

## Lorch Hall Renovation and Addition



### Project Description

Lorch Hall is an L-shaped structure that was built in 1928 and is comprised of a 6-story tower that is flanked by two, four-story wings to the north and east, with an open courtyard space completing the block. This project proposes to renovate the existing Lorch Hall building and construct an addition in the existing exterior courtyard to accommodate the current and projected growth needs for the LSA Departments of Economics and Linguistics.

The proposed addition is approximately 90,000 gross square feet and would infill the existing exterior courtyard. Approximately 73,000 gross square feet of existing space will undergo a deep renovation to address deferred maintenance, including full replacement of mechanical, electrical, and plumbing systems.

In alignment with sustainability goals, the building will be designed to be carbon-zero ready. It will operate as an all-electric facility, enabling full carbon neutrality once the electrical supply is sourced entirely from renewable energy. The incorporation of geexchange infrastructure will reduce reliance on conventional mechanical heating and cooling systems. In addition, passive solar design strategies and optimized access to natural daylight will further enhance energy efficiency and occupant comfort.

### Energy Efficiency Measures

- The building's design and systems include several energy-efficient features that will target an estimated 20% energy savings compared with an energy code-compliant building, as defined in ASHRAE 90.1-2013.

- Addition of insulation at existing, uninsulated, masonry facade
- Design of high-performance roof at the new atrium
- Triple glazing at curtainwall, high performance double glazing at punched windows
- On-site Geothermal System
- Radiant heating and cooling systems
- High performance HVAC air-side design
- Displacement ventilation for large volume spaces
- Use of natural ventilation to reduce the load on the HVAC system
- Utilization of LED lighting throughout the project to reduce lighting load

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- Occupancy sensors to turn off lights when spaces are unoccupied
- Daylighting strategies to maximize daylight in occupied spaces

### 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 exceed the project-specific emissions target of 9 KgCO<sub>2</sub>/GSF (derived from the U-M Fixed Value calculation). When the University implements its planned 100% renewable power-purchase agreement the project will be carbon neutral.

- 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.

- Native/adaptive, drought tolerant landscaping to reduce need for permanent irrigation

- Implementation of green stormwater management strategies, including groundwater recharge/infiltration to manage stormwater volumes on-site

- Low flow plumbing fixtures to reduce water consumption by a minimum of 20% beyond the Michigan Plumbing Code

- Reuse of the existing building to reduce embodied carbon

- Employing regenerative design practices for building resiliency

- Biophilic design includes views to the sky and nature as well as material selections that include natural wood, stone, cord, and felt

- Use of sustainable building materials with EPDs, HPDs, and other third-party verified certifications such as Cradle-to-Cradle and Declare labels

- Use of sustainable building materials with recycled content and participation in extended producer responsibility practices, such as take-back programs

- Minimize waste generated on site and maximize waste diversion from landfills during construction