Process Plant & Facility Design

The Complete Facility Design Solution

IMAGE Custom Engineering Solutions offers Engineering Services specializing in turn-key facility design. From a simple Pressure Reduction and Metering Station to an entire Gas Processing Plant, IMAGE can provide Mechanical, Civil, Electrical & Instrument Design. IMAGE applies the latest technology including 3D CAD design for faster, more accurate deliverables. All project related documents are issued through EDGE 360 which boasts Intelligent P&ID's, Intelligent 3D Models, and scaled drawings that can be viewed and printed 24/7 from anywhere our Customers have an Internet connection. IMAGE will provide Bulk MTO's for all required materials and provide Add/Delete MTO's to your procurement staff when a change is required. IMAGE employs wide use of in house developed custom software solutions to expedite the Design Phase deliverables. Our understanding of the fabrication processes, materials, costs, quality, and industry codes help us design a facility that is as efficient, affordable, and safe to build and operate as possible.

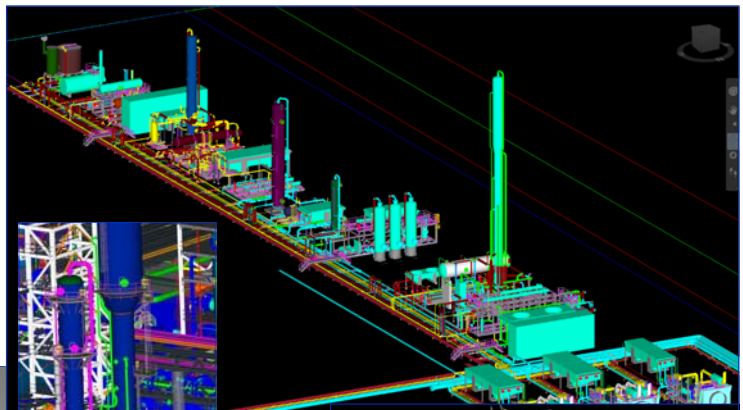
Design Experience

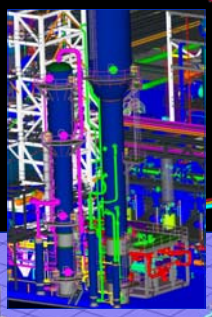
- Amine Plants
- Dewpoint Control Plants
- Gas Dehydration
- Compressor Stations
- Pressure Reduction & Metering Stations
- Biocrude Processing Plants
- Pump Stations
- Cryogenic Gas Plants
- Fuel Gas Conditioning

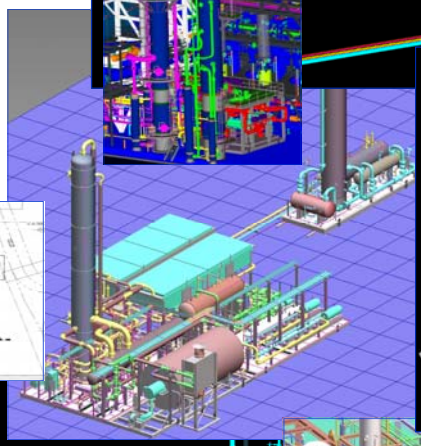
IMAGE offers unparalleled project visibility, interaction, and quality by developing and employing the latest technologies.

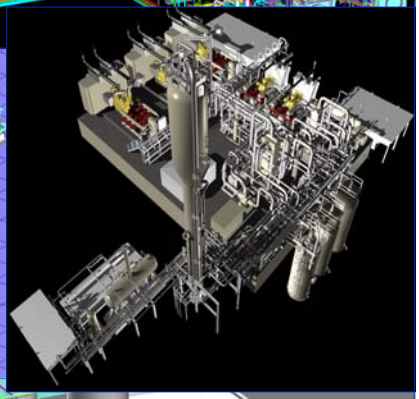
CORE COMPETENCIES

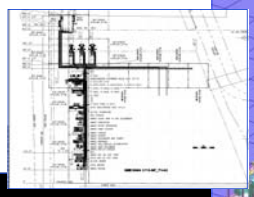
- **100% 3D CAD Design**
- **Design Review (with Virtual Walk Through)**
- **P&ID Development**
- **Equipment, Valve, Instrument & Line Lists**
- **Facility Layout and Section Details**
- **Equipment General Arrangement Drawings**
- **Structural Skid Design & Detail Drawings**
- **Piping Isometric Drawings**
- **Pressure Vessel Design**
- **(ASME Section VIII Division 1 and 2)**
- **Vessel Fabrication Drawings**
- **Material Take-Off (BOM) Development**
- **Data-Book Development**
- **Project Engineering**
- **Project Management**
- **Construction Surveillance**

