FLOOR AREA (CONT.)

(II) FIRST FLOOR (ELEV. 556.0')

(A) HEATING AREA

\[ A = \left(14'0'' \times 40.5''\right) - \left(2'5'' \times 5'0'' + 1'7'' \times 4'7.5'' (19.5') (6'') + 5'0'' (5'1'') (3'1'') + (6'5'') (6'5'')\right) \]

\[ = 1628 \text{ ft}^2 - 222 \]

\[ = 1,406 \text{ ft}^2 \]

(B) DECK AREA (ELEVATED DECK)

\[ B = \left(13.5'' \times 6'9'' \times 6''\right) + \left(13' \times 9.75' + 9' \times 4.5''\right) \]

\[ = 360 \text{ ft}^2 \]

(C) ONE FLIGHT STAIR TO LIGHTWELL

(D) POWDER ROOM

(E) ONE ELEVATOR STOP

(F) ONE FIRE PLACE
126 Crown Terraces

Floor Area (Cont.)

Area: A1 - A9, A11 - A64

(III) Second Floor (Elev. 545.5')

Note: All new framing - 1/2 pl. area with 1/8" penc. slab for estimation, 1/4" for 2nd floor.

(A) Usable Area

\[ A = \left(4'7.5\right)(16'5) - \left(5'5.5\right)(17') + \left(5'5\times5.5\right) + \left(3'7\times5.5\right) + \left(15'x7.5\right) + \left(3'7\times11.75\right) \]

\[ = 1792 - 191 \]

\[ = 1571 \text{ ft}^2 \]

(B) Deck Area (Elev. Area)

\[ B = \left(17.5\right)(3') - \left(1/2\right)(3')(8.75') + \left(1/2\right)(3')(11.75') \]

\[ = 99 + 22 \]

\[ = 121 \text{ ft}^2 \]

(C) Two (2) Bathrooms + 1 Master Bathroom

(D) Enc. Deck Area

\[ D = (8'\times17') = 136 \text{ ft}^2 \]

(E) One Elevator Stop

(F) One Fireplug
FLOOR AREA (CONT.)

\[ \text{A} = A_1 = A_{-9}, \text{AB1}-\text{AB4} \]

(IV) THIRD FLOOR (ELEV. 53'')

Note: Core Foundation Sub

(a) Habitable Area

\[ A = 1,571 \text{ ft}^2 \] (Same as 2nd floor)

(b) Deck Area (Elevated Area)

\[ B = \left( 1 \frac{1}{2}' \times 40' \right) + (3 \frac{3}{4}' \times 60') - \left( \frac{1}{2}' \times 60' \times 11 \frac{1}{4}' \right) + \left( \frac{1}{2}' \times 26\frac{3}{4}' \times 3'7'' \right) \]

\[ = 395 \text{ ft}^2 \]

(c) Two Bathrooms

(d) Storage Area

\[ \Omega = (20')(9.5') = 190 \text{ ft}^2 \]

(e) One Elevator Stop

(f) One Fire Place
TOTAL COST (5/4/09 - COST SCHEDULE, MARCH 2009)

(a) VISIBLE AREA = \((30.2 + 14.06 + 15.1 + 1.51)\) ft²

\[= 51.850 \text{ ft}²\]

\[\text{Subtotal} = (30.2 + 14.06 + 15.1) \times 125.07 + (15.1) \times 155.07 \times \left(\frac{1}{3}\right)\]

\[= 589,678 \text{ ft}²\]

(b) BALCONIES & DECK & PORTRAITS

\[= (89.4 + 96.0 + 61) \text{ ft}²\]

\[= 246.4 \text{ ft}²\]

\[\text{Not Accounted: 395 ft}²\]

\[\text{At Partial} \]

\[\text{Subtotal} = (246.4 \times 64.97) = 52,950 \text{ ft}²\]

(c) BATHROOMS: 2.5% BATH, 1.5% POWDER, 5 - BATHROOMS.

\[\text{Subtotal} = (4 \times 11,329.42) + (12 \times 11,329.42) + (34 \times 11,329.42)\]

\[= 59,479 \text{ ft}²\]

(d) KITCHEN = \[11,754 \text{ ft}²\]

\[\text{Subtotal}\]

(e) STORAGE = \((190 \text{ ft}² \times 61.19) = 11,740 \text{ ft}²\]

\[\text{Subtotal}\]
Total Cost

1. **Floor Area**
   - Sprinkler System: \((4,850 + 190) \text{ ft}^2 \times 6.25 \text{ in/ft}^2\)
   - Total: \(\$21,348 \text{ subtotal}\)

2. **Fireplaces**
   - \((3 \times \text{Fireplaces}) \times 1,586.74\)
   - Total: \(\$10,760\)

3. **Elevator Shaft**
   - \(\$2,786\)

Elevator Stop (A)
- \(7.32 \times 4 = \$29,316\)
- Subtotal: \(\$57,152\)

Total Cost = \(A + B + C + D + E + F + G + H\)

\(= \$589,676 + 52,950 + 59,479 + 11,754 + 11,740 + 71,348 + 10,760 + 57,152\)

\(= \$824,861 \text{ total}\)
FOUNDATION

THIRD FLOOR & FOUNDATION  
DRY. SKI, 92

(A) Concrete Volume - Retaining Wall: 1500 - 505

Line (1) = (1.56') (40.5') (24') = 62.5 YD^3

Line (2) = (1.17') (48.5') (21') = 44 YD^3

Line (3) = (1.17') (80') (21') = 36 YD^3

Line (4) = (1.67') (28') (10') = 17 YD^3

Line 5 = (1.16) (26') (10') = 11 YD^3

Line 6 = (1.10') (40.5') (5') = 6.25 YD^3

Patio Wall = (10') (40.5') (5') = 6.75 YD^3

24' Mech = (2') (40.5') (21') = 81 YD^3

18' Mech = (1.5') (40.5') (16') = 96 YD^3

Patio 12' Mech = (1') (3.95') (5') = 14.5 YD^3
(A) FOUNDATION CONCRETE COST (RETAINING WALL)

1. Concrete Volume = (62.5 + 44 + 36 + 11 + 6.25 + 6.75 + 81 + 36 + 14.5 + 11)
   = 244.5 m^3

   Subtotal Cost = (244.5 m^3) (813.47 / m^3)
   = $255,826

(B) CROWN TERRACE STREET RETAINING WALL: Dwg. SK1 & SKS, S-9

Concrete Volume (Use Average Height 61' 6" 40' Length)

