

The A. Alfred Taubman Student Services Center at Lawrence Technological University

The A. Alfred Taubman Student Services Center, supported entirely by philanthropy, was the centerpiece of a campaign that raised over \$46 million to strengthen retention and student success, create new endowed scholarships, and enhance the campus experience.

The 42,000-square-foot Taubman Center not only meets the requirements of the important student services functions it is designed to house, it is also a “living laboratory” of sustainable design and engineering.

Awarded Silver certification by the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED), the Taubman Student Services Center addresses the criteria of sustainable site development and construction, water and energy efficiency, recycled materials selection, and indoor environmental quality.

Oriented to promote natural lighting and take advantage of site elements, the Taubman Center’s low-e glass skin is designed to reduce heat loss and maximize daylight without succumbing to excessive solar heat gain.

Over 60 percent of the roof is vegetated. The building’s 10,000-square-foot living green roof is created with layers of insulation, roof membrane, drainage fabric, and a four-inch granular composition supporting the planting of nine different species of sedum ground cover. About nine inches thick, the roof offers more effective insulation than traditional roofs and expands and contracts with seasonal changes. It is expected to last about 40 years, more than twice the lifespan of traditional materials.

The green roof also controls and reduces water runoff. With normal rainfall, about 60 percent of the water will be absorbed by the roof while the remainder drains into a 12,000-gallon cistern to be used as “gray” water for flushing toilets and the irrigation of the campus quadrangle. A system of weirs, tile fields (composed of material made of volcanic ash), and long-rooted grasses and trees will prevent 60 percent of the rainwater that falls on the adjacent campus quadrangle from running into the Rouge River as part of a regional effort to control storm water drainage and improve the water quality and biodiversity of this portion of the Rouge watershed. This bioswale of vegetation will naturally purify the water by filtering out pollutants commonly found in snow and rain.

The most complex and sustainable aspect of the Taubman Center cannot be seen: a field of 120 geothermal wells sunk 300 feet (about as deep as the Town Center buildings across Northwestern Hwy. are high) through five geological layers under the campus quad. A system of polyethylene tubing, pumps, and fans connected to the wells utilizes water to heat and cool the building, *which has no boiler, furnace, or even a gas meter*. Water never leaves the tubes in the closed loop system, which transfers heat to and from the earth as needed to meet the building’s cooling or heating needs. The heating, ventilating, and air conditioning systems contain no CFC-based refrigerants, HCFC’s, or Halons.

Lighting in the Taubman Center is controlled by sensors and astronomically-synchronized timers that adjust three minutes a day to accommodate seasonal lighting needs. The heating and cooling system is controlled by a York state-of-the-art Direct Digital Control system, which continually monitors approximately 1,700 points throughout the building and sends signals to various valves and dampers that adjust to the demands within the building. Many of the heating, ventilation, and air conditioning controls and mechanisms are visible for study by students. The concrete flooring tiles throughout the building are elevated 18 inches, making all wiring and piping easily accessible by lifting panels of the completely modular floor.

The innovative architecture and engineering of the A. Alfred Taubman Student Services Center mirror its greater purpose: to provide innovative, seamless, and organic service to Lawrence Tech’s students. The building brings together all the services students require to succeed: the Academic Achievement Center; Offices of Admissions, Career Services, Dean of Students, Financial Aid, Registrar, and Student Activities; Student Computing Center; and the Welcome Center.

Designed to address the needs of the whole student—academic, personal, and financial—this one-stop shop aims high: to increase student productivity, create a sense of community, and provide new opportunities for collaborative learning. Cross-trained employees are able to answer many questions immediately, eliminate confusion, or efficiently guide visitors to the right department. The open, relaxed design of the Taubman Center encourages an atmosphere of teamwork, unity, and cooperation.

The Taubman Center not only puts Lawrence Tech’s students, their concerns, and success at the physical heart of campus, but also at the core of Lawrence Tech’s mission and delivery of services.

For more about the Taubman Center’s innovations, call 248.204.2206.

