

Higher Education

Seattle's U District housing boom

How to make master plans that work

Sustainable student housing



SEATTLE'S U DISTRICT HOUSING BOOM: IS THERE ROOM FOR IT?

Upzones in the U District have resulted in a housing boom for students.

Thousands of student-focused beds are coming online in the next few years in Seattle's U District. With the recent upzone, many of these beds will be in new high-rise towers, a burgeoning product for this neighborhood. The big question here is, will there be enough demand?



BY AMANDA KEATING WEBER THOMPSON

My answer is yes.

With the Link light rail station opening on the corner of 43rd and Brooklyn this fall, having a new fast and reliable option for public transportation will keep students and graduates in the U District longer, and attract those who can't afford to be closer to the downtown core, but don't want to be in the suburbs.

Critical to this postulation is the fact that this neighborhood was "upzoned" a few years ago, allowing, and incentivizing much taller buildings to be built. Depending on the location, the zoning now allows for either a 240-foot or 320-foot-tall tower, rather than the previous height allowances of 65 feet or 85 feet.

The opportunity to live in a residential tower outside of downtown or South Lake Union, and within very close proximity to the Link, is a strong draw to both students and non-students. Even through the murky lens of the COVID-era, it's crystal clear why anyone, not just a student, would want to live in this vibrant neighborhood, especially with Link light rail as your transportation foundation. Soon, in just a couple of years, the East Link will be open, connecting to Eastside tech job hubs in minutes.

With the opening of the new Link station, the U District will be one of the most well-connected neighborhoods in Seattle. It's



Designed for a neighborhood with an evolving aesthetic, the Lakeview Residences tower will provide Seattle's U District with 597 beds by the end of 2022.

IMAGE COURTESY WEBER THOMPSON/GREYSTAR

already situated on the 19-mile Burke-Gilman Trail, which runs from Golden Gardens to Woodinville and all neighborhoods in

between.

A new student-focused project opening fall 2021, Trilside, is located directly adjacent to the

Burke-Gilman Trail and takes advantage of this amenity by providing public pedestrian and bike access to the trail itself.

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A student-targeted residential community near the University of Washington, the Trailside Student Housing development is a two-phased project that will become a new place for students to call home.

IMAGES COURTESY BOGZA/PHOENIX PROPERTY CO./WEBER THOMPSON

Generous open space adjacent to the access path defines the southwest corner of this site, a strong example of improving and building upon the existing fabric of the U District.

Easy access to the neighborhood isn't its only attribute. With increased density and a changing demographic, there will be more demand and support for neighborhood lifestyle amenities including pedestrian-level open areas, restaurants, retail and entertainment. The challenge will be preserving the long-established diversity of this historic neighborhood.

Growth and development must work in concert to preserve the U District's eclectic, funky charm. Its "village within a city" vibe is what drew people here in the first place. If viewed as an oppor-

tunity to support and strengthen existing fabric, rather than price-out or otherwise remove it, the neighborhood will thrive. If this is not carefully considered, however, the danger of becoming a sterile, homogeneous neighborhood is a real threat.

One way to have positive impact on the neighborhood streets themselves is to provide either publicly accessible open space onsite or large front porches where people will have a presence on the street, providing the proverbial "eyes on the street" for both safety and vibrancy.

An example of reinforcing the fabric of an existing residential street is the 21-story Lakeview Residences, currently under construction. This project has a porch adjacent to the front

entry, providing an opportunity for residents to hang out on a perched and weather-protected spot along the street edge.

There will always be a place for fully amenitized student-focused housing developments within Seattle's U District. This is especially true when appealing to parents of said students, who are prioritizing studying and safety for their child. That said, I expect to see more developments that are student-friendly as opposed

to student-focused; this shift could broaden the appeal to transitional recent grads, those who want to live in the neighborhood but aren't students or have yet to begin their higher education pursuit, and students from nearby colleges.

Thanks to the new Link light rail station and easy access to the Burke-Gilman Trail, the U District will be a less isolated "student only" district. It has the potential to ease the transition

for a full-time student to one with a job. As I see it, the U District is still growing up (literally) just like the many young people who pass through the neighborhood on their way to adulthood.

Amanda Keating is a senior principal at Weber Thompson who oversees the firm's student housing studio. The firm is currently working on a half dozen mid- and high-rise projects in Seattle's U District.

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SHORELINE COMMUNITY COLLEGE STUDENT HOUSING

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ON THE COVER

Bellevue College opened its Student Success Center last year. Turn to page 11 to learn how campuses are evolving.

PHOTO BY FRANCIS ZERA

2021 HIGHER EDUCATION TEAM

SECTION EDITOR: SAM BENNETT • SECTION DESIGN: JEFFREY MILLER
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SOURCING REGIONAL MATERIALS FOR HIGHER ED

Agricultural complex fosters mass timber industry connections.

At FFA, we understand architecture is about making connections.

In 2018, FFA was hired to design a new, highly sustainable agricultural complex for Chemeketa Community College. For the project, using materials from



BY EDWARD RUNNING

FFA ARCHITECTURE & INTERIORS

the region was key to the college's goals and design intent. During the visioning process, we determined the best way to achieve this aspiration was to use locally sourced mass timber.

To make mass timber a reality, the project team fostered connections among the design, construction and timber industries in our region. Along with FFA, these groups included Swinerton, the project's general contractor, Freres Lumber, the project's mass timber manufacturer and supplier, Chemeketa

Community College, and the UO/OSU Tallwood Design Institute, a beacon of mass timber research and education for our region and beyond.

On a project with a fixed budget, Swinerton played a vital role in finding the most efficient use of mass timber. With the agricultural complex consisting of single-story structures, the original design intent was to use glue-laminated timber (glulam) columns and beams to support a cross-laminated timber (CLT) roof.

Through a collaborative design process, Swinerton was able to recommend the new mass timber product, mass plywood panels (MPP), as the most efficient and cost-effective roof system. The thin individual laminations of plywood that make up the panels allow for smaller incremental changes to MPP thickness. These can be increased or decreased depending on structural demands. Using a rigorous small-span structural grid, the design team reduced the roof MPP thickness to just 2 inches for much of the building.

Mass plywood panels and glulams will be on display in the lounge of Chemeketa Community College's Agricultural Complex.



IMAGES FROM FFA ARCHITECTURE & INTERIORS

Understanding the physical performance of MPP was only part of the process. The design team discovered employing MPP on the agricultural complex had inherent aesthetic, sustainability

and financial benefits. Oregon-based Freres Lumber is the lone MPP manufacturer in the world and its facilities are less than 30 miles from Chemeketa Community College's Salem campus. The near location greatly reduced delivery distance compared to other building materials and helped support the region's economy.

The reduced transportation footprint and the fact that MPP is made from renewable timber and plywood veneers which make more efficient use of raw tree material than sawn lumber, makes MPP an environmental choice.

As soon as MPP was proposed as a possibility for the project, the team worked together to better understand potential challenges. FFA and Chemeketa visited Freres' Lyon, Oregon, manufacturing facility. There they were able to discuss project goals, learn more about the MPP manufacturing processes, and gain a fuller understanding of the options available for use as a finished product.

Fostering this relationship helped increase the college's comfort level of using a new product with a unique visual appearance. Understanding the goal of putting a key local agricultural product on display, FFA and Freres were able to work together to accommodate a higher-grade finish veneer on the exposed underside of the panels. Together, the team was able to deliver a clean, hardworking aesthetic that suits the "roll-up-your-sleeves" nature of the agricultural academic program.

The relationship between Chemeketa and Freres helps both the region's education and

timber industries. Chemeketa has a great legacy as a community educator and serves local industries with a strong talent pool. As they better understand the latest innovations in mass timber and the direction of the industry, they have the option to tailor and expand their education services to align with industry goals. Freres and Chemeketa intend to remain allies well beyond the construction life of this project.

On several occasions, the design and client team hosted Judith Sheine, the design director of the Tallwood Design Institute (TDI), and students from the University of Oregon for site tours during the construction process. TDI is the leading resource for mass timber research and education for both students and industry professionals. Having previously connected with TDI, the Chemeketa Agricultural Complex provided FFA and Swinerton with a unique opportunity to build on an existing relationship.

