SCHEDULE " C "

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November 23, 2011 Project No. 1201.00

Mr. Geoff Belch
Corporation Counsel for City of London
City Hall
300 Dufferin Street, Suite 1014
London, ON N6A 4L9

Re: Building Condition Assessment and Adaptive Reuse Study for Old War Memorial Children's Hospital at London Hospital, South Street Campus

Dear Mr Belch;

Attached is the Building Condition Assessment and Adaptive Reuse Study for Old War Memorial Children's Hospital.

We look forward to the opportunity to present this report to City Council as you may require. Please contact us with any questions or comments you may have with respect to the report.

Yours truly,
ALLAN AVIS ARCHITECTS INC.

Allan Avis
B. Arch., OAA, MRAIC, CAHP

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Executive Summary

A February, 2011 Cultural Heritage Assessment determined that the Old War Memorial Children's Hospital is architecturally, historically and contextually significant. The original 1922 South Wing and the 1945 North Wing were dedicated to those who served in World War I and II, respectively. A small rooftop addition was constructed in 1978. The "T"-shaped building measures 50,270 sq.ft. (4,670 sq.m) of gross building area over five floors with 36,370 sq.ft. (3,378 sq,m) considered useable floor area. The difference in area is comprised of exterior wall structures, utility shafts, hoistways and stairways.

This assessment has concluded that the building is structurally robust and it is generally in good condition with only minor or localized structural deficiencies. Various building elements and systems, such as windows and roofing, require repair or replacement. Upgrades in insulation, provision of barrier-free accessibility and abatement of hazardous building materials will be required. A change of building use will involve extensive removal and renovation throughout the building with mostly new partitions, all new interior finishes, and mechanical and electrical infrastructure. The Ontario Building Code will require installation of a fire sprinkler system if the use is changed to residential occupancy. Having said that, it is our opinion that the original 1922 building and the 1945 addition are sound buildings and they warrant strong consideration for adaptive reuse and continued service.

Masonry, concrete and steel are the principal materials utilized in construction of the building. The original South Wing is a mass masonry structure with many interior load-bearing walls that limit potential re-configuration of spaces. The later North Wing is a steel frame structure with few columns, allowing greater flexibility within interior layouts. Existing central corridors, connecting strategically placed stairways, are practical and sensible for internal circulation, however, they restrict room widths on either side of corridors to 15'. The relatively narrow width of rooms, overall size of floor plates and total floor area, create limits for potential adaptive reuses.

Staff from several City departments and experienced realtors were consulted to discuss potential building uses. It was concluded that some form of social housing offered the greatest potential when considering the urban context, size of building, adaptability of interiors and the community's needs. Redevelopment of Old War Memorial Children's Hospital for social housing is consistent with the 2011 SoHo Community Improvement Plan.

The conceptual design presented in this report illustrates how 37 apartment suites can fit within the existing building. An initial structural assessment suggests that it may be feasible to add one or two complete floors above the existing roof. Each floor could provide an additional 11 suites.

The estimated cost to preserve the existing building and to convert it to residential use is $11,086,000 plus HST. This represents a per suite cost of nearly $300,000 each. This per suite cost to convert this building is high relative to other recent adaptive reuse projects that the City has done. Constructing a new apartment building could be done for about half of this conversion cost (not taking into account the cost for land acquisition and site services).

As the Hospital winds down and abandons the South Street Campus, there is increasing risk of unauthorized access, mischief, vandalism and unnoticed building damage and deterioration. If the building is to be deactivate (mothballed) for any length of time, the structure should be stabilized and the building perimeter secured and made weathertight. The existing steam heating provided by the LHSC central heating plant will continue to provide heat to this building and others on the north side of South Street for some period of time. It is recommended that at least minimal heating be maintained in the building. Some form of natural or mechanical ventilation is required to control moisture. Interior doors should be removed from hinges to assist with air movement. Abandoned furniture, equipment and unneeded materials in the building should be removed to eliminate potential fuel for fire, safety hazards and food source for mould. An intrusion and fire alarm system is recommended, powered by a basic electrical service to provide lighting. Properly mothballing the building is anticipated to cost approximately $386,000 plus HST.

Ongoing mothballing operations include alarm monitoring, regular site and building inspections, security walk-throughs, pest and vermin control and roof inspections. The monthly budget for mothballing costs is approximately $1,125 plus HST.

Purpose of this Report

This report assesses the condition of the Old War Memorial Children's Hospital (Building #52) located at 392 South Street, forming part of the London Health Sciences Centre in the City of London. This assessment focuses on building enclosure and building structure.

It is the intent of this report to provide City Council and City Administration with an assessment of the condition of the existing subject building, its potential for adaptive reuse and the magnitude of probable cost associated with preserving, rehabilitating and renovating the building.

The project and maintenance work identified in this report describes the work in general terms only. Individual work items will require more detailed documentation to fully establish the scope of work in contract terms, prior to engaging contractors to execute work.

The information and recommendations contained in this report reflect our best judgement based on observed conditions. We cannot guarantee that all building related problems have been encountered during preparation of the report, or that unreported building conditions will not develop after the report has been submitted. Use of the report content by a third party is the responsibility of such third party and we do not accept responsibility for damages resulting from third party use of the report.

Methodology

Multiple visual examinations of the building were conducted between March and October 2011. Limited invasive disassembly and testing were conducted on exterior masonry during the examinations.

The following personnel were involved in the site visits:

Prime Consultant: Allan Avis of Allan Avis Architects Inc., Goderich
Structural Engineer: Bob Peterman of Pow Peterman Consulting Engineers, Ingersoll
Contractor: Doug Hazen of Hazen Masonry & Restoration Inc., Ingersoll

For the purposes of this report, the main entry of the building at South Street is considered to face south.

This report views the building as a detached, stand-alone structure. In other words, existing abutting and link structures are assumed to be removed and the building enclosure made good at these locations.

Preface

Masonry
The purpose of mortar is threefold: firstly to provide a mechanical bond between masonry units, secondly to protect the wall from moisture ingress and thirdly to provide a means of egress for moisture present in the wall assembly.

Properly formulated mortars will always be weaker than the masonry being bonded together; it will also be more permeable than masonry. Mortar is designed to be sacrificial; it is more economical to replace weathered mortar than to replace damaged masonry units.

Although mortars are a relatively durable material, they do require periodic maintenance and renewal. It is reasonable to expect that masonry joints will require some amount of repointing approximately every 25 to 40 yrs. For larger buildings, we suggest a regular maintenance programme where selected wall areas are targeted on a periodic basis (e.g., every 5 yrs.) eventually working around the entire building over the course of 25 to 40 years.

Masonry elements which are exposed to cold on multiple sides (e.g., parapets, elevator hoistways and chimneys) typically experience more severe weathering due to increased exposure and require more frequent attention. These elements are usually situated high on the building and involve expensive scaffolding or use of lift devices to provide access. It is advisable to complete all work that has to be done from the access system at one time because of the significant cost for access.

Barrier-Free Accessibility and Facilities
The Ontario Building Code (OBC) may require barrier-free access and facilities for new construction and renovation projects, depending on the building size and occupancy. The OBC does not currently have retroactive provisions for existing buildings where there is no construction or application for a building permit. Many of the recommendations contained in this report are considered voluntary upgrades on behalf of the building owner, in an attempt to comply with the intent of barrier-free initiatives.

The 2005 Accessibility for Ontarians with Disabilities Act requires that all facilities intended to be used by the public comply with barrier-free design standards for access and facilities. Organizations are required to have action plans established by 01-Jan-2012 with built environment compliance anticipated by 2025.

Regardless, individuals or interest groups may have the ability to force barrier-free upgrades through Human Rights Legislation. Human Rights Legislation is a higher law than Building Code Legislation and has successfully been applied to existing buildings not otherwise considering renovation. In other words, a formal complaint made to the Human Rights Tribunal can result in court-ordered renovations to provide barrier-free access and facilities.

Hazardous Materials
Asbestos containing materials (ACM) are likely to be present on the property. Other designated substances, such as lead in paint coatings, mercury in fluorescent light tubes and thermostats may also be present on the property.

Bulk samples of representative suspect ACM materials have been tested by a qualified laboratory. The results of such tests speak to the presence or absence of asbestos in the particular sample. Prior to commencing any construction activity, additional sampling may be required for materials that will be disturbed to ensure compliance with Ontario Regulations.

Asbestos Management Program
Asbestos containing materials (ACM) in good condition, which are non-friable products with bound asbestos, pose no danger of releasing airborne fibres unless cut, broken up or otherwise physically abraded, and need not be removed, unless the owner wishes to do so. If such materials are retained, an asbestos management program must be established per Ontario Regulation 278/05, Section 8. A copy of O.R. 278/05 is appended to this Report.

Lead
Comply with requirements of Ministry of Labour "Guideline-Lead on Construction Projects" dated September 2004, a copy is appended to this Report.

Mercury
Handle and dispose of mercury waste per Ontario Regulation 347, as amended by O.R. 102/07.

PCBs
Handle, store and dispose of PCBs and PCB containing equipment per The Federal Chlorobiphenyls Regulation SOR/92-507 and O.R. 362/90.

Federal Legislation Bill C45
Property owners should be aware of Bill C45, which was enacted in the aftermath of the 1992 Westray Mine disaster in Nova Scotia. This federal legislation holds property owners and corporations, including their directors and officers, as criminally liable for inaction in addressing unsafe conditions at their property, that are known to be present or should have known to be present.

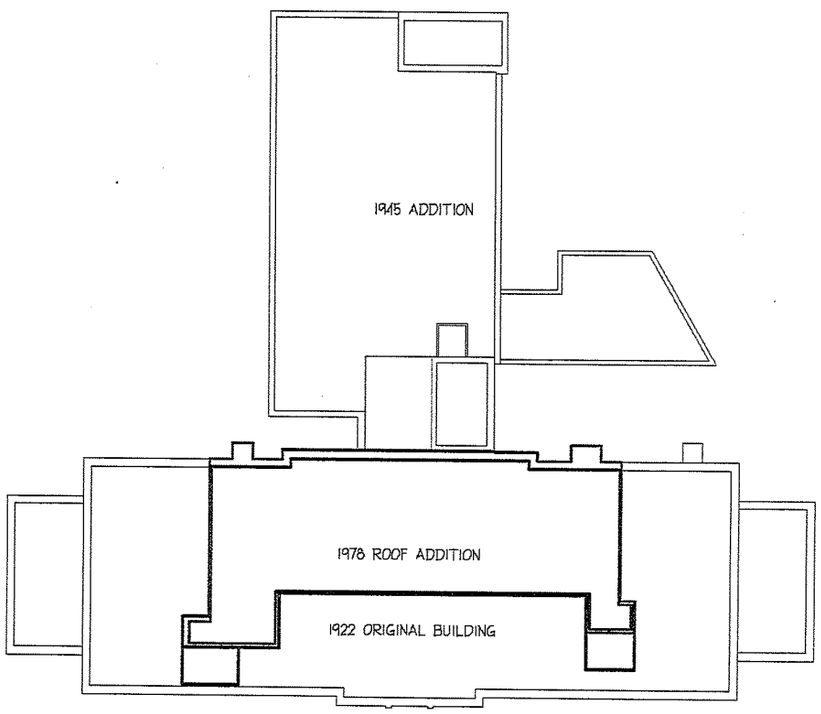
The contents of this report may identify unsafe building conditions or other conditions that may represent a liability. It is incumbent upon the property owner to address such conditions or risk prosecution.

Building History

1922 Original South Wing of the Hospital was opened in memory of those who served and died in World War I. The building was designed by Watt & Blackwell Architects of London and Toronto.

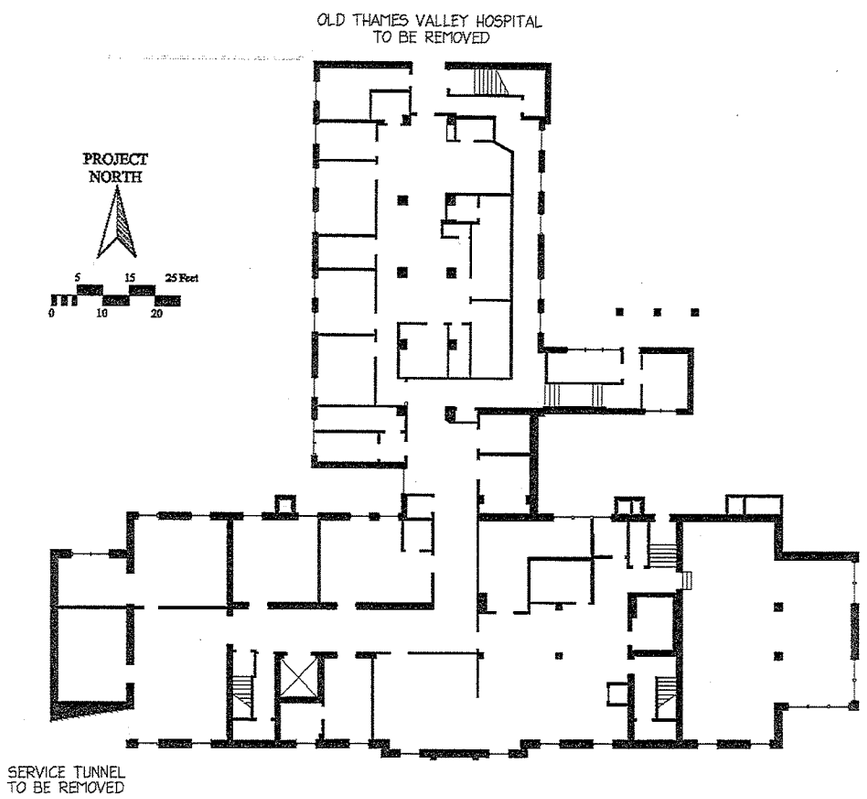
1945 North Wing addition was constructed and dedicated to the local heroes of World War II.

