



NORTHERN MICHIGAN UNIVERSITY

MARQUETTE, MICHIGAN

**Appropriations Subcommittee on Joint Capital Outlay
Career Tech and Engineering Technology Facility**

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February 26, 2020

Northern Michigan University Campus



NORTHERN MICHIGAN UNIVERSITY

Career Tech and Engineering Technology Facility

Project Overview

- Renovation of 38 year-old Career Tech and Engineering Technology Facility
- Facility is 5 acres or 209,000 gross square feet
- Key component of Northern's Strategic Plan of "Transformational Innovation"
- Facility is in need of major renovation
- **Total Project: \$28.6 million**
- **Northern's match: \$8.6 million (30% Match)**



Career Tech and Engineering Technology Facility

Current Facility



Planned Renovation



Career Tech and Engineering Technology Facility

Primary Academic Programs

- Automotive
- Construction Management
- Continuing Education and Workforce Development
- Electrical Engineering Technology
- Heating, Ventilation, Air Conditioning, & Refrigeration (HVACR)
- Industrial Maintenance
- Public Safety Institute
- Welding



Career Tech and Engineering Technology Facility

Students and Business Connectivity

- About 225 certificate, diploma, associate and bachelor degrees awarded annually from programs in complex
- Just under 660 undergraduates use the building each semester for majority of their work
- More than 250 high school students attend CTE classes at facility in coordination with local public school system
- More than 150 businesses and organizations receive training in the facility annually



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Address Growing Need in Region – Increasing Interest Among Regional U.P. High Schools

- Increased percentage of HS students taking CTE courses
 - Fiscal Year 2011-12: 35%
 - Fiscal Year 2018-19: 52%
- Career Tech Day at NMU (host local high school students interested in career-tech fields)
 - February 2020: 300 students (from Marquette, Negaunee, and Ishpeming)
 - Five prior years averaged 80 students



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Plan Progress

- NMU has completed phases 100 through 300
 - Program statement and schematic design complete
- Hired architect and construction manager
 - Neumann Smith | Miron Construction
 - Both worked on last Capital Outlay project
- Design plans completed
 - CM confirmed within approved project budget
- Faculty support of design and project plans
- Ready for construction authorization (Phases 400 and 500)
 - Preliminary design-development, final design and construction documents.
- Institutional match of \$8.6 million (30% match) is in place
- We are excited and ready to move forward



Career Tech and Engineering Technology Facility

Project Highlights

- Supports Strategic Plan of Transformational Innovation
- Transform into modern, high-tech classroom and teaching lab facility
- Supports active learning teaching pedagogies
- Improve program synergy and shared space
- Redistribution of space - relocate a number of programs to correct fragmentation and improve synergy
- Enhance learning outside the classroom and opportunity for student-faculty collaboration
- Create “flex learning” and Innovation space
- Improve corridor circulation
- Use the building as a teaching tool
- Upgrade the building’s thermal envelope, HVAC, air handling, and lighting
- Reduce square footage by 43,000 sq. ft. and annual operating costs \$204,000 with building reduction - \$1,020,000 over 5 years
- Improve learning and working environment by bringing more light into facility
- Create a more welcoming entrance to facility



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Transform Campus Facilities

- Enhance ability to recruit students and businesses
- Highlight successful skilled trade programs
- Strengthen business and industry partnerships
- Improve campus aesthetics



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State-of-the-art active learning classrooms

- Enhance ability for collaboration in classroom
- Incorporate active learning technologies
- Greater opportunity for presentations by industry experts
- Provide large classroom that incorporates both concepts
- Better instructional space for larger classrooms
- Incorporate Distance Learning Technology



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Innovative Application - Centered Laboratories

- Provide modern high-tech classrooms and teaching labs
- Enhance technology
- Incorporate new applications in programs
- Enable distance learning to all courses
- Develop and integrate virtual reality learning in laboratories



