

# Columbia Manufacturing



Columbia Manufacturing Inc., established in 1980, is a critical supplier for Connecticut's aerospace industry. The 100,000 square foot facility provides CNC machining of components, sheet-metal, and machined fabrications for the aircraft industry. They are the largest private employer in the town. To maintain their competitive position in the market, CMI implemented a comprehensive plan to increase productivity, employee comfort, and reduce operating expenses.

Working with MHR Development and Eversource Energy, Columbia Manufacturing completed a multi-measure energy retrofit and process optimization training (PRIME) to increase efficiency and reduce operating costs. This upgrade improved workforce productivity and increased employee comfort, while reducing energy costs by over \$32,000. The energy retrofits included power factor correction, LED lighting, high efficiency electric motors, space heating controls, and a refurbished hot zone for the heat treating furnace.

The implementation team included Environmental Systems Corporation (ESC), Earthlight Technologies, and Sixth Floor Consulting Group. This project received a "comprehensive" incentive from Eversource Energy, and has been featured in various energy efficiency publications.

*"Columbia Manufacturing Inc. was pleased to participate in a multi-faceted energy project which allowed us to evaluate numerous possibilities for energy savings and to pick options which we felt would maximize our cost savings and improve efficiencies while minimizing our carbon footprint."*

*Kathryn M. Conlon  
Chief Financial Officer, Columbia Manufacturing Inc.*

## INDUSTRIAL

Project: Multi-Measure Energy Retrofit  
Size: 100,000 sq. ft.  
Type: Manufacturing - Aerospace  
Address: 165 Route 66 East, Columbia, CT  
Website: [www.columbiamanufacturing.net](http://www.columbiamanufacturing.net)

## EFFICIENCY IMPROVEMENTS

- Process Reengineering (PRIME)
- Cooling Water & Dry Cooler Controls
- LED Lighting Retrofit
- Space Heating Repair & Controls
- High-Efficiency Electric Motors & Laser Alignment
- Power Factor Correction
- Heat Treat Furnace Hot Zone Repair

## BENEFITS



Heating Oil Reduction:  
+ 2,000 gallons / year



Grid-Supplied Electricity Savings:  
204,256 kWh / year



CO<sub>2</sub> Emissions Reduction:  
1,109,000 lbs. / year



10-Year Return of Investment: 337%  
Simple Payback: 3 years  
Utility & Operational Savings: \$32,000 / year



LED Lighting Savings:  
75,400 kWh / year

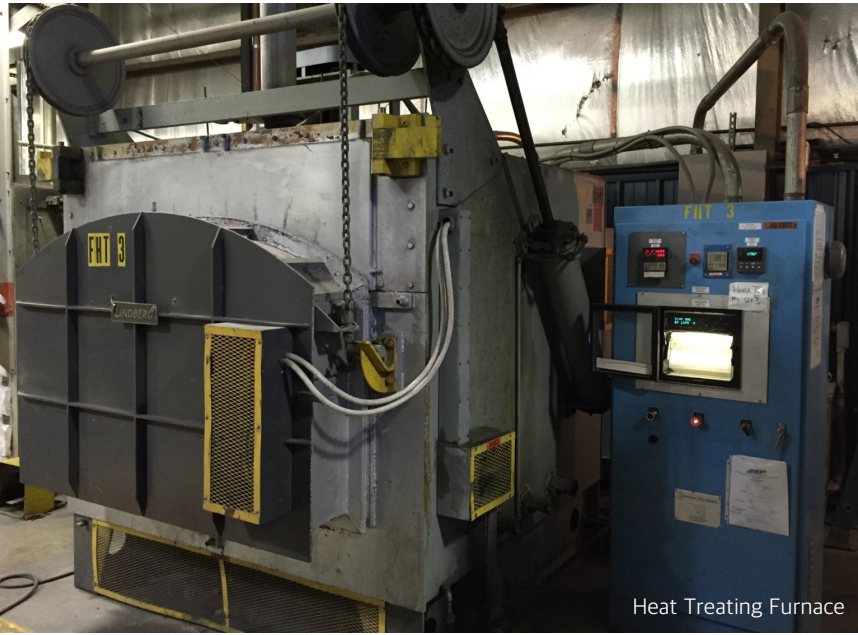


Heat Destratification:  
Improved Occupant Comfort

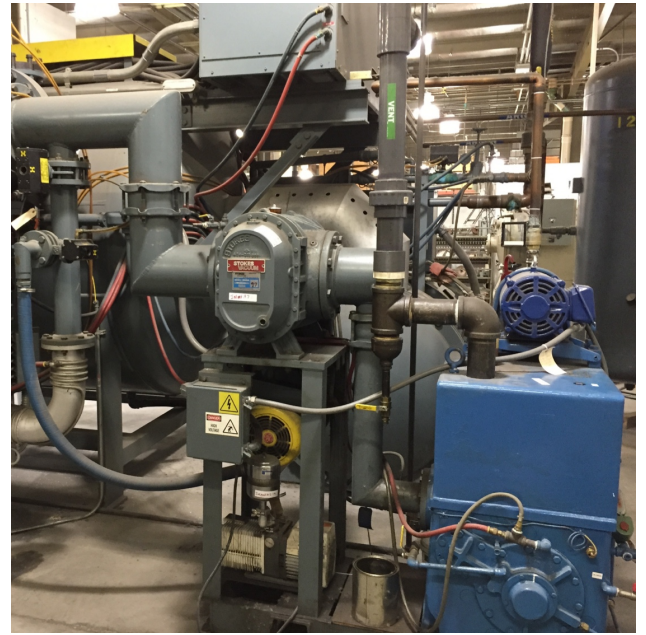
Note: these numbers are approximations and based on baseline results.



Source: Google Earth



Heat Treating Furnace



Project Team at Cooling Tower



Heat Treating Furnace

## PROCESS REENGINEERING

Columbia Manufacturing completed a multi-step Process Reengineering for Improved Manufacturing Efficiency (PRIME) program. This workforce re-training increased productivity and efficiency, while also reducing operating costs. PRIME utilizes statistical analyses, lean manufacturing training, and kaizen training events for employees to eliminate potential waste, improve production efficiency, and reduce energy use and the environmental impact of manufacturing.

## FUNDING



This multi-measure energy efficiency project received a "comprehensive" incentive from Eversource Energy.