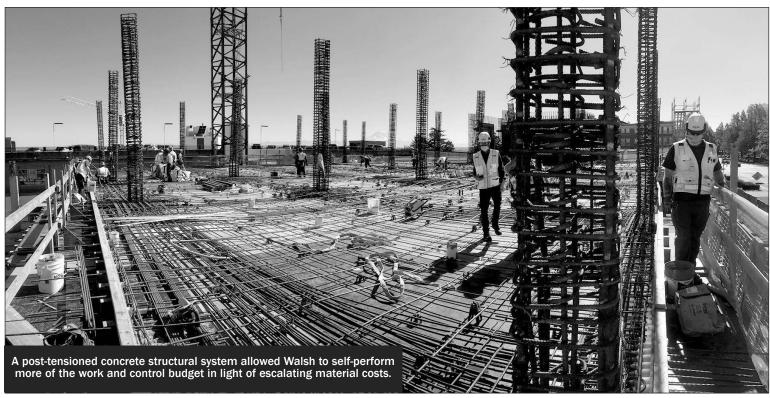
HEALTH CARE / BIOTECH



A BOOST FOR HEALTH CARE EDUCATION AT BATES TECH

The project was in construction when COVID-19 caused the first stay-at-home order in March 2020.









HENDEL

PLANK PCS STRUCTURAL SOLUTIONS

n January, classes opened at the new Center for Allied Health Education (CAHE), a \$35 million, 70,000-squarefoot addition to Bates Technical College's campus in downtown Tacoma. CAHE packs a breathtaking array of premier health care education in an urban setting. Students receive practical, hands-on and industry-specific education and training in a leading-edge facility.

Educating a workforce for the health care industry is an imper-



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ative. In Pierce County alone, health care service providers are the county's largest private employers, according to Washington State Employment Security Department. Even more compelling, a shortage of health care workers throughout the state has only been exacerbated as a result of COVID-19 pandemic. And if a Washington State Nurses Association poll indicating that "49% of health care workers said they're likely to leave the profession in the next few years" is any indication, the health care industry may experience a continued and significant labor exodus. The new center at Bates Technical College provides much needed space for programming to equip a modern workforce and represents a significant part of the state-wide push for expanded reinvestment in health care education.

The CAHE design-build project team was challenged to expand programming within a dense urban site, deliver an efficient parking layout, provide open spaces for labs and classrooms, and design for future flexibility. The project was in construction when COVID-19 caused the first stay-at-home order in March 2020. The team adapted nimbly, moving to efficiently manage city review and permitting processes and mitigate the impact of potential stalls on materials supplies.

BUILDING DESIGN

The CAHE is an industrial-style, four-story structure constructed with post-tensioned concrete slabs and concrete walls and columns. The building was designed to meet LEED Silver certification.

From the street, the structure's scale is unimposing, fitting in gently to the urban neighborhood, but it surprises with the amount of programming it provides. The layout accommodates ample open spaces for labs and classrooms, nearly doubling Bates' student capacity for its health sciences programs. Ground-level parking was provided to retain access for commuter students, and existing public transportation access was carefully maintained.

To facilitate open space design, the lateral system for the building consists of two core walls — one at the north and south ends of the building. This configuration allows for a long, 200-foot span between the cores. Columns were positioned at exterior and corridor walls to allow for easy space reconfiguration and program flexibility.

Close collaboration with the geotechnical consultant, GeoEngineers, was required for the demolition of the existing West Annex building and foundations. CAHE takes the old annex's place and neatly connects to the main campus building by crossing over the intersection of a street that had originally bisected the campus. A new exterior courtyard

BATES CAHE PROJECT TEAM

Owner:

Bates Technical College

Contractor:

The Walsh Group

Architect:

Schreiber Starling Whitehead

Structural engineer:

PCS Structural Solutions

Civil engineer: AHBL

Mechanical engineer: PAE Consulting Engineers

Electrical engineer: Tres West Engineers

Geotechnical engineer:GeoEngineers

tucks in at the newly enclosed space behind CAHE, helping to create a campus feel.

BUDGET, SCHEDULE STRATEGIES

High steel costs and supply chain issues were managed early in design, and the team considered multiple framing systems. Post-tensioned concrete proved the best choice since it allowed the contractor to self-perform more of the work and control budget in light of shortages and spiraling costs.

However, budget shortfalls required creative solutions to provide for a 15-foot-high retaining wall on the north side of the structure and the new parking ramp. To mitigate costs, the foundation of an existing gravity wall was salvaged and the foundations bulked up, repurposing it for use as a cantilevered retaining wall. The team worked closely with the city since the wall supported a functioning piece of Yakima Avenue and sat within the public right of way. Likewise, an existing vehicular ramp, previously used within the old building, was partially demolished, reinforced and extended to maintain rooftop parking access for the adjoining building. The reuse was not only a sustainable use of materials, but effectively cut the cost of the new ramp in half.

Cost-effective finishing alternatives provided the balance of the necessary budget: Instead of covered columns and dropped ceilings, exposed columns and open ceilings were used, saving on cost and enhancing the industrial vibe of the building.

A structure of this significant size and complexity required multiple city departments for the

review and permitting process. PCS worked with the city of Tacoma to submit early foundation and ramp packages. They were quickly approved, enabling the contractor to get started earlier, saving months of schedule. In addition, the team determined that submittals would need to be prioritized to get ahead of potential supply issues. Prioritized submittals were reviewed earlier than normal so that materials could be ordered well in advance.

The Bates Technical College Center for Allied Health Education project is an enormous success. The environment of designbuild collaboration helped the team navigate under extraordinary circumstances to deliver a critical community project. Classes opened in January, and a ribbon cutting is planned for April. In timing that proved prescient, Bates Technical College Allied Health Education Center provides opportunities for families to earn living wages and thrive in our communities. Graduating professionals will help bolster a weary industry labor force and contribute to a robust downtown economy.

Valerie Hendel is a marketing

coordinator, and Jared Plank is a senior associate at PCS Structural Solutions, a single-discipline

structural engineering firm with offices in Seattle, Tacoma and Portland.



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ON THE COVER

Gensler is part of a team developing a conceptual framework for the next evolution of science buildings. Turn to page 17 to learn more.

GENSLER IMAGE

2022 HEALTH CARE TEAM

SECTION EDITOR: SAM BENNETT • SECTION DESIGN: JEFFREY MILLER WEB DESIGN: LISA LANNIGAN • ADVERTISING: MATT BROWN

THE CHALLENGE OF FIGHTING CLIMATE CHANGE

Resiliency is the future of sustainable building in health care.

ealth care and sustainability play a crucial role in fostering a resilient society and ensuring a sustainable future. In the face of a disturbance, health care facilities

> are among the most important components of our



community. Be it extreme weather risks. infrastructure disturbances, utility outages. BY STACY SMEDLEY mass casualty events, or a SKANSKA public health

crisis, health care facilities must remain available and functional. As such, prioritizing sustainable and resilient design and construction within these facilities is essential.

According to a 2020 Health Affairs study, the health care industry accounts for more than 8% of all U.S. greenhouse gas emissions. In 2021, the U.S. Department of Health and Human Services launched a new Office of Climate Change and



PHOTO COURTESY OF BENJAMIN BENSCHNEIDER

Health Equity aimed at protecting community health across the nation and assisting in regulatory efforts to reduce greenhouse gas emissions throughout the health care sector.

And, on the heels of President Biden announcing his goal of creating a net-zero economy by 2050, and local governments making huge strides in regulatory action to fight climate change, we will start seeing all sectors nationally and locally - ramp up

sustainability initiatives.

