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As caretakers of the built environment, we find ourselves with an expanded responsibility to the health of our clients. As ideas about healthy living shift, so too will our concepts for the design of healthcare settings. We are seeing more corporate investment in proactive healthcare practices: more workplace daycares and gymnasiums, lower insurance premiums for better lifestyle choices, increased coverage of whole health services like massage, chiropractic wellness, and acupuncture. In this issue, David Frum shows how models of healthcare are shifting toward wellness and prevention, and he discusses several new facilities that embrace those ideas in design and practice.

In Groundwork, members of the Integrated Design Lab analyze the astonishing demand that hospitals make on energy resources, introduce techniques used by Scandinavian hospitals to mitigate that energy demand, and make recommendations useful in the Pacific Northwest.

Joel Loveland writes about our physiological response to light and how fenestration in the clinical setting affects patient healing and staff effectiveness. Julia Levitt talks to experts about air quality problems in air-tight buildings, with suggestions for improvements, particularly as systems are inherited by clients, residents, and user communities.

The ability of our structures to support health are not only affected by the systems that inform our design parti, but the relationship of what we design and build within a greater ecosystem. Looking at healthy living and the relationship between the built and the natural, the City of Seattle approved a pilot project to turn four blocks in Belltown into Seattle’s first park boulevard. Similarly, the City enacted legislation this year to slow the loss of Seattle’s urban forests. Urban farming is under consideration. And with a nod to our Olmsted legacy, Jill Shriver here brings up Seattle’s urban forests. Urban farming is under consideration.

Northwest designers are leading a new conversation in holistic design and engaging cultural attitudes toward healthy design environments. Beyond thoughtful siting, passive system design, and the use of healthy building materials, we are transforming the way that our clients think about health-conscious design for healthcare, for work, and for shelter. We have both the opportunity and the responsibility to push this dialog and advocate for greater change in how we build and how we live.

A decade into the 21st Century, we find ourselves in the midst of a healthcare debate that has the potential to change public policy in the United States in a significant way. Most of the debate centers on delivery methodologies and fiscal constraints. Seldom addressed is how our built environment enters into the equation. What are the effects of that environment on care delivery and the healing process?

Through much of the past century in the healthcare arena, environmental effects were largely ignored—modern technologies were emphasized over the buildings that housed them. But more recently, there has been significant advancement in research and practice that addresses the critical role the built environment plays in the healing process. Whether it is labeled evidence-based design, performance-based building design, or evidence-based medicine, a growing body of research points to the impact of design on patient wellness and healing outcomes, staff retention and efficiency, and the fiscal performance of an institution. Adherents to these approaches make critical decisions based upon research, post-occupancy evaluations, and their own operational evidence. Desired outcomes include solutions that encourage well-being in both patient and staff, promote healing in a less stressful environment, and minimize medical errors and infection rates.

For architects and designers, this evidence-based approach has shown how well our principles of sustainable design and good practice work to support human well-being. Patients can be given more control over their environment to modulate lighting, acoustics, temperature, and ventilation for their own comfort. Natural light can be allowed in to play its role in human circadian rhythms, which in turn affect the healing process while reducing dosing errors by staff. Views and exposure to nature can alleviate pain and speed healing. Stress levels of patients, families, and staff can be reduced in a myriad of ways: by clear way-finding, single-bed rooms, well-lit and acoustically-controlled environments.

These changes in approach and attitude create new opportunities for healthcare practitioners and healthcare designers to envision a built environment very different from what we have seen in the past. The future of healthcare building design will likely prove to be as thought-provoking and invigorating as the current healthcare delivery debate. As architects, we can look forward to being part of this groundswell.

Partner and Director of Design at Mahlum, Anne Schopf FAIA serves locally as President of AIA Seattle and nationally on the AIA Committee on Design Advisory Group. She is also a peer reviewer for the General Services Administration Design Excellence program and a frequent juror for awards programs. Anne graduated with honors from Rensselaer Polytechnic Institute with degrees in Architecture and Civil Engineering.

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Healing the Hospital
Energy Use and Indoor Air Quality in American and Scandinavian Hospitals

By Heather Burpee and Michael Weller
University of Washington’s Integrated Design Lab, part of the BetterBricks Lab Network

America’s healthcare infrastructure is in dire need of re-evaluation for both interior environmental quality and energy performance. The Integrated Design Lab, a research and market transformation arm of the University of Washington’s College of Built Environments funded by the Northwest Energy Efficiency Alliance’s BetterBricks program, has investigated methods to radically reduce energy consumption in hospitals in ways that will meet the 2030 Challenge. Their findings, plus investigations into new Scandinavian hospital models, follow.

If public discussion is any indicator, America’s healthcare system is not meeting the nation’s needs. Americans spend the most per capita on healthcare of any nation, yet there is little correlation between money spent and patient outcomes.

As a group of architects and building researchers in the Pacific Northwest, we at the Integrated Design Lab are interested in how hospital buildings can be improved to better serve people and the environment.

We have learned that in hospital design, as in healthcare spending, more is not necessarily better. Hospitals use a lot of energy; about three to four times what a typical office building uses per square foot. And its indoor air quality is intimately linked to energy performance.

What follows is a summary of our findings on these two subjects, as well as our study of hospitals in Scandinavia, a region that began rethinking hospital design in the 1980s with inspirational results.

Energy Use
Healthcare facilities use a startling amount of energy. Put in terms of the most commonly-used metric, the Energy Use Index (EUI), hospitals in the Pacific Northwest use 260-280 KButu/sf/year. Hospitals, it turns out, are the second most energy consumptive building type, just behind fast food restaurants. Translated into total energy, hospitals account for approximately 4% of all energy used nationwide. Hospitals are densely occupied, operate constantly, and contain energy-intensive equipment and infrastructure.

One of the biggest opportunities for energy reduction in hospitals is in heating and cooling. A typical mid-sized hospital in the Pacific Northwest produces enough heat from people, lights, and major equipment to meet most heating needs year round, without any additional heat production. Yet, 40-50% of the total energy demand is typically put to heating space.
Some areas of a hospital demand very cool air, especially in technically driven spaces. In typical hospital HVAC systems, incoming air is delivered by a multi-zone, overhead, ducted air system. Spaces needing the coolest air set the temperature of all air delivered to an entire zone. Spaces that need warmer air must reheat it at the delivery point, usually using an electric heating coil in the air handling unit. Such a system means that fresh air is cooled on intake and then reheated, demanding energy consumption at multiple points. Our building energy simulations have revealed that reheating consumes over 30% of a hospital’s energy. This is no small irony when one considers that enough heat is already present within the building from people, lights, and equipment to meet most heating needs without using any additional energy.

In more detailed analysis of energy use in hospitals, our group conducted research using energy model simulations of a typical 225-bed, 520,000sf, acute care hospital, and with it began to examine the energy savings created by a wide range of efficiency strategies. We applied several “bundles” of energy-saving strategies to our simulation. The results were sobering: it took the addition of five bundles of energy-saving strategies for our simulated hospital to meet the 50% reduction in energy use that could achieve the 2030 Challenge goal for 2008.

From this simulation research we took away six major points:
1) The need to reduce or eliminate re-heat energy consumption;
2) Waste heat recovery is needed: transfer waste heat to where it can be useful instead of rejecting it into the environment;
3) Additional HVAC system efficiency is required;
4) A central design goal should be to zone similar loads in close proximity. Careful building design can reduce peak heating and cooling loads, especially at the building perimeter; these reduced loads then result in a smaller, more efficient system. De-centralized systems can accommodate varying zonal load characteristics.
5) Currently, energy-saving efforts are limited by code requirements related to minimum air-flow and air delivery mechanisms. The healthcare sector should press for a reevaluation of state codes relating to air flow, so that hospital designers can take advantage of today’s more energy-efficient options for air handling, such as displacement or natural ventilation.
6) Operational efficiency and maintenance must be reviewed throughout the project.
The biggest lesson gleaned from our research is that a design that significantly reduces energy is a project that integrates its systems. Such a design requires commitment from the entire design and ownership team at the earliest planning stages. An integrated design delivery process is the most effective method for reaching this goal. By allowing for closer, earlier integration of the entire project team, all parties—architects, engineers, utility representatives, operators and owners—will work in concert to achieve high performance goals, setting them early in the design process and testing them for performance, not only through design and construction, but through the life of the building.

Environmental Quality
There is ample evidence to suggest that environmental quality is just as important as energy efficiency in achieving a successful, high performance hospital design.

Elements such as daylight, view, and fresh air connect patients to the natural environment, and this connection is beneficial to both patients and staff. These elements have strong implications for building form. Decreasing the distance to available windows and increasing the building’s perimeter brings the building occupant closer to daylight and view. These amenities in turn promote health and productivity: access to daylight regulates the human wake-sleep cycle, views can promote healing and a sense of well-being, and control of operable windows has been shown to widen the range of temperatures an occupant considers comfortable while lessening the burden on the building’s mechanical system.

Innovations in Scandinavia
Re-thinking energy use and the interior quality of hospitals to the degree we have shown may seem unimaginable, but international models provide a roadmap for such transformations. New hospitals in Scandinavia, in particular, exhibit many strategies appropriate for the Pacific Northwest.

As early as the 1980s, Northern Europe began to re-examine the typical post-war hospital form: a deep-span, multi-floor, nearly windowless, diagnostic and treatment block topped with a hotel-like patient tower. Beginning in Scandinavia, designers turned this typical form on its side, placing diagnostic and treatment facilities on one side of the hospital and patient rooms on the other, connected by a long central spine. This model allows for most spaces to relate directly to the building’s exterior. And, it significantly reduces the time patients spend in elevators—an event-prone space where patients cannot as easily be assisted if they suddenly require it.

Today, Scandinavian hospitals continue to develop new forms, exploring the potential of unbundled campuses, for instance, or space planning and mechanicals that allow for extreme flexibility of use over the hospital’s lifespan.

The changing Scandinavian hospital form, from the traditional base+tower typology to a horizontal one that provides a connection between occupant and environment, yields the benefits of natural light, views, and personal control of operable windows. These buildings also have mechanical systems that dramatically reduce the energy necessary for operation; the newest of these hospitals use 25% of the energy used by typical Pacific Northwest hospitals. A short list of technologies that some of these hospitals employ includes severely limiting re-heat, reducing air change rates, combining displacement ventilation with radiant heating and cooling, recovering heat from all internal heat sources, and relying on ground-source heat pumping for the majority of additional heating and cooling needs.

