



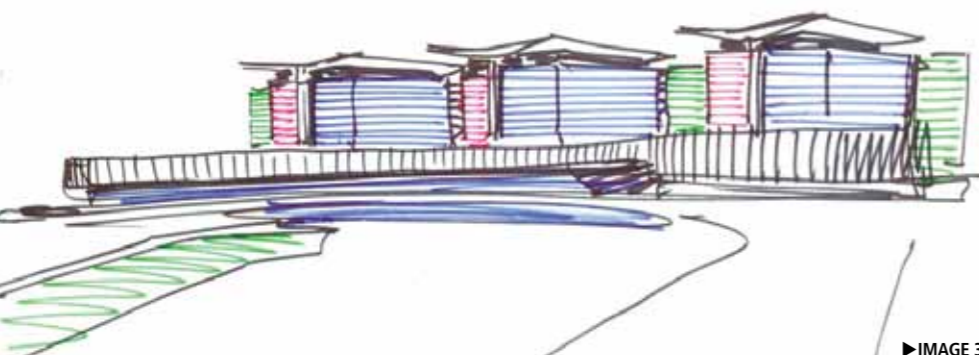
► IMAGE 4

stakeholder and it is important that the community feels a sense of pride in its healthcare facilities - the building design has to promote a sense of civic pride. This has been achieved with significant effect in our design for the acute King's Mill hospital in where the building is seen as a community landmark when entering the city – a public building the city and the local community can feel proud of.

At a smaller scale, this feeling of 'belonging to the community' has been achieved at the Mansfield Community Hospital. The original hospital was a remote collection of ageing buildings set back from the road and as such was felt to be out of touch with the community.

Our brief as designers was to redress this by renewing the existing buildings but also, importantly, creating a new front to the hospital – a shop front if you will – that would engage with the community. The solution was to create a new reception building in such a way that it creates a new presence in the town by being cantilevered out over the high street. This

'The lay-out of the building is all important – the arrangement needs to ensure that patients have access to natural light



► IMAGE 3

building reaches out to the community and has become a new 'front door', placing the hospital right on the high street.

Another important aspect of hospital design is respecting the cultural differences of communities. In a multi-cultural society such as the United Kingdom, different cultures coexist alongside each other and normally share the same healthcare facilities. The design of these facilities has therefore to ensure everyone, from whatever background or culture, is welcomed and feels comfortable.

The same is even truer when designing hospitals in other regions of the world. For example, in India and the Middle East hospital design has to consider the possibility of family rooms being provided adjacent to the patient rooms to allow relatives to stay overnight, something not common in Western hospitals. The architecture can also incorporate indigenous cultural references in the design to reflect the local traditions and heritage, further ensuring that the hospital is culturally embedded in the local community.

Taking in to consideration the local culture In the Middle East, for example, indigenous patterning in the internal and external fabric of the building can be used to create a link with their traditions, while in India the use of bright and contrasting colours can be appropriate. Colours in the Middle East may reflect the landscape so materials might be sand coloured and made of cool materials such as marble and stone. This contrasts with the northern hemisphere where warmer colours and materials such as timber, terracotta and

brickwork might be used.

Climatic differences around the world will also lead to local design responses. In Ghana, for example, where budgets are particularly limited but where the heat is intense, we designed a hospital with a floating roof to create a ventilation flow. This umbrella roof was completely separate from the building fabric in order to help keep the hospital cool by a passive measure.

► SUSTAINABILITY

Increasingly, sustainability is becoming a major issue in healthcare design and although at present it is Europe that has been leading the way, this serious topic is on the agenda of many Middle Eastern commercial developers – the Masdar project in Abu Dhabi being a major example. It is only a matter of time before this influence on design takes centre stage in the United Arab Emirates and surrounding countries.

The response to global warming creates conflicts in hospital design because whilst governments may commit to zero-carbon buildings in the not too distant future, it is very difficult to achieve this with healthcare buildings which are heavily serviced relying on sensitive ventilation and air-conditioning systems and using large amounts of energy and water.


Sustainability has now become the most significant design challenge for the architect and the wider engineering design team. Sustainability is now a central consideration of our design approach and with reduction of energy demand and carbon emissions is at the

forefront of our thinking. For example in our design for the King's Mill Hospital the building's cooling is provided by the adjacent lake rather than energy-hungry chillers.

► UPGRADING EXISTING HOSPITALS

Always one of the major issues is the speed of construction required in response to ever increasing costs and the minimisation of disruption to the provision of the health service. Most hospitals are renewed rather than built from scratch, so clients want hospitals to continue working while renewal takes place which requires decanting and moving staff and departments while maintaining a 100% uninterrupted service.

