Tomorrow’s hospitals
NHS design review programme

2004

STATUS IN WALES
INFORMATION
The NHS has embarked on the biggest single building programme ever undertaken for new healthcare buildings, and it has done so at a time of enormous change within both the health service and the construction industry. The inevitable challenges involved in such an ambitious endeavour are reinforced by the heightened demands of the consumer-based society that modern Britain has become. People want to stay in touch with the outside world when they go into hospital, and we are increasing our understanding of the potential for a well designed healing environment to contribute to the wellbeing of all who are treated within, work at, and visit our hospitals.

We are engaged in a major renewal of our NHS estate that will provide a generational change. We need to leave a legacy of which our generation can be justifiably proud now that this opportunity is presented to us.

But money and effort are simply not enough. It is the ambition behind the projects, and the intelligence and care with which we design and make these buildings, that will determine their success. That is why the NHS Design Review process has been set up, the objectives of which are, quite simply, to ensure that design standards are firmly established and improved. We want good design to be embedded within all new healthcare buildings. The evidence is there on the positive effect of these reviews; design standards continue to improve and, against that, aspirations and expectations continue to rise. We end up with better buildings that people like to work in and to be treated in.

A further consequence of the NHS Design Review process is the creation of a substantial body of knowledge, increasingly complemented by formal research work, which is available to those undertaking future projects. We need to evaluate our major building schemes and learn from them. The lessons must be passed on and used by those who follow. Learning through experience and evaluation is critical in the area of design. It is crucial that local autonomy and choice is not interpreted as a license to ignore the lessons learned from those who have gone before.

This publication seeks to provide a snapshot of a range of projects currently underway or recently completed, together with a background description of the way in which the NHS Design Review process works. We know that the challenges that lie ahead remain considerable and that our generation’s responsibilities to leave a good legacy are considerable. Much is being achieved, and we should celebrate those achievements now. But we must continue to provide enough skill and time at the beginning of projects to get the design right, learning from rigorous evaluation of past projects.”

Lord Warner, Ministerial Design Champion
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2. Introduction

The NHS enjoys a special place in the affections of the British people, yet its role in the context of a modern consumer-based society is somewhat ambiguous. Available to all, the NHS aspires to deliver sophisticated yet caring services to the highest standards. Such aspirations place considerable demands on the quality of medical practice, equipment and technology, and the facilities from which services are provided. Sadly, against such demands, and despite significant improvements in efficiency, continued developments in medical practice, and enormous investment in new technologies and facilities, the public perception of the NHS is all too often of an organisation that struggles against under-funding.

The demands placed on NHS services are intense and continue to grow as medical sciences advance and life expectancy extends, but it does not serve our community well if perceptions are adrift from reality. The difficulties should and indeed will be reported: performance will continue to be measured, targets benchmarked, and standards of medical care will accordingly continue to rise. But success should also be acknowledged and where, appropriate, celebrated. That, in the context of healthcare facilities, is what this publication is about.

Some 50 years after the creation of the NHS, the Department of Health and NHS Estates have encouraged every healthcare community to assess its entire estate in the widest context of healthcare services, to ensure that our hospital facilities are rationalised, reorganised, replaced and, where appropriate complemented with entirely new buildings on new sites. But the resulting projects should do more than just meet the demands of today; they should “lift the spirit” of all those who are treated, visit and work in our hospitals. They should also respond to continuing advances in medical practices, technologies and service delivery. In pursuit of these objectives, and in order to encourage appropriately high ambitions, best practice, and a co-ordinated design response for the work as it proceeds, the Department of Health established a design programme, which in turn developed a process to review the design of major capital schemes.

The modernisation and renewal of our country’s healthcare estate is now well underway. The first projects - including completely new hospitals - are already in use, whilst many others are at advanced stages of delivery, either on the “drawing board” or already under construction.

‘Tomorrow’s Hospitals’ outlines the framework within which the NHS is seeking to encourage best design practice. We thus provide a kind of “roadmap” for the delivery of new hospital projects. Our aim is to enable NHS Trusts, and all others involved in the massive new building programme now underway to better understand the NHS priorities and processes of assessment.

Through this process there will be a consequent improvement in understanding by all involved of how to set up projects, formulate design briefs, select partners, and subsequently establish project teams and co-ordinate efforts towards successful outcomes.

The pace has been, and will continue to be, fast and furious. But there is already much to celebrate: the case studies that follow, ranging from new hospital developments in “out of town” locations to major regeneration initiatives for complex inner city sites, and from general facilities to specialised units such as the new Evelina’s Children’s Hospital, Guy’s and St Thomas’ NHS Foundation Trust in London’s Lambeth, amply illustrate this fact.
At its inception in 1948 the NHS inherited a legacy of buildings which, albeit of diverse quality and type, included some of the finest architecture of the 19th century. However, the estate was under immediate pressure from the demands and aspirations of the new service and from the outset there was immense need to add to, change, and ‘infill’ existing hospital developments in order to improve the range and scope of facilities.

The development of new technologies and new forms of treatment have since placed ever wider demands on accommodation. As a consequence the coherence of the planning of many of the best hospitals inherited by the NHS at its inception, and built after its formation, has all too often been lost as a result of piece-meal development and redevelopment of hospital sites across the country.

By the closing decade of the 20th century it had become evident that such an approach could continue no longer. A more substantial and radical review of the entire estate would be necessary and a substantial programme of rebuilding was inevitable. The map below illustrates the current (as at July 2004) new hospital schemes counting towards the NHS Plan target.
3. NHS Design Review - Procedures and Aspirations

“To ensure that good design is embedded within the NHS hospital building programme I can say that design proposals in future will be reviewed by a panel, led by NHS Estates and The Prince’s Foundation, CABE and others, at the earliest stages of the procurement process before a preferred bidder is chosen". Rt. Hon Alan Milburn. 16 November 2001 “Building a Better Patient Environment” conference.

However much money is poured into the healthcare estate, achieving high quality buildings for immediate use and as a legacy for future generations is of critical importance. So, in pursuit of the intention that is clearly set out above, the NHS Design Review Panel is now fully integrated into the business case process.

Members of the NHS Design Review Panel include academics, professionals, advisers, enablers, and researchers in the field of design and architecture. Panel members for the assessment of any particular scheme are carefully selected to ensure that they bring to the table an appropriate range of complementary knowledge and skill. Care is taken to avoid conflicts of interest.

The intention is to produce a culture of ‘constructive collaboration’ amongst NHS trusts.

The NHS Design Review Panel meet on site with the Trust to assess and discuss the proposed scheme. Projects are initially reviewed at the early stages of the design development process pre Outline Business Case approval (Design Review Panel 1). A subsequent design review will take place at pre Full Business Case stage, Final Invitation to Negotiate (FITN) or on receipt of tenders for the scheme (Design Review Panel 2). The Design Review Panel uses the Achieving Excellence Design Evaluation Toolkit (AEDET Evolution) as a key component of the review process and structure.

www.efm.nhsestates.gov.uk

The Trust or Bidders are required to put before the Panel a detailed presentation of the design solution which is respectful of the wider project context and aspirations of the Trust. Site visits are conducted to ensure the Panel are aware of any site constraints.

Subsequent to a question and answer session with the Trust or Bidder, the Panel will convene in private to discuss the design proposals. Key issues will be collectively identified and discussed with the Trust. The Panel will then offer advice and make recommendations, emphasising particular design qualities and features which should be developed further and embedded within the scheme as the project advances. A formal written report, summarising the comments and recommendations made by the Panel, is subsequently issued to the Trust. The report includes essential and desirable criteria.