During the site visit, TDI was able to document unique details about the use of MPP because it was still exposed. They had the opportunity to ask the design and construction teams specific questions in real time. FFA will continue to engage with TDI by reviewing student projects and sharing design documents for the agriculture complex as well as other firm projects that use mass timber. Our goal is to support them as they continue to build industry knowledge around developing mass timber products.

The Chemeketa Community College Agricultural Complex grand opening is scheduled for late summer 2021. The now-



DESIGNING TOMORROW'S FUTURE

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The complex is expected to open in late summer.



FFA and Chemeketa staff toured Freres Lumber's plant to learn more about mass plywood panels.

complete net-zero project is a testament to innovative sustainability. Situated on an 8-acre site, a 15,000-square-foot academic building houses flexible learning and research areas along with working spaces for students, faculty, staff and partners. The primary structural system for the main and outer buildings

features MPP and glulams. A light-filled, double-height space will be the collective center of the main building with views out through a large glass wall and an overhead door that will open onto demonstration gardens to the south. A covered arcade protects the building along the south facade with a photovoltaic

roof structure serving as a shelter and to harness energy from the sun to support the building.

All collaborators are excited to showcase a building that highlights the use of exposed MPP. The Chemeketa Agricultural Complex is a local resource for future project design teams and a place to display what has

typically been a more industrial product, in a high-quality academic building environment. Mass timber products are often seen as an alternative to concrete and steel and are often proposed on multi-story projects. The agricultural complex illustrates how MPP is a viable choice for smaller projects with

limited budgets, and a showcase for mass timber in the Pacific Northwest.

Edward Running, associate partner, is a project manager and designer with 23 years of experience in higher education, corporate, public and residential projects.

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NEW DESIGN REQUIRES THOUGHTFUL PROGRAMMING

Delivering more building for the budget using design-build at University of Washington Bothell/Cascadia College STEM 4.

As Seattle's higher education institutions compete with other regions to attract the "best and brightest" students — the ones who will find the cure for our most challenging diseases or invent the technology that revolutionizes the way our community functions in the future — they must do so with talented faculty, noteworthy programs and with state-of-the-art lab and learning space.



BY BRIAN ASKE
LEASE CRUTCHER
LEWIS

In Bothell, Cascadia College and University of Washington Bothell joined forces, and funds, to create an educational resource that is fully integrated to educate their students in science, technology, engineering and math. Once complete, the 80,000-square-foot facility will feature classrooms, labs, collaboration space and facilities for biology, chemistry and physics. One of the goals of the project is to build a facility with the most instructional space possible, so more students from both institutions have access to educational resources.

After the successful completion of the Hans Rosling Center for Population Health — by Lewis and UW Seattle — Lewis has teamed with a new partner on this project, Mithun, to implement a similar integrated approach to deliver a state-of-the-art facility with the largest instructional space possible for UW Bothell and Cascadia College stakeholders

TRUSTING THE PROCESS

While the institutions share other space on campus, STEM 4 will be the largest and most complex jointly used facility and requires thoughtful programming and design solutions. These solutions have evolved from skillfully led working sessions with a variety of stakeholders. Those stakeholders needed to be aligned around not just their institutional needs, but also for the overall success of the project.

As a progressive design-build team, Lewis, Mithun, their trade partners and consulting engineers have worked with those stakeholders to identify what success looks like, then design and build a project that specifically meets those goals — eliminating wasted resources,

STEM 4 will be an 80,000-square-foot facility featuring classrooms, labs, collaboration space and facilities for biology, chemistry and physics.



RENDERINGS COURTESY OF MITHUN

optimizing time and money.

Since the entire team is aligned to meet the owner goals, each specialty is working towards a shared vision of success — including building size — meaning there is no need for redesigns, rework or value engineering later in the process. Now, every resource, be it funding, expertise or time is focused on providing the best possible value for the project and client.

IDENTIFYING POSSIBILITIES

To help University of Washington and Cascadia College stakeholders identify and understand the right program size for their building, the design-build team collected and compared historical cost data from similar higher education facilities in the area. Then, the team adjusted the data to account for escalation, location and changes in building codes to create reliable benchmarks and help set realistic expectations for the owner team, while setting target values to guide the design-build team.

Aligning the program and building size to the budget before design begins gives the team the right starting point make strategic design and programming decisions, while eliminating the need to value engineer important aspects of the building later in design.

HELPING OWNERS

Through transparent collaboration between the design-build team and the institutions, the team will proactively track and manage risks throughout the project, meaning unused contingency can be reinvested back into the building. By identifying and mitigating risks early at the STEM 4 project, we were able to develop the confidence with the owners to design a larger building than the initial benchmarks indicated would be possible. The team also maintains certainty that the project will be finished on budget while maximizing the amount of new lab space added to the campus.

The design-build team considered several building sizes and footprints to understand how they fit the site and the cost implications for each option. Since maximizing instructional square footage was a primary goal for our owners, the design-build team presented several options with varying building size; the bigger buildings met the owner goals, but also put a small portion of the interior buildout at risk — meaning some of the finishes would be funded through contingency that would be reinvested in the building as design and construction progressed.

In a traditional delivery method, project risks are divided amongst each stakeholder and trade partner. To manage risk, each stakeholder holds their own contingency to cover their risk throughout the project. Typically, there is little team alignment on managing that risk, it is up to each individual partner to manage risks associated with their scopes.

However, a progressive design-build delivery allows all stakeholders — including the owner, design-build team and trade partners — to combine and manage risk and contingency together. The UW Integrated Design-Build contract takes this a step further and creates a Risk Reward team comprised of the builder and certain designers and trade partners. The team puts their fee at risk to incentivize everyone to work towards a common goal to get a proportional reward. By doing so, the team can more effectively manage risk and reinvest contingency back into the project, rather than return that funding as savings too late to be meaningfully invested into the building.

Together, the institutions and the design-build team collaborated to settle on a base program that maximized the size of building with some level of the interior buildout at risk, understanding that through thoughtful

ful risk management, the team could likely reinvest the funds later in the project.

The design-build process has proven to be an important tool for higher education institutions looking to get as much building as possible for their funding, while tailoring the program to the unique needs of the students, researchers and faculty who will use it. The benefit comes from constant communication, a shared vision and complete transparency from the entire team.

The UW Bothell and Cascadia College STEM 4 building is set to complete in the fall of 2023 and will provide both institutions with a building that is 12% larger than the historical benchmarks indicated, with more instructional space, serving an additional 72 full-time students year after year — meaning more lab, classroom, collaboration and faculty space for both institutions. The project is another example of how innovative project delivery can have a direct and positive impact on fulfilling the mission of higher education.

Brian Aske is the education market director at Lease Crutcher Lewis and past president of the Northwest region of the Design-Build Institute of America.

EARLY-STAGE DESIGN HELPS HERMANSON WITH UW CENTER

Progressive design-build method delivers UW project on time and under budget.

The University of Washington's Hans Rosling Center for Population Health on the Seattle campus is complete and awaiting the return of students, faculty and staff to the new 300,000-square-foot building.

The first UW project of its size to use the progressive design-build delivery approach, the building features spaces for collaborative group work, active learning, offices and training spaces for population health sciences programs, including the Institute for Health Metrics and Evaluation,



