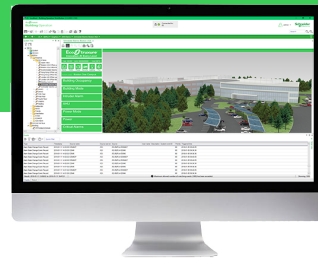


WorkStation

EcoStruxure Building Operation

EcoStruxure™ Building



Introduction

EcoStruxure Building Operation WorkStation is a fully featured environment for operating and administering all aspects of the EcoStruxure Building Management System (BMS) software. WorkStation is the window through which users can monitor their energy usage and continuously improve their building's efficiency.

Operator features

WorkStation is the interface where users and engineers access their EcoStruxure BMS servers. You can view and manage graphics, alarms, schedules, trend logs, and reports. Engineers can configure and maintain all aspects of an EcoStruxure BMS.

User account management

An EcoStruxure BMS requires each user to have an account. Access can be provided through an account maintained by the EcoStruxure BMS database or through a Windows Active Directory account. IT policies for password formatting, aging, and uniqueness can be applied and enforced through system configuration.

Language and regional settings

The software adapts the displayed language, measurement system, and date/time format to the operating system settings. Language and measurement system can easily be switched from within WorkStation. Translations of WorkStation are delivered as part of the installation or as separate language packs that are easy to install and deploy.

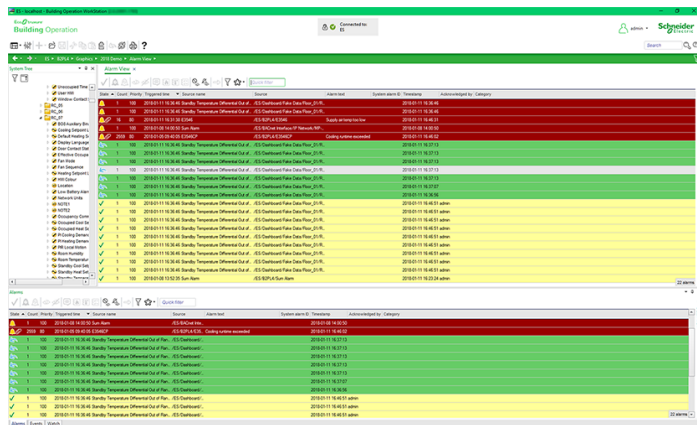
WorkStation

Customized view

The EcoStruxure BMS software has the flexibility to be fully customized to the viewing preference of individual users. The main interface, called the workspace, is a panel-based interface where users can select, position, and re-size a wide variety of components, such as alarms, graphics, and editors. A default Workspace is assigned to each user account, but users can easily modify, save, and create multiple versions to choose from. The Workspace can also be modified as needed to address real-time issues.

Efficient alarm management

Alarms need to be assessed and responded to quickly. Through the user interface, alarms are displayed in a simple and efficient way to help ensure that no alarm is overlooked. Alarms can be color coded, grouped, and filtered for maximum efficiency. The user interface enables dispatch centers or managers to assign alarms to a user or a group of users. Using a filter, users can see only the alarms assigned to them and accept or reject the assignment.



Alarm View

Filter settings and layout can be edited and stored as Favorites in the Alarms view and the Events view. Quick filter enables fast filtering of the views. Multiple alarms can be batch acknowledged for effective alarm management.

Robust alarm tracking

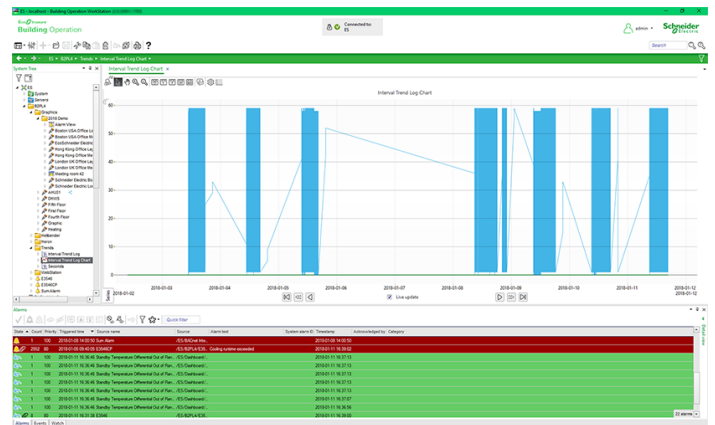
Acknowledgement and response alarms can be acknowledged with varying degrees of detail, depending on the importance of the alarm. Users can be required to enter notes or choose from a standard list to explain how the issue was resolved. WorkStation can present the user with instructions or a specific view of their system that shows details of the affected equipment. The audit trail records the user's actions.

Advanced activity log

It is important to log more than basic activity. The software logs every action with a timestamp, the user who performed the action, and the values that were changed.

