CLIMATEMASTER®

East Stroudsburg University
East Stroudsburg, PA

Commercial Case Study

East Stroudsburg University Residence Halls Offer Modern Amenities for Students, Including the Comfort & Efficiency of ClimateMaster Geothermal Heating & Cooling

A recently completed 960-bed student housing project on the campus of East Stroudsburg University in northeastern Pennsylvania combines comfort, privacy and modern suite-style living with the latest in sustainable building practices. The $74 million project included construction of two residence halls owned by University Properties (UPI) – the 157,000-square-foot Hemlock Suites and the 173,000-square-foot Hawthorn Suites.

"Our students, like students at universities across the country, have come to expect more privacy, more comforts and more conveniences in their residence life experiences," said Thomas Bartek, ESU Facilities Management auxiliary project manager. "That's what we're giving them with Hemlock Suites and Hawthorn Suites at ESU."

WTW Architects of Pittsburgh designed Hawthorn Suites and Hemlock Suites to compliment the architectural style of existing buildings on the campus, while incorporating the most appealing of modern conveniences. The various suite configurations available feature one- or two-person occupancy bedrooms with private, full baths for every two residents, kitchenettes, cable television and Internet service, and some layouts additionally include living rooms. The residence halls also feature study rooms, lounges, computer labs, kitchens and laundry facilities, with larger windows in all the common areas and suites that admit notable natural interior light.

In addition to residence suites, WTW Architects was tasked with designing the buildings to include commercial space to accommodate a 15,000 square-foot fitness center (Hawthorn) and University Police offices (Hemlock). The firm also incorporated several sustainable building aspects, such as recycled-content and low-VOC building materials; low-water plants, rain gardens and storm water holding tanks; high-efficiency plumbing fixtures; energy-efficient lighting fixtures; recycling bins in all common areas, suites and trash rooms; and video-monitored bicycle storage to encourage sustainable transportation among residents.

According to Robert Moses, ESU's director of residence life and housing, the result has been an environment in which students socialize, learn, build community and still have their privacy.

The homey on-campus environment is enhanced through in-room climate control with individual Tranquility® Vertical Stack (TRM) Series heat pumps from ClimateMaster in each suite. The heat pump units are part of geothermal heating and cooling systems specified in both buildings, which were selected due to their ability to save on heating, cooling and maintenance costs, provide improved indoor air quality and reduce the university's overall carbon footprint.

ESU, one of 14 universities in the Pennsylvania State System of Higher Education, was familiar with the proven record of ClimateMaster's geothermal heat pump systems installed at California University of Pennsylvania in California, Pa. According to Bartek, the combined performance benefits of this type of system seemed like the ideal fit for UPI's new residence building project.

"We wanted these buildings to be as carbon-neutral as possible," Bartek said.

UPI engaged EdR Development, LLC, of Memphis, Tenn., to develop, design and construct the project, which worked with WTW Architects to design the project and P. Agnes, Inc. of Philadelphia to the construct the project. P. Agnes also enlisted the services of Philadelphia-based mechanical engineering firm Wick Fisher White to design the mechanical, electrical and plumbing systems for the two new residence buildings.

The 405-ton (Hemlock) and 377-ton (Hawthorn) heat pump systems are fed by two geothermal borehole fields of 120 (Hemlock) and 110 (Hawthorn) 500-foot deep boreholes. Together, the buildings use more than 516 Tranquility Vertical Stack (TRM)

Tranquility® Vertical Stack Unit

Tranquility® 30 Two-Stage Unit

Series and Tranquility 30 Two-Stage (TT) Series units, ranging from .75 to 2.5 tons in capacity, all with the new, environmentally friendly EarthPure HFC-410A Refrigerant technology.

Within the overall system design, Wick Fisher White additionally accommodated the varied needs of the buildings, and particularly the commercial spaces that would be occupied more regularly than the residence suites.

"We accomplished this by including multiple small tonnage water-source heat pumps to allow for increased zoning capability," said Wick Fisher White associate Daniel Jewell. "We also included a dedicated condenser water loop to maintain the buildings' indoor conditions for the spaces that are anticipated to operate-year round, without having to energize the larger system components."

P. Agnes broke ground on the two residence buildings in September 2010, and installation of the mechanical systems began in May 2011. Sass, Moore & Associates, the local representative for ClimateMaster, worked with all parties to assure the project's tight delivery and start-up schedule were met.

Mechanical subcontractor Worth and Company installed all ClimateMaster geothermal heat pump units and ancillary mechanical equipment in both buildings.

"We installed 546 units in just 15 months," said Tim Moyer, senior project manager at Worth and Company. "These stackable heat pumps go in nicely. We didn't have any problems with installation."

According to Moyer, ClimateMaster consistently delivers a quality product at a reasonable price.

Project architect Hank Colker of WTW Architects underscored ClimateMaster's responsiveness and commitment to service support, particularly when some of the heat pump units' fan motors required replacement.

"ClimateMaster stands by their products," Colker said. "They came in to resolve the issues."

Colker, who has used ClimateMaster products in several previous projects, additionally said the company's heat pump units consistently provide the features he requires, and at a reasonable cost. He specifically noted the units' removable chassis, which allows staged installation, easy maintenance and minimal system downtime.

Overall, the construction project went smoothly and as-planned, even when considering the space constraint challenges associated with erecting two buildings simultaneously, and only 300 feet apart. In addition, existing underground utility and storm water management systems were redesigned to accommodate needs for the Hemlock Suites building.

Since the new residence halls opened in January 2012, the student population has responded positively, Moses said. "Hawthorn Suites and Hemlock Suites are the first

East Stroudsburg University,
Hawthorn and Hemlock Suites

Architect:
WTW Architects

Construction Manager:
P. Agnes, Inc.

Mechanical Engineer:
Wick Fisher White

Mechanical Contractor:
Worth and Company

Manufacturer's Representative:
Sass, Moore & Associates

ClimateMaster Equipment:
516 Tranquility® Vertical Stack (TRM) Series and Tranquility 30 Two-Stage (TT) Series units, ranging from .75 to 2.5 tons in capacity

Project Website:
http://www4.esu.edu/students/residence_life/halls/hawthorn_suites.cfm

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ClimateMaster has been designing and building equipment that enhances the environments we live and work in every day for more than 50 years. In addition to geothermal heat pumps, ClimateMaster offers the most extensive product line of water-source heat pumps for use in a wide variety of applications. ClimateMaster products are proudly built in the U.S.A.

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