Concrete Volume = [(10')^2] (6') (40') + ([1.5'] (6') (40')) (1/27)
   = 20.7 m^3

8% Caissons = (11 Caissons) (14') (90' / 14') = $1,998.3

Subtotal = (20.7 m^3) (813.47 / m^3) + 1,998.3
   = $20,838 + 1,998.3
   = $22,836.3
Foundation

(4) MAT CAISSONS

Dwg S-2, S-9, S-10

No. 18" & CAISSON = 24, 20' deep
Cost/ft. (77.89/ft) (129.51-77.89)
= $90.80/ft

No. 18" & CAISSON = 8, 14' deep

(a) CAISSON SET-UP COST = $10,838

(b) Cost (18" & CAISSON) = (24) (20' deep) (90.80/ft)
= $43,584

(c) Cost (18" & CAISSON) = (8) (14' deep) (90.80/ft)
= $10,170

Total CAISSON COST = ($10,838 + $43,584 + $10,170)
= $64,592
FOUNDATION

TOTAL FOUNDATION COST (NOT INCLUDE FILL & EXCAVATION)

\[ \text{Total Cost} = A + B + C \]
\[ = 256,836 + 20,821 + 64,592 \]
\[ = 251,249 \]

**Note:** DRAINAGE SHOWN IN DRAWING SK5 ASSUMED TO BE INCLUDED WITH CONC. RETAINING WALL & M&T FOUNDATION
125 Crown Terrace

(a) EXCAVATION

NOTE USE THE AVERAGE VOLUME (ESTIMATED FROM X5006 DRAW)

Volume = \( \frac{(19') (48' \times 40.5')}{2} \)

= \( \frac{1,368 \text{ yd}^3}{27} \)

= \( 51.99 \text{ yd}^3 \)

(b) FILL (HOTEL AREA); DEPTH OF FILL = 4' AVG.

Volume = \( \frac{(395 \text{ ft}^2) (4') (7/2)}{27} \)

= \( 29 \text{ yd}^3 \)

Subtotal = \( (29 \text{ yd}^3) (49.56 / \text{yd}) \)

= \( 1,379 \text{ yd}^3 \)

Total Excavation & Fill = \( 51.99 \times 1,379 \)

= \( 96,578 \text{ yd}^3 \)
(a) WEST SHOTCRETE WALL (SH1-N)

\[ \text{AREA} = \left( \frac{12 + 3.2}{2} \right) \times 52' \]

\[ = 1,144 \text{ ft}^2 \]

Cost/\text{ft}^2 = $129.21 + (289.43 - 109.21) \times \frac{0.9}{100} = 112.28/\text{ft}^2

\[ \text{Sub Cost} = 1,144 \times 112.28/\text{ft}^2 = 129,088 \text{ (Note: Part of the soil nails could be protected to public way!)} \]

(b) SOUTH SHOTCRETE WALL

\[ \text{AREA} = \left( \frac{20'(13')}{2} \right) = 130 \text{ ft}^2 \]

Subtotal = (130 ft$^2$) x $129.21/\text{ft}^2 = 16,797

\[ \text{Total Shotcrete Wall} = (197,088) + (16,797) \]

(125 Crown Terrace) = \$213,885
Concrete Wall (South)

Note: This wall is within 4th floor: SH1N, SH2N, S-2

"115 Crown Terrace" and should be under separate permit.

Area: 28' x 43' = 602 ft²

Cost = (602 ft²)($12.20/ft²)

= $103,712; use $103,000

Need separate permit to add.

Filed under

115 Crown Terrace
CONSTRUCTION BERM/RAMP

1. BERM & RAMP Ref. Doc: SK-4

2. Soldier Pile = 15 (W10x45), Length: 15' (Avg.)

Sub Cost = (15)(15')(65.42/ft)
          = $14,719

3. Wood Lashing (Assume 5' Height Avg.)

   AREA = (10+16+12+16) 5'
          = 920 ft²

   Sub Cost = (920 ft²)(41.05/ft²)
            = $37,296

4. RAMP (Fill Volume) (Assume 5' Height Avg. Fill)

   Fill Vol = [(16)(4x1') (20+16)(8')] 5'
              = 160 yd³

   Subtotal = (160 yd³)(47.56/yd³)
             = $7,609
Total Cost = a + b + c
= £ (14,719 + 6,736 + 7,609)
= £ 29,064
TEMPORARY CRIBBING

Ref: DWG: SK-3, SK-4, SK-5

BASED ON VALUATION PROVIDED BY "MARRIOTT VALUATION SERVICES"
SEE ATTACHED SHEET PROVIDED BY
TECHNICAL SERVICES MANAGER: DAVID LEUNG

Total Cost = ~£31,291
DEMOLITION

Costs presented are average costs of removal per square foot of total building floor area, except as noted, including loading and hauling, but not dump fees. It is also assumed that the materials have no salvage value. For individual unit costs, see prior page.

Costs for removal vary greatly depending on the size and complexity of the job and extent of contamination regarding hazardous materials. The following cost ranges are in some cases based on one or only a few removal projects and should be considered as very rough guides. Due to the number of variables involved, we would suggest that, wherever possible, survey, bid or contract costs be obtained.

BUILDING DEMOLITION

(Cost range per square foot)

<table>
<thead>
<tr>
<th>Class A</th>
<th>Class B</th>
<th>Class C</th>
<th>Class D</th>
<th>Class E</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4.79 - $7.05</td>
<td>6.25 - 8.00</td>
<td>3.79 - 6.15</td>
<td>$3.21 - $4.95</td>
<td>4.2 - 4.99</td>
</tr>
</tbody>
</table>

Small residences, total cost (approximately 1,000 - 1,500 sq. ft. per floor):

1-story: $3,525 - $7,550
2-story: $4,300 - $10,400
3-story: $5,700 - $12,500

SEISMIC RETROFITTING

EARTHQUAKE (HURRICANE) REINFORCEMENT: Complete foundation anchorage retrofit for small (approximately 1,000- to 1,500-square-foot) raised-floor residences cost $3,050 to $6,050.