Easy to read trend logs and charts

The software can trend data in many ways, including a periodic method (every day, hour, minute) and a change-of-value (COV) method that only records when a defined threshold has been passed. These trend logs can be shown in trend lists and charts to visualize patterns for diagnostic and optimization purposes. Multiple series can be presented in a single chart, so that data points can be easily compared.



Trend Chart view

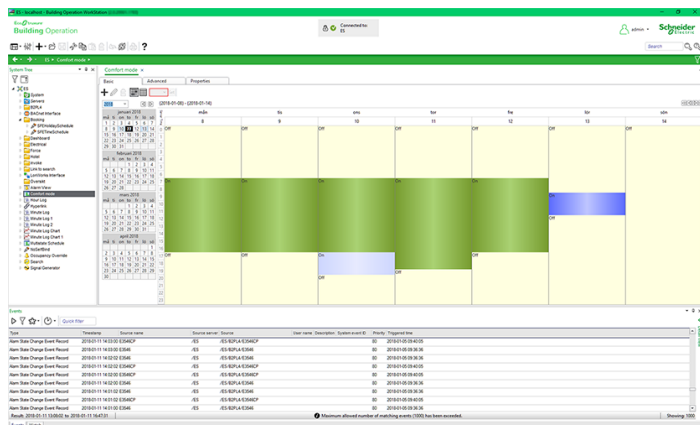
The color, weight, and style of all lines can be specified. Display of digital data is automatically shown as high and low horizontal bars, which can reduce the need for additional scaling. Log data can be presented as average, minimum, maximum, or delta in addition to the actual log value itself. Users can zoom in to see details without losing clarity. A trend chart can have two different scales on the same chart to see how different data relate to each other.

Trend data can be exported and downloaded as XML, CSV, or Excel files.

Intuitive schedules

Energy and operational efficiency is achieved when equipment is running only when necessary. Schedules manage that process through a graphical interface that is easy-to-use. Change times with a few simple clicks of the mouse. The powerful Schedule Editor can set up recurring events (every Monday, every third Tuesday, or every January 1st) or an unlimited number of exceptions with priority levels. Schedules go beyond the basic on and off control by enabling direct control of analog values. For example, users can set schedule events to percentages to control lighting levels without writing a program.

WorkStation



Schedule editor

IT-aligned design

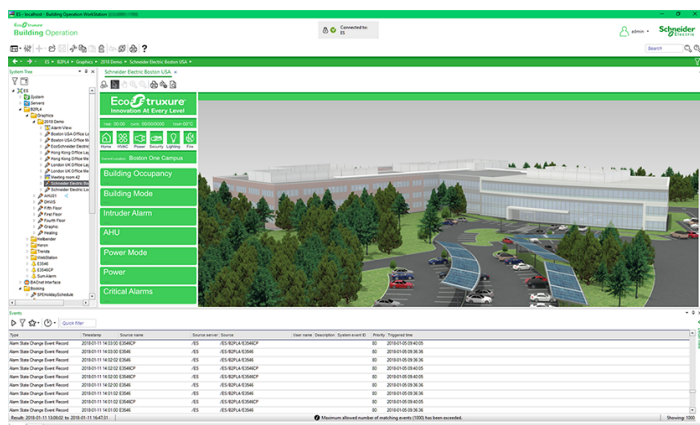
WorkStation communicates using networking standards, such as DHCP, HTTP, and HTTPS. These protocols support integration with typical IT environments and allow installation, management, and data exchange to be handled using established IT practices.

TLS support

Communication between clients and the EcoStruxure BMS servers can be encrypted using Transport Layer Security (TLS). The servers are delivered with a default self-signed certificate. Commercial Certification Authority (CA) server certificates are supported to lower the risk of malicious information technology attacks. Use of encrypted communication can be enforced for both WorkStation and WebStation access.

Stunning graphics capability

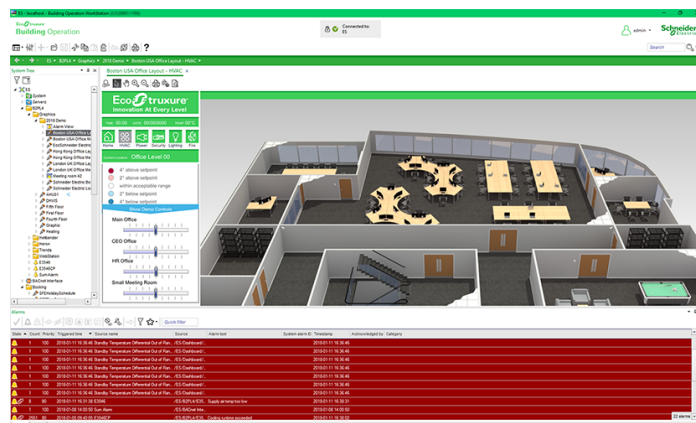
In an EcoStruxure BMS, the graphics can be customized to provide the user interface required to effectively run each facility. Graphics are stored locally in the EcoStruxure BMS servers and are available to authorized users from wherever they log on.



