Designing for "the Little Convalescents": Children's Hospitals in Toronto and Montreal, 1875-2006[1]

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Abstract. This paper explores more than a century of changing ideas about the health of Canadian children through the architecture of pediatric hospitals in Montreal and Toronto. As a unique source in the history of medicine, hospital architecture reveals three distinct phases in the construction of children as patients. Early 20th-century children's hospitals remained bastions of older spatial attitudes towards health. The postwar hospital was self-consciously modern, with an arrangement more scientific and institutional than its predecessor. Through references to other typologies, the postmodern hospital marks a curious return to the earlier attitude that children's health is a family affair. Is the hospital a home for children or an institution for science?

Résumé. Cet article s'intéresse à l'évolution des idées sur la santé des enfants canadiens pendant un siècle, à travers l'architecture des hôpitaux pédiatriques de Montréal et de Toronto. Source unique d'histoire de la médecine, l'architecture hospitalière révèle trois étapes distinctes de la construction des enfants comme patients. Les hôpitaux pour enfants du début du XXᵉ siècle étaient des bastions des anciennes attitudes spatiales vis-à-vis de la santé. L'hôpital de l'après-guerre est résolument moderne et aménagé de manière plus scientifique et institutionnelle que son prédécesseur. Grâce à des références à d'autres typologies, l'hôpital post-moderne marque un curieux retour à une ancienne attitude voulant que la santé des enfants soit une affaire de famille. L'hôpital est-il un domicile pour les enfants ou un établissement voué à la science?

In chapter 18 of Gabrielle Roy's *The Tin Flute* (1947), Rose-Anna visits her son Daniel Lacasse, a patient in the now-demolished Children's Memorial Hospital (CMH) in Montreal. The image of the hospital as por-

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trayed in this classic account of working-class urban life is unforgettable.

Roy describes the sweep of gracious mansions that surround the hospital's prestigious Cedar Avenue address, and the cheerful light inside the building: the polished floors, the gleaming whiteness, and the abundance of toys for Daniel. But in Roy's account, the hospital had a dark side, too. We feel Rose-Anna's perspiration and heavy breathing as she labours up the long, steep climb to reach Daniel in the sylvan building on Mount Royal; Rose-Anna felt swallowed up by the hospital's corridors and dismayed at the young nurse's insistence on communicating with her in English. The emotional climax of Roy's chapter is Rose-Anna's bittersweet recognition that Daniel had never been so happy. Never had she felt so poor.

This paper explores more than a century of changing ideas about the health of Canadian children through the architecture of three urban hospitals, one in Toronto, the Hospital for Sick Children (founded in 1875; known as the "Victoria" Hospital for Sick Children until 1912), and two in Montreal, the Children's Memorial Hospital (founded in 1903; name changed to the Montreal Children's Hospital in 1954), and Hôpital Ste-Justine (1907). As Roy's poignant portrayal makes clear, hospital architecture is complex and multilayered. The central question addressed in this paper is: what do visual sources concerning hospital design tell us about the history of children's medicine?

That question is not as straightforward as it appears. For the architectural history of the Canadian children's hospital since its beginning in the late 19th century sometimes contradicts and sometimes reinforces the more familiar stories of the emergence of pediatric specialties, the profound changes to the health, welfare, and education of Canadian children, and the history of the general hospital. As Stephen Verderber and David J. Fine have argued in their study of the general hospital, revolutions in hospital design tend to come from experienced architects attacking the problem of healthcare for the first time, rather than from hospital design specialists or medical advisers.[2] Thus changes in the architecture of the children's hospital are perhaps more influenced by changes in architectural practice than they are by evolving structures of medical practice, childhood reform movements, or the re-orientation of the hospital from a charitable to a scientific institution.

Moreover, research using architecture sources into the history of the general hospital in the important half-century from 1890 to 1940 has revealed something different from the canonical story told from the textual sources by historians such as Charles Rosenberg, Rosemary Stevens, Morris J. Vogel, and more recently Guenter B. Risse.[3] Scholars of individual Canadian hospitals, too, such as J. T. H. Connor, David

Gagan, Denis Goulet, and James de Jonge, have followed the international lead in describing how the hospital made a concerted, smooth transition from charity to science, from a marginal benevolent institution to a vital medical centre.[4] But in fact architectural evidence shows a resistance to the idea of a modern, scientific, medical centre. It was not until the coming of the post-World War II hospitals that modernist design in the exterior image of the hospital was used to promote the modern hospital. In the interwar period, conservative, historicist exteriors were used to comfort patients and visitors, please patrons, and solidify the social status of the institution. There was a self-conscious use of architectural forms to perpetuate and symbolize traditional spatial and social orders, perhaps as a defence against fears about urbanization and industrialization.[5]

Like their counterparts throughout the Western world, acute care Canadian children's hospitals have their roots in late-Victorian child-rescue movements, roots the children's hospital shares with other non-medical institutions such as orphanages, schools, and day nurseries.[6] This makes the children's hospital stand out from other specialist hospitals. As historian Lindsay Granshaw has noted about specialist hospitals in Britain, most were set up "not by lay philanthropists but by medical men."[7] Pediatrics as a specialty has its origin neither in connection to particular diseases or organs (like tuberculosis) nor in the application of specific technologies (such as surgery or radiology), but rather in a meliorist program for the social reform of childhood.[8] In turn, specialist children's hospitals have their origins in benevolence, not medical specialization.

The early proponents of Canadian children's hospitals, then, worked towards an identity that differs from other acute-care hospitals, specialist and general, for social reasons, and differs from social institutions for medico-scientific reasons. Throughout the century, sick children have been fittingly accommodated outside of the specialist hospital. Thus the history of children's hospitals is further complicated by their relative rarity. Infants are often housed with mothers in women's hospitals, older children in wards in general hospitals, in convalescent and chronic care homes, and in non acute-care institutions such as Shriners' hospitals. Communities with many general hospitals—Winnipeg, Calgary, Halifax, and Vancouver—typically have only one autonomous children's facility.

The 20th century ends remarkably close to where it began, with Canadian sick children cared for in both general and specialized facilities. During the interwar and post-World War II periods, however, young patients in Montreal and Toronto mostly went to separate, specialized institutions. A range of architectural types also flourished, expressing conflicting be-

nevolent and scientific mandates for the children's hospital. Indeed, these buildings illustrate a continuous tension between romantic, playful, special places designed for children, and more hard-edged, scientific, "serious" spaces, modelled on the acute-care general hospital. A home for children or an institution devoted to science? This is the central, continuing dichotomy of the Canadian children's hospital.

THE VICTORIAN HOSPITAL

The accommodation for children within the 19th-century general hospital illustrates how and why separate, purpose-built pavilions for children were considered unnecessary in Montreal as the century drew to a close. At the Royal Victoria Hospital (RVH; opened 1894), for example, young patients were integrated with adults in the rather sprawling, pavilion-plan structure built on the southern slopes of Mount Royal.[9] Apart from a dedicated children's surgical ward in a short extension behind the general surgical wards, young patients were accorded few special spaces, diagnostic or therapeutic, in the new building.[10]

In fact, the RVH as planned was a generalized machine for healing. The most prominent features of the design by British architect Henry Saxon Snell were the large, open "Nightingale" wards, which housed surgical and medical patients on either side of a central administration block, to which they were minimally connected. The ward itself functioned as an instrument by which patients could be carefully positioned in space, according to the gravity of their condition, rather than by their age or gender. As Lindsay Prior (and many Victorian hospital architects) has noted, the key dimensions of the ward were the distances between beds, the heights of ceilings, and the relationship between windows and beds.[11] Also fundamental to its efficient operation was the spatial relationship between the patients' beds and the nurses' station or desk.

Early photographs of the RVH wards show the general layout of these huge rooms. White metal beds were arranged along the exterior walls of the long and narrow wards.[12] Most photos show a less-than-ideal arrangement by which more than one bed was positioned between windows. The circulation area in the centre of the ward, defined by the ends of the beds, was typically peppered with rocking chairs, as well as desks and tables for the use of nurses. The gigantic central radiators, topped with marble slabs, became makeshift tables.[13] A large round institutional clock hung at the south end of the wards. Nearly every extant photo shows the space embellished with plants, perhaps in an effort to soften the room's institutional appearance.

Few photographs have survived illustrating the spaces occupied by children at the Royal Victoria; fortunately, one shows children and

staff.[14] William Notman's stunning 1894 photograph (fig. 1) shows one end of a pavilion-style ward, with four adult women, 12 beds, and 17 children. The clock, plants, and marble-topped radiators are identical to those found in the adult wards, as show in images like the 1912 photo of the men's typhoid ward N. Indeed, ward N was converted to the children's ward in 1919.[15] Not surprisingly, Notman photographed the children's ward with its windows open, illustrating its fundamental *parti:* fresh air. What differentiates this photo from other images of hospital wards is the relatively recreational use of the space between the radiators. Notman's photo shows six children, seated in small rockers, enjoying "tea" at a table specially scaled for them with a tiny tea service.

Figure 1

Children's ward, Royal Victoria Hospital, Montreal, 1894 (II-105910, Notman Photographic Archives, McCord Museum of Canadian History, Montreal).

It is important to keep in mind that the typical North American hospital of the 1890s was a marginal custodial institution, essentially a charity for the sick poor.[16] Parents who could afford medical care at home would never send their children to a hospital, at least until after World War I. Effective therapy, or even accurate diagnosis, was rare. As Deborah Dwork has noted, "Hospitals were important in that they

served as a training-ground for clinical practice and fostered research into the physiology and pathology of children. But they did not, in themselves, affect or even influence the gross morbidity or mortality rates of children as a whole."[17] In the RVH's first annual report (1894), the administration reported admissions of "1570 patients; of these 1345 were discharged, 776 cured, 401 improved, 97 unimproved, 71 not treated, 84 died, and 141 remained." This first group included 861 males, 709 females; 1017 Protestants, 501 Catholics, 52 other religions. The average stay per patient in 1894 at the RVH was 29.3 days and daily cost per patient, $1.42. As there is no separate reporting of children, it is impossible to know how many children were accommodated by this general hospital.[18] In the architectural drawings, historic photographs and the patient statistics of the urban, general teaching hospital, that is, children are not accorded special attention. From visual evidence, from the time the hospital opened in 1893, children were presumably treated (spatially) like the other patients who stayed at the new hospital, except, crucially, they were given opportunity and spaces for play.