The Panel has been encouraged by the high level of importance that is being attached amongst the health community to the training of their staff in design appreciation. This enables them to contribute more fully:

- to the design development of new facilities (through better understanding of the value of design, the processes by which good design is delivered, and the qualities by which better design is identified).
- to the ongoing maintenance and effective use of those facilities.

Despite best efforts and intentions the NHS Design Review Panel takes the view that somewhere along the way - as systems of administration and management developed, and medical practices and technologies advanced - we have lost the ability to appreciate what may be described as the “Totality of Experience” - a totality that encompasses environment, that places “place” and physical context firmly alongside treatment and care as critical to successful outcomes.
With two years of NHS Design Reviews and the wide range of inputs from others involved in influencing the design of new hospital environments, it is important to assess the lessons learned from reviews undertaken to date, which have since been fed back to Trusts involved in the development of subsequent schemes.

Professor Bryan Lawson and Dr. Michael Phiri of the School of Architecture at The University of Sheffield have undertaken a study to appraise the review process to help to make the system more effective and efficient. The research identified common and recurring themes in the design of major capital schemes. These are listed as follows in order of frequency of occurrence:

**Very frequent:**
- Master Planning: nature of place-making, and reference to Town & Country planning briefs.
- Pro-active Briefing: pro-active verses re-active approach and attitudes to briefing for design quality.
- Design Vision: design development and progression.
- Circulation: people, goods & services, linkages.

**Frequent:**
- Consumerism.
- Public Sector Comparator: Quality of PSC design, PSC benchmarks.
- Future Proofing: ability to grow and change in response to future needs.
- Architectural Legibility: e.g. composition, hierarchy of spaces, space organisation/differentiation.

**Regular:**
- Density of Development: e.g. site density, floor area/site area, compactness.
- Exterior Form and Treatment: facades, elevational features, atria, concourses, courtyards, plant rooms, landscaped areas.
- Deep Planning: (also related to density of development), quality of internal spaces, daylight studies, geometry and planning of courtyards.

**Occasional:**
- Guidance and standards.
- Integration of art and facilities.
- Phasing and Lifecycle: Ability to build in viable phases, sustainability, energy, strategy, impact of construction work.
- Documents: articulation of design intentions within the drawings and other documents, use of room data sheets.
The research, also identified a series of recurring suggestions from the Panel to improve schemes:

**Master Planning**

"Undertake the development of the scheme as part of the community it serves by improving the civic place and creating a sense of place."

**Pro-active Briefing**

"Take a more pro-active approach to establish what constitutes design quality and to ensure that the private sector delivers that high quality solution, for instance using resources such as the NHS Design Portfolio [www.nhsdesignportfolio.nhsestates.gov.uk](http://www.nhsdesignportfolio.nhsestates.gov.uk). Take a more active approach in briefing the bidders on the internal patient environment requirements; Take a more dynamic approach in dealing with local authorities."

**Design Vision**

"Clearly articulate the design vision to ensure whom and what is ultimately driving the design; Consider the lack of clarity in terms of design concept, which has resulted in potentially problematic workflows and logistics of movement of staff; Develop a strategy for all sites or carry out a strategic investigation of specific areas."

**Circulation**

"Consider the impact of the car parking strategy on the service delivery; Consider the car parking strategy to avoid creating a negative visual impact of users entering the site and to avoid heavy reliance on the use of private vehicles by users; Clarify and re-examine the flows around the building particularly the overly complex and long patient pathways which appear to result in prolonged periods of time travelling up and down unpleasant and lengthy corridors."

**Consumerism**

"Increase understanding of what detailed implications consumerism has for the design and operational policies of the NHS Trust, particularly with respect to privacy and dignity issues; Ensure the scheme tackles the consumerism agenda including the privacy and dignity of patients in public corridors and theatres; Evaluate the positioning of beds to ensure privacy, dignity and access to external views; Clarify and develop further the general feeling of the patient environment including the consideration of issues of patient control."
Public Sector Comparator

“Develop design exemplars in the design vision statement. The relationship between the words of the design vision and the drawings of the Public Sector Comparator (PSC) design is important, as the private sector may well respond to the disparity between the two by not taking the design vision seriously; Develop a robust PSC design in order to provide the NHS Trust with the confidence to ensure it can get what it wants from the private sector as well as giving it the justification to reject weaker private sector proposals; Establish clear design benchmarks through design studies and exemplars; Focus on the message the NHS Trust sends out to the private sector that emphasises the importance of the PSC designs as benchmark standards for bidders. Bidders will then assume that this is the standard they must match or exceed in order to respond accordingly.”

Future-proofing

“Consider future-proofing and the development, for example, of car parking as an obstacle to future expansion; Develop a long-term strategy for future development and expansion of the site, including consideration of how the future development of the hospital relates to the overall masterplan to ensure that the response is a co-ordinated one in terms of future urban context; Develop a strategy for future phases of development by creating a set of design standards for future phases; Consider the wider clinical strategy that may evolve to create more scope and sufficiently address issues of future flexibility.”

Density of Development

“Re-consider the high density of the site’s development proposals, particularly the consequences for the impact on people of the building’s massing relative to its setting and their constrained access to natural light, outlook and means of orientation; Innovate in response to issues of site density and the size and height of courtyards; NHS Estates guidance on floor area/site area as a measure of the density of development suggests avoiding reaching levels of approximately 2:1 and the implications of deep planned building.”

Exterior Form Treatment

“Undertake further work on the development of facades paying particular attention to the selection of materials to ensure these are complimentary to the rest of the site; Consider an atria or a concourse area for social spaces, as the nature of such environments will give a lasting impression to users; Consider the roof level as to the benefits it can offer people as well as plant; Ensure care is taken in the elevational treatment of the building such that it does not diminish the natural beauty of its surroundings.”

Architectural Legibility

“Consider the urban design in greater detail, in terms of pedestrian convenience and sight lines, architectural legibility, movement between public and private realms, differences in scale and the treatment of areas that people move through and sit in; Carry out further studies on patient journeys examining the patient experience and clarity of internal circulation and connections between departments; Resolve the interface between clinical planning and design.”
Deep Planning

"Seek to develop ways of improving schemes in order to mitigate the negative effects deep plan accommodation offers e.g. consider the creative use of light wells and courtyards; Carry out studies or light surveys to ensure natural light into buildings, including good provision of natural light and natural ventilation for both patient and staff facilities; Carry out further daylight analysis and views into courtyards; Re-consider materials and treatment elements for example, graded areas and discrete spaces of courtyards, identifying aspirations and ‘locking’ these into the brief to ensure that they are not eroded during the PFI process."

Guidance and Standards

"Consider the softer design issues and begin to use these to inform the output specification thus building on the amount of work already undertaken in the development of written design specifications."

Art and Facilities

"Carry out holistic integration of art and landscaping together with the interior design treatments; Revisit the initial objectives of the Trust’s design concepts for a patient and security focused building in order to improve the evolving design."

Phasing and Lifecycle

"Examine the logistics of the scheme, by going back to basics with diagrams to re-evaluate the design specifications as they are translated into the designed PSC in order to overcome problems of buildability; Provide supporting material for the scheme in terms of construction requirements with the structure needing some particular attention; Provide a much more robust justification for the demolition."