In alignment with these shared goals and regulations, great strides are being made among our health care clients in both green building and sustainability efforts. Within my role as senior director of sustainability at Skanska USA Building, I advise and collaborate with building owners and designers to determine key sustainability priorities and strategies within the project lifecycle. Among the highest priorities for

our industry and our clients is resiliency.

Resiliency can be defined as the intentional design of buildings to respond and plan for natural and manmade disasters and disturbances - as well as long-term changes resulting from climate change. Building resiliency incorporates many components - various energy and water sources, disaster fortitude design, emphasis on passive systems, resource storage, and reduced environmental impacts such as the greenhouse gas emissions associated with construction and operations.

A building is resilient if it maintains functionality in the face of disaster — a vital element in health care facilities. A building is resilient because of its strategic energy recovery systems. A building is resilient if it was built to combat climate change through holistic decarbonization initiatives. A building is resilient

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if it improves the ability to care for patients in complex situations.

When it comes to resiliency, needs vary by region. For instance, a West Coast client may be concerned with seismic needs. A health system on the Gulf Coast is thinking about hurricanes. All are focused on pandemic and mass casualty preparedness.

The importance of resilient building was emphasized throughout our work on the Samaritan North Lincoln Hospital in Lincoln City, Oregon. For this hospital, operational resiliency, seismic, and economic resiliency were all key factors during design and construction. The facility featured flexible spaces including outpatient and diagnostic imaging rooms that could be transformed into emergency treatment bays and inpatient rooms when needed. As the region anticipates a potential Cascadia Subduction Zone earthquake, the new facility had to be built to withstand a 9.0 magnitude earthquake. According to the Lund Report, state engineers noted the facility sets a new benchmark for earthquake readiness across all buildings in Oregon.

Another key to resilient building is ensuring that project plans will adhere to all future regulations surrounding climate action legislation, which can be hard to predict and vary from state to state. Regardless, embodied carbon regulation is key in meeting long-term decarbonization goals both within our industry and local communities. As part of its sustainability program plan, King County was a pilot partner for the Embodied Carbon in Construction Calculator (EC3), a tool co-created by Skanska and supported by over 50 industry partners that is working to help reduce embodied carbon throughout the built environ-

Additionally, many of our health care clients have made strong carbon reduction commitments that consider both operational and embodied carbon reduction. Utilizing innovative technology like early energy modeling tools and EC3, we can visualize and strategize the use of different materials and methods to reduce a project's final carbon footprint.

As the climate continues to change and we see the evolution of natural disasters, resiliency must be a top priority when mapping out sustainability initiatives within the construction industry. To successfully do this, it is of course necessary to look to history for lessons learned, but more importantly it is essential to look at predicative data and the future state of our society.



PHOTO COURTESY OF JOSH PARTEE

This data, which includes invaluable projections surrounding environmental risks, impending infrastructure hazards, and analysis on population displacement due to climate impacts, allows developers and community leaders to future proof their infrastructure, and plan all

HEALTH CARE / BIOTECH

future projects through a resiliency lens.

This, combined with a keen understanding and focus on decarbonizing health care facilities to reduce greenhouse gas emissions, is vital to the future of our society and our planet. By focusing on resilience and miti-

gating climate change via decarbonization, we have the ability to future proof our health care system and ensure its future impact on the environment is a positive one.

Stacy Smedley is Skanska's senior director of sustainability.



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IT'S TIME TO RETHINK HEALTH CARE DESIGN

The severity of the COVID-19 outbreak challenged health care systems in every direction.







CHANTILLY MALIBAGO

MORTENSON

here is no question that the COVID-19 pandemic has fundamentally changed our view of health care preparedness. The severity of the outbreak challenged health care systems in every direction: sicker patients requiring a higher cost of care; rising expenses across the board for labor, pharmaceuticals and supplies; and fewer outpatient visits and elective surgeries during the pandemicdriven shutdowns have strapped health care facilities and their employees.

Unfortunately, the COVID-19 pandemic will not be the last major health event we face, and health care organizations are having to rethink everything from how hospital workers are protected to the way that hospital environments are engineered and designed.

With an eye toward understanding the specific impact on providers and their subsequent shifts in strategy, Mortenson surveyed more than 100 health care professionals — including industry executives, facility and operational leaders from many of the nation's largest health care organizations — at the American Society for Healthcare Engineering's Planning, Design & Construction Summit & Exhibition in 2021.

All survey participants agreed that the pandemic opened new ways of thinking that will endure long after COVID-19 subsides. At the same time, the pandemic accelerated several important health and community trends that were already taking place. Three major themes emerged that summarize the current focus of health care providers:

- The need for greater flexibility.
- The need to make space changes to maximize safety and comfort.
- The continued advancement of telehealth.

GREATER FLEXIBILITY

When asked, "What is the

greatest long-term impact of the pandemic on your health care facilities?" the topic of flexibility was referenced more than any other. Health care facilities need flexible, multi-functional spaces that can quickly scale up or down in acuity and capacity levels. During the biggest waves, when hospitalizations were at their peaks, the need for additional intensive care unit (ICU) bed capacity and trained staff became apparent. Just as importantly, HVAC, air exchange, ventilation, gas lines and engineering systems lacked the flexibility to control airflow and keep patients and caregivers safe. Future engineering of these systems will need to support quick conversions to negative pressure of isolation of rooms and floors.

Another important element of creating greater flexibility is the use of modular components. Facility components designed and built in a standardized manner can be configured and reconfigured efficiently. Sixty percent of survey respondents reported they were considering modularity in the hospital environment including patient rooms/ICU beds, acuity adjustable spaces, surgeries, isolation, and other uses. Another 34% are considering using modular in the ambulatory setting to reduce cost and drive consistency across their network.

SPACE CHANGES

The second greatest long-term impact of the pandemic on health care facilities was the need for design and space changes aimed at increasing safety and comfort for all while underscoring the heightened commitment to the well-being of the caregivers. Space changes included the need for more physical barriers, distancing and touchless designs. Patient and treatment rooms needed to be better prepared to manage infectious diseases - requiring more isolations rooms and single-occupancy rooms. More wellness and respite areas were needed for caregivers to rest and take breaks. Common space areas such as waiting rooms, entrances, screening, and patient and provider flows are all receiving more attention now as a result.

POWER OF TELEHEALTH

Telehealth continues to drive agility. Out of necessity, the pandemic accelerated the transition to telehealth and providers

quickly recognized the positive impacts to their organizations. All of the providers agreed that telehealth is receiving much more attention now versus pre-COVID-19. Telehealth allows providers to quickly and efficiently triage and direct patients to the right care at the right time. It also helps providers reach new patients and underserved communities, enhance preventative, proactive, or ongoing care, and reduce the overall cost of care. Just as importantly, telehealth often allows patients to get the care they need without the fear of having to go to the doctor's office or emergency room. Additionally, greater use of virtual care and technology solutions are enabling efficiencies in facility space utilization.

FUTURE FACILITY INVESTMENTS

When asked, "How will your facility investments in the next 12-18 months compare to the 12-18 months before COV-ID-19?" respondents replied as follows:

- Nearly 40% said they plan to increase investment into their facilities in 2021/2022.
- Eight out of 10 indicated that their facility investments in the next 12 to 18 months will be at,



or above, pre-pandemic levels.

• 70% noted they are planning to invest in traditional hospitals and acute care, compared to just 48% in 2018.

