

Sunand Prasad

Penoyre & Prasad,  
New QEII Hospital,  
Welwyn Garden City,  
Hertfordshire,  
UK,  
2015

The courtyard is an active part of the design of the building, bringing greenery and light to the entrance hall and providing a calm view from all the waiting spaces, as well as organising the floor plans.



# Regenerative Agents

Patient-Focused  
Architectures



Holistic care is nothing new. There are well-known examples across the world and throughout history – from ancient Greece, China and India to early 20th-century northern Europe – of approaches that prioritise placemaking as a facilitator for health and healing. Inspired by such precedents, London-based architects Penoyre & Prasad produce buildings that engage with nature and help put patients back in control of their recovery process. **Sunand Prasad**, one of the firm’s cofounders, explains.

When Penoyre & Prasad was founded in 1988, the idea of ‘patient-focused medicine’ was beginning to gain currency. The phrase was a powerful three-word critique of what had prevailed unchallenged for some decades: that doctor knows best and that a disease-free future was around the corner thanks to modern scientific methods and technological advances. In an extraordinarily trenchant article in *The Lancet* in 1974, Ivan Illich had written:

By transforming pain, illness, and death from a personal challenge into a technical problem, medical practice expropriates the potential of people to deal with their human condition in an autonomous way and becomes the source of a new kind of un-health.<sup>1</sup>

It seemed evident, then, that in trying to pursue science-based design to serve science-based medicine, healthcare designers had abandoned the conscious creation of place as a primary task of architecture in favour of the accommodation of medical processes. So much so that the hospital corridor had become the epitome of alienating, bewildering placelessness. Philip Larkin’s poem ‘The Building’, also from 1974 and prompted by his visit to Kingston General Hospital in London, sums it up perfectly:

For past these doors are rooms, and rooms past those,  
And more rooms yet, each one further off

And harder to return from ...<sup>2</sup>

Penoyre & Prasad’s designs for healthcare have thus been animated by a search within architecture and urbanism for the equivalent of patient-focused medicine.

### The Environment as Healer

Until the advent of modern medicine, and particularly the development of antibiotics in the 20th century, which appeared to have eliminated the threat of infectious diseases, the environment had been a central part of curing illness and restoring health in cultures around the world. In ancient Greece the sick went to be healed at the shrines of Asclepius, the god of medicine. In China and India, systems of geometric ordering of buildings, Feng Shui and the Vastu Shastras, were related closely to the balance of bodily humours. Etymologically, the word ‘hospital’ derives from the latin *hospes*, or guest, so it was originally a place for caring for guests, and not necessarily the sick. Filippo Brunelleschi’s seminal Ospedale degli Innocenti (1419–45), a foundlings’ hospital in Florence, was a place of asylum and shelter. When hospitals in the modern sense started to be built in Europe in the 18th century, their architects set considerable store by plan configurations and sectional proportions, particularly of inpatient wards. No one was more explicit than Florence Nightingale in linking the design of wards to patients’ recovery. In her *Notes on Nursing* of 1859, she wrote:

they [patients] should be able, without raising themselves or turning in bed, to see out of window from their beds, to see sky and sun-light at least, if you can show them nothing else, I assert to be, if not of the very first importance for recovery, at least something very near it.<sup>3</sup>

Similar convictions informed early Modernist medical architecture, such as Johannes Duicker's Zonnestraal sanatorium in Hilversum, the Netherlands (1928) and Alvar Aalto's Paimio Sanatorium in Finland (1933 – see p 59).

### The Evolution of Therapeutic Environments

Two conceptions characterise these essays in the creation of therapeutic environments: the unity of mind and body on the one hand, and on the other the pre-eminence of nature as an agent of healing. The environment, through daylight, fresh air, scent, modulated sound, crisp linen, views of greenery and gardens, affects the body's physical mechanisms as well as the workings of the mind, including its perception simply of being cared for.

