



# Certificate of Design Application

From Designer: JNS Associates

Date: February 4, 2013

Job Name: Commercial & Maple Street Mixed Use Development

Address of Construction: 311-331 Commercial Street

## 2009 International Building Code

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

Building Code & Year IBC 2009 Use Group Classification (s) R-1, R-2, A-2

Type of Construction First floor IA, Second through sixth floor IIB

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) Yes

### Structural Design Calculations

Yes Submitted for all structural members (106.1 – 106.11)

### Design Loads on Construction Documents (1603)

Floor Area Use	Loads Shown
Retail	100 PSF
Corridors Public	100 PSF
Residence/Hotel	40 PSF
Corridors Resi/Hotel	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 Iw=1.0 Building category and wind importance Factor,  $I_w$ , table 1604.5, 1609.5)

Exposure C Wind exposure category (1609.4)

+/- 0.18 Internal pressure coefficient (ASCE 7)

47 PSF Component and cladding pressures (1609.1.1, 1609.6.2.2)

P = 27 Main force wind pressures (7603.1.1, 1609.6.2.1)

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

ASCE 7.05 Design option utilized (1614.1)

II Seismic use group ("Category")

0.32 / 0.123 Spectral response coefficients,  $S_D$  &  $S_{D1}$  (1615.1)

D Site class (1615.1.5)

Yes Live load reduction

20 PSF Roof *live* loads (1603.1.2, 1607.11)

39 PSF Roof snow loads (1603.7.3, 1608)

50 PSF Ground snow load,  $P_g$  (1608.2)

39 PSF If  $P_g > 10$  psf, flat-roof snow load  $P_f$

1 If  $P_g > 10$  psf, snow exposure factor,  $C_e$

1 If  $P_g > 10$  psf, snow load importance factor,  $I_s$

1.1 Roof thermal factor,  $C_t$  (1608.4)

— Sloped roof snowload,  $P_s$  (1608.4)

B Seismic design category (1616.3)

CAT 8 Basic seismic force resisting system (1617.6.2)

R=3 CD=3 Response modification coefficient,  $R$  and deflection amplification factor  $C_d$  (1617.6.2)

Equal lateral force Analysis procedure (1616.6, 1617.5)

344Y - 144X Design base shear (1617.4, 1617.5.1)

### Flood loads (1803.1.6, 1612)

No Flood Hazard area (1612.3)

14.0 ft Elevation of structure

### Other loads

— Concentrated loads (1607.4)

— Partition loads (1607.5)

— Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404)