As a result architects are deploying more innovative building techniques such as offsite fabrication, componentised assemblies and 'pod' construction for repetitive elements such as wards and bathrooms. The architect is developing closer connections with the construction industry in order to invent and develop these new building techniques. This is especially relevant for hospitals in remote places that are not close to traditional manufacturing locations for building materials.

While hospitals are complex structures, finding solutions that involve urban design, clinical planning, the healing process, construction methods and the growing issues of sustainability, can be ultimately highly rewarding. Seeing all these often conflicting issues fall into place can be immensely satisfying - and in that respect the architect has a key role to play in solving the puzzle. 



► IMAGE 5

► PICTURE CAPTIONS

Main image: Colour filtering through the façade – King's Mill Hospital
 1) Natural light and landscape design – King's Mill Hospital 1 2) A new presence on the High street – Mansfield Community Hospital 3) King's Mill Hospital – concept approach 4) A civic landmark – view of King's Mill Hospital on approach to the city 5) Colour in the façade design – King's Mill Hospital
 Pictures courtesy of Tim Soar

Challenges associated with architecture and healthcare

By Steve Brown, Design Principal, Architecture, Swanke Hayden Connell Architects



► CHALLENGES

Designing healthcare buildings is one of the more challenging tasks for an architect. The internal complexity requires experienced planning skills to ensure the correct configuration of highly serviced components and also the correct relationship between parts including operating theatres, recovery wards, clinical facilities and visitor areas.

Methods of responding to the health and well-being of the community are constantly changing as society deals with a developing understanding of how to administer healthcare. The provision of care is constantly improving and standards of clinical methodology and legislation are continuously evolving.

Healthcare buildings need to cater for all of these changes and at the same time need to fit within their urban or suburban context as a fully integrated part of the community. Also, they need to fit in with current best practice in procurement and delivery. Even though public/private delivery methods are becoming increasingly common internationally there is still nearly always an element of public finance.

Invariably, because of the involvement of public money these projects are delivered on a tight budget and there is often competition between clinical and architectural provision. It is understandable that clinical provision will always be paramount and if clinical equipment costs increase then there will be less to spend on the architecture.

► PATIENT BENEFICIAL DESIGN

Nevertheless, the architectural constituent of the project is almost as important, because architects are responsible for creating a healing environment that encourages recuperation and well-being. There is a lot of evidence based design research to draw on where it can be shown that applying certain elements of design can be beneficial to the patient, can stimulate recovery and can increase patient throughput, allowing more people to be treated.

Also from the architect's point of view there is the desire to humanise hospitals and ensure that they are not seen as remote institutions creating fear and tensions for all who enter their corridors. The architect has a social responsibility - the 'client' extends beyond the healthcare trust to the patient, their families, the doctors and nurses and to the community.

A key aspect is the importance of natural light – a direct relationship with natural light has been shown to assist patient recovery. As important is a patient's connection with the outside world. An important patient psychology



to recognise is that as they see the healthy world outside renewing itself every day it helps them recover too. To see clouds moving, the wind in the trees and people going about their daily business gives the patient an association of nature going through its cycle, which is beneficial and encourages recovery. In contrast if a patient is in a ward looking through a window into a sterile courtyard where the diurnal effect is restricted, there is less of a stimulant to recovery.

In this respect the lay-out of the building is all important – the arrangement needs to ensure that patients have access to natural light but, also, that the design is inspiring enough to lift the patient's spirit.

Landscape, colour, artwork and plenty of natural light are not simply there to make the building and its surroundings look pretty but are there for proven psychological and economic reasons. If they are incorporated into hospital design in a creative way they can assist the patient's recovery, whom may only have to stay four nights rather than five, which then becomes an economic factor to take into account.

For example at the King's Mill Hospital near Mansfield in Nottingham, England, and currently under construction, Ptolemy Mann, an artist, was an integral part of the design team and she helped with the colour selection of the external cladding as well as the public areas of the inside of the hospital.

IN SHORT

■ The design of healthcare buildings is one of the more challenging tasks that an architect is faced with

■ Finding solutions that involve urban design, clinical planning, the healing process, construction methods and the growing issues of sustainability, can be highly rewarding

► HOSPITALS AND THE LOCAL COMMUNITY

Design also has an important part to play in drawing the hospital into the local community. Nowadays it is considered a vital part of urban design that healthcare facilities are seen to be making a positive contribution to the community – after all the community's taxes go towards paying for these facilities.

The local community is a valued ⇨