There are clearly lessons for us to learn from these mechanical system examples. One of the biggest ideas that can be observed from Scandinavian hospitals is their efficient recovery of heat from all available sources. Thermodynamics are used to their fullest potential; heating and cooling are employed only where needed, recovered when exhausted.

When observed closely, Scandinavian hospitals are inspiring examples for our future hospital development. They are not only energy efficient, but embody excellent indoor environmental qualities that make them superior places to heal, work, and visit.

Heather Burpee is a Research Associate and Health Design Specialist at the Integrated Design Lab. She consults leading health design firms in the Puget Sound Region on best practices for high quality, energy-efficient design for hospitals.

Michael Weller is a MArch student in the University of Washington’s 3+ year program. At the IDL, Mike works on thermal and daylighting computer simulations and physical model studies.

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A Dose of Daylight
Capturing the human response to natural light in workplace and healthcare settings

Joel Loveland with Heather Burpee
The University of Washington, College of Built Environments; Integrated Design Lab

In Puget Sound, as in all regions above 45° latitude, swings of daylight are extreme from season to season. Almost everyone visiting Alaska or Scandinavia around the summer solstice has felt the odd, almost timeless quality of days that never really end: sunsets after 10 p.m., the everlasting twilight, sunrise between two and three o’clock in the morning. One experiences the near-manic high of working or playing twenty-plus hours a day, sleeping two to four hours a night, for weeks on end! (photo above)

Lacking significant sources to illuminate the night, we humans evolved over millions of years to be active during daylight hours and asleep through the darkness of night. Daylight and its reciprocal, the dark, rule our cycles of being awake and asleep; we now know it also rules many of our physiological systems. We have been aware of this tether to light and dark, for the most part, only intuitively: a science of light (or, from an architect’s point of view, of windows) as a dose/response metric for well-being and productivity in human systems has been slow to develop. But ask a developer of office buildings what area of a building’s floor plate accounts for the most valuable real estate, or ask a manager of a large office to point out the most coveted...
office spaces: the most common answer will be “close to the largest windows.” The conscious justification for valuing a window highly is that, usually, it gives access to a view. The unconscious, physical response of our bodies to a window reveals that, like moths, we are attracted to light.

An exploration of the human response to doses of light leads, like any good scientific endeavor, to a conceptual framework of light’s effects on our health, productivity, and sense of well-being. This work is provocative, but still in its infancy at the close of the first decade of the 21st century.

Vision and the visible effects of light
We are “ocular-centric” beings: as much as 80% of our perceptions come to us through our sight. To have the most productive and healthy environment, we vision-dependent creatures must have the right quantity and best quality of light.

An electric light fixture mounted on the ceiling or wall of a room can provide the equivalent of light received from a window twenty feet away. If lighting is considered only as the minimum amount of light required to accomplish a particular activity, then electric light and daylight might compare reasonably well. But considered more broadly, access to daylight provides other dimensions, visual and non-visual, that electric light does not: the ability to gaze upon a view for relief from chronic stress, for instance, or the environmental information gained from the light source such as a sense of the hour, season, or weather. These dimensions—the spectral color of the light, how the light source varies over time and across a space, its appropriateness to a particular task—are critical in assessing lighting performance.

When designing a lighting system that uses daylight as the primary source of illumination, the designer should consider the following:
• Design windows and surrounding spaces as interior light sources—as if they were a “daylight fixture”—and as portals to the exterior environment. In this way, the interior and exterior space fuse, and the exterior space becomes a curative landscape (photo below left).
• in all spaces where people remain for long periods of time, enhance seeing and provide views, preferably of nature (photo below right).
• Program activities across the floor plate, keeping in mind the natural variation of daylight and the luminance of view corridors during different times of the day and year.

Non-visual effects of light
In 2002, a non-visual, light-receiving cell was discovered in the human eye (Berson 2002). This receptor, essential for regulating bodily rhythms and systems, is modulated primarily by cycles of light and dark. This non-optical receptor is connected through its own nerve pathway to the brain, which then communicates to other non-visual parts of the nervous system. This process acts as a clock, oscillating on daily, circadian, and seasonal rhythms. Thus, our eye mediates two parallel responses to light: one for vision and one for physiological regulation.

In a natural setting where we have access to natural light, the body synchronizes its internal clock to the changing quality of the daylight. Many physiological responses are activated and regulated by bright, “blue-shifted” light—daylight’s characteristic color—which enters the eye and triggers this non-visual system. To list a few, body temperature and the hormones cortisol, serotonin, and melatonin are regulated through this process—hormones that play important roles in governing alertness, sleep, regulating blood sugar, and maintaining the immune system.

When the cycle of light/wakefulness followed by darkness/sleep is disrupted, our physiological processes can be thrown off balance. Darkened days—or its opposite, brightly-illuminated nights
over a long period—stress and exhaust the body, making it vulnerable to a variety of illnesses. In environments where we have less access to daylight—as is often the case in healthcare and office environments—biological systems can be disrupted significantly, as was found in a recent study of nurses that discovered a correlation between nightshift work and increased risk for cancer (Dimich-Ward, 2007). This suggests that exposure to light at times of day we humans are not used to can have a significant effect on our health and is potentially toxic over a long period of time.

Scientists have also discovered that the circadian system is stimulated by a different palette of light than is the visual system. Visual sensitivity is greatest in the yellow-green region of the light spectrum, whereas the non-visual system is stimulated more by short-wavelength blue light during the morning and longer-wavelength, warmer light from midday through afternoon. Research has shown that (as an example of daylight’s healing powers) patients in rooms facing east and exposed to morning light heal faster and have lower incidences of depression (Joseph, 2006).

The discovery of a non-visual, light-responsive receptor that regulates physiological processes prompts us to take into account the effects of lighting in the built environment, especially in healthcare settings. In hospitals, as in many work environments, employees may have little-to-no access to daylight during their workday. Workers in around-the-clock shifts can become out of sync with normal patterns of light/wakefulness, and dark/sleep—a danger in the hospital setting with its need for error-free work and its chronically stressful environment. For nightshift workers, exposure to light at night is an important issue; their tasks must be performed with enough light for critical task efficiency, yet if these lights are too bright and blue, this may disturb their circadian cycle.

Let the natural light in
We humans evolved under a cycle of daylight and darkness. Today we can assess the places we live in and build by whether those buildings, through their fenestration, give us access to the rhythms of the day and season. In the healthcare environment, the most beneficial environment for patients and workers would include as much daylight as possible during the day, reduced levels of electrical light during the evening, and fully dark sleeping rooms at night.

If work consistently places a person further than 25 feet from a windowed wall, she will probably not have a view of the outdoors, which can help relieve the chronic stress of the workplace. A lack of daylight in the morning may disrupt those hormonal cycles that allow workers and patients to sleep well at night. But with natural light, the healing process is aided, work quality improves, and the health and well-being of patients and workers is enhanced.

Our lives in these northern latitudes are carefully regulated by what we rarely notice: the light of day and its cohort, the darkness of night. The very best architecture—architecture that nurtures our health and supports our productive spirit—connects us to these natural rhythms of light and dark. An architecture built upon these windows of daylight and darkness embraces life in a manner that the extended and limitless days of electrically-illuminated space cannot.

References
One August morning, unusual vehicles appeared in Seward Park: a remote-controlled living wall that transformed streetscape into greenspace; an astronaut training apparatus where kids could explore ideas about human power; a giant, two-wheeled contraption that let riders walk and roll. A sociable (side by side, two person) tricycle with randomized music provided the soundtrack.

These were just some of the playful, visionary, low-impact vehicles (LIVs) presented at this launch of aLIVe, an artist-initiated, multi-phase effort to re-imagine our transportation system as designed around the human body.

We’re used to designing vehicles to withstand high-impact collisions, our roads to move freight and people at high speed. aLIVe asks us to consider how we can make transportation safer for our own biology, while using less fossil fuel, reducing vehicular emissions, and slowing transportation sprawl.

A LIV such as a bike—currently the only LIV permitted on our streets—has minimal impact in a collision because its standard speed is 20 mph or less. A study by Seattle/King County Public Health found that 95% of pedestrians will survive an impact at 20 mph, but only 15% survive an impact at 40 mph.

A LIV has a small carbon footprint, a small land-use footprint, and promotes mass transit by providing an effective way to complete trips. In Seattle, Sound Transit light rail stations are being placed 2½ miles apart—perfect for a LIV commuter solution.

We also need living streets. 40% of Seattle’s land is given over to roads, parking, and garages, with much of that land—the portion considered the public’s right-of-way—occupied by cars. These paved surfaces contribute to climate change: they radiate heat; they displace urban trees; they increase stormwater runoff, which, at 22,580 tons annually, is the largest source of pollutants flowing into Puget Sound.

As we think beyond the car, we also need to think beyond the bike. Not everyone can ride, and our inclement weather and difficult terrain calls for vehicles adapted to our situation. More LIV options, plus lowered speed limits in neighborhoods, could move more people, more safely, on existing roads.

We begin any great project with a vision. aLIVe is working with Great City and 4Culture to bring together artists and inventors who will stretch their imaginations and ours. aLIVe seeks “everything from poetry to prototypes.” Please contribute your ideas! Find out more at www.greatcity.org/about/alive.

Artist Cheryl dos Remedios founded and organizes aLIVe. aLIVe is hosted by Great City, in partnership with the Streets for People Coalition. Sponsors include 4Culture, Cascade Bicycle, greenmuseum.org, Anne McDuffie, Seattle Art Museum, Seattle Office of Arts & Cultural Affairs, Seattle Parks & Recreation, Seattle Summer Streets, SvR Design, Perla Sitcov, and Talking Box Media. Thanks to Anne McDuffie for her assistance with this article.
Hospital Art Enhances Healing Environment

Mary Lou Jay

Artist Lynn Basa recalls the day an older couple approached her as she was installing an artwork in the intensive care unit of the University of Washington Medical Center. “They told me their son had died of AIDS just 20 minutes before. They wanted me to know that the hospital’s art collection had meant a lot to him, that they had walked around with him and looked at the art and talked about it.”