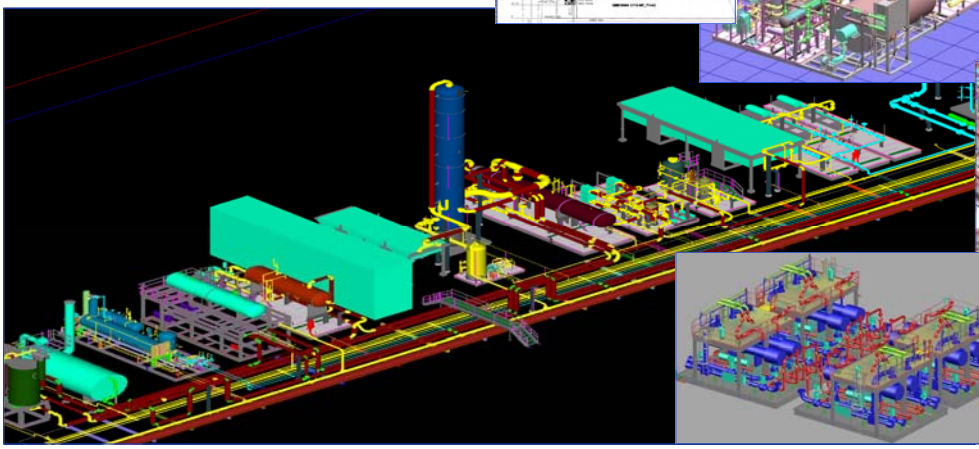












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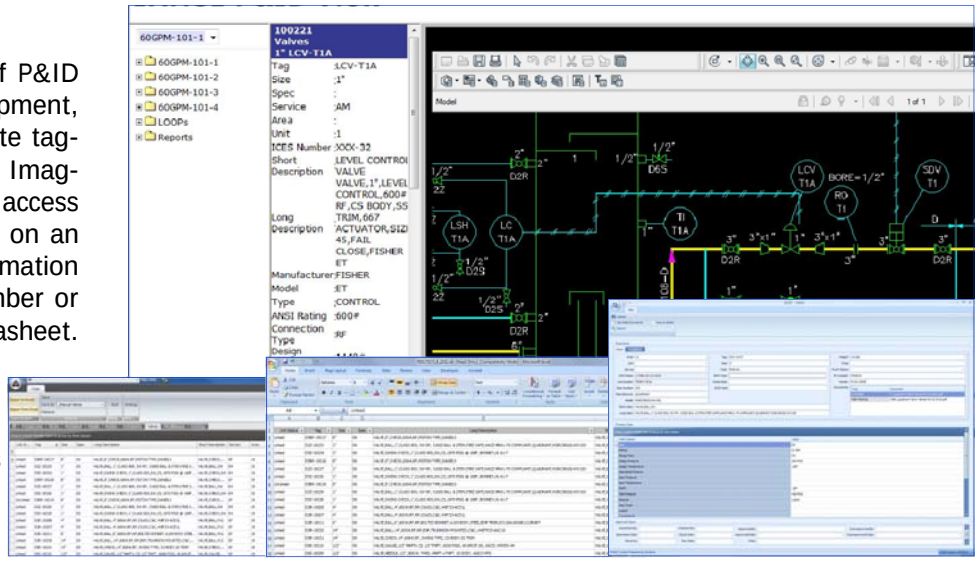
Intelligent P&ID's

List of Typical Deliverables

- *P&ID using CADWorx P&ID Professional to develop a smart P&ID including component metadata.*
- *Gathering and attachment of supporting documentation such as Operating & Maintenance Manuals, inspection reports, etc.*
- *Attachment of gathered documents to appropriate entities within the P&ID set.*
- *Publish P&ID drawings and metadata for web access.*
- *Provide Web Portal software (and server hardware as required) to provide web accessibility.*
- *Any original AutoCAD files and publishing software may be provided for future maintenance.*

IMAGE will develop a complete set of P&ID drawings to accurately show all equipment, lines, and I&E controls with appropriate tagging and product information on all. Imagine the convenience of being able to access the P&ID's through a web page, click on an instrument and instantly see information such as manufacturer and model number or even view an O&M Manual or datasheet. Whether we convert your existing P&ID's to add intelligence or create them from scratch, IMAGE can provide the experience and resources necessary to accomplish this.



