ProjectWise

Lot 3 – Cloud Support Services Definition

Prepared for UK Government G-Cloud 13

18 May 2022

ProjectWise Lot 3 – Cloud Support Services Definition

BENTLEY CONTRACTING ENTITY

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EXECUTIVE SUMMARY

A Comprehensive Work-sharing Solution

Bentley recognises that projects can vary dramatically by size and complexity and can be further complicated by project location, however, what all projects have in common is the need for effective information management and collaboration. ProjectWise Design Integration enables users to easily support work-sharing as an organisational standard while offering Bentley ProjectWise cloud services to share files, secure supply chain communications and manage office-site-field workflows.

The ProjectWise CONNECT Edition solution will enable a Common Data Environment ("CDE") through integrated suite of desktop, server software and cloud services tools facilitating:

- Design work-sharing and review
- Content publishing
- Transmittal/submittal workflows via Deliverables Management
- BIM Review for office-field-site collaboration
- Project Insights via interactive dashboards and key performance indicators (KPIs)

Each of these features plays a part in uniquely addressing the needs of all connected stakeholders throughout the lifecycle of the project.

The ProjectWise Design Integration subscription enables users to adopt the pay-per-user commercial terms. The per-user, per-quarter subscription will enable <<USER>> to align costs with the number of users gaining value from the software while eliminating any per-server software costs.

ProjectWise Design Integration subscription will entitle <<USER>> to the following:

- ProjectWise server-based capabilities:
  – ProjectWise Design Integration Bentley cloud provisioned
  – ISO 19650 configuration framework considering the UK national standard BS1192/PAS 1192 Workflow Integration for design drawings and models
  – ProjectWise file caching, delta file transfer and point-cloud straming technology
  – ProjectWise iModel Composition Server and automation services for PDF and iModel renditions
  – Design application integrations (See application and version compatibility matrix)
  – Drawing and model refeance handling
- ProjectWise 365 Cloud Service capabilities:
  – Bentley Cloud Services that include a personal portal, a project portal and an enterprise portal
  – ProjectWise Web Connections
  – ProjectWise PDF WEB annotations
  – ProjectWise Deliverables Management
  – ProjectWise Project Insights

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- – ProjectWise Issues Resolution
  - – ProjectWise Forms
- Access to Bentley LEARN On-Demand training content for all users
- Expert advice through Bentley SELECT Services Support

ProjectWise provides configurable deployment options enabling enhanced organisational agility to respond to varying project requirements and enhanced operational readiness resulting in improved ROI at the project and organisational level. This offering is for Bentley's cloud provisioned ProjectWise solution deployed within a highly secure and flexible cloud computing environment powered by Microsoft Azure. These cloud provisioned services include technology infrastructure and 24x7 help desk support backed by a robust Service Level Agreement (SLA) that guarantees 99.9% service availability, eliminating the need for <<USER>> to build, operate and maintain its own IT infrastructure and thereby reducing overhead costs and implementation time.

Conclusion

By selecting ProjectWise deployed as a cloud solution, <<USER>> can expect the following benefits:

- **Agility** - reduce the time to deploy ProjectWise and set up projects
- **Data protection** - secure and compliant ISO 27001 certified systems with embedded backup and network security services
- **Accessibility** – ability to deliver services to remote locations and virtually-connected workers
- **Improved performance** - defined service levels, including service availability, delivering enhanced performance to <<USER>>'s users
- **Value for money** - reduce OpEx and avoid CapEx while mitigating the high costs of maintaining and supporting IT infrastructure in-house
- **Expert support** - Bentley provides responsive, support, delivered by highly trained technicians and consultants

By capitalising on Bentley's industry leading ProjectWise portfolio and investment in Microsoft Azure's enterprise-grade cloud infrastructures, <<USER>> will benefit of a solution to meet its current and future business requirements. The solution combined with leading levels of support will enable <<USER>> to deliver scalable and efficient services to <<USER>>'s users.

Bentley's focus will be to deliver operational excellence, enabling <<USER>> to focus on its users and customers. Bentley is committed to working with <<USER>> in this project to deliver a fully compliant service, ensuring <<USER>>'s service is resilient, secure and available and that <<USER>>'s objectives are fully realised. We believe this makes Bentley the ideal partner for both now and for the future.

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1 IMPLEMENTATION/DEPLOYMENT SERVICES

This proposal includes the implementation of the cloud environment in the chosen Microsoft Azure data centre. Bentley will stand up, install and configure the ProjectWise server environment after Bentley's acceptance of a signed purchase order, the Fully Qualified Domain Name (FQDN), confirmation of data centre location and pre-requisite information from <<USER>>.

The ProjectWise system will be configured as defined in this proposal. This configuration has been designed based on Bentley's extensive knowledge and experience of delivering ProjectWise solutions to users worldwide to enable <<USER>> to quickly and easily apply ProjectWise to its project requirements.

To maximise the value and capabilities of the proposed ProjectWise solution, Bentley recommends that <<USER>> utilises Bentley's professional services expertise. The ProjectWise system will be configured as defined in this proposal, also if the Cloud Services (Licence) Subscription (CSS) allows <<USER>> to utilise additional ProjectWise components and cloud services.

This proposal only includes the consulting services described within.

If further Professional Services are identified during the Project execution phase, then this may impact the Professional Services estimated costs provided within this proposal and additional costs may be incurred. Bentley expects that the configuration and training services will be conducted remotely.

The Professional Services that will be provided as a one-time engagement have been described in this document. If <<USER>> require any further configuration specific to project requirements, Bentley will provide this under a separate proposal.

1.1 Pre-Requisites Required from <<USER>>'s Organisation

Bentley will deploy and configure the hosted ProjectWise system for <<USER>> to support ISO 19650 considering the UK national standard, conduct orientation coaching, and provide ongoing support during the first weeks of utilisation. The ProjectWise ISO 19650 configuration framework provides a pre-defined framework and set of best practices including project folder structures, document meta-data definitions, document coding and a set of rule definitions that leverage the PW Rules Engine and other ProjectWise capabilities to address the business process standards defined by the ISO 19650 standard.

To complete the implementation of this solution, Bentley will require some information from <<USER>> which will directly affect the delivery of the ProjectWise system timelines. Prior to the start of the implementation, <<USER>> needs to provide the following information in the formats defined below:

- List of primary design applications to be used including specific versions
- A PDF showing the primary title block used in engineering drawings
- A spreadsheet of usernames, email addresses, and desired groups to access the ProjectWise system

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1.2 Overview

The services delivered by this proposal are organised into the following phases:

- **Provisioning** – Baseline Installation and configuration activities to provide the ProjectWise Design Integration infrastructure for <<USER>>
- **Training and support <<USER>>'s core team and Operational Hand-Over** – turnover of the system to <<USER>>, and focused training and coaching sessions so transfer knowledge to <<USER>>'s responsible personnel. At the conclusion of this phase, <<USER>> and the system will be ready to support projects.

