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## OTC Field Trip to Apartment Complex and Net Zero Energy House

The opportunity to visit the latest cutting-edge technology in building construction presented itself for nineteen students from Okaloosa Technical College's Carpentry and Building Trades programs. On Friday, December the 8th, OTC's Carpentry instructor Royal Preston, led students to a 176-unit apartment complex in various stages of construction. These apartments incorporate the latest building technologies from high compressive strength concrete foundations to fire retardant insulations and caulking. The general contractor, Bobby Fisher of Robert Fisher Signature Homes, also demonstrated to the students how he is able to incorporate new lightweight concrete panels into the party walls for enhanced fire protection. Mr. Fisher explained how pouring lightweight concrete on top of the subfloors, adding extra insulation and utilizing resilient channel will help maximize sound deadening between the units. In response to a student's question, he stated that the permitting process was the most arduous part of the project, and took nearly as long as the actual physical construction.

Next, the students boarded the bus and traveled to Pensacola to tour a 4,000 square foot, Net Zero Energy, High Performance house under construction. Smart Home Pensacola ([www.smarthomepensacola.com](http://www.smarthomepensacola.com)) is a Net Zero Energy home, which means that the house produces as much energy as it consumes on an annual basis. That is little or no electricity bill. By utilizing state-of-the-art methods and materials, the Loxley Hawk Inc. contractor, Mr. David Lars Butler, and Design Engineer, Dave Robau, are able to dramatically increase the R-value or thermal efficiency of the home; thereby making it more resistant to Northwest Florida's hot summers and sometimes cold winters. One of these materials, Structural Insulated Panels (SIPs), not only increases the home's R-Value (R50 walls, R-70 ceilings), but also eliminates waste because the panels are ordered to length. Less scrap materials along with many other energy efficiencies, will help this house achieve the highly coveted Platinum LEED Certified rating. The SIPs construction then performs as a "Yeti-like" cooler which lowers the demand of the heating and cooling systems. Rather than using conventional solar panels, this house will use Integrated Solar Photovoltaic Tesla Roof Tiles that are being developed by famed Space X and Tesla's CEO Elon Musk.

This beautiful Net Zero Energy home is not only a glimpse of the future's technology in home building, but also reaches back to the past for nostalgic materials while reducing environmental demand. Longleaf Pine Heartwood was reclaimed from an existing 1900's era home that was meticulously dismantled at the home's location. Due to its old-growth origins, the very dense, Longleaf Pine will be used as a spectacular floor in the Net Zero Energy home while paying tribute to the home's past. Other technological improvements that were presented to the students include Tesla energy storage and charging stations for two Tesla electric powered cars, and a networked system that will control virtually every aspect of the home from locking the doors and adjusting the air conditioning, to monitoring the occupant's health via sensors. The students were

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