The encounter didn’t surprise Basa. During her years as director of UW Medical Center’s hospital art program, she has heard many similar stories. “The reactions that I saw from patients and staff and family showed how art can humanize an environment. Art is life, one of the most outward symbols that you can have of the human spirit.”

For many years, hospitals in the United States focused primarily on the clinical aspects of healthcare treatment. Now, however, “there is a rich and growing body of research connecting arts in healthcare programs to improved quality of care for patients, their families and even medical staff. Studies have proven that integrating the arts into healthcare settings helps to cultivate a healing environment, support the physical, mental, and emotional recovery of patients, communicate health and recovery information, and foster a positive environment for caregivers that reduces stress and improves workplace satisfaction and employee retention,” according to the 2009 State of the Field report of the Society for the Arts in Healthcare.

Hospitals have responded to this research by incorporating all types of arts programs—especially visual arts—into public and patient treatment areas.

Seattle-area hospitals were pioneers in recognizing the importance of art in their buildings. Swedish Medical Center began placing art in its buildings in the 1960s, during the time that Dr. Allan Lobb, an artist himself, served as the hospital’s Executive Director. “He saw the interconnectivity of the environment and people; he believed that the environment did affect how people felt and how they healed,” says Dianne Elliott, who served as manager and curator of the hospital’s art collection for more than a decade. Swedish, a non-profit hospital, voluntarily earmarks approximately one percent of its construction budgets to art acquisition and has recently established an art endowment fund to provide additional funding in perpetuity. Its collection now includes 2000-plus pieces, permanently displayed on the hospital’s four campuses.

Harborview Medical Center has benefitted since the 1970s from King County’s mandated one percent set-aside for art on all capital construction projects. A recent expansion program at Harborview has yielded many public art projects, overseen by the county’s cultural services agency, 4Culture. “But all of the art collected was paid for by public dollars and was only presented in public areas. That left a number of places, like treatment rooms, patient rooms and exam rooms, unserved, and they were places where art was needed,” says Peggy Weiss, Harborview’s art program manager. She has worked to develop a secondary collection to fill that gap, using limited funding from the hospital and soliciting specific, targeted donations from hospital patrons.

Art choices

Hospital art can include everything from paintings and photographs to ceramics and larger sculptures. To choose appropriate works, Swedish and Harborview have art committees composed of hospital staff, artists, and volunteers.

Swedish Medical Center doesn’t want “daisies in a jar” art, but does exclude work with political, violent, sexual or religious overtones. “Our goal was to provide complex, engaging work that’s intellectually challenging and visually stimulating—pleasantly provocative,” says Elliott.

Joyce Turner, chair of Swedish’s art committee, says words like “healing the mind and body, encouraging, welcoming, engaging, timeless, and reflective of the cultures that use the space” describe the type of artworks the hospital seeks.

“When I came to Harborview, part of my objective was to push boundaries a little, get people a little stimulated, but right away I learned that was not the purpose of a collection in a med-
ical or trauma center,” admits Weiss. “We are here to help—we are not here to provoke a lengthy aesthetic dialog. We want pieces that a wide range of people can enjoy. There will be something for almost everybody in this collection, something that everyone will find comforting. It’s not that the collection is so uniform that everyone will like it, but that everyone will find inspiration from something, somewhere in the collection.”

Basa says that the UW Medical Center’s collection was “very progressive” for a hospital art program. “Many hospital art collections are just landscapes, but there’s a whole world out there that goes beyond that. One doctor who was on the selection committee pointed out that medicine did not stop in the 19th century, so the hospital’s art collection shouldn’t either,” she says. “People notice the art; it isn’t just framed wallpaper, it is stimulating.”

Artist Ellen Sollod, who has created art both for Harborview and Swedish, says she wants this work to be quiet and soothing. “But it’s not about either denial or talking down to people; I think that one of the tendencies in these settings is to have cheerful, happy art, but the truth is that people aren’t cheerful and happy. So we try to be respectful of the experiences that people are going through,” she explains.

There’s also a definite local emphasis in Seattle hospitals’ art acquisitions. “If you want to see some of the leading artists in the region—not just public but also studio artists working primarily in the gallery world—between Swedish and Harborview they have an amazing collection,” Sollod adds.

There are some unique considerations when choosing art for a healthcare environment. Textiles or tapestries must be displayed behind glass or Plexiglas because of concerns about infection control. And Weiss has yet to find the right art for Harborview’s MRI suite. “The unit wants something right in the space where the giant magnet is located, but it’s hard to find things that don’t have metal in them. There’s always a staple in a frame, and even a Plexiglas box has hanging hardware,” she says.

Architecture that includes art
As hospital art programs have grown, so has their impact on the design of new healthcare structures.

NBBJ, architect for many of Swedish Medical Center projects, uses an evidence-based design approach, according to Elliott. “They believe that a building’s features can affect what happens to the patients, so a building needs to include elements like natural lighting and wayfinding,” she explains. “They have advocated using art as wayfinding at the end of hallways as anchor points, or to provide directions in other areas.”

Eight floors of Swedish’s East Tower feature a concave wall with two panels and a shelf that utilizes site-specific art installations, so when people step off the elevator the artwork is the first thing they see. For Swedish’s Orthopedic Institute, the art committee worked with architects and designers to designate areas for primary and secondary art placement from early on in the project.

Architects for Harborview’s new Norm Maleng building, also designed by NBBJ, incorporated museum-quality caseworks into the structure at the request of the hospital’s arts program. “By ensuring that we had the right kind of cases, we were able to build a new collection of Northwest ceramics and attract a major gift of ceramics from a Northwest patron,” says Weiss.

“We now have many years of successfully partnering with architects, and architects who have been through a successful project with integrated artwork will often ask artists to come in early,” adds 4Culture’s Tina Hoggatt. “Our best case scenario is to bring an artist in during the design phase. Artists bring really important and very different skills to the table in terms of problem-solving and envisioning. Public art is a collaborative discipline, and many artists are used to working with other design professionals.”

The impact of hospital art
Swedish has extended the reach of its art program through a video overview of selected works on all four campuses, which is available to patients via closed circuit television. At Harborview, Weiss offers new residents an art tour. “Many people coming to school here are from Montana, Alaska, Wyoming. When they come here as residents, they learn that art is central to our mission of healing and caring,” she says. “Then they go back to their states’ hospitals and clinics and ask ‘Why don’t we have art here?’”

Those residents discover, as the hospitals themselves have discovered, that art can truly make a difference in the lives of patients, visitors, and staff members.

“It’s important to humanize what can be a dehumanizing space and a scary space,” says Turner. “Studies show that art does play a role in helping people become more calm and comforted.”

“The Western medical model is all about science and machinery, and I think art is very much about human experience,” Sollod agrees. “So I think bringing art into the hospital environment begins to transform it to one that is emotionally healing. It helps mitigate the harshness of the Western medical model.”

Mary Lou Jay is a freelance writer from Timonium, MD.
Turn Open Spaces Into Healthy Places

By Triad Associates
Imagine New York City in the mid-1800s. The Industrial Revolution is in high gear. The city is strangled by its own rapid growth.

Countless immigrants occupy filthy, stifling, overcrowded apartment buildings. Disease and despair are everywhere. “Air! Give me air!” is the cry from the tenements, but few are listening.

Enter Frederick Law Olmsted, a young visionary who would become the “father of American landscape architecture.” A journalist and architect, Olmsted knew about the therapeutic health benefits of usable open spaces. He had studied the ancient Greek “healing gardens” and the Roman military hospitals where open-air gardens reportedly aided in a soldier’s recovery. He believed in the physical, social, and emotional benefits of fresh air, greenery, and open space for social interaction and physical activity.

To rescue Manhattan residents from their oppressive surroundings, Olmsted designed Central Park—the “lungs of the city” where, it was said, thousands “visited daily just to breathe.” The park promoted a sense of calm and relieved stress from the rigors of crowded city living. Today, Central Park is arguably the most famous, widely used, and enduring urban outdoor space in the country—perhaps even in the world.

The elder Olmsted’s legacy is locally evident as well. Olmsted Brothers, a firm led by Frederick’s sons, designed 38 Seattle parks, green pedestrian linkages and boulevards, and helped give our city its reputation as one of the country’s most livable and healthy cities. Anyone who spends a sunny afternoon circling Greenlake with hundreds of others on two feet, four feet, or wheels will witness first-hand the Olmsted contribution to our community.

But though not living in over-crowded tenements, today’s urban families must battle the hidden health threats of a lifestyle dominated by television, computers, video games, and automobiles. It’s reported that only a quarter of American adults engage in recommended levels of physical activity, and a third get no leisure-time physical activity at all. This inactivity contributes to an increased incidence of obesity-related diseases. And the health dangers go beyond the physical to the mental, social, and even spiritual well-being of our communities.

Large-scale, visible, public outdoor spaces are important to our well-being, but they can’t work if sedentary habits keep people on the couch. It takes careful planning and creative designs to encourage, entice, and lure both young and old outdoors.

The design community takes up the challenge

Today, careful, conscious, deliberate design is getting double-duty out of a building or from a community’s once-overlooked open spaces. Rooftops are alive with plants and people; planter strips grow food for the table; rain gardens filter stormwater runoff; trees purify the air. Green spaces and green connections encourage neighborhood walkability, with people-to-people interactions, and safe places for children to play. Careful planning and design have given the Puget Sound area many new examples of inspired and health-giving outdoor spaces.

Conover Commons: a centrally located common area

Healthy living is a built-in feature of The Cottage Company’s Conover Commons. This award-winning community in Redmond is one of several projects designed by Whidbey Island architect Ross Chapin AIA where homes are oriented around a central...
outdoor space. Chapin’s “pocket neighborhood” concept is designed to invite residents outside to the green space for strolling and social interaction with neighbors, to separate and de-emphasize the automobile from living spaces, and to provide a smooth, layered transition between public and private spaces.

The resulting health benefits for residents are profound, particularly for children. Chapin says, “Pocket neighborhoods provide an expanded safe ‘home range’ for children to explore and develop their cognitive abilities as they grow. This concept is in sharp contrast to the confined-backyard and exposed-front yard model of traditional single-family developments.”

