



# Certificate of Design Application

From Designer: Lachman Architects & Planners  
 Date: 4/20/17  
 Job Name: 502 Deering Center  
 Address of Construction: 502 Deering Center, 502 Stevens Avenue, Portland, ,Maine

## 2009 International Building Code

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

Building Code & Year IBC 2009 Use Group Classification (s) Business (Group B), Residential (Group R-2)

Type of Construction V(B)

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

### 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 Area	100 PSF
Lobbies & Exits	100 PSF
Offices	50 PSF
Residential Dwell	40 PSF

### Wind loads (1603.1.4, 1609)

1609.1.1 Design option utilized (1609.1.1, 1609.6)  
100 mph Basic wind speed (1809.3)  
II 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)  
18.1/23.6 psf Component and cladding pressures (1609.1.1, 1609.6.2.2)  
15.0/22.7 psf Main force wind pressures (7603.1.1, 1609.6.2.1)

### Earth design data (1603.1.5, 1614-1623)

1617.5 Design option utilized (1614.1)  
I B Seismic use group ("Category")  
0.28 & 0.11 Spectral response coefficients,  $S_D$  &  $S_{D1}$  (1615.1)  
C Site class (1615.1.5)

NA Live load reduction  
40 PSF Roof live loads (1603.1.2, 1607.11)  
40 PSF Roof snow loads (1603.7.3, 1608)  
50 PSF Ground snow load,  $P_g$  (1608.2)  
40 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,  $I_s$   
1.2 Roof thermal factor,  $C_t$  (1608.4)  
40 PSF Sloped roof snowload,  $P_s$  (1608.4)  
B Seismic design category (1616.3)  
I, K. Basic seismic force resisting system (1617.6.2)  
6.5 & 4.0 Response modification coefficient,  $R_d$  and deflection amplification factor,  $C_{d1}$  (1617.6.2)  
1617.5 Analysis procedure (1616.6, 1617.5)  
0.052 W Design base shear (1617.4, 16175.5.1)  
**Flood loads (1803.1.6, 1612)**  
NA Flood Hazard area (1612.3)  
NA Elevation of structure  
**Other loads**  
1000#/2000# Concentrated loads (1607.4)  
20 PSF Partition loads (1607.5)  
NA Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404)