Why Choose ProjectWise For Your Projects?

Training Overview

2025

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Agenda

- Project Team Collaboration Issues

- Why ISO 19650

- How Does ISO 19650 Work

- Next Steps

- Q&A

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Why Does this Matter?

Projects should follow a common set of generic processes at the highest level, which are fine-tuned on a project-by-project basis to ensure collaboration and cut down on errors.

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What Is ISO 19650 Standard?

- ISO 19650 is an international standard that establishes a methodology for managing the production and distribution of construction information.

- Enforcing collaboration and a specified naming policy generated by CAD systems.

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Key Challenges

- Geographically Distributed Teams
  - 24 x 7 Engineering, Controlled Access to Project Data

- Many Disciplines, Many Applications
  - Architects, Engineers, Contractors, Owners
  - Application, email integration

- Enforce Corporate Business Processes Across Firms
  - Change Management, Automation, Distribution, Notifications

- Thousands of Projects
  - Corporate Engineering Standards
  - Performance, Scalability

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How Can ProjectWise Help?

- Creating a Common Data Environment
  - ISO 19650 Standard
    - ProjectWise Design Integration
    - Workflow Rules Engine
    - Dynamic Access Control

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Configuring a CDE with ProjectWise

Not dependent on a single vendor

Deliverables Management

Ad-hoc and automated support of business process

Application Support

ProjectWise Cloud Services

i-model / PDF Generation

Templated Projects and Folders

Environments

Workflows

ISO 19650 Template

Common Data Environment

Leverage best practice templates

Configurable document coding and attributes

Condition checks and automated actions

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# ProjectWise was used to support ISO 19650 processes

Accommodating early stage works & scaling up to full delivery of the project

Thames Tideway Tunnels
London

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"Arup is committed to the adoption of BIM on its projects. ProjectWise is currently the best system to host BIM collaborative projects through the use of a common data environment."

- Will Simms, Associate Director
Arup

https://www.bentley.com/en/project-profiles/arup_projectwise_bim

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Dealing with Complexity Down to the Millimeter

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Coordination in Design was Key

Left labels (red bar):
- ARUP — Alignment and Track
- Mott MacDonald — Aerodynamics and Ventilation
- Mott MacDonald — Rolling Stock
- Mott MacDonald — Signalling, Power and OHLE
- Scott Wilson — Bulk Power and HV
- Parsons Brinckerhoff — Communications and Control Systems

Left labels (lower):
- ARUP — Bored Tunnels
- Mott MacDonald — Sprayed Concrete Lining

Diagram labels:
- C122
- C124
- C160
- C162
- C164
- C170
- C122
- Station Designers
- C124, C125
- C164, C170
- C121

Right labels (cyan bar):
- Paddington — Scott Wilson
- Bond Street — WSP
- Tottenham Court Road — ARUP
- Farringdon — Scott Wilson
- Liverpool Street — Mott MacDonald
- Whitechapel — Hyder
- Canary Wharf — CANARY WHARF LONDON
- Woolwich — Berkeley Homes
- Custom House — ATKINS

Right labels (green bar):
- Aerodynamics and Ventilation — Mott MacDonald
- M&E in Tunnels — Mott MacDonald
- Bulk Power and HV — Scott Wilson
- Communications and Control Systems — Parsons Brinckerhoff

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Crossrail's Approach

Access controlled via user security matrix

- Create
- Submit to CADQA — Approve / Reject
- Technical check — Approve / Reject
- Content check — Approve / Reject
- Task co-ordination — Approve / Reject
- Group co-ordination — Approve / Reject
- Client Approved — Approve / Reject
- Published — Approve / Reject

