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## 355 ELEVENTH STREET / SAN FRANCISCO /

eco-structure / vol. 7 / issue 5

▲ Two San Francisco builders elevated an old warehouse above its humble beginnings to create a vibrant, mixed-use building.

PHOTO COURTESY OF RICHARD BARNES

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### 28 INNOVATIVE GREEN PROJECTS 2009

Seven innovative projects exemplify green-building practices.

### 34 THINKING BEYOND THE BOX

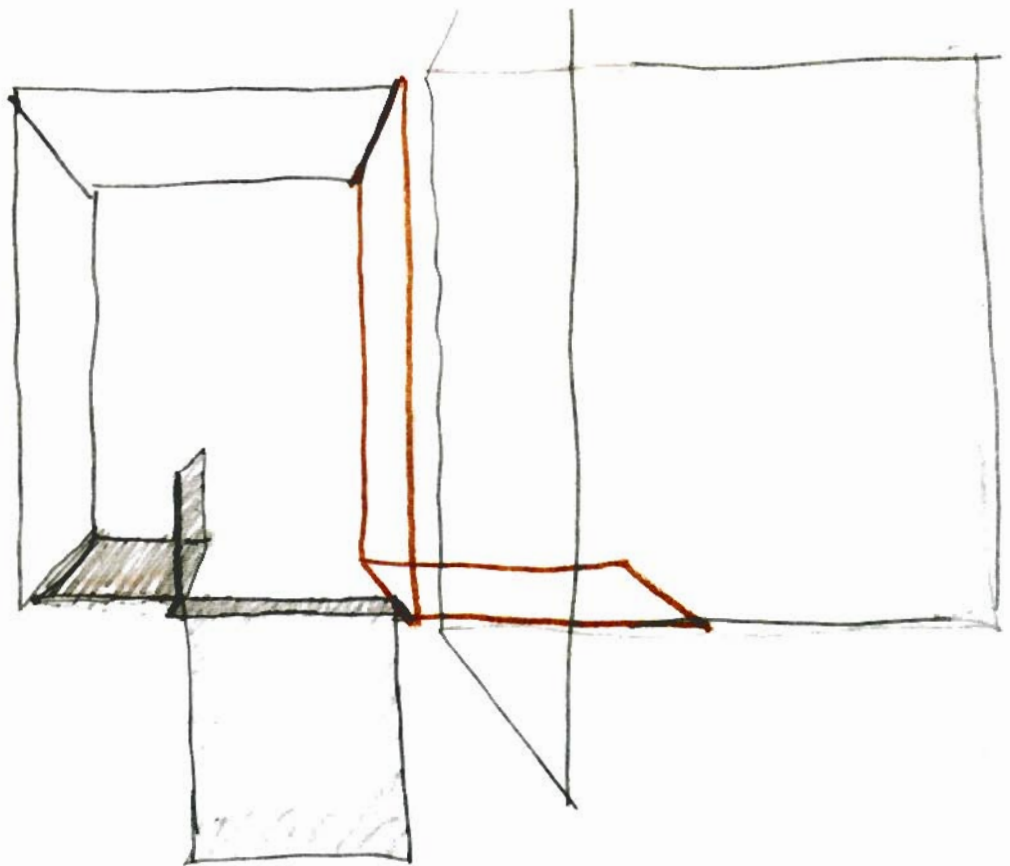
Industrial buildings have some of the greatest potential for going green.



A photograph of a modern building with a perforated metal facade. The building has a large window reflecting a white dog. The sky is blue with some clouds. The text 'Potential Exceeded' is overlaid in large white letters.

# Potential Exceeded





BY KJ FIELDS

## A Warehouse Renovation Blends Innovative Architecture and Sustainable Practices

San Francisco's South of Market district, also known as SoMa, spans a large urban industrial area that has been in a state of redevelopment for decades. Currently, SoMa is a surprising mix of posh hotels, high-end lofts, cultural attractions, and trendy restaurants speckled with light industrial businesses.

One of the district's former plumbing supply warehouses landed on the National Register of Historic Places thanks to its association with the old Jackson Brewery. Back in its heyday at the turn of the last century, the three-story warehouse was used as a storage shed for beer barrels, but two San Francisco-based companies—Aidlin Darling Design and Matarozzi/Pelsinger Builders—worked together to elevate the building far above its humble beginnings to create a vibrant, mixed-use project, which now is called 355 Eleventh Street.