There are other healthy open spaces at Conover Commons, both active and passive. When residents pondered what to do with their inviting yet under-utilized community building, they decided to turn it into a workout room. They pooled weights, treadmills, and stair-steppers, and now they regularly meet and exercise together. For quieter times, they relax on a viewing platform overlooking nearly five acres of woodland ravine, permanently set aside as a Native Growth Protection Area. Essential for a healthy, natural environment, these surrounding trees are powerful ecological and health workhorses. [tree diagram]

Legacy at Pratt Park: carefully crafted open spaces

This apartment community, Legacy at Pratt Park, is a creative reuse of the former Wonder Bread factory just east of downtown Seattle. Developed by Legacy Partners and designed by architect Joel Wilbur, it includes a variety of functional outdoor spaces—private, community, and public—that encourage and enhance healthy living.
The design team oriented the apartments around a central courtyard and fountain that provides a visual focus, cools the air, and masks urban noise with its calming sound. Their design turned rooftops into lively people places, with seating, a pea patch, BBQ area, and expansive views of downtown Seattle, the surrounding mountains and Elliott Bay. Walking is encouraged, with strong pedestrian linkages from the central courtyard to an adjacent community park, transit, and downtown Seattle.

Rainier Vista: a walking neighborhood with community gardens

Physical activity increases when safe, convenient connections lead to destinations nearby, such as parks, transit, and shopping. At Rainier Vista and other recent Seattle Housing Authority (SHA) projects, architects took advantage of their close proximity to such neighborhood amenities and provided strong linkages to encourage walking. The design team further enhanced walkability by deliberately shortening neighborhood blocks. The obvious health benefits include increased physical exercise and reductions in harmful vehicular emissions and traffic congestion.

The SHA projects provide another time-tested healthy function of outdoor spaces: gardening. Community “pea patches” encourage residents to work together toward a common goal. They foster physical exercise through working with soil, plants, and gardening tools. In addition, community gardening offers psychological and social benefits. It brings together neighbors of diverse ages and cultures to participate in a community activity. Gardening provides a strong, personal, and symbolic attachment to the land and gives an appreciation for the process of food production. Ultimately, these gardens are a source of healthy, fresh fruits and vegetables.

Boulders at Greenlake: healthy community living

When designing Boulders at Greenlake, architect Alison Walker Brems of Johnston Architects and developer Bill Parks had a single vision: to create a strong sense of community. On a 14,000sf parcel, they clustered nine homes around a shared open space. Its 125-foot long “creek” and lush landscaping worked together to hush the noise of a freeway just blocks away. Pathways, nooks, and seating areas bring people together. With multiple eyes on their community, residents take pride in the neighborhood, share ownership of the space, and watch over its children. The result is an active, well-maintained, and safe open space.

Maximize the health benefits of open space

When the entire design team collaborates early in the design process and focuses their attention on the gaps between buildings, the result can be healthy outdoor spaces. On your next project, encourage your team to incorporate healthy living and multi-functional open spaces into the design. Ask yourself, “What would Olmsted do?”

Considerations for Open Space Design

Looking beyond the site

- What amenities are located within a half mile? A mile?
- How can we encourage walking/biking?
- Can we incorporate trails and linkages?
- Are there off-site noise factors to consider?

Looking within the site

- Can we centrally locate the open space?
- What can we do to make it interesting, inviting, and useable?
- Can it be visible?
- Is it easily accessible?
- Can we include a variety of spaces, providing for active and passive activities?
- Can the open space accommodate both large and small groups?
- How can we make our open space multi-functional?
- How can we make the space inviting?
- What will people do in this space?
- How can we increase the visual quality of the space? Consider a variety of textures, color, light and shade?
- Can we use water in the space?
- How can we light the space?
- How can we create a feeling of safety in the space?
- Can we include trees for human comfort and environmental benefits?
- What views are available? How can we capitalize on them?
Peter Orszag, Director of the nation’s Office of Management and Budget, testified to the Senate Finance Committee that one of the guiding principles for health reform was to “invest in prevention and wellness. The plan must invest in public health measures proven to reduce cost drivers in our system...”

The definition of health by the World Health Organization states that “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.” This definition closely resembles the shift that Mr. Orszag is challenging us with today: to transition from treatment of disease to an ongoing, life-long process of continuous personal improvement in health. We are being asked to make changes to the way we live, rather than search for cures to problems caused by our own lifestyles. Today we reach for healthcare when our health issues became uncomfortable or painful. Tomorrow’s healthcare is envisioned as a continuum of guidance and care, rather than of episodic care.

Currently, healthcare architects are accustomed to designing facilities to meet the demands dictated by episodic healthcare. We design facilities that maximize the number of patients seen by a primary physician, surgical suites that allow high turnover of procedures, and hospital patient floors that minimize the number of staff required to care for patients. Our clients have long told us that staff time equals money, and we have been responding accordingly.

The new healthcare paradigm shifts the emphasis from staff (physicians, nurses, caregivers) to the individual patient. Prevention involves the identification of the potential health condition, counseling on prevention methods, and follow-up to verify continuity or progress. The thrust of the care shifts from episodic treatments to a continuum of care. This new emphasis challenges architects to develop new spatial concepts and vocabularies to match, creating spaces where the patient feels cared for rather than treated as a product of the healthcare machine.
**Patient-centered care**

The Swedish Executive Health Center at the Cherry Hill campus offers a good example of this proactive approach. The center offers dedicated care to executives willing to pay for direct access to providers. The care regimen starts with a thorough examination (lasting over half a day), continues with on-going communications between the provider and individual, and promises wait-free appointments thereafter.

The center’s design by Callison (Seattle) guides the visitor-patient into an environment that feels like a calm oasis in the midst of a bustling hospital. The patient enters into softly lit spaces, with carefully selected artwork on the walls and calming music in the background. She is met by the medical staff, who welcome her into a comfortable lounge where, in adjoining conference spaces, they can discuss the pertinent issues. The clinic is equipped with the full gamut of sophisticated equipment at the ready. The use of rich finishes generates an appropriately luxurious feel. Although aimed at select individuals, this center offers a glimpse at how future medical clinics could function and feel when placing patient needs at the forefront.

The Executive Health Center exemplifies patient-centered care. Such care naturally promotes prevention and continuity of interaction between healthcare providers and patients. Group Health, a Puget Sound HMO, has been applying patient-centered-care concepts to their services for some time. This is best exemplified at their Bellevue Medical Center, designed jointly by Ellerbe and NAC, which incorporates primary and specialty health clinics.

The medical teams working at these clinics truly collaborate on the care of the patients. No exam rooms are designated to a specific physician, and the teams utilize “corrals” of cubicles where they work between appointments. The “corral” serves both as a place to exchange information and to catch up on electronic charting and responding to phone calls. The latter are particularly significant since Group Health patients can have ongoing communications with their providers via phone and e-mail. The proximity of the primary and specialty clinics allow face-to-face collaborations between the clinic teams, creating the opportunity to solve complex health issues that might otherwise take multiple appointments and communications to resolve.

The architectural team created reception and waiting spaces on the east end of each floor, with exam rooms clustered in the center and cubicle “corrals” and offices at the periphery. This layout minimizes distances for weak patients and for staff and allows newcomers to orient themselves quickly. Natural light and local materials have been brought into the interior as much as possible, enhancing the warmth and comfort of the place. This medical center, both in feel and function, transmits the message of inclusivity and welcome to the patient.

**A Medical Home**

Expanding on the patient-centered concept at the Bellevue Center is the recently developed approach to preventative medicine called “Medical Home.” As Jane Brody in the June 22 issue of the *New York Times* explains it, “In a medical home, the family doctor helps patients get specialty care when they need it and, through electronic records, keeps careful track of treatments and informs specialists of the patients’ progress. The connections between the professionals who work on each case are seamless and convenient. Doctors and patients have easy access to medical information, and patients with chronic ailments are called regularly to reinforce treatment regimens and see how they are doing.”

This concept takes the ideas we identified in the previous examples to their logical conclusion: a healthcare treatment regimen that is attentive to the patient’s issues, with follow-ups both within and outside the clinical environment.

In the Pacific Northwest, both Group Health and Swedish are testing Medical Home concepts. Unlike the exclusive nature of the Executive Center, the Factoria clinic of Group Health has been working with a middle-income group of insured patients...
over the past two years with very enthusiastic results. Swedish has recently opened a similar clinic on their Ballard campus. Neither clinic has gone through major design adaptations to their new operations. A great deal of interest and enthusiasm about the concept was evident in a recent regional healthcare conference. Given such excitement among the professionals, this concept is likely to spread beyond the experimental stage, eventually requiring architects to bring a fresh look and feel to these clinics.

A “Wellspring” Facility

In a location where diverse elements of healthcare come together, wellness can become the central focus of a new facility type. Such is the Wellspring Center, housed in a former K-Mart just off of I-5 in Woodburn, south of Portland.

Wellspring Center includes a mix of services and shops: urgent care clinic, specialty clinics, complementary medicine clinic, health club, café, administrative offices, and a shop for health products, all under one roof. The owner, Silverton Memorial Hospital, collaborated with Clark/Kjøs Architects to explore ways to utilize an abandoned, former K-Mart building along the freeway. Their unconventional solution epitomizes wellness by bringing together the elements that support healthy living. Moreover, the co-located services cross-pollinate each other through packaging of discounts among them, e.g.: an event at the education center may offer coupons for the fitness center.

The deep building was opened up with landscaped courtyards to allow natural light in. The designers used extensive landscaping in the parking lot and a large water feature at the entrance to mask the automobile environment and to shift into a “cleansing” environment. The clean feel is further reinforced with the use of light-toned woods and crisp colors. While this is still a unique combination of services, we are bound to see more of these developed, considering the current shift toward a holistic approach to health.

The push for prevention and wellness within a healthcare reform is clearly evident. While specific impacts to the way in which healthcare will be provided are still sketchy, these changes are coming. As healthcare architects, we have already given these topics much thought and are starting to follow through with designs. Healthcare facilities will eventually come to match the evolution of the new paradigm in healthcare: lifelong wellness, housed in life-enhancing environments.

R. David Frum AIA is the leader of the Seattle office of Clark/Kjøs where he specializes in healthcare design. He has led facility development plans, long-term campus facility visions, and functional space programming. He is involved with AIA Seattle, the Academy of Architecture for Health, the Architecture for Health Panel and the Public Health Group of the Union of International Architects.

