

# Project Description

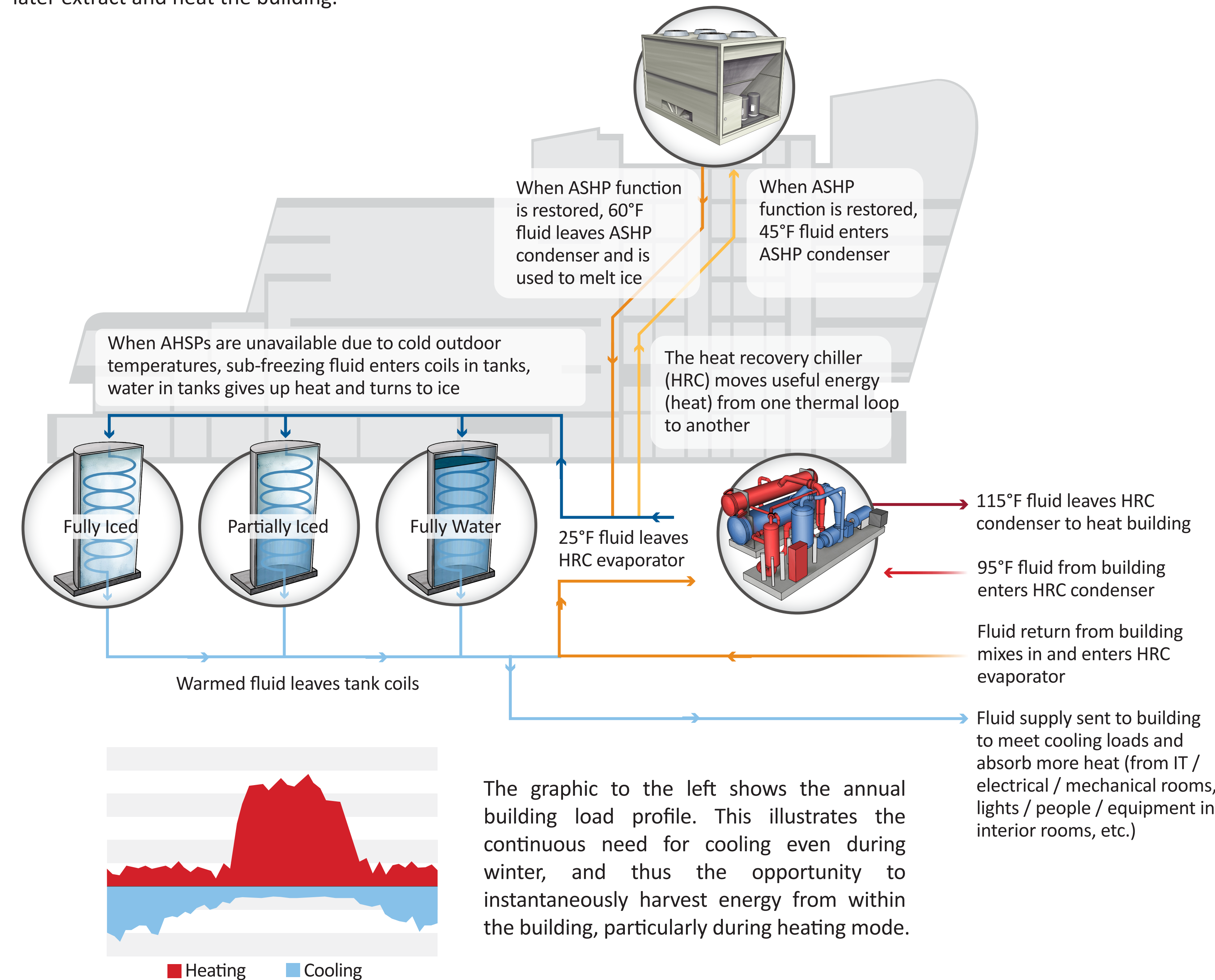
The University of Michigan Center for Innovation (UMCI) on Grand River Avenue in Detroit is a hub for innovation and community engagement. Its forward-leaning design and transparent facade symbolize progress and showcase the activities inside. The 200,000-square-foot, six-story building features public programs on the first two floors and focuses on multidisciplinary graduate research on the upper floors, particularly in technology and innovation. It also plans to offer

master's degrees and workforce development programs. A skylight-topped atrium from the third to fifth floors serves as a social hub for collaboration. Aligned with the university's goals, the building supports sustainability and carbon neutrality while being a vibrant space for learning and innovation.

## Innovative Building Systems

An innovation of the heating system for UMCI is, counter-intuitively, *the use of ice in harvesting heat*. Thermal energy storage tanks allow for energy intensive phase change by freezing water and melting ice.

While outside air conditions are above 20°F, electric air-source heatpumps (ASHP) on the roof of UMCI harvest heat from the air, working like an air conditioning unit in reverse. Heat is transferred into the thermal energy storage (TES) loop. There it can either be used by the heat recovery chillers (HRCs) to immediately heat the building or to melt ice, storing the energy for the HRCs to later extract and heat the building.



**Daylight and Views**

The UMCI design prioritizes access to quality views and daylight for regularly occupied interior spaces, with 46% of spaces with daylight autonomy and 90% of spaces with quality views.



