





## Homes for the New Millennium

JAMES ASKEW

In late 2006, Chad Ludeman, his wife Courtney and close friend Nic Darling decided to go into real estate development. Their plan was fairly straightforward: they wanted to build houses on spec, and for the most part, they already knew the style and size of home they would build—the same style and size as most new homes in the city. Courtney is a licensed real estate broker, and to build on spec, they knew, meant building homes that people wanted to buy. In Philadelphia, where they live, that home—or so it seemed—was your standard 2,000-square-foot, three bedroom, two and a half bath house with an asking price of \$500,000 or more. That was what most other developers built in Philly, and Postgreen Homes was planning to do the same.

Chad has a degree in technical engineering and manufacturing; Courtney is in real estate; and Darling worked in marketing, before joining his friends. They are all young, urban professionals, in their early to mid thirties, building careers and families. Courtney and Chad now have two young boys. Their decision to go into real estate development, Chad explains, was mostly a practical one. They wanted to own their own business; Courtney knew the market; and real estate, they figured,

was as solid an investment as one could make. It wasn't until they began pricing out land that their plans began to change.

Postgreen Homes, then operating under a different name, started off by scouring the nicer neighborhoods of Philadelphia, searching for a sizable lot on which to build its first 2,000-square-foot home. The company, with Chad as President, Courtney as CFO and Darling as CMO, also began then to work with Brian Phillips, the founding principal of Philadelphia-based Interface Studio Architects (ISA), a small, highly acclaimed firm devoted to sustainable design. "We started out thinking a little differently," Phillips says. "This was right before the housing (bubble) burst and we were looking at bigger green projects, like 2,000-square-feet, getting a LEED rating and selling for \$600,000 to \$700,000." After several long delays and a few land deals gone sour, Postgreen, however, had a vital change of heart. "The whole process (of buying land)," Chad explains, "made us take a step back, and one day we were chatting, and said, 'Why are we trying to build these homes that we can't afford, our friends can't afford and most people in their low to mid 30s, making decent money, can't afford.'" It was a moment of

THE 100K HOUSE IS AN AFFORDABLE, GREEN HOME LOCATED IN PHILADELPHIA, PA (ABOVE). FACTORY-FINISHED FIBER CEMENT PANELS ADORN THE EXTERIOR OF THE 100K HOUSE (LEFT). PHOTOS COURTESY OF POSTGREEN HOMES. PHOTOGRAPHY BY SAM OBERTER.

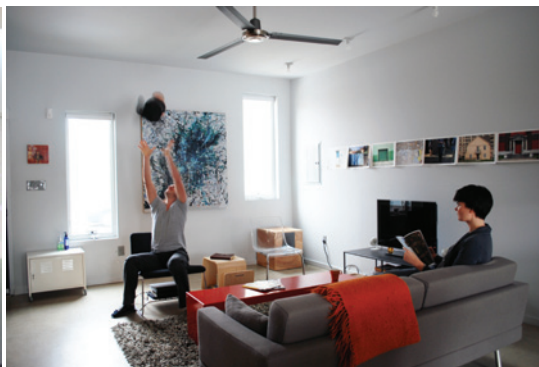
inspiration that would send Postgreen in an entirely new direction.

Phillips recalls that decision: "Chad had this moment when he realized that maybe there was this other market out there for first-time homebuyers, who in an urban setting are often relegated to a fixer upper or a small condo."

In modern, demographic parlance, Chad, Courtney and Darling are on the leading edge of the echo-boomer generation, also known as Generation Y or the Millennials. They are, in loose terms, the children of the baby boomers, born sometime between the late 70s and mid 90s and representing the largest demographic surge of homebuyers since their parents entered the market over 40 years ago. It is estimated that from the start of the millennium on, close to 80 million echo boomers have or will come of age and need a place to live. As Phillips notes, most new, single-family homes in Philadelphia are built for the middle-class, move-up buyer, while the first-time buyer is largely ignored. Postgreen Homes decided then that it would serve this market.