Documents

"Create a sketch study of the size of the new buildings imposed against the old buildings in order to evaluate the impact of the 4-6 storeys; Provide an indicative supplementary briefing information pack showing the design as drawings, site aspirations and specification notes including indicative notional standards e.g. what kind of carpets to be used, what height are window sills to be etc; Consider what information the Trust will supply to the private sector; Build on the Trust’s knowledge, awareness, enthusiasm and skill to exploit the Trust’s potential; Make as much briefing information available to bidders as possible without stipulating a particular design solution."
We have summarised the work of The University of Sheffield in such detail for two reasons:

1) It is absolutely critical that all involved in the development of new hospital buildings learn from the past and share best practice as the work proceeds.

2) Recommendations made by the Panel are generally acted upon. However, this is not the case in all instances.

Early and frequent involvement is essential if NHS Trusts are to gain maximum benefit from the review process. Indeed, it is argued that such early engagement also enables an effective “partnership” to be developed, whilst maximising the potential for recommendations and advice to be tested and, where appropriate, incorporated during subsequent design development.

In conclusion to this chapter a series of further points are set out below under the twelve principal headings now in common currency within the NHS Design Review process:

- Care Model
- Master Planning
- Design Vision
- Civic Presence and Approach
- Circulation and Access
- Legibility
- Exterior Form and Treatment
- Deep Planning
- Staff & Patient Environment
- Space Standards
- Future Proofing
- Sustainability

Despite the finest intentions and ongoing improvements in terms of both aspirations and outcomes, too many schemes have, to date, failed to deliver internal arrangements that satisfied the panel. Particular problems relate to:

- Inadequate access to outside space (terraces off wards, balconies).
- Too many internal rooms without natural daylight.
- Too many internal waiting areas without views of the outside.
- Confused “wayfinding” and inadequate development of identifiable “nodes” - that is: recognisable places within the matrix of circulation.
- Inadequate light-wells that are too small.
- Lifeless courtyards.
- Too many hostile views across flat-roofs/roof-plant/car parks.
- Inappropriate use of atria and glazed streets (excessive light contrasts/solar gain problems).
Too often design proposals are made without consulting longer term local development plans. Initiatives should be posited in the context of a ten-year review with further "horizons" at fifteen and twenty years. New building proposals within established hospital sites should also be seen within an existing setting that is qualified in terms of the planned future retention or redevelopment of adjoining building stock. How will this stage of the hospital’s redevelopment relate to, or accommodate, future as yet unplanned phases? The creation of a meaningful (even if "loose") long-term masterplan is encouraged to avoid the inevitable compromises that arise from poorly planned "incremental" development.

Accordingly, the panel seeks to:
- encourage a wider policy of "seeing" building proposals within the context of their setting amongst other buildings, existing and planned, and
- encourage the planning of new work within a comprehensible larger "landscape".

For these reasons, it is particularly important that all proposals are based on a thorough analysis in terms of a site’s essential characteristics including long views to and from the site.

There has been all too frequent acceptance by some NHS Trusts of short-term constraints on long-term outcomes. For example the compromising of the design quality of new buildings through the retention of existing facilities that will soon become redundant.
There is still a dominant tendency to receive all patients and visitors at a centralised single reception desk and hall. More sophisticated “receiving” and “processing” is required and reference has been made to airports (Stansted), railway stations (Paddington/St Pancras) and arcades (Leeds and Milano Galleria), where multi entrances and a wide range of receptions for different information and destination requirements exist. “Wayfinding” is easier in such facilities and ambient temperatures (with local adjustment) can be set to suit both stationary (waiting) and moving requirements. Security remains, however, an important consideration.

It seems, therefore, that issues of “inside” and “outside” within our new hospital buildings need to be explored more carefully through alternative models that allow for deeper “penetration” of the building/facility before screening and processing of patients and visitors begins in earnest. “Halfway houses” comprising colonnades and part covered courtyards may offer interesting solutions.

Overall, it seems that a closer collaboration and better understanding is required between the four main groups who drive hospital design briefs and design outcomes - that is between clinicians, medical planners, architects and estates/facilities managers.

There is a growing opinion that the “Deep Plan” agenda would benefit from further challenge and research. That is, the exploration of models that provide adequate and appropriate adjacencies whilst incorporating more external courtyards and landscaping and a prioritisation towards “essential” adjacencies within otherwise more dispersed and independent buildings.

More care is often needed in the development of design briefs - some projects have been justified as an essential convergence of hitherto dispersed facilities onto one centralised and large hospital campus. However, equally persuasive arguments can often be made for the dispersal of a variety of functions into smaller district facilities. Either way, many projects appear to represent “over development” - both in terms of the amount of accommodation proposed for a site, and the relationship of the proposals to the surrounding areas in terms of mass and scale.
Space Standards

Whilst some Trusts have shown admirable awareness of the "Triple E" agenda (economic, environmental and ecological sustainability) such interest has neither been consistent nor universal. There is often an evident need to plan work through more careful collaboration with wider interest groups - for example with local bus companies, and with the relevant highways departments, in relation to issues of accessibility and public transportation.

There has to date been too little evidence of any "in depth" approach to sustainability. In many schemes "lip service" is applied to the agenda of ecologically responsible design with little or no evidence of it being applied to either design approach or specification. Nevertheless, and despite some justified disappointment amongst the panel, there has been some refreshing innovative work in this area, and awareness of the importance of this issue is clearly growing.

Sustainability

Clarity is needed within design briefs with regard to functional standards and space requirements for clinical activities. Space standards provided should meet recommended guidance and not merely be an improvement on that which is being replaced. Current recommended space standards will, where adopted, determine the character for facilities that open over the next decade, and herein lies a significant dilemma: as with medical practice, architectural requirements are dynamic and space standards and arrangements will continue to develop and improve in response to new and better medical services. Trusts and their advisors always need to be alert to this fact, especially with respect to the most advanced specialist units/departments. It is essential that decisions are informed by as wide a range of relevant information sources as possible as well as current guidance.
The following case studies all exemplify aspects of design quality in the major hospital building programme. A variety of differing healthcare services are represented amongst the chosen schemes. The case studies include complete new buildings and substantial redevelopment of existing hospital sites, with varying degrees of retained estate. A wide range of contexts have produced a variety of challenges for the NHS, consortia and their design teams.

The case studies also reveal complex phasing issues. All facilities must continue to deliver existing healthcare services at full capacity throughout the construction programme and these challenges have to be met with minimum disruption and compromise in terms of design aspirations.

The studies demonstrate a variety of working methods amongst the trusts: of particular interest is the active participation of NHS Design Champions and the variety of user group, public consultation, and stakeholder involvement that has been adopted.
5.1 Sherwood Forest Hospitals NHS Trust - Public Sector Comparator

5.1.1 Project Specifics

The PSC for this project was presented to the NHS Design Review Panel on the 22nd April 2003.

Capital Cost: £166m
OBC Approval: April 2003
FBC/Financial Close: 2005
Operational: 2009/2010

Client: Sherwood Forest Hospitals NHS Trust
Architect: David Morley Architects

5.1.2 Context

The site lies in a semi-rural setting between the towns of Mansfield and Sutton-in-Ashfield within a former mining area of Nottingham. The NHS Trust is the biggest employer in central Nottinghamshire, and through this project that position will be reinforced. The new facilities include the reconfiguration of nearby Mansfield Community Hospital.

This project constitutes a "whole site" reconfiguration of Kingsmill Hospital campus, on a site of approximately 54 acres. The hospital originated as an American Service hospital during the Second World War.

