beneficial in aiding a diminution of the death-rate by tuberculosis and in raising the standard of the general health of the city." It organized a series of talks for children aged ten and older on a variety of topics related to tuberculosis: the epidemiology of the disease, its relationship to housing (ventilation was an important subject), dress, diet, alcohol abuse, and treatment. *Charter and By-Laws and First Annual Report, Royal Edward Institute for the Study, Prevention and Cure of Tuberculosis* (1910), p. 47.

100 *Report of the Royal Commission on Tuberculosis* (1909-10), p. 65.

101 The premise of the pamphlet was that tuberculosis was a "a disease of ignorance" and children would remember hygienic training all of their lives. MCI, Montreal League for the Prevention of Tuberculosis, *Minutes of the Publication Committee*, 23 October 1903. The catechism informed children that they could prevent tuberculosis by learning about the disease: its symptoms, how it is spread, and how to avoid exposure to the tubercle bacillus. Morality themes informed the catechism: drinking alcohol not only reduced a person's resistance to the disease but resulted in "poverty, unhealthy surroundings, and misery." Children were also warned against spitting, licking, sticking objects into their mouths, trading chewing gum or food with classmates, sharing pea shooters, and to practice public health techniques such as covering their mouths when coughing and washing their hands regularly with soap and water. Montreal Tuberculosis League, "A Catechism on Tuberculosis" (Montreal, 1908), p. 1-16.

102 Montreal Tuberculosis League, "A Catechism on Tuberculosis," p. 14.

103 Copp, *The Anatomy of Poverty*, p. 96.

104 *Montreal Daily Star*, 19 November 1908.

105 *Gazette*, 28 November 1908.

106 "Health of Pupils Declared Integral Part of School Duties," *Montreal Daily Star*, 16 December 1938.

107 McCuaig, *The Weariness, the Fever, and the Fret*, p. 148.

108 McCuaig, *The Weariness, the Fever, and the Fret*, p. 84, 205.

109 *PBSC of the City of Montreal Annual Report, 1936-37*, p. 6.

110 *Report of the Protestant Board of School Commissioners of Montreal* (from September 1907 to September 1908), p. 19.

111 Gleason, "Race, Class, and Health," p. 107.

"Not a Shack in the Woods": Architecture for Tuberculosis in Muskoka and Toronto

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Abstract. This paper explores architecture as a primary source in the history of tuberculosis. In comparing five Ontario sanatoria built between 1897 and 1923, we identify a range of types and a growing resemblance of ex-urban TB sanatoria to urban hospitals. Existing literature on Canadian TB hospital architecture suggests the endurance of picturesque architecture, but the cottage plan was only one of the types deemed appropriate for consumptives in the early 20th century, even in Muskoka. Furthermore we argue that urban and ex-urban TB ideologies actually coalesce about 1923, best illustrated in the boldly modern architecture of Muskoka's new Gage pavilion.

Résumé. Cette étude aborde l'architecture comme source de premier ordre dans l'histoire de la tuberculose. La comparaison entre cinq sanatoriums érigés en Ontario entre 1897 et 1923 a permis d'établir une série typologique et une ressemblance progressive entre sanatoriums ex-urbains et hôpitaux urbains. Les écrits sur l'architecture des établissements canadiens pour tuberculeux suggèrent un parti pris pour le style éclectique, mais au tournant du XX^{e} siècle, dans la région même de Muskoka, le cottage anglais n'est qu'un parti parmi d'autres que l'on juge convenir aux tuberculeux. Nous tentons de démontrer ici que les deux idéologies, urbaine et ex-urbaine, finissent par se confondre vers 1923, comme en témoigne l'architecture résolument moderne du nouveau pavillon Gage de Muskoka.

INTRODUCTION

This paper explores architecture as a primary research source in understanding changes to medical treatment and patient experience in the

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history of tuberculosis during the sanatorium age. The existing literature on TB hospital architecture in Canada, essentially Leslie Maitland's pioneering 1989 article "The Design of Tuberculosis Sanatoria in Late Nineteenth Century Canada," emphasizes the image of the main buildings only, suggesting an enduring influence of picturesque architecture in the form of cottage hospital designs and a later suburban hospital variant, which Maitland describes as a hybrid between the cottage hospital and the urban hospital.[1] But the story is more complex. Between 1897 and 1923, sanatoria changed from rather uncomfortable environments, built to effect the fresh air cure, to self-consciously modern buildings, which institutionalized increasingly sterile medical and surgical environments. We examine the implications and motivations for such changes in sanatorium design, exploring why the move away from the picturesque, romantic, country-cottage-inspired buildings occurred in both urban and rural situations, and interpreting the surprising tension between setting and architectural form.

Specifically, we compare five institutions established by the National Sanitarium Association (NSA) in Ontario: the Muskoka Cottage Sanatorium (1897), the Muskoka Free Hospital for Consumptives (1902), the Toronto Free Hospital for Consumptives (1904), the rebuilt Toronto Free Hospital for Consumptives (1912), and the Gage (1923). In using architecture as a primary source in the history of tuberculosis, we explore the material foundations of social and cultural responses to medical problems, particularly the conflict sanatorium planners and medical staff experienced between the desire to build comfortable, domestic surroundings, and the desire for therapeutic efficacy. Two significant findings emerge: first, that the canvas and wood vernacular forms—tents, tent-shacks, pavilions—that surrounded the main sanatorium buildings were not only central to the ways sanatoria functioned, but also held symbolic meaning for patients as indicators of the progress of therapy. Second, that the rationales behind urban and ex-urban TB hospital designs actually intersect about 1923. The boldly modern architecture of the Gage pavilion shows the growing resemblance of ex-urban TB sanatoria, hospitals that served urban populations but were located outside the city, to urban hospitals.

THE ORIGINS AND AIMS OF THE SANATORIUM MOVEMENT IN CANADA

On 27 June 1895, publisher William J. Gage (later Sir William Gage), industrialist Hart A. Massey, Mr. Hugh Blain, and physicians D. E. Thompson and N. A. Powell attended a meeting of the National Club in Toronto. Inspired by Edward L. Trudeau's sanatorium at Saranac Lake in upper New York State (the Adirondack Cottage Sanitarium), which had opened in 1884, this group of several of Ontario's wealthiest men

resolved to examine possible sites for Canada's first tuberculosis sanatorium.[2] On 23 April 1896, a special Act of the Dominion Parliament incorporated the National Club as the National Sanitarium Association (NSA).[3] The NSA tailored sanatoria according to patients' social class (paying or free patients) and disease status (early- or late-stage disease). The NSA first built a sanatorium for private (paying) patients with incipient (early-stage) tuberculosis, later expanding their building program to include sanatoria for free (non- or partial-paying) incipient patients, free advanced-stage patients, and private advanced-stage patients.

In their earliest days, these voluntary and open sanatoria (patients were allowed to leave the institution for extended absences, as well as to receive visitors) offered efficient and specialized palliative care facilities; there was no cure for the disease. Patients hoped to regain some measure of their former health through extended rest and inactivity, fresh air, and plentiful nutritious food. Medical staff helped patients manage tuberculosis symptoms such as pain, fever, and haemorrhages, offering encouragement for even small improvements like weight gain or the absence of fever. If patients did improve, they were rewarded with gradual increases in their daily activities. Photographs from about 1898-1908 show patients playing croquet, snowshoeing, heading off to the shooting range, and canoeing. According to extant photographs, sedentary activities, such as crafts undertaken in bed or in shops and classrooms, later replaced sports. This shift recognized that rest was key for patients with pulmonary or non-pulmonary (e.g., skeletal) tuberculosis. As medical knowledge grew, so did therapeutic efforts to enhance rest and inactivity in the affected body part. Temporary measures described below, such as nitrogen compression of the lung or setting a tuberculous spine in an immobilizing cast, were later intensified by more permanent surgical measures, such as thoracoplasty and spinal fusion. Eventually, these measures would be replaced by efforts to target the tuberculosis bacillus directly, through the use of drug-based therapies. After World War II, these drug-based therapies uprooted and supplanted the rest cure.

