



Visiting Professional Report March 29, 2005
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Introduction

On Tuesday, March 29, 2005 David Friedman visited the Civil Engineering Department of the Georgia Institute of Technology through the Friedman Family Visiting Professionals Program. The objective of this visit was to help enhance the students' and faculty's knowledge of current professional practices in the area of earthquake engineering and provide David with an understanding of the current educational practices being employed at Georgia Tech.

Presentation to Undergraduate Concrete Class

Tuesday morning started with David presenting to Dr. Reginald DesRoches' undergraduate concrete class. The topic of the presentation was "THE STRUCTURAL ENGINEER & CONCRETE DESIGN: CODES, SEISMIC DESIGN, SUSTAINABILITY, PRACTICE STORIES & PROJECT EXAMPLES." The lecture focused on the practice of structural and earthquake engineering related, in particular, to reinforced concrete design. The presentation provided the students with an understanding of code development and how professional engineers view sustainability of reinforced concrete structures. Emphasis was placed on how structural engineering practices are actually implemented on the construction site and why the need to understand construction sequencing and practice is important for structural engineers. In conclusion, recent projects worked on by Forell/Elsesser (Berkeley Civic Center, San Francisco International Airport Concourse H, UC Berkeley Baker Hall, and San Francisco Conservatory of Music) were presented introducing the use of base isolation systems, passive damping, and other state-of-the-art seismic techniques. The lecture provided students an opportunity to see how reinforced concrete design is implemented in practice and how unique situations can call for unique solutions. The lecture was well received by all of the students in the class with many of them staying after class to ask David further questions.



(Left) David Friedman presents to the undergraduate concrete class and (Right) David Friedman fields individual questions after the lecture from students



Campus Tour

After the lecture, former EERI President, Leonardo Dueñas-Osorio accompanied David on a walking tour of Georgia Tech's campus and explained some of the history and background of Georgia Tech and its buildings. Leonardo also took this opportunity to provide David with some homework in the form of a couple of papers on work being performed by graduate students and faculty at Georgia Tech. The campus tour provided David with a break from lecturing and allowed him to enjoy some of the great spring weather in Atlanta.

Department Seminar hosted by EERI & ASCE

EERI and ASCE jointly supported the lunch seminar which was open to the whole Civil Engineering Department at Georgia Tech. The feature of the seminar was David's presentation on "THE PRACTICE OF STRUCTURAL AND EARTHQUAKE ENGINEERING TODAY: THE STRUCTURAL ENGINEER AS 'MASTER BUILDER'." Approximately 100 faculty, undergraduates, graduates, and staff attended the presentation which focused on the needs of a practical structural engineer today. He discussed the fact that not only does a structural engineer need to understand and keep up with technical engineering design concepts, but must also continually learn about the development and design of new high performance systems. Along with the structural aspects, the structural engineer must also have knowledge of architecture, construction methodologies, and construction processes. The idea of the structural engineer as a "Master Builder" was then shown through a variety of examples from projects worked on by Forell/Elsesser Engineers, Inc. In particular, Mr. Friedman presented some unique problems affecting structural engineers in California, such as the California Memorial Stadium at UC Berkeley which straddles the active Hayward fault. Some of the more innovative structural engineering approaches using base isolation systems were also discussed such as the seismic upgrade of San Francisco City Hall. The presentation was concluded by recognizing "the art of engineering" and the fact that structural engineers need to go beyond just the basic technical engineering mechanics and dynamics and must be "Master Builders." The lunch seminar was well received by all in attendance with many of the faculty and students saying that it was one of the best seminars that they had attended. Everyone was pleased to be able to see how the work done at all levels in school is extended to practice.



(Right) EERI President, Jamie Padgett, introducing David Friedman as the guest presenter at the departmental EERI & ASCE lunch seminar and (left) students gather and eat before the seminar begins



Graduate Lunch

After the seminar, David was invited to join some of the graduate student members of EERI for lunch. The informal setting provided some time to relax and discuss some of the work that he and his company had been doing and introduce some of the research that the graduate students are working on in the structures group at Georgia Tech.

Lab Tour

After lunch, Brad Penar, EERI student member, gave David a tour of the Structural Engineering Laboratory at Georgia Tech. The tour provided an opportunity to explain some of the large scale experimental research that is being done at Georgia Tech and allowed David to see first hand some of the innovative technology that is being developed and may some day be used in practice. The lab tour was a great opportunity for the students of Georgia Tech to share some of the work that they have been doing with David after the informative and thought provoking presentations he had provided.

Meetings with Faculty

The afternoon provided an opportunity for David to meet individually with some of the faculty of the structures group at Georgia Tech. He met with faculty who work in the areas of seismic design and behavior of steel structures, structural applications of smart materials, structural reliability and the development of safety and serviceability criteria for structural design, and large-scale application software development. The faculty members were very pleased to share their work with David and gather his insight on the state of practice in the field of structural and earthquake engineering. The meetings were a good way for current practice and state-of-the-art research to come together.

Dinner

The visit concluded with dinner at a local restaurant with a couple of the EERI officers and faculty advisor. Further discussion continued over dinner about some of the aspects of earthquake engineering brought up earlier in the day. Dinner also provided a means of feedback on how the visit ran from both David's perspective and those at Georgia Tech. It was concluded that David's visit was entirely successful in reaching the goals of the visiting professionals program and all were pleased with how the day had progressed. As a parting gift, David was given a Georgia Tech EERI chapter polo shirt as thanks for his time and efforts.

Final Remarks

The Georgia Tech EERI student chapter is grateful for the support that EERI and the Friedman Family Visiting Professional Program has given in regards to David Friedman's visit. The success of the visit is a true testament to the programs ability to bring the academic and professional side of earthquake engineering together and provide a unique opportunity for students to see what their future may hold. The experience and knowledge brought by David was both interesting and educational for the Department of Civil Engineering at Georgia Tech. A tremendous thanks goes out to David Friedman and all of those involved with making this visit possible.