



Respect ♦ Integrity ♦ Excellence ♦ Leadership

Serving
GOVERNMENT,
Serving
CANADIANS.

Architectural & Engineering Services TERMS OF REFERENCE – REVISION NO. 1

Project No. R.066167.001

RESOLUTE BAY, NUNAVUT
NATURAL RESOURCES CANADA (NRCAN)
BUILDING CONDITION REPORT





REVISION No. 1

Date: March 13, 2014

Building Condition Reports

Project Requirements - PR

PR 1 Project Description:

PR 1.1 Project Information

PR 1.1.1 PWGSC Project Title: BCR Process for NRCan buildings in Resolute Bay, Nunavut

PR 1.1.2 Location of Project: Resolute Bay, Nunavut, PCSP site.

PR 1.1.3 PWGSC Project Number: R. 066167.001

PR 1.1.4 Real Property Team NCA Owner Investor Group

PR 1.1.5 Client / User: Natural Resources Canada (NRCan)

PR 1.2 PWGSC Project Team

To be announced at contract award

PR 1.2.1 Project Manager: Phone:

PR 1.2.2 Property Manager: Phone:
Phone:

PR 1.2.3 Portfolio Manager/OI: Phone:

PR 1.2.4 Project Leader: Phone:

PR 1.2.5 BCR Manager/P&TS Review Co-ordinator: Phone:

PR 1.3.1 Client Mandate

The client would like to establish the current status of their assets in Resolute, Nunavut by means of a level 2 general BCR which may also include specifically detailed level 3 investigations which are a sub-set of the same process to create the report. Once the requirements of the Building Condition Reports for their assets are established jointly by the Project Team, the responses to found events will be defined in detail and used to inform the next stage of planning for the projected future of strategic planning for the Asset. The strategic planning for these Assets includes the following items in the short term:

1. Preparation for the implementation of a PWGSC Facility Management Plan for NRCan.
2. Preparation of a Budget summary and Cash Flow document to be used in synchronicity with the PWGSC-National Project Management System of approvals: (Planning Initiation, Preliminary Project Approval, Effective Project Approval spending Authorities).



3. Preparation of a Risk Management Plan associated with each of the Spending Approval Authorities itemized above.
4. Preparation of a composite volume of swing space requirement to allow for the accommodation of the tenants at the appropriate periods of the schedule.

PR 1.3.2 Background

The buildings at the Resolute site are primarily one and two storied, winterized pre-engineered wood framed, metal clad buildings that were constructed in the 1970's, 80's. The buildings are utilized for accommodations, including kitchens and living quarters and research laboratories. They are leased by NRCan to personnel with the Polar Continental Shelf Program, (PCSP), the Canadian Forces Training Centre (CFATC) and the Arctic Research Infrastructure Fund (ARIF). These buildings are to be reviewed for a Building Condition Assessment so that the future decisions can be taken with an understanding of the full impact relative to all events planned in the Life Cycle.

PR 1.4 Project Outline

PR 1.4.1 Required Work:

PWGSC has a requirement for the implementation of a Level 2 Building Condition Report for six buildings in the complex. The buildings to be evaluated for their condition are XR-15, CFTAC accommodations, (BCR ONE), XR-12 (two buildings -ARIF accommodations (BCR TWO), and kitchen/dining building (BCR THREE), XR-02 recreation building (BCR FOUR), XR-03 PCSP operations centre (BCR FIVE) and XR-04 the Dr. Roy Koerner Laboratory (BCR SIX).

Upon contract award, the consultant shall develop a complete and comprehensive building & equipment condition report for each building.

The work shall be carried out based on the terms, conditions and requirements stipulated within this Terms of Reference. The final reports for the assets shall act to reasonably articulate component condition, events, and other relevant information pertaining to the site, base buildings and the fit-up spaces.

Based on the required package of work and a visual review of the site, the consultant shall submit to PWGSC any findings for the need to implement additional studies (level 3), and all associated costs. PWGSC will review the findings in consultation with the service provider and the P&TS Centre of Expertise in order to select the most cost effective & prudent decision as it relates to the critical assessment of the Asset. Once PWGSC has concurred with the need to pursue additional studies (level 3), the Consultant will be formally instructed to implement and deliver the BCR document inclusive of all level 3 studies identified.

As part of the assessment, the Consultant and sub-consultants, shall obtain relevant asset information by attending the initial meetings, via teleconference calls, planned with the Project Manager, Operational staff, P&TS Centre of Expertise specialists and other PWGSC stakeholders to provide relevant input. Discussions should be limited to information related to technical deficiencies and areas of perceived improvement to the building performance. This technical input is imperative to the success of this BCR assessment.

The objective of a **level 2** Building Condition Report is to investigate the identified various buildings and related site improvement factors including:



- Component condition and assessment of remaining life,
- Equipment obsolescence,
- Design problems and deficiencies that adversely affect operation and maintenance activities,
- Impact of compliance with Treasury Board Secretariat temperature, humidity and ventilation standards,
- Workstation density maximums imposed by design limitations of the applicable fit-up standard. (currently Workplace 2.0).
- Compliance with the latest edition / revision of all applicable standards & codes (including, but not limited to: Health, Fire, Life Safety Codes, National Building Code, Electrical Safety Program)
- Compliance with local by-laws,
- Effective age and remaining economic life of building components,
- Confirmation of regulatory testing,
- Functionality/Serviceability Assessment

In satisfying the deliverables listed in this document, it is also imperative that the Consultant ensures implementation of the following services:

- The strict adherence to the implementation and scheduling plan as provided under PR 1.4.5 in consultation with the assigned Departmental Representative
- The strict adherence to the project objectives & deliverables, project implementation plans, schedule, network diagrams and critical milestones, and work breakdown structure.
- Assistance to the Departmental Representative in Risk identification and Mitigation.
- Support to the Departmental Representative who shall be responsible for leading, monitoring, controlling the timely provision of final project deliverables to the Stakeholders of the Asset.

**Terms of Reference for the Preparation of Building Condition Reports (BCR)
Statement of Work. Standard level – 2 study.**

(SEE ANNEX “A” & “B”)

	<u>✓</u> (Serv) Indicates a consultant service requirement. <u>✓</u> (Note) Indicates (noted) consultant service adjustment below. <u>N/A</u> indicates (not applicable) no consultant service requirement.	Serv	See Note
1.	Building Condition Report (BCR level 2) Terms of Reference	<u>✓</u>	
1.1	Background	N/A	



Terms of Reference Request for Proposal

1.2	Building Condition Report - The New Approach	<u>N/A</u>	
1.3	Asset Validation Survey (AVS) Tool (See ANNEX “B”) AVS format. Use only.	<u>N/A</u>	<u>✓1</u>
1.4	General Requirements	<u>✓</u>	<u>✓2</u>
1.4.1	• Thirty Year Window of Capital and Repair Events	<u>✓</u>	
1.4.2	• Component (or Element) list	<u>✓</u>	
1.4.3	• Events	<u>✓</u>	
1.5	Component Related Requirements (See ANNEX “A” and “B”)	<u>✓</u>	
1.5.1	• Validation of the Component List	<u>✓</u>	
1.5.2	• Component Name	<u>✓</u>	
1.5.3	• Component Inspection and the Component Evaluation Criteria List	<u>✓</u>	<u>✓3</u>
1.5.4	• Establishing Component Condition	<u>✓</u>	<u>✓4</u>
1.5.5	• Required Component Photographs	<u>✓</u>	<u>✓5</u>
1.5.6	• Component Details	<u>✓</u>	
1.5.6.1	• Expected life span	<u>✓</u>	
1.5.6.2	• Component Cost	<u>✓</u>	
1.5.6.3	• Quantity (of the component)	<u>✓</u>	
1.5.6.4	• Measurement Units	<u>✓</u>	
1.5.6.5	• Last Major Action Year	<u>✓</u>	
1.5.7	• Component Narratives	<u>✓</u>	
1.5.7.1	• Component Description	<u>✓</u>	
1.5.7.2	• Component Condition and Anticipated Replacement Date	<u>✓</u>	<u>✓5</u>
1.5.7.3	• BPR Condition Narrative	<u>N/A</u>	
1.6	Event Related Requirements	<u>✓</u>	
1.6.1	• Event Classification	<u>✓</u>	
1.6.2	• Required Event Photographs	<u>✓</u>	<u>✓6</u>
1.6.3	• Event Details	<u>✓</u>	
1.6.3.1	• Brief Event Description	<u>✓</u>	
1.6.3.2	• Current Event Year	<u>✓</u>	
1.6.3.3	• Estimated Event Cost	<u>✓</u>	
1.6.4	Event Narratives	<u>✓</u>	
	• Event Description	<u>✓</u>	
	• Event Justification and Strategy	<u>✓</u>	



Terms of Reference Request for Proposal

	• Implication of Event Deferral (Risks)	✓	
1.7	Asset Data Requirements	✓	
1.7.1	• Asset Details	✓	
1.7.2	• Asset Photographs	✓	
1.7.3	• Asset Narratives	✓	
1.7.3.1	• BCR Project Team and <u>Documents</u>	✓	
1.7.3.2	• Building History	✓	
1.7.3.3	• BCR Executive Summary	✓	
1.7.3.4	• Design Parameters & Deficiencies – Current and Future	✓	
1.7.3.5	• Overview of Architectural and Structural Condition	✓	
1.7.3.6	• Overview of Site Condition	✓	
1.7.3.7	• Overview of Vertical and Horizontal Transportation Condition	✓	
1.7.3.8	• Overview of Mechanical Systems Condition	✓	
1.7.3.9	• Overview of Electrical Systems Condition	✓	
1.7.3.10	• Compliance with TBS Temperature and Humidity Targets	✓	
1.7.3.11	• Regulatory Testing Confirmation	✓	
1.7.3.12	• Compliance with Accessibility Standards	✓	
1.7.3.13	• Overview of Environmental Issues	✓	
1.7.3.14	• Overview of Project Grouping Recommendations	✓	
1.7.3.15	• Code Compliance Summary	✓	
1.7.3.16	• Building Performance Review	<u>N/A</u>	
1.8	Inspection Process	✓	
1.8.1	• Asset Validation Survey Tool Reports	<u>N/A</u>	
1.8.2	• AVS Files	<u>N/A</u>	
1.8.3	• Interview with the Asset management Team (on site)	✓	
App. I	Capital Versus Repair	✓	
App. II	Event Classification	✓	
App. III	Costing Tool	✓	
App. IV	Accessibility Audit Template	✓	
<u>Notes and/or Adjustment to Service</u>			
<ol style="list-style-type: none"> The consultant shall provide 2 electronic <u>draft</u> copies for review and comments in MS Word AVS Format (ANNEX “B”) and once revised, 4 hard copies of the <u>final approved BCR</u> and soft copies in MS word in AVS Format (ANNEX “B”) & Excel on a CD. Regarding the Lines of Communications clause, the consultant is requested to communicate with the client department through the Project Manager. 			



Terms of Reference Request for Proposal

3. Regarding component inspection the consultant shall ensure that deficiencies found to be present are clearly identified and/or the narrative field is used for further explanation.
4. Regarding service agreements summarize all asset components that have preventative or corrective maintenance or service contracts using the following format; component serviced, company, description of service, frequency of service, date of last inspection or services, typical cost. Also identify components that should have service agreements put in place that currently do not and provide an estimated cost.
5. Establishing the component condition and remaining useful life is one of the most challenging aspects of this report. Therefore the consultant shall utilize the full spectrum of sec 1.5.4 and sec 1.5.7.2 for the analysis of the component (see Annex "A"). Additionally, the consultant shall make recommendation for in-depth level 3 studies (L3) where necessary, and provide the evaluation matrix provided in the appendix (see Annex "A") and a summary table listing the components that are recommended for L3 inspections.
6. Required photographs, all listed components and events within the report shall require a photograph. Thus sec 1.5.5 and sec 1.6.2 is not limited to the following.

The objective of a **Stand Alone Task** or (**level 3 investigation**) is to investigate specific issues identified prior to the creation and completion of the Building Condition Report. The following requirements are to be investigated subject to the same contract terms as the main BCR. The series of building and site improvement factors shall include but not be limited to:

Stand Alone Level 3 Study:

	<p>✓ (Serv) Indicates a consultant service requirement. ✓ (Note) Indicates (noted) consultant service adjustment below. N/A indicates (not applicable) no consultant service requirement.</p>	<u>Serv</u>	<u>See Note</u>
1.	<u>Assessment of specific building systems in any building category.</u>		
1.1	Building envelopes to include all types of cladding and roof assemblies.		
1.2	Seismic screenings and assessments		
1.3	Thermography and Energy Audits		
1.4	Fire Alarms Systems		
1.5	Fire Protection to include suppression, emergency lighting and extinguishers.		
1.6	Mould Inspections		
1.7	Asbestos verifications		
1.8	Accessibility under Federal Barrier Free standards		
2.	<u>Assessment of Specialty Areas in any building category</u>		
2.1	Generator Rooms		
2.2	Major Mechanical equipment rooms (heating)		



Terms of Reference Request for Proposal

2.3	Elevator Machine Rooms		
2.4	Boiler Rooms		
2.5	Pump and Sprinkler Rooms		
2.6	Transformer Vaults		
2.7	Ventilation & Air Conditioning Equipment Rooms		
3.	<u>Assessment of Specialty Structures</u>		
3.1	Air Supported Structures		
3.2	Parking Structures		
3.3	Retaining Wall Structures		
3.4	Structures covering Public Spaces		
3.5	Anchor Systems on Bldg. exteriors		
3.6	Storage Tanks (excluding fuel)		
4.	<u>Assessment of Landscape Features</u>		
4.1	Fences and Gates		
4.2	Sculpture		
4.3	Outdoor Paving		
5.	<u>Assessment of Environmental Features</u>		
5.1	Fuel tank storage assessed in conjunction with a Federal protocol by the PWGSC Environmental Services.		
5.2	Storm drainage solutions		
5.3	Retention ponds & cooling structures		
5.4	Sub-surface drainage, culverts and ditches		
<u>Notes and/or Adjustment to Service</u>			
<ol style="list-style-type: none"> 1. The consultant shall provide 2 hard copy final drafts, 4 hard copies of the final approved BCR with level 3 studies and one soft copies in MS Word (in AVS Format – see ANNEX “B”) & Excel on a CD. 2. Regarding the Lines of communications clause, the consultant is requested to communicate with the client department through the Project Manager. 3. Specific Building Envelope field review for the studies shall conform to the following: <ul style="list-style-type: none"> • The field review shall include the use of an infrared thermographic camera in accordance with National Master Specifications (NMS) section 02 27 13 Thermo graphic Assessment – Building Envelope. • Where destructive test openings are not possible, the use of fiber-optic scopes for minor cladding intrusions to determine condition of structural connectors or interstitial enclosure conditions is mandatory where minor openings can be easily 			



sealed and repaired as part of the inspection procedure. Fiber-optic scopes shall be used to inspect interstitial cavity spaces and structural connectors in all “high risk” locations where exposure to pedestrian and building occupant activity is high and where visual inspections give cause for concern or where history, design and shop drawings and building management interviews give cause for concern. The emphasis for fiber-optic inspections are to assess the condition of structural connectors on precast panels, metal or porcelain panels, and masonry assemblies as well as to determine if interstitial stress indicators exist within materials within the wall assembly. Such interstitial inspections should be accompanied with photo and video documentation from the exterior inspection and from the fiber-optic scope inspection.

- It should be noted that the on-site work will be performed in an occupied building. Work at the site is to be coordinated so as to minimize disruption and without compromising the health and safety of the tenants and building services.
4. The Parking Structure field review for the studies shall include visual assessments and diagnostic testing where deemed necessary. (see suggested checklist summary)
 5. The Anchor Systems on the Building Exterior shall include visual assessments and full operation of the mechanisms to confirm maintenance protocols.

PR 1.4.2 Purpose of the project:

To develop a level 2 (L2) building condition report that sets a good baseline document with detailed technical and financial information.

PR 1.4.3 Project History Synopsis:

The last condition assessments (Building Condition Reports) for only two buildings (XR02, XR03) were done in 2008. Since that time, over the last two years, the buildings have undergone renovations and are presently under PWGSC ownership until the deficiencies for the renovated buildings are complete. Once complete, which is planned for September, 2013, the buildings will be turned back to NRCan. NRCan then wishes to contract PWGSC to provide full operation and maintenance of the buildings on the site. Prior to the PWGSC contract, NRCan wishes full building condition reports (base) in order to understand the proposed PWGSC Facility Maintenance Plan that will be undertaken for the operation and maintenance requirements (and costing) of their facilities.

