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# Therapy by design: evaluating the UK hospital building program

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**Abstract**

A renewed interest in hospital design in the UK, prompted by the Private Finance Initiative, provides an opportunity to consider hospitals as 'therapeutic environments'. Noting that the therapeutic value of hospitals is related to their physical, social and symbolic design, this paper argues that 'expert' knowledges have encouraged the development of hospitals that all-too-rarely provide benign settings for promoting patient recovery and healing. The recent programme of hospital building in the UK, however, has been accompanied by a vigorous debate over what constitutes good hospital design, with four significant ideas emerging: hospitals should be clinically efficient, be integrated within the community, be accessible to consumers and the public, and encourage patient and staff well-being. Suggesting that all four goals demand careful consideration of the real and imagined spatiality of hospital environments, the paper concludes by suggesting ways that health geographers can contribute to debates surrounding PFI hospital design.


## Introduction

'Is it a hotel? Is it a trendy bar? No, it's a hospital'
(Purvis in *The Guardian,* 5 July 2001, p. 14.

Hospital design has recently re-emerged to become a major focus in debates over therapy in the UK, with a range of national newspaper articles—such as the one quoted above—highlighting this renewed interest. Of particular concern is the design quality of hospitals being built under the British Labour Government's Private Finance Initiative (PFI). Such PFI schemes have been described by the Department of Health as 'design, build, finance and operate' schemes, where a private sector partner is responsible for:

- 'designing the facilities (based on the requirements specified by the National Health Service);
- building the facilities (to time and at a fixed cost);
- financing the capital cost (with the return to be recovered through continuing to make the facilities available and meeting the NHS's requirements);
- operating the facilities (providing facilities management and other support services)' (Department of Health, 1999, p. 16).

Mohan (2000, pp. 203–205) discusses the arrangements under which private corporations enter into PFI contracts with the NHS, for which they are paid an annual fee for the life of the contract (usually 25–30 years). The intention is that the private contractors will find innovative and cost-effective ways to meet NHS requirements by being required to share the capital and revenue costs of hospital provision. Discussing the financial risks and opportunities this entails for contractors, Mohan (2002, pp. 205–213) identifies a tendency towards reduced staffing levels and fewer beds in PFI hospitals, so that running costs are reduced and income generation maximized.

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While the changing funding of hospital building is of great significance in the PFI programme, issues of quality of provision have also been recognized as fundamental. In this paper we review emerging ideas of what constitutes good hospital design, considered in the widest sense. To these ends, the paper is divided into three main sections. In the first, we consider ideas concerning the acquisition and interpretation of medical knowledge as it informs the design and architecture of hospital spaces. In this section, we demonstrate how emerging discourses of health care have created different, and sometimes contrasting, ideas of what constitutes a suitable environment for practicing medicine. In the second section, we consider these debates in relation to emerging ideas that NHS hospitals need to be therapeutic environments—as well as efficient clinical settings. The final section offers a critical assessment of these ideas in the context of recent PFI hospital projects in the UK, with a particular focus on the building programme ushered in by the Private Finance Initiative. By way of conclusion, we highlight some of the shortcomings of this programme, and indicate ways in which medical geographers might contribute to the evaluation of hospital design.

## Contested priorities in hospital design

Health geographers have become increasingly aware of social and cultural differences (including gender, ethnicity, age, sexual orientation, and disability status) in the ways that people interpret such health phenomena as disease causation or the efficacy of various treatments (Kearns, 1995; Parr and Butler, 1999). The growth of interest in Western countries in medicines and therapies that provide alternatives to biomedicine has encouraged a broad range of strategies for well-being and healing. It has also become associated with a 'consumerist' approach in which healthcare users exercise active choice, in terms of the type of therapy they utilize and the time and place in which they prefer to use health services (Kelner and Wellman, 1997; Wiles and Rosenburg, 2001). Healthcare providers are responding to these consumerist pressures by introducing to clinics and hospitals consumption spaces similar to those of private, commercial outlets including shops and hotels (Kearns and Barnett, 1997). Notwithstanding this blurring of the boundaries between welfare and consumerism, patient experiences of hospital settings vary widely. A hospital environment that is beneficial to some may be exclusive and excluding to others (Gillespie, 2002). In short, a significant aspect of hospital design is the extent to which it is responsive to variations in patient experiences of hospital settings and in social and cultural interpretations of what makes for an efficient and therapeutic health care setting.

Recent work in 'post-medical' geography, inspired by social theory, therefore helps us conceive of hospitals as contested spaces where different stakeholders seek to communicate their ideas of good hospital design. These stakeholders include patients, staff, administrators, architects, construction engineers, policy-makers, politicians, and the public in the wider community within which a hospital is situated. In respect of hospitals built through the PFI programme, we also see an interesting combination of stakeholders in the private and the public healthcare sectors. We suggest that these stakeholders differ in various ways that affect their role in and approaches to hospital design. Important aspects of difference are their ability to have their views represented in the design process (which is associated with their relative social position); their experience of hospital settings and, not least, their knowledge of hospital design. Such knowledge is often a form of power (Fox, 1993) being *situated* in the sense that it arises out of place and time specific contexts (Pile and Thrift, 1995; Harraway, 1991). Hence, what is regarded as legitimate and useful knowledge of hospital design in the contemporary context of the PFI programme may differ markedly in other contexts.

