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Inside the Construction Operating Theater at SECCM Labs

Shawmut Design & Construction welcomes students on-site to observe and dissect the construction process as the new laboratories building takes shape.
One of the SECCM Labs project managers explains what's happening in this stage of the construction process as students in the Construction Engineering course observe the work firsthand. Image Credit: Juan Siliezar

December 3, 2018  By Jill Rodrigues '05 & Justin Wilder

BRISTOL, R.I. – With wide-ranging access to Roger Williams University’s SECCM Labs construction project as a real-world teaching resource, construction management and engineering students have their own “operating theater” to observe and learn the construction process directly from industry professionals.

Much like medical students witnessing open-heart surgery, Roger Williams students don the trade gear of hard hats, yellow reflective vests, protective eyewear and steel-toe boots to wade into the middle of the active construction site. As part of the partnership between RWU and Shawmut Design & Construction, the SECCM Labs
project is a “living laboratory” where students in the **School of Engineering, Computing, and Construction Management** (SECCM) are getting behind-the-scenes lessons on the intricate confluence of the excavation, construction, and systems work that goes into erecting the campus’s new three-story, state-of-the-art building.

“There’s been a lot of synergy between the project and the classroom,” according to Bill Seymour, RWU’s Director of Capital Projects who also teaches construction engineering courses. “In my course, students are using actual plans and specs, real-time schedules and change orders, as they observe this project. They’re taking away an understanding that what they’re learning in the classroom mirrors industry practice, demonstrating that the techniques and tools they’re employing from lessons are identical to those that are being practiced on the job.”

Amid the start-up roar of a concrete mixer and beeping backhoe lumbering into position on a recent Friday, students in Seymour’s Construction
Engineering course walked the SECCM Labs site, observing and dissecting each piece of the work underway.

“Look at the rebar,” Seymour instructed them. “Notice if it has the requisite cover and development length. Is it sized properly and laid out properly? The reinforcing bars incorporated into each footing get delivered tagged so the crew know exactly where it’s going.”

As students inspected the tags on the stacks of steel rods, they compared the information to the detail plans in their hands. Then the group watched in awed hush as ironworkers and
concrete laborers worked in tandem to create the layered concrete footings – pouring a layer of concrete, setting in the rebar framework and quickly moving down the line tying the rebar together, and then loosing another slow-moving gush of concrete overtop and smoothing it with handheld trowels to create the foundation.

Taking the opportunity to educate the students about a critical aspect of construction planning, Justin Bernard and Greg Curran, Shawmut’s project manager and senior project superintendent, led them to a gaping trench where crews are preparing to install a drainage system. As they talked beneath the monstrous limb of an excavator, reminiscent of a dinosaur-sized ostrich with its head buried in the mud, Curran explained the importance of “vertical control” to all elements of the project: the engineer comes in first to provide a benchmark measurement establishing the prevailing grade, and that creates the standard by which all contractors use to plan and implement their part of the job.
These site visits give the students an opportunity to ask leading professionals about tools and techniques, and how they respond to unexpected changes to the schedule. Back in the classroom, Shawmut’s senior professionals have also delivered presentations on scheduling and estimating while the students are covering those elements in their lessons.

For Annelise Boylan, a senior civil engineering major, the site visits and professional presentations in the Construction Engineering course have bought her lessons to life.

“This has been really beneficial to me, because this was the first time I’ve ever been on a full-blown construction site,” Boylan said. “In the course, we get the full contract specs and full detailed plans. We’re getting to see the planning that goes into it, how they use the terminologies and codes, and how it’s a uniform code that everyone uses, so then it can be applied to any job I go into afterwards.”
Jay Cobleigh, senior civil engineering major, agrees that access to a real-world construction project not only helps him understand the classroom lessons better, but also gives him a professional experience to share with potential employers.

“I think this is a really important part of the education, because it allows students to get outside the classroom,” said Cobleigh, emphasizing the importance of the hands-on learning opportunity. “Not only do I have the background from my education, but also the experiences that I’ve had. You get different perspectives on various projects before you even apply for a post-graduation job opportunity.”

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