Footnotes
1) Testimony of Peter R. Orszag, Director of the Office of Management and Budget, before the U.S. Senate Committee on Finance, March 10, 2009.
2) http://www.who.int/about/definition/en/print.html
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On September 28, the Seattle Cancer Care Alliance (SCCA) cut the ribbon on its new SCCA House, an 84,000sf hospitality facility for out-of-town oncology patients located near SCCA headquarters in South Lake Union. Although it’s not a medical facility, the building was carefully designed to play an important role in the treatment of its residents by supporting their health during an intensely stressful emotional and physical experience.

The SCCA, which is seeking LEED certification for the project, made indoor air quality (IAQ) a primary focus, according to lead architect Scot Carr AIA, an associate at Seattle-based Weinstein AU. To minimize sources of indoor air pollution, all adhesives, paints, sealants, carpets, and composite materials were specially selected for their low-to-zero concentrations of volatile organic compounds (VOCs) and noxious chemicals like urea and formaldehyde. In part because patients tend to experience heightened sensitivity to smells, trash was handled with trash chutes for garbage, recycling, and composting.

And, of course, extra care was taken to keep rooms filled with fresh air. Each room has operable windows that allow patients to control natural ventilation, and all outdoor air is filtered to MERV 13 level—the same standard used in inpatient hospital settings.

While certainly an exceptional case because of its occupants’ medical needs, the SCCA House design is representative of growing shifts, both in public awareness that indoor environments do impact health, and in opinions about what makes a building’s design “healthy” or “sick.” Built environment professionals are making strides to define best practices for healthier buildings, creating solutions for low-income housing, schools and patient facilities as well as for new homes and retrofits.

Changing Best Practices
For decades, institutions like the American Lung Association (ALA) and the U.S. Environmental Protection Agency (EPA) have worked to increase public awareness about common health hazards that exist indoors, where adults and children spend as
much as 80-90% of their time. Diagnoses such as Sick Building Syndrome, Building-Related Illness and Multiple Chemical Sensitivity have emerged in response to health complaints triggered by indoor environments. A recent study by Johns Hopkins University researchers linked indoor air pollution to an increase in severity of asthma symptoms in children.

Changes in building science, technology, politics, and popular opinion have also dramatically altered what professionals, lawmakers, and the public view as “healthy” indoor environments. According to an EPA publication on indoor air quality, early-20th century building standards called for ventilation at a rate of 15 cubic feet of outdoor air per minute (cfm) per occupant. But priorities changed during the energy crisis of the 1970s, when owners and builders “tightened up” structures to minimize indoor/outdoor air exchange, and building ventilation standards decreased to just 5 cfm per occupant.

Dan Morris, a senior air quality consultant at Bellevue-based EHSI/Healthy Buildings Inc, was designing and building cutting-edge solar homes at the time. He says his wake-up call came when occupants of some of his super-insulated homes began complaining of irritating odors. “That’s when we realized we’re putting formaldehyde, smelly paint, and other pollutants in here with not enough ventilation.”

As mass efforts mobilized to weatherize as many homes as possible, public welfare institutions quickly began to understand that by pursuing energy efficiency at all costs, people were inadvertently sealing problems into buildings. The consequences, says building scientist Dan Wildenhaus, aren’t limited to heighten indoor pollution. Building durability, along with occupant health and safety, can be compromised as well.

“Accidentally making homes too tight and not ventilating them properly is a big problem,” says Wildenhaus. “It not only means there’s less fresh air for humans to breathe; it also means moisture can be getting into building cavities, and parts of the building are becoming damp and not having a chance to dry out.” This can cause ideal circumstances for mold growth and dry rot.

New standards, most notably the American Society of Heating, Refrigerating and Air-Conditioning Engineers’ (ASHRAE) widely referenced standards 62.1 and 62.2 for indoor air quality, reflect the numerous factors impacting IAQ. The ANSI/ASHRAE standards set baseline cfm recommendations according to the building type and use, then adjust from the baseline according to the size of the space and additional factors.

But as the renewed push for energy efficiency continues, understanding the big picture of indoor air quality will be more important than ever, says Morris. “Instead of just putting in double-glazed windows and insulation in the attic, now we’re seriously looking at zero-energy houses,” he says. More aggressive energy auditing and weatherization means more room for error.

That’s not to say that energy efficiency and ventilation are mutually exclusive. The SCCA, for example, predicts its facility will operate at only 45 kBtu/sf per year—50% of regional targets for energy usage. Its sophisticated solution for energy-efficient ventilation is a heat recovery system. Inside the building’s rooftop ventilator unit, a metal cylinder extracts heat from used air being expelled from the building. The ventilator then uses the waste heat to raise the temperature of fresh air being drawn in and filtered, reducing the amount of energy the building’s heating system needs to bring the air up to indoor temperatures (the process can be used in reverse to extract unwanted heat from incoming outdoor air during the warmer months). Global firm ARUP engineered the project’s structural, mechanical, electrical, and plumbing systems.

“We want to train people to make more energy-efficient buildings, but to do that without sacrificing other top priorities,” says Wildenhaus. “If we train them to do that right, we’ll end up with homes that are energy efficient, that get better indoor air quality, that last hundreds of years, and are safe and comfortable to live in.”

Build Tight, Ventilate Right

According to Wildenhaus, one misunderstanding across the industry is the stigma that a “tight” building can’t be a healthy building.

“A house can never be too tight; a house can only be under-ventilated,” he says. Wildenhaus, who frequently works with Northwest Energy Star to provide industry trainings, offers the mantra “build tight, ventilate right.”

“You’ll do much better to control the ventilation in your house if you take out unintended holes through air sealing, air barrier framing, and proper building techniques, and then add ventilation to meet state codes or the levels needed for your certification program.”

For new construction, he recommends placing all parts of a heating system inside the building envelope. HVAC systems that link living areas to garages or attics through ductwork that runs through crawlspaces or building cavities are a common source of indoor air quality problems in homes. “If there are leaks in those systems, you may be pushing your filtered air into these undesirable spaces—or worse, drawing air into your home directly from your garage, crawlspace, or attic,” he says. At best, this air is stale; at worst, the system could invite dangerous contaminants like carbon monoxide from the garage into the living space.

Slightly increased indoor air pressure can work hand-in-hand with air sealing to reduce the incidence of indoor air pollution. When designing stores for regional grocer PCC Natural Markets, George Ostrow, President of Seattle-based VELOCIPEDE archi-
tects inc., positively pressurizes the buildings so that any air leaks send air outward instead of into the store. “Customers actually notice,” says Ostrow. “They say, ‘it smells good in here.’”

Fans are important, but simply circulating air throughout a building can’t take the place of exchanging stale indoor air for outdoor air, says Morris. Although systems that automatically shut down in closed rooms can save energy, he warns that there must always be some minimal exchange to prevent pollutants from building up.

Passive Solutions
Increasingly, firms specializing in passive ventilation design are making options available to facilitate air exchange naturally throughout a building without requiring any energy input. Common strategies include operable windows placed on multiple walls for cross-ventilation or staggered at different heights to take advantage of warm air rising. But while Morris and Wildenhaus suggest using passive design to support the total ventilation strategy (and take advantage of the Pacific Northwest’s mild climate), they caution that home systems relying solely on natural ventilation can be impractical.

It takes complex engineering to get these systems right, and only a few firms understand how to do it well, says Morris. Additionally, says Wildenhaus, a homeowner must understand the subtleties of the system in order to operate it. The degree of ventilation can shift with the season, leaving some parts of the home over- or under-ventilated at various times.

Pete Wall, director of planning and construction at the Tacoma School District, has started using a technology in newer school buildings that combines natural air currents with mechanical processes. Using a technique called displacement ventilation, “we introduce air into the classroom at the floor level; as it warms, it rises and leaves the classroom, so the students and teachers are only breathing that air once.” The air not only feels fresher, Wall says, but studies have also shown that the resulting decrease in carbon dioxide concentration means kids (and teachers) stay more alert in class.

Architects Taking the Lead
Very simple design remedies can do a lot to keep indoor pollution at bay. Ostrow suggests creating a space where occupants can wipe feet and remove shoes at the entryway. “Get rid of all carpet,” he adds. For bedrooms, he recommends cork flooring, which is warm, soft, and quiet underfoot.

In general, however, designing healthier buildings requires extra time and consideration in the early stages. “You’re considering more parallel options,” says Carr. “In light of the fact that there’s always budget pressure, it can be challenging when you’re putting out a costing set and there are five options for the mechanical system alone.”

Often, healthy design must also respond to specific needs that take time to understand. For the SCCA House, Carr and his team interviewed patients, caregivers, and physicians, and visited similar facilities. “Their leadership was key,” says SCCA Housing Coordinator Debbie Fraley.

Ostrow finds that one of the biggest challenges can be working closely with the contractor to keep construction dust and debris out of the home to the greatest extent possible.

Because of the extra time and learning required, Kathleen O’Brien, LEED AP, CSBA, of the Seattle consultancy O’Brien and Company, recommends integrated design strategies that bring all stakeholders to the table as early as possible.

“It takes a little courage. It means opening the client up to having more people involved in the process, which increases the up-front soft costs. You have meetings in the beginning to come up with better solutions, you model them, and you’re able to have a more systematic approach to the building,” she says, pointing to Miller Hull and Weber Thompson as local leaders in integrated design from the architecture side.
Keeping it working
Post-occupancy evaluations (POE) are also critical to improving the learning curve, says Morris. He recommends third-party independent evaluations that incorporate both data measurements and occupant surveys to gauge comfort and performance.

“How the occupants interact with the building, how they live in the building, how the building is operated and maintained—all of these variables impact the performance of the building,” he says. For example, when his firm was hired to do a POE of the Breathe Easy homes constructed during Phase I of the High Point project in West Seattle (designed by Seattle-based Mithun), Morris uncovered a relatively simple misunderstanding. “We learned that although the designers had chosen their materials well, the occupants didn’t know how to properly operate the systems, and the system wasn’t being properly maintained,” he says. After receiving his report, the Seattle Housing Authority immediately changed the HEPA filters as suggested and held a training session for residents. “Most of the problems we’re finding in sick buildings are problems that were preventable.”