Sample graphic – Site overview

Scalable vector graphics

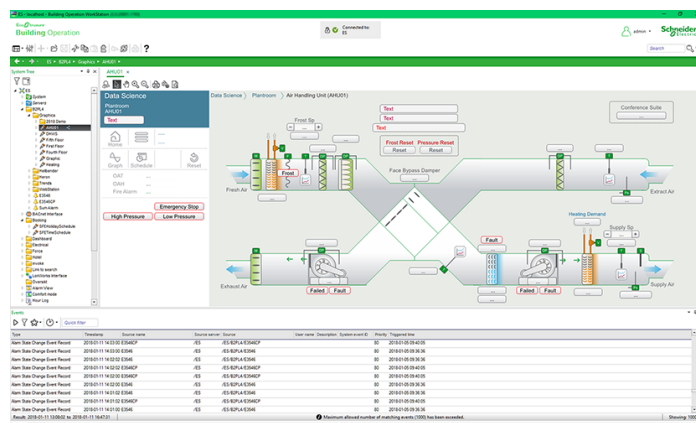
The EcoStruxure BMS software uses scalable vector graphic technology so that users can zoom in to see details without losing clarity. Graphics are built once, but can be used on any display regardless of size or resolution. Vector graphic file sizes are small so they can be stored and served directly from the field server.



Sample graphic

Super dynamic live updates

A standard live update simply shows the displayed values as conditions change in the field. With the EcoStruxure BMS software's super dynamic live updates, all aspects of graphical elements can change when values change.



Sample graphic – Building automation

Interactive ready-to-use components

Users can take control directly from a graphic and change setpoints, enable/disable equipment, and modulate actuators - all with a simple point-and-click action. A library of components is available online to choose from. These graphics can be further customized to meet the unique needs of every installation.

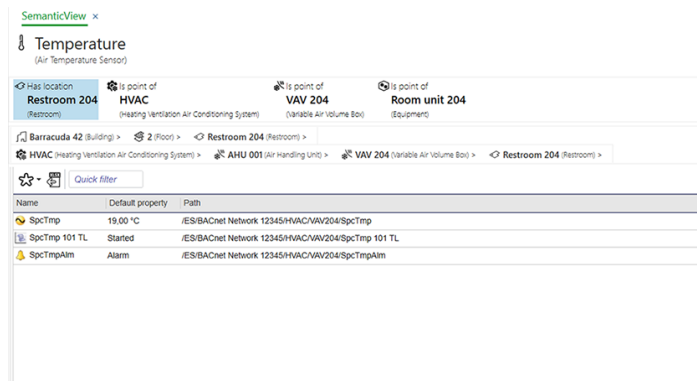
WorkStation

Engineering features

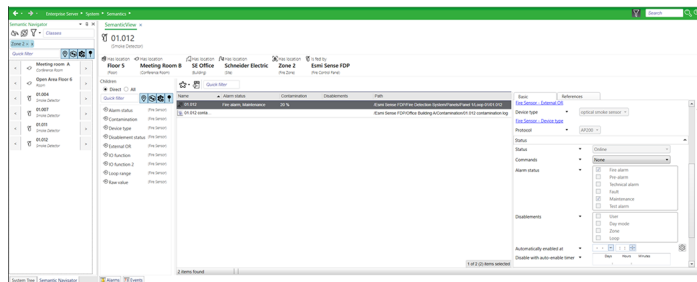
Push-button engineering features help a project stay on time and on budget. The EcoStruxure BMS software not only reduces project engineering but it also expands the possibilities for monitoring and control by delivering on-site customization tools.

Semantics

With the support for semantic modelling using Brick Schema, WorkStation and WebStation provide users with enhanced contextual information. Using Brick Schema, users can easily see where alarms originate from, what areas are affected and where to find root causes. The system can be navigated, searched, and filtered using understandable information about locations, equipment, point types and their relationships. WorkStation and WebStation also provide automatically generated alarm views, trend charts and schedule views for the modelled entities. For example, when selecting a floor in a building, the system automatically provides an alarm view filtered for alarms that originate from sources that are related to that floor.



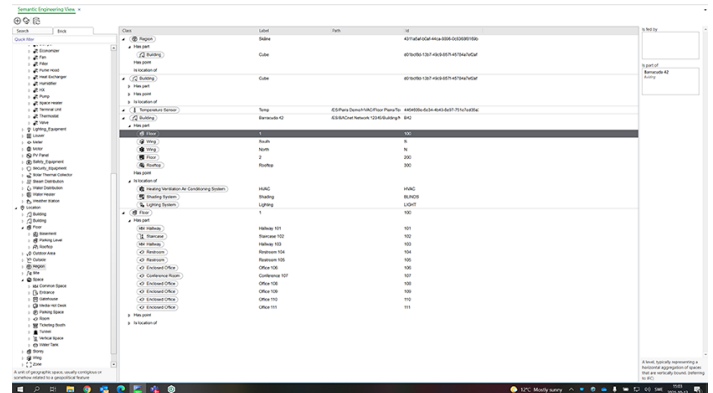
Semantic view – Building automation example



