HOSPITABLE HOSPITALS: CREATING A HEALING ENVIRONMENT

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Abstract

"HOSPITABLE" AND "HOSPITALS", WHICH HAVE MUCH IN COMMON ETYMOLOGICALLY SPEAKING, SELDOM USED TO APPEAR IN THE SAME SENTENCE. IN RECENT TIMES, HOWEVER, THE MAJOR OBJECTIVE OF HEALTHCARE ARCHITECTURE HAS BEEN TO DESIGN HOSPITALS TO MAKE THEM MORE HOSPITABLE, TO CREATE "A PLEASANT AND SUSTAINING ENVIRONMENT".[1] THIS ARTICLE BRIEFLY EXPLORES THE DIFFERENT WAYS HOSPITALS HAVE SUCCEEDED IN CREATING THIS "HEALING ENVIRONMENT"[2].

Hospitable" and "hospital" have common etymological roots, but not until recently have they been used side-by-side in architectural writing to describe healthcare facilities. This juxtaposition, which would have been perceived as quasi inappropriate a few decades ago, now refers to what is certainly one of the most important trends in hospital architecture. Architects and engineers have been devoting their creative talents to integrating the concept of hospitality in hospitals and other healthcare facilities. In some cases, one could argue that they are striving to move their creative works a few steps up Maslow's hierarchy of needs, echoing our narcissistic and individualistic western world and responding in some cases more to the marketing imperatives of a consumer-driven society in which healthcare is considered a commodity rather than to humanistic concerns.

Patients and staff are demanding more than the healing machine[3] they have been accustomed to. Patients want to be treated "holistically", in their totality and not simply as "cases". Medical and allied health staff certainly demand an efficient and efficacious workplace – but also a pleasant, comfortable and convivial one. This does not mean, however, that designers have neglected their more traditional preoccupations with efficiency, flexibility, ecology and aesthetics.

Roger S Ulrich's[4] seminal research in the 1980s provided a sound, scientific basis for what was up to that point intuitive and empirical, i.e. if a pleasant and comfortable environment can reduce stress and provide a sense of well-being, could it not also enhance our self-healing process? Ulrich eventually identified three factors that contribute to what he calls "supportive design":

- control and privacy;
- social support;
- access to nature and other positive distractions.

Designers can certainly create environments that meet these requirements, but to provide a truly patient-centred approach to healthcare, a whole caring and compassionate culture has to permeate the institution.

For the purposes of this article, these general trends will be briefly reviewed under four headings:

- urban integration and public image;
- structure and form;
- flexibility and adaptability;
- sustainability.

Urban integration and public image

Closed off for centuries behind high fences or relegated to the city's fringes, today's hospital wants to be an integral part of the urban fabric in the same way as schools, city halls, libraries and courthouses. It is a place for not only caring and curing, but also for informing and educating. To fulfill this role, the hospital is open to the city and in some cases is an extension of it. Public spaces and interior streets within the hospital, sometimes with commercial facilities, act as an extension of the neighbourhood and its streets. Some have seen this trend as the "malling" of the hospital[5].

Gardens and courtyards around the hospital prolong the urban landscape and serve as mitigating spaces between the city and the hospital's protected environment while providing additional amenities to the citizenry.

Hospitality also means a generous and cordial welcome: openness and transparency become important features. Access routes are clearly marked and segregated to avoid conflicts between emergency services and patients' and visitors' traffic. Sometimes, landmarks visible from a distance, such as towers, are used to mark the location of the hospital in the city.

The hospital is a small city, with its own internal network of avenues, streets and back alleys. Services are organized along and between these arteries as in neighbourhoods. To be understood and easily negotiated, that network, like the city, has to be legible. The hospital needs a centre, a point of reference so that when you get there, there is a "there" there, to paraphrase Gertrude Stein's famous saying about Hollywood. Architects are using various devices to create this "there" and to initiate its circulatory hierarchy. Atria and large interior streets are among the most common ones. Older hospitals are usually unintelligible,

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illegible because haphazard accretions over time have created a maze that no way-finding system can correct.

Traffic within the hospital is also segregated to promote efficiency and protect patients' privacy. The old notion of "clean" and "soiled" has disappeared: today, horizontal and vertical circulations are segregated on the basis of routes for outpatients and visitors and routes for hospitalized patients and supply distribution. In the latter case, delivery systems are sometimes automated and use dedicated corridors and elevators.

