BUILDING FOR THE FUTURE OF ENGINEERING

COLLEGE OF ENGINEERING

UNIVERSITY *of* WASHINGTON

Over the past decade, the UW College of Engineering has grown significantly to meet increasing student demand for an engineering education, and industry demand for qualified engineers.

However, relative to enrollment growth, our student-focused facilities footprint has not grown comparably, leading to a space shortage. As Washington's premier educator of engineers, the college continues to turn away large numbers of qualified applicants because we simply don't have the space to accommodate them.

Not only are we lacking enough space, but we lack the right kinds of space for today's interdisciplinary, collaborative engineering education. As the ways we teach and do our research evolve in response to the changing needs of the engineering industry, our spaces must also evolve. In this regard, much of our existing space is in critical need of renovation and modernization. To meet the requirements of Washington students and industry, we must expand and update our footprint. With your help, we can provide the learning and research spaces that best support future Washington engineers.

UW Engineering: Providing Washington's Leading Engineering Education

With a mission to develop outstanding engineers and ideas that change the world, the College of Engineering graduates more than 50% of the state's new engineers. Since 2009, the college has partnered with the state to grow more than 65% in total degrees granted annually — from 700 to 1,200+ bachelor's degrees, and from 500 to 850 graduate degrees — and we are working to continue that growth.

In addition to this overall growth, responding to the needs of our students, the college inaugurated Direct-to-College (DTC) admission in 2018. Students who previously matriculated to the college as juniors now enter the UW as engineering majors, making us responsible for more than 800 first-year students each year. Because of the DTC process, a group of Washington's most outstanding students — who in recent years increasingly had gone elsewhere in order to be assured of admission to an engineering program — opted instead to come to the UW.

Far beyond a simple administrative change, DTC represents not just the need to house freshman and sophomore classes and programs, but a profound opportunity to transform our engineering education from the moment these freshmen step onto campus.

To meet the requirements of Washington students and industry, we must expand and update our footprint.

In particular, we are pursuing more project-based learning, cross-college interdisciplinary teamwork, improved diversity, increased symbiosis with industry, and more—all in support of preparing our students for the engineering careers of the future.

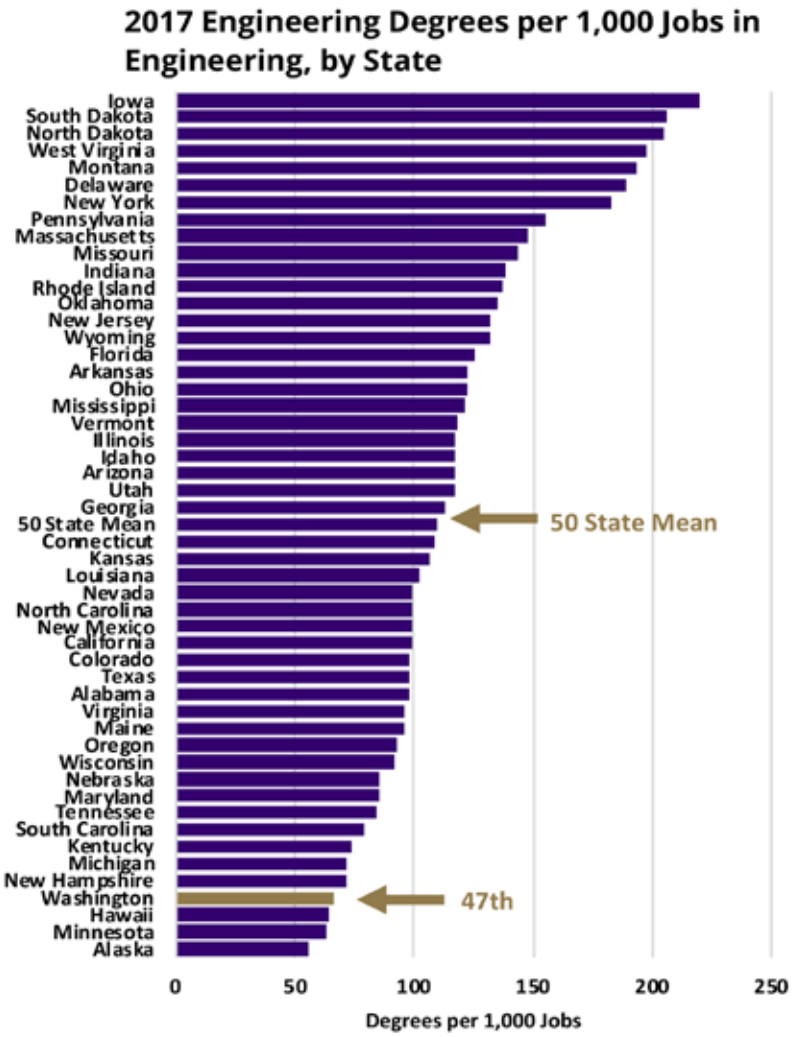
Space Limitations and the Need for Growth