Bentley's consultants are dedicated professionals whose industry experience and best practice knowledge will make <<USER>>'s project a success.

The offering described in this implementation proposal is to setup a Bentley Hosted ProjectWise ISO 19650 environment considering the UK national standard. The initial phase considers to setup a project collaboration environment as a baseline with a minimum duration. Furthermore, <<USER>> can order additional support to optimise and expand the bassline solution according to its respective business needs.

1.3 Virtual Kick-Off Meeting

This meeting will be hosted by Bentley via a conference call before travel arrangements are made to confirm <<USER>> readiness and project schedule. The objectives of the call are to:

- Agree upon project schedule, deadlines, and milestones
- Review project requirements, goals and objectives, software installation
- Confirm system architecture and status of required hardware
- Confirm availability of <<USER>>'s resources that are required for the deployment (IT, network admin, project manager, project owner, etc.)

For this task, Bentley assumes that:

- The kick-off meeting will be conducted remotely
- The kick-off will be hosted by Bentley via a conference call.
- <<USER>> will coordinate internally the involved parties and stakeholders to attend the virtual kick-off conference call.

Deliverables of this phase:

- Project Initiation Plan (PIP) - (Initial version)
- Project Kick-off Meeting Minutes

For these activities, Bentley assumes that the following persons and groups will attend:

- <<USER>>'s Executive Sponsor and/or Steering Committee
- <<USER>>'s Project Manager
- <<USER>>'s Business Representative(s)
- <<USER>>'s IT Representative(s)
- <<USER>>'s ProjectWise Administrator (Future Application Administrator)

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- Bentley's Project Manager
- Bentley's Cloud Engineer (optional)
- Bentley's Consultant(s)

1.4 Project Management

For the entire project lifecycle, Bentley will assign a responsible project manager as a single point of contact for <<USER>>'s assigned project manager. Bentley's project manager will take care of the project approach and logistics, project deliverables from Bentley, deployment team supervision, team communications, schedule, and budget etc.

The following subjects will be discussed during the Project Review meetings:

- Project Planning
- Creation and tracking of a project plan
- Kick Off preparation
- Project status meetings
- Following up and coordination of services and agreed results
- Communication of project teams
- Keeping track of schedule and budget
- Reporting of delivered services and invoices
- Project sign-off

To save travel cost and expenses the project management activities will be done off site if not otherwise requested by <<USER>>. The project status meetings are conducted off-site via telephone conference and remote connections if not otherwise requested by <<USER>>.

Deliverables during the project execution phase:

- Project Gantt Chart (Initial version for review and sign off form)
- Project Initiation Plan (PIP) - (final version after requirements and configuration workshops
- Project Meeting Minutes (After each meeting)
- Progress Reporting (Once a month)

For project status meetings and calls, Bentley assumes that the following persons and groups will attend:

- <<USER>>'s Executive Sponsor (optional)
- <<USER>>'s Project Manager
- <<USER>>'s Business Representative(s)
- <<USER>>'s IT Representative(s)
- <<USER>>'s ProjectWise Administrator
- Bentley's Project Manager
- Bentley's Cloud Engineer (optional)
- Bentley's Consultant(s)

The attendees may vary depending on the topic of the meeting and project phase.

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1.5   ProjectWise Cloud Provisioning

<<USER>>'s organisation will use the advantage of Bentley MANAGEservices which provides a complete Bentley hosted ProjectWise server environment which the ProjectWise clients can connect to. Therefore, Bentley assumes a locally installed server environment is not required, except in the case when <<USER>> does not need a local ProjectWise caching server or other components to complete the targeted solution.

Bentley MANAGEservices Cloud Services Security certifications are described at https://www.bentley.com/en/trust-center and https://cloudsecurityalliance.org/star-registrant/bentley-cloud-services/.

The following ProjectWise modules and cloud services are required to provide <<USER>> with the requested functionality:

- ProjectWise Design Integration Server
- ProjectWise ISO 19650 configuration framework
- iModel Composition Server for pdf renditions
- ProjectWise WEB Services Gateway (Access to the datasource via Internet browser)
- Bentley Cloud Service – ProjectWise 365 - ProjectWise WEB Connection
- Bentley Cloud Service – ProjectWise 365 - Deliverables Management

For these activities, Bentley assumes that the following persons and groups will be involved:

- Bentley's Cloud Engineer
- Bentley's Consultant

1.6   ProjectWise Test Client Installation

Bentley will perform a manual installation on up to 3 client PCs, possibly remotely, to install the following listed client software. Bentley recommends that an IT administrator from <<USER>>'s organisation supports this activity to enable <<USER>>'s IT administrator to perform additional installations. If offered in this proposal Bentley will also provide installation instructions how to install the client applications to repeat the installation process.

- ProjectWise Administrator (Administrative Client)
- ProjectWise Explorer (User Client)
- ProjectWise Deliverables Management Connector (Document Controller Client)

For this task, Bentley assumes that:

- <<USER>> will be responsible for additional installations of the client software; however, Bentley will provide over-the-shoulder training during the installation of the client software as listed above
- The creation of scripts for automating software installation is outside the scope
- Bentley's consultant needs administrative rights to install the applications

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- For application integrations with ProjectWise and compatibility please consider the ProjectWise Design Integration CONNECT Edition Compatibility List on the Bentley Communities.

Deliverables of this phase:

- ProjectWise Client installation and server connection instructions
- For these activities, Bentley assumes that the following persons and groups will be involved:
- <<USER>>'s IT Representative(s)
- <<USER>>'s ProjectWise Administrator
- Bentley's Consultant(s)

1.7 Baseline Configuration Workshop

During the workshop phase, Bentley and <<USER>> will discuss and agree on minimum configuration topics which are required to finish the baseline ProjectWise ISO 19650 considering the UK national standard. Changes in the workflow, folder structure or more complex configuration activities will be covered in a separate optional workshop at a later stage. Once we have agreed on the required configuration topics, the configuration of the baseline system will be performed.