1978 Roof addition constructed above South Wing as designed by Skinner & Marshall Architects of London.

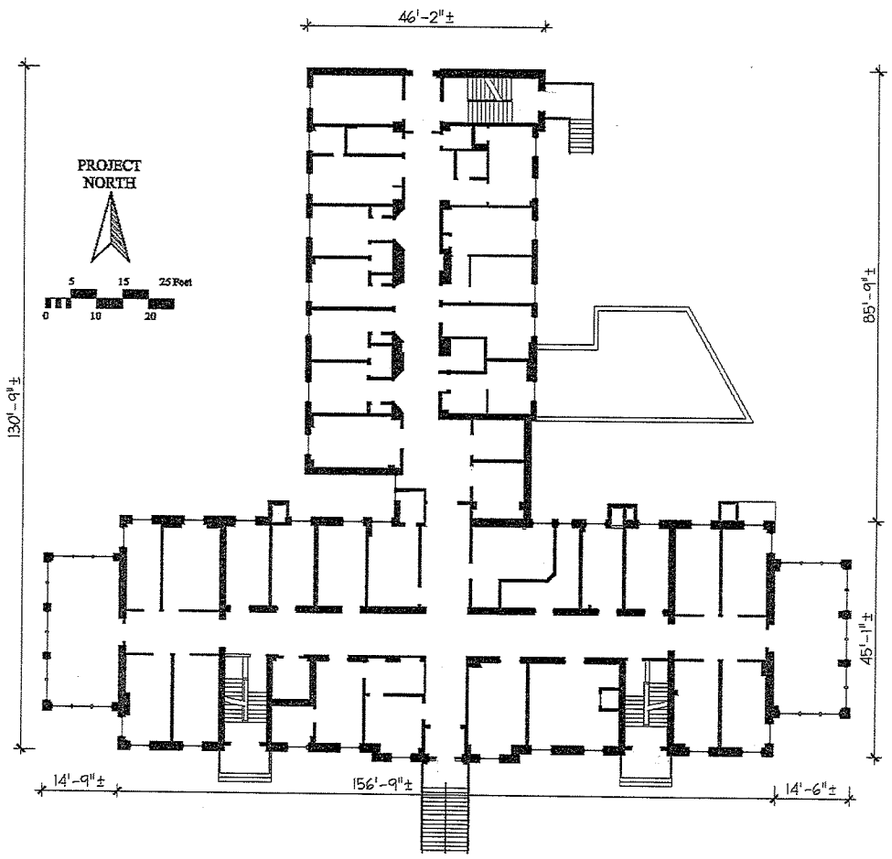


Drawings of Existing Building

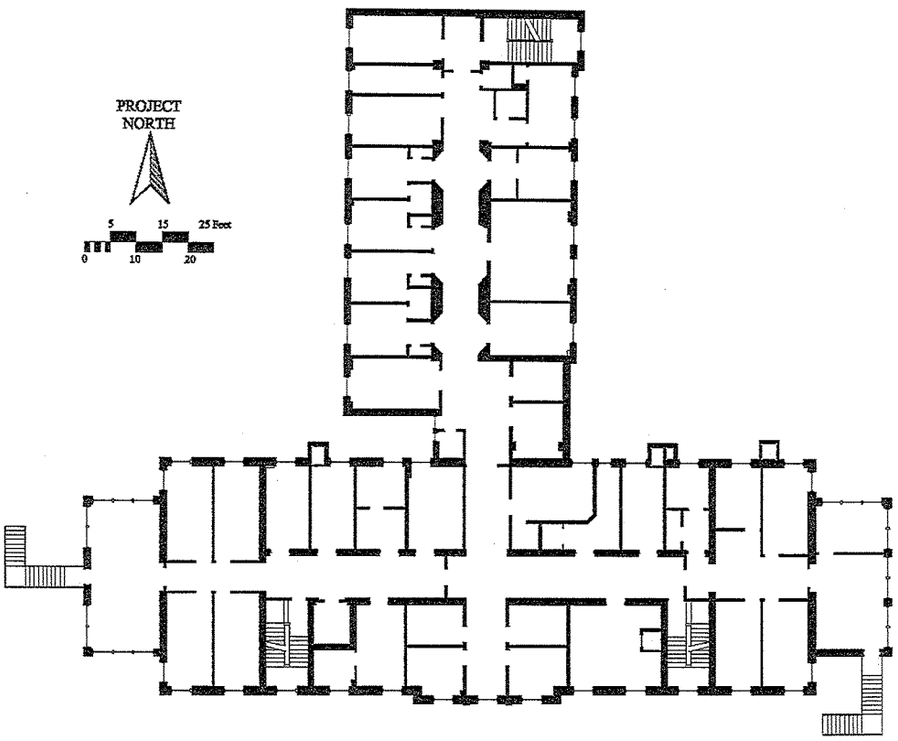
Basement Floor Plan



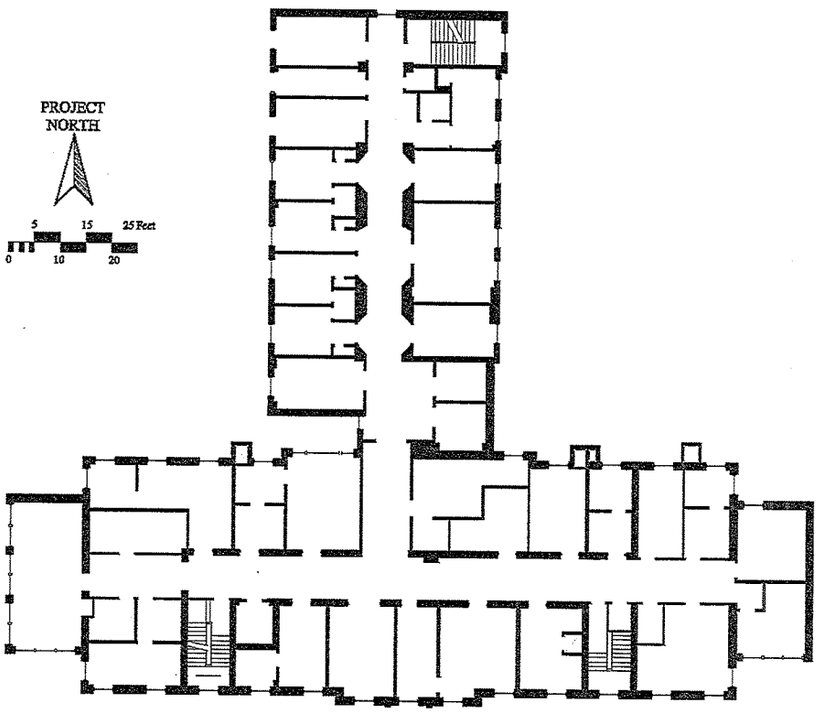
First Floor Plan



Second Floor Plan

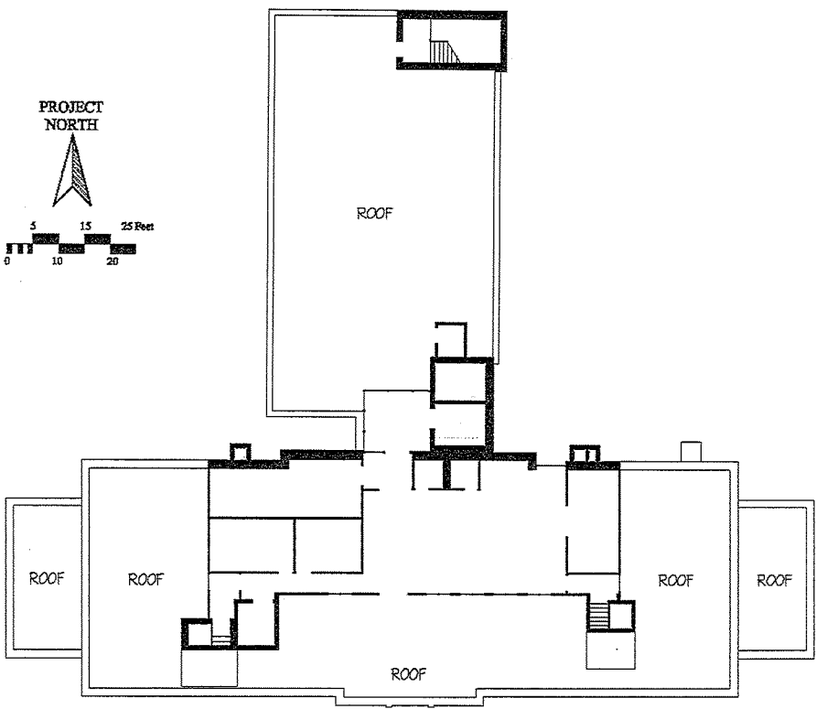


Third Floor Plan

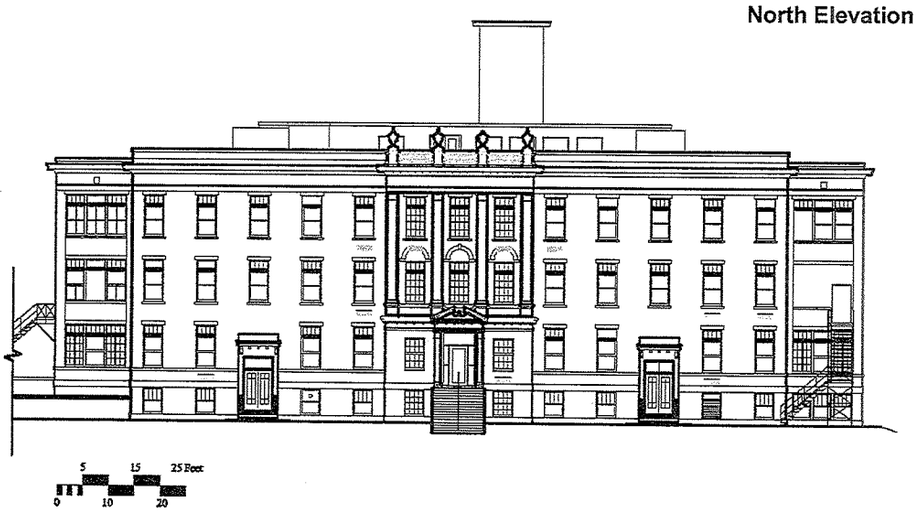


Old War Memorial Children's Hospital
London Hospital, South Street Campus

Fourth Floor Plan



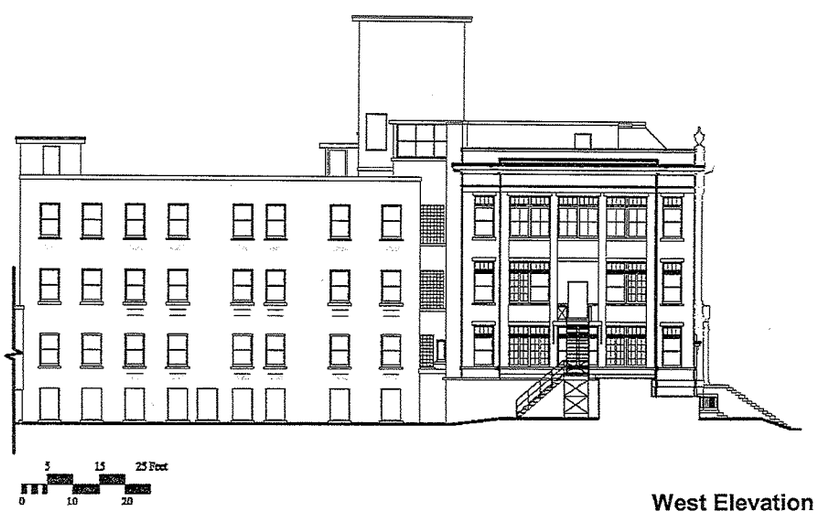
North Elevation



South Elevation

Old War Memorial Children's Hospital
London Hospital, South Street Campus

East Elevation



West Elevation

Cultural Heritage Status

Old War Memorial Children's Hospital was included in the "Cultural Heritage Assessment: Buildings in the South Street Hospital Complex, London, Ontario" prepared by Nancy Z. Tausky, dated Feb-2011. Based on the reported historical, architectural and contextual values, Old War Memorial Children's Hospital was assigned a Priority 1 rating in terms of it remaining on the City of London's Inventory of Heritage Resources.

The Tausky report states that the "War Memorial Children's Hospital is important architecturally because of the intrinsic merits of its design and because of the design's purposely commemorative quality, an uncommon attribute in a hospital building. It has historical value because of its function as a war memorial and because of its association with the architectural firm Watt & Blackwell; it is also important as the site where the cobalt bomb was first used for medicinal purposes. The building has contextual value not only for its proximity to the main hospital buildings, but also, and even more importantly, for its relationship to the streetscape it anchors."

Observations

For the purposes of this report, the Old War Memorial Children's Hospital consists of the South Wing and North Wing forming an inverted "T"-plan. The Old Thames Valley Hospital abutting the North Wing is assumed to be removed and is not part of this report. Similarly, the westbound service tunnel link to the Nurse Residence is assumed to be removed and is not part of this report.

Building Statistics
The gross floor area below represents the building area measured from outside faces of exterior walls. In other words, it is essentially the building footprint for each floor level.

Useable floor area is measured from inside face of exterior walls less vertical shafts, hoistways and stairways. The useable floor area is the maximum interior space available for occupancy/use, including corridors and interior partitions.

