

I Want You to Want Me: Embracing CAD

CM35-1 **Standards**

Doug Goforth

Standard Philosophy

Excuses, excuses

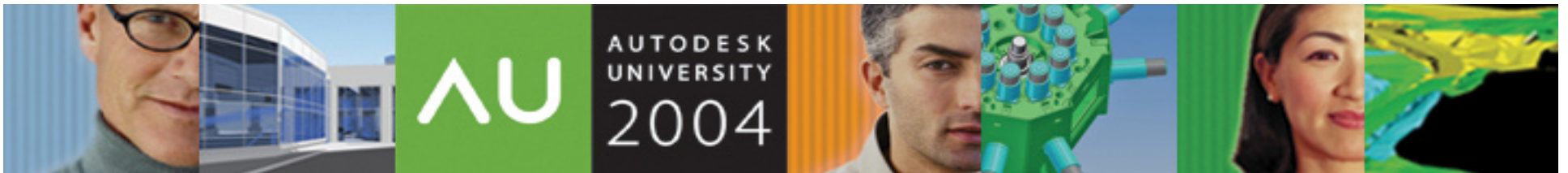
Wants and Needs

Team Buy-In

Technical Options

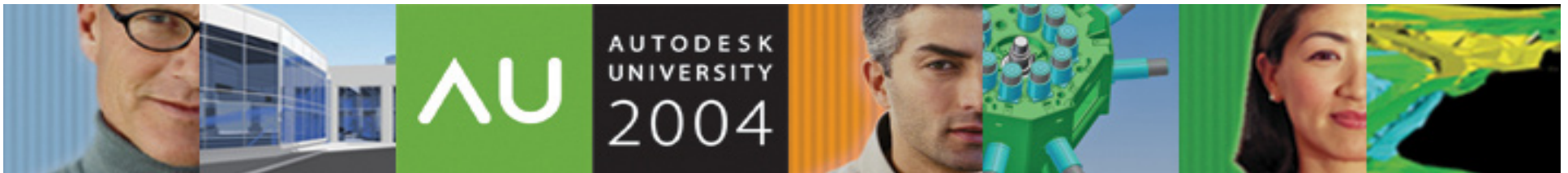
Process and Communication

Support and Maintenance



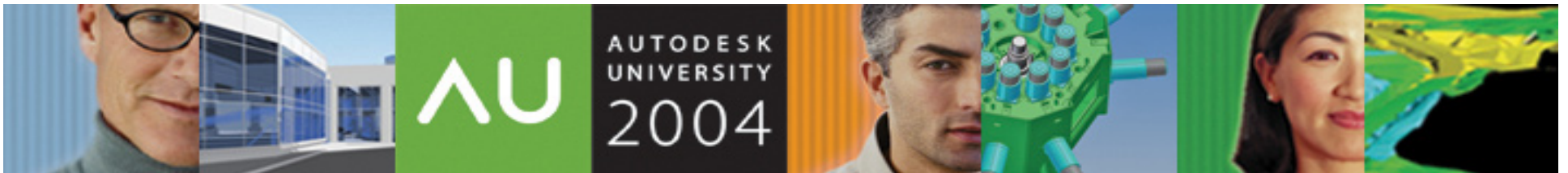
About Doug and the Stuff He Does

- ▶ Over 20 years working on CAD solutions for Facilities.
- ▶ Developed Standards and Procedures for IBM Facilities North America (over 500 users), and others...
- ▶ Provided conversions and conversion strategies to migrate 100 million sf of drawings to standardized CAD solutions for various companies. (AutoCAD, CADAM, CATIA, A&ES)
- ▶ Developed client software, strategy, and procedures for 40 million sf FM solution including MapGuide deployment.
- ▶ Implementation of NIBS and CSI standards within solutions.
- ▶ Produced thousands of pages of documentation and procedures for Facilities.
- ▶ Design and document training materials for client education.



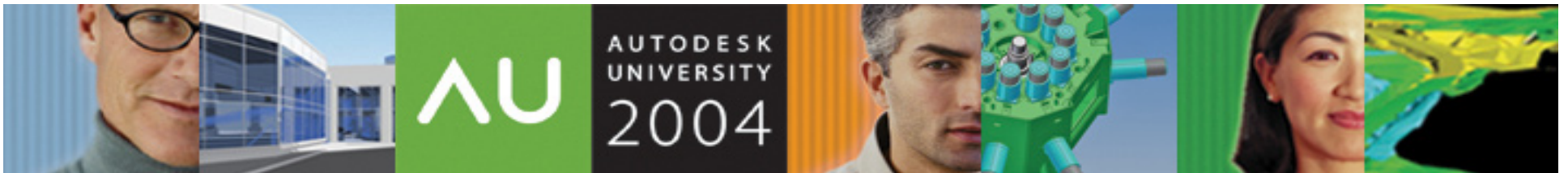
About You and the Stuff You Do

- ▶ Manage 10 or fewer designer/drafters?
- ▶ Manage more than 100?
- ▶ Only job is CAD manager?
- ▶ Double as designer drafter?



