



# PLANT SYSTEMS ENGINEERING

## FEASIBILITY STUDY: CEMENT PLANT

**Project Requirements:** A cement manufacturer wanted to move finished cement from a new multi-cell silo to existing cement shipment bins using air slides. The distance was 250' and the client did not want an intermediate towers supporting the air slide gallery.

Determine the truss system for the 250' gallery, supports and reactions at both ends, the logistics of lifting the gallery with cranes and the estimated costs. Can the client stay within budget if this method of cement transport is used?

### **Solution Method:**

Using SolidWorks and structural design, we created general layouts, performed preliminary load calculations and member sizing for the air slide gallery and end support systems.

Knowing the dead weight and center of gravity of the gallery (automatically calculated from SolidWorks), we worked with crane companies to determine lift logistics and to gather estimated pricing.



### **Results:**

Using an unsupported, 250' air slide gallery was technically feasible but due to the crane costs, the estimated cost of this overall project exceeded the clients budget.

A different, less cost intensive method was selected to move the cement.

## THE PLANT SYSTEMS GROUP, INC.

507 N. York St., Suite 2A

Mechanicsburg, PA 17055

717-795-9122 717-795-9525 Fax [www.plantsys.com](http://www.plantsys.com)