Floor Level	Gross Floor Area		Useable Floor Area	
	sq.ft.	sq.m	sq.ft.	sq.m
Basement	10,845	1,007.5	9,040	839.8
1	10,430	968.9	8,360	776.6
2	10,430	968.9	8,430	783.1
3	10,470	972.7	8,580	797.1
4	8,095	752.0	1,960	182.1
Total	50,270	4,670.1	36,370	3,378.8

1922 South Wing
The South Wing is the original building, designed in 1920 and opened for use in 1922.

The building was constructed as three stories in height plus a full (useable) basement. The later rooftop addition created a fourth storey. The form of the building is long and narrow, measuring 156'-6" by 55'-0". Building elevations and floor plan are generally symmetrical on both longitudinal and cross axes. Floor to floor dimensions measure approximately 12'-6".

Foundation walls are poured concrete with cut limestone cladding above grade level. Exterior walls above first floor level are multi-wythe, load-bearing brick masonry.

Floors are composed of parallel rows of 8" (200mm) deep gypsum tile with steel reinforced concrete ribs between rows of tile, and with the overall assembly topped with 2" (50mm) of poured concrete. The reinforced concrete elements provide the structure; the tile is essentially non-structural, permanent formwork and a means of reducing the weight of the floor structure.

This floor system could be described as a series of adjacent and parallel inverted "U"s that span from bearing point to bearing point. The first floor structure bears on exterior and interior concrete basement walls and on reinforced concrete beams, supported on concrete columns. For all but the basement, central masonry corridor walls are load-bearing. Non load-bearing interior partitions are typically hollow-core gypsum tile with plaster finish.

The interior layout, for first, second and third floors, consists of an 8' wide, double-loaded east-west corridor placed centrally in the building with fifteen foot deep rooms flanking both sides of the corridor. Large ward rooms and sun rooms are provided at both ends of central corridors at each floor level. These rooms span the full depth of the building.

Stairways are provided at both ends of the central corridor. These two stairways have direct exterior egress at grade into the south yard. The original elevator shaft, adjacent to the westerly stairway, was modified in 1945 to provide storage rooms at each floor level. The food service dumbwaiter remains adjacent to the easterly stairway.

The brick chimney, at east end of north wall, originally vented the boilers that served this building. The chimney became redundant when the in-house boilers were replaced by the campus central heating plant.

The two other "chimney-like" elements on the north wall were originally laundry chutes, which had exterior doors at grade level for pick-up.

An original coal storage room is provided below grade adjacent to the north wall near the east end. The concrete slab exposed at grade has two round steel access holes. The concrete slab is deteriorated at the underside with spalled concrete and exposed, corroded steel reinforcing bars visible from within the room. This room is redundant and is of low potential use. It is therefore recommended that the room be removed and infilled during renovations. In the interim, fencing should be installed above grade to prevent travel over the slab.

1945 North Wing

The North Wing was added in 1945 to form the stem of an inverted "T"-plan building. The north addition measures approximately 46' wide by 85' long and it is considered to be three storeys in height plus a full basement. Floors of the 1945 addition are flush with the floors of the original 1922 building to provide a continuous floor plate.

Foundation walls are poured concrete with the basement floor located approximately 4' below grade level. This building is a steel column and steel beam frame structure with exterior and interior masonry infill walls. Columns are incorporated into exterior and interior walls surrounded by masonry to provide protection against fire. Floors are constructed in similar fashion to those in the 1922 building with concrete topping and reinforced deepened ribs of concrete straddling rows of hollow clay tile units. This system provides for a one-way structural slab.

Interiors are organized around a central north-south corridor, which intercepts the 1922 east-west corridor at mid-point. The building addition provided for two larger elevator cars near the intersection of corridors and a new stairway at the north end of the corridor. Masonry walls at stairway and elevator hoistway are important structurally because they provide the lateral resistance and shear strength for the structural steel skeleton.

There is a number of stepped and horizontal cracks at interior side of walls in the northeast stairway. The cracks are located on at least three walls of the stairway, between head of door accessing the roof and the ceiling. Additional investigations are required to determine the source of these cracks and to assess their impact relative to the structure.

Grade levels at the North Wing addition are slightly lower than those at the original 1922 South Wing, thus allowing for slightly taller windows at the basement level.

Originally, the North Wing provided for a covered porch entry at the east side of the building addition. This entry is for both interior stair and ramp access to the basement level. The east porch has since been modified to delete the ramp, relocate the stair access to basement and to provide for two interior service rooms at grade level. The porch roof overhang remains.

The 1945 building is slightly shorter in building height than the 1922 building. The 1945 elevator penthouse extends well above both buildings.

1978 Roof Addition

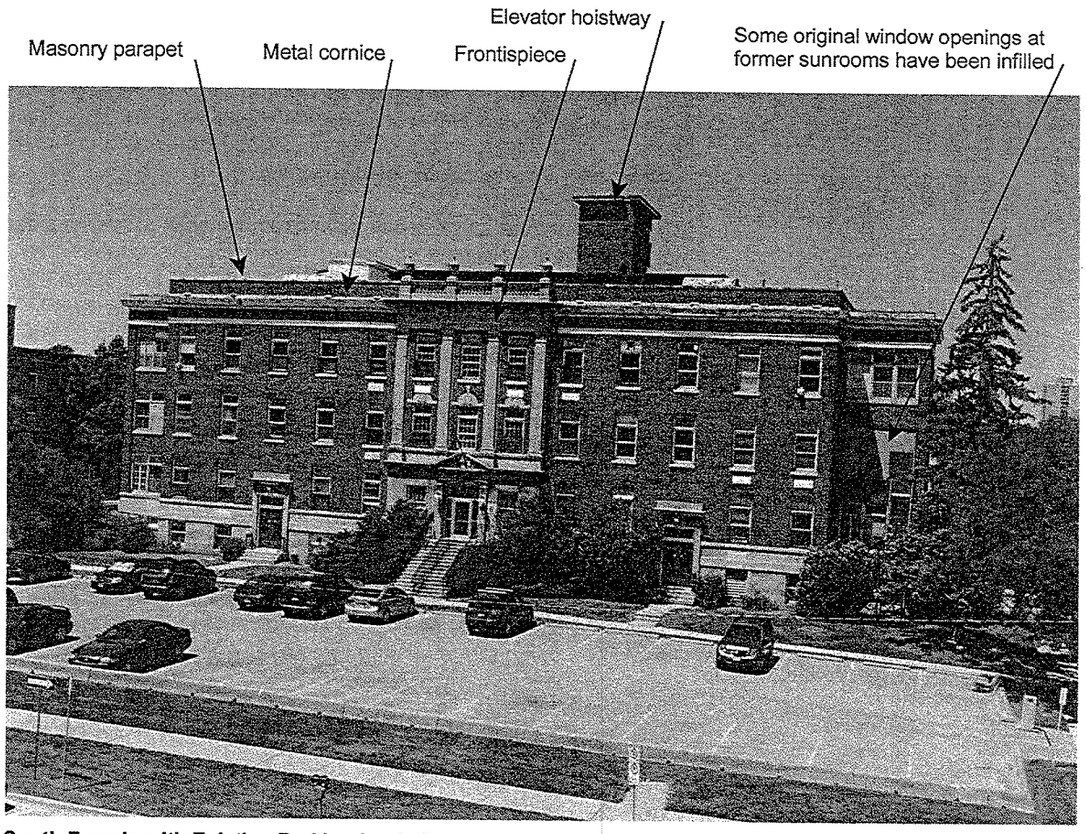
A structure was added to the roof of the South Wing in 1978. This addition was designed by Skinner & Marshall Architects of London and measures approximately 80' x 24'. The primary purpose for the addition was to provide a playroom for patients.

The roof addition is constructed of prefinished insulated metal cladding and roofing bearing on a foundation of concrete block. The floor is suspended above the original 1922 roof on open web steel joists and composite steel pan with 2½" concrete topping.

One of the 1945 elevators was extended to the roof addition. The two 1922 stairways were modified to provide egress.

The addition does not occupy the entire roof area; it allowed for an outdoor play area shielded behind the tall south parapet wall. Flat roofs remain to the east and west of the roof addition, including flat roofs above east and west sun porches.

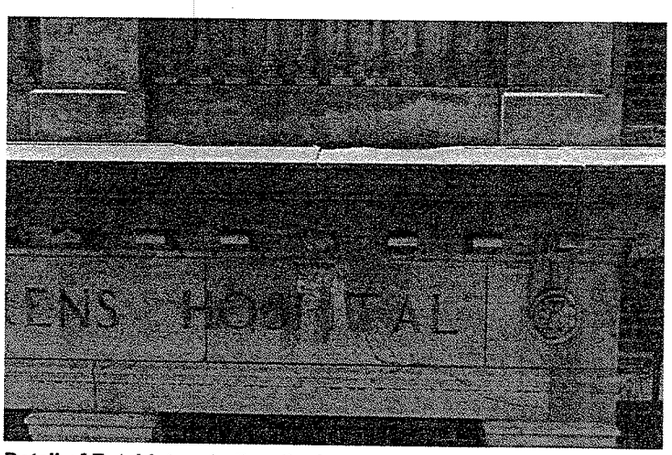
The nature of construction of the roof addition indicates that it was intended as a short-term, economical solution to meet the then current hospital accommodation needs. This addition is not of similar quality to the 1922 and 1945 buildings and, thus, may have limited applications in terms of adaptive reuse.



South Facade with Existing Parking Lot in Foreground

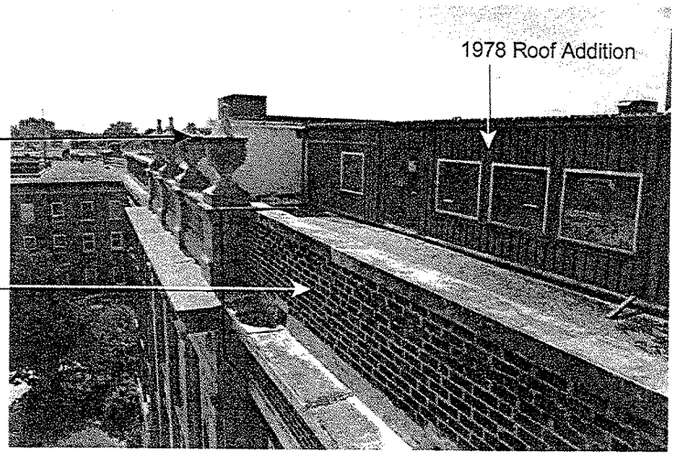
Limestone units appear to generally be sound. Potential for ferrous anchors and connectors is a concern, but there is no existing visible evidence of corrosion or oxide-jacking due to rusting of such components.

Wide, horizontal shelf at base of balustrade should be protected with lead-coated copper flashing to prevent erosion of masonry and surface washing, as visible at "P" in carved word "Hospital".



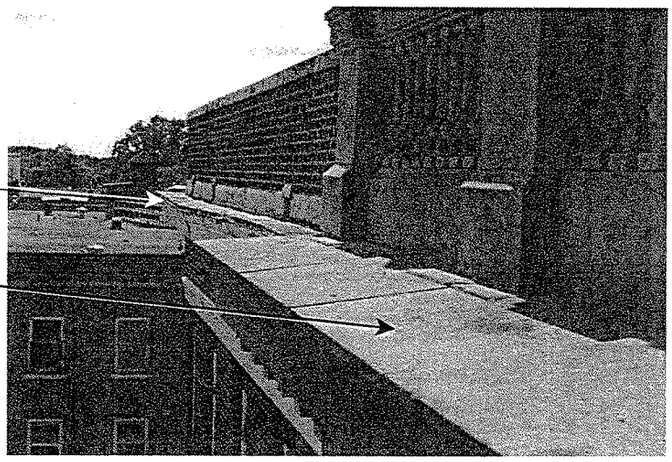
Detail of Entablature in Frontispiece

Old War Memorial Children's Hospital
London Hospital, South Street Campus



Limestone urns at top of balustrade appear to be sound, although pinnacle of second urn is missing.

Brick masonry parapet is in poor condition and requires disassembly and replacement.



Metal cornice has visible sag, indicating weakness in wood-framed support system.

Lead-coated copper flashing is recommended for deep shelf at top of stone cornice to protect joints between stone units.

Sections of metal cornice have corroded through the metal. Mortar fines are visible at opening in the cornice.

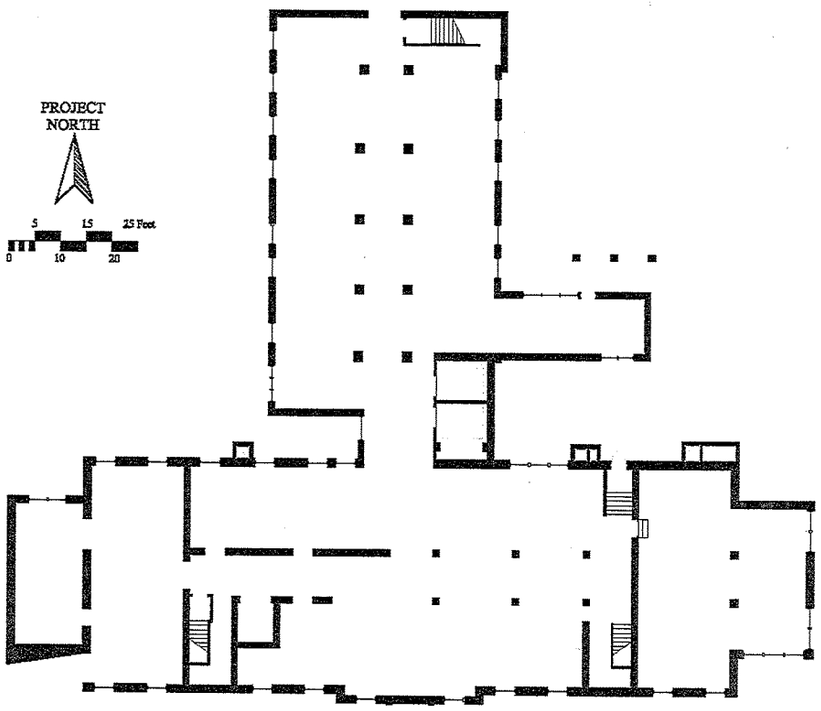
Flush mortar joint presents as a wide, crude joint because mortar is smeared over irregular shoulders of brick units.