- User and User groups
- (Please provide Bentley with a spreadsheet of usernames, email addresses, and desired groups to access the ProjectWise system)
- System and User views
- Used Applications
  (Please provide Bentley with a list of primary design applications to be used including specific versions. Please consider the ProjectWise compatibility matrix)
- PDF Renditions
- ProjectWise titleblock integration
  (*Please provide Bentley with a MicroStation title block cell or AutoCAD title block, a PDF showing the primary title block used in engineering drawings*)

For this task, Bentley assumes that:

- <<USER>>'s organisation will coordinate internally the involved parties to attend the workshops.
- <<USER>>'s organisation will take care that all relevant stakeholders and representatives from the affected departments attend the workshop to gather information, discuss the objectives and get decisions in terms of the discussed topics in relation to the proposed project.
- The workshop(s) will be delivered remotely.

Deliverables during the project execution phase:

- No physical deliverable

For these activities, Bentley assumes that the following persons and groups will attend:

- <<USER>>'s Project Manager

- <<USER>>'s Business Representative(s)
- <<USER>>'s ProjectWise Administrator
- Bentley's Consultant

1.8 ProjectWise Baseline Configuration

ProjectWise will be configured according to the ProjectWise ISO19650 business configuration framework as a baseline. These activities will be conducted mainly remotely unless otherwise agreed. Appropriate personnel from <<USER>>'s organisation must be reasonably available to work with Bentley's consultant and MANAGEservices experts during the normal working day throughout the Configuration phase.

The ProjectWise datasource will be configured as follows:

- **Assigning Access Rights** -The ISO 19650 (UK national standard) comes with an Access Control matrix for the template project.
- **Views** - Four views will be created, one global document view, and three global system views.
- **Document View** - Allows users to see attributes as columns in the document window. A global default view is required if this is not already defined.
- **System Views** - Three views are required to view the attribute lookup data correctly. These are created from each of the lookup table environments and assigned to those environments as default views.

ProjectWise for ISO 19650- Common Data Environment (CDE)

ISO 19650 section 11.1 states:

A CDE solution and workflow should be implemented to allow information to be accessed by those who require it to undertake their function.
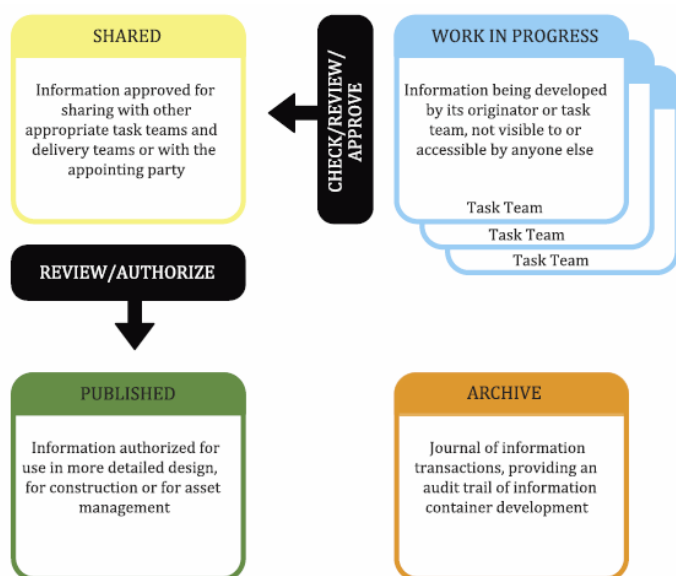

Figure 1 ISO 19650 – CDE Concept

ProjectWise ISO 19650 Framework has been configured to be an ideal CDE by combining standard ProjectWise features such as the document environment, workflow and states, and the Document Creation Wizard (DCW) in addition to the new Rules Engine and Reference Manager functions.

There are four areas of the CDE as defined by ISO 19650:

- Work in Progress
- Shared
- Published
- Archive

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For the delivered ISO 19650 framework, Bentley has pre-configured all four areas for the management of CAD data. These areas can be linked to the PDF generation functionality using the ProjectWise iModel Composition Service, but that is not configured for the delivered template.

Folder Structure

The ISO 19650 Configuration datasource has the following delivered project-based folder structure:

Root Folders: There are root folders as shown here. If the DMS System folder is visible it should be hidden as per 1.2.1 Assigning Access Rights.

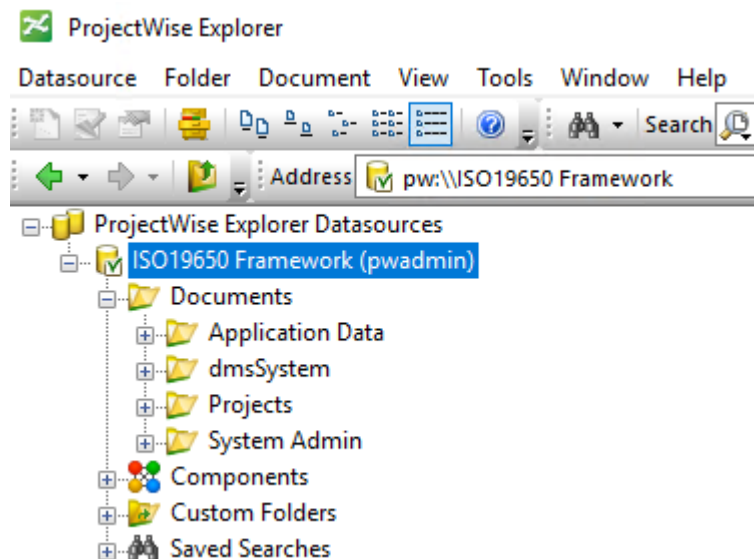*Figure 2 Root Folders*

Application Data: The Application Data Folder is for project-wide common data:

