores or the assessment of the physical environment.

5.3.1 Hospital environment (continued)

Quality of the environment for staff

This section presents the results from the staff survey on the quality of the working environment, and the purpose is to answer the following questions:

1. *Has the change in the physical environment in the staff areas increased user satisfaction?*
2. *Which aspects of the new staff areas come forward as particularly successful and whether we can recognise any obvious shortcomings?*
3. *Can we detect a relationship between the change in the physical environment and the levels of self-perceived stress and arousal in the old and the new hospital?*

The topics included under the quality of the working environment were:

- Workflows and Logistics
- Cleanliness
- Security and Ease of Control
- Quality of various staff areas (Reception/Nurse Station, Consulting/Treatment Rooms, Office Space, Staff Room, staff facilities).

The analysis examined the average scores for these topics and looked at some of the sub-items included in them. We also explored the self-reported SACL stress and arousal scores. The method of analysis is explained in section 5.2.5 and the composition of each aggregate is presented in Appendix 5.5.

Quality of the physical environment in staff areas

Table 5.5 (p. 82) presents the comparison of the pre- and post-build results from the staff survey on the quality of the working environment. Once again the environment had improved most in the Neurosciences OPD followed by the Children's Surgical Ward. The Trauma Ward 36 and the Children's Surgical Ward reported positive changes in terms of Workflows and Logistics, while the results were negative in the Trauma OPD and Ward 34 (location of the unit) and especially in the Children's OPD (layout, circulation routes, and routes of patients to/from other units). Cleanliness had improved in most of the study areas.

There were significant differences in the ratings for the new staff areas and facilities. The staff in the ward areas and the Disablement Services Centre reported improvements in the reception areas, nurse stations, consulting and treatment rooms (except for Ward 34), office space, and staff room and facilities. The reception areas had improved also in the Trauma OPD and the Neurosciences OPD, and the new consulting/treatment rooms and office space in the Trauma OPD were better than in the old hospital. In the Children's OPD the average scores for staff areas and facilities showed no change. The apparent lack of improvement in the average scores and the answers given to the open-ended questions indicated that the provision of staff facilities in the Children's OPD, Trauma OPD and the Neurosciences OPD was not sufficient, and that the staff were not entirely happy with the quality of the staff areas.

The comparison of the post-build survey results across the outpatients departments showed that the Neurosciences OPD received the highest scores for Workflows and Logistics (K-W: $\chi^2(3)=9.76$, $p=0.02$) and the ratings were particularly good for the layout and the location of the unit. The Neurosciences OPD and the Children's OPD scored well on Security and Ease of Control ($F(3,74)=5.69$, $p<0.01$, $f=0.48$), and the Neurosciences OPD and the Disablement Services Centre on the appearance and comfort of the reception/nurse station ($F(3,75)=3.39$, $p=0.02$, $f=0.37$). Even though the Neurosciences OPD received excellent ratings in the staff survey, there was weak evidence that the ratings for the consulting/treatment rooms ($F(3,73)=2.54$, $p=0.06$, $f=0.32$) and office space ($F(3,71)=2.64$, $p=0.06$, $f=0.33$) were lower than in the other OPDs, which was partly due to a lack of natural light in the consulting/treatment rooms and office space. The average scores for the other staff areas, staff room

and facilities showed no difference across the study areas, and neither did the average scores for Cleanliness.

The comparison of the ward areas confirmed the earlier results, and the Children's Surgical Ward received the highest scores for Workflows and Logistics ($F(2,36)=7.29$, $p<0.01$, $f=0.64$), Cleanliness ($F(2,36)=3.93$, $p=0.03$, $f=0.47$) and Security and Ease of Control ($F(2,35)=4.47$, $p=0.02$, $f=0.51$). The average scores for various staff areas and facilities were similar in all ward areas, and only the quality of the reception/nurse station was significantly better in the Children's Surgical Ward ($F(2,35)=4.13$, $p=0.02$, $f=0.49$). Where statistically significant differences were detected in average scores, the Trauma Ward 36 received the lowest ratings.

SACL scores

The comparison of the pre- and post-build staff survey results showed that there was a statistically significant difference in the SACL arousal scores in the Trauma OPD ($t(54)=2.21$, $p=0.03$, $d=0.58$). The post-build scores were lower which indicates that the staff were feeling less inspired and energized in the new hospital. The comparison of the post-build SACL stress scores showed that the staff in the Trauma Ward 34 were more stressed than the staff in the other two wards ($F(2,37)=3.67$, $p=0.04$, $f=0.45$). Trauma OPD did not achieve particularly good results in the staff survey and therefore there may be a relationship between the quality of the physical environment and the SACL arousal scores. However, in both units the results could potentially be linked with factors such as new working practices and short settling-in time after the move.

Table 5.5: Comparison of pre- and post-build survey results: staff survey

Area	Workflows & Logistics	Cleanliness	Security & Ease of Control	Various staff areas & facilities
Children's OPD	Layout of the unit (-) Circulation routes (-) Routes of patients to/from other units (-)	Storage of clinical waste (+)		
Trauma OPD	Location on the hospital site (-) Location in relation to key dpt's (-)			Restful and pleasing décor for Reception, Consulting/treatment rooms, and Office Space (+)
Neurosciences OPD	+	++	++	Average score for Reception ++ Natural light in Consulting/treatment rooms and in Office Space (-)
DSC		+		Average score for Reception, for Office Space, for Staff Room and Facilities ++ ++ ++
Neurology Ward day case services: not analysed due to small sample sizes (below 10 each Phase)				
Chemo Day Unit: not analysed due to small sample sizes (below 10 in Phase 2)				
Trauma Ward 36	+	(+)	(+)	Average score for Reception/Nurse station, Consulting/Treatment Rooms, Office Space, Staff Room and Facilities ++ ++ ++ ++
Trauma Ward 34	Location of the ward in relation to key dept's (-)			Average score for Reception/Nurse station, Office Space, Staff Room and Facilities ++ ++ ++
Children's Surgical Ward	++	++		Average score for Reception/Nurse station, Consulting/Treatment Rooms, Office Space, Staff Room and Facilities ++ ++ ++ ++

KEY:

A statistically significant* positive change in the ratings and the effect size is moderate (0.50 ≤ d ≤ 0.80)	+
A statistically significant* positive change and the effect size is large (d > 0.80)	++
A statistically significant* negative change in the ratings and the effect size is moderate (0.50 ≤ d ≤ 0.80)	-
A statistically significant* negative change and the effect size is large (d > 0.80)	--

* p < 0.05 ** d ≥ 0.50

5.3 2 Architectural Concept: General Areas

In order to elicit patients' and visitors' views on the architectural concept, including the Mall and effects of the low rise Plan Form (such as natural light and spaciousness) we focussed attention on a comparison of the North and South Entrances at the JCUH. Therefore, the outpatients and visitors surveys in the JCUH included questions on the appearance of the North and the South entrances. As the MGH consisted of a number of detached buildings, it did not have an entrance which would have marked a main entry point to the hospital, and therefore the survey of the main entrance areas was limited to the JCUH. In the pre-build survey the respondents were patients from the Chemotherapy Day Unit and visitors from the Children's OPD escorting a young patient. In the post-build survey the respondents were mainly from the outpatients departments or day case units located in the main building (Trauma, Neurosciences, Chemo, Neurology Ward day cases, Children's OPD). The questionnaire asked the respondents to state which entrance they had used and then to assess this area.

The North Entrance in the JCUH is the old main entrance comprising a small waiting area, shop, cash point and a reception desk. This area stayed unaltered throughout the pre- and post-build surveys. The South Entrance is the new main entrance leading into the mall where most of the artwork commissioned for the new hospital is on display, and this area was only included the post-build survey. The pre- and post-build surveys gave an opportunity to examine the results in two ways: 1) compare the pre-build main entrance (North) with the post-build main entrance (South), and 2) compare the North Entrance and the South Entrance in the post-build phase when both areas were accessible to the public.

Fig 5.1: North Entrance



Fig 5.2: South Entrance



Figures 5.3-5.6 (pp. 85-86) present the results from the pre-build unaltered North Entrance, the post-build unaltered North Entrance and the post-build new South Entrance. Only responses that related to these two entrances were included in the analysis. The four questions asked here were:

Does the appearance of the entrance...

1. *put you at ease?*
2. *meet with your expectations of a hospital environment?*
3. *look like some thought has been put into its décor?*
4. *please you with its décor?*

The results show that the respondents were noticeably more pleased with the appearance of the South Entrance, and that the difference was even more striking in the post-build phase when both entrances were open to the public. As presented in Fig.5.4, 58% of the post-build respondents assessing the new main entrance (South) replied 'Very much' when asked whether they found the décor pleasing, compared with 35% of the pre-build respondents assessing the then main entrance (North). Furthermore, the survey results showed that the difference in the ratings for these two entrances in the post-build phase was even wider (58% and 25% respectively) and the findings are consistent with the other responses presented in Figs. 5.1-5.3. The results indicate that the general areas in the hospital show significant improvement, and that the new hospital environment may have made the respondents more aware of the old décor and its shortcomings.

Fig 5.3: Does the appearance of the entrance put you at ease?

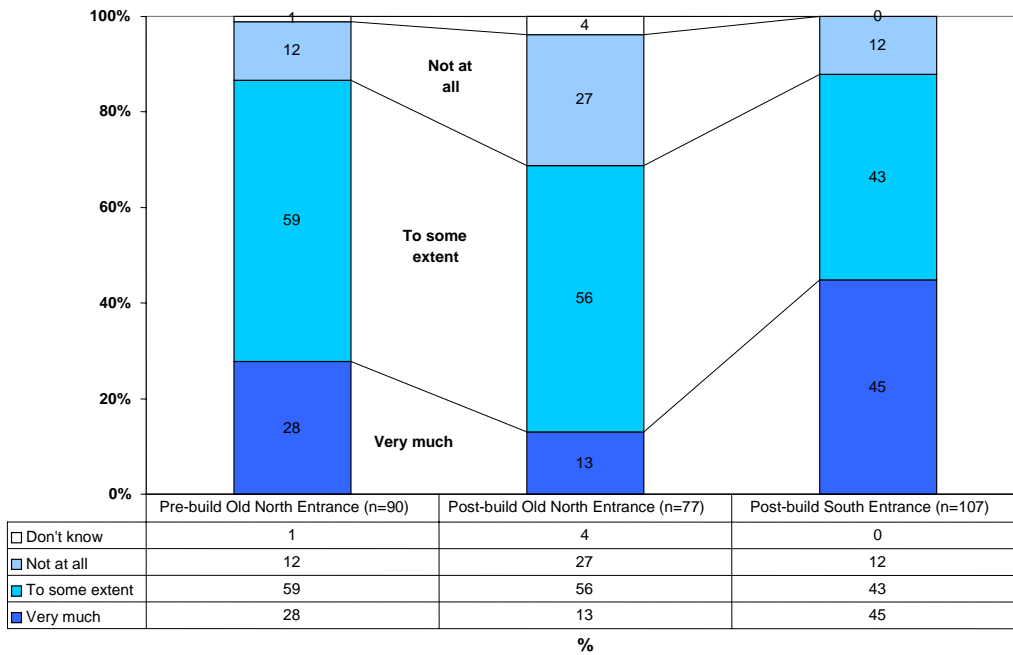


Fig 5.4: Does the appearance of the entrance meet with your expectations of a hospital environment?

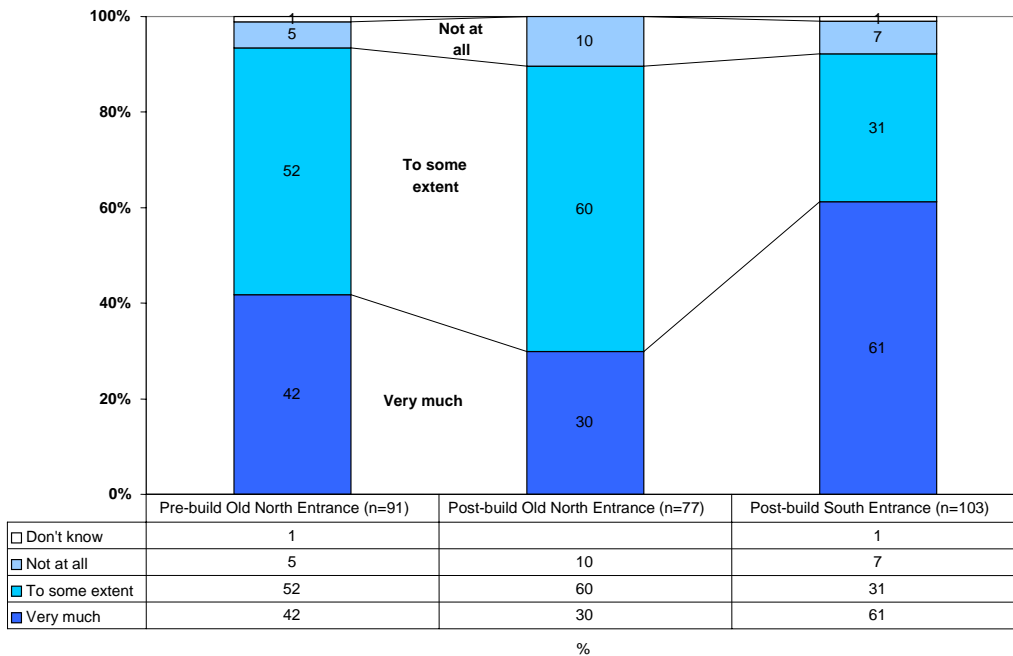


Fig 5.5: Does the appearance of the main entrance look like some thought has been put into its decor?

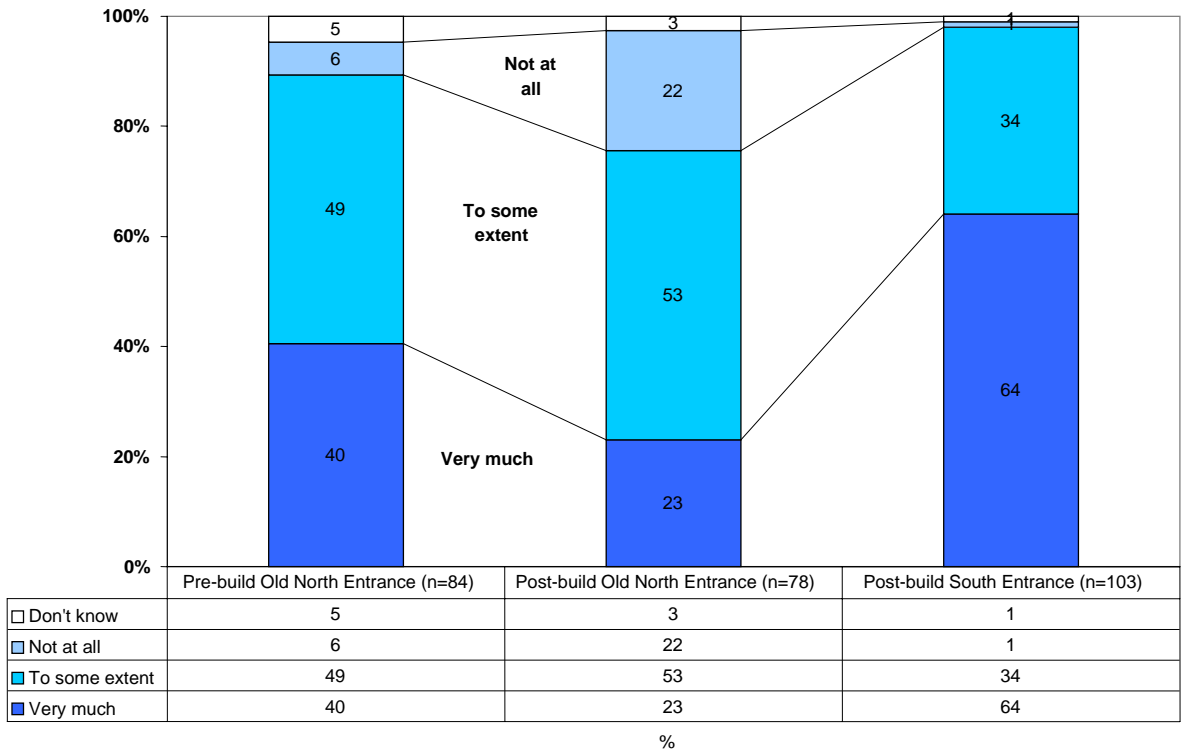
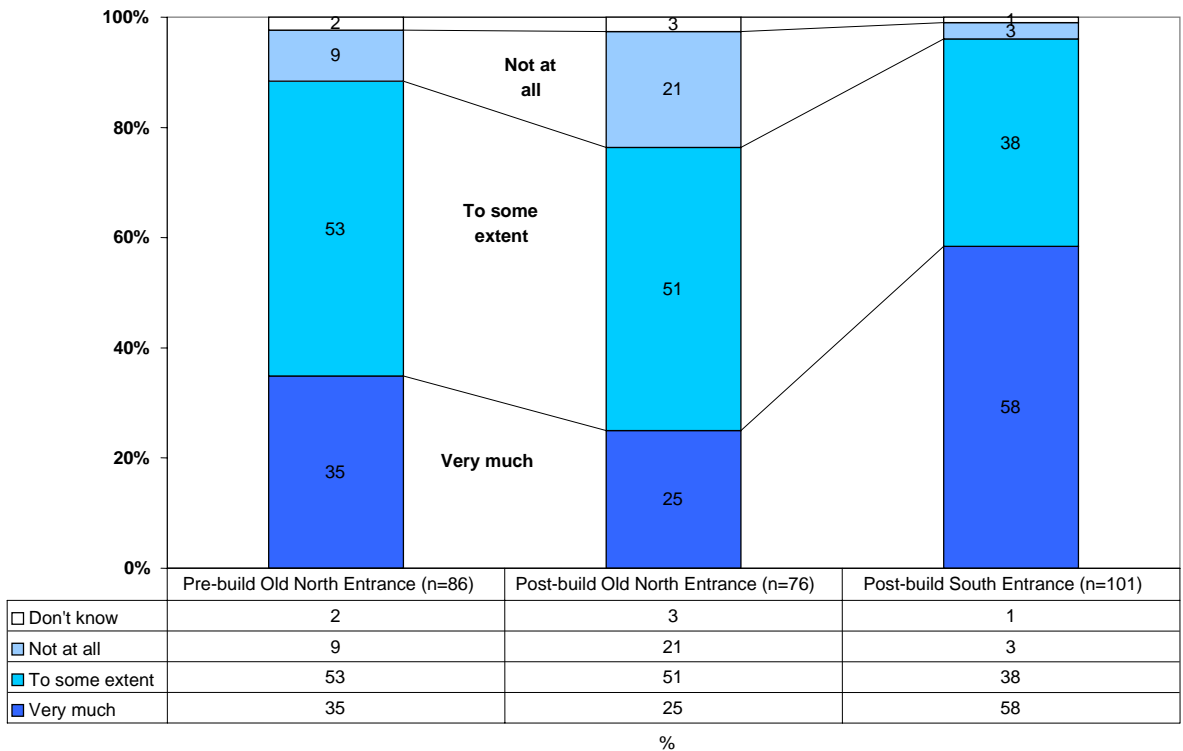


Fig 5.6: Does the appearance of the main entrance please you with its decor?



The respondents were also asked ‘What would you say are the best features of the entrance you used when you arrived at the hospital?’, and prompted to list anything relating to the décor, layout of the room, comfort, services or the staff. We only examined the post-build survey responses to this question and the results are summarised in Table 5.6. The results reflected the style of décor and the facilities available in the entrance areas. While the South Entrance impressed the respondents with its modern, light and airy appearance, the North Entrance, at this time still provided better facilities.

Table 5.6: Freetext comments in response to the question: ‘What would you say are the best features of the entrance you used when you arrived at the hospital?’

Post-build unaltered North Entrance (N=86)	Post-build new South Entrance (N=112)
Described as calming, relaxed, comfortable, warm, friendly, courteous, welcoming, ‘hotel style’ décor, pleasant and bright decor	Described as clean, bright, light/airy, spacious, attractive, impressive, pleasant, modern
Well sign-posted and easy to access	Well sign-posted and easy to access
Staff helpful and assistance available	Staff helpful and assistance available
Several references made to seating, automatic doors and various facilities (shop, cash point, phone)	Some references made to seating, lifts and automatic doors

5.3.3 Wayfinding

The new JCUH is considerably larger than its predecessors South Cleveland Hospital and Middlesbrough General Hospital, and the research team was aware that this issue had raised some concerns among the staff and the patients. A characteristic feature of the JCUH is its low Plan Form. Its two- and three-storey structure makes the site larger and the walking distances longer than in a multi-storey building. The general comments made in the survey indicated that the long distances were indeed a worry for those who were feeling unwell or required assistance. However, in terms of wayfinding the results showed very little change from the pre- to the post-build survey, and in both Phases approximately 50% of the respondents stated that it was very easy to find the unit they were visiting and over 70% indicated that the unit was well sign-posted (Figs. 5.5 – 5.6). However, only 40% replied that the sign-posting was very easy to follow, and the post-build respondents were slightly less likely to say that the number of signs was sufficient (Figs. 5.7-5.8). The questions concerning wayfinding were only included in the outpatients', day case patients' and visitors' questionnaires.

Fig 5.7: How did you find getting to this unit?

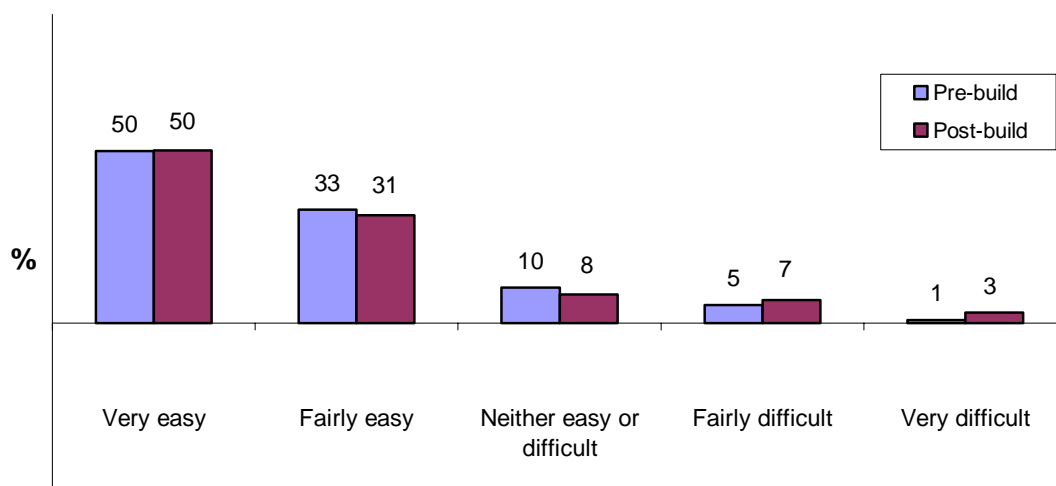


Fig 5.8: Was the unit well sign-posted?

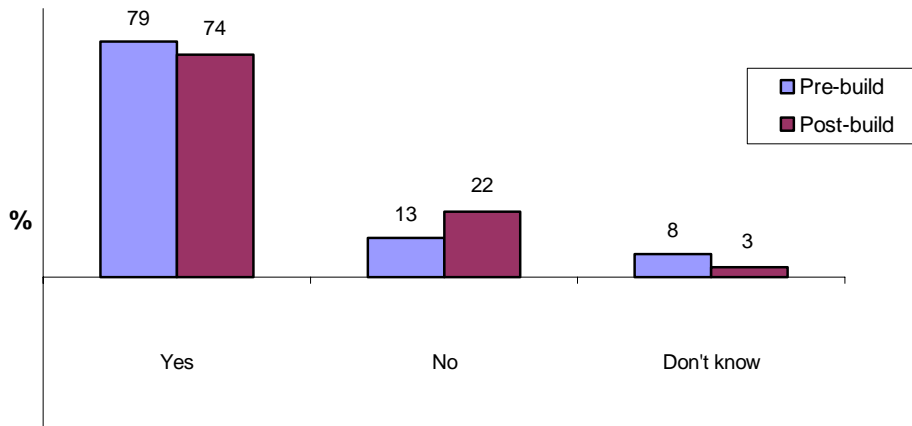


Fig 5.9: What did you think of the sign-posting?

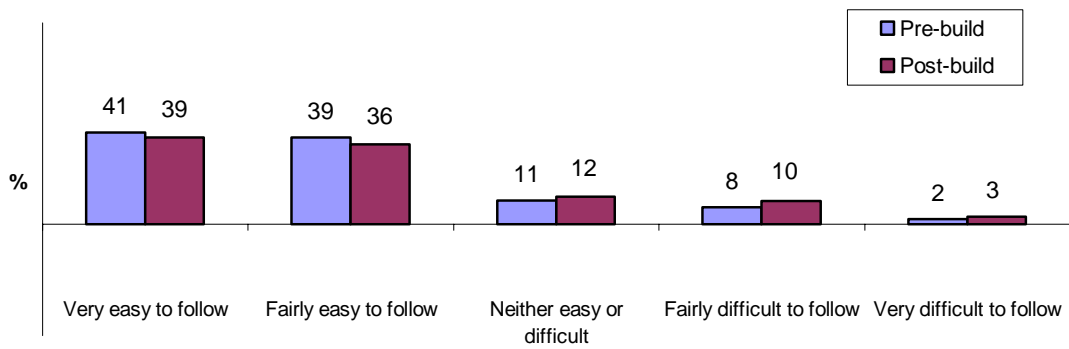
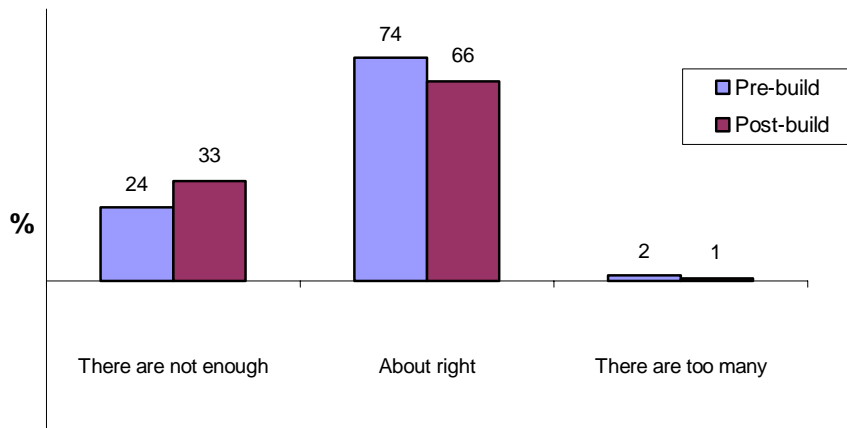


Fig 5.10: What did you think about the number of signs?



5.3.4 Artworks

An important aspect of the post-build hospital environment in the JCUH is the generous display of artwork and the use of design features such as the atrium and the courtyards. Most of the artwork and decorative features are located in the entrance areas, the main corridors and in the children’s units. The patient and visitor survey in the new JCUH involved the following four questions on artwork:

1. *Have you noticed any artwork in the hospital (either today or during previous visits)?*
2. *If yes, please tell us what it was and where it was.*
3. *Please add any comments you wish to make on the artwork you have seen in the hospital.*

379 adult patients and visitors (n=437) completed the first question and 191 (50%) of them indicated that they had noticed artwork in the JCUH. 169 respondents answered the second question and the following bullet points present some basic results concerning the artwork and features that had caught patients’ and visitors’ attention:

- The respondents were most likely to notice artwork located in the main corridors and the mall (68 references) and the entrance areas (28 references).
- Respondents visiting the Children's OPD or the Surgical Ward made several references to artwork, play areas, children's drawings, curtains etc. and the feedback was very positive.
- The adult patient areas received less attention but sometimes even a single picture on the wall was noticed, especially when the respondent had time to sit down and look around.
- The respondents were most likely to notice pictures, paintings, prints and photos in the corridors/mall (nearly 60 references).
- Approximately 30 references were made to etched/stained glass windows or murals, also located in the corridors/mall.
- The respondents made several references to artwork that related to local history, presented local scenery or was produced by a local artist, and the feedback was very positive.

81 respondents made general comments on the artwork and the vast majority of them were very positive. Less than ten respondents made negative comments and most of them suggested that art in the hospital is a waste of resources. Here are some examples of the positive comments about the artwork in the JCUH:

Very pleasing, very relaxing – gives the hospital a less clinical and more welcoming feel.

It is excellent – are you going to change it occasionally and with local views and artists?

There is a lot of artwork around, some of which is interesting as it relates to local history and culture...

Quite good – a little more around the wards and rooms would make it a lot more homely.

5.4 Conclusions

Quality of the environment for patients: Discussion

Overall the survey results were positive and showed improvement, although there were significant differences across the study areas. The patient environment had improved a great deal in the Neurosciences OPD, and positive results were also recorded in the Children's Services and the Disablement Services Centre. Furthermore, the results were rather stable for the two Trauma Wards, Trauma OPD and the Chemotherapy Day Unit. Finally, the results for the Neurology Ward day case services were quite disappointing and according to the patients the quality of the environment had declined in this area. The comparison of the post-build average scores from the staff survey indicated that the results were more positive in the Neurosciences OPD and the Children's Surgical Ward.