While study results have highlighted the renewed attention on the inpatient setting, 51% of respondents also pointed to ambulatory surgery as part of their organization's investment future, which supports a continued trend toward moving certain procedures and surgeries out of the hospital.

As a result of this shifting landscape, developer/builder Mortenson continues to work with customers to offer innovative capital, development and construction solutions to help health care organizations drive flexibility within their facilities while advancing a communityaligned care delivery strategy.

A recent case in point involves Mortenson's collaboration with Providence Health to bring its 118,000-square-foot integrated Reed's Crossing Medical Office Building & Wellness Center to Hillsboro, Oregon. Commencing at the onset of the pandemic, the Providence and Mortenson team stepped back to evaluate potential design considerations that would allow flexibility to adapt to an ever-changing health care landscape. This allowed the team to integrate adaptable exam rooms with the ability to supply negative air pressure capabilities should the need arise for more capacity. The space was also designed for both provider and staff engagement, as well as patient experience with:

Collaborative workspaces to

promote engagement internally and with the local community.

- Improved respite spaces along exterior walls.
- Increased natural light in break room spaces.

Similarly, Mortenson recently mobilized on Kaiser Permanente's new Specialty Care Center in Everett. An expansion upon the existing Kaiser Permanente Everett Medical Center, the project includes a state-of-the-art 150,000-squarefoot ambulatory surgery center with multiple specialty clinics and exam rooms designed with future flexibility in mind to scale with telehealth services. Modular and design for manufacturing and assembly elements such as Dirtt modular partitions for clinic spaces and exterior wall panels manufactured in Mortenson's offsite factory are being leveraged to increase the speed of delivery.

As the health care industry endeavors to meet the challenges of a once-in-a-generation crisis, the long-term effects of COV-ID-19 will have a lasting impact, forcing leaders to rethink how they organize, make decisions, serve customers, continue to retrofit existing spaces and expand. Working with a developer/builder who has access to a full spectrum of capital, development and construction solutions can make that journey possible.

Bryan Maggio is health care market director and guides Mortenson's health care teams. Chantily Malibago is Mortenson's director of health care real estate development and leads Mortenson Development's health care vertical sector.



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DON'T IGNORE NEW COMPLIANCE REQUIREMENTS

The Washington Clean Buildings Performance Standard clock is ticking; are health care organizations ready?

he Washington State Clean Buildings Act passed into law in mid-2019. Enter COV-ID-19 in March 2020. Health care organizations were hit especially hard with the distractions of the pandemic, making the Washington Clean Buildings Performance

BY MARTIN **CLINTON** UMC

known, and its 'years-away" compliance deadlines less pressing concern than the numerous pandemicrelated issues and staff shortages that they have faced on a day-

Standard

as it is now

to-day basis. However, the law's compliance time clock continued to tick away and still does, and the years are not as far away as they may have seemed. With penalties topping out at \$5,000 plus \$1.50 per square foot every five years, this is not something that health care organizations

can afford to ignore or wait until the last minute to address.

Health care organizations, in general, have a more difficult road to travel toward the law's compliance requirements since most hospitals and other health care occupancies have rarely had formal energy management plans. According to benchmarking data from the city of Seattle's Office of Sustainability & Environment, 36 out of the 50 medical office buildings are projected to have their energy use measure above their energy use target - a key metric of the new law — with eight buildings projected to be consuming two-fold the energy over the established target. Thirty percent of hospitals are above their energy use target as well.

With Seattle leading Washington state in energy code requirements over the years, it is likely that health care buildings throughout the state clock the same or a worse energy use, indicating an even greater need for energy conservation. In addi-

COMPLIANCE --- PAGE 14

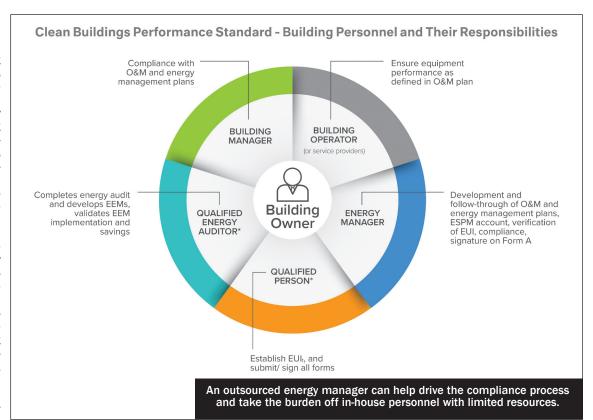


IMAGE COURTESY OF HARGIS ENGINEERS



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As Aldrich celebrates our 50th, Northwest Kidney Centers is celebrating their 60th anniversary. And together we're celebrating progress on their new Yesler Terrace Seattle facility! Thank you to Northwest Kidney Centers, Spectrum Development, and Mahlum Architects for partnering with Aldrich on this project. Congratulations!



A CANCER CARE MODEL WITH ALL THE RIGHT AMENITIES

Elevating voices of patients and caregivers guides the design of Heimann Cancer Center.

n Southern Oregon alone, there are more 2,000 new cases of cancer diagnosed each year. To address this challenge, Asante set out to transform oncological care with the

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BY PJ BAUSER MAHLUM ARCHITECTS

creation of the new Heimann Cancer Center, soon to be the most a d v a n c e d home for cancer treatment in the region.

Consolidating all outpatient oncology services under a single roof, the nearly

80,000-square-foot Heimann Cancer Center provides medical oncology, radiation therapy, infusion therapy, imaging and lab services, patient education, cancer research and pharmacy access. The center focuses on delivering medical excellence through a value-based treatment system where patients and families come first.

The design of the new facility began with connecting Mahlum's design team and Asante's administrators more directly to the specific needs of cancer patients and their caregivers by creating the Cancer Champions Group — a patient advisory group comprised of 15 to 20 current patients, past patients, and caregivers/family members. The thoughtful participation of these individuals led to several key insights that shaped the

architectural response:Importance of the care-

giver. People do not make the care journey alone and the environment should support and celebrate those who make the journey with them.

- Connection to nature. We draw strength and healing from our natural world.
- Scales of community. Patients, caregivers, and care teams form community at different scales and in different ways throughout the treatment cycle.
- Sensitivity to sunlight. Patients experiencing infusion and radiation treatments can have extreme sensitivity to sunlight.

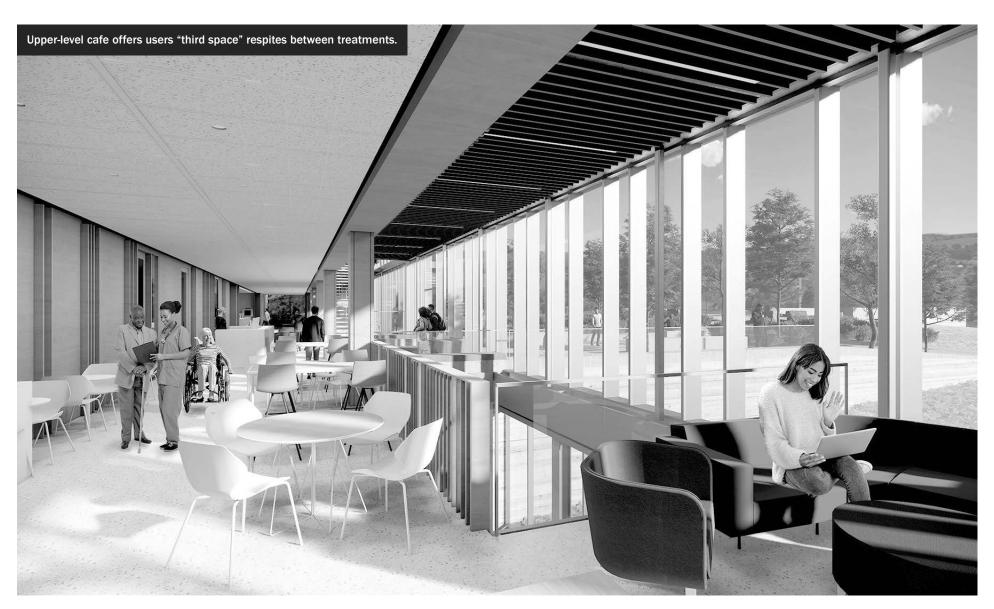
The facility's comprehensive program was designed as a full-service facility for outpatient cancer care, making it possible for patients to combine their

