

APPENDIX 3G
DEMOLITION AND RELATED WORK

DEMOLITION AND RELATED WORK

1.1 General

1.2 Site Preparation – Demolition

1.2.1 Basic Requirements

1.2.1.1 Project Co is responsible for the demolition of the following:

- 1.2.1.1(1) Shaughnessy Building: A block and L block;
- 1.2.1.1(2) Chemical Storage Building;
- 1.2.1.1(3) the MERU Building (J building);
- 1.2.1.1(4) the bridge between Shaughnessy L block and E block of the Women's Health Centre;
- 1.2.1.1(5) the connection between the 1982 building to Shaughnessy A wing at grade;
- 1.2.1.1(6) buildings, foundations, structures, roads, curbs, parking areas, walkways, landscaping and any other site improvements as shown and implied on the Demolition Drawings: Demo-1 and Demo-2 attached to Appendix 3G;
- 1.2.1.1(7) sub-surface elements such as foundations, slabs, pits, sumps, pipes, cables, ducts and underground tanks including related piping;
- 1.2.1.1(8) the utility and pedestrian tunnels, within the Project Co Site Boundary and between Shaughnessy L block and E block of the Women's Health Centre; and
- 1.2.1.1(9) all demolition that is necessary, above ground and sub surface, for the construction of the Facility.

1.2.1.2 Project Co acknowledges and agrees:

- 1.2.1.2(1) it has received and reviewed a copy of the following reports including all appendices:
 - 1.2.1.2(1)(a) (a) Stage 1 Preliminary Site Investigation dated May 2013 by exp
 - 1.2.1.2(1)(b) (b) Acute Care Center – Limited Environmental Investigation and Management Plan dated May 31, 2013 by exp

- 1.2.1.2(1)(c) (c) AREAS FOR RENOVATION Hazardous Materials Management Survey – Children’s and Women’s Health Centre of British Columbia dated March 21, 2013 by Pacific Environmental Consulting
- 1.2.1.2(1)(d) (d) FMO - Hazardous Materials Management Survey –dated May 3, 2012 Children’s and Women’s Health Centre by Pacific Environmental Consulting
- 1.2.1.2(1)(e) (e) Shaughnessy and MERU Buildings, Children’s and Women’s Health Centre Hazardous Materials Assessment dated Nov 16, 2013 by exp
- 1.2.1.2(1)(f) (f) Children’s & Women’s Health Centre of BC - Shaughnessy Building - Areas of Demolition SHY A and L Wings, and MERU dated March 19, 2013 by Pacific EHS
- 1.2.1.2(1)(g) (g) PHASE 1 - Hazardous Materials Management Survey – Children’s and Women’s Health Centre of British Columbia dated April 11, 2012 by Pacific Environmental Consulting
- 1.2.1.2(1)(h) (h) Total Updated Lead Sample Results Including TCLP - Hazardous Materials Management Survey – Children’s and Women’s Health Centre of British Columbia dated Dec 4 2012 by Pacific Environmental Consulting
- 1.2.1.2(1)(i) (i) Children’s and Women’s Health Centre of BC 4500 Oak Street Vancouver, BC – Flammable Storage Building – Pre-demolition Survey dated April 1, 2012 by Pacific EHS
- 1.2.1.2(1)(j) (j) Stage 1 Preliminary Site Investigation Update dated June 2013 by exp
- 1.2.1.2(2) (k) Supplement Drilling Investigation – Acute Care Centre, Sept 2013it has had the opportunity to undertake examinations and investigations relating to the demolition identified in Section 1.2.1.1 above, and relevant portions of the Site, in order to satisfy itself as to conditions and the impact they could have on any Design and Construction;
- 1.2.1.2(3) it is responsible for all management, removal, abatement, containment and disposal of Hazardous Substances disclosed in or reasonably inferred from the reports listed in Section 1.2.1.2(1) above; and

1.2.1.2(4) the Authority is not in any way responsible or liable for the completeness, interpretation or accuracy of reports listed in Section 1.2.1.2(1) above.

