

R. Stephen Sennott, *Encyclopedia of 20th Century Architecture: Volume 2, G-O* (Taylor & Francis, 2004), <http://lib.myilibrary.com/Browse/open.asp?ID=10337&loc=654> (6 April 2010)

HOSPITAL

The hospital is among the most complex and reinvented buildings of the 20th century. Whereas hospitals in 1900 were charitable institutions for the sick poor, resembling other benevolent establishments such as schools, prisons, convents, and workhouses, by 2000 the hospital had become a complicated architectural project that housed areas dedicated to health care, research, teaching, and new medical technologies.

Four distinct types of hospitals evolved during this period; in many ways, each of these hospital types developed as a reaction to the form that preceded it while adapting its program to rapid new developments in the delivery of health care. At the beginning of the century, new hospitals were typically constructed according to the highly developed pavilion-plan model. After World War I, new hospitals were more compact (although sometimes larger), multistory buildings with conservatively styled exteriors, accommodating patients in smaller rooms along doubleloaded corridors. The post-World War II hospital was often an isolated tower, with minimal decoration and neutral colors. Since the 1970s hospitals have become “health care facilities,” with a renewed emphasis on flexibility, patient-focused care, access, and an architectural form and language that reflects concerns for inviting and comfortable spaces.

These four types were also the result of complex and competing social, economic, medical, and professional concerns. The main issues that influenced hospital architecture in the 20th century were the evolving nature of medical theory and practice, expanding patient populations, the drive toward hospital standardization, changing notions of privacy, and increasing specialization among hospital architects.

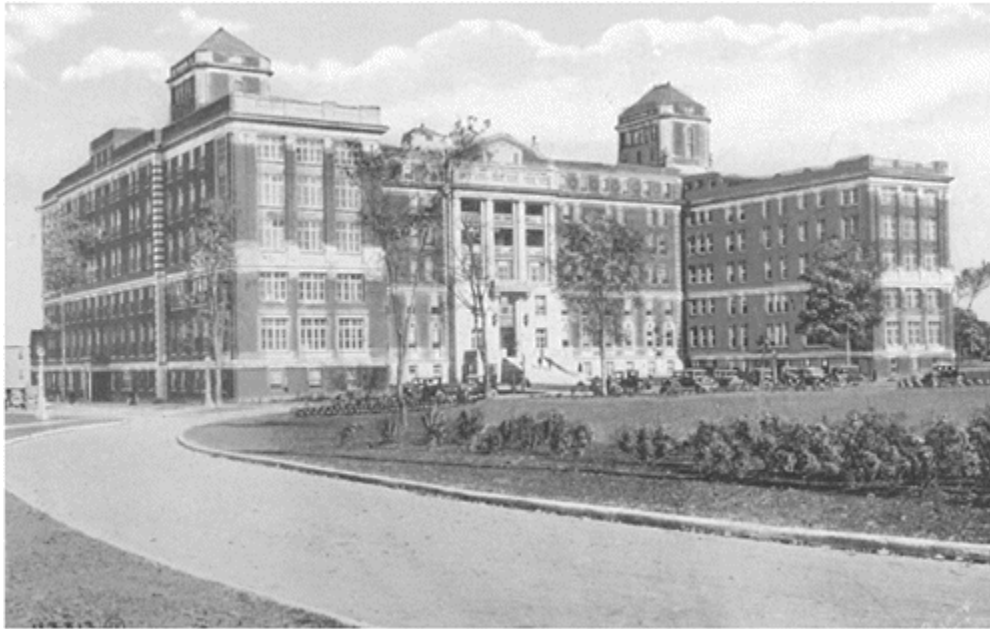
Continuing from accepted hospital plans developed during the 19th century, the basic form of the pavilion-plan hospital was well established by 1900 and continued to be constructed into the 1930s. The type had become an international standard in the 19th century, with major examples in India, Persia, Russia, Australia, the United States, and Europe. Based originally on the ideas of Florence Nightingale and other midcentury reformers, the concept of separate or minimally connected pavilions and the open plan of the wards was believed to discourage the spread of infection by maximizing ventilation. The hallmark of the pavilion-plan type was the open ward, in which 30 to 40 beds were arranged against a regular rhythm of large windows. The presumption was that the copious amounts of fresh air circulating between patients would mitigate the chances of contagion, even following the development of the germ theory in the 1870s.

The premier example of an American pavilion-plan hospital is the Johns Hopkins Hospital (1885, John Billings and John Niernsee) in Baltimore. An illustration of the persistence of this type at the turn of the century is University College Hospital (1897–1905, Alfred Waterhouse) in London. An innovation on the pavilion plan was made at the Rigshospital (1911) in Copenhagen, where the beds were turned parallel to the window. Here the ward of 26 beds was divided by screens into sections of three or four patients. This afforded the patients more privacy without sacrificing accessibility or ventilation

and foreshadowed the eventual eclipse of the open ward by the semiprivate and private room.