CANADA'S FIRST TUBERCULOSIS SANATORIUM: A COTTAGE-PLAN HOSPITAL

On July 13, 1897, on a peninsula of land on Lake Muskoka just north of Gravenhurst, Ontario, a new phase in Canada's medical history emerged. On that day the NSA opened Canada's first purpose-built[4] TB facility, known as the Muskoka Cottage Sanatorium (MCS; fig. 1),[5] marking the beginning of the sanatorium age in Canada.[6] With its proliferation of vacation cottages, the dramatic, rocky landscape of Muskoka was an ideal setting for the fresh-air cure prescribed at this time.[7]

The MCS only accepted paying patients, who stayed on average for 98 days, and were charged a fee of $6 per week. There were 35 beds at

Figure 1

View of Muskoka Cottage Sanatorium showing its bucolic, lakefront setting (c.1900; postcard, collection Stacie Burke).

the opening of the sanatorium, available only for incipient cases who came mainly for rest and good nutrition. The sanatorium educated these relatively healthy patients about living with a chronic infectious disease—how to coax tuberculosis into a quiescent state, how best to pace their daily lives, and how to prevent the infection of other family and household members.

The Muskoka Cottage Sanatorium followed the cottage plan, in an arrangement similar to the budding cottage community at Trudeau's Saranac Lake sanatorium. The cottage plan layout includes a central administration building—housing those facilities shared by patients—surrounded by smaller, separate cottages that accommodate patient rooms.[8] In terms of its overall site configuration, the cottage plan differed little from the larger-scale pavilion plan, whereby attached and detached rectangular wards surrounded a central hospital administration building.[9] Toronto-based architect George Martell Miller designed the $6000 central administration building at the MCS, "a jewel of Victorian frame construction…surrounded by treatment cottages, like a mother hen with chicks."[10] Another Toronto architect, David Brash Dick, designed the earliest treatment cottages.[11]

Like many of the luxurious vacation cottages in Muskoka, the MCS had the characteristics of what architectural historian Vincent Scully aptly named "Shingle Style" houses.[12] These were large, sprawling Victorian homes, typically constructed in picturesque vacation areas such as

Newport, Rhode Island. Sections of the houses reached out into the landscape like peninsulas, inspired by their craggy contexts. Named for the taut skin of shingles that softened their silhouettes, Shingle Style houses had plans considerably less formal than those of city houses in the same era. Public rooms were separated only by pocket doors which disappeared in the walls. Interior stairs boasted multiple landings, often with built-in furniture, and generous halls. An interior photograph (fig. 2) of the MCS shows a grand, brick fireplace with a broad mirror, at the foot of a richly panelled oak stair. Two wooden rocking chairs, placed informally, frame an interior plant stand. Like the MCS, Shingle Style houses always faced the water, rather than the street. Often the entire house was wrapped by a monumental porch, offering its residents multiple positions from which to view the surroundings while protected from the wind and rain, just the way the interior provided places for accidental meetings and cozy corners for reading or conversation. While the porch was a characteristic of the Shingle Style generally, in this case the porch suited the needs of tuberculosis patients since they required ample space for resting out-of-doors year-round, protected from the elements, but benefiting from unrestricted access to fresh air.

Figure 2

Cosy, homelike interior of the Muskoka Cottage Sanatorium main building entrance, featuring a brick fireplace with mirror, plant and stand, two rocking chairs, and stairway (1898; Second Annual Report of the National Sanitarium Association, 1898-1899, p. 1).

Perhaps the most striking architectural feature of the MCS was its multiple towers, which offered magnificent views of the surrounding area from well above the trees. The towers lent the MCS an informal,

asymmetrical look (fig. 3), underscored by its sweep of intersecting pitched roofs. Visually, the belfry roof and round sections of the huge porch united the largest building with the nearby Christie cottage (a treatment cottage), which boasted two rounded turrets and a similarly shaped porch.[13]

Figure 3

Muskoka Cottage Sanatorium with a nurse in transit. Behind the nurse is the Christie cottage, a treatment cottage. Note the people and furniture on the porches, despite the winter conditions (c.1904; West Park Healthcare Centre Archives).

Like main buildings at other cottage-plan sanatoria, the administration building at the MCS was a hub for visual supervision. In his 1909 publication reviewing sanatoria in North America, Thomas Spees Carrington suggested that all outbuildings should be sited in a direct line of vision from the administration building.[14] Carrington reported that medical authorities believed "tuberculosis patients do better [and are more contented] when housed in small numbers," particularly groupings of two to four.[15] An early MCS pamphlet highlighted this capacity to cluster patients in small groups:

> Each patient has a separate room. There are several large bedrooms, so that two patients may occupy one room if desired. Four to ten patients in a cottage insures greater privacy than in a Sanatorium where all patients are in the one building. The cottage system affords much greater freedom, lessening markedly the feeling that they are in an institution. With patients of congenial temperaments together, they may be very happy indeed.[16]

Despite its advantages for patients, the cottage plan posed problems for administrative and medical staff. The construction of separate buildings was more expensive than a single structure, though smaller-sized endowments could be secured on a cottage-by-cottage basis. Biscuit manufacturer William Mellis Christie donated $5,000 towards the William Christie cottage, while William Davies and family gave $2,100 to the William Davies Cottage. Soon after, monetary gifts from Mrs. Jackson Sandford of Hamilton and Mrs. T. H. Bull of Toronto funded the Rosemary Cottage and B. Frank Bull Cottage.[17] Each building required independent services; all of the MCS buildings were wired for electricity drawn from the sanatorium's private generator. Except in corridors and offices, lights were turned off at ten o'clock each night. In addition to the numerous stoves needed for heating bath water and for kitchen use, the administration building was heated by steam, and each cottage was heated separately by hot water.

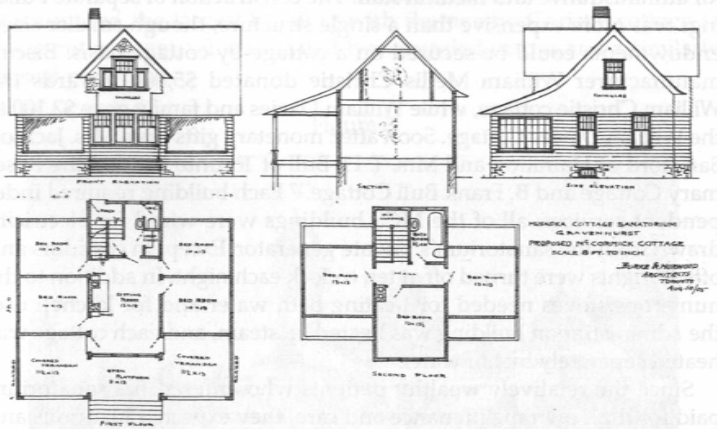
Since the relatively wealthy patients who entered the sanatorium paid for their own maintenance and care, they expected luxurious and comfortable rooms. The interior of the main building and each of the cottages was outfitted to appear home-like and non-institutional. Herbert J. Irwin, a medical doctor who worked at the site, describes the attention lavished on features and finishes in the main building, including the foyer and staircase illustrated in Figure 2:

> Central tower, spacious verandahs, windowed sunrooms on the second floor, yellow walls, and white supporting pillars....On the inside of the building, red and white tiles in pattern were laid in the foyer. A large fireplace with a mirror above it occupied the reception room, and the elegant oak stairway gave access to a conservatory.[18]

Patients' bedrooms, both in the cottages and in the main building, were modelled directly on those in urban middle-class homes. An early photograph of a patient's room shows a brass bed frame, two chairs, small table with candle, flowers, clock, and other items, and a mirrored dresser with an assortment of personal items and cards.[19]

The cottages of a cottage-plan sanatorium were deliberately domestic and home-like. The two-storey McCormick Cottage (fig. 4), built 1905-06 at a cost of $5,506[20] by Toronto architects Burke & Horwood, resembled an Arts-and-Crafts bungalow.[21] Its squarish plan included a covered verandah running the full width of the structure. At the centre of the plan a 13 x 18 foot sitting room with fireplace gave onto four bedrooms. The stairs, water closet and closet space were clustered in the rear. Upstairs larger bedrooms and a bathroom branched off a central hall. Carrington recommended bedrooms measuring 9 x 10 feet, "made small intentionally to encourage the patients to live on the porches."[22] The McCormick bedrooms, which measured 10 x 13 feet, exceeded Carrington's floor-area standard by 44%.

