

APPENDIX F

Connell House Structural Evaluation



19 September 2016

Ms. Emily Creel
SWCA Environmental Consultants
1422 Monterey Street, C200
San Luis Obispo, CA 93401

Project 167218 – Structural Evaluation of the Arthur and Kathleen Connell House,
1170 Signal Hill Road, Pebble Beach, CA

Dear Ms. Creel:

1. INTRODUCTION

1.1 Background

The building at 1170 Signal Hill Road, Pebble Beach, California is a single family residence constructed on a coastal bluff overlooking the Spyglass Ridge golf club and the Pacific Ocean. Architect Richard Neutra designed the two-story house in 1957. In 1993, architect Edward Hicks designed a small addition at the southwest corner of the building's upper story. Recently, the building has fallen into disrepair and has also been vandalized. The present building owner has applied to demolish the structure in order to construct a new, larger residence on the site. In 2014 the National Park Service determined that the building is eligible for inclusion in the National Register of Historic Places¹. Preservation interest groups have protested the proposed demolition permit on the grounds that the building is an important historic resource. The property owner counters that as a result of the building's deteriorated condition, it is unsafe, impractical to repair, and that it constitutes a public nuisance and safety hazard. SWCA Environmental Consultants retained Simpson Gumpertz & Heger Inc. (SGH) on behalf of Monterey County to provide an independent opinion as to the building's present condition and the feasibility of repair.

1.2 Objective

The objective of our investigation is to determine the building's structural condition, its safety, and to render an opinion as to whether the structure can be practically repaired and restored, or moved onto another site.

1.3 Scope

Our investigation included the following tasks:

1. Reviewed available documentation on the building's construction and condition including: structural and architectural drawings; applications for historic registration;

¹ https://www.ps.gov/nr/feature/places/DO_14000304.htm

letters filed by various parties related to the application for demolition permit' and historic photographs.

2. Conducted a site visit to observe and record the structure's condition.
3. Perform limited structural calculations to characterize the structure's strength and adequacy to meet applicable building code requirements.
4. Form an opinion as to the structure's present condition and the feasibility of repair.
5. Prepare this letter report documenting our investigation and our findings.

2. DOCUMENT REVIEW

2.1 Drawings

We reviewed the following drawings:

- Richard J. Neutra, Architect, "Residence for Mr. & Mrs. Arthur Connell, 1170 Signal Hill Road, Pebble Beach, California" sheets 1, 3, 6, 7 and 8; dated July, 1957.
- Edward W. Hicks, Architect, "Addition to the Residence of Mr. & Mrs. Clifford Mettler, 1170 Signal Hill Road, Pebble Beach, Cal", sheets 1 – 6, dated July, 1992.

The Neutra drawings show that the two-story structure is constructed with the first story partially embedded into the coastal bluff which slopes downward from the east to the west, exposing the west side of the first story, which faces the ocean. The first story is essentially rectangular in plan and housed three bedrooms, one full and two half bathrooms, a sitting room, and mechanical equipment. The upper floor is U-shaped, surrounding an open courtyard, with the open face of the "U" facing east and enclosed by a grape stake privacy screen. The south wing includes a garage and storage area, the west wing, which sits atop the first level, housed a kitchen, half bath, photographic dark rooms, dining room and living room. The north wing housed the stairway to the lower level and a den. An elevated deck extends off the building's upper level west face, and extends to the north over the basement. Figure 1 is a schematic plan.