The remarkable achievements of scientifically based medicine had, by the middle of the 20th century, shifted the focus of healing entirely to the body as an assemblage of physical parts, and elevated the status of the physician to the all-knowing master of cures. The separation of body and mind in medicine was perhaps further cemented by the development of the treatment of mental illness as its own sophisticated quasi-scientific discipline.

The powerful medical methods, processes and techniques that now needed to be accommodated found a reflection in a new architectural paradigm: the concept of the hospital itself as a great scientific medical instrument. Hospital planning became increasingly deterministic, organised by body parts and clinical processes – an approach that still dominates the design of healthcare environments around the world, albeit with increasing acknowledgment of people's experience.

Best practice in medicine, however, now seeks to harness patients' own knowledge as part of the diagnostic task, and their own regenerative power in the restoration of health. It embraces systems thinking, taking into account the wider life circumstances of patients, and recognising that social and economic conditions are strongly linked to health and wellbeing. In this holistic vision there remains nevertheless a secure place for specialism, and for segmentation by body part, which has brought about great surgical and medical advances.

### New QEII Hospital, Welwyn Garden City

The New QEII Hospital in Hertfordshire, opened in 2015, is the latest example of Penoyre & Prasad's search for a new typology truly reflective of patient-centred medicine and care. It enshrines three principles.

Firstly, the building's organisation and its spaces are designed as places for indeterminate interchange and flow as well as the specific requirements of clinical processes. The entrance, circulation and waiting spaces are a connected field of areas for informal meeting and, for example, the display of art – a world apart from the utilitarianism of hospital corridors. Secondly, these areas and the interiors generally are strongly connected with exterior space, to nature and to the public realm, to the point of dissolving the boundary between them. Both of these design strategies are further supported by the making of a strong urban form for what is a civic building of great social purpose. Thirdly, in the selection of materials and details of construction are embodied regenerative, zero-waste principles inspired by natural systems.



*above:* The interior circulation spaces of the New QEII Hospital are designed to provide a great deal of transparency and diagonal views rendering the whole building as legible as possible. Specially commissioned artwork and complementary signage design add a layer of richness as well as utility.

*left:* Two of the flanks of the three-sided plan, facing the public realm and entrance route, have colonnades leading to the main entrance, the urgent care entrance and community spaces. The roof profile, with its asymmetric pitches, acknowledges the Garden City context.





Penoyre & Prasad,  
Guy's Tower External Retrofit,  
Guy's Hospital, London, 2014

*above:* Guy's Tower, with its new high-performance skin. The 'communication tower' on the right is clad with specially folded dark-grey anodised aluminium, the facets of which reflect the changing weather. The flat pale amber strip runs up the tower in front of the boiler flues and terminates in a light sculpture designed to be programmed to react to fuel use. The 'user tower' on the left is re-clad with curtain walling outside the existing external wall, installed from balconies using special access systems without any disruption to occupants.

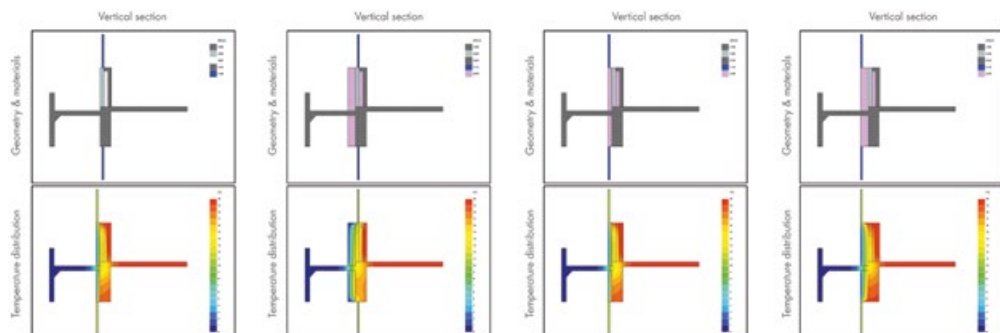
The New QEII is among the first of a new generation of National Health Service (NHS) hospitals integrating primary, sub-acute and social care services to serve the local population, who were also involved in the brief and design. The extensive range of services provided includes urgent care, diagnostic imaging, large outpatients and therapies departments, ambulatory care and an endoscopy suite. The clinical layouts, with their many generic spaces, enable flexibility of use, day to day, and adaptability to future service changes. Inpatient beds, the surgical unit, intensive care and the emergency department are provided in the nearby Lister Hospital.