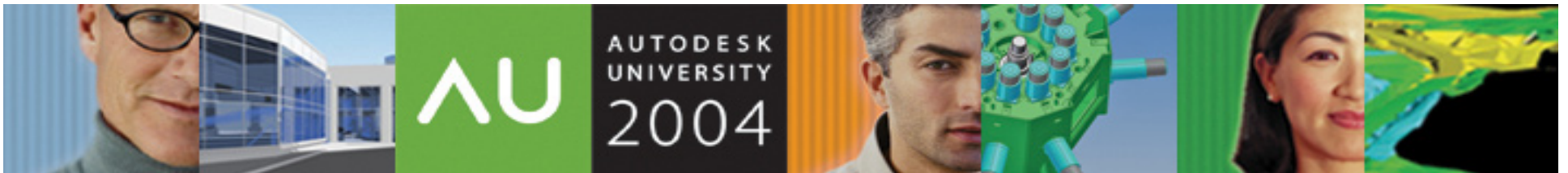
Why Standards?

- Consistency
- Efficiency
- Organization
- Structure
- Work Sharing
- Shorter design time
- Speed new processes



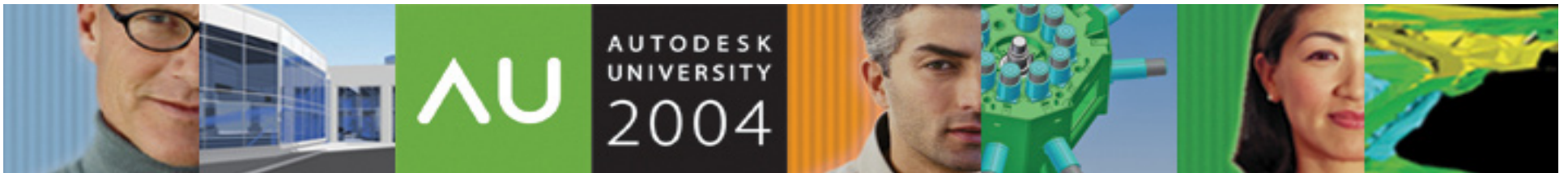
Where to Standardize

- ▶ Everywhere
 - File naming conventions
 - Layers and blocks (names and structure)
 - Colors and lineweights
 - Drawing units
 - Geometry location
 - Drawing sheets and title blocks
 - Details
 - Text size
 - Plotter configurations



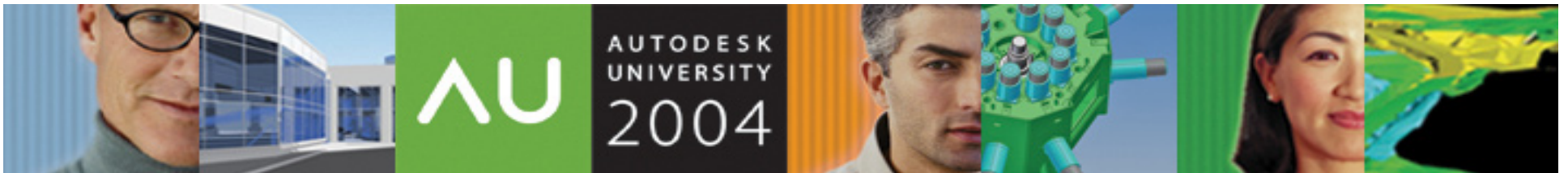
Naming Conventions

- ▶ Majority of Standards relate directly to naming conventions
- ▶ Should not require a decoder ring to understand
- ▶ Should be as short as possible
- ▶ Check out www.nationalcadstandard.org



Identify Your Needs

- Gotta convert legacy data?
- Can you teach your old dogs new tricks?
- 2D or not 2D, that is the question...
- K – I – S – S

