



PROJECT SPOTLIGHT:

Appomattox Bio Energy Hopewell, Virginia

SITE.....	55 Acres
CONSTRUCTION COST	\$170,000,000
EMPLOYS	55
FEEDSTOCK.....	Barley
ETHANOL PRODUCTS	65 MGPY
BARLEY PROTEIN MEAL	170,000 TONS/YEAR
FUEL PELLETS	50,000 TONS/YEAR

The ABE project is the first of its kind. The plant's primary product is fuel ethanol from Barley, a crop that can be grown in under-utilized farmland of the region. In addition to ethanol, the plant produces a Barley Fuel Pellet, which is a high value livestock and poultry feed, and a Barley Protein Meal.

This project delivered:

- A long and positive impact on the local economy
- The potential of \$100 million of agricultural economic opportunity

What Did AMG Do?

- Master site planning including underground utility infrastructure specification and design, high voltage underground layout, and 480V and 4160V above ground cable tray routing
- Architectural design and specifications for buildings, offices and lab spaces in the process areas
- Civil / Site design and coordination services (civil engineering was Subcontracted)
- Process design for plant areas outside of the KATZEN process boundary limits and all plant utilities including but not limited to steam, condensate, city water, firewater and natural gas
- Engineering insight and judgment during the Process Safety Management Reviews and HAZOP
- Process Flow Diagrams (PFD) and Process Instrument Diagrams (P&ID)
- Mechanical Equipment Layouts and coordination of Vendor General Arrangements
- Mechanical Equipment Specifications and bid drawings for items outside of the KATZEN process boundary limits
- HVAC and duct work design and specifications
- Spouting and sheet metal installation design and specifications
- Process piping design and stress analysis for all lines 2" and larger including select small bore lines identified by KATZEN
- Piping fabrication and installation isometrics for all lines 2" and larger
- Pipe support design for all lines 2" and larger
- Select As-Built Documentation
- Process Instrumentation specifications and location plans
- Material take-offs from the 3D design models
- Population, update and maintenance of all master engineering lists including but not limited to:
 - ~ Master Equipment List
 - ~ Master Piping Line List
 - ~ Master Tie-in List
 - ~ Master Instrumentation List
 - ~ Master Motor List
- Structural engineering, analysis and design services including but not limited to:
 - ~ Deep foundations
 - ~ Shallow foundations
 - ~ Cast-in-place concrete
 - ~ Masonry
 - ~ Structural steel and associated miscellaneous metals
- Web-enabled Electronic Document control system utilized by engineering, contractors and client personnel
- Limited procurement and scope of work documentation for bid and construction packages
- Provided assistance to the client in obtaining construction and operating permits
- Provided documentation to the client's insurance carrier for design compliance
- Landscaping design and coordination services including meetings with city officials
- Coordination with Owner's engineers, general contractors, subcontractors and plant personnel
- One 1 on-site CAD designer and 2 engineering liaisons to the contractors