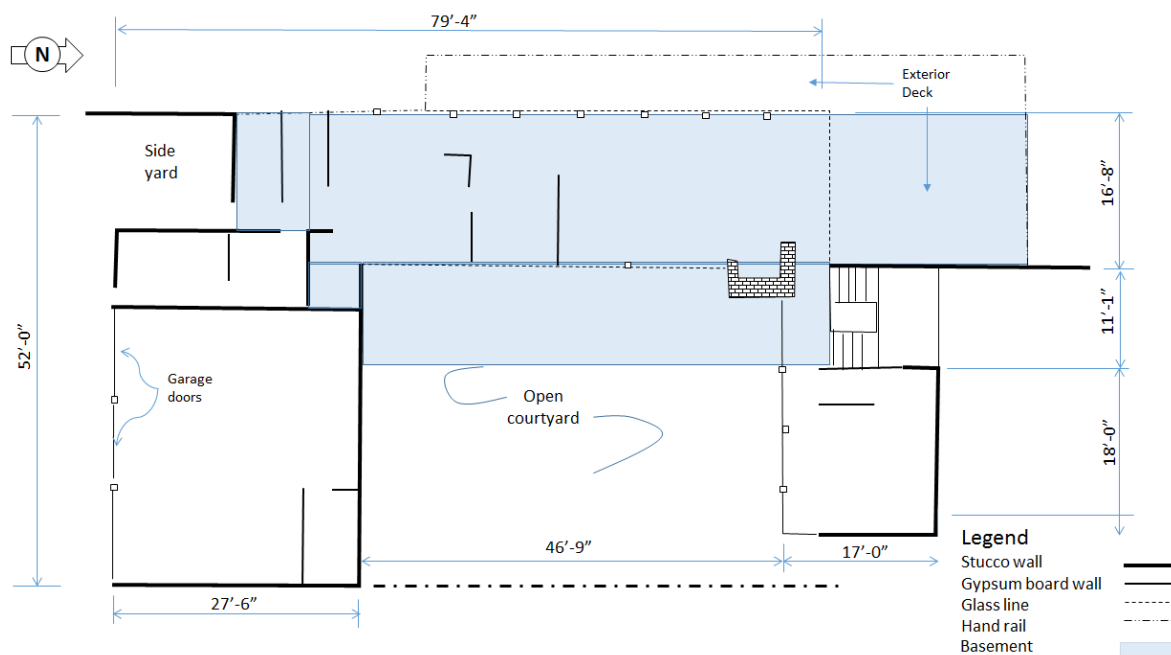


Figure 1 – Schematic layout, upper level

Neutra drawing 3 shows much of the structural framing. Generally, this shows that the main floor is composed of two rows of east-west extending sawn wood joists. The joists are supported by a shallow concrete strip footing at the east side, a north-south extending wood framed wall at the east end of the habited portion of the lower level and a line of posts with a line of 4x10 wood lintels at the west face. The floor joists cantilever over the post-supported 4x10 to form the cantilevered deck on the west side.

Foundations consist of concrete strip footings beneath the walls and small, shallow piers beneath posts. Each strip footing has a pair of longitudinal reinforcing bars at mid-depth, but no transverse bars. Concrete walls that extend from the shallow footings, to just above grade are unreinforced. Piers beneath posts are unreinforced. The drawings show that anchor bolts are provided between the sill plates at the base of the wood walls, however, neither the size nor spacing is called out. Structural sheathing is not called out for the wood walls.

The Hicks drawings show the addition of a small, 220 sq ft room infilling the yard at the upper level's southwest corner. This light wood framed structure is self-supporting, with new walls adjacent to and outside the building's original exterior walls. The south wall, and a portion of the east wall are founded on a masonry grade wall supported by a strip concrete footing. The remaining sides of the addition, constructed adjacent to the original building's walls are supported on spaced concrete piers. The first floor is hardwood flooring over 3/4 in. plywood. The drawings do not call out the roof sheathing.

2.2 National Register Registration Form

We reviewed a registration form for listing the property on the National Register of Historic Places prepared by Mr. Anthony Kirk of Santa Cruz, California and Ms. Barbara Lamprecht of Pasadena, California, dated 15 January 2014. The report includes several photographs of the property, attributed to the original owner, Mr. Arthur Connell, in 1958. The documentation primarily

discusses the properties significance as an important example of an International style home, designed by a renowned architect.

2.3 Reports by Others

We reviewed a report entitled "Response and Rebuttal to Comments by Circa: Historic Property Development and Bill Bernstein, AIA On and Evaluation of the Connell House Pebble Beach, California Recorded by Anthony Kirk, PhD 15 October 2010" prepared by Mr. Anthony Kirk, of Santa Cruz, California, dated 12 March 2012. The report is apparently a rebuttal of claims made by consultants retained by the present building owner, disputing the historic importance of the structure. The report notes that at the time of writing, the house is in poor to fair condition. The report includes a number of photos of the building annotated as having been taken on 5 October 2010. These are reproduced here as photos 1 through 4 to illustrate the building's condition at that time.