Managed workflow and document status

WORK IN PROGRESS — APPROVED 1 → **SHARED**

AUTHORISED 2 ↓

PUBLISHED

VERIFIED 3 → **ARCHIVED**

Collaborative Production

Document moves through a workflow

Crossrail
Configuration

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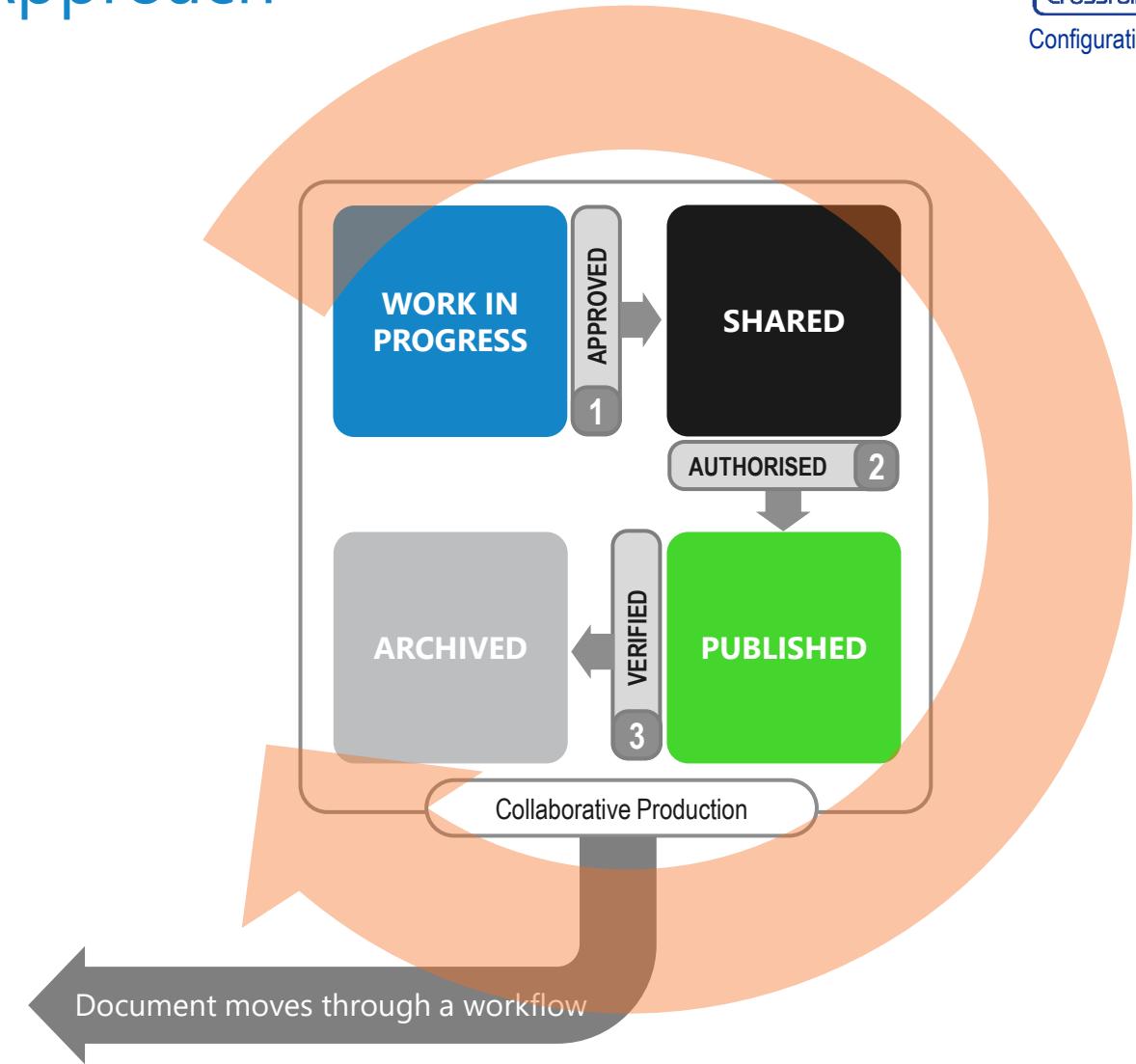
ProjectWise Workflow Rules Engine

- Originally developed as a customization for ProjectWise users to manage their ISO 19650 CAD process.

- Widely used in the Rail and Transportation Industry Internationally.