At the same time, Toronto's sick children were more legible in the cultural landscape of the city, since they occupied a purpose-built facility for children as early as 1891. Designed by Frank Darling and S. G. Curry, who had designed the Toronto Home for Incurables a decade earlier, the so-called "Victoria" Hospital for Sick Children (HSC; fig. 2) was a large Romanesque revival block, located amidst the city's tenements on College Street.[19] Its steeply pitched roofs, like those of the Royal Victoria in Montreal, lent the institution an aristocratic air, conjuring up the obvious associations of European castles, but also resembling the elaborate railway hotels constructed across Canada at this time, such as the Chateau Laurier in Ottawa and the Chateau Frontenac in Quebec City.[20]

Toronto's Hospital for Sick Children, founded in 1875, was typical of other pioneering institutions in that it combined the needs of medical science with an equally strong drive for social and moral amelioration, dependent on benevolent, middle-class women. The first hospital for children was the Hôpital des Enfants Malades in Paris in 1802. London's celebrated Hospital for Sick Children in Great Ormond Street opened in 1852.[21] The first American hospital for children opened in New York in 1854.[22] By 1890, according to historian David Charles Sloane, there were 22 children's hospitals in the United States. Most of these early buildings, like the HSC in Toronto, relied on domestic ideology to express this dual mission, appearing to be a "big house" that would provide poor, sick children with both protection and a surrogate family atmosphere.[23] This semblance of domesticity, accomplished largely through the hospital's massing, roof type, materials, scale, his-

toricist imagery, plan, and furniture, also related it to reform buildings like settlement houses. These, too, were controlled by women and were intended to improve the lives of working-class kids through various educational initiatives.[24]

Figure 2

Postcard with horse-drawn carriage, "Victoria" Hospital for Sick Children, Toronto (Courtesy of Noah Schiff).

Victorian hospitals such as the RVH and HSC were part of a worldwide explosion of medical building construction;[25] however, they also arose from these obvious civic, philanthropic, and political motives. Both commemorated Queen Victoria's silver jubilee in 1888; both were conceived as gifts to their respective cities; both were intended to express ties to Britain. In general terms, the plan of the HSC was similar to the RVH (fig. 3); it was an "E"-shaped mass with a central entry on the north, and open wards reaching south. Smaller wards were located along the College Street elevation, separated by pantries and doctors' rooms. The only feature in plan which distinguished the hospital for children from that for adults was, significantly, an outdoor playground for convalescent children in the middle arm of the "E" on the second floor. Play and fresh air were thus fundamental to its mandate.[26]

Figure 3
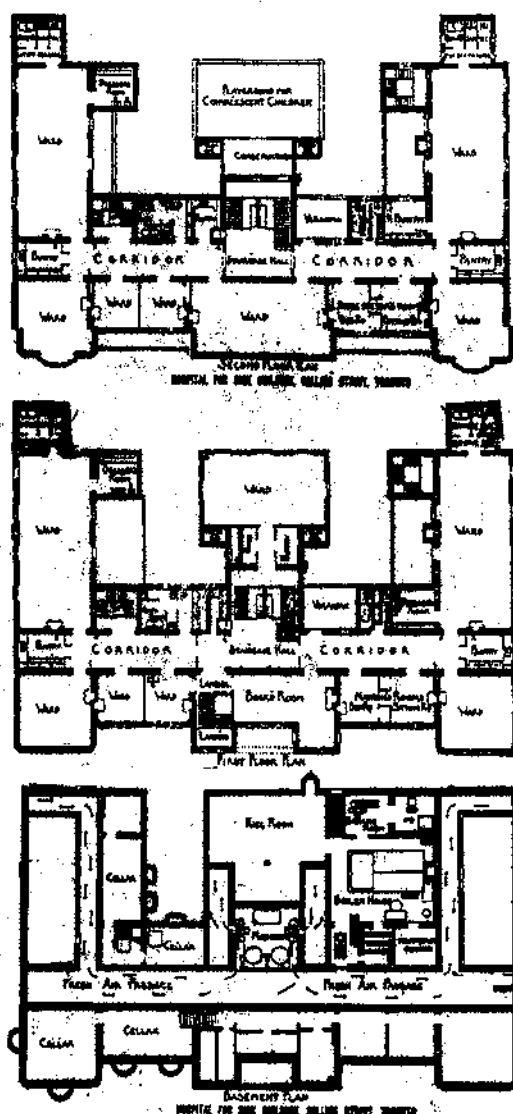
Basement, first floor and second floor plans of the "Victoria" Hospital for Sick Children (courtesy of Noah Schiff). The plan of the HSC was similar to general hospitals of the era. It was an E-shaped mass with a central entry on the north, and open wards reaching south. An outdoor playground on the second floor distinguished the hospital for children from that for adults.

THE MODERN HOSPITAL

It was mostly due to the complications of observing and isolating children in regular wards that the need for separate children's pavilions was articulated. The influential German pediatricians Carl Rauchfuss in 1877, and a half-century later Emil Freer in 1928, cited the need to isolate patients with infectious diseases as the compelling reason for separate children's hospitals.[27] But there were reasons both for and against this isolationist approach. Both for infant feeding and social reasons, adults and newborns needed to be accommodated together. The support for the specialist children's hospital thus developed only slowly. As late as 1910, hospital architect Charles Butler would still claim that "the Children's Hospital as a separate institution is a recent development in the United States."[28] Five years later Dr. Henry Dwight Chapin wrote against the hospitalization of infants, arguing that "[t]he best conditions for the infant thus require a home and a mother." "I do not believe," he wrote," that the multiplication of infant's hospitals through the country should be encouraged."[29]

Edward Stevens and Frederick Lee, specialized hospital architects with offices in both Boston and Toronto, designed several early children's hospitals and were important figures in the development of the type in the first decade of the 20th century. In his influential book *The American Hospital of the Twentieth Century*, Stevens addressed this tricky question of the separation of children in the general hospital. Noting the need to isolate them from the general patient population because of the relative high frequency of communicable diseases among the young, Stevens recommended a special observation ward for children, separated from other patients by screens. At the same time, however, Stevens reminded readers that sick children, unlike most adults, benefitted from the company of others. A glass screen separating every three to four beds, in wards not larger than 16 to 20 beds, was ideal in his opinion.[30]

In a typically immodest way, Stevens considered his own firm's design for a new Isolation Pavilion added to the Toronto Hospital for Sick Children in 1912 a model children's hospital, perhaps because it was based on the Pasteur Hospital in Paris, which had impressed him in 1907.[31] Indeed the separation of patients by plate glass partitions was known among hospital designers and consultants as "the Pasteur principle." At the Paris hospital, in addition to the isolation of patients from each other, visitors communicated with patients from special open balconies, built across the long sides of these mostly rectangular buildings.

The interior of Stevens and Lee's pavilion in Toronto shows the influence of the Paris hospital. A photograph of the HSC published in *The American Hospital of the Twentieth Century* shows a view down the inte-

rior corridor of the Isolation Pavilion (fig. 4). The dividing walls (between hall and rooms, and between rooms and rooms) are plate glass held by a system of metal framing, extending from floor to ceiling. The overall aesthetic was one of transparency, lightness, and modularity, architectural qualities associated with Modernism, and a stark contrast to the thick, masonry walls of Darling and Curry's 1891 chateau-esque building.[32]

Figure 4
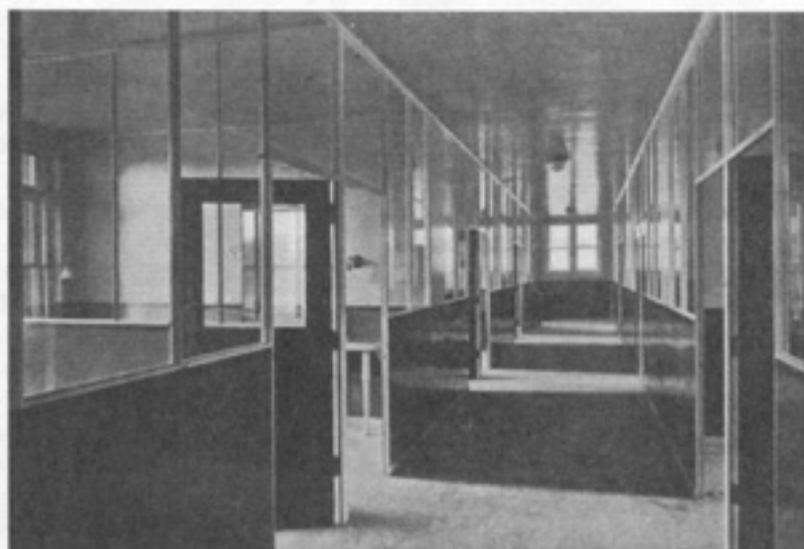
View down the interior corridor of the Isolation Pavilion, Hospital for Sick Children, Toronto, Stevens & Lee, (*American Hospital of the Twentieth Century*, p. 247).

A second, particularly scientific feature of these early 20th-century children's hospitals was the provision of space intended for the pasteurization of milk. Stevens included a photograph of the pasteurizing room in Toronto in his book, as well as the plan of the children's hospital he designed for Halifax. The Toronto hospital, according to Stevens, had the most "complete" plant for the pasteurization of milk for an institution of its size, providing milk for the hospital as well as for outpatient distribution.[33]

Apart from these two decidedly modern features (cubicles and milk rooms), however, purpose-built hospitals for children in the first half of the 20th century provided few technologies or medical spaces different from those of the general hospitals, reflecting the ambiguous relation-

ship of pediatrics to the scientific ambitions of other medical special-
ties.[34] Pediatrician Alton Goldbloom, for example, describes Montreal's
Children's Memorial Hospital in 1920 as "inactive," isolated" (espe-
cially in winter), with "few facilities for special treatment."[35] Milk
rooms were widely distributed outside of children's hospitals.[36] Infant
care did have some specialized machinery, notably the incubator.[37] But
this technology was used as often in general hospitals as in children's
hospitals. And Joel D. Howell warns that the existence of a technology
does not determine how, where, or when it is used.[38] Still Goldbloom
soon resigned his post at the Montreal General Hospital, believing that
"the future of pediatrics in Montreal lay not in the children's depart-
ments of the large hospitals, but in the Children's Hospital," which was
only gradually becoming "something more than a hospital for crippled
children."[39]

Figure 5

Aerial photo, CMH, ca. 1936 (MCH archives).

Indeed, the central ideas behind the design of buildings at the Chil-
dren's Memorial Hospital in Montreal until World War II emphasized
lingering, somewhat out-dated notions of social reform and maternal
benevolence, founded on a nostalgic view of childhood, rather than
serving the hospital's newfound scientific orientation. Perhaps the most
romantic aspect of the hospital was its site (fig. 5). Located across the

street from the current Montreal General Hospital and just to the west of the Shriners' Hospital for Crippled Children (designed by Montreal architects J. M. Miller and Hugh Vallance, 1924), the CMH occupied the wooded slopes of Mount Royal.[40] As such, it resembled other public institutions ringing the Olmsted-planned picturesque park, notably McGill University, convents and cemeteries, and the Royal Victoria Hospital. Part of its benevolent vocation was thus fulfilled by the site, as the hospital was intended to enhance the healing of sick poor kids by removing them from the crowded and damp quarters in which they lived, to the low-density and fresh air of Mount Royal. As Denise Lemieux has shown in her study of childhood in Quebec literature, this vocation stemmed both from concerns about sanitary conditions of the poor and from a dream of a mythic childhood located somewhere in Quebec's rural origins.[41] Roy's Daniel Lacasse, for example, hailed from St. Henri, one of the city's poorest neighbourhoods.