infusion and radiation therapy appointments with group therapy and/or educational visits without ever needing to leave the building. But this encompassing care model means that patients might spend up to five hours on site between appointments. So to capitalize on extended stays, the center provides patient amenities such as massage, yoga, nutrition, and health meeting spaces, and "sharing spaces" where volunteers connect patients with wigs, scarves, and other accessories that dignify the journey. The facility also supports extended stays with the introduction of "third spaces" which are flexibly programmed areas of respite that support relaxation, intermittent work, and/or social connections.

The lobby and circulation

spaces are widened throughout, allowing patients and caregivers to continually move together, side-by-side. The multi-story, public lobby overlooks gardens on "the Knoll" and outdoor gathering spaces integrated into the natural landscape, while care was taken to ensure that the therapeutic effects of these spaces could also be enjoyed by those experiencing sensitivity to the sun. Therefore, exterior glazing is coated in a UV protective film and inboard seating provides users protection from the direct sun while maintaining clear views to the exterior.

These same concepts were extended to the infusion floors where the spatial planning allows patients to engage at different scales of community. The individual infusion bays are rotated



to provide patients with privacy and direct views to nature while offering ample space for caregiver support. For those desiring greater social interaction and connection, the flexible planning enables patients to employ their ability to move during treatments to form impromptu gatherings where patients and caregivers can build community around playing games, socializing, or just enjoying one another's company.

Perhaps the greatest insight from the Cancer Champions Group was the importance of extending design into the clinical spaces where patients can sometimes feel their most vulnerable. While state-of-the-art linear accelerators are critical to providing precision radiation treatments, the equipment and vaults can create intimidating environments. The design solution was to provide a floorto-ceiling window at the vault entries, bringing daylight and warmth to the building interior warmth to the building interior and illuminating a 100-foot-long photographic wallcovering of the Oregon Coast. Such components welcome patients into the space, reducing some of the tension and anxiety often associated with radiation there. associated with radiation therapy treatment. Similar biophilic elements and wood materials permeate the public and clinical spaces — bringing a calming effect throughout.



In elevating the voices and perspectives of patients and caregivers through the Cancer Champions Group, Asante's Heimann Cancer Center delivers a warm and welcoming, patient-centric environment commensurate with the excellence of the care provided. By centering the needs of those most impacted by the work, we are building healthier, enduring communities.

As the leader of Mahlum's health care studio with 17 years

of architectural experience, PJ Bauser brings a knowledge of creating healthful environments and a passion for using design to serve vulnerable populations.

DESIGNING A HEALING RIVER IN SEQUIM

How tribal facilities for healing are helping their communities recover from opioid addiction.



PHOTOS COURTESY OF RICE FERGUS MILLER VIZLAB



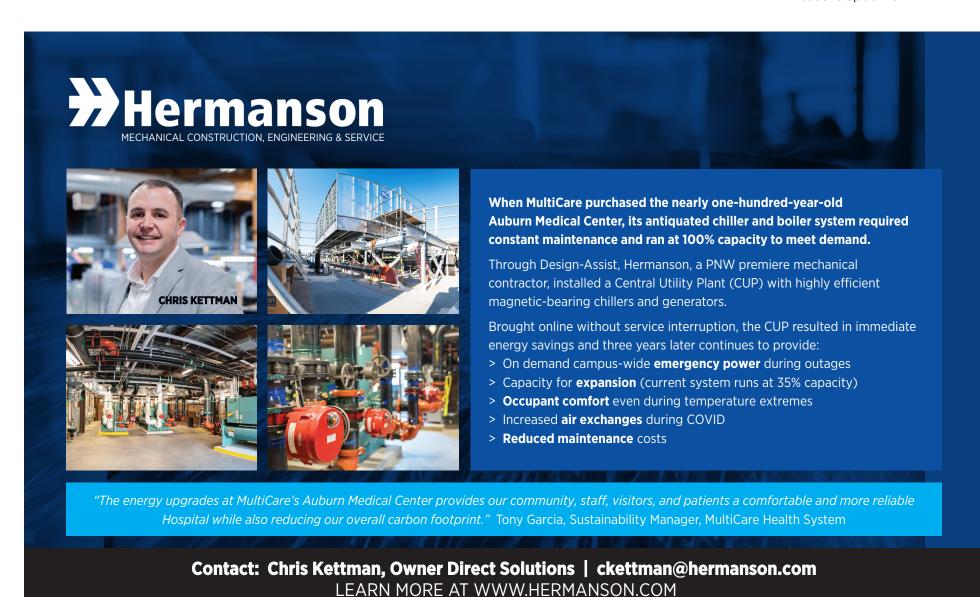


BY BLAKE Webber

KE _a Greg Er belding

RICE FERGUS MILLER

cross the United States, more than 10 million people misuse opioids annually, and more than 50,000 people die from opioid overdose. Studies have found that of those, Native Americans have the highest per capita rate of opioid overdose deaths of any population group. It's no wonder then that tribes are celebrating the recent \$590 million settlement with drug distributors over the damage opioids have caused in their communities. But long before these reparations came to fruition, tribes started strategizing ways to combat this epidemic.



CLINIC TAKES ROOT

In Sequim, the Jamestown S'Klallam Tribe (JST) has just opened its new healing clinic. the first phase of a larger planned healing campus. This much-needed contribution to Clallam County and the greater Olympic Peninsula will treat up to 300 individuals a day — and not just tribal citizens - who are suffering from substance use disorder and related health and wellness challenges. Designed by Rice Fergus Miller, this new facility offers much more than a typical medication dispensary.

The downfall of many methadone dispensary facilities is that they fail to treat the underlying issues that may have led to addiction in the first place instead focusing efforts simply on providing medications that prevent ongoing withdrawal symptoms after quitting substances like fentanyl, heroin, or prescription pain pills. For many, simply getting to a dispensary is a feat, leaving little time or ability to seek basic health care services. The Jamestown S'Klallam Healing Clinic was designed to solve this challenge, helping tribal patients and members of the greater community greatly reduce their chances of relapse.

THE WHOLE PERSON

The philosophy behind clinics that provide "wraparound services" is to treat the whole person. While patients are receiving their doses, they can be seen by a primary care doctor, dentist, or mental health counselor, and childcare services are available for those with children. Additionally, a shuttle is provided for patients without transportation. The goal is to reduce barriers to accessing treatment for holistic healing.