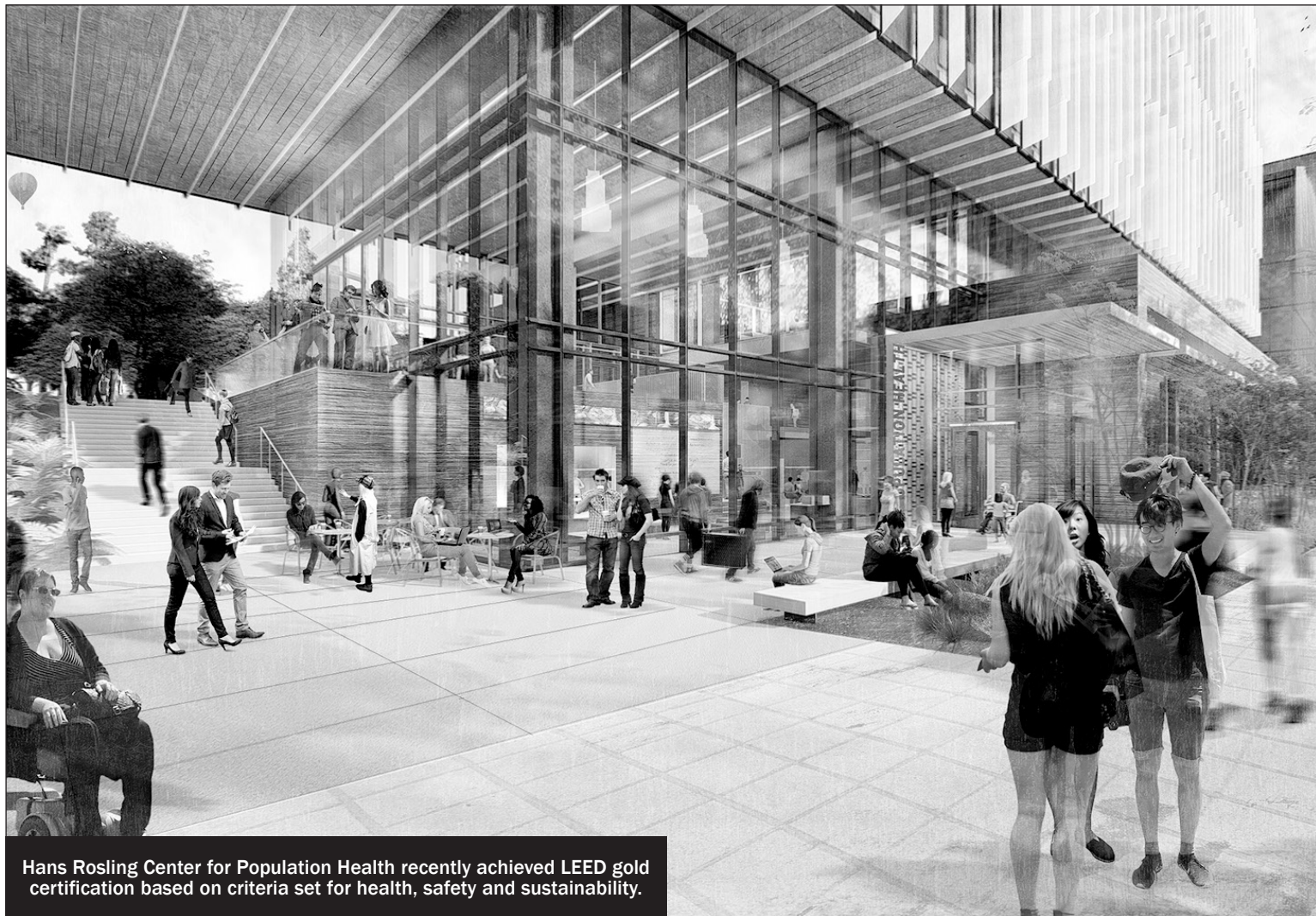
BY ERIC VAN DER VEEN
HERMANSON CO.

the Department of Global Health, portions of the School of Public Health and the university's Population Health Initiative.

Under the direction of UW's associate vice president of capital planning and development, Mike McCormick, the university was already moving toward progressive design-build delivery method when the state Legislature passed HB 1295 in 2019. The bill allows public entities to use progressive design-build as "an evaluation factor that impacts costs which may include but is not limited to overhead and profit, lump sum or guaranteed maximum price for the entire or a portion of the project, operating costs, or other similar factors that may apply to the project" then progress through a design to a contract value with the selected firm. McCormick had previously integrated design-build methods at Brown University to help ensure the lowest total installed project costs and maintain design excellence.

In progressive design-build, the mechanical and plumbing contractors collaborate with the architect, engineers and owner from the early design stage to provide comprehensive performance, quality and cost information to the owner, enabling them to make informed decisions through a best-value scoring system. Through project completion, the mechanical design-build team works in partnership with the prime design-builder and owner towards common goals for the project. In this method, competing interests are minimized, decisions can be made faster to reduce design time, and an accurate budget can be locked in much earlier, which is important in this volatile time of labor and material escalation risks.

The Rosling Center recently



Hans Rosling Center for Population Health recently achieved LEED gold certification based on criteria set for health, safety and sustainability.

RENDERING BY MILLER-HULL PARTNERSHIP

achieved LEED gold certification based on criteria set for health, safety and sustainability. Hermanson was responsible for the piping and plumbing of the rainwater catchment system that collects, filters and reuses a minimum of 75% of the rainwater that lands on all the flat surfaces of the building. That water is used in 100% of the flushing of all toilets and urinals and is connected to a dashboard that presents data, flow rates and water savings for proof-of-concept sustainability studies. Hermanson and PAE staff worked with the UW campus sustainability group to design the dashboard.

In response to UW's desire to incorporate innovative practices in their design, Hermanson facilitated the use of multitrade racks (MTR) between sheet metal, mechanical piping, electrical and ceiling contractors. Hermanson designed MEP coordination and installation by "flying" the rack through the side of building. The MTRs provided safer working conditions in a controlled shop environment, reduced parking and construction activity on campus, minimized the space needed for trade workers on the site, and provided architectural

design predictability.

The use of progressive design-build resulted in a project delivered ahead of schedule, under budget and without overage claims. Transitioning from the traditional MCCM (mechanical contractor as construction manager) delivery, Hermanson partnered with PAE from the earliest design stages to identify and integrate potential efficiencies in the construction process.

"The university also created a risk-reward incentive program based on achievable project milestones," noted Ruth Baleiko, Miller-Hull partner. "The program spurred further collaboration and innovation between the project partners and generated an additional level of 'skin in the game.'"

The project's success has resulted in the same design team of Lease Crutcher Lewis, Miller-Hull, PAE and Hermanson being awarded UW's Health Sciences Education Building once again as a progressive design-build delivery approach.

Eric van der Veen, Hermanson's hotel, highrise and office business unit leader, was responsible for securing this project in his former role of account executive.

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HOW TO MAKE MASTER PLANS THAT WORK

There are four basic principles to make a master plan work.

Master planning projects are complex, lengthy and critically important to “get right” for their communities, users and investors. A successful master plan focuses on four basic principles:

Placemaking. The best master plans create a framework of blocks, streets and open spaces where people not only show up but also like to be. The design must keep the entire site at a pedestrian scale, so people feel comfortable and engaged. It must activate the plan area edges, so they become part of the vibe even before people enter the core. Connecting everything smoothly to parking and local transit ensures visitors can come and go with ease.

Density management. Dealing gracefully with the implications of density can be the difference

between a plan a community welcomes and one they avoid. Whether the site is residential, commercial, or both, the master plan team must develop that optimal scenario between the buildings’ necessities and their size. Parking and infrastructure must also be carefully considered, with nothing overlooked and room enough to grow and evolve as the popularity of a project increases and transportation options shift.

Partnership. Achieving large-scale plans involves many players all working toward the same goal with minimal friction. Success stems from the ability to integrate with diverse teams in a deeply collaborative approach where everyone has a voice and no egos come to the table. Collective thinking leads to plans that cover all the bases and represent the needs of all partners and stakeholders.

Foresight. Master plans that stand the test of time accommodate social trends, community health and connectivity across generations. Planning for today and tomorrow also means allowing for alternative transportation



Adjacent to the future downtown Redmond light rail station, Redmond Square is a transit-oriented master plan featuring a central pedestrian passageway.

RENDERING COURTESY OF TISCARENO

options, using sustainable building materials, integrating the natural environment wherever possible, and offering designs that remain timeless in their beauty.

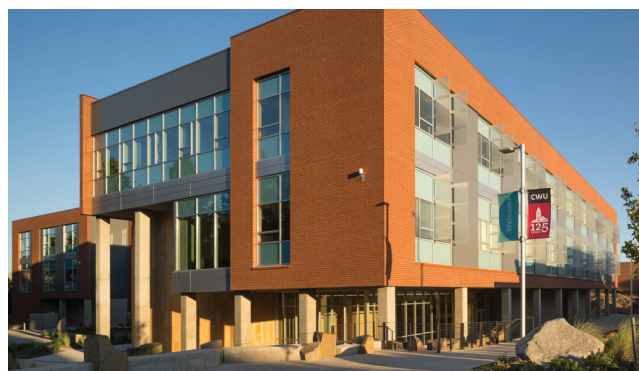
To see how these principles apply in the real world, let’s take a look at Redmond Square in Redmond. This is a newly

approved second and third phase transit-oriented development master plan project comprising of two mixed-use, six-story buildings over two city blocks. The site is adjacent to a completed first phase single-block development on the edge of the downtown core, with connections to the adjacent under-

construction light rail station integrated into the plan.