As seen in these photos, at the lower level, the building's west face and north face are enclosed with glazed walls. Solid walls are present at the northeast and southwest corners. At the upper level, the inner courtyard walls are also enclosed by glazing.

2.4 Photos by Others

We reviewed a series of three photos provided by SWCA, showing the building in a substantially deteriorated state relative to those contained in the Kirk report.

Photo 5 shows that one or more posts supporting the 4x10 along the west face of the building's upper level have either been removed or failed, allowing the northwest corner of the deck to drop. Windows at the lower level have been removed and Oriented Strand Board (OSB) sheathing has been placed at the openings, then removed. A portion of this sheathing can be seen still partially attached. Upper windows and curtains can still be seen at the upper level.

Photos 6 and 7 show extensive damage to finishes at the lower level. Portions of gypsum board partitions and ceilings are laying on the floor. Some interior doors have been removed. Some framing for the upper floor has evidently been taken down or fallen.

3. FIELD VISIT

Mr. Ronald Hamburger of Simpson Gumpertz & Heger Inc. visited the site on 30 August 2016 accompanied by Ms. Massy Mehdipour, the building owner. Ms. Mehdipour provided access to the building interior and exterior. We observed that the building has been partially demolished and is in very poor condition structurally. Shoring has been installed throughout the lower level to maintain the building in stable condition. Specific observations include the following:

1. Exterior shoring consisting of untreated wood posts, headers and cross braces have been installed beneath the west edge of the cantilevered deck, raising the previously collapsed section back into approximate alignment. The shoring system does not appear to be engineered. Posts bear directly against site paving. Framing attachment is made with nails. (Photo 8).
2. Exterior windows have been removed from the lower level. Openings are enclosed with lightly nailed OSB with building paper on the exterior (Photo 8).

3. The deck along the western edge of the upper level is misaligned and sagging (Photo 9). The original steel railing is extensively corroded and had excessive spacing of rails and posts. Some replacement wood handrail posts are poorly attached and failing. (Photo 10).
4. Wood deterioration is evident in framing at the northwest corner of the deck (Photos 11 and 12). This is likely due to impact damage in the collapse.
5. Framing deterioration is evident in the fascia beam at the deck edge (Photo 13).
6. Stucco at the top of the north buttress wall has been removed where the wall abuts the building (Photo 14). This appears related to the earlier collapse, now temporarily repaired of the deck at the northwest corner (Photo 5).
7. The upper level interior has been gutted. Most interior partitions have been removed. Much of the plywood sheathing on the first floor has been removed and other sheets are laying loose across the joists. Many windows have been removed, and replaced with OSB (Photo 15). The ceiling, and few gypsum board wall finishes have been removed in the original building, but remain in place in the addition (Photo 16).
8. Many of the floor joists along the west (Photo 17) and east (Photo 18) sides of the upper level have been sawn through and are no longer effectively supported by the original wall lines. Shoring below provides support (Photo 19). Along the east side, this shoring has raised the joist edges above their original level.
9. Temporary framing, installed at the north window wall at the upper level has failed, and been reinforced with a sister 2x member (Photo 20).
10. Gypsum sheathing in the upper level north wing has been removed as have windows, electrical wiring and fixtures, and, the ceiling. Diagonal wood roof sheathing and joists are evident (Photo 21). Exposed building paper, serving as backing for stucco, and let-in braces are evident in the northeast corner of the den (Photo 22).
11. Much of the original first level framing has been removed. Some of the few remaining posts and joists show deterioration due to water damage (Photo 23).
12. Many interior partitions in the lower level have been removed, as have all finishes (Photo 24). The upper level floor rests on two rows of shoring, running north-to-south.
13. Many of the original posts along the west wall of the lower level have been removed. The 4x10 framing is supported on newly installed 2x4 shores (Photo 25).
14. Water-related staining and deterioration is evident on the diagonal sheathing beneath the first floor (Photo 26).
15. Portions of the mechanical duct that remain are corroded (Figure 27). In mechanical areas of the lower basement, no floor slab is present.
16. Cantilevered pipe columns supporting the grape stake fence along the east side of the courtyard have corroded through at their bases (Photo 28) and the corrosion has spalled

the concrete curb wall they are mounted in. One support pipe has been removed (Photo 29).