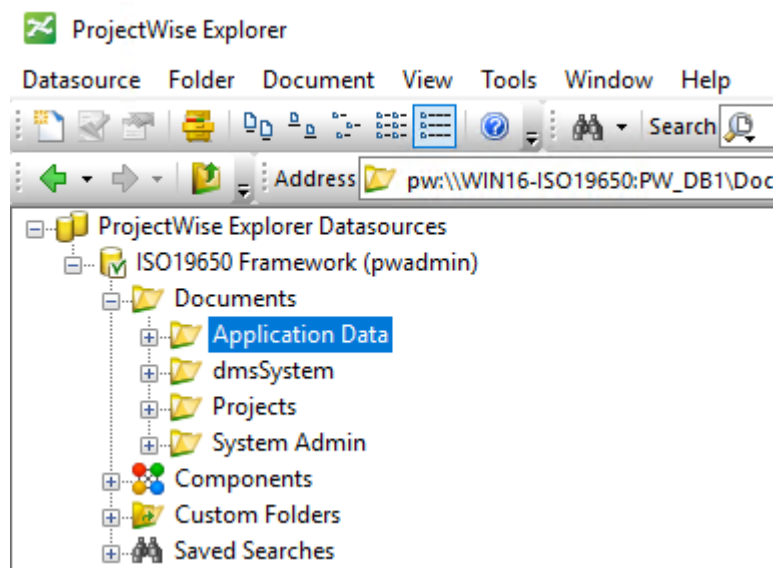*Figure 3 Application Data Folder*

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Projects: The Projects Area holds the main project data repository. The structure of this folder tree 'seeds' a number of the document code attributes to assist document creation:
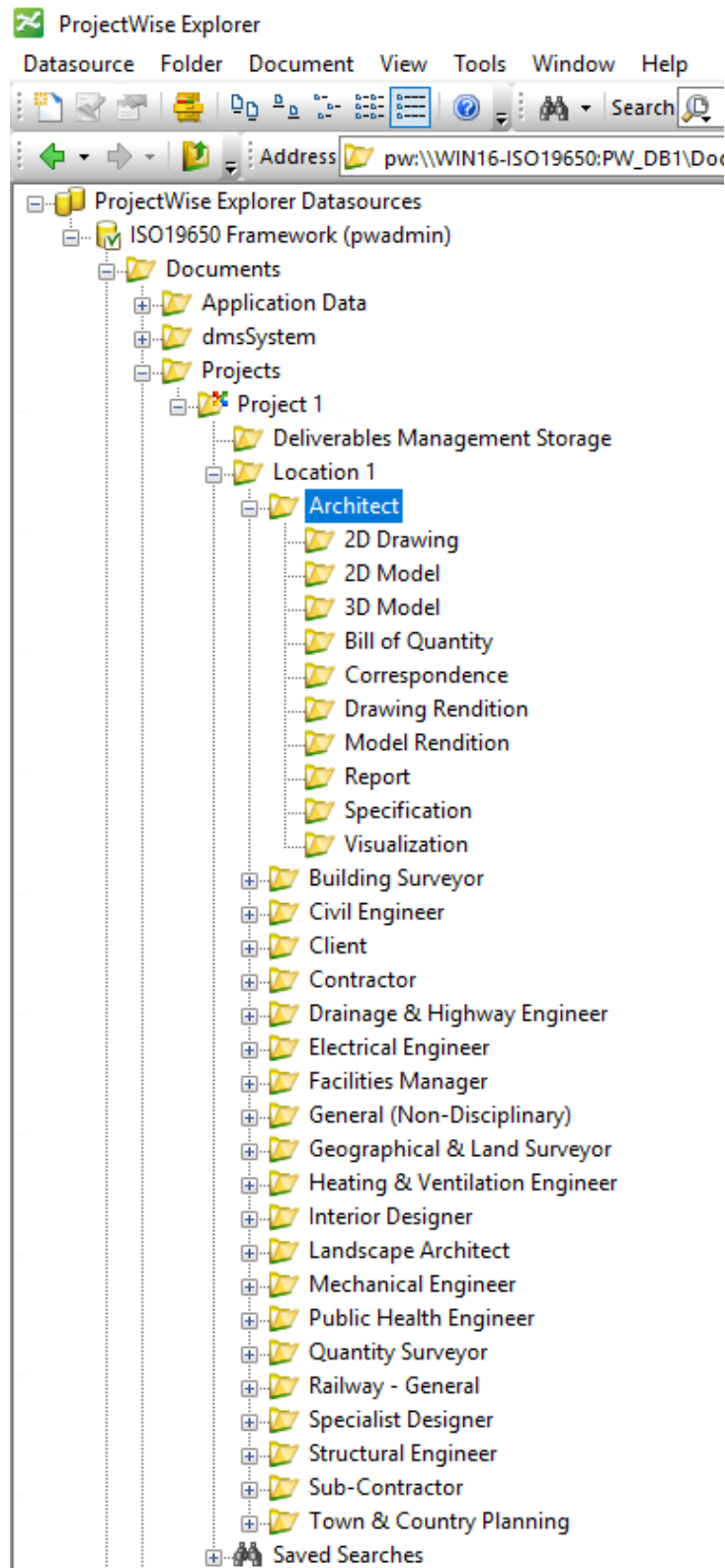

Figure 4 Projects Area

System Admin: The System Admin Area holds the Project Templates, Lookup Table Folders, and the CAD QA Rules area (if in use). This folder area should be restricted to ProjectWise Administrator access only.
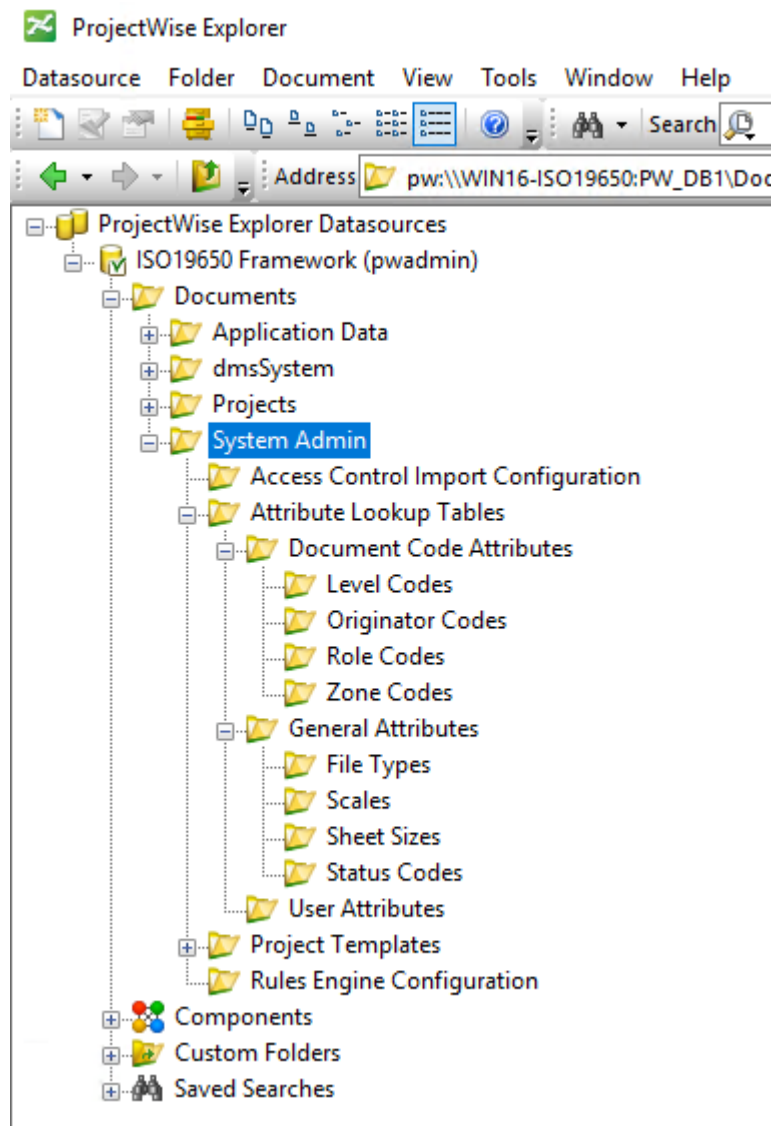
Figure 5 System Admin Area

