Certificate of Design Application

From Designer: Larry A. Wichroski, P.E.

Date: May 15, 2013

Job Name: Congress Street Building Remodel

Address of Construction: 660 - 662 Congress Street, Portland, Maine

2009 International Building Code

Construction project was designed to the building code criteria listed below:

Building Code & Year 2009 IBC Use Group Classification (s) I

Type of Construction III

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2009 IRC Yes

Is the Structure mixed use? Yes If yes, separated or non separated or non separated (section 302.3) Separated

Supervisory alarm System? Yes Geotechnical/Soils report required? (See Section 1802.2) N/A

Structural Design Calculations

Yes Submitted for all structural members (106.1 – 106.11)

Design Loads on Construction Documents (1603)

Uniformly distributed floor live loads (7603.11, 1807)

Floor Area Use	Loads Shown
Retail	100.0 psf
Residential	40.0 psf

Wind loads (1603.1.4, 1609)

Method 1 Design option utilized (1609.1.1, 1609.6)

100 mph Basic wind speed (1809.3)

Cat #1,1.00 Building category and wind importance Factor, I_w table 1604.5, 1609.5)

B Wind exposure category (1609.4)

0.18 Internal pressure coefficient (ASCE 7)

18.0 psf Component and cladding pressures (1609.1.1, 1609.6.2.2)

25.0 psf Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

page 2 Design option utilized (1614.1)

page 2 Seismic use group ("Category")

page 2 Spectral response coefficients, SDs & SD1 (1615.1)

page 2 Site class (1615.1.5)

None Live load reduction

45.0 psf Roof *live* loads (1603.1.2, 1607.11)

45.0 psf Roof snow loads (1603.7.3, 1608)

60.0 psf Ground snow load, P_g (1608.2)

45.0 psf If P_g > 10 psf, flat-roof snow load P_f

0.9 If P_g > 10 psf, snow exposure factor, C_e

1.0 If P_g > 10 psf, snow load importance factor, I_s

1.0 Roof thermal factor, C_t (1608.4)

n/a Sloped roof snowload, P_s (1608.4)

page 2 Seismic design category (1616.3)

page 2 Basic seismic force resisting system (1617.6.2)

page 2 Response modification coefficient, R_I and deflection amplification factor C_d (1617.6.2)

page 2 Analysis procedure (1616.6, 1617.5)

page 2 Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

n/a Flood Hazard area (1612.3)

40' Elevation of structure

Other loads

2000# Concentrated loads (1607.4)

n/a Partition loads (1607.5)

n/a Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404

EDP

ENGINEERING DESIGN PROFESSIONALS
Consulting Engineers

P.O. Box 575, Freeport, Maine 04032 (207) 865-9505

May 15, 2013

Mr. Ken Guimond
Bayhill Building and Design
174 South Freeport Road
South Freeport, Maine 04078

RE: Retail & Office Building Renovations
660 Congress Street, Portland, Maine
EDP Project #02412

Dear Ken:

The buildings seismic/wind resistance system consists of plywood roof and floor diaphragms and exterior brick masonry shear walls. The work being done to this building is primarily internal and consists of replacing some of the interior masonry and wood stud bearing wall with beams supported by columns. Although we are removing a portion of the interior brick wall that exists, the wall is much smaller in size compared with the exterior walls and is not considered a contributor to resisting lateral loads due to its much lower rigidity.

In conclusion, due to the lack of modifications to the buildings current seismic/wind resisting elements, it is our professional opinion that a wind/seismic analysis is not necessary. By adding plywood sheathing to the floors which is improving the existing floor diaphragms and by removing a portion of the interior brick we are reducing overall building weight which also reduces the overall seismic shear force on the building.

If you have any questions, please do not hesitate to call.

Sincerely;

Larry A. Wichroski, P.E.