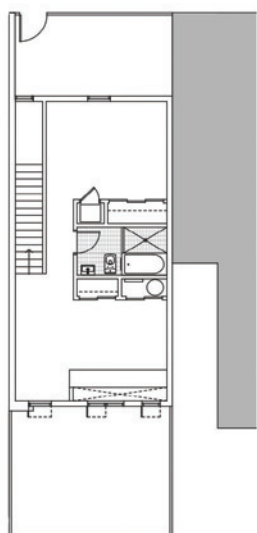
The 100K house, Postgreen's first project, would stand as its test case. Who were these first-time buyers and what did they want in a home? How small could



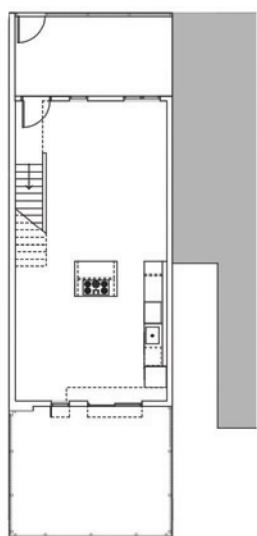


INTERIOR PHOTOS COURTESY OF POSTGREEN HOMES.

100K HOUSE



LEVEL 2



LEVEL 1

the home be? How much could they cut costs? How green could they make it? As far as Postgreen saw it, they and their friends, this new generation of homebuyer, wanted different things than their parents wanted. Cost, efficiency and size became their major drivers. "They want these nice modern, energy-efficient homes, but they don't necessarily care if the (homes) have all the bells and whistles and are 2,000 square feet," says Chad.

Phillips adds to that description: "This generation is the most environmentally conscious, most consumer driven generation ever, and so we talked about houses as products."

Another factor they considered was the home's location. Echo boomers, it appears, want out of the suburbs and back into the city centers. Philadelphia's population, over the past decade, saw its first population increase after more than 60 years of decline. Inner city neighborhoods, like Fishtown and Northern Liberties, just north of the city center, are revitalizing, with an influx of art galleries and restaurants and an increase in property values. It was in these neighborhoods that Postgreen first looked for lots, but soon found that they were constricted by cost. Their search widened, moving progressively out from the city center until the lots became affordable.

Just north of the Northern Liberties/Fishtown neighborhoods is the hard-scrabble industrial blocks of East Kensington. It, like many inner city neighborhoods, fell on hard times over past 50 years. Though the neighborhood is small, Chad estimates that there are some 2,500 vacant lots (about one in five), overgrown with weeds and litter-strewn, scattered amongst the houses. And not one new home, Chad says, has been built in the area for at least 20 years. In terms of development, Phillips adds, it was, and still is, a neighborhood where "all bets are off" with a disjointed pattern of


old industrial buildings, early twentieth-century row houses and vacant lots. The lots were cheap. Postgreen paid only \$37,500 each for two—one at 1100 square feet and the other at about 2,000. And best of all, East Kensington sits along the Market-Frankford rapid transit line, which makes the neighborhood only 12 minutes or less from anywhere downtown.

The 100K house, for all its conceptual complexity and considered approach, is, in terms of design, remarkably simple. The original challenge (and hence the name) was to build a 1,000-square-foot, super green home for \$100,000 in materials and labor. The resulting design was a box—no juts, no bays, because all that costs money. And, in fact, there are no interior doors, either, except for on the bathroom. It was a design process, observes Phillips, unlike anything ISA had worked on before. "I often use the phrase industrial design for what we did," he explains, "because it is a little more like designing a can opener, in that there is a function and the design is always going to follow that function."

That function was to be a super-efficient, market-rate affordable home that retained its market appeal. No small feat, for sure, and one that brought ISA to a unique conclusion. The way they saw it, Phillips explains, is that they had two choices: They could either design a traditional home that looked like all others, only with cheaper, less attractive materials, or they could push the limits, use quality materials and redefine our expectations of home. Obviously, they chose the latter, and the resulting home has garnered considerable attention. The 100K house, since its completion in May 2009, has won awards from the national American Institute of Architects, its Pennsylvania chapter, as well as its local, Philadelphia chapter. It received a LEED Platinum for New Homes and was recently

reappraised in early 2011 for \$299,000. The finished size of the home came in at 1,150 square feet, with a final price for materials and labor of only \$91.00 a square foot. Including all costs, materials, labor, permitting and design, the home's final construction cost was around \$200,000—an impressive success in a city with few new homes priced under \$500,000. Postgreen and ISA have since completed nine additional homes, modeled off the 100K concept, and are now designing several more. Postgreen has also started another company, Hybrid Construction, to serve as its general contractor.

