







ARCHITECTURE ENGINEERING CONSTRUCTION

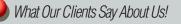
# **Engineering Procurement** Construction

Since 1944, El Associates has provided design, engineering, procurement, construction and start-up services for process-oriented projects. These have ranged from new grassroots facilities to expansion and rehabilitation of existing operations. We have become involved with some projects during the early study phase, and with others at the point where all basic data has been assembled and detailed design, procurement and construction is needed to make the project a reality.

Our staff includes chemical, mechanical, instrumentation and controls, civil, structural, electrical, environmental and industrial engineers and piping designers whose skills can be employed independently or in concert with our construction professionals.

Supported by our in-house architects and planners, we have the ability and experience to provide plant wide master planning and building design services for true single source responsibility.

Regardless of whether you are in the production of food, experience provides us with the background you require. We are confident that we can fulfill your process plant design and



"El has delivered a first class design for this challenging project . Our company is very pleased."

Colgate-Palmolive Project Manager

"The knowledge, experience, and energetic spirit of your staff continues to impress us."

BP Castrol Director of Design







# Single Source Responsibility



# **Major Industries Served**

For over 60 years, El Associates has completed the design and construction of a wide range of projects. The following are among the industries that we have served successfully:

- Pharmaceutical, Nutraceutical & Biotechnology
- Consumer Products Manufacturing
- Specialty Chemicals
- Petrochemicals
- Cosmetics
- Flavors & Fragrances
- Food & Beverage





While El Associates' specific project experience is broad, we have developed the expertise necessary to make each project successful for our clients. Our portfolio of successful project types includes the following:

- Sterile & Non-Sterile Manufacturing
- Industrial Manufacturing
- Process Manufacturing: Batch/Continuous
- Spill Prevention Control & Countermeasures (SPCC)
- Packaging & Warehousing
- Plant Utility Systems
- cGMP Compliance
- Laboratories
- Clean Rooms
- Pilot Plants



# **Design Tools**

Delivering High-Quality Projects for our clients requires a comprehensive project approach using the best-suited technology and resources. Some of the tools used to increase our project execution performance include:

- Intelligent P&ID's Software
- 3D Piping Software
- Integration of Laser Digitized Surveys
- NAIMA's 3E & Insulation Thickness Program
- Design Flow Solutions Flow Analysis Program
- US EPA's Tanks Storage Emissions Calculator
- NJ DEP's Radius Permitting Software
- US DOE Pump System Assessment Tool Software

# ENGINEERING>

El maintains a multi-disciplined engineering and architectural staff with the complete range of skills needed for the design of process facilities. Our

services include:

Heat and Material Balances **Process Flow Diagrams** 

Instrumentation and Controls Control Logic Programming Piping Layout and Supports Equipment Arrangement/Specs
Piping Stress Analysis
Hazop Review
Pharmaceutical/cGMP Design
Food Process Design

### ARCHITECTURE>

Complete Building & Utility Design

El offers a full range of architectural and interior design services. Our talented design staff stresses cost-effective, user-friendly solutions to satisfy the unique requirements of each project.

Master Planning

Programming
Facility Design
Alterations & Additions
Interior Architecture
Landscape Architecture

# PROCUREMENT>

During preliminary design, we prepare equipment and instrument lists to fix the scope of all projects. With the completed equipment specs and instrument data sheets, we obtain pricing, vendor prints and technical data from vendors. We prepare full analysis of all quotes and make recommendations for awards. Complete project financial data is maintained to insure proper cost

A detailed expediting plan tracks deliveries. Witness tests at fab shops verify quality and schedule. We also work with re-conditioned equipment tanks and vessels, and closely verify all testing work.

# CONSTRUCTION>

El has extensive experience in constructing a variety of process facilities of high-quality, on-time and within budget. Whether as your design/builder or construction manager, we can provide a wide

range of construction services.

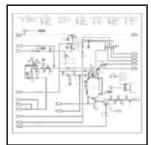
Design/Build

Construction Management

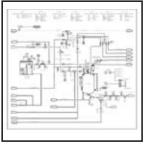
Value Engineering

Constructability Analysis

Estimating Scheduling







El's Project Approach



Engineering-Economic Analysis

Site Planning & Development





Process Development

Equipment Arrangement





Materials Handling

Designing & Engineering





**Equipment Purchase** & installation

Construction





Start-Up/ Validation

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