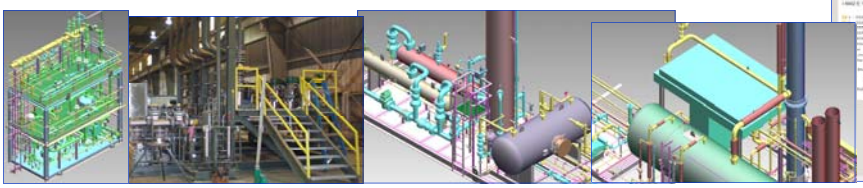
EDGE 360 Portal Access

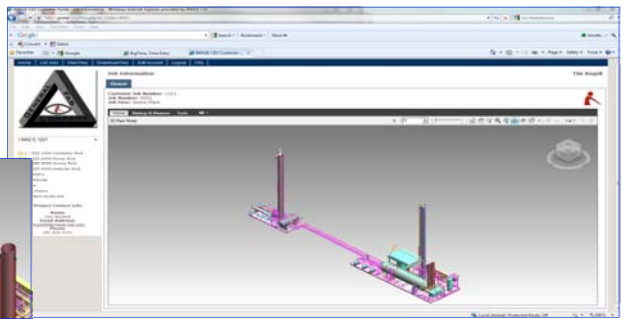
IMAGE has developed a Web-based document management solution which will allows our Customers to have 24/7 access to all project related information such as drawings, calculations, Bills of Materials, etc. All project related documentation and deliverables are accessible from within your web-browser and all files can be downloaded to your local computer as required. This information is provided in a secure location that requires a user name and password for access. Access may be granted to other related parties involved in the project as required.

Unparalleled Project Visibility

From Intelligent P&ID Reports to 3D Models with embedded BOM Data to attached Datasheets and O&M Manuals, all your project related information is just a few clicks away at anytime through EDGE 360. Users can view, print, section, rotate, markup, search, and much more. Click a Pump to see it's Spare Parts List. Click a Vessel and pull up the ASME Code Calculations. It's all there. Just a click away AND…Viewing this information does not require the users to have a seat of AutoCAD or CADWorx, yet makes all embedded data available in this environment using .dwf technology and the free "Design Review" software from Autodesk.

- *Perform virtual walkthroughs for training.*
- *Quickly and easily view and print existing drawing.*
- *Use keyword searches to locate items.*
- *Markup drawings with required modification.*
- *Provide access to 3rd party contractors and contributors.*





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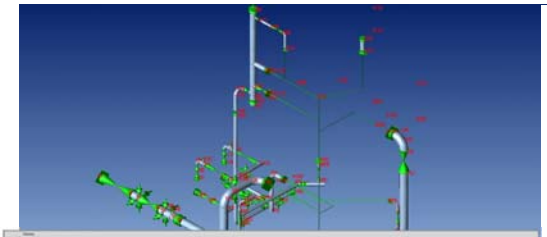
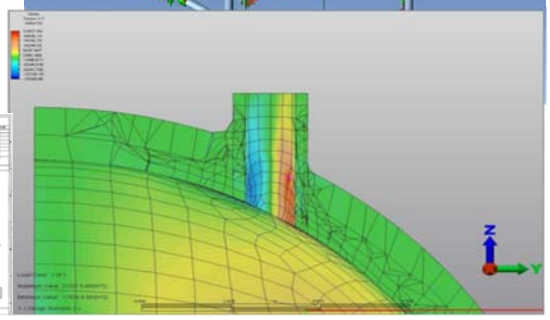
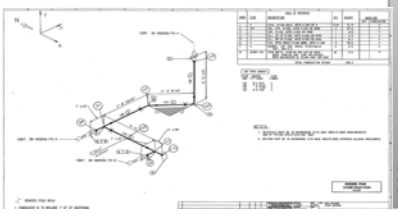
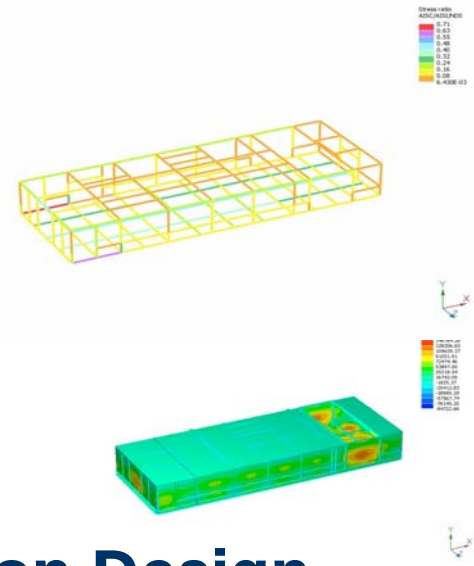
Mechanical / Structural Design