Structural Parti Drawings

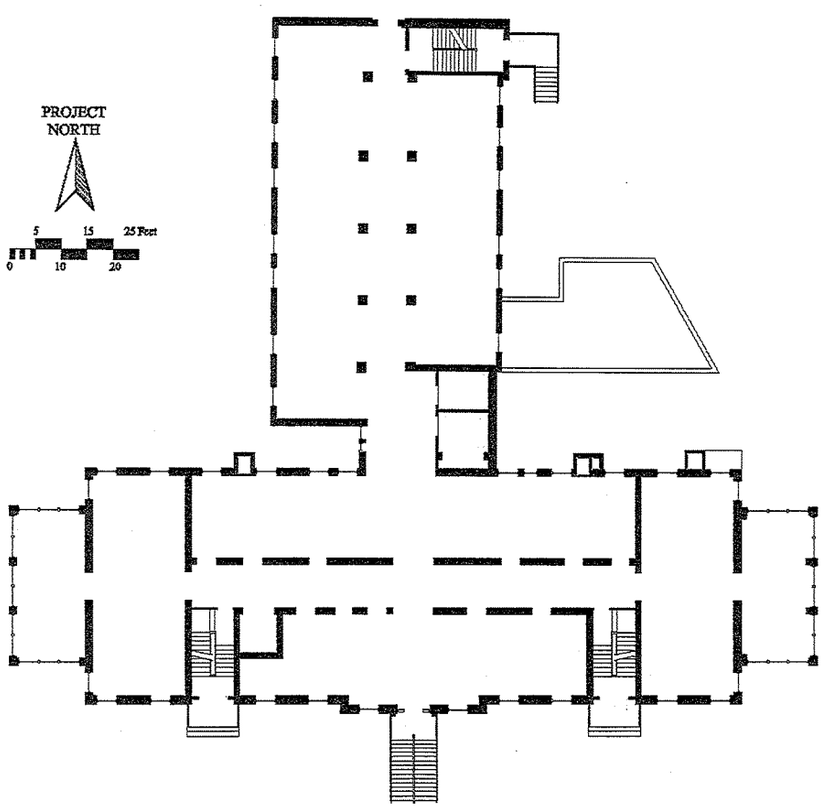
Floor plans on the following pages show the existing raw structural elements, such as exterior walls, load-bearing interior walls, columns and open shafts. Essential enclosures are also shown around existing stairways, hoistways and shafts.

The purpose of these drawings is to indicate what elements would remain after non-essential constructions are removed from the building prior to renovations. Retaining the existing structural elements represents significant cost savings compared to removing/replacing and/or modifying the structure.

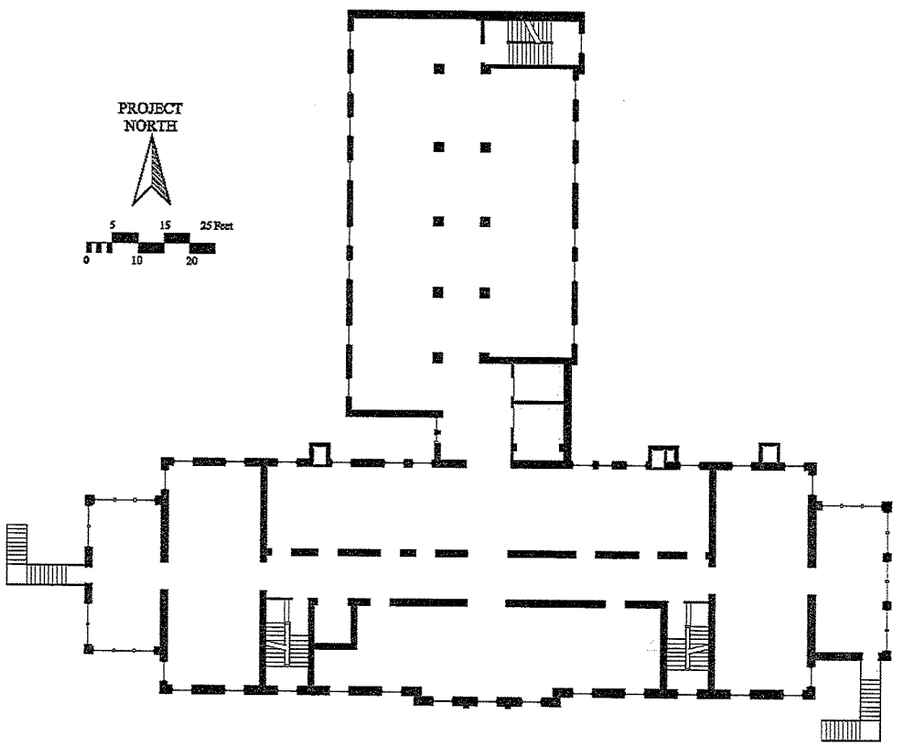
Structural Parti - Basement



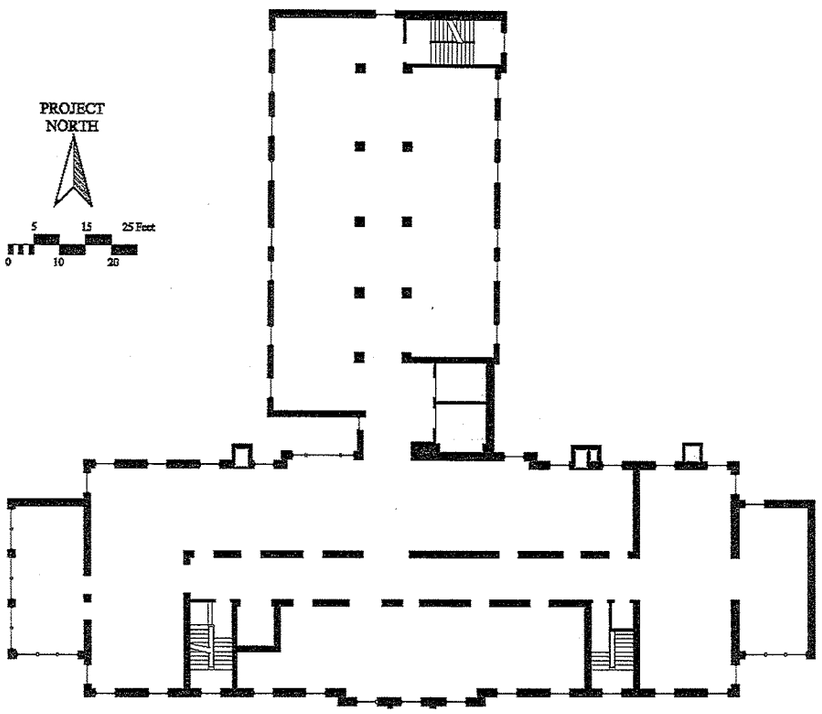
Structural Parti - First Floor



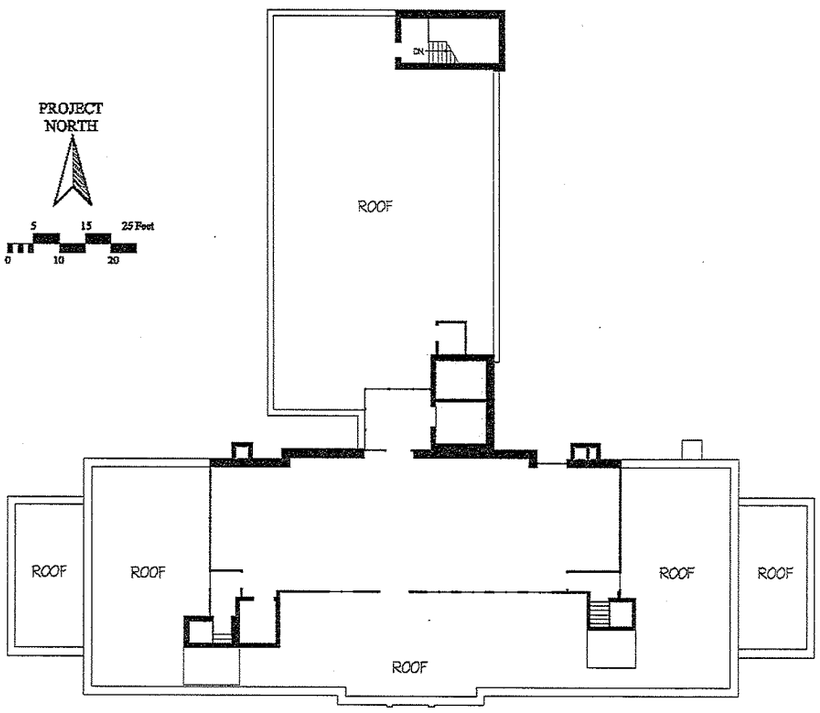
Structural Parti - Second Floor



Structural Parti - Third Floor



Structural Parti - Fourth Floor



Exterior Masonry

Exterior bricks throughout are heavily textured red tapestry units with flush mortar joints. The 1922 facebrick is laid in common bond pattern with Flemish headers (double stretchers) every sixth course. The 1945 facebrick is laid in common bond pattern with headers every sixth course.

The flush mortar joint involves smearing of mortar over faces of adjacent brick creating a visually uneven, excessively wide and unfinished appearance. This type of mortar joint leaves thin mortar edges that are susceptible to water penetration and it is not considered one of the better mortar joints in terms of weatherability. Having said that, mortar joints in facebrick generally appear to be in reasonable condition with localized areas of repair and/or repointing required.

Bricks were removed from walls at several randomly selected locations to review condition of brick units, mortar and backup masonry. At least one of these sampled areas included a section of severely weathered mortar joints in the south wall. Brick units at all locations were found to be sound and in good condition. Mortar varied from fair to good, including mortar at the severely weathered parapet section, where power tools and chisels were required to cut out mortar. Backup masonry was also in fair to good condition.

Notwithstanding the above, brick masonry at parapets (tops of walls) throughout the 1922 building should be replaced. Parapets have been subject to previous repair attempts, including installation of coating system on roof side of parapet masonry. Mortar joints are severely weathered and void of mortar at many locations. Stepped cracks were observed at many building corners. Parapet copings of stone and metal clad wood are in poor condition, allowing water to enter tops of walls. Metal cornice and metal belt course at parapet require replacement due to deterioration. It is therefore anticipated that parapets will require disassembly and reconstruction from near roof level to top of wall.

Bulging was observed in west wall brick of 1945 addition between heads of third storey window and top of wall. The cause for bulging was not readily visible and will require further investigations. It is suspected that moisture has entered the top of walls through joints in coping stone units and will be found to be a contributing factor. It is anticipated that some disassembly and repairs will be required for this section of brick around most of the 1945 Addition. When next reroofing, it is recommended that coping stones be clad with metal over membrane underlayment.

Masonry at tops of chimneys and linen chutes is deteriorated and in poor condition. These elements originally extended above top of roof parapets but were removed down to top of parapet at some time; their original functions are redundant. It is anticipated that upper sections of these elements will require disassembly and reconstruction complete with new cap flashings.

Exterior stone details appear to be of Indiana Limestone. These elements include frontispiece complete with balustrade and urns, window sills and keystones and foundation plinth. Stone units generally appear to be in good, sound condition, with some localized areas of spalling and cracks, which can be repaired. The light colour and open pour structure of the stone has lead to visible soiling from atmospheric pollutants and runoff. It is recommended that the stone be cleaned prior to repairing.

Iron dowels, cramps and ties were incorporated in the masonry. These items will corrode if exposed to water and moisture. As they corrode, their physical dimension increases by two to three times, causing stress and strain on surrounding stone and will result in fractures in the stone. This process is commonly known as "rust-jacking" or "oxide-jacking". Although there is currently little visual evidence that this is occurring, it is a concern and will require detailed investigation prior to finalizing a masonry work package.

Painted steel lintels are provided at masonry openings. The lintels are rusting through the paint and there is evidence of rust jacking at some openings. From a long-term maintenance standpoint, it is recommended that the existing steel lintels be removed and replaced with either galvanized steel or stainless steel units.

Installation of mechanical grilles, at various locations, has involved removal of some stone and brick. Placement of these grilles does not appear to have been done with an understanding of their visual impact; grilles in the south facing frontispiece are most unfortunate. Efforts should be made to remove ill-placed, unsightly mechanical grilles when next renovating the building.

The 1922 building has a metal cornice band wrapping around top of exterior walls at all but the north elevation. The cornice projects approximately 20" from the brick wall. It is constructed of galvanized steel (sheet metal) over wood sheathing and wood framing with wood lookouts embedded through the masonry wall. The upper surface of the cornice is back-sloped to drain toward the brick wall. Scuppers are provided periodically to drain the cornice top to the flat roof beyond the parapet.

A metal belt course wraps around the same walls, located approximately 20" below the metal cornice. The belt course has a shallow profile and is just slightly proud of the brick wall.

Paint finish on metal cornice and belt course has failed and the metal is corroded at both exterior and interior sides. Wood framing and sheathing supporting the cornice has rotted sections due to water penetration. It is anticipated that the metal cornice and belt course would be replaced when rebuilding the parapets. Lead-coated copper is recommended to provide the most serviceable, long-term installation for these elements.