The completed hospital will contain a new treatment centre, women and children’s centre, emergency care, education and training facilities, pathology, and new and increased in-patient provision.
5.1.3 Vision

During the development of the PSC the Trust has developed an increasingly sophisticated appreciation of the potential of design, and the importance of producing conditions through which it can flourish.

The Trust has a deep-rooted belief that their service to the community is being compromised by poor facilities from which they operate. Working closely with the PSC architects the NHS Trust recognised some of the better qualities of their site/campus, and were determined to realise its potential to the full.

In responding to this brief, the design team have sought to develop a masterplan concept for the hospital that will resolve functional relationships for the immediate accommodation requirements and provide a flexible framework for future developments.

The PSC masterplan has repositioned the main entrance of the hospital from the east corner to the west of the site, thus creating a new main route from central Nottinghamshire and the north of the county.

5.1.4 Key to the Design

The Chair of the Trust is also the project’s Design Champion and has been a key figure in stimulating public consultation and raising aspirations.

Demonstrating that the site can be transformed into a place of civic value without compromise to clinical requirements has put the Trust in a strong position to negotiate with bidders. It has also helped the organisation and community to build a better understanding of design quality.

A strong ‘urban design’ strategy for the site addresses:
- The quality of arrival at the site, main entrances and receptions.
- The specific characteristics and qualities of the spaces en-route to primary destinations including main entrances and parking.
- Potential public transport routes and ‘set down’ points within the site.
- The legibility of the site layout, making wayfinding easy for visitors.
- Quality of hard and soft landscape, including the provision of a hierarchy of external spaces with distinct characteristics and purpose.
- The integration of internal and external space along the primary hospital circulation routes, to ensure that using the ‘hospital’ street is a non-stressful and enjoyable experience.
- Awareness of potential views and site orientation in order to make best use of natural opportunities, particularly in “in-patient” areas where it has been established that sun, light and views have a direct impact on the well-being of patients.
- Quality of in-patient accommodation.
5.2 Peterborough & Stamford Hospitals NHS Foundation Trust - Public Sector Comparator

5.2.1 Project Specifics

The PSC for this project was presented to the NHS Design Review Panel in November 2002.

Capital Cost: £220m
OBC Approval: March 2003
FBC/Financial Close: 2006
Operational: 2011

Client: Peterborough & Stamford Hospitals NHS Foundation Trust
Cambridgeshire and Peterborough Mental Health Partnerships Trust
North Peterborough Primary Care Trust
Architect: Watkins Gray International LLP

5.2.2 Context

The project forms part of a masterplan covering a “whole health system” ranging from acute hospital care to intermediate and local primary care services complemented by mental health services. As a major expansion to existing services this represents a key milestone in Peterborough’s development providing both widespread employment, economic benefit, and the enhancement of this area’s reputation as a centre of medical excellence.

This project comprises the main part of a development spanning three sites. The existing Edith Cavell Hospital site is to be extended with new buildings/facilities. Existing buildings on that site will be part removed/part refurbished. The Trust has two other sites, Peterborough District Hospitals West and East (at two different city centre locations). One will be redeveloped as an Intermediate Care Centre (west); the other will be sold as a brownfield development site linking to the city centre.

The new rationalised brief to which the PSC responds, provides a new acute hospital with an A&E department plus women’s and children’s facilities, together with a mental health unit comprising acute adult, elderly psychiatric intensive care and a learning difficulties unit.
5.2.3 Vision

The key to the PSC proposal lay in “recasting” the existing 1980’s building within a larger complex that, through expansion and new building to the north, south, and predominantly west, would provide the four-fold increase of space required.

A new major axis in the form of a gallery/atrium will be driven through the complex clearly bisecting the existing hospital street. This forms the backbone that provides primary circulation legibility within the expanded facilities, connecting old to new.

The new accommodation will be ‘pushed’ well onto the western boundary providing a protective buffer from the adjoining dual carriageway. A series of landscaped courtyards have been incorporated within the scheme which is circumscribed by a new peripheral site road.

An interesting feature of the masterplan is that the main east/west route “climbs” through the accommodation linking the public entrance to the new ward accommodation at levels 3 and 4 to the west. The wards are located above (but routinely in terms of public access dislocated from) the Mother and Child Unit, A&E and theatre facilities at levels 1 and 2 below.

5.2.4 Key to the Design

Key to the success of this PSC has been the care taken in public consultation: pro-active engagement with the community has been of paramount importance. Only through that process has it been possible to secure the wider community’s commitment to the extensive rationalisation and relocation of the existing facilities, and the support of a wide variety of Trust interests.

Through public consultation workshops a “Good Design Guide” was developed, which included illustrations of exemplar buildings chosen to reflect the community’s aspirations for their new facilities.

For the Trust, design quality was key, the following issues particularly:

- Physical and visual access to the natural environment.
- Art and other sensory stimulation.
- Scope and facilities for social and family support.
- Reduction of factors that induce stress and discomfort.

The Design Review Panel felt that as the major new development is located at the rear of the site, the existing retained estate would require general renovation both internally and externally to demonstrate the new healthcare culture at Edith Cavell and the level of investment in the surrounding community. This development provides a wonderful opportunity to create a sense of place that incorporates a coherent organisation to the external approaches to the hospital.
5.3 Whipps Cross University Hospital NHS Trust
- Public Sector Comparator

5.3.1 Project Specifics

The PSC for this project was presented to the NHS Design Review Panel on 8th October 2003.

Capital Cost: €303m
OBC Approval: January 2004
FBC/Financial Close: 2006
Operational: phase 1 - 2010, phase 2 2012

Trust: Whipps Cross University Hospital NHS Trust
Architect: Avanti Architects

5.3.2 Context

Whipps Cross University Hospital is situated on the north east edge of London and serves the population of Redbridge and Waltham Forest. The Borough of Waltham Forest ranks as one of the most deprived English local authority areas. The current hospital was formed 100 years ago and has been continually developed since then. The current buildings are functionally obsolete and do not meet recommended standards for patient privacy and dignity.

Architecturally, the visual clarity of the original Edwardian buildings has now been lost in a series of later piecemeal developments.

Accommodation also forming part of the redevelopment project consists of undergraduate and post graduate teaching facilities and 750 units of student accommodation, 400 units of key worker and social housing, a sports and leisure centre and healthy living centre.
5.3.3 Vision

The new clinical model provides 846 beds. It includes the introduction of assessment centres, the creation of one-stop shops for elective care, the reconfiguration of A&E, and the centralisation of theatres and diagnostic facilities. Emergency and elective care will be streamlined.

An environment will be created that is therapeutic for patients and up lifting for the staff and public. Budgetary constraints in developing the exemplar design led to the retention of the 1990's (sub Nucleus) buildings for use in non-critical services. A key element in the Trust's brief was the requirement for an appropriate phasing strategy. The substantial part of the existing facilities are to be renewed and the hospital is to be expanded but through out this process medical services must continue to be provided from this site at full operational level without compromise to NHS performance targets.

The PSC essentially entails the clearing of a large area of staff accommodation and non clinical facilities along the southwest boundary and the construction of a major new facility that interlinks with the retained, refurbished and modernised 1980's and 1990's blocks, albeit converted.

This strategic approach will free the northern part of the site for almost universal demolition and conversion into a large landscaped foreground producing a new campus setting at the access to the site. This also provides a landscaped link with the adjoining Epping Forest to the north of Whipps Cross Road, inline with the Greater London Authority (GLA) “Open Spaces” strategy.

The ambitious scale of renewal allows for major rationalisation of adjacencies, for example, five separate theatre locations scattered across site have been consolidated within one theatre block, itself appropriately located in terms of clinical adjacencies.