Figure 6

CMH nurse and patients on walkway (MCH archives). Are these young patients of the Children's Memorial Hospital, Montreal, out for a "walk" with their nurse?

A major difference between the RVH and the CMH was in the significance accorded to exterior spaces.[42] Whereas the immediate surroundings of the RVH had served only as a picturesque framework to the hospital itself, exterior spaces at the Children's Memorial actually functioned as outdoor wards for patients. Photos show children dressed for both summer

and winter weather outside in beds and nurses taking the temperature of patients in the gardens. Some images are clearly of special events, like the shot of Commencement Day that appeared in the hospital's annual report of 1912; others, however, such as one of a nurse with three beds on a walkway outside the hospital, are more ambiguous (fig. 6). In both cases, however, the images underline how important the exterior, forested spaces were to the workings of the CMH in this period, perhaps a consequence of the children's hospital continuing struggle against tuberculosis.

Outdoor spaces were also a distinctive design feature of the CMH masterplan. The general arrangement of the site, as drawn by architects David R. Brown and Hugh Vallance, was for a series of 14 pavilions linked by walkways, forming a loop from Cedar Avenue. Directly accessible from the street were the James Carruthers Outpatient Building (1920) and the School (1916). Further up the hill, at the end of a circular driveway, were the administration building, the Sarah Maxwell Memorial, and the Arnott Cottage (1913). Smaller buildings on the site included the Kiwanis Hut (1924), the Kinmond Cottage (1925), the Judah Memorial Pavilion (1926), a hut for 20 boys with TB (1928), the Forbes building (1931), the George G. Foster Hut (1932), and the Hazel Fountaine Brown Pavilion (1935).

Figure 7
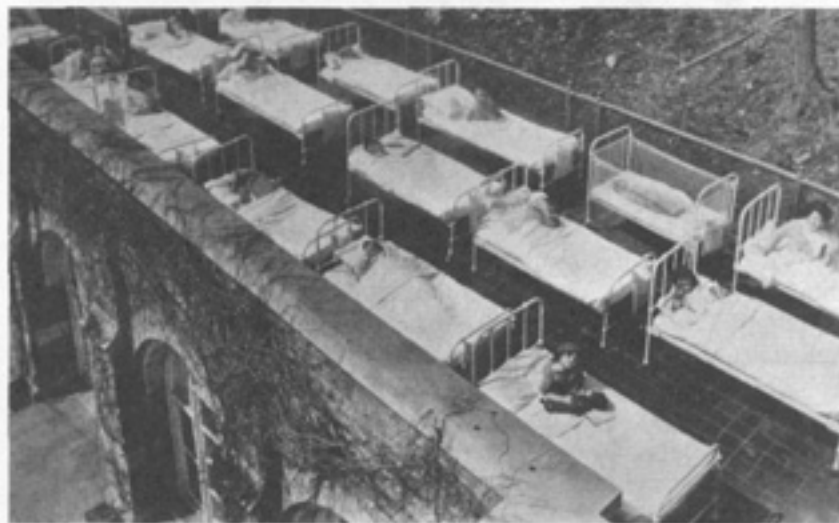
CMH Carruthers corridor (*Construction*, 1931). This photo shows the roof terrace at the Children's Memorial Hospital, Montreal, serving as a ward.

Another particularly distinctive feature of the CMH architecture was that the corridor rooftops also served as wards (fig. 7),[43] and tents that functioned as wards were scattered throughout the grounds (fig. 8).[44] A perspective drawing of this unusual corridor-type hospital space was published on the back of the CMH Annual Report in 1919, in the hope that a benefactor would subsidize this "corridor leading from the upper storey of the Hospital to the mountain park ... [for] the open-air treatment of little children suffering from deforming diseases."

Figure 8

CMH "tent" ward with boy crocheting, 1912 (MCH archives). Three young patients occupy a Ward Tent at the Children's Memorial Hospital, Montreal.

Orthopedics was a second important focus of children's hospitals. In the case of the CMH, interior photographs of orthopedic patients show it to be a comparatively non-scientific institution. Photographs (fig. 9) show hut-like rooms with visible structure and (sometimes) exposed plumbing. While these images may have been taken for the purpose of fund-raising (and thus emphasize the building in need of repair), they also illustrate just how bucolic the buildings were. In fact, the photographs resemble images of overseas hospitals during World War I, both for their emphasis on rehabilitation and for the flimsy, ephemeral appearance of the architecture.

Despite its focus on children's needs, the architecture of the CMH was far from modern. The ensemble was composed of temporary, unheated huts; it had one operating room; its x-ray department was lagging; the outpatients' department was difficult to access; its school for crippled

children suffered from competition from the neighbouring Shriners' Hospital. At the CMH, even scientific nursing, an indispensable part of the modern medical centre, lagged behind.[45] The CMH training school closed in the 1934 as part of a modernization of the nurses' educational program at the McGill teaching hospitals.[46] Not until 1931 did the CMH have a distinct nurses' residence and not until the 1950s did nurses have their own building.[47]

Figure 9

Physiotherapy ward, CMH, ca. 1942 (MCH archives). Hut-like rooms with exposed structure and plumbing at the Children's Memorial Hospital in Montreal resemble temporary, wartime hospitals.

Perhaps the continuing significance of outdoor space in the architectural evolution of the CMH also derives from its rather ad hoc beginnings. The institution, like many others devoted to women and/or children, first occupied a rented house (1903). Renovations to it cost $400, financed by a sale of home-made goods by Montreal school children. From January 1904 to May 1905, 122 patients and 195 outpatients were treated there. The patients admitted to the ad hoc quarters suffered from tuberculosis (46), rickets (17), infantile paralysis (5), other paralysis (6), and other diseases (48). The cost of patient care was .28/day, or about 20% as much as the daily patient cost at the RVH a decade earlier.[48]

Under a new director, in 1936, the CMH attempted to modernize on the model of the technology-oriented research and teaching hospital. In the ensuing fund-raising campaign, images (fig. 10) of a proposed addition to the hospital designed by emerging hospital specialist J. Cecil McDougall in a self-consciously modern idiom were publicized. This was a clear bid to associate the modern children's hospital with modern architecture. The annual reports at this time, too, show a clear transition in style and tone from an earlier romantic view of childhood disease, to the more officious, scientific business management style associated with the general hospital.

Figure 10

Fund-raising perspective, proposed CMH hospital, ca. 1936 (MCH archives). This proposed addition to the Children's Memorial Hospital, Montreal, by emerging hospital architect J. Cecil McDougall, was a clear bid to associate the modern children's hospital with modern architecture.

The hospital's architecture can be read as evidence of the great difficulty experienced by the CMH in asserting itself as a centre of research and teaching, a difficulty reflected, too, in the struggle for academic recognition of pediatrics. For example, Harold Beveridge Cushing did not convince McGill University to create a Department of Pediatrics until 1937, the same year the Canadian specialty board was created.[49]

Although he was appointed to the faculty in 1902, pediatrics did not appear in his academic title until 1920.[50] Simultaneously minor adjust-

ments occurred in the accommodation of children at the growing RVH, indicating the increasing importance of children as a special patient group; in 1919, the children's medical ward was re-located to Ward N, where it remained for the next four decades.[51]

Hôpital Ste-Justine, by contrast, was enthusiastically supported by the French-speaking medical schools from the beginning.[52] As a result, its architectural form derived from several large-scale building campaigns, unlike the rather piecemeal development of the CMH. Following its equally modest beginnings in houses, the new H-shaped, 300-bed Ste-Justine opened in April 1914; a six-floor north wing was added in 1921-22, including accommodation for private patients, electrotherapy, radiotherapy, isolation, dispensaries, a laundry, and heating furnaces; and in 1925-27 a new south wing (of eight storeys) was constructed and a fifth floor added to the centre block (fig. 11). One hundred and fifty rooms for nurses were added then, too. In 1932, a nurses' home, labs, and laundry were added. All four buildings were designed by Montrealer Joseph Sawyer, architect of a number of hospitals such as the first general hospital for women in Canada, Montreal's Women's General Hospital (1927; its name was changed to the Herbert Reddy Memorial Hospital in 1946), and the Hôpital Notre-Dame de la Merci (1932), as well as schools, churches, and other important Catholic institutions.[53]

Figure 11

The design of Hôpital Ste-Justine was remarkably cohesive, deriving from four large-scale building campaigns and a single architect, Montrealer Joseph Sawyer, (*Canadian Hospital*, 1928).

Hôpital Ste-Justine represented the ultimate in a scientific children's hospital; its design could not have differed more from the architecture of the Children's Memorial. Whereas the anglophone hospital presumed poor families would benefit from its lofty location, Ste-Justine was sited on north St. Denis Street, "where the population mainly comprises families of workmen."[54] Whereas the CMH was made up of a dozen or so small pavilions, terraced into the mountain, Ste-Justine was an integrated urban mass. And the francophone hospital included all the features associated with the modern institution: operating rooms, x-ray department, laboratories, dietetics. It was categorized as Class A by the American College of Surgeons.[55]

The relationship of pediatrics to other specialties, especially obstetrics, at Ste-Justine was also more clearly delineated than in the CMH.[56] In the course of expansion in 1928, Ste-Justine added a maternity ward and *creche* to the new north wing. The service continued throughout the 1930s, with 40 beds, 40 bassinets, and three doctors. The CMH opened a ward for infants in 1914, but obstetrics/gynecology remained the responsibility of the Royal Victoria, an arrangement cemented by the construction of Stevens and Lee's Montreal Royal Victoria Maternity Hospital in 1925-26.[57] By contrast, at Hôpital Notre-Dame, the general hospital associated with Ste-Justine, pregnant women were not admitted unless they had a life-threatening condition.[58]

Figure 12

Children's Memorial Hospital, Montreal, postcard ca. 1912 (MCH archives).

Historic photographs of the CMH and Hôpital Ste-Justine give further insight into the differing personalities of the two institutions. Not surprisingly, official images of the CMH, like the hand-tinted postcard of 1912 (fig. 12) and Notman's photograph of the hospital in 1913, emphasize its romantic forms and domestic associations.[59]

Figure 13

Snapshots of the Children's Memorial Hospital, Montreal, from Nurse Rose Wilkinson's photo album (MCH archives).

