

**At A Glance:**

- *Recommended energy and productivity savings totaling \$517,626*
- *Implemented over 95% of recommendations to save \$502,552*
- *Total emissions reduction of over 2,642 tons of CO2 annually*

Energy Saved

MAKING PAPER PERFORM.

**Assessment Overview**

A team of students & faculty from the IAC at Syracuse University performed an industrial assessment for the Burrows Paper Corporation owned Mill Street Paper Plant. The assessment was sponsored by the Department of Energy and was led by Center Director Frederick J. Carranti, P.E., a faculty member in the Department of Mechanical & Aerospace Engineering. The IAC team employed a comprehensive assessment methodology that considered energy, waste, & process-related improvements. The team examined all large energy-consuming equipment & systems for potential savings. They compiled a waste inventory & investigated the potential for waste reduction or improved disposal/recycling methods.

The team also examined manufacturing processes for potential improvements, & emerging technologies were assessed for potential contributions to efficiency improvements.

Summary

Through the Department of Energy's *Industrial Assessment Center* (IAC) located at Syracuse University, a lightweight specialty paper manufacturer was able to realize significant savings from reductions in energy & productivity costs. Through recommended changes to the compressed air system, motor, belt, and lubricant upgrades, waste heat recovery, lighting retrofits, and insulating equipment the company can potentially save approximately \$517,626 annually.

Applications:

The Syracuse University Industrial Assessment team identified opportunities to decrease energy usage, increase capacity, improve product quality, & enhance employee safety and comfort. The Industrial Assessment Center team accomplished this after conducting a comprehensive assessment of the company's systems and utility scheme. The team's goal was to identify significant opportunities for cost savings, quality improvements, & productivity enhancement.



Company Background

Burrows Paper Corporation specializes in the production of lightweight specialty paper. The company was founded in 1919 and has since grown from one paper mill in New York to four paper mills operating on a global scale. The company offers a wide variety of products ranging from industrial papers to food packaging and wrapping papers.

Burrows Paper Corporation has energy efficiency and sustainability efforts firmly rooted into its core values, using recycled paper in their products since the company was founded in 1919.



Overview of Recommendations:

The table below summarizes specific recommendations identified during the assessment. These projections of savings & capital costs identified during the assessment have been established through engineering analyses and research.

As a result, thirteen recommendations were provided to the company, for consideration and they are listed below.

Helping you achieve your energy goals



Executive Summary Recommendations

Assessment Recommendation	Annual Resource Savings	Total Annual Savings	Capital Costs	Other Costs	Simple Payback
<i>Utilize Energy Efficient Belts</i>	<i>Electricity:</i> 165,816 kWh	\$17,366	None	None	Immediate
	<i>Demand:</i> 237 kW				
<i>Reduce Compressed Air System Line Pressure</i>	<i>Electricity:</i> 79,002 kWh	\$9,043	None	None	Immediate
	<i>Demand:</i> 226 kW				
<i>Utilize Synthetic Lubricants</i>	<i>Electricity:</i> 40,984 kWh	\$4,349	None	None	Immediate
	<i>Demand:</i> 67 kW				
<i>Repair Leaks in Air System</i>	<i>Electricity:</i> 125,328 kWh	\$13,124	\$500	\$682	0.1 years
	<i>Demand:</i> 179 kW				
<i>Duct Outside Air to Compressors</i>	<i>Electricity:</i> 45,990 kWh	\$5,261	\$276	\$436	0.1 years
	<i>Demand:</i> 131 kW				
<i>Preheat Dryer Makeup Air with Exhaust Waste Heat</i>	<i>Natural Gas:</i> 26,508 MMBtu	\$323,132	\$78,080	\$1,091	0.2 years
<i>Install Occupancy Sensors</i>	<i>Electricity:</i> 71,736 kWh	\$6,815	\$1,026	\$709	0.3 years
<i>Insulate Steam Headers</i>	<i>Natural Gas:</i> 46 MMBtu	\$561	\$141	\$109	0.4 years
	<i>Electricity:</i> 4,030 kWh				
<i>Install Energy Efficient Exit Signs</i>	<i>Demand:</i> 6 kW	\$901	\$315	\$317	0.7 years
	<i>Labor Hours:</i> 12 h				
	<i>Avoided Cost:</i> \$150				
<i>Install More Efficient Lighting</i>	<i>Electricity:</i> 93,996 kWh	\$9,859	\$10,403	\$1,800	1.2 years
	<i>Demand:</i> 136 kW				
<i>Upgrade Refiners</i>	<i>Electricity:</i> 1,078,056 kWh	\$112,898	\$150,000	None	1.3 years
	<i>Demand:</i> 1,540 kW				
<i>Install Occupancy Sensors on Vending Machines</i>	<i>Electricity:</i> 1,516 kWh	\$144	\$258	\$14	1.9 years
<i>Correct for Power Factor</i>	<i>Reactive:</i> 13,895 rkVa	\$14,173	\$42,224	\$14	3.0 years
	<i>Electricity:</i> 1,706,454 kWh				
Totals	<i>Demand:</i> 2,522 kW	\$517,626	\$283,223	\$5,172	N/A
	<i>Natural Gas:</i> 26,554 MMBtu				
	<i>Reactive:</i> 13,895 rkVa				
	<i>Labor Hours:</i> 12 h				
	<i>Avoided Cost:</i> \$150				

For More Information;
Or to request your own energy assessment:

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