Figure 4



Two plans, two elevations, and a section of the proposed McCormick cottage, by Toronto-based architects Burke & Horwood, 10 August 1905 (Archives of Ontario, C11-1128, K-148, Project 912, #6).

While the MCS administration touted the McCormick as an example of good design, the Christie Cottage was a less popular model. According to Physician-in-Chief W. B. Kendall, its drawbacks were tied to its structural inflexibility and lack of space for outdoor living:

> This cottage, unfortunately, is so planned and constructed as to make practical alterations almost impossible. This building is of a peculiar shape and while there are four verandahs of varying size available, none of these are distinctly suitable for patients to use in sleeping out-of-doors. In no instance can a bed be moved directly from bedroom to verandah, while two of the verandahs are too small for any such purpose.[23]

Kendall felt that altering the cottage would be both impracticable and expensive, recommending instead that the funds be used to build a new, inexpensive and up-to-date cottage. Ironically, of all the original cottages, the Christie Cottage was the most expensive, valued in 1901 at $3,688.68; the B. Frank Bull Cottage, also assessed in 1901, was worth only $2,206.19. Its design was decidedly more favourable for fresh air treatment, because it had a large and sheltered verandah.[24]

The romantic site planning of the cottage plan had its disadvantages too. Each day the medical staff had to walk further to make rounds and supply medicines than they would have in a single, more compact building.[25] Likewise, the cottage plan was only suitable for those in early stages of the disease. Since the first cottages did not have bathrooms or

kitchens, patients had to trek back and forth to toilet and communal dining facilities in the main building. This quantity of exercise would not have been acceptable (or, in some cases, even possible) for patients in more advanced stages of tuberculosis.

Finally, while devising ways to ensure patient comfort and satisfaction, sanatorium planners simultaneously had to worry about the transmission of tuberculosis. Many of the features and furnishings that promoted a home-like environment collected dust, which was considered particularly hazardous, challenging the institution's ability to maintain sanitary space. Maitland, for instance, discusses the importance of avoiding dust-collecting surfaces such as baseboards, cornices, chair rails, door and window mouldings, and window sills.[26] This fear of dust was not limited to tuberculosis hospitals. Indeed, historians such as Annmarie Adams, Beatriz Colomina, Elizabeth Cromley, Nancy Tomes, and Gwendolyn Wright have argued that fear of germs reinforced the desirability of the minimalist, undecorated, planar surfaces associated with Modern architecture (medical and non-medical).[27] Twentieth-century general hospitals, in response, were showcases for new, "healthier" building materials. Planners specified new non-absorbent and scrubbable surface treatments such as fine-graded Portland cement (in lieu of plaster) and enamel paints for walls, and recommended glazed tiles for kitchens, bathrooms, corridors, and operating rooms.[28] Promising new flooring materials such as linoleum and terrazzo were expensive, but maple or oak hardwood floors could be made more dust-resistant by saturating the wood grain and seams between boards with paraffin wax.[29]

EXPANSION AND ISOLATION: THE OUTBUILDINGS

In the first half of the 20th century, architectural ideas regarding sanatoria design were widely debated. Important issues included how best to effect the open-air cure, the appropriate number of patients to be housed together, and the desirability of planning for future expansion. Consequently, architects used building types ranging from tents, temporary shacks, and sturdier pavilions, to urban, fireproof buildings decorated with classical ornament. Physician and tuberculosis expert Thomas Carrington's advice was to "build good, substantial buildings on lines that can be enlarged if necessary." For him, patients came second: "...it is much more important to have a substantial, solid, and well constructed administration building than to build expensive quarters for patients, especially if only incipient cases are to be admitted."[30] Architect Edward F. Stevens, whose Boston- and Toronto-based firm Stevens & Lee built over one hundred hospitals across North America from 1912 to 1933, pointed to the unique programmatic requirements of tuberculosis facilities, including the need to select a beautiful site, to provide for the

destruction of sputum cups and other contagious materials, and to supply an underground connection to the morgue. Stevens saw the choice of an unrestricted, attractive site as a means of retaining patients, in addition to its role in isolating potentially infectious people from the general population. "The average incipient patient soon wearies of his enforced confinement," wrote Stevens, "and unless the natural attractions are considered he becomes discontented and leaves, so that the sanatorium may be without patients."[31]

Sanatoria isolated patients from the general population, but within sanatoria, the notion of separation had further implications. The majority of patient spaces at the MCS, for example, were wholly separate from the main hospital. While Stevens, Carrington, and other experts believed that such separation was ideal, free hospitals like the later Muskoka Free Hospital described below (i.e., hospitals for patients unable to pay or only able to make minor contributions to the cost of their care) put more emphasis on an efficient layout for staff and mechanical services.

Planning for expansion, too, was of great concern to early 20th-century hospital architects such as Stevens.[32] While the elevation of the MCS administration building facing the lake was never modified, the hospital added numerous wings in the rear over time. In 1901, for example, the hospital added a new wing for female help to the main building. More cottages were constructed, and an assortment of outbuildings mushroomed around the main building. Patients even occupied rudimentary tents beginning in the summer of 1897.[33] The following year, they remained in the tents until the second week in November. By 1899, patients occupied the tents through the winter (fig. 5), abandoning them only in the most miserable month, February. Muskoka winters were particularly tough on the tents, as hospital administrators noted, since "the heavy snow falls…seriously impair the canvas roof, and…in wet weather it is difficult to keep the bedding and clothing from becoming damp."[34] In response to these problems, redesigned tents incorporated a simple, pitched and shingled roof, resulting in what became known as a tent-shack (fig. 6).[35] The tent-shacks stood off the ground on piers to help diminish dampness. Patients remained in tent-shacks, equipped with small wood-burning stoves, throughout the winter.

Following this successful experiment at the MCS, the Muskoka Free Hospital for Consumptives, which was hard-pressed to meet the demand for beds even in the first year of operation (1902), quickly built four large tent shacks (each with four beds), locating two on either side of the main building. Critics pointed to the lack of air circulation in the tent-shacks, so ventilating windows, visible in photographs, were installed just below the roofline on either end. Slightly more substantial shacks, offering half walls (no canvas) and glass and sash windows, later supplemented these outbuildings.

Figure 5

Tent life in winter, Muskoka Cottage Sanatorium (1899; Third Annual Report of the National Sanitarium Association, 1900, p. 3).

Figure 6

Improved tent-shack, Muskoka Cottage Sanatorium (c.1901; West Park Healthcare Centre Archives).

While there may indeed have been a perceived therapeutic benefit to housing patients in the open and fresh air, it is questionable whether the drive to construct quickly built, cheap (an estimated $160), minimally or unheated structures was motivated entirely by medical concerns. How did patients feel about these cold and damp rudimentary outbuildings?

