DOME TECHNOLOGY®

Fly Ash Storage

Boral Material Technologies | Cartersville, Georgia, USA

A unique micropile foundation provided the soution for the karst topography.

Safely housed inside a DomeSilo™, fly ash will be contained from the elements, preventing contamination of surrounding soil and water.

The DomeSilo™ is an ideal combination of structural integrity and storage capacity on space-constrained sites.

Scope of Work

- ○ FEED Study
- ● Value Engineering
- ● Geotechnical Analysis
- ○ Material-Handling Systems Engineering
- ● Structural Engineering
- ◒ Mechanical Engineering
- ○ Electrical Engineering
- ● Procurement & Subcontract Management
- ● Dome Construction
- ○ Tunnels Construction
- ○ Material-Handling Systems Installation
- ○ Explosion Relief Installation
- ● Additional Steel & Concrete Construction

○ None ◒ Some ● All

Storage & Reclaim

1 Dome: 36.6m (120ft) Wide × 30.5m (100ft) Tall

30,000 Short Tons, Fly Ash

95% Live Reclaim

Overview

Boral Material Technologies (BMT) contracted with Dome Technology to build a fly-ash storage DomeSilo™ near Cartersville, Georgia, an inland site northeast of Atlanta. This is the third Dome Technology project for BMT. According to Dome Technology sales manager Lane Roberts, BMT was seeking to maximize storage on limited land and to secure an economical storage solution.

BMT's director of engineering services Gary Gentry agrees. A dome would provide the amount of storage needed to meet operational needs, allowing Boral to "maximize storage for the footprint at a cost that's susceptible to return on capital investment," he said.

The site is comprised of karst topography, where water has dissolved portions of the limestone and left voids in the rock; this can result in sinkholes and unsure foundations. Based on front-end engineering, Dome Technology's team identified the ideal foundation type for this concrete-reinforced structure.

"We looked at different kinds of deep foundations, and (BMT) agreed that micropiles were the only kind that would work," Roberts said. The micropiles' thinner shafts allow them to penetrate limestone and better shore up the foundation.

In 1997 Dome Technology built a 30,000 metric ton fly-ash dome for the company in Walnut Cove, North Carolina, and in 1998 Dome Technology built an 8,839 metric ton dome in Fontana, California. According to Gentry, Boral is a repeat customer based on the experience working with Dome Technology in the past and "because of the professionalism and success of the previous two projects."

"For nearly four decades we've relied on a collaborative approach with companies—they're in the driver seat, and we help navigate. In every project Dome Technology incorporates innovative technology to maximize storage capacity and system performance with an economical solution," Bradley Bateman, CEO, Dome Technology.

Read more about this project at link.dometechnology.com/2900