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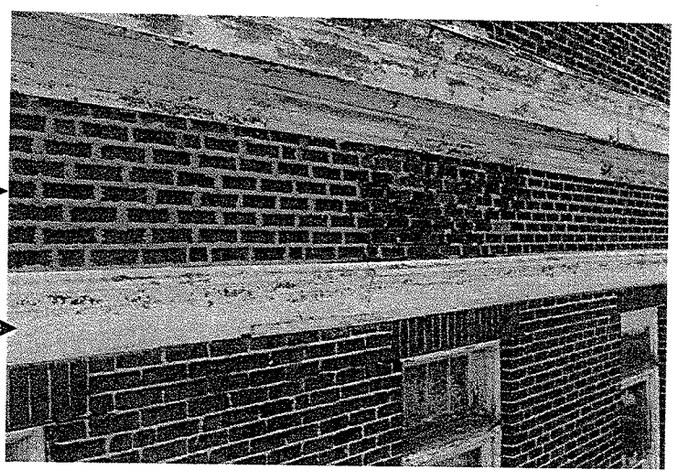
Metal cornice.

Mortar joints between metal cornice and belt course have previously been repointed. Note area of void and weathered joints above window head.

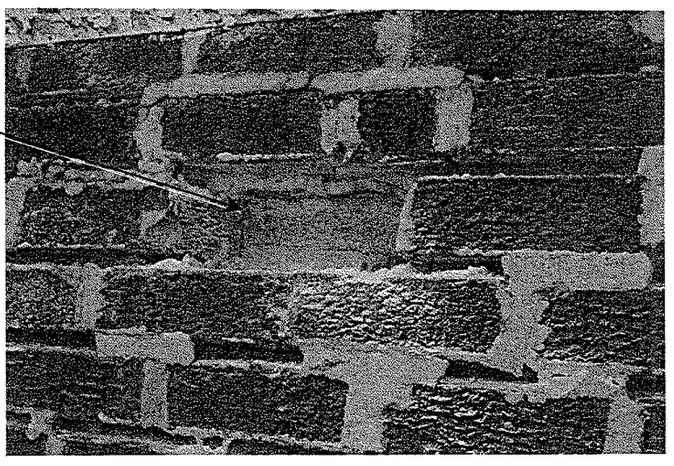
Metal belt course trim.

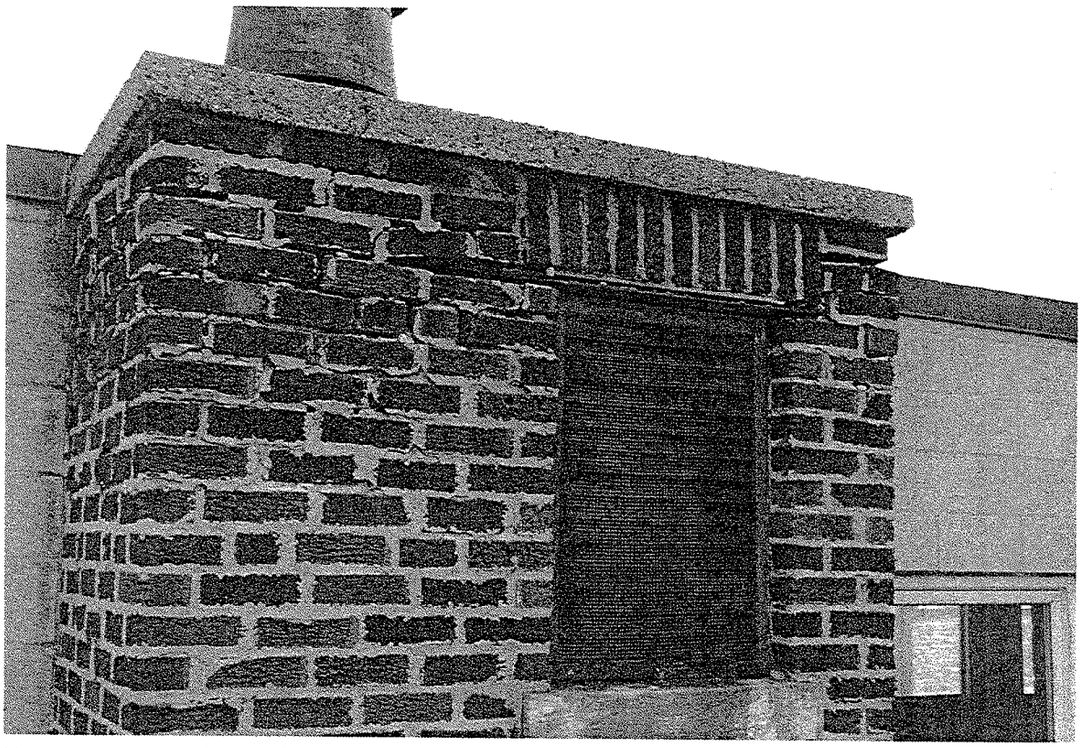


Previous attempts to repair and repoint mortar joints were poorly executed with inappropriate materials.

It is recommended that the masonry parapets be disassembled and reconstructed with all new materials.

Notwithstanding severe visible mortar joint deterioration, the remaining mortar required power equipment to cut out sample brick. The brick unit was found to be sound.





Masonry at top of northeast chimney is in poor condition and require reconstruction.

Windows

The original windows throughout the building are wood units with paint finish. The windows are typically single-glazed, single-hung wood units. Exterior storm units are provided for some windows. Many window openings have been modified to accommodate portable air conditioning equipment.

Paint finish on windows has generally failed, leaving raw wood exposed to weather. Condensation at inside face of glazing has resulted in rotting of glazing bars, sashes and frames. Rotting has also been encouraged from exterior due to deterioration of glazing putty.

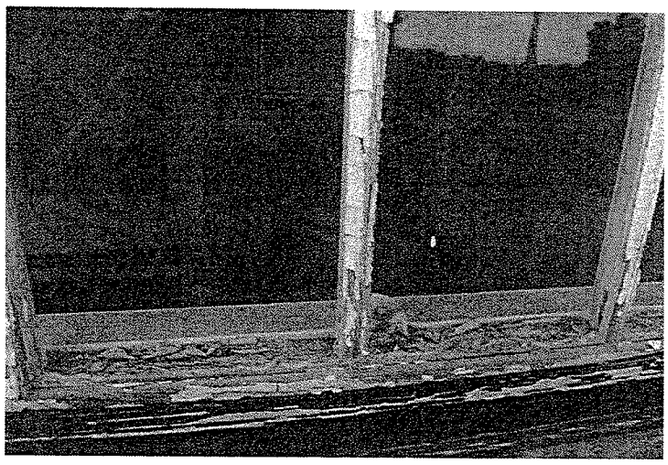
Wood window components at elevator lobby for 1978 Roof Addition are severely rotted, allowing weather entry and deterioration of adjacent wall masonry. Immediate repairs, temporary or otherwise, are required to avoid further damage.

A detailed window-by-window assessment would be required to determine which, if any, windows can be restored for continued use. It should be expected that many windows will require significant repairs, involving replacement of wood components and glazing, or complete replacement of the window unit.

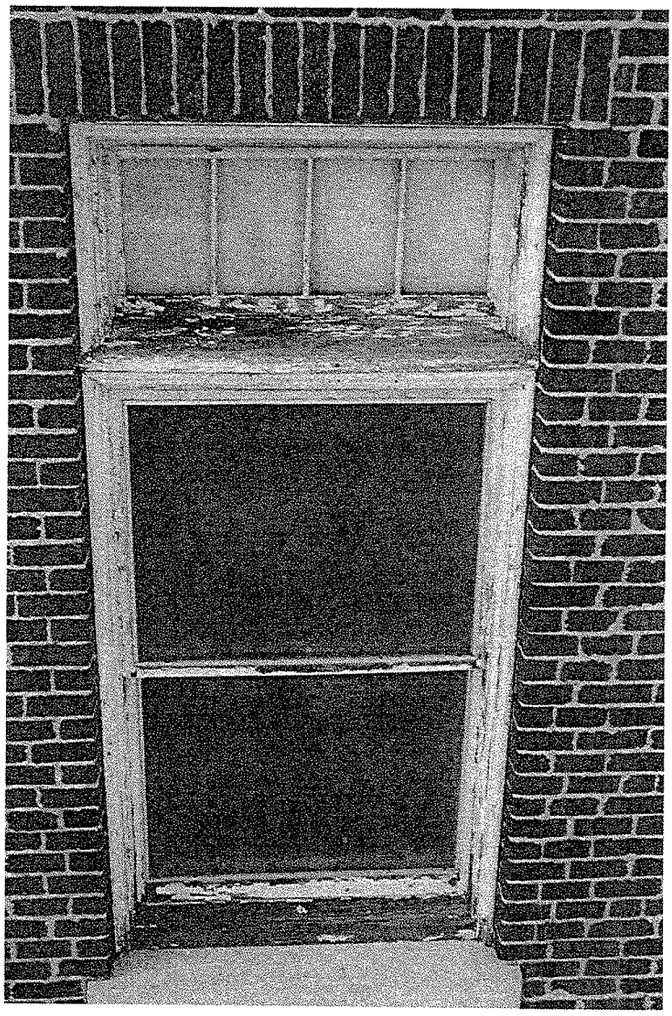
Expectations of building occupants for the proposed adaptive reuse may also drive the decision to replace all windows. It is reasonable to anticipate that the cost to repair and restore the existing windows, plus provide storm units for increased thermal comfort, will likely be more than the cost to replace the windows with similar looking insulated glass units.

Glazing putty and paint finish is no longer present at some glazing bars. Accumulation of paint fragments at inside of glass is primarily due to condensation on the uninsulated windows.

Paint finish has typically failed on wood sash and sill components leaving raw wood exposed to weather.



Steel angle lintels supporting brick have rusted and expanded resulting in distress of adjacent brick masonry. All steel should be removed and replaced with new galvanized steel or aluminum units.



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Roofing

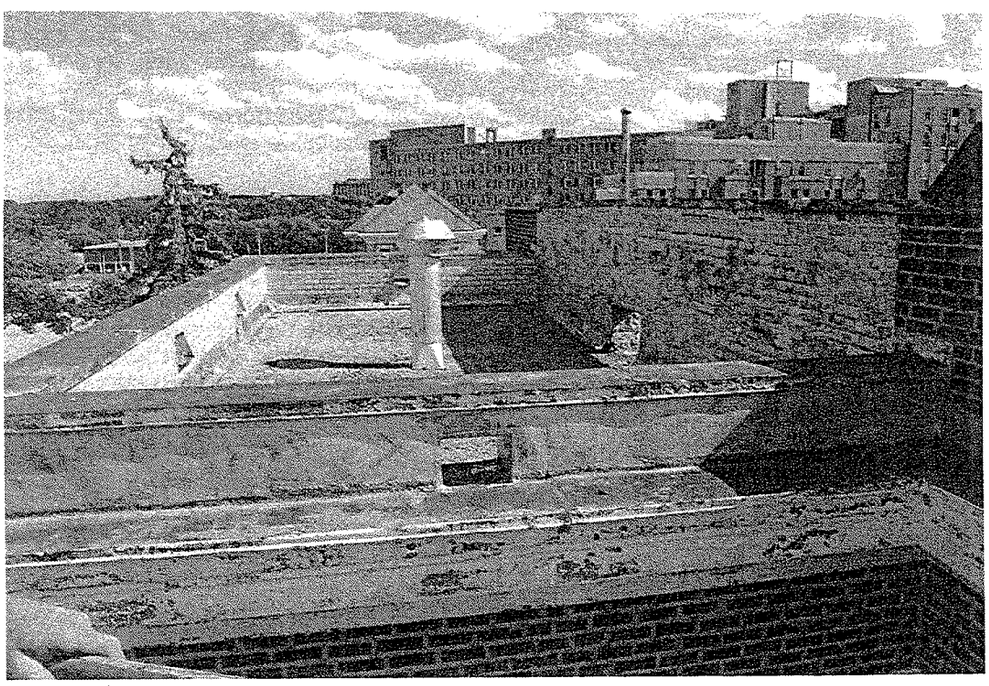
Existing flat roofing is a gravel-surfaced, built-up asphalt and felt roofing system drained by roof drains. No roof leaks were observed during our site visits. Roofs should be inspected and cleaned at least twice per year; spring and fall are common inspection times. Until the building is renovated and re-occupied, it is recommended that regularly scheduled, building walk-throughs be conducted to detect leaks at the earliest opportunity.

During one site visit, it was noted that a roof drain was clogged by organic matter and water was ponded on the roof to a depth of approximately 3". Ponding water will deteriorate the asphalt roofing system.

The two south stairways have selvage roofing, coated with aluminized paint system. Seams have previously been patched with mastic.

Roofing at 1978 Roof Addition is high-rib, prefinished metal panels with exposed fasteners. Rust is visible adjacent to cut edges and breaks in the roof panel profile.

It is reasonable to anticipate that all roofing systems will require replacement when converting use of the building. This is to allow for renewal of the most critical building enclosure element, upgrading of insulation and to facilitate installation of any new roof penetrations and rooftop equipment. An insulated, 2-ply modified bitumen roofing system with tapered insulation is recommended as the best value, most durable roofing system.



Backside of brick parapets have aluminized paint coating system applied, which is damaging to the masonry. Note scuppers through parapets to drain back-sloped cornice.

Insulation
The existing building is essentially uninsulated. Walls range from 13" to 17" thick solid masonry with interior plaster finish. Some amount of insulation is expected to be incorporated in existing roof assemblies, however, this is a moot point since it is anticipated that all roofing will be removed and replaced.

Installing insulation at inside of exterior walls is likely to be required by any adaptive reuse of the building. Increased levels of insulation can be easily incorporated in the roofing assembly when next replacing roofing.

Interiors
Is it anticipated that most interior finishes will require removal and new interior finish systems installed to allow for replacement and upgrading of information technologies, mechanical, electrical, insulation and vapour barrier system. Consequently, this report did not include for detailed analysis of such existing systems, because where such systems are present they are outdated or inadequate.

Barrier-Free Access and Facilities
Once detached from neighbouring buildings, Old War Memorial Children's Hospital is left with stair access only at all entry points and, thus, the building does not provide for barrier-free access.

