



October 21, 2016

SPC 7732-01

Ms. Yukiko Ogasawara
C/o Bud Mastropaolo
SMITH GROUP REAL ESTATE
840 Newport Center Drive, Suite 100
Newport Beach, CA 92660

Subject: LIMITED GEOTECHNICAL REVIEW
1830 Galaxy Drive
Newport Beach, CA 92660

Dear Ms. Ogasawara:

Per your request, we have visited the subject property for a visual geotechnical engineering review. Comments in this report are based on site observations, engineering evaluation, and professional experience and judgment. Observations were made only on the exposed areas of the residence and surroundings.

Site Description

The site is located east of 17th Street and the 55 Freeway in Newport Beach. The property is situated on the eastern side of the street and comprises a single-story, single-family residence with an attached three-car garage and a front courtyard (Photos 1, 2). The house has exterior stucco siding and a concrete tile roof equipped with rain gutters and downspouts only along the rear portion of the structure. A steep bluff descends from the rear of the property down to Newport Bay.

Background

We understand that the residence was built in 1967. Over the years, there have been additions and modifications to the home. The most recent interior remodeling was done in 2014 and involved the left side of the residence. One of the garages was converted into an exercise room and bathroom, and the study and three bedrooms were enlarged by moving the left exterior wall out by about three feet. In July 2015, the previous concrete decorative pavers in the rear patio were removed and replaced with new “flagstone-like” concrete pavers.

Observations

We visited the site on October 18, 2016 to review the interior and exterior of the house, the adjacent grounds, and to comment on their past performance. A summary of the most significant observations made at the site is as follows:

Interior

- There is minor, hairline wall cracking in the living room (Photos 3, 4), as well as in a few other locations inside the residence. In the master bedroom, there is wall cracking near a window where a sliding glass door used to be (Photos 5, 6).
- There is wood strip flooring throughout the living room, dining room, and kitchen. Uniform cupping of the floor was observed in all three of these areas (Photos 7, 8).
- At the right side of the kitchen near the refrigerator, there are baseboard and floor separations (Photos 9, 10). These separations are likely related to a past leak in this area.
- No notable signs of floor sloping toward the rear bluff were observed.

Garage/Driveway

- The garage slab was observed to be in good condition, with only minor, ordinary shrinkage-related cracking. However, there is water intrusion and efflorescence at the front right corner of the garage (Photo 11). The source of moisture appears to be from the raised planter outside of the front right corner of the garage (Photo 12).
- Minor shrinkage cracking of the driveway was observed.

Exterior and Drainage

- The right side yard has sufficient clearance between the weep screed and the ground elevation (Photo 13), and the left side yard has concrete flatwork that is sloped to drain toward the street (Photo 14).
- At the rear of the property, there is a steep bluff that descends to Newport Bay (Photo 15). The rear yard includes a covered deck and a patio composed of decorative concrete pavers (Photo 16).
- There is stucco cracking of the exterior wall of the master bedroom (Photos 17, 18). The cracking is located where a sliding glass door used to be (see Photo 5).
- At the rear of the master bedroom, the patio was observed to be moving laterally toward the bluff (Photos 19 through 22).



- Movement toward the bluff was also observed at the right side of the patio (Photos 23, 24). It appears that the entire patio has shifted laterally toward the bluff by up to half an inch (see Photo 20) in a little over a year.
- Although there are rain gutters and downspouts for the rear portion of the house and some area drains in the rear yard, drainage conditions should be improved. Rain gutters and downspouts should also be installed along the front and sides of the house to collect and discharge roof runoff water away from the foundation soils. Further, additional drains should be installed to minimize the flow of water toward the bluff.

Past Slope Conditions

- An aerial photo from April 27, 2003 shows heavy vegetation growing on the bluff behind the subject property (Photo 25). Rockscape and a covered structure were built along the top of the bluff.
- An aerial photo from June 22, 2005 (after heavy winter rains) shows a large slope failure of the bluff behind several homes on Galaxy Drive (Photo 26).

Document Review

At the site, we were provided with several documents, including various building and other permits from the original construction in 1967, as well as reports and permits pertaining to remodeling work performed.