- *Pressure Vessel Design (ASME Section VIII, Division 1 and 2)*
- *Pipe Stress Analysis*
- *Finite Element Analysis*
- *AISC Structural Analysis (Onshore/Offshore)*



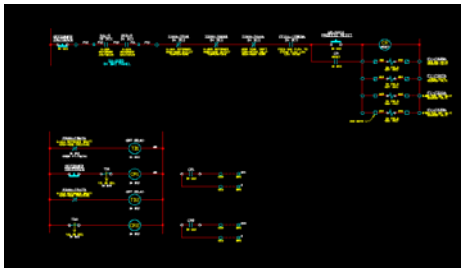




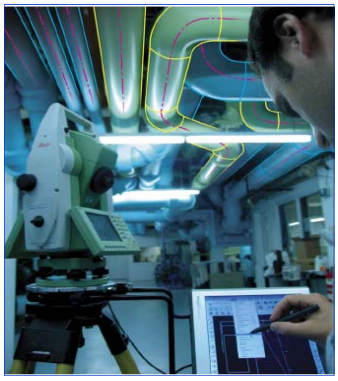


Electrical / Instrumentation Design

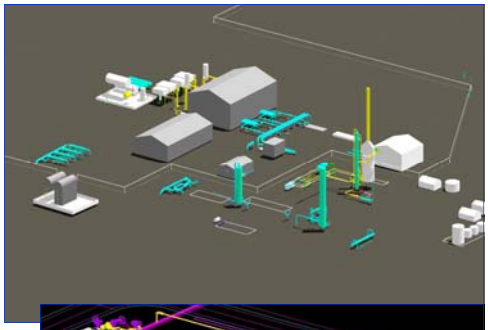
- *One-Line Diagrams*
- *Wiring Diagrams/Interconnect*
- *Network Schematic*
- *Cable Schedule*
- *Hazardous Area Classification*
- *Lighting Plan*
- *Instrumentation Location Plans*

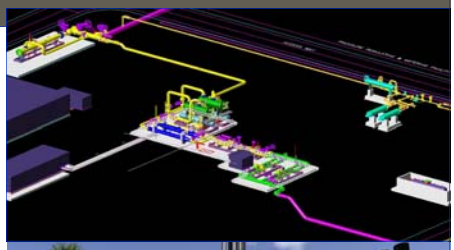


Field Services



- *On-Site 3D As-Built Piping & Equipment Modeling*
- *Superior accuracy of Industry leading Leica Instruments*
- *Real Time BOM Development*
- *On-site Model Development & Verification with no Post Processing*
- *Instant Model*





Creating As-Built Models of Piping Systems Quickly, Safely, and Accurately

IMAGE uses CADWorx fieldPipe which leverages the speed of "Point and Shoot" Measurement with the power and precision of Laser technology aboard the Leica Geosystems' Total Station. This software allows IMAGE to model any piping system with pinpoint accuracy. To create as-built models, our operators have only to set up the Total Station, point the laser at a piping item and pick components from the toolbar – the software places components in the model at exactly the right position. Now measuring and modeling hundreds of pipe components on-site in real-time is quick and accurate. Safety is also dramatically improved as it reduces climbing and clambering associated with collecting this data.

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COMPANY PROFILE

IMAGE Custom Engineering Solutions is a Houston Texas based Limited Liability Company providing the following services.

ENGINEERING & DESIGN SERVICES

IMAGE offers a broad range of Engineering Services specializing in Equipment Engineering & Design for packaged equipment fabricators and processing facility construction companies. IMAGE offers the following services.