Hitherto, it is apparent that many hospital designs in the UK have been based mainly on expert discourses that emphasize efficiency in terms of costs and clinical functionality. These values reflect the priorities of key participants in the design process and their assumptions about the relationship between healing and environment. Professional knowledges associated with western medical science, environmental psychology, landscape and design aesthetics have been powerful contributing disciplines. Such knowledges are therefore manifest in hospital design, so that it is possible to 'read' physical layouts of hospitals as embodying particular social relations. For instance, it is apparent that certain stakeholders (usually the most powerful groups) are able to manipulate the social space of the hospital so that distinctions between medical 'experts' (e.g., doctors and consultants), medically trained staff (e.g. nurses), non-medical support staff (e.g. porters, security, kitchen staff) and non-staff (e.g. patients and visitors) are maintained. Likewise, as Gillespie (2002), points out, reception staff can be positioned to act as first line gatekeepers between experts and the 'lay' public.

Yet expert knowledges are not value-free and in particular times and places they interact with prevailing political ideologies about health and healthcare. For example, Gruffudd (2001) discusses how two health centers built in London in the 1930s—the Pioneer Health Centre and the Finsbury Health Centre—were guided by modernist concerns about hygienic design, but differed radically in their social ideals; the former was based on conservative values and the latter on socialist principles. Equally important, perhaps, is the extent to

which 'lay' perceptions of building quality, health and healthcare are actively sought in the design process in comparison to the knowledges of 'experts'. Hospital buildings are thus sites that reflect and constitute complex social power relations; they are also locations for contestation over socially constructed space. Debates about what constitutes 'good' hospital design are affected by these differential power relations. With reference to the current building programme questions arise as to how, and to what extent, various stakeholders are able to participate in the design process. Their health beliefs and priorities may not be in accord, with the result that projected public images of 'good design' may disguise intense debate, controversy and compromise.

Despite this level of compromise and controversy, many contemporary discourses of hospital design depict hospitals as a complex system of interacting environments, ranging in scale from the micro-spaces of treatment rooms and wards to the wider 'civic' setting in which the hospital is located. Though often implicit, a key idea here is that each of these needs to 'work' to promote patient recovery and healing: in effect, they are imagined as 'therapeutic environments'. More widely, therapeutic environments have been the subject of a substantial body of literature generated over the last decade by health geographers and others (Gesler, 1992; Williams, 1988; Kearns and Gesler, 1998). This has included studies of historical healing sites (e.g., Gesler, 1998), the healing power of natural environments (e.g., Bell, 1999), informal therapeutic environments (e.g., Parr, 1999) as well as more direct analyses of healing spaces in health care systems (e.g., Mohan, 1999). The therapeutic landscape literature thus provides many useful indications of what therapeutic environments within hospitals might be. However, this literature devotes little specific attention to modern hospitals, (although Kearns and Barnett (1999) and Kearns et al. (2002), have made significant and welcome contributions in their work on the Starship and Ascot hospitals in Auckland). By contrast, studies by environmental psychologists and architects have contributed more directly to contemporary hospital design by focusing on measurable factors such as noise levels or the time nurses take to make their rounds (Evans, 1982; Ulrich, 1984). While more qualitative aspects of therapeutic environments, such as patients' subjective feelings about their care, feature less prominently in this psychological literature, when combined with critical geographic perspectives, they stress that therapeutic environments must be considered as *physical* environments (both natural and built), *social* environments and *symbolic* environments.

Considered as *physical* spaces, hospitals are 'behaviour settings' where there is a definite relationship between people (patients, staff, visitors) and the built forms of the hospital. In terms of research into this relationship, most attention has been paid (especially by environmental psychologists) to the ambient effects of cleanliness, spaciousness, lighting, colour, noise and ventilation on patient recovery times (Griffin, 1992; MacDonald et al., 1981; Wilson, 1972). A rather extensive literature also exists on hospital layout: for example, Kenny and Canter (1979) compared three hospital ward designs: radial, double corridor, and single corridor and then questioned nurses about their reactions to the different configurations. Three hospital nursing units were studied by Becker (1977); renovations were made on one and the other two were left unchanged. Results from questionnaires administered to staff before and after the renovations showed that the changes had a positive effect on the mood and morale of the staff in the 'experimental' ward. However, planting and landscaping outside hospitals may also be important here. For example, those who located asylums in Britain and the US in the 19th century often sought out rural settings, with the goal of providing patients close contact with nature (Philo, 1987; Edginton, 1997). The planting of trees and woodlands in the recently designated National Forest within the English Midlands (Bell and Child, 1998) similarly builds on a tradition in western culture that associates 'natural' environments with physical and mental health and renewal (Skrabanek, 1994). Yet perhaps the most well-known scientific study of the potential for nature to heal is Ulrich's (1984) experiment which compared two matched groups of patients following cholecystectomy (gall bladder surgery) in a suburban US hospital: 23 had windows looking out on a stand of trees and 23 looked out on a brick wall. The former group had shorter post-operative stays, received fewer negative comments in nurses' notes, and took fewer patent analgesics. Nature can, of course, also be brought inside the hospital: a modern cancer treatment centre, for example, features a garden atrium with season flowers and plants (Scott, 1992), and the operating theatres in Woodwinds Hospital in Minneapolis feature backlit photographs of woodlands and rushing rivers (Purvis, 2001).