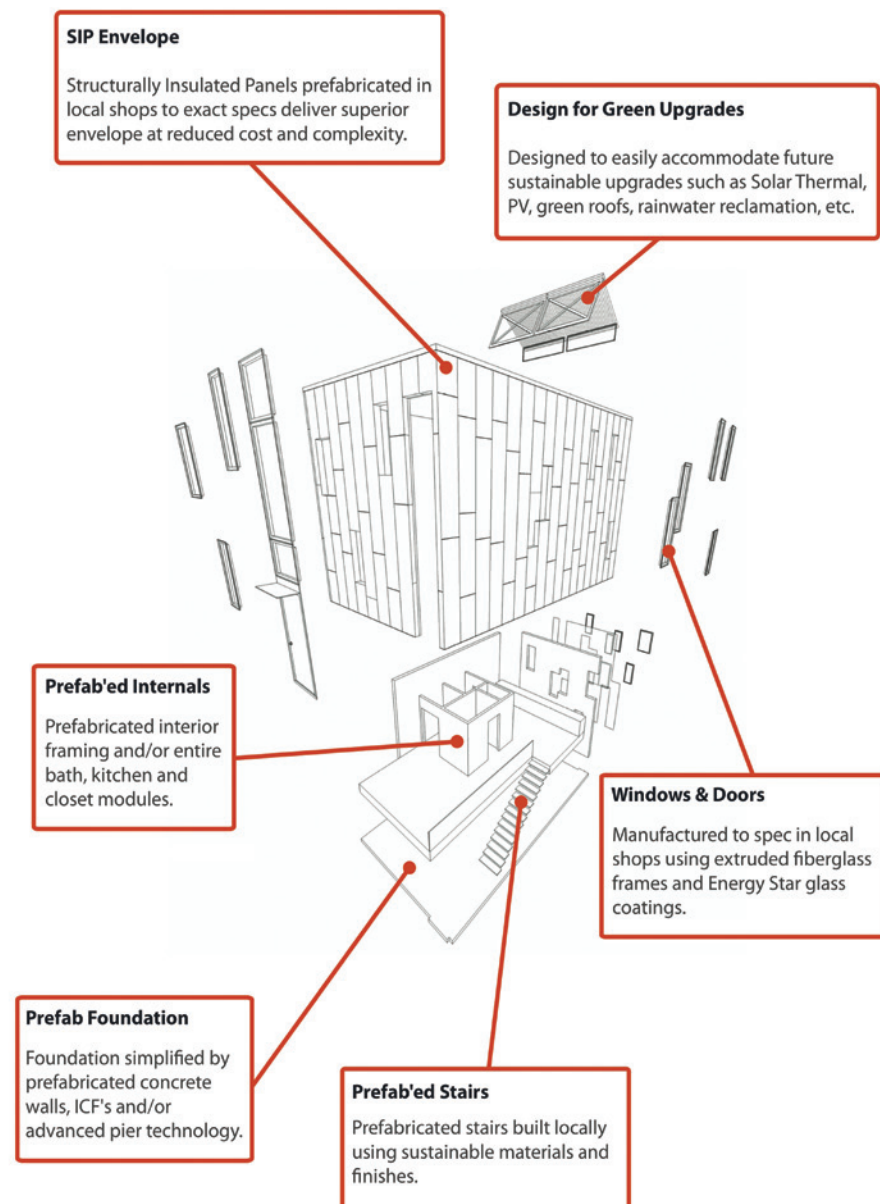
"We feel that the 100k approach, that a building should look like its parameters, inspires almost everything we do at this point," says Phillips. "It has almost become a fundamental ethos for us. A building needs to do certain things, and it can look really great doing it, but [its design] shouldn't be about a certain look that people anticipate... about some nostalgic idea of your childhood home."