UNIT COSTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sill plate anchors (8' o.c.), each</td>
<td>$38.75 - $55.00</td>
</tr>
<tr>
<td>Rim joint anchoring (2' o.c.), each</td>
<td>29.00 - 44.75</td>
</tr>
<tr>
<td>Pier joint strips, each</td>
<td>25.50 - 59.00</td>
</tr>
<tr>
<td>Cripple, shea wall sheathing, per sq. ft.</td>
<td>1.75 - 3.11</td>
</tr>
<tr>
<td>Truss/rafter ties, each</td>
<td>38.75 - 82.00</td>
</tr>
<tr>
<td>Beam anchors, each</td>
<td>55.00 - 120.00</td>
</tr>
<tr>
<td>Masonry construction</td>
<td>230.00 - 470.00</td>
</tr>
</tbody>
</table>

MISCELLANEOUS

HOUSE LIFTING (elevated above flood plain): Cost $7,750 - $14,400 for raised floor to $20,800 - $34,500 for slab on grade residences. Add $8,500 - $17,100 for full foundation, $16,900 - $27,900 for full-story raised substructure.

\[
\frac{1}{2} (\$20,800 - \$34,500) \times 1.56 = \$43,134.00
\]

HOUSE MOVING (excluding new foundations or utilities): Cost $11,900 - $21,600 for a one-story residence (approximately 1,000 to 2,000 square feet), and $9,650 - $16,100 for a two-story residence (ground floor area of 800 to 1,000 square feet) up to a 5-mile distance. For masonry structures, add 50%.

HAZARDOUS MATERIAL REMOVAL

RADON REMOVAL: Residential basement ventilation retrofit costs $925 - $1,400 for a passive exhaust pipe ventilation system plus $315 - $525 for active fan and alarm.

ASBESTOS REMOVAL:

<table>
<thead>
<tr>
<th>Operation</th>
<th>LOW COST</th>
<th>AVERAGE</th>
<th>GOOD</th>
<th>HIGH COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full abatement</td>
<td>$21.50</td>
<td>$23.75</td>
<td>$40.50</td>
<td>$55.50</td>
</tr>
<tr>
<td>Spot removal</td>
<td>8.60</td>
<td>11.40</td>
<td>15.10</td>
<td>20.50</td>
</tr>
<tr>
<td>Encapsulation</td>
<td>1.58</td>
<td>2.05</td>
<td>2.69</td>
<td>3.48</td>
</tr>
</tbody>
</table>

LEAD REMOVAL:

<table>
<thead>
<tr>
<th>Operation</th>
<th>LOW COST</th>
<th>AVERAGE</th>
<th>GOOD</th>
<th>HIGH COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full abatement</td>
<td>$2.25</td>
<td>$3.75</td>
<td>$5.50</td>
<td>$6.80</td>
</tr>
<tr>
<td>Spot removal</td>
<td>5.00</td>
<td>7.00</td>
<td>11.00</td>
<td>13.20</td>
</tr>
<tr>
<td>Encapsulation</td>
<td>2.74</td>
<td>3.48</td>
<td>4.44</td>
<td>5.38</td>
</tr>
</tbody>
</table>

GRAFFITI REMOVAL:

$1.05

SITE DECONTAMINATION: Biological soil remediation costs have averaged $100 per cu. yd. for land treatment (laid soil-conditioning farming), $194 per cu. yd. for bioremediation (air stripping and soil treatment) to $285 per cu. yd. for full bioreactor treatment (active slurry-aeration mixing), with costs having varied plus or minus 50%.

GROUND WATER CLEANUP: Pump and treat remediation costs have averaged $.11 to $.16 per gallon treated per year while permeable reactive barrier treatment systems averaged $.47 to $1.00 per gallon treated per year, with costs having varied plus or minus 50%.

STORMWATER MANAGEMENT

(Costs include trenching and backfill)

Polyethylene chamber system, complete, per gallon

<table>
<thead>
<tr>
<th>UNIT COSTS</th>
<th>COST RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chamber only (70 - 425 gallon), each</td>
<td>$57.00 - $230.00</td>
</tr>
<tr>
<td>Pipe drainage system, 10&quot;, per linear foot</td>
<td>12.20 - 18.10</td>
</tr>
<tr>
<td>12&quot;</td>
<td>15.30 - 18.40</td>
</tr>
<tr>
<td>24&quot;</td>
<td>29.75 - 34.75</td>
</tr>
<tr>
<td>36&quot;</td>
<td>62.00 - 77.00</td>
</tr>
<tr>
<td>48&quot;</td>
<td>$89.00</td>
</tr>
<tr>
<td>Bioswale detention system, per sq. ft.</td>
<td>4.15 - 5.80</td>
</tr>
<tr>
<td>Compost filter Berm system, per linear foot</td>
<td>1.95 - 4.69</td>
</tr>
</tbody>
</table>
Tom, Hanson

From: Tom, Hanson
Sent: Friday, December 27, 2013 10:52 AM
To: Leung, David
Cc: Sweeney, Edward; Hui, Tom
Subject: 125 Crown Terrace - Estimated Construction Value Based with "DBI Cost Schedule, March 2009"
Attachments: 201312271039.pdf

David,

As assigned, I have completed the estimation for the above project. I would appreciate your review/comments ASAP. I have the record drawings and you can use them for your checking!
If you have any questions, please contact me!
Thanks!

Hanson Tom, S.E.
Principal Engineer, DBI
1660 Mission St. 2nd Fl.
San Francisco, Ca. 94103
Tel: 415-558-6157
Fax: 415-558-6436
3) SAC Evaluation Report
(by Steven Lew, S.E.)
December 31, 2013

Tom C. Hui, SE, CBO
Director
Department of Building Inspection
City and County of San Francisco
1660 Mission Street, Sixth Floor
San Francisco, CA 94103

By Electronic Mail

Re: 125 Crown Terrace – SFDBI Structural Advisory Committee
Review of Engineering Report in Response to Complaints Nos. 201343501 and 201343861

TRSE Reference Number: 2013.061.01

Dear Mr. Hui:

As part of the SFDBI Structural Advisory Committee, the following is my review of the Engineering Report for 125 Crown Terrace, dated December 23, 2013, and produced by Santos and Urrutia Structural Engineers, Inc. This report was produced in response to events occurring on December 16, 2013, resulting in Complaints Nos. 201343501 and 201343861.

There are the following comments:

1. The Collapsed Temporary Shoring Plan shows a total of three cribbing towers, a future tower, and two shoring beams. The condition shown on plan differs from the narrative, which indicated three towers along the north side of the building and two towers with a shoring beam along the south side. Please clarify this discrepancy.

