

FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM



Visit to University of Massachusetts Amherst: March 4, 2016

This report summarizes the visit of **James O. Malley, SE** from Degenkolb Engineers that took place at the University of Massachusetts Amherst on March 4, 2016.

ITINERARY OR AGENDA

Provide the itinerary of the visit. For example:

TIME:	ACTIVITY:
9:00 AM – 10:00 AM	EERI Student Chapter President Stephanie Castine meets and welcomes Jim Malley to campus and gives him a brief tour
10:00 AM – 12:00 PM	Meet and greet with undergraduate and graduate students in Marston Hall, Room 114
12:00 PM – 1:00 PM	Lunch with faculty members at the Faculty Club Dr. Scott Civjan and Dr. Simos Gerasimidis
1:00 PM – 2:00 PM	EERI Seismic Design Competition team presentation in Marcus Hall, Gunness Student Center for project review and discussion
2:00 PM – 2:30 PM	Break
2:30 PM – 4:30 PM	Technical presentation to the structural engineering and mechanics graduate students, faculty, and open to any other interested individuals; titled "20 Years After the Northridge Earthquake: Reflecting on the Changes to Seismic Design of Steel Structures"
4:30 PM – 5:30 PM	Individual meetings with faculty members
6:00 PM – 8:00 PM	Dinner with EERI student chapter officers at Johnny's Tavern in Amherst

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S):

- Stephanie Castine, President, scastine@umass.edu
- Mirna Mendoza, Vice-President, mmendoza@umass.edu
- Ignacio Cetrangolo, Treasurer/Secretary, icetrang@umass.edu
- Tracy Donoghue, Seismic Design Team co-captain, tdonoghue@umass.edu
- Michael Morano, Seismic Design Team co-captain, mgmorano@umass.edu
- Dr. Scott Civjan, EERI Student Chapter advisor, civjan@ecs.umass.edu

VISITING PROFESSIONAL LECTURE OVERVIEW

The presentation that Jim Malley gave had two parts. The first part began with Jim giving an overview of what the AISC Seismic Design Provisions were like sequentially before and after the Northridge earthquake of 1994. He presented multiple design examples with photos and descriptions that were at the center of focus during this earthquake. Furthermore, the speaker went into the details of how these examples were altered in the

code and how it is still changing today. After this section of the presentation, Jim gave a short presentation on EERI and his involvement in it. During this part of the presentation, Jim also discussed his professional experience and provided career advice. At the end, questions were posed by the audience which included all structural engineering graduate students, faculty, and several graduate students that were interested in the lecture.

Lecture Abstract

On January 14, 1994, a M6.7 earthquake hit Southern California causing over \$10 Billion of damage. One of the most unexpected types of structural damage from the Northridge earthquake occurred in steel moment resisting frames, which prior to the earthquake had been considered one of the best seismic systems by many practicing structural engineers. Reports of damage to approximately 200 such buildings created great concern in the structural engineering community, leading to a six year, \$10 Million dollar FEMA funded research and development effort known as the SAC Steel Project. SAC was a joint venture of the Structural Engineers Association of California, the Applied Technology Council and the Consortium of Universities for Research in Earthquake Engineering. Through an unprecedented level of coordinated and collaborative effort by the research and structural engineering community, the SAC project performed widespread experimental and analytical investigations throughout the United States that led to the development of a series of guidelines documents for use by practicing structural engineers. Many of the recommendations were incorporated into future editions of the AISC Seismic Provisions, and are now widely used on projects in the U.S. and many other countries. This presentation will focus on the damage caused by the Northridge, the response by the SAC Steel Project and the changes to practice that have resulted.

Professional Bio

James O. Malley, S.E., is a Senior Principal with Degenkolb Engineers. He received both his Bachelors and Masters Degrees from the University of California at Berkeley. Mr. Malley has over 30 years of experience in the seismic design, evaluation and rehabilitation of building structures. He was responsible for the analytical and testing investigations performed as part of the SAC Steel Project in response to the Northridge earthquake damage. In 2000, AISC presented Mr. Malley its' Special Achievement Award. Mr. Malley is a member of the AISC Specifications Committee and the Chair of the AISC Seismic Subcommittee. He was named the 2010 T.R. Higgins Lectureship Award winner for his work on the AISC Seismic Provisions, and in 2012 was given presented with a Lifetime Achievement Award by AISC. Mr. Malley is also a member of the AWS Subcommittee on Seismic Welding Issues. Mr. Malley was also one of the authors of the PEER Tall Buildings Institute "Guidelines for the Performance-Based Seismic Design of Tall Buildings" and is involved in the peer review of numerous tall building projects in areas of high seismic risk. Jim has served as a member of the SEAONC and SEAOC Board of Directors, and was President of SEAONC in 2000-2001 and SEAOC in 2003-2004. He was named a SEAOC Fellow in 2007 and an Honorary Member of SEAONC in 2014. He also was a member of the Board of Directors of NCSEA, serving as President in 2010-2011. Mr. Malley is also presently a member of the Board of Directors of EERI and the Applied Technology Council.

SUPPLEMENTAL ACTIVITIES

Meet and Greet with Students

The objective of this activity was for both undergraduate and graduate students to stop in and chat with Jim Malley to network and get professional advice from someone who has been in the industry for years. There was a great turnout with multiple people from different disciplines. This session had a roundtable setting where students talked about classes, internship and work opportunities, tips for graduate school, and many more topics. See Item 1 for the flier.