Document Workflows and States

ProjectWise Workflows and States are configured in the ProjectWise ISO 19650 Configuration Framework datasource to give team member's access to the Model and Drawing files within the project only when the State allows them to do so. The following sections describe the process of moving design data through the WIP, SHARED, PUBLISHED and ARCHIVE sections of the CDE.

Figure 6 shows the movement of Model and Drawing files through the ProjectWise Workflow States as the designs are transitioned through the process.

Figure 6 ProjectWise Workflows for Model and Drawing

The following sections describe the design process for models and drawings as configured in ProjectWise ISO 19650 Configuration Framework.

Document Creation
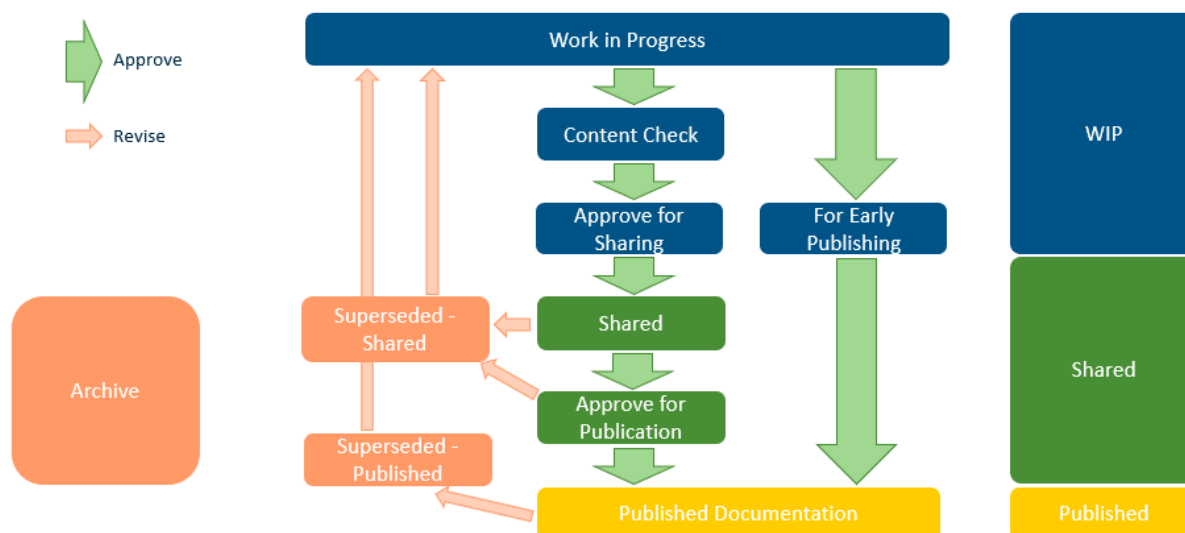
File Naming

All new model and drawing design files are created in the Work in Progress (WIP) State using the ProjectWise Document Creation Wizard (DCW). A user creates a document in the correct folder and the document code attributes are populated with default or user-selected values.

ProjectWise ISO 19650 Configuration Framework follows the following file naming convention as defined in National Annex to BS EN ISO 19650-2:2018 (British National Standard):

PPP-OOO-ZZ-LL-TT-R-XXXXX

Where:

- PPP: Project or Asset Number. Default value taken from Project Attribute
- OOO: Originator Code. This is an alphabetical code that represents the *company* contractually responsible for the aspect of work that this document relates to, not necessarily the originator of the information. Whilst the code will default to the user's company, this can be changed by selecting a different value from the pick list.
- ZZ: Volume/System (previously known as Zone). The "Volume/System" identifier is used to split the project into manageable subdivisions; all members of the design team must agree the volumes/systems at the start of a project and publish them as a shared document. The agreed volumes/systems may be then entered into the ProjectWise lookup table that is used to populate this attribute. A volume/system may be based on an important aspect of design, such as structure, cores, specialized functions, HVAC (Heating, Ventilation, Air Conditioning) systems, or strategic elements such as cladding.
- LL: Level/Location Code. An alphanumeric code that represents the level or floor of a building. Within civil engineering contracts, the 'level' code may indicate different construction levels.

On specialized infrastructure projects, other notations may be necessary, and these should be dealt with on a project-by-project basis.

- TT: Type. The "File type" is a two-character alphanumeric code that indicates the type of file. File types are used to identify the type of information in the file, for example, a CAD model file – not the format of the file content (e.g. DGN or PDF).
- R: Role Code. This code is populated from the folder structure and defines the role of the creator of the information.
- XXXXX: Number. A five-digit number uniquely defined in the context of all six document code parts. ProjectWise will generate the next available number based on the selected or default values.

Custom Attributes

In addition to the document code/file name attributes, the following attributes also need to be set before a document is sent for approval. Note, these attributes do not need to be assigned when the document is initially created, i.e., they are not mandatory ProjectWise attributes.

Design Status: Each new document is created in WIP with an initial Status of S0. The status attribute will also be displayed in the drawing title block. Design files will be produced and approved for a specific reason, and the status and suitability for each document will be denoted by the Status and Suitability Attributes.

Scale: Models will always have a scale of 1:1. When a drawing file is created, the user must select a scale. ProjectWise ISO 19650 Configuration Framework has a list of default scales.

Sheet Sizes: For drawings, a user must manually select the correct size for the drawing sheet. For models, size will always have to be selected to N/A (Not Applicable).

Revision/Version Attribute: The first revision of a design file is P01. The first version of each revision is denoted by P01.01. This is assigned by default to each new file or document that is created in ProjectWise ISO 19650 Configuration Framework. It is a single attribute field.