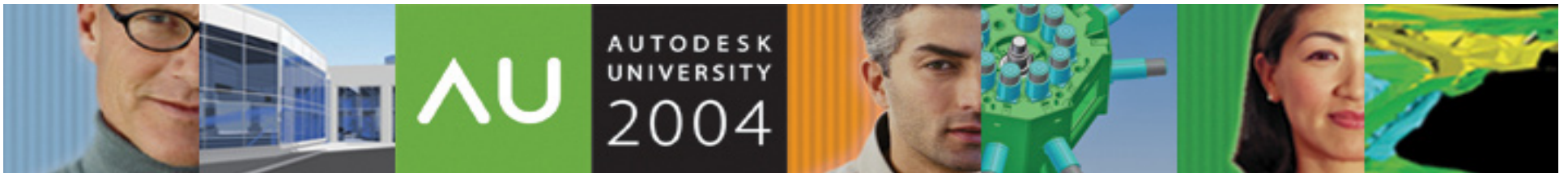
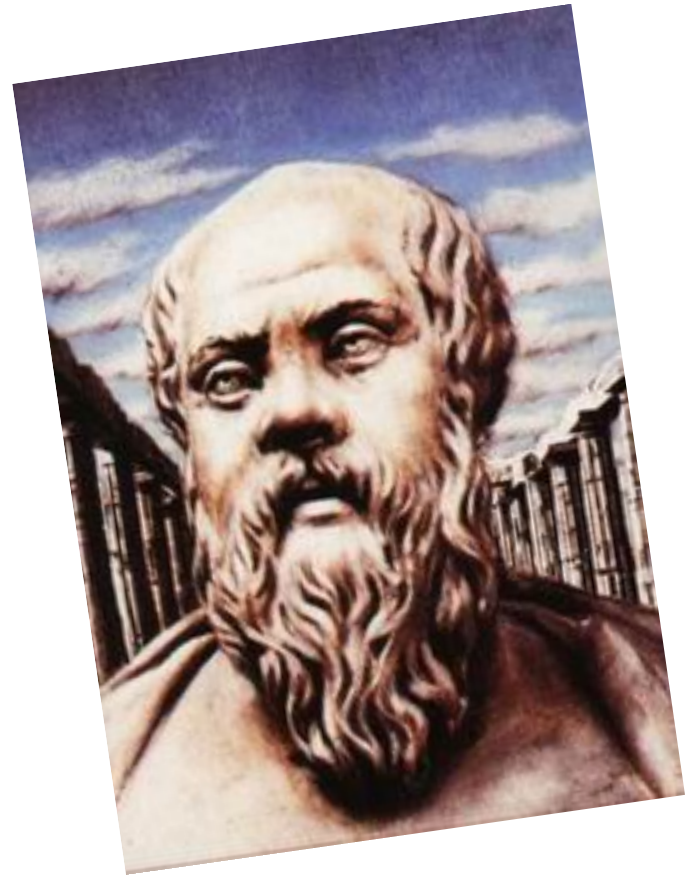


Education

"Knowledge is virtue" –
Socrates

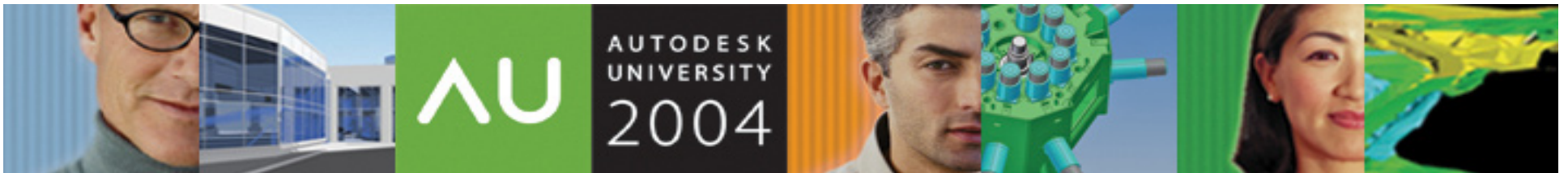
Socrates was never a CAD
manager.

"The value of user education is
efficiency and consistency."
Doug



The Buy-In

- Designers
- Drafters
- CAD Managers
- Management



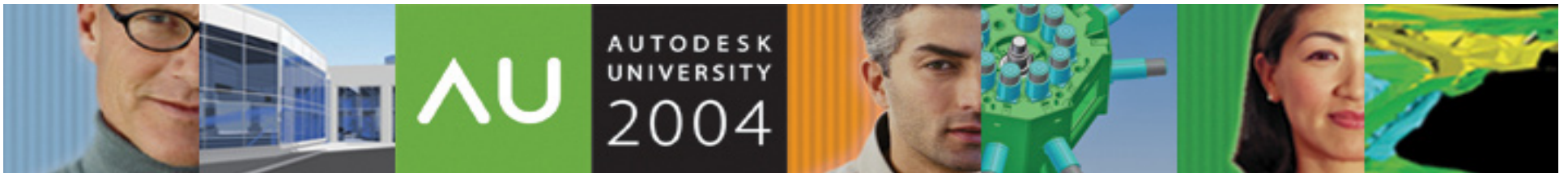
Lame Designer/Drafter Excuses

"I am not accustomed to working this way."

