

FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to University of Notre Dame: April 24th, 2018



This report summarizes the visit of **David A. Friedman** from Forell/Elsesser Engineering, Inc. that took place at the University of Notre Dame on April 24th, 2018.

ITINERARY OR AGENDA

Provide the itinerary of the visit. For example:

TIME:	ACTIVITY:
8:30 AM – 10:00 AM	Student Chapter President, Robert Devine, and Vice President, Dimitrios Patsialis, welcome David A. Friedman over breakfast at Sorin's at Morris Inn (visitor's hotel)
10:00 AM – 10:45 AM	Meeting with Dr. Alexandros Taflanidis, University of Notre Dame EERI Chapter Faculty Advisor
10:45 AM – 11:30 AM	Meeting with Dr. Yahya Kurama and Structural Systems Laboratory tour
11:30 AM – 1:30 PM	Lunch and informal meeting with department graduate students for discussion about career guidance and contemporary earthquake engineering topics
1:30 PM – 2:00 PM	Meeting with Dr. George Mavroeidis
2:00 PM – 2:30 PM	Meeting with Dr. Kevin Walsh
2:30 PM – 3:00 PM	Tour of new Notre Dame Stadium renovation, Duncan Student Center
3:00 PM – 3:30 PM	Seminar preparation time
3:30 PM – 4:30 PM	Seminar for undergraduate students, graduate students, and faculty by David A. Friedman, " <i>Earthquakes & Structural Engineering: Practice & Project Perspectives</i> "
6:00 PM – 8:00 PM	Dinner with faculty at local restaurant

STUDENT CHAPTER VISITPLANNING COMMITTEE

LEAD ORGANIZER(S): Robert Devine, President, rdevine@nd.edu

- Dimitrios Patsialis, Vice President, dpatsial@nd.edu
- Alexandros Taflanidis, Chapter Faculty Advisor, ataflani@nd.edu

VISITING PROFESSIONAL LECTURE OVERVIEW

David Friedman gave an excellent presentation overviewing how earthquakes and EERI shaped his career path. He provided insights of lessons about structural engineering and earthquake response efforts he learned from earthquakes throughout the years, such as Loma Prieta (1989), Kobe, Japan (1996), and Wenchuan, China (2008). Finally, David presented on the seismic retrofit of the San Francisco City Hall, a historic structure which incorporated base-isolation to retain the architecture of the super structure, and UC Berkeley Memorial Stadium, which crosses the active Hayward fault line.



Lecture Abstract

This presentation will reflect on the practice of earthquake and structural engineering today, with our visiting professional's own perspective on the challenges facing us as structural engineers today. Mr. Friedman will focus on two cases studies, 1) a base-isolation retrofit of San Francisco City Hall, and 2) the Seismic Safety Corrections of California Memorial Stadium at University California, Berkeley, which is a football stadium that sits directly over the active Hayward Earthquake fault.

Professional Bio

Senior Principal and immediate past President, CEO and Board chair, with more than 35 years at Forell/Elsesser and almost 40 years in the industry, David's strength is a holistic approach to a project's planning, design and construction, and the collaborative integration of creative structural solutions with architects, engineers, and builders. With a specialty in designated historic structures, David has creatively solved numerous engineering challenges. Principle examples of his solutions include the base isolation retrofits for both the San Francisco City Hall and Asian Art Museum, the adaptive reuse and retrofit for the San Francisco Conservatory of Music, and the seismic safety corrections and remodel of UC Berkeley's California Memorial Stadium. The practicing structural engineer today must have a broad understanding of not just structural engineering, but must be knowledgeable about architecture, M/E/P systems, construction delivery methodologies, and the construction process. All projects come with their own litany of challenges and constraints, and the structural engineer is one of the key players in achieving the optimal solution: The project's budget, the selected performance and design criteria, the architectural form, and the operating systems all affect the selection of the appropriate

structural materials and lateral force resisting system. Then the analysis must get translated into a design, and the design must clearly and carefully be delineated into construction documents including plans, details, sections and technical specifications, with appropriate attention to sequencing, phasing and constructibility. This all gives rise to the notion of today's structural engineer as a "Master Builder", one who can articulate their way through a complex labyrinth of form finding, criteria setting, risk evaluation, design and documentation, and construction.

SUPPLEMENTAL ACTIVITIES

EERI Graduate Student Chapter Lunch/Informal Discussion

David Friedman had an informal meeting with the EERI Graduate Student chapter over lunch. The attendees of this meeting were eight PhD students at different points in their academic careers. The goal of this activity was to provide the graduate students, who are our most active members throughout the year and organize our multiple outreach events, an opportunity to speak with our visiting professional about career opportunities and lessons and ideas about contemporary topics in structural engineering. During this meeting, the topic of conversation most discussed was resiliency of structures for earthquake hazards, both in developed countries (USA, Japan, etc.) and developing nations (Haiti, Nepal, Columbia). David provided excellent insight from his experiences with the United States Resiliency Council and Build Change on how different the demands are in these different environments and where he would like to see the resiliency initiative go in the future.



Breakfast with EERI Student Chapter Leadership

To start David Friedman's visit, he was welcomed by the EERI Student Chapter Leadership, Robert Devine and Dimitrios Patsialis. Over breakfast, the goal was to prime David for his day, answering any questions about the provided itinerary and glean if there was anything not on the itinerary that the visitor was interested in. Additionally, the time was spent talking about what the Notre Dame chapter's annual achievements and goals were, such as outreach activities, student professional development, and attempting to return to the undergraduate seismic design competition. The student leadership also asked David about his experiences through his career with EERI and what he would like to see more of from student chapters. From this meeting, Robert and Dimitrios will continue to promote the undergraduate seismic design competition this fall as well as continuing our many outreach activities.