By way of contrast, in the literature on the *social* environment of hospitals there is much weight given to the sense of community or belongingness inculcated in different hospitals (Filstead and Rossi, 1973). In the literature on mental illness much attention has been given to the influence of social relations, with psychiatrists discovering, for example, that the extent of mental illness among soldiers varies by military unit dependent on such factors as leadership, authority structure, and morale (Main, 1980). It was also found that poor relationships between patients and staff in mental hospitals could harm the healing process; with the remedy to encourage full participation in a community atmosphere and break down hierarchies and divisions between and among patients and staff (Manning, 1989).

Morrice (1979) accordingly sets out the four fundamental characteristics of the 'therapeutic community': democratization, permissiveness, reality confrontation, and communalism. Similarly, Moos (1997) offers the notion of a *social climate* that promotes interpersonal relationships, personal growth, and program structure. Social climate concepts have been examined in several empirical investigations (Leatt and Schneck, 1982; Moss, 1984; Porter and Watson, 1985; Holahan, 1979). One feature of social environment studies that often receives mention is the degree of control or autonomy patients and staff have in hospitals and how this affects healing (Minckley, 1968; Kenny and Canter, 1979; Stevens et al., 1992; Ryder, 1985). Somewhat critically, Gillespie (2002, p. 218), concludes that the '[f]unction [of health architecture] has been the upholding of dominant cultural discourses and professional power, and to reinforce the 'naturaliness' of social hierarchies and inequalities [e.g., between patients and staff and between genders]'.

Compared with aspects of the physical and social environment, which have been dealt with extensively in the hospital design literature, *symbolic* environments have received relatively little consideration. However, some environmental psychologists argue that it is impossible to understand a person's reactions to an environment unless one recognizes that there are cognitive or symbolic mediators between stimulus and response (Canter and Canter, 1979; Evans, 1982). In the medical anthropology literature it is similarly argued that people develop a set of beliefs about health issues that affect their use and experience of health care systems. Somewhat surprisingly, hospital environments are rarely discussed in this literature: one noteworthy exception being studies of how language structures differences between carer and patient, helping or hindering treatment (Mishler, 1984; Todd and Fisher, 1993). Other literature only hints at the way that environments symbolically structure beliefs and expectations. As examples, the colour scheme used in a waiting room may evoke either positive or negative feelings, while people might invest the physician's white coat with such abstract qualities as purity and honesty (Blumhage, 1979). Technology, too, has powerful symbolic force (Kenny and Canter, 1979); people are often impressed or frightened by items that range in sophistication from syringes to MRI scanners. Gruffudd (2001) also identifies the importance of the symbolism of technology in his analysis of modernist trends in architecture, urban planning and clinic design in the 1930s. Given key precepts underpinning the modernist movement that human health could be improved through scientifically and technically well-ordered spaces, it was important that the clinics symbolized this through designs that made great play of the 'white heat' of modernity: the clinics were light (especially white), airy spaces that denoted high standards of cleanliness and hygiene.

The naming of hospitals can have symbolic significance, as it can for other sorts of places, creating bonds between people and place (Kearns et al., 2002; Berg and Kearns, 1996). Kearns and Barnett (1999) showed how important symbolism is in their discussion of the Starship hospital for children in Auckland. The 'spaceship' motif signifies adventure to children and is intended to entice them, distract them, and calm their fears (in passing, they note it is also a symbol of the 'enterprise culture', capitalizing on the *Star Trek* connection, to signify the commercial objectives of this privately funded hospital). Thus it is noted that groups of people have different *ideologies* about care (Canter and Canter, 1979; Moss, 1984); they may *interpret* environments in different ways (Evans, 1982); and they have certain *expectations* about what they will find when they come to a hospital (Hutton and Richardson, 1995). An analysis of symbolic environments is therefore central to an investigation of the design process.

The following sections therefore interpret the development of (contested) design goals for hospitals in the PFI era developing the ideas that therapeutic environments need to be assessed in terms of their physical, social and symbolic space. Before we do so, however, we present the historical background to the recent debate in Britain by reviewing earlier writings on hospital design predating and following the inception of the NHS in 1948. We then describe the emergence of four key goals for hospital design arising from the revival of interest in hospital design that has accompanied the construction of new hospitals in Britain, partly through the PFI scheme. This debate has resulted in the development of 'expert' tools for evaluating hospital design, and while this paper welcomes attempts to construct more benign, healing environments, it suggests that the current means for evaluating quality in hospital design are predicated on a narrowly conceived (and culturally specific) body of 'expert' knowledge to which geographers have, unfortunately, only rarely contributed.