Did their independence from the administration offset the uncomfortable conditions? Some patients associated the tent-shacks, like the cottages, with improved health. The tent-shacks held special significance since patients would only be transferred to them (out of the main administration building) once their conditions had significantly improved, usually judged by weight gain or the absence of fever. Since staff visits could be sporadic, placing patients in the outbuildings was a sign of optimism, indicating that patients were well enough to be independent. For others, though, the outbuildings were simply unsuitable. On 21 September 1915 a 35-year-old male cigar maker was admitted to the Muskoka Free Hospital and then released only five days later. His discharge note explains his quick departure:

> Patient's mother came to F.H.C. Sunday Sept 26 about 9 a.m. Her son had written to her expressing dissatisfaction with his surroundings. He was in a ward and had been up for 9 meals.... [His mother] made several remarks during the conversation (i.e.) "They were raised poor probably but were always clean," also ..."putting my son in one of those chicken coops that I see around here." [The patient] said that there were coffee stains on the table cloth and a piece of egg shell where he had his place at the table. He also did not care to eat from dishes that patients helped to dry. He said that his surroundings did not suit him.[36]

Though her son had a bed in the main administration building of the Muskoka Free, the mother clearly had her reservations about his placement in one of the "chicken coop" tent-shacks.

Both the MCS and the Muskoka Free Hospital for Consumptives soon added another building type, the pavilion. In massing, the pavilions resembled modern motels. The Kendall Pavilion opened in June 1913, providing beds for 20 patients at the MCS.[37] Unlike pavilions found at other sanatoria and at the Muskoka Free Hospital, each patient in the Kendall Pavilion had accommodations reflecting the social class of the patients admitted to the MCS. Especially planned for men, the Kendall Pavilion gave each patient "an open-air sleeping room, a spacious, southerly exposed verandah, a comfortable well-ventilated dressing room with running hot and cold water, the use of modern lavatory accommodation, and the most up-to-date hospital equipment installed throughout."[38]

Since incipient patients spent considerable time out of doors, personal storage space and dressing rooms were particularly important. In his widely read text *The American Hospital of the Twentieth Century*, Stevens notes how the patient's cupboard, locker, or closet served as a source of comfort to ambulatory patients, "for to the lonely man away from family and friends this may be the only place which he may call his very own."[39] Carrington, too, stresses that while tuberculosis patients would do well in unheated buildings for their open-air treatment, every structure needed at least one heated dressing room to maintain a minimum

level of comfort for the patients. In Muskoka's extreme climate, heating the dressing room was essential not only for patient comfort, but also to prevent pipes from freezing in winter. The women's pavilion, for example, provided a communal dressing room heated with a coal stove. Still, Physician-in-Chief Kendall noted several problems with this heat source:

> First: it is necessary that a fireman attend to this fire early in the morning—the noise of this disturbs the patients. Second: we cannot very well prevent the patients from interfering with the drafts on the stove and this, at times, wastes fuel. Third: a fireman cannot take care of such heating equipment without causing a good deal of dust, particularly in removing the ashes. Fourth: while with the present equipment using a small coil in the stove, we cannot, in the coldest winter weather, supply an adequate amount of hot water.[40]

The dressing room itself could be sealed off for fumigation with formaldehyde gas.

ACCOMMODATING POOR AND SICKER PATIENTS

Following the success of the MCS, anti-tuberculosis activists sought to expand the scope of sanatorium activity in Ontario, looking to accommodate poorer patients, thus creating a new focus on charity, as well as sicker patients (in more advanced stages of the disease) who had been excluded from admission to the MCS. These expanded objectives structured new proposals for spaces that symbolized and assisted therapeutic efficacy. On 5 July 1902, a few years after the opening of the MCS and only a few kilometres away, the National Sanitarium Association opened the Muskoka Free Hospital for Consumptives (MFHC), reputed to have been the first free sanatorium (that is, for non-paying patients) in North America.[41]

Like the MCS, the MFHC specialized in the care of incipient patients, a large number of whom came from urban populations, removing them from the crowded city to the countryside.[42] Unlike patients at the MCS, however, those at the MFHC were compactly housed in a three-storey, symmetrical, wooden building (fig. 7). The design made explicit references to domestic architecture, perhaps as a way of softening its overall image. The sanatorium roof, for example, was hipped with a central chimney in back, adjacent to the linen closet; and two pavilion-like towers served to reduce the overall scale of the building's massing. An oriole window punctuated the front elevation, which was clad with siding.[43] On the first floor of the U-shaped plan, eight-, two-, and four-bed wards or rooms (total of nine rooms) ran along the front of the building, facing the waterfront; washrooms, stairs and cloakrooms fit into the "legs" of the U; at the corridor's centre, across from the four-bed ward, was a generous linen closet. In front, seven of the building's nine structural

Figure 7

The Muskoka Free Hospital for Consumptives, for the care of incipient patients, made explicit references to domestic architecture, perhaps as a way of softening its overall image (photographed at its 1902 opening; West Park Healthcare Centre Archives).

bays were taken up by a two-storey verandah, framed by the largest wards. The Matron's room and staff bathroom were in the northwest corner, overlooking the covered passageway which led to the dining room on the ground floor.

The success of the MFHC coupled with the magnitude of tuberculous poor in the Toronto area led the NSA to build a third sanatorium. In 1903 the Association purchased the Buttonwood Farm, located on 40 acres in Weston some 16 kilometres northwest of central Toronto, for the Toronto Free Hospital for the Consumptive Poor (TFHC; fig. 8).[44] A renovated farmhouse, with stone walls a metre thick, formed the nucleus of the new facility, serving as a residence for physician Allan Adams, the nursing staff, and the housekeeper.[45] A reception room with a fireplace and a piano became the first stop for new patients, who were housed in a new wing, while the two principal sitting rooms became the patient dining room and an assembly hall for church services.

Over time, the sanatorium added a small laboratory, a pharmacy, and a treatment room. Like earlier sanatoria, the TFHC saw the immediate construction of inexpensive, vernacular structures, including shacks. Women later stayed in a wooden pavilion constructed only a few feet from the main hospital. For men, the TFHC accepted a donation of 10 former horse-drawn streetcars from the Toronto Transit Commission (when the city streetcars went electric).[46] These were converted into 1- or 2-person

Figure 8

The Toronto Free Hospital for the Consumptive Poor occupied an expanded farmhouse (c.1904; West Park Healthcare Centre Archives).

chalets.[47] Men also stayed in a number of solidly built, wood-frame (no canvas) shacks with large glass and sash windows that could be opened upwards and latched to the ceiling for ventilation.[48] Unlike the pavilions at Muskoka where heating was centralized in the dressing room, the Toronto outbuildings had stoves to warm the main sleeping area.

While Muskoka was intended for early-stage cases of tuberculosis, the Toronto Free Hospital was established for patients with advanced tuberculosis. According to medical experts, patients with more advanced disease required different accommodation and services than incipient patients. Carrington, for instance, suggests that the concept of aseptic space was even more important when housing advanced cases, but we find few significant internal differences between the Muskoka and Toronto sanatoria.[49] The main distinction between them was in the exterior site planning. Perhaps because doctors believed individuals with advanced tuberculosis had less resistance to the cold than those with incipient disease, there was less unheated open-air accommodation at the Toronto Free Hospital, and fewer outbuildings. Advanced cases supposedly needed warm, well-ventilated rooms with ready access to nursing and medical care. The Toronto Free provided generous south-facing windows and verandahs, allowing for plenty of sunlight and fresh air. At both the Muskoka and Toronto sanatoria patients were bundled warmly in the winter to withstand the cold. An interior photograph of the women's ward in the addition to the original farmhouse shows home comforts such as area rugs, photographs, mirrors, non-institutional fur-

niture, and a giant, footed potbelly stove.[50] The horse-drawn streetcars converted into chalets for patient accommodation teemed with ornamental woodwork, creating excellent dust-collecting surfaces.[51]

SUBURBAN AND EX-URBAN SANATORIA: THE RISE OF THE HOSPITAL MODEL

From the perspective of this study, it is opportunistic that massive fires destroyed two of the NSA's original sanatoria, the Toronto Free Hospital and the Muskoka Free Hospital (with no fatalities). We use the word opportunistic in the sense that the post-fire need to rebuild led to new design ideas, an emphasis on medical intervention in the care of tuberculosis patients, and increasing public support.[52]