This preoccupation with legibility is not foreign to the concept of the hospitable hospital. On the contrary, hierarchy and segregation create clear circulation patterns that contribute to the patient's and family's comfort by reducing stress and protecting privacy, not to mention the light and delight that atria and interior streets bring.

Structure and form

Over the past decade, three major factors have been shaping the contemporary hospital: the introduction of public spaces within the hospital, the importance accorded to natural light, and new medical practices. The combined effect of these three factors has introduced a horizontal and fragmented approach to hospital design, a radical departure from the most common hospital morphology of the 1970s and '80s, the tower-on-a-podium concept or the "matchbox on the muffin", as it is sometimes called.

The hospital is being "unbundled". Services are grouped together in separate blocks according to their functional and clinical affinities: the diagnostic and treatment block, the ambulatory care block, the support services block. Inpatient units are no longer on top of the podium that previously housed all these services: they slide to the side and are tied horizontally with the other blocks. Interior streets and vast atria link these blocks together. Blocks are narrow and interspersed with courtyards and gardens bringing in a maximum of daylight and diversion to patients, staff and visitors and facilitating their orientation. This approach to design responds to the mostly European concept of access to daylight as a right, not a privilege. With this unbundling or fragmentation, blocks are free to adopt the shape, structural frame, engineering systems and code requirements that are the most appropriate to their functions, a freedom that the tower-on-a-podium concept cannot provide[6].

Changing medical practices and a greater emphasis on patient-centred care, however, have introduced a new mutation in this fragmentation process. To better serve their patients and provide a one stop-shopping approach to care, various modalities, such as ambulatory care, diagnosis and treatment and inpatient care, are grouped together around a certain clientele, such as mental-health patients or mother and child, pathologies such as cancer, or specific organs or physiological systems. To give a physical expression to this new clinical approach, services are now partially decentralized and dispersed. For example, in the Hôpital de Nevers[7] in France, the cardiac care programme brings together on one floor inpatient beds, medical daycare, some intensive care beds, catheterization laboratories and a small surgical suite. The epitome of this satellization is the new University Hospital in Tronheim, Norway, where each clinical programme occupies its own building with its own separate entrance, maintaining only tenuous physical links with some centralized support services[8].

Horizontality is not always possible, particularly for hospitals located on dense town centre sites. But even then, town centre hospitals like the University Medical Centre in Groningen (The Netherlands) and the Princess Margaret Hospital in Toronto (Canada) still provide all the amenities associated with a hospitable environment.

Flexibility and adaptability

Flexibility has always been an elusive and frustrating goal in hospital design. Hospitals are heavily serviced and built to last, and yet they must constantly adapt to changing needs arising mainly from technological development and new medical practices. Flexibility is related to the ability to change internally and to grow externally, and to replace parts that have become obsolete. Adaptability refers to versatility, to the possibility of using the same space for multiple functions.

Over the years, many solutions have been used to resolve the issue of flexibility. The new horizontality adds another weapon, so to speak, to the architectural arsenal. When the hospital is fragmented into separate blocks, the blocks can grow at their own pace and can eventually be fully or partially replaced. Growth and change is planned from the very beginning. Services most likely to grow are identified at the programming stage and future growth is planned either by allowing space on the side for expansion or internally by providing "soft space", space that is easily displaced, located next to services most likely to expand. Vertical expansion is also possible in the tower-on-a-podium concept, but is seldom used as it is associated with numerous problems[9].

In the 1970s, the interstitial space hospital was conceived as a way to provide that ever elusive complete flexibility, an "equipotentiallity" that would allow any function to be located anywhere within the long-span structural frame by tapping into a service backbone located within the interstitial floor. This approach found its purest expression in the McMaster Health Centre in Hamilton, designed by Zeidler Roberts Partnership Architects of Toronto (Canada)[10].

