



Revit Technology Conference 2007

Documentation in Revit

Documentation in Revit

Chris Needham - C3 Consulting Solutions





Introduction

- Who am I? chris.n@c3consulting.com.au
- What do I do? CAD/BIM Strategic Consulting
- What do you do?

- What you may expect
 - Leverage and efficiencies
 - Tips and tricks, traps, best practice, workarounds
- What I may expect
 - Learning and sharing

Introduction

RTC 2006

Overview

Control

Hybrid Revit

Other Views

Worksets

2D vs 3D

Annotations

Aesthetics

Standards

Templates

Family Creation

Production

Summary

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RTC 2006

Recap: RTC 2006 - Documentation

- Basic Documentation
Glen Cunningham – Monumentum
Documentation Management - Prepare your plan of attack!
Review - Audit the design model
Standards - Establish your practice standards
Views - Prepare the views you intend to document
Sheets - Setting up drawings
Annotation - Annotating your views
Detailing - Adding detail to your views
Production - Printing, exporting and revising
- Advanced Documentation
Gary Kleyn & Daniel Smith, Glanville Architects
 - Download the PDF of the talk from the RUGS website
<http://www.rugsyd.com.au>



Overview

- Control
- Hybrid Revit
- Other Views
- Worksets
- 2D vs 3D
- Annotations
- Information Aesthetics (Look & Feel)
- Establishing Standards
- Templates
- Family Creation
- Production
- Summary

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Control

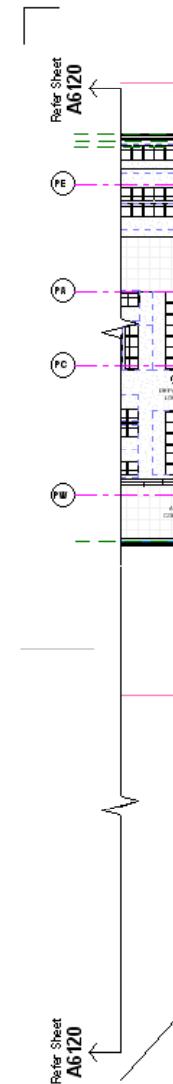
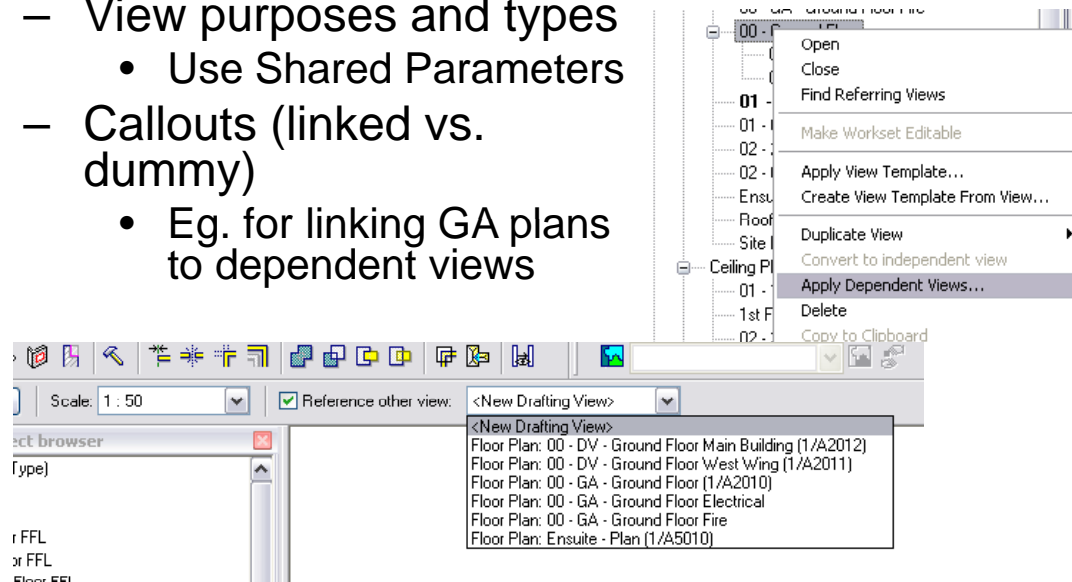
- First you must control your model
 - Design Philosophy
 - Placeholder vs. elements
- Revit 2D views are live representations of 3D models
 - Sometimes too alive!
 - Need to protect and lock various elements:
Invisible objects, reference planes, placeholders
- Must be disciplined and communicate
 - Harder to hide laziness or lack of knowledge
 - Direct impact on team members
 - Benefits: Improved teamwork and workflow