### COMMUNITY OUTREACH

In addition to transforming the 14,000-square-foot (1300-m<sup>2</sup>) derelict building into a district asset, 355 Eleventh Street is the new headquarters for Matarozzi/Pelsinger Builders, and it is on track to earn LEED for New Construction

Gold certification from the U.S. Green Building Council. The construction company occupies the second floor and leases out office space on the third floor. The first floor and courtyard soon will be home to a restaurant that is seeking Platinum certification under USGBC's LEED for Commercial Interiors standard.

Originally, a large concrete parking lot led to the building's front entry, but the architects at Aidlin Darling Design had a different vision for the open space; they suggested half of the parking area to be relinquished to allow space to create an open-air courtyard for the facility. Matarozzi/Pelsinger agreed.

"It was a significant gesture toward the community for the owners to embrace the idea," says Joshua Aidlin, principal at Aidlin Darling Design. "The restaurant's outdoor courtyard was the primary component that unlocked the public potential of the building complex, which in turn will activate its industrial surroundings and provide a neighborhood amenity."

### LIGHT AND AIR

On the building's north and south façades, 33 historic windows were preserved and refurbished.



MATTHEW MILLMAN



Modifications to the building in the 1960s, however, compromised the integrity of the front and rear warehouse façades, and this opened up design opportunities on the east and west walls. The architects were able to promote passive ventilation and daylighting by adding large banks of operable windows on the second and third floors of those façades. The original 4- by 7-foot (1.2- by 2.1-m) double-hung windows on the north and south sides provide cross ventilation.

On the front face, the architects honored the building's original three openings by using their individual dimensions as a design constraint. The team retrofitted the main building entry, a second entrance for the restaurant that steps down into the courtyard, and one turn-of-the-century window. On the second floor of the front façade, designers added a new window that is 13 feet (4 m) tall and 10 feet (3 m) wide and extends 24 inches (610 mm) past the building face to bring natural light deep into the reception and office areas. Metal extrusions in varying depths accentuate the four apertures and amplify the building's industrial character.

### METAL ILLUSION

Although the new east and west window banks contribute to sustainable strategies, the San Francisco Planning Department's Historic Preservation Division pressed the team to maintain a monolithic appearance on the façades, in keeping with the original appearance of the warehouse. The solution came from using a perforated metal skin, derived from off-the-shelf zinc siding, that was custom-milled with an intentional ordering system.

the metal scrim slowly reveals the building behind the wall.

"The transition from day to night creates a poetic dialogue between the old historic structure and new façade," Aidlin says. "The perforated zinc walls act as solar shading devices but allow for passive cooling through cross ventilation, essentially becoming a skin that breathes."

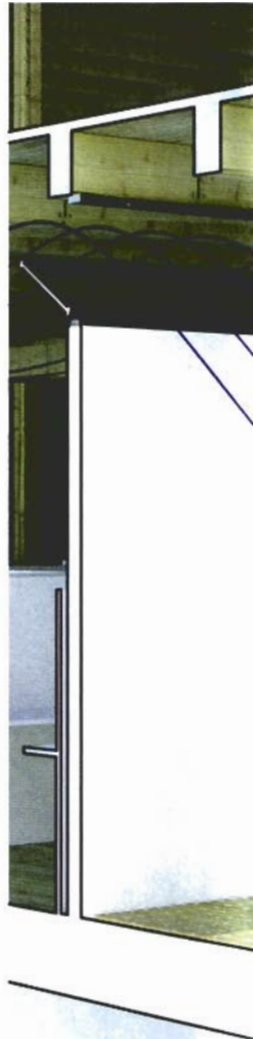
### MATERIAL CRAFT

Matarozzi/Pelsinger Builders had performed a green remodel of their prior offices but had outgrown the space. Despite the rusted corrugated siding on the 97-year-old warehouse at 355 Eleventh Street, the company saw the building's potential.

"We just fell in love with it," says Dan Pelsinger, partner at Matarozzi/Pelsinger Builders. "It was a perfect project for us to create an example for our clients. We knew we could make it modern and sustainable."

Inside, large painted Douglas fir beams had been charred by a fire that took place approximately 30 years prior. Careful sandblasting of the paint left some of the wood's burnt hue to enhance its character. The team removed some of the timber beams to create the open feeling of the building's lobby on the first floor, and they recycled and transformed the removed beams into a conference room table and coffee table.