"I could do my job faster if I did not have to spend time adhering to the standards."

"No one else will be working on this job, so why does it matter."

"My way is better."



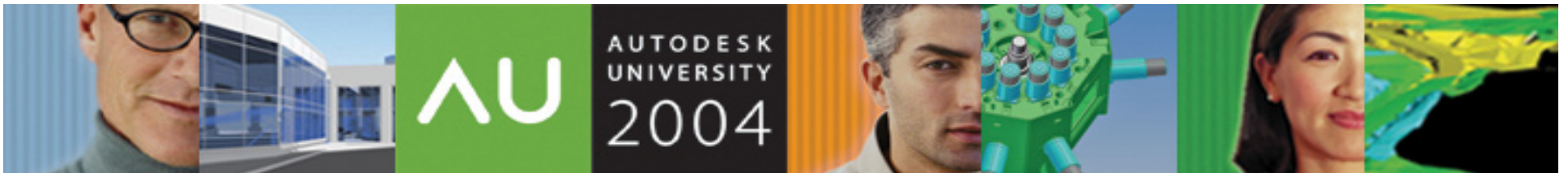
Not-So-Lame Designer/Drafter Excuses

"The conventions are confusing."

"Standards do not allow for things I need."

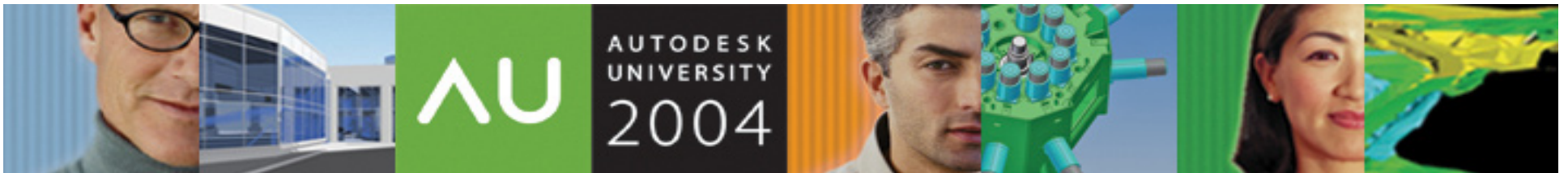
"Standards do not resemble the real world."

"My way is better (guess what, sometimes it is)."



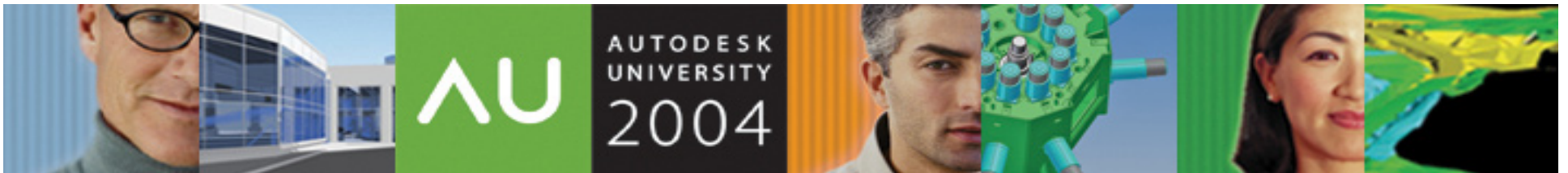
Design Team Buy-In

- Evaluate the responses to your process
- Listen to the users
- Measure efficiency
- Clear and well documented
- Advocates among the users
- Is the designer just being a pain in the neck?
- Are **you** being a pain in the neck?