Internally, floor plates are at a single level for each floor with elevator access provided between floor levels. Existing corridors are generously wide and all but some existing service closets have minimum 36" wide door openings.

There are numerous existing washroom facilities throughout the building that are equipped as barrier-free. This may be of little consequence since the interior is proposed to be gutted and completely renovated, including for barrier-free access and facilities as required to suit the adaptive reuse of the building.

There is a large enough area of property surrounding the building to allow for flush building access and convenient parking.

Barrier-free accessibility should be considered a primary objective for just about any adaptive reuse. Provincial legislation entitled "Access for Ontarians with Disabilities Act" requires accessibility compliance by the year 2025 for buildings intended for use by the public. A successful appeal to Human Rights Commission could initiate an earlier compliance date.

Hazardous Building Materials
A Hazardous Building Materials Survey was not included as part of this Report.

A Hazardous Building Materials Survey includes a room-by-room inspection of materials prepared by a specialized Environmental Consultant. Samples of suspect materials are sent for laboratory analysis and a written report is issued documenting the process and findings. As discussed in the Preface to this Report, building Owners are obligated by Provincial law to know of the existence of Designated Substance on their property and to take action to remedy and maintain same.

Current Occupational Health and Safety Act identifies eleven substances as Designated Substances in the workplace: acrylonitrile, arsenic, asbestos, benzene, coke oven emissions, ethylene oxide, isocyanates, lead, mercury, silica and vinyl chloride. A Hazardous Building Materials Survey will also typically comment on the presence of other non-listed materials such as mould and animal droppings (quano).

Asbestos
London Health Sciences Centre had commissioned an Asbestos Building Material Survey for this building. The purpose of the Survey, prepared by Golder Associates Ltd. of London, dated 27-Aug-2008, "was to identify accessible ACMs (asbestos containing materials) that require monitoring as part of an Asbestos Management Plan". This Survey is strictly for asbestos and did not review the presence of other Designated Substances. Furthermore, the 2008 Golder Survey is limited to visible ACMs stating that "it is possible that undiscovered ACMs may be present within inaccessible locations such as wall cavities or above inaccessible ceilings". This approach and scope of survey is standard for an intact building.

It was noted that the Golder Survey included for the building area immediately north of, and attached to, the section of building that is referred to in this Report as the North Wing. Therefore, the full scope of the Golder Survey would not apply to the building as defined in this Report.

The following asbestos containing materials have been identified in the building:
- aircell mechanical insulation on straight run pipes;
- parging on straight run pipes;
- preformed block on straight run pipes;
- parging cement on fittings;
- plaster;
- various lay-in ceiling tiles;
- vinyl floor tile and vinyl sheet flooring;
- cellulose and tar paper on straight run pipes;
- transite asbestos cement;
- mastic;
- suspect laboratory equipment;
- window glazing; and
- caulked sealant.

A Summary Report on Updated Decommissioning Cost Estimates for London Health Sciences Centre - South Street Campus was prepared by AECOM Canada Ltd. dated14-May-2010. In that update, two qualified and experienced asbestos abatement contractors provided estimated asbestos abatement and demolition costs. The contractors were provided with documentation and representatives conducted a site visit. The two cost estimates for abatement work (not including demolition) were $210,000 and $700,000, averaging in at $450,000.

Of importance to the proposed adaptive reuse of the building, the Golder Survey "recommends the following be considered if future renovations are planned:

- Should planned renovations involve the removal of the materials identified as asbestos containing, ensure that all appropriate precautions (as detailed in O. Reg. 278/05) are followed;
- Disturbances to materials listed in this (Golder) report as presumed ACM should either be sampled prior to disturbance, such as building maintenance activities, renovation or demolition, or treated as ACM and handled in accordance with the requirement of O. Reg. 278/05; and
- It is possible that undiscovered ACMs may be present within inaccessible locations such as wall cavities or above inaccessible ceilings. If encountered during future renovations or demolition, suspect materials should be treated as asbestos-containing until proven otherwise."

The other Designated Substances were not included in the asbestos-only survey. Based on the age of the building and nature of use, it is reasonable to anticipate that some of the other Designated Substances are present on the site and could be encountered during renovations or demolition. Provincial Regulations require a comprehensive survey be conducted to determine the presence, location and condition of such materials.

The following is a list of potential hazardous materials that may be present at the site:

Lead
Lead containing paints may have been used throughout the building at both interior and exterior surfaces. Lead is also suspected in:

- pipe joint solder;
- cast-iron pipe bell joint sealant; and
- wall assemblies of medical diagnosis rooms.

Lead containing materials will not generate airborne lead dust in the absence of disturbance. Significant, harmful lead dust levels can result when uncontrolled work procedures are used on lead-based materials.

Procedures outlined in Ministry of Labour document "Guideline - Lead on Construction Projects (2004)" should provide an adequate standard for the handling or disturbance of the material.

Disposal of construction waste containing lead is regulated by Ontario Regulation 347, as amended by O. Reg. 558/00, and may be subject to Leachate Criteria of this Regulation.

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Mercury
Mercury is suspected to be contained in wall-mounted thermostats and in fluorescent light tubes. The presence of mercury in these materials poses minimal risk to building occupants and workers, provided the equipment containing mercury is handled properly and mercury is not allowed to escape. Mercury waste must be handled and disposed of according to Ontario Regulation 347, as amended by O. Reg. 558/00, and may be subject to Leachate Criteria.

Silica
Silica may be present in concrete and masonry materials and in ceiling tiles. Disturbance of silica will occur during demolition of walls and ceilings, saw cutting of concrete floors and removal of lay-in tile ceilings containing silica. Work area enclosures, wetting of materials, negative air pressure and respiratory protection are required by Ontario Regulation 845/90, amended by O. Reg. 111/04, when dealing with silica.

PCBs
According to Hospital Maintenance Staff, all fluorescent lighting fixtures or ballasts have been replaced in recent years with non-PCB ballasts.

Each ballast has an identification number which can be checked against manufacturers listing of serial numbers available from Environment of Canada Identification of Lamp Ballasts Containing PCBs Report EPS 2/CC/2 (revised) August 1991.

Federal Regulation SOR/2008-273 requires that all PCB ballasts and PCB containing equipment be removed by 31-Dec-2025. PCBs must be disposed of as hazardous waste in accordance with Ontario Regulations 362/90.

Mould
Mould may be present at locations of water intrusion through the building enclosure and in areas of higher humidity. The lack of ongoing activity in the building, reduced air circulation and warm interior temperatures, provides conditions that will encourage mould growth.

Any mould affected materials should be removed and disposed of using Level 2 mould abatement guidelines per Environmental Abatement Council of Ontario's 2004 document titled "Mould Abatement Guideline".

Guano
Bird and bat guano is unlikely since there is no attic space in the building.

Guano can contain fungi that causes a potentially serious respiratory illness known as Histoplasmosis. For health reasons, it is required that guano be removed using remediation procedures described in Appendix 'B' of the Environmental Abatement Council of Ontario's (EACO's) 2004 document, titled "Mould Abatement Guidelines".

General Hazardous Materials Recommendations:

- An Asbestos Management Program is required because asbestos containing materials (ACM) were identified in the building. A specialized Hazardous Materials Consultant should be engaged to assist in preparing this Program. Trained municipal staff or a qualified abatement contractor should be engaged to execute maintenance or removal/disposal work. An Asbestos Management Program would not be required if all asbestos containing materials are removed from the site.
- A detailed listing of required ACM repairs and removals starts on Page 12 of the Golder Associates Ltd. survey contained in the Appendices.
- A comprehensive, room-by-room Hazardous Building Materials Survey is required to determine what, if any, other Designated Substances are present at the site. This Survey is required prior to commencing work at the site.
- Construction workers require appropriate training and protective equipment when exposed to airborne particles of hazardous materials.
- Dispose of spent fluorescent light tubes as hazardous waste using a licenced recycling contractor.
- Recycle and/or dispose of refrigerant gases from mechanical equipment using a licenced recycling contractor.

Mechanical & Electrical Systems

Mechanical and electrical systems were not reviewed in detail as part of this Report. The change in use contemplated would generally require that almost all of the existing mechanical and electrical infrastructure in the building be removed and replaced.

The following is a general, brief assessment of these systems provided to emphasize the need for replacement systems when considering adaptive reuse of the building.

There is no building-wide air ventilation or air conditioning system. Heat from the central heating plant (Building #68) enters Old War Memorial Children's Hospital via an underground service tunnel system and connects to the original header pipe system in the former boiler room at the east end of basement in the South Wing. The heating system is low pressure steam that is distributed throughout the building to cast-iron terminal radiator units. LHSC has indicated that steam heat, provided by the central heating plant, will continue to be provided to the building for the time being.

Old War Memorial Children's Hospital does not have an existing fire sprinkler system but does have a fire standpipe system.

Originally, the building had a coal-fired boiler in this room. The original coal storage room remains underground adjacent to the north wall of the boiler room. Two streel access grates are visible at grade level. The concrete roof slab for this room is in a deteriorated condition as noted earlier in this report.

Air conditioning has been provided locally on a room-by-room basis by installing portable A/C units in windows.

The electrical service to this building is fed from an adjacent structure, which is scheduled to be removed. Therefore, a new electrical service will be required to service the subject building.

It appears that The Old Thames Valley Hospital abutting the North Wing is fed from the subject building. This service would obviously be severed when removing The Old Thames Valley Hospital.

Conclusion

With the exception of the 1978 Roof Addition, the overall building is structurally robust and it is generally in good condition with only minor or localized structural deficiencies or concerns. It is our opinion that the original 1922 building and the 1945 addition are sound buildings and they warrant strong consideration for adaptive reuse and continued service.

Floor plan drawings provided earlier in this Report, indicate existing load-bearing structural elements. Existing door and window openings are shown in walls.

The difference in structural systems between the two phases of construction is readily apparent in the drawings. Corridor and stairway walls in the 1922 building are thick, load-bearing brick walls, whereas the 1945 addition has two rows of columns in the corridor walls. The implication is that non load-bearing walls can be removed and/or modified relatively easily and economically. Load-bearing brick walls would be more costly to remove and replace with beams, however, modifying smaller (door size) openings in these walls may be possible with modest cost. Removing or modifying steel columns may not be feasible and would represent significant cost.

Adaptive Reuse

It is our opinion that Old War Memorial Children's Hospital is a good candidate for adaptive reuse.

Some of the tangible attributes of the existing building include:

- the building is intact and structurally sound;
- provides for approximately 36,370 sq.ft. (3,378.8 sq.m.) of total useable floor area;
- constructed of non-combustible materials;
- approximately 12' (3.6 m) tall, floor to floor heights that will easily accommodate building structure and mechanical/electrical installations;
- durable exterior of stone and brick masonry;
- large windows with good distribution throughout exterior walls;
- efficient interior circulation system provided by central, double-loaded corridors;
- good distribution of stairways for communications between floors and egress;
- existing elevator hoistway centrally located in floor plate;
- many interior partitions in 1922 building and most partitions in 1945 addition are non load-bearing and could readily be removed or modified; and
- finishes at corridors and stairways are durable, institutional grade materials.

The configuration of interior spaces is limited by the building form and existing building structure. Both wings are long and narrow providing potential room depth of approximately 15' (4.6 m) to either side of existing central corridors. Corridor walls in the original 1922 building are poured concrete at basement level and multi-wythe brick masonry at upper floor levels, which makes wall removal or modification more involved and expensive. Greater flexibility is provided in the 1945 addition since corridor walls are non load-bearing and there are only ten steel columns (five at each side of corridor) at each floor plate in the North Wing. Stairway and elevator hoistway in 1945 addition are considered shear walls and are part of the essential structure.

Existing stairways and elevator hoistways are appropriately placed to serve a wide variety of potential building uses. The hoistway is large enough to accommodate a new car that can comply with barrier-free design standards. There are significant structural and economic advantages to retaining the existing stairways and hoistways in their current locations.

Site Context

The site of the subject building has many positive attributes, including:

- The site is located close to the City's core, is accessible from Wellington Road (one of the City's major arterial streets) and South Street is a public transit route.
- The Thames River at south edge of the hospital campus provides for distant views and vistas, interfacing with the natural environment, and is connected to a continuous riverside park system.
- This building is just one property of many that forms the approximately 25 acre (8.5 ha) site. This is a substantial parcel of land that is available for redevelopment and is adjacent to the City core.
- Existing parking is provided on site adjacent to the building and additional parking is provided at existing surface parking lots on the east side of Colborne Street.

The location of the building site on the former hospital campus, and in the context of the City, is a determining factor in the range of potential reuses. The 2011 SoHo Community Improvement Plan concluded that the Hospital lands provide an opportunity to preserve and celebrate heritage resources to ensure that the hospital remains etched in the community's memory. A diversity of housing types was promoted as a means for growing "in place".

Old War Memorial Children's Hospital is located on the north side of South Street at the corner of Colborne Street. This building is located at the east edge of the hospital campus and thus is a transitional building between the existing residential neighbourhood and the yet to be developed bulk of the hospital campus.

The surface parking lot on the property, located immediately south of the subject building, provides for approximately 41 parking spaces. There is additional capacity for parking in the paved boulevard at Colborne Street and in existing parking lots on the east side of Colborne Street (approximately 140 spaces at lot north of South Street and 146 spaces at lot south of South Street). It is our understanding that the two surface parking lots on the east side of Colborne Street are not currently owned by the City.

At this time, there is a lack of local conveniences to support redevelopment of the Hospital property. It is anticipated that such conveniences (e.g., grocery store, laundry mat) will emerge as development of the site progresses.

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Potential Building Uses

A meeting was convened in August 2011 to discuss various commercial, institutional and residential adaptive reuses for the building and overall Hospital property. This meeting was attended by members of City staff, including Administration, Social Services and Planning and Development, and by professional realtors experienced with commercial and residential developments and familiar with the London marketplace.