2. The Emergency Shoring Plan shows that the existing tree trunk near the southeast corner of the lot will be shaped to accept 6x8 wood members to temporarily brace Building Zone 3. It is suggested that if possible, additional blocks/shims be placed between the tree trunk and the new adjacent retaining wall in the event the tree trunk is not stable. Verify adequacy of 6x8 wood members given their apparent long unbraced length and connections to the existing building. Verify that 6x8 wood members are rigidly attached at floor level to the existing building.

3. Verify if additional lateral loads (wind, seismic, other environmental) need to be considered in design of the temporary building supports during construction.

4. Clarify if additional temporary support is required for the south side of Building Zone 2 (temporary braces, chains, etc.).

5. Verify adequacy of existing soldier beams to resist additional loads from downhill building zones due to proposed chain restraints. Are chains themselves adequate for such loads?

6. The Mitigation Plan sheet indicates that Building Zone 2 will be relocated at Elevation 535' on W6 beams supported on 4'-0" high cribs upon completion of grading and leveling. Verify adequacy of W6 shoring beams and cribs shown and of existing framing to span between W6 beams. Clarify how Zone 2 will be supported during grading and leveling operations.
7. The Mitigation Plan sheet also indicates that Building Zone 2 is to be raised to Elevation 568' after completion of the foundation. Confirm if Zones 1 and 3 are to be raised to this level. Will an intermediate shoring plan showing temporary supports at Elevation 568' be required? Submit such a plan if so required with all required documentation.

8. The narrative discusses the addition of a shear wall at the northernmost building segment. This shear wall is not shown on any of the drawings in the report. Clarify intent of shear wall. Is this shear wall designed as a permanent wall for the completed building or is it designed for the temporary condition? Verify adequacy of shear wall design if so required.

Please note that Tuan and Robinson Structural Engineers Inc. makes no warranty, either expressed or implied, as to any findings, designs, recommendations or professional advice except that they were prepared in accordance with generally accepted professional engineering practice.

We trust this is the information you were seeking. Please do not hesitate to call should you have further questions or comments.

Very truly yours,
Tuan and Robinson Structural Engineers, Inc.

Steven Lew, SE
License No. S4180, exp. 9/30/2015

cc: Edward Sweeney, SFDBI
    Hanson Tom, SFDBI
4) EOR Reports

(by Santos & Urrutia Structural Engineers, Inc.)
December 23, 2013

Mr. Hanson Tom  
Department of Building Inspection  
City of San Francisco  
1660 Mission Street  
San Francisco, CA 94103

Re: Structure Collapse: 125 Crown Terrace, San Francisco, CA

Complaint No.: 201343501 & 201343861  
S&U Job: 9356  
Block 2719B, Lot 003  
Subject: Engineering Report

Mr. Hanson Tom,

At Director Tom Hui’s request this is the engineering investigative report on 125 Crown Terrace.

Background

The original structure is one story of timber framing over a large crawl space. Under permit application 2011/10/06/6315, the building is in a process of being remodeled and added to. The addition is both vertical and horizontal, with the design adding floors under the existing structure. The permit was issued at the end of November 2013, which included both soil and structure shoring.

Construction commenced in the beginning of December 2013. In this process the building was placed on beams and cribbing with the lower crawl space walls removed. The house moving contractor decided that it was better to leave the building heavy (with plaster and finishes) in order to lessen the potential for wind uplift. The lower retaining walls were placed, the upper shoring beams and a portion of the upper wall was placed. In order to place the required retaining walls the beams and cribbing needed to be moved and readjusted several times.

On Monday, December 16, 2013 the contractor was in the process of moving the shoring towers to their latest locations. The building was supported by a beam to the north with three towers, a beam to the south on two towers and was in the process of digging the pit for the middle (future) tower. At 5pm of that day construction ceased, the excavator was left in place, under the house, with its arm in an inverted V.
The Failure
At 10:30pm, Monday, December 16, 2013, the south beam buckled, pulling the house off its cribbing toward the south. This pulled the north cribbing beam off its towers and the structure started to slide with the steel. At this point the eastern most portion of the structure landed and impaled itself on the arm of the excavator. Because the excavator was on a flat stable spot it did not move. This arrested the down hill movement of the structure. At this point the structure broke into three distinct sections; one eastern piece on the excavator and two western pieces resting on the eastern one. The southern most piece was listing towards the property to the directly to the south. In the attached calculations, they show that the southern beam was overstressed to 159% of allowable.

Temporary Stabilization
On December 17th, 2013, Santos & Urrutia obtained permit application 2013/12/17/4398 in order to provide emergency demolition of the southern most section of the building which was placing the greatest pressure on the excavator and was listing. The exterior walls were removed and retained for future use. Then the remaining portions were stabilized by chaining them back to the existing vertical soil shoring piles. The northern most and eastern portions were lightened (plaster and finishes removed) and a shear wall was added to the northern most section.

This stabilization is not recommended for any long term as weather can further destabilize the site.

Mitigation
In order for construction to proceed, we will remove the walls of the eastern most section and retain them for reuse in their original position in the final structure, exposing the excavator. Stabilize the northern most section and move it to a flat space on the site. Demolish the remaining portions of the floor and remove the excavator. In the final design the walls that were retained (during the stabilization and mitigation) will be placed back to their proposed original locations.

Should you have any questions, please contact me.

Sincerely,

[Signature]

Albert Urrutia
Structural Engineer

Attachments: Collapse Temporary Shoring Plan, Beam Stress Calculations, Photos, Emergency Demolition and Stabilization Plan and Mitigation Plan
STRUCTURAL CALCULATIONS FOR:

SHORING BEAM FAILURE
125 CROWN TERRACE
SAN FRANCISCO, CALIFORNIA

REPORT PREPARED BY:

SANTOS & URRUTIA, INC.
STRUCTURAL ENGINEERS
2451 HARRISON STREET
SAN FRANCISCO, CA 94110
Phone (415) 642-7722
Fax (415) 642-7590
Email - main@santosurrutia.com

S & U JOB # 9356

DATE: December 23, 2013

PAGES: 2
**125 CROWN TERRACE (19356)**
SAN FRANCISCO, CA

**SHORING BEAM FAILURE**

**PURPOSE**

This calculation is to show the stress level of the existing sout preparing shoring beam prior to buckling and collapse.