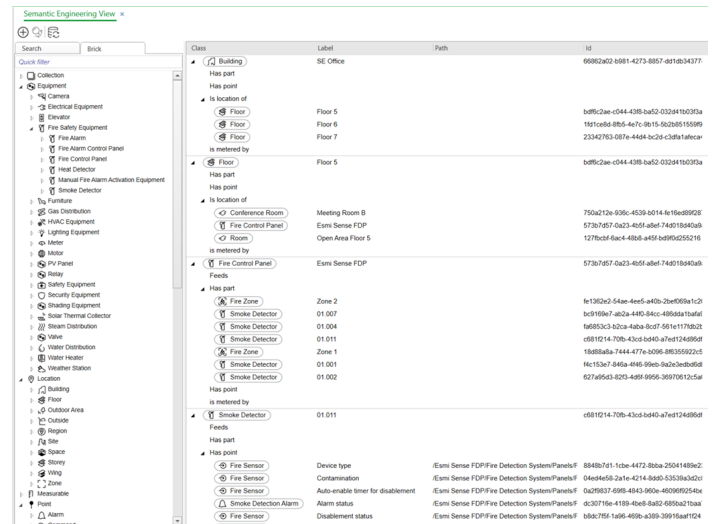
Semantic view – Fire detection example

WorkStation has a built-in tool for creating and editing the semantic model, or the “digital twin”, of buildings using Brick Schema. Digital representations of real assets, such as regions, sites, buildings, floors, spaces, equipment, sensors, and systems can be created using the tool. The resulting model can then be used in WorkStation and WebStation to provide additional context to alarms and points, to enable make it easier to use filters and search criteria, and for navigation. The model

will also be available through APIs such as EcoStruxure Web Services and Smart Connector.



Semantic Engineering view – Building automation example



Semantic Engineering view – Fire detection example

Meter management

With the meter management functionality, EcoStruxure Building Operation offers improved methods to support data accuracy and automatic detection of meter changes. In addition, purpose-built functions enable easier handling of the following concepts:

- Aggregations
- Virtual metering
- Apportioned metering
- Unit conversions

Meter hierarchies enable powerful visualization of sub-meter structures or categorizations. A web-based editor with intelligent help functions enables efficient construction of meter hierarchies.

WorkStation

Normalization and signatures

The normalization functions help with benchmarking, and the signature function enables automation and/or alerting when resource usage is too high or low. This enables early detection of non-operational equipment and misused building functions, resulting in energy savings and higher occupant satisfaction.

The system includes easy-to-use tools for regression analysis and powerful methods for time-period classification, that is, differentiation of workdays versus holidays.

Change control

Using the built-in security-related configuration features within the EcoStruxure BMS software, you can comply with regulations related to restricting access to authorized and qualified individuals and with full audit trail. In addition, access-related settings can be further configured to apply restrictions based on time of day or geographic location.

The change control features extend the basic activity logging provided by the EcoStruxure BMS software by enhancing the functionality of the standard log, enabling efficient and fully configurable change control with the following features:

- Single or dual electronic signature application
- Change control that can be restricted only to specific objects in the system
- Change control that can easily be applied to all objects
- Every associated action is logged with the parameter that was changed
- Before and after parameter values including meta data

For each signature event, the change control signatures contain:

- The unique identifier of the person executing the signature
- The full name of the user who performed the action
- The geographical date and time stamp
- The meaning of the signature, such as approval, review, responsibility, and authorship

Type management

With the type management features in the EcoStruxure BMS servers and WorkStation, you can quickly and easily reuse graphics, programs, and controller applications. WorkStation allows making these types of objects into Custom Types, which enables very effective patterns for inspecting, updating, and deploying new versions of the object types throughout the system.

Backup and restore

A BMS can have thousands of created and configured objects. The ability to restore system data following unexpected events, such as an unintended delete or a hardware-related issue, is an

important operational consideration. The EcoStruxure BMS software has a built-in Backup and Restore functionality that can backup, store, and restore from multiple copies of an EcoStruxure BMS server's database. This functionality resides on an EcoStruxure BMS server and can be accessed and configured through WorkStation.

Import and export

Configurations and programs can easily be transferred from one EcoStruxure BMS database to another with the import and export feature. The import interface provides a preview of the objects so users can confirm the content. WorkStation supports import from Excel, which makes it easier to configure new systems or make system-wide changes.

EcoStruxure BMS server support

Direct connection of the WorkStation to all EcoStruxure BMS servers supports optimized configuration and operation.

Device Discovery

The Device Discovery significantly reduces engineering time by detecting new devices on the network and automatically creating a corresponding device in the EcoStruxure BMS.

Binding tool

Data is easily exchanged between points, programs, EcoStruxure BMS servers, and other vendor's systems via a simple binding mechanism. The binding tool in the EcoStruxure BMS software is intuitive and is used to swiftly configure data exchange.