The upward angle of the postcard image, for example, sets off the varied rooftop elements of the building—gable-end chimneys, dormers, curved oriel window, and expressed parapets—features we associate with domestic rather than institutional design. The angle also showcases the hospital's bay window and fine brick detailing. The CMH's small scale, too, is reinforced by the relatively informal postures of the nurses shown in the postcard. One even sits on the ground in her

starched, white uniform. The same sort of images can be seen in an extant photo album belonging to Rose Wilkinson, a nurse at the CMH, that is mostly filled with snapshots of staff members and patients. These are intimate images of groups huddled together, often smiling and touching, resembling family photographs (fig. 13). Photographs of Ste-Justine's patients, on the other hand, are typically more formal, emphasizing the hospital's scientific, institutional character (fig. 14).[60]

Figure 14

Interior view of ward, Hôpital Ste-Justine, Montreal (Ste-Justine archives).

Comparing the design of Ste-Justine and the CMH also speaks eloquently of the differences between French and English children's hospitals in Montreal during the first half of the 20th century. Perhaps most importantly, it should dispel the notion that francophone hospitals were somehow less scientific, or more backward, than their anglophone counterparts. This presumption was most clearly articulated by art historian Shelley Hornstein, who suggested in an article published in 1991 on the architecture of Montreal's 19th-century teaching hospitals that the religious (French) and secular (English) institutions were in constant competition for the domination of Mount Royal. It sets the original Montreal General Hospital and the Hôtel-Dieu in opposition, describing the English system and its buildings as "an architecture of domination," while she reads the French hospital, mostly due to its convent-derived form, as a "zone of passivity." As further support for her thesis on

the competitive nature of hospital building between Montreal's supposed two solitudes, Hornstein also reads the siting of these two buildings as a case of straightforward one-upmanship, remarking that 19th-century teaching hospitals in Montreal literally "leapfrog[ged] up its hills" in a competition "waged for the administration of life or the conquest of death."[61] Twentieth-century children's hospitals, as should be clear by now, recount a different story.[62]

THE INTERNATIONAL-STYLE HOSPITAL

The planned modern addition publicized in the CMH 1936 fundraising campaign (see fig. 10) was never constructed. In 1956 the CMH moved to a downtown site, surrounded by busy city streets, that had been home to hospitals since 1880. The move to downtown was prompted by a series of events that had more to do with changes in hospital administration than a careful consideration of the architectural needs of a children's hospital.[63] Most importantly, the Montreal General Hospital (MGH) had decided to move to a new site on the mountain just across Cedar Avenue from the CMH. Rather than follow the prewar plan to rebuild on the mountain, the CMH took over the Western Division of the MGH on Tupper Street.

Figure 15

MCH 1955 towers (*Montreal Star*, 22 October 1954). This image shows three stages of the hospital's development: the mountainside hospital, the new downtown site before the 1955 towers were built and a rendering of the proposed 1955 towers.

The new hospital aspired to be everything the old one was not: urban, modern, and scientific. Even the name was changed to the Montreal

Children's Hospital (MCH) in 1954, since the idea of commemorating Queen Victoria's benevolence now seemed outdated.[64] Typical of North American hospitals built following the war, the new Montreal Children's Hospital more closely resembled an office building than a house (fig. 15). J. Cecil McDougall, of McDougall, Smith, and Fleming, by now Montreal's architect of choice for anglophone hospitals, was familiar with the terrain. Twenty-five years earlier he had designed a ten-storey Private Patients Pavilion (1932) here for the Western Division of the MGH.[65]

For the MCH, McDougall kept the Private Patients Pavilion and added two relatively stark, undecorated towers, which he accommodated by demolishing the remaining 1880 pavilion of the original Western Hospital and a 1907 addition. The new hospital had a 385-bed capacity versus 173 in the old, mostly in public wards in the new 13-storey west tower. With the extra beds, the MCH planned to raise the upper age limit for patients from 13 to 16.[66] The old nurses' home, built for the Western Hospital in 1921, was converted into an interns' residence. The second, east tower, connected by a tunnel under Essex Street, had beds for 165 nurses.

Figure 16

Hospital for Sick Children, University Avenue, Toronto, 1951 (*Journal Royal Architectural Institute of Canada*, 1951).

Figure 17

Model of Hôpital Ste-Justine, Montreal, in an advertisement for Metropole Electric, Inc. (*Architecture-Bâtiment-Construction*, 1956).

The new MCH, then, consisted of both old and new buildings. Two exemplary postwar children's hospital in Canada made a more thorough break with the past. The Toronto Hospital for Sick Children opened an 11-storey tower on University Street, south of its old College Street location, in 1951 (fig. 16). It was the work of the prolific hospital specialists (and consultants) Govan, Ferguson, Lindsay, Kaminker, Maw, Langley, and Keenleyside. And in 1957, 50 years after its founding, Ste-Justine opened a 13-storey, 133,500 square-foot, 800-bed facility

(fig. 17) with a bold double "Y"-shape plan (fig. 18) on Côte Ste-Catherine across from the Université de Montréal (itself conceived in a modern style by Ernest Cormier, and recently opened on the north flank of Mount Royal).[67]

Figure 18

Plan, main floor, Ste-Justine, Montreal (*Architecture-Bâtiment-Construction*, 1953). Designed by Joseph Sawyer, the new Hôpital Ste-Justine featured a bold, modernist double "Y"-shape plan.

Planning for some of these post-World War II children's hospitals began in the 1930s under the guidance of established experts: for instance the architect of the new Ste-Justine was the same Joseph Sawyer who designed all of the earlier hospital on the old site. But by the time they opened in the 1950s, both architecture and hospitals had new mandates. Hospitals were no longer charities for the poor, but much larger scale health centres for all, offering scientific medicine based in, or at least closely connected with universities. The new mission was outlined by U.S. Surgeon General Thomas Parran, who in 1945 described the modern hospital as a "complex technical machine, employing the latest sci-

entific diagnostic aids, preventative and curative measures, and professional skills."[68] This agenda, backed by increased state funding and the growth of private medical insurance plans, sparked an era of hospital construction across North America.[69]

General hospitals operated under a three-part mission: research, patient care, and teaching. Children's hospitals adopted this orientation. And like the general hospital, the children's hospital refused to take on chronic care or contagious diseases.[70] But pediatric institutions also tried to extend and legitimate their expertise in infant care, orthopedics, and rehabilitation. Newspaper reports described the focus of activities at the new MCH as "preventative medicine, treatment of acute ailments, and correction and assistance of handicapped patients."[71] With this new scientific mission, children's hospitals took on more importance as *centres* for social reform. Historians have shown how pre-World War II children in Canada were reformed through ideas of middle-class "nurturing," ideas controlled and regulated by emerging scientific experts such as pediatricians, and dispersed at home (for example in advice books for parents), and in public institutions such as schools (for example with regular dental clinics).[72] But it was only after World War II that the children's hospital, with its clinical and research services, was renewed as an active social agency important to all, rather than a custodial resort for children already marginalized by poverty and illness, and thus came to dominate the efforts to improve children's—and through them the nation's—health.

Architectural production itself had likewise changed. A coherent and self-proclaimed modern architecture was ready to serve the new scientific hospital. Known under the rubric of the International Style, postwar architecture placed an emphasis on rational plans, often based on Taylorist motion studies and the Fordist factory as the model of production. This functional planning was housed in unadorned, boxy forms, marked by an abundance of windows, often arranged in repetitive horizontal strips. Such stripped-down elevations were often thought to create a desirable neutral or minimalist environment. Superintendent Joseph H. W. Bower, for instance, boasted that the new HSC "is utilitarian in design and little attempt has been made at architectural embellishment."[73] Historian Jonathan Hughes points out that although these principles were initially developed for tight urban conditions, they were used on non-urban sites, too.[74] Thus although McDougall originated plans for modernist towers on the CMH's mountain location, he had little trouble adapting them for downtown.[75] Hospitals could now openly use architecture to convey and communicate the modern, scientific interiors—modern in layout, technology, and organization—rather than to disguise them in historicist exteriors. Hospital experts in the

postwar era made rigorous attempts to define the hospital as scientific and progressive, not simply custodial. Innovations in medical practice—for example, in 1957 the MCH performed the first open-heart surgery on a child in Canada—created a strong belief in the future of scientific medicine. Architectural modernism was a key factor in expressing these scientific goals both with an appropriately rational-looking architecture, and through the implementation of planning changes such as centralized kitchens and record keeping that radically changed the habits of all hospital users, employees, and patients.

Figure 19

View through airplane window of Hôpital Ste-Justine and the Université de Montréal (*Architecture-Bâtiment-Construction*, 1953).

Ste-Justine's founder, Justine Lacoste Beaubien, lobbied for a new hospital that would proclaim Ste-Justine as a thoroughly modern institution, involved in research and medical education as well as treatment. She wanted to keep Ste-Justine autonomous, while forming closer links, physically and administratively, with the Université de Montréal. Some of the medical staff opposed the move to Côte Ste-Catherine. The community-based hospital had always prided itself on being accessible to its traditional clientele: the French-speaking working-class population of northeast Montreal. And Beaubien herself hesitated to give any direct control of hospital activities to the university. She argued, however, that hospitals were no longer charities, but rather health centres that could offer the best possible care to children of all classes only by a tighter relationship with the university. That association is a prominent feature in contemporary photos, such as one taken from an airplane during con-

struction (fig. 19). In other interior photos, the main university building, with its iconic tower, is clearly visible through the windows, a picturesque and authoritative backdrop to formal and casual activities within the hospital.[76]

In addition to the need to expand and grow, these hospitals were justified by the imperative to keep up to date with technology. Ste-Justine incorporated new non-medical technology. It had a four-storey underground bomb shelter, capable of protecting 20,000 people. Beaubien ordered three landing pads on the roof for helicopter ambulances.[77] Built-in systems included ceiling panels for radiant heat (rather than hot water radiators) derived from a children's hospital in France, and an elaborate electronic communications network that could pipe music into the nurses' and employee residences.[78] Many of the innovative ideas came from Soeur Noémi de Montfort, Beaubien's assistant and overseer of the project, who had visited over 160 hospitals in North America.[79]
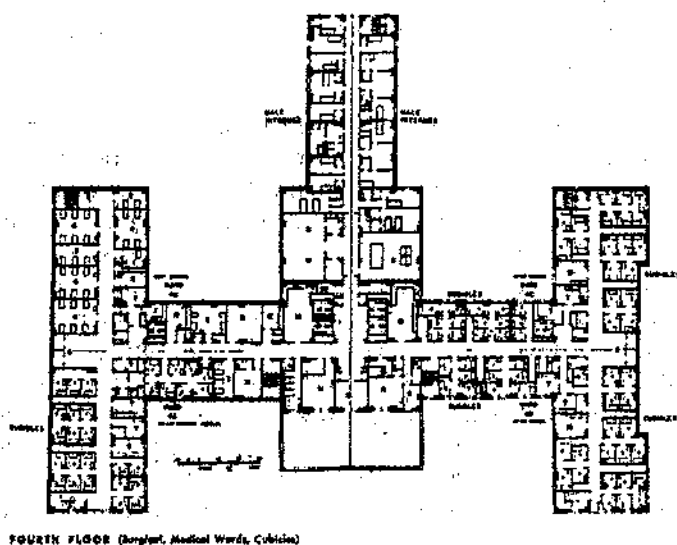
Toronto's new Hospital for Sick Children, too, flourished a manifold array of medical technology. The hospital installed the latest equipment, including diagnostic and therapeutic tools, confirming the hospital as the desired location for medical treatment. A pneumatic tube system could rapidly send documents and objects such as x-rays or medicine to any of 25 stations throughout the hospital. A central supply piped oxygen and suction to ducts beside every bed. In addition each crib was equipped with a "germicidal" ultra-violet lamp.[80]

The HSC also used new building technology. Since the building was erected in a hospital zone, the engineers developed a system of welding the structural steel frame (instead of riveting) that minimized noise during construction.[81] The hospital had 635 beds, but the steel structure was designed to accommodate 200 more. Following standard skyscraper construction, whereby the entire load of the building is borne by a grid of columns, the interior partitions were independent of the main structure, so floor layouts could be easily changed, although the position of corridors and large spaces were restricted by the location of columns and elevators. This structure was thought to ensure future flexibility, a concept foremost in the 20th-century planners' "intentions." Indeed, hospital experts imagined that the hospital could only continue to grow.

