

## Field Trip to One of the World's Largest Bio-Medical Facilities under Construction



*Automated Machine Guidance*

**H**ello! My name is Olga Golovina and I am a visiting research assistant in the School of Civil and Environmental Engineering (CEE) at Georgia Tech. Through my academic advisor, Dr. Teizer, 35 students and I had the opportunity to visit one of the largest bio-medical facility construction sites (~\$1B). Our visit was organized by Fluor Corporation, one of the largest capital facility constructors in the world. I am writing this article to share with you our experiences and lessons learned from this field trip. They may help students interested in pursuing a construction career or any other area in civil or environmental engineering.

**F**irst of all I would like to say a few

words about Fluor and the project. Fluor Corporation is a professional services company. It means, it provides all of the main areas in engineering, resource procurement, construction, maintenance, and project management services. In 2013, Fluor was ranked No. 1 in Fortune's annual survey of the world's most admired companies in the engineering and construction industry category. Fluor has more than 41,000 global employees and has projects in more than 25 countries on six continents.

**W**e students first participated in a safety orientation. Safety is always first we learned! Then a presentation from the project manager, Jim Sparrow, followed. His vast experience made it easy to understand the complexity of the project. Baxter International Inc. is building a 100-acre green field campus in Covington, GA, located about 50 miles east of Atlanta. The new biology complex will have 1.2 million square feet of building space, including a waste treatment facility, manufacturing, laboratory, administrative, and a central utility building. At the peak, the

site will have a couple thousands of workers present at the same time. After completion, the medial campus will separate plasma components, purify them, and allow life-sustaining therapies for treating burn victims and patients with immune disorders and other medical conditions.

**A**fter the introduction, the students were divided into two groups. The first group had a bus tour. They saw and heard about construction methods, for example, how to deal with construction phasing, pouring concrete, safety, and resolving daily conflicts. The second group visited the site's administrative offices. They met construction managers, who explained details to project controls and scheduling, and showed off the latest technologies, including 4-D animation and tablet PCs that allow near real-time project management. As explained, site inspector can use a tablet to confirm that a task has been completed, or instantly communicate project issues through pictures or information models.

**A**t lunch, we had opportunities to talk



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with civil engineering professionals. Then all participants went to a local career fair where the participating contractors and subcontractors explained their role in the project, and even offered internships and full-time positions. Since we knew in advance to bring our resume, chances were very high for some students to be recruited for a follow-up interview.



Site Staff & Olga (left) and Project Site (right)

It was a great experience. I learned a lot of interesting facts about existing best practices but also about trends and how construction processes will change in the near future. The industry is changing in a way that it will use a lot more technology, such as BIM and sensors. And who knows may be some of the students, who participated in this field trip, will work for Fluor Company and the other participating companies in the near future to implement these changes.

As part of the construction education at Georgia Tech, Dr. Teizer requires his students to participate regularly in field trips. Other opportunities, like internships and co-op programs exist. This field trip greatly helped me understand the current construction best practices performed by one of the world's top construction companies and at one of the world's largest construction sites.



Fair for Internships and Full-time Careers



Interactive Project Controls

I would like to thank the Fluor team, especially the project engineer Ashly Coggins and Will Jones (a CEE alumni), and Dr. Teizer for organizing this field trip and for providing transportation and safety equipment.



Workers, Cranes, Pumps, and Tour Bus



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