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Re-imagine Laboratories

- Flexible and adaptable lab space
- Seamless integration with future technologies
- Enhanced lighting for better learning environment
- Ability to co-locate classrooms within laboratories



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Maker Space Laboratories

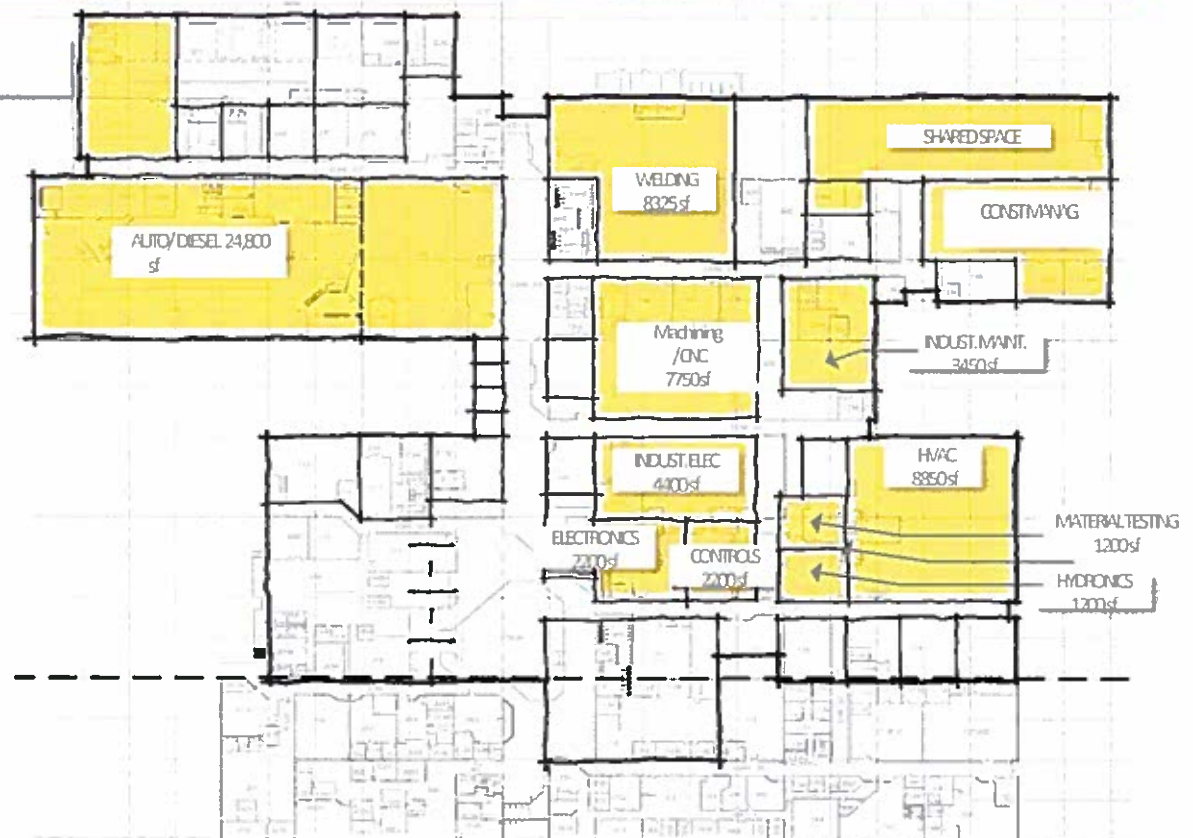
- Space dedicated to multi-disciplinary collaboration
- Build special projects outside of traditional laboratories
- Assist local inventors working with Invent@NMU, our “idea incubator,” for prototyping of products
- Create dynamic creative environment



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Redistribution of Teaching Classrooms and Labs

- Redistribution of space to create greater synergy between programs and reduce fragmentation
- Promote interdisciplinary activity
- Enhance group learning and sharing of ideas



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Enhance Promotion of Programs and Student Experience

