

Data Drives Our Decisions – CAD Management from A to Z

Yoshi Honda - US CAD, Inc.

CM111-1P Review and discuss the future of the CAD industry. We'll examine the trends of CAD standards by reviewing data from the past, collecting data from the present, and focusing on where that information will take us in the future. Discuss the concepts and begin a framework for the vast amount of data created and stored when implementing and enforcing CAD standards. We'll analyze and compare standards from different firms and disciplines and learn additional ways of producing and publishing companywide.

About the Speaker:

Yoshi Honda is the Director of Operations for US CAD in Hawaii. He was formerly the president and owner of Pacific CADD Services, Inc. a CAD production service company based in the Hawaiian Islands for over a decade. In addition to commercial CAD production, US CAD Hawaii performs CAD management, implementation, and is an Autodesk Premier Solutions Provider that fosters CAD awareness.

Honda has had the opportunity to work with many local, national, and international firms that has allowed him to experience many different styles of project and CAD management. Honda has taught at the college level and has been speaking at Autodesk University since 1997.

Honda is also long-time member of AUGI, Inc., where for six years he has held various AUGI Board of Directors positions including Education & Training Chair, Junior & Senior Vice President as well as President in 2002 and again in 2005. He continues to serve the organization as the Education Manager and also the Content Manager for the AUGI CAD Camps.

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Introduction

Today we will review, discuss, and examine CAD standards by looking at data that I have collected over the last few years. We will also focus on where that information will take us in the future. We will analyze and compare standards from different firms and disciplines and learn additional ways of producing and publishing company-wide standards. Due to our limited time scheduled and all the information we have to get through today, this class handout, in reality, is going to be your “workbook”.

Today we will get you started on these exercises, it will then be up to you, and your dedication and commitment to finish these exercises and create a road map of where you intent to take your company, department, and position.

Networking with your Peers

The first thing that we need to do in this class is to get yourself introduced to your peers. The people sitting around you are in the same “boat” as you are, they are most likely in the same leadership position you are in, and they are going to be a “support system/team” for you, today and in the future. We will take a few moments to allow you to introduce yourself to the people around you and allow you to get the names, email addresses, and information about the industry they serve.

Name	Email	Industry
1. Yoshi Honda	yoshi.honda@uscad.com	Autodesk Premier Solutions Provider
2.		
3.		
4.		
5.		

Timeline and Goals

Next, I want you to list where you are on your management timeline. When you return to your office I would like you to list a few goals for the future of your department.

Where have you come from? Where are you today? Where do you want to be in the future?

Five years ago...

Two years ago...

Today...

Two years from now...

Five years from now...

Why have standards?

Why do we need standards and what do they accomplish?

List the “Top Three” reasons why you feel your company should have standards.

As a class we will discuss the effects that CAD standards have on a department and/or company, feel free to list those below for your reference and comparison.

“Your” personal - Top Three reasons to have standards:

1.

2.

3.

What was discussed in your “Group” – Top Three reasons to have standards:

1.

2.

3.

Our “Class” – Top Three reasons to have standards:

1.

2.

3.

Your "Personal" - Top Ten Standards

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Your "Groups" - Top Ten Standards

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Our “Class” - Top Ten Standards

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Data – Top Ten – From the past

Let's look at and see if we have any trends or patterns over the years, I have collected this data from attendees at Autodesk University for the last six years.

Autodesk University 2000

1. Layers
2. Symbols/Blocks/Detail Library
3. Templates/Drawing Set-up
4. File Naming
5. Plotting
6. Text and Dimension Styles
7. Titleblocks
8. File Management/Directory Structure
9. Colors and Linetypes – bylayer
10. Paper Space/Model Space

Autodesk University 2001

1. Layers
2. Plotting/Plot Styles
3. Dimensions
4. Files Naming
5. Directory Structure
6. Blocks
7. Sheet Format/Layouts/Scaling
8. Linetypes
9. Archiving
10. Annotation/Text

Autodesk University 2002

1. Layers
2. File Naming
3. Dimensions
4. Blocks/Symbols
5. Annotation/Text Styles
6. Linetypes
7. Plotting/Plot Styles
8. Sheet Format/Layouts/Scaling
9. External Reference Usage
10. Archiving

Autodesk University 2003

1. Layers
2. Sheet Format/Layout
3. Dimensions
4. External Reference Usage
5. File Naming
6. Annotation/Text Styles
7. Archiving
8. Plotting/Plot Styles
9. Linetypes
10. Scaling

Autodesk University 2004

1. Layers
2. Annotation/Text Styles
3. Dimensions
4. Plotting/Plot Styles
5. External Reference Usage
6. File Naming/Management
7. Symbols
8. Tool Pallets
9. Sheet Format/Layouts
10. Templates

Autodesk University 2005

1. File naming/Management
2. Layers
3. Dimensions
4. Annotation/Text Styles
5. Plotting/Plot Styles
6. Archive
7. External Reference Usage
8. Symbols/Blocks
9. Sheet format/Layout
10. Templates
11. Directory Structure
12. Process and Documentation

Autodesk University 2006

1. Layers
2. Annotation/Text Style
3. Dimensions
4. Plotting/Plot Styles
5. External Reference Usage
6. File Naming/management
7. Symbols
8. Tools Pallets
9. Sheet Format/Layout
10. Templates

Standards – CAD Managers Top Ten

I have asked this same question, about CAD standards, to dozen CAD managers across the US, four managers from large sized firm (250+ seats), four managers from medium sized firm (249 – 100 seats), and four managers from small sized firm (under 100 seats).