As files are moved up through the ProjectWise workflow (Figure 6), they retain the initial Revision, e.g., P01.01. If at any point during the workflow a file is rejected it reverts to WIP, the version is automatically saved to:

- P01.02, the next minor version for unapproved (WIP) files, or to
- P02.01, the next major revision, for approved (Shared) files.

The PUBLISHED document may have a C revision (C01, C02 etc.). That is selected during document Publishing.

Access Rights: Models and drawings can only be edited or changed whilst in the WIP State. As soon as a file is moved on through the approval states, it becomes read-only for the majority of users or operations. This is handled by defining Workflow-level access rights on the documents. The only exception to this rule is where there may be a requirement to update internal model or ProjectWise specific meta-data in order to update the title-block or Tag data for status informational purposes.

Approving or Rejecting/Revising a Design File: For designs that need to be revised, the user selects Document > State Change and selects "*Reject / Revise*".

ProjectWise State: Work in Progress

After a document has been created and worked on in the Work in Progress State, and it needs to be approved, the following actions are undertaken.

Before sending for approval: The user must populate the following attributes:

- Status Code to specify its approval purpose.
- Title Line 1
- Revision Note
- Scale
- Sheet Size

Approving a Work in Progress Document: Once design files have reached a stage that requires approval for task or group coordination, they are moved to the next State of the workflow.

Revising a Work in Progress Document: If a design file needs to be revised as part of the Work in Progress design process.

ProjectWise State: Content Check

Approving a Content Check Document: Design files undergo a Content Check, typically by the Lead Discipline Designer.

Rejecting a Content Check Document: If a design file has failed the content check process, the document must be rejected.

ProjectWise State: Approve for Sharing

Approve an Approved for Sharing Document: Once design files are approved for coordination, they are moved to the Shared State where they can be viewed and referenced by other teams in the Project.

Rejecting an Approve for Sharing Document: If a design file has failed the final approval process, the document must be rejected.

ProjectWise State: Shared

Shared files will reside in the Shared State until they are superseded by newer designs, or approved for publication for external use, such as drawings being Issued for Construction.

Revising a Shared Document: If a design file needs to be updated it shall be revised.

ProjectWise State: Approve for Publication

Design files undergo a final Approval Check before being published. To approve a document in the Approve for Publication State:

Rejecting an Approve for Publication Document: If a design file is deemed not to be suitable for Publication it must be rejected.

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ProjectWise State: Published Documentation

Once published, design files can be approved no further in ProjectWise.

Interfaces

Figure 7 Drawing and Model Attributes

Figure 8 Archive Revision Notes

Figure 9 Work Area Properties

For the **configuration of the ProjectWise datasource** Bentley will:

- **Datasource Management –** Setup of 1 datasource with 1 storage area as described in section (See section "ProjectWise Baseline Configuration")
- **Folder Structure –** Bentley will provide ISO19650 example multi-discipline folder structure as described in section "ProjectWise Baseline Configuration".
- **Document Environments, Attributes, and Interfaces –** as described in "ProjectWise Baseline Configuration".
- **Workflows, States –** as described in section ProjectWise Baseline Configuration".
- **Application integrations and connections –** Setup up to 5 application connections or integrations for applications which are listed in the ProjectWise Design Integration CONNECT Edition Compatibility List on the Bentley Communities.
- **Document List View and preview pane –** Setup 1 document view and 1 system view up to 10 attributes for each view.
- **Audit Trail –** We configure the Audit Trail options according to best practice.
- **User and Group Management –** User and Group Management, the configuration framework provides 4 user lists (approvers, authorizers, WIP, checker) for 20 standard disciplines. Further users, groups, and user lists can be applied by <<USER>> after the ProjectWise Administrator training.

- **Security –** All security will be setup as described in section "ProjectWise Baseline Configuration". No other security will be defined. Further security settings can be applied by <<USER>> after the ProjectWise Administrator training.
- **Attribute Exchange (Title Blocks) –** Setup attribute exchange for 1 title block with up to 20 attributes for MicroStation or AutoCAD
- **Working with MicroStation Workspaces and AutoCAD Profiles –** Not part of the baseline configuration. Can be enabled at a later stage if required.
- **Defining Project Types –** As described in section ProjectWise Baseline Configuration".
- **Delta File Transfer (DFT) –** We enable the delta file transfer (DFT) functionality
- **Managing Document Extractions –** Document Extractions (Indexing) will be enabled to index dgn, dwg, pdf, doc, docx, xls and xlsx.
- **Messaging Agents –** Not part of the baseline configuration. Can be enabled at a later stage if required.
- **Spatial Management –** Not part of the baseline configuration. Can be enabled at a later stage if required.

Additional ProjectWise features will not be setup or modified unless explicitly described in this proposal. How to create and manage users, groups, documents, folders, security and document attributes will be covered during the ProjectWise Administrator class.

Deliverables of this phase:

- No physical deliverables planned for this phase. Bentley will finalise the configuration and inform <<USER>> project manager during a project status meeting and report that the initial configuration of the solution is accomplished.

For these activities, Bentley assumes that the following persons and groups will be involved:

- <<USER>> ProjectWise Administrator
- Bentley's Consultant(s)

ProjectWise PDF Renditions

If <<USER>> chose option 2 to enable PDF renditions, we deliver an additional requirements workshop in terms of PDF renditions in combination with the baseline configuration workshop.

For this task, Bentley assumes that:

- <<USER>> will be responsible for preparing the workshop environment with PC's, projector, flipchart, and boarding.
- <<USER>> coordinate internally the involved parties to attend the workshops
- The workshops will be delivered remotely.

Deliverables during the project execution phase:

- No physical deliverable

For these activities, Bentley assumes that the following persons and groups will attend:

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- <<USER>> Project Manager
- <<USER>> Business Representative(s)
- <<USER>> ProjectWise Administrator
- Bentley's Consultant

For the configuration of the iModel Composition Server (iCS) for PDF software, Bentley will

- Configure the ProjectWise Orchestration Framework database to work with Bentley's iModel Composition Server for PDF
- Configure ProjectWise InterPlot Organiser and configure the MicroStation engine components to generate renditions (PDF, JPEG, TIFF and/or CALS)
- Setup two jobs (renditions) to demonstrate how PDF and/or other file formats are dynamically created

For these tasks, Bentley assumes that:

- For the PDF File or paper print out generation, we do not create design scripts to modify set the sheet sizes, colours, line weights, set layers, scale factors, etc. The PDF files will be generated from the active design model (or layout) with the actual design file settings.
- iModels and/or PDFs files from Revit models or drawings must be manually created by the users. The iModel creation is possible for example with Bentley's iModel Composer.

