

1.	CODE ANALYSIS / REGULATORY ASPECTS The original Sir Frederick Banting Research Centre laboratory building was most likely constructed under the National Building Code of Canada 1970, as the Ontario Building Code was not published until 1975. The renovation of the 3 rd and 4 th floors of the animal wing of the building will be regulated under 2006 Ontario Building Code (OBC 2006), with consideration of more stringent requirements from the National Building Code of Canada 2010.
	<div>1. Codes and Regulations<ul style="list-style-type: none">Ontario Building Code 2006National Building Code of Canada 2010National Fire Code of Canada, 2010National Plumbing Code of Canada 2010The Canadian Electrical CodeThe Canada Labour CodeThe Canada Occupational Health and Safety RegulationsAll other Provincial/Territorial and Municipal Acts, Codes, By-laws and regulations appropriate to the area of concern.</div> <div>2. SUMMARY OF AUTHORITIES HAVING JURISDICTION<div>1. As typically required by PWGSC:<ul style="list-style-type: none">Although the Federal Government does not formally recognize jurisdiction at other levels of government, voluntary compliance with the requirement of these other Authorities is a requirement unless otherwise directed by the Departmental Representative.As a result, codes, regulations, by-laws and decisions of authorities having Jurisdiction shall be observed.The renovation of the 3rd and 4th floors of the animal wing of the SFBRC will be regulated under 2006 Ontario Building Code (OBC 2006), with consideration of more stringent requirements from the National Building Code of Canada 2010.In cases of overlap, the most stringent will apply. The Consultant shall identify other jurisdictions appropriate to the project.PWGSC will voluntarily comply with the applicable provincial Construction Health and Safety Acts and regulations, in addition to the related Canada Occupational Safety and Health Regulations.Authorities Having Jurisdiction for this project are as follows:<ul style="list-style-type: none">City of Ottawa – Municipal AHJLabour Canada / HRSDC – Fire Protection</div></div> <div>3. Summary of Codes, Regulations and Standards (Code Analysis)<ul style="list-style-type: none">Seismic upgrades to this wing of the SFBRC building have been completed as part of the recent Deconstruction Project.The following analysis notes have been collated by the consultant team, and are subject to <u>further refinement during the construction documents</u> phase of the project.<div>1. Code requirements from the following standards directly impact the design of this facility:<ul style="list-style-type: none">Ontario Building Code 2006National Building Code of Canada 2010National Fire Code of Canada, 2010TB Standard for Electronic Data Processing (EDP) Equipment</div><div>2. While the SFBRC facility has 2 distinct major occupancies (Group D & F3), the 3rd and 4th floors of the animal wing which are being renovated as part of this project have only one major occupancy, as follows:<ul style="list-style-type: none">Group F Division 3 Low Hazard Industrial – Research Labs</div><div>3. For the purposes of OBC Code classification, the following applies:<ul style="list-style-type: none">Building area: 8,429sm (90,696sf)Number of storeys: 4Number of streets: 2Building sprinklered: Partially - not currently existing on the 3rd & 4th floor of the animal wing, and not to be installed, in accordance with HRSDC’s ruling as follows: “NFPA 13 requires all portions of a building to be equipped with sprinkler protection unless sprinklers are specifically permitted to be omitted. As such, the 3rd and 4th floors are not to be sprinklered without the entire building being sprinklered. Sprinklering upper floors without providing sprinklers below or on other adjacent levels could give a false sense of protection. Additionally, the sprinkler system could be ineffective in the event of a fire starting in an unsprinklered area of the building. A better approach is to sprinkler the entire building.” (Kim Grace, HRSDC – Labour Canada – Ontario Region, January 21, 2013).</div><div>4. Based on existing conditions as well as the facility’s most restrictive proposed major occupancy, the OBC classification of the facility is 3.2.2.73 Group F, Division 3, Any Height, Any Area, which has the following requirements:<ul style="list-style-type: none">Floor assemblies shall be fire separations with a fire-resistance rating not less than 2 h.If the building is not sprinklered, roof assemblies shall have a fire-resistance rating not less than 1 h.Loadbearing walls, columns and arches shall have a fire-resistance rating not less than that required for the supported assembly.</div></div>