**LOADS**

**ROOF/Ceiling**

<table>
<thead>
<tr>
<th>Material</th>
<th>Weight (psf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt shingles roof</td>
<td>3</td>
</tr>
<tr>
<td>1 x sheathing</td>
<td>2.5</td>
</tr>
<tr>
<td>2 x 4 @ 16&quot; O.C. (rafters)</td>
<td>1.1</td>
</tr>
<tr>
<td>2 x 12 @ 16&quot; O.C. (ceiling)</td>
<td>3.5</td>
</tr>
<tr>
<td>Plaster + lath</td>
<td>2</td>
</tr>
<tr>
<td>Insulation</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19.1 psf</strong></td>
</tr>
</tbody>
</table>

**Floor**

<table>
<thead>
<tr>
<th>Material</th>
<th>Weight (psf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 x sheathing</td>
<td>2.5</td>
</tr>
<tr>
<td>1 x hardwood</td>
<td>3.0</td>
</tr>
<tr>
<td>2 x 12 @ 16&quot; O.C.</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9.0 psf</strong></td>
</tr>
</tbody>
</table>
WALLS

EXTERIOR SIDING
2 x 4 STUPS @ 16" OC.
INSULATION
PLASTER

TOTAL 12.6 psf

INTERIOR WALLS ADD 3 psf

LOAD TO BEAT

\[ P_1 = \left( \frac{1}{2} \right) (5) (4.0 + 14.1) + \left( \frac{6}{2} + 4 \right) (12.4) = 600 \text{#} \]

\[ P_2 = P_1 + \left( \frac{10}{2} \right) \left( \frac{2}{2} \text{ of } 8 \right) (3 + 9) \]

\[ + \left( \frac{2}{2} + 8 \right) \left( \frac{2}{2} \text{ of } 8 \right) (19.1) \]

\[ + \left( \frac{2}{2} \right) (12.4) 8 = 7684 \text{#} \]

\[ P_3 = \left( \frac{12.5 + 10}{2} \right) (3.9) \left( \frac{2}{2} + 9 \right) \]

\[ + \left( \frac{12.5 + 10}{2} \right) (8) (12.4) \]

\[ = 3700 \text{#} \]

\[ f_d = \frac{69,083 (12)}{54.1} = 1518 \text{#} \text{ psf} \]

\[ F_0 = \frac{170 \times 10^3 (1.0)}{(133.5)^2} = 9.5 \text{#} \text{ psf} \text{ allowable} \]

\[ \% \text{ over-stressed} = 159\% \]
Restoration Protocol

For

125 Crown Terrace
San Francisco, CA 94114

December 30, 2013

Prepared by Santos & Urrutia Structural Engineers, Inc.
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December 23, 2013

Mr. Hanson Tom
Department of Building Inspection
City of San Francisco
1660 Mission Street
San Francisco, CA 94103

Re: Structure Collapse: 125 Crown Terrace, San Francisco, CA

Complaint No.: 201343501 & 201343861
S&U Job: 9356
Block 27198. Lot 003
Subject: Engineering Report

Mr. Hanson Tom,

At Director Tom Hui’s request this is the engineering investigative report on 125 Crown Terrace.

Background
The original structure is one story of timber framing over a large crawl space. Under permit application 2011/10/06/6315, the building is in a process of being remodeled and added to. The addition is both vertical and horizontal, with the design adding floors under the existing structure. The permit was issued at the end of November 2013, which included both soil and structure shoring.

Construction commenced in the beginning of December 2013. In this process the building was placed on beams and cribbing with the lower crawl space walls removed. The house moving contractor decided that it was better to leave the building heavy (with plaster and finishes) in order to lessen the potential for wind uplift. The lower retaining walls were placed, the upper shoring beams and a portion of the upper wall was placed. In order to place the required retaining walls the beams and cribbing needed to be moved and readjusted several times.

On Monday, December 16, 2013 the contractor was in the process of moving the shoring towers to their latest locations. The building was supported by a beam to the north with three towers, a beam to the south on two towers and was in the process of digging the pit for the middle (future) tower. At 5pm of that day construction ceased, the excavator was left in place, under the house, with its arm in an inverted V.
The Failure

At 10:30pm, Monday, December 16, 2013, the south beam buckled, pulling the house off its cribbing toward the south. This pulled the north cribbing beam off its towers and the structure started to slide with the steel. At this point the eastern most portion of the structure landed and impaled itself on the arm of the excavator. Because the excavator was on a flat stable spot it did not move. This arrested the down hill movement of the structure. At this point the structure broke into three distinct sections; one eastern piece on the excavator and two western pieces resting on the eastern one. The southern most piece was listing towards the property to the directly to the south. In the attached calculations, they show that the southern beam was overstressed to 159% of allowable.

Temporary Stabilization

On December 17th, 2013, Santos & Urutia obtained permit application 2013/12/17/4398 in order to provide emergency demolition of the southern most section of the building which was placing the greatest pressure on the excavator and was listing. The exterior walls were removed and retained for future use. Then the remaining portions were stabilized by chaining them back to the existing vertical soil shoring piles. The northern most and eastern portions were lightened (plaster and finishes removed) and a shear wall was added to the northern most section.

This stabilization is not recommended for any long term as weather can further destabilize the site.

Mitigation

In order for construction to proceed, we will remove the walls of the eastern most section and retain them for reuse in their original position in the final structure, exposing the excavator. Stabilize the northern most section and move it to a flat space on the site. Demolish the remaining portions of the floor and remove the excavator. In the final design the walls that were retained (during the stabilization and mitigation) will be placed back to their proposed original locations.

Should you have any questions, please contact me.

Sincerely,

Albert Urutia
Structural Engineer

Attachments: Collapse Temporary Shoring Plan, Beam Stress Calculations, Photos, Emergency Demolition and Stabilization Plan and Mitigation Plan
December 31, 2013

Tom C. Hui, SE, CBO
Director
Department of Building Inspection
City and County of San Francisco
1660 Mission Street, Sixth Floor
San Francisco, CA 94103

Re: 125 Crown Terrace – SFDBI Structural Advisory Committee
Review of Engineering Report in Response to Complaints Nos. 201343501 and 201343861

TRSE Reference Number: 2013.061.01

Dear Mr. Hui:

As part of the SFDBI Structural Advisory Committee, the following is my review of the Engineering Report for 125 Crown Terrace, dated December 23, 2013, and produced by Santos and Urrutia Structural Engineers, Inc. This report was produced in response to events occurring on December 16, 2013, resulting in Complaints Nos. 201343501 and 201343861.

There are the following comments:

1. The Collapsed Temporary Shoring Plan shows a total of three cribbing towers, a future tower, and two shoring beams. The condition shown on plan differs from the narrative, which indicated three towers along the north side of the building and two towers with a shoring beam along the south side. Please clarify this discrepancy.

