



2008 Frequently Asked Questions & Answers

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GEOS NEIGHBORHOOD *Frequently Asked Questions & Answers*

What is Geos Neighborhood?

Comfortable, modern and attractive, the new Geos Neighborhood in Arvada, Colo., is being designed as the nation's largest net-zero energy, master-planned residential community. At Geos, environmentally sustainable function dictates form: The Geos Neighborhood will generate enough of its own renewable energy to offset the annual power needs of the community's 250 planned homes.

Geos Neighborhood incorporates aggressive sustainable measures – among the most uncompromising nationwide – including on-site solar and geothermal systems that are designed to supply 100 percent of the project's energy needs. This sharply contrasts with the nation's average home and is set to achieve a new standard for master-planned-community building in the 21st century.

What does net-zero energy mean?

Net-zero energy means that a home or community uses renewable resources to generate as much energy as it consumes over the course of a year.

What methods are used to ensure energy efficiency at the Geos Neighborhood?

- Smart, passive solar orientation
- Super-insulated airtight building shell
- Heat recovery ventilators (HRV) for fresh air with minimal energy loss
- Geothermal (or Ground Source Heat Pump) heating and cooling, and water heating
- High-efficiency lighting and appliances
- Photovoltaic solar panels

A leaky home compromises even the most energy-efficient heating and cooling systems. The homes' airtight construction will achieve a low 0.1 natural air changes per hour. By contrast, the majority of U.S. homes currently being built average between 0.5 and 0.7, according to the Energy Star* program, letting more hot air out and cold air in.

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*From www.energystar.gov: Energy Star is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy, helping us all save money and protect the environment through energy-efficient products and practices.

Heat recovery ventilators (HRV) will make the homes' heating systems even more energy efficient. The innovative system will transfer 75 percent or more of the heat from air exiting the home to the fresh, filtered air entering the home.

With more than 300 days of sunshine a year in Colorado, the sun will provide the majority of the homes' heating needs, while geothermal energy will provide heat as needed during overcast days and at night. Underground geothermal exchange systems will capitalize on the earth's constantly moderate temperature, and utilize an underground loopfield to extract energy that will be used for domestic hot water, space heating in the winter and space cooling in the summer.

What is the source of electricity at Geos Neighborhood when the sun is not shining or during the night?

During the course of a year, the energy Geos Neighborhood generates from renewable resources during the day will offset the amount of energy it consumes from the grid at night.

Are Geos homeowners paying more for the energy-efficiency systems?

The energy-efficiency systems' costs are included in the price of a home. The initial savings are realized immediately through the reduced payments of the homeowner's energy bill.

Do homeowners pay energy bills?

Homeowners pay nominal fees to the utility company to ensure the electric lines that connect the home to the grid are maintained and always available.

If homeowners do not pay energy bills, who pays the meter fee, which is assessed to all Xcel customers?

Homeowners will pay this nominal fee.

How is Geos able to provide these advanced and typically expensive energy-efficient systems in moderately priced homes?

A large component of the energy performance is the orientation and design of the Geos homes. Geos also realizes a cost advantage by creating economies of scale for multiple renewable energy systems. All technologies used at Geos already are commercially available, so research and development expenses primarily are limited to system integration and computer modeling.

Are there any qualifications or special requirements to live at Geos Neighborhood? Does the homeowner have to commit to a certain level of "sustainability?"

No, there are no specific requirements, but homeowners will receive a Geos-produced manual with suggested guidelines for how to best operate the homes, given the environmental and energy-saving technology offered in each home.

How else does Geos provide for a sustainable environment?

Geos' forward-thinking community model breaks established design rules to create a new generation of sustainable communities. One example is its "checkerboard design," which means that every other home sits on the front of the lot whereas its neighbor sits to the back, minimizing the shadowing that could impede a home's solar collection.

This innovative, solar-sensitive pattern differs markedly from a typical neighborhood where homes are designed with a linear setback – each the same distance from the property line in a configuration that can block access to the sun.

How is the community conserving water?

Through advanced biological storm water management systems, the team at Geos has taken several steps to recycle storm water back to the community landscape.

Storm water also is managed alongside each streetscape. Each street-side rain garden is submerged six inches below street level, thus diverting the water to the tree located alongside the street. Then, cobblestone dissipates the velocity of the water before it reaches a drain that recycles the excess water back to the neighborhood parks instead of sending it through a storm drain.

When will the first homes be available for move-in, and when is full build-out expected?

Groundbreaking for Geos Neighborhood infrastructure is scheduled for Q4 2008. Residential groundbreaking is slated for Q1 2009. Market conditions and demand will determine the time frame for completion of Geos Neighborhood.

What is the range of home sizes and prices at Geos Neighborhood?

Geos Neighborhood offers a variety of housing types, including single-family homes, live/work townhomes, paired homes, row homes, multi-level condos and co-housing. Home sizes range from 860 to 3,683 square feet, depending on the unit type. Geos units are competitively priced from the \$200,000s.

What is co-housing?

Co-housing communities are small-scale neighborhoods that provide a balance between personal privacy and living among people who know and care about each other. Co-housing developments are designed, planned and managed with a high degree of resident participation, and most major decisions are arrived at through a consensus decision-making process.

What types of sustainable standard and upgrade features will be offered for homebuyers?

Each homes' standard and upgrade features will include energy-conserving light fixtures and water-conserving plumbing fixtures; interior finishes will be low-toxic and contain no or low VOCs (volatile organic compounds), and materials will be from sustainable resources.

Is there mixed-use incorporated in the Geos Neighborhood?

Approximately 12,000 square feet of neighborhood-oriented retail and office space are planned for the Beachfront Neighborhood and the mixed-use entry area of Geos Neighborhood. In addition, many homes incorporate live/work space for home-based businesses or home offices that open to the public sidewalk. The entire development is a walkable neighborhood with smaller community sub-areas.