PR 1.4.4 Site Conditions:

Site conditions, which may influence this project, include:

- The consultant shall at all times comply with the applicable Provincial/Federal Electrical, Construction, Fire Codes, Acts, Standards and Guidelines. Additionally, at all times comply with Provincial Health & Safety Acts, and Regulations, in addition to the requirements of Canada Occupational Safety and Health Regulations, and Canada Labour Code.
- The focus of the BCR summary shall address the costs of work to be undertaken for the operations and maintenance requirements of their buildings and grounds.



PR 1.4.5 Implementation Strategy:

	Activity identified for Implementation		Milestone	Time Frame	STATUS
3	Interface with the PM who has coordinated the initial site briefing with PFM, COE, and main stakeholders.	Phase 2		2 days	
4	Interface with the PM who has secured all existing documentation from the stakeholders and the PFM.	Phase 2		6 days	
5	Interface with the PM who has tracked the needs of the Consultant and matched the required resource to facilitate the actions for access to the site.	Phase 2		12 days	
6	Consultant undertakes site visit to Resolute			5 days	
7	Submit to PM the First Draft of the BCR who circulates to the P&TS/COE team for comment.	Phase 2	FIRST DRAFT Week 8	5 days	Deliverable RS 2.1.1 to 2.1.4 1st draft Partial payment possible at 25% with submission of raw gathered data to the assigned PM.
8	Interface with the PM who compiles comments from all stakeholders and advises of needed revisions.	Phase 2		10 days	
9	Submit to PM the Final Draft of the BCR who circulates to the P&TS/COE team for comment.	Phase 2	PRE-FINAL DRAFT Week 11	5 days	Deliverable RS 2.1.1 to 2.1.4 pre-final draft with comments Additional payment possible at 25% with submission of the 2 nd Draft BCR to the assigned PM.
10	Interface with the PM who compiles comments from all stakeholders and advises of needed revisions.	Phase 2		5 days	
11	Submit to PM the Final submission who presents it to the PFM, Asset Manager and Owner/Investor for use.	Phase 2	FINAL SUBMISSION Week 13	5 days	Deliverable RS 2.1.8
12	Minor corrections as requested by PFM, Asset Manager, client and submission/circulation for sign-off.	Phase 2	FINAL DRAFT SUBMISSION SIGN-OFF Week 14	5 days	Deliverables RS 2.1.8 Sign –off. Balance of payment possible at 50% with submission of the Final BCR to the assigned PM.



PR 1.4.6 Access to the Site and Security Requirements:

- For general access the consultant will be required to conduct site related work Monday to Friday between 8am and 4:30pm. All other access times will be determined by consultation with the departmental representative. The consultant shall pre-arrange dates & times for site access at least 72 hours in advance.

PR 1.4.7 Issues / Constraints / Challenges / Opportunities:

- Available as-built drawings are mostly available given the recent work. The drawings of the original structure may not be available electronically.
- Previous reports or studies are available and will be provided by the PM but may take some time to be gathered together.

PR 1.5 Work Breakdown Structure and Schedule

PR 1.5.1 RS 2.1.1

Completion (Architectural)	2	Weeks	
PWGSC Review:	N/A		

PR 1.5.2 RS 2.1.2

Completion (Structural)	2	Week	
PWGSC Review:	N/A		

PR 1.5.3 RS 2.1.3

Completion: (Mechanical)	2	Weeks	
PWGSC Review:	N/A		

PR 1.5.4 RS 2.1.4

Completion: (Electrical)	2	Weeks	Complete rough data
PWGSC Review:	N/A		

PR 1.5.5 RS 2.1.5 (N/A)

Completion:		Weeks	
PWGSC Review:		Week	

PR 1.5.6 RS 2.1.6 (N/A)

Completion		Weeks	
PWGSC Review:		Week	

PR 1.5.7 RS 2.1.7 (N/A)

Completion		Week	
PWGSC Review:		Week	

PR 1.5.8 RS 2.1.8

Completion (Final report)	3	Week	
PWGSC Review:	3	Week	



PR 1.6 Existing Documentation

PWGSC will transfer all available drawings and studies as requested by the consultant.

See issues and constraints PR 1.4.7

PR 2 Required Services - RS

Full services are required from the following members of the consultant's team:

Mechanical Engineering: **Required**

Electrical Engineering: **Required**

Structural Engineering: **Required**

Architectural Engineering: **Required**

Cost Consulting: **Required**

RS 2.1 Required Services

The preparation of the building condition report requires an objective & subjective analysis of the asset under consideration. Therefore in order to produce the final reports the forgoing engineering services shall be applied to the following five key areas.

1. Analysis Phase
2. Research Phase
3. Survey Phase
4. Report Development Phase
5. Data Base Phase

RS 2.1.1	Mechanical survey, report development, costing and data base entry	Required
RS 2.1.2	Electrical survey, report development, costing and data base entry	Required
RS 2.1.3	Structural survey, report development, costing and data base entry	Required
RS 2.1.4	Architectural survey, report development, costing and data base entry	Required
RS 2.1.5	Re-Capitalization Asset Management Plan information data base entry and costing against market conditions	Not Required
RS 2.1.6	NPMS Milestones data base entry	Not Required
RS 2.1.7	Risk Management Plan recommendations data base entry	Not Required
RS 2.1.8	Final Report Hard Copies and Electronic Copies in MS Word & Excel	Required

ANNEX “A”

TERMS OF REFERENCE REQUEST FOR PROPOSAL

PROJECT # R.066167.001

**Reference Framework
For
Preparation of Building Condition Reports**

ANNEX “A”

Reference Framework for the Preparation of Building Condition Reports (BCR)

1 Building Condition Report (BCR level 2) Terms of Reference

1.1 Background

PWGSC, as the service agency responsible for allocating accommodation to its tenant departments, is accountable for effectively acquiring and efficiently managing this accommodation program.

In addressing this mandate, PWGSC undertakes a series of cyclical evaluations of the current and proposed accommodation. These evaluations are performed in order to determine the most appropriate management strategy for the retention, maintenance and/ or retrofit/ renewal of these facilities in order to satisfy current and future client requirements.

In view of the age of the PWGSC building inventory and given the significant investments required to re-capitalize these assets, the importance of a rigorous analysis of the inventory through the preparation of Asset Management Plans, a financial analysis, is critical to the effective and efficient life-cycle management of this inventory.

Building Condition Reports provide the detailed technical information on which the Asset Management Plans are based. While the condition of the majority of PWGSC assets has been assessed in the past, the data in the Building Condition Reports and subsequently, the analysis Asset Management Plans, must be updated every 5 years to ensure their accuracy and to provide best support possible to managers making capital and repair investment decisions.

1.2 Building Condition Report - The New Approach

Prior to 2002 PWGSC BCRs were always delivered as a paper-based report. While this approach worked reasonably well for single assets, performing an analysis to determine the overall condition of the portfolio was a very arduous task.

In 2002, PWGSC purchased an off-the-shelf database application to hold and summarize building condition information. This application, with the trade name "Recapp", was configured for use with existing business processes and named "Capital Asset Planning System" (CAPS) for use within the PWGSC environment.

This database application greatly increased the usefulness of the building condition data. Asset BCRs are kept current as yearly inflation updates to project costs and project completion information is entered. CAPS generated reports permit the planning of projects at the portfolio level with the potential for cost savings by taking advantage of the economies of scale.

1.3 Asset Validation Survey (AVS) Tool

To simplify the data entry process, the vendor of the CAPS application provides a self-configuring, Microsoft Access™ database that can be used to export the data one building at a time. This tool, called the Asset Validation Survey (AVS) tool, will be provided to users for use when conducting BCRs.

AVS data files exported from CAPS, for use in BCR data collection, contain all the current BCR data in the CAPS application and the latest Building Performance Review, which is updated annually. Once the BCR file is completed, it is to be reviewed by the Asset Manager for Quality Assurance. Upon Asset Manager approval, the file is returned to PWGSC for an administrative Quality Assurance, and then imported into the application. This allows a standardized approach for the collection of BCR data across Canada.

1.4 General Requirements

This Statement of Work describes the work required to complete a Building Condition Report. In general, a BCR is an assessment of the condition of the components and recommended actions required to maintain the asset in operating condition during a projected 30 years. The BCR covers all components on the site and in the asset organized as follows:

- Site related components;
- Architectural related components;
- Structural components;
- Horizontal and vertical transportation;
- Mechanical components, and;
- Electrical components

There are multiple levels of reporting available to establish the current status of the building. One is the level 2 general BCR and another is a specifically detailed level 3 investigation (Stand-Alone) which can be a sub-set of the same process to create the overall BCR. Once the objectives of the Building Condition Report are established, there will be a clear indication of the level 2 or level 3 inclusion.

The objective of a level 2 Building Condition Report is to investigate various building and site improvement factors including:

- Component condition and assessment of remaining life,
- Equipment obsolescence,
- Design problems and deficiencies that adversely affect operation and maintenance activities,
- Impact of compliance with Treasury Board Secretariat temperature, humidity and ventilation standards,
- Workstation density maximums imposed by design limitations,
- Compliance with the latest edition / revision of all applicable standards & codes (including, but not limited to: Health, Fire, Life Safety Codes, National Building Code, Electrical Safety Program),
- Compliance with pertinent local by-laws,
- Effective age and remaining economic life of building components,
- Confirmation of regulatory testing,
- Functionality/Serviceability Assessment
- Other level three studies (stand alone)
- Accessibility Audit (stand alone)
- Seismic screening/assessment, (stand alone)

The intent of the level 2 BCR is to identify the events required to bring an asset to Class B (BOMA definition) level of accommodation and to maintain that level throughout a 30 year planning horizon. If an asset is at the Class A (BOMA definition) level of accommodation then the level to be maintained during the 30-year planning horizon is Class A (BOMA definition).

The concept of full life cycle costing for the facility is the basis for the development of the long-term capital plan. The 30-year capital plan should indicate the optimal timing / grouping of recommended events in order to minimize overall cost and tenant disruption.

1.4.1 Thirty Year Window of Capital and Repair Events

Prior to the use of the Capital Asset Planning System, Building Condition Reports have always had a 25-year planning horizon. Since the BCR data in the CAPS application is kept up to date through yearly data entry, the 25-year horizon for CAPS reports would only be valid for one year. The number of years of valid planning data available reduces by one year for every year since the last BCR. To ensure PWGSC continues to have valid 25-year forecasts of events costs during the 5 years between BCRs, PWGSC now requires a 30-year planning horizon.

1.4.2 Component (or Element) list

To ensure consistency, PWGSC has defined a master list of components from which the specific components that make up an asset can be chosen. These components establish the level of detail required in the BCR. Once chosen for a particular asset, each component is entered into the AVS file.

Component data, including projected costs to maintain building condition, are associated with the relevant component.

Note: In this document we will use the word “element” and “component” interchangeably.

1.4.3 Events

An “event” is the name given to a recommended action to repair or replace a component. Events are typically grouped together into projects that are implemented once funding has been secured. In a BCR events shall be classified by event type so that various building performance measures can be calculated and the status of government programs can be ascertained.

An event shall only cover that set of tasks that can be accomplished during one fiscal year. Recommended component repair or replacement events envisioned to last longer than one year shall be entered in AVS as multiple events. Each of these events shall cover one years worth of work and all these events shall be grouped to indicate that they are all part of a larger component replacement program.

1.5 Component Related Requirements

This section describes the work that the consultant/assessor will perform at the component level when producing a BCR.

1.5.1 Validation of the Component List

The AVS file for any building contains a component list specific to that building and site improvements. To ensure the BCR will cover the entire building, the first task in writing a BCR shall be to validate the existing component list. The existence of each component in the list shall be confirmed by visual confirmation at the building and site. Use the master component list in the AVS tool as a guide to establishing the granularity to which the building will be broken down. Components in the building’s component list, but not found in the building shall be deleted. Components found to be of an incorrect type (e.g. tar and gravel roof cover instead of an inverted roof cover) shall be reclassified to the correct component type. Components in the building and in the master list but missing from the building component list shall be added.

1.5.2 Component Name

When using the AVS tool the default component name is the same as the component’s name in the master component list with the asset name appended. To help position the component within the building, its location shall be inserted between these two parts of the default name. For example, if there were two different types of roof cover used on a building then the consultant/assessor will identify where each is located. (E.g. Penthouse, A wing, etc.) This will not be required where a component can be found in more than one location.

1.5.3 Component Inspection and the Component Evaluation Criteria List

Each component in the AVS tool has a list of possible deficiencies associated with it. As part of the inspection process, the deficiency list for each component shall be reviewed and those deficiencies found to be present identified by a mouse click in the default box for each one. A note/narrative can be entered to further explain the deficiency.

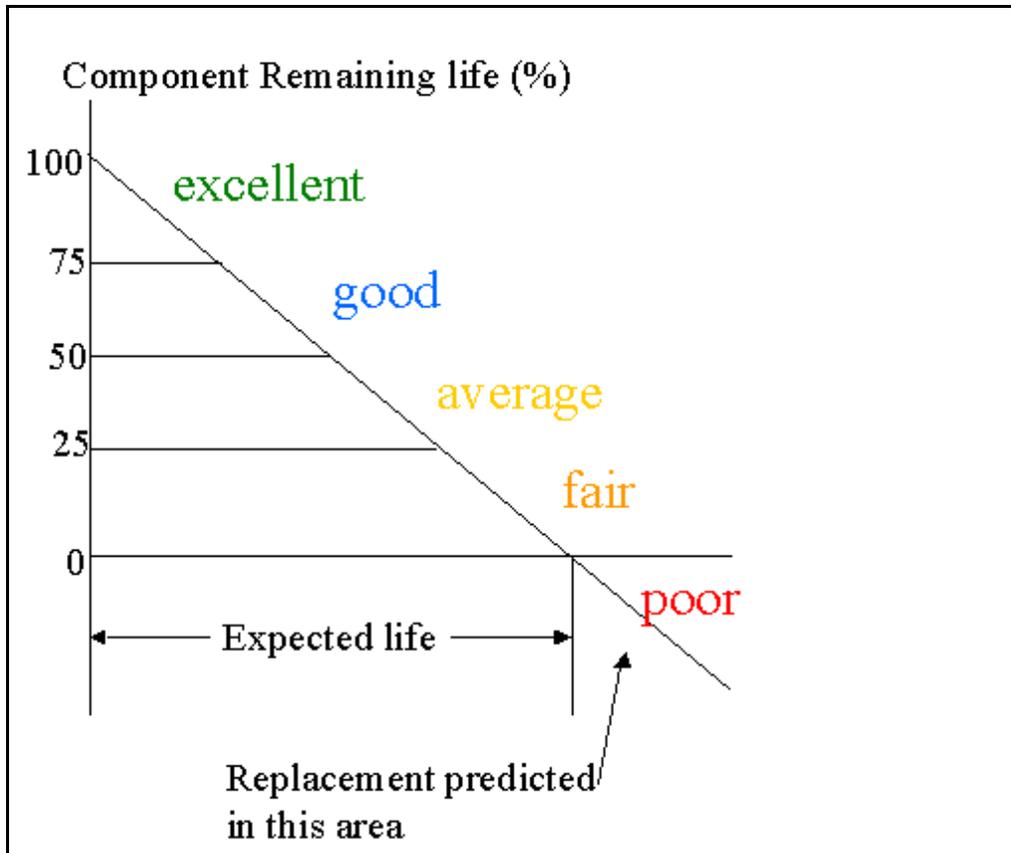
1.5.4 Establishing Component Condition

The first step in establishing the condition of a component is to decide on a component's remaining life. The remaining life shall be determined by considering the following factors:

- Age of the component
- Component expected life
- Identified deficiencies
- The component service conditions including duty cycles, weather conditions, hours of operation.
- Maintenance practices
- Obsolescence
- Operational or functional performance problems

Then, as a result of the inspection process the condition of each component shall be determined as "excellent", "good", "average", "fair" or "poor". For purposes of consistency, each of these five possible conditions is related to the remaining life of a component divided by its expected or theoretical life expressed as a percentage. The following chart can illustrate how this works.

Note: Percentages at the boundaries between two conditions shall link to the condition below the boundary. (E.g. 50% of life remaining would imply average condition).



Finally, the expected or theoretical life of every component shall be established as part of the inspection process. For convenience the average expected life of every component in the CAPS application has been determined. If the consultant/assessor feels that, under the circumstances in which the component is being used, this expected life is too high or too low, the expected life shall be modified to suit the situation.

