



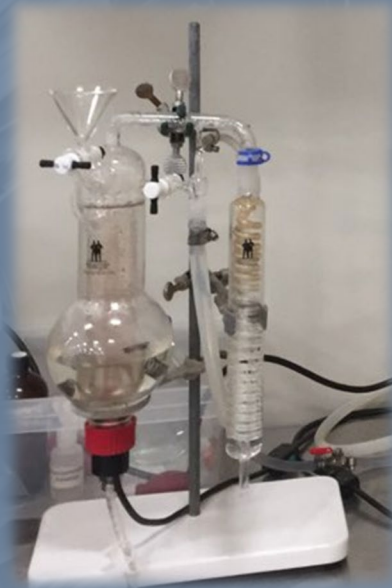
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Market Areas



Chemical Process Design

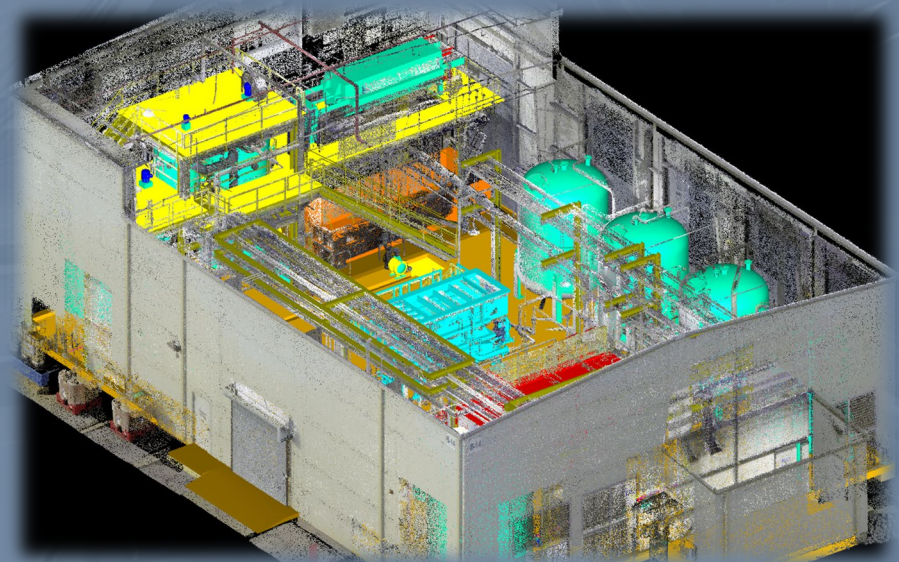
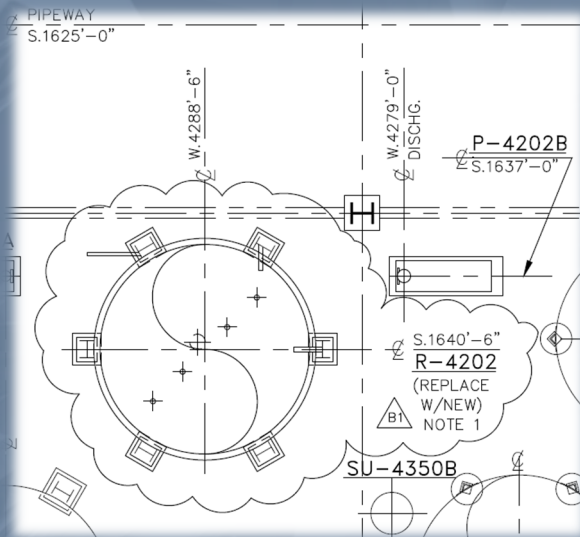
- Feasibility Studies
- Conceptual Design Development
- Process Scale-up: Lab to Pilot to Production
- Process Simulation



- Heat & Material Balances
- Equipment Sizing and Selection
- Piping & Instrument Diagrams