Material choices included bamboo flooring, concrete countertops made of 85 percent recycled content and workstations produced from recycled material and that can be completely broken apart at the end of their useful life to be recycled again.



The architects were able to promote passive ventilation and daylighting by adding large banks of operable windows on the second and third floors of those façades.

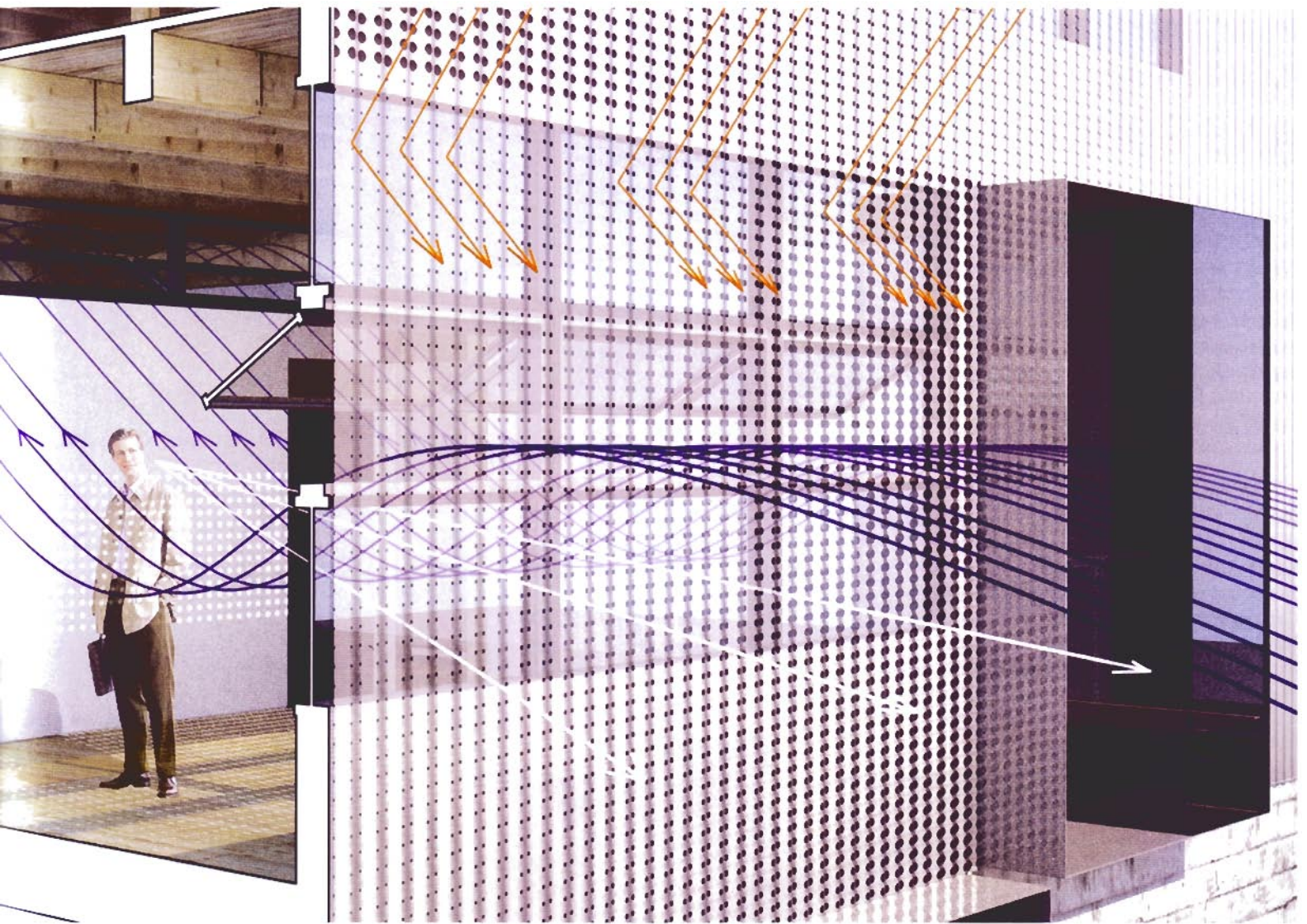
The perforations range in size from 1/16 inch (1.6 mm) to 1 inch (25 mm) in diameter and the holes graduate from small to large on the second story, forming a relationship to the new large aperture. On the third floor, the perforations reverse direction, gradually changing back to small. Both graphic and subtle in its application, the shifting size of the perforations breaks down the building scale. The two-story metal wall obscures the new windows during the day. This promotes maintaining the monolithic effect the city requested. In the evening, as interior lighting becomes prominent,

