

MEMORANDUM

To: Tom Zilka, FDIC

From: Kent Sasaki, SE
Andrew Shuck, SE
Melissa Meikle, PE

Date: January 4, 2018

Project: FDIC Building, 25 Jessie Street, San Francisco
WJE No. 2016.5265.0

Subject: FDIC Building Movement Prior to OWC Excavation

WJE has been monitoring the FDIC Building at 25 Jessie Street in San Francisco, California for movement during construction of the Oceanwide Center (OWC) buildings using several techniques, including land surveying. The surveying is being performed by Kier & Wright Civil Engineers & Surveyors, Inc. (K&W). Referenced figures are at the end of this memo. For the purposes of this memo, the elevation of the subject building facing Jessie Street is north.

Monitoring points (MP) located at the roof elevation, MPs 11 and 21, were set on November 1, 2016 (Figure 1). Figure 2 shows the change in the northing measurements of MPs 11 and 21 since they were set; most recent movement data is taken from the December 26, 2017 K&W survey. At MP 11, there has been horizontal movement of about 1.3 inches to the south (i.e., negative northing movement), and almost all of that movement occurred after the March 15, 2017 survey. At MP 21, there has been horizontal movement of about 1.7 inches to the south, and almost all of that movement occurred after the March 28, 2017 survey.

During the November 15, 2017 meeting between FDIC and OWC and consultants for both parties, representatives from OWC and Langan (OWC's geotechnical engineer) informed FDIC that their investigation into the cause of the measured roof movement detailed in WJE's memorandum dated October 20, 2017 had been inconclusive. They did, however, suggest that the movement may have been caused by the installation of the CIDH piers for Tower 2 (to the south of the FDIC Building) and expressed a belief that the rate of movement would decrease once the installation of these piers was completed on December 15, 2017. Since the K&W survey dated December 11, MP-11 has moved about 0.06 inches north, and MP-21 has moved about 0.2 inches south.

OWC and their consultants have provided no results for their investigation into the pre-mass-excavation movement of the FDIC Building and have provided no additional measures to attempt to mitigate similar movement during the at-grade construction of below-ground elements for Tower 1 (to the east of the FDIC Building). As shown in Figure 3, the CSM wall at the perimeter of Tower 1 is closer to the FDIC building than Tower 2, as are its nearest CIDH piers. We are concerned that, based on measured movements to date, the FDIC Building will continue to move during the construction of these Tower 1 elements and that such movement is likely to be of a larger magnitude than the movement observed to date because Tower 1 is closer to the FDIC Building than Tower 2.

As was also discussed during the November 15 meeting, the ground movement analysis performed by Malcolm Drilling's engineering consultant, Brierley, was solely focused on predicting soil movement after the main excavations were complete. Their analysis did not attempt to characterize ground behavior during the construction of the CSM walls or the CIDH piles. Furthermore, the December 15, 2017 evaluation report by Nabih Youssef Associates included no effort to evaluate the effects of any permanent movement of the FDIC Building during Tower 1 activities performed at ground level.

To date, the FDIC building has been permanently displaced approximately 1.7 inches laterally during OWC activity to the south. This displacement was not predicted in any of the OWC pre-construction analyses or considerations and occurred despite what OWC feels were considerable efforts to limit ground movement. To our knowledge, OWC has not meaningfully modified their construction plan, despite this unexpected building movement. The movement of the FDIC Building to date is in many ways more valuable than any predictive analysis - this is movement that has already happened, which should serve as an opportunity for reassessing basic assumptions. OWC and its consultants, however, appear to have chosen to ignore the movements of the FDIC building and are proceeding as though those movements had not occurred or are not of significance.

Information to Request from OWC:

1. Any OWC work products generated as part of their investigation into FDIC Building movement (described in the October 20, 2017 WJE memo).
2. Estimates of FDIC Building movement during the at-ground construction of below-ground elements of Tower 1.
3. Proposed additional measures during the upcoming at-ground OWC Tower 1 construction activities to mitigate movement of the FDIC Building.
4. Updates to the Langan and/or Brierley soil analyses resulting from the ground (and building) movements measured to date.