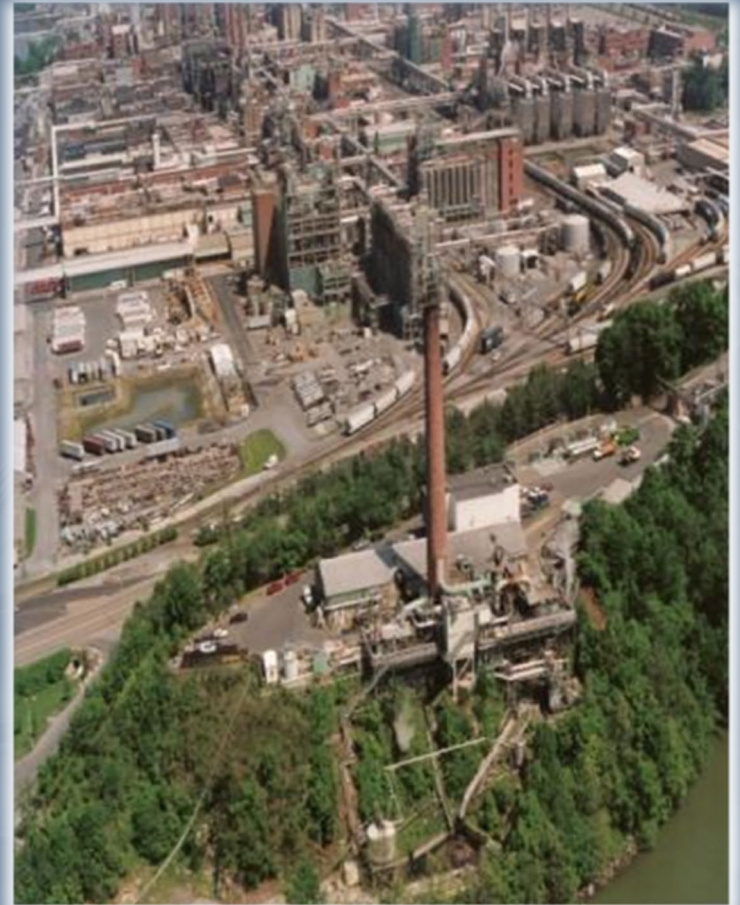
Mechanical & Electrical Design

- Equipment Design & Specification
- 3D Laser Scanning
- Facility Layouts
- Piping Design
- Instrumentation & Controls



Environmental & Safety

- OSHA Process Safety Management (PSM)
- Dust Hazards Analysis
- Process Hazards Analysis (PHA) Facilitation
- Pressure Relief Design
- Environment Regulatory Compliance
- Air Pollution Control Design
- Hazardous Waste Disposal Design and Compliance

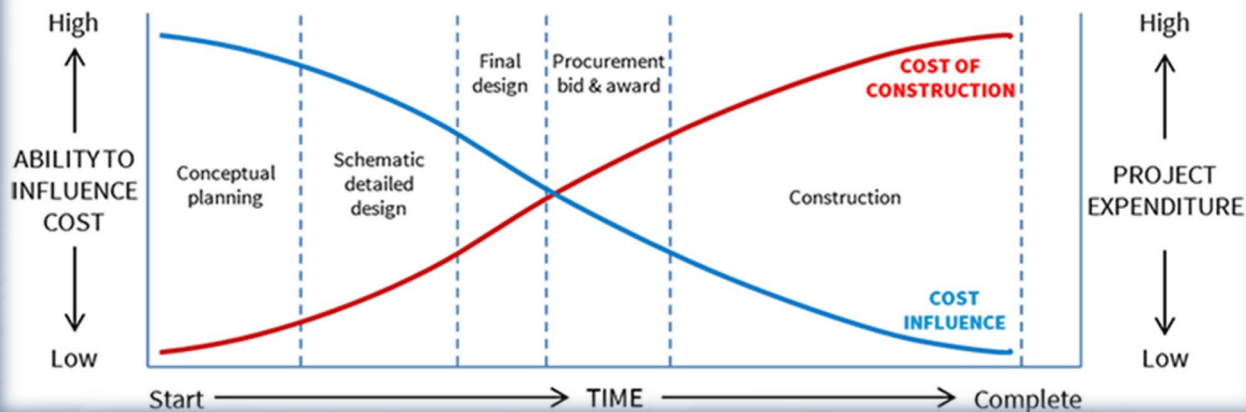


Project Management

- Project Execution Plans
- Schedule
- Total Installed Cost (TIC) Estimating
- Cost Controls
- Quality Control Plan

	Class 5	Class 4	Class 3	Class 2	Class 1
Estimate Class	H: +30% to +100%	H: +20% to +50%	H: +10% to +30%	H: +5% to +20%	H: +3% to +15%
Accuracy of Cost Estimate	Concept Screening	Study or Feasibility	Budget Authz or Control	Control or Bid Tender	Check Estimate or Bid Tender
	L: -20% to -50%	L: -15% to -30%	L: -10% to -20%	L: -5% to -15%	L: -3% to -10%
	<ul style="list-style-type: none"> • 0% - 2% Maturity Level of Project Definition • Capacity Factored Parametric Models, jdm, or Analogy 	<ul style="list-style-type: none"> • 1% - 15% Maturity Level of Project Definition • Equipment Factored, or Parametric Models 	<ul style="list-style-type: none"> • 10% - 40% Maturity Level of Project Definition • Semi-Detailed Unit Cost with Assembly level Line Items 	<ul style="list-style-type: none"> • 30% - 75% Maturity Level of Project Definition • Detailed Unit Cost with Forced Detailed Take-off 	<ul style="list-style-type: none"> • Move to Construction • 65% -100% Maturity Level of Project Definition • Detailed Unit Cost with Forced Detailed Take-off
	Pre-Feasibility	Definitive Feasibility	Preliminary Design	Final Design & Procurement	

COST INFLUENCE CURVE



Pillars To Success

Quality

Schedule

Budget



- Developing a Well Defined Scope of Work
- Identifying the Right Team Members
- Establishing a Good Schedule
- Allocating Needed Resources
- Excellent Communication

Why Choose Franklin Engineering?

- We Seek Long Term Partnerships
- Quality of our Deliverables
- Diverse Experience
- Wide Spectrum of Project Experience
- Responsive
- Proven history of success

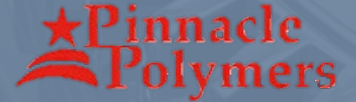




EASTMAN



TESLA



BlueOval SK



Mitsubishi Chemical America



ARKEMA

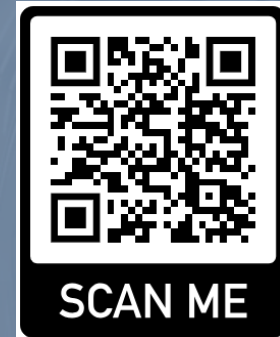


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