- More users in North America are becoming more familiar with the ISO standard.

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How Was This Accomplished?

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What is a ProjectWise Workflow?

- ProjectWise workflows define a series of States through which a document must pass as part of its business, design or project life cycle.
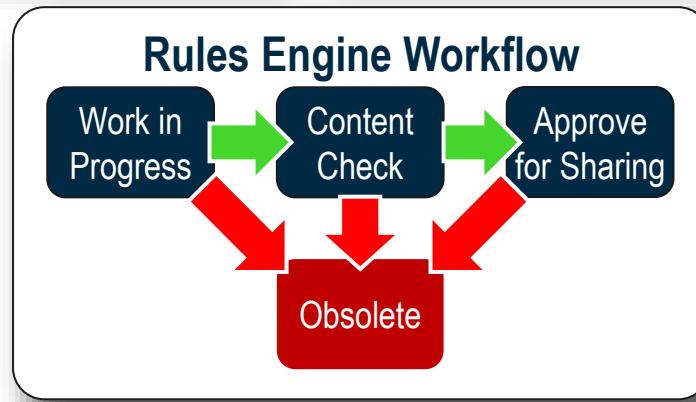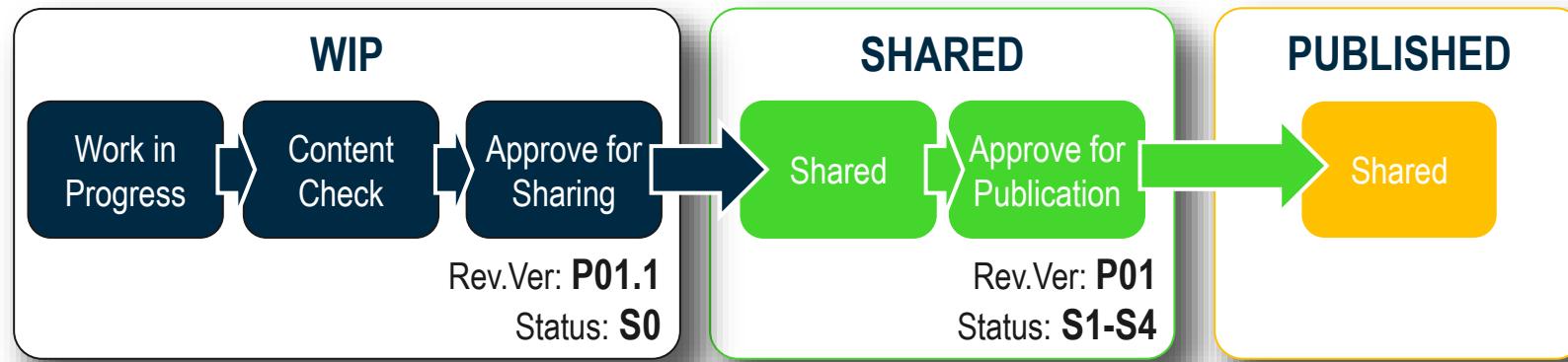
What is a ProjectWise Workflow?