Mass change

A system often can have hundreds of objects with the same configuration. One action creates and configures these duplicates with a mass change and create feature.

Programming

Today's buildings demand more than basic control. They require applications that can be customized to meet specific building automation needs.

Unlike other software that requires factory involvement for non-standard or special applications, the EcoStruxure BMS software can be easily customized. You can turn operational sequences into reality in the field to save both time and money on any project.

Two programming options

Unique to the industry, the EcoStruxure BMS servers have both script and function block programming options. This flexibility allows the appropriate programming method to be selected for the application.

WorkStation

Spreadsheet view

The Spreadsheet view allows creating and editing of multiple points in a tabular format rather than editing each point individually. The spreadsheet feature supports copy/paste of cell content to and from Microsoft Excel. The Spreadsheet view can be used for configuration of values, alarms, trends, the SpaceLogic automation server's Central IO modules and I/O points, as well as Modbus points.

Multi-program editing

The EcoStruxure BMS software has a robust programming environment that enables multiple program editing at the same time. Simple cut and paste functionality contributes to coordinated operation of multiple programs controlling a larger system.

Optimized program execution

You can assign each program to a specific task and cycle time that is appropriate for the program's application. This supports execution of programs for critical applications without impact from other tasks. The sequencing of program execution is handled automatically by the EcoStruxure BMS server.

Dynamic programming

There is no downtime while programming because the program runs even while it is being edited. When the program is saved, the code is replaced and the new sequence begins. The execution of other programs is not impacted during the updating process.

Reduced set-up time

Inputs, outputs, and other objects in the system are connected through bindings, by the use of the binding tool. This binding reduces set-up time and increases system stability. No bindings are in the code itself. Each program becomes easy to copy throughout the system, which saves time and helps maintain consistency.

Script Editor

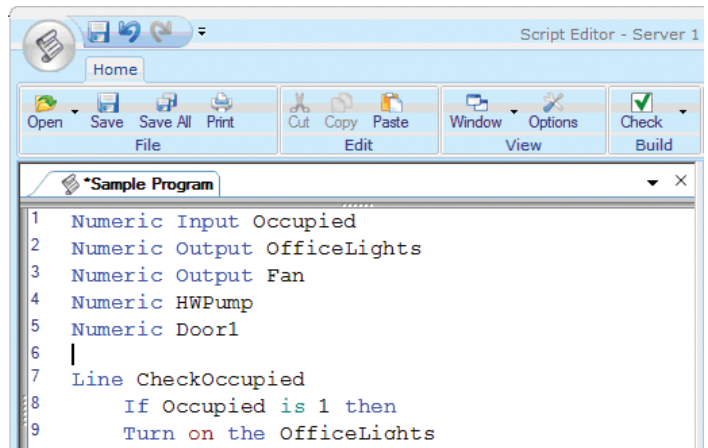
Script Editor features:

- Display color codes for every part of a line in Script
- Auto-correct and Auto-complete displays detected syntax errors and completes known keywords and declared variables
- Cut/Copy/Paste, Find/Replace, Undo/Redo, Goto Line/Declaration/Definition functionality
- Customize font type, size, color, and background color of the editing environment
- Save sections (snippets) of code and quickly insert them into other programs
- Insert a keyword into the code by selecting the keyword from a quick selection box
- Reference a local variable or constant throughout a program

- Display a list of detected errors linked to the program's problem area for quick troubleshooting
- Save work without affecting runtime code

Script programs read like a book with easy to learn commands, such as:

- Turn on the Fan
- Close the Valve
- If Temperature > Setpoint then goto CoolingOn



Script Editor

Understandable program status

Because Script programs are composed of basic, everyday language statements, it is easy to follow the logic and quickly understand what the program is doing. Description line names can be added to state the action performed in that section of the program. As a result, users can view diagnostic details of the running program to see how long the condition has been in effect.

Script Debug mode

Using the built-in Script Debug mode, you can debug script programs using either a single step process or a program trace process. All variables - bound global variables and declared local variables - are shown with their live values for the currently executing line of the script program. After debugging is complete, a simple toggle of the mode returns Script Editor to the normal editing process.

Efficient library management

To support reuse and reduce the need to write the same program multiple times, the EcoStruxure BMS database allows programs to be imported from and exported to an external library. The Script Editor is an evolution of the Plain English (PE) programming language used by both Infinity and Andover Continuum systems so libraries of PE code can be imported into

WorkStation

Script Editor. During the import process, PE code is automatically converted to the updated Script format.

Support for Plain English controllers

Script Editor supports Plain English (PE) controllers, so you don't need to learn and program two different sets of formatting rules. Instead, the PE format is applied behind the scenes during the deployment of the controllers that require PE format.

BACnet support in script programming

BACnet support provides direct control using specific BACnet services, such as ReadProperty and WriteProperty. Advanced applications can even command BACnet priorities.