Clinics with this approach have been shown to produce impressive results. One such clinic for the Swinomish Indian Tribal Community has been very successful. Over a 12-month period from 2018 to 2019, it nearly reached client capacity, its client retention rate was over 75%, and opioid overdose deaths among Swinomish Tribal members dropped by 50%. Clearly, patients are less likely to relapse when receiving holistic care that helps them get their lives back on track to a healthy condition.

on track to a healthy condition.
According to Dawn Lee, a planning consultant who worked with Rice Fergus Miller and Jamestown S'Klallam Tribe on the new JST Healing Clinic, "Breaking down barriers for clients is the best way to ensure that clients can meet their individual treatment needs. By offering transportation and childcare, patients can safely get to the clinic without worry, and begin focusing on their treatment goals. Giving the client all the tools and understanding necessary to be



successful sets them up for their best chance at recovery, that's why this model works. Patients have a lower success rate if we refer them outside of the clinic for other services."

CULTURAL STYLE

The design of these healing clinics is about much more than a pharmacy walk-up window and requires navigating complex medical-planning challenges. Not only is the JST clinic a highly protected facility with security personnel on site at all times, it contains a dental clinic, medical exam rooms, a pharmacy, and childcare facilities.

Most patient visits are routine, planned and protective of confidential personal information. Some patients may arrive at the clinic in an emergency scenario needing urgent access to health and/or dental care services. Medical staff are trained to provide comprehensive patient care, and facilities must conform to strict DEA requirements, which necessitate specialized knowledge and information that must be integrated into the

The aesthetic of the building is heavily inspired by forms found in traditional Pacific Northwest American Indian architecture. The geometries and materials used are meant to reflect a

SEOUIM --- PAGE 16



COMPLIANCE

CONTINUED FROM PAGE 9

tion, Washington State Hospital Association is very concerned for the Public Health Districts that have buildings over 50,000 square feet, coupled with growing pressure on communities experiencing population shifts as the pandemic has decentralized the workforce.

REQUIREMENTS OF NEW LAW

The Washington Clean Buildings Performance Standard requires that building owners must develop a comprehensive energy management plan, an operations and maintenance plan (commonly called an O&M plan), train their O&M personnel, track and report building energy use, and complete one of the following compliance pathways:

- Meet your Energy Use Index (EUI) target.
- Meet the building investment criteria prior to compliance date.
- Meet target EUI through conditional compliance.
- Meet building investment criteria through conditional compliance.
- In rare cases, compliance through exemption.

STUMBLING BLOCKS

Historically, there have been no requirements for an energy policy to be created and regularly reviewed by top management in health care, but this law changes that. Health care organizations are quite familiar with utility management plans, fire/life safety plans, and safety plans. But with top health care leaders focused on the myriad of other priorities, many health care organizations do not have formal energy management plans that track and report building energy use, have compliant operations and maintenance plans, have consistent and formal training programs to operate the building in an energy efficient manner, or train tenants on how to operate the building. Unfortunately, this results in an environment that is unprepared from an energy management perspective.

Health care facilities are, by nature, too complex to benefit from either a piecemeal approach or the misconception that a new technology, or easy fixes, will solve their energy use challenges.

Health care is a complicated industry with no shortage of issues all grappling for attention, from staffing to patient safety to pandemics to finances, so it is understandable that attention focuses on the organization's core business — providing critical health care services. Done smartly, energy management shouldn't come at the expense of world-class health care.

The basic steps to meeting requirements of the Clean Build-

ings Performance Standard for health care organizations include:

- Benchmark your building to determine your accurate EUI.
- Budget for basic compliance.
 Document your process to lower overall compliance expens-
- Track for the future of your building.
- Determine if internal or outsourced solutions are appropriate.

OUTSOURCING EXPERTISE

Having an energy manager can help drive the compliance process for health care organizations. There are affordable resources from people who understand and have done this kind of work for years. A qualified energy manager has the technical background and necessary structures in place, has been involved with the Clean Buildings Standards prior to it becoming a law, is in contact with buildings regulators at Washington Department of Commerce, and will show organizations the different paths they could use to

The necessary benchmarking, planning, and reporting is time-consuming, for which many health care organizations are not prepared or well-resourced. An experienced energy manager removes the new law's compli-

ance burden from the health care organizations' owners and facilities staff and offers a pathway that can help you begin today and assist you in phasing the costs systematically leading up to compliance. This expertise includes:

- Understanding the 84-page law and associated standards.
- Broad experience with energy management plans.
- Qualified persons and qualified energy auditors on staff.
- Comprehension of the compliance pathways and strategic application for ROI.
- Full-time technical staff prepared to execute and document the correctives.

As energy policies evolve, health care organizations will constantly balance those with mission policies. Utility rate structures are expected to change to include "time of day rates," which will significantly impact energy costs of 24/7 operations. And electrification efforts throughout the state of Washington will significantly impact hospitals which are very reliant on fossil fuels. These and other mandates will require expertise in energy performance standards and assurance of compliance.

STATE ENERGY POLICY

The state continues to make

headlines as further measures emerge to curb buildings' emissions of climate pollution. The State Building Code Council is strongly weighing stricter decarbonization updates, the city of Seattle is looking to support small commercial buildings living up to the 2019 Clean Buildings Standard, and the state Legislature spent much of the 2022 session considering measures to expand the 2019 law to include buildings down to 20,000 square feet, even multi-residential and commercial spaces. If this language is adopted, the number of Washington's operating facilities subject to the Clean Buildings Performance Standards with a five-year renewal schedule could more than double.

The trend is clear, and early action can maximize cost-effectiveness: performing the Clean Buildings Performance Standard work now is the first step for health care organizations to being ready for what is to come.

Martin Clinton is building performance services manager at UMC. He has worked extensively with the Northwest Energy Efficiency Council, Washington State University, the Washington Department of Commerce and professional associations to educate on the implications of the Washington Clean Buildings Performance Standard.



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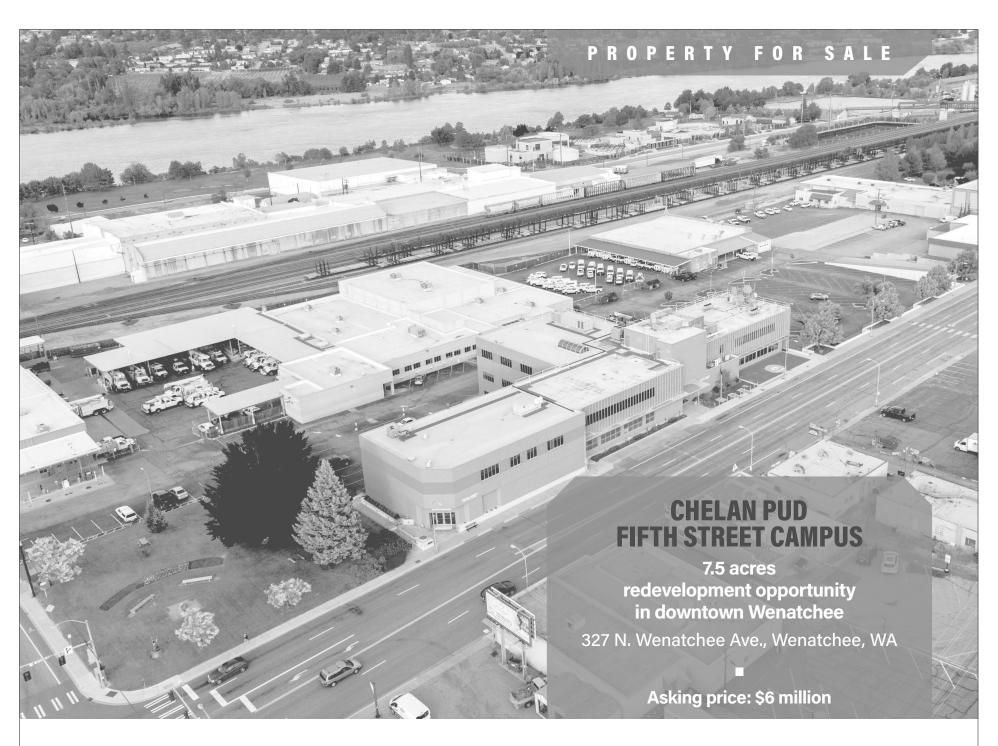
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SEQUIM

CONTINUED FROM PAGE 13



modern interpretation of these culturally significant designs.

