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Inside:

Exterior view of Poplar Grove, with entry gate in foreground.

Entry court of Poplar Grove.

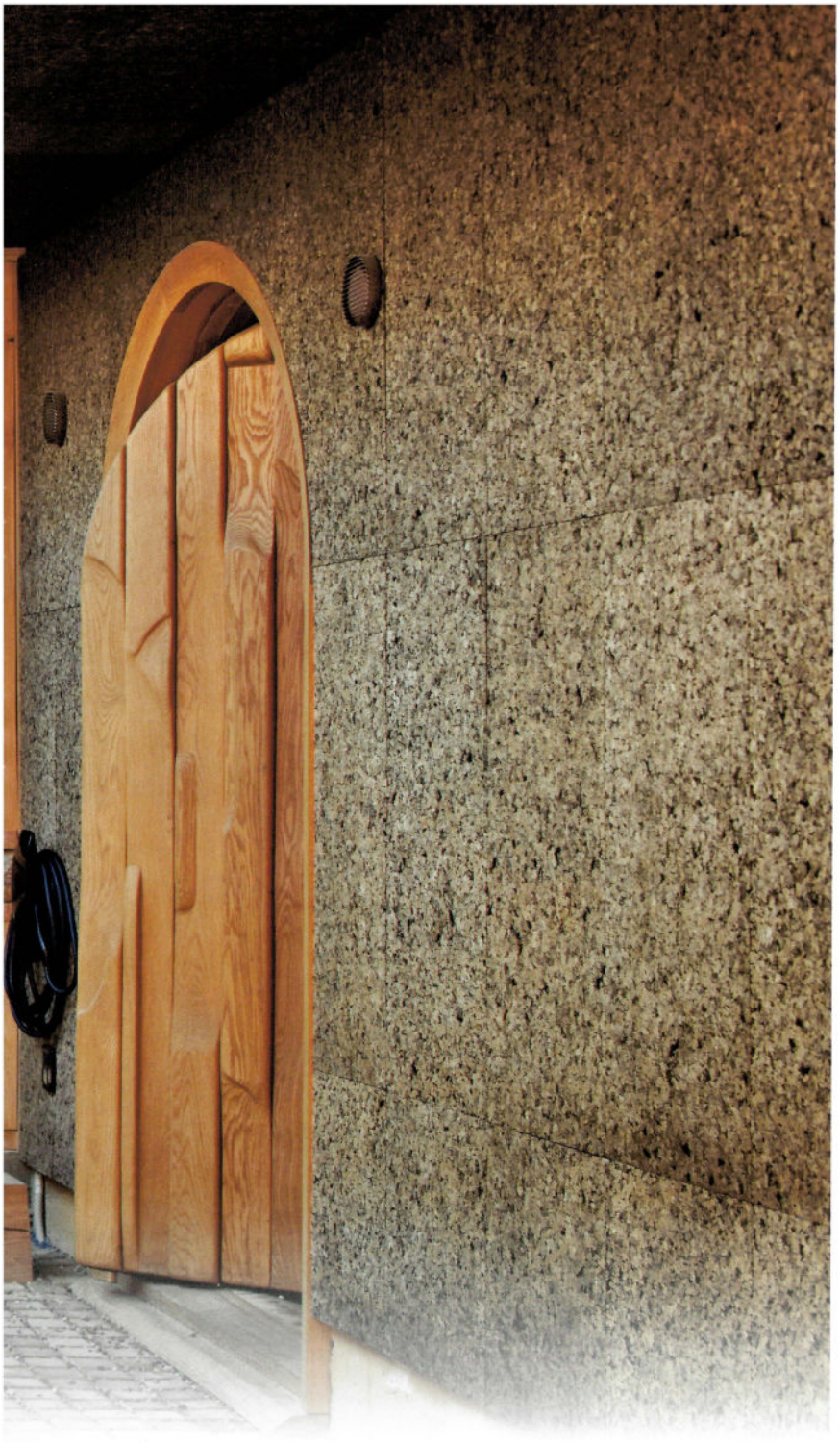
Tree→house

Capitol Hill Gets a Compostable Alley Residence

by Ronald O'Rourke

Although buildings tend to have finite lifespans, architects usually don't design them with their eventual demise foremost in mind. But that was precisely the case with Poplar Grove, a new compostable alley house in DC's Hill East neighborhood designed by **BLDUS,** an architecture and development office founded in 2013 by **Jack Becker, AIA,** and **Andrew Linn.**

Based in the Anacostia part of Washington, BLDUS (also rendered as bld.us) describes itself as a firm that "makes healthy buildings in the Mid-Atlantic region that pay tribute to their context and gain integrity as they age." The firm's work, the architects say, "integrates traditional construction methods with new technologies and organic materials ideally suited to the Mid-Atlantic region, like wood, bark, cork, wool, mycelium, willow, hemp and bamboo—affordable and sustainable construction alternatives to steel and concrete." Taking advantage of its location in DC,



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Project: Poplar Grove,
Washington, DC

Architecture/Interior Design/General Contracting: **BLDUS**
Structural Engineering: **JZ Engineering**
Civil Engineering: **Huska Consulting**
Construction: **Artwork** (framing and detailing); **Frontier** (groundwork)

First (above) and second (top) floor plans.