1.2.1.3 Without limiting the responsibility of Project Co above, Project Co will:

1.2.1.3(1) 1.2.1.3(1) be responsible for completing a hazardous materials study, at its cost, to determine the extent of existing Hazardous Substances in building elements to be demolished, including but not limited to, asbestos, lead paint, PCB's, CFC's, radioactive substances, bio-hazards and mercury;

1.2.1.3(2) 1.2.1.3(2) take all precautions so that no transmission of Hazardous Substances and noxious fumes interfere or contaminate the C&W Campus and surrounding neighbourhood;

1.2.1.3(3) 1.2.1.3(3) perform all requirements of the "proponent" prescribed in the letter dated 4 June 2013 from SLR to the Director of Waste Management, Ministry of Environment titled Release Request - Development Permit Application, Acute Care Centre - BC Children's and Women's Health Centre, 4480 Oak Street - City of Vancouver, BC, with the exception of 2(a) and 2(e);

1.2.1.3(4) 1.2.1.3 (4) be responsible for management, removal, abatement, containment and disposal of any underground storage tanks and any underground piping and appurtenances, including any that may themselves constitute Hazardous Substances; and

1.2.1.3(5) 1.2.1.3(5) complete the management, removal, abatement, containment and disposal of all Hazardous Substances prior to demolition.

1.2.1.4 For buildings to be demolished Project Co is responsible for all building systems terminations and cap offs prior to demolition. The Authority will have separated the unburied mechanical and electrical systems connecting buildings to be demolished, except for Life Safety systems and underground systems.

1.2.1.5 Project Co will perform all design and construction work:

1.2.1.5(1) that is triggered by the demolition work required in Appendix 3G;

1.2.1.5(2) that is required for the existing buildings on the C&W Campus to function for all their intended uses with all building systems operating fully;

1.2.1.5(3) including, but not be limited to: code related upgrades, fire egress upgrades, structural upgrades and the temporary or permanent redirection of services.

1.2.1.6 All new design and construction required by Appendix G will meet the requirements of Schedule 3.

1.2.2 Performance Requirements

1.2.2.1 Project Co will:

- 1.2.2.1(1) prior to performing demolition work, submit a report on the protective measures in place for existing buildings to the Authority;
- 1.2.2.1(2) conform to applicable codes for demolition of structures and provide for the safety of adjacent structures, the erection and maintenance of temporary barriers and security devices;
- 1.2.2.1(3) obtain City of Vancouver and other authority approvals required to undertake a demolition.;
- 1.2.2.1(4) ensure demolition work does not interfere with, or prevent the site and neighbouring buildings from operating normally;
- 1.2.2.1(5) provide perimeter screen and safety walls to ensure safety and protection of people and objects outside of the demolition area; provide overhead protection from falling debris;
- 1.2.2.1(6) carry out demolition activities so as not to interfere with access to existing buildings; provide access described in 4.2.1.11, 4.2.1.12 and 4.2.1.13;
- 1.2.2.1(7) schedule hours of operation and plan the traffic flow required for demolition in accordance with the Phasing Plan, the Work Plan and the Demolition Plan referred to in Schedule 2 Design and Construction Protocols;
- 1.2.2.1(8) be responsible for ensuring that fire safety will be in force at all times during demolition;
- 1.2.2.1(9) implement a pest control management plan for related areas before, during and post demolition;
- 1.2.2.1(10) perform all work to CAN/CSA-Z317.13 Infection Control During Construction Renovation, and Maintenance of Health Care Facilities;
- 1.2.2.1(11) perform demolition work in accordance with LEED requirements;
- 1.2.2.1(12) provide dust control at all times:

- 1.2.2.1(12)(a) spray demolition area with water once demolition of structure begins;
- 1.2.2.1(12)(b) manage water runoff through the site; and
- 1.2.2.1(12)(c) protect all storm drains that could be affected by the demolition work;
- 1.2.2.1(13) perform work in accordance with Schedule 2, Control of Noise;
- 1.2.2.1(14) secure demolition site 24/7; obtain Authority's approval of Project Co's Security Plan prior to commencing work;
- 1.2.2.1(15) conform to applicable regulatory procedures, including WorkSafe BC requirements, during all phases of the demolition and when discovering hazardous or contaminated materials;
- 1.2.2.1(16) ensure the walls separating the Building construction from remaining structures will be designed so that the demolition and construction of the Building will not interfere with the normal operation of the Hospital;
- 1.2.2.1(17) remove of all demolition materials from the site safely and legally;
- 1.2.2.1(18) terminate existing surfaces of building elements to be demolished along straight lines at natural divisions determined through consultation with by the Authority. Cut existing surfaces so that a smooth transition with new work will result;
- 1.2.2.1(19) terminate all existing tunnels at the Project Co Construction Site Boundary, closed off and made good.
- 1.2.2.1(20) refer to Schedule 2, 6.10 for salvage material and equipment title;
- 1.2.2.1(21) make provisions to ensure that affected areas of the remaining building are weather-proofed during and after demolition and for the duration of construction of the Building;
- 1.2.2.1(22) construct a temporary insulated and weatherproof wall to protect all previously interior areas exposed to the exterior during the demolition and construction process;
- 1.2.2.1(23) Project Co's design will identify where the Building and neighbouring buildings are intended to be joined as interior space and be responsible for providing permanent exterior walls at all locations that are no longer interior walls. These required exterior walls in existing buildings shall meet all the requirements of Schedule 3 and complement the design of the existing adjacent building facades;