The aspects of the new patient environment that came forward as particularly successful were decor, materials and furniture. Also patients' privacy in consulting and treatment rooms and the quality of the toilet facilities had improved. However, the results showed that the benefits of the new design were not equally spread across the study areas, and the cross tabulations (Appendix 5.11) show that some of the post-build ratings in the staff survey were actually rather negative.

The comparison of the pre- and post-build stress and arousal scores from the patient survey did not show any association with the improved ratings on the quality of the hospital environment, and only the arousal scores gave some evidence of a relationship between poor ratings on the physical environment and respondents' diminished well-being. This evidence came from the Neurology Ward day case services where unfinished décor and fewer opportunities for

relaxation (e.g. drink/snack, reading, chatting) may have had a negative impact on patients' mood.

Quality of the environment for staff: Discussion

The results on the quality of the working environment were similar to the staff survey results on the quality of the patient areas. Firstly, the same two study areas (Neurosciences OPD and the Children's Surgical Ward) had improved most and reported the highest average scores in the post-build survey. Secondly, not all the study areas were equally pleased with the new hospital environment. The key issues concerned workflows and logistics, the quality of staff areas and the provision of staff facilities. The two above mentioned units and Trauma Ward 36 reported improvements in workflows and logistics from the pre- to the post-build survey, whilst the Children's OPD reported deterioration in terms of layout, circulation routes and the routes for patients outside the unit. Furthermore, the results from the Trauma OPD and Trauma Ward 34 indicated that the post-build respondents were less pleased with the location of the unit in the new hospital.

Cleanliness, the quality of staff areas and the provision of staff facilities had improved in a number of study areas, but the comparison of the post-build average scores revealed that there were hardly any differences between the units. The general comments indicated that the provision of staff room, kitchen, toilets, lockers and changing rooms was not as good as the staff had expected and this was an issue especially in the outpatient areas. The cross tabulations (Appendix 5.11) show that the staff were less positive about the new environment compared with the patients and the visitors, and that some of the post-build ratings were rather negative. Finally, the Trauma OPD showed deterioration in the SACL arousal scores and Trauma Ward 34 in the stress scores. Trauma OPD did not achieve particularly good results in the staff survey and therefore there may be a relationship between the quality of the physical environment and the SACL arousal scores. However, in both units the results could be linked with factors such as new working practices and short settling-in time after the move.

Summary of Conclusions

- There were significant differences between the study areas but two of them (Neurosciences OPD and Children's Surgical Ward) showed more consistent positive results.
- Overall the quality of the patient environment had improved and the good design outcomes related to general appearance, décor and patients' privacy.
- The results from the staff survey indicated that the general appearance and comfort of the staff environment had improved significantly in the ward areas and the Disablement Services Centre. However, the other study units showed very little improvement and the general comments indicated that the provision of staff rooms, kitchens, toilets, lockers and changing rooms was not adequate.
- Some areas reported problems relating to workflows and logistics in the new hospital.
- Staff were generally less positive than patients about the new environment.
- The comparison of the pre- and post-build SACL arousal scores gave some evidence of a relationship between poor ratings on the physical environment and patients' diminished well-being in the Neurology Ward day case services.
- Trauma OPD showed deterioration in the SACL arousal scores and Trauma Ward 34 in stress scores. Trauma OPD did not achieve particularly good results in the staff survey and therefore there may be a relationship between the quality of the physical environment and the SACL arousal scores. However, in both units the results could be linked with factors such as new working practices and short settling-in time after the move.
- The general areas of the hospital (including the Mall and South Entrance) were regarded as a considerable improvement on the previous accommodation.
- Patients and visitors were particularly impressed with the quality of light and spaciousness in the public areas of the JCUH.
- A substantial proportion of the patients and visitors surveyed (50%) had noticed the artworks at the JCUH.
- Artworks referencing the local area were particularly commented upon and appreciated by hospital users.

6.1 Introduction

Utilising a qualitative approach to data collection we set out to investigate and better understand the meaning of significant aspects of the MGH but more especially the JCUH for those who are employed and are treated there. This chapter begins with a brief account of our methods of data collection. The rest of the chapter consists of our presentation and commentary on this material under the eight thematic headings (see Ch. 2).

6.2 Methodology

This chapter draws on data collected in a number of different ways. Foremost among these is the semi-structured interview. We chose this method because it provided enough structure to focus our inquiries and permit comparison with quantitative data, but was flexible enough to allow informants, often unprompted, to identify issues of particular concern to them. Members of the research team interviewed a total of 60 individuals during the pre-build phase and 58 during the post-build phase. Table 6.1 provides details of the range of individuals interviewed. The Mall Questionnaire (see Appendix 6) was devised to carry out brief interviews with respondents in situ in the Mall so that we could gather on the spot, immediate responses to one of the key architectural features of the JCUH. Although participant observation would have been difficult in this case, we did undertake a Direct Observation study in order to gain an unscripted sense of how the hospital was being used in practice (Ch. 7 see section 7.4). We took approximately 200 photographs at the MGH and the JCUH. Finally, we examined a number of leaflets and pamphlets produced by South Tees Hospitals NHS Trust.

Table 6.1: Interview Details

SITE	INTERVIEW	
UNITS	Pre	Post
Chemotherapy	S/V/Pat/Par - 6	S/V/Pat/Par - 6
Child Outpatients	S/Par - 6	S/Par -6
Child Surgical	S/Par - 6	S/Par -6
Disablement Services	S/V/Pat/Par - 7	S/V/Pat/Par - 6
Neurology Day	S/V/Pat/Par - 7	S/V/Pat/Par - 6
Neurology Outpatients	S/V/Pat/Par - 7	S/V/Pat/Par - 6
Trauma 34	S/V/Pat/Par - 7	S/V/Pat/Par - 6
Trauma 36	S/V/Pat/Par - 7	S/V/Pat/Par - 6
Trauma Outpatients	S/V/Pat/Par - 7	S/V/Pat/Par - 6
Domestic Staff	n/a	2**
Porter Staff	n/a	2**
Total ~ interviews	60*	54* + 4** (58)
* Willing to be interviewed from survey.		
** Only interviewed post-build		

KEY:

S – Staff / SB – Staff Business Visitor / P – Patient /

VAP – Visitor Accompanying Patient / Par – Parent / Snr – Senior Staff

Interviews lasted 30-120 minutes and the majority were conducted at either MGH or the JCUH. Some patients were interviewed in their homes. Our aim was to interview as broad a spectrum of patients and staff as possible, generally within the units selected. We also interviewed cleaning and portering staff having successfully approached Sovereign⁶ for permission. In the case of the children’s ward we decided, for ethical reasons, to interview the parents of patients rather than patients themselves.

We began each interview with a set of questions, covering the themes we wished to discuss. However, if an interviewee brought up other issues relevant to our research we allowed time to

⁶ Sovereign is the private company responsible for cleaning and portering services at JCUH.

pursue that topic; we were flexible within a framework. All the interviews were then transcribed and coded.

At the start of the pre-build phase, in order to ensure comparability of approach across interviewers, we attended a small number of each others' interviews, with the respondents' permission. We also reviewed the transcripts of each others' interviews. Questions for the semi-structured interviews were generated from discussions within the team, bearing in mind the need for qualitative and quantitative research techniques to complement each other thematically. Once interviews had been completed, interviewers also consulted with each other and with the team as a whole in order to generate inductive coding categories for the data produced.

We drew up an interview schedule at the beginning the of the pre-build phase, focusing on the stated aims of our Outcomes Research and drawing on sections of the questionnaires targeted at staff and patients. We refined our questions before commencing the post-build phase, focussing on the following themes:

- Art and design (response to art/environment, importance of views)
- Coherence (sense of unity, comradeship)
- Cultures (difference between units/ hospitals, change of time)
- Efficiencies (processes, procedures, adjacencies, cleanliness, security)
- Interactions (between all actors, social support, privacy)
- Liaisons (between client group and design team, briefing process)
- Place attachment (personalisation, control, comparison with other building types)
- Roots (connection with local community, attitude towards/knowledge of James Cook)
- Routes (movement to and within hospital, landmarks for orientation)
- Senses (sight, hearing, touch, smell, taste, temperature)
- Transfer (input into the move, anticipation, old versus new)

- Vision (perceptions of architectural quality, quality of care)

After coding the transcripts and collecting relevant material under these headings, we agreed, as a team to collapse these headings into the following:

1. Visions and aspirations
2. Hospital environment
3. Institute concept
4. Architectural concept
5. Input into planning
6. Wayfinding
7. Space: public and private
8. Hospital/Community connections

Our intention in developing these themes was primarily to make the most efficient and effective use of the data we collected. We agreed, further, that the original themes were too abstract and that there were too many overlaps. By reducing the themes from twelve to eight we hope to have reduced these overlaps. The categories combine coverage of staff and patient expectations with various dimensions of their practical experience of observing and moving around hospital spaces. In this chapter, we have subdivided theme 2 (Hospital environment) to highlight a number of key issues that emerged as important for respondents during the interviews.

* Please note that we have removed hesitation and repetition from the quotations.

6.3 Results

In this chapter we have confined ourselves to presenting, contextualising and sometimes commenting briefly on the opinions of as broad a range of patients and staff as possible. Care should be taken not to generalise too broadly from these quotes and comments.

6.3.1 Visions and Aspirations

The choice of James Cook as the new name for the hospital was interpreted by many as a way of demonstrating pride and helping strengthen local identity. This is in line with the aspirations of the planning team.

Yeah, I like it yeah I think we should be proud of it. To be honest we haven't got an awful lot going for us in Middlesbrough but we're proud of that.

[Female clerical officer]

I think its good, think it's something to be proud of the James Cook, it's been well planned that way. Definitely.

[Nurse]

One Section Manager noted the wider benefits to the local community and how he felt the JCUH had raised the status of Middlesbrough as a regional referral centre for the NHS :

I think that the people who come in are fairly proud of it and they do have an excellent NHS facility which is accessible to all. On a site which is reasonably well accessed though not in the centre of town and perhaps not as convenient as Middlesbrough General for some things, but it's also generated jobs. There is undoubtedly benefits to the local economy and there's more medical students coming through and so on that does have an effect, brings jobs and kudos, effectively the Middlesbrough has now become a recognised regional centre almost on a par with Newcastle and Leeds, which before it definitely was not it was just a series of small hospitals in the district.

For some the new hospital sent a message to the *external* world:

I mean I think the main thing wrong with this area, the northeast, nothing was better said by Margaret Thatcher when she said, 'Don't moan. Don't be moaning me. See what you're good at.' You know, being a Middlesbrough fan, we've got a state of the art stadium there with nothing round it. The council can't even build a bloody decent road to it. And you should be proud of things like that. We've got a fantastic hospital. You tell the rest of the country we've got it.

[Father of patient]

Fig 6.1: The new front entrance of the JCUH



6.3.2 The Hospital Environment

a) *What is an ideal hospital environment?*

We asked staff and patients to describe their ideas of an ideal hospital environment, where cost would not be a constraining factor. We have a range of responses. Here a member of staff [disability services] was interviewed prior to the move to the new building. Note that the issue of scale is mentioned: that the new hospital will be too big, but that individual units are frequently insufficiently spacious.

[My ideal] would be on a much more human scale than what I can tell that the new [one will be] both for staff and for patients. It's gonna be quite cramped, I think the new one... and I think this place, even though it was only meant as a temporary building, has turned out to be actually quite well designed.

I don't know, wouldn't know where to start! I think you'd make... as here... you'd have the very obvious opening with electric doors and the reception as the hub.. and then everything go out from there [...] and just make it obvious where everything is... nice big toilets... and lots of disabled parking.

.. I dunno.. how do you design something that isn't intimidating?.. I think that you would have carpets, nice pictures on the wall, you'd have windows, nice wallpaper, that kind of thing... not too many uniforms running about... and not extremely loud buzzers.

Several respondents stressed the importance of windows and natural light, and fresh air.

It would be bright and airy preferably with windows...that's only a personal thing you know, I think it gives a more welcoming environment nice bright airy not too hot ...

[clerical officer]

From a patient perspective issues of space were also highlighted, but at the level of control of personal space and territory. This patient is describing her ideal ward with reference to her experience at the MGH:

If you can have a bit more space round your bed [so] you feel as if you've got your bit of space [...] and other people have got theirs and you mustn't go over that because that's theirs. [...]... but it's space is money isn't it, you know what I mean, I appreciate you know that maybe if they squash people a little bit more together then they can have an extra patient in and that after all is...the main criteria isn't it really getting patients in and out, but I just felt as if it was a bit like ... you know limited. I'll tell you what I did like though that they had in the second ward I went into they had little wardrobes along the side of the wall that you could put ...your things in ...but you didn't have a key or lock or anything.

Ideal environments: senior staff

Amongst senior clinicians there is significant divergence of views. One divisional manager believes the new hospital encapsulates his ideal environment for his division:

Well probably in a way it wouldn't be far away from the place at James Cook.

In contrast a senior clinician describes how the existing set up (at MGH) with combined office/consulting rooms is ideal and very flexible, but will be lost in the new building where these functions will be separated. He then explains the interrelationship between high quality space and attracting and retaining high quality staff.

My ideal model was to have offices of this size. This is a highly efficient office. It's that it's my base for all my paperwork, all my personal things, material stuff, but it's also a very busy clinical office - I see all my outpatients here, but I can spread out my legs whenever. There's no other claim to this room. [...] It's ample size: you get a patient, two relatives, a wheelchair and a nurse in here whereas in the very small clinical rooms in the outpatient suite on single site that won't be. [...] We've been very lucky with this particular model and this particular floor here...the ultimate flexibility

Asked whether quality of space makes a difference in terms of attracting and retaining staff, he replied:

I think it does yes I think it does [this argument] has been used vociferously in exchange of letters between some of my more aggressive colleagues from the planning department saying the RSPCA wouldn't allow you to keep animals in these [new] offices [laughs] I think that's a bit over the top [but] the argument [is] that if you're trying to recruit people... you know you have to demonstrate decent physical surroundings.

Ideals: Patient Centred Care

The concept of patient centred care is emphasised in the documentation from the Trust. What does it mean in practice? Here is the sceptical view of a senior clinician.

It's a lovely term. It means all things to all men doesn't it? It was originally 'patient focused care' but then it somehow metamorphosed into 'patient centred care'. It came across the Atlantic I think I understand but it is a good thing. It is like mother with an apple pie ... it's I don't know what I could say about it except it's tried to put the patient at the centre of things, which is fine as far as one can, but I think some doctors felt that it was a little bit insulting, that a number of managers that climbed on this bandwagon proclaiming patient centred care to the masses. Most doctors I hope would always put the patient at the centre always ... I hope ... I believe.

An elderly male patient explains what he would like in an ideal hospital, which understandably focuses on his medical needs:

I would want to feel that I was getting the best possible medical treatment, in as comfortable situation as possible and that financial resources of the hospital should be geared to that end.

A senior staff nurse emphasised the linkage between appearance and expectations of standards:

Just makes the place look smart you know I think when people think they...the standard of service I'm sure isn't any different but I think they think they're going to get a higher standard of service if the place looks smart and tidy and it's nice to see a hospital that looks clean. Tatty is associated with dirty.

b) Does this environment work for patients, staff and visitors?

This is a broad theme which touched on many aspects of working and being treated at the JCUH. Many interesting subthemes emerged in the course of the research and the results are grouped under these subthemes.

Patient control of environment

It is recognised that the ability to control aspects of your situation is a key factor in patient comfort and levels of satisfaction. Here an elderly male patient explains how in MGH he is able to control the lighting and temperature:

Sometimes you get in here and it can be so bright and you just wanted...you're tired and you just wanted to rest your eyes sort of thing and it's nice to be able to switch these off, and then you've just got that these side lights which give a more muted sort of thing and it's really nice to be able to have either the sun shining in, and like this person who's sitting here has switched it off and it makes a tremendous difference to the temperature in the room. The amount of sun that's shining in it ...the temperature in the room can really soar with the sun and a lot of people. I opened a window over there this morning - it's nice. It's lovely to be able to have the windows open slightly and sort of adjust your fresh air because you're here for quite a while.

This is possible also for patients in the new hospital:

And there was a little bit of light on the ceiling for staff to walk in and check you in the night and they wouldn't have to disturb you. Yes, I thought it was very well thought through. Yes, you could [control it]. Yes. Very easily. There was like a buzzer you could ring for help or assistance. The television, the speakers, earphones, you could listen to a

radio or TV through the earphones and things like that. You had all that controlling and the nightlight, you controlled that. [and the windows?] Yes, they could be opened.

[Male patient trauma ward]

Homeliness: decoration and personalisation processes

Control of the environment can extend to changing it. There is a close linkage between decoration, personalisation and attempts to achieve an environment which is commonly described as 'homely'. The ability to be in control of the environment is a key aspect of feeling at home. Here two porters explain how the children's work is used to decorate the wards:

And obviously on the kids' wards there's all they've just put like all the like clowns and all over the walls. I think so I think it makes it a little more like homely if anything. [and another porter adds] I think it's just that homeliness. Homeliness -- I think it's important for them when they come in is to be in a good frame of mind which gives the doctor a better chance of finding out what the situation is.

At particular times of year they also display work from outside:

The odd time we've had schools that have done things like for bonfire night and things like that and we've put them up but whichever time of year it is we can put things up

[Senior Staff Nurse, MGH]

In explaining the appearance of the older hospital (MGH) an information officer keeps referring to the idea of achieving homeliness:

They've just decorated it to look homely, really. It's a bit tatty at the edges, but that's ok. I think it doesn't look like a medical building at all, really. I think that's the way it is now, isn't it? They don't tend to paint everything white anymore, which is probably a good thing. Well, homely in the sense that woodchip isn't particularly homely! It's not clinical in that sense, it's homely in the -- you wouldn't need to be worried if you spilt a cup of coffee on the floor! Comfy chairs and tables. And there's a coffee machine and that kind of thing; it's all there, really.

Many staff were able to personalise their work environment. Two staff in MGH explain what they have done:

Yes, we all have a desk and shelving space and filing cabinets -- so you can personalise that, to a certain extent. I've got a calendar with men on it [quietly] [laughs] in various states of undress which can't be seen from the waiting area, I have to say, and another calendar with cats on it. But other than that it's impersonal. [The other secretaries] they look at my calendars! I don't think they have anything personal. Some of the Consultants have pictures of family up and some, one or two of the secretaries, have little cuddly things, you know, things that you stand on your monitor but on the whole, I think we're probably quite an impersonal bunch of people when we're at work!

(Senior Secretary)

Attitudes to the personalisation of space vary. One senior clinician explained how in the future he would not personalise his space as in the past because of how patients might interpret the presence of personal images and objects. Interestingly this coincides with a separation of offices from consulting rooms in the new building.

[These family pictures] have been there for twenty years. I haven't taken them down I really should now.

Fig 6.2 : The personalisation of work areas (MGH)



And when asked whether he thought they helped make the room potentially less intimidating:

Potentially, although there is a school of thought that believes doctors should not have photographs of their beaming children in their offices because the patients that are coming are patients and it's a reasonable argument. I've never thought of it until a colleague told me about this about a year ago. I think it is reasonable. I wouldn't now if I was just starting out put photographs of my lovely smiling children up.

Decision-making about décor

In the MGH, decisions about décor involved the staff of the particular spaces. This has continued during the rebuild at the JCUH and staff (at least in some departments) have had an input in deciding the colours and decoration of parts of the new hospital. Here a ward sister explains the process.

Yeah they if we ever needed painting or anything they always ask us and we get samples to look at. We all, you know, we decide, you know, say that'll go oh I don't want that and yeah they're pretty good like that. Oh we do because I've picked all the ones for the new [department in JCUH] but I can't even remember what they are now because it was that while ago! Colours and fabrics and you what you wanted on the walls, yeah, I've done that and it was me and my line manager; the divisional manager, we had all the samples all over and does that go with that. I'm going 'no, we want it modern!'

Fig 6.3: A corridor near the Surgical Paediatric Unit (JCUH)



This is expanded on by a unit manager. She begins by describing the process at the MGH and then explains how the new hospital will constrain possibilities for personalisation and decoration.

Well when we decorated this place there were about three or four managers involved and we just sort of said you know wouldn't it be nice if we had this, this, this and this, these colours -- and it just goes from there. So you get wallpaper samples and colour samples um the carpet actually looked quite nice at one time before I think it's the damp that's gone in the concrete that's made it that colour. Well it was quite nice a light grey a neutral colour and the pinks of course because it's a ladies room I think ladies prefer pinks to blues and greens.

We went on to talk about how she had made efforts to make it feel more agreeable, friendly.

And how some of those ideas might be translated in the new building:

Well they won't because we've been dictated to as to what [we] will have for wall floor coverings colours -- we were allowed a little bit of autonomy in choosing the colours. The colours haven't really been a problem but as in terms of décor and floor coverings we've had very little choice on that. As for putting pictures and things up we've been told that we're not allowed to put anything up on the walls at all, that we have to put a request in if something's to be put up on the wall and the service providers will send somebody round to put the picture up and will charge us for the privilege of doing it. No it's PFI, the building is only rented, so how that's going to work I've no idea as yet.

This is echoed by a physiotherapy assistant in the same department. She emphasises the importance of making the place welcoming for patients as well homely for both staff and patients. Again, this is about control of the work place by those who occupy it.

Well, I think on, pictures on the wall but apparently they don't agree with that. Well, it was said that they didn't think it was appropriate. Well, I think it looks nicer, I mean in the corridors they've got plenty of pictures and things. Which looks nice, so why not in the department? ... Once the cracks maybe start appearing and, oh, we'll hang a picture up and hide that do you think! It is like a second home isn't it? It's I think you know people should be able to put a few pictures up and whatever. And make it look welcoming, and homely.

Workplace as home: colleagues as extended family

This theme is expanded on by a ward sister who not only talks about the workplace as a home, but her colleagues as an extended family:

I think the staff are very homey as well ...I mean certainly I do. This is my second home. I've similar feelings I think about being here to my home environment. If people criticise the ward you tend to take it very personally. I feel the staff work very much as a team and it's almost like an extended family, in that you trust them ...you put a certain level of trust and faith in the rest of the staff and in the patients that come backwards and forwards that you develop a relationship with them and it is almost like an extended family, you feel very protective towards them.

A female clerical officer emphasises the importance of the people rather than the workplace.

It's a work place; it's the people that are important not particularly the work place for me.

This last comment was repeated by several interviewees -- both patients and staff.

Welcoming and friendly or cold and clinical? Comparing 'old' and 'new'

For some patients the close positive correlation between the approach of the staff and the appearance/characteristics of the building has been changed by the new hospital building. A female chemotherapy patient describes the response of her mother-in-law who regularly accompanies her to the new hospital.

She said, when we came to this one, it's different to the other area, she said it's more plain, even said the words clinical, more clinical than the old place. Because as soon as she went in the old one, she thought, oh this is friendly.

She was then asked whether she thought the friendliness wasn't just to do with the people then:

Oh, no. It felt more welcoming really. I mean, like I say, loads of times, the girls haven't changed, it's nothing to do with them, it's just the, because even the mother-in-law and John says, the girls haven't changed.

In contrast the wife of a patient in the new trauma ward was much more positive in her assessment. She refers to homely qualities in the new building:

In the ward they were very homely. Very homely. But everywhere you went in the hospital, there were very nice people. Very nice surroundings.

And what was it that made her 'feel at home':

Everything really. It was relaxing really. It wasn't like a hospital. It was relaxing. There were pictures on the walls. Art and plants in the corridors. Chairs all the way up the corridors. So if a patient got tired they could sit down. But they weren't like ordinary chairs. They were comfortable like two-seater sofas.

As expected, patients varied in their responses. Here, a female chemotherapy day patient is very critical of the absence of daylight in a quiet room:

Yeah, really. I think they could've thought more about, I suppose the décor could have, it's very clinical, very white. I suppose you can't put wallpaper in, can you. [This quiet room] it's quite small, no windows and if you shut the door, it's very claustrophobic. I came in with my husband and we came out again, because it was just...like you're in a coffin before you're in one. Yeah. I just can't get my head around that there's no window.

Another patient explains how she feels uncomfortable with the scale of the new building, again drawing on her previous experience as a point of comparison:

I think it's more comfortable going into MGH as a visitor than it is South Cleveland. I think it's cold in there isn't it. I don't know I just I always felt quite at home in MGH, bit scary South Cleveland. It's just so big it's just, I can't explain what it is, it's too big. The corridors are so wide and so long and it's you walk a mile down the corridor to get to a little ward and then you go to another ward at the other end of the hospital you've got that walk again. It's just so, so big.

A senior clinician/ divisional manager appears to be aware of these sentiments (without necessarily sharing them):

It's seen as the General being small friendly, bit old fashioned; quite a few people are a bit worried about the high-tech at James Cook.

The contrast between the friendliness of the old with the perceived impersonal nature of the new is explained by a clerical assistant (interviewed at MGH prior to the move) who suggests that the new hospital is more 'upmarket'. This is suggestive of class distinction (not explored here).

This would have to be like a personal opinion. I think that this hospital is not as impersonal and I feel as if we have more time with the patients. I think, although it's an old building, it's big and it's spacious, and you can find somewhere to sit, if you do want to sit on your own. There is always somewhere where you can sort of find a corner to sit in and, you know, get away from it if you want to, or... go and join in, you know, wherever. From my experience of only going over to James Cook, it just seems that there's so many people there and it's so big and impersonal. Everyone seems to be dashing about and the places seem, [with] the décor with the paintings and what have you are, you know, very upmarket. It all looks very nice but it does seem as if it's impersonal. I don't know, there's nothing, it doesn't seem to have, friendliness.

Significantly, MGH was seen as a part of the local community in way that the JCUH was not, or at least, it had not yet developed this position. The club run by staff and patients in the MGH Disablement Services Centre was very popular and seemed to symbolise the affection may had for MGH. One patient, when asked whether you could get lost in MGH, replied:

Well you can't cos it's just part of your street [laughs] part of your heritage.

We were surprised how important the concepts of homeliness and familiarity was for patients and how frequently it was raised in interviews. It should not be underestimated as an issue affecting patients' and staff responses to the new environment.

Comparing JCUH with different building types

A number of respondents have already remarked that the imagery and atmosphere of the JCUH does not conform to traditional expectations of a hospital. Many people compared it to other

building types, partly because of its appearance, but also for the perceived change in organisational culture implied by the new building:

Well it's a work place you know, it's a lot more it's a factory; it's a, you know, a people factory a lot more isn't it.

[Parent of disabled teenager]

This idea is expanded in the comments (made prior to the move) of a female clerical worker, who also raises the issue how people will adjust to the new place. Will increasing familiarity lead to more positive responses and a greater sense of ownership?

The other one (the JCUH) is a bit intimidating. It's massive and, and, you can't get parked. I remember it being built and we used to call it 'the chicken factory' because it looked like a factory, metal rigs, and it's just got bigger and bigger since then, and I think people find that a bit intimidating.

It's very difficult for people that have worked here for a long time, have got used to it and are familiar and all that, even if it is a bit tatty and grubby at the edges. And it's also difficult for patients that've been coming here for, you know, decades or, and it's more difficult for them to change. I think for people that are coming, to use the service first, I'm not quite sure how they'll react, it'll be normal for them, won't it, so. It's still very, I don't know it's like the Metro Centre, but upside-down and jiggled up, isn't it, really? You can't find anything [laughs]! And they have fabulous maps everywhere, don't they? And great big signs advertising everything and you still get manage to get lost in the Metro Centre, don't you? This is like that except, a hundred times worse, really - and you're ill!

This reference to shopping malls was made by a number of respondents. Many more believed a hotel reception area was a more accurate analogy:

I thought [the globe] was nice. That was outside the glass, the whole glass entrance. I thought it was quite impressive. It was almost like you were going into some sort of fancy.... As I say it felt more like going into a hotel reception than it did going into a hospital, and I thought that was a hospital thing.

[Mother of child patient]

Fig 6.4: A corner in the foyer, front entrance (JCUH)



A clerical officer relates this to her experience of another local hospital:

I went to North Tees - my sister was in there a couple of weeks ago - and you walk in. I thought this is lovely, like a four star hotel, and it was. Oh yes four star environment, because there were carpets on the floor, there were goldfish.

For a male patient in the new JCUH building is more like an art gallery or airport, and he does not believe this to be appropriate:

I tell you, the first time I actually went down and looked at the place, it looked like one of these new designer airports. If you showed me a photo of that atrium inside, I would've said modern art gallery, airport. The last thing on my mind is hospital. I've talked to people who said they hate it because, like older people, it's too much. I don't like that.

Perhaps the most revealing part of the same interview is when he describes how the new building suggests different codes of behaviour. He is unsure about the behaviour which might be appropriate in the new space. This is the very opposite of an environment in which people feel 'at home' and sense they are in control.

Why are they there? This area, the biggest area, the atrium as you walk in, it's got some sort of plaque or something saying it's some sort of communal meeting area for discussions of this, that and the other. If it's a meeting place, yes, but the only people who are actually going to meet there are actually reps. We actually saw people sitting there eating their lunches. Just eating sandwiches. It's not a place to eat a sandwich. Who are these areas designed for? Are they designed for visitors or staff or inpatients? There's no clarification, anything, you know, are you allowed to eat sandwiches?