### INNER WORKINGS

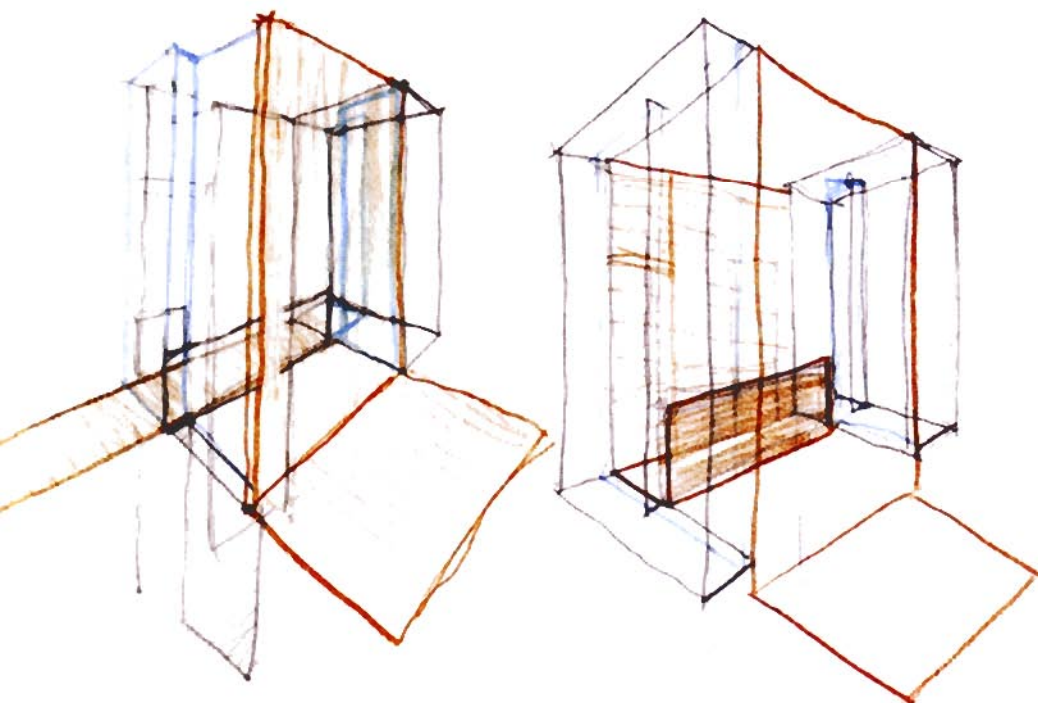
To save energy and make the most of natural daylight, the team placed light sensors in general work areas. The automated system dims itself based on the percentage of available daylight. Occupancy sensors also were installed in the conference rooms and bathrooms.

The team considered a geothermal heating system but a study showed that San Francisco's climate was too temperate to make the system feasible. Instead, the team installed a radiant-heating system, with a gas-fired boiler providing





Perforated zinc walls provide solar shading while allowing daylight and outside air to enter the interior space.





## MATERIALS AND SOURCES

Corrugated/perforated siding—VM Zinc from Umicore Building Products USA, Raleigh, N.C., [www.v zinc-us.com](http://www.v zinc-us.com)

Operable windows—Ventana Aluminum Manufacturing Co., San Francisco, (415) 822-6370

Operable skylights—Skylight & Sun, Berkeley, Calif., [www.skylights.com](http://www.skylights.com)

Vegetated roof—Green Grid from Weston Solutions, Vernon Hills, Ill., [www.greengridroofs.com](http://www.greengridroofs.com)

Daylight sensors—Watt Stopper, Santa Clara, Calif., [www.wattstopper.com](http://www.wattstopper.com)

Energy-efficient lighting—Finelite, Union City, Calif., [www.finelite.com](http://www.finelite.com)

Workstations—Answer workstations from Steelcase, Grand Rapids, Mich., [www.steelcase.com](http://www.steelcase.com)

