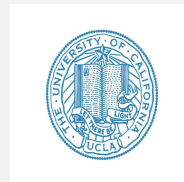


FRIEDMAN FAMILY VISITING PROFESSIONALS PROGRAM



Visit to UCLA: March 09, 2021

This report summarizes the visit of **James O. Malley** (Group Director, Senior Principal, Degenkolb) that took place at UCLA on March 09, 2021.

ITINERARY OR AGENDA

TIME:	ACTIVITY:
11:30 AM – 12:00 PM	Welcome & coffee with EERI-SEAOSC President and Vice President
12:00 PM – 12:50 PM	Friedman Family Lecture (CEE 200 Seminar)
12:50 PM – 1:30 PM	Friedman Family Q/A Session with graduate and undergraduate students

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S): Abhimanyu Singh, Vice President, abhimanyusingh@g.ucla.edu
Keri Scholte, President, kerischolte@ucla.edu

VISITING PROFESSIONAL LECTURE OVERVIEW

Kicking off his talk, James O. Malley reflected on his career path, highlighted the importance of community resilience in Earthquake Engineering, discussed the application of Performance-Based Earthquake Engineering and outlined professional opportunities for students. Mr. Malley shared EERI's mission statement, explained the process of getting involved with the club and then elaborated upon various initiatives taken by EERI. Some of the programs that Mr. Malley discussed included the School Earthquake Safety Initiative (SESI) and Learning from Earthquakes Program (LFE). These initiatives promote building safe schools for children and training early career practicing engineers, researchers, and graduate students to become future leaders in the field of earthquake engineering. Following that, Mr. Malley encouraged students to be a part of EERI to benefit from the vast range of opportunities provided by the organization.

Mr. Malley began his lecture on Seismic Design of New Tall Buildings using Performance-Based Earthquake Engineering by discussing the need for the Tall Buildings guidelines. He explained that a great majority of tall buildings under design or construction in Western U.S. use the typical Core Wall System for high rise residential. However, the design codes do not allow the shear wall system alone to exceed 240 feet of overall height and Performance Based Design is used to get around that limitation. Moving forward with the discussion, Mr. Malley elaborated on the Alternative Methods Clause in Section 104.11 of 2018 IBC and Section 1.3 of ASCE 7-16 which allow for alternate design approaches that satisfy and comply with the intent of the provisions of the code. Mr. Malley discussed the challenges that arise while establishing the design criteria and methodology to create

equivalent or superior performance of the design followed by the solution to the problem: The Tall Building Guidelines which refer to ASCE 41, ASCE 7 Standards and ATC 114 for non linear modeling.

Mr. Malley gave an overview of the Performance Based Design guidelines by outlining the performance objectives, capacity design, classification of structural actions, and acceptance criteria for MCE level earthquake. He explained the evaluation procedure for the building design resulting in realistic estimates of stiffness, strength, and damping and further touched upon viscous damping. Following this, Mr. Malley focused on the peer review projects that he had worked on and went over nine unique performance based design projects including Pac Bell Park, De Young Museum, LA Live!, Wilshire Grand, and the currently under construction (W)rapper Tower . He further discussed the challenges that he faced during the projects and how they were solved. Mr. Malley presented each project with an outline of the unique structural challenges that made the "Peer Review Lineup" informative, interesting, and fun for the audience. He elaborated on each engineering problem and provided detailed context and descriptions of how the engineer on record and the peer review committee went through the tall building design to ensure life safety and successful completion of the projects.

To conclude his lecture, Mr. Malley summarized his peer reviewed signature projects and touched on the Performance Based Design Guidelines which helped create a mechanism for workable approach to design and approval for such projects. He went over the interactions and cooperation between the engineering on record and the peer review panel which played an essential role in the design of the building and continues to push the envelope of structural and earthquake engineering.

Overall, the attendees, consisting of approximately 50 individuals including undergraduate students, graduate students, and professors were inspired by James O. Malley's work, his passion and approach to structural engineering.