Builder for Function Block

Builder for Function Block features:

- Create a program by adding function blocks and adding connections between the blocks
- Hierarchical blocks collapse functionality into one block, which increases readability
- See actual runtime data in blocks - facilitates debugging and verification
- Cut/Copy/Paste, Find/Replace, and Undo
- Add text, color code lines, change font type, size or color to increase readability
- Check and display a list of detected errors linked to the program's problem area for troubleshooting
- Import previously created programs from library
- Save without affecting runtime code

it easy to quickly understand and follow program logic. The readability is further enhanced by the use of the hierarchical function blocks, which allow complex functions to be stored inside one block and thereby create a high-level view of the program.

Offline simulation and online testing

By using the built-in debugger in the editor, you can simulate the application using single step functionality or simulating patterns on inputs. The online testing is performed in WorkStation where the graphical layout is available and the runtime values can be seen as they are executed, with the possibility to trend log or plot values for troubleshooting and fine tuning.

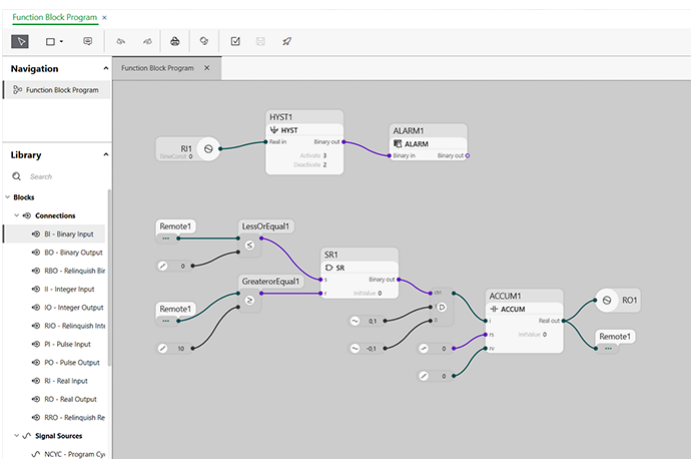
Library management

With Function Block, code can be imported or exported to an external library, so that no code ever needs to be written twice. Because Function Block is an evolution of the TAC Menta programming language used by the TAC Vista system, libraries of Menta code can be imported into Builder for Function Block. During the import process, the Menta code is automatically converted to the updated Function Block format.

Graphics Editor

Graphics are created and edited using the Graphics Editor: a powerful tool that helps users visualize everything from the field control level to the enterprise level. The Graphics Editor provides a variety of easy-to-use tools to build whatever graphics are required, from a simple line drawing to a photorealistic image. The Graphics Editor can import a wide variety of formats, including .jpg and CAD drawings. JavaScript can also be used to further customize the behavior of each graphic. Animation can highlight changes in the system or make navigation easier. For example, you can create a floor plan view with color-coded temperatures for each zone.

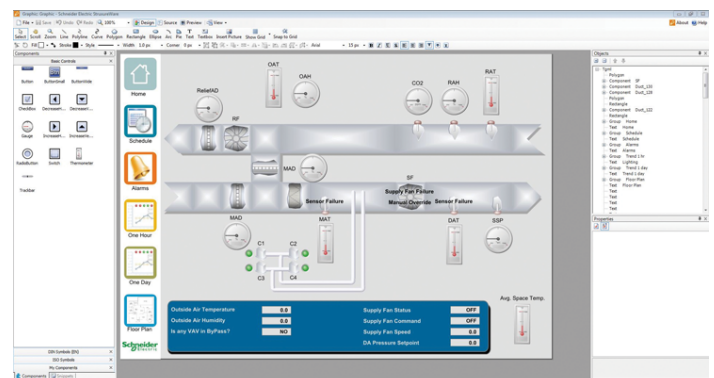
The Graphics Editor is accessed from WorkStation and enables users to create and edit the graphics in systems. WorkStation and WebStation use the same graphics format, so graphics are engineered once.



Builder for Function Block

Function block programs

Graphical programming provides a level of readability not seen in other types of programming languages. The visualization of the graphical elements, the blocks, and their connections makes



Graphics Editor – Building automation example

WorkStation

Thermal Graphics: Floor plans can be set up with zones that change color based on the status, measured temperature, pressure, humidity, usage level or other data provided by the EcoStruxure BMS database.

Values are updated using the most efficient data retrieval method available. When supported by the EcoStruxure BMS server or the field device, the following methods may be utilized:

- Change of value (COV) subscriptions
- Read multiple properties at once

To share components and function snippets, they may be drag 'n dropped to email, Skype, or Windows Explorer for easy distribution.

Great graphics - little effort

Graphics Editor was designed to help users without strong artistic or technical skills to create great graphics. If the user is more advanced, the possibilities are endless.

Reusable components and function snippets

Graphical elements can be grouped into reusable components with properties that are easy to edit. Furthermore, function snippets that cause the component to animate or display a certain color based on a value can also be saved and reused. Users can copy a gauge component and change its color, font, and border size without affecting the original functionality.