And asked whether they felt they needed permission:

Yeah, that's the sort of thing because you're looking at, it's all leather seating. You think to yourself, oh, this cost a fortune these seats, and if I come here as a visitor you're thinking, oh I can't get in because it's another 10-15 minutes before open time. Right? If I sit in these seats is a big security guard going to come and go at me, 'Get out of here!'

Sensory impressions

One of the most common comments on the new hospital as a sensory experience related simply to the positive effects of moving into a new space. Thus a female staff member noted:

I think a brand new environment raises the morale of people who actually work there because I think with old and tatty [furnishings], you tend to become depressed and a 'couldn't care less' attitude, I think. But when something's nice, bright, I think it makes you feel better. Light and airy to me makes me feel better.

'Light' and 'airy' were two fairly common adjectives used to describe JCUH, and it is clear that the overall look of the place (as also revealed in interviews about art), rather than necessarily any specific areas, makes a positive impression. In ward areas, the issue of personal control over one's immediate environment again came to the fore (as it did in relation to 'interactions'), for instance over control of light and heat. Thus a female spouse of a patient, believed that greater control was beneficial:

Especially for somebody to be sort of lying down and not looking up at bright lights all the time. The lights were on the wall behind you, concealed.

And this was in contrast to your experience in the General?

Yes. And especially when the lights come on first thing in the morning and it's still fairly dark, which obviously it was in March/April, and all the lights would come on, and you'd be lying there like, and all these lights come flashing on up above you and, you know, if you are trying to sleep, because you don't get much sleep in hospitals during the night.

One complaint about light in the new hospital did occasionally emerge where there were no areas of 'natural light'.

Smell was rarely mentioned in interviews, though occasionally some patients referred to the fact that JCUH did not smell like a hospital (a largely positive comment, perhaps echoing those referring to its hotel-like qualities). However, sound clearly was an issue for people admitted to wards. In general, JCUH is characterised as quieter than MGH, and one male patient (and his wife) related this feature interestingly to issues of ward design:

The way it actually had been designed as a simple area where the nurses' station was. I mean, rather than the wards being at the end of one long corridor, it's been split up into various places. The ward actually split off from that central nurses' station, off in different directions, north, south, east, west, and the private rooms were very close to the nurses' station. So obviously we had, there's a bloke on the ward with me for the first two days who, he'd had a bump on the head, and up during the night all the time and the nurse would constantly have to move him about. That's the only problem you find. In the end he was transferred to another hospital.

The other sense referred to in interviews was that of the heat/cold experienced. A mixed picture emerged over whether the new hospital was too hot or too cold (presumably relating not only to differences in individual perception but also to different parts of the hospital). As with the idea of 'natural light', so 'fresh air' appeared to be valued positively, provided it was not too cold:

Oh, well, apart from the fact that those doors never stop opening. We went down there some months ago because I didn't know to fill in waiting for blood counts, by the time we came back, my veins had all seized up. It was so cold (female patient referring to the south entrance).

Access for the disabled

Unfortunately we were able to interview few disabled patients and no disabled staff. It did become apparent that disabled access is considered poor in the Children's Out-Patients' department at JCUH. The mother of one disabled child summed up her thoughts thus: 'Just not a lot of consideration gone into the development of the (Children's) outpatients department, I don't feel.'

The position of the disabled within the hospital was commented on by several interviewees. Their views were generally critical of current arrangements. The following remark is typical:

So as far as disabled services is concerned, I was astonished to find the hospital doesn't have one (a disablement officer). You know, they've got a disabled services unit

[Parent]

This is an area in which further research needs to be undertaken.

Cleanliness

An efficient hospital is a clean hospital and hospital cleanliness is necessarily a major objective of all NHS Trusts. The opinion of interviewees varied in this. Some patients and visitors show considerable sympathy for the cleaning staff:

I've been sat there when the cleaners have been rushing to get it done because the nurses need to be in. Especially on a children's ward, you're getting dirt almost every 10 minutes, do you know what I mean? Children being sick, it's normal! Come on. But they don't have a chance to clean. I can't even clean with my children in my own house. I need them out the way to get it done

[Visitor]

This interviewee suggested that the small bays typical of all wards must be a problem and that day rooms where patients could go in order to better facilitate cleaning might have improved things. The same interviewee voiced her concerns about cross-infection and MRSA caused by

cleaning staff who move between wards. In reply to our question regarding cleaning, one staff member in an out-patients' department replied:

In terms of cleaning, dreadful. Absolutely diabolical. We've had to call out the heavy mob, like, get the clinical matron involved because the standard of cleaning is dreadful

[Nursing staff]

One nursing manager explained how delighted she was when she saw on the ward plan that there would be 17 toilets, a far better provision than she had had at Middlesbrough General. Unfortunately, it became apparent soon after the transfer that there was insufficient cleaning time allocated to her and it was impossible to keep all the toilets clean resulting in complaints from patients and toilets being temporarily closed. Ward staff who have commented negatively about the cleaning of their ward are quick to point out that the cleaners are 'doing their best'. One staff member commented that it is one thing for the JCUH to look wonderful, but another to keep it looking that way. She went on to make a case for 'dedicated' cleaners, in other words cleaners responsible for a single ward, her point being that this would be more efficient. One patient, a professional hygienist in the food industry, was particularly critical of the lack of proper hygiene systems on the ward in which she had been treated. She observed that rubber gloves, although readily available, were seldom worn by staff and that staff almost never washed their hands before examining her:

Everybody touches a door handle to open it or to, you know, push it. And things like that. You're contaminated straight away and you've got to wash your hands as soon as you go into a department regardless. I was just shocked that with MRSA it's not happening.

[Patient]

She argued that there should be posters making clear what is expected of staff vis-à-vis hygiene and cleanliness and thought that the hospital needed to take action to ensure that systems for ensuring cleanliness were in place and being upheld by all staff, all the time.

Teething problems and major problems

'Teething problems', such as a leaky roof, were identified as problems but staff were willing to give the design team the benefit of the doubt in such cases, assuming that building on this scale is bound to have initial flaws. Teething problems are perceived as short term, things that will be put right in a relatively short time-span. Staff tend to distinguish between these and 'major faults in design' which are more or less permanent.

One medical staff member was concerned about the shortage of High Dependency Unit (HDU) beds but said that the unit was in fact processing patients with increasing efficiency. The shortage of HDU beds was a 'teething problem' which he believed would eventually be solved. Working on the same unit an administrative staff member believed that the working environment in the JCUH is 'a lot better - a hundred per cent better' (than at MGH). But she immediately qualified her enthusiasm thus:

...so we're not actually happy about the office space we've been given and the fact that we don't have anywhere to go to eat lunch or to have a break. Nothing was provided. That's one of the main things.

[Ward-based administrative staff]

On the whole, however, staff are complimentary regarding the design of the ward environment, though some exceptions emerged. For example, staff and patients are particularly concerned with the siting of toilets on Ward 36. The toilet facilities are situated directly opposite the nurses' station, which more or less ensures a considerable decrease in privacy for patients. In relation to that same ward nursing staff, while agreeing on the positive 'look' of the place, feel that the six-bedded bays leave too little space for their day-to-day routines. One member of staff had visited another ward in which toilet arrangements had been designed rather more sensitively leaving her confused about the reasons for the poor design in Ward 36.

Lack of windows in general but especially in toilets is a cause for some concern and also the inability for staff to control ambient temperature -- apart from opening and closing windows -- where they exist. As one interviewee remarked, in relation to a ward nursing station:

And you also have the lights on all the time, a lot of us get tired, stinky eyes, I know I certainly do. Whether or not it's to do with lack of ventilation or combination with light.

[Nursing staff]

Several interviewees commented on the disjointed nature of the JCUH as things currently stand. The mismatch of styles is evident, especially at the top of the Mall where two styles of interior design clash rather obviously. One member of staff commented that it was as if two completely different hospitals from different periods had been bolted together.

In relation to the South Entrance interviewees noted how much better a covered entrance would be:

And it's not covered. There's only like a small roof section in the middle. But the areas around it, the path, I would've liked to see some sort of cover across there simply because walking out of the hospital when I left, there was snow and ice as well, and I found that pretty lethal, I really did. I was walking out on two sticks.

The only additional facility suggested by staff for the wards was a room set aside for the use of parents on the Children's Ward. Several parents mentioned the facilities at the RVI in Newcastle: a room with comfortable chairs and tea and coffee-making facilities and perhaps a stop on the WRVS trolley route. Many parents spend many hours on this ward and felt that such a room would improve their and their child's experience of the James Cook immeasurably.

Yeah, everybody's got the bed down the side of the bed which is fine. I don't mind doing that. It's brilliant. You want to spend time with your child. But you do want your time away. You've had a hectic day, they've took blood off her, she's screamed all day, she's past herself. She's eventually gone to sleep and you've still got to sit with her. You know, when you're at home, you can go to bed, you can sit down and think, oh thank God for that, you know.

[Parent of child patient]

When asked whether the lack of a parents' rest room on or near the children's units diminished the efficiency of those units, parents tended to agree strongly:

It affects everybody. Yeah, because some children are ill when they go in there, some children just got a virus and they need antibiotics or what not or they're just on IVs but I have been there in situations where they can't get blood out of Jessica and they've tried all

day long. By the end of the day she's, well, in an uncontrollable state and we are. We're tense. We feel awful. You know, you feel for them but you're fed up because they've screamed and you know, you're tearing your hair out. They eventually go to sleep and what to you do? You sit there. There is no escape whatsoever. In them positions, you do need it. I mean, I've been on that ward when she's been fine. She's been fine for 8 months. But then they've told me, sorry, your daughter's never going to walk again. I ran out of that room -- this is the old ward 21 -- I've ran out of that room; there's nowhere to run to.

[Parent of patient]

The provision of refreshments continues to develop. A number of interviewees suggested the introduction of a coffee bar at the South Entrance. This is where many patients wait for transport home. Some wait for an hour or more. In the winter months the area can be chilly and there is nowhere at hand to buy a hot drink. Indeed, a coffee-bar was installed opposite the reception desk at the South Entrance (early in 2004) but was removed after a few months. Aesthetically, removal was the correct decision, but patients were left again without a place to buy a warm drink at that end of the hospital. A patient commented that a similar facility near the x-ray department might alleviate the stress of waiting.

Security is not widely perceived to be a problem. When theft of items from staff and patients have been reported, swift action has been taken to catch the thief and make the area safe. There were stories of handbags being snatched from cars but we interviewed no one who had seen or experienced such an incident.

6.3.3 Institute Concept

Adjacencies

The generation of efficiency through 'adjacencies' is a stated objective of the planning team (See Ch. 4). The aim is to situate those units which have a close structural and/or functional relationship as near to one another wherever that is feasible.

Generally speaking, staff are aware of the efforts made by planners and architects to build for adjacency efficiencies. One commonly felt problem however is the relatively great distance from some wards of the X-ray department and the pharmacy. There is a commonly shared feeling

that these units could have been located more centrally. One interviewee reported that a nurse from her ward (Ward 34, Trauma) escorting an elderly wheelchair patient to X-ray took two hours to make the round trip. This caused considerable problems for the staff who were left on the ward, which at that point was full.

Staff sometimes perceive there to be a gap between the stated objectives of the Trust in this regard and its achievement. Asked whether her unit was situated efficiently in regard to other units, one nurse replied:

No, because the units that we might have relations with are the orthopaedic wards which are at the end of the south corridor.

The porters are critical of the distances between some units:

The one bugbear that we have is A&E and MAU, which is the medical assessment unit, which is over here, which is ward one, and A&E, which is actually right over the far side. When a patient comes into A&E, he automatically, if he's being kept in, no matter what condition it is, they will be taken to MAU to be assessed – which is a vast distance for a start. When they get to MAU, the first thing they do is send them for an X-Ray, which is back next to where A&E is, so we have to take the patient back.

A senior medical staff member was ambivalent about the adjacencies achieved for his unit:

I think from the staff point of view the adjacencies are not that good, we have a couple of elective wards with our offices, we have 300 yards to walk to an operating theatre down on the floor below, we have a hell of way to walk to the Trauma ward. When somebody is injured say with a broken leg they are seen down there the decision is taken to admit them, they go in the lift upstairs and the Trauma Ward is above A&E dept. We then have to walk a good half a mile to get to the Trauma ward which is long way and a floor down. So that's a long way. It is a bit of a pain.

Some staff were perplexed to find that units very similar in size and function to their own were provided with different facilities; several mentioned inexplicable variations in the size, position and equipping of reception areas for instance.

However, staff in other units (notably chemo/radio-therapy and 'neuro' wards) feel that their position has been considerably improved in the rebuild. One nurse told us that patients are

happier to have the specialties they need 'in the same place'. Combined clinics further these efficiencies. In some cases, then, useful adjacencies have been achieved and are appreciated by staff and patients alike.

Unit design

There is also a perception among staff that the design of some units (particularly day units and outpatients departments) are not what they should be, that 'patient pathways' have not received sufficient attention in the new building. While the quantity of rooms is perceived to be adequate in the study units the quality often drew considerable criticism -- in particular, the size of offices, treatment rooms/cubicles and waiting areas. Office-based staff are particularly critical:

And there's not enough space to be able to do your job efficiently, really so you know, stress levels do get quite high and it's very frustrating

[Nursing staff]

Some, whose jobs combine administrative with clinical work, are particularly unhappy:

From a practical point of view, in my opinion, we should take a sledgehammer to all the internal walls and redesign it. Totally inappropriate for patient flows. Totally inappropriate in terms of capacity. I mean, the plans were done 7 years ago. Our activity in the last 5 years has gone up 30% and there is no way that that will ever accommodate our current levels of activity.

[Nursing staff]

And design is also thought to have a bearing on the well-being and therefore effectiveness of staff:

But the toilet provision for the number of staff is inappropriate. The beverage bay is, well, I don't know if you've seen it. I can show it to you whenever you go out if you want to have a look at it. But the beverage bay for the number of staff that might need to go and make -- and we were initially told that you couldn't have a cup of tea in your room so if you go down to the beverage bay to make a cup of tea, once you get 4 people in there, there's not enough oxygen for anybody else to be in the room. So the space for staff

facilities is also inappropriate for the number of staff here. And that in essence then makes the staff feel that the organization doesn't care about them

[Nursing staff]

The final sentence is worth noting. The interviewee reiterated this point a little later on during the same interview: 'If they care about the staff, then they didn't demonstrate that in designing the building.' It is hard to overestimate the importance to staff of feeling valued by and within the organisation. This interviewee did not believe that such weaknesses in design (as she saw them) were intentional but firmly believed that the outcome for staff morale was the same: 'And I don't believe that that's what the organisation wants them to feel. But that's certainly the way that it comes across in practicality.' Similarly, several staff members complained that their rooms had little or no storage space ('not even shelves'), leading to the increased possibility of losing files and other material. Partition walls are thought to be the main problem -- unable to bear the weight of shelving. The absence of window in offices was similarly cited as a cause of a decline in the effectiveness of staff. Windowless work-spaces caused considerable frustration among those staff who felt that they not only worked less efficiently in such conditions but were also made ill by them:

This doctor was very critical of his office space particularly concerning the lack of space and, critically, the absence of a window:

Well, in Middlesbrough General, the surgical offices are in, what in previous years, used to be the rheumatology department. These were made up into offices. They weren't fantastic. It was old, there was mould on the walls in parts, the carpet was a bit dirty and smelly. But it was of a reasonable size, and the secretary was next door, in her own office, with enough space to store stuff and I had a window.

[Medical staff]

Offices which are small and windowless, without air conditioning or the means to control temperature, appear to have an extremely demoralising effect on staff. We were told on several occasions that the quality of work done was affected negatively by such working conditions.

On the whole, the staff on the wards seem to be happier about the facilities provided for them. For example the provision of well-appointed nurse rest rooms has a beneficial impact on staff morale:

We have a sitting room which is nice, I like that, and you can go and have a cup of coffee and it's official, it's not like years ago when you poked around with this, that and the other.

[Nursing staff]

6.3.4 Architectural Concept

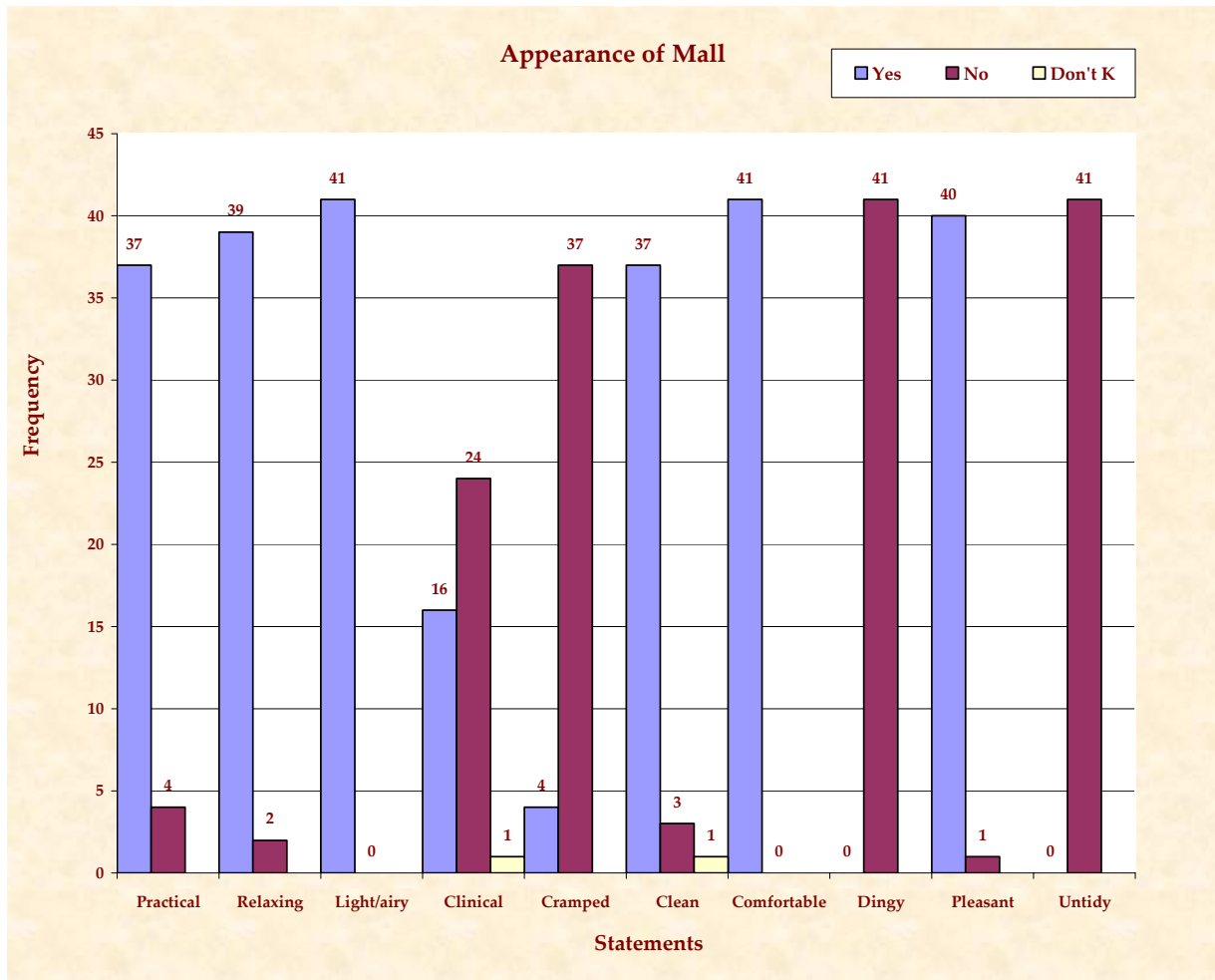
a) The Plan Form

The low rise Plan Form has been singled out for praise, especially from those who have experience of working in multi-storey hospitals. Such places are almost entirely dependent on the lift, a rather weak lynch-pin. The disadvantage - acknowledged in various ways by many staff members - is that there can be long walks between locations. A problem for many staff is the distance from their unit to others which they are connected to in some way.

b) The Mall

Results from the 41 hospital users interviewed in the Mall Questionnaire suggest that the Mall is very positively viewed according to the criteria used in the questionnaire survey. (Fig. 6.5)

Fig 6.5: Responses to descriptors of the Mall



The one criterion for which there was some disagreement was for the descriptor 'clinical' reflecting the difference of view we have already described by users of the hospital generally: that for some a 'clinical' appearance was a positive thing and for others it was not. It was this part of the hospital that was most frequently compared to an art gallery by respondents in both the Mall questionnaire and in the interviews. In most cases this comparison was a favourable one but in others it was not.

The interview material gave a bit more detail about what users liked. One of the porters thought the Mall was 'beautiful' and went on:

I think when you go down there [Mall] it's relaxing....it's a different atmosphere.

One senior manager confirmed this view:

I think certainly even now if you go down the main Mall people who come in there for the first time appreciate it. By and large it's light, it's airy and people appear to enjoy that space.

Significantly, also, one of the facilities managers recounted a story of a female patient who had not been looking forward to her move into the new hospital:

There was an elderly lady who came across [from MGH] and whilst she was leaving a huge Nightingale ward and coming to this bespoke accommodation with en-suite facilities....she wasn't at all happy. And later on the day of the move we found her in the Mall with her husband who had come in to visit her after she had been transferred across and she walked round the Atrium and she had a look at some of the artwork and sculptures that were on display and she was absolutely bowled over and smiling and saying this was a fantastic place.

Were users of the hospital taking time to enjoy the space by sitting in the areas designed? One patient described sitting under the Glasswork

Which is sort of a like more of a sail effect than the glass, although I think the glass is very restful.
and I find it quite peaceful and relaxing and sort of like, to me, sort of picture yourself at sea and things like that you know.

Fig 6.6 Glasswork Sculpture and Mall



Others users commented on the role of the Atrium area as ‘a very good meeting place for families, friends etc’ (patient comment in Mall questionnaire). The public use of the Mall and Atrium space was emphasised by one of the hospital managers:

You think this is close to a concert hall here.

Another manager who was involved in the Healing Arts programme described how the Atrium area had in fact been used in this way:

...we had Susanna Clark, who’s an ambassador for Middlesbrough, [an] opera singer, and it was fantastic and the acoustics down there; and the people who were there thought it was marvellous.

The Mall and Atrium areas, therefore, seemed to be fulfilling expectations that they would provide a central focus for the new hospital as a meeting and gathering place for staff and patients and for functions. However, at the time of our research some developments in the Mall

were yet to take place. Shops and a coffee shop were still to be opened and there was still an impression that the space was, as described by one member of the domestic staff, 'underused'. There was also some confusion about who was allowed to make use of the seating areas. One patient articulated this confusion:

Who are these areas designed for? Are they designed for visitors or staff or inpatients? There is no clarification, anything, you know, are you allowed to eat your sandwiches?

The hospital management were aware of this problem and related it to the fact that the Mall area had not at this time been sufficiently developed. It was felt that when the shops and other amenities had opened up, it would become clearer that the Mall was for everyone:

...so I think that once it opens out and once the shops are open, it'll be a completely different feel, once again.

[Manager]

However, one staff member commented in the Mall questionnaire that the use of the area for rest and refreshment was in danger of detracting from its aesthetic effect:

Vending machines spoil the overall effect. However, I guess they are a necessary evil!

Fig. 6.7: Vending Machine



c) Perceptions of architectural quality: scale

I think if the hospital hadn't been so pleasant he'd have gone round the twist, being in there for 3 ½ months.

[Wife of patient at JCUH]

Sentiments similar to the above were regularly expressed in the interviews. However many patients who were very positive about the new hospital simultaneously expressed concerns about the scale of the building. There is a perception that a larger building will inevitably lead to difficulties. Here the father of a patient begins by contrasting new and old:

Obviously it was an old dilapidated building I suppose. It was fairly prehistoric. The James Cook in comparison, it's brand new, state of the art. A smashing place. ... As hospitals go you have to be in that type of environment. But yeah, I think the hospital overall I think, you know, it's fantastic to have. [but] I honestly believe you're better off having smaller places. I think I always feel such a big place always looks like a recipe for disaster. Things getting lost, people not knowing their way around. I mean you actually

got people showing you where to go. [...] yeah, I mean, it's such an enormous complex.

6.3.5 Input into Planning the Hospital

This section explores the processes of liaison between the designers and planners of the building and some of the future users. We were interested in how the designers obtained information and how design ideas were communicated. The following sections draw extensively on a (pre-build) interview with a senior clinician who is a divisional manager, a member of both the hospital management team and the project team. He was involved in the processes from the start:

Very early on, from the inception of the project. We originally hoped that we'd have government money to bring the two hospitals together. We failed, we failed with that and then we went to the PFIs.

Importance of participation

The same senior clinician was asked if he was the only person involved from his division and he emphasised the wide range of involvement of staff, even those at relatively junior levels in his areas of responsibility. However we cannot assume that all groups had equal or equivalent involvement. Interestingly he referred to 'the design process', echoing the increasingly accepted idea that design is not something carried out exclusively by the designer, but must be a dialogue between designers and future users:

Many of us went [to meetings]: at least three other consultant neurologists, two neurosurgeons, a couple of neuro-radiologists, rehabilitation doctor plus the ward sisters plus secretaries - very broad representation....including ward sister level and secretarial level - we have all been involved in the design process. We have been involved, it's a good thing, or you could say it's a very clever ploy on behalf of somebody up there who will later turn round and say 'well you signed the plans off' [laughs].

Somebody like myself who was also on the management group had to try and maintain the broad point as well as the parochial [concerns]. There were inevitably [tensions] there always have been, there always will be. There was always somebody from the Trust

planning department, one or two, to see fair play as it were between ourselves who, tub thumping you know 'we want [such and such] in our offices' and the architects.

The senior secretary who works for him echoed the positive nature of the involvement, and explains how people were chosen to play a role:

I think it's just nice to be asked but obviously, everybody can't be asked. There are far too many people and there would be too many disagreements. So people were chosen generally on their position, you know, the ward managers, the department managers. But it is nice to, I think people feel, more valued if they're involved in the decision, process even if it was a limited amount - this shade of blue or... [laughs].

The next section examines the mechanics of the dialogue. How did the designers learn what was needed? The senior clinician was asked if the medical staff produced diagrams of what they felt would be appropriate:

Yeah there were sort of matrices drawn up: in an ideal world what should be juxtaposed with what else. But we were constrained of course by the fact that there is already a hospital on the site -- we are building a new hospital into South Cleveland hospital. It was a new build, re-build site project but yes we were conscious of, for example, neurosciences would like to be fairly close to eyes and ENT and we've achieved that.

We were talked through this at the very early stages by the initial architects, who were an American team who were very impressive. They were prompting us and we were new to this, they were prompting us and saying 'OK in Neurosciences, what do you want to be next to? We'll build it if we can.' It was extremely helpful, yes, extremely helpful. [They] would draw up draft plans at the design stage and what the scale of it was around 1:200 I've forgotten, and then we'd meet again in a month or two months and they'd show us what they'd drawn up to see if that squared with our ideas.

I thought it went very well on the whole. Just speaking of our own little patch we were very disappointed in some areas not to get what we wanted. We wanted an ideal world but there was compromise. On the whole we're getting too small. I mean there was a footprint of the building which was sacrosanct as far as I could tell. They couldn't increase this so we didn't get the space that we in Neurosciences thought that we needed even for that amount of [staff]. In the intervening years, four or five years, the department has grown [in accordance with] national plans and NHS expansion.

It is apparent from our interview data that some clinicians were fully incorporated into the planning process. This did not mean that all of their suggestions were incorporated into the final build which subsequently led to some feeling of discontentment.

Communication

We were particularly interested in the different ways that designers communicated with users, and vice versa. A senior clinician was asked about reading conventional plans and if they were given the appropriate information during the process:

I think we did yeah. Going back to the original, this American team and they were superb, absolutely outstanding in their grasp of our ignorance over points. How they tutored us, interpreted big plans, doing sketches. They were outstanding and we were comparing this with some exemplar plans which were by a company whose name I've forgotten but there was an exemplar which PFI had to beat and I don't know the details. PFI was all about value for money wasn't it? In the early days value for money and there was an exemplar plan by an American guy on behalf of the trust or the region which [was costed].

He was asked about how the architects enquired about how things were done currently, and how far it was an exercise in re-thinking working practices and challenging assumptions.

I think it was largely the latter although one example of how we [did this] was my proposition that we have this particular model: go back to my office cum consulting room because of its flexibility. So it has disadvantages if a patient has very smelly feet you've got that for the rest of the day.

He was then asked whether three dimensional models or computer simulations were used to communicate.

I don't think we used hi-tech as perhaps we could have done. Not that I know much about hi-tech. We didn't have virtual hospitals at an early stage though at a later stage I understand that Teesside University had a virtual [reality model]. I haven't seen it, it's supposed to be very good. The first time we went to see our department, we got access to most of it, to see the wards, how we had envisaged it in our mind's eye without seeing a model, to actually walk in and see the place, it was very much as we expected it to be.