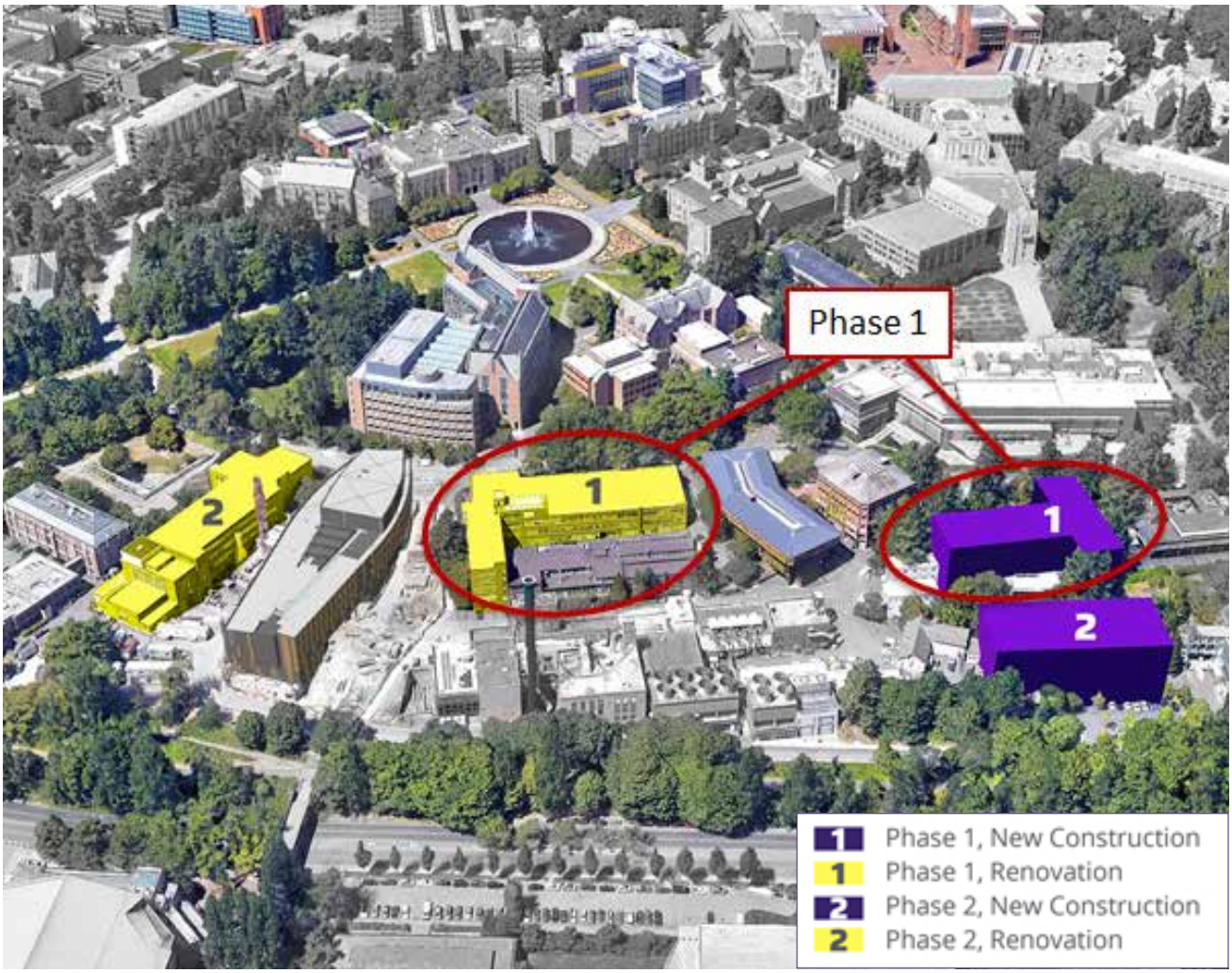
In the past decade, we have leveraged public and private funding to build two new state-of-the-art facilities: the Molecular Engineering & Sciences/Nanoengineering & Sciences research complex, and the Bill & Melinda Gates Center for Computer Science & Engineering.