Keep Learning
According to Wildenhaus, the best thing an architect or designer can do is to pursue continuing education that teaches building science and ventilation techniques, and that will train them to use checklists and performance testing to achieve comfort and indoor air quality while maintaining energy efficiency (see sidebar for Wildenhaus’ top program choices).

“The greater their understanding of sound building science, the more options they can present to builders and to homeowners on ways that they can choose to provide indoor air quality to the home, and the more successful they will be.”

Resources for Continuing Education and Training

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<tr>
<th>Program Name</th>
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<th>Description</th>
<th>Target Audience</th>
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<tr>
<td>Indoor AirPlus*</td>
<td>U.S. EPA with Northwest Energy Star</td>
<td>This 4-hour course will prepare building professionals to plan for EPA Indoor AirPlus certification for their projects.</td>
<td>Professional designers and builders.</td>
<td><a href="http://www.epa.gov/indoorair-plus/resources.html">www.epa.gov/indoorair-plus/resources.html</a></td>
</tr>
<tr>
<td>Healthy Home Training for Building Professionals</td>
<td>Master Builders Association of King and Snohomish Counties in partnership with American Lung Association in Washington and Northwest Ecobuilding Guild</td>
<td>This course, which will be offered at least twice annually, provides professionals with the building science, moisture management and building materials information they need to build energy efficient homes that provide a comfortable and healthy indoor environment.</td>
<td>Residential construction builders, remodelers, architects and trade contractors</td>
<td><a href="http://www.mba-ks.com/index.cfm">www.mba-ks.com/index.cfm</a></td>
</tr>
<tr>
<td>Master Home Environmentalist Program</td>
<td>American Lung Association in Washington</td>
<td>Volunteers are trained to assess indoor environments and to identify low- and no-cost solutions to improve health and safety. In-home assessments are provided free to the public.</td>
<td>Public</td>
<td><a href="http://www.alaw.org/air_quality/master_home_environmentalist">www.alaw.org/air_quality/master_home_environmentalist</a></td>
</tr>
<tr>
<td>General</td>
<td>Home Performance Washington</td>
<td>Industry association of energy auditors and home performance contractors focused on energy efficiency and indoor air quality</td>
<td>Industry professionals</td>
<td><a href="http://www.homeperformance.washington.org">www.homeperformance.washington.org</a></td>
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Julia Levitt is a Seattle-based journalist who most recently worked as managing editor for the non-profit media organization Worldchanging.com. She is currently a graduate student at the University of Washington College of Built Environments, pursuing a Masters of Science in Real Estate.
In November, AIA Seattle honored architects and their project teams from across Washington State for projects exemplifying best examples in a broad array of sectors from single- and multifamily residential, to civic, to commercial. Award-winning projects, which were announced at a sold-out event at Benaroya Hall, served as powerful demonstrations of the agility, inventiveness, and foresight that architects bring to their work in this era of change—improvising and reacting quickly to new constraints, going above and beyond to improve the built environment.

“These projects truly epitomize not only the best of what is possible here in Washington, but also what our colleagues are trying to achieve across the country,” said event moderator Elizabeth K. Meyer FASLA, University of Virginia. “We found the work inspiring and thought-provoking.”

The three-person jury included Nigel Dancey, RIBA Foster + Partners, London, Mark Rios, FAIA, FASLA, Rios Clementi Hale, Los Angeles, and Teddy Cruz, eStudio Cruz, San Diego. The event was moderated by Elizabeth K. Meyer, FASLA, University of Virginia. Co-Chairs for the 2009 AIA Seattle Honor Awards were Don Miles FAIA of ZGF Architects and Shannon Nichol of Gustafson Guthrie Nichol.

Honor Award

Grand Teton Discovery and Visitor Center

Bohlin Cywinski Jackson


Grand Teton National Park’s rugged alpine landscape and stunning array of wildlife attracts over two million visitors every year, making it one of our most popular national parks. A new visitor center at the southern entrance to the park near Jackson, Wyoming replaces an outdated, undersized building and is designed to connect visitors more viscerally to this extraordinary landscape.

The building is placed at the edge of the riparian forest in a sagebrush meadow, enabling visitors to sense the meandering river and confront the great mountain range. Visitors pass through a compressed entrance vestibule before emerging into an expansive light-filled space.

This Wyoming project was described by jurors as a significant asset to the future of our national park service. “The national park is the star, but somehow this building really holds its own—it is a timeless fit for that site.”  □

The jurors identified five themes that they responded to throughout the work: Infrastructure, Ecology, Social Sustainability, Density, and Craft. Infrastructure ranged from the large, urban scale down to a thoughtful design approach to a humble biofuel station, bringing the value of design thinking to every type of project. Ecologically, jurors noted that conceptions of site and systems began to connect inside and out, moving away from buildings towards connected ecological systems.

Social sustainability referenced the power of architects to improve social environment. Jurors pointed out architects’ potential and responsibility to see how our work can instigate change, from a girls’ school in Africa to housing for migrant farm workers. From a sustainability point of view, the jurors felt very strongly about density and wanted to honor difficult projects that sought to address different scales of living. The jurors also responded to the sheer beauty of many of the projects and the excellence of their execution.

Of the 175 submittals to the 2009 AIA Seattle Honor Awards, four received Honor Awards, five received Merit Awards, three received Commendations, and one received a Citation. □
Honor Award

Mercer Slough Environmental Education Center

Jones & Jones Architects and Landscape Architects
With Consulting Team: Environmental Permitting: Vicki Morris Consulting Services; Geotechnical design: Shannon and Wilson; Civil Engineering: PACE Consulting Engineers; Structural Engineering: Lund and Everton Structural Engineers; Mechanical, Plumbing: Stantec; Electrical, Communications, Lighting design: Sparling; Cost Estimating: Davis Langdon.

Construction team included—General Contractor: Berschauer Phillips Construction Company; Jim Phillips; Al Bowen; Keith Michel; Tyler Farnar Construction; Geotechnical Services: Hayes McElroy

As an education facility focused on the study of wetland ecosystems, this center, certified LEED Gold, teaches by design and example. It immerses students in a thriving upland tree canopy overlooking a major urban wetland, while exhibiting principles and techniques that help keep the wetlands intact.

Preserving the tree canopy meant footprints of no more than 2,500 square feet. By analyzing voids in the forest, the design team identified “rooms” for each of eight structures, four of which barely touch the ground. Using helical pilings and concrete pile caps, the structures cantilever over the land and up into the tree canopy. This allows water, air, and vegetation to flow beneath, thus sustaining the fragile, sloped site and the land’s natural vessels. Building volumes and decks are staggered, offset, and pierced to accommodate trees and allow the buildings to interact with their surroundings.

This well-crafted public project was a stand-out because of its deep connection to its environment, distinguished by the ecological systems operating across building and landscape. Jurors described the project as a “vivid learning laboratory.”

Honor Award

Vancouver Convention Centre West, Expansion

LMN + DA/MCM

The Convention Center fully engages a vibrant downtown core and the natural ecosystems of its spectacular waterfront setting. Recently submitted for certification as LEED Platinum, this project functions as a living part of the city and harbor, occupying fourteen acres on land and eight acres over water. It features 1 million square feet of convention space, 90,000sf of retail space, 400,000sf of walkways, bikeways, public open space, and plazas, and a six-acre living roof, the largest in Canada.

The site’s many renewable resources include a seawater heat pump system, and the water conservation and reuse strategy will reduce potable use by 60-70% over typical convention centers.

Describing the design as “the way a convention center should be done,” the jurors were impressed with the projects relationship to the city and the water, as well as the inclusion of sustainable elements, such as the green roof that “feels more like a rooftop park.”
Merit Award

Hinoki House

Rex Hohlbein Architects


The Hinoki House is located on a hillside in a 1950s suburban development undergoing rapid redevelopment. The project began with three primary challenges: to integrate design and a high level of craftsmanship with the challenges presented in fitting into an eclectic neighborhood; to utilize construction technologies and materials that maximize both the beauty of the structure and its sustainability; and to create a place of refuge and peace for its inhabitants, one with a strong connection to the landscape.

In response, the design sought to be quiet in form, scale, and material selection, and a green “living roof” was incorporated into the design. All interior habitable spaces allow movement to exterior garden spaces. Building materials were selected for longevity of performance. The floor plan is “open” in design with a distinct separation between public and private spaces.

Honor Award

Wing Luke Asian Museum

Olson Sundberg Kundig Allen Architects

With Contractor: Marpac; Project Manager: HomeSight; Structural Engineer: Coughlin Porter Lundeen; Mechanical Engineer: Interface Engineering; Civil Engineer: Coughlin Porter Lundeen; Electrical Engineer & AV, IT, Communications: Sparling; Lighting: Candela; Acoustics: Michael R. Ventis Associates; Historic Preservation: Lawengood Architects; Cost Estimator: Robinson Company; Geotechnical Engineer: PanGeo; Land Survey: Bush, Roed, & Hitchings, Inc.


Drawing inspiration from its history, the architects saved as much of the original 1910 building as possible. Windows and doors were repaired and reinstalled, fir joists were recycled as stair treads, and fire doors and other, no longer “functional” objects were turned into furniture and works of art. On the upper floors, the original narrow doorways, corridors, and small rooms immerse visitors in the intimacy of the original space. Operable windows and two-story lightwells encourage natural air flow, while transparency between spaces and floors allow daylight to reach the entry level.

Before they were even chosen for the job, the architects began to document the Kong Yick building and, starting in July 2004, held community meetings to allow community members to participate in the museum’s expansion.

Jurors were unanimously impressed, noting that “this remarkable renovation defines architecture in a very holistic and sustainable way, remembering its past while projecting its possibilities into the future.”

Merit Award

North Beach Residence

Heliotrope Architects

With Structural: Swenson Say Faget; General Contractor: David Shore; Cabinetry: the Loop Company.

This residence is located on a northwest-facing beach fronting the Strait of Georgia on an archeologically significant floodplain. This required that no footing excavation take place and the structure be raised several feet off the ground. The design brief called for a low-impact, easy-to-maintain summer home with minimal distractions from the land and the view.

The design response situates the structure among the trees between the beach and the meadow, with walls of glass opening out to both. While actual shelter is provided, the experience is of nearly complete openness to the environment, with a minimized structure meant to disappear from view.