When we saw our offices it was also as we expected ...very small and very dark and very dingy [laughter].

We were interested in understanding the structures related to decision-making. Here, a clinical director describes the process:

There was the management group and then there was the project team which was a very slightly smaller version of the management group that met quite often and then individual groups from thirty two, thirty three directorates of the Trust would meet on a very regular basis perhaps monthly. If we were scheduled to have a meeting with [my] directorate as I'm Clinical Director I would be invited and I would be invited to bring colleagues, senior nurses, secretaries, Divisional Manager, the Business Manager - a team of five or six.

We propagated information to some extent through our normal internal management structure, monthly meetings of the directorate and the division and these are really business meetings in which we go through finances targets etc, and they were a forum in which we could debate what was happening outside. We also widely distributed the drawing as they were brought out [which we] posted strategically within our little patch.

He was asked how all this extra work was fitted in:

With difficulty at times, but I must say I found the whole process so intriguing. I don't know, I'd always had a vague interest in architecture I think, and to see building, architecture and to see how this was developing I found it absolutely fascinating. I think most people have enjoyed the process. I think they've found it interesting, illuminating, at times frustrating because we were idealists.

We then examined the whether the involvement of staff would make a difference to the project, not least to make it easier to cope with some of the disappointments.

Oh yes, it made a huge difference. The most recent example I can give you, we're looking at fixtures for some of the rooms like in the waiting area in the main neurosciences outpatients and we were debating this so we got my secretary and the outpatient team leader in and said 'Right these are the colours you chose'... it's just an example of involvement at a fairly junior level although they play a crucial role but I think they enjoyed being empowered being part of a team. It's been sort of a team building exercise on massive scale.

Limited choice

In the following section a senior secretary explains the consultation process from her perspective. She is clearly aware of the limitations of this process.

Yeah, there's a lot of meetings. Each area has what we call a Commissioning Lead that attends all the various meetings, once a month or once a fortnight, in some cases... where we go to meet with the planning people who are co-ordinating everything. So then I would deal with, for example, there's a company dealing with the move of the furniture and purchasing of new furniture and equipment so he would deal, liaise with me about the consultants and secretaries.

The Commissioning Leads have been to meetings to discuss wall and floor colours, seats, this kind of thing. [...] you can't go wrong, really because there's a limited choice: certain floors are going to be a certain colour scheme so we were given charts but you couldn't really choose, you know. [...] because everything it was kind of a circle and everything blended in or contrasted so you couldn't really [go wrong]. [...] there's a certain pattern to follow. So the wards could choose from certain colours, depending on which floor they were on.

Well, we had plans, so we looked at the plans, while we were going through the furniture. [...] When we went to the meeting, it was about the colour schemes, the walls and floors and curtains were discussed at that point.

She was asked about more fundamental issues such as the configuration of spaces and the total amount of space available, and whether these were negotiable.

No, these meetings have been going on for a long time but they started off just with the Planning people and the Chiefs of the Divisions and the Divisional Managers. And obviously certain things were set out at that time, you know, just basic.. 'this is what you'll get!' ... there were only certain things that could change, you know, a limited amount of space. So how much was allowed to be changed was limited, as far as I know.

Earlier she had expressed reservations about the first floor location of the waiting room and also its small size. Who decided these things?

[slight pause] I don't honestly know. I would imagine that there'll have been experts in designing hospitals that made those decisions, not necessarily people within the organisation.

Here she acknowledges the idea of the 'expert' who has superior knowledge, but in the next answer she appears to imply that such experts could learn from studying the existing circumstances and consulting with staff. When asked whether anyone had come to find out how they had used the space, she replied:

I'm pretty sure they haven't [quietly].

Changes of staff in the design team

Over a long project change of staff is inevitable, but to ensure continuity it is vital that procedures are efficient. This doesn't seem to have always been the case. The prosthetics manager was asked whether there was much liaison with the architects:

Yes, lots, lots and lots. We've had quite a few meetings since ... a lot of meetings. We've met probably about five different architects. Every time we've been to planning meetings we've met different people who unfortunately have attended the meeting without the minutes from the previous meeting because somebody hasn't communicated that to them. So a lot of the issues we've been over and over and over a lot of times and to lots and lots of different people and I think this is where the confusions arise.

Despite liaison with users, many design decisions were taken without checking with the users, or even worse appeared not to draw on good practice for the disabled design.

One of the interesting things on our last visit where they were asking us to sign off everything and say yeah it was ok. We went into the reception and there was no way on earth anybody in a wheelchair could access the reception. There were two sets of double doors, they weren't automatic and they opened out, which again was a little bit disturbing when you've got architects that are used to dealing with these things. Yes and it was at normal height the handle ... that was quite, quite a shock to see that. Somebody didn't listen.

A Sister in the Children's Outpatients explains how lack of consultation inevitably leads to problems which need correcting later:

There is an outside play area. It's in a courtyard and I'm not very happy with it at the moment. There's things there that aren't very child-orientated that look nice but they're not very safe because obviously we've got safety to think about as well, cos children run about so we don't want any sharp edges or things that they might trip over and hurt themselves. They've got these great concrete bollards in the middle of the floor on the play area and big boulders at the moment. They're getting removed but er [half-laugh]. ...It obviously hadn't been thought of. It looks very nice, and it is nice to look at but they need to think a bit more of the safety issues, especially where children are going to be.

Flexibility of the design

An issue raised by many of the respondents was the fact that the building may not be responsive to changes and developments in staffing and medical practice. This inflexibility is undoubtedly a cause for concern, particularly given the inevitability of changes in health provision and technology within the lifetime of the building. The inflexibility illustrated above is echoed in the account of a Sister in the Children's Outpatients:

The plans were drawn up so long ago and things have changed so radically since then anyway. We've got more Doctors, you know, more clinics, so with the space that was designed initially it doesn't look like it, it might be enough. Yeah, I mean, the consulting rooms, as we have them now, are bigger than the new consulting rooms in the new area. So my main concern at the moment is looking at what we've got and seeing if it'll fit in the new place because they're about half the size. The consulting rooms they're a lot smaller, but that was so that we could get more rooms in, we've got extra rooms.. we've got 7 rooms now and there's going to be 11, but. [slight pause] it looks a bit smaller than it was.

Several senior medical staff strongly believed that the planning of their units - and the JCUH as a whole - left insufficient room for growth. Some worries were voiced about the space that would be available for things like treatment rooms, staff rest rooms and, particularly, waiting rooms. It was evident to one unit, well before the transfer, that their waiting room space would be reduced by about 60% in the new building at a time when throughput was increasing.

6.3.6 Wayfinding

Our questions regarding 'wayfinding' led us to consider two different areas: first, the route from home to the JCUH; second, pathways through the hospital. We will deal with each of these in turn.

Getting to the JCUH

We found that patient interviewees generally made the journey to the hospital by car, normally accompanied by a friend or relative. Some people are sent a map in the post while others are not, so establishing a pattern is difficult. People who travel to and from the JCUH by bus will be relieved when the buses are routed through the hospital and bus shelters are provided.

Rumours were mentioned to us that if staff lived within a three mile radius of the hospital then they would not be allowed to drive to work, and that there might be a series of buses with nominated pick-up points for staff. Neither of these rumours appear to have been grounded in fact. Nevertheless, such issues were a serious cause for concern among staff prior to the transfer.

At the time of carrying out interviews, access by bus was rather poor. People from most of Middlesbrough were taking two buses. This probably explains, at least to some extent, the pressure on the car-parking facilities. Patients described their route to the hospital in some detail and none of them had problems finding it.

Wayfinding in the hospital

Units in the new sections of the JCUH are perceived to have bright and welcoming entrances. For an increasing number of patients and staff, the route through the hospital begins at the new South Entrance. One member of staff described it thus:

Yes, I think the entrance is fantastic, the big atrium and the corridors moving through it and I love that there is not a fluorescent light bulb anywhere, you have proper lights, and we are starting to look at hospitals in a larger context. You make it look, you soften everything we don't have tar walls and the carbolic smell anymore, we have an environment which is much more like a hotel or an airport lounge which is functional

which has interest for patients and staff, it's pleasant to walk through and I think you feel that on a whole that what the planners have produced is both functional and aesthetically pleasing, I think it's good.

[Medical staff]

Comparing the North and South Entrances (see also Ch. 5 section 5.3.2), one patient had this to say:

Yeah, I think the North Entrance is pretty average and it's a crowded sort of area, I think. So I tend to come in the South Entrance, which is bright and airy, tapestries, murals, the big malls and its light paint, the tiles are nice and light and it's very roomy and airy and it's very nice. That's the way I came in this morning. Well I came in twice today and both times I came in the South Entrance, because I find the North Entrance seems to be crowded. A bit dark and dank. But the South is roomy. The people with wheelchairs have room to sit there and move around. In the north entrance, it seems to be a bit shuffly but the South Entrance, in my opinion, is excellent.

[Patient]

Some disabled patients, however, complained that, having struggled to reach an entrance, perhaps on crutches and with the help of friends or relatives, they could not find a wheelchair:

The other thing with the south entrance is, there aren't any wheelchairs there. Well, it's difficult to get one there.

[Patient]

Again, others' experiences were different and one congratulated the efficiency of a porter who 'seemed to conjure up a wheelchair from nowhere'. Staff were often complemented for their helpfulness in wayfinding and staff themselves were aware of their role in helping people find their way around:

And we get people stopping us all the time: 'can you show me where so-and-so is?' And on our floor there's a sign pointing to ITU and places like that which isn't very clear. And my friend works on ward 23 which doesn't even get a mention....So some of them [the signs] are alright. but others aren't very clear.

Many interviewees were complimentary about the receptionists at the South Entrance. Helping people get away by ringing for taxis is clearly greatly appreciated.

Signage

Pre-transfer remarks made by some staff at MGH suggest that visitors and patients regularly called in at the Out-Patients reception desk asking for directions because they did not understand the signage. However, at least in the initial stages, the problem remained at JCUH as there were many comments made about the difficulty of finding one's way around.

Signage at the JCUH was understandably made difficult during a transitional period during which time a unit might remain in the same place while routes to it changed because of ongoing alterations. A patient in cardiology brought this issue to our attention, concluding:

It's like a maze and the other problem is that every time I come the corridors look different.
[Patient]

Other comments related to more complex issues:

Speaking to my brother for instance, ... the word 'radiology' confuses him. Why can't we just call it 'X-Ray', he says. You know, he comes and he's looking for the X-Ray department. Just simple things like that. I think people are not used to changes in terminology. It takes them a while to get used to these things. I mean, he's not un-intelligent, you know, but he said, what does radiology mean? And I said, well it covers a multitude of things now, not just X-Rays.

[Patient]

I think some of the signs in the main entrance are a bit confusing as we don't look at them now, I can remember that there was one list and I thought it was confusing. As it said first or second floor, but on this list it is not clear for Ward 34.

[Nursing staff]

One was annoyed that the first time he attended, there was no-one at the reception desk (at the South Entrance):

That's the bit that got me the first time. I thought that was just appalling really, not to have somebody there or a sign to say that there is nobody here between these hours or whatever. But to kind of wander in on a Saturday morning. I would imagine that all admissions to the wards are early admissions and I kind of got the impression that you're just left to your own devices. And far from a welcoming atmosphere, when you walk into

that, whether you go in as a prospective in patient or a visitor or whatever. I just think they really need to put some concentration into that area, a friendly face, ideally a couple of people in that area.

[Patient]

We are aware of the fact that these, and other related, issues have been identified by planners within the JCUH structure, as this comment indicates (the interviewee has just given an example where on letters sent to patients with instruction letters for where to go for an appointment the ward is referred to by name, whereas on signs in the hospital it is referred to by its ward number):

That's just an example, but there are some areas where this is happening. Because the last thing you want, the patient comes in at the end of the day, the patient comes in to be treated and anything else, our job is make that as easy as possible. So ideally they need to be able to get parked, need to be able to come in and they need clear signage to be able to get to the hospital, to their own department, so when they get treated, that's what the focus is. They don't want to be spending half an hour trying to find a parking spot, coming in, getting lost, going a long way, coming back, walking two miles, getting where they want to be and by that time they're so het-up and worked up, it's kind of like, I don't want to do this now.

[Administrative staff]

The signage is criticised quite heavily by some -- especially those patients who were treated in the hospital during the first few months after transfer. We found very few people (either staff or patients) who used other landmarks -- works of art for instance -- in their way-finding. One couple referred to the entrance 'past the globe' but they were unusual in using this kind of reference. In some cases the artwork seemed more of a distraction to those who were anxious and concentrating on finding their way.

To further underline the complexity of this issue, the signage is thought perfectly adequate by some, who have experienced no difficulty in finding their way around the JCUH:

Oh, no, it's fine. I mean, it's very well signposted and people are very pleased to direct you in the right direction. And as soon as you walk in, reception desk is right there, so, when we first came, we had to ask there, but they were very happy to be able to help you.

[Patient]

And again:

Most people in there are just 'oh it's just down here.' I mean, there's only two or three main corridors to think about. I don't think it's nearly as bad as some people are trying to make out how it is to find places. I've found everywhere I wanted to go.

[Parent of patient]

The provision of signage has continued to be developed by the Trust (see Ch.7 section 7.5.5).

Clearly, it will take a while for staff, patients and visitors to assimilate what is a new and rather innovative system of waymarking.

6.3.7 Space: Public and Private

While issues of privacy in hospitals are often debated in connection with the extent to which patients feel that they can achieve this (presumed) 'ideal' during treatment, our interviews uncovered a rather wider range of themes, relating not only to patient experience but also to other social interactions, taking in all users of the facilities.

Certain areas of the hospital, in its old and new forms, were perceived to be clearly 'public' in the sense that they involved the movement of unspecified people to and from other spaces. The most obvious examples of such spaces were the entrances and the cafés. However, we detected some ambiguity as to the use and 'ownership' of some areas of the rebuilt facility. This point is particularly true for the Atrium, as we have discussed:

It's all leather seating. You think to yourself, oh this cost a fortune these seats, and if I come here as a visitor you're thinking, oh I can't get in because it's another 10-15 minutes before open time. Right? If I sit in these seats is a big security guard going to come and go at me, 'Get off there, it's for staff.'

While such views were expressed by a patient, it is clear that staff themselves were not sure of the appropriateness of the Atrium as a place for lunch or other breaks:

Now, a lot of the girls have been bringing packed lunches with them and sitting in the Atrium. It's not used a great deal. There's tables, settees, and comfy chairs and they have

been told on numerous occasions that they're not allowed to sit out there and eat their lunch and that they'll have to move.

[Administrative worker]

Fig 6.8: Two 'pods' (seating areas) situated on either side of the mall.



Of concern to some staff was the occasional lack of provision of spaces of relaxation that would be closed to patients. In other words, some staff were clearly hoping for a common room in which to get away, however briefly, from work pressures, and were disappointed if such a space did not materialise. This concern over provision of spaces that can be seen as half-private and half-public was occasionally extended to patient provision, for instance in the following remark, which also reflects the fact that JCUH had to 'live up to' expectations over what moving to a new environment would bring:

Well I think what we are lacking in unfortunately - I was looking forward to having a day room for patients where we didn't at the General and our ward and also others general wards at the General did.

'Homes' versus 'hotels'

The question of the public/private divide was also expressed in the frequent comparison of new and old hospital spaces with either homes or hotels. The image of the hotel tended to refer to the new hospital as a luxurious place, whereas the image of 'home' was more often invoked in relation to the idea of hospital as a place where levels of domestic comfort or privacy could be achieved. It is clear from our interview data that, at least with regard to the dimension of 'domesticity', Middlesbrough General was highly regarded - the term quite often used to characterise the place is 'homey':

I like the paintings of the old hospitals and I'm sure lots of the older generation, Middlesbrough people, will like to see the old, because the ...[unclear]... in particular, was ...[unclear]... great affection for it. Very much a community spirit around there.

[Nursing staff]

Privacy and dignity

Many interviewees, particularly patients, referred explicitly to questions of privacy in treatment and recuperation. Certainly, there were some occasions noted when privacy was seen as unambiguously to be desired, even if it was not always achieved. Thus, one patient noted:

Going to the loo, all the loos seem to be around the nurses work station....Quite often that...every Tom, Dick and Harry stood around this work station too so I found it quite embarrassing, sort of like walking into the toilet....So you're very well aware, aren't you, using the loo that there's all these people just outside the door which, I don't think many people have thought about.

On frequent occasions what patients expressed was a desire to *control* the amounts of privacy as opposed to sociability they experienced in JCUH:

In the room I was in, there was four....You had your little bit of privacy and you could interact with the other patients very easily and it was also very pleasant for the staff as well because you could walk in one room and into another and there was a different atmosphere in each room.

Or again, from another patient:

Oh, yeah. You feel ok, there's a seat for your partner can sit next to you, so that's nice and then it goes sort of like that, so I mean you can just sit on your own if you want to or you can talk to people if you want to, so it's nice that you can do either really.

6.3.8 Hospital/Community Connections

The James Cook theme

The intention of linking the new hospital with the local community and its history is expressed in the naming of the new facility, celebrating the life of a local man, Captain James Cook, the famous 18th century explorer (Salmond, 2003). This strategy was largely praised by interviewees. Some told us that they very much appreciated the references to James Cook:

Yes, some of these etched windows, some of his quotes. Yes, I feel quite proud of him now. I did go through a time in my life when I thought that he caused a lot of problems, but I've changed now, and begin to think that Cook did as much good as harm.

[Patient]

Certainly the link with local identity (and yet of course with a figure who also travelled around the world) was made by many respondents:

Yeah, I like it yeah I think we should be proud of it. To be honest we haven't got an awful lot going for us in Middlesbrough but we're proud of that.

[Clerical officer]

I think it's good, think it's something to be proud of the James Cook, it's been well planned that way. Definitely.

[Nurse]

It gives us an identity. Yes, that is right, it gives us an identity.

[Sister]

Service departments and PR in particular have been keenly aware of the need to generate a 'corporate image', which we take to imply not least a unified identity on site. The JCUH replaces a number of pre-existing institutions and providing the new single site facility with a coherent image is not a straightforward matter. A male Head of Services noted:

I was in favour of the name changing because you were amalgamating basically three hospitals and to leave the name of one hospital would have sent out the wrong message. [...]. Calling it James Cook? Yeah, I think that was a good thing too, he is our most famous son, having read the books about him he was an amazing person no question, so I don't have any problem with that. There are loads of hospitals elsewhere named after famous people...Lister, lots and lots of hospitals and James Cook was definitely a person of enough stature to be recognised locally. I think that's a good thing.

There is also some evidence that, aside from mediating between three previous hospitals, the name appeared 'neutral' in another respect

I think that's good. I do. Well the 'James Cook University Hospital', well it's the area, isn't it? It's better than calling it after a councillor or a politician. (her husband adds) I wouldn't want it to be called the 'Tony Blair'.

[Female patient]

On the other hand, we also found a certain ambivalence about the name. One patient said that she was largely unaware that the hospital was themed and that with reference to James Cook 'there was not much of him about', at the same time suggesting:

If it is a namesake hospital, a mural of him would have been [good].... do many people even now know who James Cook is and you are coming to the James Cook hospital?

It remains true that staff and visitors apparently walk past what might otherwise be considered large-scale references to the explorer (such as the Globe and the Glasswork sails) without recognising them as such and sometimes without noticing them at all. Furthermore, some staff pointed out that without specifying a location the name could be confusing to new patients from outside Middlesbrough in particular.

Because of the James in it, I mean it's human nature, we phone people and say it's the James Cook University hospital and well, where's that? I don't know where that is. And you say, it's South Cleveland on Marton Road. And they say, oh I know South Cleveland.

[Ward staff]

This perception caused some to suggest that 'South Cleveland' would have been a better choice.

When you're saying the James Cook University Hospital, it makes its sound that it's something that's been built from scratch from brand new. Everything else is demolished and then they just suddenly made this, but hey didn't, they just extended. That's all that was done, yeah. So it would have been a lot easier for patients and staff for it to have been called South Cleveland. A lot of the time, you're making phone calls and you do find yourself tending to say, South Cleveland because everybody has known it as that for years. So it does seem as though it would have been easier to leave it as South Cleveland rather than changing it.

[Nursing staff]

Art and identity

We also assumed that one reason for theming the hospital with reference to James Cook was to create a coherent environment – that a single theme would unify the dozens of different units that comprise the hospital. In practice, the degree of awareness of the presence of this theme varied greatly among respondents, and not surprisingly a lack of knowledge of it was particularly notable among patients. For example when asked if he they were aware that any of the artwork was related to the theme of James Cook these male patients replied:

No, not in the slightest. [...] the thing around James Cook, myself I had absolutely no idea.

The James Cook theme? I wasn't really aware of the James Cook theme, to tell you the truth. [...] You know, you don't see the Endeavour and all these ships and like bits of cannons sticking about. [...] But James Cook, I suppose, is a local, historical figure. So it gives it some identity, North Tees, South Tees, so on. I didn't realise that it was a James Cook theme hospital, because it wasn't apparent to me.

[Male patient]

Although most of the commissioned artwork is based around Cook's voyages of discovery, there are many other items which draw on the very local imagery of Middlesbrough. For example the Transporter Bridge features prominently strongly in the curtains and the murals. The local and the distant are frequently juxtaposed, and is sometimes commented on positively.

Well on the ward we have James Cook himself and the Transporter bridge on the curtains. [...] That is quite nice actually and it gets patients interested as they are trying to spot out all the different things that they can see

[Staff nurse]

Some of the most enthusiastic responses came from patients discussing work with local themes and images. For example this male patient was recovering from a brain tumour and spent several months in the hospital. He was delighted to be able to link pictures in the hospital with his work as a lorry driver prior to his illness:

I mean, going up towards the caf, there was some pictures there of industrial areas. [...] Yeah. And what I was doing, my job was going into the industrial areas on the chemical plants. [...] I was looking at them and thinking, that looks like such and such. So I was doing this going up the corridor. [...] And having a look at the name of the picture. ...Well I'm not sure I thought it was such and such but they're saying it's such and such so I mean, I say I will – Cassocks was one, Billingham... and all the big chemical plants I used to take scrap metal out for the company I worked for. And that was my main job, driving skip wagons and taking the scrap out of the chemical plants. So I can recognise different places. [...] And you could see, well, that's chemical tanks where the gas is stored, and you could see all that and the scaffolding and things like that ...and I was putting them in the place I had seen them.

The references to local history and heritage seemed to be particularly valued. This appears to be one of the ways in which linkages between the hospital and community might be developed, as is clarified by these enthusiastic comments from the parent of a child patient:

I think Captain Cook's mother lived just over the way [...]. I mean I'm a school teacher myself, primary special needs, so we do a lot of our work on James Cook and the area as part of our subject matter that we're doing in schools. Captain Cook trails and the schoolhouse and...[...] It gives people a lot of things to look at and it gives interest and a nice feeling that this is a community hospital and this is what it's all about. Putting a stamp on things as well.

I did think there was a lovely mural on the wall, like a timeline on the wall that was opposite the pharmacy. And I thought that was wonderful because it showed the development of the hospital from where it had been, and then the involvement of when the infirmary came, and when the General came, and it had people – they were obviously important people at the time – on the wall. And I just thought that was lovely. A good indication of where the hospital had come from and where it was going to.

6.4 Conclusions

We have divided our conclusion into three sections, the first relating to general points; the second specifically to patients, and the third specifically to staff.

General

- The Atrium and Mall are regarded as successful aspects of the new JCUH.
- Despite this there is some confusion about the role of the Mall as it has not yet developed fully its 'village street' function.
- Rooms without natural light are considered unpleasant by patients and staff alike.
- There remains a wide spectrum of opinion regarding the 'formal' artwork on display at the JCUH.
- Reception staff are highly valued as welcoming and for their assistance with Wayfinding. When they are not available at the main reception desks this can cause confusion to those arriving.
- It remains to be seen the extent to which patients and staff accept and assimilate the James Cook theme.
- Many patients and visitors do not appear to notice the connection between the James Cook theme and the artwork.
- Public spaces are generally regarded as overgenerous, whereas as the treatment areas and offices are frequently criticised for being too small.
- There is evidence of pride in the new building and belief that it will play a positive role in the self-esteem and identity of the region

Patients

- Patients are, on the whole impressed with the JCUH.
- The size of the JCUH unnerves some patients.
- There is little evidence to suggest involvement of patients in decision-making about the new building.
- Wayfinding can be further improved.

- Further research should be carried out on the provision of facilities for disabled children. Staff might actively solicit comments and suggestions from parents with disabled children.
- The Trust should consider installing play areas in units (e.g. Audiology) where children are treated.
- Patients are generally happier when they have a measure of control over their immediate environment.
- 'Feeling at home' is a positive condition for hospital patients.
- A parents' lounge in or near the Children's Ward would be of considerable value.

Staff

- There was very extensive participation by staff in design/decision making process. This was regarded as positive despite the belief that key decisions (e.g. space allocations) were non negotiable.
- The long design period and change of design staff led to absence of continuity and may account for some design weaknesses
- Staff working on wards and out-patient units feel hampered by a lack of office space. This is especially true where such space is also used for examining patients.
- Adjacencies have been working for some staff, but not for others.
- The design process does not appear to have been able to accommodate changes to procedures and circumstances during the period of design and construction. Concern about the rigidity and inflexibility of the design and its ability to cope with future change.
- There is concern about the small size and absence of natural lighting in some consulting rooms.
- There is some concern on the part of unit staff that too few resources are allocated to cleaning.
- Staff feel engaged by the James Cook theme and it has helped to begin a process of connection to the JCUH and a sense of pride in the hospital.
- Staff vary in their reactions to the art displayed at the JCUH. While some believe that it is likely to help patients recover, others are more concerned about its cost and the extent to which more obviously 'useful' equipment was sacrificed in its purchase.

7.1 Introduction

The research described in this chapter represents a subset of the outcomes study. Besides the aim of contributing to a high quality hospital environment, the Trust attached specific aims to commissioned art works and arts programme developed at JCUH. In brief, these aims were as follows:

- To convey a sense of quality health care,
- To provide a therapeutic environment,
- To inspire confidence in the service provided,
- To assist with wayfinding,
- To build on existing community links.

The aim of the evaluation was to assess the success of these aims but also, following our inductive methodology, to determine what else hospital users took from the art work, and, indeed, whether they were aware of it at all. In addition, we have added a dimension which is missing from most hospital arts evaluation, that is analysis of the perspective of the commissioned artists themselves.

This chapter, therefore, will start with a description of the development of the arts programme at JCUH, details of its funding and of the commissioning process. We will go on to describe the methodologies employed in the research before presenting the results.

7.2 Background to the arts programme

The arts commissions programme appears to have originated in an Arts Plan drawn up as long ago as 1995 by South Tees Acute NHS Trust with Cleveland Arts. It proposed that 2.5% or c.£250,000 be allocated for artworks from the then much more modest capital budget for a single site plan. (If that target had later been adopted into the PFI plans 2.5% would have amounted to around £3 million.) The plan raised questions for discussion on whether a hospital arts programme should be 'high tech or crafts friendly?', attempting to push the envelope of art commissions and tease out a vision and value structure to underpin a commissions programme. It was suggested that the programme should reflect the hospital's regional catchment area in its choice of themes for the artworks and in the selection of artists and art forms (e.g. harnessing the North East's national reputation for glasswork). Special focus would be given to the use of art to assist way finding, identification of entrances, and invitation for patients/visitors to use social spaces. It included plans for performing arts development in the hospital after completion of a single site building programme and noted the need for a major evaluation of the art commissions. The selection process for artists would be partly open, with Cleveland Arts inviting a 'long list' of artists to submit slides and CV's, from which short lists would be drawn up for the Trust's consideration. Although the Arts Plan document seems to have been 'put on file' at the time and forgotten about – Planning and Estates staff had no, or only dim, recollection of it – it is remarkable how the thinking within this document has remained manifest throughout the Healing Arts Committee's programme.

In 1998 an Arts Project Committee Single Site Development was set up, to which Margaret McGloin, Assistant Director of Planning, in September that year tabled a list of aims and objectives, as follows:

Statement of Aims

1. To convey a sense of quality health care by the integration of arts projects in the environment and daily life of the hospital, thus promoting the general well being of staff, patients and visitors.
2. To use the therapeutic value of arts to provide a caring, sympathetic and relaxing atmosphere for patients and their relatives.
3. To inspire confidence in the service thus improving patients' physical and psychological well being.
4. To create, in all who visit the hospital, a positive and lasting impression of a quality service.
5. To help orientation and communication throughout the building by utilising the concept of the arts in the directional signing system.
6. To build on existing close community links with the hospital by increasing public interest and support for the Arts Project.

(So the aims of the arts programme had ideological intentions to convey 'quality health care' and 'quality service', as well as on a practical level to assist way-finding and build community links – thereby *servicing* a health agenda. These considerations were less paramount in the artists' thinking which was more a response to the designed space their work would go into.)

Margaret McGloin's report went on to outline objectives through which the aims would be achieved:

1. The incorporation of a series of commissions for permanent art and craft works in the building during or soon after its construction, which will be agreed by the Arts Project Committee.
2. The advancement of a continuing arts programme based on the strengthening and development of existing links with the local community and the forging of new working relationships with local and regional arts bodies by the Arts Project Committee. The programme will include projects for imaginative landscaping in the grounds as well as ensuring decoration meets the Project's aims.