The building is formed of three L-shaped wings enfolding a central courtyard, around which the main public circulation and all of the waiting spaces are arranged. The geometry also creates smaller, more private gardens at the edge against an old mature hedgerow, ensuring that people in the building are never far from the calming presence of gardens. A generous, timber-lined colonnade connects arrival routes from opposite directions and leads to the main entrance with its central reception, cafe, pharmacy, and information and community support facilities. The bright and open triple-height main entrance space connects the internal space, colonnade and landscaped courtyard, views to which are immediately visible on entry.

The pitches of the long roofs and the glazed porcelain tiles on the walls acknowledge the Arts and Crafts roots of Welwyn Garden City. These tiled facades are lifted up above the colonnade to spatially link the urban public realm to the courtyard within. The windows generally incorporate a large fixed-glass pane and an insulated shutter, which form part of the natural ventilation.

Energy requirements have been minimised through the building form and fabric. Air source heat pumps, heat recovery ventilation and high-efficiency lighting fulfil the residual demand. The building's carbon emissions have been reduced further through the use of renewable energy generation. Climate adaptation was also fully considered in the design through its inclusion in the pioneering UK government-funded Design for A Future Climate research project.

Computer thermal modelling was used to rapidly test alternative external cladding strategies from a complete double skin to a minimal upgrade of the windows. The design at the far right was finally selected for maximum performance within the budget: a new highly insulated skin outside the existing envelope that was removed gradually from inside to make more space.





Penoyre & Prasad,  
Sir Ludwig Guttman Health & Wellbeing Centre,  
East Village,  
London,  
2011

*left:* The health and community centre is organised around a four-storey atrium, the west wall of which adjoins a courtyard. The atrium is an extension of the urban public realm and has multiple uses.

*above:* Despite its relatively small size in comparison to the large residential block of East Village, originally designed and constructed as the Athletes' Village for the London 2012 Olympic Games, the building's profile gives it a distinct monumental presence expressive of its civic role.

### Guy's Tower External Retrofit, London

Not every project will have scope to embrace all three principles outlined above. At the 34-storey Guy's Tower, constructed in 1974, the tallest hospital building in the world, the brief was limited to making the crumbling and tired-looking exterior 'fit for purpose' for the next 30 years and reflective of a modern, high-performing hospital and health service; and to do so without any disruption to the services.

Neither the interior planning nor the mechanical, electrical and plumbing services were part of the project, but working with engineers and project managers from Arup, Penoyre & Prasad expanded 'fitness for purpose' to include the energy and carbon as well as the aesthetic challenge, while also using the opportunity to transform the rather mean circulation spaces into the connective field described above. In the event, the world financial crisis of 2008 to 2010 forced a scaling back of the project, and the improvements to the internal circulation were abandoned. Externally, the original concrete walls were made safe and then entirely over-clad with aluminium and curtain walling over a highly insulated substratum, all installed working entirely from outside, using existing balconies and clever access systems devised by the contractor Balfour Beatty. Detailed computational thermal modelling was used to refine the environmental design and predict energy use.

The tower, a familiar part of the London skyline, though described as Brutalist owes as much to Constructivism, being an expressive composition in two parts. The stack of floor plates of the 'user tower', each surrounded by a continuous balcony, are

connected by the second, 'communication tower' with its dramatic overhang of a lecture theatre on the 31st floor. The new design emphasised the verticality of the communication tower, cladding it in dark aluminium panels with a stiffening origami fold for the outer skin, juxtaposed with a flat pale-umber strip running up to the boiler flue terminations and crowned by a sculpture by German artist Carsten Nicolai. Cleaning the balcony fronts of the user tower has strengthened the horizontals of the floors. The re-cladding has not sought to transform the somewhat gawky architecture of the original, but sharpened its contours and added sparkle to the skin, the facets of which reflect the changing London sky.

