



University of Arizona: Leading the Evolution of the Sustainable Built Environment

Ralph Banks PE, P.ENG, LEED AP • published in the April 2019 issue

The University of Arizona's recently completed Strategic Plan consists of a framework of five pillars. Pillar V—Institutional Excellence has five initiatives, one of which is to elevate the University of Arizona as a distinguished university leader in sustainability.



Health Sciences Innovation Building (HSIB)

At the Department of Planning, Design & Construction, we continue our focus on the built environment aspect of sustainability, fostering well-designed, cost effective, and contextually responsive buildings of enduring quality that utilize simple, green materials in creative and inspiring ways while supporting the University's campus-wide sustainability efforts in support the University's Strategic Plan.

To validate and metric these efforts, the University of Arizona registers its projects with the U.S. Green Building Council to achieve Leadership in Energy and Environmental Design (LEED®) certification. In 2009, the University received its first LEED certification for the Student Recreation Center, achieving Platinum status. Since then, the University's portfolio has grown to ten LEED certified buildings—four certified at the highest achievable Platinum level, two certified at Gold, four at Silver, and six buildings currently pending certification.

Continuing its leadership role in sustainability accreditation, the University has utilized the Green Building Institute's Green Globes certification for its recently completed Biological Sciences Research Laboratory (BSRL). An alternative accreditation metric to LEED, Green Globes is a nationally/internationally recognized, sustainable benchmark for the design, construction and operation of high performance green buildings utilized by both the United States and Canadian federal government agencies.

Health Sciences Innovation Building (HSIB)

HSIB is currently tracking for LEED Gold. This 9-story, 220,000 square foot, state-of-the-art facility provides instructional spaces that offer simulated, real-life situations for teams of students, faculty and health professionals in Medicine, Nursing, Pharmacy and Public Health. Serving as the vanguard for interprofessional health education in the United States, the HSIB will be an incubator for interdisciplinary research and development by connecting these realms to real-world practice while supporting a culture of calculated risk-taking and creative disruption. The

flexible, large, medium and small group/team learning areas, clinical labs, and simulation centers provide a broad spectrum of instructional applications.

The design approach to a sustainable envelope is premised on passive measures inspired by the local Sonoran Desert context and adapted to the University campus' red brick aesthetic. Daylighting into the deep floor plate was carefully considered and specifically related to each solar orientation. The east façade is predicated on the self-shading quality of the Saguaro cactus. Terra Cotta panels are shaped for maximum efficacy between heat-gain thermal comfort and daylight. These vertical, twisted form panels are fine-tuned to be more dense at small spaces while more open at transitory spaces.

North and south elevations are glazed to maximize daylight into the building's interior. Glazing systems are adapted to effectively shade the glass from direct sunlight by way of horizontal shelves at the south and vertical fins on the north to mitigate low angle sun in the summer months. The west elevation is generally solid with glazing strategically placed into deep crevasses to create passive shading. The top floor is adorned with north-facing roof monitors that provide soft daylight into the space while mitigating the impact of direct solar heat gain. The mechanical, electrical and plumbing distribution systems are strategically optimized to not only address the current programmatic space and comfort requirements, but also provide flexibility for potential future re-programming of space.

Biological Sciences Research Laboratory (BSRL)