Layout and creation tools

There are a number of basic drawing tools available within the Graphics Editor. Equipment diagrams, floor plans, maps, navigational maps, and other types of graphics can be created to display dynamic data.

The unique Layers functionality in Graphics Editor facilitates easier editing of graphics with different categories of information. Layers can be controlled through scripting so that the right information is displayed to the right users at the right time.

Effects

Graphics can have visual effects, such as gradients, and semitransparent colors. Dynamic rotation, scaling, and movement can also be added based on point values to emphasize important events.

Importing

Graphics Editor lets you take advantage of photos and graphics created by other vendor's applications. Bitmaps in various formats can be embedded and common vector-based formats

can be converted to native EcoStruxure BMS graphics using Graphics Editor.

SpaceLogic BACnet/IP controller management

WorkStation has built-in management features for SpaceLogic BACnet/IP controllers, which allow authorized engineers to view, document, and update the controllers' applications and firmware in an efficient and controlled manner.

Software Licensing Model

EcoStruxure BMS software version 7.0 offers a simplified and centralized licensing model which allows for one-time, single-step activation of a system license deployed at the top level server of the system, thus removing the need for license engineering on each server in the system. This provides considerable time savings during the initial commissioning as well as during any future upgrade of the system.

System capabilities are available in a three-tier model: Essential, Advanced, and Advanced Plus. Select the tier that matches your business needs, and everything will then be bundled into the centralized system license and inherited across all servers in your system architecture, including Enterprise Central, Enterprise Server, and field servers.

The centralized licensing model combined with the three-tier capability model provides a uniquely easy-to-manage system throughout the lifecycle. Among other benefits, this gives the ability to remotely manage the capability tier as business needs evolve and to facilitate expansion as the system grows with added servers and connected devices.

Configuration of software licenses is done through EcoStruxure Power & Building Software Companion, accessible by EcoXpert™ partners and Schneider Electric representatives. It provides the ability to select architecture and tier options as well as manage license evolutions throughout the lifecycle of the system.

For more information on the three-tier system capabilities, see the Schneider Electric website, www.se.com.

Part Numbers for Add-on Options

For information on the part numbers for the WorkStation add-on options, see the following tables.

WorkStation

Building Automation – Part Numbers for WorkStation Add-on Options

Add-on Option	Part Number
SW-STATION-PRO-0, EcoStruxure Building Operation WorkStation Professional Includes Editor licensing (WorkPlace Tech Editor, Graphics Editor, Function Block, and Script Programming license) For 1 concurrent user per license	SXWSWORK00002
SW-EDITORS-0, EcoStruxure Building Operation Editors WorkPlace Tech Editor, Graphics Editor, Function Block and Script Programming license only For 1 concurrent user per license	SXWSWEDIT00001
EcoStruxure Building Operation Graphics Editor (Graphics Editor license only) For 1 concurrent user per license	SXWSWEDIT00002

Fire Detection – Part Numbers for WorkStation Add-on Options

Add-on Option	Part Number
PC Client Professional, on-premise subscription license, 1 year duration Includes Editor licensing (Graphics Editor, Function Block, and Script Programming license) For 1 concurrent user per license	FFSEFOEDI0000

Specifications

WorkStation	
Hardware requirements	
Processor	Minimum: Intel Core i5 @ 2.0 GHz, or another x86-64 processor with comparable performance Recommended: Intel Core i5 @ 3.0 GHz or better
Memory	Minimum: 4 GB Recommended: 8 GB or higher
Storage capacity	Minimum: 20 GB
Display	Minimum: 1,024x768 pixel resolution
Other devices	Microsoft mouse or compatible pointing device is required.
Software requirements	
Operating systems	Microsoft Windows 10 (64-bit) ^a Microsoft Windows 11 Microsoft Windows Server 2016 Microsoft Windows Server 2019 Microsoft Windows Server 2022 Microsoft Windows Server 2025

a) Tested with version 7.0.2 and earlier of the EcoStruxure Building Operation software.

The following Microsoft Windows 10 editions are supported: Pro and Enterprise.

The following Microsoft Windows 11 editions are supported: Pro and Enterprise.

The following Microsoft Windows Server 2016 editions are supported: Datacenter, Standard, and Essentials.

The following Microsoft Windows Server 2019 editions are supported: Datacenter, Standard, and Essentials.

The following Microsoft Windows Server 2022 editions are supported: Datacenter, Standard, and Essentials.

The following Microsoft Windows Server 2025 editions are supported: Datacenter, Standard, and Essentials.

WorkStation

Visio versions (WorkPlace Tech Editor)

Microsoft Office Visio 2016 (32-bit and 64-bit^a)
 Microsoft Office Visio 2019 (32-bit and 64-bit^a)
 Microsoft Office Visio 2021 (32-bit and 64-bit^a)
 Microsoft Office Visio Plan 2 (32-bit and 64-bit^a)
 Microsoft Office Visio 2024 (32-bit and 64-bit^a)

a) 64-bit Visio is supported in EcoStruxure Building Operation version 7.0.2 and later.

