

ENERGY STAR Building Design Profile

Ingles Store #133
Mills River, NC, 28759

While Ingles Markets has incorporated energy saving design features in their buildings for a number of years, this is the first store to seek ENERGY STAR Certification. Robertson Loia Roof worked closely with Ingles staff members to assure that this 90,000 plus square foot building met or exceeded the EPA industry standards.

The public is aware and appreciative of Ingles' efforts to conserve energy and to create an efficient and comfortable shopping environment. By achieving the Design to Earn the ENERGY STAR certification, Ingles customers can rest assured that Ingles Markets Incorporated understands the importance of making a difference by reducing their carbon footprint and its effects on the environment.

There are many energy efficient design features incorporated in this store. Some energy conserving features include well insulated walls and roof construction, highly efficient HVAC equipment and refrigerated cases, heat reclaim for air and water, daylight harvesting via clerestory windows and skylights, and an energy management system which helps monitor and control the energy usage.

The 90,000 square foot roof is insulated with polyisocyanurate rigid panels. The white single ply roofing membrane is high reflectance, helping to reduce heat gain and thereby helping to keep the building interior cooler. This store has installed 75 skylights with highly efficient translucent aerogel panels comprise 2,250 square feet or roughly two and one half percent of the roof area. This building also utilizes photocells to determine that natural light levels are adequate. To further decrease energy consumption, motion sensors are also used in the back rooms to allow lighting use only when necessary. In addition, the energy management system monitors the outdoor lighting, department equipment panels and HVAC temperature and humidity.

Heat is reclaimed by collecting hot refrigerant that is circulated through coils in reclaim tanks and used to preheat water before it enters the water heating tanks. Heat from hot refrigerants are also reclaimed and used to supply heat and air for the loading dock heaters. These applications help reduce the energy required to heat water and air.

Ingles selected high efficiency refrigerated display cases for this store. These cases conserve energy by using LED lighting instead of fluorescents, and by installing motion sensors to help prevent unnecessary lighting. These refrigeration cases also optimize performance and energy costs by putting less heat in the cases, thereby reducing refrigeration energy.



Architect of Record:

Robertson Loia Roof, P.C.

Engineering Firm:

Robertson Loia Roof, P.C.

Building Owner:

Ingles Markets, Inc.

Design Energy Rating:

94

Percent Energy and CO₂ Reduction*:

34

Design Year/ Estimated Occupancy Date:

2012 / January 2013

Space Type:

Supermarket / Grocery

Floor Space:

90,183 SF

Estimated Energy Use Intensity:

367 kBtu/sf/yr

Estimated Total Annual Energy Use:

33,134,186 kBtu/yr

Estimated Annual Energy Cost:

\$ 224,873

Technologies Specified:

Daylighting through the use of skylights, efficient HVAC systems, reclaiming of heat from refrigerated equipment, roof materials

For More Information

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*Percent Energy and CO₂ Reductions are based on comparison to a median building of similar type.