FRIEDMAN FAMILY VISITING PROFESSIONALS PROGRAM
supported by a generous endowment from the Friedman Family



James O. Malley
Degenkolb Engineers

**Seismic Design of Tall Building Projects Using
Performance-Based Earthquake Engineering**

Figure 1: Virtual Friedman Family Lecture, Jim Malley presenting on Performance Based Earthquake Engineering.

The Peer Review Lineup... (for Fun & Games)

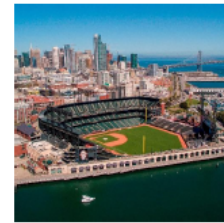


- Pac Bell Park (NOT AT&T or now Oracle) - SF
- De Young Museum – SF
- LA Live! – LA
- Wilshire Grand – LA
- Oceanwide Plaza – LA
- 181 Fremont – SF
- Rainier Square – Seattle
- The (W)rapper Tower – Culver City
- Oceanwide Center - SF

Figure 2: Jim Malley presenting on The Peer Review Lineup.

Pac Bell Park (Now Oracle)

- Lateral system is not a steel structure! R/C Moment frames
 - Interfaces with steel portions in exposed areas
- Foundations posed huge challenges
- Lots of joints multiple models



EE
RI

Figure 3: Pac Bell Park, Peer Review Lineup slide.

Lecture Abstract

The presentation summarizes how the PEER TBI Guidelines are used for the Performance-Based Seismic Design of Tall Buildings. This document is widely used in numerous major West Coast cities to allow unique designs that would not be possible to achieve solely by using the prescriptive building code requirements. Examples are provided of several significant projects that have been designed using performance-based earthquake engineering concepts.

Professional Bio

James O. Malley is a Senior Principal with Degenkolb Engineers of San Francisco, California. He received both his Bachelors and Masters Degrees from the University of California at Berkeley. A registered Structural Engineer in California, Mr. Malley has over 30 years of experience in the seismic design, evaluation and rehabilitation of building structures. He has specialized in the seismic design of steel frame structures, especially for health care facilities. Mr. Malley served as the Project Director for Topical Investigations for the SAC Steel Program. In that position, he was responsible for directing data collection and interpretation of steel frame buildings damaged by the Northridge Earthquake and all of the analytical and testing investigations performed as part of the SAC Steel Project. In 2000, this work was recognized by AISC in presenting Mr. Malley its' Special Achievement Award. Mr. Malley is the Chair of the AISC Specifications Committee and the past Chair of the AISC Seismic Subcommittee responsible for developing the AISC Seismic Provisions that are the basis of the IBC. Mr. Malley is a member of the ASCE Committee on Steel Buildings and the ASCE Seismic Effects Committee. He was named the 2010 T.R. Higgins Lectureship Award winner for his work on the AISC Seismic Provisions, and in 2012 was presented with a Lifetime Achievement Award by AISC. Mr. Malley is also a member of the AWS D1.1 Subcommittee on Seismic Welding Issues that publishes the AWS D1.8 Seismic Supplement to AWS D1.1. He was a member of the steel subcommittee of the ATC 33 project that developed FEMA 273/274, "NEHRP Guidelines for the Seismic Rehabilitation of Buildings", and is a member of the Building Seismic Safety Council Provisions Update Committee. Mr. Malley has served as a member of the SEAONC and SEAOC Board of Directors, and was President of SEAONC in 2000-2001. He was President of SEAOC in 2003-2004. He was named a SEAOC Fellow in 2007 and an Honorary Member of SEAONC in 2014. Mr. Malley was also a member of the Board of Directors of NCSEA, serving as President in 2010-2011. He was also presented the James Delahay Award by NCSEA in 2014 for his contributions to the development of building codes and standards. He is also presently a member of the Board of Directors of EERI. Mr. Malley is also a member of the Board of Directors of the Applied Technology Council. He has made numerous presentations on the effects of the Northridge Earthquake on Steel Frame Buildings, as well as the seismic design of steel structures. Mr. Malley is the author of over fifty technical papers and was the Co-Recipient (with the late Egor Popov) of the 1986 ASCE Raymond C. Reese Research Prize ASCE for the paper "Shear Links in Eccentrically Braced Frames".