Its placemaking is reflected in the many opportunities created for people to interact outdoors, with sunny and shaded plazas, lush urban landscaping, and inviting small-scale retail and

MASTER PLANS — PAGE 16



We are campus builders

Lydig has completed over \$1 billion worth of higher education construction projects in Washington. We know what it takes to build safely on a busy campus without disrupting students or faculty. Our experience spans state-of-the-art teaching and research facilities, on-campus residential communities, athletic complexes, performing arts centers, and historic renovations. We are proud to build facilities that support groundbreaking research and encourage collaborative learning and exploration.

Learn more about the higher education projects we’ve built at lydig.com.



THE POST-PANDEMIC EDUCATIONAL LEARNING CURVE

Focus should be placed on ensuring students all have equal access to the same spaces, tools and technologies.

When the world came to a screeching halt a year ago, little did we know how much would change in our daily routines in how we work, in how we live and in how we learn. The pandemic forced our teachers, students, parents and educational institutions to adapt to new, fast-tracked, hybrid and remote learning models that hadn't existed at such a scale before.



BY DONNA BARRY
GENSLER SEATTLE

Within a short time, we've experienced an unprecedented shift and are now looking at lessons learned and reimagining what a more resilient and equitable education system could look like moving forward.

We at Gensler recently published our design forecast for the year ahead, exploring trends, insights and advice on how we can address the tactical challenges brought on by the pandemic. Following are some of the trends we foresee continuing post-pandemic:

HYBRID LEARNING

Providing a choice between virtual and physical learning environments is critical in supporting equal access to seamless digital and physical experiences. Hybrid academic environments must be adaptable to support every learner, while keeping up with constant change. Single-use spaces will be a thing of the past, and instead will have multiple lives as they evolve and adapt.

DESIGN TO THE EDGES

Institutions must move away from designing one optimal experience for all students and instead focus on designing multiple, diverse pathways so every learner is welcome and feels a sense of belonging.

TALENT DEVELOPMENT

The repositioning of the talent pool toward marketable and adaptable skills is accelerating. To drive economic vitality, education is taking cues from industry to incubate talent and boost job placement. The emergence of unlikely collaborations across fields of study, industries and departments has expanded the definition of interdisciplinary culture and will better equip institutions to tackle complex

challenges operationally and academically.

DATA INFORMED

As competition for students and funding increases, institutions are focused on measurable success and impact. A focus on the user experience facilitates an increase in resource allocation, enhancing opportunities for student and faculty recruitment and retention, grants, funding, academic performance and partnerships.

RESILIENT CAMPUS + COMMUNITIES

The campus is no longer an isolated bubble. The triple bottom line for educational institutions — social, economic and environmental — will require a holistic approach to resilience related to sustainability, wellness, and operational and technological preparedness.

VALUE OF PLACE

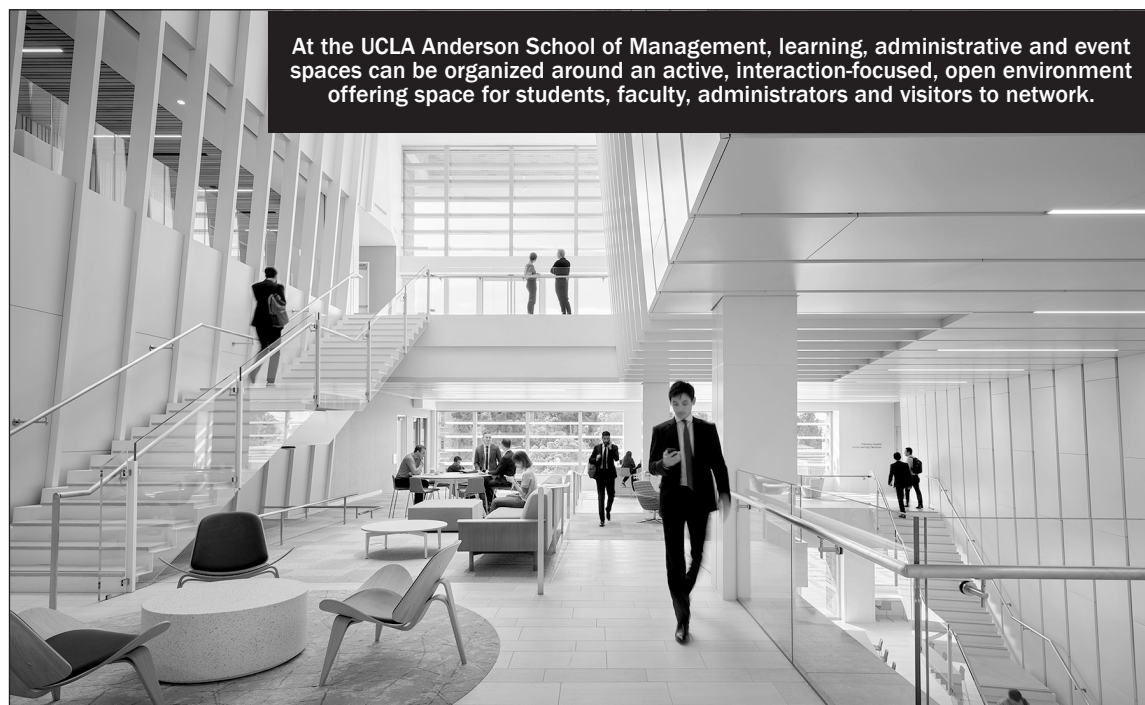
Virtual access to knowledge continues to evolve, but in-person experiences are essential for cognitive skills, social and emotional relationship-building, and igniting inspiration. As learning moves online, in-person experiences and culture must be even more impactful for students connecting with each other, faculty and the larger world context.

As we continue to explore possible solutions for an evolved academic system, the key element connecting all these potential solutions — and quite honestly, the most important — is the student. While teachers and parents are certainly grappling with a myriad of challenges themselves, students are the most impacted and will experience the most lasting effects, whether to their social, emotional or physical well-being.

When we finally are living in a post-pandemic world, how can we future-proof our schools so we are better prepared for the next pandemic or societal challenge? How can we evolve the design of our schools to enhance the student experience and foster learning and success? After spending months studying the shifting space needs at colleges and universities during the pandemic, Gensler identified four key design strategies that are shaping the next generation of campus buildings:

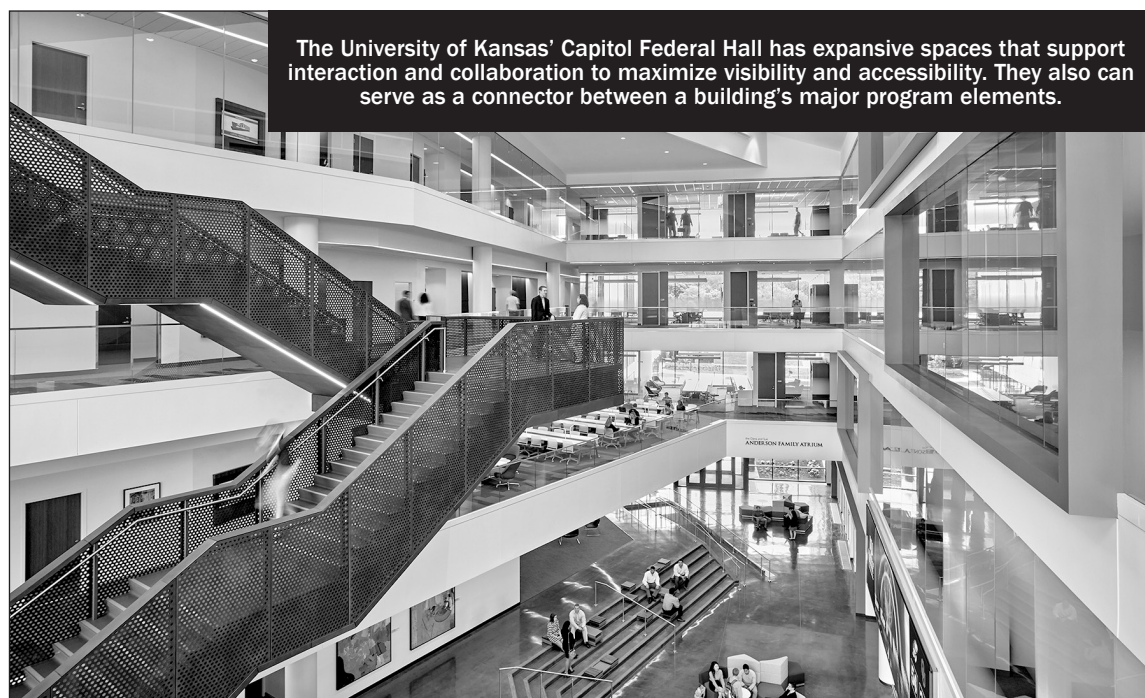
COMMUNITY

Campuses must support the



At the UCLA Anderson School of Management, learning, administrative and event spaces can be organized around an active, interaction-focused, open environment offering space for students, faculty, administrators and visitors to network.