## A brief history of hospital design as therapy

Though an emphasis on notions of therapeutic design has been to the fore in discussion of the PFI building programme, the idea that the environment of a place should contribute to the therapeutic process is surely an ancient one (Gesler, 1993). Indeed, in many accounts the establishment of therapeutic communities for patients is traced to the 18th and 19th century idea of *moral treatment*—or treating people as humans as well as trying to cure their diseases (Filstead and Rossi, 1973). This notion gained its strongest support in the treatment of the mentally ill. Among the most famous examples

are Geel in Belgium, a community which took mental patients into its homes; Philippe Pinel loosing the chains or shackles of inmates in two insane asylums in Paris in 1792; and the environment of kindness and consideration which patients encountered at York Retreat, established by William Tuke in 1806 (Moos, 1997; Edgington, 1997). In the modern era, one can point to a few well-known persons and events that have helped to integrate this idea into other health care spaces. For instance, Florence Nightingale (1863) became famous in the 19th century for introducing hygienic standards that saved the lives of thousands of patients in London, Scutari, India, and many other places around the world. She used statistics to show that there were great variations in hospital mortality rates and argued that these were largely due to different physical environments. In her book, *Notes on Hospitals* (Nightingale, 1863), she discussed the importance, among other things, of low patient densities in wards, circulation of fresh air, adequate light, good drainage, clean kitchens and laundry rooms, and good accommodation for nursing staff.

Hence, during cycles of reform throughout the 19th and 20th centuries, attempts were made to replace custodial, bureaucratic medical institutions with more open facilities where patients were encouraged to aid in their own healing. Especially noteworthy in this history is the *therapeutic community* or *milieu therapy* movement that began in World War II. During World War II, Maxwell Jones treated 100 soldiers suffering from effort syndrome at Maudsley Hospital in London (Jones, 1979), recognizing that their problems resulted from environmental stress rather than biological causes. Others picked up the idea of creating groups of patients and carers who worked together on the healing process in diverse settings: hospitals, halfway houses, work places, and even within residential communities (Main, 1980). Such ideas re-emerged, albeit in different forms, in the guidelines that informed the construction of hospitals in the British NHS. Francis et al. (1999) review developments over the past 50 years to identify the way that the NHS has implemented therapeutic design ideas for its health care buildings. Research on innovative design was encouraged most notably in the early days of the NHS when the Nuffield Provincial Hospital Trust published *Studies in the Function and Design of Hospitals* (1955). Huges (2000) shows how clinical, social, and architectural ideas came together at this time to create the vertical ward tower set on top of a horizontal block with service and support functions. Colloquially known as the 'matchbox on a muffin', and influenced by office buildings and hospitals built in Europe and the US, this design symbolized modernity, efficiency, and an optimistic attitude toward technology and progress. Over the years, several innovative variants were considered, including McKeown's *Balanced Teaching Hospital Design* (1965), Ulrich's Theory of *Supportive Design* (1997), and patient-focused care.

The NHS research agenda, however, had its failings. Nuffield 'theory' was based on the notion that rational inquiry would aid architecture as it did industry, medicine, and economics; subjective values were ignored (Francis et al., 1999). Much of the research placed emphasis on clinical functionality rather than environmental quality. One of the primary emphases was on a *systems approach* (Mohan, 2000), codified in a series of Hospital Building Notes and exemplified by the *Best Buy Hospital* guidelines introduced in 1967 (described by Francis et al., 1999). Each decade witnessed changes marked by such designs as mainstream modern, the nuclear hospital, the Harness Hospital System, and, most recently, the adoption of designs that borrow from non-clinical settings—apparently including hotels and 'trendy bars'. Despite its research tradition, the NHS today pursues no coherent research agenda or programme of studies. A range of different (and sometimes conflicting) design solutions and innovations promoted by natural scientists, environmental psychologists, designers and architects are being integrated in new hospitals: for example, the use of telemedicine, new distinctions of public/private space, more artworks in hospitals, new standards of landscaping, colour therapy and so on. On this basis, it has been suggested that, 'It seems likely that the PFI process will discourage innovation and the new hospitals may not respond to the larger agenda of the community and the environment' (Francis et al., 1999, p. 25).

In spite of, or perhaps because of, this lack of a coherent research agenda, the recent PFI initiative has been heralded as providing a unique opportunity to promote excellence in UK healthcare design. This programme—redeveloping around 25% of healthcare buildings within 10 years—has been the decisive factor in the commissioning of over 70 hospital building schemes since 1997: 15 had reached financial close by 2000 (at a combined cost of £942 m, compared with the £200 m of public funds spent on hospital projects in the same period). As such, the hospital building programme stands at the apex of a massive investment programme designed to renew the NHS, and, in their words, provide 'world-class healthcare'. While there has been little agreement on what this new generation of hospitals should look like, a number of key design goals have been implicit in the discourses of medical practitioners, architects, National Health Service advisors, government policy-makers, and those media commentators who have picked up on the debates surrounding PFI hospital design. These 'design goals' are explained in more detail below and are classified as: facilitating clinical models of treatment, improving the integration of the hospital within the community, improving public and consumer access, and, finally, providing benign and

holistically therapeutic environments for patients and staff.