- A State is a document attribute which provides a measure by which to check on, search for, or report on, a document, and provides a means to secure it.
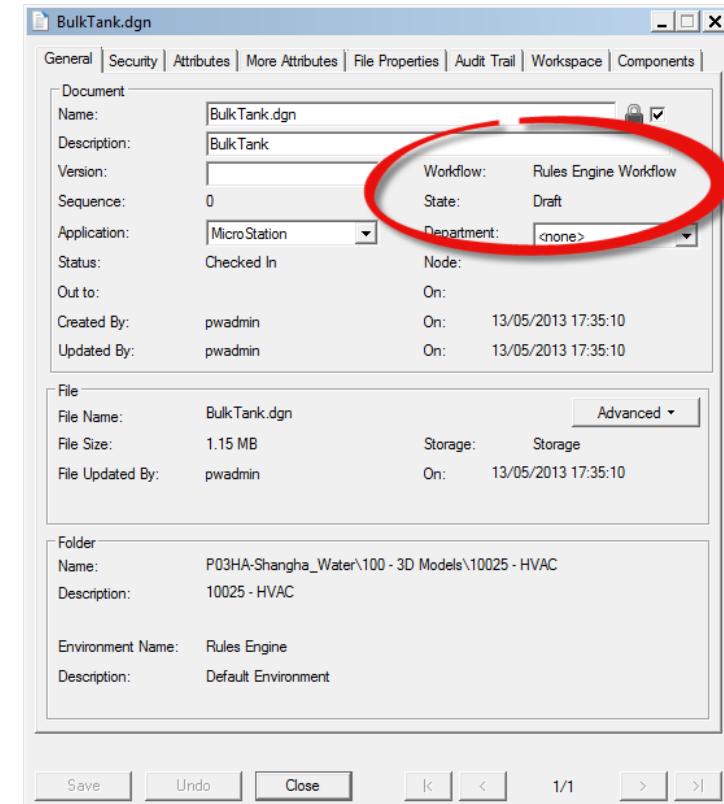
User Permissions & Rights
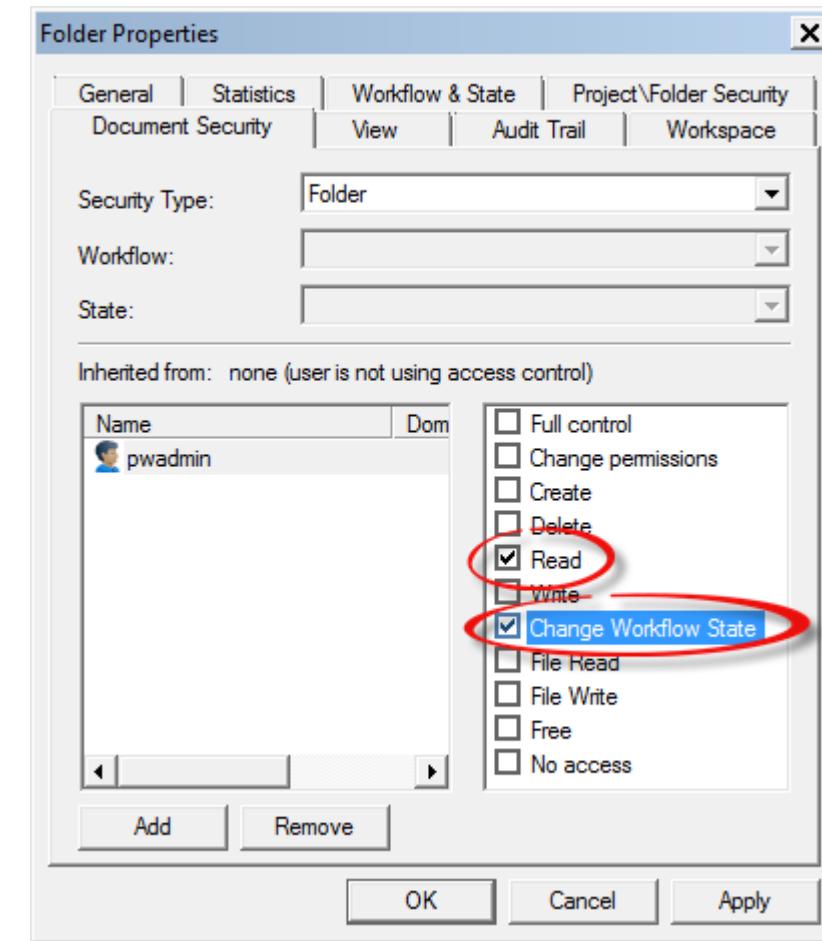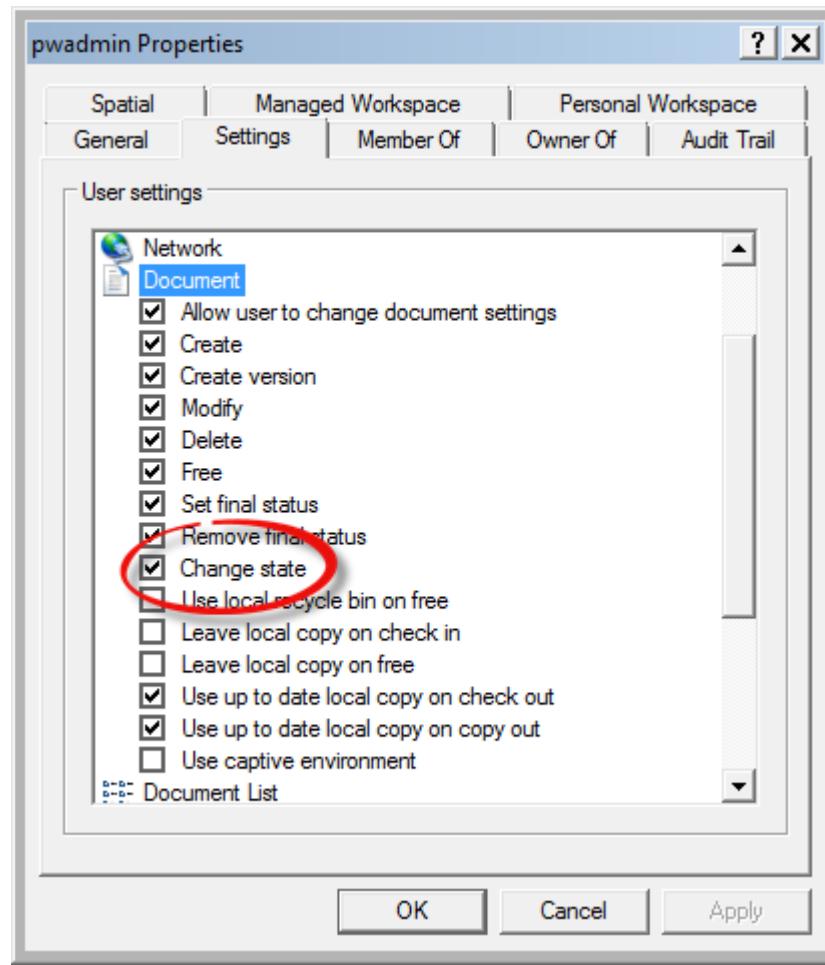
Dynamic Access Control

