Inside the Lois and Carey Patterson Student Center at Texas A&M University-Texarkana

photo by Matt Cornelius

THE AESTHETICS OF ACADEMICS

BY TIFFANY HORTON, HORTON DESIGN STUDIOS

Have you ever wondered why a community our size would need three separate colleges?

That answer is quickly settled when you learn just how unique each campus is. For instance, did you know that University of Arkansas Hope-Texarkana (UAHT) is on the verge of installing Arkansas' first ever college solar training lab? Were you aware the students at Texas A&M University-Texarkana (TAMU-T) have access to their own Starbucks? What about the cutting-edge, industry standard equipment used in the trade courses at Texarkana College (TC)? These twenty-first century facilities are paving the way toward the quality educational options available in our area, and these are just the beginning!

The beautiful campus of Texas A&M University-Texarkana includes the BASS (Building for Academic and Student Services) and the Lois and Carey Patterson Student Center, two of the city's fine educational facilities. The BASS opened in the Spring of 2019 and is home to the newly added mechanical engineering program, the state-of-the-art nursing program, and other key components such as the admissions and financial aid offices. Walking up to the building, you are met with large, beautiful windows and the perfect balance of modern and traditional. The main lobby is open and inviting. The first floor focuses on the mechanical engineering lab. TAMU-T began offering the mechanical engineering program in the fall of 2020 and that lab boasts several equipment stations that allow students to experience everything from electrical circuits to thermodynamics.

On the third floor of the BASS is a mock hospital, complete with a variety of simulators. It feels as if you have stepped into a functioning hospital, and there are "patients" at every turn. Carol Flores, Simulation Lab Coordinator said, "It's an eight-bed hospital designed to be somewhat like an ICU." In the mock patient rooms are patient monitoring systems showing heart rhythm, pulse ox and other vitals on equipment identical to what you would find in a standard patient room. Instructors can program the simulators to run very specific scenarios and even have them talk to the students in the same way a patient and nurse might interact. While one student or group works through a scenario, another group can watch from the

Starbucks in the Lois and Carey Patterson Student Center at Texas A&M University-Texarkana

photo by Matt Cornelius

control room. This gives both sets of students the ability to assess the situation and debrief afterwards to discuss what was handled correctly and anything that could have been handled differently. Flores explained, "Students go to the hospital and get clinical experience, but for example, they may never see someone having active chest pains. We can simulate that here and then they know what to expect when they experience that in the real world. They can also work on their critical thinking skills safely. No one's going to be hurt in this environment." Their simulations include patients of all kinds, from geriatrics to a mother delivering a baby. The students learn to insert tracheotomies and catheters, write charts and even properly administer medicine. If it can happen in a hospital, they probably have the capability of running the scenario as a lab! TAMU-T's nursing program offers a Bachelor of Science in Nursing degree, a Master of Science in Nursing Administration degree and the new Psychiatric Mental Health Nurse Practitioner degree.

Another of TAMU-T's beautiful facilities is the Patterson Center which could be described as "the heartbeat of campus." Besides being home to the school's kinesiology program, it also houses a lot of the options that enhance student life. Walking in, there is a small cafe area complete with Starbucks, and a hangout space where students can play everything from pool and ping pong to video games. The center of the building is a beautiful basketball gym with an expansive glass wall allowing passing visitors to enjoy a few seconds of the game, even if they don't have time to stop in for the full event. Across from the gym is a large weight area, and tucked all around the building are comfortable seating areas with plenty of places to charge a phone or plug in a laptop. It is a space every student is bound to love!

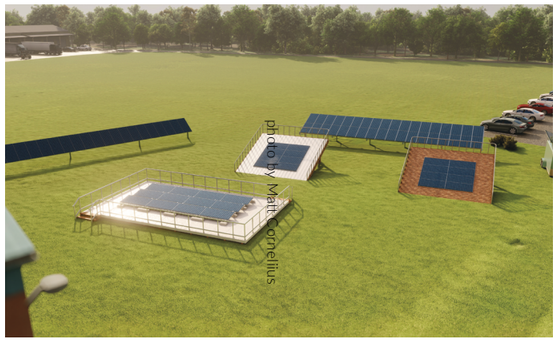
A new solar education lab and yard array at the University of Arkansas Hope-Texarkana is currently under construction. UAHT Interim Chancellor Laura Clark explained UAHT currently offers an Associates of Applied Science in Power Technologies degree. This degree teaches students about renewable and non-renewable energy sources. Past focus has been primarily on fossil fuel power

Inside the Building for Academic and Student Services (BASS) at Texas A&M University-Texarkana

photo by Matt Cornelius

A new solar education lab and array at the University of Arkansas of Hope-Texarkana is currently under construction.
Renderings by MAHG Architecture