*Facilitating clinical models of treatment*

Since a major focus of hospital care is to cure patients, it is not surprising that one of the dominant goals in hospital design is to facilitate what is considered to be best medical practice. In discussing this goal, the literature employs such words as 'efficiency,' 'functionality,' and 'patient flows.' The emphasis is on the use of efficient management and new technologies. This goal was an early concern of NHS hospital design and continues to be important to NHS projects. The medical profession, as is to be expected, broadly prioritizes this goal. A review of two prominent medical journals, the *Lancet*, and the *British Medical Journal*, found little discussion of specific hospital design features, but several articles referring to either hospital management or the organization of certain clinical facilities in PFI schemes. For example, the *Lancet* published an article about operating theatre design that discussed the way that theatres were laid out and the impact that the location of the sterilization equipment had on efficiency in the operating theatre (Essex-Lopresti, 1999). The NHS is also interested in this goal. A Lewisham NHS Trust press release, for example, described their new clinical building as bringing 'services together under one roof so that patients can receive care and treatment seamlessly' (http://www/lewishan.nhs.uk/buildstory.php/stpry-lewis200010418).

*Integration of the hospital within the community*

This goal speaks to the role of hospital buildings within communities. It includes talk of buildings that foster civic pride as well as being integrated into urban landscapes and urban activities. There is a substantial literature produced by the Commission of Architecture and Built Environments (CABE, 2000), the UK Government's design watchdog, that looks at urban design and aesthetics. The UK Government's aim to signal concern with the design of new public buildings is reflected in the launch of Prime Minister Tony Blair's Better Public Buildings Award, which he described as 'an attempt to create a new civic building programme to rival that of the Victorians' (Weaver, 2001). Following this type of rhetoric, Alan Milburn, Secretary of State for Health, has argued that Prince Charles will assist the NHS to learn from 'past mistake', pointing out that many hospitals of the post World War II period are 'little short of a national disgrace' (Butler, 2001). However, not all 'old' hospitals are apparently lacking in civic virtues, with Alan Milburn praising 19th century buildings for their sense of civic pride: '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).

From the architect's point of view, the way that a building fits into the local setting is similarly important. However, the way hospitals can best fit into their local context is a matter of some debate, and often depends on whether the PFI project is for a new city-centre landmark facility or an extension or refurbishment of an existing site. In the case of the former, and in keeping with the Prime Minster's civic building crusade, buildings that make an explicit statement tend to be favoured, whereas in the latter case more importance may be placed on contextual compatibility. For instance, Spring (2001, p. 36) claims that the 'huge' new Chelsea and Westminster hospital 'fits with relatively little disruption into the surrounding townscape of Victorian four-storey brick terraces' but felt that it had been somewhat marred by a large fabric canopy on the front of the hospital which gives a 'dowdy image'. George Demetri, on the other hand, explained that you could not 'miss' the Birmingham children's hospital which was a vibrant contrast to the hospital next door. Moreover, he felt that 'combination of toy town hospital fairytale castle must be seen as wholly appropriate outcome' (Spring 2001, p. 36).

*Public and consumer access*

Literature on this goal emphasizes consumer access to hospitals and within hospitals. It is consumerist in two senses. First, it advocates consumerist ideals of responsiveness to health care users, for example, through amenities for users, public accessibility and user consultation over hospital design. Second, it seeks to produce spaces of consumption that will help to 'sell' the hospital and its services as a carefully packaged product. Crucial here has been the Government's launching of its *Better Patient Environment* initiative, intended to communicate the message that taking patient needs into account will improve their experience of health care. A report on 'ground-breaking research', presented at a Royal Institute of British Architects (RIBA) one-day conference entitled: *Design Quality: The Evidence*, suggested that patient priorities were not being taken on board by the NHS. The report noted that patients ranked hospital environments as number one in their list of priorities, while NHS Estates ranked design 23rd out of 42 options (*Architects' Journal*, 2000, p. 20). Client consultation is, however, an important issue for architects, although some do not include patients as 'clients'. Several articles and letters in *Architects' Journal* stress that users should be consulted when architects design a building. In one such article, Geoffrey Purves, welcoming the Green Paper titled 'Our Healthier Nation', stated that the PFI initiative was '[a]n

unprecedented opportunity for architects to capitalise on clients' wish to see buildings well designed. Architects have the opportunity to work with clients directly, with doctors, patients, and other users of primary health care buildings…' (Purves, 1998, p. 40).

The commercial aspect of this goal comes through in rhetoric that contrasts the perceived features of old and new hospitals. While old hospitals are depicted as institutional, uncomfortable, and 'public'—in the negative sense of an absence-of-privacy for patients or staff—new hospitals are compared favourably with privately owned commercial buildings such as hotels, offices, and supermarkets. Terms such as 'domestic' and 'non-institutional' are thus seen as positive attributes of hospitals. This type of language is used by both representatives of the British Government and architects. For example, Sally Sullivan in her work as a hospital interior designer noted that 'those who commission interior designs . . . are beginning to include phrases such as 'five-star hotel' and 'domestic' to describe the internal environment of their buildings' (Sullivan, 2001, p. 71). According to Curtis (2000, p. 16), consumption-oriented hospital design is being driven by patients 'who have discovered airport departure lounges, ski villages and Ikea' and will not 'queue for an old-fashioned NHS.' This overt commercialisation, however, has also been criticized by some: Pollock (1997, p. 125) states that '[t]here is a sense that NHS trusts under PFI could become little more than employment and recruitment agencies that serve only to give a 'product brand' to the services they provide.'

