

AMERICAN BUILDERS QUARTERLY

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RECOVERY-ACT CONSTRUCTION

How you can use the ARRA to benefit your business, and how it's changing the future of construction

ACTIVE-ADULT COMMUNITIES

The upward trend that's redefining the senior-housing industry

CRITERION PROPERTY COMPANY, L.P.

Developer showcases its honed vision for carving properties into compelling, aspirational-lifestyle communities



The zebra wood cabinets and checkered wood tones create a warm contrast to the stainless-steel countertops in this kitchen, built by Big Street Construction, Inc. Photo: Arctic Edge Photography.

BIG STREET CONSTRUCTION, INC.

Sustainable-home builder conquers sub-Arctic temperature fluxes with efficient building methods

BY RUSS KLETTKE

AT A GLANCE

LOCATION:
NORTH POLE, AK

YEAR FOUNDED:
2003

EMPLOYEES:
3-5

AREA OF SPECIALTY:
BUILDING ENERGY-EFFICIENT HOMES

AVERAGE ANNUAL REVENUE:
\$1.5 MILLION

YOU DON'T HAVE TO LIVE IN NORTH POLE, ALASKA to know it can be a cold place. Winter temperatures dip as low as -60 degrees Fahrenheit (-51 degrees Celsius) due to surrounding mountains that create a temperature inversion, keeping the area in the deep freeze for months at a time. On the contrary, the region's short summers can be warm and sunny, with temps as high as 90 degrees Fahrenheit and 24 hours of direct sunlight.

Despite such fluctuation in extreme weather, homebuilders in the region have developed methods and materials for building energy-efficient homes. And among the best practitioners is Big Street Construction, Inc. (BSC), a

seven-year-old North Pole-based builder that received the Interior Alaska Builders Association Gold Award for the Best Home in Tier 1 in the association's 2006 and 2008 Parade of Homes.

"It's an unforgiving climate," says Brian Flemming, president and founder of BSC. "You have to build a home, not just for the cold, but for this swing in temperatures."

And BSC is one to get the job done. Even in October, it isn't unusual for Flemming to be framing homes in 12-degree temperatures—hardly as low as it goes. The extremes of an interior-Alaska winter certainly reduce

ENERGY-EFFICIENT BSC HOME FEATURES

BSC guarantees its homes achieve a 5-Star Energy Star rating via several tactics, including:

- 2' x 6' (or larger) studs on the exterior frame—these enable 50 percent more insulation than homes built with 2 x 4s.
- High R-value insulation—this reduces thermal conduction with almost double the insulation factor employed in even the upper-Midwest and Rocky Mountain regions, with a minimum of R-21 for exterior walls and R-60 to R-70 for attics (two-feet deep).
- Vapor barrier (Visqueen brand)—a 6mm-thick plastic sheet between the drywall and the insulation resists the diffusion of moisture from inside to outside (and vice versa).
- REMOTE Wall System—a rubber membrane is placed between the sheathing of a framed structure and the exterior-facing material, with insulation fastened on the exterior side of the wall.
- Heated slabs—most of BSC's homes are built with a heated monolithic-concrete foundation. The area's climate and a high-water table preclude basements in most new construction.
- Triple-pane, UV-coated windows—three panes reduce thermal transfer in winter, while the coating prevents overheating during those super-long summer days. Very few homes have central air conditioning in the region, but with proper insulation and light blockage, structures can be "like a summer root cellar," Flemming notes.
- Heat-recovery-ventilation (HRV) systems: The HRV system exhausts stale, moist air. "Because the building envelope is so tight, interior air quality is a big issue," Flemming says.

the construction season, but "I have framed outside at 50 degrees below zero on more than one occasion," Flemming says. "Sometimes we have no other choice." But it's not as bad as it sounds. In sub-zero conditions, BSC "bubbles" a structure with a complete cover of fiberglass-reinforced Visqueen, lifted and warmed with forced-air heaters, creating a 40-to-50-degree working environment.

BSC is a family affair, with Flemming's wife, Patty, balancing duties as a mother and providing bookkeeping and interior-design services for clients. Flemming himself, 32, prefers to function as the builder, not a general contractor, as long as he is physically able to do so. "My clients know they're looking at the person who is building the home," he says. "Our personalities have to mesh to make it an enjoyable experience."

And for anyone buying a 2,200- to 4,000-square-foot home in such a formidable environment, comfort levels are of utmost importance. ABQ



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—Brian Flemming, President & Founder



P: 907.590.9915

F: 907.488.5833

brian@bigstreetconstruction.com
patty@bigstreetconstruction.com

www.bigstreetconstruction.com