In many respects, the change in sanatorium design was phenomenal. Following the fires at Weston (1910) and Muskoka (1920), new architectural models appeared. More monumental buildings replaced the rather eclectic assortment of additions and outbuildings which comprised the Muskoka and Toronto sanatoria. A significant new Toronto sanatorium exemplifies one of these models, what Maitland has called the suburban institution, a hybrid between a cottage sanatorium and the urban hospital.[53] The Main Medical Building, or Prittie building, of the Toronto Hospital for Consumptives opened in 1912, providing beds for 95 patients. The principal donors to the building fund, Mr. and Mrs. R. W. Prittie, had grown interested in tuberculosis philanthropy after their daughter, Kathleen Honorah Prittie, died of the disease.[54] Two other substantial structures complemented the Prittie—a separate building for children with tuberculosis (the Queen Mary Hospital for Consumptive Children) and another for paying (advanced-stage) patients (the King Edward Sanatorium). The Prittie building was indeed typical of urban general hospitals of its era, like those of Stevens & Lee: a three-storey monolith, classically inspired; giant Ionic columns[55] at the entrance; engaged columns between bays of windows.[56] An interior photograph shows an old-fashioned, residential main reception room containing a piano, an informal clustering of wooden furniture, a brick fireplace, paintings, curtains, and an area rug.[57] Views of a women's ward in the Main Medical Building[58] show just how much the patient experience in the sanatorium had changed in comparison to life at the old Toronto cottage sanatorium building. Even the accommodation on medical wards, where many patients were grouped together in one space, differed from the use of smaller, often individual patient rooms in the old building. Exceptionally high coffered ceilings created a feeling of spaciousness, while tall windows ensured ample natural light. Furnishings were minimal—each patient had a bed, a nightstand, a chair, and a shared dresser.

In short, the medical model of general hospital accommodation had pervaded the Toronto sanatorium. This ward photograph could easily be mistaken for any women's ward in a general hospital, a dynamic influence noted in the press: "There was never any difference in essentials between sanatoriums and general hospitals, and every year brings them closer together in methods and aims. General hospitals are becoming sanatorium-ized…sanatoriums are becoming general-hospital-ized."[59] The institutionalization of the ward was no doubt fuelled by the demands on nurses and physicians caring for a large population of patients largely confined to bed because of their advanced disease.

Curiously, by this time Carrington believed ward-based care was not the best option for tuberculosis patients, particularly those with advanced disease:

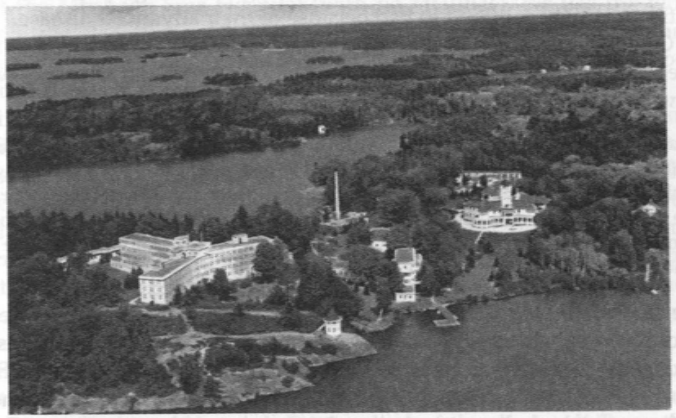
> A very important point to be taken into consideration in constructing these buildings is that tuberculous patients in the last stages are very annoying to each other. The constant coughing and expectorating of one not only worries the others, but is also a suggestion to cough for all in the ward, and is the cause of many a paroxysm of coughing which could be controlled if patients were not placed close together in crowded wards.[60]

He also suggested that if separate rooms were not possible, patients should be provided with dividers, and that wards with two rows of beds facing each other should be avoided. Clearly, the new Toronto Free Hospital failed to meet such prescriptions. It is likely that efficient medical care ranked above concerns about noise and annoyances. Each patient could benefit from a growing list of medical procedures, including vaccines, tuberculin injections,[61] high frequency current,[62] heliotherapy, and UV exposure.[63] In addition, artificial pneumothorax (also known as nitrogen compression),[64] a treatment developed by Forlanini in Italy, was practised in Canada after 1912.[65] More complex regimens of patient care necessitated greater daily contact between the patients and medical personnel. Patients were monitored in greater detail, using more sophisticated patient charts, to keep track of their treatments and responses.

In 1923 a new building, named in honour of NSA founder Sir William Gage, who died months before its opening, replaced the fire-ravaged Muskoka Free Hospital. Built to a design by Toronto architect Charles S. Cobb at a cost of $359,780, the architecture of the Gage (fig. 9) differed substantially from that of its older neighbour. Whereas the adjacent MCS drew inspiration from the surrounding sprawling cottage architecture of the Muskoka region, the Gage was a bold, modern structure, resembling an office building or school (fig. 10). In its site planning, massing, plan, and construction, and despite its isolated waterfront location in bucolic Muskoka, the Gage resembled hundreds of general urban hospitals constructed in North American cities in the interwar period.

Instead of generous porches acknowledging the waterfront, Cobb's "front" elevation was a severe, repetitive structure of double-hung windows. While the MCS reached out into its immediate surroundings, embracing by design its glorious site, the Gage was severe and rectangular, with relatively few entrances. Remarkably, it had no open-air verandahs or balconies, relying instead on the flat roof of the modernist block for patients to experience fresh air and sunlight.

Figure 9



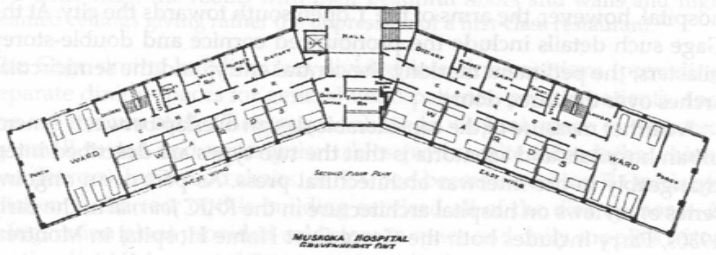
Aerial showing the Gage and the Muskoka Cottage Sanatorium side by side. The third arm of the Gage was added to accommodate surgical rooms, as discussed later in the text (c.1950; postcard, collection Stacie Burke).

In plan, the Gage was a wide V-shape (fig. 11), with east and west wings intersecting at a triangulated central hall; patients occupied four-bed rooms arranged along double-loaded corridors on four floors of the east wing and three floors of the west wing.[66] On each patient floor, the ends of each wing were reserved for windowed sunrooms, labelled "porches" on the plan, accessed through six-bed wards.[67] Echoing the design of the MFHC, the plan shows that patients were only housed on the south side of the hallway, giving patients magnificent views of the lake. And again like the older hospital, rooms on the north side were reserved for service rooms, in this case bathrooms, lockers, utility rooms, diet kitchens, patients' laundry, and the like.[68] The provision of only indirect access to porches from patient rooms differed substantially from other sanatoria built at the time, such as the Mount Sinai Sanatorium in Ste-Agathe-des-Monts, Quebec, by Spence & Goodman. Its wards occupied the centre of the hospital, opening up directly to a continuous "sun porch" on the building's south face and a narrow circulation corridor on

Figure 10

The Gage pavilion was a bold, modern structure, resembling an office building or school (c.1922; West Park Healthcare Centre Archives).