*Providing therapeutic environments for patients and staff*

This goal attempts to service the physical and psychological needs of patients and provide an atmosphere that engenders a sense of well-being. A phrase often used is 'patient-centred care' which is focused on 'continuity', 'accountability', and patient education. In a speech to the Building a Better Patient Environment NHS/Prince's Foundation conference, the Minister of Health, Alan Milburn, argued that the hospital building programme provided an opportunity to 'design in from the start the space, the flexibility, the infrastructure in which staff can deliver the best quality care' and that it also meant that it was possible to have 'from the outset an appreciation of the importance of the patient environment to recovery and rehabilitation' (Milburn, 2001). Milburn then referred to a research study carried out by Leeds Teaching Hospital and Nottingham University on the Jubilee Wing of Leeds Hospital that suggested a better patient environment had improved recovery times and the way that patients perceived their hospital experience. However, this notion of producing well-being also extends to staff, for whom morale is seen as a key issue. Francis and Glanville (2001, pp. 62–63) discuss the concept of 'architectures of personal care' and stress the need to balance requirements for 'sophisticated, highly engineered' spaces with the need for 'an ambience that is calming and supportive for patients and staff'.

Government rhetoric on the well-being goal was echoed by Lord Hunt in a speech on the occasion of the Building Better Healthcare Awards. He maintained that the government '[h]ave a strong record in health on promoting design quality. We recognize that how a building looks, and how it feels to work can have a major impact on patients, staff and visitors. Well-designed buildings are welcoming, safe and effective. Good design lifts the spirits, helps patients to recover, and inspires staff to give their best.' (http://www.nhsestates.gov.uk). Benign and holistic environments are in the minds of some architects when they discuss the benefits of such specific design features as art works and colour. The King's Fund book, *Improving Hospital Design*, argues that patients should be able to control their environment (Dormer, 1994). At the Mental Health Unit at St. Mary's Hospital (London), Nightingale Associates state that '[r]oof lights are used throughout, creating a sense of freedom despite the need for careful security', with the company using lighting, colour, and art to create a 'healing environment' (Sullivan, 2001, p. 71). An article in the same journal on Chelsea and Westminster Hospital, London, quoted a survey of staff, visitors and patients in which 75 per cent said that the art collection and performance art reduced their stress levels, improved their mood and took their minds off their immediate problems and worries (Spring, 2001). This hospital, it is said, '[b]roke the mould for an NHS facility and was a precursor to the current drive towards patient-friendly design' (Spring, 2001, p. 36).

## Evaluating PFI hospital design

The new generation of PFI-hospitals is thus informed by a number of design goals which include new understandings of hospitals as therapeutic environments as well as more traditional ideas of hospitals as efficient clinical spaces, spaces that are integrated with their surroundings and spaces that are accessible and responsive to patients' needs. Given these ambitious design goals, an important question remains: how are new hospitals to be evaluated? NHS Estates is currently conducting Design Reviews of the new PFI schemes, a process launched by Minister of Health Milburn at the November, 2001 NHS/Prince's Foundation conference. The two issues that are most discussed in these reviews are urban design (the context of the buildings and sense of civic place) and interior environments. The NHS proposes the *Achieving Excellence Design Evaluation*

*Toolkit* (AEDET) to assess new health care buildings (NHS Estates, 2001). This instrument demonstrates the strategy proposed by the NHS to acquire and represent knowledge that may be relevant for hospital design. There are 10 sets of questionnaire items, organized under three main headings: (1) *Functionality*: Uses, Access, and Spaces; (2) *Impact*: Character and Innovation, Citizen Satisfaction, Internal Environment, and Urban and Social Integration; (3) '*Build Standard':* Performance, Engineering, and Construction (see Fig. 1). Each of the 10 sets of items has several specific questions to be considered during an evaluation. For example, the first item under Uses is 'Does the design support and enhance the client's healthcare philosophy and design vision?' Under 'Impact' one of the questions asks: 'Is the building therapeutic for patients?' It is envisaged that the questionnaire might be completed in the course of consultation through 'workshop' meetings of 'multi-disciplinary teams' (NHS Estates 2001, p. 5), so this questionnaire is apparently intended to provide an agenda for discussion between stakeholders.