Currently hidden from the surrounding clutter, the central remains of the original Edwardian towers will be revealed and set within a new landscaped foreground. It is intended that the towers will be converted in the future for community use.

5.3.4 Key to the Design

Staggered multi-bay ward layouts enable external views to be provided from the circulation routes and good levels of daylight deep into the building from the west. By repeating a series of blocks that incorporate 50% single bedrooms, flexibility in nursing patterns is achievable. The PSC architects have undertaken dimensional analysis of courtyards with regard to the quality of sunlight and daylight penetration.

The Panel emphasised that the PSC should include the explicit aspirations for the quality of the internal environment and the patient journey. This might include re-visiting the location of out-patient departments currently on several different levels.

The NHS Design Review Panel complemented the Trust's significant commitment to the sustainability agenda in informing future bidding consortia.
5.4 The Leeds Teaching Hospitals NHS Trust - Preferred Bidder

5.4.1 Project Specifics
The FITN proposals were presented to the NHS Design Review Panel on 8th January 2003.
- Capital Cost: £220m
- OBC Approval: September 2001
- FBC/Financial Close: October 2004
- Start on Site: November 2004
- Operational: 2008
- Trust: The Leeds Teaching Hospitals NHS Trust
- Preferred Bidder Consortium: Catalyst Healthcare (Leeds) Limited
- Architects: Anshen Dyer

5.4.2 Context
The St James’s Hospital site is part of the Harehills Regeneration Area of Leeds. The development comprises a new stand alone wing and an associated 1,300 space multi story car park on a brown field site within the boundary of the St James’s University Hospital campus in the centre of Leeds. The accommodation, which is arranged over eleven floors, encompasses high technology areas, inpatient and outpatient facilities and public space. Service provisions include:
- Non-surgical oncology (radiotherapy and chemotherapy).
- Clinical haematology.
- Specialist surgical services (oesophageal, gastric and hepatic cancers, pancreatic disease and thoracic surgery).
- Clinical support services including theatres, critical care, imaging, pharmacy, medical physics, pathology, endoscopy and nuclear medicine.
- Non clinical support services.
5.4.3 Vision

The objective of the project is to provide a state-of-the-art 21st century facility delivering centralised and expanded cancer care to the Yorkshire Cancer Network.

The resulting design has achieved key adjacencies that include:

- Critical care, theatres and surgical wards located on a single level and with immediate proximity to theatres and ITU on the rest of the St James’s site. This arrangement will provide greater flexibility of use and staffing;
- 12 linear accelerator bunkers, all located on a single level alongside treatment planning, mould room and review clinics. Radiotherapy facilities are thus organised to provide the best use of support accommodation and reduce staff movements;
- Location of haematology out-patients, daycases, in-patients and HMDS on one floor in order to support joint working.

The development of the scheme has involved extensive staff, patient and community consultation with the aim of delivering a building that responds effectively to the needs of patients and carers, develops a sense of ownership and trust, accelerates change, and improves the quality of care.

Trust brief requirements were to maximise the use of natural daylight, to improve patient experience, reduce staff travel times, and offer enhanced privacy and dignity whilst achieving clear and rational planning arrangements with respect to departmental adjacencies, patient flows and wayfinding.

5.4.4 Key to the Design

An "E" shaped footprint has been adopted for the patient areas providing a perimeter wall that maximises opportunities for natural light, ventilation, and for views to the adjoining public realm and street scape. The slope of the site has been used to provide natural light into the lowest levels of the new building. Waiting spaces are sited adjacent to landscaped courtyards within the "E" providing interest and access to external space. In addition, the design incorporates accessible terraces at ground, third and fourth floor levels.

The external appearance of the building is characterised by unique forms which combine composition with an expression of lightness which intentionally contrasts with other buildings on the site. These forms reflect the clinical planning solution with separate but complementary treatments for the hi-tech block, inpatient zone, public floor and building plinth.

A new plaza area acts as a formal entrance and drop off point for the new wing while providing a direct link between the car park and the clinical building.

Functionally, the building has been split vertically between high technology diagnostic and treatment zones and patient-focused zones including out patient, day care and in patient accommodation. The building is arranged with ambulatory care services on the lower levels offering easy access to radiotherapy, outpatients, imaging and pharmacy. Inpatient services are located on the levels above within a more secluded environment. Clear separation has been provided between FM and clinical functions. A central spine links these separate elements at each level providing a focus that forms a glazed gallery at ground and first floors. This arrangement allows access externally to the building from both ends of the site.
5.5 Mid Essex Hospital Services NHS Trust - Preferred Bidder

5.5.1 Project Specifics

The FITN proposals were presented to the NHS Design Review Panel on 7th January 2004.

Capital Cost: £120m
OBC Approval: June 2002
FBC/Financial Close: 2005
Operational: 2008

Client: Mid Essex Hospital Services NHS Trust
Preferred Bidder Consortium: The Bouygues Consortium
Architect: Llewelyn Davies Ltd

5.5.2 Context

The Broomfield Hospital site is situated on 22 hectares of land approximately 4 miles north of Chelmsford town centre. The hospital benefits from a semi-rural location surrounded by large areas of woodland. This site started life as a TB sanatorium during the inter-war period.

The NHS Trust comprises a number of hospitals and clinical areas providing a full range of core, general and acute services, as well as ICU, breast care and renal services to a large catchment area in Essex. Regional plastic surgery and burns services are also provided from this location. Current split site working, poor intermediate care facilities and lack of sufficient short stay elective accommodation adversely affects service provision. Many of the buildings on the site simply cannot function effectively as part of a modern general acute hospital. Several aspects of the Broomfield site do not adequately serve current needs - in particular the traffic congestion caused by the poor relationship between access roads and the A&E block, and the separate entrances serving out-patients and pharmacy.
5.5.3 Vision

The Trust’s vision for the site has been realised by an integrated development strategy which establishes core clinical areas and public amenities at the centre of the site with good access to parking and public transport for both visitors and staff. This strategy has been informed and supported by the Trust’s Design Champion who is a Trust board member.

The primary aim of the proposed site layout is the creation of a structured campus arranged within the context of a longer term development control plan which includes a clear hierarchy of spaces, connected by a series of links, that encourage clear and simple wayfinding.

The Trust’s clear brief includes the redevelopment and refurbishment of A&E, centralisation of the diagnostic and treatment centre, maternity and paediatric facilities, cardiac centre, private patients’ units, revised road and car parking layouts, helipad, landscaping, new staff accommodation and other ancillary uses.

The building provides for out-patient services at ground level with A&E assessment and critical care at level 1, theatres and short stay at level 2, maternity at level 3 and children’s services at level 4. This planning arrangement meets the Trust’s brief for all out-patients to be provided for on one level. The new critical care centre is adjacent to A&E and assessment beds and children and maternity have their own dedicated floors.

The design ‘grafts’ the new building onto the existing Alpha Block by creating a covered concourse which will provide a new ‘heart’ and spiritual centre to the hospital between the two buildings connecting from east to west. This device allows the new entrance area to be linked to the existing urban square. The proposed covered concourse forms the primary circulation spine for the public to move within the hospital. All public amenities, including the reception, restaurant and pharmacy, are located within this spine.

5.5.4 Key to the Design

The principal analogy in the design concept is that of ‘connecting hands’, integrating the landscape of Broomfield Hospital with the woodlands and surrounding parks. This approach provides an opportunity to set up a series of related internal and external spaces which, at their connections, establish ‘landmarks’ to aid the visitor in wayfinding during their journey in and around the hospital.

