

CASE STUDY / **DOOR MANUFACTURING FACILITY**

# OPENING THE DOOR TO SUSTAINABILITY

For TruStile Doors, finding a more beneficial use for more than 7,200 tons of sawdust byproduct created each year through manufacturing meant integrating a solution into design of its new facility — effectively reducing greenhouse gas emissions by more than 37,000 tons per year.



# A GREENER FUTURE IS JUST OVER THE THRESHOLD

Choosing from three viable design options for its new facility, TruStile Doors sought to decrease its greenhouse gas footprint by finding a more effective use for its sawdust byproduct.

## PROJECT STATS

### CLIENT

TruStile Doors

### LOCATION

Denver, Colorado

### PROJECT COMPLETION

Spring 2020

## CHALLENGE

TruStile Doors is a manufacturer of high-quality, interior and exterior, medium density fiberboard, wood and glass doors for residential and commercial use. The company's existing plant in Denver, Colorado, was generating approximately 600 tons of sawdust byproducts each month that was disposed of at a nearby landfill, a composting facility or trucked to farmers in Nebraska for use in crop heating.

that would reduce the company's environmental impacts, decrease costs and increase efficiency.

Such an undertaking would require bringing together a variety of pieces, including analysis of the environmental impacts of the various design options for the new facility and the preparation of air construction permitting applications to meet all local, state and federal regulations required.

## REDUCES GHGs BY

# 37K

TONS PER YEAR

## REDUCES LANDFILL WASTE BY

# 7.2K

TONS PER YEAR

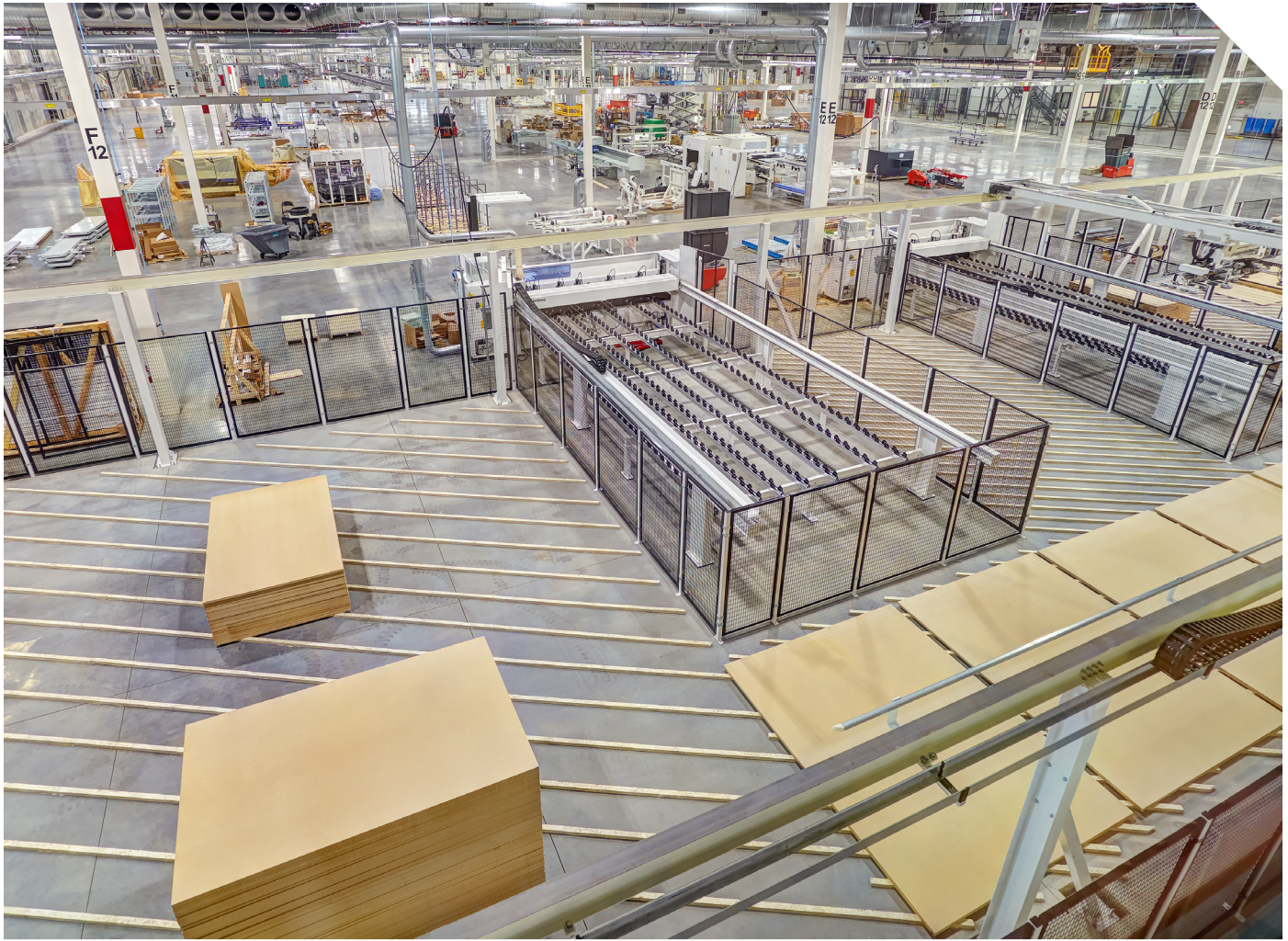
High costs were associated with the process used to dispose of this sawdust byproduct and concern surrounded the increased carbon footprint generated by excess greenhouse gas emissions, other air pollutants and landfill usage. As a solution, TruStile sought to utilize this sawdust byproduct in a way

## SOLUTION

Three scenarios were all considered feasible for TruStile: a solution that suggested the continued disposal of all sawdust byproducts; the installation of a biomass boiler to combust all sawdust byproducts for only heating the new facility; and the installation of a biomass boiler to combust all







sawdust byproducts for both heating and cooling of the new facility.

Understanding the environmental impacts of each of these scenarios would help the company make an informed decision about which to construct.

Our team was retained to perform the environmental impact studies for each design scenario. An initial site visit was conducted to meet with TruStile staff to better understand its manufacturing process and desires for the project. Through this site visit and additional meetings, the varying options for the utilization or disposal of the sawdust byproduct at the new facility were determined.

We then performed an analysis to calculate the environmental impacts of each option. These impacts were presented to TruStile, allowing the company to weigh its options and choose the most effective design for the new facility in terms of environmental impacts and economics.

Based on the analysis we provided, TruStile chose to install a biomass boiler capable of combusting all wood byproduct in order to heat and cool the new facility. This option had the lowest footprint in terms of greenhouse gas emissions. After this option was selected, our team worked with TruStile to prepare and submit all air construction permits required to meet local, state and federal regulations and begin construction of the new facility.

## RESULTS

Completed in spring 2020, the selected design utilizes a state-of-the-art HVAC system that meets all heating and cooling needs of the new facility through the combustion of sawdust byproducts created during the manufacturing process. The boiler is also equipped with emissions controls to meet strict standards for air emissions.

Overall, this new facility provides TruStile the ability to utilize its sawdust byproduct for heating and cooling rather than having to treat it as a waste product. This will reduce greenhouse gas emissions by offsetting power from the grid while also reducing excess costs created through previously required sawdust byproduct disposal processes.



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