An interesting feature of the AEDET instrument is the emphasis on systematic 'scoring' on each of the 10 dimensions, to produce measurable 'performance' indicators for each aspect of design. The AEDET instrument (NHS Estates, 2001) anticipates that for each group of 'questions', responses will be recorded using six semantic differential response categories ranging from 'very poor/disagree' to 'excellent/agree'. This reflects the current preoccupation in the NHS with performance indicators that can be used to produce measurable targets. The strategy raises some interesting questions about the problems inherent in the use of measurable targets in the health care sector (e.g., Fulop and Hunter, 2000; Curtis, 2003). For example, in order to be useful, targets need to be relevant for the specific setting where they are to be applied and there is a risk that important outcomes of health care will be ignored if they cannot be expressed in terms of measurable targets. The participants using the AEDET profile are expected to translate quite complex qualitative judgments about several discrete questions into single 'scores', which may in practice be quite difficult to achieve. However, the instrument is not being promoted as a universally applicable tool in its published format; rather, it is suggested that: 'The criteria used in the toolkit may be adapted by Primary Care Trusts (PCT) and NHS Trusts, and incorporated into their specifications of design vision, philosophy and quality, to form an important part of their briefing, whether using exchequer funding or a PFI contract.' (NHS Estates, 2001, p. 3).

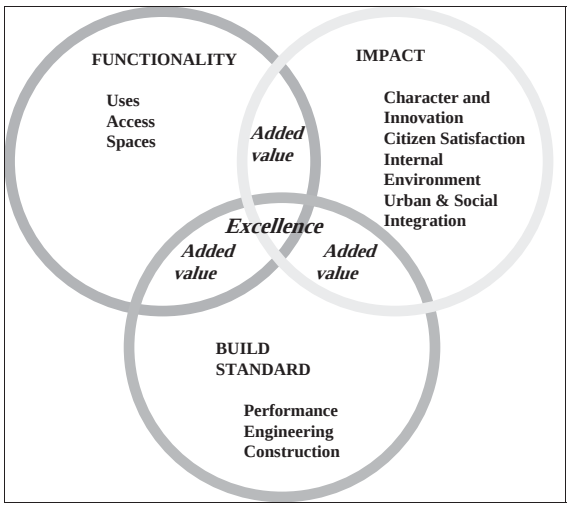


Fig. 1. Achieving excellence design evaluation toolkit—the framework.

In the light of critical geographical perspectives on health care spaces, it is notable that the documentation accompanying this evaluation instrument does not include detailed references to the theoretical and empirical evidence bases which support the approach used, although it does state the following:

> 'The Design Evaluation draws its inspiration from many sources, from within the NHS and beyond. The resulting set of design evaluation criteria have been synthesised from a number of sources which include: The Patient Journey Model, Better By Design, the NHS Design Quality Portfolio technical and user criteria, the PFI Design Development Protocol and the Model Design Quality Specification. The NHS has worked closely with the Commission of Architecture and Built Environments and the Construction Industry Council to develop the criteria to ensure we are all working within a common industry wide framework' (NHS Estates 2001, p. 2).

Implicitly, this suggests that at least some of the work by geographers on therapeutic environments, discussed above, might have influenced the development of this instrument. Yet it is obvious that there are questions to be raised about the balance of emphasis in the AEDET evaluation instrument and whether it fully represents all the different goals and aspects of therapeutic environments that are likely to be important in hospital design. For example, while the preceding sections of this paper have made clear that therapeutic environments are spaces whose physical, social and symbolic qualities may affect relations between people and place to promote better recovery and healing, the AEDET tool regards space seemingly only in a physical sense, posing suggested questions for assessing the functionality of space as 'Does the design encourage optimal use of floor space and effective working practices? Is the utilization of floor space optimized? Are spaces shared where appropriate? Is there any obviously under-sized floor

space? Is there any obviously over-provided floor space?' (NHS Estates, 2001). Likewise, questions concerning 'design and character' do not allow ample consideration of symbolic and social space, while questions of social space are only obliquely addressed through questions on community and social impacts (which mainly focus on landscaping and local context). While such questions are certainly relevant to an evaluation of hospital design, they are clearly insufficient for considering the range of ways in which hospital design can fulfill the goals set by policy-makers. For example, symbolic design issues could really make a difference to the interior environments discussed in the NHS Estates Design Reviews.

In this light, we are particularly interested in considering how geographers might contribute to the assessment process design for PFI hospitals, and whether a 'geographical' perspective might suggest areas that are under-represented in the debate over hospital environments. To assist our thinking, we have been using a matrix that relates the four design goals that underpin PFI projects to the three dimensions of therapeutic environment identified in the literature (i.e. their physical, social and symbolic character) (Fig. 2). While designed as an exploratory framework rather than a prescriptive instrument, each cell of the matrix is intended to encourage exploration of the design features that represent 'intersections' between specific design intentions and types of therapeutic space. For example, the top left cell contains features that are part of the natural and built environment that may help achieve the goal of clinical efficiency. Of course, some aspects of hospital design might figure in more than one cell. Thus for example, aspects of the physical environment such as clear patient pathways, which contribute to the clinical efficiency of a hospital, may also symbolically emphasize the hospital as a patient-centred environment.