Required additional software

Microsoft .NET Framework 4.7.2 and later

Communication (to EcoStruxure BMS servers)

HTTP

Non-binary, port configurable, default 80

HTTPS

Encrypted supporting TLS 1.2 and TLS 1.3, port configurable default 443
 TLS 1.3 requires WorkStation to run on Windows 11, Windows Server 2022, or later.

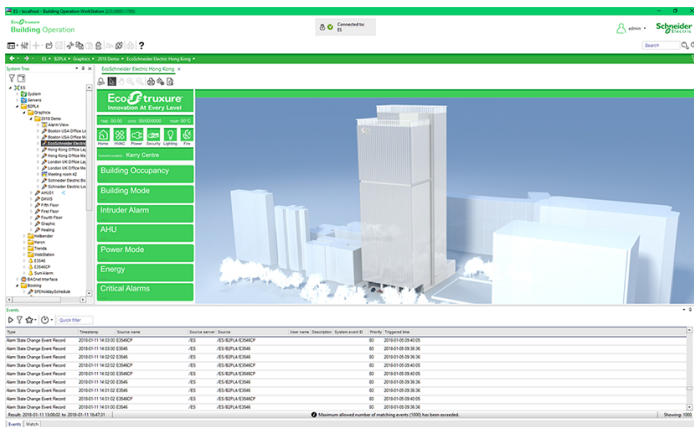
Graphics

Insert Formats

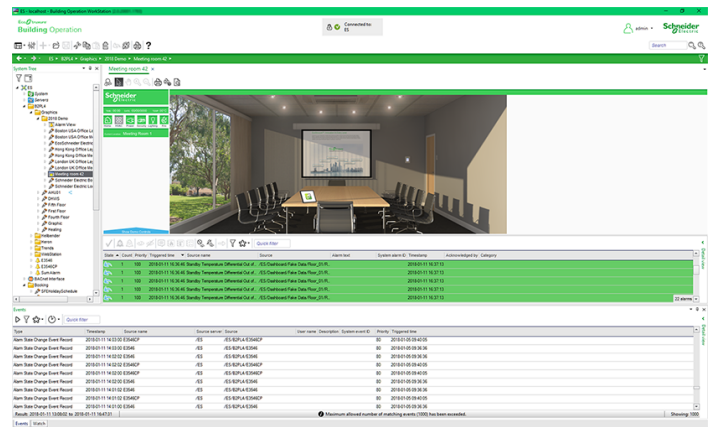
PNG
 BMP
 JPG
 GIF
 Animated GIF

Import Formats

DWF (partial support)
 DWG (partial support)
 DXF (partial support)
 SVG (partial support)

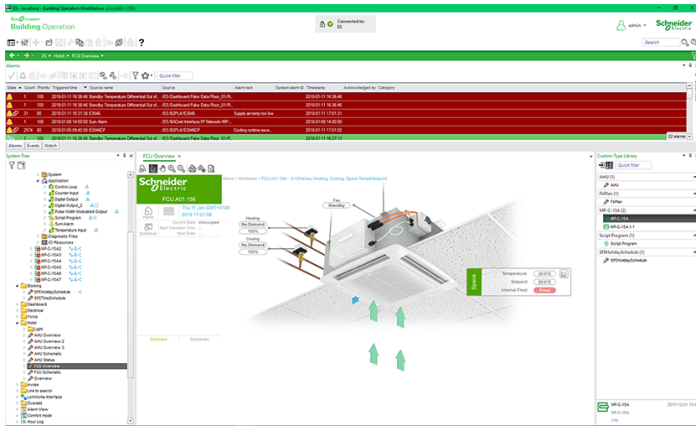


Sample WorkStation interface

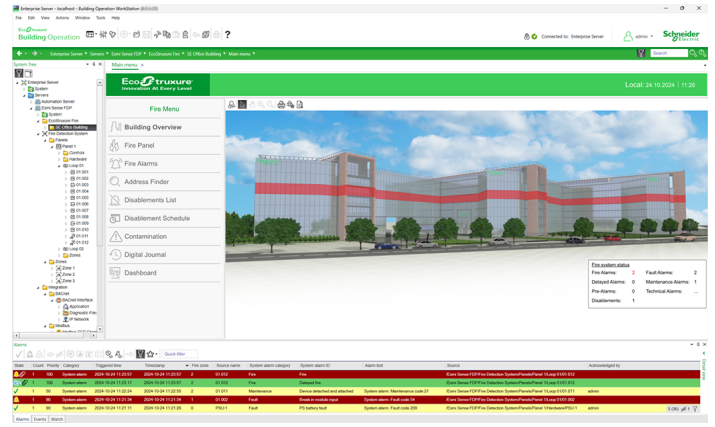


Sample WorkStation interface

WorkStation



Sample WorkStation interface – Building automation



Sample WorkStation interface – Fire detection

www.se.com/buildings

Life Is On

Schneider
Electric