The design concept is supported by a series of waiting spaces along the concourse on the ‘fingertips’ of each ‘hand’, allowing visitors to enjoy the experience of the inner courtyards, which provide a visual connection to the countryside beyond. The new building is organised in a series of regular ‘clinical fingers’ running north south, interspersed by courtyards. The courtyards allow for maximum light in the clinical areas, whilst the south orientation provides for maximum sun penetration. The new concourse forms a straight spine in the proposal that engages with the public waiting spaces at the crossing point with the courtyards. It is intended that at these ‘nodal points’ the landscape and interior design will be themed in a logical and hierarchical fashion as a clear wayfinding system.
5.6 University Hospital Birmingham NHS Foundation Trust & Birmingham and Solihull Mental Health NHS Trust - Preferred Bidder

5.6.1 Project Specifics

The FITN proposals were presented to the NHS Design Review Panel on 23rd October 2003

- Capital Cost: £520m
- OBC Approval: March 2001
- FBC/Financial Close: 2005
- Operational Date: Phase 1 - 2006 Phase 2 - 2008

Client: University Hospital Birmingham NHS Foundation Trust & Birmingham and Solihull Mental Health NHS Trust.

Preferred Bidder Consortium: Consort Healthcare

Architect: Building Design Partnership (BDP) / Nightingale Associates

5.6.2 Context

This project aims to modernise acute and mental health services in South Birmingham. Key stakeholders involved in the planning process include Primary Care Trusts, the Ministry of Defence, the University of Birmingham, Birmingham and The Black Country Strategic Health Authority and Birmingham City Council.

The New University Hospital Birmingham will replace the existing Queen Elizabeth Hospital (QEH) and Selly Oak Hospitals (SDH) and will be located in Edgbaston, South Birmingham. To the north and east of the site lies the existing QEH, the University Medical School and the Women’s Hospital. To the east is the university, the railway line, and the Worcester and Birmingham canal, and to the south Bourn Brook. On the west of the site lies Metchley Lane and a range of residential properties.

The Women’s Hospital is part of Birmingham Women’s Hospital NHS Trust and will not form part of this project. Most of the current medical uses of the existing QEH complex will be decanted as the consolidated new hospital is fully commissioned. A number of the existing buildings to the north east of the site are functionally unsuitable and are proposed for ‘mothballing’ in the Trust’s PSC.
5.6.3 Vision

The NHS Trust's vision is to create a new hospital, which will be a civic landmark and a building of which the community can be proud. As well as providing the most modern high-tech equipment and facilities, the hospital environment will contribute to the health and well-being of its patients, as well as all those who will work within and visit the new buildings.

The project brief is driven by a desire to organise services around the patient. This approach helps to define departmental adjacencies which, when linked to the local urban and master planning principles, results in a clear site organisation. There is great commitment to the inclusion of the healing arts as an integral part of the design.

Services are currently delivered from the Selly Oak and Queen Elizabeth Hospitals sites, separated by 1.5 miles and across the busy A38 Bristol road. Such split site arrangements involve patients, staff and visitors moving between the two sites - clearly not desirable from a clinical or personnel perspective. The Trust's key aim is therefore to centralise acute services onto the Queen Elizabeth site. This will improve access and efficiency whilst enabling the Trust to provide high-quality services and environments for patients and staff.

The vacated Selly Oak site will provide a significant urban regeneration opportunity for the locality. Currently, more than 550,000 patients attend the two hospitals annually for treatment, over 6,000 staff are employed and the NHS Foundation Trust has an annual income of over £300 million. The Hospital is therefore a significant social and economic resource within the Birmingham locality. This project will create 1,000 new healthcare jobs and 2,500 construction jobs.

5.6.4 Key to the Design

The Panel acknowledged that transport issues are being developed by the Trusts, through negotiations with the University, the Local Authority and other bodies. The Panel encouraged the Trusts to continue developing an integrated transport system throughout the campuses, including the areas owned by the Ministry of Defence, the University and J Sainsbury. The Trusts have been negotiating the possibility of introducing an ultralight rail and bus system with the local transport authority - an exciting and laudable initiative.

The Panel was particularly impressed by the involvement of the Design Champions and Design Advisors, and felt that there was room for them to extend their involvement to champion the patient environment and consider in more detail areas where clinical treatment would be carried out.
5.7 University Hospital of North Staffordshire
NHS Trust - Preferred Bidder

The FITN proposals were presented to the NHS Design Review Panel on 28th August 2003

5.7.1 Project specifics

Capital cost: £370m
OBC Approval: August 2002
FBC/Financial close: 2005
Operational: Phased completion 2006-2011
Client: University Hospital of North Staffordshire NHS Trust
Preferred Bidder Consortium: Equion/Laing O'Rourke
Architect: RyderHKS

5.7.2 Context

The University Hospital of North Staffordshire is currently split across three sites. This arrangement produces a number of problems stemming largely from the wide dispersal of services, but also the outdated and inadequate buildings in which those services are accommodated. The Trust’s brief aims to centralise its services into new facilities on the City General site and contribute to the creation of stronger primary care services as a vital component of a vision for the future.

The City General site itself has been subjected to piecemeal development since the mid 19th century. This has led to a dispersed and poorly connected range of facilities across the sites: arrangements that preclude the efficient implementation of medical care services.

The master plan integrates elements of the existing estate within the new build and provides a framework for future expansion. This offers a sustainable response to the provision of new healthcare facilities.
5.7.3 Vision

A master plan has been created that offers a clear, efficient and forward thinking medical solution with built-in flexibility.

In the plan the site is organised by a primary axis running east-west, delineating the principal pedestrian circulation route both externally and internally. The two main entrance points are located as ‘nodes’ on the axis, each reached through carefully organised external spaces that order the wider public realm and provide clear wayfinding. These arrangements offer a valuable amenity and breakout space.

The larger building mass of the diagnostic hub is orientated towards the south and west aspect in order to derive benefit from the larger scale of the urban corridor and the longer range views beyond. This location provides immediate clinical adjacencies to the key elements of both the new and retained facilities.

The north elevation of the diagnostic hub addresses the primary public zone of the site and features a fully glazed enclosure of the public gallery concourse.

The treatment centre reduces in scale towards the domestic context to the north and east and responds to the immediate setting of the listed buildings within the site.

5.7.4 Key to the design

The organisation of the building is planned around a clear public realm, defined by the main pedestrian gallery running east-west. The public realm is reinforced with a terraced garden area providing continuity between the internal and external environment. This concept of connectivity between inside and outside spaces is continued in the arrangement of the glazed waiting areas that open from the gallery. The waiting environment is effectively extended out in the landscape beyond and the interior areas thus benefit from splendid views and natural light.

At department level, a series of well defined and visible landmarks connected by clear routes continues a simple method of natural way finding. Colour, light, art and the continuing connection with the external environment remain the primary elements in achieving this strategy and developing a therapeutic environment to comfort, reassure and delight patients and staff alike.
5.8 Sheffield Teaching Hospitals NHS Foundation Trust - Preferred Bidder

5.8.1 Project Specifics

The FITN proposals were presented to the NHS Design Review Panel on 10th December 2003.

Capital Cost: £31m
OBC Approval: March 2003
FBC/Financial Close: 2004
Operational: 2006

Client: Sheffield Teaching Hospitals NHS Foundation Trust
Preferred Bidder Consortium: Kajima (Europe) UK Ltd
Architect: Sheppard Robson

5.8.2 Context

The new ward block development will replace the existing 168 beds currently provided within the Victorian medical wards accommodation built in 1878 and known as the 'Vickers Corridor'. The Sheffield Health community have endeavoured over the past twenty years to replace the old ward facilities.