5.	OBC Part 11 – Renovation would also apply, in accordance with OBC Division A, Article 1.1.2.6 (1). As such, OBC Article 11.3.3.2 (3) (b) might be deemed to govern over Part 3, stating that: where existing interior walls or ceilings or floor assemblies or roof assemblies are substantially removed on any storey in an existing building and new interior walls, ceilings, floor assemblies or roof assemblies are installed, the storey shall be sprinklered if the building is over 3 storeys in building height. In this situation, we assume that HRSDC’s ruling with respect to sprinklers, as quoted above, is to be considered definitive.
6.	Based on existing conditions as well as the facility’s most restrictive proposed major occupancy, <u>no NBC classification of the facility would be applicable unless the building was sprinklered</u> . In this light, HRSDC’s ruling would constitute an exemption for this project. If the building <u>was</u> sprinklered, the NBC classification of the facility would be 3.2.2.80 Group F, Division 3, up to 6 Storeys, Sprinklered, which has the following requirements: <ul style="list-style-type: none">Floor assemblies shall be fire separations with a fire-resistance rating not less than 1 h.Loadbearing walls, columns and arches shall have a fire-resistance rating not less than that required for the supported assembly.
7.	The following OBC requirements apply: <ul style="list-style-type: none">Lab suites to be separated from each other by rated fire separations having a fire resistance rating not less than 1 h in accordance with OBC 3.3.1.1 (1). NBC requirement is identical, under NBC 3.3.1.1 (1).Janitors Rooms – a room or space within a floor area for the storage of janitorial supplies shall be separated from the remainder of the building by a fire separation having a fire-resistance rating not less than 1 h in accordance with OBC 3.3.1.20 (1). NBC requirement is identical, under NBC 3.3.1.21 (1).2 means of egress required for floor areas in excess of 200sm, in accordance with OBC 3.4.2.1 (1). NBC requirement is identical, under NBC 3.4.2.1 (1).30m maximum travel distance to exit, in accordance with OBC 3.4.2.5.1 (f). NBC requirement is identical, under NBC 3.4.2.5.1 (f). Travel distance is measured to exit from the egress door of a suite (separated by a fire separation having a fire resistance rating not less than 45 minutes) in accordance with 3.4.2.4 (2) (a) (i) <u>plus</u> 30m within the suite to the nearest egress doorway in accordance with OBC 3.3.1.6.1. NBC requirement is identical, under 3.4.2.4 (2) (a) (i) <u>plus</u> OBC 3.3.1.6.1.A standpipe system is required under 3.2.9.1 (1) (a). NBC requirement is identical, under 3.2.5.8 (1) (a).
8.	The design for the renovations to the 3 rd and 4 th floors of the SFBRC Animal Wing will be in accordance with the requirements of OBC Article 3.2.2.73 Group F, Division 3, Any Height, Any Area.
9.	Occupant Load calculations, in accordance with OBC Table 3.1.17.1, would be as follows: 1,602sm / 4,6sm = 348 occupants. For exit and sanitary calculations, OBC permits the occupant load to be adjusted to equal the number of persons for which the area is designed (Article 3.1.17.1 (1) (c) (ii). NBC allows a similar adjustment under Article 3.1.17.1.2. For design purposes, the occupant load has been set at 120 occupants per floor. In OBC and NBC, such a design adjustment requires a permanent sign indicating that occupant load to be posted in a conspicuous location. The <u>actual</u> programmed occupant load, as confirmed by Health Canada, is a maximum of 129 occupants on both floors combined.
10.	Exit width and height calculations <ul style="list-style-type: none">Exit width required for stairs = 8mm x Occupant Load (120) = 960mm (OBC 3.4.3.2 (1) (b)). NBC requirement is identical, under NBC 3.4.3.2 (1) (b).Minimum exit width shall be 790 mm for doorways and 1100mm for corridors and passageways. (OBC 3.4.3.2 (7)). The corresponding NBC requirements are 800mm for doorways and 1100mm for corridors (NBC 3.4.3.2 (8)).Minimum exit height is 2100mm (OBC 3.4.3.5 (1)). The corresponding NBC requirement is 2050mm (NBC 3.4.3.4.1).
11.	Plumbing Facilities <ul style="list-style-type: none">The calculation is based on a controlled single tenancy facility using the programmed Occupant Load (120) per floor and assuming equal gender apportionment of 60 for each sex.Number of water closets required on each floor: Male 4 and Female 4 (OBC 3.7.4.9 (1). NBC requirement is identical, under NBC 3.7.2.2 (14).
12.	Emergency Generator / Fire Alarm systems <ul style="list-style-type: none">An emergency generator may be installed remotely to the building to service the needs of the 3rd and 4th floor laboratories.If installed within the building, the emergency generator shall be installed in accordance with (CAN/CSA-C282-05)The fire alarm system shall conform to Treasury board, PMM-OSH, Chapter 3-4 “standard for fire Alarm Systems” and the OBC (2006).
13.	Record Storage <ul style="list-style-type: none">No on-site record storage is programmed.
14.	OBC Part 11 <ul style="list-style-type: none">Part 11 of the OBC offers compliance alternatives for renovations. The applicable compliance alternatives have been transposed below, and may be implemented where deemed applicable.