plants with a small emphasis on wind and solar energy. By adding the new solar lab, UAHT will increase the depth of instruction on solar energy. "We started making changes to include renewable energies several years ago, so the students were exposed to more than coal fire because we know that is probably not going to be on the horizon," Clark explained. "Solar, wind and hydro are the things of the future, so we started introducing that technology." She elaborated on how the introduction of alternate fuel sources had opened their eyes to the need for both further education and more technicians in our area and across the state of Arkansas. "About three years ago, Arkansas was 36th in the nation in terms of the use of solar energy and we are already 30th. According to the Solar Energy Industries Association website, Arkansas has over 43,550 homes powered by solar energy. There are 30 solar companies in the state, yet we don't have a Solar installation program in the state of Arkansas at all," said Clark. She elaborated on the need for technicians and training and the value that this adds to our community, "There's really not a workforce for solar.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Instead, the few trained technicians are being pulled elsewhere… solar panels and other equipment are becoming more affordable, and more people are interested in alternative fuel sources. So, by training technicians to be able to install and repair solar equipment, we will be able to contribute to homes and industries being able to use more solar energy." As part of the degree, students will gain a Certificate of Proficiency in Solar Technology. The curriculum and lab are modeled after the Solar Energy International Lab in Colorado. Classroom knowledge and hands-on learning are combined through the lab's setup where students will install and uninstall several types of solar arrays. The lab itself will be at the Hope campus and occupy approximately seven acres. The design will allow for students to gain a real-world understanding of solar energy and provide some electricity for UAHT, making the campus more energy efficient as well.

Funding for the lab was gained largely through grants, including an AEP SWEPCO Foundation award of $200,000. Entegrity Energy Partners was selected to design and install the solar project. First Solar and OMCO Solar are donating solar modules and racking equipment. The projected completion of the lab is set for December 2021, so the first group of students is already enrolling in the classroom curriculum portion of the certification, and they should be able to continue with installation classes in the spring semester 2022. "I hope to give our students a credential that's going to be very employable in the future. I think that's very important," said Clark. "By creating a workforce, we may also be able to bring in businesses and industry to our area that produce or create and design solar array. We know there are jobs out there and that our students can get those jobs. When a company is saying that they want to build

The entry of the Ledwell Building at Texarkana College is decorated with inspirational quotes, the story of Betty and Buddy Ledwell, and Mr. Ledwell's high school mechanical drafting work.
photo by Matt Corneliius

solar panels and start to look at where, maybe they'll think of Southwest Arkansas."

Stepping into the beautiful Betty and Buddy Ledwell Workforce Training Center on the Texarkana College campus, you are first greeted by the quote, "There are no problems, only opportunities," which adorns the entry wall. The facility began hosting classes in Spring of 2019. The entry of the Ledwell Building has been thoughtfully designed and the walls are decorated with inspirational quotes, the story of Betty and Buddy Ledwell, and Mr. Ledwell's high school mechanical drafting work. Programs found in the Ledwell Building include Construction Technology, Industrial Maintenance, Electrical Technology and Electronics Technology and Instrumentation.

TC Vice President of Operations Brandon Washington explained the focus of the college's trade programs. "Anything that we do, or purchase, we get direction from our local advisory board or local employers. They give us direction because we want to make sure, first and foremost, that it's going to benefit the students and make sure they are an asset from day one." In the Heavy Equipment Operator simulation lab, Construction Technology Instructor Mike Lee explained some of the technology they use to prepare their students, including an impressive simulator that allows student to feel as if they are sitting in the seat of a piece of heavy equipment. The simulator has large screens that mimic real-life scenarios. The instructor can switch out the controls to mimic a variety of heavy equipment pieces. "It simulates excavators, dozers, a backhoe, and even cranes. But the industry need that we have right now is that there are not enough heavy equipment operators. There's a skills gap that happened when the current generation of operators retired, and because traditional college was pushed for so long, we didn't create a skilled labor force to take over these particular positions," Lee explained. In addition to the heavy equipment simulator, there is also a computer lab set up in the classroom. The computers are used for the students to learn a variety of industry

standard programs such as CAD (Computer Aided Drafting) and Chief Architect, as well as to complete OSHA training.

Moving on to the construction technology lab, students learn the fundamentals of working on a construction site, from very basic hand tools to more complicated power tools. They are also taught how to install doors and windows, hang siding, and, are even introduced to the basics of mechanical systems. "Everything is a building block in construction. It starts with the foundation and goes up from there," Lee continued. "Same thing in this program. We start with our floor systems, our foundations, and we're going to build our wall systems, roofs, so on and so forth. We concentrate mainly on carpentry skills and being proficient with those, and we scratch the surfaces of electrical and HVAC. So, our goal is to give them a general contractor view."

Across the hall from Construction Technology is another large and impressive lab, home to Industrial Maintenance, Electrical Technology, and Electronics Technology/Instrumentation. This portion of the building is divided by the various equipment, each of the pieces grouped according to the specific program they serve. There are brand new pieces of Computerized Numerical Control (CNC) training equipment selected by Instructor Mr. Thomas Holt based on recommendations from industry partners. "What we're trying to do is to train a CNC operator to come in and be able to load the part into the machine, run the program, get the finished part, and quality check the finished part. It's a new 12-week program that we are offering," explained Holt. "By doing that, it helps to fill a dire need that we have in our area for CNC operators." In a second area, there are multiple motor stations set up to allow students studying industrial electricity to practice wiring for different systems. Other skills learned include bending conduit, pulling wire, and what size wire is needed for different applications. Students will also learn about green energy, including wind and solar power. In an adjacent lab, the students studying Electronics Technology/Instrumentation are taught about Programmable Logic Controllers (PLCs). They learn how to program PLCs which requires creating the program on a computer and then wiring up the PLC.

The third program housed here is Industrial Maintenance. Students in this program use all the equipment and lab areas used in the electrical and electronics programs, plus additional equipment. The local industries are in constant communication with the trade programs offered at TC. "They work with us on making sure that we're staying up-to-date with their technology because they know we want to," described Holt.

Local students are being set up for success, making it clear our community is looking ahead and working hard to take the local work force into the 21st century and beyond.