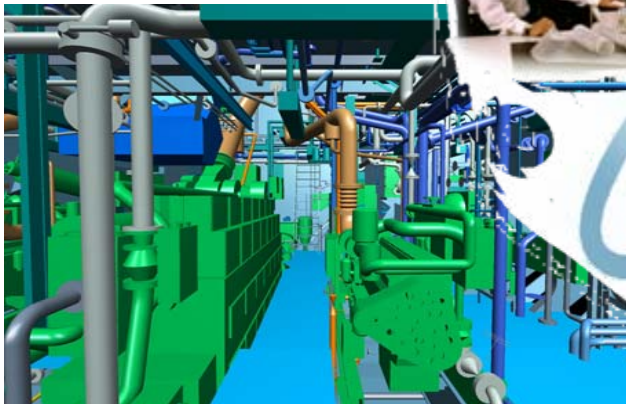# CADMATIC

3D PROCESS PLANT DESIGN SOLUTION FOR PROCESS, MARINE AND PULP&PAPER INDUSTRY

www.cadmatic.com

ELOMATIC/CADMATIC - Turku White House
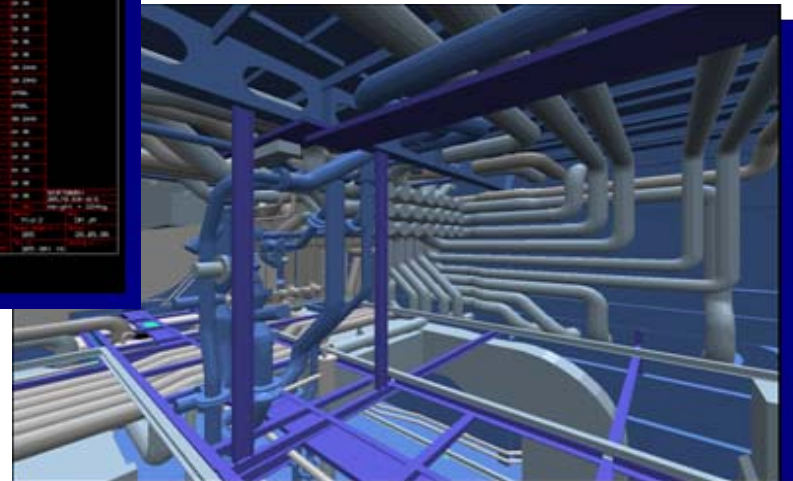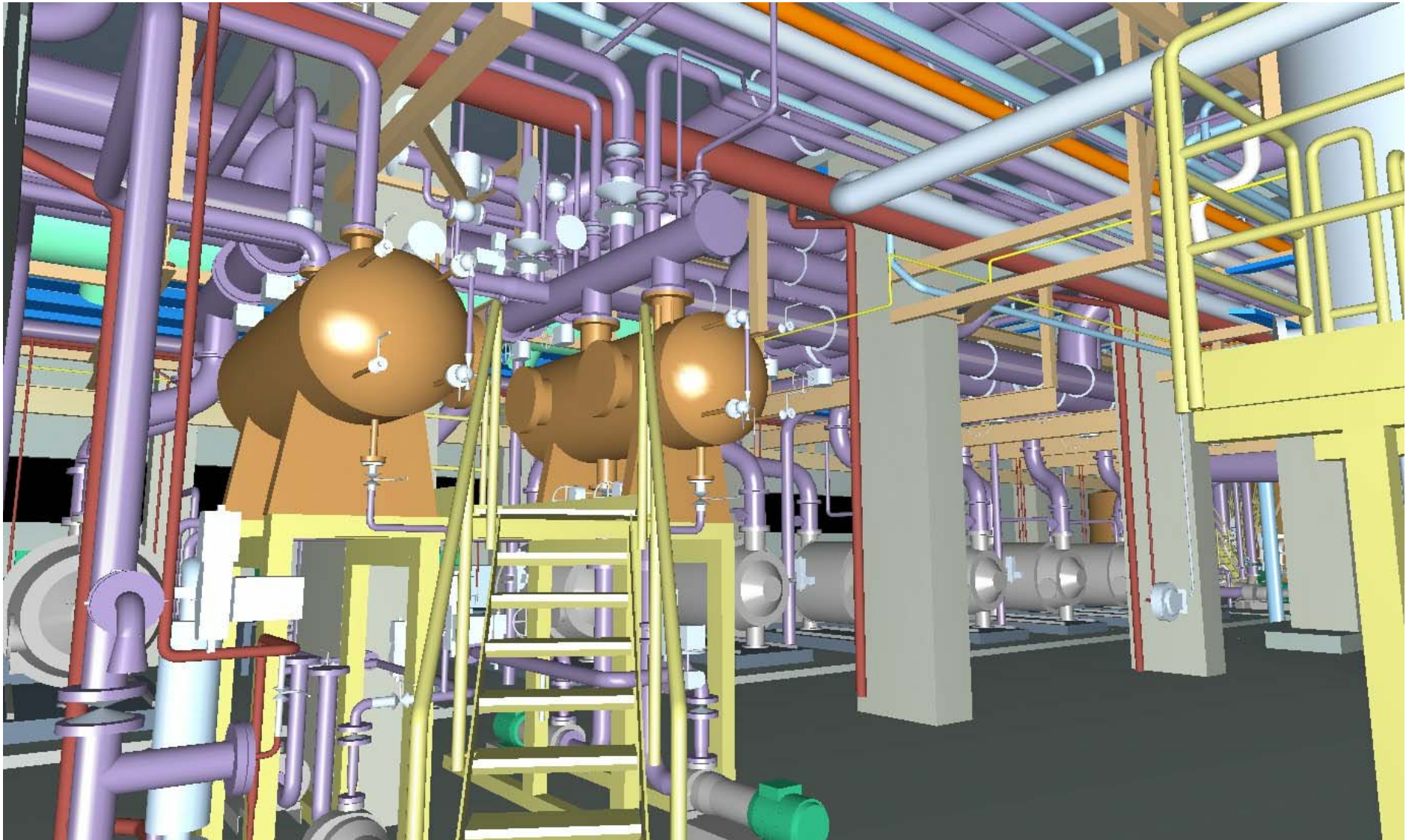
History