3. The identification of specific responsibilities for care of the quality of environment within normal working procedures and of items, such as schedule for redecoration, which should be brought to the Committee's attention.
4. The continuing review of priorities, strategies and means of feedback in relation to the Arts Project and production of a brief Annual Report in which progress is measured against aims and objectives.
5. The agreement of briefs and budgets for individual commissions and projects and on selection procedures taking or noting advice from arts professionals who will be co-opted to the Committee as observers and advisers.
6. The development of funds on the signature of the Chairman and Secretary for projects agreed by the Committee and recorded in the minutes of the meetings.

Even at this early stage there is consideration given to the practical maintenance of artwork and a commitment to an ongoing rather than time-limited programme. With the advent of PFI, the Committee became known as the Single Site Arts Committee, who re-endorsed these aims and objectives at its meeting in January 2000. This Committee was chaired by Mrs. Audrey Collins with a membership of 20 comprising senior trust managers, clinical staff, academic and business interests. The latter included the Evening Gazette, reflecting the Committee's concern for transparency and positive media coverage, the Chair stating that funds for artworks should not be drawn from patient care budgets. It was agreed to adopt and promote a James Cook theme for the commissions programme, but to balance the historical perspective with 'contemporary feel'. As a manager in Planning and Estates explained it:

The reason for having a separate committee was so that it could be very transparent in terms of the finances, that the money for the arts was completely separate from the money for the hospital. Initially we decided we would like to commission a number of pieces of art work for the hospital as almost discreet packages and then the realisation came - wait a minute - this is bigger than all of this. This needs to be co-ordinated. It needs to be part of the whole. The focus was very much on integrating things. It was very much a case of asking 'why is it there?' and 'what's it for?' I think the 'globe' landmark feature is the best example of that. We were saying that we would really like something that symbolises this hospital, that we could see something in the future.

At the Committee's January 2000 meeting a core budget of £250,000 was ring fenced within PFI, and Mowlem was requested to identify 'milestone' dates so a commissions timetable could be drawn up. Commissions allocations were agreed from the £250,000 as follows:

South Entrance Globe	£100,000
Atrium Glass	£55,000
Benefactors' Panel	£10,800
Children's A&E	£12,000
Spinal Injuries Unit	£20,000

There were also to be fee allocations to HLM Architects and Cleveland Arts as contracting agent. Budgets were also to be determined for a decorative flooring scheme and courtyard artworks.

In March 2000 the Committee re-titled itself again as the Healing Arts Project Committee. The name changes may be significant in that they reflect a process of change within the Committee's discussions to seeing art commissions not as separate entities but as part of an ongoing process within the single site development. It denoted a therapeutic intent, a distinct thematic continuity and identity, and an intended 'legacy' as set out in the aims and objectives. Although it saw massive potential for the arts, it also took a pragmatic view, Chief Executive Bill Murray stating that "opportunities for the full integration of art may be missed and that construction of the hospital took full priority." (Minutes 15/3/00) This priority on hospital construction before integration of art had implications for delays and changes in the process of several art commissions, as discussed later.

At its next meeting in May 2000, the Healing Arts Committee agreed five priority areas for commissions: the new south main entrance, the children's trauma play area, the Mall, the atrium, and the Spinal Injuries Unit. That month, Cleveland Arts produced a project brief for artist/designers for all these areas, except the Spinal Injuries Unit. The Committee aimed through fundraising to match the £250,000 allocated within PFI, but had the confidence if necessary to underwrite the cost of schemes to get them into the hospital time-scale and plans.

Artists were selected from closed shortlists proposed by Cleveland Arts, and for the larger commissions design proposals were required. Northern Arts provided half (£2,000) of the costs for the design proposals from short-listed artists. There were pragmatic reasons for looking for artists based in the region for most of the commissions: "There was an underlying bias towards employing local people but I don't think we would have gone locally if we had not felt that what they were offering us was right. I think the other consideration was a little mercenary - you do get more for your money."

Two of the commissions identified in the programme at this stage did not subsequently come to fruition – engraved glass screens for the A&E entrance that were to be complementary to the main entrance 'landmark' sculpture were realised to be too costly, and a floor design by Jennie Ross that was put forward by the architects was dropped, partly on account of cost but also for more complex reasons regarding the viability of the design itself within the space.

Also, on occasion, the hospital's aspiration for an artwork and the reality of the environment did not match up, e.g. 'The Journey to Theatre' art installation:

There were a lot of constraints around health and safety and hygiene, and then you also have the logistics of where the artworks can go as there is so much signage in hospitals. Also when you get on main corridors where you may be impinging on the thoroughfare it does not make sense to have this 'children's route'. I remember when it was going up people were thinking 'what is this?' which is a bit of a shame. So it's not your own private corridor that you think of as the children's route. You are in the huge hospital space, so it loses a little.

[Fiona Rutherford]

By November 2000, the Committee had raised an additional £86,700 for the commissions, and by March 2003 had achieved a total budget of £515,700, as follows:

PFI	£250,000
Regional Health Authority	
Trust Fund via Newcastle and	

North Tyneside Health Authority	£122,000*
Mowlems	£11,700
Regional Arts Lottery	£30,000
Corus (via landfill tax relief)	£70,000
ICI	£20,000
Donations	£12,000

*NNTHA awarded £20,000 in 1999 for the Spinal Injuries Unit, £50,000 in 2000 for key arts and landmark projects, and £52,000 in 2001 for the Cleveland Child Assessment Unit.

Arts consultant Germaine Stanger was contracted in 2000 to develop an arts Lottery bid to support the 'journey to theatre' artist's residency in paediatrics, and the sensory installation and video for the Cleveland Unit. A £30,000 (maximum) award was less than the £50,000 the Committee had initially hoped for, but a later successful application was made to Northern Rock to help meet the shortfall.

In April 2003 all aspects of management of the commissions passed by agreement from Cleveland Arts to the hospital Trust. This followed an internal review by Cleveland Arts that determined it should henceforth concentrate on its education work and withdraw from public art management. In 2001-02 Cleveland Arts management of the commissions programme had been affected by a series of personnel changes in the organisation. So at this point, with Margaret Baily in post, the Trust took over full management at the crucial time when commissions were preparing for installation. At the operations level, the commissions remained driven by an holistic vision rather than by any obligation:

When this PFI was done it didn't have anything in the brief about art from the Department of Health end, from the NHS Estates end, but the art got in here because of the local commitment. Essentially I see it being like the pursuit of art initiatives for other public buildings some time ago. It's a commitment. It's down on paper and therefore once that's part of that, it has to be done. The only danger with that is if it was mandatory to do it you could lose something. You can be tokenistic and say we've got to appoint someone to achieve this but that may take the edge off it really and it becomes institutionalised.

[Margaret Baily]

Although the commissions programme was not materially progressed until fairly late in the PFI process, after financial close, a core budget for the arts with principles, aims and objectives was championed by the Trust throughout the process with some built-in allowance for installation costs. But opportunities for the artists to engage with the design process itself in the areas in which their works are placed were limited – i.e. they had control over colour palette, form and content of their work, but were less able to exert influence on decisions on the space itself in which their works are located. This is not unusual though it is generally felt in the public art sector that commissions are best realised when artists are involved in the wider design process itself from an early stage. Essentially the hospital seems to have approached art commissions as additionality: “It wasn't in the original architects' brief to provide art work so we weren't substituting anything really in that instance. We were adding something to it.” The gap between the early vision for an integrated art programme and the actual timetable for its delivery has meant the artworks are more a response to given spaces than integral to their design. The art commissions process was not therefore fundamentally different in this PFI context from processes used regularly for non-PFI hospital commissions and other public spaces.

7.3 The Context/The Works

The art evaluation has focused on the site-specific artworks and artist residencies commissioned through the Healing Arts Committee, outlined in Table 7.1 below:

Table 7.1: Site-specific artworks and artist residencies

DEPARTMENT	WORK	ARTIST	INSTALLATION DATE
Spinal Injuries	Glass panels in entrance, dining room and ward areas	Bridget Jones, Newcastle	June 2002
Spinal Injuries (pre-build at Hexham unit)	Poet in Residence	Kevin Cadwallender, Sunderland	Book published July 2002
Main Entrance	Landmark Feature – a large globe with a quadrant on the top (approximately 4 metres high)	Andrew Burton, Newcastle	March 2003
Reception	Clock (funded by Middlesbrough Rotary Club)	David Williams, Saltburn	February/March 2003
Reception/Atrium	Benefactors Panel Etched glass panel showing flora and fauna of southern hemisphere and space to put names	Chloe Buck, Saltburn	February/March 2003
Chapel	Stained glass window	Josie Kyme, Middlesbrough	2003
Atrium	Glass sculptures suspended from the ceiling around a walkway	Laura Johnston, Newcastle	February/March 2003
Paediatrics OPD	- Inlaid floor for Paediatric Waiting	Lee Brewster,	Floor July 2002

DEPARTMENT	WORK	ARTIST	INSTALLATION DATE
	<p>Room</p> <ul style="list-style-type: none"> - Furniture and wall panels for play area off the above waiting room - Computer Game 	<p>Darlington</p> <p>Chris Ellis, Whitby</p>	<p>Play room January/ February 2003</p> <p>December 2003</p>
Journey to Theatre	Artist-in-residence appointed March 2002, running workshops on the Paediatric Wards to establish a theme to decorate the corridors from the surgery ward to the operating theatre	Fiona Rutherford, Newcastle	January/February 2003
Cleveland Unit	Tees Dance Initiative working with a multi-media artist to produce an interactive piece of art for use by the children in this specialist unit	Dancer Amanda Drago, Teesside, and multimedia artist Bruno Martelli, London	July 2003
Interior Courtyard: The Mall	Watering Can and Flower – Steel Sculpture	Christopher Lisney	Nov 2003

In addition to these commissions, there are numerous paintings on long-term loan from Paintings In Hospitals displayed in the Mall and main corridors, temporary displays of craft works from Middlesbrough Craft Gallery, three large embroideries donated by The Embroiderers' Guild, wall murals in paediatrics, and photo-montage panels on the history of the hospital site that are located by the Pharmacy in the Mall. There is also at the main entrance a stainless steel design feature bearing the hospital's name, commissioned through sponsorship from Corus. And as well as the visual arts the hospital has since 2002 regularly presented performing arts events by both professional and amateur groups in the atrium on the Mall.

7.4 Methodology

The art works research has no pre-build phase because it was not possible to make a comparison with a similarly structured arts programme in the MGH, NRI or in SCH. This aspect of the research was a particular challenge to us as we wished to gather data about responses to the art works in ways other than asking hospital users what they thought. This has been done in previously in questionnaire surveys and in interviews. Clearly, this inevitably draws the attention of the respondent to the art work in question. In view of the importance placed on the role of the arts developments in the hospital, we wanted to find out not just what people thought when faced with a direct question about the works, but whether they actually noticed them in the first place.

In order to decide how to go about this we held a number of meetings of a subgroup of the research team to discuss literature from a number of disciplines, including anthropology, social geography and museum studies. The museum studies literature was particularly informative giving us the idea of 'direct observation' of hospital users as they passed the art works; and of in situ short structured interviews with respondents as they stood nearby a work (Macdonald, 2002; Macdonald, 1998). This literature also gave us the idea of the 'active audience' (Macdonald, 2002): the notion that audiences for the arts do not necessarily construe arts objects in ways intended by the artist or by curators. Until encountering this idea, we had assumed that

the art works would be interpreted by the hospital ‘audience’ in the light of their therapeutic effects. Awareness of this idea of the ‘active audience’ enabled us to be alert to responses to the works which were not related to the idea of the therapeutic environment. This was important as the hospital Trust, in their aims for the art, clearly saw the art as potentially having wider benefits than this.

After carrying out our literature review, we settled on the following methodologies for examining the impact of the art works (Table 7.2).

Table 7.2: Research methodologies used to examine the effects of the art works

Method	Rationale
1. Survey Questions	Numbers of users aware of art
2. Interviews with users	Interpretation and views of art
3. Interviews with artists	Experience of artists in hospital context
4. The Mall Questionnaire (See appendix)	In situ view of art
5. Direct Observation	Numbers aware/interacting with art
6. Examination of documentation from the Healing Arts Committee	Commissioning process
7. Examination of publicity materials	Trust’s presentation of art to wider public

Details of methodologies used

Details of methodologies 1 and 2 are provided in chapters 5 and 6. Separate interviews with the commissioned artists were carried out by our team member who had specific experience of arts

commissioning both in hospital and other public sectors. The Mall Questionnaire (see Appendix 6) was devised to carry out brief interviews with respondents in situ in the Mall adjacent to some of the main art works and design features so that we could gather on the spot, immediate responses. Direct observation was carried out on 3 occasions for one hour each at two of the main locations for the art works: in the main Atrium near the Glasswork, and by the South Entrance next to the Globe. Responses by passers by to the art works were recorded on a scale ranging from 'not notice' -- 'notice' -- 'extended look' -- 'touch' -- 'comment'. Any comments overheard were recorded. Finally, documentation was examined as listed in Table 7.1.

7.5 Results

These results are a collation of material collected by each of the methodologies listed in Table 7.1. Most of the material comes from the interviews carried out in the post-build phase of research but when other methodologies were more prominent this will be made clear. Results will be presented under the themes common to Ch's. 4-6, with the exception of results relating to the idea of the institute concept, which this chapter does not address. In addition, we will examine two further themes: 'Awareness and understanding of the art works by hospital users' (7.5.8), and 'The commissioned artists' involvement', looking at the effect that working in the hospital environment had on the artists practically and artistically, and at the management of the commissioning process (7.5.9).

7.5.1 Vision and Aspirations

It was clear from our on the spot analysis carried out via the Mall Questionnaire that immediate responses to the new hospital were that it impressed those coming into it. The comment 'very impressive' was repeated frequently by visitors and patients. The patients interviewed shared this view and related the high quality of the building to the art work on display:

..it's lovely, really impressive. It's been well thought out that, first impressions of when people come in is wow this is nice.

Another patient, when asked about the Globe sculpture at the South Entrance said:

To me, it represents world class because I think it is an absolute first class hospital.

The staff also felt that the artwork lent status to the building:

Makes you proud to be part of this hospital when it looks like an art gallery.

As well feeling that the building itself was impressive, respondents also thought that having a building of this quality was good for the community and gave Middlesbrough something to boast about. One patient, when asked about the James Cook theme on which some of the art works were based said:

I like it because I don't think the area of Middlesbrough and surrounding areas have a lot going for it....apart from James Cook.. ;

and another, commenting that the people of the North East were always moaning about not being as good as the South East, charged the interviewer to publicise what Middlesbrough had got:

We've got a fantastic hospital. You tell the rest of the country we've got it.

The overall impression was, therefore, that the building was impressive and was something for the wider community to be proud of. It was difficult, however, to find comments where patients and visitors connected the fact that they were impressed by the building with a feeling of greater confidence in the service provided, except for the patient who saw the Globe as representing that the hospital was 'world class standard'. On the contrary, two respondents, said that they viewed the focus on art works as a façade hiding lack of resources to carry out high quality health care. One nurse commented:

...I mean, I think it looks lovely. But in terms of the political side of the Trust, I think it, I don't know, I suppose it belies lack of infrastructure underneath, 'no knickers', I think.

A patient shared this view:

It looks brilliant as a piece of art. It's not there as a piece of art. It's more like going to airports all over the world. Breathtaking when you get inside them but just a way, a means of making it look good.

7.5.2 The Hospital Environment

a) *What is an ideal hospital environment?*

The main question for this theme was the extent to which respondents felt that an ideal hospital environment was one that included art works or not? Views were expressed on both sides of this argument. One patient said 'I don't think art is quite the answer', suggesting that it is difficult to please everyone and that as a patient, 'you want to be in and out as quick[ly] as you can.' Another patient felt that the art 'just seems to give the wrong impression', a sense that the hospital did not feel like a hospital. Others shared this feeling that the hospital was not 'hospitably' in feel, that it was more like a modern art gallery or an airport. Although a few respondents viewed this negatively:

Spare money if there is any should be allocated within the nursing and furnishing side of the operation rather than the 'arty farty' side of the operation.

[Patient]

most had a positive response to the fact that the hospital felt different to the old hospital:

...it's very sort of pretty and isn't hospitably. I'm very aware that it doesn't smell like a hospital.

[Patient]

The fact that the JCUH does not 'smell like a hospital' was a frequently recorded positive finding in this research. Those who felt positive about the fact that the hospital was not

'hospitally' did make connections between this and the art work. One patient who was asked if she had looked at the pictures on the walls said,

I haven't stopped to look at them but I have noticed, and thought that was nice. Takes the clinical aspect off a bit.

When pressed for views about what role they felt the art work might play in a hospital environment, one patient suggested that 'it adds to your confidence in the environment'. She told an anecdote about attending a private hospital where the hotel reception-like environment made her feel very confident in the care she might expect. In addition to this expectation, one member of staff suggested that the hospital had a role in providing people who would not normally attend art galleries with access to art:

... there's this perception that art is for a certain type and should belong to an art gallery...I think you should broaden that.

The hospital was, in fact, compared with a much publicised new art gallery on the Newcastle Gateshead quayside by one respondent in the Mall Questionnaire:

It looks like the Baltic art gallery in Newcastle, very impressive.

The artists, however, were most revealing about why they felt art had a role in the hospital environment. Laura Johnston expressed her view about what she expected might be the effect of her Glasswork:

The therapy I suppose is partly about distraction, but also I feel that there's a kind of uplifting effect. The way that it works with the light just seems to have some effect on how people feel.

And Bridget Jones, a stained glass artist, spoke of how her work as:

Persuading people about coloured glass, how moving it can be when it's mediating between a very light space and a very dark space.

Fig 7.1 Stained Glass by Bridget Jones in Spinal Injuries Unit
(Courtesy of South Tees Hospitals NHS Trust)



b) Does this environment work for patients, staff and visitors?

The question for this subsection was in what way did the artwork contribute or detract from the users experience of the hospital? As in the previous section, the negative view expressed was that the artwork did not really matter to patients. This was clearly articulated by one patient:

The artwork didn't mean anything to me, to be honest. It could've been cartoons on the wall, whatever, it could have been big red blobs, I just couldn't connect with it on either visit. Because I was so concentrated on trying to get where I needed to be.

There was no clear message that the artworks had a negative effect on the users' experience of the environment, just an impression of neutrality in those who were not negative about it. A frequent comment, however, was that money spent on the art would have been better directed towards more practical patient care. There was clearly a public relations job needing to be done to point out that the artworks had not been funded by the NHS.

The artwork on the whole was seen as making a positive contribution to the hospital environment by both patients and staff.

Yes, I think it is marvellous, ...you walk down the corridors and see all the pictures [and] you feel resuscitated having spend a morning in a busy clinic and that is extremely important...

[Senior Clinician]

Fig 7.2: Corridor at JCUH



The parent of a child who was attending an out-patient appointment thought that the artwork helped relieve his boredom:

And I thought it was interesting for my son because he was taking in the artwork on the floor while we were waiting for our appointment. It cut back the waiting time.

For one patient getting out of the ward was the 'highlight of your day' and the artwork contributed to that enjoyment: 'I think it is nicer than just seeing a bare wall.' A ward sister expressed the view that 'it might give a patient a feel good factor.' Another patient, disagreeing with the view that the art was a waste of money, felt that there were benefits for both patients and staff:

- Patient:* It's not taking any money away from the service that the hospital's actually giving. It's just making the facilities that little bit more pleasant for staff.
- Wife:* For people like me that don't like hospitals.
- Patient:* And visitors and patients.

A member of staff, who was involved in planning the Healing Arts programme, also commented on the beneficial effect of the fact that the JCUH did not seem like a hospital:

A lot of people have said it, even if it takes my mind off things for a while, I've forgotten I was in a hospital. I think...that's what we are trying to do, really...[it] can actually help the healing process.

Some users, while being positive about the artworks, had some practical criticisms.. One of the porters had difficulties with the rough flooring in the Mall:

...the new Mall I think is beautiful. You know, I think the tiled floor is a bit – when you take trollies, and you can hear 'bump, bump bump, bump...

One patient was frustrated about the placement of the works:

Have the art gallery part of it where it needs to be, where you're actually going to be sitting. How are you going to see it lying in a hospital bed?

It is clear that some patients felt that the artwork was focussed too much in the public areas rather than where in -patients who might wish to enjoy would be able to view it.

Artists' views of the effect of their work

The artists involved in creating the work emphasised engagement at the emotional level with the work and the relationships built up with audience or participants. On the other hand, references to artworks in the AEDET Design Toolkit are somewhat limited to how art assists way-finding and how 2D works are displayed. The artists at JCUH, however, have considered more deeply the specific circumstances of creating their work in a hospital and the intended effect on its particular audience:

People who are going to a hospital might never set foot out again you know, so what went through my mind was what one should be aspiring to do in a sculpture that goes outside a hospital. Are you attempting to calm people? I aimed to occupy their time because sculpturally there's quite a lot going on in that it is a simple image from a distance, but then it has got a surface that requires investigation.

[Andrew Burton]

The artists in residence took the opportunity to engage with the culture and value structure of where they worked and make connections between staff, patients and their families:

In the spinal injury ward you need to establish a relationship like a family. The sister in charge talked about how it should operate, but what she talked about was human values. In my opinion, as a poet, the nurses have got to be a priority in the spinal unit. The terminology changes but the core of anything has got to be respect for people. If you can't have love on a ward like that then how can you expect anything else?

[Kevin Cadwallender]

The artist involved in creating the children's Journey to Theatre also spent time on the ward in order to create her work.

I think there is a different sensitivity towards people as they are in a very vulnerable situation and the whole dynamic of the thing is very different. So I felt privileged for people to allow me into where they were. It was very sociable and enjoyable and provided a distraction. Some of the parents were pleased to see what their children could do, as maybe they had not seen their children working with art materials. The parents said they did not know they could do that.

[Fiona Rutherford]

7.5.3 The Architectural Concept: The Mall

The general features of the Mall have already been described in Ch. 6 (see section 6.3.4). In this chapter, we will discuss the additional impact of the artwork and arts programme in association with the Mall.

By common consent, probably the most obviously striking architectural feature of the JCUH is the large area (the Atrium) which lies just behind the South entrance at the start of the Mall.

One patient said, of the tapestries which hang there:

I have seen them but not had a good in-depth look. I mean, I walked through the other week and they had this fair thing on...I don't know what that was about. There were little stalls and things but nothing of real interest I don't think because I walked through.

The point worth making here is that few people stop on their way through the Atrium to look at the artwork on the walls (or at the 'sails' suspended from the ceiling).

A parent of a sick child generally admired the mall: 'Oh, it's nice, nicely decorated, the paintings and that. Many interviewees were very positive in their comments about the Mall: a nurse told us; 'It's beautiful, really impressed with the way it's been set out, really lovely.' And regarding the artwork in particular: 'Again it's lovely, really impressive. It's been well thought out that, first impressions of when people come in is wow, this is nice.'

A patient, sitting (for the first time) in the Atrium commented on the 'sails': (it's) sort of a like more of a sail effect than the glass, although I think the glass is very restful. She went on, 'I find it quite peaceful and relaxing and sort of like, to me, sort of picture yourself at sea and things like that, you know.'

Fig 7.3 : The Mall Glasswork
(Courtesy of South Tees Hospitals NHS Trust)



There was a sense that the Mall area had not yet come into its own because the facilities, such as shop and coffee areas has not yet opened:

It is underused. I mean they could use displays in there, they could have other things going on in there, but they don't seem to do it in there, it just seems to be a vast space – it's very nice, with the glass (unclear) and everything, its very nice, clean sharp, but it's underused I think.

However, a senior member of staff explained that the Mall

will open up once again [when]... you've got people that can gather and have a cup of tea, and possibly listen to concerts...So, the performances that have been in there, we had Susanna Clark, who's an ambassador for Middlesbrough Opera singer and it was fantastic and the acoustics down there and the people who were there thought it was marvellous.

A porter commented, succinctly: 'Yeah – the new Mall I think is beautiful.' And another member of staff: 'I think that's lovely, - I think there's some really nice parts – I think when you go down there [the Mall] it's relaxing...' And when asked, a porter, said that patients taken through the Mall have been very impressed: 'Yeah, they have actually, I've heard them say 'oh, isn't it nice down here – nice and bright, and...' you know, I do think it has a very good effect.'

7.5.4 Input into Planning the Hospital

We did not ask hospital users directly what they would have said about the artworks programme if they had had the chance to comment on it in advance. However, it is possible to infer some views from the interviews we carried out. It was clear from many of interviewees that they would not have allocated money to the artwork had they been asked beforehand, mainly because they saw this (wrongly in fact) as taking away resource from patient care:

If there has been a lot of money spent on theming it around James Cook then it is a waste of money because people are too ill to say 'that's nice', they want to get themselves better. The hospital is there to help them to get better not for a day out.

[Patient]

This view was sometimes expressed even when the interviewee appreciated the artwork and the appearance of the new hospital. One porter interviewed was asked about the Globe at the South Entrance:

I really don't think there is any need for it – I don't know what it cost –
so I don't think they should have wasted all that money on it. I mean, it looks nice down the Mall, but I think they could have used the money a bit better to be honest.
...so I don't think they should have

Artists' input into planning: Liaison with architects/engineers

The artists did have the chance to make comments on the hospital at the planning stage but because artists' involvement was relatively late in the PFI process, their liaison with the architects was limited. This sometimes resulted in the artist's frustration with the space and the presentation of the artwork within it:

There was discussion about possibly installing additional lighting but it's often the case that the architects have already plotted all that and it's quite tricky to get something added specifically for the artwork. And I now I wish I'd pushed that more to be honest. The thing about glass is that it really does respond to direct light in a quite dramatic way and in there it's not going to get that unfortunately.

[Laura Johnston]

In another case the artist found a more productive relationship with engineers:

I didn't really have much to do with the architects. I had quite a lot to do with Arups engineers, they were very good. The architects were less hands on really. I never really got a fix on who we were talking to at the architects. I don't think they were particularly interested actually, I never got the impression that they were. This isn't particularly a criticism. Landscape architects were a bit more helpful.

[Andrew Burton]

And one artist found the presentation of her work compromised by safety features that she was not aware of:

It was a very frustrating commission partly because there were architects in London, there were architects in Sheffield, there were architects on site, there were builders there, all different departments of builders. There was the hospital and there was Cleveland Arts. So that was six different people and I never knew who was going to make decisions about standards and safety, or whether something could go in, or who would give me a size. Having spent all this money on my glass, the contractors then built these absolutely horrible things that look like hospital beds from the Victorian period and stuck them in front of the doors so that people didn't get trapped in them. I began a campaign to just have plain glass ones. I was allowed to take them down to photograph a piece but I don't know whether they replaced them. They were just four angled sections bolted together and the whole thing looked...ugh!

[Bridget Jones]

Further on in to the commission process some artists experienced problems with the lines of communication:

It was very messy actually because there were continual changes of personnel. I'm not sure it caused a problem but it was a bit peculiar for us because the personnel at Cleveland Arts were continually changing. Which happens you know but there might have been occasions where I was trying to get some sort of change through because things change while you're making the thing and it was a very tight contract. It specified all sorts of things about the sculpture, it was going to be a certain height, certain materials, and of course in a contract you have to go through a process to get any sort of change agreed. It was a fairly lugubrious sort of process because people kept changing. I had to go through so many people.

[Andrew Burton]

And in one case the location of the artwork itself was changed, requiring a re-think on how it might be effectively displayed:

Originally they gave me an area in which it needed some curved screens. It would have cost about ten thousand just to get the curved screens. They were to go in this big long corridor, opposite each other or virtually next to each other. Then they discovered there wasn't enough room to get a wheelchair behind them to get into the toilets, so they hadn't really thought it through. Also it would have been difficult to attach them, because the ceiling there is a false ceiling and behind there are tubes and pipes and stuff.

[Chloe Buck]

7.5.5 Wayfinding

We were unable fully to assess the extent to which the themed artwork had any impact on hospital users' ability to find their way around the hospital. Just at the time that the fieldwork phase of research came to an end signs started to appear around the hospital making use of the James Cook theme and some of the related artwork to help guide people about. The images and the parts of the hospital they represented are listed below:

<i>Image</i>	<i>Area denoted</i>
The Globe	South area of hospital
Portrait of James Cook	North left side area
Ship	North right area
Kangaroo	Women's and Children's services
Middlesbrough Transporter Bridge	Cardiac services

One of the team was in the hospital just after these signs has been put up and asked some hospital visitors if they understood what they meant. The visitors were not sure. The reception staff at the South Entrance were also asked if they knew what parts of the hospital the signs were supposed to point to and they did not know. One of the PALS (Patient Advice and Liaison Service) volunteers who help with guiding visitors and patients around the hospital guessed that the Kangaroo meant 'maternity'. A passing member of staff also commented 'it looks like someone has run amok with stickers'. Clearly, these comments were only initial impressions within the first couple of days of the signage being put up. It was unfortunate that we did not have the opportunity to assess how this signage worked out, especially as it was the main way in which the hospital used artwork and the hospital's theme to assist in wayfinding.