Hospitals in the interwar period were much more compact than those constructed around 1900. Although these buildings were planned according to Tayloristic principles of efficiency and employed modern materials, such as reinforced concrete, hospitals constructed between the wars were likely to resemble Georgian mansions or Scottish castles, employing a series of revival styles. Typical of this period is the work of Boston- and Toronto-based architects Edward Fletcher Stevens and Frederick Lee, who designed hundreds of hospitals in North America, such as the Ottawa Civic Hospital (1924).

A constellation of other hospital design experts appeared in the interwar period, contributing to the architectural development of the hospital. Sigismund Schulz Goldwater, a physician and commissioner of New York City's hospitals from 1934 to 1940, acted as "advisory construction expert" for 156 hospitals. Goldwater was an outspoken advocate of the "vertical" hospital, ideas that were published posthumously in his *On Hospitals* (1947).



Postcard of Ottawa Civic Hospital, Ottawa, Ontario; designed by Stevens and Lee (1922–1924). Photo courtesy Annmarie Adams

A number of social and medical factors also influenced the design of the interwar hospital, such as the increasing significance of surgery, the arrival of middle-class and paying patients, and the establishment of hospitals for special patients, such as women and children. Whereas the pre-World War I surgeon had likely performed in an amphitheater with tiered seating, surgery in the 1920s commonly took place in a suite of smaller specialized rooms. Surgery was one of the means by which middle-class patients were convinced that the hospital was a better place for healing than home. To this end, hospitals constructed luxurious pavilions for paying patients in the 1920s that were frequently compared to hotels. Like other building types, new hospitals in the 1920s

accommodated large numbers of automobiles for the first time, offering both parking and patient drop-off by car.

Interwar hospitals were also often much larger than those constructed before World War I, especially in the United States. The Columbian Presbyterian Medical Center (1928, James Gamble Rogers) in New York and the Cornell Medical Center of New York Hospital (1933, Coolidge, Shepley, Bulfinch and Abbott) are illustrations of this jump in scale.

In the name of economy, the post-World War II hospital was most likely a multistory tower, resembling an office building more than any domestic model, often surrounded by huge parking facilities. Hallmarks of the post-World War II hospital were standardized floor plans, undecorated facades, flat roofs, vertical circulation, and controlled ventilation. The image of these hospitals, with their sleek, hard-surfaced interiors, was detached and neutral, whereas the interwar institution had been romantic and highly decorative.

Postwar hospital architects also experimented with the hospital's section. In Europe, a number of huge urban replacement hospitals were built in the 1960s following a "matchbox on a muffin plan," whereby patient towers were constructed atop a podium of high-tech services. Examples of this type include the Free University Hospital Center (1969, Arthur Q. Davis and Franz Mocken) in Berlin. A system of interstitial space, where flexible service floors were located between patient levels, was first used in a health-related building in the Salk Institute of Biological Studies (1960–62, Louis Kahn) in La Jolla, California. It subsequently (until about 1980) became a popular model for acute-care hospitals in England, Canada, and the United States. Among the first hospitals to employ the system was the Health Sciences Centre (1966–72, Craig, Zeidler, and Strong) at McMaster University in Hamilton, Ontario, Canada.

Since the 1970s, hospitals constructed after World War II have been sharply criticized for their impersonal scale, urban isolation, visual sterility, and confusing circulation. The hospice movement, the rise of patient-driven (as opposed to provider-driven) care, and increased consumer awareness about health care matters have encouraged alternatives to these machinelike forms. A new focus on patient-centered facilities, which embraced homelike spaces and furniture, regional symbolism, increased access, and humanly scaled buildings, characterized hospitals of the final three decades of the 20th century.

In terms of hospital planning, architects also looked to three significant models in the design of hospitals since the 1970s: the shopping mall, the village, and the home. The Dartmouth-Hitchcock Medical Center (1991, Shepley Bulfinch Richardson and Abbott) in Hanover, New Hampshire, resembles a mall in its skylit rotunda and three-story galleria. "Health villages," comprised of low-rise interconnected buildings, are a conscious critique of the megahospital of the immediate postwar period in their use of brick (and other materials that express human scale), sloping roofs, and enclosed walkways. The inclusion of domestic imagery, as an attempt to infuse intimacy and meaning into the institution, has sometimes meant a confusion of contexts. For example, the Hijirigaoka Hospital (1990, ARS Design Associates) in Tokyo boasts red-brick cladding, colonial detailing, and classical porticoes, as found on the eastern seaboard of the United States.

The end of the 20th century was marked by unprecedented hospital mergers and the closure of many historic hospital buildings. Whereas some of these have been preserved as administrative adjuncts to new health care facilities or transformed to completely new uses, many historic hospitals have been simply abandoned and/or demolished—costly reminders of the swift pace of medical progress.

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See also Salk Institute, La Jolla, California

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