"The 100K house," he adds, "taught us how to give up other things that in our minds are superficial, while still maintaining this core, performance-based model of a home." 

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## SITE BUILT MEETS PREFAB

Hybrid design for local, efficient and green home delivery



## PRODUCTS AND MATERIALS

:: Vertical fiber cement siding 4x8 sheets (exterior rain screen)

JAMES HARDIE  
26300 LA ALAMEDA, SUITE 400  
MISSION VIEJO, CA 92691

:: Home Slicker (exterior rain screen)

BENJAMIN OBDYKE  
400 BABYLON RD, SUITE A  
HORSHAM, PA 19044

:: Builders Wood Aluminum Clad (windows)

JELD-WEN  
3250 LAKEPORT BLVD.  
KLAMATH FALLS, OR 97601

:: Slim line II-80 panels (solar thermal system)

SCHÜCO  
32920 ALVARADO-NILES RD.  
UNION CITY, CA 94587

:: Munchkin boiler (gas boiler)

HEAT TRANSFER PRODUCTS, INC.  
120 BRALEY ROAD | EAST FREETOWN, MA 02717

:: RecoupAerator 200DX (energy recovery ventilation system)

ULTIMATEAIR  
178 MILL STREET  
ATHENS, OHIO 45701 USA

:: IKEA modular cabinets

:: IKEA Kitchen Island w/painted plywood top

:: Painted plywood (kitchen counter)