This is the data they presented.

1. Project Directory Structure/Search Paths
2. Risk Management
3. Dimensioning
4. Layer Conventions
5. Project Hosting & 24/7 File Access
6. Data Management/Workflow Software
7. Documentation (Standards/Policies/Guidelines/Inventory)
8. Quality & Standardization in Presentation & Plotting of Images
9. Customization with Third Party & Internet Applications
10. Archival of Data Policies

Sample of a CAD/Users Manual Content

The purpose of this document is to establish a set of guidelines for the generation of AutoCAD drawings. It is very important that we strive to obtain a level of consistency in our drafting. Consistency in our drafting is the foundation for a quality-engineering package. Please remember this document will continue to evolve over time, with the changes in technology. This is simply a sample or an outline of where to start.

Module	Topic
1	Introduction
1.1	Scope
1.2	Intended Use of Drawings
1.3	Goal
1.4	Purpose
1.5	Tools
2	Deliverables
2.1	Record Drawings
2.2	Disc Format
2.3	Drawing Catalog Information
2.4	Transmittal Format
2.5	Close - Out Steps
2.6	Requirements
3	System Setup – (AutoCAD)
3.1	Settings/Units
3.2	Setup
3.3	Drawing Sheet
3.4	External Reference
3.5	Layouts - Paper Space



	3.6	Model Space
	3.7	Origin
4		Naming Convention – (AutoCAD)
	4.1	Naming Convention for Consultants
	4.2	Drawing Files – General
5		Entities
	5.1	Text - General
	5.2	Text – Size/Font/Usage
	5.3	Blocks - General
	5.4	Blocks – Inserting a Drawing
6		Dimensioning
	6.1	Styles
7		Titleblock
	7.1	General Information
8		Layering Convention
	8.1	Concept
	8.2	Application
	8.3	Layer Format
	8.4	Pen Table Information
	8.5	Layer Listing
Appendix ‘A’		Discipline Codes
Appendix ‘B’		Sheet Numbering
Appendix ‘C’		Evaluation
Appendix ‘D’		Assessments
Appendix ‘E’		Risk Management
Appendix ‘F’		Glossary
1		Revit/Civil 3D/Inventor
	1.1	Exporting To DWG
	1.2	Export Layers
	1.3	Custom Export Layers
	1.4	Exporting Schedules
	1.5	Exporting To an ODBC Database
	1.6	Exporting To IFC
	1.7	Selecting Views to Print Or Export
	1.8	Import Options
	1.9	Shared Positioning In Revit Structure
2		Creating a New Revit Project
	2.1	Templates – Set Up
	2.2	Text General
	2.3	Text – Size/Font/Usage
	2.4	Dimensions
	2.5	Families
Appendix ‘R’		Revit/Civil 3D/Inventor Glossary

Module Sample – Text

This is simply a sample or an outline of a module.

5.1 Text - General

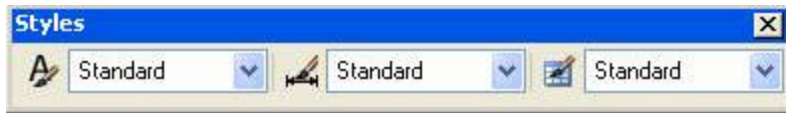
All text shall be standard AutoCAD fonts.

Text heights smaller than the AIA standards are used due to the inherent clarity in computer generated text.

All text shall be in upper case

All text in a drawing has a text style associated with it. When you enter text, the program uses the current text style, which sets the font, size, oblique angle, orientation, and other text characteristics. If you want to create text using a different text style, you can make another text style current. The table shows the settings for the STANDARD text style.

You can modify an existing text style in the Text Style dialog box by changing the settings. You can also update existing text of that text style to reflect the changes.



5.2 Text – Size/Font/Usage

SIZE	FONT	USAGE
0.08"	ROMANS	In symbols, and special small text.
0.10"	ROMANS	Room Names, Room Numbers, Cost Centers, General Notes, Schedules, miscellaneous text, and dimensions.
0.15"	ROMANS	Tittles (in Title block). Schedule list headings, and minor (sub) titles.
0.25"	ROMANS	Plan/main titles, detail names, Sheet numbers, and special headings.



Conclusion

Remember CAD Management is what you make it; it is a way of life. You have to be a “jack of all trades” to have the ability to truly multi-task everyday.

It is a role that will constantly evolve and a job that will never be complete. As a CAD manager, you have your hands full maintaining software and hardware and keeping users productive. Sometimes this day-to-day firefighting keeps you from noticing trends that might shape your job in the future.

It is my hope that today, together - we helped you notices some of these trends.

Class Notes:



Please print clearly

Name: _____

Email: _____

Industry: (circle one of the follow that best describes your field)

BSD - Building Solutions Division

ISD – Infrastructure Solutions Division

MSD – Manufacturing Solutions Division

City, State or Country: _____

Autodesk Products Primarily Used:

AUGI Member:

No Yes

If so, how long? _____

Local User Group Member:

No Yes

If so, what is the LUG's name? _____

How many times have you attended Autodesk University? _____

What city would you like to see host Autodesk University, in the future:

- 1.
- 2.
- 3.
- 4.