It was concluded that the location, site and buildings were not well suited for commercial and institutional uses. Generally, this type of tenant requires large open spaces as opposed to the restricted room sizes dictated by the existing building structure and circulation systems. The realtors reported that the subject building is too small for a single commercial tenant. It was also reported that there currently is surplus inventory of such spaces in the City and the potential rental rates required to pay for the proposed renovations would be in the range of $35/sq.ft. to $40/sq.ft. whereas the marketplace is currently offering and receiving close to $19/sq.ft. for rents. City operated long-term care facility was considered a no-go.

Existing structural and space configurations simply do not work for residential condominiums and high-end residential rentals. Suite sizes of approximately 1,200 to 1,500 sq.ft. are considered appropriate for these uses. The narrow fifteen foot width of rooms at either side of central corridor would require the suites to be approximately 80' long. Only fourteen to sixteen suites could be accommodated in the building. It was estimated that each condo would have to sell for a minimum $350,000 to $500,000 just to cover the raw cost of renovations. This level of pricing well exceeds that of the local marketplace for similar properties.

Some form of social housing was considered the best adaptive reuse for the building. The smaller suite sizes can handily fit within the existing structural system and floor plate configurations. Localized removal of some walls, creation of new wall openings and installation of new walls would be required to accommodate a variety of bachelor, one bedroom and two bedroom suites. On average, one new residential suite can be created from every three patient rooms. Overall, it is anticipated that 37 suites could be accommodated in the existing building.

Social housing could take the form of affordable, geared-to-income, or assisted housing. It was reported by staff that a notional allocation of $150,000 per suite may be forthcoming to the City of London from Provincial agencies to support social housing projects. It was also reported that there is a strong demand for such housing; the current waiting list is approximately 2,000 households long for the under 60 age group. Conversion to social housing is consistent with SoHo Community Improvement Plan. It was suggested that the City might seek a partner to operate this type of facility.

The location of the property is ideal; it is located close to the city core, has available public transit and is a transitional property between the larger hospital site redevelopment and the existing mix of modest housing surrounding the site.

Preliminary Building Code Interpretation

The former use of the building as a hospital would classify the building's existing occupancy as Group B, Division 2 for care and treatment facilities. Changing the use of the building to Group C, residential occupancy, will involve application of sections of the Ontario Building Code (OBC) applicable to the proposed new use, and it is also likely to require re-zoning and potential amendments to the Official Plan.

The existing building area (footprint) is 10,845 sq.ft. (1,007.5 m^2). The building is constructed of non-combustible construction and is considered to face two streets.

With the existing 1978 roof top addition, the building is four storeys in building height. In this configuration, OBC Article 3.2.2.45 would apply, requiring installation of a fire sprinkler system. This Article permits combustible and non-combustible construction and requires:

- floor assemblies to be constructed as fire separations with a minimum one hour fire resistance rating;
- mezzanines to have a minimum one hour fire resistance rating;
- supporting structures to have a minimum one hour fire resistance rating.

If the 1978 roof top addition was removed, the building would revert to a three-storey building height, which would be governed by OBC Article 3.2.2.44, which does not require a fire sprinkler system, provided the building is of non-combustible construction. The requirements for this Article are the same as listed above with the additional requirement of a minimum one hour fire resistance rating for the roof assembly.

If the 1978 roof top addition was removed and two new floors were constructed on top of the existing roof, to occupy the full footprint of the building, then OBC Article 3.2.2.43 would govern. In this case, the two-storey addition would be of non-combustible construction and a fire sprinkler system would be required throughout the building. The same fire rating applies as listed above for Article 3.2.2.45.

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Conceptual Design

The City Zoning Bylaw provides for minimum suite sizes. The City's Service Manager for Social Housing may establish suite sizes and amenity requirements based on other housing in the City. The default suite sizes provided in Canada-Ontario Affordable Housing Program are listed in the table below.

Suite Sizes	City Zoning Bylaw Minimum Suite Size		Canada-Ontario Affordable Housing Program	
	sq.ft.	sq.m	sq.ft.	sq.m
Bachelor	398	37.0	450	41.8
One Bedroom	506	47.0	650	60.4
Two Bedroom	614	57.0	850	79.0

Sizes of suites shown in the following Conceptual Design Drawings comply with the Zoning Bylaw minimums and, in some cases, exceed the above maximum sizes. This is due to limitations imposed by the existing floor plate configuration, structural elements and interior circulation system.

On the four main floor levels in the existing building, the Conceptual Design provides for a total of 37 suites, as follows:

12 2-bedroom suites;
24 1-bedroom suites; and
1 bachelor suite.

The 1978 Roof Addition was not built to the same institutional construction quality of the earlier buildings and the enclosed space cannot be readily subdivided into residential suites having exterior window walls (for daylight, views and ventilation), and still utilize the two existing stairways for egress. The high parapet walls surrounding the 1922 building obscures views. This existing space may be best utilized as one or two rather luxurious penthouse suite(s) or be designated as a common or fitness room.

Alternatively, the 1978 Roof Addition could be removed and a new roof top addition with suites constructed that would envelope the entire roof area. The approximate five foot height difference between 1922 and 1945 roofs would have to be taken into account and both stairways and elevator hoistways would have to be extended upwards.

An initial structural review indicates that adding one floor should be feasible without significant reinforcing of the existing structure. Adding two floors may require more extensive reinforcing but may also be feasible. Each floor plate of a new roof addition could accommodate an additional eleven suites, modelled from the layout shown for the Third Floor.

There is opportunity during future design development to refine the sizes and quantities of suites. The Conceptual Design Drawings included with this report are intended to provide an indication of potential building layout and to demonstrate the feasibility of accommodating a reasonable number of suites.

It appears that the normal, expected range of amenities spaces, such as common room, laundry and storage lockers, can also be readily accommodated.

Nature of Proposed Building Modifications

In simplified terms, renovating the building will involve:

- abatement of hazardous building materials;
- repair of masonry parapet/top of wall;
- repointing of exterior masonry;
- replacement of rusting steel lintels at door and window openings with galvanized steel or stainless steel units;
- restoration/repair of existing windows or installation of replacement units;
- installation of new insulated roofing system;
- removal of a significant amount of interior finishes and partitions;
- insulating of exterior walls, construction of new partitions and installation of all new interior finishes;
- provision of barrier-free access into the building;
- replacement of elevator equipment in existing hoistway;
- new mechanical heating, ventilating and air conditioning systems;
- new water distribution, sanitary and storm plumbing systems
- new fire sprinkler system;
- new electrical service and lighting and distribution system; and
- new connection devices for telephone, data and cable TV.

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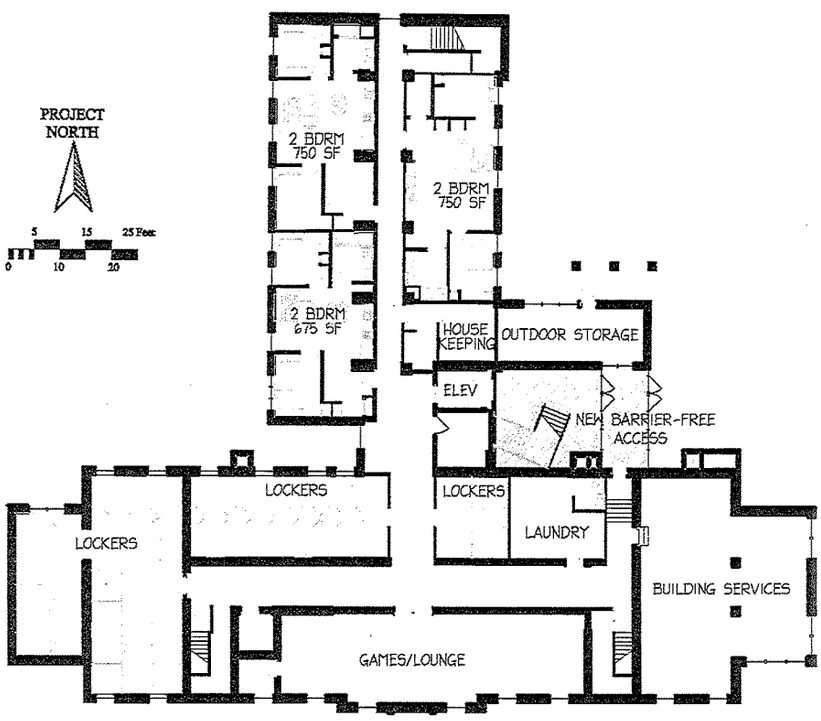
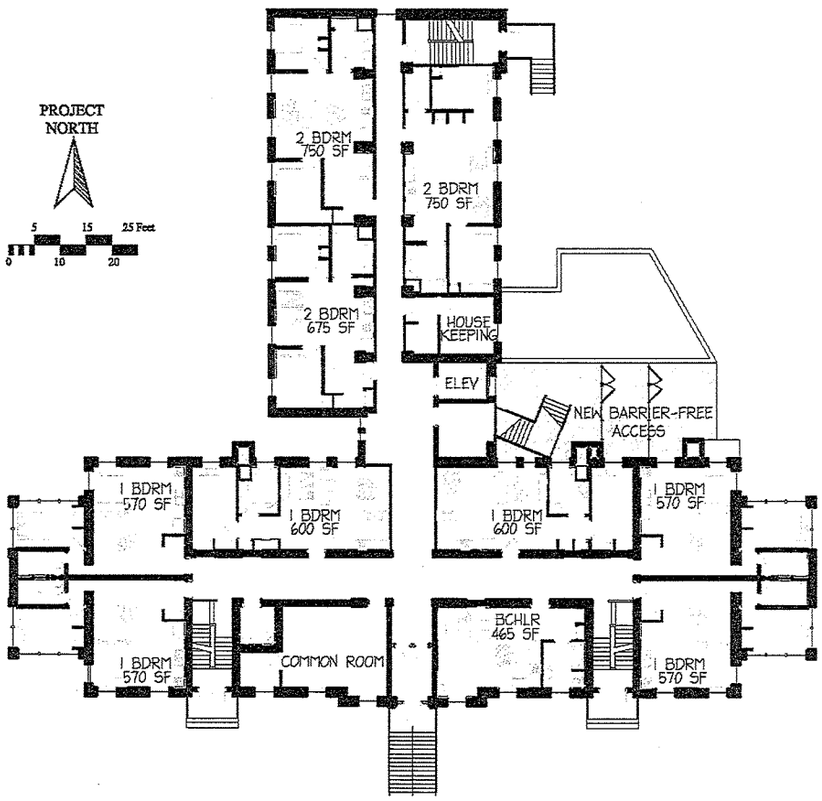
Conceptual Design Drawing **Basement**



Conceptual Design Drawing **First Floor**



Old War Memorial Children's Hospital
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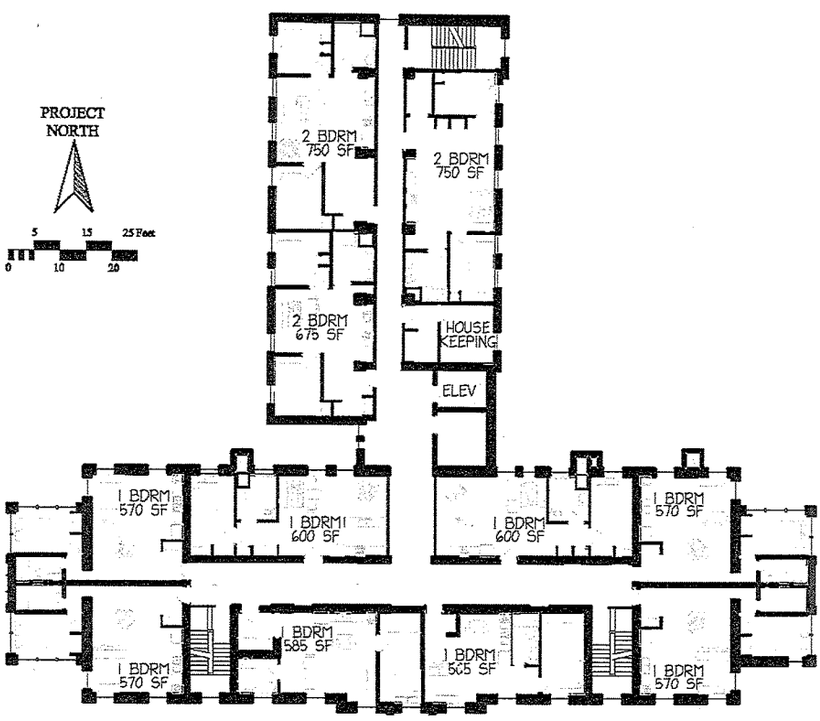
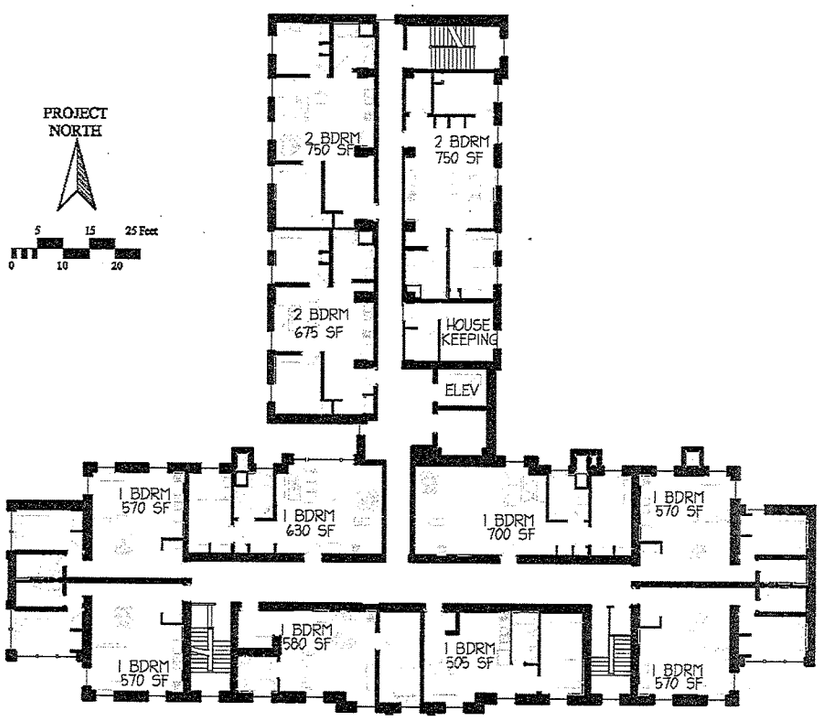
Conceptual Design Drawing **Second Floor**