Figure 11



In plan, the Gage pavilion was a wide V-shape. Patients occupied four-bed rooms arranged along double-loaded corridors (R. E. Wodehouse, "Sanatorium Architecture," *The Canadian Hospital*, 9 [May 1932], p. 24)

the north. Dr. R. E. Wodehouse, Executive Secretary of the Canadian Tuberculosis Association, saw the Gage ward and porch as one: "Muskoka has [as] the outer walls of its wards all disappearing windows, which makes the ward a porch."[69]

A photograph of the Gage sunroom[70] shows the absence of any overhead lighting, a feature recommended by Canadian hospital architect B. Evan Parry, since "it is difficult for a patient lying on his back to avoid

the light from a ceiling fixture. Side fixtures are preferable."[71] According to Parry, only private patients' rooms had more home-like settings, with "dainty washable window hangings" and bureaus and beds of oak, birch, or maple.[72] Public wards, on the other hand, were more utilitarian—although with small changes they could be made to feel less institutional. Parry suggested, for example, avoiding the standard white enamelled beds in favour of iron beds painted light blue, green, grey, buff or brown, because they are "much more grateful to the eyes of the patient."[73]

The Gage followed other trends popular for urban hospital exteriors, which were constructed of reinforced concrete and hollow-tile block, faced with brick. Architects typically softened these massive V- Y- U- or H-shaped ensembles by conservative exteriors including classical or regionally inspired motifs. Stevens & Lee's red brick Ottawa Civic Hospital, for example, which opened the same year as the Gage, sported quoins, three-storey Corinthian pilasters, towers in the tradition of British architect Edwin Lutyens, and numerous classical references around its elaborate, raised entry. The 1923 Hôpital Notre-Dame in Montreal was a six-storey buff brick structure with double-height Corinthian columns of Stanstead granite at its monumental central entry. Stevens & Lee's neo-baronial Montreal Royal Victoria Maternity Pavilion in Montreal, opened just a year before the Gage, as well as Pond & Pond/Martin & Lloyd's General Public Hospital in Saint John, New Brunswick boasted the same gentle bend in plan as the Muskoka structure. In the Montreal hospital, however, the arms of the Y open south towards the city. At the Gage such details include the pronounced cornice and double-storey pilasters; the pediment marking the central entry; and the semicircular arches over the three doors.

A further measure of the considerable design overlap between general urban hospitals and sanatoria is that the two types are described interchangeably in the interwar architectural press. As part of an ongoing series of reviews on hospital architecture in the *RAIC Journal* in the early 1930s, Parry includes both the Grace Dart Home Hospital in Montreal (for TB) and the St. Boniface Sanatorium in Winnipeg without mentioning tuberculosis.[74] Likewise, the Ruddy building for surgical patients, a five-storey brick addition to the Toronto Hospital for Consumptives, Weston, constructed in 1938, though not a V-shaped plan, was remarkably similar to the Gage, further illustrating how urban and ex-urban TB design rationales coalesced.[75]

MEDICAL AND NON-MEDICAL SPACE IN THE NEW HOSPITAL SANATORIA

Despite the myriad changes in the design of new sanatoria, dining remained unaffected. From the earliest cottage sanatorium designs, the

dining room was critical to the patient experience. First, dining was a rite of passage, since only patients showing clear signs of improvement were allowed up for meals. For instance, a patient may have been allowed only one meal in the dining room, with the remainder taken in bed. Second, the act of dining was a social event, an occasion when patients met communally. Dining helped to relieve the monotony of the remaining hours of the day generally spent in bed. Since typically during bedrest no reading or talking was permitted except at specified times, conversations at the dining room table took on additional significance.

At the cottage sanatoria, large dining room tables brought numerous patients together to share meals and stories. Cottage sanatorium dining rooms were usually located in the main building, with kitchens nearby. As discussed earlier, the MFHC dining room was in an annex, connected to the main building by a covered passageway. At the Gage, the dining room was in a separate structure, linked to the hospital by a tunnel. Psychologically, this spatial separation allowed for a de-institutionalization of the space for eating and meeting and reduced smells and noise that could interfere with prescribed rest. Stevens & Lee and other urban hospital designers commonly used this planning technique for hospital kitchens.

> The dining-room, a one-storey structure by itself, may be reached through a commodious tunnel from the main building. There is no thought of hospital as you enter here, the rooms with their beautiful floors and walls and high beamed ceilings giving rather the impression of a first-class restaurant.[76]

The Gage dining building was divided into three sections, providing separate dining spaces for general ward patients, private patients, and the sanatorium staff. Photographs show an elegant space punctuated by small round and rectangular tables (with white tablecloths, china, and flowers), bentwood chairs, dark wood beams on ceiling.[77] One large kitchen at the rear of this building serviced all of the dining rooms. A refrigeration plant provided cold storage space and daily supplies of ice for the diet kitchens and for general medical use (ice compresses were routinely used to stop lung haemorrhaging).

In contrast to the social, non-institutional character of the dining room in the interwar sanatoria, purpose-built spaces for therapy were essential features of the interwar general hospital's design program. Architects' plans accommodated more invasive medical procedures to treat tuberculosis, especially surgery. The design of the Prittie building, unlike its predecessor, provided ample space for recent medical and technological innovations. A minor surgery room, fitted with steel cabinets and tables, sterilizing apparatuses, and a terrazzo-tile floor, was built specifically for pneumothorax.

The 1930s saw an intensification of surgical procedures in the treatment of both pulmonary and non-pulmonary tuberculosis. The most common new procedure, thoracoplasty, involved the removal of selected ribs to permanently collapse all or part of a diseased lung. At the Toronto sanatorium, such procedures took place in an entirely new building, the A. E. Ames Building. At the Gage, a third (northern) wing was added to the original V-shaped structure. The first floor of the Gage's new wing, the Medical Service Floor, contained dental, radiological, and surgical departments with two examination rooms, Physician-In-Chief Dr. Kendall's offices, a patients' waiting room, and an information bureau. A suite of surgical rooms at the Gage featured dressing and scrub rooms for surgeons and surgical nurses, an operating theatre with a glassed-in observation gallery for students, service rooms for sterilizing and storing equipment, and post-operative rooms for patients.

CONCLUSIONS

The architectural history of tuberculosis sanatoria in Canada weaves a complex pattern involving buildings that are much more than simple variations on the cottage plan, especially as sanatoria became increasingly medicalized and urban in the 1920s. The variety of building forms and types that surrounded the main buildings of cottage-plan hospitals—tents, tent-shacks, pavilions—was not only central to the ways these places functioned, but also held symbolic meaning for patients with tuberculosis. As a journalist in *The Modern Hospital* noted in 1927, "The sanatorium is not a shack in the woods, nor the mental hospital a bedlam, but both are modern hospitals with the same objectives."[78] The growing resemblance of TB sanatoria in recreational areas to urban hospitals (with a real intersection in 1923, best illustrated in the boldly modern architecture of the Gage pavilion) highlights the tensions between a desire to build comfortable, domestic surroundings, and the medical impulse to accommodate scientific-based treatments and therapies. The introduction of sophisticated surgical treatments for tuberculosis represented the penultimate phase of increasing medical intervention, only to be superseded by the advent of effective drug-based therapy in the 1940s. By the 1950s, hospitals designed for relieving TB symptoms and for surgical therapies were upstaged by the effectiveness of antibiotics, culminating in the demise of the tuberculosis sanatorium as an independent and specialized medical facility.

The uneven development of the Canadian sanatorium also stems from unique opportunities. The monumental buildings constructed after tragic fires of 1910 and 1920 in Weston and Muskoka respectively embodied new practices, some of which flew in the face of expert advice. Nothing in Toronto was as startling as the new Gage building, sited lakeside

on a beautiful and isolated Muskoka peninsula, but looking like an urban office block. The juxtaposition of the Gage and the older Muskoka Cottage Sanatorium (in reality and in this study) thus shows how urban and ex-urban hospital typologies intersected in the mid 1920s, but also how architectural ideals about tuberculosis and medicine in general coalesced. Through exploring monumental and vernacular works of architecture beyond their stylistic appearance, this more nuanced history of tuberculosis uncovers hidden links between patients and hospitals, space and therapy, medicine and architecture.

ACKNOWLEDGMENTS

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NOTES

1 Leslie Maitland, "The Design of Tuberculosis Sanatoria in Late Nineteenth Century Canada," *Bulletin of the Society for the Study of Architecture in Canada*, 14, 1 (March 1989): 5-13. On page 5 Maitland writes: "until 1917, by which time it may be said that the building type reached the shape it would follow for the next thirty years"; and on page 12: "Construction of tuberculosis hospitals continued throughout the 1920s, 30s, 40s, and even 1950s. The buildings erected were based upon the principles established during the twenty-year period from 1897-1917."