ELOMATIC
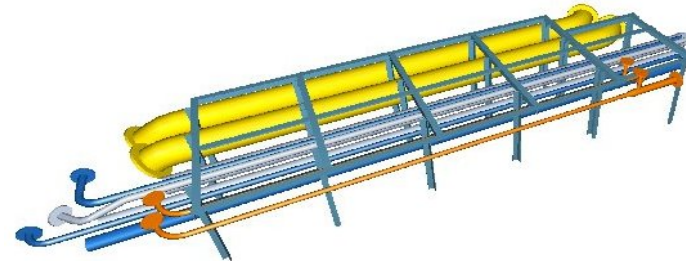1970

1981

1985

What is a 3D-Model ?

Why to create a 3D-Model ?

- Just create **ONE** 3D-model and use it in **SEVERAL** tasks
  - Drawings (Lay Out, Sections,…)
  - Calculations (quantity, process calculations,…)
  - Isometric-drawings (prefabrication, pipe racks, bending machines,..)
  - Visual reports (maintenance, project meetings,…)
  - etc…
- Stretch your imagination !!!

- + It takes about same time to create a 3D-model than 2D-drawing
- - Administrating 3D-Software is more difficult than in 2D-Designing
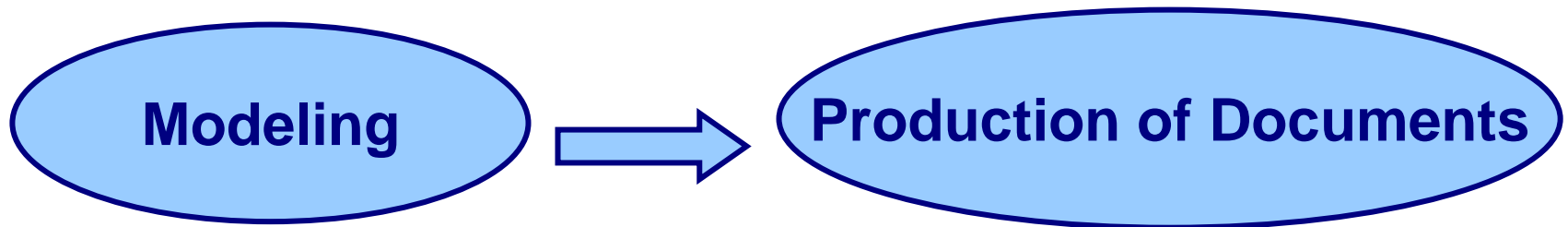
Why 3D-Design ?