1.5.5 Required Component Photographs

A good photograph is worth a thousand words. To give a better understanding of the asset, the consultant/assessor will always include a photograph of the following components:

- Asset (See 1.7.2)
- 00.1A-055 Signage
- 00.2A-010 Paved Parking Lots/ garage
- 01.3-050 Exterior Wall Finishes
- 01.4 Roof
- 03.1A-050 Boilers
- 03.1A-070 Chillers
- 03.1A-072 Cooling Towers
- 03.2A-010 Controls, Electrical or Pneumatic
- 03.3-025C05 Domestic Hot Water Tanks

- 04.1A-010 Primary Switch Gear
- 04.1A-020 Primary Transformer & Vault
- 04.2 Secondary Service Electrical

- 04.2A-010 Secondary Switchgear
- 04.2A-020 Secondary Transformer
- 04.2A-050 Cabling, Raceways & Bus Ducts
- 04.2A-070 Distribution Panels
- 04.3A-010 General Lighting
- 09.1S - Cafeteria (link these photos to Cafeteria renovations)
- 09.2S - Lobby – all four sides, ceiling and floor (link these photos to Lobby renovations)
- 09.4S - Washrooms (typical, not one of each) (link these photos to Washroom renovations)

These photographs, as well as those specified elsewhere in this document must be in JPEG format and have VGA resolution (640 X 480). The camera's JPEG compression shall be set to "basic" or "normal" (16:1 or 8:1 respectively) to achieve the lowest possible file size the camera can generate. The consultant/assessor will include a description with photograph clearly explaining the subject matter. To avoid distortion within the CAPS application, please take all pictures in landscape format (Do not hold the camera on end).

1.5.6 Component Details

Associated with each component listed, there are several component details that shall be reviewed and updated as necessary. These details are:

- Expected life
- Component Cost (if a replacement event is included)
- Component Condition (See **1.5.4 - Establishing Component Condition**)
- Quantity (quantities associated to all the components covered in the 30 year horizon)
- Measurement units to use for the quantity field above
- Last Major Action Year

The definition and requirements for each field are listed below:

1.5.6.1 Expected life span

The expected life span of a component is an estimate of the number of years a component will last, from brand new, before it must be replaced. Right clicking on any component in the AVS tool to "view structure details ..." will show the average estimated expected life for any component in the CAPS database. This number, or, a number modified as described in paragraph 1.5.4 above, shall be entered into this field.

1.5.6.2 Component Cost

The cost (replacement cost new) of each component shall be calculated and entered into this detail field, when there is a replacement event. This is to be done using the PWGSC provided cost-estimating tool. The best time to fill in this field is when an event cost to replace that component is being calculated.

Please see section **1.6.3.3 Estimated Event Cost** for a description of the Costing Tool and **Appendix III** for additional information.

1.5.6.3 Quantity (of the component)

The quantity of the element or component in the building shall be determined for replacement cost estimating purposes. Distance, area and volume measurements shall be measured using the metric system. These values are required to calculate component replacement costs.

1.5.6.4 Measurement Units

Select the appropriate measurement unit for the quantity number entered in the field above. Selections required by the costing tool are:

- Bhp Boiler capacity is specified in Boiler Horse Power
- BTU Size of forced air furnaces is specified in British Thermal Units
- tons Air Handling Unit cooling capacity is specified in tons of cooling
- ea Number of units (e.g. doors, fixtures, etc.)
- flts The number of flights of stairs in the building
- Hp The total horsepower of the HVAC pumps
- level The number of levels an escalator rises/drops
- ltr Size of tanks in liters
- m Length of a component in meters
- m² Area of a component in square meters
- pt Total number of sensing and control points in a control system
- seat Total number of seats (e.g. bleachers)
- stp The number of stops (floors) an elevator services
- sum Total cost of the unit (e.g. traffic control system)

If the correct units are missing from the AVS tool, make reference to the correct units in the Component description narrative field.

1.5.6.5 Last Major Action Year

The last major action year for a component is the last year the component was replaced or renovated to the point where its expected life is now as long as if it were new. The consultant/assessor will update this field for each component in the asset as part of the BCR. If the last major action year is not known, then it shall be determined by subtracting the expected life for that component from the year the next replacement or renewal renovation is recommended. If the component has never been replaced, the consultant/assessor will use the year of construction as the last major action year for that component.

1.5.7 Component Narratives

There are two component level narratives associated with each component. Each of these narratives is listed below along with a description of the content required for each. If a narrative already exists, then it shall be reviewed and modified to reflect the current situation.

1.5.7.1 Component Description

The description of the component should include:

- Basic Description (i.e. make/model)
- The location of the component
- The quality of the component (Above average, average, below average)
- The capacity or performance of the component

This information is to be recorded against the component and carried forward in the executive summary.

1.5.7.2 Component Condition and Anticipated Replacement Date

This narrative field should include:

- An assessment of the impact of each of the components deficiencies on the component's remaining life.
- Quality and service conditions that will lengthen or shorten the component's expected life span, for example:
 - i. Below average quality component
 - ii. Component or system design
 - iii. No longer supported by the supplier
 - iv. Inadequate maintenance
 - v. Inadequate performance
 - vi. Damage from external sources
- The rationale for component's condition rating (Excellent, Good, Average, Fair or Poor).
- The year the component was last replaced and establishment of the next replacement date.
- An overview of the component's condition and recommendations/predictions for future repair and replacement projects. (Details of these projects will be described within the event description narrative field)

1.5.7.3 BPR Narrative (Mandatory if component rating is unsatisfactory)

If, during the last Building Performance Review (BPR), one or more components were considered operationally unsatisfactory, the BPR team will have given each of those component an "unsatisfactory" status and filled in this narrative field describing the reason why. The consultant/assessor will review this narrative field for each "unsatisfactory" component and recommend and cost a course of action to rectify the problem described in the form of an event. Discussions with the Property Management team shall be held to ensure the consultant/assessor fully understands the problem described for each "unsatisfactory" component.

Note: This field can also hold valuable information from the BPR, even if the status is "Satisfactory".

1.6 Event Related Requirements

Once the process of evaluating a component's condition has been completed, the recommended replacement or repair events shall be entered into the AVS application.

Note: BCR events typically apply to "replacement" or "repair" activities over \$5,000. However, events under \$5,000 may still be considered valid, as long as they do not apply to maintenance activities (i.e. changing oil or replacing filter).

When generating a report in the CAPS application, the user can check a box that will cause virtual events to be included in the report. Virtual cycling will automatically repeat all the repair/replacement events entered for one complete lifecycle for each component. The number entered into the component data field labeled "expected life" determines the component lifecycle. PWGSC has decided to make use of this feature. Therefore the consultant/assessor will only enter one lifecycle (expected life) worth of repair events and replacement events into the AVS tool.

1.6.1 Event Classification

In CAPS several event classes have been defined and placed in an event structure. The highest level of this event structure sorts the events into Capital and Repair projects. The criteria for determining whether an event is a Capital or Repair project are based on the rules for accrual accounting and can be found in Appendix I. An event shall always be classified at the lowest level of the event classification structure. Each branch of the structure tree, whether Capital or Repair is almost the same. The justification for recommending each event shall be used to determine that events classification. Possible choices are:

Environmental

- Asbestos
- Hazardous Materials
- Ozone Depleting Substances
- PCBs
- Storage Tanks
- Waste Management

Functional

- Accessibility
- Code / Directive Compliance (see subcategories in appendix II)
- Design Problems and Deficiencies
- Domestic Water Quality
- Federal Identity Program (FIP)
- Indoor Air Quality
- Security
- Seismic

Operational (consumption reduction)

- Chilled Water
- Domestic Water Usage
- Electrical
- Federal Building Initiative (FBI)
- Fuel Oil
- High Temperature Water
- Natural Gas
- Steam

Physical (condition)

- Component Life Extension
- Component Replacement or New (to the asset)
- Equipment Obsolescence

Whole Building Expenditures

- Used to classify events resulting in deliverables in document format, including: studies, reports, audits, plans, etc.

The majority of events are usually classified under the “physical” classification category as a component life extension or component replacement event. The other classification choices have been chosen to facilitate reporting on various government programs and to help determine asset performance in those areas.

1.6.2 Required Event Photographs

A photograph shall only be included with a recommend event if:

- There is visual evidence of damage or wear.
- There is a visually evident health or safety risk.
- There is a visually evident code or directive compliance issue.
- The photograph will help explain the event implementation strategy
- Visual evidence is required to explain the event implementation strategy.
- There is some other valid reason for adding a photograph.

Please refer to Section “1.5.5 **Required Component Photographs**” for photograph specifications.

1.6.3 Event Details

The event details listed below shall be validated and entered or updated in the AVS file for every new or existing event.

1.6.3.1 Brief Event Description

This description is used in CAPS spreadsheet reports and should therefore be as short and concise as possible, preferably no more than 100 characters (e.g. replace roof, repair boiler, etc.), and should not be kept as the default name. This field should be used to identify any potential code or Health and Safety considerations.

Note: CAPS will automatically assign a priority ranking to each event, based on criteria linked to the classification of the asset, component and event, as well as the predetermined tier-value of the asset. CAPS prioritization data is a valuable component of the BMP Event Listing and is to be used by the PFM when determining their project priorities.

1.6.3.2 Current Event Year

The recommended year of event implementation shall be validated and entered into this field.

1.6.3.3 Estimated Event Cost

The total estimated event cost at a class D accuracy, in current year dollars, shall be validated and entered into this field.

To calculate component replacement costs, the consultant/assessor will use the PWGSC provided costing tool. This costing tool consists of a costing database, which is available through the AVS tool and is used to provide the baseline costs, and a spreadsheet, which contains location cost adjustment amounts determined by the city in which the asset is located.

To calculate the cost of component life extension events and component replacement cost if you feel that use of PWGSC costing tool would be inappropriate given component replacement requirements, cost estimates for component life extension events shall be determined using a commercially available cost-estimating tool, not provided. When costs are estimated without using the PWGSC provided cost estimating tool, the consultant/assessor will ensure the cost estimate includes a construction contingency equal to 15% of the base costs, and an amount to cover project soft costs of 30%. The base costs, construction contingency and project soft costs shall be separately entered into the AVS tool-costing module as cost lines to substantiate the total event cost.

Component replacement costs for each component shall also be entered into the component detail labeled "component cost". See section **1.5.6.2 Component Cost**.

Note: PWGSC may change the calculation of soft costs during the standing offer contract.

1.6.4 Event Narratives

There are three event narratives associated with each event. Each of these narratives is listed below along with a description of the content required for each.

Event Description

The following information shall be included in every event description:

- A full description of what is to be done
- The results expected from event implementation

Event Justification and Strategy

The following information shall be included in this narrative field:

- Rational for why the event is required.
- List of what deficiency(ies) the event correcting or enhancement is it providing.
- Indicate any potential for cost savings, increased performance, changes in function, reduction in energy consumption, greater code compliance, and increased accessibility.
- How the event should be carried out; steps required
- Indicate if it would be better to wait for a particular time of year?
- Will the tenants be disrupted?
- Describe the precautions that should be adhered to, to minimize impact on the tenant and building operations.
 - List other events that should be grouped with this event and implemented together.

Implication of Event Deferral (Risks)

The answers to the following questions shall be included in this event narrative:

- What will be the impact on asset operations if the event is delayed?
- Will there be any additional degradation (cost) if the event is delayed?

- What is the potential impact of other components if the event is delayed?
- What is the impact on the tenants health and working environment if the event is delayed?
- What is the impact on other related events/projects?

1.7 Asset Data Requirements

The asset data requirements for a BCR are described in this section.

1.7.1 Asset Details

There is only one asset detail to be filled in. The field is called “Date of current BCR”. The date the BCR will be completed shall be entered into this field.

1.7.2 Asset Photographs

The consultant/assessor will include a recent photograph of the front of the building and a description, including building name and location. Please refer to Section “1.5.5 Required Component Photographs” for photograph specifications.

1.7.3 Asset Narratives

The first ten narrative fields in the AVS file are used in the Asset Management Plan and don’t need to be updated as part of this contract.

1.7.3.1 BCR Project Team and Documents

The following information should be included in this narrative field:

- List of participants including: name, discipline and the company they work for
- Limitations on liability (only if required by the consultant)
- List of documents reviewed
- List of drawings reviewed

1.7.3.2 Building History

When creating or adding to the building history, include the following:

- Date the asset was constructed
- Subsequent additions
- Major alterations/renovations
- Any known changes in the building/facility use and occupancy

1.7.3.3 BCR Executive Summary

The following list describes what the consultant/assessor will include in the “BCR Executive Summary”:

- A brief description of the Asset (if previously completed please verify content for accuracy) including:
 - i. Location

- ii. Exterior walls
- iii. Roof cover
- iv. Frame
- v. Heating and Cooling System
- vi. Number of Floors above and below grade, gross area
- vii. Parking structures/lots
- viii. Other significant site improvements
- A description of the original design intent.
- Description of what the asset is currently being used as.
- Provide an overall assessment of the condition of the asset and provide an estimate of its remaining service life.
- State the cumulative cost of all events as a percentage of the asset replacement cost new (RCN).
- For each of the following disciplines state the 5 and 10-year cumulative costs in dollars and as a percentage of the asset's RCN.
 - i. Site
 - ii. Architecture and Structural
 - iii. Vertical and Horizontal Transportation
 - iv. Mechanical
 - v. Electrical
 - vi. Renovations

1.7.3.4 Design Parameters & Deficiencies – Current and Future

If a Functionality/Serviceability assessment has been carried out since the last BCR was completed, the consultant/assessor will review the identified serviceability issues and recommend solutions by creating and entering events into the AVS file. The consultant/assessor will describe the issues reviewed and write an overview of the recommendations under this heading in the AVS file.

If a Functionality/Serviceability Assessment has not been completed, components that received an unsatisfactory rating during the last BPR shall be considered as the source of serviceability issues. Each unsatisfactory component shall be reviewed, serviceability issues identified and solutions recommended. The consultant/assessor will describe the issues reviewed and write an overview of the recommendations under this heading in the AVS file.

See paragraph **1.7.3.16 Building Performance Review** for instructions on how to process the information provided and what to add to this narrative field.

For the parameters listed below, the consultant/assessor will compare the maximum capacities against those required for the current workstation density, and any workstation density proposed for the future and make recommendations to overcome any physical or code limiting factors, excluding floor area.

If a workstation density for the future is not provided, use the maximum number possible. The maximum possible number of workstations can be calculated by dividing the usable area of the building by the target area allowed per workstation, as per the PWGSC 2005 fit-up standard. The parameters are:

- Maximum floor loading
- Maximum heating capacity
- Maximum cooling capacity
- Maximum electrical capacity
- Elevator capacities

- Washroom capacities
- Emergency exit stairwell size

1.7.3.5 Overview of Architectural and Structural Condition

The Consultant/Assessor will provide a description of the following structural characteristics:

- Size of structural column grid with respect to floor layout, remodeling potential and floor plate dimensions.
- Eccentricity of the core relative to the center of the building.
- Floor – ceiling dimensions.
- Adequacy of the plenum space.
- Shear walls, X-bracing, moment frame.
- Run-off water control.
- Abnormal deflection/deformation of visible structural components

The Consultant/Assessor will provide an overview, condition, recommendations and the long-term outlook for the following building elements:

- Foundations, basements, crawl spaces.
- Super Structure, including the frame and floor and roof structure
- Overview of seismic screening (only if it is part of the call up)
- Building Envelope, including the exterior cladding, the windows (including skylights, exterior doors, and the roof cover.
- Interior elements including, interior design/layout, the wall finishes, ceiling finishes, floor finishes, lobby, washrooms and cafeteria.

1.7.3.6 Overview of Site Condition

The Consultant/Assessor will provide an overview of the functionality and condition of the site improvements and long-term outlook, including the following components:

- Landscaping and site related components
- Paved surface systems including, roadways, sidewalks, parking lots, recreational areas and playgrounds
- Unpaved surface systems including, roadways, walkways, parking lots, recreational areas, and playground.

1.7.3.7 Overview of Vertical and Horizontal Transportation Condition

The Consultant/Assessor will provide an overview of the condition and recommendations for the primary vertical/horizon transportation systems, including the long-term outlook.

1.7.3.8 Overview of Mechanical Systems Condition

The Consultant/Assessor will provide an overview of the condition and recommendations for the major mechanical systems, including the long-term outlook.

1.7.3.9 Overview of Electrical Systems Condition

The Consultant/Assessor will provide an overview of the condition and recommendations for the major electrical systems, including the long-term outlook.

1.7.3.10 Compliance with TBS Temperature and Humidity Targets

The Consultant/Assessor will ensure compliance with “TBS Occupational Health and Safety Directive, Appendix A – Temperature and Humidity Targets” (http://www.tbs-sct.gc.ca/pubs_pol/hrpubs/tbm_119/oshd-dsst/oshd-dsst01-eng.asp).

If the asset meets or exceeds these targets the consultant/assessor will describe any adverse effects on the asset’s components, if they exist. If the asset does not meet or exceed these targets, the consultant/assessor will describe why and what could be done to meet the temperature and humidity targets. Any recommended events shall be added to the AVS file.

1.7.3.11 Regulatory Testing Confirmation

The Consultant/Assessor will review the latest regulatory testing results and list any tests that were omitted. Include recommendations for remedial action if necessary and the reasons for omission.