- Workflows can also be described a Dynamic Access Control.

- Dynamic Access Control describes the method of controlling documents security as they are passed through a workflow from State to State, and as such describes the primary use of workflows in ProjectWise.

- Access rights can be assigned independently to ProjectWise Folders and ProjectWise Documents

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ProjectWise Workflow Rules Engine

- Mechanism for enforcing business processes

- Uses and extends existing workflow capabilities

- Examples:
  - Automatically set a Document Attribute prior to Approval
  - Check an attribute has been set

- Non-linear Workflows

Rules Engine Workflow

Work in Progress → Content Check → Approve for Sharing

Obsolete

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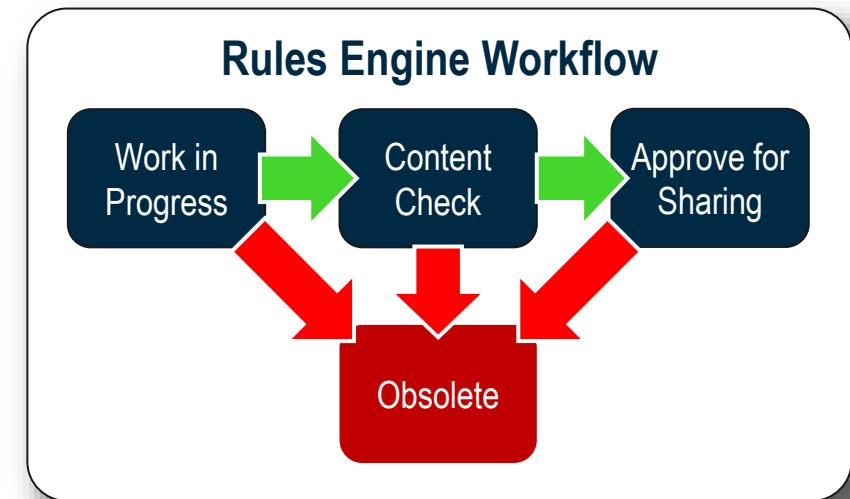
ProjectWise Workflow Rules Engine

- Replaces Standard Workflow commands with Rules Engine Operations

- Each Operation triggers a Rule with a confirmation dialog

- Each Rule consists of one or more sequential Actions

- A Rule is not run unless one or more optional Conditions are satisfied
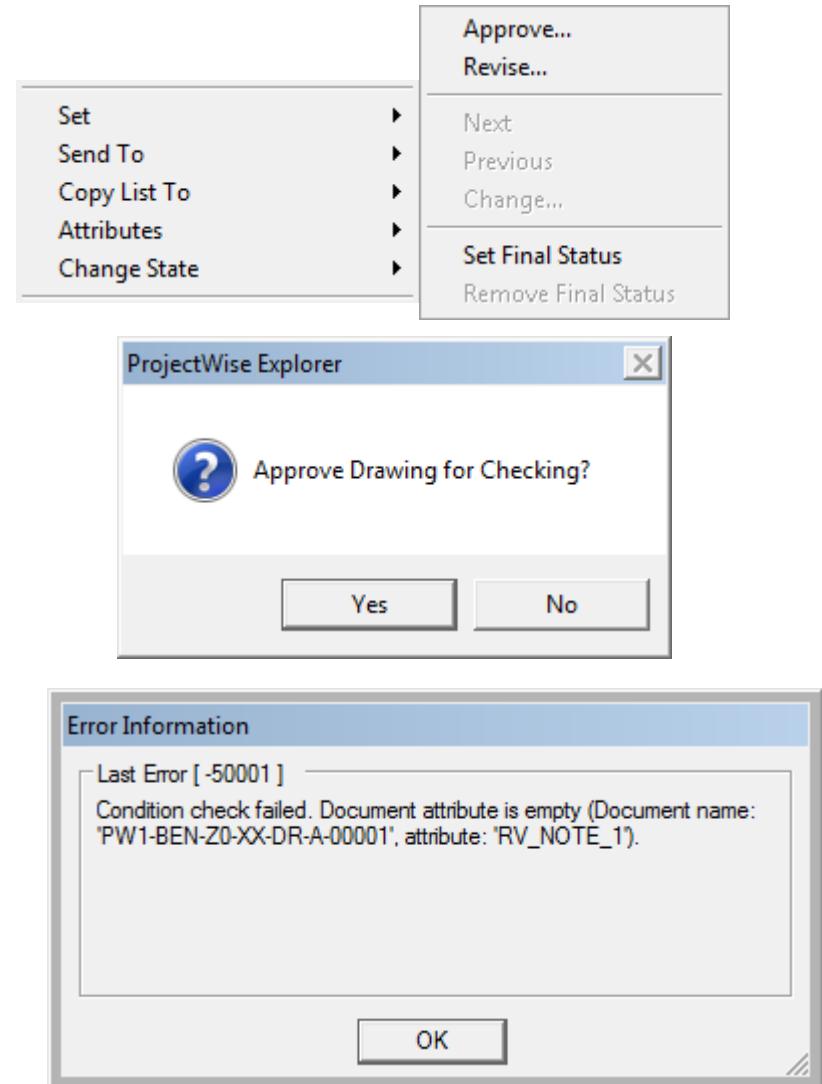
ISO 19650 Template – Workflow