One of the documents provided was a geotechnical investigation report prepared by Giles Engineering Associates, Inc. (Giles) in July 2015 for “Proposed Rear Yard Flagstone Pavers.” The following are the most pertinent findings in their report:

1. Giles performed their investigation after the previous concrete decorative pavers were already removed. It was their understanding that the previous pavers had significant cracks and that during removal of the pavers, the soils were found to be very loose and yielding to depths of about three feet.
2. Giles performed a subsurface investigation by excavating three borings to a maximum depth of eight feet. They found the soil to be “very loose” and recommended scarifying the subgrade soils to depths of about six inches and recompacting in place. They also recommended that a geotechnical consultant be present on site during construction operations to verify proper placement and adequate compaction of all fills.

We have some concerns after reviewing the above findings from Giles. It is our opinion that scarifying to depths of six inches may not have been adequate, given the presence of very loose soil found to greater depths. In addition, it is unknown if the fill compaction and construction work were observed and inspected by a geotechnical consultant.



Geology and Seismicity

The site is located in Newport Beach at an elevation of around 80 feet above sea level. The property is on top of a steep bluff that runs along Newport Bay. Review of geologic maps and references indicates that the site is underlain by marine terrace deposits mostly composed of sandstone, siltstone, and conglomerate. The bluff area, in general, is susceptible to landsliding under adverse conditions.

Review of historical aerial photos indicates that the bluff behind the property and adjacent lots experienced a large slope failure in the winter of 2004/2005 following heavy rains (see Photo 26). Even though the bluff was highly vegetated prior the slope failure (see Photo 25), the heavy rains were able to saturate the sandy soil and induce the slope failure. We understand that retaining walls were built as part of the slope repair. However, no permits or details of the repairs were found at the City of Newport Beach.

The closest known active faults that would be expected to have the most significant impact on the site are the Newport-Inglewood and Whittier-Elsinore faults. A high magnitude earthquake along the San Andreas Fault could also cause significant damage at the site. In addition, the subject property is located within the zone of susceptibility to earthquake-induced landslides.



CONCLUSIONS

In general, the residence appears to be in good condition, with minimal interior cracking and distress, and with no signs of unusual floor deformation. However, the bluff behind the property is cause for some concern. More specifically:

- There is minor, hairline wall and ceiling cracking in some areas of the house. The cracking in the master bedroom is located where a sliding glass door once was, and is likely due to methods used to place the drywall and stucco after the door was removed.
- There is cupping of the wood strip flooring throughout the living room, dining room, and kitchen. In the absence of plumbing leaks, the uniform cupping is likely due to natural soil moisture permeating through the slab. It is unknown what type of moisture barrier was placed over the slab prior to the wood flooring installation.
- There is moisture intrusion at the front right corner of the garage. Moisture appears to be entering from the adjacent raised planter, and it is likely that no waterproofing was placed on the garage wall before the planter was constructed.
- Although there are rain gutters and downspouts for the rear portion of the house and some area drains in the rear yard, drainage conditions should be improved. Rain gutters and downspouts should be installed along the front and sides of the house to collect and discharge roof runoff water away from the foundation soils. Further, additional drains should be installed to minimize the flow of water toward the bluff.
- The rear decorative concrete pavers were installed just over a year ago and have developed cracks and separations of about half an inch toward the rear bluff. The potential for additional slopeward movement should have been considered in the design of the new patio.
- The steep bluff behind the property and adjacent lots experienced a large slope failure in the winter of 2004/2005 following heavy rains. We understand that retaining walls were built as part of the slope repair; however, the details of the repairs are not known. The bluff area, in general, is susceptible to landsliding under adverse conditions, such as periods of intense rainfall or moderate to high-intensity earthquakes.
- As is the case with most sites in Southern California, damage to the residence can occur during a moderate to high-intensity earthquake. Damage can result during an earthquake occurring in one of Southern California's major fault zones, such as the San Andreas and the closer Newport-Inglewood and Whittier-Elsinore fault zones, which are capable of generating moderate to high-magnitude earthquakes. In addition, the subject property is located within the zone of susceptibility to earthquake-induced landslides.



CLOSING REMARKS

This report has been prepared solely for the use of our client. The conclusions reached in this report are limited in nature and are based on field observations, professional experience, and engineering judgment. No warranty is either expressed or implied with respect to the future performance of the site.

The opportunity to be of service is sincerely appreciated. Should you have any questions or need further assistance, please call.

Respectfully submitted,

SPC Geotechnical, Inc.



Helen Chrysovergis, P.E., G.E.
Principal Engineer





Photo 1: A front view of the residence.

DSC05129.JPG



Photo 2: An overview of the entry courtyard.

DSC05146.JPG



Photo 3: A view of the living room. There is some minor hairline wall cracking in the living room as well as in a few other locations inside the residence.