- Improve the quality of engineering and cut down the error rate...

    • E.g. collision control, specifications,

- ...with less time

    • E.g. Less documents are needed, Design Tools...

- Distributed design (Several designers can build one 3D-model)
- Etc…
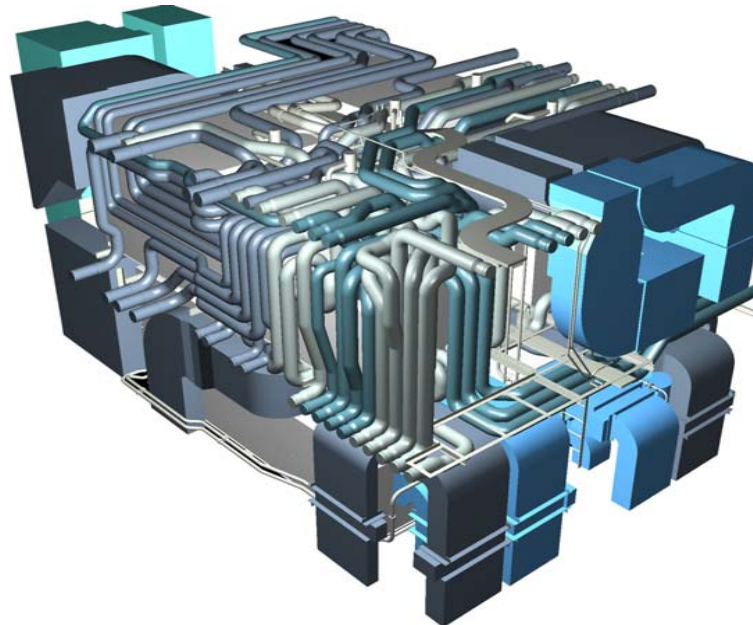
What are differences between 2D and 3D-design

- Creating Model
- Model as Database
- Documents are identical
- Material data in the Model
- Dimensions in the Model

- Creating Documents
- All data in the Documents
- Documents independent
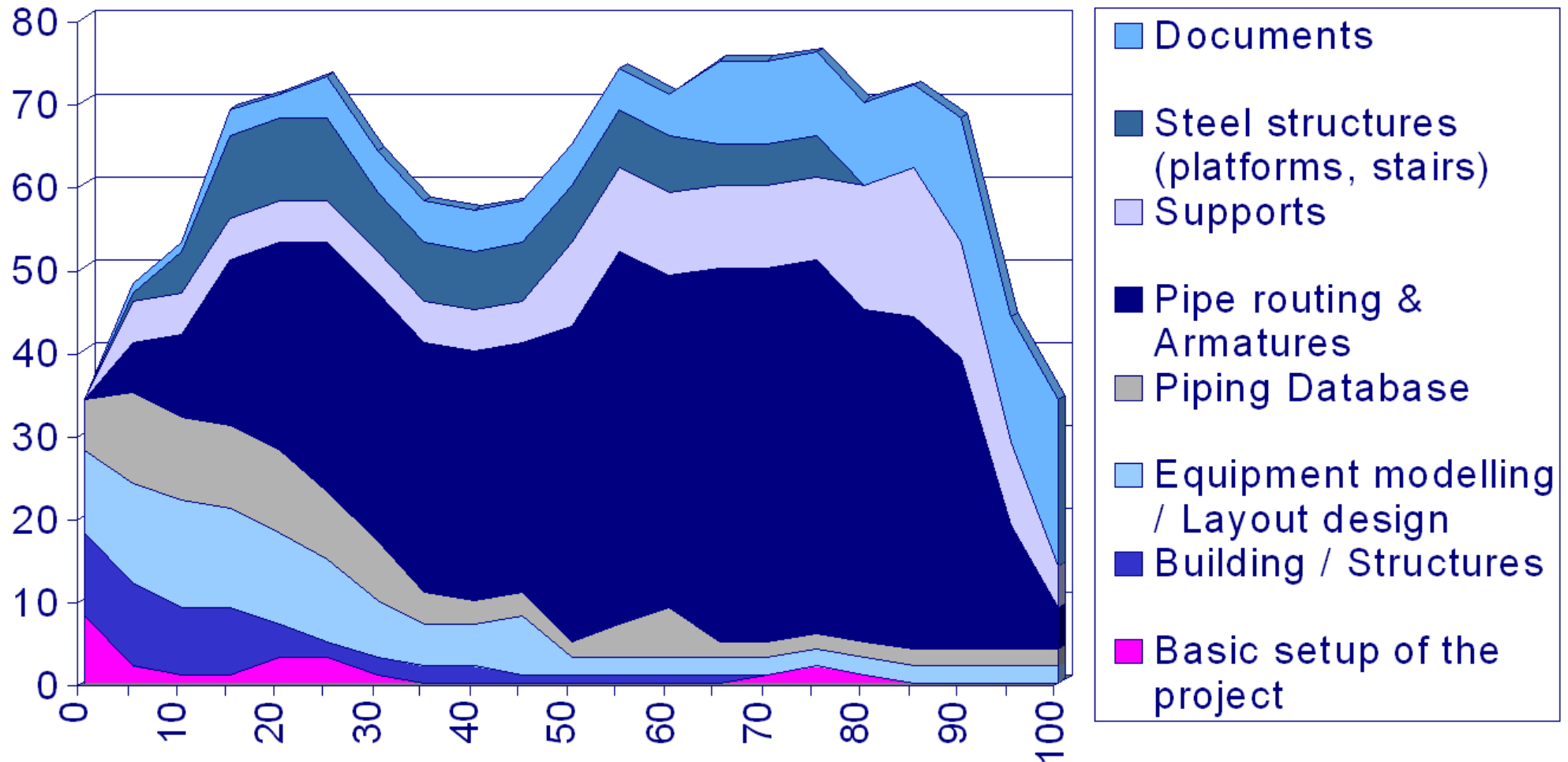- Materials in material documents
- Dimensions in some documents