Control

(Continued)

- Controlling Views
 - Dependent Views
 - Once you've created one set (across one level), you can Apply Dependent Views to other parallel views that *share the same scale*
 - Customise View Reference families to suit your needs, eg. Breakline appearance
 - View purposes and types
 - Use Shared Parameters
 - Callouts (linked vs. dummy)
 - Eg. for linking GA plans to dependent views

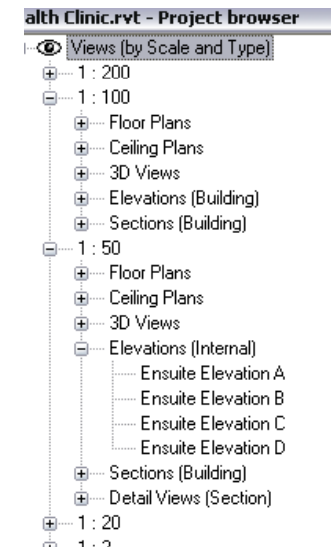
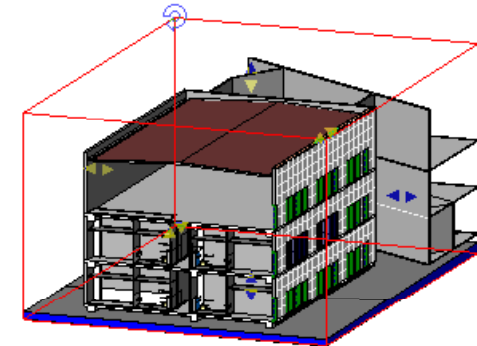




Control

(Continued)

- **Controlling Views**
 - Section boxes
 - Great for inspecting the model
 - View properties
 - Explore and try everything
 - View Templates
 - Apply by scale (use project browser to help sort by scale)
 - Scope Boxes
 - Don't confuse with Section Boxes
 - Marvellous way to control ref planes, grids, levels and view extents

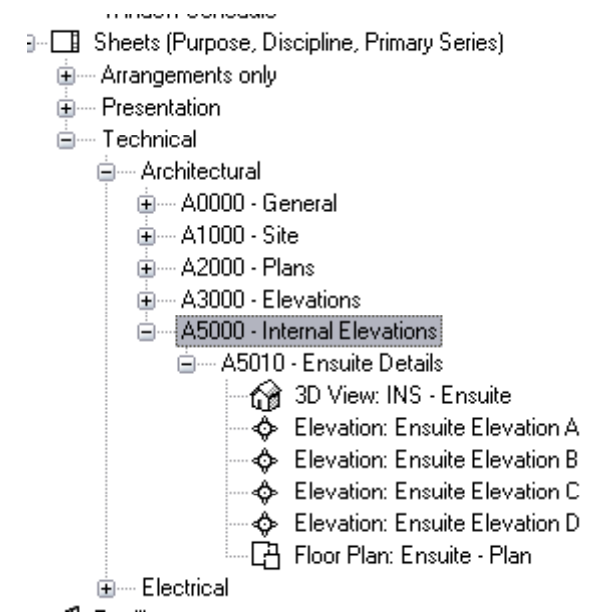




Control

(Continued)

- Controlling the Browser
 - View organisation
 - Not on sheets
 - Custom Shared Parameters
 - Housekeeping
 - Sorting to see what is important and perhaps quickly eradicate old or redundant views
- Controlling the Sheets
 - Schedules
 - Sheet organisation
 - Sheet access to views





Hybrid Revit

- Pros and cons
 - Gain speed, but can lose quality of info
 - Users familiar with format, but have less control
- Prepare drawings
 - Consider appropriate use
 - Clean up drawings (hatching, anonymous blocks, purge)
- Maintain naming conventions
 - Keep names intuitive if you intend to use multiple files