## Configurable Workflow & Dynamic Access Control
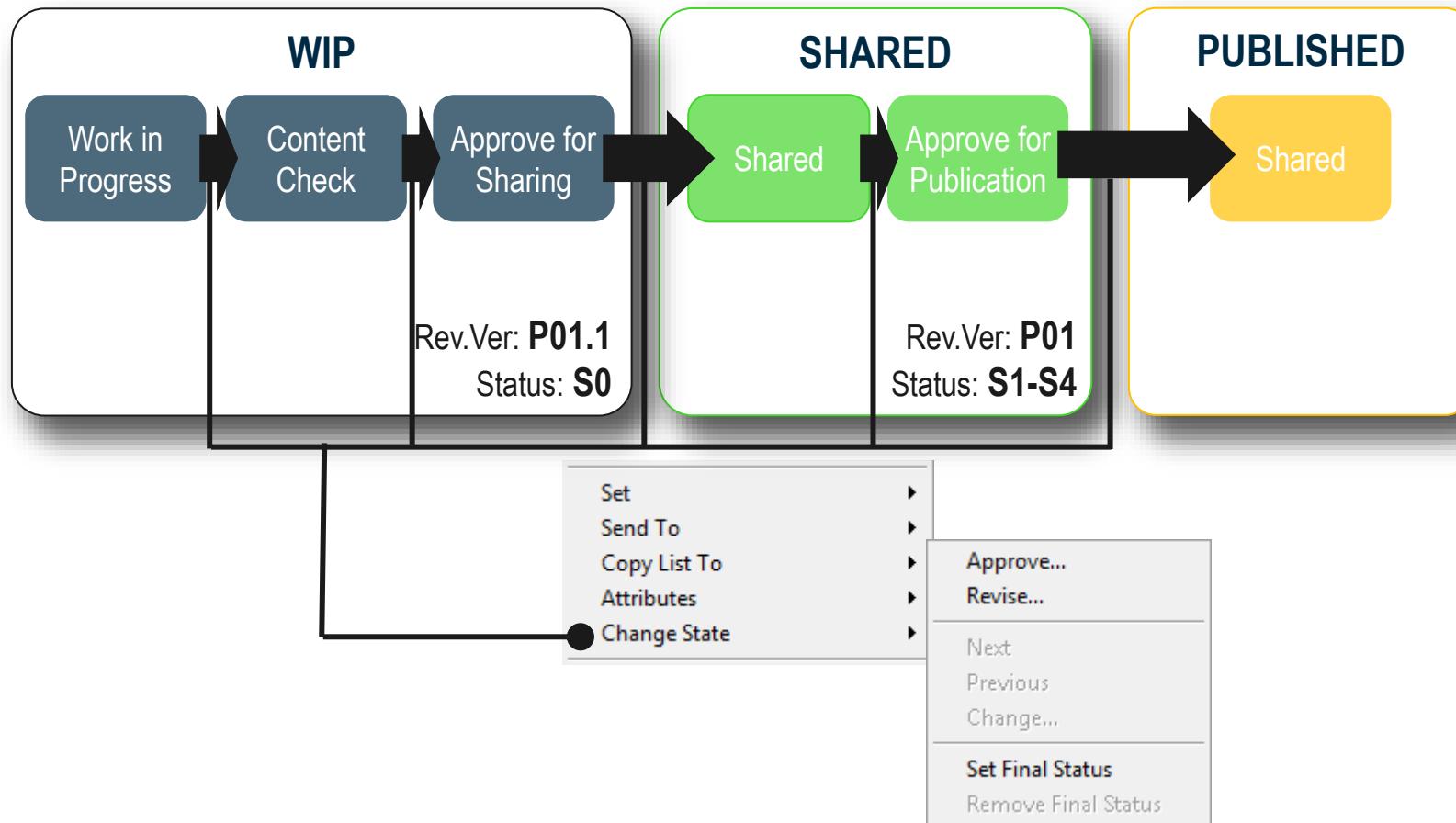
ISO 19650 Template - Details

- Provides ISO 19650 Best Practices for:
  - Work Area Properties
  - Folder Structure
  - Environment and Document Coding
  - Access Control
  - Rules Definition
- Several ISO 19650 Template specific Stored Procedures are deployed when imported

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ISO 19650 Template – Template Folder Structure

