

# CBD Chemical

Production Building Virginia, USA



Function/Occupant Type: High Hazard, Chemical Manufacturing Plant  
Size: 55,000 GSF  
Stories: 5 floors plus a mezzanine in the first floor and a penthouse roof  
Primary Project Team: Withheld at request of Engineers and Contractors  
Dates of Construction: April 2008 – January 2009  
Cost Information: \$125 Million  
Project Delivery Method: Design-Bid-Build with a Negotiated Guaranteed Max Contract

## Architecture

The exterior skin is a combination of insulated metal panels and translucent metal panels. The north and south facing walls have horizontal strips of windows, while the west end has a vertical strip of windows. The skin of the building was designed as explosive release wall assemblies in the event of an explosion.

## Structural System

The structural system is comprised of is moment frame structural steel. Every girder column connection is a moment connection. The lateral systems in both the north-south and east-west directions are structural steel moment frame systems. The first floor has an 8 inch cast-in-place concrete slab while the other four floors have normal weight concrete on metal deck. The entire building is sitting on precast concrete piles.

## Mechanical System

The Production Building has two 5600 MBH has-fired boilers, two 507 ton air cooled screw chillers, and two AHUs. One small AHU serves the boiler building, while the large AHU serves the Production Building. The system is a constant air volume system with terminal air units which condition the air for each space locally. The large AHU uses an energy reclaim coil using a 30% glycol solution.

## Electrical System

The electrical system has three service entrances at 480/277V. One powers the motors and control centers, one powers control centers and chillers, and the last controls PBP panels which power the heaters. There are small transformers for lighting/receptacle loads. A UPS at 208/120V serves emergency lighting loads.