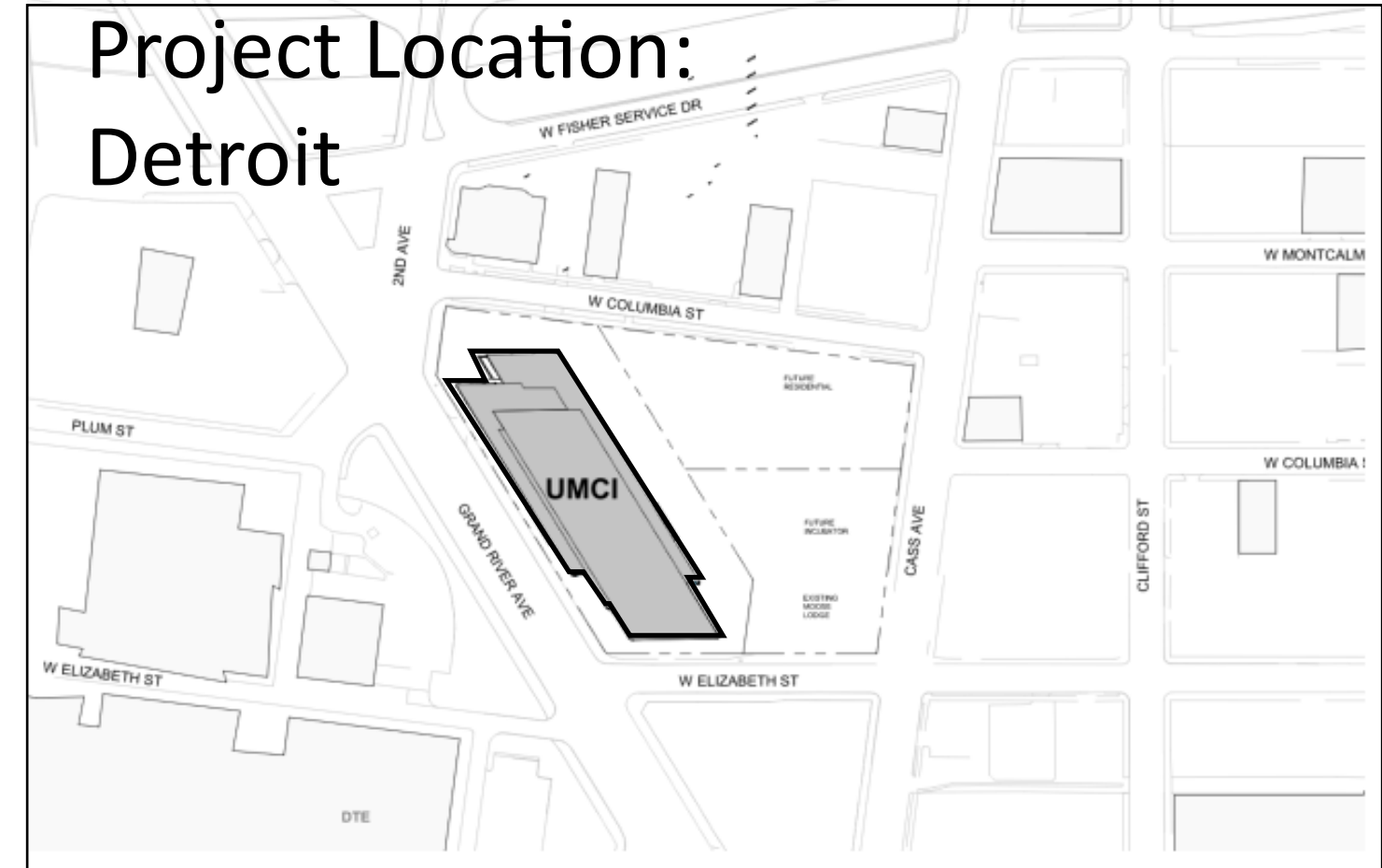
**Vegetated Roof**

The vegetated roof on Level 3 enhances views from interior spaces, reduces urban heat island impact, and contributes to stormwater retention reducing runoff from the site.



**Rooftop Terrace**

An accessible rooftop terrace, with drought tolerant plantings, creates an opportunity for users to engage with the surrounding urban environment.



### Sustainability Facts

**U-M Center for Innovation (UMCI)**

Building Use	Classroom / Office / Event
Location	Detroit, Michigan
Size	200,000 Square Feet
Number of Occupants	1,125

LEED version	v4
LEED certification level	Registered with a LEED Platinum Target
ASHRAE 90.1 version	2010
Energy cost savings compared to ASHRAE baseline	30%
Total energy savings	\$282,600/ year
Total energy savings (all-electric)	8,432 MMBtu / year
CO2 emissions avoided	959 metric tons/ year
Water fixture baseline	2012 Michigan Plumbing Code
Total water savings	40%
Construction/Demolition waste diverted from landfill	TBD

Insulation (R-Value)*	Code (ASHRAE 90.1-2013)	Project
Wall assembly - above grade	18.2	15
Wall assembly - below grade	7.5 c.i.	20
Roof assembly	30 c.i.	30

Glazing - Curtain Wall System		
U-value**	0.42	0.18
Solar Heat Gain Coefficient (SHGC)**	0.40	0.27

Glazing - Fixed Assembly		
U-value**	0.42	0.30
Solar Heat Gain Coefficient (SHGC)**	0.40	0.25-0.27

Project Team	
Owner	University of Michigan
Architect	Kohn Pedersen Fox Associates
Engineer	Affiliated Engineers Inc.
Contractor	Walbridge
MEP Commissioning Authority	FST Technical Services
Building Envelope Commissioning Authority	SmithGroup Inc.
Project Management	U-M AEC

Design Period: 09/2020 - 08/2024  
 Construction Period: 08/2024 - 05/2027

\* The higher the R-value the better the insulating quality  
 \*\* The lower the U-value and SHGC the more energy efficient the window