- Window view to classes and laboratories
- Ease corners in facility
- Allow prospective students, parents, business and industry, and community to see innovative student projects students are doing in labs and classrooms



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Informal Learning Spaces

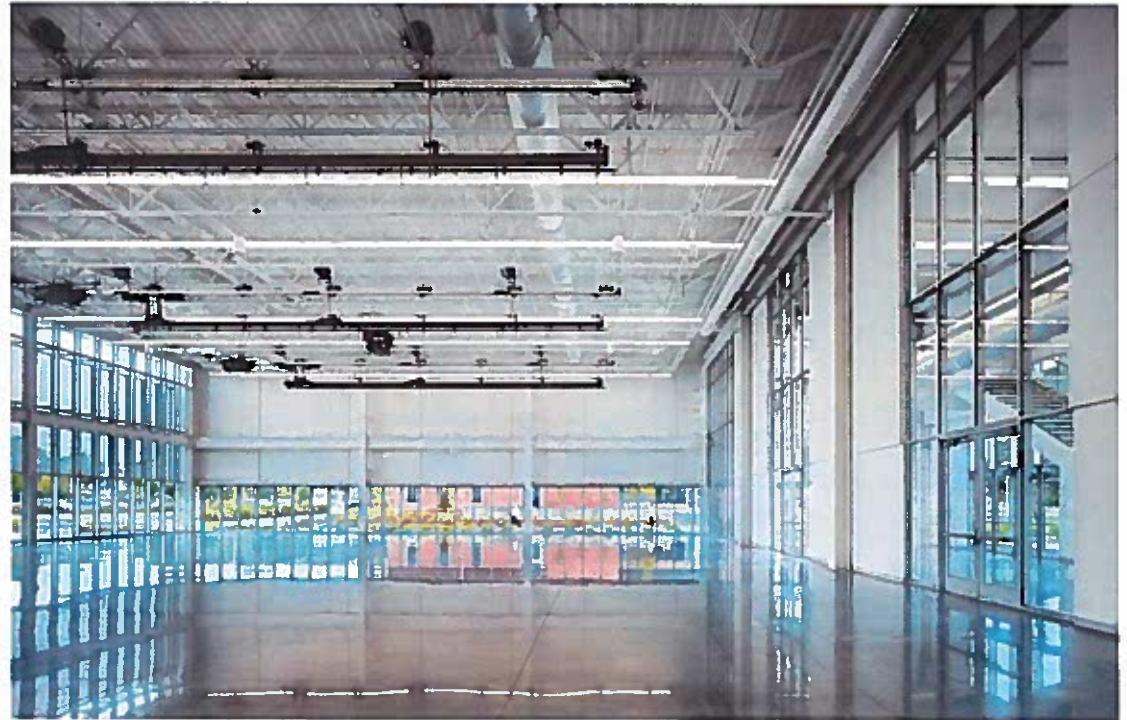
- Enhance learning outside the classroom
- Provide greater opportunities for collaboration among students and faculty
- Encourages ability for sharing of ideas
- Promotes “group think” for creative solutions
- Smaller spaces for private study
- Provides greater space for students to be interviewed by business and industry right on site



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Create “Flex Learning” and Innovation Hall

- Showcase student projects
- Allow business and industry to present new technologies and products tied to NMU programs
- Large overhead doors to bring in products and projects of all sizes
- Host job fairs, guest speakers, and other special events



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Enhance the Learning and Working Environment

- Welcoming to students, prospective students, parents, business and industry and the community
- Introduce more natural light coming into facility



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Transformation of Facility into Working Laboratory

- Buildings infrastructure – mechanical and electrical systems will become part of teaching environment
- Create “window” views into these systems



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Summary

- Project is key component of strategic plan of transformational innovation and excellence in facilities
- 38 year-old, 209,000 sq. foot facility is in need of major renovation
- Will significantly enhance the 8 career tech and engineering technology programs located in the facility
- Ability to help U.P. business and industry is far-reaching and dynamic
- Addresses growing need in the region



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Closing

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