



## The Building Envelope

The building envelope of a home includes the walls, ceilings, floors, windows, and doors. It is the barrier that keeps the indoor climate of the home comfortable year-round.

### Insulation

- Insulation in SMUD Advantage Homes keeps summer heat outside and winter warmth indoors, providing a comfortable living environment. SMUD Advantage Homes not only have ample insulation throughout the home structure, including R-30 in the ceiling, they are also constructed with high efficiency R-6 insulated HVAC ducts that deliver conditioned air throughout the home.

### LoE<sup>2</sup> Windows\*

- Windows can be the biggest source of heat gain in the summer and heat loss during the winter. Advantage Homes are constructed with dual pane, low solar heat gain coefficient (SHGC) LoE<sup>2</sup> windows. LoE<sup>2</sup> glass has micro coatings that reflect the sun's heat rays back outside in the summer, but retains heat indoors during the winter. LoE<sup>2</sup> windows also filter out 90% of the sun's damaging UV rays, thus preserving your carpet, drapes and furniture, while maintaining high light levels to brighten the home.



## Heating, Ventilation & Air Conditioning (HVAC) System

Air conditioning accounts for the majority of residential energy consumption during hot summer months. An HVAC system that is properly engineered will provide increased comfort and optimum energy efficiency.

### Engineered HVAC Design

- The HVAC system of each Advantage Home is engineered to ACCA (Air Conditioning Contractors of America) standards to provide optimal performance and energy savings. ACCA engineering standards accurately calculate the AC unit size, duct sizes, and air distribution layout, ensuring the proper amount of conditioned air is delivered to each room in the home. A correctly designed HVAC system provides even temperatures throughout the home creating a comfortable environment for the homeowner to live in. Additionally, a properly "right-sized" AC unit will reduce the humidity in the home, more effectively improving the homeowners comfort level.

### Energy Efficient Air Conditioner

- Advantage Homes are equipped with high efficiency 13.0 SEER (Seasonal Energy Efficiency Rating) Air Conditioning (AC) units. California Energy Commission (CEC) Title 24 requires builders to install 10.0 SEER AC units. The higher the SEER rating, the more energy efficient the unit and the less it will cost to operate year after year.

### Thermostatic Expansion Valve

- The AC units installed on Advantage Homes are equipped with a TXV that helps maintain, and can even increase, their energy efficiency level. The TXV also acts as a protection device for the compressor, increasing its life and reliability. Even when initially installed correctly, AC systems eventually develop charge and airflow problems as a result of small refrigerant leaks, maintenance problems, and dirt build-up. The TXV is a regulating device that helps the AC unit perform at optimum efficiency by adjusting refrigerant levels in response to peak loads and changing conditions.

### Tight-Sealed Air Distribution Duct System

- Reduced air loss means increased comfort and energy savings. When the air distribution system is installed in a SMUD Advantage Home, each air duct is tightly sealed guaranteeing minimum air loss, with maximum cooling and heating efficiency. Once completed, the system is pressurized and tested to ensure it passes the required specifications. A tightly sealed air distribution system will also keep dust from entering the system, providing clean conditioned air, and reduced maintenance on the equipment.

### Zone Controls

- HVAC zone controls are installed in all SMUD Advantage Homes that are two stories or larger than 2,500 square feet. Individual thermostats are located upstairs and downstairs allowing each zone separate temperature control for increased comfort and energy efficiency. Single story homes are zoned for living and sleeping areas.

Learn more about SMUD Advantage Homes at [smud.org](http://smud.org) or call (916) 732-5085.



\*LoE and LoE<sup>2</sup> are trademarks of Cardinal Glass Industries.