The proposal intends to match the client requirements with a sympathetic and effective design, which has been developed following extensive interaction with the Trust and its users. The key drivers of the design were the site conditions, clinical functionality, and the patient and staff experience. The Trust had a strong desire to maximise patient observation, views from inpatient beds, orientation and daylight in order to provide high quality environments for staff and patients alike.
5.8.3 Vision

Discussion and careful consideration of the site led to the development of 'L' shaped wards linked to a central atrium space, which in turn links to the existing hospital building. The atrium 'announces' the entrance and enhances the site's legibility and permeability of the interior. It allows simple access from staff areas, while providing clear wayfinding internally for visitors, staff and patients.

A key design issue that commanded particular attention was the quality of the internal environment. A quality patient and staff environment is provided through high levels of daylight, generous views, imaginative use of colour, and the use of quality materials. Every patient bed has access to an adjacent window with a commanding view of either landscaped courtyards or across a leafy valley.

Windows are designed to the benefit of those occupying the space. For example, lower sill heights facilitate a patient view that consists of more than just the sky!

The courtyards have been designed to facilitate circulation and provides the clinical adjacencies necessary to efficiently operate the unit. They also reduce the perception of enclosure. This is achieved by the introduction of glazed link bridges which, while facilitating the desired clinical adjacencies, are transparent and allow views to the wider environment beyond for patients, visitors and staff.

In the arrangement of the single rooms, which make up 50% of the bed numbers, the multi wards are located on the street-side of the facility to enable patients to enjoy the adjoining activity and visual stimuli, while single-bed wards are located adjacent to the courtyards, benefiting from a more tranquil and calming environment.

Observation opportunities for staff were paramount user requirements and a number of internal studies have been undertaken to prove the most efficient arrangement. Each bed is positioned to maximise sight lines both from and between the nursing stations.

5.8.4 Key to the Design

The design of the new facility on the Northern General Hospital site is a considered response to certain critical key design issues which were identified as follows:

- Positioning and orientation of the building to take advantage of the landscape views. The site levels fall from west to east on a slope of 10 metres giving views over gardens and woodland.
- To provide all habitable rooms, specifically bed areas, with good levels of daylight with visual benefits provided by its location to all patients.
- To ensure that bed clusters, within each ward, provide the individual nursing teams with high levels of observation over a full 24-hour period.
- To ensure that nursing staff have close proximity to the ward support rooms.
- To provide a high quality environment for patients, visitors and staff and to take into account the needs of people with disabilities.
- To provide a design which can be adaptable and respond to any future change of use.
5.9 Guy’s & St Thomas’ NHS Foundation Trust - Under Construction

5.9.1 Project Specifics

Capital Cost: £41.8 m  
FBC: September 1998  
Start on Site: February 2002  
Operational: 2005  
Client: Guy’s and St Thomas’ NHS Foundation Trust  
Architect: Hopkins Architect Ltd  
Medical Planners: RKW

5.9.2 Context

Guy’s and St Thomas’ NHS Foundation Trust serves the London Borough of Lambeth and Southwark. It is also a tertiary referral hospital for the whole of the southeast of England. The Trust offers various discrete services including cardiology, neurology and renal specialisms. St Thomas’ is also one of the largest children’s hospitals in the country, and contains within its riverside site the Evelina Hospital. With a long tradition of over 900 years of medical practice being delivered from the Guy’s site, near London Bridge, Baron de Rothschild established the original Evelina Hospital in 1869 in memory of his wife Evelina who died in childbirth.

The original Evelina Hospital located in Southwark was absorbed into Guy’s in the 1970’s. This project relocates the hospital onto the St Thomas’ site creating a unique facility for children and their families. Here children can live at the facility for extended periods during treatment and intensive care, and families can receive specialised support and counselling to enable them both to cope with, and to contribute to, their children’s situations and well being.
5.9.3 Vision

Responding to the belief that "a sick child is a sick family" the project aims to create a new and unique facility for children and their families on the St Thomas' site.

Evelina’s tradition of service to this part of London has been crucial. This building allows the hospital the opportunity to expand on their work for children and families and further raise aspirations.

“What is a hospital that doesn’t feel like a hospital?” The principal aim of this project was to create a hospital facility that didn’t feel like a hospital.

5.9.4 Key to the Design

The design responds to the opportunity of the site’s proximity to the Archbishop’s garden in the neighbouring Lambeth Palace. This walled garden is the largest private garden in London other than Buckingham Palace and has been made available to families and children at Evelina for day use. The wards also overlook the gardens through the atria/conservatory. The chosen site was formerly a nurse’s residence and was chosen as the most appropriate setting to extend the hospital’s acute facilities of which the new children’s hospital will form a key part. The building is arranged to accommodate more “public” activities on the lower floors whilst on the upper levels the inpatient ward and school look south into the conservatory with a landscaped backdrop.

Glazed lifts rise within the conservatory and connect via bridges into the ward accommodation.

The concept on arrival to a ward is that the first space entered is a children’s play area. The ward configuration is planned to allow all bed bays to look into the conservatory. Medical and surgical bed facilities can expand and contract to reflect varying demands.

As an aid to wayfinding as users rise through the levels in the building each floor is themed: ground floor: "ocean" and then for floors above "arctic"; "forest"; "beach"; "savannah"; "mountain", and of course "sky".

The passage of natural light into the building is maximised by the atria/conservatory, a space for children and their families to use outside the ward environment. This arrangement allows the maximum amount of natural light into the building and provides a dynamic volume in which activity and performance can take place against the backdrop of the Lambeth Palace gardens.

The architects have incorporated highly transparent glazed screens and partitions around areas where privacy can be moderated by the use of louvre blinds within their double glazed panel system. Internal openness and transparency is a great part of this building’s appeal.
5.10 West Middlesex University Hospital NHS Trust - Open and Operational

5.10.1 Project Specifics

Capital Cost: £53m  
OBC Approval: June 1999  
FBC/Financial Close: January 2001  
Start on Site: February 2001  
Operational: April 2003 Refurbishment July 2004  
Client: West Middlesex University Hospital NHS Trust  
Consortium: Bouygues UK, Ecovert FM, HSBC  
Architects: Nightingale Associates

5.10.2 Context

The existing hospital epitomised the disadvantages of unco-ordinated piecemeal development over time, an example of which was the need to transport patients by ambulance across site to diagnostic imaging and operating theatres which were remote from the wards that they served. As a result of this and other major issues around site planning and medical services particularly the efficiency of healthcare service delivery was heavily compromised.

The northern block contains highly serviced ambulatory care and diagnostic services containing: A&E, Diagnostic Imaging, Theatres, Critical Care and Day Surgery, pharmacy and mortuary.

The southern block contains new inpatient beds on three levels with a sunny southern orientation with outpatient’s facilities easily accessible at ground floor level. Elderly Person wards, Paediatrics as well as Women’s Services are retained in refurbished existing buildings.