- 1.2.2.1(24) be responsible for patching, repairing and "making good" all exterior and interior surfaces affected in all existing buildings in which work is taking place, to match the quality of the adjacent surfaces. "Making Good" shall be defined as preparing new surfaces which are identical to adjacent surfaces, and finished off in such a manner that there are absolutely no visible traces (at a distance of 600 mm), between existing work and the work of new patching. "Making good" therefore, extends to the complete re-finishing of entire surface areas as is necessary, to junction points or inside or outside corners of walls, partitions and ceiling;
- 1.2.2.1(25) ensure that SHY B Block is not in worse condition after completion of demolition described in Appendix 3G than it was prior to commencement of this demolition;
- 1.2.2.1(26) provide required LEED documentation; and
- 1.2.2.1(27) accurately record actual locations of capped utilities, subsurface obstructions and/or conditions.

1.3 Civil Requirements

1.3.1 General

- 1.3.1.1 Project Co will inspect and examine the Site with the Authority and verify the extent and location of items designated for demolition.

1.3.2 Basic Requirements

- 1.3.2.1 Project Co will confirm the extent of the demolition and ensure there is no disturbance to the operations of the existing adjacent buildings and areas.
- 1.3.2.2 All materials are to be stockpiled and removed for disposal offsite.
- 1.3.2.3 Demolition to comply with CSA S350: Code of Practice for Safety in Demolition of Structures.
- 1.3.2.4 Demolition to comply with the latest edition of the VBBL.

1.3.3 Performance requirements

- 1.3.3.1 Project Co will undertake demolition in accordance with the following performance requirements:
 - 1.3.3.1(1) Locate any active services located on the site that serve other properties and take steps as required to prevent any disruption to such servicing

- 1.3.3.1(2) Re-location of services that are connected to other buildings will include installation of replacement services at such a time, and any other steps required including installation of temporary alternate services, so that the services to other buildings are not disrupted.
- 1.3.3.2 Disconnect, cap, plug or divert as required existing services.
 - 1.3.3.2(1) Sewer and Water Lines: Remove in locations as required, in accordance with the requirements of the Authority or City of Vancouver and securely plug to form watertight seal.
 - 1.3.3.2(2) Natural Gas Supply Lines: Remove in accordance with gas company requirements.
 - 1.3.3.2(3) Other Underground Services: Remove and dispose of as required.
- 1.3.3.3 Locate and protect utilities. Preserve active utilities traversing the site in operating conditions.
- 1.3.3.4 Notify, coordinate and obtain approval from utility companies before starting demolition.
- 1.3.3.5 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers or onto adjacent properties
- 1.3.3.6 Removal of Pavements, Curbs and Gutters will include but is not limited to the following:
 - 1.3.3.6(1) Square up adjacent surfaces to remain in place by saw cutting or other method approved by the Authority.
 - 1.3.3.6(2) Protect adjacent joints and load transfer devices
 - 1.3.3.6(3) Protect underlying and adjacent granular materials.
- 1.3.3.7 Prevent movement, settlement, or damage to adjacent structures, utilities and landscaping features and parts of building to remain in place. Provide bracing and shoring as required.

1.4 Structural Requirements

- 1.4.1 Prior to demolition Project Co will:
 - 1.4.1.1 Ensure that all remaining structures are sufficiently shored and protected against structural damage from demolition activities.

