

FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

{Include Student
Chapter University Logo
Here}



Visit to University of California San Diego: March 1, 2021

This report summarizes the visit of **David A. Friedman** from Forell Elsesser Engineers Inc. that took place at the University of California San Diego on March 1, 2021.

ITINERARY OR AGENDA

Provide the itinerary of the visit. For example:

TIME:	ACTIVITY:
12:00 PM – 12:45 PM	Meet the Friedman Family Visiting Professional (FFVP)
1:00 PM – 2:00 PM	Seminar from David A. Friedman
2:00 PM – 2:30 PM	Discussion with the Speaker: Highlights & In-Depth Discussion of Projects from the Seminar
2:45 PM – 3:30 PM	Student Presentations to the Speaker
3:30 PM – 4:00 PM	FFVP Wrap-Up with David

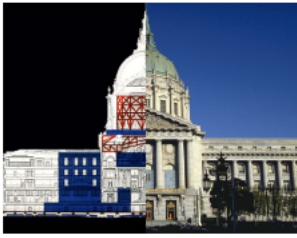
STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S):

- Mike Morano, President, mmorano@eng.ucsd.edu
- Joaquin Marquez, Vice-President, jfm010@eng.ucsd.edu
- Claudio Sepulveda, Treasurer, csepulve@eng.ucsd.edu
- Gilberto Mosqueda, UCSD EERI Faculty Advisor, gmosqueda@eng.ucsd.edu

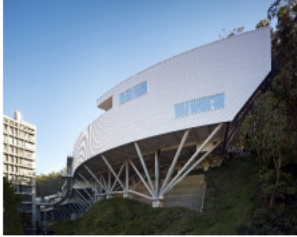
VISITING PROFESSIONAL LECTURE OVERVIEW

David provided one of the best and well-received seminars at UCSD that we have been a part of here. There was a healthy mix of undergraduate and graduate students from the department who turned out to hear his lecture. He was able to explain things in elementary ways for people of all levels of education to understand but was ready and able to go in-depth into any topic for all questions that were asked by the attendees. I think everyone enjoyed when he explained some case histories and projects that he worked on in the past. It gave a great view into the world of a practicing engineer and what our students could see after they graduate. He was so enthusiastic and engaging and we hope we can have the pleasure of hosting him again (hopefully in-person!).



San Francisco City Hall

Forell/Elsesser served as Prime Engineer for the complete repair and base isolation seismic upgrade of the 550,000 sq.ft., 4-story City Hall which contains both Superior and Municipal Courts for the City and County of San Francisco. This "essential facility" is a classic steel framed structure with a 310-foot high dome clad with perimeter granite walls and with hollow clay tile interior walls. Base isolation was selected because it is cost-effective, allowed for minimum disruption to the ornate historic building, and provided maximum protection. The structural solution consisted of 530 isolators, concrete shear walls, steel collectors, reinforcement of rotunda tower walls and installation of steel braces and shotcrete walls were used at various levels of the dome.



UCSF Parnassus Ray & Dagmar Dolby Regeneration Medicine Building

The construction of this 80,000 SF stem cell research building utilized the design/build delivery system. The program included wet laboratories, laboratory support, offices, an auditorium, and "green roofs." This unique building, designed by the renowned and international architect, Rafael Viñoly, is situated on a steeply sloped site and terraces vertically through a series of steps along the building length. The structure is steel framed with special friction pendulum isolators that protect the structure and the sensitive equipment and research it houses from the effects of a major seismic event.



UC Berkeley California Memorial Stadium

This historic concrete football stadium was originally built in 1923 and was designed by John Galen Howard. The project included seismic strengthening and modernization of this non-ductile concrete frame structure with a seating capacity of 72,000-seats. The west bowl retrofit saved the perimeter historic wall of the stadium; provided a new seating bowl, press box, and 200,000 SF of game-day and programmatic improvements. The unusual aspect of the project was created by the challenge posed by the Stadium sitting atop the northern segment of the Hayward Fault, which runs approximately from end zone to end zone. The retrofit of the fault rupture segments includes "blocks," separated from the adjacent building portions, and free to move independently when the fault ruptures and displaces. The West Bowl was an interesting challenge as well, and utilized vertically-post-tensioned rocking concrete walls and passive viscous dampers.

Figure 1: Projects discussed by David Friedman during his Seminar at UCSD.

Lecture Abstract

The practicing structural engineer today must not only 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 constructability. 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 (and hopefully not litigation). Some current projects that highlight these issues include:

Professional Bio

David Friedman officially retired from Forell | Elsesser Engineers Inc. at the end of 2020, after 40+ years where he was past President, CEO, and Chair of the Board. F | E is an award-winning structural and earthquake engineering firm headquartered in San Francisco. As Engineer-of-Record and Principal-in-Charge of over 400 seismic retrofits and construction projects, his work included the base isolation retrofits for San Francisco City Hall and the Asian Art Museum, the adaptive reuse and retrofit for the San Francisco Conservatory of Music, and the highly innovative seismic safety corrections and remodel of the UC Berkeley California Memorial Stadium, which sits atop the active Hayward Earthquake Fault.