There was some evidence of the role of the artworks in assisting Wayfinding. One patient in the survey commented on the 'prints on the walls and in the corridors' and suggested that:

Familiarisation with these enables one to prevent getting lost in space!

However, another visitor did not think that the art was helpful in this way:

Interviewer: Did you stop and look at the artwork?

Patient: o, not really. Like I say, I'm not really into art. You sort of glance as you walk past but you're looking for signs anyway. So it caught your eye, but nothing outstanding.

Interviewer: Did it help you perhaps when you came back again? You remembered the route because of certain things that you'd seen?

Patient : Yes. Just the notices, but not the artwork.

7.5.6 Space: Public and Private

Two main themes emerged in this section in respect of the artwork. The first was one that has been mentioned under section 7.5.2 (b), that the artwork in the public spaces such as the Mall and Atrium was much appreciated but that the private areas, such as the wards, were rather bare and uninteresting in comparison:

...The big passageway [Mall], yeah. At one time there were old newspaper cuttings up there [the historical murals] and you'd have to read every one of them sort of thing, when you walk by. So I think the passageways are quite interesting and then when you get to the actual wards, there's nothing, nothing there.

Another patient reflected that the wards seemed poky in comparison with the light airiness of the public areas:

At times you sometimes think is it wasted space; you think would they be better putting this space actually in the wards so you had more room in your actual own ward.

However, she also saw the benefits of the public areas to the life of the hospital and its community:

But then you find that the facilities are used particularly downstairs in the entrancy bits. The children loved it, because it was round about Christmas time and the concerts were going on...

The second point that emerged under this theme was that hospital users were unsure about who was permitted to make use of the facilities available in the public areas. This point was also discussed in 7.5.3. Both staff and patients appeared confused:

...they spent a lot of money on art, they spent a lot of money on making the south corridor [Mall] really lovely, but when you then go for your lunch and there's no space in the dining room to sit down, if you go and sit in the south corridor somebody tells you not to sit there.

[Nurse]

For the patients it was as if the context was almost too nicely decorated and furnished for them to be allowed to make use of it:

...it's all leather seating. You think to yourself, oh, this cost a fortune these seats, and if I come here as a visitor you're thinking, oh I can't get in because it's another 10-15 minutes before opening time, right? If I sit in these seats a big security guard is going to come and go at me, 'Get off there, it's for staff!'. [Patient]

Fig 7.4 Seating area in Mall



7.5.7 Hospital/Community Connections

One of the aims that the Trust included for the artworks was that they should help build links with the community. In the interviews patients and staff talked of the importance of these connections and of maintaining a sense of continuity with the past represented by the pre-existing hospitals. The Cook theme was seen as important in establishing these links:

...and now I've been into the new wing with all the art influence on the stained glass windows for instance...and it's got the trails, the Captain Cook trails around it etched into it.

....

It gives people a lot of things to look at and it gives interest and a nice feeling that this is a community hospital and this is what it's all about.

[Parent]

And one ward sister mentioned the cabinets in the Mall:

...the cabinets have the history of James Cook and it provides great interest in this area.

It was interesting that the most high profile commissioned works, the Glasswork and Globe, were not mentioned in this context. Those who discussed them in the interviews often interpreted them in different ways (see 7.5.8), not necessarily connecting them to the Cook theme to the same extent as the more obvious reference works like the artefacts in the cabinets or the etched glass.

Another frequently mentioned reference point for the region was the design on the curtains round the examination room beds which featured the Middlesbrough Transporter Bridge, made famous by its appearance in the film *Billy Elliot*, and other local landmarks :

The curtains are printed on one side, and there's a transporter bridge, there's the Stadium, the football stadium, there's Captain Cook, there's everything in the area, Whitby Abbey...

[Patient]

The only problem with the design was:

They're only printed on one side of it...you can't see them unless you turn them around. I turned them around to look. I thought they were really good.

[Patient]

The sense of continuity with previous generations who had been served by the pre-existing hospitals was represented for most respondents by the historical murals which were erected on the wall of the Mall at its North end where it joined onto the older part of the hospital.

Yes, when you walk along the corridor before you get to the old bit and you have the mural on the wall of the old North Riding and I think that they are fabulous..

[Patient]

And another patient said

I like the paintings of the old hospitals and I'm sure lots of the older generation, Middlesbrough people, will like to see the old...because they [had such] great affection for it. Very much a community spirit around here.

Fig 7.5 MGH Mural
(Courtesy of South Tees Hospitals NHS Trust) :



Another patient had personal reasons for being interested:

I really think that [the mural] was interesting simply because my dad used to be head porter at North Ormsby Hospital.

As described by a manager in charge of the presentation of the murals and some of the other artworks, they were pleased with the reactions to the murals because a lot of effort had been put into community involvement in them:

We actually were very anxious to get, not just staff but former members of staff, former patients, and older people...who have a lot of memories of the hospital, to get involved in these murals and we were very conscious as well that we didn't want just to close the doors on Middlesbrough General and North Riding, switch the light off and just say, right, that's it.

The manager in charge of public relations commented that it was the murals rather than the Cook related works that were drawing in visitors to the hospital for the sole purpose of looking at what was on the walls. However, the importance of the Cook theme in the eyes of the Trust management was emphasised by the fact that the hospital was hoping to become a site on the Cook Heritage Trail.

The public relations office at the hospital were clearly not depending on the Cook theme alone, therefore, to establish and maintain community links and ownership of the hospital that they felt was important. Cook was just one of a number of local references some of which involved the previous history of medical care in the community, and some of which were local landmarks. The Cook theme was regarded as key, however, in giving the hospital some sense of coherent identity and this point was grasped by the artists who were commissioned to work on it.

Artists' views on the role of the Cook theme

What has been unique in art commissioning at JCUH is the intent to achieve a thematic unity and corporate identity across the commissions programme through references in the artworks, both overt and implicit, to the voyages of Captain James Cook. Although a few artists had some

initial misgivings about this, all responded positively to the theme as it lent itself to a wide range of subject matter and interpretation, and they found the background reading on Cook to be fascinating.

Anything you might want to get your teeth into could come into navigation, science versus romanticism, the whole mythologising of Cook. I'd had this idea that I would like to do something with lettering (on the base of the landmark sculpture) because I'd become very interested in Cook's travels. I'd become interested in whether you could construct a kind of autobiography of Cook just by taking some of the place names and rearranging them so that they almost read like a cycle of human life, his life, and his very curious mind. It goes from Conception Bay to Cape Farewell. I can't remember now what the sequence of it is but it is of birth, adolescence, feeling positive and then being knocked back, and then travel.

[Andrew Burton]

The way I approach commissions is to look at the space and respond to how I feel people are going to experience a space on one level. I was very concerned about that and then alongside that trying to link it to the theme. I like the idea that people will move through the space and make links between different things they're going to see. So my response to the James Cook theme was the whole idea of exploration and the globe. It's interesting because although the form of it is like the Southern hemisphere of the globe and I've got these lines along it, actually when you look at it you probably wouldn't pick that up straight away at all, because it's much more the rigging that you see. And I like that because obviously that's a really good link to Cook and the scale of it in terms of rigging.

[Laura Johnston]

Another artist found that though the Cook theme offered rich possibilities for art workshops in paediatrics, it was less successful in adapting to her linoleum panel designs along a sparse long corridor that she felt 'stretched' her work and its visual impact:

We went to the Capt. Cook Museum, a fountain of information. I became a Capt. Cook bore! But it was the plants from the voyages that we started off with as you could use them in a fantastical way. All the plant imagery connected and attached up. I got

intrigued by the Endeavour itself and an initial thought was that maybe the piece would be more dynamic like a textile, as I liked the idea of the sails, something in movement. But I did not know what the corridor was like then. It came down to the fact it would have to be visually strong and simple.

[Fiona Rutherford]

And in the case of the poet-in-residence the Cook theme became a channel for empathy with the spinal injuries patients themselves:

I shared the research with Bridget Jones (glass artist for Spinal Injuries unit). Her research came from the naturalist who had gone on Cook's ship, how he described the ocean. And she used that for her glass panels. But the description of it was a lot longer than that and so beautiful, and I liked the way it was trying to spell out the experience of the ocean, the period of being in the doldrums, for example. I felt I'd experienced something like that with my back, when I was confined to a bedroom for two months and I couldn't walk properly. The Cook theme gave strong words. The names of the ships, Endeavour, Discovery and Resolution were ones that I thought were very resonant. I don't know why exactly the book had to be in three parts, but when I interviewed patients I was thinking they talk about the past as if it's someone else, they go through the process in the middle and then come out the other end reborn as a person again.

[Kevin Cadwallender]

For the hospital itself the Cook theme aspired to achieve three things: providing a corporate identity to the building, building community links, and a sense of participation in and ownership of the overall design:

If anyone has a right to use the title of James Cook it's the hospital that is five hundred metres and no more from where he was born, and Middlesbrough's woken up to that. They've got one of the most famous men around and when the BBC tried to find the twenty most famous Britons, Cook was number eleven. So we decided that for the first time ever, certainly in a thousand bed hospital, that the theme right through it would be Cook, his travels, the instruments.

[Bill Murray CEO]

7.5.8 Awareness/Interpretation/Views of Artworks

This section will discuss the extent to which artworks were noticed by hospital users and whether specific works were liked or not by users (see also Ch. 5 section 5.3.4). We also have some material on whether patients, staff and visitors connected with the works at any deeper level than just noticing them through the kinds of interpretative comments they made.

Awareness of works

We have a number of sources of information about hospital users' awareness of the artworks: the direct observation study, the Mall questionnaire and the interviews. The direct observation study enabled us to get an objective impression of whether the works caught to the eyes of those walking through the hospital or not. In the study carried out in the Atrium area a total of 274 passers by were observed during a lunch time period. 72% did not glance at any of the adjacent artworks, which included the tapestries, the Glasswork and the cabinets containing Cook memorabilia. A further 15% did notice, and 13% took what we described as an 'extended look'. A small proportion of those who engaged further in the works made comments such as 'this is posh' (referring to the Atrium area in general) and 'It's beautiful' (about the Glasswork). In the observational study adjacent to the Globe at the South Entrance, a similar number of passers by were observed over two one hour periods but a much smaller proportion made eye contact with the sculpture: only 9% in the first study dropping to 3% in the later study, which was carried out at a time when the passers by might have become more used to the Globe being there.

This methodological approach made it clear that most hospital users, as we would expect, did not see the artworks as something to stop and inspect. They were in the hospital either to work or to get to an appointment, and did not have time to study them. However, it was interesting, particularly in the Atrium study, to observe how often eyes were drawn to works. It was important that these works were placed in the line of vision of the passers by, as were the tapestries, which were the most commonly viewed works. The Glasswork sculpture did not draw the eye – despite the fact that it was a more striking work - as it was suspended from the ceiling of the Atrium and passers by would have had to look round the central corridor and up to the ceiling to view it.

Fig 7.6: Glasswork from below
(Courtesy of South Tees Hospitals NHS Trust)



One passing couple and a visiting group of 3 specifically interrupted their walk along the passageway as if they knew the Glasswork was there so that they could examine it and comment on it together. Viewing of the Globe was hampered by the fact that ambulances were frequently parked around it to pick up outpatients from the South Entrance. During the two hours of observation there was only a total of just under 20 minutes when the area around the Globe was free of obstruction.

Fig 7.7: Globe and ambulances



The interviews reflected this impression that patients, visitors and staff were not tending to make too much of viewing the works, but did, on the whole, like to see them there. One patient commented:

I think you pass and see a piece of art and think, that is nice, but you don't usually register it that much.

A porter, when asked about the murals said:

I never really took that much notice, to be honest – I know they are, I think they're of the old hospital or something, aren't they?

And a patient made a specific comparison with an art gallery in this way when discussing the artworks:

...yes you do notice them. You do look at them, but you don't stand and gaze at them like you would if you went to an art gallery.

Another patient explained, referring to the Globe sculpture:

There were loads of people in and out and people were looking at it as they walked past...[but] they haven't got time to go and inspect it and look at stuff like that.

The impression is that most people were rushing by, noticing the art, but not taking time to look at it or think much about what it meant. However, even the very fact of coming into contact with art at all seemed to make an impression on some hospital users, who did not see themselves as people who normally took much to do with art:

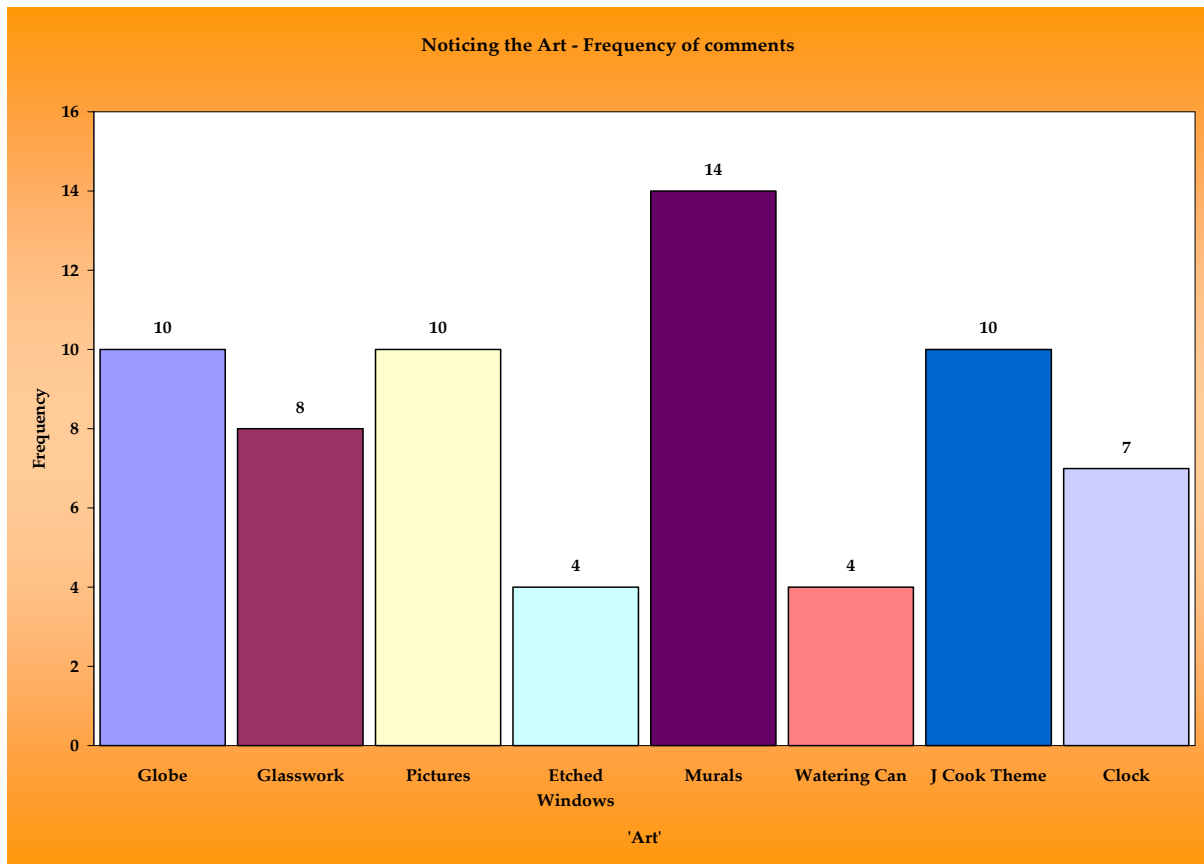
I mean, I've actually looked at the pictures round the corner there, and I know one's of Saltburn [a local town], there, for me to actually look at art!

[Member of domestic staff]

What was noticed?

In the short Mall questionnaire, passers by were asked were there any works that they had noticed? *Fig 7.2* indicates the most frequently mentioned artworks.

Fig 7.8: What did respondents in the Mall questionnaire notice?



The murals were the work most frequently mentioned in this part of the study, reflecting the local interest in the hospital’s previous history, and, perhaps, the fact that these displays were more immediately accessible than the artworks themselves.

What was liked?

All of the above works were mentioned positively by interviewees, giving us a bit more information on why particular works were popular with hospital users. The importance of the historical murals for users’ sense of continuity and connection with the previous history of the hospital has already been discussed in section 7.5.7. The glass etchings were also mentioned frequently and with pleasure:

The passageways, I could spend all day in some of the passageways because there’s some lovely etched windows.

[Patient]

Fig 7.9: Windows in Mall area



Others seemed charmed by the metal sculptures in the gardens which could be seen from the Mall areas :

Another thing I liked about the artwork are some of those metal sculptures in the little gardens.

[Patient]

One of these was a watering can seemingly held up by the flow of its own water:

I went down the new Mall earlier on, and I think there are some lovely things. The watering can, going out the window... .

[Member of domestic staff]

This exchange between a patient and his wife was characteristic of the kind of comments made by those who noticed and remembered the works:

Patient: What I saw I enjoyed.
Wife: Yeah, there's a wide variety of pictures. There was paintings, drawings, sketches.
Patient: There was some glass, wasn't there?
Wife: There was also a collage.
Patient : Yeah.
Wife : And there was the glass in the South entrance foyer.
Patient : Yeah.
Wife : That was lovely.

Interpretation of the works

As we have shown above, most comments from those who noticed the works went no further than saying they were 'nice' or 'lovely'. A few people made some interpretative comments which indicated that they had engaged with the works in a more detailed way. One child looking at the Globe had said, 'Look mummy! It's a giant beach ball!' A patient commented on the Glasswork:

... to me, ... the streams of the glass was to me like the shape of a sail...the glass that changes colour and things like that to me represented sails...

This patient also commented on the 'restfulness' of the glass because of this effect and the changing colours of the dichroic glass itself. A visitor thought the same:

It was just relaxing...with all the natural light coming in and the reflections from the glass.

One staff member, however, did not see the Glasswork as a restful image:

The sails at the front are made from the protective tiles off the Space Shuttle Columbia, so I've heard.

It is striking that someone could think that an artwork based in a hospital might represent a tragic space flight in which all the crew lost their lives! Clearly, it is not possible always to

predict how individuals will respond to artworks even in a hospital situation where they might be expected to interpret works in the light of the wider healing role of the hospital.

7.5.9 Artists' Involvement

There are a number of points that were raised by the involvement of the artists in the development and presentation of the hospital which are not relevant to the themes above. This section will discuss a) the effect working for the hospital has on the artists practically and artistically, and b) how the art was managed from commissioning by the Trust to cataloguing and curating for the future.

Effects that working for a hospital had on artists, artistically and practically

These were not 'safe' art commissions. Creating artwork that is sensitive to its health context and aims to have an inherent therapeutic effect can be emotive and challenging as the artists recognised. The commissions also challenged the artists' practice and the presentation of their work, and gave them the opportunity to work with new materials and develop new techniques in fabrication and installation:

Because dichroic glass is produced by depositing layers of oxides onto glass in a very controlled way, you can selectively reflect and transmit wavelengths of light. I just found it to be a really exciting material because not only do you transmit light through the glass but also it reflects another colour back. So suddenly you've got this material that's doing two things that no other glass seems to do really.

[Laura Johnston]

Lighting the sculpture was quite problematic. Originally I had some over-ambitious design ideas how it could be illuminated on a rotating basis and the engineers were really up for it because the night-time lighting was quite important. But it was very problematic because we couldn't really spot the thing from high up because you are going to get glare angles. A globe is actually a very hard thing to light. You can light the underside of it quite easily but getting any light straight on the top of it is quite difficult.

[Andrew Burton]

But some artists also felt their practice becoming constrained in trying to balance what the health sector and the contemporary art sector want:

We (glass artists) all feel we've been pushed into this thing, if you want to be contemporary, of not really doing stained glass at all because people perceive it as old fashioned with associations. I'm an artist who has to compete increasingly through the public art system where people have to be seen to be picking things that are contemporary and they can justify. So everything I do, especially on that scale, has to play to that particular gallery because I know that I'm only as good as my last job. Sometimes you know that something else might be more suitable, and have more of a resonance in a public space. I'm always trying to balance the whole business of responsibility to people who use the building and keeping one eye on the people that are going to be offering me my next job. Minimal is what people want at the moment. Commissioning bodies don't want over richness. So my practice exists in a gap between what is very recognisable to the general public and what at the other end is completely different, is very minimal and installation-based.

[Bridget Jones]

The artists alone cannot resolve this dilemma. Discussion needs to take place at national level between the NHS and the art sector on what constitutes 'quality' and 'contemporary practice' in arts in hospitals, recognising that what makes for quality in a health environment may be different from other kinds of public space. This is not an issue about 'dumbing down' but rather inciting debate on aesthetics and functionality in healthcare. The NHS and Arts Council have so far not risen to this debate, though it has implications for funding of hospital commissions. The situation is further aggravated by NHS publications that feature artworks but never credit the artists who made them, e.g. *The Art Of Good Health*, NHS Estates 2002. The anonymity of the artists can reduce their work to a 'design feature', possibly contributing to a lack of recognition by the public of art in hospitals as art.

Yet the NHS is ready for this debate and has interesting perspectives to bring to it. The Trust's Chief Executive Officer (CEO), for example, recognised that:

It's got to be the nicer end of art, not intruding on or jarring on the nerves but actually adding to a feeling of tranquillity and calming. I think that the healthcare system and most doctors/scientists now will agree it helps their job because one of the problems they have is our fear factor.

Furthermore, the Trust's CEO had an holistic vision of all aspects of design and art being interlinked, giving an additional value to the building that he felt to be intangible. As he observed:

I walked down The Mall the other week with the Chaplain and I said 'here's something about this building you can't put your finger on. It's more than the sum of its parts. It's that extra atmosphere.' The Chaplain said "you mean the 'soul' of the building?" He's right, that's it exactly.

Artists working in the public art field frequently talk about their work as striving to capture the spirit of a place or structure and connect it with the people who pass through it. Sensitivity to space and context informed all the commissioned artists in the planning of their work. The effect may not always come just from individual artworks in isolation but in their juxtaposition and relationship with everything else around them. The extent to which artwork is subliminally felt rather than explicitly noticed in the hospital environment is a challenge for future debate and research.

How the commissions were managed?

All the artists spoke highly of the support of Planning and Estates, particularly Margaret Baily, and considered that the Trust had the requisite skills for public art management when it came to practical details and installing the works. The withdrawal of Cleveland Arts from the management process allowed a more direct communication with the hospital that the artists preferred:

Their (Cleveland Arts) role had been envisaged to be much more of a link between the artist and the hospital. But obviously that just didn't happen. So when it was down to the hospital they really just wanted to know practical things and check everything was going okay.

[Laura Johnston]

In PFI developments, it would be worth considering whether the public art agency would be better placed on the contractor rather than client side so as to have influence on the role of artists

in the design process. Cleveland Arts' most effective role was in assisting the identification and selection of appropriate artists. The Trust's ability to take over all aspects of the programme later on suggests that acquiring the knowledge of commissioning in-house is a viable alternative to management by a public art agency. It can increase the sense of ownership and foster dialogue between arts and health sectors. The management style became refreshingly straightforward, de-mystifying what can appear outside the art world as a complex process. As the Planning and Estates manager explained:

I simply see myself as the facilitator really. That's the way I see what I have done. I've brought the relevant people round the table, reinforced the parameters and the time tabling and all that sort of thing. It got simpler.

Some of the artists interviewed felt they would have benefited from meeting each other, to understand better how the Cook theme was being interpreted and developed throughout the commissions programme, and to consider how they might complement each other:

From the hospital's point of view they were fully aware of how things fitted together from observing and selecting the work. But the artists were just supposed to deliver their bit. I think it would have been good for me to know how other people were dealing with spaces. There could have been more linkage actually if you're aware of once you've passed through this space there's going to be this here. I like the idea of working to create links when people go through a space rather than having individual artworks dotted through a building. There was never any sense of 'let's get the artists together, look at what everyone's doing', and get a sense of us all being a part of this route through the hospital.

[Laura Johnston]

But those that had the opportunity to collaborate found this aspect of their commissions particularly satisfying:

I was especially happy when we were doing the book together. I felt this is wonderful to be working with these people and making these decisions and collaborating, but then sad knowing that it would come to an end and you wouldn't have that working relationship again. It happens a lot on commissions. You feel as if you're part of a team, like you've got a job, and all of a sudden you don't, you leave it and you don't really have that relationship with these people again.

[Bridget Jones]

Because artists are in effect self-employed contractors, delays in the building programme and the hospitals' move to the single site affected the impetus of several artists' commissions, and in some cases had a knock-on effect on their financial stability and other work commitments:

I designed the screens three years ago, then forgot about it really. It was delayed a bit. Then there was the change of location.

[Chloe Buck]

It was a very long drawn out process involving a lot of plans and a lot of changes. You can lose the thread a bit, but I think that might be a function of PFI possibly, I don't know. If I was being very hard nosed about it, it actually was a terrible financial disaster for me in some ways because it lasted for such a long time, yet it was such a big project I couldn't really take on anything else. It was always about to happen and you can't work like that. I would probably do it differently now, the administration and stuff like writing, making phone calls, going to meetings. It was always something I was really pleased to be doing but it did last a very long time.

[Bridget Jones]

It does hang over, it impacts on you as you have other work going on, and you think that you should have finished that and you have to go back to it, but you cannot give it the attention that it had in the initial time scale which is a shame as you have lost the time and focus that you had on it as you had to move on.

[Fiona Rutherford]

The Trust was also attentive to matters of insurance and maintenance of the artworks, and the defining of responsibilities, though the complexity of this would require more discussion with PFI partners:

The easiest example is to say that if, say, someone damaged the artwork design on the paediatric floor, if it were wear and tear and it had to be replaced, then Sovereign would replace it to the cost of a new plain floor and then anything over and above that would have to be arts money. I also asked all the artists about an appropriate cleaning regime so that we have from them what should be done. We've had a joint meeting between ourselves and our PFI partners about this protocol of maintenance and what happens about damage and that sort of thing.

The commissions programme appear to have given the Trust a motivation to look at the role of art in the hospital as a long-term process:

We've actually achieved, more than achieved, the objectives that were set out in the beginning, as far as I can see anyway, so then in the long term we must ask how do we move forward?

At the time of interview, the Trust was also cataloguing all the artworks in the hospital, a sizeable number with the addition of the loaned works. This is unusual and exemplary practice in arts in hospitals. Again, it appears to stem from a sense of pride in the art collection and the building itself.

7.6 Conclusions

- JCUH was seen as an 'impressive' hospital and this impression was partly mediated by the artworks.
- Displaying art in hospitals can be a risky business for hospital Trusts. Trusts cannot necessarily predict how patients and other hospital users will respond to artworks.
- It is important that costs of hospital art do not come from money that might otherwise be spent on practical patient care. This PR job may need more attention at JCUH.
- Some patients and staff felt that the artworks gave the hospital a sense of not being like a hospital. For most this was positive, because their feelings about hospitals were negative. For others (a minority), they wanted to feel that they were in a clinical environment and they felt that the art detracted from this.
- Artworks were concentrated too much in public spaces not in wards for inpatients to enjoy
- Cook theme had less of impact on community than historical murals in terms of providing continuity and connection, despite detailed engagement of artists with the theme. No clear sense that the theme gave coherence to the hospital as a whole but it must be remembered that this study was carried out in the early stages of the new

hospital's use and that familiarity with the theme and its utility within the hospital might take time to develop.

- Artworks were liked but hospital users did not engage with them in any great detail: seen as a backdrop to the main concern of the hospital which was patient care.
- The presence of artworks in the hospital was bringing some hospital users into contact with art who would not normally think of themselves as consumers of art.
- The art commissions programme was well planned in advance, but was not integrated into the PFI design process itself.
- The Healing Arts Committee was an effective means for selecting and funding commissions, and maintaining positive PR and ownership of the programme.
- Cleveland Arts intermediary role became problematic over time.
- The Trust acquired expertise in-house to manage the commissions.
- Artists found interpretation of the Cook theme to be inspirational, challenging and emotionally engaging.
- More dialogue is needed between NHS and the arts sector on what constitutes quality in the healthcare environment.
- Delays in the building programme affected the artists' momentum and engagement with their commissions.
- Artists should have had more information earlier from architects on the design of the spaces for the artworks and factors that might impinge upon them.
- Artists felt that there was added value to their art in supporting the care environment.
- There was no opportunity for artists to understand the programme theme as a whole and meet other artists (except in the case of specific collaborations).
- The artist residencies added elements to the engagement of the programme with staff, patients and public.

As this study has dealt with such a wide variety of variables this chapter will first list the key conclusions of the study listed under our main themes. We will then go on to discuss these conclusions in relation to the original research questions posed. Finally, we will list our key recommendations.

Summary of Conclusions

8.1 Visions and Aspirations

What were the visions and aspirations of the Trust and the design team for the hospital.

- Key aspects of the Trust's design philosophy included:
 - patient centred care
 - the institute concept (a hospital within a hospital)
 - a mall

These aspirations were not lost sight of during the design process.

- The Trust was determined not to lose control of design quality after the appointment of the preferred bidder and was prepared to invest in senior staff time continuing to be allocated to progress meetings during the detailed design stage of the project.
- JCUH was seen as an 'impressive' hospital and this impression was partly mediated by the artworks and high quality of the South Entrance area and Mall.
- The Trust wished to signal continuity with the hospitals that were subsumed within JCUH and this was successfully maintained by the creation of the historical murals.