DSC00070.JPG



Photo 4: A closer view of the hairline wall cracking.

DSC00072.JPG



Photo 5: A view of the master bedroom. There is wall cracking at the corner of the window, where there used to be a sliding glass door. DSC00057.JPG



Photo 6: A closer view of the cracking. DSC00060.JPG

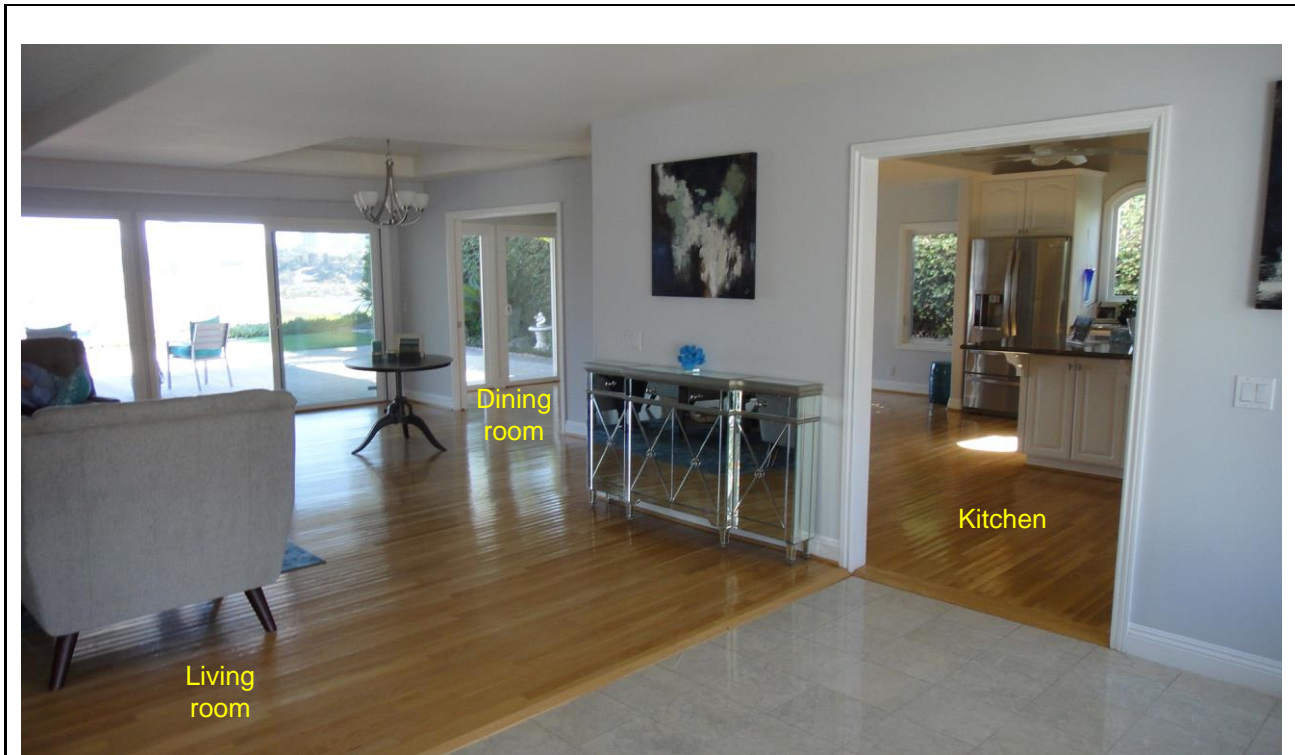


Photo 7: An overview of the living room, dining room, and kitchen. There is cupping of the strip wood flooring throughout this area.