PHOTO BY RYAN GOBUTY



The University of Kansas' Capitol Federal Hall has expansive spaces that support interaction and collaboration to maximize visibility and accessibility. They also can serve as a connector between a building's major program elements.

PHOTO BY GARRETT ROWLAND

“whole student” and prioritize programs that target physical, social and emotional well-being. Providing spaces to support interaction and collaboration and locating services to maximize visibility and accessibility are paramount. A combination of digital platforms integrated with physical space will bring the most value for human connection and enhance the learner's sense of belonging.

MULTIDISCIPLINARY INCUBATORS

Academic incubators and interdisciplinary spaces support entrepreneurship. These environments and support networks will continue to evolve

and will be even more vital to diversify the economy and provide an engine for growth in the community. Spaces that bridge industry and academia and fuel workforce development, R&D, and innovation will continue to pervade education.

TECH-ENABLED COLLABORATION AREAS

Despite advancements with online communication and whiteboarding programs, face-to-face collaboration sessions are still supreme. Academic buildings will transition into places of gathering, where groups can meet, learn and create together. Flexible space supports dynamic,

in-person collaboration. These hyper-flexible and tech-enabled learning environments provide choice based on how learners and educators best engage between virtual and physical space.

REIMAGINED LECTURE FORMATS

“Flipped classrooms” started trending from a unique question: Why pull students together in a 1,000-seat lecture hall to sit in a non-interactive environment when you can record (or live broadcast) it, and have those students instead listen to the lecture from their dorm room

LEARNING CURVE — PAGE 16

THE EVOLUTION OF CAMPUS, A NEW NORMAL FOR HIGHER EDUCATION

Institutions are looking beyond traditional delivery models and the typical classroom.

What initially began as a listening exercise to understand the pandemic across the higher education sector has blossomed into a framework for a design practice and, most importantly, a driving force for sweeping change across the industry.

Members of DLR Group's higher education team are conducting an ongoing national research study, engaging with more than 170 institutions through one-on-one interviews across every aspect of campus. Along the way, we're gathering input from students, faculty, staff and administrators as we discuss ways in which campuses have responded to the events of the past year and will continue to evolve into the future.

During this research effort, we are exploring approaches taken by many institutions nationwide, including the Pacific Northwest, for rethinking design now, for the future. The adaptation of the built environment is playing a critical role in the future of learning, student success, and access to education. At this pivotal junction, institutions are looking beyond traditional delivery models and the typical classroom, to embrace technology in a way that connects the world in a seamless exchange of knowledge sharing for the next generation of students.

Academics: Institutions are reevaluating student and faculty needs, driven by expectations about the campus experience. Parameters for time, accessibility, and flexibility will collectively reshape the environments for learning and research. Ramifications of the pandemic have taught us that learning has — and will — rapidly expand beyond the traditional classroom.

Planning: Beyond the building, campuses facilitate strong relationships between architecture and sociology. In many cases, a student's campus experience is the time to build character by learning from a diverse network of peers, exploring new passions and living independently. Planning for a resilient future of the campus experience gives

institutions the tools to embrace an ever-changing world.

Work spaces: A remote-renaissance has paved the way for campuses to think critically about the value and purpose of work environments. These may no longer be assigned based on title alone, but instead focus on meaningful, collaborative and social environments where people come together for intentional reasons.

LOCAL PERSPECTIVE

The Northwest is home to some of the finest colleges and universities in the country. During a recent AIA Seattle event, I spoke with three institutions that shared evolving outcomes informing their respective campuses.

Bellevue College in Bellevue already had a strong remote learning system in place, so when the remote transition occurred, it was well received. Faculty perspectives have since evolved to envision using shared campus spaces in addition to traditional academic work spaces.

- Diversity, equity and inclusion work is occurring on campus, and experiences for Bellevue College's majority commuter populations could be enhanced through a wider variety of indoor and outdoor spaces. The campus nestled in the forest seeks to become "more inclusive, more embracing, more nurturing for everyone who visits."

- Changing the perspective for reasons to be on-campus allows for increased flexibility for the campus community. The on-campus experience is tailored towards enriching the academic and social hub for the community.

- Repurposing infrastructure to support the community for alternative uses, and as a receiver for new projects and initiatives is driven by the state of Washington in order to serve constituents.

Central Washington University in Ellensburg strives to return to an on-campus experience to support the majority of its students who seek in person engagement in fall 2021. The university is focused on increasing effective utilization of space on campus, as facility design and evolving pedagogy are aligning to ensure flexible models of learning continue into the future.

- An emphasis on health and



Design for a campus experience that is more flexible and adaptable, and therefore more collaborative and innovative. University of Florida Institute of Black Culture and Institute of Hispanic and Latino Cultures.

PHOTO BY SEAMUS PAYNE/COURTESY OF DLR GROUP

wellness is a growing trend that has seen a growing need for services on campus. It highlights the critical resources of the campus to support the increase in student needs.

- The university is seeking partnership opportunities to support operational and functional needs of the physical campus, in coordination with the local municipalities. Carbon emission reductions and energy reduction goals are dependent on these relationships.

- All parties are looking forward to the future and managing the learning and social activities on campus to keep the Wildcat Spirit strong.

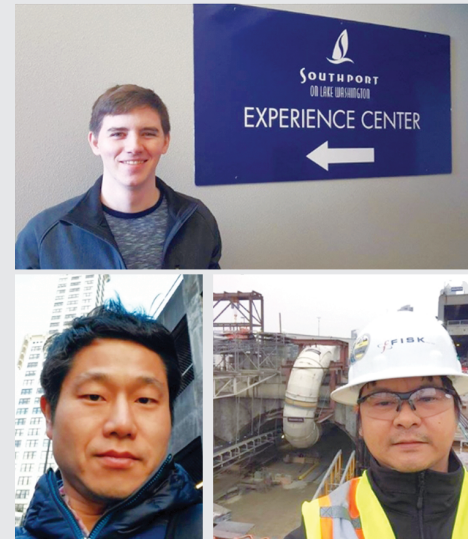
Washington State University in Pullman has maintained a small degree of research faculty and courses in person to manage critical on-campus activities. According to one university representative, the capacity to change was surprisingly easier during the transition to remote learning and will have longer term opportunities for expanding access for education.