- It remains to be seen whether the James Cook theme assists in linking the hospital strongly with the Middlesbrough community.
- There is evidence of pride in the new building and of a belief that it will play a positive role in the self-esteem and identity of the region.

8.2 The Hospital Environment

8.2.1 What is an ideal hospital environment?

- Rooms without natural light are considered unpleasant by patients and staff alike.
- Patients are happier when they have a measure of control over their immediate environment.
- 'Feeling at home' is a positive condition for hospital patients.

8.2.2 How does the JCUH measure up?

- The survey results showed that there were significant differences in views about the quality of the environment between the study areas but two of them gave more consistent positive results.
- Overall, the quality of the patient environment had improved and the good design outcomes related to general appearance, décor and patients' privacy.
- Patients are impressed with the new areas of the JCUH.
- The results on the quality of the working environment were slightly less positive and the problems related to workflows, staff areas and staff facilities.
- Specifically, there is concern about the small size and absence of natural lighting in some consulting rooms.

- The patients were more positive about the hospital environment than the staff. However, surprisingly attitudes towards (?) many study areas and topics showed no change from the pre- to the post-build survey.
- There was some evidence of a relationship between a deterioration in the SACL arousal scores and poor ratings on the quality of the patient environment. This evidence came from the Neurology Ward day case services, where the dayroom used by the day case patients was not properly furnished and arranged at the time of the survey.
- Further research should be carried out on the provision of facilities for disabled children. Staff might actively solicit comments and suggestions from parents with disabled children.
- The Trust should consider installing play areas where children are treated (e.g. Audiology).
- A parents lounge in or near the Children's Ward would be of considerable value to hospital users.
- There is some concern on the part of unit staff that too few resources are allocated to cleaning.
- Some problems are being experienced with the Facilities Management services. The cost of minor alterations works is higher than anticipated and the work is taking longer to carry out than is desirable.
- The design brief required provision to be made for the spiritual needs of patients. A multifaith suite of rooms (?) and a holistic care centre are provided.

8.3 Architectural Concept (including Institute Concept, Mall and Plan Form)

- The institute concept has reduced travel distances for some patients and staff but this is not a universal feeling.
- The Mall is generally seen as a successful part of the new design.
- It was too early to assess the success of the Mall's role as a 'village street' as the shops and coffee areas were not fully in place at the time the research was carried out.
- The size of the JCUH unnerves some patients.

- The design does not appear to have been able to accommodate changes to procedures and circumstances during the period of design and construction. There are concerns about the ability of the design to cope with future change.

8.4 Input into Planning the Hospital

- There was clear leadership from the Chief Executive of the Trust which ensured that there was a robust management system achieved by continuous involvement during the design stage of the project by senior administrators and clinicians. This helped considerably to ensure that the design philosophy of the Trust was maintained and developed during both the design and construction stages of the project.
- The management team involved senior clinicians in meetings throughout the whole design process up to Financial Close, and by seeking their opinions during the design development stage. This ensured they took ownership of the design proposals.
- Despite this close involvement there were difficulties for clinicians in understanding the 3D implications of some design decisions. This has led to some rooms falling short of expectations. Better use of 3D visualisation techniques would improve the communication of design ideas between architects and users.
- This extensive participation of staff in the design/decision making process about the new hospital was generally regarded as positive despite the belief that key decisions (such as space allocations) were non negotiable.
- Although clinical staff were involved in planning the perception in interviews was that local people and patients were not involved in any decisions about the new building.
- The process research confirmed this impression showing that there was limited consultation with patients during the design stage.
- Artists should have had more information earlier from architects on the design of spaces for the artworks and on factors that might impinge upon them.
- Delays in the building programme affected the artists' momentum and engagement with their commissions.

- More dialogue is needed between NHS and the arts sector on what constitutes quality in the healthcare environment.

8.5 Wayfinding

- Problems have been experienced with wayfinding throughout the hospital and further work is being undertaken in this area.
- Receptionists are sometimes not available at the main reception desk at the new South Entrance and this can cause confusion for those arriving at that entrance.
- New signs making use of local and James Cook themed images have just been placed in the hospital. This occurred too late for the study team to assess their utility for wayfinding.

8.6 Space : Public and Private

- The design of the new facilities has given a higher profile to the use of art and other activities (such as musical performance and shopping areas) in the hospital. This has raised questions about the ownership of public spaces: Is it a corridor or a community space?; Are retail and entertainment activities beneficial to a hospital environment?
- There has been some improvement in travel distances between wards and operating theatres, and in some cases these routes do not use the main public routes.
- Staff and patients are unclear as to who 'owns' some of the public areas i.e. who has the right to sit and eat lunch in these areas. There is some evidence that this rather unexpected question has been raised because the high quality of the Mall and Atrium areas has led patients and staff alike feel they need permission to sit there.
- The public spaces in the JCUH are generally regarded as overgenerous, whereas the treatment areas and offices are frequently criticised for being too small.

- Artworks were concentrated too much in the public spaces and not in wards for inpatients to enjoy.

8.7 Hospital/Community Connections

- The Cook theme had less impact than the historical murals in providing continuity and connectedness, despite detailed engagement of the artists with the theme.
- There was no clear sense that the theme gave coherence to the JCUH as a whole but it must be remembered that the post-build study was carried out within six months of the move into the new hospital and that familiarity with the theme and its utility within the hospital might take time to develop.
- The artists found interpretation of the Cook theme to be inspirational, challenging and emotionally engaging.
- Many patients and visitors do not appear to notice the connection between the Cook theme and the artwork.

8.8 The Art

- There is a wide spectrum of opinion regarding the 'formal' artwork on display at JCUH.
- Staff vary in their reactions to the art. Some believe it is likely to help patients recover, others are more concerned about its cost and the extent to which obviously useful equipment was sacrificed in its purchase.
- It is important to both patients and staff that the costs of artworks in hospitals do not come from money that might otherwise be spent on practical patient care. There is a crucial role for PR in showing that this is the case. Slightly less 'blaming' of JCUH PR dept? Some patients and staff felt that the artworks gave the hospital a sense of not being 'hospitally'. For most this was positive (see conclusion under 8.2). For others (a minority), they wished to feel that they were in a clinical environment and they felt that art detracted from this.

- The presence of artworks in the hospital was beneficial for some hospital users who would not normally see themselves as consumers of art.
- Artists felt that there was added value to their art in supporting the care environment.
- The artists' residencies added elements to the engagement of the programme with staff, patients and public.
- The art commissioning programme was well planned in advance but was not integrated into the PFI process itself.
- The Healing Arts Committee was an effective means for selecting and funding commissions, and for maintaining positive public relations and ownership of the process.

8.9 PFI Process and Financial and Contracting Issues

- When originally planning the new hospital facilities the Trust accepted the need to use the PFI procurement route and willingly embraced the methodology this imposed. The PFI solution was tested alongside the public sector comparator model.
- The transfer of responsibility for design decisions has created tension. With the architect being accountable to the contractor after the selection of the preferred bidder there is the potential for design standards to be diluted. In the case of the JCUH the strong management team assembled by the Trust minimised this potential difficulty. (Gives the Trust more credit.)
- Restrictions and other difficulties caused by the PFI process have been a difficulty for staff. They note, in particular, delays in having minor repairs carried out.

Discussion of Research Questions

In this section we will briefly summarise how the original research questions have been answered by these conclusion. The relevant chapters contain more detailed accounts.

8.10 Process Research (Ch. 4)

The research questions were as follows:

1. How were 'patient-centred care' concerns articulated in the brief? How was the design process managed to ensure that these priorities were maintained?
2. How closely does the completed building reflect the 'patient-centred' aspirations of the brief?

The design brief put a high value on patient-centred care and what they meant by this was outlined in the briefing documents (Ch. 4 section 4.3.1). The key design features of the hospital, the Mall, the horizontal plan and the Institute concept were also adopted in order to provide convenience, comfort and ease of use for patients. In order to ensure that patient-centred care was kept centre stage, the design team relied on involvement of clinicians rather than on consulting patients. While this was very positively valued by the staff, lack of patient involvement has led to some problems, such as poor facilities for children in some key parts of the hospital. The Trust included the principle that patients' spiritual needs should be provided for within the hospital. It was clear that the relevant local spiritual leaders were consulted and this led to the creation of the multifaith space and Muslim prayer room.

The Institute concept and horizontal plan seemed to be successful in that few patients and staff complained about having to cover long distances within the hospital because of the convenience of planned adjacencies. The JCUH has also been successful in maintaining privacy for patients when they need it within the hospital by separating the most private patient routes from public areas. It was more difficult for us to assess the success of the Mall in creating a 'village' feeling within the hospital. This idea had been invoked partly because of the large scale of the hospital

to give it a community focus and also to provide a convenient place for shopping and refreshments for hospital users. However, at the time that the research was underway the Mall was not yet fully developed and was often underused. Initial impressions are, however, that the Mall is providing comfortable seating and meeting areas for patients and visitors and is contributing to wellbeing particularly because of the quality of the light, décor and artworks within it.

8.11 Outcomes Research (Ch.'s 5, 6 and 7)

The research questions were as follows:

1. What is the impact of the new hospital environment on patients' and visitors' experience of care, staff's experience of giving care, and user satisfaction and sense of well-being compared to the old environment?
2. Does the new building design take into account the needs of, and interactions among, its users better than the old design?
3. What is the user response to the art work placed or integrated within the new hospital building?

This was a complex study in that it involved nine separate study areas. It is no surprise that each of these areas had their own ideas about the new hospital and how it compared with previous accommodation. In order to tease out the reasons for differences in response between the nine units we could have analysed the qualitative data unit by unit. We decided not to do this as there were relatively few interviews carried out per unit. However, some key findings from the qualitative research give some insight into these differences. In their response to discussions about what they liked about hospitals patients would often use the term 'homey' as a positive epithet. It was significant that it was patients in the Neurology Ward day case area who were least satisfied with the accommodation after the move. This ward is likely to have a high number of patients who are regular attenders and for whom it might take time to feel at

home in the new environment. In addition, the décor of this area was incomplete at the time of the study.

The interview results also highlighted staff and patients' ambiguous attitude to hospital design quality and artworks and this explains, to a large extent, the mixed results from the units. At times staff and patients in interviews were very positive about the high quality design specifications, appreciative of the quality of the light, the leather armchairs and impressive scale of the public areas, and of the artworks within them; and at other times they were sceptical, wondering how much money was spent on these elements to the detriment of patient care. There is little doubt that the hospital users value the high design specifications and artworks. The fact that staff in the survey results and interviews complained about their small, unadorned office spaces in comparison with the public areas would imply that these were positively valued and there are results that also suggest this. The disappointed users of the Neurology day ward area would regularly have been making comparisons between it and the Atrium area as they are just next to each other. However, hospital users have a sense that there is a pay-off; that money spent on good hospital design or art is not being spent on patient care. This attitude co-existed with the idea that good design and art made a positive contribution to patient and staff wellbeing. The views of users of the JCUH on this issue, therefore, cannot be summarised as wholly positive or wholly negative. They value the quality of the design and the art but regard it as a luxury that they could do without if the money was used more directly to improve patient care.

In general terms, however, the JCUH was more positively valued than the old hospitals by patients. Staff were less satisfied but this dissatisfaction related more to their own private provision of staff rooms, lockers and toilet areas than to the ward and other working areas. The important implication here is that in designing new hospitals planners must make the comfort and convenience of staff, as well as patients, a priority. As we have seen in the process research, the highly visual areas such as the Mall and Atrium were given priority, as was the horizontal plan and Institute concept as part of the Trust's focus on patient-centred care. These have been successful, but the needs of staff appear to have been given insufficient attention. This point is

important for patient satisfaction as well as for staff. Patients may value the impact that a good environment can have on their care but they still maintain that the most important element in high quality care are the staff.

This was a study of hospital users' perceptions of the environment collected primarily by questionnaires and interviews. However, we did collect some objective data in the form of Self Reported Stress and Arousal Scores (SACL scores). This data, on the whole, did not reflect a positive effect from the new hospital environment. It is important not to over-emphasize this finding as it probably reflects the timing of the post-build study, which was carried out during the period when staff and patients were settling into the new accommodation.

The artworks were largely valued by hospital users and they contributed to the fact that the JCUH was viewed as an impressive, high quality hospital. In keeping with the positive value put on the 'homey' descriptor for a good hospital, many patients and staff valued the presence of the art because it made the hospital feel less clinical. The JCUH was compared to many other types of buildings, airports and art galleries being the most common. The art gallery comparison was particularly interesting because, despite the fact that the artists approached their commissioned work with the same commitment and intellectual rigour as they would have for exhibiting in a commercial gallery there was little evidence that hospital users were approaching the art in this way, as if they were in a gallery (sentence unwieldy). The artworks were seen on the whole as a pleasant backdrop to the hospital giving colour and something interesting to look at as you passed by.

We examined the Trust's management of the artwork commissioning. This was a successful process and one that other Trusts might follow. The Healing Arts committee, which had representation from both the Trust and the local community, was an effective means for selecting and funding commissions that were regarded as suitable for the hospital and the Middlesbrough community. Initially, the Trust made use of the local arts organisation, Cleveland Arts, as intermediary but it became simpler for both the Trust and the artists when the Trust took responsibility for managing the process directly. In this way, the Trust acquired

expertise in-house in managing commissions, expertise that can be used again in the future for further commissions and for curating the works already in place.

8.12 Recommendations

1. Successful attainment of a high quality design specification in a PFI built NHS hospital depends on leadership and commitment from the highest level in the NHS Trust involved.
2. Hospital staff at all levels should be involved in planning from the earliest stages in the design process but they must be assisted in visualising the implications of the space by the use of 3D visualisation technology.
3. Patient groups and representatives should be consulted from the earliest stages in the design process.
4. If artworks are planned within the hospital space, the commissioned artists should be consulted about design decisions relating to the space in which their work will be situated.
5. It is important to give equal consideration to both patient and staff areas when designing a new hospital, including staff changing and recreation areas.
6. As far as possible, in-patient routes should be separated from public areas within the hospital.
7. Patients and staff prefer rooms to have natural light.

8. Big is not necessarily best. It is difficult to please everyone in a large hospital like the JCUH which is essentially several hospitals within a hospital. Patients may be overawed by the large scale of huge hospitals and the preferred 'homey' feel is less easy to achieve.
9. Artworks are a valued element in hospital design and decoration but it should be made clear that their funding will not detract from direct patient care.
10. Artwork commissioning can be successfully carried out in house by NHS Trusts as long as they consult widely with hospital users and members of the local community, and make use of local expertise.

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Appendices

CHAPTER 4 APPENDICES

- 4.1 PFI Timetable**
- 4.2 Questionnaires**
- 4.3 Cost of Initial Capital Development**
- 4.4 PSC and PFI Area Comparison**
- 4.5 Post Project Evaluation Report by Anshen Dyer**

Appendix 4.1

PFI Timetable (from FBC, p44)

Stage	Deadline
OJEC advertisement placed	14 March 1995
Deadline for receipt of expressions of interest	11 April 1995
Short list of bidders drawn up for negotiations phase	26 May 1995
Issue of ITN document	31 October 1995
Discussion/negotiations with bidders	1 November 1995 – 27 July 1996
Best and final bids submitted	28 July 1996
Selection of preferred bid	14 August 1996
Contract Negotiations	August 1996 – ongoing
General Election	April 1997
Selection as priority scheme	July 1997
Ongoing Negotiations	Continuing
Commercial Close	21 December 1998

Appendix 4.2

	INTERVIEW SCHEDULE
Topic	Design Team + JCUH Advisor
General	<ul style="list-style-type: none"> • Title of job and what it involves • Age/training • Experience of hospital projects • Length of involvement at JCUH
Inception/ Visions and aspirations	<ul style="list-style-type: none"> • How did you respond to the Trust's requirements for patient-centred care in the brief? • Are there any aspects of the brief which could have been improved to further enhance 'Patient Centred Care'? • Was the idea of high quality design and arts projects discussed at this early stage? • Were there any differences between you and the Trust on design visions/aspirations? • What level of information and drawings were prepared by Anshen Dyer at this stage? <p>Was the relationship with the planning team and clinical groups satisfactory/successful?</p>
Strategy and Policy issues	<ul style="list-style-type: none"> • How was the conceptual work carried out by Anshen Dyer conveyed to the shortlisted PFI bidders? • Were shortlisted bidders involved with any public consultation sessions? • What was the process for reviewing/amending design concepts? • Were there constraints on achieving 'patient centred care' as set out in the brief due to existing NHS policy?
Briefing Process	<ul style="list-style-type: none"> • How did the design team liaise with the management team? • What was the structure of consultation and decision making? (e.g. – committees <ul style="list-style-type: none"> - frequency of meetings - approval of decisions • How were 'patient centred' ideas expressed?

<p>Briefing Process (continued)</p>	<ul style="list-style-type: none"> • How were design quality indicators expressed? • How were visual/aesthetic values communicated? • How were Arts projects integrated? • How were performance criteria set? • Was there sufficient time? • How were conflicting priorities resolved? • Were design ideas presented to 'user group' sessions by the architect? • Who 'led' the design team? • How were design changes agreed?
<p>Scheme Design</p>	<ul style="list-style-type: none"> • What changes would you include in the ITN stage of a PFI bid? • Following appointment of 'Preferred Bidder' were timescales acceptable? • How were design stages/departmental designs 'signed off' by the users? • How were design ideas tested against financial budgets? • Were value engineering processes used? • How were design quality issues prioritised? • Was the briefing document respected at this stage? What changes were made? • Does PFI allow good design to be achieved – e.g. is 'patient centred care' achievable under this system? • Were timescales realistic and achievable? • How were value engineering checks organised? • Were 1:50 drawings prepared and 'signed off' by user groups? • What other documentation was produced at this stage?
<p>Financial Close</p>	<ul style="list-style-type: none"> • How were design ideas tested against financial budgets? • How were costs and space standards compared to national comparators? • Have the original design aspirations been achieved? • Could you identify any additional costs associated with achieving 'high quality' architectural design? • What documentation was produced at this stage?

Construction Phase/ Management of the building work	<ul style="list-style-type: none"> • Were programme dates achieved? • How are/were day to day decisions managed? • What mechanisms are/were in place to decide on any amendments? • What system of documentation is/was used to monitor decisions taken and check progress? <p>What steps are in place to carry out post-build evaluations?</p>
Ideals	<ul style="list-style-type: none"> • Do you think that the design vision is/has been achieved? • What else would you have liked to see included? • Could you summarise your views on the successes and shortcomings of the design and procurement process at JCUH?

Topic	Senior Management / Medical
General	<ul style="list-style-type: none"> • Title of Job and what it involves. • Has work changed much over the years? • Age /training • How long been at this hospital and where else worked? • Do you live locally?
Inception/ Visions and aspirations	<ul style="list-style-type: none"> • Were you involved in developing the design brief aspirations? • Was there general agreement about 'patient centred care'? • Are there any aspects of the brief which could have been improved to further enhance 'Patient Centred Care'? • Improved efficiency of layouts? Adjacencies etc • Was the idea of high quality design and arts projects discussed at this early stage? • Was there sufficient time to undertake this part of the process? • How would you describe the balance of input between the medical and administrative sides?
Strategy and Policy issues	<ul style="list-style-type: none"> • How was the briefing team formed? Who was included? Appropriate composition? • Can you explain the consultation process with those in your department/section? Did everyone have an opportunity to engage? Were you satisfied with the outcome? • How were patient/ public views considered? • PFI: were alternative approaches considered? • How were the business case parameters set? • Were you able to influence any of the cost parameters? • Were efficiency targets discussed (e.g. for reducing lengths of stay)? • Were performance standards set by comparison to national scales? <p>Were you constrained by NHS policy or were you able to be innovative?</p>
Briefing Process	<ul style="list-style-type: none"> • Can you explain how the management group liaised with the design team? • What was the structure of consultation and decision making? (e.g. - committees - frequency of meetings - approval of decisions type of information requested • How were different interests communicated and accommodated? E.g. clinical practices, financial constraints, statutory targets, management approaches... • How were 'patient centred' ideas expressed and developed in the brief? • How was high design quality assured? How were Arts projects integrated?

	<ul style="list-style-type: none"> • Was there sufficient time for these processes? • How were conflicting priorities resolved? • Were other medical staff and patients involved in these processes? • How were design changes agreed?
Scheme Design	<ul style="list-style-type: none"> • What changes would you include in the ITN stage of a PFI bid? (level of detail design; financial information; negotiation/clarification process after bid submission) • Following appointment of 'Preferred Bidder' were timescales acceptable? • Were you satisfied with the level of consultation at 'Preferred Bidder' stage? • How were design stages/departmental designs 'signed off' by the users? • How were design ideas tested against financial budgets? • Were Value engineering processes used? • Could the process be improved? What modifications would help bidders or clarify their submissions? • Were medical priorities achieved at this stage? • Were 1:50 drawings prepared and 'signed off' by user groups? • Was the consultation process satisfactory in drawing up departmental layouts? • What other documentation was produced at this stage?
Financial Close	<ul style="list-style-type: none"> • Do you believe the design met the medical targets? • Were you shown all relevant documentation at this stage?
Construction Phase/ management of building work. / On going consultation	<ul style="list-style-type: none"> • What processes exist for communication between clinical staff, Trust planning team and the contractors? • How are changes incorporated (e.g. new pieces of equipment)? • Are programme dates being achieved? • What mechanisms are in place to decide amendments? • Do you think the new facilities will achieve the patient-centred aspirations set out in the brief? • What steps are in place to carry out post-build evaluations? • Are patient/staff/visitor responses monitored? (other than this research project). • How are performance and efficiency targets measured against national averages? • How does the Trust report progress to the NHS?

Experience of Hospital	<ul style="list-style-type: none"> • How does the old hospital(s) compare with any previous hospitals you have worked in? re space and working arrangements. • What do you appreciate about the old hospital and is it likely to change with the new? Re space and working arrangements • Do you consider the location of your unit/section/division to be functional in the old hospital? • Do you think the situation will be significantly improved/worsened/unchanged in the new? Eg increased accessibility; provision of specialist services in the community?
The move	<ul style="list-style-type: none"> • How will the move affect working arrangements for staff at all levels?
Ideals	<ul style="list-style-type: none"> • What would your ideal unit/section/division/hospital be like? Will the new hospital be closer to this ideal? • What would you like to achieve but is not possible?

Appendix 4.3

Cost of Initial Capital Development

	£Million
Construction	106.343
Design	9.625
Development Costs	11.832
Total	127,800

Appendix 4.4

PSC and PFI Area Comparison

	PSC (m ²)	PFI (m ²)
Existing Area	76,614	76,614
Omit Bath and Wells Villas	<u>(2,058)</u>	<u>(2,058)</u>
	74,556	75,556
New Build	51,556.70	51,885.60
Less: Demolition	<u>(436)</u>	<u>(949)</u>
	<u>125,686.70</u>	<u>125,492.60</u>
Plus: Holistic Care Centre	372	372
Plus: Spinal Injuries Unit	<u>2,753</u>	<u>2,753</u>
Total Area for New Hospital	128,811.70	128,617.60
DIFFERENCE IN AREA BETWEEN PSC (m²) AND PFI (m²) – 194.1		

APPENDIX 4.5

THE JAMES COOK UNIVERSITY PFI PROJECT

Post Project Evaluation

For

South Tees Hospitals NHS Trust

Appraisal of the Design Solution
and the Functional Suitability
of the Completed Building

April 2004

THE JAMES COOK UNIVERSITY PFI PROJECT

Post Project Evaluation

Contents

Section 1:	Executive Summary
Section 2:	Design Evaluation Report
Section 3:	Key Learning Points for the NHS

THE JAMES COOK UNIVERSITY PFI PROJECT

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Executive Summary

THE JAMES COOK UNIVERSITY HOSPITAL PFI PROJECT

Post-Project Evaluation: Appraisal of the Design Solution and the Functional Suitability of the completed building

Executive Summary

The PFI new build and alteration works commenced on the site of the existing South Cleveland Hospital in 1999 and were completed in the summer of 2003. The completed site was renamed the James Cook University Hospital.

In November 2003, the South Tees Hospitals NHS Trust commissioned architects Anshen Dyer to undertake the design appraisal section of the post-project evaluation. Some of the key issues arising from the attached evaluation are summarised below: -

External Works (Appraisal Ref. 1, 2 & 4)

- The Trust's car parking requirements as briefed have been fully accommodated (1), however there is not sufficient parking at peak times (2).
- Car park security provision for staff, visitors and patients has been fully considered (1).
- The car parking to the Spinal Injuries Centre needs to be reviewed, as there appears to be insufficient space allocation and signage (2).
- The landscaping needs to mature before the 'parkland setting' effect can be fully evaluated (4).

Provision for the Disabled (Appraisal Ref. 6)

- Internally, disabled facilities are well provided in the new build accommodation, although in some instances the travel distances between disabled toilets are longer than desirable.
- Externally, it would appear that facilities for the disabled have not been fully considered. Further way-finding measures would alleviate the situation.

Building Design Quality; Interior and Exterior (Appraisal Ref. 3, 5 & 9)

- The primary mall running between the north and south entrances is generally well signposted (3).
- The secondary east/west main corridors are lacking in clear landmarks to aid way-finding.
- The Trust is reviewing way-finding based on patient/visitor feedback.
- The internal landscaping to the primary mall and associated courtyards is satisfactory. Other main routes e.g. the east/west corridors have not been considered to the same standard (5).
- The interior finishings to the primary mall have been thoughtfully designed (9).
- In sharp contrast, there is little evidence that the themes and techniques used in the primary mall have been used to create a similar effect to secondary corridor areas, other than colour themes.

Building Design Quality; Interior and Exterior (Appraisal Ref. 3, 5 & 9) (Cont'd)

- With few exceptions, such as the Spinal Injuries Unit, departmental areas have been developed in a standard way, without special embellishment.
- The use of art has proved an important part of the interior design policy.

Clinical Functionality (Appraisal Ref. 8, 10, 11 13, 14 & 16)

- There is limited scope for expansion of the buildings within the existing site curtilage. However, the Trust is seeking to acquire additional adjacent land to the south of the hospital site (8).
- There is some 'soft space' planned amongst clinical areas, which could be relocated in the future to allow for the localised expansion of clinical facilities.
- Innovation has been achieved in the design by the realisation of a "hospital village" organised around the central Mall. The "Institute" model of organisation has been successfully realised for some clinical aggregation such as Neurosciences (10).
- The new facility is a major improvement over the old facilities in a number of ways: by concentrating healthcare services on a single site; by achieving improved functional adjacencies; by providing an identifiable main entrance, linked to a secondary entrance by the central mall; and by providing a significantly better environment for patients, visitors and staff. Positive feedback from staff greatly outweighed adverse feedback (11).

Provision for Staff, Visitors and Patients (Appraisal Ref. 7, 12 & 15)

- The provision of safety and security is generally satisfactory, although the Trust is currently reviewing security on a site-wide basis now the building is fully operational (7)
- The Trust's requirements in respect of patient centred care have been successfully achieved in the case of some clinical specialities e.g. Neurosciences. Other clinical aggregations such as Cardio-Thoracic services are somewhat more dispersed (12).

- Generally rooms and facilities for staff, visitors and patients were viewed as appropriate. However, in some instances such as Day Case Surgery, current activity has exceeded that expected and re-arrangement of functional space to accommodate this activity may be required (15).

Documents Reviewed

In the preparation of the evaluation report, we reviewed the following documents provided by the Trust: -

- Selected 1:50 scale loaded departmental plans
- Selected general arrangement drawings at varying scales
- Site/landscape plan
- Schedules of Accommodation
- Operational Policies for selected departments
- Sections 1 & 2, Schedule 9 Part 2 of the Concessionaire's Proposals
- Architectural Performance Specification, Schedule 9 Part 2 of the Concessionaire's Proposals
- Part 1, Schedule 9 Part 1 Trust's Requirements
- Department of Health, Good Practice Guide, Learning Lessons from Post-Project Evaluation
- Anshen Dyer's original Development Control Plan 1996

In addition, Anshen Dyer visited the site in November 2003 to meet selected departmental representatives and tour the hospital.

