

CASE STUDY:

VALUE PLASTICS

Fort Collins

A Colorado company founded in 1968, Value Plastics has emerged as a premier OEM (original equipment manufacturer) supplier of precision plastic components to both the medical and industrial sectors. The Value Plastics product line is designed, manufactured, and distributed from its Fort Collins facility.



In 1995, Value Plastics was looking to build a new facility, and the city of Fort Collins was looking for a company interested in constructing a model, highly energy-efficient small manufacturing building. As energy efficiency is part of the ethic of Value Plastics and its founder, this was a perfect match.

The 41, 000 square-foot building, home to 45 employees, was designed with energy efficiency in mind. Daylighting has been employed throughout the building, with some 60% of the structure being glass. Interior walls and ceilings are light-colored, which assists with natural light diffusion and minimizes the amount of electricity needed for lighting work areas and other spaces.

A Johnson Controls energy management system (EMS) was integrated into the initial construction of the facility. This computer-controlled system was not effectively used until 2000, when it was upgraded and began overseeing energy use in the building.

On the building operations side, the EMS works to ensure that HVAC and lighting systems are operating efficiently. Air-handling units and chillers are run on an occupied/unoccupied schedule, running only between the hours of 6:00 a.m. and 4:30 p.m. With approximately 70% of Value Plastic's processing being done outside of these hours, additional efficiencies are gained.

Cooling is accomplished through a double unit, lead/lag chiller system. The lag chiller tracks the lead chiller, coming on-line only if the lead chiller can't meet the building's cooling demand. This double unit system needs only one electric chiller pump to meet cooling needs. The lead and lag chillers are rotated once per month to reduce wear-and-tear and for maintenance purposes.

On the processing side, air compressors that were once vented into interior work spaces are now vented through the roof, significantly reducing cooling demand. Over the years, Value Plastics has moved to ENERGY STAR®-labeled electric molding machines which allow the chilled water used in the molding process to be recycled within the machine, maximizing the use of the water while lowering the demand on the facility's chillers. And the lead/lag chiller system, described above, ensures that, should one of the chillers go down to a mechanical failure, production will not need to be halted while repairs are being made.

Value Plastics has invested approximately \$30,000 in energy efficiency-related upgrades to its facility and operations since 1995. Annual energy and cost savings are estimated at 97,200 kWh and \$4,400 respectively, with a simple payback period of 7 years. The firm joined the [Fort Collins Climate Wise](#) program in July 2003.

By aggressively pursuing energy efficiency in both its facility and processing operations, Value Plastics has been able to add more processing and computer equipment without increasing its electricity use. Value Plastics continues to investigate additional energy efficiency opportunities, and considers its efforts a work in progress, one that will continue to benefit both Colorado's environment and the company's bottom line.