This conceptual matrix can be used in several different ways and we are pursuing a research agenda that will have the following objectives:

(a) using the ideas in this framework to critically examine the ways that specific design features are justified in relation to distinctive design goals;

(b) exploring whether the framework provides a satisfactory heuristic strategy for structuring observations in different hospital settings (e.g. primary care vs. mental health hospitals) and in different hospital schemes (e.g. new build vs. renovation projects);

(c) considering whether information collected using this type of framework can inform the modification of existing evaluation tools, or the development of new tools, for critical assessment of hospital design.

In the preliminary stages of this agenda, we have concentrated especially on the first of these three objectives through an exploration of some of the first wave of PFI projects (including a newly built mental health facility in East London). Further, we have tried to relate the questions listed in the AEDET instrument to our framework. While it is possible to attribute AEDET items roughly to cells in the goal/environment matrix, specific AEDET items are sometimes difficult to relate to particular cells (for example, 'Does the building look and feel substantial?') Overall, somewhat less than one-half the AEDET items fit under the clinical model goal, approximately one-tenth under the community integration goal, one-fifth under the access and consumerism goal, and one-fourth under the promoting well-being goal, (Fig. 3). To a large degree, these figures indicate the priorities of those 'experts' who produced the NHS toolkit: evaluation is apparently influenced heavily by the clinical model and much less by the other three goals, despite rhetoric to the contrary. Likewise, approximately three-fourths of the AEDET items relate

| Environment/ Design goal | Clinical efficiency | Community integration | Public access and consumerism | Promoting well-being |
|---|---|---|---|---|
| Physical Environment | e.g. physical layout of wards/facilities, clear patient pathways | e.g. wheel chair ramps, clearly defined entrances | e.g. comfortable wards and waiting areas | e.g. external landscaping, internal lighting and ventilation |
| Social Environment | e.g., surveillance of patients, lines of communication | e.g. multi-language or graphic signage | e.g. patient-centred spaces | e.g. appropriate designation of public/private space |
| Symbolic Environment | e.g. hygienic design | e.g. hospital naming, public symbols | e.g. patients as consumer, hospital as health supermarket | e.g. use of natural materials, warm colours |

Fig. 2. Therapeutic environments/design goal matrix.

| Environment/ Design goal | Clinical efficiency | Community integration | Public access and consumerism | Promoting well-being | Totals |
|---|---|---|---|---|---|
| 1. Physical | 34 | 8 | 15 | 19 | 76 |
| 2. Social | 3 | 1 | 2 | 2 | 8 |
| 3. Symbolic | 8 | 2 | 3 | 4 | 17 |
| Total | 45 | 11 | 20 | 25 | 101 |

Fig. 3. Hospital design goals and therapeutic environments: assessing the AEDET (percent of schedule that deals with each matrix cell).

to physical environments, about one-twelfth to the social environment (e.g., 'Are places provided for social interaction for patients, staff and public?'), and one-sixth to the symbolic environment (e.g., 'Does the form of the building appeal to the aesthetic senses?') These figures are perhaps not surprising, given that (as shown above) the focus of the debate on NHS hospital design has traditionally dwelt on the physical appearance and layout of buildings. Moreover, while a checklist approach such as AEDET seems appropriate for exploring the design of physical spaces, it is perhaps not adequate for exploring social and symbolic environments (where methods such as participant observation and in-depth interviews of a range of stakeholders would be required). Hence, rather than simply replacing one assessment tool with another, we suggest our matrix can be used to structure a critical exploration of hospital design, providing an '*aide-memoire*' for the recording of more qualitative observations and responses in order to collect a more comprehensive and flexible set of data which will reflect situated knowledges and local cultures of health care.

## Conclusion

In a society where understandings of health have expanded to encompass a holistic notion of mental and physical well-being, rather than a straightforward idea of a disease-free body, it is not surprising that hospitals are changing in form and function. In the UK, the recent PFI building programme has brought these issues into sharper relief, suggesting that acute services are now designed with very different conceptions of users as customers rather than patients. This has meant that the new generation of hospitals seek to reconcile many of the traditional functions of hospitals (i.e. surgery and post-operative care) with a consumer-oriented role as accessible providers of health care, advice and treatment. These shifting goals are, however, being encouraged through a diverse range of design features, encompassing modifications to the social, symbolic and physical spaces of hospitals. To date, there is little consensus as to the effectiveness of these different design ideas, despite the government and NHS's enthusiasm to hold up various exemplars of good design.

This paper has demonstrated the potential for health geographers (and especially those working on 'post-medical' theories concerning therapeutic environments) to contribute to the current debate about the design of the new wave of hospitals being constructed in the UK. Of course, the general strategy (if not the fine detail) of the conceptual matrix we have articulated here may also be of relevance more widely. Moreover, the discussion has illustrated some fundamental issues concerning the interactions between theory and practice in health care and highlights the influence of processes by which theoretical and empirical knowledge is acquired and represented in public debate. These processes of course reflect the social relations between different stakeholders in health care, as well as the continued dominance of professional discourses of health care and medicine that argue for the primacy of clinical care. Challenging such discourses, we have emphasized the need to consider the symbolic and social importance of the buildings in which health care is delivered, as well as the physical aspects of the built form of hospital buildings and we recommend increased attention to these dimensions in debates over hospital design.

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