2 Minutes of the National Sanitarium Association, 27 June 1895, Toronto. West Park Healthcare Centre Archives.

3 Godfrey L. Gale, *The Changing Years: The Story of Toronto Hospital and the Fight against Tuberculosis* (Toronto: West Park Hospital 1979), p. 5.

4 Purpose built means custom designed for a particular purpose. In this case, the new institution was planned specifically for the care and treatment of tuberculosis sufferers; "purpose-built" can be contrasted to institutions which were simply remodeled or otherwise requisitioned to suit the needs of tuberculosis patients.

5 Gale, *The Changing Years*, p. 7. The name changed to the Muskoka Hospital for Consumptives with the opening of the Gage Building in 1923. The original MCS main building was demolished in June 1958.

6 At the height of the sanatorium movement in 1953, there were 101 Canadian sanatoria and hospital-based tuberculosis units, providing an estimated 19,000 patient beds. See George J. Wherrett, *The Miracle of the Empty Beds: A History of Tuberculosis in Canada* (Toronto: University of Toronto Press, 1977).

7 http://www.muskokaheritage.org/heritagegallery.asp. Accessed 4 January 2005.

8 Cottage hospitals, as opposed to cottage plan hospitals, are small, community-based institutions usually built in rural locations distant from urban, academic general hospitals. The authoritative text is Henry C. Burdett's, *Cottage Hospitals: General, Fever and Convalescent* (London: Scientific Press, 1896).

9 For a definition of pavilion-plan hospitals, see Jeremy Taylor, *The Architect and the Pavilion Hospital: Dialogue and Design Creativity in England, 1850-1914* (London: Leicester University Press, 1997), p. 5-6.

10 Herbert J. Irwin, undated slide show presentation notes, Gravenhurst Archives. Architect George Martell Miller (1854/5-1933) designed a great variety of structures including schools, hotels. See Eric Arthur, *Toronto: No Mean City* (Toronto: University of Toronto Press, 1965) p. 255. The commission for the MCS may have stemmed from his connections to the Massey family. He served as the supervising architect for Massey Hall (1893) and also designed the Lillian Massey Building (1908).

11 Architect David Brash Dick (1846-1925) was noted for his work for the Consumers' Gas Company and the University of Toronto. His connection to the MCS was likely through William J. Gage, whose house on Bloor Street at Walmer Road he designed in 1886.

12 Vincent Scully, *The Shingle Style: Architectural Theory and Design from Richardson to the Origins of Wright* (New Haven: Yale University Press, 1955).

13 Note the belfry roof on the main building has a faceted, octagonal design, while the Christie roofs are rounded.

14 Thomas Spees Carrington, *Some Plans and Suggestions for Housing Consumptives* (New York: The National Association for the Study and Prevention of Tuberculosis, 1909), p. 14.

15 Carrington, *Some Plans*, p. 10.

16 National Sanitarium Association, undated promotional pamphlet. West Park Healthcare Centre Archives.

17 National Sanitarium Association, *First Report of the Muskoka Cottage Sanatorium for Consumptives*, 1898, p. 7.

18 Herbert J. Irwin, "The Sanatoria of Muskoka," *East Georgian Bay Historical Journal*, 2 (1982): 187.

19 *Third Annual Report of the Muskoka Cottage Sanatorium*, National Sanitarium Association, Toronto, 1900, p. 6.

20 The Cottage was endowed, likely just before his death in 1906, by Mr. Thomas McCormick, a well-known manufacturer (McCormick Manufacturing Company Ltd. which specialized in biscuits or crackers) based in London, Ontario. "Report of the Secretary (J. S. Robertson)," *Annual Report of the National Sanitarium Association*, 1904-1905, p. 5. McCormick's gift was made in memory of his daughter, the late Katie L. Pollock. *Annual Report of the National Sanitarium Association*, 1905-1906, p. 4.

21 Burke & Horwood are well-known Toronto architects, responsible for the Simpson department store, Jarvis Street Baptist Church, and the Bloor Viaduct, among other structures. See Angela Carr, *Toronto Architect Edmund Burke: Redefining Canadian Architecture* (Montreal: McGill-Queen's University Press, 1995); Kelly Crossman, *Architecture in Transition: From Art to Practice, 1885-1906* (Kingston: McGill-Queens University Press, 1987); and Geoffrey Simmins, *Ontario Association of Architects: A Centennial History, 1889-1989* (Toronto: Ontario Association of Architects, 1989). For the sanatorium, Burke & Horwood also produced drawings for a classically inspired balcony (1907), Rosemary cottage attic (1905), Davies Cottage bathroom (1905), laundry, physician's residence (1905), male employees' quarters (1906), and servants' quarters (1905) at the MFHC; and a nurses' pantry at the MCS (1906). At the Toronto Hospital, the firm designed the Mulholland Building (1906) and the Hammond Cottage (1906).

22 Carrington, *Some Plans*, p. 70.

23 W. B. Kendall, Physician-in-Chief, Muskoka Cottage Sanatorium; *Annual Reports of the National Sanitarium Association and the Toronto Free Hospital for Consumptives*, 1914-1915, p. 24.

24 Financial Statements of Board of Trustees, *Annual Report of the National Sanitarium Association*, 1900-1901, p. 17.

25 By its second year of operation, the MCS had installed a system of electric bells "by means of which a nurse may be called to any room either in the Administration Building or the cottages." As a result, nurses not only made routine visits to the cottages, but could also be summoned any number of times, day or night. Report of the Medical Superintendent (J. H. Elliott), *Annual Report of the National Sanitarium Association*, 1898-1899, p. 6.

26 Maitland, "The Design of Tuberculosis Sanatoria," p. 8-9.

27 Annmarie Adams, *Architecture in the Family Way: Doctors, Houses, and Women, 1870-1900* (Montreal: McGill-Queens University Press, 1996); Elizabeth Cromley, *Alone Together: A History of New York's Early Apartments* (Ithaca: Cornell University Press, 1990); Gwendolyn Wright, *Moralism and the Model Home: Domestic Architecture and Cultural Conflict in Chicago, 1873-1913* (Chicago: University of Chicago Press, 1980); Beatriz Colomina, "The Medical Body in Modern Architecture," *Daidalos*, 64 (June 1997): 60-71; Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge, MA: Harvard University Press, 1998).

28 Annmarie Adams, "Modernism and Medicine: The Hospitals of Stevens and Lee, 1916-1932," *Journal of the Society of Architectural Historians*, 58, 1 (March 1999): 45-48.

29 Maitland, "The Design of Tuberculosis Sanatoria," p. 8.

30 Carrington, *Some Plans*, p. 20.

31 Edward Fletcher Stevens, *The American Hospital of the Twentieth Century* (New York: Architectural Record Publishing Company, 1918), p. 130.

32 Stevens was commissioned to enlarge the Sea View Hospital on Staten Island to accommodate 2,000 patients. The three editions (1918, 1921, 1928) of *The American Hospital of the Twentieth Century* devote considerable attention to flexible planning.

33 Tents were commonly used at summer camps, where they were viewed as healthy until the 1920s. See Abigail Van Slyck's forthcoming book on summer camps, especially chapter 2, "Housing the Healthy Camper: Tents, Cabins, and Attitudes towards Health."

34 J. H. Elliott, Physician-in-Charge, Muskoka Cottage Sanatorium; *Annual Report of the National Sanitarium Association*, 1900-1901, p. 5.

35 By 1905, at the MCS, the word "shack" had been abandoned in favour of "tent-cottage," likely to add appeal to the paying patients; the MFHC continued to use "shack." Report of the Secretary (J. S. Robertson), *Annual Report of the National Sanitarium Association*, 1904-1905, p. 6.