Seismic Design Team Presentation

The purpose of this activity was for the Seismic Design Team to present their progress up until that point and their future plans, including fabrication, presenting and testing. Based on his experience with the Seismic Design Competition and seismic design in general, Jim was able to help the team by answering questions they had about modeling, analyses techniques and details to include in the presentation.

Technical Presentation

The objective of this activity was to inform students about how significant the Northridge earthquake was and its implications on the design codes that we use today. Its purpose was also to identify how engineers responded to this earthquake. The second, shorter presentation was to encourage students to get involved and to interact with the speaker to learn about how to become a better professional after school. See Items 1 and 2.



Photo taken of EERI officers and members of the seismic design team after the Technical Presentation.

Left to right: Ignacio Cetrangolo (Secretary/Treasurer), Stephanie Castine (President), Mirna Mendoza (Vice President), Tracy Donoghue (Seismic Design Team Co-captain), Jim Malley (Visiting Professional), Michael Morano (Seismic Design Team Co-captain), Zachary Bartula (Seismic Design Team Member)

RESULTS, FEEDBACK AND LESSONS LEARNED

One of the challenges that we faced was the coordination of activities and events that we wanted to do with Jim. We knew that he was going to be great professional to have and we wanted to make sure that it all went smoothly. By communicating we were able to decide on activities and coordination but initially it was tough to decide how we wanted to present our school and students to him. For the future it would be great to talk to other schools that have had a similar Visiting Professional to give us advice.

ACKNOWLEDGEMENTS

The University of Massachusetts Amherst EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Jim Malley through their Friedman Family Visiting Professional Program endowment. The UMass EERI Student Chapter would also like to thank the UMass Amherst College of

Engineering Career Development Center for welcoming Jim into our department and providing a location for the meet and greet and the Structural Engineering and Mechanics Seminar for co-sponsoring this event.

LIST OF ATTACHMENTS

Included at the end of this report are various attachments to supplement the information included above. A list of the attachments is included below:

- Item 1: Flier for Meet & Greet

Jim Malley, SE

Civil Engineering

Stop by and chat with Jim about his experience in the structural engineering industry and what life is like in the shoes of a civil engineer. Learn about the unique career path that made him the successful engineer he is today. All questions welcome!



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WHERE? Experiential Learning Center, Marston 114

WHEN? Friday, March 4th 10 AM – 12 PM

Sponsored by:



Earthquake Engineering Research
Institute UMass Student Chapter

- Item 2: Flier for Technical Presentation



Department of Civil and Environmental Engineering
 EERI Student Chapter
 University of Massachusetts Amherst



**20 Years After the Northridge Earthquake:
 Reflecting on the Changes to Seismic Design of Steel Structures**

James O. Malley, SE

Senior Principal, Degenkolb Engineers
 San Francisco, California

Friday, March 4

Time: 2:30 pm - 3:45 pm

Location: Guinness Student Center, Marcus Hall

Abstract: On January 14, 1994, a M6.7 earthquake hit Southern California causing over \$10 Billion of damage. One of the most unexpected types of structural damage from the Northridge earthquake occurred in steel moment resisting frames, which prior to the earthquake had been considered one of the best seismic systems by many practicing structural engineers. Reports of damage to approximately 200 such buildings created great concern in the structural engineering community, leading to a six year, \$10 Million dollar FEMA funded research and development effort known as the SAC Steel Project. SAC was a joint venture of the Structural



Engineers Association of California, the Applied Technology Council and the Consortium of Universities for Research in Earthquake Engineering. Through an unprecedented level of coordinated and collaborative effort by the research and structural engineering community, the SAC project performed widespread experimental and analytical investigations throughout the United States that led to the development of a series of guidelines documents for use by practicing structural engineers. Many of the recommendations were incorporated into future editions of the AISC Seismic Provisions, and are now widely used on projects in the U.S. and many other countries. This presentation will focus on the damage caused by the Northridge, the response by the SAC Steel Project and the changes to practice that have resulted.



Biography: James O. Malley, S.E., is a Senior Principal with Degenkolb Engineers. He received both his Bachelors and Masters Degrees from the University of California at Berkeley. Mr. Malley has over 30 years of experience in the seismic design, evaluation and rehabilitation of building structures. He was responsible for the analytical and testing investigations performed as part of the SAC Steel Project in response to the Northridge earthquake damage. In 2000, AISC presented Mr. Malley its' Special Achievement Award. Mr. Malley is a member of the AISC Specifications Committee and the Chair of the AISC Seismic Subcommittee. He was named the 2010 T.R. Higgins Lectureship Award winner for his work on the AISC Seismic Provisions, and in 2012 was given presented with a Lifetime Achievement Award by AISC. Mr. Malley is also a member of the AWS Subcommittee on Seismic Welding Issues. Mr. Malley was also one of the authors of the PEER Tall Buildings Institute "Guidelines for the Performance-Based Seismic Design of Tall Buildings" and is involved in the peer review of numerous tall building projects in areas of high seismic risk. Jim has served as a member of the SEAONC and SEAOC Board of Directors, and was President of SEAONC in 2000-2001 and SEAOC in 2003-2004. He was named a SEAOC Fellow in 2007 and an Honorary Member of SEAONC in 2014. He also was a member of the Board of Directors of NCSEA, serving as President in 2010-1011. Mr. Malley is also presently a member of the Board of Directors of EERI and the Applied Technology Council.