Hybrid Revit

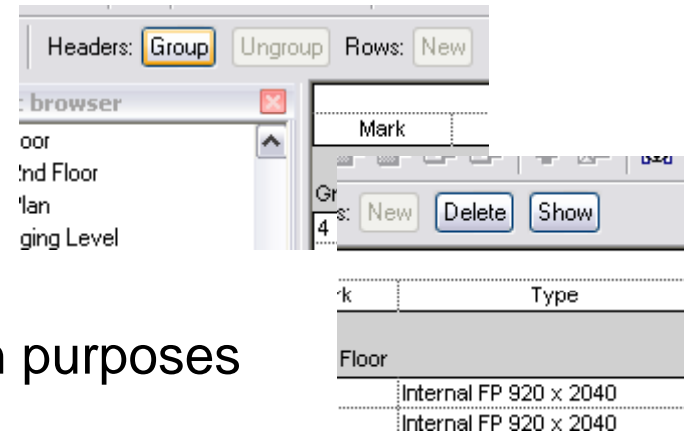
(continued)

- Linking vs Importing
 - Linking is usually preferable
 - Don't have to keep all the imported files – clean up whenever possible and appropriate
 - Place into dedicated workset (invisible by default)
 - Don't explode
- 'Trace over' technique - Working with images
 - Calibrate and pin the image
 - Presentation styles can be made easy by importing images as backgrounds (use in view or on sheet under views)



Other Views

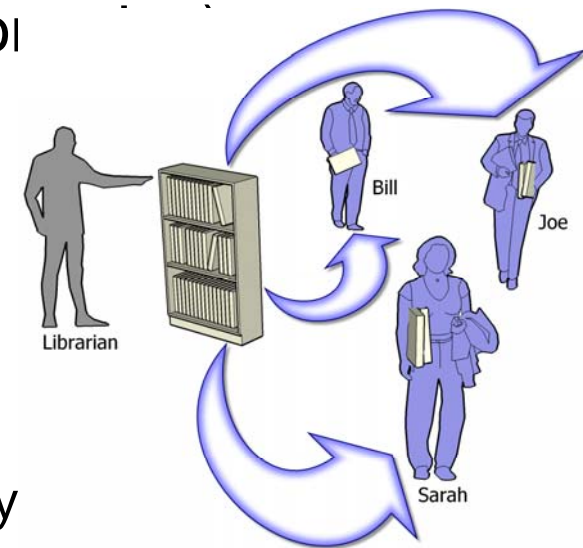
- 3D isometric
- 3D perspectives
- 3D details/cutaways
- Schedules
 - Grouping of fields
 - Working vs. Production purposes
- Room and Area fills
 - Consider your needs before commencing
 - Area schemes define what you want to measure
- Shadows and shading
 - Thirsty on resources
 - Greater depth and clarity





Worksets

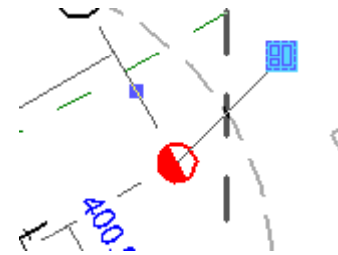
- Worksets vs. Worksharing
- Defining worksets
 - Consider carefully according to project needs
- Central vs. Local files (auto)
- Relinquishing
- Save to Central
- Central File Management
 - Audit periodically
 - Compact periodically
 - Review Warnings periodically
 - Restoring from Backups
 - Moving (Always 'Save As')





2D vs. 3D

- Detail groups
- Detail components
 - Repeating details
 - 2 pick families
 - Space Bar
- Underlay model
 - Check your progress
- Drafting views
- Imported Details
 - Clean up first, don't keep in project
- Legend views



Lighting Legend

○ D1	LED & 50W QT 12 IRC OSRAM LAMP DIMMED TO 90%. RECESSED DOWNLIGHT WITH OUTER LIGHT RING
⊙ D2	2 x 26W TC-DEL COMPACT FLUORESCENT 3000k CRI>= 85 SURFACE PENDANT MOUNT DOWNLIGHT
⊙ D3	2 x 42W COMPACT FLUORESCENT 3000k CRI>=80 CABLE SUSPENDED LUMINAIRE
○ D4A	MR16 LED (GREEN) WITH COLOUR CHANGING RECESSED CIRCULAR LOW VOLTAGE LED DOWNLIGHT
○ D4B	MR16 LED (RED) WITH COLOUR CHANGING RECESSED CIRCULAR LOW VOLTAGE LED DOWNLIGHT