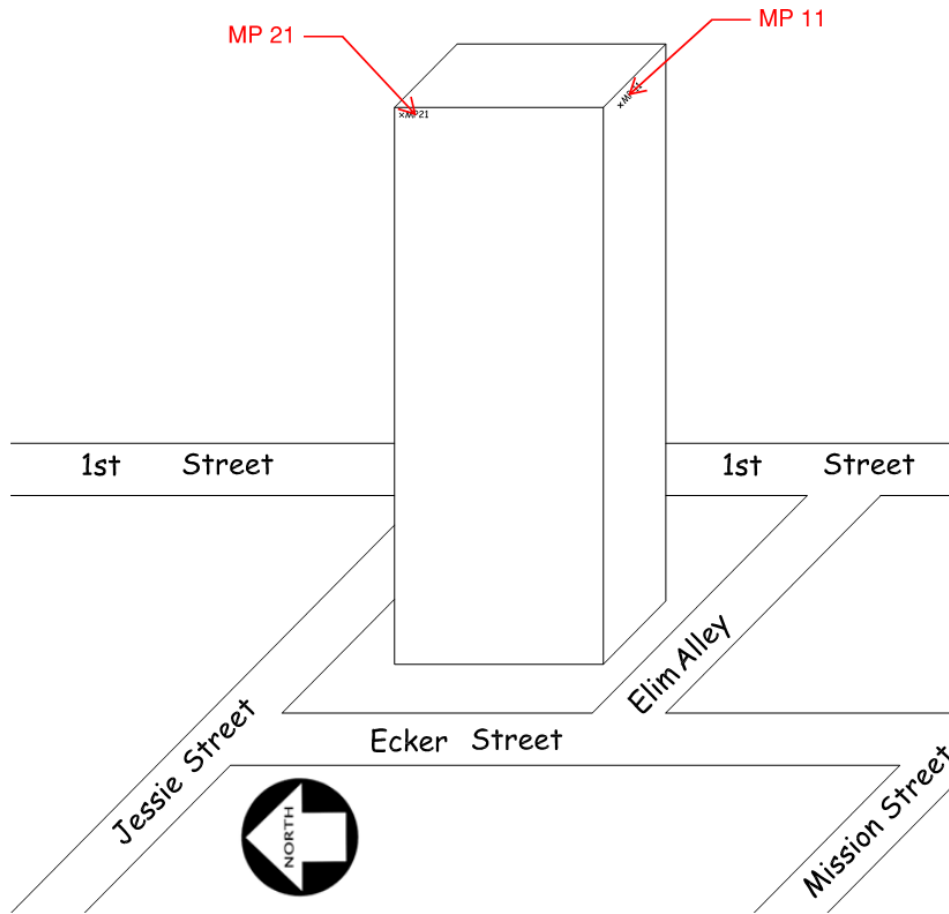


Figure 1: Approximate location of MPs 11 and 21 on the building at 25 Jessie Street.