2. The Emergency Shoring Plan shows that the existing tree trunk near the southeast corner of the lot will be shaped to accept 6x8 wood members to temporarily brace Building Zone 3. It is suggested that if possible, additional blocks/shims be placed between the tree trunk and the new adjacent retaining wall in the event the tree trunk is not stable. Verify adequacy of 6x8 wood members given their apparent long unbraced length and connections to the existing building. Verify that 6x8 wood members are rigidly attached at floor level to the existing building.

3. Verify if additional lateral loads (wind, seismic, other environmental) need to be considered in design of the temporary building supports during construction.

4. Clarify if additional temporary support is required for the south side of Building Zone 2 (temporary braces, chains, etc.).

5. Verify adequacy of existing soldier beams to resist additional loads from downhill building zones due to proposed chain restraints. Are chains themselves adequate for such loads?

6. The Mitigation Plan sheet indicates that Building Zone 2 will be relocated at Elevation 535' on W6 beams supported on 4'-0" high cribs upon completion of grading and leveling. Verify adequacy of W6 shoring beams and cribs shown and of existing framing to span between W6 beams. Clarify how Zone 2 will be supported during grading and leveling operations.
7. The Mitigation Plan sheet also indicates that Building Zone 2 is to be raised to Elevation 568" after completion of the foundation. Confirm if Zones 1 and 3 are to be raised to this level. Will an intermediate shoring plan showing temporary supports at Elevation 568" be required? Submit such a plan if so required with all required documentation.

8. The narrative discusses the addition of a shear wall at the northernmost building segment. This shear wall is not shown on any of the drawings in the report. Clarify intent of shear wall. Is this shear wall designed as a permanent wall for the completed building or is it designed for the temporary condition? Verify adequacy of shear wall design if so required.

Please note that Tuan and Robinson Structural Engineers Inc. makes no warranty, either expressed or implied, as to any findings, designs, recommendations or professional advice except that they were prepared in accordance with generally accepted professional engineering practice.

We trust this is the information you were seeking. Please do not hesitate to call should you have further questions or comments.

Very truly yours,
Tuan and Robinson Structural Engineers, Inc.

Steven Lew, SE
License No. S4180, exp. 9/30/2015

cc: Edward Sweeney, SFDBI
Hanson Ton, SFDBI
January 2, 2014

Mr. Tom Hui & Mr. Hanson Tom
Department of Building Inspection
City of San Francisco
1660 Mission Street
San Francisco, CA 94103

Re: Structure Collapse: 125 Crown Terrace, San Francisco, CA

Complaint No.: 201343501 & 201343861
S&U Job: 9356
Block 2719B, Lot 003
Subject: Response to Tuan & Robinson Letter 2013.061.01

Mr. Tom Hui & Mr. Hanson Tom,

We have received the Tuan & Robinson letter dated December 31, 2013. This letter has several comments on the Santos & Urrutia "Emergency Demolition & Stabilization" drawing and the subsequent report. The following is a response to those comments:

1. The original shoring prior to collapse was actually on two cribbing towers and the mat slab to the north and one cribbing tower and mat slab to the south. In my hurry to get the report out I described the mat slab support as cribbing towers.

2. The tree trunk that the structure is braced off is the remnants of a 100ft+ cedar tree that was recently removed as part of the construction. The trunk is in excellent condition and acts as an anchor for this section of the house. The 6x8 braces were SDS screwed into the trunk and dies have additional blocking.

3. The nature of the bracing and restraint is truly temporary and is not designed for any long term loadings. Besides the braces it is currently restrained by twelve loops of chain around the three portions of the structure and attached to cleats welded to the existing soil shoring I-beams. There are no calculations I can provide for this configuration.

4. There are approximately eight loops of chain around Zone 2.

5. The existing soldier beams are placed down to their depth with only the top five feet exposed. They have twenty feet embedded into the hill.
6. The Mitigation Plan is being revised for submission to the SAC. We will address these concerns at that time.

7. The Mitigation Plan is being revised for submission to the SAC. We will address these concerns at that time.

8. A shearwall was installed across Zone 2's south end in order to prevent the building from collapsing into itself. This wall will not be part of the final construction but simply is a temporary element to remain in place until the section is placed back into its permanent location.

Should you have any questions, please contact me.

Sincerely,

[Signature]

Albert Urrutia
Structural Engineer
January 3, 2014

Tom C. Hui, SE, CBO
Director
Department of Building Inspection
City and County of San Francisco
1660 Mission Street, Sixth Floor
San Francisco, CA 94103

Re: 125 Crown Terrace – SFDBI Structural Advisory Committee
Engineering Report in Response to Complaints Nos. 201343501 and 201343861
Review of Responses to TRSE Letter dated December 31, 2013

TRSE Reference Number: 2013.061.01

Dear Mr. Hui:

We are in receipt of the letter by Santos and Urrutia Structural Engineers, Inc., dated January 2, 2014. Their letter contains responses to our comments regarding the Engineering Report for 125 Crown Terrace, dated December 23, 1013, produced in response to events occurring on December 16, 2013, resulting in Complaints Nos. 201343501 and 201343861.

Our comments to the responses follow in the order listed in the January 2 letter:

1. No exception taken.
2. No exception taken, but please verify that 6x8 wood members are attached to rigid spots on the existing building, perhaps along floor level.
3. No exception taken.
4. No exception taken.
5. No exception taken.
6. We expect that Comment #6 concerning the adequacy of Zone #2 shoring before and after grading to Elevation 535' will be addressed in a revised Mitigation Plan per the responses, and in any accompanying documentation including calculations.
7. We expect that Comment #7 concerning an intermediate shoring plan for raising the existing building components to Elevation 568' will be addressed in a revised Mitigation Plan per the responses, and in any accompanying documentation including calculations.
8. No exception taken.

Many of our comments concerned the Emergency Shoring and Stabilization Plan, Sheet S2, with SFDBI approval stamp; December 17, 2013. We understand that due to the quick production of this Plan and emergency stabilization in the field, discrepancies likely occurred between the Plan and what was implemented. We assume such measures were approved by SFDBI in the field, so we have no additional comments on these. We have no other comments on the responses or on the Engineering Report.
Tom C. Hui, SE, CBO
January 3, 2014
Page 2 of 2

Please note that this letter does not address any other comments, findings or directives from SFDBI or from any agency for the City and County of San Francisco concerning 125 Crown Terrace or the Engineering Report, nor does this letter address events occurring on December 16, 2013.