- 1.4.1.2 Provide necessary shoring and temporary structures in accordance with VBBL and WorkSafe BC requirements.
- 1.4.1.3 Provide underpinning of existing structures as required for both temporary excavations and permanent construction. If underpinning is to remain in the final structures, design and construction will provide for long term durability.
- 1.4.2 During demolition Project Co will:
 - 1.4.2.1 Maintain all shoring and protective measures in structurally sound condition until demolition activities are complete.
- 1.4.3 Reinstatement of Remaining Buildings
 - 1.4.3.1 Where A wing and L wing of the existing Shaughnessy Building are to be demolished to accommodate construction of the ACC, Project Co will rebuild exit stairs and structural elements as required for the remaining building to conform with VBBL requirements.
 - 1.4.3.2 Structural elements will include but not be limited to foundations, retaining walls, stair structures, vertical load carrying elements and lateral load resisting elements (including seismic loads).
 - 1.4.3.3 Project Co will have all new or modified structural elements conform to the same design and submission requirements as specified for the ACC.

1.5 Mechanical Requirements

1.5.1 Demolition

- 1.5.1.1 Project Co. will be responsible for demolition and removal of existing buildings as described in Appendix 3G Section 1.2. The mechanical scope of this work will be as per the following description:
 - 1.5.1.1(1) State of mechanical services in these buildings at the start of Project's Co's demolition: All supply and return piping services will be isolated with new valves, or existing valves that are sufficient to provide isolation. Ductwork will be isolated where dampers are available, otherwise will be left as-is. Drainage services will be left in place.
 - 1.5.1.1(2) Project Co's scope of work: remove all mechanical services within the demolition boundary, including underground services. Cap all services within one meter of the existing isolation valve where the service has been valved. Cap remaining services at demolition project boundary as necessary to build the ACC.
 - 1.5.1.1(3) Isolated systems that are intended for demolition will be de-energized and drained by the Authority, complete with Lock-Out Tag-Out (LOTO)

safety protocol. Project Co will participate in the LOTO protocols during demolition.

- 1.5.1.2 Prior to executing demolition work, confirm that all systems in the areas that are scheduled to be demolished are NOT affecting areas that are to remain. All remaining areas beyond demolition areas are to have no disruption.
- 1.5.1.3 Authority to have first right of refusal on all existing equipment and devices that are to be demolished and removed. All items which the Authority does not want shall be disposed of by Project Co in accordance with the project's LEED requirements.

1.6 Electrical Requirements

1.6.1 Demolition

1.6.1.1 Basic Requirements

- 1.6.1.1(1) Demolition of the existing buildings (or portions of it) to be done with no disturbance to the operation of the existing hospital.
- 1.6.1.1(2) Prior to executing demolition work confirm that all systems in the areas scheduled to be demolished are NOT affecting areas that are to remain. All remaining areas beyond demolition areas are to have no disruption.
- 1.6.1.1(3) Confirm extent of the demolition as described in Appendix 3G section 1.2.
- 1.6.1.1(4) The Authority is to have first right of refusal on all existing electrical equipment and devices that are to be demolished and removed – such as light fixtures, FA devices, panels, transformers, etc. Salvage devices and equipment that Authority wishes to retain. All items which the Authority does not want shall be disposed of by Project Co.

1.6.1.2 Electrical systems

- 1.6.1.2(1) All electrical devices to be safely disconnected prior to removal.
- 1.6.1.2(2) Remove all electrical materials, inclusive of exposed conduits, equipment, pull boxes, junction boxes, and all associated wiring back to the panels and make safe.

1.6.1.3 Security systems

- 1.6.1.3(1) Disconnect all security devices from overall security system with no disturbance to the operation of the existing hospital.

1.6.1.3(2) Remove all security devices, wiring, exposed conduits and boxes from areas scheduled to be demolished.

1.6.1.4 Fire alarm system

1.6.1.4(1) Disconnect all fire alarm devices from overall FA system with no disturbance to the operation of the existing hospital.

1.6.1.4(2) Remove all fire alarm devices, wiring, exposed conduits and boxes from areas scheduled to be demolished.

1.6.1.4(3) Verification of the remaining FA system to be done by the Authority.

1.6.1.5 Data, phone and low voltage systems

1.6.1.5(1) Disconnect all associated devices from overall systems with no disturbance to the operation of the remaining systems in the existing hospital areas that are to remain.

1.6.1.5(2) Remove all associated devices, wiring, exposed conduits and boxes from areas scheduled to be demolished.