The vegetated roof filters rainwater that is collected and stored to irrigate the garden and flush toilets. Potable hot water and hydronic heating are aided by 90 evacuated tube collectors on the roof, and a 4kW PV panel system above the vegetable garden provides supplemental electricity. Systems are designed to zero out electricity use over the course of a full year.
Merit Award

Safari Drive

The Miller/Hull Partnership
With Civil Engineer: DEA (Phoenix); Structural Engineer: Quantum; Mechanical Engineer: Frick + Kurtz; Landscape: Floor Associates; Acoustical: BRC; Code Consultant: Tom Kinsman; Hardware Consultant: Adams Consulting; Contractor Team: Okland Construction.

Safari Drive reinvets the suburban form. The project ultimately will include 165 condominium units and amenities totaling approximately 325,000sf of building area (Phase 1 and 2 combined) on a 4.81 acre site (34 units/acre).

The barrier of distance between exclusively residential and commercial zones is compressed to a livable dimension. Potentially daunting in the context of low-lying suburbia, the massing of five-story buildings is modulated to a human scale, graciously introducing a viable level of density in the midst of consumptive sprawl.

Within its own bounds, the project is a self-sustaining, vibrant mixed-use urban neighborhood.

Small commercial functions—live/work lofts and ground floor retail spaces—are mixed among the residential units, contributing a shared energy to the public spaces.

Merit Award

Waipolu Gallery

Bohlin Cywinski Jackson

Located on the island of Oahu, this private gallery and studio offers spectacular views of the Pacific to the south and nearby Diamond Head to the northeast.

A copper-clad structure encloses the primary gallery space, its apertures framing views of Diamond Head and the ocean. Orientation on the site and precisely positioned overhangs mitigate the tropical sun.

The building’s two elements are joined by a square tubular glass bridge that floats above a stone staircase linking all three levels. The land’s natural terracing offers each level its own private entry sequence. Following the topography, articulated landscape connects the new building to the existing house and garage.

Merit Award

Topline Corporate Headquarters

NBBJ
With Structural engineer: Harriott Engineers; Mechanical engineer: MacDonald Miller; Electrical engineer: Hill Electric; General contractor: Joseph S. Simmons Construction Inc.; AV Communications: Sun West Communications; Furniture dealer: Commercial Office Interiors/Western Office Interiors.

Topline Corp., a small footwear design and manufacturing company based in Bellevue, Wash., has a 20-year history of designing shoes that have appeared on runways and Hollywood red carpets. In contrast, their design headquarters, 40 miles east of Seattle, has not been as red carpet-suitable.

Through analysis, creative interpretation of zoning regulations, and negotiation with city officials, the design team was able to utilize the full 30,000sf warehouse. Topline’s work model was transformed to a collaborative workplace that connects clients and designers with their product. The project includes a new lobby, design studios, showrooms (including a 40-foot-long catwalk), corporate offices, meeting facilities, a shoe library, magazine lounge, design lab, café, and informal brainstorming areas.

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Commendation
Conrad Prebys Music Center, University of California, San Diego

LMN
With Theater: Auerbach Pollock Friedlander; Cost Control: Davis Langdon; Acoustical: Dr. Cyril M. Harris PhD and HFP Acoustical Consultants; Mechanical/Electrical: Flack & Kurtz Inc; Civil: KPF Consulting Engineers; Structural: Magnusson Klemencic Associates; Life/Health Safety: Pekelis Fair Associates; Landscape: Wallace Roberts & Todd Inc.

Situated at the heart of the University of California in San Diego’s emerging “arts district,” the Conrad Prebys Music Center provides a central focus for music and arts for the campus and the region. The Conrad Prebys Music Center embodies the department’s ambitious, inventive culture of music. A vital part of the campus arts district, the center also connects with the rest of the campus through public spaces and walkways that form a neighborhood network.

Commendation
FutureFactory Amenities Upgrades Program

DLR Group
With Twin Aisle Café: DLR Group, for architecture, interiors, mechanical and structural engineering; Wood Harbinger, electrical engineering; JLR Design Group, kitchen consultant; General Construction, general contracting. For Dreamliner Diner: DLR Group, for architecture, interiors, mechanical and structural engineering; graphic design; Wood Harbinger, electrical engineering; JLR Design Group, kitchen consultant; General Construction, general contracting. For Various Plaza Cafés: DLR Group for architecture, interiors, electrical and mechanical engineering, graphic design; Wood Harbinger, electrical engineering, mechanical engineering; JLR Design Group, kitchen consultant; General Construction, general contracting. For Various Espresso Cafes: DLR Group, for architecture, electrical engineering, mechanical engineering; Huy-Lay/Recherche Associates; Tully’s Brand Architect; General Construction, general contracting. Restroom Renovations: DLR Group for architecture, interiors, electrical engineering, graphic design; Wood Harbinger, electrical engineering, mechanical engineering; TLR Design Group, kitchen consultant; General Construction, general contracting. Employee Services Center: DLR Group for architecture, interiors, electrical engineering, mechanical and structural engineering; Wood Harbinger, mechanical engineering; BMW, general contractor. For Employee Services Center: DLR Group for architecture, interiors, electrical and mechanical engineering; Magnusson Klemencic Associates, structural engineering; BKI, general contracting.

This immense workplace is definitively industrial as an experience, charged with the sights and sounds of people assembling large commercial aircraft. The building sits on an even larger factory campus unconnected to commercial amenities, so tenants take their breaks here, eat lunch here, and share with peers here.

The Amenities Upgrades Program provides spaces within the factory to find respite, to recharge, and to connect with one another both formally and informally. The design of each space contributes to the overall improvement of working in this incredible facility, while each space is an improvement on that overall theme. This is design as culture change.

Commendation
Novelty Hill Januik Winery

Mithun
With Contractor: Walsh Construction Company; Structural Engineer: IL Gross; Mechanical Engineer: Emerald Air, Inc; Electrical Engineer: PK Electric; Plumbing Engineer: HV Engineering; Civil Engineer/Wetland Consultant: David Evans & Associates; Irrigation Design: Royal Waldock; Bench Design and Construction: Korf Design, Inc; Environmental Graphic Design: WRG; Energy Studies in Buildings: University of Oregon; Daylighting: Better-bricks Daylighting Lab; Artist: Susan Zuccola.

Representing a time-honored tradition, this new winery offers a fresh interpretation that respects the clients love of modern architecture, advanced technology, and winemaking. The experience creatively melds production with hospitality to celebrate the entire sequence of events in winemaking in a distinctly Washington State way.

The unlikely site, stretching along a busy thoroughfare and sloping down to a wetland, is used to advantage. Building into the hillside preserved natural habitat while keeping the wine cool. The space is spare to keep the focus on wine.

Using biophilic principles, the design surprises, delights, and elevates the human spirit. A number of serendipitous elements appeal to a variety of senses and encourage visitors to explore.

Citation
BIO(da)TA

Zero-Plus | STAVE
With At Arup: Peter Asplund, Hans-Erik Blomgren, Cormac Deary, Brian Glover; Charles (“Sp”) Simenstad, Research Professor, University of Washington School of Aquatic and Fisheries Sciences; Critics: Wyn Breask, John Grade, Anne Han, Rob Hutchison, Daniel Mihalyo, Ana Pinto da Silva

BIO(da)TA is an emergent, immersive and environmentally-integrated Thematic Pavilion for Yeosu Expo 2012. The proposal amplifies the experience of the Thematic Pavilion by creating an architectural system of dispersal that allows visitors and researchers direct interaction with the ocean and coastal environment. This project is a living and adaptive building set into and on the water, adjusting daily with the tidal ebb and flow. BIO(da)TA takes a holistic and systemic approach, integrating direct experience, exhibits, research, bioremediation, economic development, and adaptive reuse into a cohesive whole. As an example of living building technology and its expressive potential, this proposal uses the elements of sun, wind, rain, water collection, and tidal movement in a fully integrated system of engineering. The building becomes organism, and the participants are a part of that life form.
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The EPA’s mission is to protect and enhance human health and the environment. In building their mixed-use regional headquarters on a brownfield site in a historic neighborhood of Denver, the EPA sought a building that thoroughly expressed this mission. The complexities of the project—historic district, homeland security requirements, local regulations on energy and water issues, and a mandate for an extremely high performance building—required deep and fundamental collaboration among the entire project team.

Analysis-driven form: The form of the building emerged directly from analysis of the site, the potential for daylighting and attendant energy offsets, and the effect of building form on heating and cooling loads. The building naturally organized itself into two clearly defined L-shaped volumes organized around a central atrium, each with a distinctive façade system designed for maximum performance. The building’s form and energy performance are truly integrated; the individual elements and systems cannot be presented independently of the whole.

The design process included continuous energy and performance modeling, from the earliest massing studies to the details of glazing and mechanical systems, and this continues in post-occupancy fine-tuning.

Beautiful solutions: Controlling sunlight, glare, and heat gain was particularly important in Colorado, where the sun is intense and frequently unobstructed. Successful implementation involved development of a daylight control system for the central atrium. A system of reflective sails was designed to minimize glare in the upper floors while redirecting daylight deeper into the atrium. A local sailmaker was contracted to produce the sails. This low-cost solution artfully directs sunlight down through the atrium, creating shifting patterns throughout the day.

Challenging regulations: Although water is scarce in the high plains of Colorado, current regulations prohibit harvesting of stormwater. Working with local authorities, the design team, assisted by the EPA and experts from the City of Portland, obtained support for an eco-roof, the first of its kind permitted in Denver as a pilot project. The Department of Urban Drainage agreed to allow the roof as the sole stormwater management method, waiving the standard requirements for detention tanks and filtration vaults. The EPA agreed to monitor roof performance for five years and will share the data with city and county officials as a means of evaluating the true effectiveness of this approach in the Colorado environment.
Building 35: Natural Sciences Building

Olympia, Washington

Architect: the Miller Hull Partnership; Contractor: Mortenson; Structural Engineer: AHBL; Civil Engineer: AHBL; Lab Planner: Research Facilities Design; Mechanical Engineer: PAE; Landscape Architect: Murase; Costing: Roen & Associates; Electrical, Acoustic, Telecom & AV: Sparling.