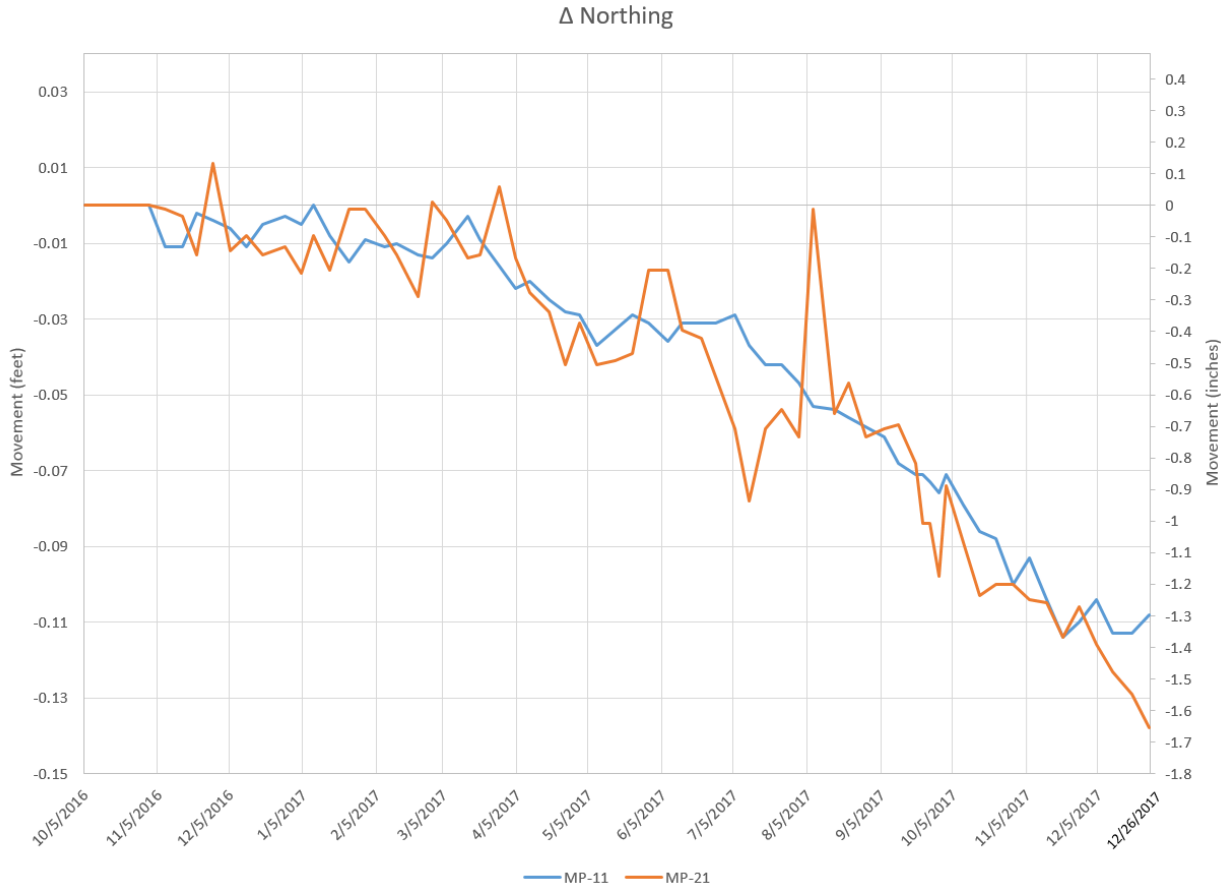


Figure 2: Horizontal north-south axis movement measured by K&W at monitoring points 11 and 21 between November 1, 2016 and December 26, 2017. Negative measurements represent horizontal movement to the south.

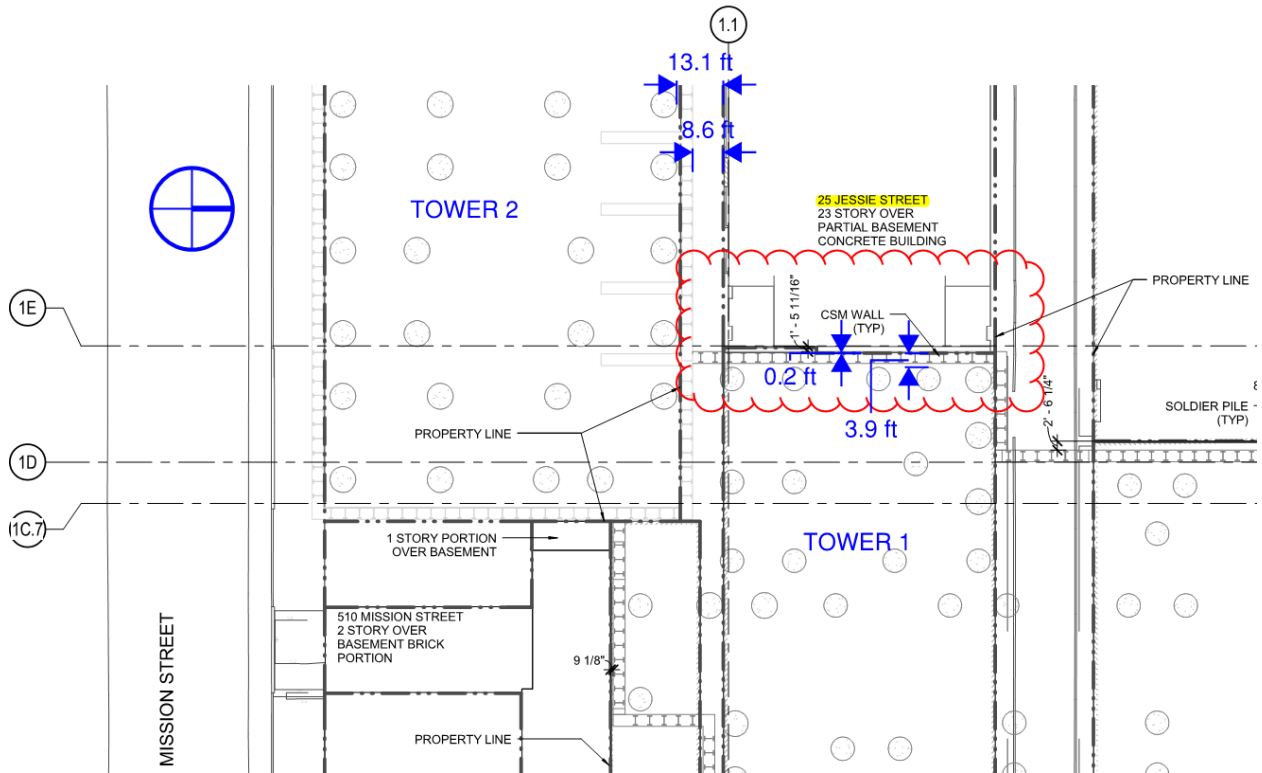


Figure 3: Partial plan view of the Tower 1 and Tower 2 foundation elements (CSM walls and CIDH piers) adjacent to the FDIC Building. Blue markups and yellow highlighting have been added by WJE to illustrate distances from elements at each tower to the FDIC Building. Taken from "OWC T1 CSM Sequence on 25 Jessie.pdf" received on December 12, 2017.