



### PROCESS

A waste transformation company wanted to transform reclaimed fly ash and bottom ash into a premium product for use in the concrete industry, but needed to reduce the moisture content of their ash.

FEECO began by running pilot drying tests in our testing facility, [The Innovation Center](#). In confirming that we could reach the customer's specified target parameters, we were commissioned to design and manufacture a 10' diameter by 50' long [rotary dryer](#) with combustion chamber to dry the customer's ash at 40 TPH.

This application presented a unique challenge in balancing the air velocity (and therefore production capacity) with the light weight of the ash.

A common approach manufacturers take in settings like this is to increase the drum's diameter in order to slow down the gas velocity and reduce entrainment, but this would have significantly increased the cost of the unit.

Instead, we designed the dryer with an over-sized discharge breeching to take advantage of the Venturi effect—an engineering principle in which transitioning to a larger volumetric space will reduce the gas velocity. This allowed any entrained particles to drop out of the air flow. By using this approach, we were able to maintain the desired air flow velocity while minimizing particle entrainment.

FEECO was chosen for this project because of our testing capabilities and our reputation for the industry's best rotary dryers.

### PROJECT SPECS

**Customer:**  
Proprietary

**Equipment Supplied:**  
Rotary Dryer

**Project Location:**  
Missouri, USA

**Industry:**  
Energy

**Material:**  
Fly Ash

**Project Engineer:**  
FEECO International, Inc.