Interior planning was based on the model of the acute-care adult hospital. In one of the first books on hospital design to appear after World War II, Charles Butler and Addison Erdman give equivocal advice to planners. They suggest that separate cubicles and isolation rooms are required for children's wards because children's diseases are often infectious. But children are also prone to loneliness and fear, and are thus

better off in 8-bed wards rather than private rooms.[82] The plans of the HSC show private and semi-private wards on floors eight and nine. Intended for paying patients, these wards mark the diminished role of charity in the hospital's mission and reinforce the notion that the hospital was now a desired treatment centre for all children, rich and poor. Administrators were quick to point out that the difference between public and private wards was only in the degree of privacy and allotment of space, not in the quality of care.[83] As the plan of the fourth floor shows, even among the public wards there were a large number of private rooms, used to isolate children with contagious diseases (fig. 20).

Figure 20

FOURTH FLOOR (Surgical, Medical Wards, Cubicles)

HSC fourth floor plan, 1951 (*Journal Royal Architectural Institute of Canada*, 1951). This plan of the fourth floor of Toronto's Hospital for Sick Children, designed in 1951, illustrates the continuing combination of public wards and private rooms.

The planners also instituted a rudimentary "pad and tower" vertical structure. Patient wards occupied floors four through ten. "All other services, such as operating rooms, routine and research laboratories, x-ray, together with administrative facilities, dining rooms and other general services are located on the lower floors."[84] This configuration of low service building and high ward towers reigned almost unquestioned as the form of progressive hospital design for 20 years.[85] Although the pad and tower concept, known in Britain as the "matchbox

on a muffin," worked well for the zoning of hospital functions, the form came not from a close analysis of how the hospital was organized, but instead clearly drew from contemporary urban office towers.[86] The quintessential pad and tower office building, however, opened after HSC: the 1952 Lever House, a Manhattan corporate headquarters designed by Skidmore, Owings, and Merrill. This chronology shows the interpenetration of ideas in modern architecture and modern hospital planning; architects did more than merely dress hospitals in the latest architectural fashions.[87]

Ironically, it is difficult to read from exterior or interior photographs of these three postwar hospitals that they were specifically designed as environments for children.[88] During this period the romantic and domestic imagery of early children's hospitals gave way to the bureaucratic image of modernist architecture. In the postwar era of self-conscious progress, of plans for technological, physical, and (especially in Quebec) social modernization, the children's hospital lost a distinct architectural and urban identity, appearing virtually indistinguishable from hospitals for adults, and from other buildings such as office buildings or hotels.

Later developments in children's hospitals saw a retreat from these extremes toward more patient-centred, comforting (as opposed to clinical) environments. Curing sick children remained the business of medicine, but the conception of the hospital visit as an orderly industrial process withdrew. Hospitals returned again to a belief that children's health is a family affair.

THE POSTMODERN HOSPITAL

In architecture, postmodernism has a specific meaning different from its familiar connotations in cultural studies and philosophy. It describes some of the work by the generation of architects who came of age after the era of functional rationalism and the International Style. Postmodernist designs are often modern buildings in structure, organization, and planning, but decorated with playful features, such as colourful quotations of historical details. While many tout postmodernism as a return to traditional urban design principles, others deride the superficial application of glittery ornament and the embracing of the vacuous glitz of popular culture. In *Learning from Las Vegas*, a controversial 1972 architectural manifesto, Robert Venturi and Denise Scott Brown even suggest that architects must look to mundane buildings like hot dog stands and gas stations as ideals.[89]

Postmodernism and children's hospitals make an intriguing combination because of the widespread belief that children's hospitals should have animated, distracting, colourful environments.[90] If hospitals such

Figure 21

Atrium Patient Tower, Hospital for Sick Children, Toronto, postcard, view of interior (courtesy of Annmarie Adams).

as the HSC a hundred years earlier used historicist imagery to reassure and comfort children and their families, postmodern hospital architects include whimsical references to the past and to popular culture to divert and entertain them. A premier example is the Atrium Patient Tower at

the Hospital for Sick Children in Toronto, designed by the Zeidler Roberts Partnership/Architects (fig. 21). This 572-bed, eight-storey addition opened in 1993 to replace all wards and inpatient services in the 1951 facility. It has 96 beds and four nursing stations on each typical floor, arranged, as the name implies, around a central atrium (fig. 22).

Figure 22
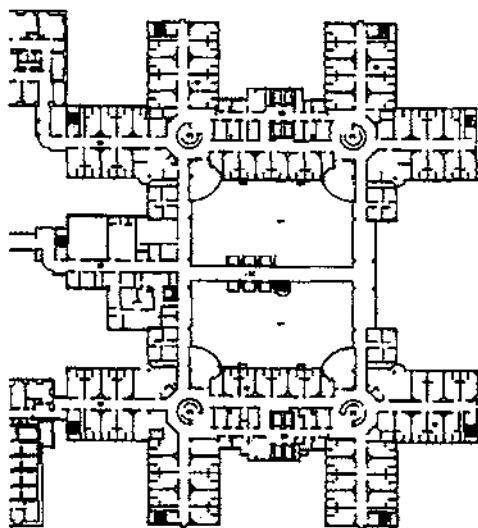
Atrium Patient Tower, Hospital for Sick Children, Toronto, typical floor plan.

The atrium as a hospital space appeared in the late 1980s. Verderber and Fine claim that it became an appropriate form as "providers sought new forms of prestige, new types of patients, and increased market share," referring to the rise of corporate hospitals at this time in the United States.[91] In the publicly funded Canadian system, however, the atrium is also fashionable, serving two important purposes. First, the atrium gives hospitals a grand public interior space. Earlier children's hospitals, as we have seen, had no interior spaces intended to encourage the general public to visit. Second, the bustling grand space provided by the atrium in hospitals since the 1980s provides a distraction for hospitalized children, taking its cues from psychological studies that suggest children need to be diverted when ill. And true to postmodernism, the hospital atrium refers to a building type outside its immediate architectural vocabulary: the shopping mall. The inclusion of shops, a

fountain, and a 750-seat, 24-hour cafeteria is supposed to make a trip to the hospital seem ordinary and familiar to children. Its architects are masterful designers of malls, too. Opened in 1977 in the heart of Toronto, and covering two city blocks, their design for Eaton Centre features a huge 900-foot-long galleria with more than 300 shops on five levels.[92]

Second, the atrium provides a clear orientation system for the hospital. That is, it helps visitors with "wayfinding," literally with finding their way from the front door to the services they will use. The Atrium Tower entrance is emphatically marked by a semicircular car drop-off, a large glass entrance canopy, and a bridge that connects the atrium with laboratories in the Elizabeth McMaster Building across the street. Inside, visitors are led down a "main street." Vertical circulation for the public consists of a set of clearly visible elevators and stairs set in the middle of the atrium. On the upper floors corridors are attached to the atrium, allowing natural light in and users to look out onto the activity below. The system thus does away with the long, dark corridors found in many postwar hospitals.

Besides the influence of shopping malls, the atrium has a predecessor in earlier health care projects of Zeidler Roberts. The office gained international attention for the McMaster University Health Sciences Centre, which opened in Hamilton in 1972. It remains the acme of the modernist desire for functional and technological flexibility, achieved through the incorporation of "interstitial space," a system of expanded subfloors filled with mechanical, electrical, and communication services.[93] The plans of the pediatric units of that modern hospital already reveal the seeds of the ideas of the postmodern Atrium Tower: play rooms and wards arranged around interior courts.[94]

The Atrium Tower is postmodern in that the atrium or galleria adds a new spatial sequence to hospitals, derived from the experience of the mundane shopping mall. The issue of postmodernism in architecture, however, is more familiar as a debate about how buildings look, namely, the question of decoration that quotes historical ornament. The Tower quotes premodern styles. Both the inside walls of the atrium and the exterior façades recall art deco or art nouveau motifs.[95] Such decoration is often derided as arbitrary, a merely ornamental gesture that only adds to the feeling of being in a shopping mall. The question is, why is the illusion of going to a shopping mall an appropriate experience for sick children?[96]

Other Zeidler Roberts projects use the same galleria device. At the Walter C. Mackenzie Health Sciences Centre in Edmonton, the teaching hospital for the University of Alberta, two five-storey, glass-enclosed atria separate the three hospital wings, and are meant to provide clear

orientation for visitors and a soothing garden atmosphere. The point is, the atrium is a versatile architectural idea, which can be used to create soothing transitional spaces for adults or active, animated, diverting spaces for kids. If the atrium is a successful wayfinding tool, however, its merit as an entertainment device is more complex to evaluate. Its use as a diversionary tactic suggests that hospitalization is too stressful and traumatic for patients, especially little patients, to confront; that medical science and healthcare need to be disguised before they are acceptable to children. The Atrium Tower is perhaps a step backwards to earlier children's hospitals that, functionally indistinguishable from adult facilities, depended on sentimental ideas of childhood to create an identity and justify the need for a separate children's institution.

THE IMAGINARY HOSPITAL

Montreal is once again facing these same questions about children's healthcare facilities. For the first time, McGill University has lent its name to a hospital. The new McGill University Health Centre (MUHC) is the result of a voluntary 1998 merger between five of McGill's associated teaching hospitals: the Royal Victoria Hospital, Montreal General Hospital, Montreal Chest Institute, Montreal Neurological Institute, and the Montreal Children's Hospital.[97] The MUHC plans to abandon all of its existing buildings and move to a new $1.2 billion superhospital facility in 2006.[98] After a century of separation, children and adults could once again be part of the same teaching facility.

