



# Certificate of Design Application

From Designer: Simpson Gumpertz & Heger Inc  
 Date: 7 February 2014  
 Job Name: Maine Medical Center - Bean 2 Roof Addition  
 Address of Construction: 22 Bramhall St, Portland ME 04102

## 2009 International Building Code

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

Building Code & Year IBC 2009 Use Group Classification (s) I-2 (Hospital)  
 Type of Construction IBC - Type 1B (non-combustible, 2 hour rated)  
 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? NO If yes, separated or non separated or non separated (section 302.3) \_\_\_\_\_  
 Supervisory alarm System? YES Geotechnical/Soils report required? (See Section 1802.2) NO

### Structural Design Calculations

NO 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
Procedure Room	80 psf
Corridors	80 psf (above ground)
Posted Storage	100 psf
Mechanical Room	150 psf

### Wind loads (1603.1.4, 1609)

Method 2 Design option utilized (1609.1.1, 1609.6)  
100 mph Basic wind speed (1809.3)  
1.15 Building category and wind importance Factor,  $w$ , table 1604.5, 1609.5)  
B Wind exposure category (1609.4)  
±0.18 Internal pressure coefficient (ASCE 7)  
per code Component and cladding pressures (1609.1.1, 1609.6.2.2)  
per code Main force wind pressures (7603.1.1, 1609.6.2.1)

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

Frame Design option utilized (1614.1)  
IV Seismic use group ("Category")  
0.327, 0.123 Spectral response coefficients,  $S_D$  &  $S_{D1}$  (1615.1)  
D Site class (1615.1.5)

per code Live load reduction  
20 psf Roof *live* loads (1603.1.2, 1607.11)  
50.4 psf Roof snow loads (1603.7.3, 1608)  
60 psf Ground snow load,  $P_g$  (1608.2)  
50.4 psf If  $P_g > 10$  psf, flat-roof snow load  $P_f$   
1.0 If  $P_g > 10$  psf, snow exposure factor,  $C_e$   
1.2 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)  
C Seismic design category (1616.3)  
OSCBF 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)  
ELF Analysis procedure (1616.6, 1617.5)  
±2100 k Design base shear (1617.4, 1617.5.1)  
**Flood loads (1803.1.6, 1612)**  
n/a Flood Hazard area (1612.3)  
 \_\_\_\_\_ Elevation of structure  
**Other loads**  
n/a Concentrated loads (1607.4)  
15 if <80psf Partition loads (1607.5)  
 \_\_\_\_\_ Misc. loads (Table 1607.8, 1607.6.1, 1607.7, 1607.12, 1607.13, 1610, 1611, 2404)



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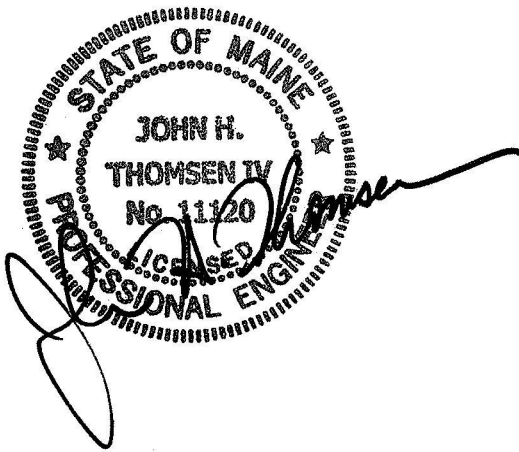
From:

Simpson Gumpertz & Heger Inc - Structural Engineers

These plans and / or specifications covering construction work on:

Maine Medical Center - Bean 2 Roof Addition

Have been designed and drawn up by the undersigned, a Maine registered Architect / Engineer according to the **2009 International Building Code** and local amendments.



Signature:

John H. Thomsen

Title:

John H. Thomsen, PE, Principal

Firm:

Simpson Gumpertz & Heger Inc

Address:

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