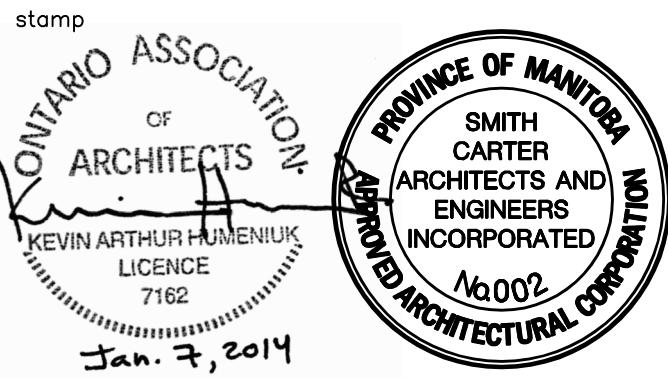
Table 11.5.1.1.F: Compli • Table 11.5.1.F: Compliance Alternatives for Industrial Occupancies.

Canada

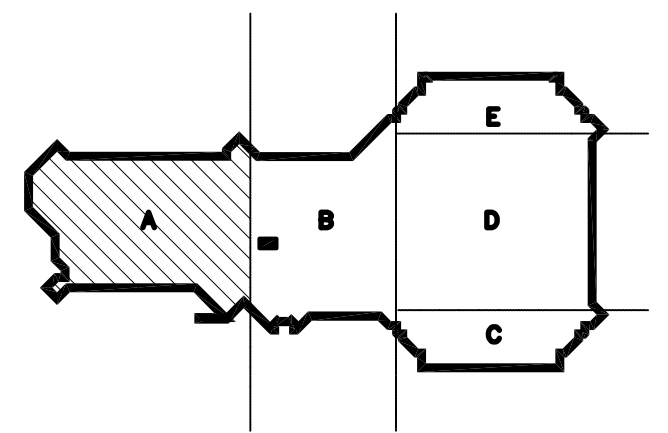
Smith Carter Architects and Engineers Incorporated
1600 Buffalo Place
Winnipeg, Manitoba
Canada, R3T 6B8
T: 204.477.1260
F: 204.477.6346
www.smithcarter.com

Smith Carter

SC Proj: #12C-00081-00

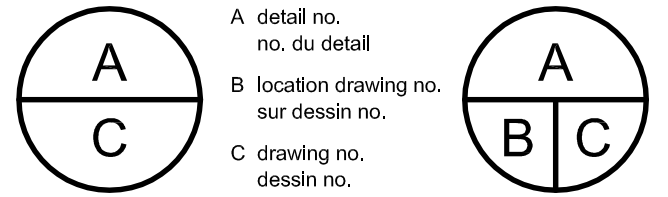


key plan plan repère



Contractor to verify all dimensions & conditions on site and immediately notify the engineer of all discrepancies.

5	ISSUED FOR ADDENDUM No.04	2014/01/28
4	ISSUED FOR 100% CONSTRUCTION DOCUMENTS	2013/10/10
3	ISSUED FOR 99% CONSTRUCTION DOCUMENTS (VOL 2)	2013/08/29
2	ISSUED FOR 98% CONSTRUCTION DOCUMENTS (VOL 1)	2013/08/15
1	ISSUED FOR 66% CONSTRUCTION DOCUMENTS (RS4)	2013/05/30
0	ISSUED FOR DESIGN DEVELOPMENT	2013/03/22
revisions	description	date



project project

SIR FREDERICK BANTING
RESEARCH CENTRE
ANIMAL TO WET LAB CONVERSION

251 SIR FREDERICK BANTING WAY, ON

drawing dessin

CODE ANALYSIS

Designed By	A. COPPINGER	Conçu par
Date		(yyyy/mm/dd)
Drawn By	C. KROLL	Dessiné par
Date		(yyyy/mm/dd)
Reviewed By	A. COPPINGER	Examiné par
Date		(yyyy/mm/dd)
Approved By	A. COPPINGER	Approuvé par
Date		(yyyy/mm/dd)
Tender		Soumission
Project Manager		Administrateur de projets
Project no.		No. du projet
		R.044033.002
Drawing no.		No. du dessin
		G003