### Sir Ludwig Guttman Health & Wellbeing Centre, London

In the last two decades, the UK has been making a decisive shift to a primary and community care led National Health Service, ending the dominance of the acute sector. A stimulating challenge for architects has been the design of a new typology, neither GP surgery nor hospital, to create civic buildings of substantial scale, the mission of which is as much the promotion of health and wellbeing as the treatment of disease. The Northern Ireland Health Service has led the way in implementing this approach, and Penoyre & Prasad has so far designed six such buildings in Belfast, with locally based Todd Architects.

As these were being designed in the early 2000s, the NHS Local Improvement Finance Trust (LIFT) programme in England

triggered similar innovations with new types of community and integrated care centres. At the centre of these is the idea of the service being configured around the patient, rather than the patient having to navigate a disaggregated, provider-centred service. In southeast Belfast, over 40 separate buildings have been replaced by three strategically located integrated health and social care centres, and a similar 'one-stop shop' approach has been pursued elsewhere in the UK.

Penoyre & Prasad's design for the Sir Ludwig Guttmann Health & Wellbeing Centre in East Village, London, which opened in 2011, builds on the typology developed initially for integrated care centres in Belfast. The many cellular spaces required for consultation, diagnosis, treatment and surgical procedures are gathered on four floors around a forum created by extending the urban public realm into the building. On entering this lofty, generously day-lit atrium from the street, visitors pass by a pharmacy and a cafe, spaces that have more in common with retail than with healthcare. They can also walk straight through the space and out into a secluded garden courtyard, ameliorating any sense of being trapped in an institution.

Unlike the clinical spaces to which it may lead, the atrium is functionally indeterminate. As well as making the building easy to navigate, it provides circulation, is used for waiting, and could even hold a large meeting, exhibition or other event. There is a fitness suite and spaces for community use on the first floor.

The centre was built to high environmental standards, using natural ventilation, and renewable energy with careful selection of materials and the recycling of over 90 per cent of already minimised construction waste. Originally the medical centre for the London 2012 Olympic Games, it occupies a tight triangular site edged by railway cuttings at a prominent entry point into the Olympic Park. Its integration into the urban fabric, its history, and its role as one of only two civic buildings in East Village is

reflected in its sculptural form. Compared to the residential blocks it sits among, the centre is relatively small. Inspired by the monumental presence of the diminutive Trinity Church among Manhattan's skyscrapers, the design gives it a profile and compositional presence that emphasise its specialness. The pavement is extended into a colonnade containing all the main and subsidiary entrances, further integrating the building into its urban setting.

## Regenerative Agents

The mastery of efficient clinical planning and logistics is essential to the success of any healthcare design, but by itself insufficient. In Penoyre & Prasad's projects it is seen simply as a precondition for the pursuit of the experiential, expressive, social and ecological ambitions of the architecture. Feedback from earlier buildings by the practice has shown that the design principles described above, together with an organisational culture of focusing on patients' needs at the centre, achieve the immediate aim of giving patients a sense of control and help to minimise the stresses inevitable when dealing with medical conditions. Within their landscapes and urban settings, the larger ambition is to make the buildings themselves agents in the therapeutic scheme, and beyond that, agents of wellbeing. ▢

### Notes

1. Ivan Illich, 'Medical Nemesis', *The Lancet*, 11 May 1974, pp 918–21. Republished at <http://jech.bmj.com/content/57/12/919.full>.
2. See Philip Larkin, *High Windows*, Faber & Faber (London), 2003, pp 136–8.
3. Florence Nightingale, *Notes on Nursing*, facsimile edition, JB Lippincott Company (Philadelphia, PA), 1946, p 48. Digital version available at: <https://babel.hathitrust.org/cgi/pt?id=uc2.ark:/13960/t1xd16d8p;view=1up;seq=9>.



The ground-floor layout connects the building to its urban and social context, where its healthcare purpose, though large in terms of floor area, is but one of a number of uses and destinations.

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