Long planar elements and shallow sloped roofs with deep overhangs are reminiscent of the structures once built by local tribes. Cedar wood cladding is the primary exterior material on the building, and it is oriented horizontally with two distinct widths and depths as a modern interpretation of this local material. A local artist was commissioned to create the traditional tribal art patterns that frame the main entry, as well as art found throughout the interior of the project.

A MODEL

Unfortunately, medicationassisted treatment (MAT) facilities sometimes face opposition due to a lack of understanding about what these services truly offer to the community.

That was initially the case for the JST Healing Clinic. "Sometimes, optically, people think that these kind of treatment centers become a magnet to drug dealers and the underbelly of that industry," said Jamestown S'Klallam Chairman W. Ron Allen. "That's not what it is. It's the opposite of that perception. These facilities are designed to be highly secure, highly safe, highly monitored and totally focused on helping those individuals become healthy."

Thanks to a series of public outreach meetings and education with the Sequim community about the benefits of clinics with wraparound services, the project was able to move ahead. Allen and other JST officials raised funds through Washington state monies earmarked for MAT facilities, as well as the tribe's own contributions.

While a number of these facilities are underway in communities around Washington state and beyond — Rice Fergus Miller is also designing MAT clinics for the Nisqually and Quinault Nations — the healing clinic mod-

el is viable for all rural communities around the country. They can be of benefit wherever access to health care is more difficult to come by than narcotics. They can mean saving the lives of tribal citizens, and the lives of many people in the community at large.

PATH TO RECOVERY

While other similar projects are underway in Washington state, each project requires a separate set of considerations and modifications to meet the nuanced needs of each tribe's culture and each community they serve. These facilities can be difficult to operate and hard to justify financially without the proper balance of scale and program elements. An experienced team with the right expertise is essential.

"I'm proud of this contribution to our community and so grateful the clinic is finally open," said Allen. "This has been a long time coming, and our brothers and sisters have been waiting for this care. I know we're going to save a lot of lives."

All American Indian tribes have deep connections to storytelling and lore, and the design of the JST facility incorporates a story with significant meaning for the tribe's culture and history. It's about changing the path of a river by moving just one stone. This new healing clinic will serve as exactly that for many tribal and community members who utilize its services: The first step toward healing.

The hope is that other health care facilities follow this model. By lowering barriers and providing wraparound services that treat the whole person, deeper, longer-lasting healing can take place.

Blake Webber is an associate principal at Rice Fergus Miller and leads the firm's health care studio. Greg Belding is a principal at Rice Fergus Miller.

design for healing





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THE LAB BUILDING OF THE FUTURE IS NEXT

The traditional method of designing new science buildings needs to evolve from what the building looks like.



IMAGE COURTESY OF GENSLER

he demand for lab space and science workplaces is skyrocketing in almost every market, increasing competition among science building developers. The traditional method of designing new science build-

ings needs to evolve from what the building looks like to how it needs to be optimized for a tenant. At their best, buildings are more than just containers for people; they are plat-

YOSHINOBU ers for people; they are platforms for great efficiencies and incredible experiences.

BY CHAD

Designing lab buildings comes with unique challenges. Concerns about vibration, ventilation, containment, and specialized equipment go beyond the scope of traditional workplaces. Developers must meet exact specifications to ensure safe and successful working environments.

NEXT GENERATION

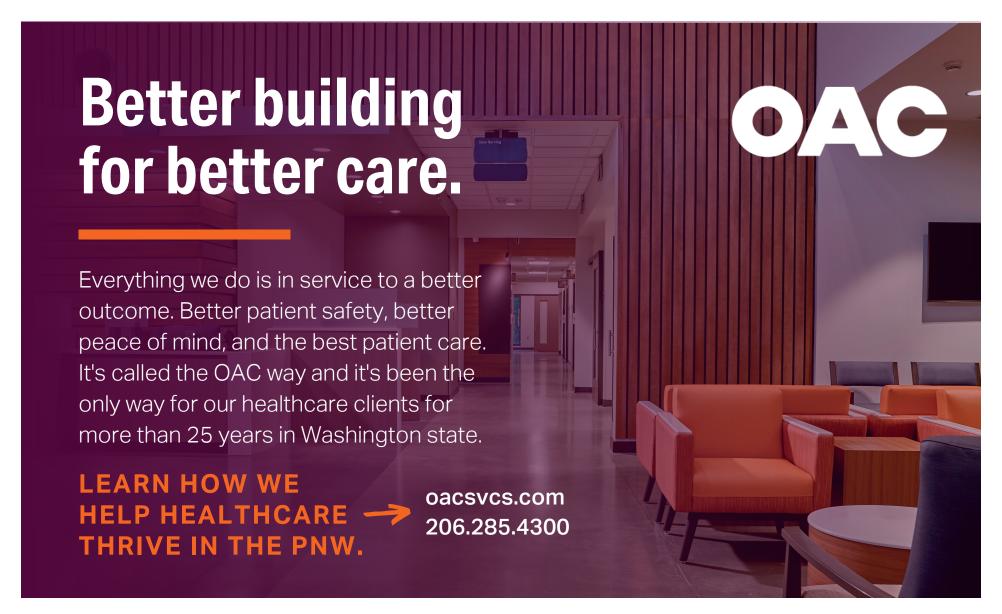
As part of ongoing measurable impact research funded by the Gensler Research Institute, Gensler partnered with Buro Happold and KPFF to develop a conceptual framework for the next evolution of science buildings

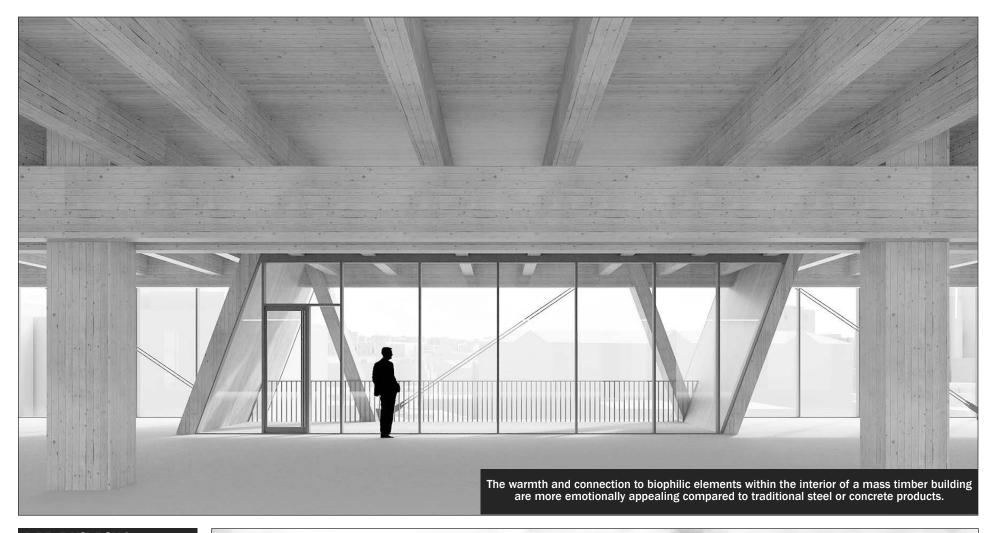
We located our concept in Seattle's Uptown Arts District and based our decisions and design interventions around industryspecific research and data. The project had three goals: (1) liberate the space and make it more than just a container for people; (2) increase product differentiation in the market to allow our developer clients to leapfrog past their competition; and (3) offer solutions that prioritize decarbonization as a method of resiliency. We call this idea NEXT, and it redefines what a lab can be.

