
TIE LINE

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CH2MHILL

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EARTHQUAKE SPECIAL

ENGINEERS OUT QUICKLY TO ASSESS DAMAGE

Wednesday morning after the quake, CH2M HILL was on the phone offering free (CORP-funded) services to our clients to help them determine if they had structural damage to any of their facilities. For these *pro bono* services, we asked clients to sign a statement, approved by legal counselor **Wyatt McCallie/DEN**, waiving any CH2M HILL liability. **Bill Carley/SFO**, Civil Engineering Division Manager, and **Bill O'Leary/SFO**, Chief Engineer, coordinated client and community requests.

Steve Thoman/SFO checked eight bridges for Foster City and a private school in San Francisco. **Jeff Aldrich/SFO** inspected numerous buildings in Oakland. **Gordon Elliott/SFO** and **Jeff Mather/LAO** looked at the EPA building in San Francisco. We also inspected the Oakland Public School District administration building. **Mark Brady/SFO** and **Keith Cooke/SFO** looked at the San Jose/Santa Clara Wastewater Treatment Plant.

Scott Ashford/SFO, geotechnical engineer, traveled to Watsonville, one of the areas hardest hit by the earthquake, to inspect the foundation of a five-story hospital. Overall, the facility came through in good condition. While in Watsonville, Scott volunteered his services to the City's Office of Emergency Services. He walked approximately 4 miles of levees to determine their condition. Scott noted some cracking and sand boils but no major damage.

We also inspected some of our own design/construction projects to see how they fared

through the earthquake. All appear to have received no structural damage.

We have been contacted by the Santa Clara Valley Water District to provide construction management services and redesign of clarifiers for their Rinconada water plant. The plant received major damage in the earthquake and had to be shut down.

CH2M HILL also provided services through the State Office of Emergency Services (OES). In the event of a major earthquake, the Structural Engineers Association of California has emergency teams set up who come in from areas that have not been affected. Our work for the OES was performed in the Oakland area and in the South Bay. The engineers are deputized and swear allegiance to the country, and receive a liability release.

Over a 4-day period, each of our engineers inspected approximately 100 buildings. In addition to the SFO engineers, we had engineers from RDD (**Greg Bickett**, **Mike Cooper**, **Bob Braithwaite** - called out of retirement, and **Mark Randall**), LAO (**Jeff Mather**), and SAC (**Joe Bender**, **Hans Strandgaard**, **John Pohle**) assisting in the damage assessment.

Based on an initial evaluation or sweep, a building was posted by an engineer as safe, limited entry, or unsafe. If you watched the news on the Marina District, these were the green, yellow, and red tags that you saw residents receiving to let them know the condition of their house.

During the second sweep, the initial posting may be upgraded or downgraded, and the engineer determines whether a building is condemned and

should be demolished immediately or condemned and demolished later, or requires further inspection.

HIGHWAY RECONSTRUCTION TEAM FORMED

A major concern resulting from the earthquake is rehabilitating Bay Area roadways. Crisis can evoke creativity, and this happened at the SFO office on Wednesday, October 18, the day after the earthquake. Several of our transportation engineers sat down at a spontaneous meeting to brainstorm what was needed to get transportation facilities back in operation as quickly as possible. The proposed solution was a fast-track approach using the expertise of at least 10 of the major design and construction firms in the Bay Area.

CH2M HILL took the initiative to contact key people and then arranged for a meeting in Sacramento with Bob Best, Executive Director of Caltrans. On Thursday, October 19, this group, which represents the top transportation expertise in the country, met in Sacramento. As spokesperson for the group, **Craig Zeien**, Regional Manager/SFO, presented a possible project organization, led by a Caltrans-appointed executive director and a flow chart detailing tasks such as demolition, field investigations, surveys, modeling for traffic detours, and plans for improvements.

Caltrans has decided to implement the proposed project organization and is in the process of developing tasks for execution by the group. Possible work in addition to the I880 reconstruction includes structural analysis of the elevated I-280 extension and the Embarcadero Freeway, which are now closed, and interim solutions to traffic around the collapsed Cypress section of I-880.

CONFEREES ROCKED

The World Series was not the only major event drawing crowds into San Francisco the week of October 15. Our own CH2M HILL people had been planning and preparing for the 62nd Annual National Water Pollution Control Federation Conference to be held in San Francisco from October 15 to 19. About 50 CH2M HILL employees

and several spouses from across the country came to attend the conference.