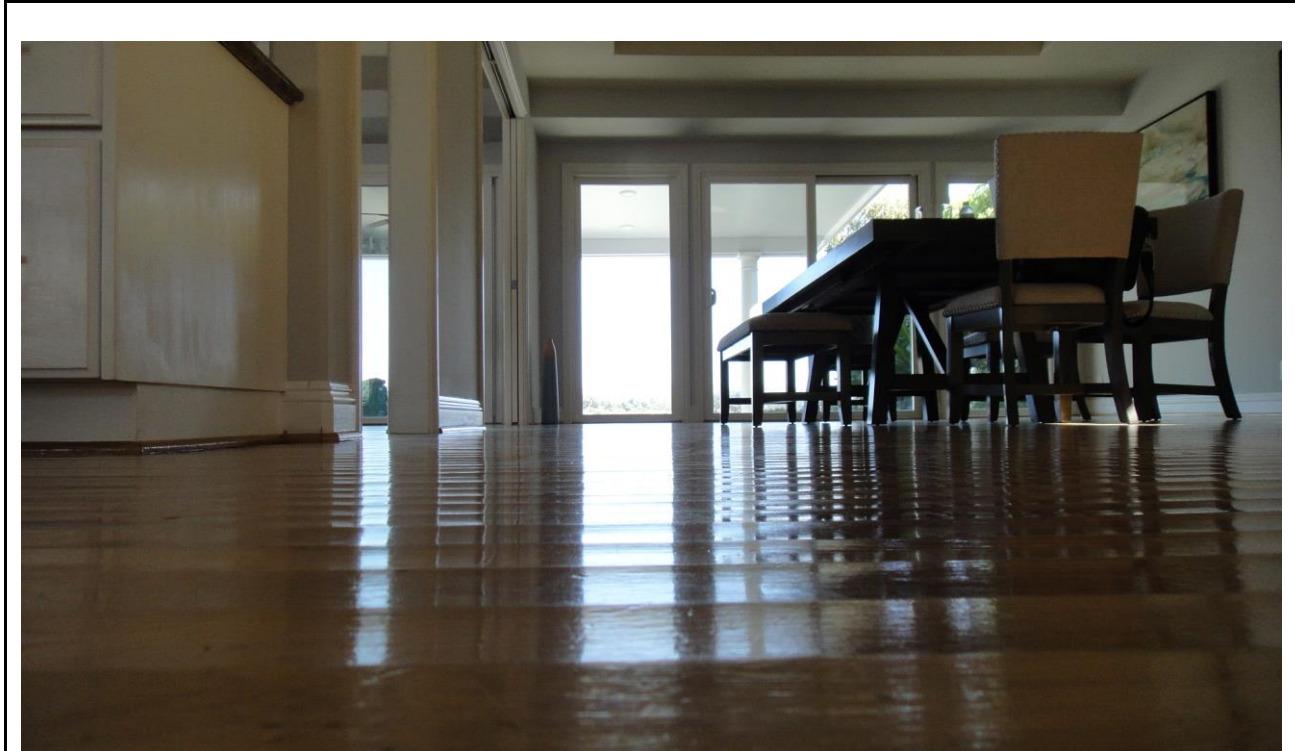


Photo 8: A close-up view of the floor cupping in the kitchen/dining room.



Photo 9: A view of the right side of the kitchen. There are baseboard and floor separations next to the refrigerator, likely due to a past leak. DSC00065.JPG



Photo 10: A closer view of the baseboard and floor separations. DSC00066.JPG



Photo 11: Water intrusion and efflorescence (white salt deposits) at the front right corner of the garage. DSC05242.JPG



Photo 12: The raised planter at the front right corner of the garage. Water is intruding into the garage from the planter. DSC00083.JPG



Photo 13: An overview of the right side yard. There is good clearance between the weep screed and the ground elevation. DSC00022.JPG



Photo 14: An overview of the left side yard. The side yard concrete is sloped to drain toward the street. DSC05200.JPG



DSC00027.JPG

Photo 15: An overview of the rear yard and the adjacent steep bluff descending to Newport Bay.



DSC00029.JPG

Photo 16: An overview of the rear deck and patio.



Photo 17: A view of the exterior wall of the master bedroom. There is stucco cracking where a sliding glass door used to be (see Photo 5). DSC00031.JPG



Photo 18: A closer view of the stucco cracking. DSC00055.JPG



Photo 19: A view of the patio where it meets the rear of the residence. The patio has moved toward the bluff.

D5C00044.JPG



Photo 20: A closer view of patio movement toward the bluff, measuring about 1/2 of an inch.

D5C00045.JPG



Photo 21: Another location of patio movement toward the bluff.

DSC00049.JPG



Photo 22: Another patio separation at the rear of the residence. This separation is also indicative of movement toward the bluff.

DSC00050.JPG



Photo 23: An overview of the right side of the rear yard. Note the steep bluff directly behind the property.

DSC05174.JPG



Photo 24: Patio separations at the right side of the patio. These separations also indicate movement toward the bluff.

DSC00040.JPG



Photo 25: An aerial photo from April 27, 2003. There is heavy vegetation covering the bluff. Note the rockscape and covered structure at the top of the bluff behind the property.



Photo 26: An aerial photo from June 22, 2005, following heavy winter rains. A large slope failure has occurred on the bluff behind several homes. Note that the rockscape and covered structure have fallen down the bluff.