FLEXIBILITY, SUSTAINABILITY

The use of mass timber in

LAB BUILDING --- PAGE 18





LAB BUILDING

CONTINUED FROM PAGE 17

large building construction has gained a lot of traction in recent years because of its ability to significantly lower the carbon footprint of a project. The feeling of a mass timber space is completely different. The warmth and connection to biophilic elements are more emotionally appealing compared to traditional steel or concrete products.

We also discovered that timber is particularly suited to offsite modular construction, which would allow us to produce the project in a nearby factory and deliver it to the site as a kit-ofparts. This approach would be 30% faster and 10% cheaper to construct than a conventional concrete building. With 85% fewer deliveries to the site and a 75% reduction in construction waste, NEXT uses 80% less carbon to build than a conventional concrete lab building. This amounts to a savings of approximately 5,200 total metric tons of CO2.

We extended the sustainable approach to the building's operations, as well. NEXT uses an allelectric heat pump chiller (EL1) system that is more efficient than a natural gas system in all locations and sectors. All-electric systems result in lower building Energy Use Intensity (EUI) in all markets and achieve zero carbon emissions on a clean grid. In total, NEXT produces 50% less greenhouse gas emissions and uses 30% less energy annually than a conventional lab building.



LAB LAYOUT

Another innovative feature of NEXT is the flexibility of the building grid. Lab building layouts are

determined by two things: the lab bench, where equipment is stored, experiments take place, and work is prepped; and vibrations in the floor plate, which must be kept to an absolute minimum to prevent disruptions in science experiments.

We created the most flexible grid for our tenants at 33-by-33

feet. These are optimal dimensions for standard lab bench layouts with room for tenants to switch things around. However, the size of this grid in mass

timber doesn't work well with vibration, so we consulted with our engineering partner KPFF to make it work. Together we achieved a vibration of 6,000 MIPS, a go-to standard for most lab buildings.

We also relocated the building core from the center to the side of the building. Putting a core in the middle of a building is like putting a fireplace in the middle of your living room. It bifurcates and separates tenants. This move allows our tenants more flexibility on their layout.

HEALTH & WELLNESS

Science workplace tenants are increasingly looking for spaces that can promote the health and wellbeing of their employees and of the communities in which they're located.

With a multitude of operable windows, the workplace portion of the floor will have abundant access to fresh air. And in Seattle, where the climate is optimal for natural ventilation, the workplace can spend 34% of total occupied hours in natural ventilation mode, which helps yield energy savings of 30% compared to a conventional lab building.

Each floor also has direct access to outdoor spaces throughout the building. According to the Gensler U.S. Workplace Survey, science workers ranked outdoor space as their No. 1 most desired workplace amenity. We also took the most under-utilized component of the

building — a fire stair — and flipped it into a tenant amenity. Shifting the stair to the perimeter flooded it with daylight and appealing views.

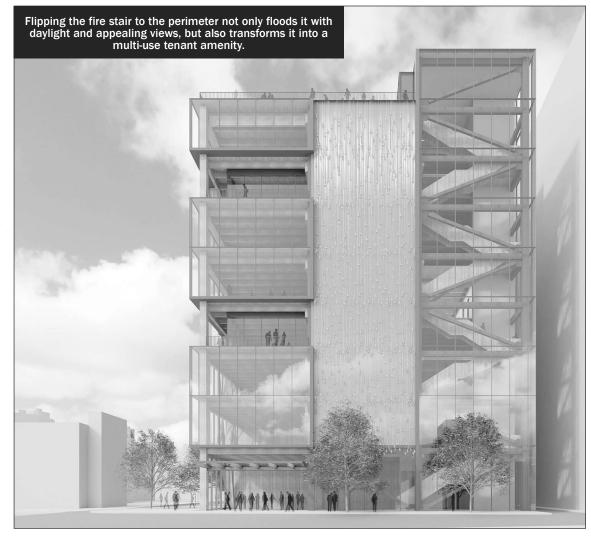
With access control technology, the common stairwell can also serve as an interconnecting stair for specific tenants on multiple levels — eliminating the need to build their own internal stairs, reducing unnecessary construction, and bringing the space to market sooner.

CONNECTING TO COMMUNITY

Lastly, we wanted to show how a science building could connect to its local community. The ground floor is designed to hold a multipurpose arts and entertainment venue, as well as a restaurant incubator to diversify the culinary arts in the city.

The multipurpose venue was created in partnership with the Uptown Arts and Cultural Coalition to provide flexible spaces for young musicians, art education, theater, and performance space. The restaurant incubator gives minority entrepreneurs the opportunity to launch their businesses, while a shared kitchen space allows for multiple food venues to enhance the neighborhood food scene. These efforts will create more cultural diversity within the Uptown District.

Ultimately, NEXT is a platform that allows tenants and developers to reimagine what a science building can be. It's our call to action to shift from the past to



a more resilient and inclusive future for lab buildings.

Chad Yoshinobu is a design

principal and global sciences practice area leader for Gensler. He believes in the aggregation of diverse design lenses from life sciences, office buildings, tech workplace, and hospitality to reinvent what we do for our clients.



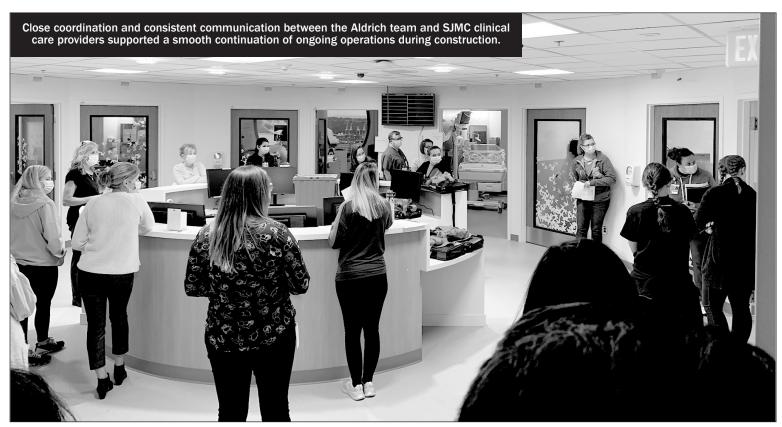


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WHAT IT TAKES TO BUILD HEALTH AND SCIENCE PROJECTS

Unique requirements, a specialized approach and best practices are key.



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his year marks Aldrich + Associates' 50th anniversary. We have practiced health care construction for nearly all our 50-year history, from construct-



BY GEORGE WARD ALDRICH ± ASSOCIATES

ing clinics and office buildings for private practice doctors in the 1970s and '80s to recent projects at some of the Puget Sound's premier facilities. Today, we focus solely on health and science projects.

Our specialization in this area has been very rewarding and we love sharing our knowledge and our passion. In this article, we'll share our insights about the unique requirements that come with construction in these complex environments, highlight some of the key benefits to facility owners and project teams that come from engaging health and science project specialists, and explore some

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of the trends and best practices we're seeing in project delivery.