One of the loudest objections to the current decentralized model of the university health centre is the uneasy physical links between all services surrounding children. For example, under the current "far-flung MUHC arrangement," if a newborn requires surgery, the baby is transported to the MCH, perhaps accompanied by the father, while the mother must remain at the RVH Maternity Pavilion. An MUHC Foundation publicity campaign claims that "On the new one-campus Glen site, a simple wheelchair ride could reunite the entire family."[99]

Not everyone thinks the re-integration of children into the general hospital in Montreal is a good one. Planning for the inclusion of children in the MUHC was rocked by the resignation of MCH executive director Patricia Sheppard in January 2000.[100] She left out of concern that pediatrics was not being given enough autonomy within the MUHC structure. The result, she fears, could be a real lowering in the quality of care the hospital can deliver to children. Sheppard and others (like Beaubien at Ste-Justine 50 years earlier) are mostly apprehensive about diminished administrative authority, about losing control over such things as budgets, medical appointments, and operating room schedules. But that anxiety includes the possible lack of specific child-ori-

ented facilities and architectural identity in the superhospital. In its latest presentations, the MUHC has begun to discuss separate emergency and other services for children. But if the MCH keeps its name and has its own pavilion, why should it move to the new site with the adult hospitals? The problem of designing for children thus threatens to undermine the whole "one-hospital one-site" superhospital concept.

The Université de Montréal has similar plans for a new superhospital. In 1996 its main teaching hospitals merged into the Centre hospitalier de l'Université de Montréal (CHUM). But Ste-Justine declined to join the administrative merger. The French-speaking children's hospital will thus not be part of the proposed facility set to open in 2006 in the Rosemont district, ironically just across from Ste-Justine's former St. Denis Street location. The difference between the futures proposed for Ste-Justine and the MCH illustrates the continuing difficulty of housing children's health care: what is best for the patient, separate or attached?

At a colloquium entitled "Healing by Design: Building for Health Care in the 21st Century" held 20-21 September 2000 in Montreal, organized by the MUHC, hospital administrator Bruce King Komiske was asked to speak about current trends in the design of children's medical centres.[101] It is not surprising he recommended a "separate but attached" model, illustrating his talk with recent facilities in the United States, including the Hasbro Children's Hospital in Providence, Rhode Island; St. Louis Children's Hospital, Missouri (fig. 23); and the Maria Fareri Children's Hospital in Westchester, New York. Children's health centres must now offer the same range of specialized medical expertise as the adult hospitals, from surgery to psychiatry, but based on the idea that because of the uniqueness of childhood development, medical workers must understand special psychological needs and distinct physiology. Children's hospitals, that is, have to deal with a set of conditions specific to children, such as congenital and chronic diseases, and the high incidence of respiratory problems, but benefit from close contact to parallel services such as neurology and oncology in adult hospitals.

In Canada there are many approaches to negotiating the separate but attached model. Children's hospitals such as Ste-Justine, the BC Children's Hospital, and Izaak Walton Killam in Halifax have joined with other hospitals to become facilities for children and mothers; the Children's Hospital of Eastern Ontario and the HSC in Toronto are now part of a network of pediatric services; and the Winnipeg Sick Children's Hospital and the Alberta Children's Hospital have merged within larger medical centres.[102] Many of these institutions have undergone name changes in response to this "move away from bricks-and-mortar

definitions of health care."[103] Like management mergers in other eco-
nomic sectors, it is difficult to know whether these transformations cut
costs or improve care or patient outcomes. But taken together they
break down the 20th-century century notion that sick children need
separate buildings to suit their special medical and social needs.

Figure 23

St. Louis Children's Hospital, Missouri, 1994 (Bruce Komiske,
ed., *Designing the World's Best Children's Hospitals*, Mulgrave:
Images Publishing, 1999). The spaces of recent American hos-
pitals, like the St. Louis Children's Hospital, Missouri, are de-
signed to divert and entertain patients and visitors.

The belief in medical progress and the continual advance of medical technology remains at odds with the attempt to provide environments specifically supportive of children's experience, yet flexible enough to adapt to future changes in medical practice. The main feature of Komiske's model institutions is a complete denial of their function as hospitals. He advises incorporating regional, non-health-related themes, such as the imagery of a village, or the provision of a real zoo, sailboat, or train. "A great children's hospital should be designed so that it does not look institutional," he said.[104] In these hospitals, as in the Toronto Atrium Tower, the lobby, not the exterior façade, is key, providing direction and diversion, and allowing children and parents to forget that they are in a hospital. A colourful, playful, childlike atmosphere seems intuitively valuable, yet there is little scientific study to show that offering children a hospital dressed up as a Disney theme park actually improves patient outcomes. Moreover, such interior decoration can detract from the search for architectural solutions to real design problems, disguising rather than defining children's experiences.

For example, one important change to children's health services that will affect the MUHC design is the concept of patient-centred care. This approach involves trying to reduce the number of hospital workers a sick child encounters, and making more provisions for keeping patients together with their families. Such changes have been successfully incorporated at the Atrium Tower. There the design of rooms was carefully studied through the construction of full-scale mockups. In the final building, all rooms are private, and include a daybed so a parent can spend the night in the room.[105] Conversely, the trends to reduce the length of patient stays, to use digital communication tools for long-range consultation, and to involve families in hospital care (sometimes called open visiting) all place a greater emphasis on outpatient and ambulatory clinical facilities than on ward design.[106] Finally, some of the critical architectural problems of the postwar hospital, such as the nurses' residence and its relationship to the administrative, medical, and service spaces, are now simply irrelevant.

To date in public presentations the MUHC has talked about a campus of separate lowrise pavilions as the architectural form of the superhospital. But this image seems meant to allay fears that a university medical centre would be a gigantic, imposing, unfriendly megastructure, rather than to reflect a comprehensive architectural plan for state-of-the-art healthcare design.[107] Still, even what's best elsewhere in the world may not meet the requirements of Canadian children's hospitals, especially in light of the 1984 Canada Health Act, which guarantees Canadians universal, free access to insured healthcare. Komiske for instance, draws some funny conclusions. He says good design is important be-

cause in the year following the opening of the Hasbro Children's Hospital, the hospital's market share increased 20.5% and emergency visits increased 25%.[108] The measurable result of his "good design" is thus not better care but bigger profits.

Few details of the new MUHC or the CHUM designs have been determined. In the case of the MUHC, it is even hard to confirm whether children will be treated in the same facility as adult patients, even if they occupy the same site. What is certain is that more children than ever are now admitted to hospitals, albeit for shorter stays.[109] Faced with the ongoing difficulty of simultaneously providing spaces for the latest medical care and spaces that reflect our cultural ideas about sick and healthy children, debates over the image, location, and arrangement of Canadian children's hospitals continue.

NOTES

1 The quote is from Edward Fletcher Stevens, *The American Hospital of the Twentieth Century*, 3d ed. (New York: Dodge, 1928), p. 210.

2 The relationship of trends in health architecture and mainstream architectural design is explored in Stephen Verderber and David J. Fine, *Healthcare Architecture in an Era of Radical Transformation* (New Haven: Yale University Press, 2000).

3 Charles Rosenberg, *The Care of Strangers: The Rise of America's Hospital System* (New York: Basic Books, 1987); Rosemary Stevens, *In Sickness and in Wealth: American Hospitals in the Twentieth Century* (New York: Basic Books, 1989); Morris J. Vogel, "The Transformation of the American Hospital, 1850-1920," in Susan Reverby and David Rosner, eds., *Health Care In America* (Philadelphia: Temple University, 1979), p. 105-16; and Guenter B. Risse, *Mending Bodies, Saving Souls: A History of Hospitals* (New York: Oxford University Press, 1999).

4 J. T. H. Connor, *Doing Good: The Life of Toronto's General Hospital* (Toronto: University of Toronto Press, 2000); David Gagan, "For 'Patients of Moderate Means': The Transformation of Ontario's Public General Hospitals, 1880-1950," *Canadian Historical Review*, 70 (1989): 151-79; Denis Goulet, François Hudon, and Othmar Keel, *Histoire de l'Hôpital Notre-Dame de Montréal, 1880-1980* (Montréal: VLB Éditeur, 1993); and

James de Jonge, "Metamorphosis of a Public Institution: The Early Buildings of the Kingston General Hospital," *Society for the Study of Architecture In Canada Bulletin*, 22 (September 1997): 74-82. J. T. H. Connor in "Hospital History in Canada and the United States," *CBMH*, 7 (1990): 93-104, and S. E. D. Shortt, "The Canadian Hospital in the Nineteenth Century: An Historiographic Lament," *Journal of Canadian Studies*, 18 (Winter 1982-84): 3-14, complain that Canada lacks synthetic and comprehensive studies of hospital development.

5 On the ways historicist hospitals functioned as modern institutions, see Annmarie Adams, "Modernism and Medicine: The Hospitals of Stevens and Lee, 1916-1932," *Journal of the Society of Architectural Historians*, 58 (March 1999): 42-61.

6 On the impact of social reform movements on Canadian childhood, see Joy Parr, ed., *Childhood and Family In Canadian History* (Toronto: McClelland and Stewart, 1982); Patricia T. Rooke and R. L. Schnell, eds., *Studies in Canadian Childhood: A Canadian Perspective* (Calgary: Detselig Enterprises, 1982); and Cynthia R. Comacchio, "*Nations Are Built of Babies*": *Saving Ontario's Mothers and Children 1900-1940* (Montreal: McGill-Queen's University Press, 1993).

7 Lindsay Granshaw, "'Fame and Fortune by Means of Bricks and Mortar': The Medical Profession and Specialist Hospitals In Britain, 1800-1948," in Lindsay Granshaw and Roy Porter, eds., *The Hospital In History* (London: Routledge, 1989), p. 202.

8 On the unique characteristics of pediatrics as a specialty, see Sydney A. Halpern, *American Pediatrics: The Social Dynamics of Professionalism, 1880-1980* (Berkeley: University of California Press, 1988), p. 9-12.

9 On the significance and development of pavilion-plan hospitals, see Jeremy Taylor, *The Architect and the Pavilion Hospital: Dialogue and Design Creativity in England 1850-1914* (Leicester: Leicester University Press, 1997). On the history of the Royal Victoria Hospital, see D. Sclater Lewis, *Royal Victoria Hospital 1887-1947* (Montreal: McGill University Press, 1969).

10 Lewis, *Royal Victoria Hospital*, p. 22, 26.

11 Lindsay Prior, "The Architecture of the Hospital: A Study of Spatial Organization and Medical Knowledge," *The British Journal of Sociology*, 39 (1988): 86-113.

12 Robson claimed in a letter dated 20 April 1895 to Chipman, in the possession of the RVH, that 30 beds were intended, "but we have had 32 on account of the pressure."

13 Undated specs for hot water heating apparatus, in the possession of the RVH, call for radiators to be covered by a Tennessee marble slab 1½" thick.

14 There are also two photographs of Ward N in use as the Children's ward (i.e., after 1919), one showing patients and nurses in the McGill University Archives (PR023775) and one of the empty ward in the possession of the RVH.