1.7.3.12 Compliance with Accessibility Standards

The Consultant/Assessor will complete this narrative field. The narrative field shall contain a summary of the results of the audit.

1.7.3.13 Overview of Environmental Issues

The Consultant/Assessor will review the latest Environmental assessment and create events to address any environmental issues raised. These issues could include:

- Asbestos Management
- PCB Management
- Hazardous Material Management
- Ozone Depleting Substances Management
- Pest Management Initiatives
- Storage Tanks
- Waste Management Initiatives
- If asked, the consultant/assessor will write a summary of the results of Green Globes Assessment

1.7.3.14 Overview of Project Grouping Recommendations

The Consultant/Assessor will list, in summary format, all the events that should be grouped and implemented at the same time due to their interdependence. The consultant/assessor will provide a justification for each grouping proposed and indicate if the tenants will need to vacate the area or the whole asset during project implementation. This shall be included in BCR Executive Summary.

1.7.3.15 Code Compliance Summary

The Consultant/Assessor will check for code compliance of the following building equipment and systems:

- Occupancy types/loads
- Ventilation
- Heating
- Cooling
- Pressure Vessels
- Fire Detection/Protection
- Emergency doors/exits/lighting
- Electrical power capacity
- Lighting
- Elevators
- Washrooms

The Consultant/Assessor will review the latest version of the Building Performance Review (see the next heading) and review the paragraph on code compliance.

The Consultant/Assessor will list all code infractions, categorized by:

- National Building Code
- Provincial Building Code
- Fire and Safety Code (incl. CLC)

For each infraction, the Consultant shall include a recommended remedy in the form of an event entered into the AVS file and indicate if addressing the infraction could be delayed due to the age of the building.

1.7.3.16 Building Performance Review

When completed, the latest Building Performance Review will have been entered under this heading in the AVS file and each component will have a satisfactory or unsatisfactory rating. The Consultant/Assessor will review the section on tenant satisfaction and discuss any “unsatisfactory” ratings with the Property Manager. Equipment or systems that have ongoing operational issues shall be assessed and recommendations in the form of events to address these issues shall be added to the AVS file and a summary of the issues and recommendation shall be written in narrative field “Design Parameters & Deficiencies – Current and Future”.

1.8 Inspection Process

1.8.1 Asset Validation Survey Tool Reports

The AVS tool can generate three types of reports. The first is known as the “spreadsheet report” and lists the asset’s components and all the associated event information.

The second type of report is called the “condition report” which is available with or without pictures. This report will give the user a complete record of all the data that has been entered into the AVS tool, including all of the asset narratives. Printed off at the beginning of the inspection process, this report can also be used by the BCR inspection team to collect the building condition information. It contains a list of all the deficiencies that can be chosen for each component.

The third type of report is called a “technical component list”. This report is used to give the user an overview of component condition and the total of all events scheduled in any given year for each component.

1.8.2 AVS Files

When a Consultant/Assessor uses a single person to enter all the data into the AVS file, the file is exported to include all disciplines. If each discipline lead is required to enter their own data, a separate AVS export file can be provided for each. The Consultant/Assessor can specify which approach they wish to use when asking for the AVS files for a building.

1.8.3 Interview with the Asset management Team

It is the responsibility of the consultant/assessor to schedule an interview with the asset management team at the beginning of every building inspection. This meeting will give the Consultant/Assessor an opportunity to validate the asset's component list, confirm the existence of operational problems, collect information about projects that have been completed since the last BCR and schedule escorted access to the building for the BCR team.

During the winter months, components located outside the asset may not be accessible or visible due to a layer of snow. In these circumstances the Consultant/Assessor use the condition assessment provided by the property management team to prepare a preliminary schedule of proposed events. The consultant/assessor will return to the asset, weather permitting, and confirm the condition of all those components whose condition could not be assessed during the original visit. The Consultant/Assessor will update the BCR with any changes required to reflect actual component condition. This process shall not delay the delivery of the first version of the BCR.

2. Functionality and Serviceability Assessment (stand alone task)

The Consultant/Assessor will be asked to perform Functionality and Serviceability Assessments (FSA).

3. Level III Studies (stand alone task)

A Building Condition Report - Level 3 is a specialized technical review undertaken to address specific deficiencies or recommendations identified from the BCR - Level 2. It can be performed on an ad hoc basis or in response to special custodian requests. The BCR - Level 3 normally covers specialized issues such as occupant environmental complaints or energy audits. It may also be called for as part of a broader feasibility study related to key investment decisions, such as a major renovation, acquisition, or disposal. Level 3 reviews are performed by technical specialists and could involve one or more disciplines.

The Consultant may be asked to undertake level 3 investigations that could include items listed below:

The selection could be part of these series of building and site improvement factors including but not limited to:

- 1. Assessment of specific building systems in any building category.**
 - 1.1 Building envelopes to include all types of cladding and roof assemblies. "
 - 1.2 Seismic screenings and assessments "
 - 1.3 Thermography and Energy Audits "
 - 1.4 Fire Alarms Systems "
 - 1.5 Fire Protection to include suppression, emergency lighting and extinguishers. "
 - 1.6 Mould Inspections "
 - 1.7 Asbestos verifications "
 - 1.8 Accessibility under Federal Barrier Free standards "

- 2. Assessment of Specialty Areas in any building category**
 - 2.1 Generator Rooms "
 - 2.2 Major Mechanical equipment rooms (heating) "
 - 2.3 Elevator Machine Rooms "
 - 2.4 Boiler Rooms "
 - 2.5 Pump and Sprinkler Rooms "
 - 2.6 Transformer Vaults "
 - 2.7 Ventilation & Air Conditioning Equipment Rooms "

- 3. Assessment of Specialty Structures**
 - 3.1 Air Supported Structures "
 - 3.2 Parking Structures "
 - 3.3 Retaining Wall Structures "
 - 3.4 Structures covering Public Spaces "
 - 3.5 Anchor Systems on Bldg. exteriors "
 - 3.6 Storage Tanks (excluding fuel) "
- 4. Assessment of Landscape Features**
 - 4.1 Fences and Gates "
 - 4.2 Sculpture "
 - 4.3 Outdoor Paving "

- 5. Assessment of Environmental Features**
 - 5.1 Fuel tank storage assessed in conjunction with a Federal protocol by the PWGSC Environmental Services."
 - 5.2 Storm drainage solutions "
 - 5.3 Retention ponds & cooling structures "
 - 5.4 Sub-surface drainage, culverts and ditches "

6. Specific types of analyses

- 6.1 Development of alternative solutions rated through risk and cost/benefit analyses
- 6.2 Recommendation of solutions to provide immediate relief and long term asset integrity
- 6.3 Development of costed projects, broken down to the component/event level and including the same narrative and detail data described in section 1.5 and 1.6 for components and event.

4. Accessibility Audit (stand alone task)

The consultant shall complete the Accessibility Audit template in Appendix IV by comparing the current asset configuration against the requirements specified by the 2006 Treasury Board *Accessibility Standard for Real Property* policy available at the website listed below.

- **5.1 Accessibility Requirements of the Treasury Board *Accessibility Standard for Real Property* or subsequent editions (web link: <http://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=12044§ion=text>) and**
- ***CAN CSA B651-95 Barrier Free Design* or *CAN CSA B651-04 Accessible Design for the Built Environment Standards* (confirm with PWGSC the technical standard that is to be referenced prior to commencement of the Building Condition Report).**

Once the template has been completed, the consultant shall enter the recommended events against the relevant components in the AVS file. The year event implementation is recommended and Class “C” cost estimates, including the soft costs as specified in the event costing section, shall be included for each event. **(Note: The costing tool cannot be used here because it is only accurate to Class “D”.)** Other event details and the three narrative fields shall be entered as previously described. One additional event detail indicating the policy year (1995 or 2004) driving the event may need to be entered by the Consultant.

The completed template shall be delivered to PWGSC in MS Word 2000 format.

5. Seismic Screening/Assessment (stand alone tasks)

5.1 GENERIC TERMS OF REFERENCE for Seismic Screenings

A seismic screening shall be carried out in accordance with NRC's "Manual for Screening of Buildings for Seismic Investigation". The screening shall include a site review, a review of available existing building drawings/reports and the submission of the completed NRC Seismic Screening Form. The form is to contain a photograph of the building, relevant sketch(es) and a completed comments section indicating notable observations and any qualifications used in determining the Structural Priority Index (SPI) score. Comments by consultants should not be limited by the space available on the form. It is recommended that a separate write-up describing relevant observations during the review be included. If, for the specific type of building, significant changes have been made in the seismic provisions of the new 2005 National Building Code of Canada, a brief paragraph describing the nature of the changes shall be included in the comments. A provincially registered professional engineer (structural) shall stamp the Seismic Screening Form with his seal.

Context of Screening Results

The SPI score indicates deviation by contributing seismic factors to current seismic construction practices. It is not a detailed assessment and does not identify the level of specific building vulnerabilities. NRC suggests SPI scores be used for evaluation and planning purposes on the following basis:

- less than 10: low priority for further evaluation
- between 10 and 20: medium priority for further evaluation
- between 20 and 30: high priority for further evaluation
- higher than 30: can be considered an exceptional risk

Note: It is understood that NRC's "Manual for Screening of Buildings for Seismic Investigation" was based on NBCC 1990. Should a new screening document based on NBCC 2005 become available, PWGSC may require the screening to be carried out in accordance with both the NRC Manual and the new document.

Seismic Evaluation (Level 3)

5.2 GENERIC TERMS OF REFERENCE for Detailed Seismic Assessment

Detailed Seismic Assessment includes:

1. A gathering and review of existing plans and other documentation on the building.
2. A review of the building's main structural resistance system and elements to both the applicable provincial code, and the NBCC 2005 seismic requirements;
3. Performing relevant on-site investigations and a condition survey of existing elements;
4. Involvement of a geotechnical engineer to address site classifications and foundation requirements;
5. A detailed structural analysis, in accordance to the applicable provincial code and the NBCC 2005, taking into account the proposed alterations and building occupancy;
6. Review of operational and functional components (i.e. non-structural elements) as it relates to operational and life safety requirements. These include, but are not limited to building components such as canopies over exit ways, partitions in corridors and stairwells, roof parapets, mechanical and electrical systems, ceilings, and cladding at access/egress locations.
7. Submission of a seismic assessment report including an evaluation of the sufficiency of the main building structure expressed as a percentage of the applicable provincial code, and the NBCC 2005. The report is also to include an assessment of the non-structural elements identified in 6.

The bulk of the seismic assessment will be done by a structural engineer, but other disciplines (e.g. geotechnical/electrical/mechanical/elevator/architecture) may be required to help coordinate with discipline-specific issues as required. Documents such as NRC's "Guidelines for the Seismic Evaluation of Existing Buildings" and CSA-S832-2006 "Seismic Risk Reduction of Operational and Functional Components of Buildings" shall be considered as reference documents.

Options assessment for seismic upgrades

If the main building structure does not meet 60% of either the applicable provincial code (while it continues to be based on NBCC 1995), or of NBCC 2005 requirements for new construction, upgrade options and approaches are to be investigated, so as to upgrade the seismic resistance of the main structure to at least the 60% level, but preferably to the 100% level. The optimal level of upgrade shall be selected based on financial, functional, operational, security and client requirements. Incorporation of practical aspects of the building alteration is to be carefully considered. New and emerging technologies are also to be carefully considered. Upgrade options for non-structural items are also to be investigated. Options, cost estimates and recommended seismic upgrading approaches are to be documented.

Reference documents such as NRC's "Guideline for Seismic Upgrading Techniques of Building Structures" and the CSA-S832-2006 " Seismic Risk Reduction of Operational and Functional Components of Buildings" are considered as reference documents.

Selection of an upgrade option (whether 60%, 100% or other level) will include consideration of the following, among others:

- Seismic performance level
- Design, project management and construction costs
- Constructability considerations
- Client requirements
- Operational requirements
- Displacement of building occupants
- Long-term flexibility requirements for the building
- Architectural aspects of improvements
- Heritage aspects

Consideration of options will be documented in part by ensuring:

Renovation plans contain the seismic assessment report name, author and date.

Where seismic upgrade work is not required, the existing level of seismic resistance expressed as a percentage of the current NBCC requirements is to be described on the renovation plans.

Where seismic upgrading work is included, details of the seismic improvements including the level of seismic upgrade in relation to the current NBCC requirements, seismic design loads and design philosophy are to be described on the renovation plans.

6. Appendix I – Capital versus Repair

6.1 The Definitions of Capital versus Repair used for event classification in CAPS.

Before assigning an event as CAPITAL, the cost must be greater than \$25k, and one or more of the following rules must apply. Otherwise the event should be classified as a REPAIR:

6.1.1 Does the event...

- Provide an increase in quality over original? The work is being done solely for the purpose of improving the functioning of the asset. If however the work is being done due to the poor condition of the component and the replacement is inherently more functional or of higher quality due to being newer, then the event is a Repair event.

- Improve operating efficiency? The work is being done solely for the purpose of improving the operating efficiency of the asset. If, however, the work is being done due to the poor condition of the component and the replacement is inherently more operationally efficient, then the event is a Repair event.

- Add a new item, system or function to the asset? Adding accessibility capability such as door openers to an asset that does not have them would be considered a Capital event, but replacing existing door openers that are in poor condition would be a Repair event.

- Increase the area of the building? Adding a new wing or floor to the asset.

- Modifications, Upgrades, Refits, Optimize, Refurbish, Aesthetics etc. These words do not automatically denote a CAPITAL project, but here are some rules to guide you:

- i. If the optimizations, upgrade etc. are being performed on a technology-related component (Certain electrical components, DDC Controls, Elevator controls etc) the replacement event is probably an improvement in quality over the original as opposed to a replacement due to physical condition and should therefore be classed as CAPITAL. If an element is being replaced for any reason other than poor condition or obsolescence, its associated event should be classified as CAPITAL.

- ii. Most Lobby refurbishments/refits are for aesthetic purposes. These events normally occur before the end of the typical service life of most lobbies finishes, as there is a need to keep the 'street-appeal' of the asset fresh and new. These events should be classed as CAPITAL.

7. Appendix II - Event Classification

7.1 Event Structure

The event subclasses are the same for both Capital and Repair. The event classification chosen shall reflect the primary reason for the event. (E.g. if the purpose of event is to remove asbestos, then the Environmental Asbestos classification would be used, if the purpose of the event is to repair a component, then the Physical Component life extension event would be used). Where not self-explanatory, definitions are provided:

7.1.1 Environmental

- E Asbestos.
- E Hazardous Materials
- E Ozone
- E PCBs
- E Storage Tanks - This includes oil, propane, gas, and chemical and water storage tanks.
- E Waste Management

7.1.2 Functional

For any event proposed to ensure code or regulatory compliance not covered by environmental classification. Ensure Code reference number is identified in narrative.

- F Accessibility – events required to address deficiencies when the asset is assessed against current deficiency guidelines.
- F Building Code/Canada Labor Code - event to ensure compliance to a specific code:
 - i. F Municipal Codes
 - ii. F National Codes
 - iii. F Fire and Safety Codes – event is prompted by the results of an examination of Fire and Safety Code.
 - iv. F Provincial Codes
 - v. F Treasury Board Secretariat or Deputy Minister Directive – event due to policy/directive)
- F Domestic Water Quality –when event is prompted due to contamination
- F Federal Identity Program (policy on signage)
- F Indoor Air Quality - event is prompted due to results of an examination of Indoor Air Quality. Include events that rectify mold or contamination. Do not include events that rectify temperature comfort issues.
- F Security Events dealing with access control and monitoring over and beyond the normal. EG the current system is adequate but a video monitoring system is installed. This does not include replacing an outdated security system.
- F Seismic event is prompted due to results of Seismic Screening
- F Design Problems or Deficiencies (events dealing with space usability issues)

7.1.3 Operational (Opportunities for energy savings)

Ensure that the event narratives specifically state that the event is being performed for energy efficiency. Do not class events here that are prompted due to end of life conditions.

- O Chilled Water – More efficient Chillers, Chilled water piping systems
- O Domestic Water Usage – Energy efficient faucets, toilets, spray nozzles etc.
- O Electrical – Changing old ballast for energy efficient ones, T8 bulbs for T12s
- O Federal Building Initiative - event is prompted to effect compliance with the FBI
- O Fuel Oil – More efficient Oil-fired Furnaces/heaters
- O Hot Water Heating – More efficient Hot Water Heater
- O Natural Gas – More efficient Natural Gas furnace/heaters
- O Steam – More efficient Boilers, piping

7.1.4 Physical

Physical class can be used to describe 90 percent or more of events in the database. The challenge is to first select another class that may better suit or that describes the event in more detail and if there were none that fits then the event would be placed in one of the two subclasses here.