- P&ID Development
- Engineered BOM Development
- Equipment, Line, Valve, Instrument, Drawing Lists
- CADWorx Spec Development
- Pressure Vessel Design Calculations (ASME Section VII, Div. 1 & 2)
- Finite Element Analysis
- Structural Design Calculations
- Pipe Stress Analysis
- 3D Vessel, Structural, and General Arrangement Dwgs
- Piping & Steel BOM
- Material Take-offs
- Isometric Drawings
- Project Engineering
- Electrical Engineering
- Instrumentation Engineering
- Project Management
- Material Procurement Support
- Construction Surveillance

CUSTOM SOFTWARE DEVELOPMENT

IMAGE offers a variety of Integration and Implementation Services to assist our customers in the development and implementation of "Best Practices" applications, methods, procedural documentation, and technical training specifically for the Engineering and Custom Manufacturing environments.

- AutoCAD Applications
- CADWorx Customization
- CADWorx Spec Development
- Intelligent P&ID Systems
- Engineering Applications
- MRP System /CAD Integration

Additionally, IMAGE offers the following Standard Software packages.

- ICES BOM
- SpecGen for CADWorx
- IMAGE VDS-Vessel Design Summary for COMPRESS
- IMAGE-CADLink

FIELD SERVICES LASER BASED AS-BUILTS

IMAGE Field Services provides a fast, safe and accurate alternative to antiquated "Tape and Level" As-Built development. Instead, accurate 3D models of Piping systems are developed using CADWorx fieldPipe for Leica fieldPro, leveraging the speed of "Point and Shoot" Measurement with the power and precision of Laser EDM technology aboard the Leica Geosystems' Total Station. This software allows IMAGE to model any piping system with pinpoint accuracy. IMAGE can develop 3D plant models on-site and in real-time. This dimensional and material information can then be used to generate accurate Fabrication and Assembly Isometric drawings, Bills of Materials, Weld Maps, Cut Lists, and more. All this can be generated in the field on demand and approved and verified in real-time on-site.

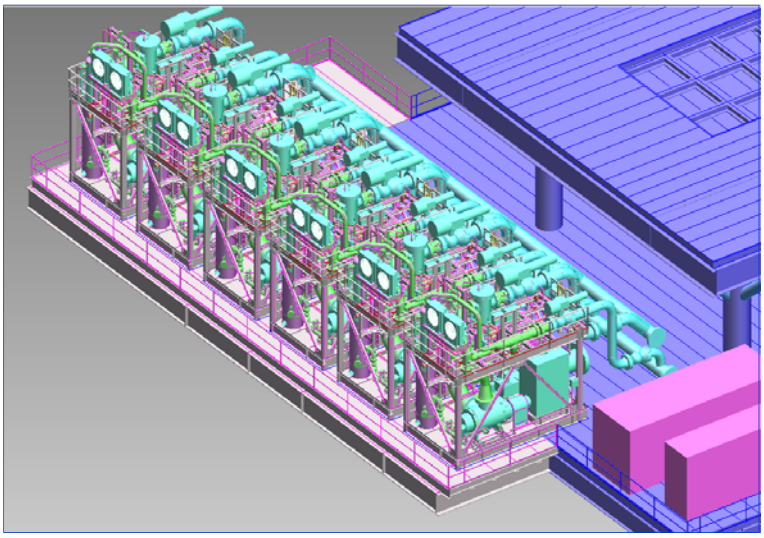
- As-Built Dimensioning
- Accurate "Tie-in" Locations
- Overhead or Difficult to Access Piping
- Dimensional Survey for Stress Analysis
- Piping Dimensional Validation

IMAGE is appropriately insured and registered to practice Engineering in TX, LA, and KS.

IMAGE is dedicated to providing a safe and healthy environment for employees and customers, a secure future for our staff, and a good neighbor for our global community. Our dedication, integrity, and innovation continue to pave the way.

Commercial Software Packages

- Design and Drafting— AutoCAD 2011
  — CADWorx P&ID Professional
  — CADWorx Plant Professional
  — CADWorx Steel
- ASME Pressure Vessel Design— COMPRESS 2011
- Pipe Stress Analysis— Caesar II by Coade
- Finite Element Analysis— AutoDesk Algor
- Structural Analysis— RAM Elements v.10.7 by Bentley
- Model Review and Rendering—Navisworks
  —3D Studio Max
  —Autodesk Design Review
- GoToMeeting
- MS Office 10



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