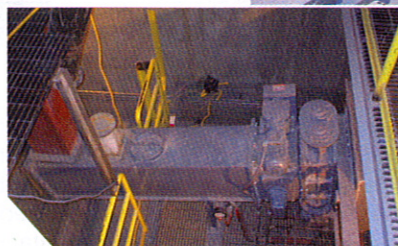
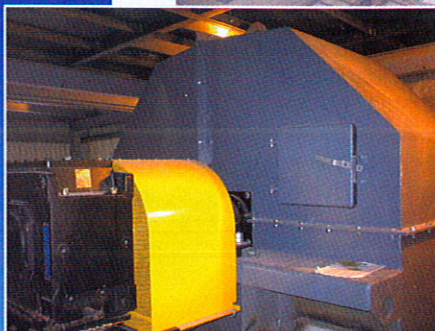
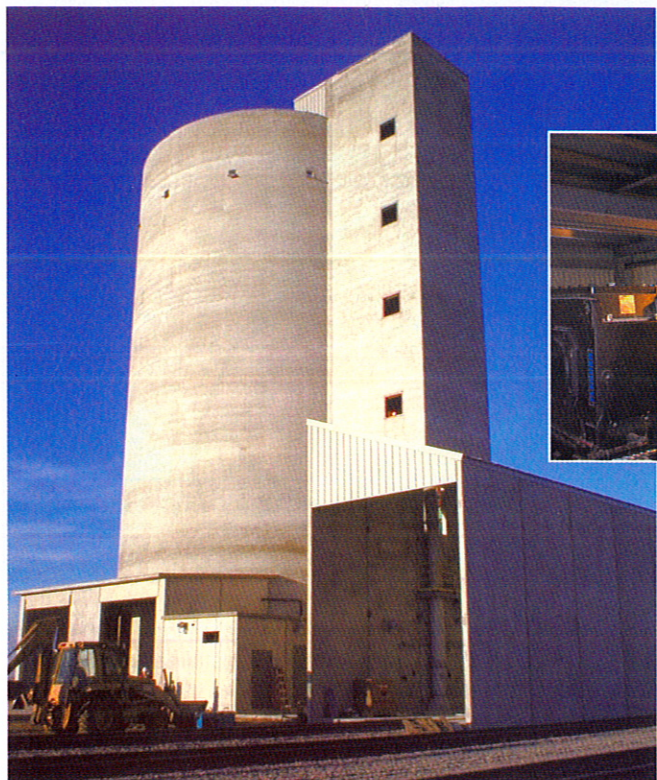


Agri-Systems Design/Builder



In February of 2004, Grupo Cementos de Chihuahua began operation of a new shipping terminal in Commerce City, Colorado.

Purpose

GCC had already been operating a Portland Cement terminal in the Denver area. Yet the urban location and increasing cement sales in the area were making it difficult to keep up and stay efficient.

With the acquisition of South Dakota Cement, GCC was shipping greater and greater quantities of their Portland Cement into the growing Denver area. They needed a high capacity, durable, and efficient terminal to transfer cement from rail to trucks. The trucks would then deliver to GCC's concrete ready mix customers.

Always considering long-term goals, GCC purchased and developed an entire industrial park, of which their new cement terminal would be the centerpiece.

Within the industrial part, GCC has plans for a large warehouse for intermodal services, as well as cement packaging for shipment to bag customers via truck or rail. GCC also left space for other industrial users that will need good access to the urban market with significant rail sidings.

Cement Terminal

The cement terminal features a 6 000 t slipform concrete silo. Inside the silo there is a 15.25 m (50 ft) diameter

invented concrete cone with perimeter airslides for silo reclaim. Under the cone, three floors filled with dust collection and truck loading equipment. Two truck lanes for load-out run through the base of the silo. Trucks load without moving by way of automated shuttle loaders while the trucks fit on top of either of two truck scales.

Portland cement arrives at the terminal by rail car. The rail receiving pit has the capability of dumping two rail cars simultaneously. From the rail pit, cement conveys to the bucket elevator via multiple airslides. The bucket elevator and access stairs are housed with a slipform concrete tower integral to the site structure.

The silo walls were constructed well above the actual silo roof to meet the aesthetical desires of the city. These walls then hide the airslides and dust collection equipment on the silo roof.

Other Notes

The silo sits atop multiple large diameter concrete drilled piers. The roads of the industrial park have all been constructed of reinforced concrete.

Most of the material handling equipment was shipped in from Europe. **Agri-Systems** provided most turnkey services - excavation / structural / work / equipment installation / electrical work / and engineering. GCC provided the equipment, rail yard, and control system separately.

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