UNIQUE REQUIREMENTS

Nimble and flexible: Working in a patient care area or active laboratory often comes with strict requirements for noise and vibration control with access restrictions that can change due to operational circumstances. The ability to quickly shift focus and resources is a key factor to staying productive and moving a project forward without impacting care, especially in perioperative and critical care environments, where change can happen on a moment's notice.

For example, in our work on CHI Franciscan St. Joseph Medical Center's Neonatal Intensive Care Unit, we coordinated downto-the-minute plans with nursing staff to ensure safety for these vulnerable patients. This sometimes involved running to an adjacent floor to make sure nurses could put earmuffs on neonates prior to drilling and, providing phone numbers so nurses could immediately reach our project leads if a baby's condition changed or there was an unexpected delivery. When NICU staff needed quiet or a hallway cleared immediately, our team was there to get it done.

Extensive communication: Another key requirement, espe-

cially in occupied health care environments, is making sure all staff fully understand the nature and implications of upcoming work. One tool we use to support ongoing communication is an activity-specific method-of-procedure document that includes visuals of affected/unaffected areas and down-to-the-hour scope detail, required safety precautions, and infection control measures.

Other strategies we use include simplified color-coded phasing plans with dates and marking the location of temporary walls with blue tape on the floor well in advance of construction activities so staff can familiarize themselves with the new traffic patterns. Daily huddle meetings with health care providers and weekly recap emails with progress photos and details about upcoming tasks/deliveries are all part of Aldrich's commitment to keep everyone involved in the project well-informed.

SPECIALIZED APPROACH

Budget accuracy: For facility owners and project teams, having reliable cost data is a key element to support decision-making that guides a project's design. A contractor with extensive, successful health care experience is likely to have representative unit pricing and historical cost data

Creative solutions drawn from a team's collective experience in projects of all kinds enables designers and contractors to meet the needs of diverse health and science environments, such as this 41-foot atrium at EvergreenHealth's Family Maternity Center.

that they can use for reference. Since this is all that we do, we have customized our estimating tools for health and science projects. Combined with our extensive historical cost database, this enables us to provide reliable cost information at the

earliest stages of a project and anticipate how the design will progress as it relates to the project budget.

Creativity: There are many different types of environments included under the umbrella of health and science facilities,

requiring openness to diverse perspectives and creative ideas from both designers and contractors. For example, Evergreen-Health's Family Maternity Center included a two-story, 41-foot-tall

WHAT IT TAKES — PAGE 23



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WHAT IT TAKES

CONTINUED FROM PAGE 21

atrium that required an infection control barrier. Similar atria in airports came to mind as our team looked at the cavernous space, and we developed a barrier solution using scaffolding to anchor our fire-retardant plastic along with 2-inch rigid foam to reduce noise transfer. These measures turned out to be an excellent and effective solution for this unique space.

Knowledge sharing: The strict codes and requirements combined with the variety of space types in health and science makes partnership and knowledge sharing between designers, contractors, and owners a key factor in devising effective and innovative solutions. We hold a Thursday morning superintendent's huddle, a Friday project engineer's huddle, and a Monday project manager's huddle.

These huddles often lead to teams sharing creative approaches and resources to support each other and bring the value of our company's collective wisdom to every project. For example, we had one project team constructing modular patient rooms at Evergreen-Health, and another team looking for the right solution for an ophthalmology clinic for Northwest Eye Surgeons (NWES). We proposed the modular idea to NWES and it ended up working best for them as well. Our teams also keep an ear to the ground on material availabilities - a particularly relevant topic as supply chain disruptions continue to challenge all construction proj-

BEST PRACTICES

Design-build and integrated models: More owners, such as University of Washington, Moses Lake Community Health Centers, and Northwest Kidney Centers continue to adopt design-build and other alternative delivery methods. The goal of designbuild and other models like it is to create a more integrated and collaborative approach between owners, designers, and contractors. Integrated models can also shorten project timelines, which supports the owner's speed to market goals.

We believe in the value of this

DJC

integrated approach. As such, most of our project management staff is DBIA certified, with the plan to have all management team members complete certification within the next two years.

Trust and transparency between all team members are the cornerstones of maximizing these integrated processes. We encourage this environment through team partnering and developing project charters, full team kickoff meetings that get all parties on the same page, and regular project executive meetings where leaders from all key parties, owner included,

can speak openly about project progress and challenges.

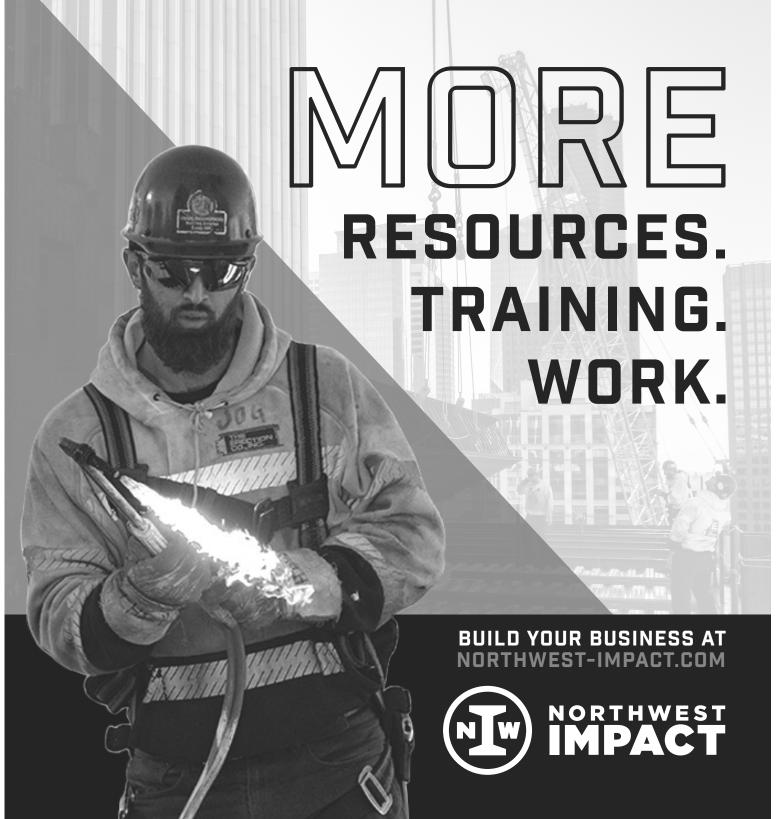
Expanding and changing care: We're seeing more primary and specialty care centers opening in communities and rural areas. This expansion correlates with implementation of the Affordable Care Act and population shifts out of expensive metro areas. Health care communities have also increased investments in behavioral health, residential treatment facilities, elective surgeries for a growing aging population, and user-centered biophilic design approaches that support decreased patient mortality rates and decreased staff absenteeism and turnover. More specialty centers and designs that incorporate user feedback and connectivity to the natural environment mean even greater diversity of environments that require specialized capabilities from the design and construction community.

Many owners continue to invest in practice flow study and operational efficiency to streamline the patient/provider experience. All of these trends are important to understand so that we can ask the right questions early, support reliable decision-

making, and help bring best value for our clients and their patients.

Although we only practice in one market, we find there's never a dull moment. Together with owners and designers, we're tackling some of the more complex challenges in the built environment and supporting our communities through the places they go for care. We're proud to specialize in health and science construction.

George Ward is president of Aldrich + Associates.



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