Conceptual Design Drawing

Third Floor



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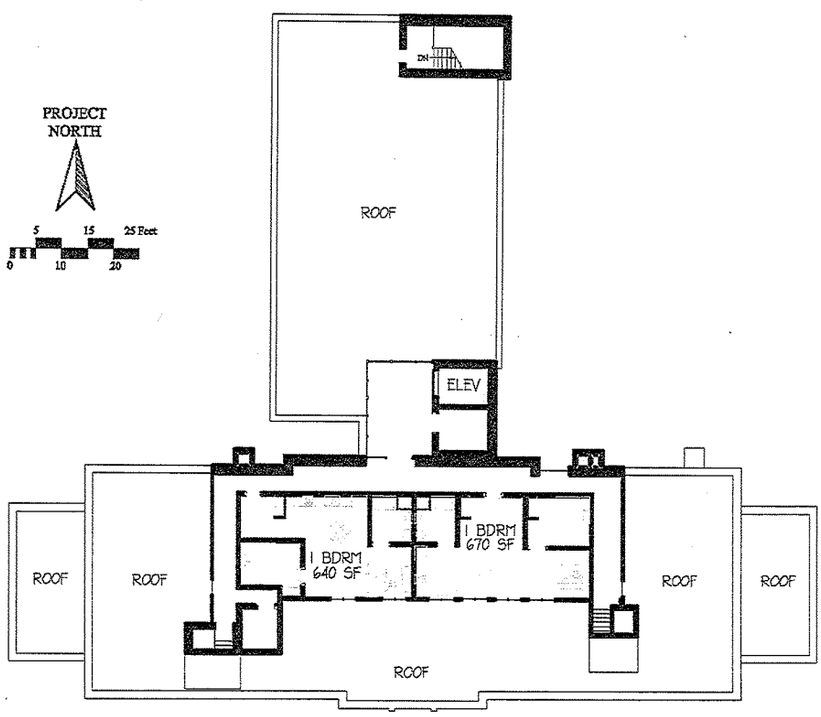
Conceptual Design Drawing **Fourth Floor**



Probable Construction Costs

Statement of Probable Construction Costs	
General Demolition, Removals & Disposal	$338,000
Asbestos Abatement	$484,000
Other Hazardous Building Materials Abatement	$300,000
Masonry Restoration (including scaffold access)	$1,725,000
Windows & Doors	$525,000
Roofing	$308,000
Barrier-Free Access Addition	$165,000
Interior Renovations	$3,380,000
Elevator	$168,000
Fire Sprinkler System	$136,000
Water & Sewer Upgrades	$50,000
New Electrical Service & Utility Charges	$100,000
Appliances	$48,000
Subtotal	$7,727,000
Contractor General Conditions, Overhead & Profit	$1,159,000
Permits and Fees	$193,000
Contingency	$1,159,000
Professional Design and Administration Fees	$1,388,000
Total (HST extra)	$11,626,000

Removing the existing 1979 Roof Addition and constructing a new storey with eleven suites would increase the above total by $1.95M. Adding yet a second new storey above the existing roof would represent an additional cost of $2.3M.

Not included in costs:
- land acquisition
- site development
- soft costs such as legal, surveying, marketing and debt servicing
- furniture and furnishings
- demolition and removals of adjoining and neighbouring structures
- project funding from senior levels of government

Estimate for asbestos abatement is taken from report prepared by AECOM Canada Ltd., dated 14-May-2010. An additional allowance figure has been provided for abatement of other hazardous building materials which may be found at the site.

The recommended average cost of $450,000 has been increased by 7.5% to account for general increases in construction cost since the estimate was originally prepared.

A 15% design and construction contingency is carried in the budget to reflect the preliminary nature of the estimate. The contingency would normally be reduced and funds reallocated as the scope of work and details are refined during design phase and during preparation of construction documents.

On a per suite cost basis, converting the existing building would represent a cost of approximately $300,000 each. It is our understanding that the City has completed similar conversion projects such as 390 Princess Avenue for a cost of approximately $148,000/suite and Grosvenor Street at approximately $207,000/suite. The estimated cost to convert Old War Memorial Children's Hospital is at least 45% higher.

By comparison, our firm is currently constructing a new 31-suite affordable housing project in Clinton. The cost of the project is $4.6M including for site development and site services, but excluding land acquisition cost and HST. That represents a cost of $148,000 per suite.

The cost of work is estimated on a contracted-out basis, is based on our experience with projects of similar nature and information provided by contractors and suppliers. The estimates are in fourth quarter 2011 dollars. We cannot guarantee the accuracy of the estimate because market conditions are beyond our control. The estimates should be modified periodically to reflect actual or anticipated rates of inflation.

Interim Building Maintenance (Mothballing)

This section focuses on de-activating (mothballing) the building for a period of time should renovations regarding adaptive reuse be deferred.

Stabilizing of the structure, controlling or exterminating pests and vermin and to protect the building enclosure against moisture penetration must be accomplished as the first step. The next steps involve:

- securing the building to reduce vandalism and unauthorized entry;
- provision of adequate interior ventilation to prevent decay and deterioration, especially during summer season;
- modifying building services such as electrical and mechanical systems appropriately; and
- implementing a maintenance and monitoring plan.

Structural stabilization should be minimal for this building based on the structural assessment. A section of partially removed floor assembly at second floor in the south wing should be investigated in greater detail to determine if it requires immediate repair or interim safety hoarding. The concrete slab at grade, at the former coal storage room, is deteriorated and it is recommended that this structure be removed or fencing be installed to prevent travel over the slab. Cracks at interior side of walls in the northeast stairway of the 1945 addition require additional investigation prior to determining nature of repairs.

Parapet walls throughout the building will become a structural concern as wall conditions deteriorate. The metal cornice is already a concern with respect to potential dislodging from the building. Periodic inspections of parapet walls should be undertaken to monitor its condition and to determine the cause of bulging at top of 1945 Addition walls. Deterioration of the parapet walls is not only a structural concern but will result in moisture penetration into the building causing other damage. Localized repairs at severely deteriorated parapet and chimney masonry will be required for mothballing.

Elimination or reduction of interior heating will result in more snow accumulation on the flat roof. Regular monitoring of roofs is required during winter. Excessive amounts of accumulated snow may have to be removed manually or with snow blowers to reduce roof loads. Alternatively, structural shoring could be installed at building interior to provide increased load capacity.

Grading around the building should be reviewed to ensure surface runoff flows away from the foundation wall.

Pests and vermin control will require sealing of building penetrations, which are considered entry points, and installation of traps and baits at building exterior and interior. A pest control contractor is well suited to provide this service with regular scheduled attendance at the site.

Although there were no currently observed roof leaks, the roofs should be thoroughly inspected at the time of mothballing the building and at least twice a year with any identified repairs executed immediately.

Interior doors, except for fire-rated doors at stairways, elevator, dumbwaiter and boiler room, should be propped open to allow for free movement of air. Fire-rated doors should remain closed to reduce spreading of fire.

There are at least nine exterior doors that are accessible from grade level and over 186 window openings on the four façades. Each of the exterior doors must be secured from unauthorized entry and windows at basement and first storey, and perhaps second storey, should be protected to prevent breakage and forced entry.
Protective covers at windows should be designed to deflect wind, rain and snow, and yet allow for ventilation to interiors. Covers that still permit light penetration are preferred as natural light is of great benefit when conducting ongoing inspections and maintenance operations. Fastening of protective covers must be done to avoid damage to existing masonry walls and wood windows, if they are to be retained.

Immediate repairs or temporary cladding is required at exterior wood windows located in elevator lobby for 1978 Roof Addition. These windows have severe rot and are allowing weather entry that will result in deterioration of adjacent wall masonry.

With the building enclosure made weathertight and secure, it is essential to provide adequate ventilation throughout the building. Without sufficient air changes, humidity levels may rise to levels that encourage mould, rot and insect infestation. Ventilation can be provided by natural or mechanical means. The minimal number of air changes, normally recommended for mothballing a building, are two to four during summer and one to two during winter.

All damaged interior building materials, redundant furnishings, equipment and furniture should be removed from the building. This eliminates potential fuel for fire and will facilitate monitoring activities and eliminate sources of organic food, nesting for vermin and mould. Components of existing buildings that have previously been removed, and ones that require removal for mothballing, should remain stored in the building. For example, a substantial quantity of wood window sashes are stored in various rooms. The sashes should be placed on pallets, catalogued if possible, and loosely draped with fabric air barrier to provide protection in the event of leaks.

Emergency egress facilities are required for persons conducting periodic inspections or working inside the building. Therefore, it is recommended that glazed exterior doors be replaced with steel reinforced hollow metal doors having exit device hardware. With the exception of designated entry doors with locks, all other exterior doors should have no exterior hardware such as pulls, knobs/levers or keyholes.

A fire and security detection/monitoring system should be installed. Smoke detectors and rate-of-rise detectors should be strategically placed throughout the building's interior. An intrusion alarm system could consist of motion detectors in corridors at floor levels having grade level access. Low temperature detection devices should be utilized and system equipped with automatic dialer for off-site monitoring. The monitoring system could also incorporate devices to report on humidity and temperature conditions inside the building.

Unless removing all interior finishes, it is recommended that a minimal amount of heating be maintained in the building. Doing so will not only prevent wall masonry from completely freezing, but it will reduce damaging condensation (mould) that will develop during warmer temperatures in spring seasons.

LHSC has indicated that steam heating will continue to be provided for the buildings on the north side of South Street for the time being. This existing heat source can therefore continue to provide minimal heating during mothballing.

Water lines, including fire standpipe system, could be drained to avoid potential freezing and leaks. This will have the negative affect of reducing firefighting abilities from inside the building. Shutting down the water service will require discussions with the Fire Department.

Sewer gases can be explosive. Therefore, either sanitary sewer traps must be filled with glycol or the sewer line to street cut off and capped. Glycol filling of traps will require regular inspection and maintenance.

A basic electrical service with some lighting and convenience outlets will be required to provide lighting for safety reasons and for monitoring and maintenance activities. Electrical power will also be required for the fire and security alarm system and heating system. London Hydro and London Health Sciences are currently making changes to electrical services around the hospital site and re-feeding various buildings from different locations. It is somewhat unclear at this time how this will impact the subject building. Therefore, it is assumed that a new, residential size 200 amp service may be required for the de-activation period.

While reasonable efforts can be made to stabilize the building and to slow the deterioration of materials, natural disasters, storms, undetected leaks and unwanted intrusion can still occur. A regular schedule is therefore required for surveillance, maintenance and monitoring activities. The more frequent the site visits, the sooner that water leaks or break-ins will be noticed and the better the air change. Monitoring of the condition of identified hazardous building materials is an important issue should these materials (i.e., paint coatings, asbestos insulation, etc.) deteriorate and become a present health and safety concern. Regular visits and ongoing maintenance will also let the community know that the building is being cared for and it has not been abandoned. It is recommended that site visits, involving a brief walk through the entire building, be conducted every three days or at minimum once per week. Fire and police services should be advised of the vacant status of the building.

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According to the budget list below, it is reasonable to anticipate that a budget of $386,000 is required to mothball the building. In addition, a monthly budget of approximately $1,125 is required for monitoring, regular walk-throughs and pest/vermin control.

Budget for Mothballing Building	
Protective measures at second floor, South Wing & at below grade coal storage room	$2,000
Localized masonry repairs, zoom-boom access	$30,000
Disconnect & cap unneeded building services	$10,000
Temporary electrical service, lighting & distribution	$15,000
Install basic fire alarm & intrusion alarm systems	$10,000
Remove interior doors (except fire rated doors)	$7,500
Remove unnecessary interior furnishings and materials	$30,000
Install protective covers at doors & windows: labour	$31,500
material	$40,000
zoom-boom equipment rental	$8,000
Mechanical ventilation system	$6,000
Allowance for urgent haz-mat abatement	$50,000
Subtotal	$240,000
Contractor General Conditions, Overhead & Profit	$36,000
Permits and Fees	$6,000
Contingency	$48,000
Professional Design and Administration Fees	$56,000
Total (HST extra)	$386,000

Budget for Monthly Mothballing Costs	
Roof inspections (every 3 months)	$100
Security walk throughs, exterior & interior (twice weekly)	$800
Monitoring of fire and intrusion alarm systems (24/7)	$125
Ongoing pests and vermin control	$100
Total Monthly Budget (HST extra)	$1,125

- - - End of Report - - -

Appendix

Attached document was commissioned as part of this Report:

Structural Engineer's preliminary assessment, prepared by Pow Peterman Consulting Engineers, dated 14-Oct-2011.

Attached documents commissioned outside of this Report or are provided form record/reference purposes:

Asbestos Building Materials Survey, Building No. 52 - Old War Memorial Children, South Street Hospital Campus, London, submitted to London Health Sciences Centre and prepared by Golder Associates Ltd., dated 27-Aug-2008.