



# THE FACILITIES TIMES

## FACILITIES MANAGEMENT

July 2018

### Liu earns doctorate in civil engineering

Congratulations are in order for Dr. Yalin Liu. Dr. Liu recently completed a doctorate in civil engineering at Auburn University.

As a student employee of Facilities Management, she served as a document specialist integrating building documents into the database. She came to Auburn University in 2014 after completing her bachelor's and master's degrees at Ocean University of Qingdao in the Shandong province in China.

She recently received a Best Student Paper Award at the Transportation Research Board's 97th-annual board meeting in Washington D.C. for her research into emerging concrete technology.

She has future plans to teach.

We wish her well and thank her for her service and expertise as she continues her professional journey!



Dr. Yalin Liu

### Robotic mason places bricks on performing arts center

For the first time in Alabama history, a robot is doing masonry for a construction project.

And it's proving its abilities through the construction of the Jay and Susie Gogue Performing Arts Center.

Known as SAM100, or Semi-Automated Mason, the bricklaying robot is one of the first of its kind. It takes under its wings the repetitive act of laying brick after brick, allowing masons to work around the robot by finalizing its work.

"For us it's all about efficiency and the quality of the work," said Matt Hearn, senior project manager for Rabren General Contractors Inc. "We partner with (C&C Masonry) on multiple jobs. We have a great relationship.

"When C&C came to us with the idea of the robot, we all sat around a table and discussed the benefits."

Robotics play a facet in almost every part of our lives, from the cars we drive to the phones we use.

They make tedious, difficult work easier and faster for the workers involved and safer for the human operators.

So why not construction? That's what the engineers at Construction Robotics of Victor, NY, asked in creating SAM.

Engineers load a pattern into SAM's onboard computer then use tablets to

align the robot through a laser sight located on the main body. Masons lay a few lines of brick as a starter, and SAM takes care of the rest to the tune of more than 3,000 bricks a day.

"The technology and ability to program the system to operate the robot

took a lot of the leg work and the manual strain out of the brick-laying," said Scott Cunningham, president of C&C Masonry. "You actually program in the pattern, load it into the software, and it just does what you tell it to do."

***SAM continued on 3***



SAM has the ability to lay more than 3,000 bricks per day.



# July News Briefs



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The July Construction Update was recently released. It features a cover photo of the Gavin Engineering Research Laboratory.

## Facilities Cares

If a Facilities Management employee is a victim of a catastrophic event or suffers a loss in their family, we want to do all we can to support them in their time of need.

Please notify Barnese Adair-Wallace, director of Employee Engagement, at (334) 844-4812 or [adairbw@auburn.edu](mailto:adairbw@auburn.edu).

## — EMPLOYEE RECOGNITIONS —



Anthony Driver, far right, gave Tiger Tickets to, from left, Jose Montanez and Gloria Parker and Certificates of Appreciation to Reta Jackson, Quinton Perry, Sharn Washington and Denise Kalan. Not shown is Samantha Long.



Karen Whitehead received a Certificate of Appreciation from Justin Sutton.

### Editorial and Writing Staff

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Submit Feedback to Trey Wood at [woodcas@auburn.edu](mailto:woodcas@auburn.edu)



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## SAM continued



*Masons load mortar and bricks into SAM, allowing it to continuously build the programmed pattern.*



*A small team allow SAM to continue working without requiring anyone to do anything too strenuous.*

A conveyor belt is loaded with bricks and a holding area is filled with mortar. SAM uses a robotic arm to pick up a brick, slather it with mortar, then place the brick in its preordained location. Masons then come behind to refill SAM with bricks and mortar and clean up the areas where the bricks are placed.

It has its limitations, however. SAM can't do corners, only large flat spaces, making the Gogue Center a great candidate for its services.

"The building lent itself to the situation with the complexity of the job and SAM has fit right in," Hearn said. "I think quality is the number one thing we are looking for. In the construction industry that is what we strive to do on a day-to-day basis: provide the owner with a quality product. SAM far exceeds what we could have ever imagined for this scope of work."

A superintendent stays onsite with SAM to make sure nothing goes wrong. A specialized tablet allows staff at Construction Robotics hundreds of miles away in New York to diagnose the issue and explain how to repair the machine. They can then communicate through video to the operator.

"The tablet will also give you messages if something goes wrong with SAM," C&C Masonry Superintendent Antonio Hamilton said. "Maybe a misfeed, when too many bricks try to go down through the conveyor belt, or the mortar is too soft or hard. That tablet lets you know."

Using SAM to complete one of the more physically laboring parts of the Gogue Center's construction helps create new jobs for masons while saving their bodies from excess stress.

"If we didn't have SAM up there, we would probably have to have four or five masons doing that role and probably another foreman watching to make sure that design gets done right," Hamilton said. "With SAM having that design program in its system, it takes the load off of the masons, foremen and also our management."

The Jay and Susie Gogue Performing Arts Center is an 85,000 square foot building with seating for about 1,200 people. It's planned for completion by summer 2019.



# AUFM HEALTH & SAFETY • CELEBRATION •

## First Health and Safety Celebration a success

Thank you to all Facilities Management employees who made the first Health and Safety Celebration a great success!

Dozens of vendors provided

safety and health checks, showed off new technology, and brought valuable information for the hundreds of employees who arrived at the celebration throughout the day.

The photo booth, dunk tank and contests were well received, and a special thanks should be given to the Employee Engagement Committee for their work in making the day special for everyone!

