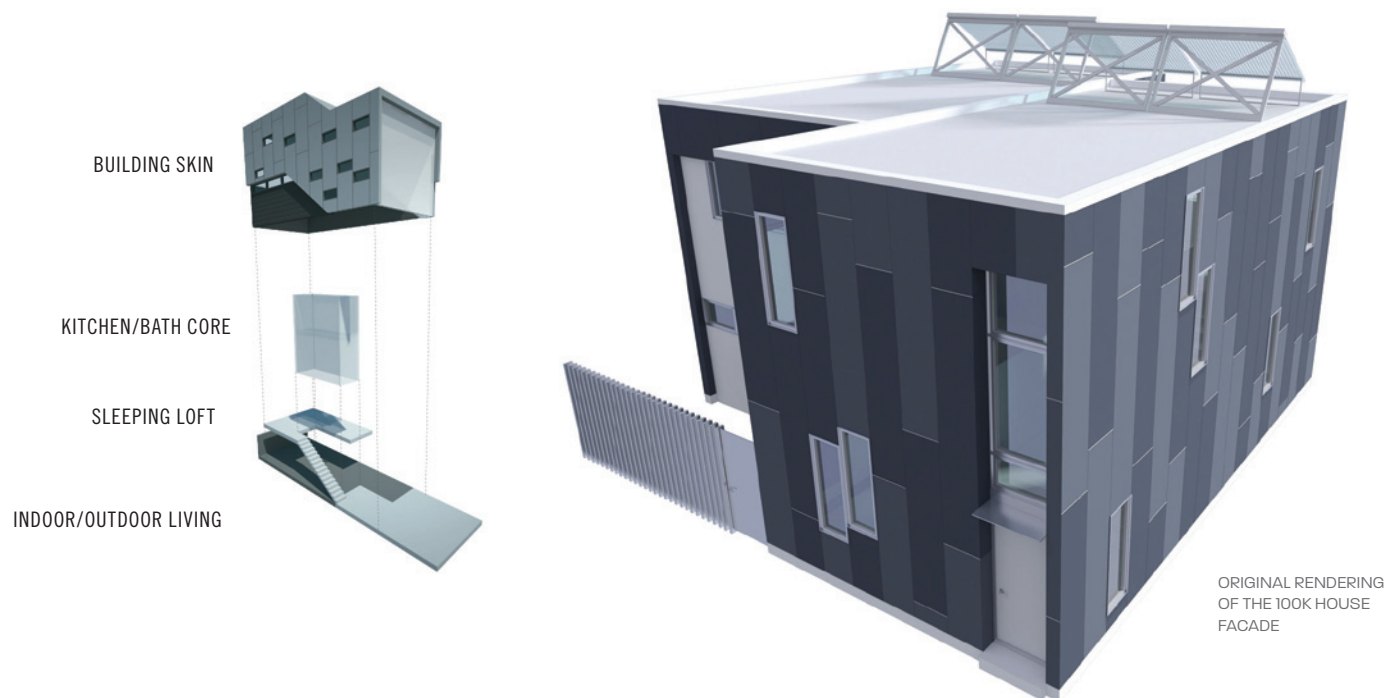
:: Eco Tuff industrial floor coating

ECOPROCOTE  
2921 W. CULVER ST., #4B PHOENIX, AZ 85009



INTERIOR FRONT

DIAGRAMS, FLOORPLAN, MODEL AND RENDERING COURTESY OF POSTGREEN HOMES.



ORIGINAL RENDERING  
OF THE 100K HOUSE  
FACADE

## BEHIND THE NUMBERS

**PROJECT NAME:**  
100K House

**DEVELOPER:**  
Postgreen Homes LLC, Chad Ludeman

**ARCHITECT:**  
Interface Studio Architects, LLC,  
Brian Phillips, AIA, LEED AP

**CONSTRUCTION:**  
Manor Hill Contracting Services, LLC

**STRUCTURAL ENGINEERS:**  
Larsen & Landis

**ENERGY CONSULTANT:**  
Zero Energy Design

**LEED PROVIDER:**  
MaGrann Associates

**SUSTAINABLE CABINETRY:**  
Papajohn Woodworking

**LOCATION:**  
Philadelphia, PA

**PROJECT TYPE:**  
Affordable, single-family, urban in-fill

**PROJECT STYLE:**  
Loft townhome

**ARCHITECTURAL DESIGN:**  
Modern

**DATE STARTED:**  
October 2007

**DATE COMPLETED:**  
May 2009

**CONSTRUCTION TIME:**  
9 months

**CERTIFICATIONS:**  
LEED Platinum, Energy Star

**AWARDS:**  
LEED for Home project of the year, 2010  
AIA National Housing Award: One and Two  
Family Production Homes  
AIA Philadelphia Merit Award  
AIA Pennsylvania Merit Award  
AIA Philadelphia Honor Award

**LOT SIZE:**  
1,080 square feet

**LOT PRICE:**  
\$37,500

**TOTAL HOUSE SIZE:**  
1,150 square feet

**FOOTPRINT:**  
648 square feet

**CONSTRUCTION METHOD:**  
Structurally insulated panels

**CONSTRUCTION COSTS:**  
\$105,000

**CONSTRUCTION PRICE PER SQUARE FOOT:**  
\$91.00 per square foot

**FINISHED COST:**  
estimate \$200,000/\$173.00 a square foot

**APPRAISED RESALE VALUE IN MARCH 2011:**  
\$299,000

**NUMBER OF BEDROOMS:**  
2

**NUMBER OF BATHS:**  
1

**CLIMATE:**  
Northeast: cold winters, warm summers

## PROJECT SPECS

**EXTERIOR CONSTRUCTION:**  
Structurally insulated panels

**EXTERIOR SIDING:**  
James Hardie fiber cement sheets and stucco

**INTERIOR WALLS:**  
Drywall/birch plywood

**FLOORING:**  
Downstairs: Polished concrete  
Upstairs: Birch plywood

**HEAT:**  
Subfloor radiant

**HOT WATER:**  
Solar thermal hot water/gas boiler back-up

**AIR CONDITIONING:**  
Split-ductless, passive and energy recovery  
ventilation

**R-VALUES:**  
Walls: R24 (6.25 inch structurally insulated  
panels)  
Ceilings: R40 (10.25 inch structurally  
insulated panels)

**GREEN AMENITIES:**  
Solar thermal array  
Solar tube in bathroom, to bring solar light to  
interior space  
High R, SIP panels walls and roof, with sealed  
vapor barrier  
Energy recovery ventilation unit  
Rainwater collection/rain barrel  
Ceiling fans  
Sunshades on exterior windows

**ESTIMATED MONTHLY HEAT/HOT WATER  
COST (WINTER):**  
\$70