Anshen Dyer
April 2004



THE JAMES COOK UNIVERSITY PFI PROJECT

Post Project Evaluation

Design Evaluation Report

THE JAMES COOK UNIVERSITY PFI PROJECT

Post Project Evaluation

Key Learning Points for the NHS

CHAPTER 5 APPENDICES

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- 5.2 Recruitment of study participants and ethical considerations**
- 5.3 Questionnaire Design**
- 5.4 Survey questions and average scores: Patient and Visitor survey**
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- 5.6 Patient characteristics of the sample%**
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- 5.8 Comparison of the pre and post-build survey results on the quality of the patient environment: Patient and Visitor survey**
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- 5.11 Questionnaire example: Staff**
- 5.12 Questionnaire example: Patient**
- 5.13 Questionnaire example: Parent/Guardian**

Appendix 5.1

Selection of study areas

The selection of the study areas was based on the original study proposal that recognised five key service areas involved in the JCUH single site development: the Children's Services, Cancer Services, Neurosciences, Cardiothoracic Services and the Pain Services. The Trust and the research team had identified these as target areas as their clinical environment would change significantly through the single site development. However, within the Cardiothoracic Services the building works were well advanced and study areas for the baseline (pre-build) evaluation were no longer available. Furthermore, the Pain Services opted out due to a heavy workload and pressure on the service delivery. The negotiations continued with the Children's Services, Cancer Services and the Neurosciences, and the Trauma Division replaced the two withdrawn service areas. The target was to select, following the divisional or other senior managers' recommendations, 8-10 clinical areas representing the JCUH and its predecessor South Cleveland Hospital, as well as Middlesbrough General Hospital. The selection was purposive concentrating on areas where it would be appropriate to carry out a customer satisfaction survey on the physical environment involving patients. Only units in the old, unaltered clinical areas that were due to move into a brand new or completely refurbished accommodation qualified for the study. The Trust and the research team also identified a number of general areas where significant changes in the hospital design and installation of new artwork would take place.

Appendix 5.2

Recruitment of study participants and ethical considerations

This section presents the recruiting strategy for surveys and face-to-face interviews, and explains the practical and ethical considerations relating to the study. The research team obtained an approval for the study from the Trust's ethics committee in June 2002 and discussed the sampling and recruiting strategy with the Chair and the Vice Chair. The research project was registered with The National Research Register (NRR) which provides a record of Research and Development projects within or of interest to the NHS, and the research team followed the guidelines set out by the 'The Research Governance Framework for Health and Social Care' Department of Health (2001).

The data collection involving patients and parents began with a self-administered questionnaire survey in the four inpatient and six outpatient units. Each study area nominated a senior member of staff (outpatients or ward manager) who was in charge of the study area and in regular contact with the research associate. Each study area also nominated 1-3 designated members of staff who recruited the participants and distributed and collected the questionnaires. These tasks were allocated to staff nurses, auxiliaries or ward clerks in wards, and to receptionists in outpatient departments and day case units. The research associate frequently visited the study units to collect the completed questionnaires, consult the designated staff, and to monitor the response rate and the quality of the data.

The designated staff approached a sample of patients and parents and handed out a survey questionnaire and an information sheet to those who agreed to take part in the study. The information sheet explained the purpose and the potential benefits of the study, and named the sponsor, the research organisations involved and a contact person (research associate) for any queries. The inpatients were asked to fill in the questionnaire in the middle of their stay to avoid inconvenience on their arrival or departure dates.

The outpatients completed the questionnaires in the waiting area or in the day room, apart from some respondents from the Disablement Services Centre who took the questionnaire home and returned it by post. The participation in the study was voluntary and the respondents were free to withdraw from the study or to decline to answer any particular question. The information sheet also explained that all the answers would be completely anonymous and treated in the strictest confidence by the University and not traced back to the respondent. The information was only to be used for the purposes of the research and no personal data would be disclosed to the NHS.

The research team wanted to conduct a small number of face-to-face interviews with patients and visitors, and therefore the survey questionnaire requested whether the research team would be allowed to contact the respondent for an interview. A purposive sample of those who gave their consent was contacted and the interviews took place either at the hospital or in the respondent's home. The interviewees received a second information sheet and were reminded of their right to withdraw from the study at any time. The interviewees were also asked to sign a consent form. The methodology and results for the interviews with the patients and the visitors are presented in Ch.6.

All members of staff in the ten patient areas received a survey questionnaire asking whether the research team was allowed to contact the respondent for an interview, and a purposive sample of those who gave their consent was contacted. However, a number of pre-interviews before and during the surveys were carried out and the interviewees were recruited directly by contacting the study areas. The study also involved a small number of interviews with porters from the Hotel Services. The participation in the study was voluntary and the staff were under no obligation to take part in the surveys or interviews. All interviewees were given an information sheet and asked to sign a consent form. The methodology and results for the interviews with the staff are presented in Ch.6.

The research team complied with the five ethical responsibilities towards the patients, visitors and the staff who were approached during the fieldwork. The responsibilities are voluntary participation, informed consent, no exposure to harm, anonymity and confidentiality, and privacy. Children under 18 years of age were not approached for the study. Furthermore, the designated staff recruiting the patients and parents were asked not to approach anyone who might be confused, too distraught or too unwell to participate.

Appendix 5.3

Questionnaire design

The research team developed five different sets of questionnaires adapted according to the various study areas and target groups. The questionnaire development was carried out gradually over a seven-month period between November 2002 and May 2003. The five questionnaire categories were:

- patients in outpatients departments and day case units
- inpatients
- visitors escorting a young patient in the Children's OPD
- visitors escorting a young patient in the Children's Surgical Ward
- staff in a) outpatients departments b) day case units and c) wards

The patient questionnaires for outpatients departments, day case units and wards were similar but accustomed according to the nature of the care environment, and similar approach was used with the staff questionnaires. The visitor questionnaire was a modified version of the patient questionnaire in compliance with the special circumstances where the adult escorting the child often stays with the young patient during the entire visit. The survey materials were tailored for each study area and specifically named the area the respondent was asked to assess (e.g. Neurology ward dayroom, Disablement Services Centre waiting area, Trauma ward bed area, main entrance, staff facilities etc.). All questionnaires were designed using the Formic software and printed in scannable format.

The patients' and visitors' survey included questions with regards to general appearance, décor, comfort, privacy, relaxation, artwork and wayfinding. The assessment of the general appearance was based on the questionnaire developed by Leather (2002) for a study carried out in the Leeds General Infirmary. However, the individual questionnaire items were slightly altered and the research team decided not to use the scoring system introduced with the tool. Questions relating to the physical comfort were partly based on the Poole Hospital study by Lawson and Phiri (2003), and questions on the wayfinding were adapted from the 'NHS Wayfinding Research Project' by Miller and Lewis (1998).

The staff questionnaires had separate sections on the quality of the patient environment and the quality of the working environment. Both sections involved questions with reference to décor, comfort, light, sound, air quality and room temperatures, and staff control of heating and ventilation. Additional aspects of the patient environment covered in the staff questionnaires were privacy, relaxation and self-care. Furthermore, the assessment of the working environment included sections on workflows and logistics, cleanliness, security and ease of control, and staff facilities. The staff questionnaires were influenced by the NHS Estates AEDET tool, but the research team decided to focus on fewer topics and used a different scale for the answer options.

The study involved two different self-reported quality of life measures: Stress Arousal Checklist (SACL) developed by the University of Nottingham (Gotts & Cox, 1988), and the five dimensional Euroqol (EQ-5D) questionnaire including the Visual Analogue Scale (VAS, also known as the health thermometer) (University of York). SACL - which was also used in the Leeds General Infirmary study mentioned above - measures self-reported stress and arousal with 30 mood describing adjectives and provides a single score for both items. The EQ-5D is a five dimensional questionnaire for the measurement of individual's self-perceived general health. The five dimensions are mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, and the responses can be summarised with a single score. The respondents are also asked to value their health by indicating a health thermometer (VAS) score on a visual scale from 0 to 100.

Both EQ-5D and SACL are self-administered questionnaires asking the respondent to assess their health or mood today, i.e. 'here and now', and were included in the questionnaires in order to measure and compare respondents' self-perceived general health, stress and arousal in the pre- and post-build environments. Both measures were included in the patient questionnaire but the visitors and the staff were only asked to assess their state of mood using the SACL.

The purpose of the EQ-5D questions was to check that the pre- and post-build samples of patients were similar in terms of their general health. The research team wanted to distinguish any changes between the pre- and post-build survey results, which might be affected by a post-build sample of respondents enjoying significantly better or worse general health, rather than reflecting the changes in the environment. The rationale for including the stress and arousal questions was to see whether we could establish a link between the change in the physical environment, and the levels of stress and arousal among the pre- and post-build respondents. Stress and arousal scores were perceived as a measure of respondents' well-being, and the purpose of the study was to explore if the scores would reflect the survey response on the physical environment.

Appendix 5.4

Survey questions and average scores: Patient and visitor survey

The data were analysed using the average score for each of the following five topics, and two reliability measures (Cronbach's α and Reliability coefficient θ (Dunn, 1989)) were calculated to test how well the sub-set of items within each average score measured that topic. The reliability measures were calculated separately for all study areas, and the results indicated good reliability (Cronbach's $\alpha > 0.70$) for

- General Appearance (Cronbach's α 0.81 – 0.88)
- Décor (Cronbach's α 0.75 – 0.88)
- Comfort (Cronbach's α 0.75 – 0.94 except for Children's Surgical Ward 0.62)
- Relaxation (Cronbach's α 0.81 – 0.88).
- Satisfaction with the Staff (Cronbach's α 0.88 - 0.94)

As the reliability measures for Privacy were low in most of the study areas, the analysis examined both the average score and the individual items.

The pre- and post-build average scores and the individual items for Privacy from each of the nine study areas were compared using the independent samples t-test or Mann-Whitney U test. Statistical significance was set at 5% (0.05) level, which means that a detected difference in the pre- and post-build scores is only statistically significant if the test gives a 95% confidence level. In order to differentiate between small and large differences, the analysis also examined the effect size, Cohen's d. Effect sizes above 0.50 were considered moderate and effect sizes above 0.80 large.

'General appearance' average score included:

Is this room:	
Extremely / Quite a bit / Moderately / Slightly / Not at all / Don't know	
• practical	
• relaxing	
• light/airy	• friendly (wards only)
• cramped	• sparse (wards only)
• clean	• private (wards only)
• comfortable	• efficient (wards only)
• dingy	• welcoming (wards only)
• pleasant	• cheerful (wards only)
• untidy	• impersonal (wards only)

'Décor' average score included:

Very much / To some extent / Not at all / Don't know
• Does this room's appearance put you (your child) at ease?
• Does this room's appearance meet with your expectations of a hospital environment?
• Does this room's appearance look like some thought has been put into its decor?
• Does this room's appearance please you with its decor? (Adult units only)
• Is decor suitable and enjoyable for your child? (Children's units only)

'Comfort' average score included:

Have you (Has your child) been affected by any of the following?
Most of the time / Only some of the time / None of the time / Not applicable
<ul style="list-style-type: none">• Disturbing noise
<ul style="list-style-type: none">• Lack of fresh air
<ul style="list-style-type: none">• Unpleasant smells
<ul style="list-style-type: none">• Room temperature too warm
<ul style="list-style-type: none">• Room temperature too cold
<ul style="list-style-type: none">• Draughts from windows, doors etc.
<ul style="list-style-type: none">• Inadequate lighting
<ul style="list-style-type: none">• Glare from interior lighting
<ul style="list-style-type: none">• Glare from outside lighting

'Privacy' average score included:

Please rate the waiting area / dayroom / bed area on the following things relating to privacy:
Excellent / Good / Fair / Poor / Not applicable
<ul style="list-style-type: none">• Privacy for confidential conversations
<ul style="list-style-type: none">• Personal privacy in your bed area (wards only)
<ul style="list-style-type: none">• Personal privacy in toilets/bathrooms

'Relaxation' average score included:

Please rate the waiting area / dayroom / bed area on the following things relating to relaxing:
Excellent / Good / Fair / Poor / Not applicable
<ul style="list-style-type: none">• Have a friendly chat with other patients or visitors (adult units only)
<ul style="list-style-type: none">• Read (adult units only)
<ul style="list-style-type: none">• Have a cup of tea/coffee or a snack when you feel like it (adult units only)
<ul style="list-style-type: none">• Have fresh air (adult units only)
<ul style="list-style-type: none">• Take a nap when you feel like it (adult wards only)
<ul style="list-style-type: none">• Look around and enjoy the room (adult OPDs only)
<ul style="list-style-type: none">• Child make friends with other children (children's units only)
<ul style="list-style-type: none">• Child have play activities (children's units only)
<ul style="list-style-type: none">• Child read (children's units only)
<ul style="list-style-type: none">• Child have a cup of tea/coffee or a snack when you feel like it (children's units only)
<ul style="list-style-type: none">• Child have fresh air (children's units only)
<ul style="list-style-type: none">• Child look around and enjoy the room (children's units only)

'Satisfaction with the staff' average score included:

Please rate how you feel the staff:
Excellent / Good / Fair / Poor / Not applicable
<ul style="list-style-type: none">• Are responsive to your needs
<ul style="list-style-type: none">• Treat you with respect and dignity
<ul style="list-style-type: none">• Are sensitive to your worries and concerns

Appendix 5.5

Survey questions and average scores: Staff survey

The data were analysed using the average score for each of the following ten topics, and two reliability measures (Cronbach's α and Reliability coefficient θ , (Dunn, 1989)) were calculated to test how well the sub-set of items within each average score measured that topic. The reliability measures were calculated separately for all study areas, and the results indicated good reliability (Cronbach's $\alpha > 0.70$) for

- Privacy (Cronbach's α 0.81 – 0.88)
- Light(ing) (Cronbach's α 0.75 – 0.88)
- Colour Schemes (Cronbach's α 0.75 – 0.94 except for Children's Surgical Ward 0.62)
- Materials and Furniture (Cronbach's α 0.81 – 0.88).
- Air Quality and Room Temperatures (Cronbach's α 0.81 – 0.88).
- Sound Insulation and Acoustics (Cronbach's α 0.81 – 0.88).
- Workflows and Logistics (Cronbach's α 0.81 – 0.88).
- Cleanliness (Cronbach's α 0.81 – 0.88).
- Security and Ease of Control (Cronbach's α 0.81 – 0.88).
- General appearance and comfort in various staff areas (Cronbach's α 0.81 – 0.88).

As the reliability measures for Privacy (for patients) were low in most of the study areas, the analysis examined both the average score and the individual items. Also the sub-items for staff facilities (kitchen, toilets, changing rooms and lockers) were examined individually.

The average scores and the individual items for Privacy from each of the nine study areas were compared using the independent samples t-test, Mann-Whitney U test, ANOVA or Kruskal-Wallis test. Statistical significance was set at 5% (0.05) level, which means that a detected difference in the pre- and post-build scores is only statistically significant if the test gives a 95% confidence level. In order to differentiate between small and large differences, the analysis also examined the effect size, Cohen's d. Effect sizes above 0.50 were considered

moderate and effect sizes above 0.80 large. When more than two samples were compared, Cohen's *f* was used to measure effect size, and effect sizes above 0.25 were considered moderate and effect sizes above 0.40 large.

Staff Survey on the Patient Environment

All questions used the following scale: Excellent / Good / Fair / Poor / Not applicable

'Privacy in patient areas' average score included

• Privacy for confidential conversations in the waiting/day room/bed area
• Privacy for confidential conversations in consulting/treatment rooms (OPDs and Daycases)
• Personal privacy in consulting or treatment rooms / bed area
• Personal privacy in toilets
• Quality of toilet facilities
• Quality of washing facilities (wards)
• Access to toilets/bathroom avoiding alternate male/female areas and common areas (wards)
• Movement of patients to/from other units avoiding public areas (wards)
• Enough space to accommodate patients and their relatives/friends

'Light in patient areas' average score included

• Natural light in the waiting/day room/bed area
• Views from the windows in the waiting/day room/bed area
• General lighting in the waiting/day room/bed area
• Task lighting in bed areas (wards)
• Non-glare lighting in the waiting/day room/bed area
• Adjustability of light in the waiting/day room/bed area
• Adjustability of lighting at night in bed areas (wards)
• Lighting in toilets
• Use of lighting to improve wayfinding

'Colour schemes and patterns in patient areas' average score included

<ul style="list-style-type: none">• Colour schemes in the waiting/day room/bed area
<ul style="list-style-type: none">• Colour schemes to differentiate space
<ul style="list-style-type: none">• Colour schemes to assist wayfinding

'Materials and furniture in patient areas' average score included

<ul style="list-style-type: none">• Use of art work in decor
<ul style="list-style-type: none">• Use of natural materials in decor
<ul style="list-style-type: none">• Flowers, plants and fishtanks
<ul style="list-style-type: none">• Non-reflective surfaces
<ul style="list-style-type: none">• Non-slip flooring
<ul style="list-style-type: none">• User-friendly nurse call system
<ul style="list-style-type: none">• Adjustable beds and tables (wards)
<ul style="list-style-type: none">• Enough room between beds to allow visitors to sit by the bed (wards)
<ul style="list-style-type: none">• Seating
<ul style="list-style-type: none">• Matching furniture
<ul style="list-style-type: none">• Use of durable materials (opd's only)
<ul style="list-style-type: none">• Use of furniture and fittings to improve wayfinding

'Air quality and room temperatures in patient areas' average score included

<ul style="list-style-type: none">• Air quality in the waiting/day room/bed area
<ul style="list-style-type: none">• Room temperatures
<ul style="list-style-type: none">• Staff control of ventilation
<ul style="list-style-type: none">• Staff control of heating

'Acoustics and sound levels in patient areas' average score included

<ul style="list-style-type: none">• Comfortable sound levels in waiting/day room/bed area
<ul style="list-style-type: none">• Comfortable sound levels in bed areas at night (wards)
<ul style="list-style-type: none">• Sound insulation between consultation or treatment rooms // bed areas vs other areas

- | |
|--|
| • Sound insulation between toilets and other areas |
| • Room acoustics in waiting/day room/bed area |

Staff Survey On The Working Environment

All questions used the following scale: Excellent / Good / Fair / Poor / Not applicable

'Workflows and logistics' average score included:

- | |
|---|
| • Layout of the unit |
| • Sufficient space to cope with the workload |
| • Design that supports management of workflows |
| • Flexible design |
| • Safe and easy circulation routes within unit |
| • Safe and easy routes for the staff to/from other units |
| • Safe and easy routes for the movement of patients to/from other units |
| • Location on site |
| • Location in relationship to key departments |
| • Integration of services to minimise the movement of patients |

'Cleanliness' average score included:

- | |
|---|
| • Storage space to avoid clutter |
| • Out-of-sight storage space for equipment |
| • Adequate locked storage space for clinical waste |
| • Waiting areas and corridors easy to clean and keep tidy |
| • Consulting/treatment rooms easy to clean and keep tidy |
| • Staff areas easy to clean and keep tidy |
| • Toilets easy to clean and keep tidy |

'Security and ease of control' average score included:

- | |
|---|
| • Monitoring of patients |
| • Supervision and control of entrances |
| • Supervision and control of movements and activity within the unit |

'General appearance and comfort in various areas' (reception/nurse station, consulting/treatment rooms, office space, staff room) average score included:

• Comfortable space
• Restful and pleasing decor
• Natural light
• General lighting
• Task lighting (reception/nurse station)
• Non-glare lighting and non-reflective surfaces
• Comfortable sound levels
• Control of ventilation
• Control of heating
• Comfortable space

Staff facilities: no average scores, individual items

• Kitchen facilities
• Lockers and changing rooms
• Staff toilet

Appendix 5.6

Patients Characteristics of the sample, %

Characteristic	PATIENTS		VISITORS	
	Baseline	Post-build	Baseline	Post-build
1. Age				
• 18-29	8.0	5.2	17.0	19.1
• 30-49	29.0	28.6	78.6	74.8
• 50-65	35.2	36.0	4.5	6.1
• Over 65	27.9	30.2	-	-
2. Gender				
• Male	52.6	45.6	16.5	14.3
• Female	47.4	54.4	83.5	85.7
3. Ethnicity				
• White	97.8	99.2	94.4	96.6
• Other	2.2	0.8	5.6	3.4
4. Skills and qualifications				
• Skills but no qualifications	36.8	37.7	15.6	28
• NVQ 1-4 or eq.	48.5	51.2	71.5	63.5
• Other	6	1.6	2.8	3.2
• None	8.8	9.4	10.1	5.4
5. Economic activity				
• In paid work	31.6	28.7	52.9	46.7
• Unemployed	3.0	2.0	1.0	8.6
• Retired	30.6	34.7	1.9	-
• Unable to work – temp. sickness	4.4	0.8	N/A	N/A
• Unable to work – LLI* or disability	21	23.9	5.8	7.6
• Looking after the family	6.2	5.6	32.7	34.8
• In FT education or training	2.5	3.6	2.9	3.3
• Other	0.7	0.8	2.9	1.1

LLI = Long-term limiting illness

Appendix 5.7

Staff Characteristics of the sample, %

Characteristic	STAFF	
	Baseline	Post-build
1. Age		
• 21-30	13.8	8.1
• 31-40	31.9	30.9
• 41-50	33.3	39.7
• 51-60	16.7	20.6
• 60+	4.3	0.7
2. Gender		
• Male	18.8	23.5
• Female	81.2	76.5
3. Job status		
• Medical	11.6	18.1
• Nursing	59.4	53.6
• Management	1.4	2.9
• Admin/clerical	13.0	11.6
• Allied Health Professional	8	11.6
• Scientific/Technical	3.9	1.4
• Other	2.9	0.7
4. How long worked in this unit		
• 1-11 months	7.2	18.1
• 1-2 years	13.9	6.5
• 3-5 years	19.7	18.8
• 6-10 years	19.0	20.3
• 10+ years	40.1	36.2
5. How long worked in health care		
• 1-11 months	2.9	1.4
• 1-2 years	2.2	2.9
• 3-5 years	13.0	8.8
• 6-10 years	11.6	16.1
• 10+ years	70.3	70.8
6. Contracted hours of work		
• Full-time	60.6	68.1
• Part-time	37.2	29.0
• Job sharing	2.2	2.9

Appendix 5.8

Comparison of the pre- and post-build survey results on the quality of the patient environment: patient and visitor survey

Area	General Appearance	Decor	Comfort	Privacy	Relaxation
Children's OPD	(t(117)=5.14, p<0.01, d=0.92) ++	(t(114)=4.85, p<0.01, d=0.88) ++	(t(113)=2.69, p=0.01, d=0.48) (+)	No change	(t(84)=3.68, p<0.01, d=0.71) +
Trauma OPD	No change	(t(125)=4.41, p<0.01, d=0.70) +	No change	Privacy for conf. conversations (t(92)=2.43, p=0.02, d=0.42) (+)	No change
Neurosciences OPD	(t(31)=4.09, p<0.01, d=1.21) ++	(t(39)=6.42, p<0.01, d=1.81) ++	No change	No change	(t(24)=2.93, p=0.01, d=0.91) ++
DSC	No change	No change	No change	No change	No change
Neurology Ward day case services	(t(58)=-3.08, p<0.01, d=0.69) ◎	(t(82)=-1.99, p=0.05, d=0.42) (◎)	No change	No change	(t(72)=-2.64, p=0.01, d=0.58) ◎
Chemo Day Unit	No change	No change	No change	No change	No change
Trauma Ward 36	No change	No change	No change	No change	No change
Trauma Ward 34	(t(44)=-2.71, p=0.01, d=0.80) ◎ ◎	No change	No change	No change	(t(42)=-2.49, p=0.02, d=0.74) ◎
Children's Surgical Ward	No change	No change	No change	Privacy for conf. conversations (t(84)=2.09, p=0.04 d=0.41) and in toilets/bathrooms (t(63)=2.9, p=0.01, d=0.61) +	No change

Appendix 5.9

Comparison of the pre- and post-build survey results on the quality of the patient environment: staff survey

Area	Privacy	Light	Colour Schemes	Materials & Furniture	[Air Quality and Room Temperatures] [Acoustics and Sound insulation]
Children's OPD	(t(17)=2.64 , p<0.02, d=1.11) ++	No change	No change	No change	No change
Trauma OPD	Privacy for confidential conversations in consulting/ treatment rooms (t(46)=2.91 , p=0.01, d=0.80) + Personal privacy in toilets (t(49)=-2.22, p=0.03, d=0.60) ◎	No change	No change	(t(46)=2.45, p<0.02, d=0.68) +	No change
Neurosciences OPD	(t(33)=4.89, p<0.01, d=1.65) ++	(t(27,15)=2.61, p=0.01, d=0.88) (+) NB: low reliability	(t(29)=6.59, p<0.01, d=2.30) ++	(t(30)=6.38, p<0.01, d=2.15) ++	Air&temps (U=95.00, p=0.05, d=0.80) + Sound&Acoustics (t(30)=4.19, p<0.01, d=1.44) ++
DSC	(t(25)=2.77, p=0.01, d=0.97) ++	(t(23)=6.55, p<0.01, d=2.28) ++	(t(21)=2.55, p<0.02, d=0.91) ++	No change	No change
Neurology Ward day case services: not analysed due to small sample sizes (below 10 each Phase)					
Chemo Day Unit: not analysed due to small sample sizes (below 10 in Phase 2)					
Trauma Ward 36	No change	No change	No change	(t(27)=2.84, p=0.01, d=1.05) ++	No change
Trauma Ward 34	No change	No change	(t(18)=2.28, p<0.03, d=0.94) ++	No change	No change
Children's Surgical Ward	(t(18)=8.19, p<0.01, d=3.38) ++	(t(20)=3.31, p<0.01, d=1.37) ++	(t(16)=3.28, p<0.01, d=1.35) ++	(t(15)=8.98, p<0.01, d=3.69) ++	Air&temps (t(18)=2.66, p=0.02, d=1.10) ++ Sound&Acoustics (t(19)=5.18, p<0.01, d=2.14) ++

Appendix 5.10

Comparison of the pre- and post-build survey results on the quality of the working environment: staff survey

Area	Workflows & Logistics	Cleanliness	Security & Ease of Control	Various staff areas & facilities	SACL
Children's OPD	<p>Layout of the unit (t(16)=-2.51, p=0.02, d=1.05) (⊙)</p> <p>Circulation routes (t(21)=-2.97, p=0.01, d=1.21) (⊙)</p> <p>Routes of patients to/from other units (t(21)=-2.79, p=0.01, d=1.15) (⊙)</p>	<p>Storage of clinical waste (t(21)=2.66, p<0.01, d=1.08) (+)</p>			
Trauma OPD	<p>Location on the hospital site (t(45)=-3.28, p<0.01, d=0.90) (⊙)</p> <p>Location in relation to key dept's (t(46)=-3.88, p<0.01, d=1.05) (⊙)</p>			<p>Restful and pleasing décor for Reception (t(45)=3.21, p<0.01, d=0.90), Consulting/treatment rooms (t(53)=6.22, p<0.01, d=1.64), and Office Space (t(53)=4.18, p<0.01, d=1.15) (+)</p>	<p>SACL arousal score higher (t(54)=2.21, p=0.03, d=0.58) (⊙)</p>
Neurosciences OPD	<p>(t(31)=2.12, p=0.04, d=0.48) +</p>	<p>(t(25)=3.69, p<0.01, d=1.29) ++</p>	<p>(U=43.00, p<0.01, d=1.23) ++</p>	<p>Average score for Reception (t(19)=5.02, p<0.01, d=1.81) ++</p> <p>Natural light in Consulting/treatment rooms (t(20)=-4.07, p<0.01, d=1.40) and in Office Space (t(26)=-3.84, p<0.01, d=1.22) (⊙)</p>	
DSC		<p>(t(32)=2.02, p=0.05, d=0.68) +</p>		<p>Average score for Reception (t(26)=2.87, p=0.01, d=1.00), for Office Space</p>	

				(t(22)=2.05, p=0.05, d=0.73), for Staff Room and Facilities (t(24)=2.91, p=0.01, d=1.04) ++ ++ ++	
Neurology Ward day case services: not analysed due to small sample sizes (below 10 each Phase)					
Chemo Day Unit: not analysed due to small sample sizes (below 10 in Phase 2)					
Trauma Ward 36	(t(26)=2.19, p=0.04, d=0.80) +	(t(27)=1.98, p=0.06, d=0.73) (+)	(t(23)=1.96, p=0.06, d=0.71) (+)	Average score for Reception/Nurse station (t(25)=3.26, p<0.01, d=1.19), Consulting/Treatment Rooms (t(21)=3.52, p<0.01, d=1.41), Office Space (t(17)=3.15, p<0.01, d=1.33), Staff Room and Facilities (t(27)=2.90, p<0.01, d=1.06) ++ ++ ++ ++	
Trauma Ward 34	Location of the ward in relation to key dpt's (t(20)=-3.42, p<0.01, d=1.38) (⊙)			Average score for Reception/Nurse station (t(12)=2.92, p=0.01, d=1.26), Office Space (t(17)=3.12, p=0.01, d=1.31), Staff Room and Facilities (t(27)=2.96, p=0.01, d=1.30) ++ ++ ++	SACL stress (t(14)=2.26, p=0.04, d=0.95) ++
Children's Surgical Ward	(t(16)=4.41, p<0.01, d=1.75) ++	(t(1)=6.83 p<0.01, d=2.71) ++		Average score for Reception/Nurse station (t(16)=3.54, p<0.01, d=1.48), Consulting/Treatment Rooms (t(12)=3.44, p<0.01, d=1.47), Office Space (t(12)=4.07, p<0.01, d=1.74), Staff Room and Facilities (t(17)=5.14, p<0.01, d=2.19) ++ ++ ++ ++	

A statistically significant* positive change in the ratings and the effect size is moderate ($0.50 \leq d \leq 0.80$)	+
A statistically significant* positive change and the effect size is large ($d > 0.80$)	++
A statistically significant* negative change in the ratings and the effect size is moderate ($0.50 \leq d \leq 0.80$)	-
A statistically significant* negative change and the effect size is large ($d > 0.80$)	--