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BLDUS works with an eye toward bringing issues such as sustainability and environmental health to the attention of national policymakers. Another BLDUS project, Grass House, received a 2019 award for architecture from AIA|DC and was featured in the Fall 2019 issue of this magazine.

Poplar Grove is a two-story, 2,500-square-foot residence located on Adelaide Alley, an east-west alley bisecting the block bounded by 16th, 17th, D, and E streets, SE. The site is a little north and west of Congressional Cemetery, where sculptor Adelaide Johnson (1859-1955), the alley's namesake, is interred. Johnson, whose work is displayed in the U.S. Capitol, was devoted to the cause of equality of women and was known as the "sculptor of the women's movement."

The clients for the project—a couple with one child and expecting another—wanted a house that could accommodate extended stays by in-laws, but they asked the firm to design the house as if it were being done on spec, so they could, if necessary, sell it at a good price.

The four-bedroom, three-and-a-half-bath residence is tightly fitted onto its plot, but includes fenced-in outdoor spaces on three sides. The interior is efficiently arranged, with rooms placed around a central stairwell

Front door and entry hall.

Living room and study, with net "flooring" above.

that is capped by a large skylight. A second-floor space directly above the living room is fitted with trampoline-like netting rather than a conventional floor—a playful feature that gives the living room a bit of a lofted feel and permits more daylight from the skylight to reach the first floor.

Although the site is hidden from the street, the house is exposed to neighboring dwellings on all sides—a condition that the design manages with its fencing and window placements. "Like [in] a Roman *domus*, a dialogue between fence and fenestration creates privacy on this islanded alley lot," the architects said, referring to a house type of ancient Rome characterized by a large central hall or atrium and few external windows.

Poplar Grove "brings the Piedmont foothills to the nation's capital," the architects said. "The landscape of Jefferson's Poplar Forest"—a plantation and plantation house in Bedford County, Virginia, that was owned by Jefferson—"is folded into the material palette of Poplar Grove—tulip poplar bark cladding and poplar interior cabinetry, black locust structural timber, and cedar roofing and fencing—and supported by an innovative hollow-wall bamboo system with continuous insulation cavities filled with sheep's wool."

While the house might appear from the outside to be somewhat dark and closed off from its surroundings, it is surprisingly bright on the inside due the interior's use of blond woods, daylighting from the rooftop skylight, and additional daylight from first- and

Dining room and kitchen.

second-floor windows. The house is situated in the middle of a long-established urban neighborhood, but it has the feel on the inside of a modern mountain cabin in a Nordic country.

Construction costs for the project "were equivalent to conventional construction because unhealthy materials like drywall, fiberglass insulation, and sheathing are eliminated from the process," Linn said. "Construction time was equivalent, except in the interior detailing, which was handled with care."

In terms of energy use, "with the right combinations of these natural materials, the house is able to achieve Passive House standards," the architects said, referring to a set of energy-efficiency and comfort standards established by the International Passive House Association (iPHA). Heating and cooling is provided by two mini-split heat pumps—ductless heat pumps that each heat and cool a multi-room space within the house—while an efficient Conditioning Energy Recovery Ventilator (CERV) system provides fresh air circulation.

The house "was designed and built to stand for centuries, modeled after America's oldest houses, some still standing after four centuries," Linn said. "Eaves

Second-floor stair hall.

protect the façade, the façade protects the structure, the sheep wool in its wall cavities wicks away moisture and expands over time, and the finishes, fixtures, and handles are all intended to develop patinas. But when the house does reach the end of its lifespan, 98% of it can be composted, minus the wiring, plumbing, nails, and brass fixtures and handles."

It's not common for architects to characterize a project in poetic terms, but BLDUS has done so for Poplar Grove, as follows, with a reference back to Adelaide Johnson:

A thank you note to the Sun and the Moon.
A tribute to a progressive artist.
A farm-to-shelter summary of a regional building cuisine.
A compostable bamboo, wool and wood creature.
A reevaluation of Poplar Forest.
A Roman Domus in the New New Rome.
A nest for a family.
A house in a Capitol Hill alley.

Primary bedroom closet and bathroom.