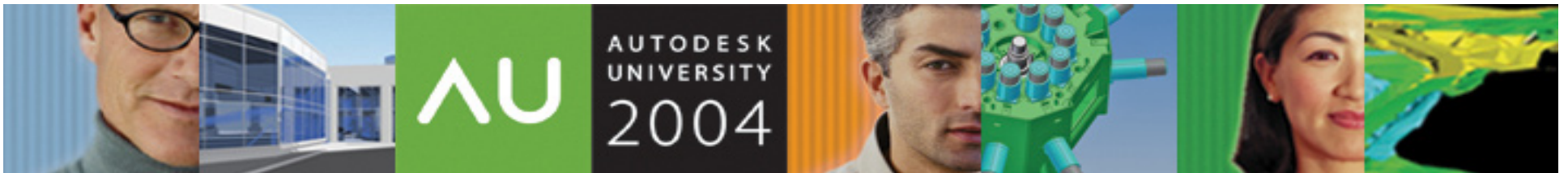
Designer Objectives

- ▶ View the main objective as producing contract documents.
- ▶ May not view compliance with standards as part of the objectives.
- ▶ Standards must be part of the objective to facilitate the buy-in.



Reasons for the Designer to *WANT* Standards

- ▶ Existing docs for new projects are instantly available.
- ▶ Plots on demand.
- ▶ Master database are updated faster.
- ▶ Documents will be clear and consistent.
- ▶ Lower job costs.
- ▶ Fewer and clearer drawing sheets result in lower bids.
- ▶ Predictability in estimating drafting time.
- ▶ Off load some of the drafting.



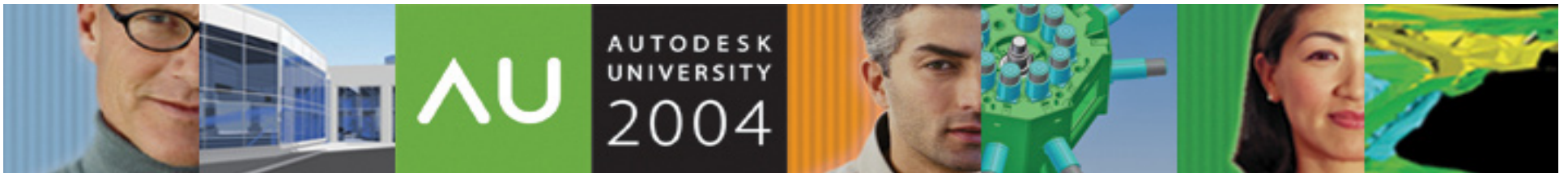
CAD Manager Excuses

"I don't know where to begin."

"I don't believe the users would follow the standards."

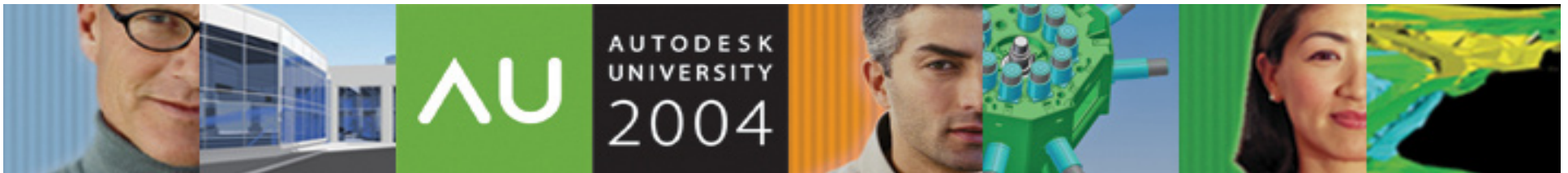
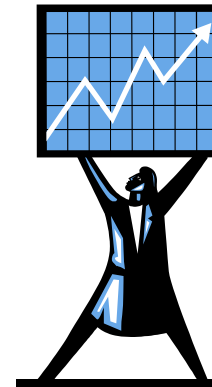
"Too much time is needed to set up the process."

"Management does not recognize the importance of having standards."



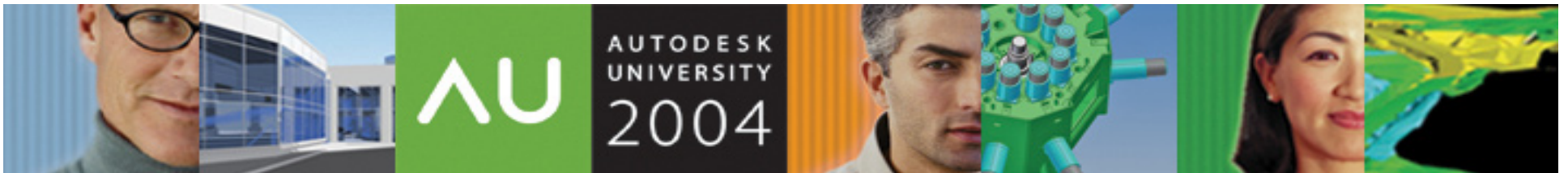
Management Buy-In

- ▶ Reduced drafting time.
- ▶ Reduced cost.
- ▶ Take the time to produce an ROI.
- ▶ Show that you have a plan of efficiency and organization.
- ▶ Be sure to make charts and graphs.



