



## BENTLEY SUBSTATION STANDARD



### Who should attend:

Application Engineer  
R&D Engineer  
Product Designer  
Product Engineer  
Industrial Engineer

### Prerequisites:

Computer literate  
Basic Understanding of  
CAD design.

### Equipment / Software:

Bentley Academic License

### System Requirements

Windows 7, 8.1, and 10 (64  
bit), SQL Server 2008 or  
higher  
4GB recommended  
24GB free disk space  
(includes 12GB install  
footprint)  
512MB of videos or higher

### Course Duration:

5 Days

### Certification:

Certificate of Competency

### Location of Course:

UCSI FETBE Bentley  
Academy Laboratory

### Course Objective

The objective of this training is to provide users with the basic functionalities of using Bentley Substation as an Electrical Design Tool for 3D physical modelling design. Including 3D Physical Design, Electrical design, Section views, Hook points, and Wire Sizing. In the final steps, the user will use reporting tools to generate wire lists and Bills of Material (BOM) for the 3D physical model

### Substation Module

#### Create intelligent substation models

Focus your design process around an intelligent model rather than a set of separate drawings. Create a 3D model built from a database of intelligent objects. Use the model to seed, create, link, and maintain consistency across 2D drawings, electrical schematics, and reports.

#### Design substation physical layout

Perform layout in 3D using a catalog of equipment objects that snap together at predefined hook points. Move groups of connected equipment as units to change positions quickly. Use built-in 3D tools to design the grounding grid and lightning protection and analyze cable sag, clearances, and clashes.

#### Design substation protection control

Produce linked and cross-referenced one-line diagrams, wiring diagrams, schematics, and panel layouts. Speed design with wires that break and heal automatically as you place or remove symbols. Save time and increase quality with automatic wire numbering, device tagging, error checking, and more.

#### Estimate substation materials

Create reports automatically with a parts database that connects every 3D object and electrical symbol to detailed parts data. Publish accurate bills of materials, wire length reports, purchase order lists, and more. Update these reports quickly to keep up with design revisions.

#### Generate substation construction deliveries

Produce 2D construction drawings automatically from the 3D substation model. Define and publish plan, elevation, and isometric views using configurable drawing templates that promote company standards. Eliminate hours of manual updates by simply republishing drawings when design changes occur.



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### Substation Course Outline

#### Day 1

- Substation Introduction
- Project Manager
- Setup Configuration
- Project Options
- Create New Project
- Create New Page
- Toolbars and Task Menu
- Training Project
- Overview
- Single Line Diagram
- Catalog Manager
- Project Reference Point
- Work With Grounding Grid
- Work With Reference Point

#### Day 2

- Work With Substation Objects
- Single Object
- Variable Objects
- Hook Points
- Composite Objects
- Place 3D Layout Symbols
- Create 3D Objects
- Part Database
- Generate Report
- Lightning Protection Tools
- Accessory Kit Manager

#### Day 3

- Work With Construction Label
- Place Label For Devices
- BOM Label Settings
- Construction Drawing Manager
  - Grounding Grid
  - Section View
- Work With Multi-line Schematic
- Cross-referencing
- Print to PDF – Project Publisher

#### Day 4

- Single Line Schematic Creation
- Multi-line Schematic Creation
- Create 2D symbols
- Create Families
- Create New Part
- Place 2D Symbols
- Placing by Device ID
- Panel Layout Creation

#### Day 5

- Report Template Creation
- Generate Graphical Part List
- Generate Graphical Plan
- Smart PDF
- Data Manager
- Backup and Restore Project
- Export Cable List from BRCM  
Processing