



CASE STUDY: SCHLUTER SYSTEMS

Futuristic Design for Specialty Manufacturing Company Helps Environment

Schluter Systems designs and manufactures specialty construction materials. When building a new facility in northern Nevada complete with an office, training space and warehouse/distribution center, the company sought to create a unique space that works with the environment to reduce energy costs and increase occupant comfort. Plans also incorporated innovative technology to attain LEED® Gold certification. Schluter Systems received an incentive from NV Energy to help offset the cost of its newly constructed building.

The building features a white roof, glass atrium, solar panels, skylights, desert landscaping (to minimize water use), low-E glass, and a two-story “living” wall that includes more than 2,000 plants spread across 400 square feet. A waterfall and retention basin reduce noise levels and help humidify the building.



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Project Summary

The facility's mechanical system includes a solar wall intake, solar hot water system, ground source heating and cooling equipment, heat pumps, controls and an earth air tunnel intake. The earth air tunnel utilizes underground air—where temperatures remain consistent year-round—to heat, cool and bring humidity to the building complex. The air temperature is adjusted as it passes through the tunnel, reducing the heating and cooling load. In addition, a recovery heating and cooling unit reclaims about 90% of conditioned air before it leaves the building. Radiant walls in the warehouse are the site's primary heating source and are the first of their kind in North America. Measuring 908 linear feet by 8 feet, the walls connect to the ground source heat pump well field and offer all of the advantages of radiant flooring.

Both air and water ground source heat pumps help condition the building, while a high-tech, in-floor hydronic radiant heating system reacts quickly to changes in temperature and consumes much less energy than traditional systems. It is easy to regulate and operates at a low temperature range. Additionally, hydronic pipes (Schluter®-BEKOTEC) positioned close to the surface create a reaction time that is eight times faster than a traditional system.



Energy-saving Equipment

For this new construction project, Schluter Systems can expect annual projected energy savings of more than 291,000 kWh annually, when compared to an average industrial/office site. This facility also reached LEED® Gold certification.



Project Results

Building Type: Industrial/office

Project Type: New construction

Measures: LEED® Gold certification

Incentive: \$19,258

Projected Annual kWh Savings: 291,308