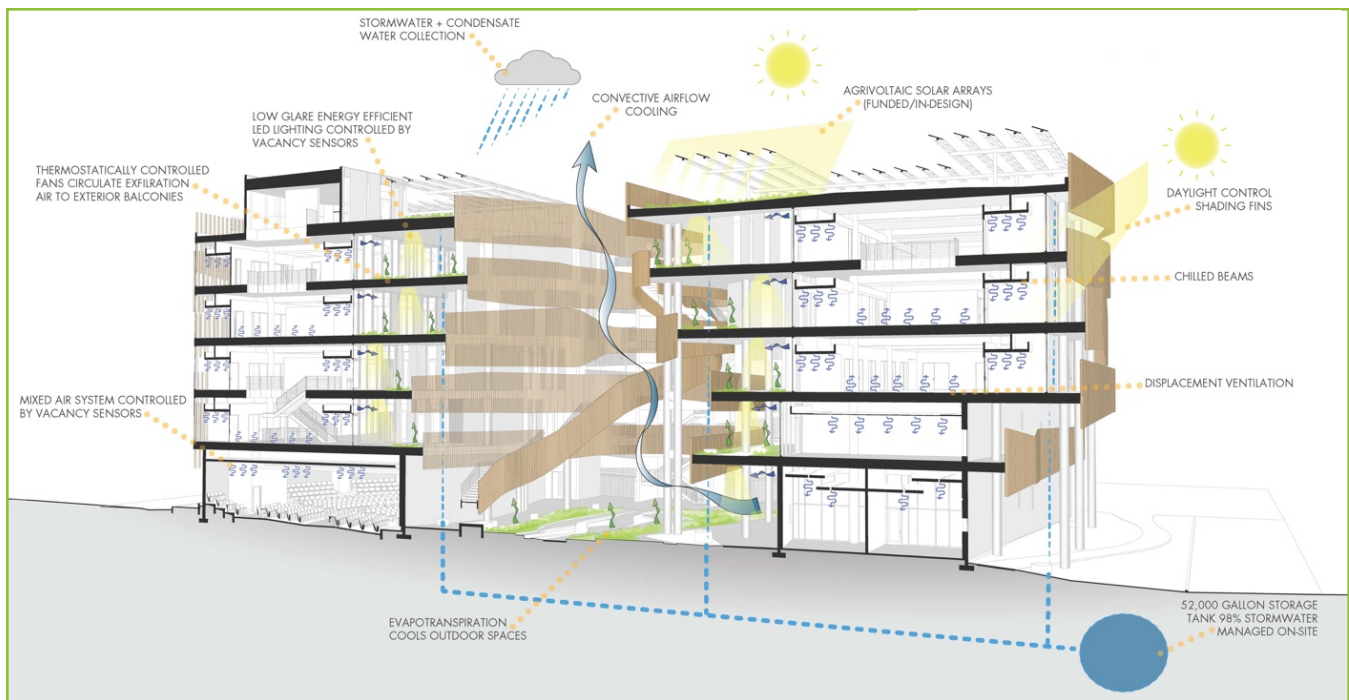


BSRL is currently tracking for LEED Gold and was recently awarded the Green Building Institute's Green Globes 3-Globe certification, analogous to LEED Gold. BSRL's 150,000 square feet of highly efficient and flexible open-plan labs and offices is a multi-disciplinary research nexus supporting interdisciplinary research in multiple health science disciplines to advance the understanding of the molecular basis of human health, aging and disease. The building houses multiple cutting edge research programs—including the University's Center for Innovation in Brain Science, headed by Dr. Roberta Diaz Brinton, a leading and nationally recognized neuroscientist in the field of Alzheimer's, the aging female brain and regenerative therapeutics. BSRL's high performance envelope and building systems contribute to it being similarly efficient to comparable lab buildings.

The Environmental & Natural Resources 2 Building (ENR2)

ENR2 is a LEED Platinum recipient, continues to facilitate a key University of Arizona mission through its fundamental research. With its multitude of sustainable elements, ENR2 plays a flagship role in the University's ongoing and concerted effort to promote interdisciplinary research that focuses on Earth Science and Environmental programs.

A key goal of this facility is to establish an atmosphere for collaboration of scientific and interdisciplinary research which creates great opportunities for graduate students across multiple disciplines. Fostering its role to promote interdisciplinary research that focuses on Earth Science and Environmental programs, ENR2 is facilitating a Rooftop



Environmental & Natural Resources 2 Building (ENR2)

Agrivoltaic Project that will co-locate the growing of plants (agriculture) with that of solar panels (photovoltaics) with significant student and research engagement. This will create a true example of ENR2 as a living laboratory and facilitate research to better understand:

1. How crops can share the same land as photovoltaic panels and benefit from the shading effect.
2. How the shading of the plants reduces the amount of water they require.
3. How the cooling effect of the plants on the underside of the PV panels increases their overall efficiency.

Honors Village Project



The Honors Village is currently tracking for LEED Silver. This public-private partnership between the University of Arizona and American Campus Communities comprises a three city block development that includes three separate buildings—a 1,035 bed dormitory, dining, and Honors College Administration and classroom building; a state-of-the-art Recreation Center and Wellness Center; and a 370 space 4-story parking structure. The development

also includes three surface parking lots that incorporate comprehensive storm water mitigation measures.

Large Scale Renewable Energy (LSRE)



This initiative includes options and possibilities to offset all of the University's Scope 2 greenhouse gas emissions (carbon created from purchased power) and will supplement on-campus purchased power with additional renewables, as well. We are driving to accomplish our sustainability and climate resiliency goals while leveraging student engagement and incorporating our own research technologies. As we find a way forward, this is yet another way that the University of Arizona is a national leader.

As we move forward into the 21st Century, the University of Arizona continues to rise to its Strategic Plan challenge of increasing leadership in sustainability through design and construction of innovative, inspiring projects such as these.

Ralph Banks, P.E. P.Eng. is the Director of Engineering, Design & Construction at the University's department of Planning Design & Construction. Ralph is an internationally registered Professional Engineer and LEED Accredited Professional and can be contacted at rabanks@email.arizona.edu

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