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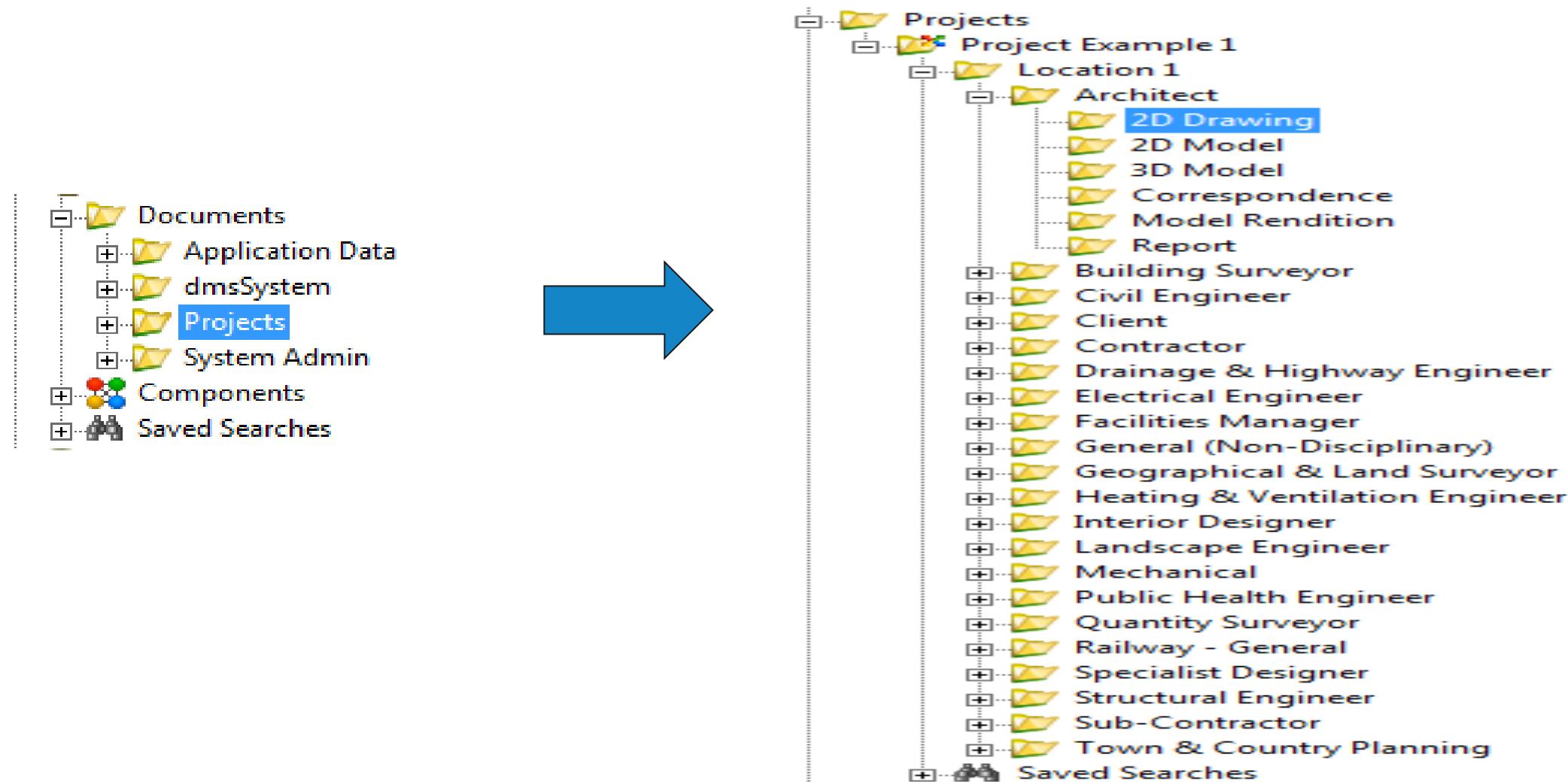
ISO 19650 Template – Access Rights

- Users are assigned to a Discipline (Role) User List

- Project access is enabled through membership of a Project User Group

- Users can access their own discipline's WIP data in their own Projects

- Users can view all other discipline's Shared data in the same Project

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ISO 19650 Template – Environment

Document environment configured to support automatic ISO 19650 file naming and metadata with Document Creation Wizard

ISO 19650 Template – Lookup Tables

Code	Description	model	drawing	document	Filter
NTS	Not To Scale	0	1	0	Scale
N/A	Not Applicable	0	0	1	Scale
1:2500		0	1	0	Scale
1:1250		0	1	0	Scale
1:1000					
1:500					
1:200					
1:100					
1:50					
1:20					
1:10					
1:5					
1:2					
1:1					
1:100					

Code ▲	Description	Filter
01	First Floor	Level
02	Second Floor	Level
03	Third Floor	Level
05	Fifth Floor	Level
F1	Foundation Level 1	Level
GF	Ground Floor	Level
LG1	Lower-Ground Level 1	Level
LG2	Lower-Ground 2	Level

Code	Description	model	drawing	document	Filter
S0	Initial Status or WIP	1	1	1	Status
S1	Fit for Coordination	1	0	0	Status
S2	Fit for Information	0	1	1	Status
S3	Fit for Internal Review and Comment	1	1	1	Status
S4	Fit for Construction Approval	0	0	1	Status
D1	Fit for Costing	1	1	1	Status
D2	Fit for Tender	0	1	1	Status
D3	Fit for Contractor Design	1	1	1	Status
D4	Fit for Manufacture or Procurement	0	1	1	Status
A	Fit for Construction	0	1	1	Status
B	Partially Signed-off	0	1	1	Status
AB	As Built	1	1	1	Status

Code	Description	model	drawing	document	Filter
DR					
M2					
M3					
MR					
AF	Animation File...	1	0	0	Type
VF	Visualization Fi...	1	0	0	Type
CO	Correspondance	0	0	1	Type
RP	Reports	0	0	1	Type

Code	Description	Filter
		Role
		Role
		Role
	Engineer	Role
		Role
		Role
		Role
	Surveyor	Role
	Engineer	Role
		Role
		Role
		Role
W	Contractor	Role
X	Subcontractor	Role
Y	Specialist Designer	Role
Z	General (Non-Disciplinary)	Role

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WRE in Action – ISO 19650 Workflow