- Social aspects of higher edu-

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SUSTAINABLE STUDENT HOUSING BUILDING DESIGN FOR HIGHER EDUCATION

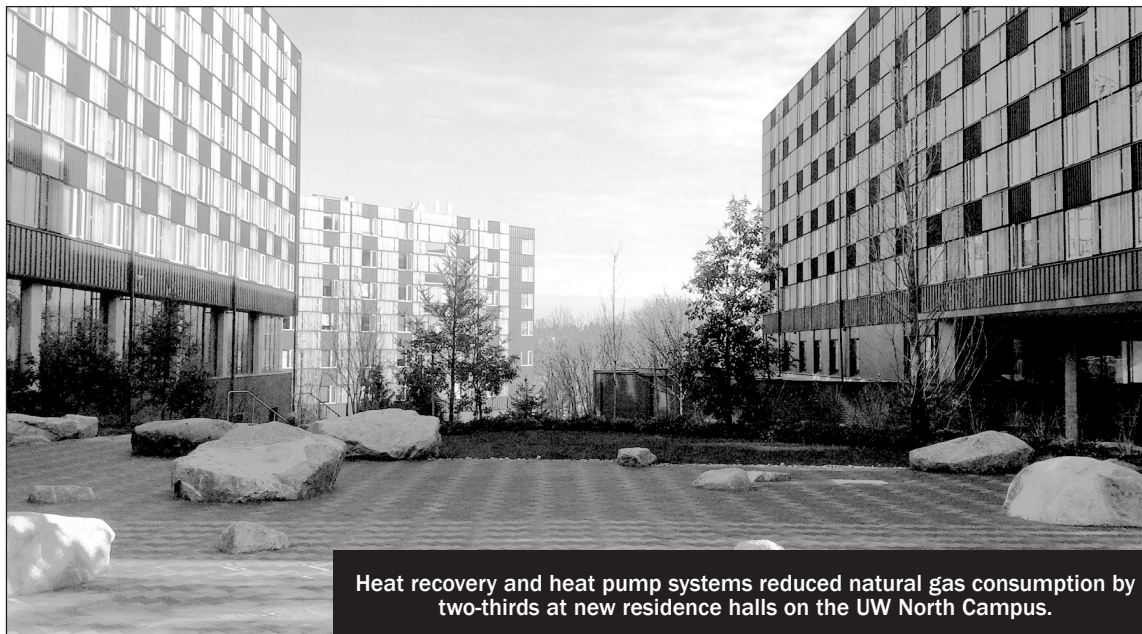
Rushing's student housing projects have been focused on minimizing energy usage and reducing greenhouse gas emissions.

Sustainable building design for student housing is critical to the growth of local universities that have aging facilities, limited state funding for new housing, and that are trying to attract the best and brightest young students from around the world. Over the past 10 years, Rushing has had the opportunity to work on many higher education student housing projects in western Washington. All the projects were highly focused on minimizing energy usage, reducing greenhouse gas emissions, reducing water usage and reducing long-term maintenance costs, while maximizing amenities for the students. The most recent phases of



BY ERIC VANDER MEY RUSHING

the University of Washington North Campus housing expansion include four new student housing buildings along Denny Field (McCarty, Madrona, Willow and Oak halls). These buildings achieved a LEED NC gold rating. The building LEED energy models demonstrate a 42% reduction in site energy consumption compared to the ASHRAE 90.1 baseline. By using heat recovery and heat pump systems, the projects reduced natural gas consumption by two-thirds. Many of the key measures used to meet these sustainability goals involve the mechanical, electrical, plumbing and lighting systems. Some measures were simple and others much more complicated. Each of the measures were thoroughly vetted with the design teams and many tested with various student groups on campus in existing buildings prior to implementing in the new construction projects. Below is a summary of a few of



Heat recovery and heat pump systems reduced natural gas consumption by two-thirds at new residence halls on the UW North Campus.

PHOTOS COURTESY OF RUSHING

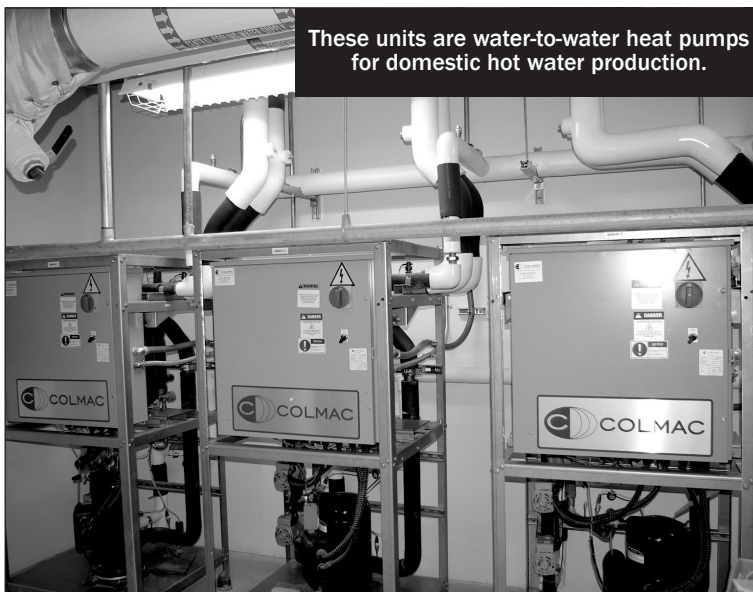
the key measures. The residential units in most of these buildings use elec-

trical resistance baseboard space heaters and do not have mechanical cooling. The efficient thermal envelope and tight air barrier design help to minimize the space heating loads, but the push-for-heat thermostats provide the optimization to reduce energy usage in student rooms. These simple thermostats allow occupants to set the space heating temperature. Once set, the thermostat allows heat for two hours then automatically sets back to 66 degrees. If the temperature is not set for another 48 hours, the thermostat automatically sets back to 55 degrees. This allows most of the building to setback without any facility staff adjustments over winter break while maintaining freeze protection.

latest version of this thermostat specially for the project.

Domestic hot water is a significant portion of the energy and water usage for student housing buildings, contributing to 25%-35% of annual energy usage mostly due to the heavy use of showers. The North Campus housing projects, after testing many shower heads (including personal in-home testing by the Housing & Food Services capital planning and sustainability manager), settled on an ultra-low-flow shower head that outperformed many other shower heads with higher flow rates. The Bricor Eco-Mi\$er 1.06-gallon-per-minute shower head helped to reduce domestic water usage by more than 50% over a code-compliant building, achieving a 58% reduction in flow.

King Electric developed the



These units are water-to-water heat pumps for domestic hot water production.

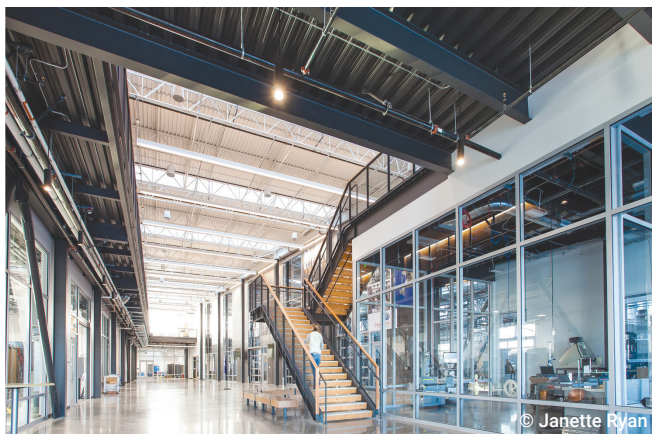


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Other measures implemented were not as simple but will provide substantial energy and carbon emissions savings for the student housing projects over the coming years. These include central heat recovery systems to transfer “waste” heat from commercial kitchen refrigeration systems and electrical rooms that utilize water-to-water heat pumps over to domestic hot water production. This concept can be applied within a building or even across multiple buildings, allowing heat from dining and commercial kitchens to reduce the use of boilers in adjacent buildings.

For the UW North Campus housing project, the integrative design process and life-cycle cost analysis study resulted in shared central plant equipment between the buildings for only the heating systems. Central systems for multiple buildings did not pencil for the cooling systems based on the low summer occupancies. The residential areas are supported by a wide range of common areas throughout the various buildings. These include student meeting rooms, study centers, maker labs, chemistry labs, gaming centers, cafes, dining cafeterias and commercial kitchens. Mixing these commons areas within the same structures as the residential housing allows for greater energy exchange, providing sig-

nificant energy and greenhouse gas emission reductions. For example, heat is recovered from the more energy-intensive commercial kitchen common areas in Willow Hall and shared with the residential uses in Willow, McCarty and Madrona halls.

West Campus buildings (Lander, Maple and Terry halls) provided a unique energy exchange opportunity for the UW central cooling water system. This system operates to provide chilled water for cooling during the summer months but during other times of the year acts as an energy exchange loop. These three buildings provided an opportunity to “harvest” heat from other buildings on the central cooling water loop that are cooling server rooms and electrical rooms with internal loads throughout the campus.

In addition to air-to-water heat pumps that supplement the natural gas boiler systems, water-to-water heat pumps and energy recovery coils are used to provide heat for the domestic hot water systems and commercial kitchen make-up air units.

While many other design ideas and measures were studied along the way, the systems serving residential units remained simple throughout the evolution of the design. With the recently enacted 2018 state and city energy codes requiring energy recovery ventilation for Group



Air-to-water hydronic heat pump modules were installed on rooftops on the UW West Campus.

