CAMPAIGN FOR CIVIL AND ENVIRONMENTAL ENGINEERING

REIMAGINING THE UNDERGRADUATE TEACHING LABORATORIES
For more than 125 years, the Department of Civil and Environmental Engineering has provided comprehensive undergraduate and graduate programs focusing on sustainable built environments ranging from aviation systems to wastewater systems, critical infrastructure projects including bridges, buildings, environmental restoration, power plants, roadways, and water systems vital for economic growth and prosperity around the globe.

Our ABET-accredited undergraduate curriculum provides students with a strong foundation in environmental, geotechnical, structural, transportation and water resources. To remain current, we must significantly upgrade the undergraduate teaching facilities to include modern hands-on applications in virtual & augmented reality, structural health monitoring, drones & remote sensing, and smart pavements.

The department has identified 5,000 square feet on two floors of the historic HEDCO building as the new core for our undergraduate teaching laboratories. Our vision includes modern, dedicated laboratories for teaching hydraulics, cyber research, concrete mixing, student project/meeting space, and graduate student space. Plans also include a maker space with 3D printers, laser cutters and other modern hands-on equipment.

We are asking our alumni, industry partners, faculty and friends to help with a $2 million campaign toward total project costs of approximately $4M. The building, which was constructed in the early 1930’s, requires significant structural and seismic upgrades. Donations of $1,000 or more will be recognized on a permanent display near the entrance to the lab. Gifts in any amount are needed and welcome to complete the project.
We are pleased to announce a $1M leadership commitment from the Julie M. and David S. Layton Foundation to name the building in honor of Alan W. Layton. Raised in Davis County under humble circumstances, Alan learned early the value of hard work. A decorated World War II veteran, Alan returned from the war to rejoin his family and recover from injuries sustained in the Battle of the Bulge. The war had interrupted his pursuit of a Civil Engineering degree at the University of Utah, so faced with the pressures of providing for his young family, Alan took an engineering job with the Bureau of Reclamation. Restless in his job and with a desire to build his own dream, he started the Layton Construction Company in 1953.

Today, Layton Construction is a nationally ranked commercial contractor with proven experience in virtually every industry. The values of its founder: integrity, safety, quality and unity, continue to guide the company today. A leadership gift from Layton Construction will name the maker space.

Additional commitments to the project include a major gift from Clyde Companies for the naming of the Construction Materials Lab, and a combined gift from brothers Ralph and Grant Marsh for the Cyber Infrastructure Lab.
The development of a new, integrated curriculum will bring the power of cyber technologies to the maturing area of sustainability engineering, by integrating advanced computer-aided systems into transformative infrastructure projects. In the future, smart infrastructure will be capable of evaluating the performance of bridges, roads, buildings, and pipelines, and identify maintenance needs, provide rapid assessment after hazard events, identify functioning emergency routes, and prevent tragedies.

This new direction in the application of cyber technologies in sustainable smart infrastructure will place the University of Utah as a leader in sustainable engineering design practices among its peer PAC 12 Universities.
THE NEW LAB WILL ENABLE:

- Smart Infrastructure integrated as a theme into traditional disciplinary courses and emphasized in the *Introduction to Civil and Environmental Engineering* course

- A foundational course to develop essential skills in programming, sensor usage, data management, and analysis

- A new set of technical elective courses aimed at providing an undergraduate emphasis in cybertechnology applications for sustainable infrastructure

- Expansion of graduate courses covering key civil engineering research applications of cybertechnology

- MS certificate program providing training of emerging cybertechnology concepts for existing civil engineering workforce
**MAKER SPACE**

The freshman-level "Introduction to Civil Engineering" course will be getting a maker space for students to explore concepts vs. watching presentations and videos of engineering work. This space will allow instructors to develop novel experiments aimed at explaining the fundamentals of statics, materials, water resources, environmental processes, and cyber infrastructure. Plans include 3D printers, laser cutters and other modern equipment.

A technician office adjacent to the space will allow students to work on their own schedules and still have supervised access to tools and someone to assist them in their learning.

**HYDRAULICS LABORATORY**

Understanding the movement of water in pipes, canals, and rivers is essential for designing drinking and wastewater systems and ecosystem protection. As such, our hydraulics laboratory has been a staple in our curriculum for many years. The HEDCO renovation project will relocate the hydraulics lab that is currently housed in the Merrill Engineering Building. The move will consolidate all four teaching labs into one building making it easier for technicians and optimizing student lab experiences. It will also open up critically needed space in the Merrill Building for other departments whose labs are over-capacity.

**CONSTRUCTION MATERIALS LABORATORY**

Materials, like concrete, asphalt and others, are an important laboratory experience for Civil and Environmental Engineering students. Over time, the department has invested in the latest technologies that require modification of the existing space to ensure student safety and better access to these tools. The renovation will also provide space for the student ASCE concrete canoe along with an ADA entrance added to the south and emergency exit to the north.
PROJECT TIMELINE

Demolition was completed this spring on the 5,000 sq. ft. space. Construction is currently underway with a substantial completion date projected for summer 2022. Your donations now will help to create a modern learning environment for a new generation of civil engineering innovators and technology leaders.

In addition to construction costs, donations will provide the equipment, furnishings and experiments needed for a top notch educational experience.

For more information regarding the project, or to ask about naming opportunities, contact Josh Grant at josh.grant@utah.edu, or 801-585-7173.

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