Woodharbor Doors and Cabinetry

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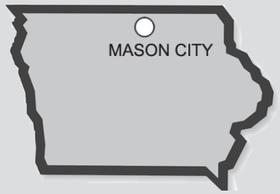

Woodharbor Doors & Cabinetry, Inc. was founded in 1993 by Curtis, Dennis and Jon Lewerke. The Lewerkes began as custom home builders in the 1970s. Unsatisfied with the quality of cabinetry available to them, they began to manufacture their own line. Over the years, the business evolved to the current company with plants in Mason City and Northwood.

Project Background

Woodharbor Doors and Cabinetry has made much progress in reducing energy use and the amount of raw materials used through process changes, equipment modifications and utilizing new technologies. However, with a goal of expanding production in the next few years, it is crucial for the company to also expand upon its current waste reduction methods and lean manufacturing principles.

Incentives to Change

There are many benefits to reducing the amount of wood, paint and paint-related wastes produced, as well the amount of energy consumed. By implementing these environmentally friendly projects, Woodharbor can seek to acquire a greater approval from its employees and consumer base, while potentially decreasing the size of its ecological footprint. This will be a challenge with a goal of increasing production, but the projects highlight areas in which waste reduction and diversion methods can significantly be improved. Similarly, the resulting financial savings illuminate the larger scope to which waste reduction can and should be applied at the company.

Results

Wood Waste Diversion and Source Reduction

The current waste management method for wood scraps is labor intensive and allows building heat loss in the winter. With the installation of a wood grinder and overhead bin, much heat and labor would be saved, as well as disposal, hauling, and container rental costs. Wood scraps are a reusable, valuable material, and there are many local markets for wood grindings. Source reduction in wood waste generation may be accomplished by assessing the quality of raw lumber purchased for various products. Upgrading to select and better cherry wood from #1 common for processes has a potential to divert 113 tons of wood a year and to save $86,000 annually.

Energy Reduction

By installing gated dust collection systems with variable frequency drive motors at each Woodharbor facility, electricity use will decrease by more than 1.5 million kWh per year. Fixing the more than 100 leaks found in the air compressor systems at both facilities is also another opportunity to reduce energy consumption and will save roughly 349,000 kWh and $23,000 a year. The purchase of an ultrasonic leak detector and greater employee encouragement for reporting leaks as they develop are recommended to maintain these savings.

Solvent Recovery System

With an in-house solvent recovery system, acetone purchases would greatly decrease, as would the amount of paint waste from the facility. Although the current paint waste handler reclaims the acetone in Woodharbor's paint waste, the annual savings that would result from this project can be used to fund other environmentally beneficial projects.

Burning Used Paint Filters for Fuel Recovery

Woodharbor disposes of paint filters from its spray booths when all the solvents have evaporated. The container rental fees, disposal costs, and taxes could be eliminated if the filters were to be used for fuel recovery, diverting about 18 tons a year of paper and polyester materials from the landfill. More research is needed in order to determine an outlet for the used paint filters.

Project	Annual Cost Savings	Environmental Results	Status
WOOD WASTE DIVERSION	$151,000	2,900 tons	Recommended
WOOD WASTE SOURCE REDUCTION	$83,000	113 tons	Recommended
GATED DUST COLLECTOR SYSTEMS	$96,000	1,500,000 kWh	Recommended
AIR COMPRESSOR LEAKS	$23,000	349,000 kWh	Implemented
SOLVENT RECOVERY SYSTEM	$63,000-$115,000	17,000 gallons	Recommended
BURNING USED PAINT FILTERS FOR FUEL RECOVERY	$12,000	18 tons	More research needed

Air Pollutants Diverted in Tons

	Total for all sectors
SO2	7.10
CO	0.72
NOX	3.37
VOC	0.12
LEAD	0.0
PM	0.17

Green House Gases Diverted in Tons (CO2 Equivalent)

	Total for all sectors
CO2	1,320.0
CH4	43.69
N2O	14.43
CFCS	16.01