



Visiting Professional Report, October 25, 2007
Mason Walters, SE Principal
Forell / Elsesser Engineers, Inc., San Francisco, CA

Introduction

Mason Walters visited the Civil Engineering Department of the Georgia Institute of Technology through the Friedman Family Visiting Professionals Program on Thursday, October 25, 2007. 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 to provide Mason with an understanding of the current educational practices employed at Georgia Tech.

Presentation to Undergraduate Concrete Class

Thursday morning started with Mason presenting to Dr. Reginald DesRoches' undergraduate concrete class. The topic of the presentation was "Seismic Emphases for Building Design." 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 appropriate lateral system selection and seismic connection detailing in concrete through various project examples including retrofit strategies. Mason also gave us an insight on how professional engineers view sustainability of reinforced concrete structures. Emphasis was placed on how structural engineers select a type of construction along with local site restriction and architectural requirement when implementing recent reinforced concrete innovation such as hybrid moment frame and sustainable building design. In conclusion, recent projects worked on by Forell/Elsesser (San Francisco City Hall, Oakland City Hall, Utah State Capital Building, and Asian Art Museum) were presented introducing the use of concrete for its particular attributes, "formability" to achieve geometric and/or functional needs, deformation compatibility considerations, sustainable concrete mixtures and applications 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 Mason for further questions.



Mason Walters presents to the undergraduate concrete class



Meetings with Faculty

Followed by the lecture in concrete design class, Mason met individually with some of the faculty of the structures group at Georgia Tech. First, he had a talk with faculty who work with structural engineering design software development (GTStrudl) and had a very exciting discussion on current status and future development of the field of computer aided engineering. In the afternoon meeting, other faculty introduced Mason the undergoing research projects in the structural applications of smart materials and large-scale experiments on innovative steel and composite structures. The faculty members were very pleased to share their work with Mason and gather his insight on the state of practice in the field of structural and earthquake engineering. Meetings were a good way to put together the current practice and state-of-the-art research.

Lab Tour

Before lunch break, Masahiro Kurata, the president of EERI GT Chapter, gave Mason a tour of the Structural Engineering Laboratory at Georgia Tech. The tour provided Masahiro an opportunity to explain some of the large scale experimental research that is being done at Georgia Tech and allowed Mason 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.

Graduate Lunch

Mason was invited to join some of the graduate student members of EERI for lunch. The informal settings at local restaurant 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. It was nice to hear that Mason started his early career with the project of famous spaghetti junction in Atlanta.

Department Seminar hosted by EERI

GT EERI hosted the afternoon seminar which was open to all students in Civil Engineering Department at Georgia Tech. The seminar featured Mason's presentation on "Seismic Isolation Case Studies." Approximately 40 faculty and graduate students attended the presentation on modern seismic risk mitigation technology. The focus of the lecture was placed on the concept of seismic isolation together with the breadth of its application and several challenges for engineers in the future development of seismic isolation. The combination of local site response and building type is the key factor for the appropriate selection of seismic isolation technique. Soft soil repository like Mexico City is isolated naturally and improper application of isolation technique in such place induces a resonance of structures. Fiction pendulum system suddenly excites structures with high frequency and is not proper for historical dome structures like San Francisco City Office. Basic lecture on seismic isolation technique followed example projects worked by projects worked on by Forell/Elsesser (Oakland City Hall, Utah State Capital Building, Asian Art Museum, Emergency Communication Center, Colorado Bay Bridge, Mokelumne Aqueduct). The seminar was well received by all in attendance with many of the faculty and students stating that it was one of the best seminars that they had attended. Everyone was pleased to see how works done at all levels in school is extended to practice.



(Left) Mason presents in departmental seminar, (Right) Mason with some of GT EERI Members



After the departmental seminar, Mason was given Georgia Tech EERI Chapter polo shirts from GT EERI President, Masahiro Kurata, as thanks for his time and efforts

Dinner

The visit concluded with dinner at a local Thai 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 that day. Dinner also provided a means of feedback on how the visit ran from both Mason's perspective and those at Georgia Tech. It was concluded that Mason's visit was entirely successful in reaching the goals of the visiting professionals program and all were pleased with how the day had progressed.

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 Mason Walters'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 Mason were both interesting and educational for the Department of Civil Engineering at Georgia Tech. Tremendous thanks go out to Mason Walters and all of those involved with making this visit possible.