Based on the misrepresentation that their initial construction costs were exorbitant, a misrepresentation that still circulates today[11], although it should have been put to rest a long time ago by a Canadian study[12], full interstitial space hospitals are seldom seen today: interstitial floors are used selectively, primarily over some heavily serviced diagnostic and treatment services. The principles on which they were based are still espoused today, however, by some respected companies that specialize in healthcare design[13]. Briefly, the strategy is to separate the permanent from the temporary and to create a kind of universal framework that is irrigated by a

fixed backbone of mechanical, electrical and communication systems and a prime vertical and horizontal circulation network.

Adaptability is another basic tenet of contemporary design. This versatility is usually achieved through modularity and universality: patient rooms that can adapt to different levels of care; multipurpose exam consultation rooms and offices; modular clinics; operating rooms that can be adapted for various procedures; identical medical surgical units; and so on.

Sustainability

Hospitals have a voracious appetite for energy, an appetite that architects and engineers have successfully attempted to mitigate for years, but their concern for energy consumption has embraced some much broader horizons with the introduction of the concepts of "sustainable development" and "green building". LEED (Leadership in Energy and Environmental Design) certification has become a benchmark for sustainability in North America. This point system is designed to encourage owners to add sustainable features in the design of their facilities. It touches all aspects of the design, from site to materials to design innovations. To incorporate these features in healthcare facilities, however, is no small challenge, as they are complex building types with highly sophisticated mechanical and electrical systems. Think, for example, of the requirements for high rates of air changes to control infection; on the other hand, reliance on daylight is perfectly in tune with "hospitable" design. And for once, capital and operating budgets will be considered holistically. These are just a few of the projects that have received LEED certification so far, but there is no doubt that design will be greatly affected by this newcomer.

Conclusion

This brief overview of current trends in healthcare architecture is based on facilities from North America and Europe. These trends, however, are going global as the approach to healthcare as a commodity, a view promoted by some international organizations and private insurance providers, migrates to other continents, particularly to countries with an underdeveloped public system. Some countries in the Far East, for example, are building hospitals that are perfectly in keeping with western standards to welcome "medical tourism"[14]. This migration towards the top of Maslow's hierarchy of needs does not augur well for people still at the bottom, concerned with mere survival. ❑

Author

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References

[1] Definition of "hospitable", *Merriam Webster's Dictionary*, 10th Edition, 1995.

[2] "Healing environment" is the expression most commonly used to convey the idea that the physical milieu by and in itself can be a powerful adjuvant to the patient's self-healing power.

[3] This expression "healing machine' first appeared in Mémoire sur les hôpitaux written by J R Tenon in 1788. In many respects, it could be argued that the concept of "healing environment" is a contemporary extension of Tenon's concept of the hospital as a "therapeutic instrument." See Foucault, M et al. *Les machines à guérir: aux origines de l'hôpital moderne*, Pierre Mardaga, Paris, 1979.

[4] For the most up-to-date research on this subject, see Ulrich, R et al. The role of the Physical Environment in the Hospital of the 21st Century: A Once-in-a-lifetime Opportunity. A full copy of this report can be downloaded at www.healthdesign.org/research/reports/physical_environ.php

[5] Sloane, DC, Scientific Paragon to Hospital: The Evolving Design of the Hospital, 1885–1994, Association of Collegiate Schools of Architecture, *Journal of Architectural Education*, November 1994.

[6] The new National Hospital in Oslo, Norway designed by MEDPLAN is an excellent example of this approach.

[7] Fermand, C, Les hôpitaux et les cliniques, *Le Moniteur*, Paris 1999.

[8] For a description of this project, see Dilani, A, *Design and Care in Hospital Planning*, Karolinska Institutet, Stockholm, 1999.

[9] See Cherfurka, T et al. Concepts of Flexibility in Healthcare Facility Planning, Design and Construction at http://www.aia.org/aah_a_jrnl_0401_article6

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[11] Verderber, S, Architecture for Health – 2050: an International Perspective, *The Journal of Architecture*, Volume 8, Autumn 2003, page 293.

[12] Department of National Health and Welfare of Canada and Mathers and Haldenby Architects, Interstitial Space in Health Facility Research Study Report, 1979.

[13] Jonassen, J O et al., Health Facility and Humanity: An Agenda for the 21st Century, presented in Stockholm at the 2nd International Conference on Health and Design, June 2000.

[14] Are we ready for medical tourism? *The Hindu Magazine*, Delhi, Sunday, April 17, 2005.