FRIEDMAN FAMILY VISITING PROFESIONALS PROGRAM

Visit to University of Toronto: March 28, 2019

This report summarizes the visit of **Mr. James O. Malley** from Degenkolb Engineers that took place at the University of Toronto on March 28, 2019.

ITINERARY OR AGENDA

Provide the itinerary of the visit. For example:

March 27th	
TIME:	**ACTIVITY:**
8:30 PM – 9:00 PM	Student Chapter President, Pedram Mortazavi, and Chapter member, Joshua Tapia, meet James Malley at the Toronto Pearson International Airport and welcome him to Canada, and the City of Toronto
9:30 PM – 10:30 PM	After arrival, James Malley has dinner with the Chapter members at a local restaurant. The Chapter President, Pedram Mortazavi, and Chapter member, Joshua Tapia, drive the Visiting Professional to his hotel after the dinner
March 28th	
TIME:	**ACTIVITY:**
8:25 AM – 8:45 AM	Student Chapter President, Pedram Mortazavi, meets James Malley at his hotel and accompanies him to the University of Toronto Campus
8:45 AM – 9:45 AM	Tour of the University of Toronto campus by the Chapter members, led by the Chapter Director-Finance, Allan Kuan
10:00 AM – 11:00 AM	The Chapter Faculty Advisor, Professor Constantin Christopoulos, and Chapter President, Pedram Mortazavi, give James Malley a tour of the University of Toronto Structural Testing Facilities
11:30 AM – 1:00 PM	Guest lecture by James Malley – The lecture was well attended by graduate students, faculty members, and industry professionals
1:15 PM – 2:15 PM	Lunch / Networking with graduate students, faculty members, and industry professionals
2:15 PM – 2:45 PM	Meeting with Professor Jeffrey Packer
3:00 PM – 4:00 PM	Graduate students' presentation to James Malley on their research projects

STUDENT CHAPTER VISIT PLANNING COMMITTEE

LEAD ORGANIZER(S): Pedram Mortazavi, President, pedram.mortazavi@mail.utoronto.ca

- Myron Zhong, Vice-President, myron.zhong@mail.utoronto.ca
- Allan Kuan, Director-Finance, allan.kuan@mail.utoronto.ca
- Mohamed Sayed, Director-Events, sayed.mohamed@mail.utoronto.ca
- Luis Ardila Bothia, Director-Undergraduate relations, l.ardila@mail.utoronto.ca
- Joshua Tapia, Chapter Member, joshua.tapia@mail.utoronto.ca
- Professor Constantin Christopoulos
- Professor Jeffrey Packer
- Professor Evan Bentz
- Professor Oh-Sung Kwon

VISITING PROFESSIONAL LECTURE OVERVIEW

The title of the lecture was "Use of PEER Tall Buildings Initiative Guidelines for Peer Review of Tall and Unique Structures". Other than providing direction for design and peer review of tall buildings, Mr. Malley addressed the design of some of the tallest and most unique buildings that he had peer reviewed over the last decade. All buildings featured a unique architecture, presenting challenges to their structural design.

The lecture was well attended by graduate students, faculty members and industry professionals. Professors Jeffrey Packer, Evan Bentz, and Oh-Sung Kwon attended the lecture. Industry professionals from Cast Connex, Kinetica Dynamics, RJC, Dialogue, Arup, Entuitive, PLC Constructors Canada Inc., and the City of Toronto Engineering and Construction Services joined the talk. The pictures below were taken during the lecture.

Figure 1: A picture of the Lecture by James Malley at the University of Toronto

Figure 2: A picture of the Lecture by James Malley at the University of Toronto

Lecture Abstract

Engineers designing tall and otherwise unique structures are challenged in strictly meeting all seismic design provisions of the building code. Prior to 2010, there were no guidelines in place to allow engineers to perform a performance based seismic design to validate that their designs were consistent with the performance goals of the code. In 2010, the PEER Tall Buildings Initiative published the first edition of the "Guidelines for Performance-Based Seismic Design of Tall Buildings. The 2nd edition of the Guidelines was published in 2017. Since their publication the PEER Guidelines have been used to facilitate the peer review and approval of dozens of tall and unique structures in many major West Coast cities. This presentation will summarize some of the key elements of the Guidelines and discuss their application on a number of interesting peer review projects.

