



GREENFIELD PET RESIN PLANT PROJECT

GREENFIELD PLANT – SOUTHEAST USA

TOTAL INSTALLED COST \$160,000,000

PENTA provided complete structural, HVAC, and non-process electrical engineering and design services for a Greenfield PET resin facility that was executed on an extreme “Fast-Track” basis. The Owner contracted with technology vendors for the chemical process and pneumatic conveying design. The plant site consisted of the following areas:

Main process building: 200’x130’x110’ tall with five process levels, numerous platforms, elevated slabs, and a six-level attached structure for offices, control room, electrical rooms, lab, and raw material storage. PENTA modeled the structure using Frameworks software.



Storage Silo structure: 40’x40’x177’ tall, including 2500-ton capacity, 39’ diameter vessel with additional smaller silo, mixing vessels, pumps, platform structure, and stair tower. Vessel supported at 81’ above grade due to gravity-fed equipment below.

Heat Transfer Media Heater plant: includes 4 heaters, stack, and 100’x40’x40’ tall platform/ pipe support structure.

Tank Farm: Concrete design for 5 tanks, containment wall, and truck unloading.

Warehouse: 360’x127’x25’ tall with office area, compressors room, and silo support structure. Also included 10 large exterior silos: six 30’ diameter x 90’ tall silos on a concrete slab and four 19’ diameter x 72’ tall on a steel structure 25’ above grade.

Utilities: 180’x120’x25’ tall structure to house utility equipment, numerous large process pumps, and maintenance facility. Exterior to the building were two large concrete cooling tower basins for three-cell arrangement. Basins were 15’ tall due to NPSH requirement of high-flow pumps.



Truck and rail loading: Two-bay truck loading structure with pneumatic conveying equipment. PENTA also designed a three-track rail car loading/unloading facility that was 75’ tall due to conveying and product cleaning equipment needed above the rail cars. One track included a 79’-long unloading pit designed per railway bridge standards.