- P Component life extension - an action that will allow the component to last longer -repair floor slab, patch leaking roof areas
- P Component replacement or new – replacement of the component – paint, carpeting, doors, pumps etc.
- P Equipment Obsolescence - the component still works but there are problems with obtaining spare parts or service/maintenance contracts

7.1.5 Whole Building Expenditures

This category includes any Studies/Reports/Investigations and Level III Studies (All components with the number 10.1A-* and 10.2-* inclusive) If the money budgeted for the study includes a physical action, and is over 25K then the event should be classed as CAPITAL. If the money budgeted for the study does not include a physical action, then the event should be classed as REPAIR.

8. Appendix III – Costing Tool

8.1 Background

In order to encourage a more consistent methodology for estimating the cost of events listed in the CAPS application, PWGSC has developed a Costing Tool, which shall be used when calculating the cost of component replacement. Material and Labour costs, standard construction contingency of 15% and project soft cost of 30% have all been predetermined in the costing tool to ensure cost estimates in the CAPS application have all been developed in a consistent fashion. These per-unit costs in the Costing Tool will be updated on an annual basis.

The cost of repair events cannot be calculating using the PWGSC provided costing tool. Consultants shall use one of the commercially available cost estimating systems to establish component life extension event costs.

9. Appendix IV - Accessibility Audit Template

**PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
2005-2009 ACCESSIBILITY AUDIT PROGRAM**

**ACCESSIBILITY AUDIT
NAME OF BUILDING
ADDRESS OF BUILDING
CITY, PROVINCE
PWGSC ASSET NUMBER
TB DFRP IDENTIFIER**

PREPARED BY:

**GROUP NAME
REAL PROPERTY SERVICES
PUBLIC WORKS AND GOVERNMENT SERVICES CANADA**

DATE:

PROJECT NO:

ACCESSIBILITY EVALUATION: *BUILDING NAME*

TABLE OF CONTENTS

1.0 INTRODUCTION ... X
1.1 Federal Standards

2.0 FACILITY OVERVIEW..... X

3.0 WALKWAYS X
3.1 Existing Conditions
3.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard
3.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

4.0 PARKING X
4.1 Existing Conditions
4.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard
4.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

5.0 BUILDING ENTRANCES X
5.1 Existing Conditions
5.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard
5.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

6.0 VERTICAL MOVEMENT X
6.1 Existing Conditions
6.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard
6.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

7.0 INTERIOR DOORS AND CORRIDORS (Base Building) X
7.1 Existing Conditions
7.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard
7.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

8.0 WASHROOMS X
8.1 Existing Conditions
8.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard
8.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

9.0 DRINKING FOUNTAINS X
9.1 Existing Conditions
9.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard
9.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

10.0	PUBLIC TELEPHONES/TACTILE SIGNAGE	X
10.1	Existing Conditions	
10.2	Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard	
10.3	Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment	
11.0	PUBLIC AREAS	X
11.1	Existing Conditions	
11.2	Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard	
11.3	Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment	
12.0	BUILDING EXEMPTIONS	X
12.1	Recommended Exemptions	
13.0	ACCESSIBILITY COMPLIANCE SCORE.....	X
13.1	Existing Compliance with B651 95	
13.2	Existing Compliance with B651 04	
14.0	CLASS C CONSTRUCTION ESTIMATE	X

BIBLIOGRAPHY

APPENDIX A: Accessibility Standard for Real Property, November 1, 2006
Treasury Board of Canada Secretariat

APPENDIX B: Project Team

1.0 INTRODUCTION

This Accessibility Audit report has been initiated by Public Works and Government Canada Asset and Facility Management Services in response to the 2005 'Accessibility for All' report, prepared by the Subcommittee on the Status of Persons with Disabilities for the Standing Committee on Human Resources, Skills Development, Social Development and the Status of Persons with Disabilities.

The Subcommittee on the Status of Persons with Disabilities was mandated to examine various issues related to accessibility for persons with disabilities including the accessibility of buildings and transportation under federal jurisdiction; issues of accessibility related to Parliament Hill, the accessibility of benefits from the Canada Pension Plan, the accessibility of jobs in the federal public service; as well as tax measures for persons with disabilities.

As a result of the Subcommittee's examination of the accessibility of buildings under federal jurisdiction, Recommendation 3 of the 'Accessibility for All' recommended:

The Subcommittee recommends that the Department of Public Works and Government Services Canada establish in 2005 an ongoing audit program of the compliance of federal buildings with technical standard CAN/CSA-B651-04, as formulated by the Canadian Standards Association. A progress report should be tabled in 2007, and all federal buildings must be audited by no later than 2009.

In its formal response to the Subcommittee, PWGSC stated:

Public Works and Government Services Canada (PWGSC) is developing an auditing strategy, electronic database system, and training tools, to establish a program to audit the accessibility of all its facilities, both owned and leased. The audit program will simultaneously follow twin tracks. Firstly, it will audit for compliance with the Treasury Board Accessibility Policy. Secondly, it will audit for compliance with the Canadian Standards Association's technical standard, CAN/CSA-B651-04 Accessible Design for the Built Environment. The federal government is the only jurisdiction in Canada, so far, to adopt this rigorous standard.

The approach PWGSC has chosen for its audit program will help identify gaps between the requirements of Treasury Board policy and the 2004 version of CAN/CSA-B651-04, and provide valuable information for future investments in renovations and acquisitions. A further benefit of the audit will be the opportunity to optimize the department's monitoring and reporting on accessibility within its inventory.

The audit program will comply with, and be guided by, the Treasury Board Accessibility Policy. PWGSC will work with Social Development Canada to ensure that the offices of the latter and its Ministers are among the first public spaces to be audited for accessibility. A progress report on the audit program will be tabled by December 2007, for completion by December 2009.

Consequently, the objective of this accessibility audit is to:

Identify any remaining accessibility improvements required in order to bring the base building elements of the facility in compliance with the *Accessibility Requirements* of the Treasury Board *Accessibility Standard for Real Property* and the CAN CSA B651 95 Barrier-Free Design Standard .

Identify the incremental improvements required in order to bring the base building elements of the facility in compliance with the *Accessibility Requirements* of the Treasury Board *Accessibility Standard for Real Property*, and the CAN CSA B651 04 Accessible Design for the Built Environment Standard.

Identify the Class C construction Costs associated with compliance with each of the above.

Document facilities and areas exempted from the requirements of Treasury Board *Accessibility Standard for Real Property* and the rationale supporting the exemptions.

1.1 Federal Accessibility Standards

The current policy regulating accessibility to federal facilities is identified in the Treasury Board of Canada *Accessibility Standard for Real Property (ASRP)*, which replaced the 1998 *Treasury Board Real Property Accessibility Policy* on November 1, 2006. For reference purposes, a copy of the ASRP has been included as Appendix A of this document.

Section 5 of the ASRP, *Accessibility Requirements*, provides a detailed 'scoping' of accessibility requirements for federal real property, and these requirements have been included under the headings for the various base building and/or site elements audited in this study.

Section 5.2 of the ASRP also specifies the use of the Canadian Standards Association B651 Standard as the technical reference for accessibility, and PWGSC's 1990-1995 Accessibility Program resulted in upgrading of its inventory of Crown Owned and Leased inventory to comply with the *CAN/CSA B-651-M90* and *CAN CSA B651 95* editions of the *Barrier-Free Design Standard*. Although amendments between the M90 and 95 editions of the standard were relatively minor, the standard was superceded in August 2004 by the *CAN CSA B651 04 Accessible Design for the Built Environment* standard. B651 04 presents numerous technical changes from the two earlier editions of the standard and also incorporates the accessibility requirements of the CAN CSA B44 00 Elevator Code as a mandatory annex of the standard.

In March, 1992, the Accessibility Office, PWC Headquarters issued an [Accessibility Evaluation Guide](#) that identifies various 'Assessment Considerations' for existing installations that vary slightly from the technical requirements identified in CAN CSA B651 and do not compromise effective use by persons with disabilities. These have been noted where applicable. While the [Accessibility Evaluation Guide](#) contains additional Assessment Considerations in addition to those identified in this report, those that have been problematic or open to interpretation have not been referenced in this document. Note also that these Assessment Considerations are not intended for application in new construction, which should be designed fully in accordance with the requirements of the CAN CSA B651.

2.0 FACILITY OVERVIEW

Facility Name:	Insert
Municipal Address:	Insert
Crown-Owned or Leased:	Insert
PWGSC Asset Number:	Insert
PWGSC Cost Centre Number(s):	Insert
Total Rentable Area (m2):	Insert
Building Height (Storeys):	Insert
Total Parking:	Insert
Date of Construction and major capital Improvements:	Insert
Client Departments in Facility/Floor Location:	Insert
Service/utility areas not audited:	Insert

3.0 WALKWAYS

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

c) public areas (including, but not limited to.... walkways);

k) Accessibility shall include routes from accessible parking areas, local public transit stops and all drop-off areas that are within the limits of the federal property to main entrances.

3.1 Existing Conditions

Reference Checklists:

Accessibility Checklist B - Passenger Pick-Up Areas

Accessibility Checklist C - Curb Ramps

Accessibility Checklist D - Accessible Routes

Accessibility Checklist E - Ramps and Platform Lifts

Accessibility Checklist I - Stairs and Stairwells

Overview of Accessibility Elements to Review

As PWGSC has limited control over provincial municipal jurisdictions, the following are to be examined within the property limits of the facility being audited:

Walkways:	Width, gradient, thresholds, gratings in circulation routes, curb ramps.
Exterior Stairs:	Tread configuration (rise, run, nosing design), slip-resistance and colour-contrast of nosings, handrails (profile, extensions, returns). While CSA requires detectable warning surfaces, no national standard has been developed and this work should be deferred until there is an established national standard.
Exterior Ramps:	Ramp width, gradient, landings, handrails (profile, extensions, returns, wall clearances, etc), protective edges, etc.

3.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

3.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to

formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Exterior Walkways

Increase of minimum width of exterior walkways to 1500 mm (CSA 95: 1200 mm minimum).

Curb Ramps

Requires curb ramps to have detectable hazard indicators (CSA 95: colour and texture contrasted only)

Stairs/Ramps

Requirement for extension of handrails for the perimeter of stair landings (CSA 95: 300 mm extensions beyond top of stairs, 300 mm extensions plus one tread depth beyond base of stairs). Change of handrail heights from 860-920 mm (CSA 95: 800-920 mm).

Requirement for ramp handrails to colour contrast with their surroundings (CSA 95: not identified).

Colour contrast of horizontal face of stair nosings to be 50 \pm 10 mm deep (CSA 95: not specified)

Ramps to have colour contrasted strips 50 \pm 10 mm deep at top, base and landings (CSA 95: not specified)

4.0 PARKING

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

j) Where employee or visitor parking is provided, the quantity of accessible parking spaces provided shall conform with municipal by-laws or the following table, whichever has the higher number of accessible spaces:

<i>Total parking spaces</i>	<i>Minimum No. of accessible spaces</i>	<i>Total parking spaces</i>	<i>Minimum No. of accessible spaces</i>
<i>up to 25</i>	<i>1</i>	<i>151-200</i>	<i>6</i>
<i>26-50</i>	<i>2</i>	<i>201-300</i>	<i>7</i>
<i>51-75</i>	<i>3</i>	<i>301-400</i>	<i>8</i>
<i>76-100</i>	<i>4</i>	<i>401-500</i>	<i>9</i>
<i>101-150</i>	<i>5</i>	<i>more than 500</i>	<i>2% of total</i>

Accessible parking spaces shall be within a reasonable and safe proximity of the federal facility but may be distributed among distinct parking areas .

4.1 Existing Conditions

Reference Checklists:

Accessibility Checklist A - Car & Van Parking

Overview of Accessibility Elements to Review

Parking: Quantity (see above), width, access aisles, signage and pavement markings, proximity to accessible entrance(s), headroom clearances

4.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

4.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

5.0 BUILDING ENTRANCES

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

a. Entrances. Frequently used points of access to the property must be equipped with a power door operator at main entrances to real property. Where entry to or exit from the facility is through a series of doors in a vestibule-like arrangement, at least one complete set of doors allowing access to the vestibule area shall be so equipped.

PWGSC Assessment Considerations:

Where fixed building constraints preclude the modification of a ...vestibule (i.e., to provide sufficient manoeuvring space at doors or adequate space between two doors in series), automatic door openers prove to be a relatively low cost solution.

Where vestibules or privacy screens restrict manoeuvring space, doors can sometimes be removed for easy access as long as privacy is not inhibited.

5.1 Existing Conditions

Reference Checklists:

Accessibility Checklist F - Entrances
Accessibility Checklist G - Doors
Accessibility Checklist O - Millwork
Accessibility Checklist P - Secure Areas

Overview of Accessibility Elements to Review

Existing buildings:	Power operators for accessible main entrance and related vestibule doors.
Powered entrance doorways:	Clear width, vestibule depth (doors in series)
Non-powered entrances:	Clear width, vestibule depth, door hardware, door closer forces, clearances on push and pull side of doors, threshold heights.
Base Building Security Desks	Desk height, cane detectability

Note: Identify issues related to exterior stairs and ramps, including those to entrances, under 3.0 Walkways and any interior stairs and ramps under 6.0 Vertical Movement.

5.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

5.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Doorways

Clear width of doorways to be measured to edge of any panic hardware (CSA 95: measured face of stop to face of door)
Bottom edge of glazing in doorways not to exceed 900 mm (CSA 95: not mandatory).
Power door controls to be minimum 25 x 75 mm in size, between 800-1200 mm in height, located in the path of travel and clear of door swings. (CSA 95: not specified)
Thumb latch door hardware specified as not acceptable (CSA 95: not specified)
Specifies power doors are to remain open for a minimum of 5 seconds (CSA 95: not specified).

Secure Areas

Requirements for Access Systems Card Access, Keypads and Security Gates (CSA 95: not specified).

6.0 VERTICAL MOVEMENT

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

b) passenger elevators;

In addition to the above ASRP requirement, PWGSC generally includes platform lifts, ramps and open circulation stairs related to internal routes of travel.

PWGSC Assessment Considerations:

Elevators

Undersized elevator cabs need not be replaced unless they cannot provide the required 1200 mm depth required for a person in a wheelchair to pull in. If there are two identical control panels, only one need be modified to be accessible.

Additional PWGSC Assessment Considerations:

Elevators:

As handrails in elevator cabs are utilized for stabilization purposes only, existing handrails are left as is. Since the BFDS requires handrails on all non-access walls, new handrails are installed where they are not yet provided on all non-access walls and any existing handrail(s) are replaced to match.

6.1 Existing Conditions

Reference Checklists

Accessibility Checklist E - Ramps and Platform Lifts

Accessibility Checklist H - Elevators

Accessibility Checklist I - Stairs and Stairwells

Overview of Accessibility Elements to Review

Note: Auditing of enclosed exit stairs is not required as ASRP does not reference emergency egress or areas of refuge.

Elevators: Compliance with Appendix C of the BFDS in terms of cab size, height of hall call buttons, control panels, emergency telephones and lanterns, audible and visual signalling, tactile markings on controls, automatic door reopening devices, tactile floor designation signage, handrails on all non-access walls, etc.

Platform Lifts: Compliance with CAN/CSA B355

Interior Circulation Stairs (excludes enclosed exit stairwells): Tread configuration (rise, run, nosing detail), slip-resistance and colour-contrast of nosings, handrails (profile, extensions, returns).

Interior Ramps: Ramp width, gradient, landings and handrails (profile, extensions, returns, wall clearances, etc) protective edges, etc.

Note: Identify issues related to any exterior stairs and ramps, including those to entrances under 3.0 Walkways.

6.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

6.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Interior Circulation Stairs/Ramps

Requirement for extension of handrails for the perimeter of stair landings (CSA 95: 300 mm extensions beyond top of stairs, 300 mm extensions plus one tread depth beyond base of stairs). Change of handrail heights from 860-920 mm (CSA 95: 800-920 mm).

Requirement for ramp handrails to colour contrast with their surroundings (CSA 95: not identified).

Colour contrast of horizontal face of stair nosings to be 50 ±10 mm deep (CSA 95: not specified)

Ramps to have colour contrasted strips 50 ±10 mm deep at top, base and landings (CSA 95: not specified)

Elevators

Auditor Note: As the new elevator requirements require controls to be between 890-1220 mm for elevators serving less than 16 openings, consider that this would likely require full replacement of control panels anyway.

Minimum door/ cab size dimension (CSA 95: 910 mm door: 1725 mm wide, 1295 mm deep with 1370 mm mm deep to face of door)

Centred 1065* mm door: 2030 mm wide, 1295 mm deep with 1370 mm deep to face of door

Side (off centred) 915* mm door: 1725 mm wide, 1295 mm deep with 1370 mm mm deep to face of door
Any 915* mm door: 1370 mm wide, 2030 mm deep with 2030 mm deep to face of door
Any 915* mm door: 1525 mm wide, 1525 mm deep with 1525 mm deep to face of door

* permits -16 mm tolerance

Auditor Note: For undersized elevator cabs, consider:

- wheelchair footprint (CSA: 750 mm x 1200 mm)
- supplementary features (mirrors on backwalls to assist access /egress)
- alternative regulatory requirements such as the 890 mm width and 1370 mm depth acceptable for Limited Use/Limited Access (LULA) elevators.