Making it Easy

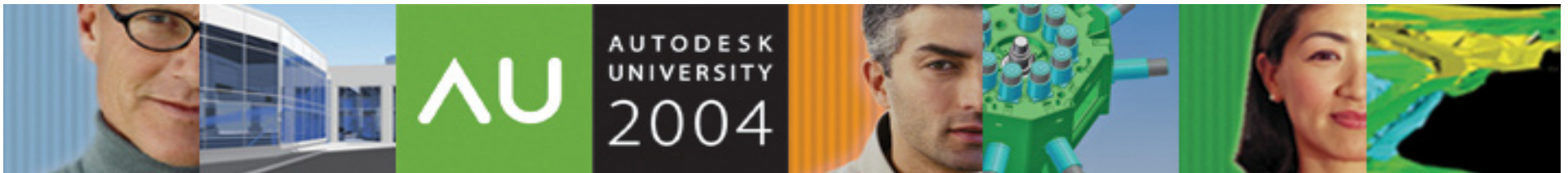
- ▶ Use the technology to your advantage.
- ▶ Give the users software solutions that fit your industry
 - Architectural Desktop
 - Revit
 - Third party add-ons
- ▶ Help them recognize the standards
 - AutoCAD Drawing Standards Checker
 - Standards Notification feature



Document Management

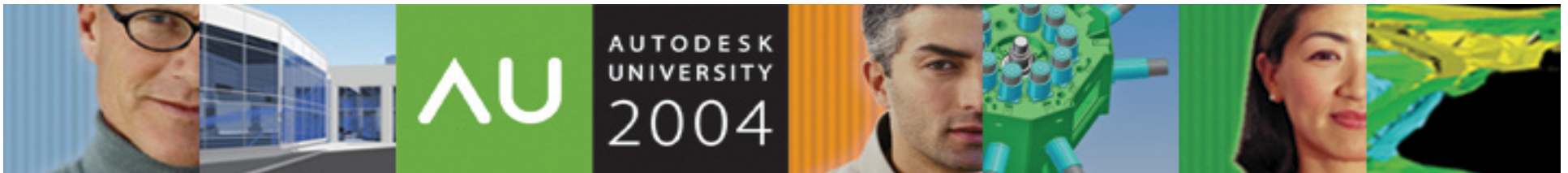
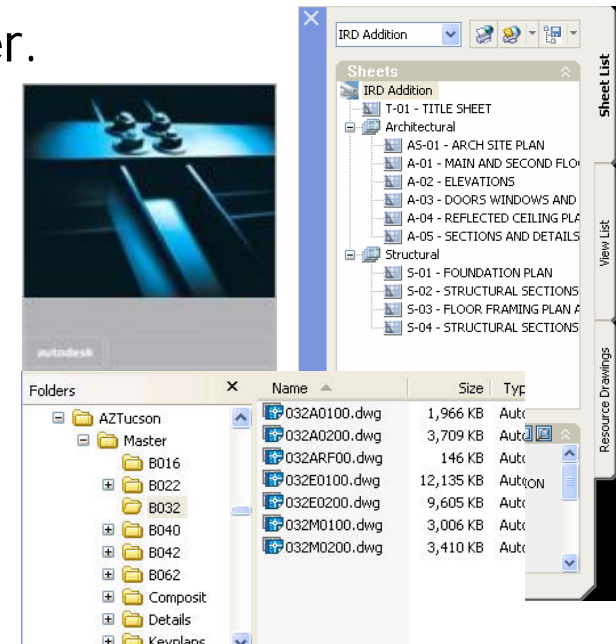
Organization = Productivity

- ▶ Become the Document Czar of your department
 - Create a request form for drawings and documents
 - Create the requested files for the user with their proper name and location
 - Give the VBA whiz-kid the task of programming a drawing unload program.