Meetings with University of Notre Dame Faculty

Throughout David Friedman's visit, he had meetings with four of the University of Notre Dame Structural Engineering faculty members, Dr. Alexandros Taflanidis, Dr. Yahya Kurama, Dr. George Mavroeidis, and Dr. Kevin Walsh. The goal of these meetings were to allow the faculty to show David the initiatives of the department and provide tours of departmental resources. For example, these meetings included a discussion about Engineering2Empower, an organization of Notre Dame Faculty and students that has developed and implemented an alternative housing model in post-quake Haiti, a tour of the Structural Systems Laboratory, where experimental research on earthquake resistant shear walls is being conducted, and discussion on the undergraduate experience and post-graduation career options for students at the University Notre Dame.

RESULTS, FEEDBACK AND LESSONS LEARNED

Having David Friedman visit Notre Dame as a Friedman Family Visiting Professional was a terrific experience for EERI student chapter. He was an excellent resource for the graduate student chapter, providing insight on the current issues that face earthquake engineers. Additionally, David gave an excellent presentation which was appropriate for the diverse audience including undergraduate students, graduate students, and faculty members. David was excellent to work with, bringing a great attitude and excellent discussion to every meeting he was in and was enjoyable to guide the entire day. The Notre Dame EERI student chapter is grateful for David Friedman's willingness to participate and is eager to take advantage of the Friedman Family Visiting Professional Program in years to come.

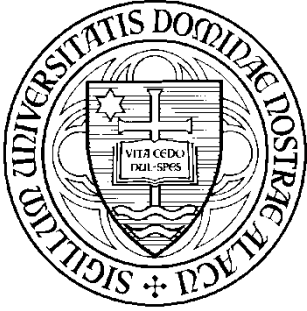
ACKNOWLEDGEMENTS

The University of Notre Dame EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of David A. Friedman through their Friedman Family Visiting Professional Program endowment.

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, Announcement of the Event
- Item 2, David A. Friedman Biography
- Item 3, Visiting Professional Itinerary



Department of Civil & Environmental Engineering & Earth Sciences

*Earthquake Engineering Research Institute (EERI) David M.
Friedman Visiting Professional Seminar*

April 24th, 3:30 PM Debartolo 210 3:30-4:30 PM

David M. Friedman

Emeritus CEO & Chair of the Board, Senior Principal, Forell/Elsesser Structural
Engineers

Title:

Earthquakes & Structural Engineering: Practice & Project Perspectives

Abstract:

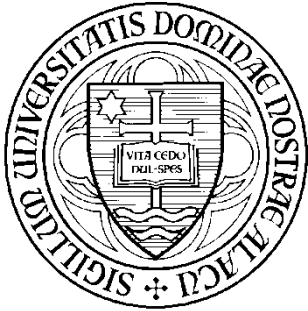
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David M. Friedman

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Hall and Asian Art Museum, the adaptive reuse and retrofit for the San Francisco Conservatory of Music, and the seismic safety corrections and remodel of UC Berkeley's California Memorial Stadium. The practicing structural engineer today must have a broad understanding of not just structural engineering, but must be knowledgeable about architecture, M/E/P systems, construction delivery methodologies, and the construction process. All projects come with their own litany of challenges and constraints, and the structural engineer is one of the key players in achieving the optimal solution: The project's budget, the selected performance and design criteria, the architectural form, and the operating systems all affect the selection of the appropriate structural materials and lateral force resisting system. Then the analysis must get translated into a design, and the design must clearly and carefully be delineated into construction documents including plans, details, sections and technical specifications, with appropriate attention to sequencing, phasing and constructibility. This all gives rise to the notion of today's structural engineer as a "Master Builder", one who can articulate their way through a complex labyrinth of form finding, criteria setting, risk evaluation, design and documentation, and construction.



Department of Civil & Environmental Engineering & Earth Sciences

Itinerary: Mr. David Friedman

Monday, April 23, 2018

2:35 p.m. CT - Arrive ORD, drive to South Bend via rental car Accommodations at Morris Inn

Tuesday, April 24, 2018

8:30 a.m.-10:00 a.m. - Breakfast at Morris Inn with EERI Student Leadership
Meet Robert Devine and Dimitrios Patsialis at Lobby

10:00 a.m.-10:45 p.m. - Dr. Taflanidis (Fitzpatrick 158)

10:45 a.m.-11:30 p.m. - Dr. Kurama (Fitzpatrick 157)

11:30 p.m.-1:30 p.m. - Lunch with EERI Graduate Students (117I Cushing Hall)

1:30 p.m.-2:00 p.m. - Dr. Mavroeidis (Fitzpatrick 169)

2:00 p.m.-2:30 p.m. - Dr. Walsh (Cushing 200)

2:30 p.m.-3:00 p.m. - Duncan Center Tour with Rob Devine

3:00 p.m.-3:30 p.m. - Seminar preparation time (Debartolo 210)

3:30 p.m.-4:30 p.m. - Seminar, *Earthquakes & Structural Engineering: Practice & Project Perspectives*, (Debartolo 210)

Wednesday, April 25, 2018

9:00 am ET - Depart South Bend by rental car (1 hour and 56 minute drive with light traffic)

11:45 a.m. CT - Depart ORD