Door reopening devices

Permits contact to be made before door reopening device is activated (CSA 95: no contact permitted).

Door timing for hall or car call

For hall calls, a minimum of 5 seconds is required between the time the door starts to open to the time it starts to close (CSA 95: 4 seconds).

Hall Call buttons

Extends height range for hall call buttons to 890-1220 mm (CSA 95:1070 mm \pm 25 mm)

Buttons or surrounding collar required to be raised a minimum of 1.5 mm (CSA 95: raised, flush or recessed)

'Up' hall call button to be above 'Down' button (CSA 95: not specified)

Clear floorspace of 760 mm by 1220 mm required at call buttons (CSA 95: not specified)

Objects below hall call buttons not to protrude more than 25 mm (CSA 95: not specified)

Hall buttons to be a minimum of 19 mm in smallest direction (CSA 95: 20 mm).

Car Controls

Clear floorspace of 760 mm by 1220 mm required at car controls (CSA 95: not specified)

Height of car controls to be between 890-1220 mm where elevator serves less than 16 openings (CSA 95: 890-1370 mm). Elevators serving more than 16 openings remain at 890-1370 mm.

Buttons or surrounding collar required to be raised a minimum of 1.5 mm (CSA 95: raised flush or recessed).

Buttons are to be arranged in either standard telephone style keypad or with numbers in ascending order. When 2 or more columns of buttons are provided, they are to read left to right (CSA 95: not specified).

Buttons to be identified by tactile characters and Braille only except where arranged in a standard telephone keypad arrangement (CSA 95: tactile characters only).

Raised star provided immediately left of the button for the main entry level (CSA 95: not required)

Car Position Indicators

Requires both audible and visible car floor location indicators (CSA 95: visible only)

Audible signals to sound once for the 'Up' direction or twice for the 'Down' direction or alternatively be verbal stating the word 'Up' or 'Down' (CSA 95: optional to include audible signal only as car passes or stops at a floor)

Audible signal or verbal annunciator to be 10 db above ambient to a maximum of 80 db (CSA 95: audible signal of minimum of 20 db)

Hall or in-car signals

Requires visible and audible signalling at each hoistway to indicate which car is answering a call and the direction of travel (CSA 95: car answering call only). In car signals that are visible from the floor area adjacent to the call buttons.

Audible signals to sound once for the 'Up' direction or twice for the 'Down' direction or alternatively be verbal stating the word 'Up' or 'Down' (CSA 95: optional to include audible signal only as car passes or stops at a floor)

Audible signal or verbal annunciator to be 10 db above ambient to a maximum of 80 db (CSA 95: audible signal of minimum of 20 db)

Floor Designation Signage

Floor designations to consist of raised characters and braille designations (CSA 95: braille not required)

Raised designations a minimum of 0.8 mm high (CSA 95: 0.75 mm high)

Mounting height is 1525 mm to the baseline of the character (CSA 95: centred at 1500 mm \pm 25 mm)

Raised star provided immediately left of the floor designation at the main entry level (CSA 95: not required)

Emergency Communications

If emergency communications device is in a closed compartment, the door hardware is to be operable with one hand, not require tight grasping pinching or twisting of the wrist and not require greater than 22 N to activate operable parts (CSA 95: not specified).

Requires emergency signalling devices not only to be limited to voice communication. If instructions for use are provided, essential information is to be provided in both tactile and visual form.

LULA (Limited Use Limited Access) Elevators

New allowance for LULA elevators

Cab size minimum of 1060 mm width by 1370 mm depth with clear width door opening of 815 mm.

7.0 INTERIOR DOORS AND CORRIDORS (Base Building)

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

e) interior doors and corridors;

7.1 Existing Conditions

Reference Checklists:

Accessibility Checklist D – Accessible Routes

Accessibility Checklist G - Doors

Overview of Accessibility Elements to Review

Doorways: Clear width, door hardware, door closer forces, clearances on push and pull side of doors, height of transparent glazing in doorways etc.

Corridors: Width, slip resistance, carpeting, level changes between adjoining floor materials, protruding objects that are cane detectable, headroom clearances, floor grates, etc.

Operating Mechanisms²: Height of light switches, electrical outlets, buzzers, access telephones, card access devices.

Note: Identify issues related to any interior stairs and ramps under 6.0, Vertical Movement.

7.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

7.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Doorways

Clear width of doorways to be measured to edge of any panic hardware (CSA 95: measured face of stop to face of door)

Bottom edge of glazing in doorways not to exceed 900 mm (CSA 95: not mandatory).

Power door controls to be minimum 25 x 75 mm in size, between 800-1200 mm in height, located in the path of travel and clear of door swings.

Thumb latch door hardware specified as not acceptable (CSA 95: not specified)

Specifies power doors are to remain open for a minimum of 5 seconds (CSA 95: not specified).

Corridors

Headroom clearance increased to 2030 mm minimum (CSA: 1980 mm minimum)

8.0 WASHROOMS

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

f) Washrooms

PWGSC Assessment Considerations:

One accessible male washroom and female washroom, or alternatively one accessible individual washroom, is required on each floor in existing buildings based on the ASRP 5.2 'Note: This technical standard ...does not apply retroactively to accessibility requirements of real property in the inventory prior to October 1, 2004'.

Only one lavatory per washroom has to be accessible.

Where fixed building constraints preclude the modification of a washroom vestibule (i.e., to provide sufficient manoeuvring space at doors or adequate space between two doors in series), automatic door openers prove to be a relatively low cost solution.

Where vestibules or privacy screens restrict manoeuvring space, doors can sometimes be removed for easy access as long as privacy is not inhibited.

If the toilet was installed with its centerline located at 430 mm from the wall carrying the grab bar...it need not be moved.

Flush controls that are not on the transfer side of the toilet need not be relocated.

Where existing urinals do not meet the CAN/CSA B651 requirements, they do not have to be replaced if toilet fixtures are available in accessible stalls.

8.1 Existing Conditions

Reference Checklists:

Accessibility Checklist G - Doors

Accessibility Checklist J - Washrooms

Accessibility Checklist K - Individual Washrooms/Showers

Overview of Accessibility Elements to Review

Main Core Washrooms:

Entrance Doorway:	Clear width, door hardware*, door closer forces*, clearances on push and pull side of doors*, etc.
Sink:	Height, kneespace/circulation clearances, faucet controls, mirror, soap/wastepaper dispensers heights, etc.
Stall:	Stall size, stall door (see above), locking devices, coat hook, etc.
Toilet:	Seat height, centreline distance, backrest, grab bars, paper dispensers, etc.
Urinal:	Circulation clearances, well openings, grab bars, etc. Asa urinals were not in the 1995 standard, urinal upgrading would be for compliance with 2004 Standard only.

*Power operation of a washroom entrance door will generally compensate for the non compliance of these items.

Individual Washroom:

Room size, circulation clearance between sink/toilet, shelf, light switch/outlet height(s), etc. See also Entrance Doorway, Sink and Toilet headings above.

Showers:

Circulation clearances, stall size, thresholds, grab bars, controls, head, etc.

While RPA does not identify a specific a requirement for access to showers, showers not provided for operational purposes can be considered a staff amenity and should be accessible.

Note:

Where structural, architectural and/or fixture count limitations prohibit modification of existing main core washrooms, the installation of a separate accessible individual washroom is generally a more cost-effective solution.

8.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

8.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Increase in size of toilet stalls to 1600 mm wide by 1500 mm deep (CSA 95: 1500 mm by 1500 mm).

Requirement for a clear floor area of 1500 mm by 1500 mm outside of the doors for accessible stalls (CSA 95: 1200 mm by 1200 mm).

Auditor Note: If the two points above cannot be achieved in an existing washroom, an accessible individual washroom will be required in an alternate location.

Description of requirements for accessible urinals (CSA 95: urinals not included). Although only one urinal is required to be accessible to persons using wheelchairs, all urinals in washrooms would require raised vertical markers. **Auditor Note: For floors with multiple washrooms, locate the accessible urinal in the male washroom which also contain the accessible toilet stall. If the required solution is an accessible individual washroom, exclude the requirement for a urinal.**

Lowering of maximum height of coat hooks in accessible stalls to 1200 mm (CSA 95:1400 mm maximum)

Requirement for D-pulls outside of doors to be horizontally mounted (CSA 95: vertical)

Soap dispensers to be no more than 1100 mm high (CSA 95: 1200 mm) and within 500 mm reach from the lavatory (CSA 95: not specified).

Clarification of kneespace clearance under sinks at end walls to be centred on sink (eg. 920 mm width required where at end wall)

Clarification that tilt mirrors are not recommended (CSA 95: not specified)

Addition of 1000 mm long horizontal grab bar at entrance to roll-in showers (CSA 95: not required) and increase in length of the same bar at entrances to showers with a fold-down seat (CSA 95: 750 mm long). Increase in length of the grab bar on the rear wall of roll in showers to 1000 mm (CSA 95: 900 mm minimum).

9.0 DRINKING FOUNTAINS

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

h) Drinking fountains. One accessible cooler or fountain shall be provided in each location where water coolers or drinking fountains are provided;

PWGSC Assessment Considerations:

PWGSC Standards for Leased Accommodation only require one accessible fountain per floor.

9.1 Existing Conditions

Overview of Accessibility Elements to Review

Water Coolers:

Dispenser height, operating mechanisms, cup dispensers and circulation clearances.

Drinking Fountains:

Spout height, operating mechanisms, circulation/ kneespace clearances and cane detectability.

9.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

9.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Requires drinking fountains to colour contrast with their background

Requires fountains to be cane, detectable recessed or otherwise located outside of circulation routes

Requires user to be able to control the timing and water delivery height (eg. not electronically controlled).

10.0 PUBLIC TELEPHONES/TACTILE SIGNAGE

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

g) public telephones. When banks of public telephones are provided, there must be at least one public telephone per bank accessible to persons in wheelchairs and one public telephone per bank accessible to persons with hearing impairments. All direct-line telephones and at least one charge-a-call telephone, when provided, shall be similarly accessible

Tactile signage. Tactile signs shall be provided for the following: washrooms, emergency exits, elevators, and stairwells.

PWGSC Assessment Considerations

Public telephones located in the entrance lobbies of PWGSC leased facilities are generally not modified as they do not constitute part of the leased premises.

10.1 Existing Conditions

Reference Checklists

Accessibility Checklist M - Tactile Signage

Accessibility Checklist N - Public Telephones

Overview of Accessibility Elements to Review

Tactile Signage:

Federal Identity Program (FIP) tactile signage installed for doors to all washrooms (accessible and non-accessible), stairwells and exits directly to the exterior. Tactile signage for elevators is generally installed to elevator manufacturers standards and is not included as part of the FIP tactile signage system.

Tactile signs are located on the latch side of doors (not on the doors) at a centreline height of 1500 mm.

Public/Direct Line Telephones

Height, directory/TDD shelves, flux coil volume control devices for handsets, circulation clearances, accessibility of location.

10.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

10.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Lowering of public telephones for use by persons in wheelchairs to 1200 mm (CSA 95: 1370 mm).

11.0 PUBLIC AREAS

Accessibility Requirements of the Treasury Board Accessibility Standard for Real Property:

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

c) Public areas (including, but not limited to, cafeterias, lounges, recreation areas, eating areas, patios, libraries, and walkways);

l) Accessible seating spaces shall be provided within auditoriums, theatres, and other general assembly areas in conformance with the quantities identified in the National Building Code of Canada.

m) Classrooms, auditoriums, meeting rooms and theatres with an area of more than 100 square metres shall be equipped with an assistive listening system encompassing the entire seating area.

11.1 Existing Conditions

If this section is not applicable (eg. There are no base building exterior amenity areas, cafeterias, eating or assembly areas etc. related to the facility), state so but do not delete.

Reference Checklists:

Accessibility Checklist D - Doors

Accessibility Checklist G- Accessible Routes

Accessibility Checklist O - Millwork

Overview of Accessibility Elements to Review

Exterior Amenity Areas (eg. recreation areas, patios, terraces, etc. within the limits of the federal property)

Site Furnishings: Placement in relation to accessible routes.
Benches: Seat height backs, armrests.
Picnic Tables: Height, kneespace clearances

Cafeterias:

Entrance Doorway: Clear width, door hardware¹,
door closer forces¹, clearances on push and pull
side of doors¹, etc.

Circulation: Width of checkout lanes, corridors to seating areas,
Height of/reach to servery shelves, self-serve cabinets/ coolers and vending machines².

Assembly Areas

Entrance Doorway: Clear width, door hardware¹, door closer forces¹,
clearances on push and pull side of doors¹, etc.

Accessible Seating Quantity (see above), size, access aisles.

Access to Stages

Assistive listening systems for base building, auditoriums, conference rooms, theatres, etc. over 100 square metres. A portable system is a cost effective alternative to hard wiring a new system.

1 Power operation of entrance doors will generally compensate for the non-compliance of these items.

2 Height/reach issues can often be addressed by ensuring the same selection of food beverages are provided at accessible lower level shelves.

11.2 Modifications Required to Comply with CAN CSA B651 95 Barrier-Free Design Standard

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation. For new interventions to be installed or constructed, detail as per CAN CSA B651 04.

11.3 Incremental Modifications Required to Comply with CAN CSA B651 04 Accessible Design for the Built Environment

Describe in sufficient detail, including quantities and locations, for cost estimator and to formulate scope of work for implementation.

The primary differences between the CSA 95 and 04 Standards are:

Requirement for line up guides in cafeterias to

- have clear floor area of 1500 mm by 1500 mm at start, end and changes in direction.
- be stable and not move easily
- be cane detectable at or below 680 mm
- colour contrast with surroundings

Changes height range for accessible tables to 730-860 mm (CSA 95: 810-860 mm)

12.0 BUILDING EXEMPTIONS

With regards to exempting all or parts of facilities from accessibility requirements, the Accessibility Standard for Real Property includes the following reference:

Exemptions and Minor Variations

5.5. Certain elements of real property may be exempted from the full accessibility requirements unless the intended use requires public access or the job requirements are such that a person with a disability could meet these requirements. Custodians shall establish internal procedures for identifying and seeking the deputy head's approval of full or partial exemptions from the accessibility requirements of this standard. They shall document the rationale for these exemptions and maintain records of all real property that is partially or fully exempted in accordance with this standard.

5.6. If the criteria that justified the exemption change, the custodian shall reassess the real property against this standard to ensure that the exemption is still justified.

5.7. Custodians may allow minor variations from the accessibility requirements of this standard (including the technical standard). However, such variations shall be consistent with the general intent of this standard and shall not affect the general accessibility of a specific property.

5.8. Where the accessibility requirements of this standard will significantly reduce the heritage quality of the property, some deviation from this standard is permitted. In deviating from the standard, custodians shall ensure that the following requirements are met:

- a. access shall be provided to at least one main level of the building;
- b. there shall be full access to government services and employment opportunities;
- c. where washroom facilities are provided in an inaccessible location, equivalent facilities that are accessible shall also be provided; and
- d. for inaccessible exhibitions, another version of the exhibition, such as a video display, shall be provided in an accessible area.

In response to 5.2 above, PWGSC has adopted the exemption criteria identified in the 1998 Real Property Accessibility policy (eg. which preceded the current Accessibility Standard for Real Property) for the purposes of formalizing exemptions under the 2005-2009 Audit Program.

Various new buildings or structures, due to their specialized design function or requirements, may be candidates for a reduced level of accessibility or can be completely exempted from barrier-free design requirements. Such facilities include, but are not limited to, the following:

1. ***Naturally inaccessible facilities in remote locations***
This would include, for example, mountain top installations not accessible by vehicles, facilities on islands not served by accessible ferry systems, below-grade excavations not serviced by elevators, etc.
2. ***Unattended monitoring stations***
This would include facilities which are not occupied on a full time-basis such as:
-facilities housing monitoring/test/experimental equipment or instrumentation which are monitored on an intermittent basis.
-lookout/observation towers.
3. ***Facilities designed and constructed to accommodate able-bodied personnel (i.e. where being able-bodied is a specific part of the job requirement)***
This would include such facilities as guardhouses, service garages, utility buildings, warehouses, processing plants etc. Offices and support functions provided for the sole use of the able-bodied staff located in these facilities can also be exempted.
4. ***Facilities where operational requirements preclude reasonable access by persons with disabilities***
This could include facilities where immediate evacuation is required in the event of an accident. See also **Hazardous Occupancies** and **Facilities designed and constructed to accommodate able-bodied personnel**.
5. ***Hazardous Occupancies***
In some cases, access need not be provided to certain parts of a facility such as boiler rooms, roofs, elevator pits, elevator penthouses, mechanical rooms, electrical vaults, piping or equipment catwalks, or areas of hazardous occupancy (as defined by the National Building Code of Canada and the National Fire Code of Canada), unless the intended use requires public access or the job requirements are such that a person with a disability could meet these requirements.