R-2 dwellings and sleeping units, this presents a new challenge for student housing projects in Washington. These energy and mechanical code requirements provide the framework to build higher-performance buildings. The energy recovery ventilation systems have the added advantage of supplying fresh tempered and filtered air to each student housing unit. The added challenge will be

finding ways to cost-effectively implement these requirements in the student housing projects that are constructed to operate very differently than market-rate apartment buildings.

Rushing is excited about the significant impact these past and future housing projects will have on the lives of our state’s higher education students, providing a sustainable and comfortable environment to live,

learn, work and play. We look forward to implementing these sustainable design measures on future projects.

Eric Vander Mey has been the principal in charge at Rushing for numerous student housing projects for the University of Washington (Seattle and Bothell campuses) and Western Washington University.



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“The building was designed to look like a traditional higher education academic facility with comfortable break-out spaces, flexible classrooms, and areas for students and faculty to hang out and collaborate. The “back of house” parts of the building, while still ‘rough and tumble’ and durable are designed to be seen as well as used like a living room where students can hang out and feel at home.”

Becky Barnhart, AIA
Principal, Integrus Architecture

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THE EVOLVING BUILDING DELIVERY MODELS AT HIGHER EDUCATION INSTITUTIONS

Approaches to three projects provide important lessons into the meaning of value.

Colleges and universities are competitive places. From admissions and world-class faculty to research innovations and fundraising, our higher education institutions are building not only for today but also for future generations. The same is true of the buildings that make up these storied institutions.



BY TONY STEWART
SKANSKA USA
BUILDING

Here in Washington, recent evolutions to how construction projects are delivered on several campuses are shaping strong, thriving collegiate communities for years to come while also helping ensure maximum benefits to today's students, faculty, the citizens of our state and our Legislature.

When so many people have a stake in the outcome of a project, we've learned over our 75 years that the critical thing to focus on is value. That doesn't necessarily mean lowest cost, but rather how we deliver the best value to all stakeholders for the money spent. That's how we truly build what matters.

RESHAPING ROLE

Build-delivery models are rapidly evolving across campuses here in Washington. The thoughtful, innovative, creative and forward-thinking approaches being employed by colleges and universities are helping further the atmosphere of ingenuity for us and our design partners. We are also witnessing a dramatic shift in value-add integrations, where added-value really comes to life in both design-build and integrated project delivery approaches.

However, delivering value does not necessarily look like it used to. Builders have to adapt to a constantly moving goal line by extrapolating new techniques to produce project integrations that not only meet the needs of the community, partners and clients, but also exemplify how each project will positively impact future generations.

Balancing design aesthetic and functionality, maximizing the program with environmental concerns and budgets, and myriad other things that come into play requires builders to

step out of their traditional role and embrace a trusted advisor mentality, even when that means potential changes that don't necessarily benefit the builder.

At Skanska, our trusted advisor relationships have allowed us to work with clients to reshape performance metrics and redefine the value proposition, find progressive and measurable ways to add value, deliver a higher level of thoughtfulness and innovation, and help each institution maximize its return on investment.

BEST VALUE SOLUTIONS

Higher education clients are increasingly migrating to forward-thinking value of design perspectives and build-delivery models which move beyond best-value solutions. Discussions surrounding alignment of core values such as sustainability or fiscal responsibility often saturate the process in interesting ways we can leverage across working groups.

No longer is it enough to offer the best safety track record, glowing references and examples of previous cutting-edge projects. We must instead provide owners with both clear insights and the ability to quantify the enhanced value being delivered.

For our team here at Skanska, three current and recently completed higher education projects highlight not only how we've seen this come to life, but also the flexibility that will be needed as the value evolution continues to accelerate.

DESIGN-BUILD; GMP MODEL

The recently completed 82,437-square-foot Plant Sciences Building on the Washington State University campus in Pullman is an example of an extraordinarily successful value-add progressive design-build with a guaranteed maximum price (GMP) agreement in action.

During construction, Skanska and its design partner, LMN Architects, employed an advanced solution for panels of precast exterior brickwork for an attractive and contemporary way to optimize investment on the skin of the building. This allowed for an economical exterior envelope system, which then facilitated the build out of the interior interdisciplinary research spaces.



The recently completed 82,437-square-foot Plant Sciences Building on the Washington State University campus in Pullman used value-add progressive design-build.

PHOTOS COURTESY OF SKANSKA

TRADITIONAL GMP MODEL

At Seattle University, one of Skanska's longest-tenured higher education clients, we are building the Jim and Janet Sinegal Center for Science and Innovation under a traditional GMP agreement. The center will be the home to future STEM education. Working alongside Seattle University, Mithun Architects and EYP Architecture & Engineering, the Center for Science and Innovation is on track to open for the 2021-22 academic year, and includes construction of a five-story, 111,000-square-foot LEED gold building that will house the biology, chemistry and computer science programs.

Key items that facilitated our success on this project were centered around early engagement and a collaborative approach towards design, budgeting and the constructability review process. Working early and actively in conjunction with reliable and adaptive partners enhances value and provides additional flexibility. This new building will anchor the campus gateway and will advance implementation of the campus master plan.

INTEGRATED DESIGN-BUILD

On the other end of the spectrum from brand new facilities, some universities are reinvesting in aging infrastructure to repurpose and rejuvenate their campuses. With sustainability at the forefront of building upgrades,

we have found success reinventing the old.

Partnered with Perkins&Will, the renovation of the 80,000-square-foot Kincaid Hall on the University of Washington campus was a risk-reward partnership with builder, designer, mechanical and electrical trade partners where behaviors set the stage, and where each partner was held accountable for providing best value under the delivery model. Under an integrated design-build delivery approach, the Kincaid Hall renovation replaced aged and outdated building infrastructure and modernized space usage in an environmentally friendly manner to reduce energy consumption and work towards carbon neutrality.

With this reinvestment, we have given a new 50-year lease on life to a 1960s-era building that is core to the campus. Substantial alteration improvements included new windows, a new building-wide ventilation system, plumbing, electrical, seismic upgrades and interior upgrades (including a new MRI suite) to modernize the building and meet the program needs for the Psychology Department and Biology Administration.

The risk-reward model used for Kincaid Hall drove innovation and genuinely pushed the envelope as far as possible in the process of integrations by quantifying a clear line of sight for demonstrating value.

Performance metrics were expected and acted as an incen-

tive for each stakeholder within the greater team to actively collaborative to align on value, while continually evaluating competing needs for limited resources whether financial or otherwise. Where the design-builder boldly questioned the original budget in terms of value, the definition phase duration was nearly doubled and produced the best possible use of our schedule around competing interests and allowed for us to deliver on our promises.

DELIVERING VALUE NOW

Owners will pay for value, but they need to truly see it. That's why we find the continuing evolution of delivery models to be particularly exciting. Gone are the days of pie in the sky designs and visions of grandeur, only to be forced to cut back to hit a budget. Today, the flexibility to successfully work in a variety of models allows us to deliver on investments because we understand that baselines have changed and will continue to change, and we must take the lead in these new approaches.

At the university level, flexibility, growth with purpose, and finding ways to make a meaningful difference in the lives of our clients, students, and the region, is what will matter most in the years to come, and we are proud to be a part of it.

Tony Stewart is vice president design construction integration at Skanska.