Task chairs—Think from Steelcase

Planted pervious pavers—Soil Retention, Carlsbad, Calif., [www.soilretention.com](http://www.soilretention.com)

Nonplanted pervious pavers—Ekopaver from Airostone Corp., San Bruno, Calif., [www.airostone.com](http://www.airostone.com)

Walk-off mats—American Floor Products Co., Gaithersburg, Md., [www.americanfloormatsonline.com](http://www.americanfloormatsonline.com)

Interior paint—Eco Spec low-VOC Coating Primer & Latex, Benjamin Moore, Montvale, N.J., [www.benjaminmoore.com](http://www.benjaminmoore.com)

## GREEN TEAM

Owner and general contractor—Matarozzi/Pelsinger Builders, San Francisco, [www.matpelbuilders.com](http://www.matpelbuilders.com)

Architect—Aidlin Darling Design, San Francisco, [www.aidlindarlingdesign.com](http://www.aidlindarlingdesign.com)

Structural engineer—Berkeley Structural Design, Berkeley, Calif., (510) 981-1016

Mechanical engineer—CB Engineers, San Francisco, [www.cbengineers.com](http://www.cbengineers.com)

Civil engineer—Sandis Engineers, Oakland, Calif., [www.sandis.net](http://www.sandis.net)

Geotechnical engineer—Herzog Geotechnical Consulting Engineers, Mill Valley, Calif., [www.herzog-geotechnical.com](http://www.herzog-geotechnical.com)

Landscape architect—Miller Company, San Francisco, [www.millercomp.com](http://www.millercomp.com)

Green consultant—Simon & Associates, San Francisco, [www.greenbuild.com](http://www.greenbuild.com)

Streetscape designer—Shift Design Studio, San Francisco, [www.shiftdesignstudio.com](http://www.shiftdesignstudio.com)

Lighting consultant—Associated Lighting Representatives, Oakland, [www.alrinc.com](http://www.alrinc.com)







hot water to tubes in a gypcrete subfloor. This system requires less energy to operate than the geothermal system would have.

Daylight, passive cooling, and radiant heat greatly lower the building's energy use. Looking to create energy in addition to conserving it, San Francisco-based CB Engineers, the mechanical engineer on the project, created a digital model that predicted a 30-kilowatt photovoltaic array on the roof would provide approximately 70 percent of the building's electrical needs. Although the building hasn't yet produced a year's worth of energy data, the feedback software installed with the array has thus far shown CB's energy model to be accurate.

The PV panels cover two-thirds of the roof and the remaining one-third supports a tray-based vegetated roof system. Trays 3- by 3-feet (0.9- by 0.9-m) in size contain 3 inches (76 mm) of soil and plantings that retain, filter, and slow rainwater runoff and provide attractive seasonal blossoms.

#### OUTDOOR CONNECTION

The building's adaptive reuse was completed last October and the restaurant will open in November.

The restaurant will occupy the first floor, wrapping around the building lobby. The courtyard will increase the guest-seating area by 50 percent. A part of the courtyard also will serve as an outdoor garden where the restaurant can cultivate its own herbs and salad greens. A dark wooden fence with recessed light pockets and view slots sets the dining patio apart from the front lot and provides a deep contrast against the bright garden greens. Light-colored concrete pavers with microperforations line the courtyard to mitigate the heat-island effect and absorb rainwater. Grass pavers, which have a 50 percent open area inside each square with very fine grass to slow runoff, cover the parking area at the rear of the building.

Pelsinger says that although his company has provided green construction on residential and commercial projects before, 355 Eleventh Street was an eye-opening experience. "We learned so much going through the LEED process," Pelsinger says. "We are really proud of this building and the choices we made." 🌱