In addition, David is the immediate Past President of the Board of Directors of the Earthquake Engineering Research Institute (EERI), which disseminates lessons learned from earthquakes, and for which he participated in post-earthquake reconnaissance teams in Kobe, Japan and Wenchuan, China. He has also served as Chair of the Board of the San Francisco Foundation (SFF), San Francisco Planning + Urban Research Association (SPUR), and Jewish Home & Senior Living Foundation of San Francisco (JH&SLF). David also served on the Board of Directors of the University of California, Berkeley Foundation (UCBF), and most recently Build Change, a nonprofit working globally to save lives in earthquakes and typhoons.

A licensed Structural Engineer in California, Nevada, and British Columbia, he has a B.S. in Civil Engineering from University of California, Berkeley.

SUPPLEMENTAL ACTIVITIES

Meet the Friedman Family Visiting Professional (FFVP)

Informal meeting with our EERI FFVP, David Friedman, to get to know our speaker better before his seminar. We will have some discussions focused on resume building and finding the right job after school. A lot of undergraduates attended this session and we got great feedback from them about how open and helpful David was to them. He provided them with anecdotal stories of the beginning of his career and things he would look for on resumes of prospective hires which gave students more confidence in going out to search for a job.

Discussion with the Speaker: Highlights & In-Depth Discussion of Projects from the Seminar

David will spend the time to go more in-depth with the projects he touches on during the SE290 Seminar. This will be the time for attendees to ask questions and engage David in discussion on any of those projects. This was the favorite activity of the graduate students in the structural engineering department. This was a heavily technical discussion which related to the research of several students in attendance which led to great technical discussions and discussions of research implications.

Student Presentations

In our final supplemental activity, that was requested by David himself, we gave the students a chance to showcase the work they have going on at UC San Diego and solicit David for any feedback he had. First, we had the UCSD Undergraduate Seismic Design Team present their completed work for the first ever virtual Seismic Design Competition. They got great feedback from David and were able to bounce ideas off him for future competitions. Next, we had Mike Morano present the current NHERI LHPOST6 upgrade at UC San Diego and get ideas from David about the potential projects now having an outdoor shake table capable of 6DOF.

RESULTS, FEEDBACK AND LESSONS LEARNED

The main challenge this year was the overall planning of a virtual FFVP. It was hard to come up with engaging activities in a virtual environment for both the students and the visiting professional. What was great about this experience though was David being able to tell us the things he would like to do and see which actually helped with the planning and made for a more fun and interactive experience between both parties. Despite

the challenges of this year, this was one of our best events, in-person or otherwise, thanks to David and the help of the student chapter organizers. This was a lecture very well-received by student of all levels and our faculty as well.

ACKNOWLEDGEMENTS

The UC San Diego EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of {name of professional} 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, flier for event

Friedman Family Visiting Professionals Program at UC San Diego Monday 3/1/2021 (All times PST):

The UC San Diego Department of Structural Engineering will be hosting David Friedman as part of the EERI **Friedman Family Visiting Professionals Program** organized by the EERI Student Chapter. The visiting professional give a seminar and engage with students through various activities to discuss project as well as professional issues. Undergraduate Students, Graduate Students, and Post-Docs are encouraged to participate in this virtual event. Take advantage to hear, discuss and learn from a leading professional in the field of structural engineering. You can join all events in the following zoom link

<https://ucsd.zoom.us/j/91213598791>

12:00-12:45 – Meet the Friedman Family Visiting Professional (FFVP)

Informal meeting with our EERI FFVP, David Friedman, to get to know our speaker better before his seminar. We will have some discussions focused on resume building and finding the right job after school.

1:00-2:00 – SE290 Seminar from David Friedman

Seminar will be hosted as part of the SE 290 Seminar Series (see attached)

2:00-2:30 – Discussion with the Speaker: Highlights and In-Depth Discussion of Projects from Seminar

David will spend the time to go more in-depth with the projects he touches on during the SE290 Seminar. This will be the time for attendees to ask questions and engage David in discussion on any of those projects.

2:45-3:30 – Student Presentations

- 1) Graduate Student Presentations for the NHERI LHPOST6 Upgrade.
- 2) Undergraduate student presentations

3:30-3:45 – FFVP Wrap-up with David

Last chance to come and ask David any burning questions or to just hang out and chat before we wrap-up the FFVP visit.

*Department of Structural Engineering
University of California, San Diego
SE 290 Seminar*



David A. Friedman, SE
Senior Principal, Emeritus CEO, and Board Chair
Forell|Elsesser Engineers Inc.

**"The Practice of Structural and Earthquake Engineering Today
and 3 Unique Structural Engineering Projects"**

Monday, March 1, 2021

1:00 pm - 1:50 pm

<https://ucsd.zoom.us/j/91213598791>

For enrolled SE 290 students, the seminar will be recorded and made available asynchronously on Canvas

Abstract

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Biography

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