Certificate of Design Application

From Designer: Becker Structural Engineers and Reiter Architecture & Design

Date: 8-15-2015

Job Name: 35 Pleasant Street/6 South Street Renovation

Address of Construction: 35 Pleasant Street/6 South Street, Portland, Maine 04101

2009 International Building Code

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

Building Code & Year IBC 2009 Use Group Classification (s) Residential R-3

Type of Construction Wood Framed with Steel beam/column elements

Will the Structure have a Fire suppression system in Accordance with Section 903.3.1 of the 2009 IRC No

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

Supervisory alarm System? No Geotechnical/Soils report required? (See Section 1802.2) No

Structural Design Calculations

Completed 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
Residential Single Family Units	40 psf
Stairs serving dwelling units	40 psf

Wind loads (1603.1.4, 1609)

ASCE 7 Chapter 6 Design option utilized (1609.1.1, 1609.6)

100 mph Basic wind speed (1809.3)

1.0 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/-24.1 psf Component and cladding pressures (1609.1.1, 1609.6.2.2)

12.0 psf Main force wind pressures (7603.1.1, 1609.6.2.1)

Earth design data (1603.1.5, 1614-1623)

N/A for Residential Single Fam Design option utilized (1614.1)

Seismic use group ("Category")

Spectral response coefficients, SDs & SD1 (1615.1)

Site class (1615.1.5)

N/A Live load reduction

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

46 psf + drift Roof snow loads (1603.7.3, 1608)

60 psf Ground snow load, P_g (1608.2)

46 psf If P_g > 10 psf, flat-roof snow load $_{Pf}$

1.0 If P_g > 10 psf, snow exposure factor, $_{Ce}$

1.0 If P_g > 10 psf, snow load importance factor, $_{Is}$

1.1 Roof thermal factor, $_{C}$ (1608.4)

N/A Sloped roof snowload, $_{Ps}$ (1608.4)

N/A Seismic design category (1616.3)

Basic seismic force resisting system (1617.6.2)

Response modification coefficient, $_{RI}$ and deflection amplification factor $_{Cd}$ (1617.6.2)

Analysis procedure (1616.6, 1617.5)

Design base shear (1617.4, 16175.5.1)

Flood loads (1803.1.6, 1612)

N/A Flood Hazard area (1612.3)

Elevation of structure

Other loads

300 lb at stair treads Concentrated loads (1607.4)

N/A Partition loads (1607.5)

Planters @ 400 plf Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404