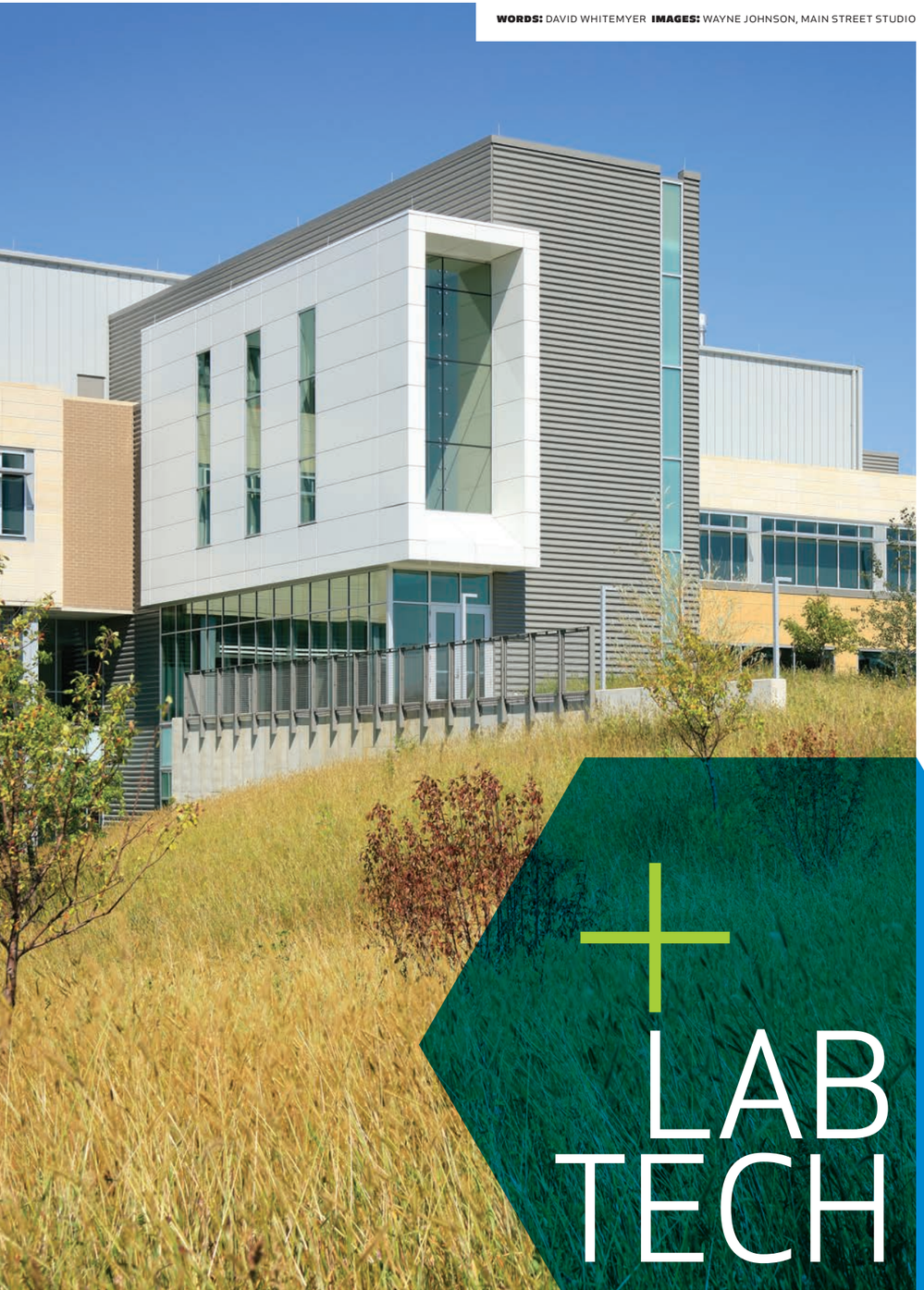
WORDS: DAVID WHITEMYER **IMAGES:** WAYNE JOHNSON, MAIN STREET STUDIO



+ LAB TECH

It's comical irony that for the last 40 years, the laboratory responsible for analyzing Iowa's environmental and public health had been located in a dimly lit, maze-like, asbestos-rich building originally constructed in 1917 as a tuberculosis sanatorium. It was the oldest state lab in the nation. And so, it made sense that the new laboratory should incorporate sustainable principles, and should focus on the well-being and comfort of its occupants.