Tuan and Robinson Structural Engineers Inc. makes no warranty, either expressed or implied, as to any findings, designs, recommendations or professional advice except that they were prepared in accordance with generally accepted professional engineering practice.

We trust this is the information you were seeking. Please do not hesitate to call should you have further questions or comments.

Very truly yours
Tuan and Robinson Structural Engineers, Inc.

Steven Lew, SE
License No. S418K, exp. 9/30/2015

cc: Edward Sweeney, SFDBI
Hanoch Tem, SFDBI
Steven,

Thanks for your hard work and quick response in contacting the EOR, Mr. Santos, and resolved the plan check comments that you produced on Dec. 31, 2013. Your letter is acceptable to DBI and therefore satisfied the directives ordered by our Director Tom Hui in his Action Plan dated Dec. 19, 2013.

We will contacting you and Mr. Timothy Mathison when the next SAC is reconvene to hear the appeal of the above project again.

Please let me know if you have any questions!

Sincerely yours,

Hanson Tom, S.E.
Principal Engineer, DBI
1660 Mission St. 2nd Fl.
San Francisco, Ca. 94103
Tel: 415-558-6157
Fax: 415-558-6436

Hanson,

No exception is taken to the responses. Attached is our letter stating such. I'll send you three hard copies of this letter in the mail as well. Let me know if any questions.

Steven Lew, SE
Tuan and Robinson
Structural Engineers, Inc.
221 Main Street, Suite 860
San Francisco, CA 94105
T: 415.957.2486 #107
F: 415.957.2483
www.trsinc.com
Cc: Sweeney, Edward; Leurg, David
Subject: FW: 125 Crown Terrace (Response to Steven Lew's comments)

Steve,

Please review the responses from Mr. santos, EOR. Please try to resolve all issues ASAP. Director Hul is instructing that Mr. Santos’ responses to your review comments to be resolved by close of business today.

If permit is required for any item please contact me so that I can work with Mr. Santos to file the permit.

If all issues are resolved, please send me an approval letter stating that you have satisfied the responses. Thanks for your help!

Hanson Tom, S.E.
Principal Engineer, DDI
1660 Mission St. 2nd Fl.
San Francisco, Ca. 94103
Tel: 415-558-6157
Fax: 415-558-6436

---

From: Rodrigo Santos [mailto:rsantos@santosurrutia.com]
Sent: Thursday, January 02, 2014 3:09 PM
To: 'Steven Lew'
Cc: Tom, Hanson; Hul; Tom; 'Albert Urrutia'
Subject: FW: 125 Crown Terrace (Response to Steven Lew's comments)

For your review and comment.

Best Regards,
Rodrigo Santos, S.E.
Principal Engineer
Santos & Urrutia Structural Engineers
2451 Harrison St., San Francisco, CA 94110
Phone: (415) 642-7722 x103
Fax: (415) 642-7590
Cell: (415) 601-0641
rsantos@santosurrutia.com
Dear Director Hui:

The City anticipates that it might become involved in litigation regarding the collapse of the building located at 125 Crown Terrace, San Francisco, CA 94114 ("Property") which occurred on December 17, 2013. For that reason, it is essential that your department preserve the Property and all buildings, structures, and materials located there and take no action to compromise, affect, change, or otherwise alter in any way the condition of the Property or permit or authorize the alteration or change of any aspect of the Property and/or the buildings or structures located there including the removal of any materials, altering or removing any false work, or altering or removing any temporary shoring. We understand that you have already taken steps adequate to secure the property in a manner that will avoid danger to health or property. Please take no further action until we notify you that we have completed our inspection and preservation of evidence of the condition of the property.

In addition, it is also crucial that your department identify all personnel who may have participated in any capacity with respect to the investigation, inspection, permitting, plan checking, engineering, or project management and inform them of their duty to RETAIN AND PRESERVE all documents in the department's and its employees’ possession that relate in any way to the Property including any and all documents related to the December 17, 2013 collapse of any building or structure located at the Property. Effective immediately, it is critical that none of the department's employees or contractors delete, overwrite, or otherwise alter or destroy any documents or files that may be relevant to this matter. This includes documents and information on personal devices. The duty to preserve applies to BOTH HARD-COPY AND ELECTRONIC MATERIALS, and to drafts as well as final versions of documents, whether created, saved, or stored on devices issued by the Department or personal devices.

Your department therefore must temporarily suspend all automatic and routine document destruction procedures, including the recycling of back up tapes, until further notice from the City Attorney's Office. The documents to be preserved include those that refer or relate to:

- The December 17, 2013 collapse of any building or structure at the Property;
- The response to the December 17, 2013 collapse (whether by City personnel and other entities);
- Any investigation of the December 17, 2013 collapse;
- The condition of the Property on or before the December 17, 2013 collapse;
- Any photographs, video(s) or audio recordings related to the December 17, 2013 collapse;

---

CITY HALL • 1 DR. CARLTON B. GOODLETT PLACE, ROOM 234, SAN FRANCISCO, CALIFORNIA 94102-5408
RECEPTION: (415) 554-4700 • FACSIMILE: (415) 554-4715
Letter to

Tom Hui
Director, Department of Building Inspection
Page 2
December 18, 2013

- Costs incurred by the City as a result of the December 17, 2013 collapse; and
- Any permit applications, inspections, plan checking, engineering, or project management related to the Property generally.
- All evaluations, determinations, findings, approvals and/or correspondence to or from the SAC (“Structural Analysis Committee”) regarding the Property, whether in electronic or hard copy format.

The type of documents likely to be relevant includes the following categories:
- All correspondence, including letters, memoranda, faxes, e-mails, electronic text messages or instant messages, to or from an employee of your department and/or the SAC relating to the permitting approvals for the Property preceding the December 17, 2013 collapse;
- All correspondence, including letters, memoranda, faxes, e-mails, electronic text messages or instant messages, to or from an employee of your department relating to the December 17, 2013 collapse;
- All documents or files of any type created by department employees in the course of their work relating to the December 17, 2013 collapse;
- All notes, meeting minutes, meeting agendas, calendar entries, summaries, or other documents of any kind relating to telephone calls, meetings, or other discussions involving employees of your department or third parties relating to the December 17, 2013 collapse;
- Video and audio tapes, photographs, spreadsheets and databases relating to the property, including the December 17, 2013 collapse and any response to the December 17, 2013 collapse;
- All correspondence, including letters, memoranda, faxes, e-mails, electronic text messages or instant messages, to or from an employee of your department relating to the Property generally, including but not limited to communications with the Property owner(s) or their principals, agents or employees and any internal communications and communications with third parties about the Property;
- All documents or files of any type created by department employees and/or the SAC in the course of their work relating to the Property generally;
- All notes, meeting minutes, meeting agendas, calendar entries, summaries, or other documents of any kind relating to telephone calls, meetings, or other discussions involving employees of your department or third parties, including but not limited to the SAC, relating to the Property generally; and
- All plans, drafts of plans, applications for permits and other documents submitted by the property owner(s) or agents on their behalf relating to any work done or sought to be done on the Property.