Our ability to expand further is limited by space constraints. Looking ahead, the demand for engineering degrees will only increase: while five of the top 10 first-choice majors of UW incoming freshmen are in engineering, Washington ranks 47th in the nation in the production of engineers relative to the size of our engineering workforce.

To meet the needs of our students and the state, the UW must educate more engineering students, and more space is needed for us to do so — particularly, space that allows us to provide the kind of education our students need for success in the engineering industries of the present and future. Specifically, this space must enable the collaborative, project-based learning that happens in dedicated project space, research labs and instructional labs.

The college's core engineering facilities are currently stretched past capacity, and many of its 25 buildings are outdated, with classrooms and laboratories designed for the traditional educational style of the past. We have reached the limit in terms of the number of students we can safely accommodate in our labs; without more research and project space, adding more instructors and more students becomes counterproductive. Finally, in addition to building new facilities, we must upgrade our existing facilities, such as the Mechanical Engineering Building, More Hall and others, to meet the needs of contemporary engineering education.





A Home for the Engineers of the Future

UW Engineering's goal is to grow not only in terms of numbers, but to become more inclusive, collaborative, innovative and adaptable, with programs supported by facilities rivaling or exceeding those of our peer institutions.

To support this vision and align the college with its peers in terms of facilities, the college partnered with an architectural consulting firm to assess the college's space needs and to develop strategies to fulfill the college's teaching and research space needs going forward. The study identified the need for 349,000 additional square feet to meet current and anticipated growth and recommended building two new college-wide facilities, and undertaking renovations to several existing buildings.

Based on these recommendations, the college retained a local architecture firm to develop a 10-year facilities plan in accordance with UW Capital Projects and the state's legislative request timeline. The next phase of the college's facilities plan includes **constructing a new, interdisciplinary engineering building and making upgrades to the Mechanical Engineering Building (MEB).** These projects will provide an academic "home" for all undergraduate engineering students, as well as additional faculty-student research and project collaboration space.

By providing the silo-free learning environment and program space that students need to prepare for industry and entrepreneurial careers (see sidebar, "Transformative Spaces"), this facilities project will relieve pressure on departmental facilities across the college. Dedicated space for industry-sponsored capstone projects will strengthen connections between the UW and industry, opening doors to post-degree employment for students and faculty-student translational research. The new building will also house programming for leadership, diversity and access.

Upgrades to the MEB will support interdisciplinary research programs (such as the Boeing Advanced Research Center [BARC], and the Engineering Innovation in Health Program) and cross-college student projects (i.e., Robotics, Formula Motor Sports, EcoCar) traditionally housed in this department, while enabling the ME department to grow to meet the high demand for Mechanical Engineering education at the UW.

A subsequent phase of the college's facilities plan will include a second new building and a renovation of More Hall; additional, department-based renovations will continue concurrently as the overall plan progresses.

Together, these planned construction and upgrade projects will enable UW Engineering to provide more access for talented Washington students, while building on our current educational excellence and innovation.

Below: Architect's rendering of possible design elements in new engineering building.

The Time is Now to Invest in Washington Students

The state has approved design funding. Now, to launch the first phase of the facilities plan, we seek private philanthropic investments totaling $50 million, **which will lay the groundwork for another request to the state legislature to meet the estimated project cost of $100 million.**

We are at a pivotal moment. Your support will help supply our students with learning environments that will:

- Enable us to grant more UW Engineering degrees to talented Washington students;
- Provide an educational "home" for cross-disciplinary courses and programs;
- Encourage the interactions that are critical to sparking new ideas;
- Develop students' talents in premier teaching and learning spaces, laboratories and makerspaces; and
- Facilitate engineering discovery by housing state-of-the-art faculty labs and office space.

We invite you to partner with us. For more information, contact Judy Mahoney, Associate Dean for Advancement, at 206.685.8629 or jkm7@uw.edu.

Thank you for your interest in the College of Engineering.

Transformative Spaces

The proposed facilities project will add the following types of spaces:

- **Classrooms**—flexible and designed for active learning
- **Curriculum lab space**—classrooms that include specific types of lab equipment required for accreditation
- **Project space**—designed for flexibility, with movable furniture and open floor space, to enable hands-on learning from design to solution
- **Student space**—dedicated informal gathering space for students to meet, study and collaborate
- **Research lab** space for faculty and student teams
- **Offices** for faculty and student support staff

BE BOUNDLESS

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