The new three-story natural science building at SPSCC presented a complex challenge: design a high-performance building that combined laboratory program elements—which required a high powered and intensive mechanical system—with offices and classroom spaces that were to be naturally ventilated and passively cooled.

Organizing the building for efficiency: The initial move that proved essential for significant energy savings was to separate laboratory and non-laboratory program functions of the building, concentrating the piped and ducted systems in the lab wing while giving the non-lab spaces natural ventilation. This separation of program elements allowed a change of structural systems in the two sections of the building.

Tackling the laboratory mechanical systems was the biggest challenge in reaching 2030 Challenge energy targets. The optimum HVAC system in the lab section included high-efficiency boilers, exhaust air heat recovery, premium efficiency motors, and advanced system controls. Non-lab portions of the building are naturally ventilated and warmed by hydronic heating, and solar energy is harvested through photovoltaic panels on the roof. This translates into a 48% energy savings over standard buildings.

Teaching through the landscape: The building is sited within the Percival Creek Watershed, a very hydrologically sensitive area requiring special care to ensure that no untreated runoff enters the public stormwater system. Early site analysis generated the concept of a central science courtyard centered around a stormwater pond and native plantings that would meet the site’s stormwater needs and provide learning opportunities outdoors. The building was designed to treat 100% of the stormwater flow within the boundary of the site prior to any discharge. Pervious paving eliminated surface water runoff from the site, and the retention pond not only mitigates stormwater, but has grown into a beautiful teaching asset.

Flexibility now and in the future: To ease the maintenance burden, building systems were orchestrated to express an exposed building aesthetic, be intuitive in layout, and offer as much access as possible for any change or maintenance required. Lab spaces allowed for the inevitable growth or modification that will occur to the original program over time. Based on the integration of systems, change can occur without signification demolition.

Above: Evergreen trees along the western edge of the site shade the building from the western sun. Early calculations of the retention pond at the center of the science courtyard design showed that the size of the pond could quickly consume much of the space between buildings. In response to this concern, porous concrete was proposed for all site hardscape, including the pedestrian sidewalks and the service vehicle access drive, to better manage and absorb surface run-off.

Above and Right: In the office wing of the building, the architects eliminated as many systems as possible, provided maximum connection from the occupants to the exterior through daylight, views, and natural ventilation and maintained a focus on maximizing a user’s ability to control their own comfort. This will allow multiple users with differing personal comfort needs to comfortably occupy the same space over the years.
Affordability is important now more than ever. This Spring, AIA Seattle is pleased to offer a wide variety of continuing education classes in order to help you get the education you need at a price you can afford. Classes are $5 for members, $20 for non-members and subjects include the latest in code, business development, sustainability and more. Don't miss this opportunity to keep competitive in this changing market. Perfect for emerging professionals. For more information, visit www.aiaseattle.org/calendar.

**Navigating the Economy Series**
AIA Seattle recognizes the challenges we all face in these uncertain times. Our members and staff are committed to helping each other navigate this rocky economy. To help the architectural community stay ahead, AIA Seattle will continue this free series of classes through 2010, offering a wide array of marketing, networking, training, and business support opportunities. Priority registration is given to AIA members and member firms; non-members may register two weeks before each class. For more information on additional resources beyond classes, visit www.aiaseattle.org/economy.

**Saturday Seminars: How to Work with an Architect**
“How to Select & Work with an Architect” is a monthly seminar presented by architects that gives you the information and confidence you need to successfully choose and collaborate with an architect. Whether you’re dreaming of a new home or planning a complex commercial development, the key to ensuring that your vision becomes reality is the same: involve an architect early.

**Open House Program with Northwest Home Magazine**
The AIA Seattle/Northwest Home Open House program solicits and reviews applications of architect-designed homes for regular feature publication in Northwest Home/Seattle Magazine, with an open house held on a Sunday afternoon during the month of publication. Want great exposure for your residential project? Contact Isla McKetta at imcketta@aiaseattle.org to submit your built work.

**Design Salon Series**
The AIA Seattle Design Committee promotes design excellence among AIA members and fosters a collaborative spirit between architects and the broader design community. Part of the committee's work includes the Design Salon Series, a year-long exploration of the place of style in architectural discourse. This series is intended to encourage a robust discourse on the art and design of building. Want to continue the dialogue? Visit the Design Committee’s blog—http://aiaseattle.org/dialog—and keep the conversation going!

**2009-2010 Architectural Record Exam (ARE) Study Resources**
Let AIA Seattle help prepare you for the ARE by taking advantage of our study resources. AIA Seattle members have free access to ARE exam 4.0 study materials at the AIA office and online. Hard-copy study materials have been purchased from Kaplan AEC Education and Professional Publications, Inc. Study material, including flash cards, covers the topics covered in the exam. These materials are available to anyone preparing for the ARE exams. AIA Seattle members also have free access to online materials on Kaplan’s Web site. For more information, contact Debra Haraldson at debrah@aiaseattle.org. (NOTE: The 2009-2010 ARE Prep series, with monthly classes and study sessions, is full. Visit the Web site in August 2010 for information on the 2010-2011 series.)

**Young Architects Forum/WASLA Emerging Professionals Happy Hour Series**
Networking has never been more important. Join your friends and colleagues at this casual, monthly happy hour, a collaboration with Washington Association of Landscape Architects and AIA Seattle’s Young Architects Forum. Make new friends and professional contacts while visiting firms around the city.

**Annual Meeting and Membership Appreciation Party**
You work hard. Take the night off and celebrate the year with the AIA Seattle community! Join architects, engineers, construction professionals, landscape architects, and others, all while celebrating those who make things happen at AIA Seattle. Everything we do is driven by our members and allied professionals, so here’s cheers to you!

**In the Gallery**
What Makes It GREEN? Awards recognize significant projects in sustainable design by architects and designers in Washington, Oregon, Idaho, Alaska, Montana, Guam, Hawaii, Hong Kong, and Japan. Join AIA Seattle’s Committee on the Environment (COTE) as they celebrate projects that are helping shift the paradigm toward a carbon-neutral future.
2010 AWARD SUBMITTAL PLANNING CALENDAR
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WHAT MAKES IT GREEN?

January 25 Call for Entries Opens Online
February 26 Registration Deadline
March 12 Submittal Deadline
May 5 Live Shortlist Interviews

FUTURE SHACK
A residential architecture program for our times, Future Shack celebrates progressive solutions for urban living across a wide range of building types, budgets, constraints, and social agendas.

May 1 Call for Entries Opens Online
June 1 Registration Deadline
June 16 Submittal Deadline
September 12 Awards Published in Seattle Times Pacific Northwest Magazine

AIA SEATTLE HONOR AWARDS
The annual Honor Awards for Washington Architecture in November is AIA Seattle’s touchstone awards program, recognizing projects that represent the highest level of design achievement.

July 12 Call for Entries Opens Online
September 21 Registration Deadline
October 5 Submittal Deadline
November 8 Honor Awards

AIA SEATTLE/DAILY JOURNAL OF COMMERCE
PROJECT OF THE MONTH
The Project of the Month program is a juried review of architect-designed projects including commercial, industrial, and multifamily residential buildings for monthly publication in the Daily Journal of Commerce.

Submittals Drawn from Honor Awards Pool

AIA SEATTLE/NORTWEST HOME OPEN HOUSE
The Open House program solicits applications of architect-designed homes for regular feature publication in Seattle Magazine’s Northwest Home, with an open house held on a Sunday afternoon during the month of publication.

Member Firms always receive discounted rates on submittals. Projects selected for any of these programs are eligible for the AIA Northwest Pacific Region Design Awards. Dates accurate at time of press.

For latest information, visit www.aiaseattle.org
Behind the scenes at the 2009 Honor Awards
What goes on behind the scenes of the AIA Seattle Honor Awards? Veteran Honor Awards volunteer Ed Sozinho of Pro Image Photography shares with us images of the jury and Honor Awards committee as they deliberate during the jury process. Pictured are juror Teddy Cruz of eStudio Cruz, San Diego, and moderator Beth Meyer FASLA of the University of Virginia. View more of Ed’s images at www.aiaseattle.org.

AIA Recognizes AIA Seattle Diversity Roundtable as a Diversity Best Practice for 2010.
The 2010 AIA Diversity Recognition Program Jury selected the AIA Seattle Diversity Roundtable to be acknowledged as a Diversity Best Practice for 2010. The Diversity Recognition Program recognizes architects for exemplary commitment and contributions to diversifying the profession of architecture.

AIA Seattle blogs
Whether it’s discussing the future of the Central Waterfront or where style meets architecture, AIA Seattle has blogs for you to connect your ideas with other members and beyond.

Follow Cristina Bump Assoc. AIA, Emerging Professional Traveling Scholarship Winner, as she explores seawall design in Sydney, Melbourne, and Vancouver BC: http://cristinabump.wordpress.com/
Interested in sustainable design? Check out the Committee on the Environment’s blog http://aiaseattlecote.wordpress.com
What are the trends that are shaping the future of architectural design? Join the AIA Seattle Design Committee at their blog, dialog:http://aiaseattle.org/dialog
What do you want your central waterfront to be? Let us know your thoughts at Our Seattle Waterfront: www.ourseattlewaterfront.org

Regional award for Schacht Aslani
The Douglass-Truth Library by Schacht Aslani Architects was awarded a 2009 AIA Pacific Northwest Region Merit Award. Collaborating on that project was AIA Seattle Corporate Allied Partner KPFF Consulting Engineers.

NBBJ wins ASHRAE award
The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) announced that Harborview’s Norm Maleng Building received an honorable mention within the new healthcare facilities category of their 2010 Technology Awards. The project had recently been awarded first place for the region. Designed by NBBJ, the building’s project team also included AIA Seattle Corporate Allied Partners Turner Construction and Coffman Engineers. The ASHRAE Technology Awards program recognizes outstanding achievement in the design and operation of energy-efficient buildings.

Olson Kundig wins three regional awards
Olson Kundig Architects (formerly Olson Sundberg Kundig Allen Architects) recently received three AIA Northwest & Pacific (NW&P) Region Design Awards. The Rolling Huts received an Honor Award, Tye River Cabin received a Merit Award, and Noah’s Ark at the Skirball received a Citation Award. The firm also received a 2009 INaward, given by the International Interior Design Association, for Hong Kong Villa. The project received the Best in Competition award in the INhome category.
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