Professional Bio

James O. Malley, S.E., is a Senior Principal with Degenkolb Engineers. He received both his Bachelors and Masters Degrees from the University of California at Berkeley. Mr. Malley has over 35 years of experience in the seismic design, evaluation and rehabilitation of building structures. He was responsible for the analytical and testing investigations performed as part of the SAC Steel Project in response to the Northridge earthquake damage. In 2000, AISC presented Mr. Malley its' Special Achievement Award. Mr. Malley is Chair of the AISC Specifications Committee and the Past-Chair of the AISC Seismic Subcommittee. He was named the 2010 T.R. Higgins Lectureship Award winner for his work on the AISC Seismic Provisions, and in 2012 was given presented with a Lifetime Achievement Award by AISC. Mr. Malley is also a member of the AWS Subcommittee on Seismic Welding Issues. Mr. Malley was also one of the authors of the PEER Tall Buildings Initiative "Guidelines for the Performance-Based Seismic Design of Tall Buildings" and is involved in the peer review of numerous tall building projects in areas of high seismic risk. Jim has served as a member of the SEAONC and SEAOC Board of Directors, and was President of SEAONC in 2000-2001 and SEAOC in 2003-2004. He was named a SEAOC Fellow in 2007 and an Honorary Member of SEAONC in 2014. He also was a member of the Board of Directors of NCSEA, serving as President in 2010-1011. Mr. Malley also served as a member of the Board of Directors of EERI and is presently on the Board of the Applied Technology Council.

SUPPLEMENTAL ACTIVITES

Dinner on March 27th

After picking up Mr. James Malley from the airport, the Chapter members met Mr. Malley and the Chapter President at a local restaurant for dinner. The group was also joined by a structural engineer from RJC, a leading engineering firm in Toronto.

University of Toronto Campus Tour

The first activity on the agenda for the day of March 28th was a tour of the University of Toronto campus. Hart House, the Robarts Library, the Thomas Fisher Rare Books Library, Myhal Centre for Engineering Innovation and Entrepreneurship, the Convocation Hall, the King's College circle, The Knox College, the Philosopher's Walk, the Soldiers' Tower were among the places that were visited during the tour. Chapter member Allan Kuan led the tour. The pictures below were taken during the tour.

Figure 3: Chapter members with Mr. James Malley while Approaching University of Toronto's Philosopher's Walk

Figure 4: Chapter members with Mr. James Malley at the Thomas Fisher Rare Book Library listening to the library tour guide

Figure 5: Chapter members with Mr. James Malley at the Soldier's Tower, a World War memorial Monument, located on the University of Toronto Campus
Myron Zhong (VP), Joshua Tapia, James O. Malley, Allan Kuan (Director Finance), Pedram Mortazavi (President), and Jeffrey Salmon

Figure 6: Chapter members with Mr. James Malley at the Robarts Library
Myron Zhong (VP), Pedram Mortazavi (President), James O. Malley, Allan Kuan (Director Finance), Jeffrey Salmon, and Joshua Tapia

Tour of the Structural Testing Facilities at the University of Toronto

The campus tour was followed by a tour of the Structural Testing Facilities of the Department of Civil Engineering at the University of Toronto. The tour was led by the Chapter Faculty Advisor, Professor Constantin Christopoulos and the Chapter's President, Pedram Mortazavi. Testing devices and some of the most recent developments at the University of Toronto were presented to Mr. James Malley. The following Pictures were taken during the lab tour.

Figure 7: The Chapter's Faculty Advisor, Professor Constantin Christopoulos discussing the recent developments at the University of Toronto

Figure 8: Picture taken at the end of the tour of the Structural Testing Facilities
Professor Constantin Christopoulos (Chapter's Faculty Advisor), Mr. James Malley, Pedram Mortazavi (Chapter's President)

Lunch/Networking Session

After the lecture, Mr. James Malley and the Chapter members were joined by industry professionals, alumni, and faculty members for lunch. Conversations about the lecture continued over lunch and Mr. James Malley interacted with professionals from the leadings engineering offices in Toronto. Graduate students were provided with an opportunity to interact with industry professionals as well.

Figure 9: Picture taken during the networking lunch

Several professionals from Toronto Dialogue office, RJC, CastConnex, and Kinetica Dynamics attended the lunch. Professors Jeffrey Packer, Evan Bentz, and Oh-Sung Kwon attended the lunch as well.

Figure 10: Picture taken at the end of the lunch/networking session
Chapter Members: Mohamed Sayed, Allan Kuan, Myron Zhong, Patrick Clarke, Jeffrey Salmon, Pedram Mortazavi, and Luis Ardila Bothia
Faculty Members: Professors Jeffrey Packer and Evan Bentz
Industry Processionals: David Ruggiero from RJC, Michael Gray from Cast Connex, and Michael Montgomery from Kinetica Dynamics

Graduate Students presentations

Towards the end of the day, several graduate students presented their research projects to Mr. James Malley and got valuable feedback on their research. The following picture shows Dr. Xu Huang, a recent graduate from the University of Toronto, presenting his doctoral research to Mr. James Malley.