To ensure that all necessary electronic documents are preserved, all of the following sources must be considered:
Letter to

Tom Hui
Director, Department of Building Inspection
Page 3
December 18, 2013

- Back-up tapes, including the cloud, created during the time period beginning December 17, 2013 to the present, for all email and network data;
- Current and former employees' desktops or PCs, laptops, handheld devices (such as iPhone, iPad; Android, or BlackBerry devices), and other hardware provided to department employees (including removable storage devices such as USB thumb drives or removable hard drives);
- Personal electronic devices, including telephones, smart phones, and home computers, if used by employees, including personal emails, text messages and voicemails;
- Active Department network shared drives and individual user drives;
- Active Department e-mail servers;
- Active databases;
- Photographs and videos obtained from any source; and
- Any other local or centralized storage media that may be accessed by members of your department.

If you have any doubt about whether a document falls within a category listed above, please retain it. You should preserve the original and all non-identical copies and drafts of the same documents. You should preserve the documents in the files in which they would normally be stored, and should not segregate them in response to this notice.

You need not create any records that do not currently exist. You must simply preserve all documents in the categories described above that have already been created or that are created in the future as part of your normal business activities.

If you are aware of any documents that relate to this matter that are outside of your department’s immediate control – for example, documents that may be in the possession of an outside vendor – please contact our office as soon as practicable so that we may see to their preservation.

PLEASE DESIGNATE A REPRESENTATIVE TO SUPERVISE PRESERVATION OF YOUR DEPARTMENT’S RELEVANT INFORMATION. Yvonne Meré from our office (415) 554-3874 will be in contact with you in the next day or so to discuss preservation issues, including strategies for implementing this litigation hold in a cost-effective manner.

Thank you in advance for your cooperation and effort in responding to this request.
Letter to

Tom Hui
Director, Department of Building Inspection
Page 4
December 18, 2013

Very truly yours,

DENNIS J. HERRERA
City Attorney

Cc: Daniel Lowrey, Deputy Director, Inspection Services, DBI
December 20, 2013

Tom Hui
Director, Department of Building Inspection
1660 Mission Street
San Francisco, California 94103-2414

Re: 125 Crown Terrace, San Francisco, CA 94114

Dear Director Hui:

Thank you so much for your assistance earlier this week regarding the December 17, 2013 collapse at the property located at 125 Crown Terrace, San Francisco, CA 94114 (“Property”). I understand that the Department issued a stop work order at the request of the City Attorney’s Office to permit the Property to be inspected and evidence preserved. That initial inspection and investigation of the December 17, 2013 collapse has concluded.

At this point, this office withdraws the request that work at the Property be stopped. That said, we continue our request that you RETAIN AND PRESERVE all electronic and paper documents and information related to the Property generally and the December 17, 2013 collapse as outlined in the City Attorney’s letter dated December 18, 2013.

Thank you in advance for your cooperation and effort in responding to this request.

Very truly yours,

DENNIS J. HERRERA
City Attorney

YVONNE R. MERÉ
Deputy City Attorney

Cc: Daniel Lowrey, Deputy Director, DBI
December 24, 2013

To Whom It May Concern:

The assignment of specific Inspectors to perform inspections depends on many factors. Since the economic downturn Inspection Services has been constantly struggling with providing timely inspections due to layoffs and then with the sudden upswing the challenge was in the prolonged process of rehiring. Two Inspectors have been transferred to San Francisco International Airport, one was assigned to plan check and another has been promoted to the position of Senior Building Inspector also in plan check. This has left our division short staffed to a point where we are constantly shuffling and assigning the Inspectors so we can cover the requests for inspection.

The supervisory staff and management has discretion in assigning Inspectors to provide services where needed based on necessity. With staff taking vacation, sick leave and attending training it is necessary to continue to provide inspections in a timely manner. Some of the required inspections are very time sensitive and it is sometimes critical that an Inspector is dispatched without delay. I have previously stated at many Public Advisory Committee meetings that if an Inspection District is backed up that a supervisor may be contacted and another Inspector may be assigned to perform the inspection. This is especially true in the case of reinforcing steel where soil collapse is an immediate concern. As such, it has always been understood that customer requests are facilitated based on timelines and on mitigating hazard due to delay.

Mel Murphy's job at 125 Crown Terrace was an example of what is described above in so far as, drilled piers were being poured and there was a problem with soil falling back into the hole before the concrete could be poured encasing the reinforcing steel. Mr. Murphy called me and requested an inspection for pouring these piers. I couldn't get a hold of the District Inspector but was able to contact Inspector Matthew Greene who I knew was in a nearby District. Inspector Greene agreed to perform the inspection and in the interest of continuity service the next three inspection requests. Senior Building Inspector Bernard Curran who is the Senior Inspector for the area is now assigned to perform the inspections at the site.

Very truly yours,

Daniel Lowrey
Deputy Director of Inspection Services
January 3, 2014

Tom C. Hui, SE, CBO
Director
Department of Building Inspection
City and County of San Francisco
1660 Mission Street, Sixth Floor
San Francisco, CA 94103

Re: 125 Crown Terrace – SFDBI Structural Advisory Committee
Engineering Report in Response to Complaints Nos. 201343501 and 201343861
Review of Responses to TRSE Letter dated December 31, 2013

TRSE Reference Number: 2013.061.01

Dear Mr. Hui:

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1. No exception taken.
2. No exception taken, but please verify that 6x8 wood members are attached to rigid spots on the existing building, perhaps along floor level.
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4. No exception taken.
5. No exception taken.
6. We expect that Comment #6 concerning the adequacy of Zone #2 shoring before and after grading to Elevation 535’ will be addressed in a revised Mitigation Plan per the responses, and in any accompanying documentation including calculations.
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8. No exception taken.

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