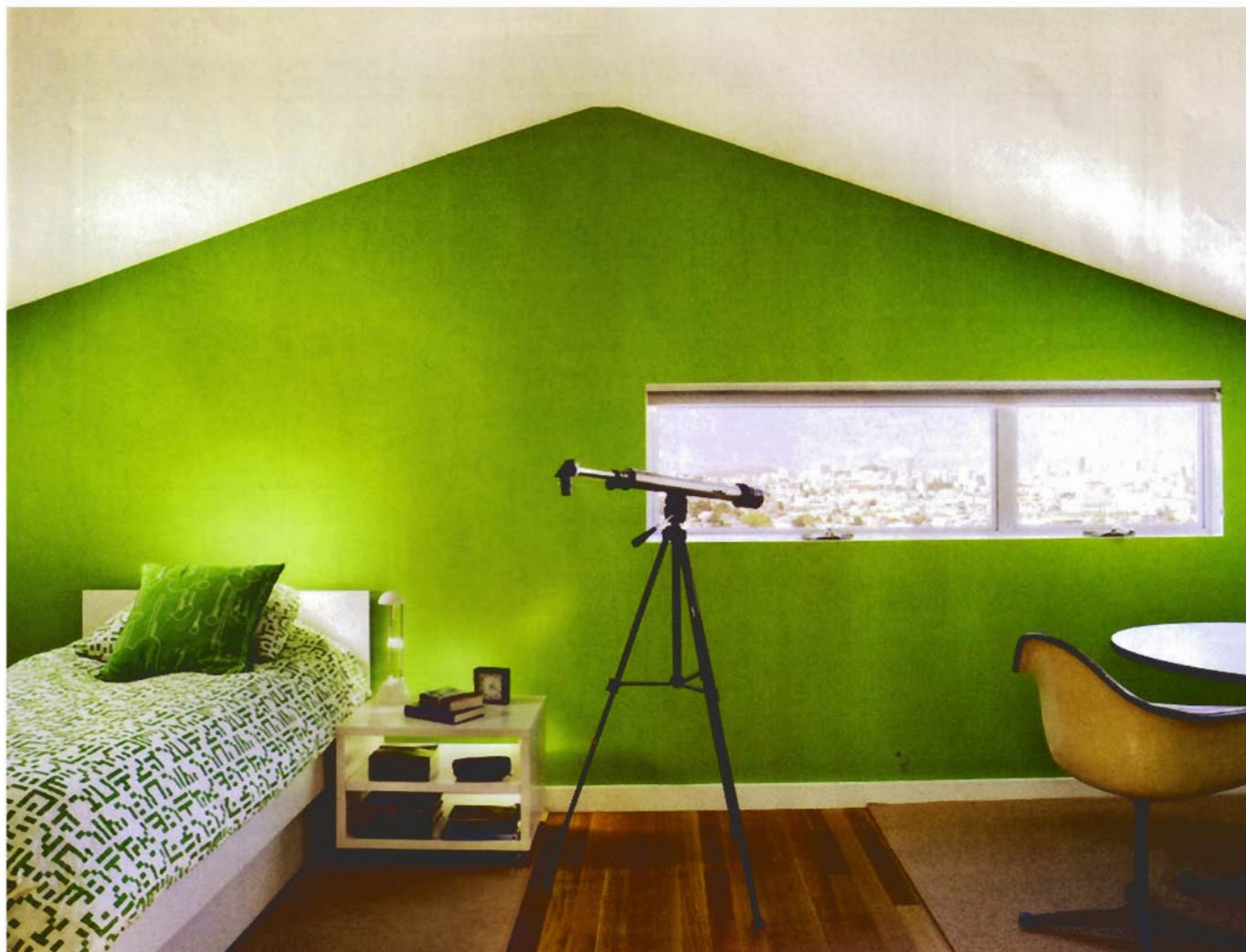
» KJ FIELDS writes about architecture and sustainability from Portland, Ore.



RICHARD BANRIES

Matarozzi/Pelsinger Builders, San Francisco, occupies the second floor and leases out office space on the third floor of 355 Eleventh Street.





The boys' bathroom (right) is shared by Drew and Seth, whose room is one flight up in a new attic perch (above), where Linda's childhood breakfast table and chairs serve as an inspirational place for crafts.

house, while the master bedroom overlooked the street. Parents and kids shared the one bath on the floor. Yama and Mar swapped the rooms, giving the master bedroom the sweeping rear view and a new ipe deck, and cut both rooms down in size to accommodate their own bathrooms. They also created a separate bedroom for Seth in the existing attic.

While the interior is spare and airy, the architects retained the feeling of intimacy afforded by more traditional floor plans, using cutouts and niches in the walls both to vary the pacing and to provide places for selected pieces of art. Says Yama, "The goal was not to superimpose a loft on the interior, but to balance warmth with openness—and to be able see right through the house, from the front to the city beyond."