Based on the definitions of the National Building Code of Canada, this would include the following:

-high hazard industrial occupancy means an industrial occupancy containing sufficient quantities of highly combustible and flammable or explosive materials which, because of their inherent characteristics, constitute a special fire hazard.

-medium hazard industrial occupancy means an industrial occupancy containing in which the combustible content is more than 50 kg/m² or 1200 MJ/m² of floor area and not classified as high hazard industrial occupancy).

- 6. No barrier free access is required to the second storey of a two-storey building if the second storey is less than 600 m² rentable and there is full access to government services and employment opportunities on the ground floor. The same provisions apply to single-storey buildings where the basement is used as an operational second floor.**

This would include facilities where, for example, government services, offices and employee amenities (meeting rooms, kitchenettes, photocopy and business machine areas, etc.) are already located on an accessible Ground Floor and the second storey and/or basement level is less than 600 m² rentable and consists of private offices only. Where a person in a wheelchair is located on an accessible ground floor, staff that supervises or is supervised by, this person should be co-located on the same floor.

- 7. Facilities to be permanently vacated or removed from federal inventory within one year**

This would include facilities which, for example, are to be vacated, disposed of, demolished, decommissioned or otherwise within the course of the 2005 to 2009 audit program. While RPA identifies a one year term, take into consideration planning, design and implementation time frames.

12.1 Recommended Exemptions

The following parts of the facility are identified for exemptions under the Accessibility Standard for Real Property and were therefore not examined in this accessibility audit:

List areas of the facility not audited, adding/deleting as required.

Janitors closets, mechanical, electrical and telecommunications rooms, janitors closets, loading docks, long-term 'dead' storage areas at Basement level, etc.

*For facility exemptions under headings 5.4 and .1 to .6 above, insert description and submit to PWGSC Portfolio Management for formal exemption through the PWGSC **Best Practice on Accessibility: Exemption Criteria and Approval Process.***

Example:

This audit did not include review of the 3rd and 4thth Floor of the General Records Centre as these floors consist of long-term document storage only (eg. on 3 metre high pallet system) only and all offices and amenities for staff responsible for working on these floors are located on the Ground and 2nd Floor.

This recommendation is based on the considerations for *Facilities designed and constructed to accommodate able-bodied personnel (i.e where being able-bodied is a specific part of the job requirement)* and *Facilities where operational requirements preclude reasonable access by persons with disabilities*

13.0 ACCESSIBILITY COMPLIANCE SCORE

13.1 Existing Compliance with B651 95

(Simply fill in the score and the calculation is automatic /compléter simplement la colonne C, le calcul est automatique)

% Compliance of Asset = $\frac{\text{Total D}}{400}$

Scoring *

- 4 = Full compliance: Fully meets Treasury Board Accessibility Standard for Real Property (ASRP) and CAN/CSA B651 technical requirements or PWGSC acceptable technical variances.
- 3.5 = Excellent: Requires minor adjustment of existing elements to comply with ASRP and CAN/CSA technical requirements (signs/ accessories/grab bar relocations, maintenance items, painting, etc.).
- 3 = Very Good: Requires replacement of existing elements to comply with ASRP and CAN/CSA technical requirements (signs/ accessory installations, new controls for existing door operators, new grab bars, etc.).
- 2.5 = Good: Requires installation of new element to comply with ASRP and CAN/CSA technical requirements (installation of power door operators, grab bars, elevator control panels, etc.).
- 2 = Moderate: Requires minor architectural/structural or mechanical interventions to comply with ASRP and CAN/CSA technical requirements (modification of ramps, reconfiguration of accessible stalls, replacement of elevator panels, lowering of drinking fountains, etc.).
- 1.5 = Poor: Requires major architectural/structural or mechanical interventions to comply with ASRP and CAN/CSA technical requirements (extension of ramps, reconfiguration of washrooms, replacement of elevator cabs, replacement of drinking fountains, etc.).
- 1 = Very Poor: Requires construction of new accessibility elements to meet ASRP or CAN/CSA technical requirements (construction or installation of new ramps, washrooms, lifts/elevators, drinking fountains, etc.).
- 0 = ASRP Accessibility elements cannot be accommodated due to architectural, structural or other limitations.

If a particular accessible element is not applicable to a specific building (for example, single storey building with no elevators, no public telephones, etc.), assign a full score for that specific element. This approach is to avoid the need to redistribute the scoring to the other accessible elements.

13.2 Existing Compliance with B651 04

(Simply fill in the score and the calculation is automatic)

$$\% \text{ Compliance of Asset} = \frac{\text{Total D}}{400}$$

Scoring *

- 4 = Full compliance: Fully meets Treasury Board Accessibility Standard for Real Property (ASRP) and CAN/CSA B651 technical requirements or PWGSC acceptable technical variances.
- 3.5 = Excellent: Requires minor adjustment of existing elements to comply with ASRP and CAN/CSA technical requirements (signs/ accessories/grab bar relocations, maintenance items, painting, etc.).
- 3 = Very Good: Requires replacement of existing elements to comply with ASRP and CAN/CSA technical requirements (signs/ accessory installations, new controls for existing door operators, new grab bars, etc.).
- 2.5 = Good: Requires installation of new element to comply with ASRP and CAN/CSA technical requirements (installation of power door operators, grab bars, elevator control panels, etc.).
- 2 = Moderate: Requires minor architectural/structural or mechanical interventions to comply with ASRP and CAN/CSA technical requirements (modification of ramps, reconfiguration of accessible stalls, replacement of elevator panels, lowering of drinking fountains, etc.).
- 1.5 = Poor: Requires major architectural/structural or mechanical interventions to comply with ASRP and CAN/CSA technical requirements (extension of ramps, reconfiguration of washrooms, replacement of elevator cabs, replacement of drinking fountains, etc.).
- 1 = Very Poor: Requires construction of new accessibility elements to meet ASRP or CAN/CSA technical requirements (construction or installation of new ramps, washrooms, lifts/elevators, drinking fountains, etc.).
- 0 = ASRP Accessibility elements cannot be accommodated due to architectural, structural or other limitations.

If a particular accessible element is not applicable to a specific building (for example, single storey building with no elevators, no public telephones, etc.), assign a full score for that specific element. This approach is to avoid the need to redistribute the scoring to the other accessible elements.

14.0 CLASS C CONSTRUCTION ESTIMATE

Accessibility Standard for Real Property Requirements	CAN CSA B651-95	CAN CSA B651-04
3.0 Walkways	Insert	Insert
4.0 Parking	Insert	Insert
5.0 Building Entrances	Insert	Insert
6.0 Vertical Movement Elevators	Insert	Insert

Circulation Stairs Ramps		
7.0 Interior Doors and Corridors	Insert	Insert
8.0 Washrooms	Insert	Insert
9.0 Water Coolers/Drinking Fountains	Insert	Insert
10.0 Public Telephones/Tactile Signage	Insert	Insert
11.0 Public Areas	Insert	Insert
Est/Design Allowance		
Estimated Construction Cost		

Notes:

- 1) *Excludes GST*
- 2) *Excludes Fees*
- 3) *Excludes Project/Construction Contingencies*

BIBLIOGRAPHY

Accessibility for All, Report of the Standing Committee on Human Resources, Skills Development, Social Development and the Status of Persons with Disabilities, June, 2005.

Accessibility Standard for Real Property, Treasury Board of Canada Secretariat, November 1, 2006

Real Property Accessibility, Treasury Board of Canada Secretariat, June 30, 1998.

CAN/CSA B651 95 Barrier-Free Design, Canadian Standards Association, September 1995.

CAN/CSA B651 04 Accessible Design for the Built Environment, Canadian Standards Association, August, 2004.

Accessibility Evaluation Guide, Accessibility Office, Public Works Canada, January, 1994.

Canada Labour Code, Part II: Canada Occupational Safety and Health Regulations, December 23, 1998.

APPENDIX A: Accessibility Standard for Real Property (November 1, 2006)

ACCESSIBILITY STANDARD FOR REAL PROPERTY

Table of Contents

1. Effective date
2. Application
3. Context
4. Purpose
5. Accessibility requirements
6. References
7. Enquiries

Accessibility Standard for Real Property

1. Effective date

This standard is effective November 1, 2006.

2. Application

This standard applies to all departments within the meaning of section 2 of the *Financial Administration Act*, unless specific acts or regulations override it.

3. Context

The *Canadian Human Rights Act* (CHRA) gives effect to the principle that all individuals should have equal opportunity to have their needs accommodated, consistent with their duties and obligations and to function as members of society, without being hindered in, or prevented from, doing so by discriminatory practices.

The *CHRA* prohibits discrimination in the provision of goods, services, facilities or accommodation customarily available to the general public and prohibits the adverse differentiation between individuals.

4. Purpose

The Treasury Board *Policy on the Management of Real Property* holds Deputy Heads responsible for providing barrier-free access to, use of and exit from real property in accordance with this standard. This standard establishes minimum requirements for the accessibility of real property to meet the objectives of the policy.

This standard is issued pursuant to the *Financial Administration Act*, subsections 7(1), 9(1.1), 9(2) and the *Federal Real Property and Federal Immovables Act*, subsection 16(4).

5. Accessibility requirements

5.1. In the management of real property, custodians shall at a minimum, provide access to and use of the following:

- a. Entrances. Frequently used points of access to the property must be equipped with a power door operator at main entrances to real property. Where entry to or exit from the facility is through a

series of doors in a vestibule-like arrangement, at least one complete set of doors allowing access to the vestibule area shall be so equipped.

b. Passenger elevators.

c. Public areas (including, but not limited to, cafeterias, lounges, recreation areas, eating areas, patios, libraries, and walkways).

d. Federal work areas (including, but not limited to, offices, on-floor storage areas, meeting and training rooms, computer rooms and spaces for business machines).

e. Interior doors and corridors.

f. Washrooms.

g. Public telephones. When banks of public telephones are provided, there must be at least one public telephone per bank accessible to persons in wheelchairs and one public telephone per bank accessible to persons with hearing impairments. All direct-line telephones and at least one charge-a-call telephone, when provided, shall be similarly accessible.

h. Drinking fountains. One accessible cooler or fountain shall be provided in each location where water coolers or drinking fountains are provided.

i. Tactile signage. Tactile signs shall be provided for the following: washrooms, emergency exits, elevators and stairwells.

j. Where employee or visitor parking is provided, the quantity of accessible parking spaces provided shall conform with municipal by-laws or the following table, whichever has the higher number of accessible spaces:

<i>Total Parking Spaces</i>	<i>Minimum No. of Accessible Spaces</i>	<i>Total Parking Spaces</i>	<i>Minimum No. of Accessible Spaces</i>
<i>up to 25</i>	<i>1</i>	<i>151–200</i>	<i>6</i>
<i>26–50</i>	<i>2</i>	<i>201–300</i>	<i>7</i>
<i>51–75</i>	<i>3</i>	<i>301–400</i>	<i>8</i>
<i>76–100</i>	<i>4</i>	<i>401–500</i>	<i>9</i>
<i>101–150</i>	<i>5</i>	<i>more than 500</i>	<i>2% of total</i>

Accessible parking spaces shall be within a reasonable and safe proximity of the federal facility but may be distributed among distinct parking areas.

k. Accessibility shall include routes from accessible parking areas, local public transit stops and all drop-off areas that are within the limits of the federal property to main entrances.

l. Accessible seating spaces shall be provided within auditoriums, theatres and other general assembly areas in the quantities identified in the *National Building Code of Canada*.

m. Classrooms, auditoriums, meeting rooms and theatres of more than 100 square metres shall be equipped with an assistive listening system encompassing the entire seating area.

5.2. In meeting accessibility requirements for real property, departments shall apply the technical standard found in the publication entitled "Accessible Design For the Built Environment" (CAN/CSA-B651-04).

Note: This technical standard has applied to the accessibility requirements of real property acquired (including lease renewal), under construction or undergoing major refit since October 1, 2004. It does not apply retroactively to accessibility requirements of real property in the inventory prior to October 1, 2004.

5.3. For Crown-leased real property outside Canada, custodians shall make best efforts to meet the standard.

5.4. Departments shall adapt residential units to the technical standard when employees or their immediate dependants require accessibility.

Exemptions and minor variations

5.5. Certain elements of real property may be exempted from the full accessibility requirements unless the intended use requires public access or the job requirements are such that a person with a disability could meet these requirements. Custodians shall establish internal procedures for identifying and seeking the deputy head's approval of full or partial exemptions from the accessibility requirements of this standard. They shall document the rationale for these exemptions and maintain records of all real property that is partially or fully exempted in accordance with this standard.

5.6. If the criteria that justified the exemption change, the custodian shall reassess the real property against this standard to ensure that the exemption is still justified.

5.7. Custodians may allow minor variations from the accessibility requirements of this standard (including the technical standard). However, such variations shall be consistent with the general intent of this standard and shall not affect the general accessibility of a specific property.

5.8. Where the accessibility requirements of this standard will significantly reduce the heritage quality of the property, some deviation from this standard is permitted. In deviating from the standard, custodians shall ensure that the following requirements are met:

- a. access shall be provided to at least one main level of the building;
- b. there shall be full access to government services and employment opportunities;
- c. where washroom facilities are provided in an inaccessible location, equivalent facilities that are accessible shall also be provided; and

- d. for inaccessible exhibitions, another version of the exhibition, such as a video display, shall be
- e. provided in an accessible area.

6. References

Treasury Board policy instruments

- Federal Identity Program Manual, Section 4.3b. Tactile Signage
- Management of Information Technology Standards
- Policy on the Duty to Accommodate Persons with Disabilities in the Federal Public Service
- Policy on the Management of Real Property

7. Enquiries

Please direct enquiries about this standard to your departmental headquarters. For interpretation of this standard, headquarter officials should contact:

Real Property and Materiel Policy Division

Treasury Board of Canada Secretariat

L'Esplanade Laurier

140 O'Connor Street

Ottawa ON K1A 0R5

Telephone: (613) 941-7173

Facsimile: (613) 957-2405

E-mail: rpmpd@tbs-sct.gc.ca

Date Modified: 2006-06-26

**PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
REAL PROPERTY SERVICES**

APPENDIX B: PROJECT TEAM

Project Leader: The (National) Asset and Facilities Management Directorate

Property Manager: Insert

Portfolio Manager: Insert

Accessibility Coordinator: Insert

Accessibility Survey Team: Insert

APPENDIX C: TEMPLATE CHECKLISTS

Template checklists will be made available in hardcopy only.
Please send requests to:

Director, A&FM RPSB PFM
Sir Charles Tupper Building - RM B415
2720 Riverside Dr.
Ottawa, ON K1A 0M2
Canada
Phone: (613) 736-3032

ANNEX “B”

TERMS OF REFERENCE

Project No.: R.066167.001

**AVS FORMAT for COMPONENT LISTS in BUILDING
CONDITION REPORTS**

BCR COMPONENT LIST per CAPS / AVS FORMAT (ENG/FR)

00.1 Site

00.1-010 Site Improvements

- 00.1-010C03 Area Lighting
- 00.1-010C04 Area Posts/Bollards
- 00.1-010C05 Concrete Wall
- 00.1-010C10 Fence & Gates
- 00.1-010C11 Flagpole
- 00.1-010C15 Masonry Wall
- 00.1-010C16 Monuments, Artwork, & Fountains
- 00.1-010C18 Natural Stone Wall
- 00.1-010C20 Planters
- 00.1-010C25 Site Furnishings
- 00.1-010C28 Slope Protection

00.1-020 Site Related Stairs, Plazas & Decks

- 00.1-020C10 Bleachers
- 00.1-020C20 Handrails and Railings-Site Related
- 00.1-020C30 Ramps-Site Related
- 00.1-020C40 Stairs-Site Related
- 00.1-020C50 Wood Deck

00.1-030 Retaining Walls

- 00.1-030C10 Concrete Reinforced Retaining Wall
- 00.1-030C11 Concrete Pavers Retaining Wall
- 00.1-030C12 Gabion(Wire-mesh+stone) Retaining Wall

- 00.1-030C15 Metal Retaining Wall
- 00.1-030C20 Stone-Masonry Retaining Wall
- 00.1-030C25 Wood Retaining Wall

- 00.1A-045 Underground Utilities
- 00.1A-050 Aboveground Utilities
- 00.1A-055 Signage
- 00.1A-060 Undeveloped Lands
- 00.1A-065 Soft Landscaping
- 00.1A-070 Stormwater Management Systems
- 00.1A-075 Septic Systems
- 00.1A-080 Well Water Systems