4. CALCULATIONS

We performed a preliminary seismic evaluation of the building using the ASCE 31-03 Tier 1 procedures. ASCE 31-03 is a standardized methodology commonly recognized in the industry as a means of determining whether a building meets an acceptable minimum standard of earthquake safety. This standard is consistent with the performance intent of Section 8-801 of California Code of Regulations Title 24, Part 8, otherwise known as the California Historic Building Code. It includes three levels of procedures, termed Tier 1, Tier 2 and Tier 3. The Tier 1 procedures are the simplest of the three levels and consist of evaluating the building using a series of checklists that identify the presence of features known to have caused poor performance in other buildings in past earthquakes, together with quick approximate calculations to characterize a building's strength. For the purpose of this evaluation we assumed that the building had been restored to its original condition, with the 1993 addition, but without any of the damage or deterioration reported above, or any structural upgrades or enhancements.

We determined that the building has the following deficiencies:

1. The walls do not provide adequate strength to resist the specified seismic forces.
2. Several of the upper level walls are discontinuous, i.e., they land on floor joists and are not supported on walls below.
3. The primary lateral resistance for the building is provided by cement plaster (stucco) on the exterior walls finish plaster on interior walls. This is not permitted for buildings exceeding one story in height.
4. Wood framing along the building's north side does not appear to be anchored to the building foundations.
5. Some framing members supported on posts and walls do not have positive connections to the post or walls.
6. Framing members at the edges of diaphragms are not provided with continuity hardware to resist chord and drag forces.
7. Three walls of the 1993 addition are supported on raised piers rather than a continuous strip footing. There is no detailing indicating positive attachment to the adjacent original structure.

5. DISCUSSION

5.1 Present Condition

5.1.1 Original Building

As evident from the photographs attached hereto, and our on-site observations, the original building is presently in very poor condition and is no longer capable of self-support. Essentially all interior finishes, including ceiling and wall finishes have been removed as has much of the

plumbing, electrical and heating utilities. Interior partitions have been removed at both levels. Glazing, and in some cases, window framing is missing from many exterior openings. A large portion of the exterior plaster has been broken and/or removed from the north buttress wall. Much of the structural sheathing has been stripped from the upper level floor and many of the wood joists have been cut along both lines of support. Some of the first level framing has experienced fungal rot associated with long term exposure to water. Some exterior framing is weathered, split and deteriorated beyond further use. Original steel handrails along the edge of the exterior deck have corroded and replacement wood railings are not well attached and are in danger of failing.

The building is presently erect only because of the presence of temporary wood shoring installed beneath the exterior deck along the building's west side, and also adjacent to the inside faces of the first story exterior walls. All exterior windows facing the ocean on the north and west sides of the building's lower story and some window openings on the north and east sides of the upper story are closed with OSB sheathing supported by occasional 2x4 posts. Building paper has been placed on the exterior surface of the window closures. This building paper is torn in some locations and has come loose in others. Portions of the exterior stucco walls that have damage have been temporarily "weatherproofed" with the installation of plastic sheeting, adhered with tape.

The shoring and protection that has been put in place is at best a short term solution. Closures in the large ocean-fronting windows do not have adequate structural framing support and are not adequately attached to the building frame. A severe winter storm could fail these closures allowing wind and wind-borne water and sand to enter the building. In fact, one post, located at the north face of the upper level has previously failed and been replaced with a post having only half the strength of the original.