1.9 Software Training and Coaching

<<USER>>'s organisation will train a number of users now and in the future how to use the implemented solution to enable <<USER>>'s users to follow best practice in terms of <<USER>>'s business processes and standards during the solution lifecycle to use of the implemented solution. Therefore, we suggest a "train the trainer" approach where Bentley train <<USER>>'s future ProjectWise Administrators and key-users to enable them to train the end users.

The following training are included to follow the suggested "train the trainer" approach with this proposal. If <<USER>> would like to schedule additional training, please contact <<USER>>'s account manager or the assigned project manager.

1.9.1 ProjectWise Administrator Client

This course presents an overview of the ProjectWise Administrator client application. It focuses on the options available to administrators from within the client application. This course is for administrators who need an overview of how ProjectWise relates to the management of projects and documents.

ProjectWise Administrator Client	
Skills Taught	After completing this course, <<USER>> will be able to:
	Use and apply principles and features of ProjectWise Administrator Client
	Create Users and User Groups

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ProjectWise Administrator Client	
	Manage datasources and control user access
Course Prerequisites	ProjectWise User Essentials
Course Material Language	English
Training Material	Bentley Institute e-Kits
Recommended attendees	Up to 4 attendees per group
Duration	1 group x 2 days = 2 days

1.9.2 ProjectWise Design Integration User

This course is for individuals who need to manage documents throughout a project cycle and work in the ProjectWise managed environment. It presents techniques for working in the integrated environment with MicroStation, AutoCAD, and Microsoft Office applications. Methods for searching for documents are presented, as well as how to use the ProjectWise web interface. Live training courses are very interactive. Students will continually engage with the instructor to ensure a successful learning outcome that includes a course assessment.

ProjectWise User Essentials	
Skills Taught	After completing this course, the user will be able to:
	Log in from the desktop and work with integrated applications
	Navigate using ProjectWise Explorer and use its features
	Use workflows
	Search for documents
	Scan for References and Link Sets and use other utilities
Course Prerequisites	None
Course Material Language	English
Training Material	Bentley Institute e-Kits
Recommended attendees	Up to 8 attendees per group
Duration	1 groups x 1 day = 1 days

1.9.3 ProjectWise WEB Connections

This course or demonstration is for individuals who need to manage documents or to have access to the project data via the WEB-Interface (Internet Browser) to access a connected project and ProjectWise datasource.

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ProjectWise User Essentials	
Skills Taught	After completing this course, the user will be able to:
	Log in
	Navigate using the internet browser interface
	Navigate using the mobile device and app (optional)
	Search for documents
	Import documents
	Check in/out documents
Course Prerequisites	Handling of an internet browser
	Installation of the App (optional)
	Login to a training datasource
Course Material Language	English
Training Material	No training material will be provided
Recommended attendees	Up to 8 attendees per group
Duration	1 group x 0,5 days = 0,5 days

1.9.4 Bentley Deliverables Management

ProjectWise Deliverables Management allows for project information exchange between project participants that have a formal relationship with each other as defined by their contracts. Live training courses are very interactive. Students will continually engage with the instructor to ensure a successful learning outcome that includes a course assessment.

Bentley Deliverables Management	
Skills Taught	After completing this course, <<USER>> will be able to:
	Understand Transmittals, Submittals and Request for Information's (RFI) functions and settings
	Create and Issue a Transmittal
	Create and Issue a Submittal
	Create and Issue an RFI
	Receive and Respond
	Modify a Transmittal Cover Letter
Course Prerequisites	Knowledge of the ProjectWise Explorer interface.

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Bentley Deliverables Management	
Course Material Language	English
Training Material	No training material will be provided
Recommended attendees	Up to 8 attendees per group
Duration	1 group x 2 days = 2 days

For these tasks, Bentley assumes that:

- These classes will be taught by a Bentley Institute instructor/trainer in <<USER>>'s location. Bentley will provide for reference the standard Bentley Institute electronic training material. The training material will not be modified in any way.
- The training and coaching sessions will be delivered remotely.

Deliverables of this phase:

- If applicable and described in a particular training and coaching section above, Bentley will provisioning standard Bentley Institute Training material according to the above-listed training sessions as referenced in the table sections "Training Material" in electronic form (PDF-Format) to <<USER>> for distribution.

For these activities, Bentley assumes that the following persons and groups will be involved:

- <<USER>>'s Project Manager
- <<USER>>'s Business Representative(s) – Key Users for the "train the trainer" session(s) and UAT preparation
- <<USER>>'s Business Representative(s) – Document Controller for the "train the trainer" session(s) and UAT preparation
- <<USER>>'s IT Representative(s)
- <<USER>>'s ProjectWise Administrator
- Bentley's Project Manager
- Bentley's Trainer(s)

1.10 User Acceptance Test Support

After the initial implementation is finalised and the ProjectWise Administrators and users are trained, the test period starts. During this timeframe, <<USER>>'s organisation and UAT-Test team will be responsible for performing the user acceptance activities and proof if the delivered solution if it is in line with the upfront agreed on system requirements. During this phase, additional configurations may be required. If a remote connection is possible between <<USER>>'s site and Bentley, the consultant will adjust the configuration remotely.

Duration of the Test phase: 2 weeks

Bentley's expected support effort during this phase: 7.5 hours

For this project phase, Bentley will:

- Bentley provides remote support during the test phase
- Bentley performs adjustments of the configuration according to the upfront confirmed and prioritised issue list

For these tasks, Bentley assumes that"

- <<USER>>'s organisation performs the application and functional test
- <<USER>>'s organisation is responsible to create and maintain an issue list and test report
- Bentley provides test support remotely up to the estimated amount of hours

Deliverables of this phase:

- No physical deliverables planned for this phase from Bentley
- <<USER>>'s organisation will provide test scripts
- <<USER>>'s organisation will provide test reports of the performed test sessions
- <<USER>>'s organisation will sign off the functional acceptance form of the solution provided by Bentley

For these activities, Bentley assumes that the following persons and groups will be involved:

- <<USER>>'s Project Manager
- <<USER>>'s Business Representative(s) – Assigned Key User(s) for the UAT session(s)
- <<USER>>'s Business Representative(s) – Assigned Document Controller for the UAT session(s)
- <<USER>>'s ProjectWise Administrator
- Bentley's Project Manager
- Bentley's Consultant(s)

If after ten (10) days following Production Go-Live, Bentley has not received a formal acceptance or rejection from Subscriber, the software will be deemed accepted.