The provision of more logical departmental layouts would help eliminate the transfer of non ambulant patients by lift wherever possible, minimise patient transfer within a 24 hour period, help separate elective from emergency procedures and ensure that the building is even more patient and staff friendly.
5.10.3 Vision

The hospital has been designed to harmonise in scale and in character with the local surroundings. Its design has incorporated sustainable products to minimise the environmental impact by reducing energy consumption, management and maintenance costs over the life cycle of the building. The new building is more compact than the one it replaces and there are now larger areas of open landscaped spaces which, as the planting matures, will provide shelter and varied interest in colour and leaf form. The site also has a problem with aircraft noise as it is on the flight-path to Heathrow, so the building design has incorporated noise attenuation measures to reduce this disturbance.

5.10.4 Key to the design

The design comprises a new four storey and two storey block arranged in a broadly elliptical shaped building linked to the existing Medical Block. The two new blocks are joined by a common entrance and a covered ‘street’ or concourse, the principal circulation artery developed through the centre of the building links all major departments. The new main entrance is easily identifiable close to car parks and the Twickenham Road access. From here the covered street connects to the main reception point. With its shops, cafe and restaurant it has become the main focal point for visitors, staff and ambulant patients.

The concept for landscaping was integrated and closely allied to the overall scheme strategy and has incorporated the following aspects:

- Landscaping treatment has been applied to the road access from Twickenham road to the new main entrance.
- Hard and soft landscaping to all car parking areas. (The ratio of car parking is 1.5 spaces per bed space, based upon an overall capacity of the whole hospital of 539 beds).
- Inner courtyards are appropriately landscaped, suitable for visitor and patient use and amenity adjacent to the main concourse.
5.11 Northumbria Healthcare NHS Trust - Open and Operational

5.11.1 Project Specifics

Capital Cost: £20m
OBC Approval: February 1996
FBC Approval: August 1999
Financial Close: November 2000
Start on Site: February 2001
Operational: April 2003

Client: Northumbria Healthcare NHS Trust
Consortium: Canmore Partnership
Architects: Reiach and Hall Architects

5.11.2 Context

The existing Wansbeck General Hospital, opened in 1993, was the first hospital in the North of England to be designed on the ‘nucleus’ principle of grid pattern and interconnecting corridors with wards formed around courtyards. It was also the second of two low energy hospitals built to demonstrate how low energy consumption could be carried out in new and existing healthcare premises.

Wansbeck General Hospital Phase 2 is a major extension to an existing general hospital. It consists of the following departments: Outpatients, Rehabilitation, Maternity (including Ante, Post Natal, and Special Care Baby units), Childrens Health, Gynaecology and Day Surgery (including Dental).
5.11.3 Vision
The new facility is conceived as a new two-storey community of buildings. This strategy is driven by the functions of the different elements, with the gymnasium requiring separation from the main building for acoustic reasons and separation from the Child Health building for social reasons. The buildings relate to each other in terms of form, material and detailing, and enclose a number of external spaces creating an amalgamated hospital community.

Phase 2, the new maternity template, special care baby unit and central delivery have their own dedicated Obstetric Theatre. The postnatal ward is located adjacent to the delivery suites and all three units are on one level. With such well-appointed rooms, many patients have likened the hospital to a hotel.

The design of the new hospital offers central interlinked patient waiting areas, a series of consulting suites (where each consultant has access to two examination rooms) and a number of adjoining therapy consulting rooms to enable patients to consult with clinicians, chiropodists and other specialists on the same day. The new “five-day” surgical department is located on the first floor adjoining the Theatre Department for ease of access.

5.11.4 Key to the design
Internally, the building is arranged around a central street. There is an emphasis throughout on daylight, starting in the double height main entrance area, lit by a high-level glazed wall. The majority of spaces are naturally lit and ventilated except where there is a clinical requirement for mechanical ventilation.

The gymnasium, part of the rehabilitation department, is free standing, connected to the main building by a glazed walkway. Expressed as a simple volume, it forms a fulcrum between the main building and the Child Health Building. In the Child Health Building, which is also linked by a glazed walkway, the scale is reduced, as is the palette of materials, with brick becoming predominant. The plan is simply arranged around a central court with clinical accommodation on the ground floor.

The design emphasises the aspirations of the new hospital by introducing a thoroughly contemporary crisp and clean visual aesthetic. Colour is used to differentiate between floor levels and departments. Colour is also used to accentuate a sense of place. Stronger colour marks routeways through the hospital and offers navigation and route-finding within the new hospital. The Child Health Unit has brighter colours, which are contrasted to provide an animated interior. Natural ventilation in the facility significantly reduces energy costs associated with mechanical ventilation and brings independent control back to the patients and staff. The ability for patients and staff to control their surroundings cannot be underestimated in the recovery of patients and the feeling of well-being of staff who work long hours and shifts.

As part of the grouped nature of the hospital plan, and as a fundamental part of the energy-saving and environmental aspects of the project, courtyards play a very specific role in the interior and exterior landscape of the hospital. Each courtyard has a different character responding to the wards and/or departments they serve whilst reflecting the function and service that they offer. The courtyard in the rehabilitation therapy department contains an exercise walking track along with walls and ramps with handrails, encouraging patients to regain walking confidence on a range of surfaces like steps, ramps, gravel, cobbles and grass.
Clearly, both the healthcare sector and construction industry are undergoing a phase of accelerated change and modernisation, this is happening in the context of continuing social and economic development in the wider community. Change inevitably brings with it challenge and the opportunity for new ideas, design innovation and new practice. Against that background expectations are greater than ever before. It is in the light of all these issues that we stand at the threshold of a new era: new healthcare practices, new architectures, new social and environment agenda, new methods of project delivery and funding and new opportunities for collaboration.

The University of Sheffield study gives invaluable feedback from the NHS Design Reviews to date. Trusts and Consortia embarking on new projects would do no better than to start there: guidance offered through the careful design review of major capital schemes will be invaluable to all involved in forming design briefs, developing project strategies and refining their solutions.

But above all the lesson must be that whatever the scale or type of project, whether it's a specialist new build unit or a major phased redevelopment, a new building or a substantial renovation, nothing is more important than an appreciation at the outset of the value of good design.

The expectations placed on all those involved in the delivery of the new healthcare estate are wide: they range from meeting new design agenda that will improve environment for patients, staff and visitors and new forms of collaboration within the construction industry that will improve the quality, economy and efficiency of the building process to, finally, a greater appreciation of the agenda that affects the wider community.

Good design, championed by committed players, wide consultation with stakeholders, and a high level of aspiration from the outset are the essential ingredients of a successful project. But even that is not enough; the gestation period for a building project is fraught with challenges. The pressures to compromise are wide and varied: the route to completion is long and testing. Many parties with conflicting interests are involved and thousands of people will contribute: only when a robust commitment to preserving and protecting design quality exists will we leave work which is worthy of our efforts, the public we serve and the future generations who will surely look with critical eyes at the NHS facilities that we are now committed to delivering.
Co-authors

Paul Hyett, Chairman of RyderHKS and past president of the Royal Institute of British Architects is a member of the NHS Design Review Panel steering group.

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University Hospital Birmingham NHS Foundation & Birmingham and Solihull Mental Health NHS Trust - Consort Healthcare, Building Design Partnership (BDP), Nightingale Associates.

University Hospital of North Staffordshire NHS Trust - Equion/Laing O'Rourke, RyderHKS.

Sheffield Teaching Hospitals NHS Foundation Trust - Kajima (Europe) UK Ltd, Sheppard Robson.

Guy’s and St. Thomas’ NHS Foundation Trust - Hopkins Architect Ltd, RKW.

Northumbria Healthcare NHS Trust - Canmore Partnership, Reiach and Hall Architects.

West Middlesex University Hospital NHS Trust - Bouygues UK, Ecovert FM, HSBC.

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