



COLD CLIMATE HOUSING RESEARCH CENTER

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Sustainable Northern Shelter: Anaktuvuk Pass House Completed

Fairbanks (7/23/09)– The Cold Climate Housing Research Center (CCHRC) is pleased to announce the completion of construction of its Sustainable Northern Shelter (SNS) demonstration house in Anaktuvuk Pass, Alaska. Construction began on June 16 with substantial completion four weeks later on July 11.

With guidance from CCHRC and Tagiugmiullu Nunamiullu Housing Authority (TNHA), students from Barrow's Ilisagvik College built the home to gain home-building knowledge and experience, which they can apply to future building projects across rural Alaska.

"We hope this prototype home, in Anaktuvuk Pass, will change the approach to designing and building affordable, energy-efficient, culturally-based, and environmentally-appropriate buildings for Alaska," says CCHRC President and CEO Jack Hébert. "This is the beginning of a new day for rural Alaska. This project incorporates ten thousand years of sustainable principles with new technology."

Located in the central Brooks Range, the small community of Anaktuvuk Pass has a number of homes poorly constructed for the extreme climate, and a shortage of housing overall. The completion of the home marks an important milestone in the Anaktuvuk Pass portion of the CCHRC's Sustainable Northern Shelter Program. The program aims to work with local communities to build affordable, culturally-rooted, energy-efficient housing in rural Alaska villages by combining traditional home designs with modern homebuilding techniques. As part of the SNS program, CCHRC collaborates with the people of the community on the design of the home, to ensure the home is suitable to their lifestyle. Other villages currently participating in the program include: Newtok/Mertarvik, Point Lay, and Nuiqsut. There has also been statewide interest in the project's general design approach.

This construction method utilizes an innovative building envelope. The basic technique involves a light steel frame structure with an interior plywood skin. A soy-based, polyurethane insulation with an R-60 is applied to this framework. This insulated layer is covered by a spray-applied coating, which is durable, waterproof, and resilient. Earth-banking and a sod roof are used to buffer the structure from strong winds and drifting snow. The home makes use of natural lighting, water conservation, and other energy-saving techniques. To further reduce the home's need for costly energy, the Yukon River Inter-Tribal Watershed Council installed solar panels and will be adding a wind power system to produce renewable energy.

The high cost of transporting building materials to rural Alaska was a major consideration. All the material needed for construction of this home was approximately 30,000 pounds and could fit into a single DC-6 aircraft. An average home in Anaktuvuk Pass uses 1,400 gallons or more of fuel oil per year and can cost over \$1 million to build, including shipping of materials. The Sustainable Northern Shelter home is designed to use 110 gallons of fuel oil a year and cost under \$150,000 to construct, including shipping.

The village of Anaktuvuk will choose a family to live in the home. Over the winter, CCHRC will monitor the building's condition and systems to assess where changes can be made in future homes for Anaktuvuk Pass.

The Anaktuvuk Pass SNS project partners include: Tagiugmiullu Nunamiullu Housing Authority (TNHA), Canada Mortgage Housing Corporation, City of Anaktuvuk Pass, U.S. Dept. of Commerce, GW Scientific, Alaska State Museum, Alaska Housing Finance Corporation, Nunamiut Corporation, Ilisagvik College, Yukon River Inter-Tribal Watershed Council, Lifewater Engineering Company, Engineering and Environmental Internet Solutions, and Demilec USA.

Located in Fairbanks, Alaska, the Cold Climate Housing Research Center is a non-profit institution dedicated to research that improves the durability, health, and affordability of shelter for people living in circumpolar regions around the globe.

For more images of the construction of the Anaktuvuk Pass home, visit <http://cchrc-research.org/slideshow.html>, or follow the link from our website, www.cchrc.org.

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