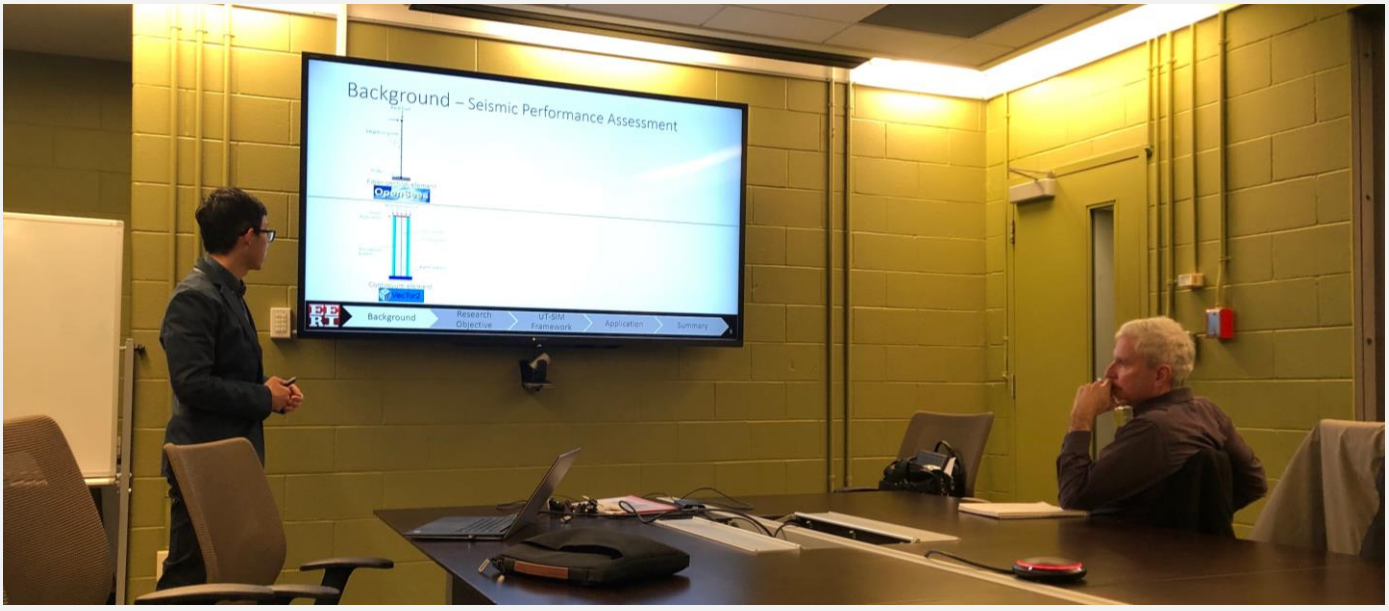

Figure 11: Graduate Students Presentation to Mr. James Malley

RESULTS, FEEDBACK AND LESSONS LEARNED

The lecture by Mr. James Malley attracted a large audience from undergraduate students, graduate students, U of T alumni, Industry professionals, and faculty members.

Mr. Malley's lecture provided a great opportunity for the University of Toronto structural engineering community to learn more about the current earthquake engineering practices in the west coast. In addition, it peaked the interest of undergraduate and graduate students in earthquake engineering.

The graduate students found the unique opportunity to present their research projects to Mr. James Malley and receive valuable feedback from him. Further, Mr. James Malley provided the Chapter members with valuable career advice. The networking session allowed the graduate students to interact with industry professionals.

In the future visits, the Chapter would like to have the University of Toronto Undergraduate Seismic Design Team present to the visiting professional.

ACKNOWLEDGEMENTS

The University of Toronto EERI Student Chapter gratefully acknowledges the support of the Friedman Family for sponsoring the travel of Mr. James O. Malley through their Friedman Family Visiting Professional Program endowment.

The Chapter is also grateful to the Department of Civil and Mineral Engineering, You're Next Career Network at U of T, Engineering Society at U of T, and the Engineering Alumni Association at the University of Toronto, for their financial support.

LIST OF ATTACHMENTS

A list of the attachments is included below:

- Item 1, flier for event

University of Toronto
Earthquake Engineering Research Institute
Student Chapter

EERI

Friedman Family Visiting Professionals Program

Thursday, March 28, 2019
11:30AM – 1:00PM| Room GB244

James O. Malley, SE
Senior Principal
Degenkolb Engineers, CA

Use of PEER Tall Buildings Initiative Guidelines for Peer Review of Tall and Unique Structures

By
James O. Malley, SE

Abstract: Engineers designing tall and otherwise unique structures are challenged in strictly meeting all seismic design provisions of the building code. Prior to 2010, there were no guidelines in place to allow engineers to perform a performance based seismic design to validate that their designs were consistent with the performance goals of the code. In 2010, the PEER Tall Buildings Initiative published the first edition of the "Guidelines for Performance-Based Seismic Design of Tall Buildings. The 2nd edition of the Guidelines was published in 2017. Since their publication the PEER Guidelines have been used to facilitate the peer review and approval of dozens of tall and unique structures in many major West Coast cities. This presentation will summarize some of the key elements of the Guidelines and discuss their application on a number of interesting peer review projects.

For more information, or to join the U of T EERI Student Chapter, email: eeri@utoronto.ca

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Senior Principal
Degenkolb Engineers, CA

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