MADISON
DOUBLE R



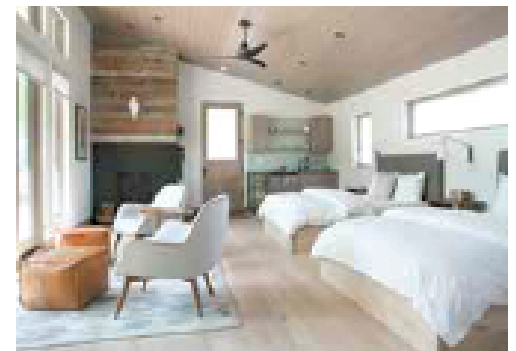
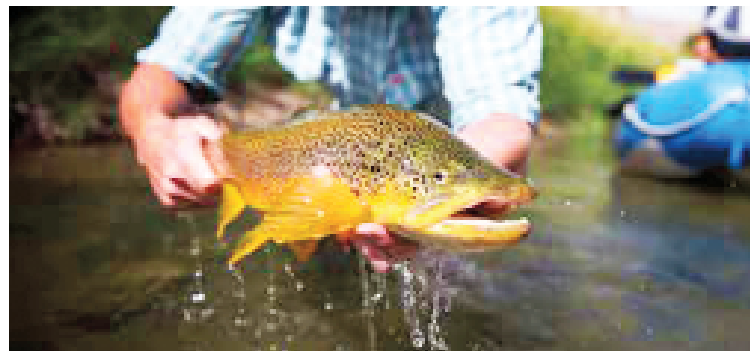
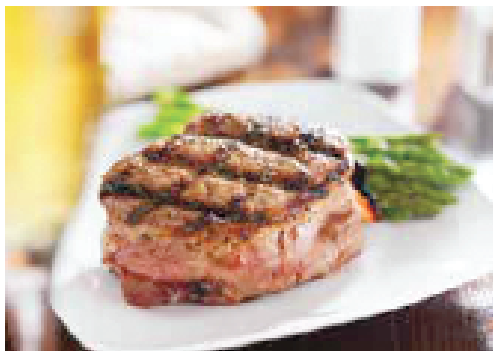
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MASTER PLANS

CONTINUED FROM PAGE 9

restaurants. A wide shared pedestrian-vehicular path called the “woonerf” meanders through the plan and acts as both an entrance to, and nexus of, activity. The sunny, southeast side of the development faces the future light rail station over a railroad line converted to a park and trail system that connects through downtown Redmond and beyond. On the south edge of the master plan a large overhang on one of the buildings creates a covered plaza, signaling that an inviting pedestrian experience awaits. The entire plan beckons people to enjoy this urban outdoor oasis.

Downtowns by definition imply density, but the Redmond Square master plan deemphasizes often-related bulk by making the lower levels exciting and interesting. For example, careful use of pedestrian-scaled modulation and materials on the facades reduces the impression of buildings looming over sidewalks, while designing for a variety of storefront experiences helps people relate to everything at ground level in multiple ways.

As with many master plan projects, this one’s key partnership is with the city planning department. They are charged with completing the goals of the comprehensive downtown plan. We worked closely with them to make sure all the hard work and thought that went into planning their city’s

urban experience while managing necessary growth as a whole was implemented on the smaller block-by-block scale in the master plan.

Redmond is constantly growing and keen on reducing vehicle congestion, so an important component of foresight was to emphasize the pedestrian angle in support of future regional transit expansion. The new light rail station will have no associated parking structure, so a tremendous amount of effort was placed on defining the paths pedestrians would most naturally take into, through and out of the site. We applied similar thinking toward Redmond’s projected future redevelopment, considering how new pockets of population might interact with what is being created now. The final path of the woonerf was partly instructed by this expected growth.

Master planning projects are integral to the success of every urban plan. Making sure they carefully consider placemaking, density management, partnerships, and foresight increases the likelihood that citizens will thrive in their planned urban environment now and well into the future.

Scott Glazebrook served as conceptual design lead and project manager for Redmond Square and is vice president at Tiscareno Associates.

LEARNING CURVE

CONTINUED FROM PAGE 10

and use alternating class periods for smaller, in-person groups? The shift to remote learning places a renewed focus on repurposing lecture halls into collaborative environments, hyper-personalizing hands-on learning in smaller cohorts.

As we see more schools, colleges and universities begin reopen — in whatever potentially new hybrid manner that may be — we must leverage the learnings from this past year and recognize and course correct the dire shortcomings that were exposed. Society has never been so widely aware of the challenges surrounding equitable learning as we

are right now. While we wait to see how our academic system will evolve post-pandemic, it’s critical that focus is placed on ensuring our students all have equal access to the same spaces, tools and technologies. After all, we are teaching our future leaders. It’s time for academia to evolve to meet every student at the same equitable starting point. We can’t afford to fall behind this learning curve.

Donna Barry is an architect, design director, senior associate and higher-education practice area lead for Gensler’s Seattle office.

NEW NORMAL

CONTINUED FROM PAGE 11

education are more important than ever. WSU has embraced new and exciting ways to engage the campus community through remote activities and will continue to build upon the social aspects of the campus experience.

- As some initiatives have stalled, new relationships have formed. The partnerships with the local health authorities, like on-campus blood drives, have expanded new networks for the university to contribute to. The energy focused on community health is a new frontier and an aspect of the campus experience that WSU is excited about.

- A lot of traditions have been upended and WSU has the capacity to quickly adapt,

with the infrastructure support of new and expanding tools to tailor support for achieving the institution’s mission.

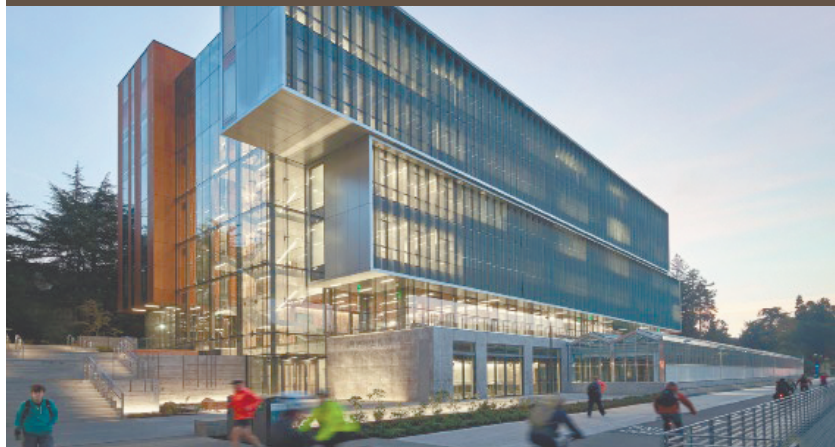
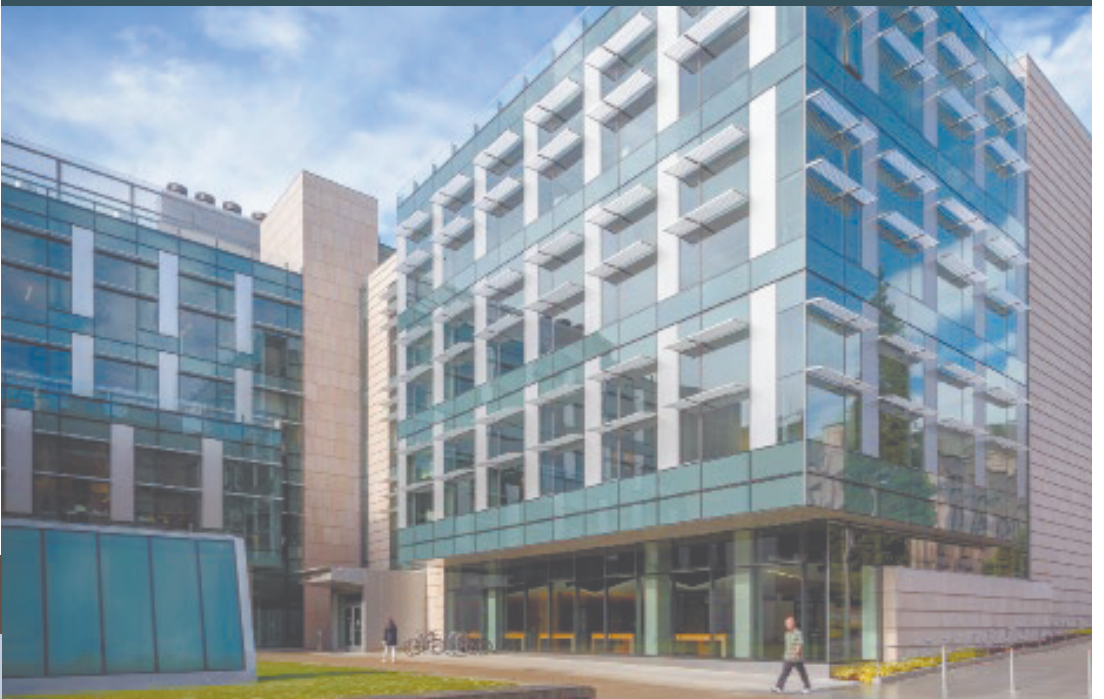
These campuses have found creative ways to continue the critical steps of bringing communities together. At the end of the day, it’s not about the trends — it’s about what’s intrinsic in the culture of an institution, and how we as designers can help tell that story through our work.

Jackie Eckhardt leads DLR Group’s higher education practice in the Northwest and contributes as a thought leader to national campus planning projects from the firm’s Seattle office.

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