36 Muskoka Cottage Sanatorium Discharge Notes (1915), West Park Healthcare Centre Archives.

37 Named after the sanatorium's Physician-in-Chief, Dr. W. B. Kendall.

38 W. B. Kendall, Physician-in-Chief, Muskoka Cottage Sanatorium; *Annual Reports of the National Sanitarium Association and the Toronto Free Hospital for Consumptives*, 1913-1914, p. 19. The separation of women and men and rules forbidding liaisons forming between patients could not stem the secret rendezvous and romances between patients. The good humour between patients is evident in a joke which appeared in *The Sanitarium Sun*, the Muskoka patient newsletter, in 1933: *Ruby Lyske* (contemplating building a home for her dog): "What's the name of the building you keep your pets in?" *Margaret Arnold* (absently): "The Kendall." (*The Sanitarium Sun*, 4, 2 [5 February 1933], p. 14).

39 Stevens, *American Hospital*, p. 131.

40 W. B. Kendall, Physician-in-Chief, Muskoka Cottage Sanatorium; *Annual Reports of the National Sanitarium Association and the Toronto Free Hospital for Consumptives*, 1914-1915, 24-25. Construction of a separate MCS infirmary began in 1919, providing a place to evaluate newly admitted patients, as well as to monitor the occasional case of worsening disease.

41 Gale, *The Changing Years*.

42 This notion of separation is a founding principle of other sanatoria: Saranac Lake, of course, and Ste-Agathe-des-Monts in Quebec.

43 Maitland considers the MFHC a class of building in the "cottage style," despite the fact that it included no cottages ("The Design of Tuberculosis Sanatoria," p. 10).

44 The name soon after changed to the Toronto Free Hospital for Consumptives and, later, the Toronto Hospital for Consumptives.
45 On the widespread conversion of multiple building types to hospitals, including sanatoria, about this time, see Annmarie Adams, "Borrowed Buildings: Canada's Temporary Hospitals during World War I," *Canadian Bulletin of Medical History*, 16 (1999): 25-48.
46 Report of the Physician-in-Charge (Allan Adams), *First Annual Report of the Toronto Free Hospital for Consumptives*, 1904-1905, p. 16.
47 On the re-use of such vehicles as housing, see William B. Rhoads, "The Machine in the Garden: The Trolley Cottage as Romantic Artifact," in Sally McMurry and Annmarie Adams, eds., *Perspectives in Vernacular Architecture VIII* (Knoxville: University of Tennessee Press, 2000), p. 17-32.
48 The shacks are visible in the *Early Toronto Hospital Photograph Collection*, West Park Healthcare Centre Archives.
49 Carrington, *Some Plans*, p. 10.
50 The women's ward (c.1904) is visible in the *Early Toronto Hospital Photograph Collection*, West Park Healthcare Centre Archives.
51 The horse-drawn streetcar chalets are visible in the *Early Toronto Hospital Photograph Collection*, West Park Healthcare Centre Archives and on-line at http://www.westpark.org/about/hisphoto.html. Accessed 30 August 2005.
52 In architectural history several well-known fires are believed to have given rise to design reform, especially those in London (1666) and Chicago (1871). Historians believe that these fires provided opportunities for Christopher Wren to "invent" the Protestant church form and William Le Baron Jenney and his colleagues to develop the skyscraper. See Spiro Kostof, *A History of Architecture: Settings and Rituals* (New York: Oxford University Press, 1985), p. 540 and 655. Outbuildings continued to serve "up-patients," particularly those who were well enough to carry on part-time work at the sanatorium and required little supervision. The lack of supervision did, at times, lead to problems of misconduct among the patients; typical examples included food fights, fist fights, romantic carousing, cigarette smoking, and alcohol consumption. Nevertheless, with an eye to maximizing the number of beds, the rudimentary pavilions constructed in the wake of the fire remained in use, accommodating over 100 beds; extant streetcars provided another 10 beds.
53 Maitland, "The Design of Tuberculosis Sanatoria," p. 11.
54 In July 1912 Mrs. R. W. Prittie invited about 30 women to her Parkdale home to learn about the work and needs of the Toronto Hospital for Consumptives. A sewing club was formed to assist the hospital in clothing indigent patients. Over time, the scope of the club's activities increased, with a particular emphasis placed on Christmas and the children's sanatorium. Owing to ill-health, Mrs. Prittie resigned as President in 1920. Report of the Weston Sanitarium Club, *Annual Reports of the National Sanitarium Association and Toronto Hospital for Consumptives*, 1937, p. 23.
55 West Park Healthcare Centre's Long-Term Care facility was built on the footprint of the old Main Medical Building; two altered columns now form a centerpiece of the LTC gardens; see http://www.westpark.org/patientservices/phototourgardens.html. Accessed 30 August 2005.
56 For an illustration and information, see "Toronto Hospital for Consumptives," *The Canadian Hospital*, 4 (August 1927): 13-14, 27.
57 The reception room (c.1912) is visible in the *Main Medical Building Photograph Collection*, West Park Healthcare Centre Archives.
58 The women's ward in the Main Medical Building (c.1912) is visible in the *Main Medical Building Photograph Collection*, West Park Healthcare Centre Archives.
59 "Canadian Sanatoriums Becoming More Hospitalized," *The Modern Hospital* (March 1927): 74.
60 Carrington, *Some Plans*, p. 48.

61 While tuberculin is more commonly known for its use in TB skin tests, it was also used as an immune system stimulant and periodically injected in an effort to increase a patient's resistance to the bacillus.
62 The high frequency electrical current was intended to stimulate body tissues, encouraging blood circulation and cell nutrition while promoting healing.
63 W. J. Dobbie, Physician-in-Chief, Toronto Free Hospital for Consumptives; *Annual Reports of the National Sanitarium Association and Toronto Free Hospital for Consumptives*, 1916-1917, p. 22.
64 Procedurally, artificial pneumothorax involved the injection of air into the chest cavity—the pressure of the injected air would collapse the lung; the procedure was based on the premise that a lung at rest had a greater chance of healing than a lung at work. The air would naturally dissipate over time and, with reduced pressure in the chest cavity, the lung gradually reinflated. Nitrogen was somewhat favoured since it was absorbed more slowly thereby reducing the number of "refills" required to keep the lung collapsed.
65 Katherine McCuaig, *The Weariness, the Fever, and the Fret: The Campaign against Tuberculosis in Canada 1900-1950* (Montreal: McGill-Queen's University Press, 1999).
66 The topography and geography of the site dictated the imbalance in the number of floors (including the lack of a basement in the west wing): "extensive drilling and blasting" of the rocky terrain would have been required to have symmetrical east and west wings. *Annual Reports of the National Sanitarium Association and Toronto Free Hospital for Consumptives (1922-1923)*, Report of the Physician-in-Chief, p. 6.
67 *Annual Reports of the National Sanitarium Association and Toronto Free Hospital for Consumptives (1922-1923)*, p. 24.
68 "Memorial Tablet to Sir William Gage," *The Canadian Hospital*, 3 (January 1926): 9.
69 R. E. Wodehouse, "Sanatorium Architecture," *The Canadian Hospital*, 9 (May 1932): 24.
70 Gage Sunroom (c.1923), *Muskoka Photograph Collection*, West Park Healthcare Centre Archives.
71 B. Evan Parry, *Planning of Small Community Hospitals* (Ottawa: Department of Health, 1925), p. 34.
72 Parry, *Planning*, p. 96.
73 Parry, *Planning*, p. 96.
74 See B. Evan Parry, "Hospitals—Their Planning and Equipment," *Journal (Royal Architectural Institute of Canada)* (January 1931): 23-33.
75 "New Building at Toronto Hospital for Consumptives, Weston, Ontario," *The Canadian Hospital*, 15 (June 1938): 45-46.
76 "Memorial Tablet to Sir William Gage," *The Canadian Hospital* (January 1926): 9.
77 *Muskoka Photograph Collection*, West Park Healthcare Centre Archives.
78 "Canadian Sanatoriums Becoming More Hospitalized," *The Modern Hospital* (March 1927): 74.