Modeling → **Production of Documents**

One modification in the model.
Easy to control

Modification to many documents.
Laborious to control

3D DESIGN PHASES

Efficient 3D-modeling organization

- One person is responsible Administrator
  - Main task is focus to Administration
  - Good administration is most profitable work
  - Also a Deputy Administrator is needed
- In big projects responsible designers for
  - Modeling buildings
  - Modeling equipment
  - Document production
- Layout- and piping design
  - Project Manager divides project to area responsible designers
  - Main designer first routes main pipelines into model and is responsible that model is congruent
  - Area responsible designers are responsible for modeling certain area

Some Cadmatic-administrator tasks

- Defining module-lines in model
- Defining systems and pipelines in project
- Specifications (piping/beam)
- Piping components and library (Basic project concept)
- Isometric/spool drawings, drawing sheets and material listings
- Layer definitions
- Manage licenses

**Good administration can decrease design hours significantly
1 administration hour more = 2-5 design hours less
Administrator should be close to design work**

Training in periods

- User Training (8 Days)
  - Building of 3D Model
  - Document Production
  - Etc..

- Administrator Training (5 Days)
  - Only for Administrator and Deputy Administrator

- Advanced Training (1-3 Days)
  - 3 - 6 months after 3D-modeling is started
  - After User Training normally designers use only basic commands by using advanced commands 3D-modeling is faster

Example about Advanced Training

- Special commands, advanced navigation

- Examples how to automate routine tasks

- How to control the status of the data in 3D-Model

  • Document number of the initial data

  • Status (e.g.. preliminary, for approval)

  • It is possible to create an eBrowser model where colors are by status (e.g.. all preliminary information is in red color)

- When you get more data about the object it is easier to **replace** the preliminary object with a new object than if you would **modify** the preliminary object

2009-11-12

LEARNING & TEACHING

- Concepts from "Real world"
  - no IT or geo-/trigonometric terms
  - no drawing concepts (line types, layers etc.)
  - hidden database
- Navigation most difficult thing to learn
  - understanding of depth
- Disciplines similar
  - Equipment, piping, steels, HVAC, cable racks
  - Easy moves between disciplines

Operating systems and Hardware

- Supported operating systems:
  - Workstation:
    - XP Professional
  - Server:
    - Windows 2003 Server Standard
  - Network operating system:
    - Windows, Active directory or flat domain
    - Windows users accounts must be Domain users not Local users
- Hardware demands in general level:
  - Server: Application server -> Enough memory and fast disk i/o
  - Workstation: Performance PC with OpenGL Graphic card