SUPPLEMENTAL ACTIVITIES

Welcome and Coffee with EERI-SEAOSC President and Vice President

Before Mr. Malley presented his lecture, Keri Scholte and I (Abhimanyu Singh) hosted a quick virtual welcome coffee chat with him. After welcoming Mr. Malley to UCLA and introducing ourselves, we went over the itinerary for the day and prepared for the virtual presentation.

Friedman Family Q/A Session with Undergraduate and Graduate Students

After Mr. Malley presented his lecture, we hosted a Question and Answer session with both undergraduates and graduate students. Students focused on asking both technical questions, such as the usage of composite elements in the design of tall buildings in practice; along with business-related questions, such as what takeaways did Mr. Malley had from all the peer review projects he has worked on; and career advice

questions, such as what additional skills should we as students focus on improving once we enter the industry. The audience was quite engaged and the students came away feeling very satisfied with their interaction with Mr. Malley.

RESULTS, FEEDBACK AND LESSONS LEARNED

Brief description of challenges during the process, general reception of the program and Visiting Professional. Also, a description of other topics or disciplines the Student Chapter would like to cover in future visits, and related goals.

- **Lecture**
As in previous years, the lecture was co-programmed with the Civil and Environmental Engineering Graduate Student weekly seminar (CEE 200), which provides an excellent platform to gather graduate students and professors. This year we heavily encouraged undergraduate students to attend the lecture and our efforts resulted in the attendance of more than 20 undergraduate students. Even though this year the event was held online, the participation of both undergraduate and graduate students was phenomenal. Overall, we believe Mr. Malley was very well received by everyone and that this arrangement to co-program should continue in the future to ensure large participation of students.
- **Q/A with Undergraduate and Graduate Students**
Due to the Q/A session being held in conjunction with the lecture, we had excellent attendance since we coordinated this event with the Civil Engineering Department. The students were very engaged and were able to ask Mr. Malley both more technical questions, as well as career advice questions. As both undergraduate seniors and graduate students were taking Performance Based Design courses that quarter, the students got a lot out of our speaker's advice and technical expertise.

ACKNOWLEDGEMENTS

The UCLA EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the virtual visit of James O. Malley through their Friedman Family Visiting Professional Program endowment.

LIST OF ATTACHMENTS

- Item 1: flier for event

EERI Friedman Family Lecture at UCLA

Speaker : James O. Malley

Date : March 9th, 2021

Venue : EERI Zoom* (Friedman Family Lecture + Q&A Session)

[EERI-SEAOSC Chapter Zoom](#) (Welcome call)

Topic: "Performance-Based EQ Engineering of Tall Buildings"

Bio: James O. Malley is a Senior Principal with Degenkolb Engineers in San Francisco, California. He received both his Bachelor's and Master's degrees from the University of California at Berkeley. A registered Structural Engineer in California, Mr. Malley has over 30 years of experience in the seismic design, evaluation, and rehabilitation of building structures, and has been recently elected to the National Academy of Engineers, which is among the highest professional distinctions accorded to an engineer. He has specialized in the seismic design of steel frame structures, especially for health care facilities. Notably, Jim Malley has conducted many peer reviews of performance-based design projects and plans to present how these projects are evaluated and showcase some unique case studies.

Schedule [03/9/21]:

11:30am - 12:00pm - Welcome & coffee with EERI-SEAOSC President and Vice President

[\(EERI-SEAOSC Chapter Zoom](#) link)

12:00pm - 12:50pm - Friedman Family Lecture (CEE 200 Seminar)

(EERI Zoom* link)

12:50pm - 1:30 pm - Friedman Family Q/A Session (optional for attendees)

(EERI Zoom* link)

* The EERI Zoom link to be provided by EERI. Attendees will need to register for the talk via the [EERI Website](#).