00.2 Paved Surface Systems

00.2-014 Paved Walkways & Areaways

- 00.2-014C01 Bituminous Walkway & Areaways
- 00.2-014C02 Concrete Walkway & Areaways
- 00.2-014C03 Walkway Pavers & Areaways

00.2A-010 Paved Parking Lots
00.2A-011 Paved Roadways
00.2A-012 Paved Playgrounds
00.2A-013 Paved Sports & Recreational Spaces
00.2A-015 Pavement Marking
00.2A-020 Traffic Control Devices

00.3 Unpaved Surface Systems

00.3A-010 Unpaved Parking Lots
00.3A-011 Unpaved Roadway
00.3A-012 Unpaved Playgrounds
00.3A-013 Unpaved Sports & Recreational Spaces
00.3A-014 Unpaved Walkways

01. Architectural & Structural

01.1 Foundations

01.1A-010 Footings & Foundations
01.1A-011 Basement Walls

01.2 Superstructures

01.2-010 Structural Framing

01.2-010C05 Frame - Concrete
01.2-010C10 Frame - Concrete + Steel
01.2-010C15 Frame - Steel
01.2-010C20 Frame - Steel (Prefab)
01.2-010C25 Frame - Wood
01.2-010C30 Frame - Wood (Post & beams)

01.2-020 Floor Structure-Slab on Grade

01.2-020C05 Slab on Grade - Asphalt
01.2-020C10 Slab on Grade - Concrete
01.2-020C15 Slab on Grade - Wood

01.2-030 Floor Structure-Slab above Grade

01.2-030C05 Slab above Grade - Concrete
01.2-030C10 Slab above Grade - Wood

01.2-040 Roof Structure

01.2-040C05 Roof Str-Concrete Joist +Concrete deck

01.2-040C10 Roof Str-Concrete Joist + Steel deck
01.2-040C15 Roof Str-Steel Joist + Steel deck
01.2-040C20 Roof Str-Steel Joist + concrete deck
01.2-040C25 Roof Str-Steel Joist + Wood deck
01.2-040C30 Roof Str-Timber Joist + Wood deck
01.2-040C35 Roof Str-Wood Joist + Wood deck

01.2-050 Miscellaneous Structures

- 01.2-050C05 Balconies
- 01.2-050C10 Entrance/Canopies
- 01.2-050C15 Exterior Stairs
- 01.2-050C20 Parking Garage
- 01.2-050C25 Ramps
- 01.2-050C30 Basement Garage
- 01.2-050C35 Loading Docks

01.3 Exterior Walls/Closures

01.3-010 Exterior Concrete or Masonry Walls

- 01.3-010C05 Ext.W - Aggregate or Texture, Block back-up
- 01.3-010C10 Ext.W - Brick, block back-up
- 01.3-010C15 Ext.W - Brick, Common
- 01.3-010C20 Ext.W - Concrete Block
- 01.3-010C25 Ext.W - Concrete, precast panels
- 01.3-010C30 Ext.W - Concrete, reinforced, formed
- 01.3-010C35 Ext.W - Concrete, tilt-up panels
- 01.3-010C40 Ext.W - Granite
- 01.3-010C45 Ext.W-Heavy,Alum or Steel,Block
- 01.3-010C50 Ext.W-Light,Alum or Steel,BlockBack-Up

- 01.3-010C55 Ext.W - Local fieldstone, in mortar
- 01.3-010C60 Ext.W - Local stone, block back-up
- 01.3-010C65 Ext.W - Local stone, rough cut, solid
- 01.3-010C70 Ext.W - Ornamented Concrete Block
- 01.3-010C75 Ext.W - Panels-Brick or tile

01.3-020 Exterior Curtain Walls

- 01.3-020C05 Ext.W-Concrete & glass panels, precast

- 01.3-020C10 Ext.W - Metal & Glass panels
- 01.3-020C15 Ext.W - Steel studs and stucco
- 01.3-020C20 Ext.W - Stone Panels

01.3-030 Exterior Pre-Engineered Walls

- 01.3-030C05 ExtW-Prefab Bldg pnls,alum,steel,glass

- 01.3-030C10 Ext.W-Prefab Bldg pnls, stucco, steel
- 01.3-030C15 Ext.W-Prefab. Bldg panels,veneer,block

- 01.3-030C20 Ext.W-Sandwich panels, alum. or steel

- 01.3-030C25 Ext.W - Sandwich panels, cement fiber

- 01.3-030C30 Ext.W - Sandwich panels, fiberglass
- 01.3-030C35 Ext.W-Sandwich panels, glass and metal

01.3-040 Exterior Wood or Steel Stud Walls

01.3-040C10 ExtW-Alum or Stl sdng,horiz./sheet pnl

01.3-040C15 Ext.W - Asphalt Siding

01.3-040C20 Ext.W -Cement fiber,siding or shingles

01.3-040C25 Ext.W-Hrdboard sdng or shingles, horiz

01.3-040C30 Ext.W - Plywood textures

01.3-040C35 Ext.W - Shingles or Shakes, wood

01.3-040C36 Ext.W - Stucco

01.3-040C40 Ext.W-Synthetic plaster on rigid insul

01.3-040C45 Ext.W - Veneer, Common Brick

01.3-040C50 Ext.W-Veneer,Face Block or Cncrt Brick

01.3-040C55 Ext.W - Veneer, Stone

01.3-040C60 Ext.W - Vinyl Siding

01.3-040C65 Ext.W - Wood Siding

01.3-050 Exterior Wall Finishes

01.3-050C10 Ext.W - Paint

01.3-050C20 Ext.W - Sealer

01.3-060 Exterior Doors

01.3-060C00 Revolving Door

01.3-060C01 Aluminum Doors

01.3-060C05 Glazed Doors

01.3-060C10 Steel Doors

01.3-060C15 Wood Doors

01.3-060C18 Overhead Door

01.3-060C20 Other-Specialties Doors

01.3-065 Exterior Door Hardware

01.3-070 Windows

01.3-070C01 Aluminum Windows

01.3-070C04 PVC Windows

01.3-070C05 Steel Windows

01.3-070C10 Wood Windows

01.3-070C15 Other-Specialties Windows

01.3-075 Window Coverings

01.4 Roofing

01.4-010 Roof Coverings

01.4-010C01 Aluminum/Metal or Steel Roof

01.4-010C02 Atrium type-Glass, frame and glazing

01.4-010C05 Built-up Roof, Tar & Gravel Roof

01.4-010C10 Composition or Asphalt Shingles/Tiles Roof

01.4-010C15 Copper Roof

01.4-010C20 Elast./Mod. Bitumen, 1 ply membrane Rf

01.4-010C25 Inv Roof/Elast. Reinforced Sheet 1>ply

01.4-010C30 Slate Roof

01.4-010C35 Tile, Terracotta or concrete Roof

01.4-010C40 Wood, shake or shingles Roof

01.4-010C45 Special Roof Coverings

01.4-010C50 Green Roof

01.4-020 Roof Specialties

01.4-020C05 Gutter

01.4-020C10 Structural Terrace

01.5 Interior Construction

01.5-010 Masonry Partitions

01.5-010C01 Concrete Block Partition

01.5-010C02 Concrete Partition

01.5-010C05 Glazed Block Partition

01.5-010C10 Interior Glazed Opening

01.5-010C15 Tile Partition

01.5-012 Frame Partitions

01.5-012C01 Gypsum Board Partition with Studs

01.5-012C05 Plaster Partition with Studs

01.5-012C10 Chain-link Partition

01.5-013 Special Partitions

01.5-013C01 Copper Lined Partition

01.5-013C05 Lead Lined Partition

01.5-013C10 Washroom Partitions

01.5-050 Interior Doors

01.5-050C05 Glass & Glazed Doors

01.5-050C10 Hardwood Doors

01.5-050C15 Metal Doors

01.5-050C20 Softwood Doors

01.5-050C25 Specialties- Doors

01.5-060 Interior Wall Finishes

01.5-060C01 Acoustic Wall Treatment

01.5-060C05 Ceramic Wall Tile

01.5-060C10 Lath & Plaster Wall

01.5-060C15 Paint

01.5-060C17 Vinyl Wall Covering

01.5-060C20 Stucco Wall Finish
01.5-060C25 Wood Paneled Wall Finish
01.5-060C30 Special Wall Finishes
01.5-060C40 Wall Waterproof Membrane
01.5-060C45 Glazed Wall Coating

01.5-070 Floor Finishes

01.5-070C01 Asphalt/Asbestos Floor Tile
01.5-070C05 Carpeting
01.5-070C10 Ceramic Floor Tile
01.5-070C100 Floor Control Joints
01.5-070C105 Floor Expansion Joints
01.5-070C110 Lead Lined Flooring
01.5-070C115 Copper Lined Flooring
01.5-070C15 Granite Floor
01.5-070C20 Hardwood Floor
01.5-070C25 Linoleum or Sheet Vinyl Floor
01.5-070C30 Marble Floor
01.5-070C35 Painted Concrete Floor
01.5-070C36 Parquet tile floor
01.5-070C40 Porcelain Floor Tile
01.5-070C45 Quarry Tile Floor
01.5-070C50 Rubber Floor
01.5-070C55 Sealed-Epoxy Concrete Floor
01.5-070C60 Vinyl Floor Tile
01.5-070C65 Terrazzo Floor
01.5-070C70 Special or Other Floor Finishes
01.5-070C75 Raised Floor Systems
01.5-070C80 Floor Toppings & Traffic Membranes
01.5-070C85 Masonry & Stone Flooring
01.5-070C90 Composition Flooring
01.5-070C95 Waterproof Membrane on Floors

01.5-080 Ceiling Finishes

01.5-080C05 Acoustic Tile Ceiling
01.5-080C10 Gypsum Board Ceiling
01.5-080C15 Metal Panel Ceiling
01.5-080C20 Painted Ceiling Structures
01.5-080C25 Plaster & Lath Ceiling
01.5-080C30 Suspended Acoustic Panel Ceiling
01.5-080C35 Wood Ceiling
01.5-080C37 Ceiling Paint
01.5-080C40 Special Ceiling Finishes
01.5-080C45 Lead Lined Ceiling
01.5-080C50 Copper Lined Ceiling
01.5A-055 Interior Door Hardware
01.5A-110 Interior Stairs

01.6 Miscellaneous Items

01.6A-010 Building Signage (Interior)
01.6A-011 Catwalks
01.6A-015 Chimneys
01.6A-025 Fixed or Permanent Furnishing (Millwork)

01.6A-030 Fountain & Systems
01.6A-035 Kitchen Equipment
01.6A-036 Ice Rink Accessories
01.6A-037 Ladders
01.6A-038 Railing & Ramps
01.6A-040 Squash Courts & Accessories
01.6A-045 Swimming Pools & Spa Accessories
01.6A-050 Walk-in Freezer/Cold Storage
01.6A-055 Window Washing Device Anchors
01.6A-060 Special Ornamental Elements

02. Conveying Systems

02.1 Conveying Systems - V & H Movement

02.1A-010 Elevators
02.1A-020 Escalators
02.1A-030 Freight Elevators
02.1A-040 Wheelchair Platform Lifts

02.2 Conveying Systems - Specialties

02.2A-010 Bridge Cranes
02.2A-015 Chain Hoists
02.2A-017 Conveyors
02.2A-020 Dumbwaiters
02.2A-025 Loading Dock Equipment
02.2A-030 Moveable Floors
02.2A-035 Moving Walkways
02.2A-040 Scissor Lifts
02.2A-045 Specialty Interior Cab Finishes

03. Mechanical

03.1 HVAC

03.1A-010 CHP Related Heat Exchangers
03.1A-020 Duct Systems
03.1A-022 Self-Contained AHU - Cool
03.1A-023 DX Split AHU - Cool
03.1A-024 Computer Cooling AHU
03.1A-025 Roof Top AHU - Heat&Cool
03.1A-026 Window Unit A/C - Heat&Cool
03.1A-027 Packaged Terminal AC AHU
03.1A-028 Heat Pumps

03.1A-029 Central Station AHU
03.1A-030 Ventilation Fans
03.1A-032 Humidifiers
03.1A-034 Make-up Air AHU
03.1A-040 Heating & Cooling Piping Systems
03.1A-045 HVAC Pumps
03.1A-047 Chemical Feed System
03.1A-050 Boilers
03.1A-052 Boiler Oil Supply System
03.1A-054 Boiler Auxiliary System
03.1A-060 Terminal Units
03.1A-070 Chillers
03.1A-072 Cooling Towers
03.1A-080 Furnace/Forced Air
03.1A-082 Gas Fired Radiant Heater
03.1A-084 Gas Piping System

03.2 Control Systems

03.2A-010 Controls, Electrical or Pneumatic
03.2A-020 Direct Digital Control

03.3 Plumbing

03.3-025 Tanks

03.3-025C05 Domestic Hot Water Tanks
03.3-025C10 Water Storage Tanks
03.3A-010 Plumbing Piping
03.3A-015 Plumbing Fixtures and Accessories
03.3A-020 Plumbing Pumps
03.3A-040 Water Treatment Systems
03.3A-045 Drinking Fountain

03.4 Special Systems

03.4A-010 Stacks & Breaching
03.4A-015 Compressed Air Systems
03.4A-025 Medical Air Systems
03.4A-026 Medical Vacume Systems
03.4A-030 Water Distillation Units
03.4A-035 Sterilization System
03.4A-040 Vehicle Fuel Storage and Distribution
03.4A-045 Vacuum Systems
03.4A-050 Incinerators
03.4A-055 Compactors
03.4A-060 Diesel Generator Fuel Supply Systems
03.4A-065 Swimming Pool & Systems
03.4A-070 Methane Venting Systems
03.4A-075 Ice Rink Systems

03.5 Fire Protection

- 03.5A-020 Fire Pumps
- 03.5A-030 Specialty Fire Protection Systems
- 03.5A-040 Smoke Protection Fans
- 03.5A-050 Sprinkler Systems
- 03.5A-060 Standpipe Systems
- 03.5A-070 Portable Fire Extinguishers
- 03.5A-080 Fire Protection Water Storage Tanks

04. Electrical

04.1 Main Service Electrical

- 04.1A-010 Primary Switch Gear
- 04.1A-020 Primary Transformer & Vault

04.2 Secondary Service Electrical

- 04.2A-010 Secondary Switchgear
- 04.2A-011 MCC
- 04.2A-020 Secondary Transformer
- 04.2A-030 Electric Power Meter
- 04.2A-035 Inverters
- 04.2A-040 Rectifiers
- 04.2A-050 Cabling, Raceways & Bus Ducts
- 04.2A-060 Capacitors
- 04.2A-070 Distribution Panels

04.3 Lighting Fixtures

- 04.3A-010 General Lighting
- 04.3A-020 Exit Lighting
- 04.3A-030 Exterior Lighting
- 04.3A-040 Emergency Lighting
- 04.3A-050 Specialty Lighting Fixtures

04.4 Electrical Service Ground

- 04.4A-010 Grounding Systems

04.5 Electrical Systems

- 04.5A-010 Fire Alarm System
- 04.5A-020 Emergency Power System
- 04.5A-030 Communication Systems
- 04.5A-040 Security System

04.6 Special Electrical Systems

- 04.6A-010 Automatic Door Devices
- 04.6A-015 Clock Systems
- 04.6A-020 Bird Deterrent System

04.7 Electrical Heating Systems

04.7A-010 Electric Baseboard Heaters
04.7A-020 Underfloor Electric Cables
04.7A-030 In-Ceiling Electrical Radiant Heating
04.7A-040 In-Wall Electrical Radiant Heating
04.7A-050 Snow Melting Cables
04.7A-060 Electrical Radiant Unit Heaters
04.7A-070 Fan Powered Unit Electric Heaters
04.7A-080 Duct Electrical Heaters

09. Renovations

09.1S Cafeteria Renovation
09.2S Lobby Renovation
09.3S Accessibility
09.4S Washroom Renovation
09.9S Whole Building Renovation

10. Whole Building Expenditures

10.1 Audit and Assessments

10.1A-010 AMP
10.1A-015 Building Condition Report
10.1A-020 Appraisal
10.1A-025 Indoor Air Quality
10.1A-030 Accessibility Audit
10.1A-035 Threat and Risk Assessment
10.1A-040 Seismic Assessment
10.1A-045 Energy Audit
10.1A-050 Environmental Audit
10.1A-055 Functionality Assessment
10.1A-056 Serviceability Assessment
10.1A-060 Telecommunications Infrastructure Audit
10.1A-065 Water Quality Audit

10.2 Level Three Studies

10.2A-010 Architectural & Structural
10.2A-020 Mechanical
10.2A-030 Electrical
10.2A-040 Vertical and Horizontal Transportation