# SIA DESIGN SERVICES SMALL-SCALE PROJECT MANAGEMENT AND DESIGN SERVICES

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# SUMMARY

This PDF is printed from SIA's website. It conveys core competencies for SIA regarding a specific service. The service associated with this PDF is CAD Administration.

SIA offers 5 specific services:

- CAD Administration
- Database Management
- Task-Based Procedure Writing
- Software Presentations
- Piping Design Services

Check out

www.siadenver.com for more information!

## **CAD ADMINISTRATION – WHAT IS IT?**

CAD Administration is a cornerstone position of any company utilizing either CADWorx or Autodesk Plant 3D software. The CAD Administrator interacts with two very important groups of people: Management, and CAD Operators. Management is oftentimes more concerned with budgets, timelines, client satisfaction, project costs, etc. These concerns fall outside the realm of operating the CAD software directly, but everything that comes from the CAD software has a direct effect on these concerns. The CAD Operators, are the ones on-the-ground with the program and use it daily. These team members are more concerned with the operation of the software, quality of the deliverables, efficiency of the program, complexity of the program, daily task completion, computation power, graphics, etc. These groups interact indirectly with each other throughout the life of a project.

### Contact Us

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The CAD Administrator: an important 'cog' in your company.

regards to Management, the CAD Administrator needs to be able to gather together information when needed regarding a project, generate reports, and articulate the status of a project as well as direct concerns from the CAD Operators group. When more information is required, a CAD Administrator gathers additional information using the project database, and discusses any important topics with project management.

The CAD Administrator also confidently deals with project-specific and client-specific concerns of CAD Operators. A deeper knowledge of the program will mitigate many issues CAD Operators have.

"In almost every job now, people use software and work with information to enable their organization to operate more effectively." – Bill Gates

The CAD Administrator influences and

responds to both groups effectively. With

# CAD ADMINISTRATION – WHAT SIA OFFERS!

1. Project Standards - Implementing Project Standards is the first responsibility of a CAD Administrator. Project Standards are represented in the documents that are sent to the client in any phase of the project (IFA, IFB, or IFC). Project Standards represent the brand of the company. Some standards include:

- Process and Instrumentation Diagram Symbology, Process Line weight and color, Title block information, Smart data symbols, Titleblock
- 3D Piping Layout Pipe Dimensions, Text Heights, Notes, Titleblock information, Instrumentation Symbology

Structural Layout - Text Heights, Structural Dimensions, Beam line weight and color

2. Pipe Specification Development/Implementation - Specification refers generally to the constraints, codes and requirements used in all aspects of the plant design. Design, Purchasing, and Installation has to be done with the correct specification for each specific client and each specific project. The CAD Administrator is aware of the importance of the specification and takes extra care to enable other team members to work effectively within these parameters. Core competencies include:

Ensure pipe specification is represented correctly in CAD environment -CADWorx and Plant 3D are data-driven programs. As the complexity of these data programs continues to grow, along with their commonplace use, it is crucial to have a dedicated member of the team verifying pipe specification within the software throughout the project life. Dedicated attention is not simply a design concern, it is a liability. If the incorrectly used spec is spotted before installation, expensive change orders will result, increasing cost to the client. If the designer uses the wrong spec and is not caught before installation, the company that produced the design and the specification may be held liable.

Participate and deliberate in Value Engineering –

Value engineering is a systematic approach to improving projects and processes, affecting the bottom line cost to the client. Value engineering methodology achieves a balance between performance, quality, manufacturing methods, safety and cost when considered during piping specification development. Due to the multifaceted nature of pipe specification, examining the manufacturing process and verifying it against the project engineering requirements is a common way to cut client costs.

Educate others regarding pipe specification -

Knowledge is the most effective means to propel a company toward efficiency in design and operation. Education regarding pipe and material properties aids all members of the project team, improving every design. Specific areas of piping design specification that broaden understanding of the project and will affect future projects are:

NOTES:			

- Pipe Manufacturing Processes
- Pipe Marking and Coating
- Pipe Fabrication
- Shop vs Field Welding
- Heat Treating
- Pipe Material and Properties
- Welding Basics
- Pipe Field Assembly

3. Educate Team - The CAD Administrator is responsible for educating team members in all aspects of CAD use relating to their specific discipline. The CAD Administrator is an authority on many project issues. There are 3 areas that SIA concentrates on, highlighted below.

#### **Instrumentation**

- Control Loop Elements
- Pressure Measurement
- Flow Measurement
- Temperature Measurement
- Level Measurement

Pipe Manufacturing and Fabrication

- Manufacturing Processes
- Pipe Sizes
- Marking and Coating
- Fittings and Components
- Pipe Fabrication
- Shop Welding
- Branch connections
- Heat treating

Pump Selection

- Centrifugal Pump Configurations
- Centrifugal Pump Cavitation and NPSH
- Centrifugal Pump System Design
- Positive Displacement Pumps
- Pump Piping Layout

#### Valve Types and Applications

- Valve Parts
- Isolation Valves
- Gate Valves
- Butterfly Valves
- Isolation Applications
- Throttling Valves
- Valve Actuators

SIA will partner with your company in the area of CAD Administration. This important position will drive your company forward, contact us today!