The Des Moines office of OPN Architects began designing the new State Hygienic Laboratory (SHL) in 2005. Opened in spring 2010, the lab is located just across the street from the BioVentures Center, another OPN project. Constructed at different times and with different goals, the buildings' expressions are well coordinated, appearing as entry pillars to the University of Iowa's Oakdale Research Park in Coralville, just north of I-80.

OPN had been tasked with achieving LEED Silver certification for the building, but in the end it was awarded with LEED Gold. "There was a clear synergy between the lab's function and the health and safety of the people who work in it," says Aaron Twedt, project architect at OPN. "The purpose of the building is to protect public health." The SHL routinely tests samples of air, drinking water, wastewater, soil, sediment, industrial effluents and fish. It searches for and protects citizens from harmful contaminants and infectious diseases, and also responds to threats from possible bioterrorism.

Floor-to-ceiling windows *(above)* provide warmth, natural light and views to lab technicians.

The laboratory's orthogonal, south-facing entry *(opposite)* rises out of native wildflowers and prairie grasses.

Warm furnishings *(top left) and open circulation are provided where staff test samples of air, water, soil and sediment.*

Ribbons of windows *(below) and earthy colors mesh with corrugated metal cladding and industrial-looking exhaust fans.*

The clearly defined lobby *(right) and assembly space penetrates through the building's north facade.*

ARCHITECT: OPN ARCHITECTS **CONTRACTOR:** KNUTSON CONSTRUCTION

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LEED certification certainly steered many of OPN's design decisions, but the firm was pushed even harder by following guidelines set forth by Labs21, a voluntary EPA-sponsored program dedicated to improving the energy efficiency and environmental performance of laboratories in the United States. The USGBC recognizes Labs21 and provides credit for following a few of its principles.

"We tried to maintain a scientific lab aesthetic, while introducing large glass openings to promote natural lighting for the offices," explains Twedt. The 114,000-square-foot building doesn't pretend to be anything other than what it is. Approaching from the south, toward the main entry, ribbons of windows and earthy colors mesh with corrugated metal cladding and a collection of futuristic-looking exhaust fans. "The fans were highlighted to illustrate the technical aspect of the building," Twedt says.

Laboratories have strict mechanical requirements for controlling airborne agents produced through testing and experiments, but OPN also considered the off-gassing of materials and the use of environmentally friendly cleaning products. In addition to the GREENGUARD-certified carpet, low-VOC paints and other common eco-friendly finishes, the lab's interior exhibits some unique materials. PaperStone, a 100-percent post-consumer recycled paper and resin material, was used for the countertop of the lobby's information desk, which is surrounded by Kirei Board, a product manufactured from reclaimed sorghum straw and formaldehyde-free adhesive. In fact, almost 9 percent of the total building materials used in the project was made of post-consumer content.

Twedt notes that both OPN and the client were interested in finding local suppliers for the lab's furnishings and construction materials. In the end, the percentage of regionally extracted and manufactured materials in the total project cost was about 21 percent and 23 percent, respectively. "Using regional materials really spoke about the function of the lab itself," says Twedt, which is about the vitality of Iowa and its communities. The building's office furniture was manufactured in Muscatine, much of the lab casework came from Wisconsin, and the stone along the north and south facades is Anamosa limestone.

Green principles and the health of the community don't stop at the door. Beyond the limestone walls and through the floor-to-ceiling windows, lab technicians and office workers are treated to panoramic views of native wildflowers and prairie grasses. The seed mix was based on the Hayden Prairie, a surviving parcel of indigenous landscape near the western border of Iowa. OPN more than doubled the square footage of the building in landscape preservation and replacement, which garnered the project another LEED credit in the Sustainable Sites category. "We also thought about how employees would commute to the building," says Twedt, explaining that the SHL parking lot has preferred spots for drivers of energy-efficient cars, carpools and motorcycles. And the building has shower facilities for those who ride their bikes.

The SHL facility practices what it preaches. The workers responsible for analyzing Iowa's health get to work in a healthy, green environment. In turn, OPN hosts "Green Day" each year, an internal design and sustainability conference that allows speakers, clients and contractors to discuss eco-friendly trends and practices. "The principles behind LEED are things that OPN has already been doing for a long time," says Twedt, proudly. Those principles are elegantly manifested in the lab's appearance, and more importantly, in its consideration of the comfort and well-being of its occupants.