U-M Center for Innovation

Project Description

The University of Michigan Center for Innovation (UMCI) is a proposed new academic building to be located in downtown Detroit. The proposed building will be the first of 3 buildings to be constructed on the site, with the other two buildings to be constructed by a developer at a future date. UMCI will be a world-class research, education and entrepreneurship center designed to advance innovation and talent-focused community development to propel city, region and statewide job creation and inclusive economic growth by stimulating economic development in the city of Detroit. The program will offer a mixed-model approach that includes both masters' degrees and workforce development programs that will focus on technology and innovation. The new building will have a basement and 6 stories above grade. The lower floors will contain public-facing programs while the upper floors will be dedicated mostly to graduate programs.

Energy Efficiency Measures

- The building's design and systems are designed with a stretch goal for energy cost savings of 20% compared with an energy code compliant building as defined in ASHRAE 90.1-2013
- A hybrid water-to-water heat pump and air-to-water heat pump system with ice thermal storage tanks to maximize the energy recovery from simultaneous heating and cooling loads at different locations and at different times, and to further reduce the peak electrical demand compared to electric resistance heating and traditional air-to-water heat pumps
- Optimized glazing performance exceeds ASHRAE 90.1-2013
- Central station air handling units with total energy recovery heat exchangers that reclaim the energy from the building general exhaust air to preheat and precondition the ventilation air
- Hot water radiant floor heating system that serves the lobby area to heat the large, open space more efficiently than a forced air heating system
- Demand control ventilation for the kitchen and densely populated spaces including classrooms and conference rooms
- Air source heat pumps for domestic hot water
- Roof top photovoltaic panels to provide on-site renewable energy

Other Sustainability Measures

- In keeping with the University's carbon neutrality goals, by embracing high-performance systems, energy conservations measures and electrifications, the project aims to better the project-specific emissions target of 10 KgCO2/GSF (derived from a percent reduction from ASHRAE). When the University implements its planned 100% renewable power-purchase agreement the project emissions will be 0 KgCO2/GSF.
- This project is registered under the LEED® green building certification program with the certification goal of LEED Gold. This project will use the LEED for New Construction v4 rating system.

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- Designed with a hybrid mass timber structure to reduce embodied carbon, reduce waste, and provide occupants with a connection to nature.
- Designed to reduce water consumption by a minimum of 20% beyond Michigan Plumbing Code; savings obtained through the use of low-flow plumbing fixtures
- Stormwater is designed to retain runoff volume generated by the 90th percentile storm event using on-site measures including hydrodynamic separators for water quality and a modular precast concrete underground detention system with an outlet control structure to regulate the site discharge rate.
- Native and drought tolerant plantings will be used on site to reduce irrigation water use
- Project site located near public bus routes & bike networks to encourage use of public & bike transit instead of driving
- Views to the outdoors and access to natural light from the interior influence emotional and cognitive health of building occupants
- Specification of materials with Environmental Product Declarations
- Specification of materials with Health Product Declarations
- Specification of materials with recycled content
- Specification of regional materials
- Low-VOC paints, coatings, adhesives and sealants
- Construction Waste Management, more than half the waste generated during construction will be diverted from landfills and either salvaged for reuse or recycled