Because the earthquake occurred at the end of the conference day, attendees were at various places throughout the city. **Ray Yep**, Division Manager of SFO's Water and Wastewater Division, was at the Cadillac Bar and Grill with **Mike Iverson/SFO** and **John Buttz/SFO** for a reunion of UC Davis graduates when the earthquake struck.

Once the initial shock of the earthquake was over, **Ray and Don Evans/OMI** walked about six blocks to the Parc 55 Hotel, where CH2M HILL had a hospitality room on the 32nd floor. Because the power was down, they had to take the stairs to the hospitality room. Ray found about two dozen CHers talking calmly in the room, including **Harlan Moyer/DEN**, **Gene Suhr/CVO**, **Sharry Gale/CVO**, and **Tracie Peterson/DEN**. According to Harlan, "When the earthquake struck, Tracie yelled out to people to move away from the chairs and windows. There was one vertical movement, and then the building had three horizontal oscillations, swaying 4 to 6 feet. Sharry says, "The floor bounced up and down for the longest time." Gene estimated that this relatively new building was good for 8 1/2 feet of sway so no one need worry (not reassuring, though, coming from a sanitary engineer). Several people decided to spend the night in the hospitality room with blankets and pillows furnished by the hotel. None of our conference attendees were injured.

On Wednesday morning, it was announced that the conference was cancelled. Moscone Center, site of the conference, was being used as an emergency shelter, with cots set up among the display booths.

OFFICES SUSTAIN MINOR DAMAGE - STAFF COPING

The SFO building did not sustain any structural damage; however, the inside of the building was devastated in spite of a cursory effort to earthquake-proof the contents. Because the quake started out slow and gradually built in intensity, people were able to react and seek cover. Consequently, no one was injured in the office.

In the aftermath, bookshelves and file cabinets were laying on the floor and against people's desks. Some had been bolted to the wall and were still standing; however, the bolts had worked loose. All pictures in the office were either tilted or on the floor with only one exception: our founding fathers. Cornell, Howland, Hayes, Merryfield, and Hill rode the earthquake with calm and remained exactly in the same position and expression as they always had!

The SJC office suffered interior damage also. Some 7-foot, back-to-back shelves fell over, along with a television and picture.

SFO employees who live in the heavily damaged Marina District, which is constructed on fill, got off lucky. No one experienced any serious damage. The only problem is that some homes have been without gas and electric power since the quake and will be for at least 18 weeks. **Bob Woodhouse** and his wife Leslie have taken temporary quarters closer to the office because of the utilities outages. Commutes that used to take 30 minutes now take 1-1/2 to 2-1/2 hours - just ask **Dave Berger, Mel Sears, or Laura Hamish**.

ROADWAYS PERILOUS

SFO staffers all have stories to tell, but possibly the most chilling is **Gerry Mancias'**. He was on the upper Cypress structure heading to an evening class. He had just pulled around a big rig when he saw the freeway in front of him breaking away, section by section. He knew it was just a matter of time until his section collapsed. He kept one hand on the steering wheel and with his other hand grabbed a rosary he had hanging from his rear view mirror. After the crash, Gerry was unable to get out of his car--the door and seat belt were jammed. About a half an hour later, rescue workers released him. As they were carrying him away from his car, worry gripped him and he shouted, "My blue sheets!" One of the rescuers had to return to his car and retrieve, of all coincidences, the blue sheets for an I-880 project. Gerry spent a couple of days in the hospital recovering from cuts and bruises, and he is back at work now -- with his blue

sheets.

Don Monette was traveling at about 60 mph on his way to the Oakland side of the Bridge toll plaza. His car "swerved to the right about 3 feet when the earthquake hit with "what felt like a sudden high-impact, high-intensity shock wave." He thought he'd hit a freeway column holding up the 2-lane overpass he was almost under that swayed about 6 or 7 inches for several seconds. "Then the road opened up and substrata and sea water started oozing up on to the road, and crevices were everywhere."

Phil Kohne was on I-880 nearing the Cypress section, when he decided to pull off and get gas. We're thankful he was running low because Phil would have been on the lower portion at 5:04 p.m.

Mike Moul was returning to SJC from SFO and had been on the Cypress structure about 20 minutes before the quake.

THANKS FOR THE NEWS

Contributors to this edition were **Melania Clapponi/SFO, Elenore Souza/SFO and Pat Smith/DEN.**

-Larry Weymouth/CVO, Editor