Document Management

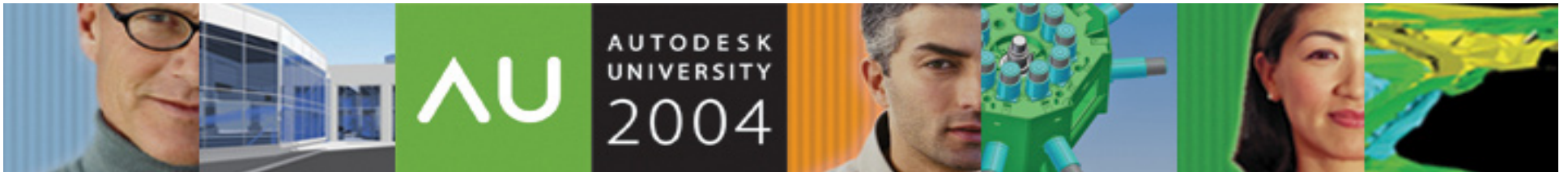
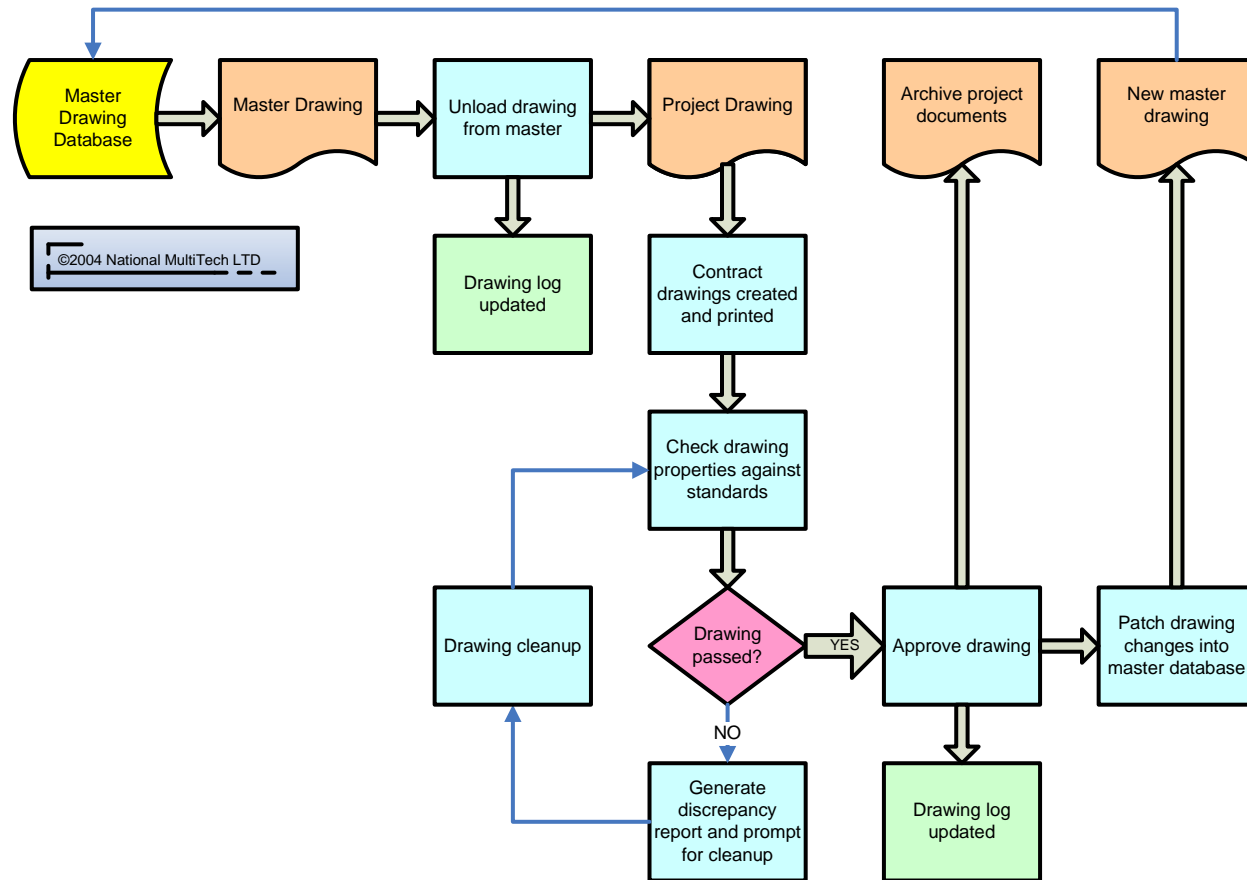
- ▶ Documents are useless if you can't identify them.
- ▶ *Minimum* requirement is to have a *strict* naming convention.
- ▶ Remove unidentifiable files from the server.
- ▶ Consider implementing a document management solution
 - Buzzsaw
 - AutoCAD Sheet Set Manager
 - Organize in Windows Explorer
- ▶ Be committed to the standards.



