

WEDNESDAY, FEBRUARY 6, 2019

Students Get a Tour of Future Careers

By J. Chambless, Staff Writer



Students from Kennett High School watch a drone demonstration, with Tom Bentley at right.

Last week, classroom theory became reality for a group of Kennett High School civil engineering and design students as they got an in-depth tour of homes under construction near the school.

On Feb. 1, students in the STEM classes at the high school were welcomed at the Stonehouse development on South Union Street. Bundled up against the biting cold, groups of students saw all phases of construction – from simple wooden markers hammered into the bare earth, up to nearly completed homes with all the appliances installed. Stonehouse will eventually be a 38-townhome development built by Bentley Homes.

The company's owner, Tom Bentley, shadowed the tour groups on Feb. 1 and spoke to the students about using drones to map construction sites. It was Bentley's idea to bring the students to the site in hopes of fostering future engineers. Last year, he met with school district superintendent Barry Tomasetti and suggested the partnership with the classes. There have been two prior

classroom visits from Bentley himself, and the Bentley project architect, to discuss design work being done by the students.

Kennett High School offers a curriculum called Project Lead the Way that matches students with teachers to design homes based on the teacher's requests, while adhering to stringent Habitat for Humanity construction guidelines. The award-winning curriculum teaches students to interact with clients, to work with professional-level Revit software, and to get a feel for what a career as a designer would be like. The chance to see real homes under construction nearby was a natural fit.

"This is the first time we're actually going on a field trip to see a site," said Kennett High School teacher Ron Phillips. "We've worked with Bentley Homes in class a couple of times. They sent an engineer, they sent an architect, and they sent their owner, Tom Bentley. It's been nice for the students to kind of pick the brain of a professional. It's great for me, because the professionals keep saying the same things I've been telling the kids all year," he said, laughing.



Dave Gibbons unpacks one of the drones he uses to map Bentley sites



Tom Bentley (right) discusses drone technology with students.

“Project Lead the Way provides curriculum all over the country. This class is Pathway to Engineering. Students work on the Affordable Home Project. They’re given guidelines and some residential codes to stay within. They do everything – from pre-construction through walls, HVAC, lighting, plumbing, everything. It gives them a taste for every aspect of construction. And I pair them up with teachers, who become their clients. The students interview the teacher, find out their needs, and design a house based on that.”

Students from grades nine through 12 in the Intro to Engineering and Design, Principles of Engineering, and Civil Engineering and Architecture classes took part in the field trip.

“One of the things that I love about this course is that it’s so easy to walk out of class and see things we’re talking about in real life,” Phillips said. “One of the things we talk about in all our classes is that everything was designed by somebody for a reason. We’re applying those ideas to the design of buildings, parking lots, retention ponds, everything. So it’s kind of fun.”

With snow falling, the tour started outdoors with an explanation of site grading, stormwater control and the meaning of the stakes that marked where crews would soon be digging the foundations. Inside a nearby home, with its bare wood framing and ductwork visible, students saw where plumbing would eventually become a bathroom, and where a central beam would support the finished home.

Robert Duffy of Bentley Homes explains the construction process.



Students see stonework being installed in the lower level of one of the Stonehouse homes.

Next door, and in another nearby home, the construction process was further along, and students learned about HVAC systems and soundproofing, wiring and windows, flooring and stonework.

The historic stone home that was already on the site will be refurbished and occupied by a family in the months to come. Even its stone outhouse will be preserved, reflecting the history of the 10-acre site.

Lydia Hallman, the director of curriculum and mathematics and science instruction at Kennett High School, was involved in the initial planning for the visit. “Mr. Bentley went and did some instruction with the Civil Engineering and Architecture students at the high school in December,” she said. “Then in the spring, the Society of Women Engineers will be coming back to the houses and looking at some of the computer applications and the staging of the houses. This is a unique opportunity.

“I’m learning a lot,” she said, smiling. “And we’re beginning to look into working with other area companies to do more of these experiences. This is a great chance to find out what an engineer really does.”

The last stop for many of the students was a home that was about four to six weeks from occupancy.

With the kitchen counters and appliances installed, the group gathered to see an explanation of drone technology that is used to survey construction sites.

Flying a drone cuts days or weeks off of the sketch plan process, and the imaging can produce three-dimensional renderings of a site, giving developers, township officials and future residents a clear idea of what a finished community will look like.

Bentley, looking carefully at the drones on the kitchen counter, said, “When drones first came out, I thought they were interesting, but now they have so many applications. . . . When I buy a site that’s raw, we can go out and fly a drone and give us an idea of what’s there – how steep the hills are, where the streams are. We just bought a 40-acre site in Exton, and we’ve already negotiated a contract. There’s about 10 acres we just can’t use. When I bought the property, I had to offer the seller something that makes sense for me, but gives him enough money to want to sell it to me.

“We do this whole dance with the engineers and how many units we can get on a property, how much we can pay for the units, talking to my marketing people,” Bentley said. “This kind of stuff is really important. It’s kind of like an orchestra. Everybody’s got to be playing the same tune. We have to communicate.”

With the tour completed, and having gathered in the driveway of a home, Bentley watched the drone smoothly lift off and hover motionless at the height of the garage. He grinned and posed for the camera, sharing the enthusiasm of the students around him.