1.11 Operational Hand-over

After a successful Production Go-Live, Bentley's Project Manager will coordinate an Operational Hand-over call to transition to the Operation and Support phase. This call will be attended by the <<USER>>'s representatives as well as Bentley's Project Manager and MANAGEservices Consultant (Bentley's Cloud Engineer).

Deliverables of this phase:

- Instructions for support request

For these activities, Bentley assumes that the following persons and groups will be involved:

- <<USER>>'s Project Manager
- <<USER>>'s ProjectWise Administrator
- Bentley's Project Manager
- Bentley's Cloud Engineer
- Bentley's Consultant(s)

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1.12 Post Deployment Support

Bentley's ProjectWise consultant will spend up to the estimated number of days with the use of ProjectWise. The time will be spent answering questions, confirming user training topics, and helping <<USER>>'s personnel use ProjectWise to its full potential. Additional offsite consulting services will be available at an hourly rate and can be proposed separately if requested.

Post Deployment Support phase: 4 weeks

Bentley's expected support effort during this phase: 15 hours

If additional support is required, Bentley can offer the extended support via a change request procedure or as a separate engagement.

For this project phase, Bentley will:

- Support <<USER>>'s key project team answering questions, discuss issues and provide guidance
- Follow up on open questions
- Review reported issues and support to fix those together with <<USER>>'s representatives

For these tasks, Bentley assumes that:

- <<USER>>'s organisation will take care to setup and maintain a remote connection that Bentley's consultants have access to the clients if required.
- The project post deployment support will be conducted remotely
- Bentley will provide support up to the estimated amount of days during this period. <<USER>>'s organisation can request additional support from Bentley via a change request or an additional services proposal.

Deliverables of this phase:

- No physical deliverables planned for this phase from Bentley

For these activities, Bentley assumes that the following persons and groups will be involved:

- <<USER>>'s Business Representative(s) – Key User(s)
- <<USER>>'s Business Representative(s) – Document Controller(s)
- <<USER>>'s ProjectWise Administrator
- Bentley's Consultant(s)

1.13 Project Close Out

During a project close-out meeting with <<USER>>'s organisation, the final project review and acceptance of the project will be performed. Bentley will analyse the project retrospectively to create a final report. This report will also address the "Lessons Learned". Relevant information for future use or expansion of the solution will be collected as well.

For this project phase, Bentley will:

- Prepare the project close out meeting and update all related documents:
- Review the project objectives together with <<USER>>

- Review project issues together with <<USER>>
- Discuss the project experience with <<USER>>
- Handover the project close-out form to <<USER>>'s organisation

For these tasks, Bentley assumes that:

- The project close-out meeting is conducted remotely
- <<USER>>'s organisation will coordinate internally the involved parties to attend the meeting
- <<USER>>'s organisation review and fill in and sign off the project close out form if there are no remaining issues on the project.

Deliverables of this phase:

- No physical deliverables planned for this phase from Bentley

For these activities, Bentley assumes that the following persons and groups will attend:

- <<USER>>'s Executive Sponsor and/or Steering Committee
- <<USER>>'s Project Manager
- <<USER>>'s Business Representative(s)
- <<USER>>'s IT Representative(s) (optional)
- <<USER>>'s ProjectWise Administrator
- Bentley's Project Manager
- Bentley's Cloud Engineer (optional)
- Bentley's Consultant(s)
- Bentley's Trainer(s) (optional)

1.14 Documentations

Bentley will provide following documentations during the execution timeframe of the implementation project:

- Client-side installation guide which documents the required steps and the required configuration settings to install the ProjectWise clients. Therefore, we assume to create a document with 5 – 10 pages.

For the training and coaching sessions, Bentley will provide standard training materials for the particular applications where available. This distributed material will not consider <<USER>> specific ProjectWise configuration. On request, Bentley can propose to create a specific add-on documentation which contains <<USER>> folder structure, workflows, document attributes and other relevant settings for <<USER>>.

For this task, Bentley assumes that:

- The document language is English
- All documents will be handed over in electronic form as PDF file
- <<USER>>'s organisation supports Bentley to create the listed documentations
- Bentley will consider one update cycle of the listed documentations

- Bentley will not provide a documentation or training material which considers <<USER>> specific configuration settings, workflows, folder structures etc. If <<USER>> would like to have additional training material or documentations, Bentley can offer this on request.

Deliverables of this phase:

- Ordered documentations as listed above.

For these activities, Bentley assumes that the following persons and groups will be involved:

- <<USER>>'s Business Representative(s) – Key User(s)
- <<USER>>'s Business Representative(s) – Document Controller(s)
- <<USER>>'s ProjectWise Administrator
- <<USER>>'s IT Representative(s)
- Bentley's Project Manager
- Bentley's Consultant(s)

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2   OPTIONAL CONSULTING AND TRAINING SERVICES

The options described below are not part of the baseline implementation services and therefore also not included in the implementation price. These options can be requested as additional services.

2.1   Option 1: Configuration Review and Requirements Workshop

After the initial software installation and baseline configuration are finalised, we setup a configuration review workshop to go thru the configuration. After the workshop is finalised Bentley will document changes <<USER>> would like to perform. Changes can be done on based on the conditions of this proposal and the SIFA rate card.

For this task, Bentley assumes that:

* <<USER>> will coordinate internally the involved parties to attend the workshops
* The workshops will be delivered remotely.
* For the Software configuration review and changes, we consider up to 1 days remote and 1-day documentation

Deliverables during the project execution phase:

* No physical deliverable

For these activities, Bentley assumes that the following persons and groups will attend:

* <<USER>>'s Project Manager
* <<USER>>'s Business Representative(s)
* <<USER>>'s ProjectWise Administrator
* Bentley's Consultant

Configuration and Training Services

Once the workshop is finalised, Bentley will be able to estimate the effort required to fulfil <<USER>>'s additional requirements. The services will be performed on a time and material basis, based on the conditions of this proposal and the SIFA rate card.

About Bentley Systems

Bentley Systems (Nasdaq: BSY) is the infrastructure engineering software company. We provide innovative software to advance the world's infrastructure – sustaining both the global economy and environment. Our industry-leading software solutions are used by professionals, and organisations of every size, for the design, construction, and operations of roads and bridges, rail and transit, water and wastewater, public works and utilities, buildings and campuses, mining, and industrial facilities. Our offerings include MicroStation-based applications for modelling and simulation, ProjectWise for project delivery, AssetWise for asset and network performance, Seequent's leading geoprofessional software portfolio, and the iTwin platform for infrastructure digital twins. Bentley Systems employs more than 4,500 colleagues and generates annual revenues of approximately $1 billion in 186 countries.

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