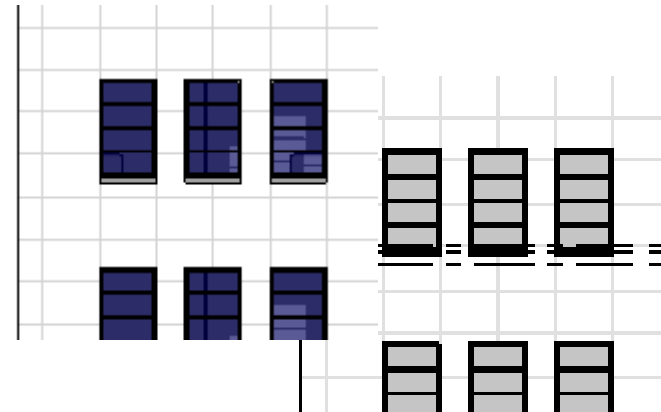
Annotations

- Tags
- Text
 - Leaders
 - Arrowheads (limitations)
- Dimensions
 - Rounding
 - Define styles by purpose
- Note Block
 - Keynoting
- Grid types
- Detail Components
- Symbols
- Spot Levels



Information Aesthetics

- Line Styles
 - Be clear and consistent with naming
 - Consider naming by purpose or object type (eg. 'Fence')
- Lineweights
 - Vanilla (OOTB) lineweights not appropriate
 - Customise only once (in template)
 - Transfer if required via Transfer Project Standards
- Line patterns
 - Not difficult, but still no support for complex line patterns
- Linework tool
- View visibility
 - Filters
 - Halftones
 - Underlays
- Composite views
 - 3D over 2D elevations
 - All topography vs. crop region
- Filled Regions





Establishing Standards

- Required for
 - Graphics
 - Processes
 - Best Practice
- Naming Conventions
 - Views
 - Families
- Object Styles
 - Subcategories (similarity to layers)
- Details
 - Save as views
 - Utilities to save model items and views
- Presentation of standards
 - Knowledgebase vs. manual format



Templates

- Use appropriate numbers of preloaded components
 - ‘Shopping trolley’ approach using sample projects
- Easy platform for establishing BIM standards
- Multiple templates
 - Base (office-specific)
 - Project Type
 - Client
- Sample files
 - System Families
 - Materials
 - Environment settings



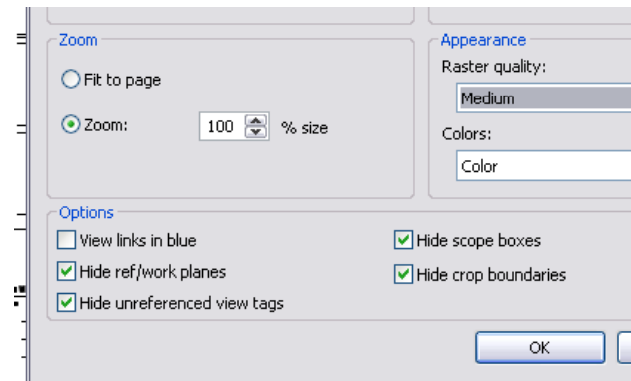
Family Creation

- Library structure
- Library management and distribution
- Importing images into workspace
- Content philosophy
 - Generic
 - Manufacturer specific
- 2D vs. 3D geometry
- Masking Regions
- Type Catalogs (*.csv files)