15 Lewis, *Royal Victoria Hospital*, p. 182.

16 See note 3.

17 Deborah Dwork, "Childhood," in *Companion Encyclopedia of the History of Medicine*, Vol. 2 (London: Routledge, 1993), p. 1074.

18 *Royal Victoria Hospital Annual Report* 1894, p. 8.

19 Kelly Crossman, *Architecture in Transition: From Art to Practice, 1885-1906* (Montreal: McGill-Queen's University Press, 1987), p. 12.

20 This resemblance is noted by Noah Schiff In "'The Sweetest of All Charities': The Toronto Hospital for Sick Children's Medical and Public Appeal, 1875-1905," Master's thesis, University of Toronto, 1999.

21 Dr. Charles West founded the hospital in a house. The 120-bed facility designed by E. M. Barry was erected in 1872-77 on the same site. See Harriet Richardson, ed., *English Hospitals 1660-1948* (Swindon: Royal Commission on the Historical Monuments of England, 1998), p. 110-11. On the origins of children's hospitals in Britain, see Elizabeth M. R. Lomax, *Small and Special: The Development of Hospitals for Children in Victorian Britain* (London: Wellcome Institute for the History of Medicine, 1996).

22 See Jacalyn Duffin, *History of Medicine: A Scandalously Short Introduction* (Toronto: University of Toronto Press, 1999), p. 317. Janet Golden claims that the first perma-

nent pediatric facility in the United States was the Children's Hospital of Philadelphia in 1855 in Janet Golden, ed., *Infant Asylums and Children's Hospitals: Medical Dilemmas and Developments 1850-1920, An Anthology of Sources* (New York: Garland, 1989), n.p.

23 David Charles Sloane, "Caring for the Children: The Emergence of the Modern Children's Hospital, 1890-1930," unpublished paper (September 2000), p. 18.

24 For a discussion of domestic ideology as an expression of an overtly feminist material culture, see Annmarie Adams, *Architecture in the Family Way: Doctors, Houses, and Women, 1870-1900* (Montreal: McGill-Queen's University Press, 1996), p. 158-60. On the architecture of settlement houses, see Deborah Weiner, *Architecture and Social Reform in Late-Victorian London* (Manchester: Manchester University Press, 1994).

25 Planners were preoccupied with this rapid increase in health care facilities. Surgeon Albert J. Ochsner and Architect Meyer J. Sturm reported in their book *The Organization, Construction and Management of Hospitals* (Chicago: Cleveland Press, 1907), p. 19, that in Prussia alone the number of hospitals almost tripled between 1876 (1,502) and 1900 (3,900).

26 Schiff has also noted the strategic location of the first-floor board room, which permitted a view of the entry from the room, while those in the board room remained invisible from the entry; see Schiff, "The Sweetest of All Charities," p. 122. The plans were published in *The Hospital for Sick Children, College Street, Toronto. The Lakeside Home for Little Children: History of These Institutions* (Toronto, 1891), p. 63, 68, 74.

27 See Edward Seidler, "An Historical Survey of Children's Hospitals," in Lindsay Granshaw and Roy Porter, eds., *The Hospital In History* (London: Routledge, 1989): 181-97.

28 See Charles Butler, "Planning of Children's Hospitals," *The Brickbuilder*, 19 (August 1910): 180.

29 Henry Dwight Chapin, "Are Institutions for Infants Necessary?" *Journal of the American Medical Association*, 64 (2 January 1915): 1-3, reprinted in Golden, ed., *Infant Asylums and Children's Hospitals*, p. 175-77.

30 Stevens, *The American Hospital of the Twentieth Century*, p. 210.

31 Stevens' description of the Pasteur Institute is included in Edward F. Stevens, "The Contagious Hospital," *The Brickbuilder*, 17 (September 1908): 183-84. See also Edward F. Stevens, "Admitting Department of Buffalo Children's Hospital," *The Modern Hospital*, 14 (April 1929): 346, which may be the only article he wrote on children's hospitals. For a general description of the Hospital for Sick Children in Toronto, see Max Braithwaite, *Sick Kids: The Story of the Hospital for Sick Children in Toronto* (Toronto: McClelland and Stewart, 1974).

32 The buildings are described in "Toronto Hospital for Sick Children, Toronto," *Construction*, 7 (October 1914): 378-81.

33 Stevens, *The American Hospital of the Twentieth Century*, p. 18.

34 On the architectural development of modern hospitals, see Adams, "Modernism and Medicine."

35 Alton Goldbloom, *Small Patients: The Autobiography of a Children's Doctor* (Toronto: Longmans, Green & Co., 1959), p. 175-78. Goldbloom writes: "Children's Memorial was a most inactive hospital. Its outpatient department boasted two or three visits a day in fine weather, in winter often none for days. The few non-surgical patients were for the most part suffering from chronic disease and needed little more than nursing care. There were few facilities for special treatments. Any laboratory examinations beyond the very simplest were made through the courtesy of one of the larger hospitals. An ancient X-ray machine, operated usually by the intern, was used for the comparatively infrequent pictures that were taken" (p. 176).

36 Montreal opened its *Gouttes de lait* system in 1901; by 1915 there were 28 depots; see Duffin, *History of Medicine*, p. 319. See also Denyse Baillargeon, "Fréquenter les Gouttes de lait: L'expérience des mères montréalaises 1910-1965," *Revue d'histoire de l'Amérique française*, 50 (été 1996): 29-68.

37 On the incubator, see Jeffrey P. Baker, *The Machine In the Nursery: Incubator Technology and the Origins of Newborn Intensive Care* (Baltimore: Johns Hopkins University Press, 1996).

38 Joel D. Howell, "Machines and Medicine: Technology Transforms the American Hospital," in Diana Elizabeth Long and Janet Golden, eds., *The American General Hospital: Communities and Social Contexts* (Ithaca: Cornell University Press, 1989), p. 132.

39 Goldbloom, *Small Patients*, p. 190.

40 The Shriners' Hospital is an interesting example of a specialist children's hospital. On its design, see "The Shriners of Montreal Erecting Commodious Hospital for Crippled Children," *Contract Record and Engineering Review* (28 May 1924): 540; and "Shriners' Hospital for Crippled Children, Montreal," *Journal Royal Architectural Institute of Canada*, 4 (July 1927): 242-49.

41 Denise Lemieux, in *Une culture de la nostalgie: L'enfant dans le roman québecois de ses origines à nos jours* (Montreal: Boréal Express, 1984), writes of a "myth" of childhood that develops in Quebec literature between the wars, often centred on nostalgia and a romanticized folkloric past (p. 12).

42 A drawing in the Canadian Architecture Collection, McGill University (not yet catalogued), indicates that landscape architect Frederick Law Olmsted, designer of New York's Central Park and Montreal's Mount Royal Park, advised on the landscaping for the RVH, but it is unclear whether his design was executed.

43 This list of buildings has been pieced together from various sources, mostly "The Romance of a Great Idea," notes from a slide lecture given by nurse Dora Parry, probably in 1966, now in the Montreal Children's Hospital archive.

44 These "tents" were wooden structures with canvas, pull-down walls. Four are visible in a photo of Commencement Day published in the *Children's Memorial Hospital Annual Report* of 1912.

45 On the significance of trained nurses to the 20th-century hospital, see Kathryn McPherson, *Bedside Matters: The Transformation of Canadian Nursing, 1900-1990* (Toronto: Oxford University Press, 1996).

46 See Jessie Boyd Scriver, *The Montreal Children's Hospital: Years of Growth* (Montreal: Montreal Children's Hospital and McGill-Queen's University Press, 1979), p. 84. "Modernization" here meant "specialization": the CMH no longer offered full training, but rather specialized instruction, including lectures and demonstrations, in medical, surgical, and orthopedic nursing, and infant feeding. For example, pediatric nursing was offered as a special three-month course for students at the RVH Training School; see Lynda deForest, *Proud Heritage: A History of the Royal Victoria Hospital Training School for Nurses, 1894-1972* (Montreal: The Alumnae Association of the Royal Victoria Hospital Training School for Nurses, 1994), p. 56-57.

47 On the importance of the architecture of nurses' residences, see Annmarie Adams, "Rooms of Their Own: The Nurses' Residences at Montreal's Royal Victoria Hospital," *Material History Review*, 40 (Fall 1994): 29-41.

48 *MCH The Children's Story*, a brochure published to celebrate the hospital's 50th anniversary, n.p.

49 Duffin, *History of Medicine*, p. 317. For a discussion of the ways early pediatricians justified their claim to a separate specialty, see Jonathan Gillis, "Bad Habits and Pernicious Results: Thumb Sucking and the Discipline of Late Nineteenth-Century Paediatrics," *Medical History*, 40 (January 1996): 55-73.

50 Edward H. Bensley, "Harold Beveridge Cushing (1873-1947)," *McGill Medical Luminaries* (Montreal: Osler Library, 1990), p. 95.

51 Lewis, *Royal Victoria Hospital*, p. 182. According to Martin Entin of the RVH, Ward N was on the third floor of Snell's east wing, facing University Street.

52 On the early history of Ste-Justine, see Rita Desjardins, "Hôpital Sainte-Justine, Montréal, 1907-1921," Master's Thesis, Université de Montréal, 1989, and Willie Major, "L'Hôpital Sainte-Justine," *L'Union Médicale*, 69 (July 1940): 732-43.

