

FRIEDMAN FAMILY VISITING PROFESSIONALS PROGRAM



Visit to Universidad Iberoamericana: March 10, 2021

This report summarizes the visit of **David Friedman** from Forell/Elsesser Engineers, Inc. that took place at the Universidad Iberoamericana on March 10, 2021.

ITINERARY OR AGENDA

TIME:	ACTIVITY:
10:00 AM – 10:10 AM	Student Chapter President welcomes Visiting Professional to the lecture
10:10 AM – 10:53 AM	Lecture by Visiting Professional to the Faculty of Civil Engineering students, staff and EERI members.
10:53 AM – 11:35 AM	Q&A session
11:35 AM – 11:40 AM	Closing remarks by Student Chapter Vice-president

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S): Juan Carlos Perez Peralta, chapter president, juancarlos1002010@gmail.com

- Biandry Nicole Cabrera Encarnación, chapter vice-president, biandrycabrera10@gmail.com
- Richard Albert Hernandez Castro, chapter secretary, richardalbert27@gmail.com
- Guillermo Geraldo Melendez, chapter treasurer, ronaldgeraldomelendez@gmail.com
- Karen Camil Gil Paulino, chapter PR manager, karengilpaulino@hotmail.com

VISITING PROFESSIONAL LECTURE OVERVIEW

The topic of the lecture was "Earthquakes & Structural Engineering Practice & Projects Perspectives".

Starting the lecture, Mr. Friedman gave a summary on the main seismic events that have occurred in recent history and presented an overview on the main lessons learned from each earthquake.

One of the most impactful parts of the lecture was Mr. Friedman's favorite definition of Structural Engineering which states that "Structural Engineering is the art of molding materials we do not entirely understand into shapes we cannot precisely analyze so as to withstand forces we cannot really assess, in such a way that the community at large has no reason to suspect the extent of our ignorance". Coming from an engineer with such an ample background, this definition was eye-opening for everyone involved.

The students were fascinated by all the shared information which was reflected on all the questions asked on the Q&A session and found Mr. David Friedman to be the ideal role model and professional aspiration.

Lecture Abstract

As a devoted professional and expert disseminator of the seismic risk reduction, David Friedman provides an insight on how important it is to acknowledge the impact that a seismic event has on the vast majority of disciplinary areas from a geoscientist, engineer or architect to a social scientist, economist or business analyst.

His professional timeline, aside from being extensive, was marked with 3 seismic events (Loma Prieta, Kobe and Wenchuan) that shaped his approach for earthquakes and also changed his perspective as an engineer on how damaging a seismic event is for the different society sectors.

The two main topics of the lecture were the following:

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.

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 challenged 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.

Professional Bio

David Friedman is a Senior Principal, CEO, President and Chair of the board of directors at Forell/Elsesser. He has been with the firm since 1980, has over 43 years of structural engineering experience, and has served as Project Principal on a variety of new design and retrofit projects including community and civic facilities, university complexes, research laboratories and transportation facilities.

With a specialty in seismic engineering and retrofitting of existing structures, particularly those with historic designation, David has solved numerous structural and earthquake engineering challenges during his career with Forell/Elsesser Engineers. His experience includes many of the firm's signature projects including the base isolation retrofits of San Francisco City Hall and the Asian Art Museum, the adaptive reuse and retrofit for the San Francisco Conservatory of Music, and the seismic safety corrections and remodeling of UC Berkeley's California Memorial Stadium.

David is a former President of the Earthquake Engineering Research Institute (EERI) devoted to world-wide seismic risk reduction and dedicated to learning and disseminating the lessons learned from earthquakes around the world. He is also deeply involved in many civic, philanthropic, and not-for-profit Boards including The San Francisco Foundation, SPUR, UC Berkeley Foundation, and the Jewish Home of San Francisco.

SUPPLEMENTAL ACTIVITES

Q&A Session

The students were fascinated by all the shared information which was reflected on all the questions asked on the Q&A session and found Mr. David Friedman to be the ideal role model and professional aspiration.

The Q&A Session extended for about an hour and was very dynamic all throughout that time.

RESULTS, FEEDBACK AND LESSONS LEARNED

Despite the setbacks imposed by the current situation of the Covid-19 pandemic, the lecture went as smoothly as it could. The general feedback given by the attendees was positive, and we would be honored if Mr. Friedman could give another lecture in our faculty after the pandemic subsidizes.

ACKNOWLEDGEMENTS

The Universidad Iberoamericana EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the Friedman Family Visiting Professional Program. We also thank our faculty advisor, Mr. Jean Guzman, and the moderator, Ms. Claudia Deveaux for their support during the planning of the lecture and other EERI activities.

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, i.e. flier for event
- Item 2, lecture abstract.

*David Friedman's lecture
hosted by EERI UNIBE Student Chapter:*

“The Practice of Structural &
Earthquake Engineering
Today & 3 Unique Structural
Engineering Projects”



INFORMATION:

Date: March 10th, 2021

Time: 2pm (Local time)

Register in ...

<https://eeri.swoogo.com/2021ffvp>



The Practice of Structural & Earthquake Engineering Today & 3 Unique Structural Engineering Projects

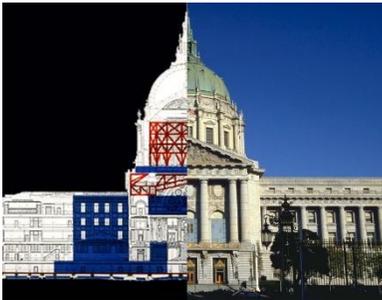
Universidad IberoAmericana

March 10th, 2021

Presented by David A. Friedman, SE
Retired, Senior Principal, Emeritus CEO & Board Chair
Forell/Elsesser Engineers, Inc.



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:



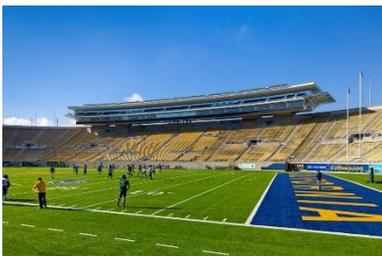
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UCSF Parnassus Ray & Dagmar Dolby Regeneration Medicine Building

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.



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