Global stability of the structure is a greater concern. With much of the floor sheathing removed from the upper level, there effectively is no diaphragm at this level at this time. As a result there is no load path available for wind or seismic loads in the east-west direction. This could lead to collapse. Beyond the lack of a second level diaphragm, the shoring installed beneath the upper floor level, to hold the structure in place now that the joists have been cut, has not been designed for lateral force resistance. While cross bracing is present, the attachment of the braces to the framing consists of a few nails at each joint. Neither braces nor columns are positively attached to the ground. Strong winds or earthquakes could cause failure of these braces.

Present weather protection is likely to deteriorate rapidly with time. The building paper used to provide water protection for sheathing on window openings is subject to mechanical damage from wind or vandals and will require periodic maintenance. Even if maintained this protection does not fully seal the building against moisture intrusion and some damage due to such intrusion is already present. Uncoated, exposed wood shoring on the building's west face will deteriorate with exposure to the weather.

Our preliminary seismic evaluation indicates that even prior to partial demolition and vandalism, the building likely did not conform to currently accepted levels of seismic safety. While a more detailed evaluation may indicate that some of the deficiencies we identified are not of significance, we recommend a seismic upgrade be included as part of any attempted rehabilitation of the property.

5.1.2 Addition

The 1993 Addition appears to be in reasonable condition. Most interior and exterior finishes on this small structure appear to remain intact.

5.2 Reconstruction

Restoration of the structure, while technically feasible, would likely entail an effort comparable to the structure's original construction. We judge that the following existing features of the original building could be incorporated into a reconstruction:

- Most portions of the foundation system.
- The lower level floor slab.
- Most of the exterior stucco walls at the lower level and some at the upper level.
- Structural roof framing.
- Those original window frames that remain in place.
- Masonry fireplace.
- First floor framing in the north wing.

Reconstruction would require either removal or shoring of the above elements in place. The following elements would need to be replaced with new materials, many of which could be similar to the original construction:

- Portions of the foundation where new embedded items are required, or where larger resistance is required to provide resistance to wind and/or seismic forces.
- New structural sheathing, hold-downs and anchor bolts will be required on exterior walls to allow them to serve as shear walls. Sheathing can be placed on the interior face.
- The upper level floor system in the west wing, including the cantilevered deck and handrail will need to be replaced in its entirety. Since stacked construction is used, with the upper story walls constructed atop the upper floor platform framing, reconstruction of this floor will require dismantling of the upper level walls in this area, and replacement or reconstruction.
- All partitions will require reconstruction.
- New interior finishes including walls and ceilings.
- New windows and frames, particularly at the lower level where the window system was integral with structural support for the upper level.
- New plumbing, ductwork and electrical wiring.

- New fixtures including sinks, toilets, and baths.
- New cabinetry and millwork.
- Reframing work may require reroofing the structure.
- Grape stake fence at courtyard.

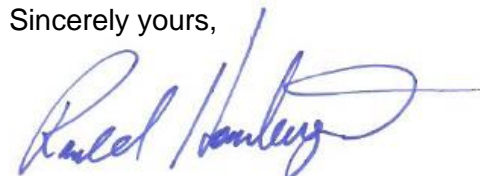
5.3 Relocation

We understand that one potential strategy under consideration for the environmental impact report is to relocate the building to an alternative site. In our opinion the building, in its current form, has inadequate structural integrity to permit such relocation as well as a poor configuration. Impediments to such relocation include the lack of either a competent horizontal diaphragm or vertical load carrying system at the upper level. A second challenge to relocating the building is the fact that it is partially constructed into the side of the bluff. As such, it does not have first story walls along the first story east face. Prior to relocating the building it would be necessary to under pin the upper story, along the east side, with new structural framing. It would then be necessary to carve an access road into the bluff, at shallow grade, to allow trailers to be placed under the building, and for transporting the building off the site.

6. CONCLUSIONS

On the basis of our limited investigation, the building at 1170 Signal Hill Road, Pebble Beach, California, though presently stable in the absence of severe winter storms or earthquakes, is unsafe for occupancy. Further, the structure's condition will continue to deteriorate under the influence of the wind and rain. Restoration of the building, though possible, would require substantial reconstruction, as described above. Relocation of the building to an alternative site is impractical. We recommend abatement of the structure, either through demolition, repair, or more thorough and permanent stabilization, as a public nuisance.

