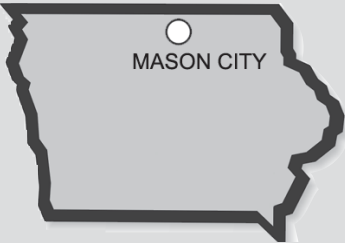


GRAHAM Division of AADG, Inc.



CURRIES Division of AADG, Inc., located in Mason City, was founded in 1958 and is the market-leading manufacturer of hollow metal doors and frames. The company manufactures specially designed and standard products for new building projects as well as renovations. GRAHAM Division of AADG, Inc., also in Mason City, was founded in 1968 and is a market leader in the production and supply of non-fire-rated and fire-rated architectural flush wood doors for the commercial construction industry.

Abraiz Sajjad, Mechanical Engineering, Iowa State University

Project Background

CURRIES and GRAHAM has demonstrated a commitment to waste reduction through previous projects. A large quantity of used materials/by-products are being recycled, which has saved the company disposal costs. A previous P2 intern worked on the installation of a solvent distillation unit, filtering the lubricant from the roll formers for reuse, recycling waste polystyrene and fixing air leaks in the compressed air system.

Incentives to Change

GRAHAM wanted to explore opportunities to reduce energy costs and evaluate alternate wood waste disposal practices. This resulted in several different projects, which are outlined below.

Results

Dust Collection System (Ecogate)

Ecogate manufactures a system for regulating the dust collection system by optimizing its efficiency as well as reducing the power consumption. This involves the installation of automated blast gates on all the ducts. Variable frequency drives are also installed on motors to reduce energy use. These blast gates open up only when the machine is in operation in contrast to the current system, which runs throughout the day. A cost savings analysis revealed energy savings of about \$95,000 per year. The project would have a ROI of less than 2 years after receiving an incentive from Alliant Energy. Further investigation is necessary on this project.

Wood Wastes

GRAHAM pays about \$55,000 annually to dispose of wood wastes, which includes landfill as well as hauling charges. A wood recycler can accept the waste for less cost, saving GRAHAM about \$30,000 annually.

Vending Miser Project

There are 15 soda vending machines in the breakrooms of different facilities of CURRIES and GRAHAM. These breakrooms are empty for the majority of the shift while the machines operate continuously. With the Vending Miser® in place, energy costs for the machines are estimated to be reduced by 70-80 percent. This equates to energy savings of about \$130 per machine, per year. Total estimated saving on all machines is about \$2,000 annually.

Replace Aerosol Cans

CURRIES's door plant currently uses about 3,300 aerosol paint cans annually to spray under window kits and an additional 2,300 cans for touchups on the door line. The aerosol cans could be replaced by a paint/acetone mixture, providing a faster dry time as well as cost savings. The paint is being tested at the window kit line and will be fully implemented soon, with an associated cost savings of about \$7,000.

GRAHAM Warehouse Lighting

GRAHAM stores raw lumber at a warehouse and current practice is to light the entire facility all day. By installing ultrasonic occupancy sensors, this energy waste can be eliminated. Estimated cost savings are about \$4,000 annually with a ROI of about 6 months.



Air Pollutants Diverted in Tons

	Total for all sectors
SO2	6.0
CO	0.6
NOX	2.8
VOC	0.1
LEAD	0.0
PM	0.1

Green House Gases Diverted in Tons (CO2 Equivalent)

	Total for all sectors
CO2	1,122.0
CH4	37.0
N2O	12.2
CFCS	13.6

Project	Annual Cost Savings	Environmental Results	Status
DUST COLLECTION SYSTEM	\$95,000	1,800,000 kWh	More research needed
WOOD WASTE DISPOSAL	\$30,000		Implemented
INSTALLATION OF VENDING MISERS	\$2,000	13,433 kWh	Implemented
REPLACEMENT FOR AEROSOL CANS	\$7,000	Eliminate 5,600 aerosol cans	Implementing
WAREHOUSE LIGHTING	\$4,000	94,418 kWh	Implementing

