



PROJECT MEMORANDUM

To: City of San Clemente
910 Calle Negocio, Ste. 100
San Clemente, CA 92673

Date: February 17, 2009
Project No.: 071111-02

Attention: Mr. Tim Shaw



From: Dennis Boratynec DJB

Subject: Updated Seismic Parameters per 2007 California Building Code, Avenida Vista Hermosa / Avenida La Pata Sports Park

References: Lawson & Associates Geotechnical Consulting, Inc., 2008, Preliminary Geotechnical Recommendations for Phase 2 Improvements, Avenida Vista Hermosa / Avenida La Pata Sports Park, Talega, City of San Clemente, California, dated April 1, 2008.

As requested, LGC has prepared this memorandum to summarize our updated seismic design parameters for the subject site in accordance with the 2007 California Building Code. The following seismic design parameters should be used in place of the seismic design parameters presented in our referenced report.

The site seismic characteristics were evaluated per the guidelines set forth in Chapter 16, Section 1613 of the 2007 C.B.C. Site coordinates of latitude 33.4608 degrees north and longitude -117.6068 degrees west, which are representative of the site, were utilized in our analyses. The initial results of our analyses for the maximum considered earthquake (MCE) spectral response accelerations (Ss and S1) are presented on the following table.

Table with 2 columns: Selected Parameters from the 2007 C.B.C. Section 1613 - Earthquake Loads, and Seismic Design Values. Rows include Site Class per Table 1613.5.2 (D), Spectral Acceleration for Short Periods (Ss)\* (1.263), Spectral Accelerations for 1-Second Periods (S1)\* (0.462), Site Coefficient Fa per Table 1613.5.3(1) (1.000), and Site Coefficient Fv per Table 1613.5.3(2) (1.538).

\* Calculated from the USGS computer program "Seismic Hazard Curves, Response Parameters and Design Parameters" v5.0.9 (10/6/08)

The spectral response accelerations ( $S_{MS}$  and  $S_{M1}$ ) and design spectral response acceleration parameters ( $S_{DS}$  and  $S_{D1}$ ), adjusted for Site Class D, were evaluated for the site in general accordance with section 1613 of the 2007 C.B.C. These site class adjusted parameters are listed on the following table.

Selected Parameters from the 2007 C.B.C. Section 1613 - Earthquake Loads	Seismic Design Values Modified for Site Class D
Site Modified Spectral Acceleration for Short Periods ( $S_{MS}$ ) for Site Class D [Note: $S_{MS} = F_a S_S$ ]	1.263
Site Modified Spectral Acceleration for 1-Second Periods ( $S_{M1}$ ) for Site Class D [Note: $S_{M1} = F_v S_1$ ]	0.711
Design Spectral Acceleration for Short Periods ( $S_{DS}$ ) for Site Class D [Note: $S_{DS} = (2/3) S_{MS}$ ]	0.842
Design Spectral Acceleration for 1-Second Periods ( $S_{D1}$ ) for Site Class D [Note: $S_{D1} = (2/3) S_{M1}$ ]	0.474

In accordance with Table 1613.5.6 (1, 2), the seismic design category for the subject site is Category D, where  $S_{DS} \geq 0.5$  and  $S_{D1} \geq 0.2$ .

Section 1802.2.7 of the 2007 C.B.C. states that the PGA for a site may be defined as  $S_{DS}/2.5$ . The  $S_{DS}$  for the subject site has been calculated as 0.842.

Therefore,  $PGA = 0.842/2.5 = \mathbf{0.34}$

If you have any questions regarding this memo, please do not hesitate to contact this office.

cc: RBF Consulting, Inc.  
Attention: Mr. Matthew Capuzzi