Sincerely yours,



Ronald O. Hamburger, SE
Senior Principal
CA License No. 2951

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Encl. Photos



Photo 1
Kirk photo of building's north side, looking southwest, 5 October 2010.



Photo 2
Kirk photo of northwest corner looking southeast, 5 October 2010.



Photo 3
Kirk photo of southeast corner, looking northwest, 5 October 2010.



Photo 4
Kirk photo of inner courtyard, looking towards northwest, 5 October 2010.



Photo 5
SWCA photo looking north
along the building's west
face.



Photo 6
SWCA photo looking east
from the lower level, west
side.



Photo 7
SWCA photo looking east
from building's lower level,
west side.



Photo 8
Exterior shoring present
under west edge of deck.



Photo 9
Sagging deck and handrail
along upper level west face.



Photo 10
Rusted steel hand rail posts
and wood replacement posts
that are failing in some
locations.



Photo 11
Framing deterioration is evident at the northwest corner of the deck.



Photo 12
Framing deterioration at northwest corner of deck.



Photo 13
Deterioration and splitting at
deck edge.



Photo 14
Damaged stucco at north
buttress wall, adjacent to
house.



Photo 15
The interior of the upper level has been gutted with much of the flooring removed.



Photo 16
Finishes removed around the upper level bath, but still in place in the addition, visible to the rear left.

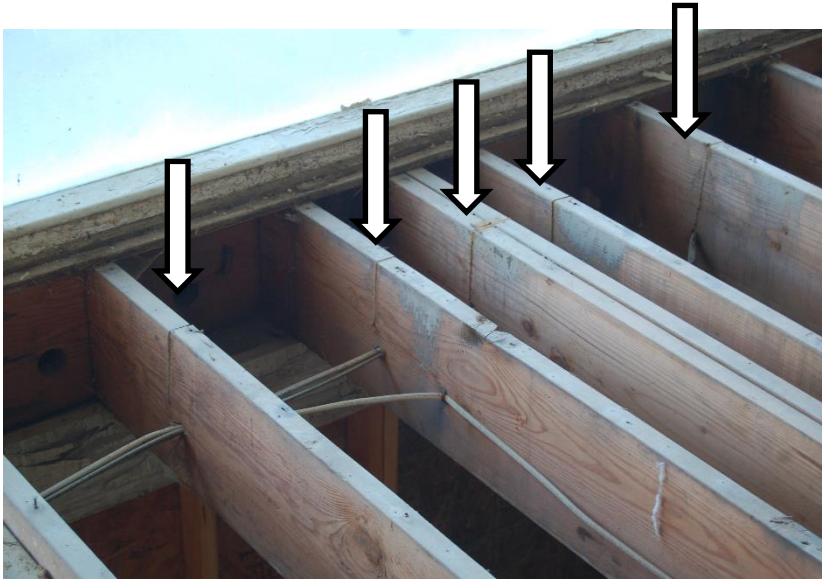


Photo 17

Floor joists along the upper level west side have been saw cut adjacent to the supporting wall.



Photo 18

Floor joists along the upper level east side have been sawn through and displaced vertically by the shoring below.



Photo 19
Upper level floor framing, saw cut at both ends and supported by shoring below.



Photo 20
Failed shoring post placed at upper level north windows. New 2x member is placed adjacent to failed members.



Photo 21
Demolished finishes in the
upper level north wing.



Photo 22
Interior view of upper level
northeast corner.



Photo 23
Water staining and damage
to wood framing at lower stair.



Photo 24
Lower level has been gutted
of all finishes and the upper
level floor is supported on two
rows of wood shores.



Photo 25

Many of the original lower level support posts have been removed. The outer line of 4x10 beams are supported by 2x4 shores.



Photo 26

Water staining and deterioration on diagonal wood sheathing and upper level floor framing.



Photo 27
Rusted ventilation system ducts. Note that floor slab is not present in mechanical areas.



Photo 28
Hole at base of cantilever pipe fence support and spalling of concrete curb.



Photo 29
Location of removed fence support post.