- Documents may be Approved or Revised apart from Published Documents that may only be Revised
- Revised Documents are move to Superseded State before New Version is created
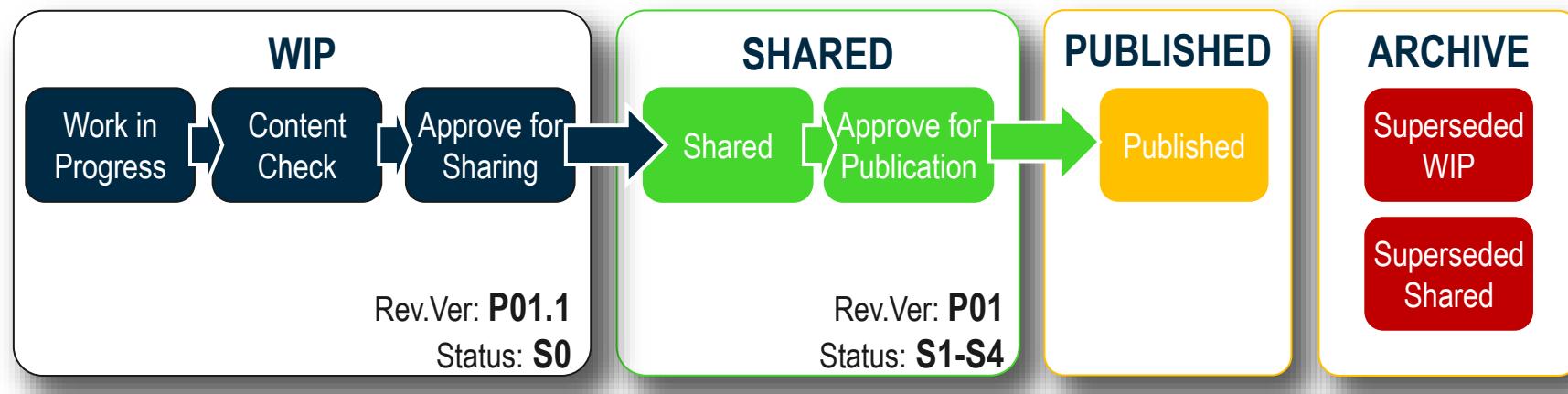
Return on Investment

- This procedure can improve the quality of your services and offers a saving of between 25% and 30% of the construction cost.

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Summary

- ISO 19650 Business Process Template Review
- ProjectWise Workflow Rules Engine
- Requires Professional Services Involvement

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Thank you.
Questions?

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Our Colors

CMYK | RGB | WEB | PMS

The Bentley color palette has been carefully crafted and has evolved to convey the ideas of a stable, professional, technical, and modern software company. The use of the colors represents the overall brand and maintains a sense of consistency throughout Bentley's marketing.

Bentley Black
RGB 26, 26, 26
WEB 1A1A1A
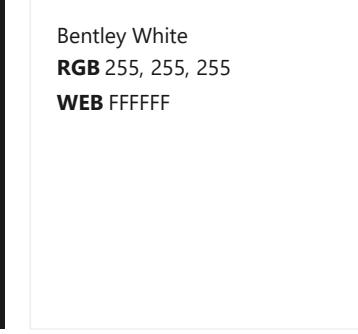
Bentley White
RGB 255, 255, 255
WEB FFFFFF

Bentley Green
RGB 68, 214, 44
WEB 44D62C
Pantone 802 C

Bentley Grey
CMYK 0, 0, 0, 30
RGB 188, 190, 192
WEB bcbec0
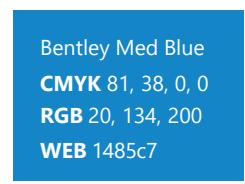
Bentley Med Blue
CMYK 81, 38, 0, 0
RGB 20, 134, 200
WEB 1485c7
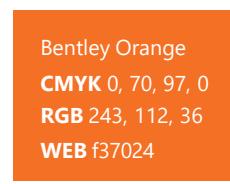
Bentley Orange
CMYK 0, 70, 97, 0
RGB 243, 112, 36
WEB f37024

Bentley Grey
WEB d1d3d4
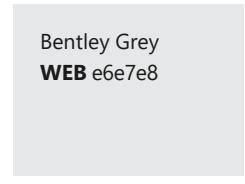
Bentley Grey
WEB e6e7e8

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Bentley PowerPoint Resources (hyperlinked)

All can be found on [Branding Portal](#)

PowerPoint Support Graphics Library

Inventory of graphics aligned with Corporate messaging, which should be proliferated in our presentations for consistency in how we communicate storylines. These graphics are also designed as PowerPoint objects to provide flexibility for color changes as needed.

Pre-made Slide Layouts

Some pre-designed slide layouts for some of the more common use cases (be sure to check the presenter notes for more details on each slide).

Industry Divider Slides

These are now hosted as a separate file to keep this main template simplified and a smaller file size.

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