Production

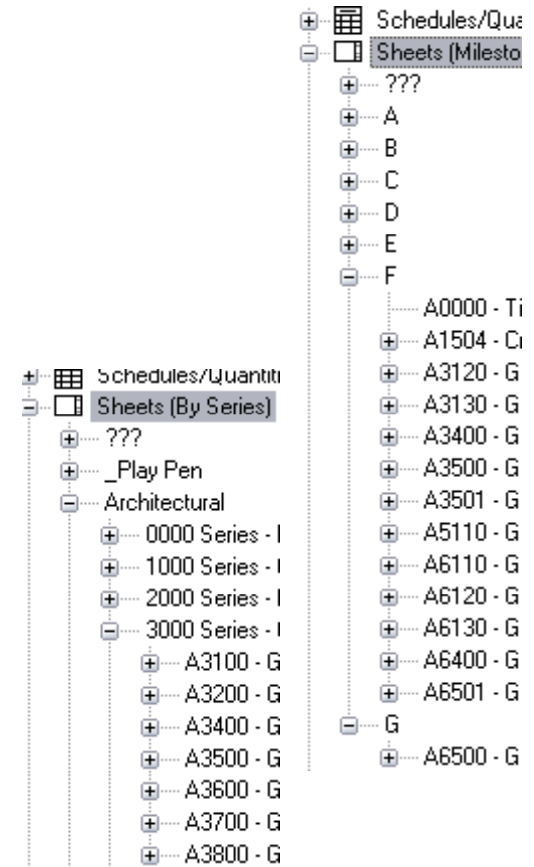
- Plotting
 - PDF
 - Use with third party app to batch-rename output files if required
 - DWF
 - 2D or 3D format
 - Markup and review using Autodesk® Design Review
 - Establish standard setup configurations in template
 - Beware resource limitations with raster-heavy views/sheets
 - Beware zoom scale and 'left-over' view/sheet lists





Production

- Exporting
 - Rendered images
 - Shaded views
- Leveraging project browser
 - Maximise sorting capabilities
 - Use it like a batch processor to apply sheet parameters *en mass*
- Revision Management
 - Vanilla (OOTB) options not appropriate for Australian conventions
- Archiving
 - Save as new (central) file





Summary

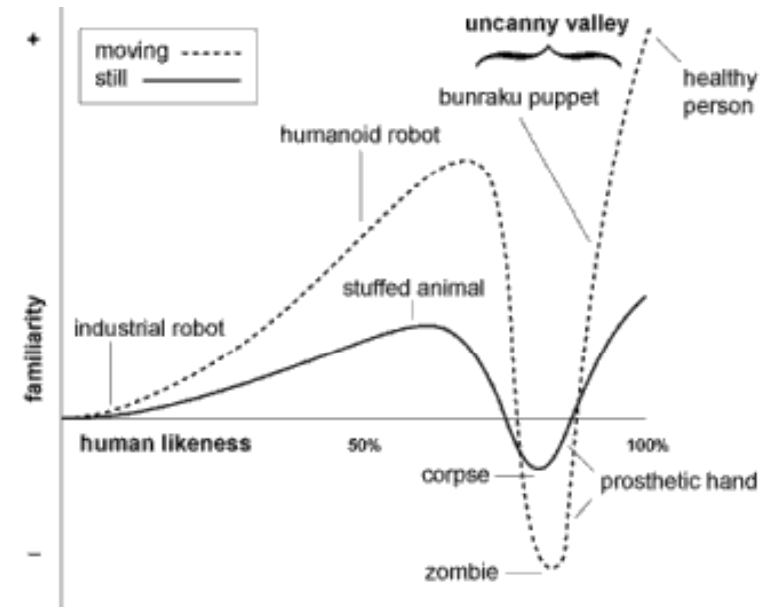
- Be disciplined and consistent
- Communicate with your colleagues
- Think outside the square
- Try new ideas
- Always strive for better methods and information
- **CCC** - 'Conveying the Correct information Clearly'
- New technology
 - where to from here?
 - Sidenote: Uncanny Valley



Uncanny Valley

Basic Theory

- Established by Masahiro Mori in 1970
- ...as a robot is made more humanlike in its appearance and motion, the emotional response from a human being to the robot will become increasingly positive and empathic, until a point is reached beyond which the response quickly becomes that of strong repulsion. However, as the appearance and motion continue to become less distinguishable from a human being's, the emotional response becomes positive once more and approaches human-to-human empathy levels.





Uncanny Valley

examples of characters/beings lacking in likeness



Dr. Hiroshi Ishiguro.



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Summary

To ponder:

Our building images can be like this, where the client (or other viewer) doesn't buy into an image if it falls into the valley. Sometimes it's safer to use a heavily stylized image, suggestive of a concept. The equivalent of this in a character analogy could be the Simpson – poor (human) likeness, but we still relate strongly...