53   For information on Sawyer's life and work, see *Architecture-Bâtiment-Construction*, 8
     (janvier 1953), an issue devoted to Sawyer, "un des architectes pionniers de la Prov-
     ince de Québec," p. 13.
54   "St. Justine's Hospital, Montreal," *Construction*, 21 (March 1928): 87.
55   "L'Hôpital Ste-Justine for Children, Montreal, Earns Splendid Reputation," *The
     Canadian Hospital*, 5 (October 1928): 20-21.
56   On the history of pediatrics in French-speaking Montreal, see Rita Desjardins, "L'in-
     stitutionnalisation de la pédiatrie en milieu franco-montréalais 1880-1980: Les enjeux
     politiques, sociaux et biologiques," PhD thesis, Université de Montréal, 1998.
57   The new pavilion was a merger of the former Montreal Maternity Hospital and the
     Royal Victoria. On its design, see "The Royal Victoria Maternity Hospital," *The Cana-
     dian Hospital*, 3 (October 1926): 11-15.
58   Denis Goulet, François Hudon, and Othmar Keel, *Histoire de l'Hôpital Notre-Dame de
     Montréal 1880-1980* (Montreal: VLB Éditeur, 1993), p. 108. On the impact of the rela-
     tionship between pediatrics, obstetrics, and the trend towards in-hospital childbirth,
     see Veronica Strong-Boag, *The New Day Recalled: Lives of Girls and Women in English
     Canada, 1919-1939* (Mississauga: Copp Clark Pitman, 1988), p. 164.
59   The photo is in the Notman Photographic Archives, McCord Museum, VIEW-5025.
60   Patients at Ste-Justine were segregated according to their ages, and then by their
     sicknesses, separated by gender; at the CMH they seemed to be grouped in intimate,
     family-like clusters. In 1956 the hospital's director Dr. John De Belle looked forward
     to a new building in which the patients could be "segregated according to sex, age
     and disease groups." In particular he lamented that at the mountainside CMH it was
     "difficult to segregate older patients from young, boys from girls"; see "Children's
     Hospital Move Set for Dec. 1," *Montreal Daily Star*, 26 October 1956, p. 4.
61   Shelley Hornstein, "The Architecture of the Montreal Teaching Hospitals of the Nine-
     teenth Century," *The Journal of Canadian Art History*, 14 (1991): 12-24.
62   One goal of recent writing on the history of medicine in Quebec has been to dispel
     this notion of the backwardness of francophone institutions; see Goulet et al., *Hôpital
     Notre-Dame*, p. 9-24.
63   The Vivian Report, a survey of Montreal hospitals by a professor in McGill Univer-
     sity's department of Public Health, had recommended a change to a more accessible,
     larger downtown outdoor (emergency) department; see Scriver, *The Montreal Chil-
     dren's Hospital*, p. 117-19. The CMH had absorbed the Montreal Children's (Vipond)
     Hospital, a small private children's hospital, and moved its outpatient department to
     the small hospital, a mansion renovated in 1932 by Huntly Ward Davis, the architect
     of the CMH, on St. Antoine near Guy Street. On the renovations, see "Remodelled
     and Re-Made Buildings," *Construction*, 26 (May-June 1933): 71-74.
64   Scriver, *The Montreal Children's Hospital*, p. 125-26.
65   McDougall also designed the Montreal General Hospital (1955), described in *Journal
     Royal Architectural Institute of Canada*, 32 (September 1955): 311-28, and the Montreal
     Chest Institute (1952 and 1955).
66   "Children's Hospital Move Set for Dec. 1," *Montreal Star*, 26 October 1956, p. 4.
67   The "Y" shape was the result of a long series of planning studies; see *Architec-
     ture-Bâtiment-Construction*, 8 (janvier 1953): 29. The Université de Montréal was origi-
     nally intended to house a university hospital. On Cormier's design, see Isabelle
     Gournay, ed., *Ernest Cormier and the Université de Montréal* (Montreal: Canadian Cen-
     tre for Architecture, 1990).
68   Quoted in Rosemary Stevens, *In Sickness and in Wealth*, p. 219-20.
69   In 1946 the U.S. government passed the Hill-Burton Act. Over the next 20 years, 4,678
     projects in the U.S. received federal aid through its provisions, with the ultimate goal
     of providing 4.5 hospital beds per 1,000 inhabitants throughout the country. See
     Stevens, *In Sickness and in Wealth*, p. 218.
70   The MCH sent children with infectious diseases to the Alexandra Hospital, which
     had been established in 1904, three years before the Children's Memorial Hospital.

71 "Montreal Children's Hospital Becomes New Name of CMH," *The Montreal Star*, 22 June 1954, p. 6.

72 MCH pediatrician Alton Goldbloom's classic *The Care of the Child* (Toronto: Longmans, Green & Co.), first appeared in 1928, was quickly translated into French, and appeared in five editions by 1947. On the institutionalization of middle-class nurturing, see Neil Sutherland, *Children in English-Canadian Society: Framing the Twentieth-Century Consensus* (Toronto: University of Toronto Press, 1976); Comacchio, *Nations Are Built For Babies*; Norah Lewis, "Physical Perfection for Spiritual Welfare: Health Care for the Urban Child, 1900-1939," in Patricia T. Rooke and R. L. Schnell, eds., *Studies in Childhood History: A Canadian Perspective* (Calgary: Detselig Enterprises, 1982), p. 135-66; and Dianne Dodd, "Advice to Parents: The Blue Books, Helen MacMurchy, M.D., and the Federal Department of Health," *CBMH*, 8 (1991): 203-30.

73 Joseph H. W. Bower "Serving Sick Children," *Journal Royal Architectural Institute of Canada*, 28 (June 1951), p. 158.

74 See Jonathan Hughes, "The 'Matchbox on a Muffin': The Design of Hospitals in the Early NHS," *Medical History*, 44 (January 2000): 21. Hughes points out that a series of hospitals in the southern U.S. followed hospital administrator Gordon Friesen's thorough attempt to use notions derived from industrial production to lay out the planning and delivery of services in hospitals. The first hospitals following his recommendations were completed in 1956, but by then his ideas were already well-known among hospital experts in North America and Europe.

75 In fact another hospital McDougall designed in an aggressively modernist manner, the new Montreal General Hospital, opened in 1955 directly across Cedar Avenue from the CMH. On its design, see note 65.

76 A view of the hospital showing the University tower accompanied an article on the personnel building days before the hospital opened; see "Le pavilion du personnel à Sainte-Justine," *La Presse*, 18 October 1957, p. 18. See also the photo of the ceremonies for the 50th anniversary of the Fondation de l'Hôpital Sainte-Justine (21 May 1957), in Nicolle Forget, Francine Harel Giasson, and Francine Séguin, *Justine Lacoste-Beaubien et l'Hôpital Sainte-Justine* (Sainte Foy: Presses de l'Université du Québec, 1995). The image features Justine Lacoste-Beaubien, Cardinal Paul-Émile Léger, and pediatrician Edmond Dubé dining in a wing of the hospital in front of a panoramic view of the Université.

77 See "Hospital Will Stand as Symbol of Hope," *Montreal Daily Star*, 19 October 1957, p. 4. The HSC in Toronto did not open a rooftop helioport until 1972.

78 Forget, Harel Giasson, and Séguin, *Justine Lacoste-Beaubien*, p. 132.

79 "Hospital Will Stand as Symbol of Hope," *Montreal Daily Star*, 19 October 1957, p. 4. For a discussion of the significance of the considerable architectural expertise of women in religious orders, see Tania Martin, "Housing the Grey Nuns: Power, Religion and Women in Fin-de-siècle Montréal," Master's thesis, McGill University, 1995.

80 See Bower, "Serving Sick Children," p. 158. These items were thus incorporated in the design of a children's hospital absolutely contemporary with their introduction into Friesen's adult hospitals; see Hughes, "Matchbox on a Muffin," p. 40.

81 Gordon L. Wallace and Clare D. Carruthers, "Outline of Structure," *Journal Royal Architectural Institute of Canada*, 28 (June 1951): 172.

82 Butler and Erdman also advised that technical requirements, such as utility rooms, "do not vary much from any other service." See *Hospital Planning* (New York: F. W. Dodge, 1946), p. 60-61.

83 Bower, "Serving Sick Children," p. 157-58.

84 Bower, "Serving Sick Children," p. 156.

85 Hughes, "Matchbox on a Muffin," p. 35.

86 On the pad and tower concept, see also Verderber and Fine, *Healthcare Architecture*, p. 48-50.

87 On the relationship between hospital design and civic design in postwar Britain, see Jonathan Hughes, "Hospital City," *Architectural History,* 40 (1997): 266-88.

88 Scientific medicine meant an increasing level of standardization for hospital practices, equipment, and buildings, whether in general or specialist hospitals. From 1919 until 1951 hospitals in North America, including Canada, were accredited by the American College of Surgeons (ACS). In 1959 the Canadian Council on Hospital Accreditation took complete control and responsibility for accrediting hospitals in Canada. See George Harvey Agnew, *Canadian Hospitals, 1920-1970: A Dramatic Half Century* (Toronto: University of Toronto Press, 1974), p. 37-38.

89 Robert Venturi, Denise Scott Brown, and Steven Izenour, *Learning from Las Vegas* (Cambridge, Mass.: MIT Press, 1972).

90 See the discussion of the children's hospital as a fantasy environment in Jain Malkin, *Hospital Interior Architecture: Healing Environments for Special Patient Populations* (New York: Van Nostrand Rheinhold, 1992), p. 168-77.

91 Verderber and Fine, *Healthcare Architecture,* p. 157.

92 For descriptions of the hospital, see *Progressive Architecture,* 73 (March 1992): 92, and Mary Lou Lobsinger, "Animation for Sick Kids," *The Canadian Architect,* 38 (April 1993): 16-24.

93 On interstitial space, see Verderber and Fine, *Healthcare Architecture,* p. 116-24, and Hughes, "Hospital City," p. 271-72.

94 Eberhard H. Zeidler, *Healing the Hospital: The McMaster Health Sciences Centre* (Toronto: Zeidler Partnership, 1974), p. 55-57.

95 Jim Murray described the elevation as "a lively facade with curiously Mackintosh implications," in the Canadian Architect Award of Excellence jury report; see *The Canadian Architect,* 31 (December 1986): 20.

96 Lobsinger, "Animation for Sick Kids," p. 21.

97 The McGill University Health Centre, "A Single Site, A Single Vision, A Singular Future," n.d., 14. Planning for the administrative merger began as early as 1993.

98 Jeff Heinrich, "Race of Superhospitals Is On," *The Gazette,* 6 October 2000, p. A1.

99 Susan Drouin, "The New Site Means New Configurations for Efficiency and Comfort Affair," published by the MUHC Foundation in *The Gazette,* 6 May 2001. Drouin is Associate Director of MUHC Nursing—Obstetrics and Gynecology.

100 Jeff Heinrich, "Hospital Director Quits in Protest," *The Gazette,* 12 January 2000, p. A1.

101 His lecture was entitled "The Children's Hospital: Crown Jewel of a Medical Center."

102 Zeidler Roberts Partnership/Architects has recently been chosen as design architects for the $135 million Alberta Children's Hospital in Calgary. See *Canadian Architect,* 46 (May 2001): 11.

103 Charlotte Gray, "Focus Changing at Children's Hospitals," *CMAJ,* 158 (1998): 15.

104 Komiske, "The Children's Hospital: Crown Jewel of a Medical Center." Komiske examines more images of the "best" children's hospitals in Bruce King Komiske, ed., *Designing the World's Best Children's Hospitals* (Mulgrave: Images Publishing, 1999).

105 Verderber and Fine point out that health planners in the U.S. continue to have a "near obsession" (p. x) with the idea that every patient should be housed in a private room, whereas in the U.K, by contrast, public, open wards are still considered both functional and ideal (*Healthcare Architecture,* p. 196-200).

106 See Richard Lansdown, *Children in Hospital: A Guide for Family and Carers* (New York: Oxford University Press, 1996), p. 244-49.

107 In fact at the Healing By Design Colloquium, Wanda J. Jones, an expert in healthcare delivery systems, specifically warned against the campus plan of separate buildings; see Wanda J. Jones, "New Century Design for the McGill University Health Centre: From Negative to Positive Value in Health Facilities," Healing by Design, Montreal, 20-21 September 2000.

108 Komiske, "The Children's Hospital: Crown Jewel of a Medical Center."

109 Lansdown, *Children in Hospital,* 1996.