# Frequently Asked Questions – Health Facility Construction

## Structural

**All code sections cited are based on the 2007 California Building Code (CBC), unless otherwise noted.**

### Structural Design

**1. Can OSHPD pre-approvals (OPA) based on the 2001 CBC be used on projects governed by the 2007 CBC?**

Yes. Until further notice, existing OSHPD pre-approvals (OPA) based on the 2001 CBC may be used without modification on projects subject to the 2007 CBC. All aspects of the design and installation of the pre-approval component or system, including computation of the lateral forces, shall be in accordance with the approved OPA.

**2. Section 1614A.1.9 requires scaling of modal base shear (base shear calculated by the response spectra method) upward to the equivalent static base shear. Can the modal base shear be scaled down?**

No. If the calculated modal base shear is higher than the equivalent static base shear, the design must be based on the modal base shear without reduction.

Section 12.9.2 in ASCE 7-05 permits modal base shear to be calculated by using response spectra defined in either Section 11.4.5 or 21.2 in ASCE 7-05 divided by the quantity R/I.

**3. Section 11.2 in ASCE 7-05 defines a bearing wall as any metal or wood wall that supports more than 100 lb/linear ft of vertical load in addition to its own weight and any concrete or masonry wall that supports more than 200 lb/linear ft of vertical load in addition to its own weight. Does this definition apply to Table 12.2-1, Design Coefficients and Factors for Seismic Force-Resisting Systems in ASCE 7-05?**

Yes. Definitions in Section 11.2 of ASCE 7-05 apply to all seismic requirements in the 2007 CBC and ASCE 7-05, unless modified in the 2007 CBC.

**4. Section 12.8.7 of ASCE 7-05 permits β (the ratio of shear demand to shear capacity for the story) to be conservatively taken as 1.0. For steel special moment resisting frames (SMRF), with $C_d$ = 5.5 and β = 1, $\theta_{max}$ = 0.09, which is less than 0.10. Does that mean that no P-Δ effects need to be considered for steel SMRF design?**

No. P-Δ effects shall be considered for all steel frame design as required by Section C1 of AISC 360-05 and for all concrete frame design as required by Sections 10.10 through 10.13 of ACI 318-05. See Section 101.7.2, 2007 CBC.

**5. Are the site-specific spectra required for all modal response spectrum analysis under the 2007 CBC?**

No. Site-specific spectra are only required when specified in Section 1614A.1.2 of the 2007 CBC. However, site-specific spectra may be used for any structure.

**6. Does OSHPD permit an increase in drift limit to 125% of the drift limit specified in Section 12.12.1 of ASCE 7-05 as allowed in Section 16.2.4.3 of ASCE 7-05?**

Yes, provided an analysis is performed as required by Chapter 16 of ASCE 7-05 and Section 1614A of the 2007 CBC.

**7. How does one go about calculating the building separation in accordance with Section 12.12.3 of ASCE 7-05?**

The building separation between two buildings may be calculated as the algebraic sum of the total deflection ($\delta_x$) of the two buildings as determined in Section 12.8.6 (Equation 12.8-15) of ASCE 7-05.

**8. Can the strength reduction factor or resistance factor, φ, be taken as 1.0 when using load combinations with overstrength factor or when seismic forces are amplified by the system overstrength factor, $\Omega_0$?**

No. However, for Allowable Stress Design (ASD) load combinations with the overstrength factor, an increase in allowable stress is permitted by Section 12.4.3.3 of ASCE 7-05.

**9. Does OSHPD permit wind load calculations based on the Division of the State Architect (DSA), Interpretation of Regulations (IR) #16-7, Wind Load Determination – Alternate Method?**

No. However, OSHPD has proposed amendments to the 2007 CBC to adopt simplified wind load provisions. Designs based on the OSHPD proposed amendments shall be permitted as an alternative system. For the proposed amendments, refer to http://www.bsc.ca.gov/prpsd_chngs/pc_07_comment.htm.

**10. Can we use the Seismic Load Effect including Overstrength Factors as shown in Section 12.4.3 of ASCE 7-05 instead of the Special Seismic Load Combinations shown in Section 1605A.4 of the 2007 CBC?**

Yes. Special Seismic Load Combinations in Section 1605A.4 of the 2007 CBC were revised in the 2007 Supplements to the 2006 International Building Code (IBC) for consistency with ASCE 7-05. There are additional proposals to further modify the IBC prior to publication of the 2009 edition.