Process Flow

Master Drawing Life Cycle

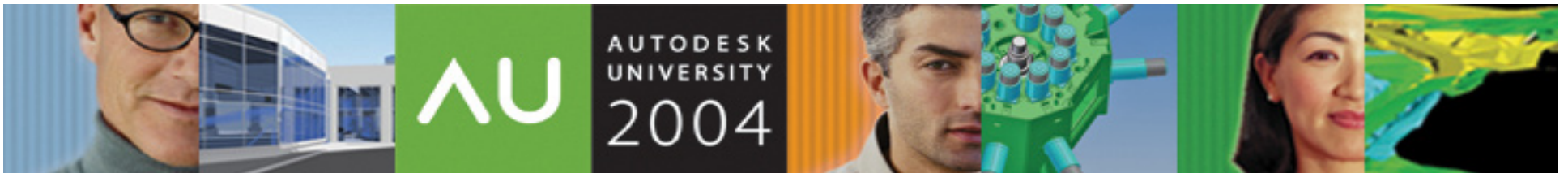
AU2004



Coordinating with Outside Design Firms

What are your options?

- 1) Mandate that your vendors adhere to your standard.
- 2) Strongly *suggest* adherence to your company's standards with a clear indication that you will *prefer* compliant vendors.
- 3) Let them do whatever they want and then convert the drawings as the come back.
- 4) Consider adopting your vendor's standard strategy as your own.



Providing Help

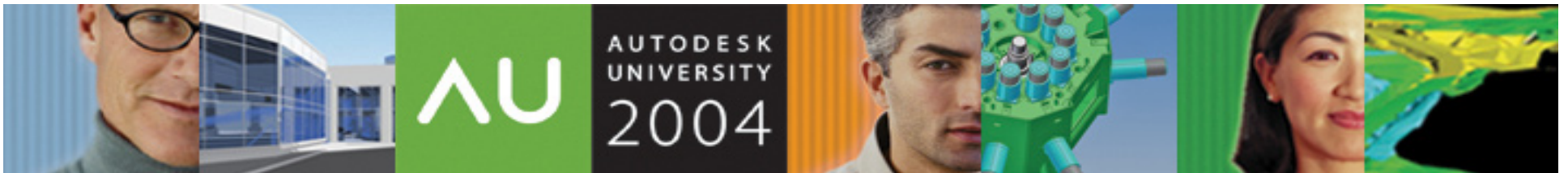
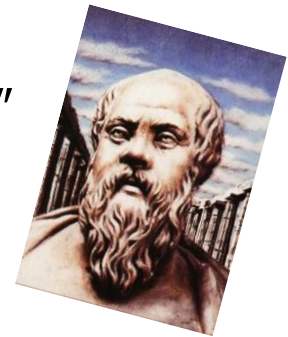
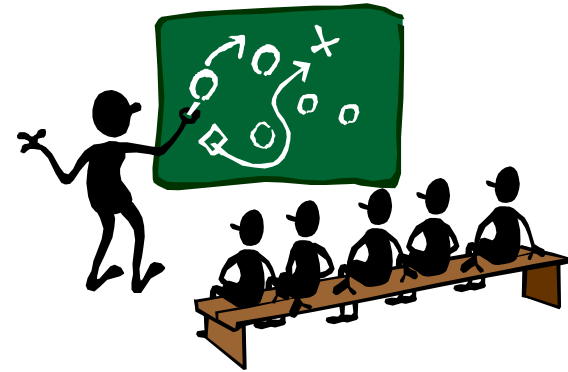
What to do when they don't know what to do...

- ▶ Comprehensive documentation on drawing standards.
- ▶ Naming conventions for all documents (not just drawings).
- ▶ Process flow documentation.
- ▶ Someone who is the go-to guy for answers (maybe that is you).
- ▶ Users need to know where to get answers not provided in the documentation.
- ▶ Provide timely responses to help requests.



Maintain, Encourage, Enforce

- ▶ It's up to you! Have a plan!
- ▶ Monitor the database.
- ▶ Police the documents.
- ▶ Keep the process as simple as possible.
- ▶ *"What you cannot enforce, do not command."*
Socrates
- ▶ Reward adherence by providing useful services that *require* standardized documents.



Resources

- ▶ Plethora of books on teamwork and leadership
- ▶ National Institute of Building Sciences
Get a membership!
www.nibs.org
www.nationalcadstandard.org
- ▶ The Construction Specifications Institute
www.csinet.org
- ▶ Doug's email: doug.goforth@nationalmultitech.com

