BUILDER™
Inventory Guide

Version 3.3.12

January 11, 2018

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Using this Guide

This guide explains how to create and maintain real property inventory in the Sustainment Management System with BUILDER™.

Prerequisite

This guide assumes that you are already familiar with the material in the *BUILDER™ Getting Started Guide*.

Companion Guides

In the future, separate guides will be made available to assist with the following tasks:

- Condition Assessment
- Functionality Assessment
- Work Configuration
- Work Planning
- BUILDER Administration.

BUILDER Version Information

Welcome to BUILDER™

BUILDER, part of the Sustainment Management System, provides facility managers with the tools they need to generate the greatest impact from maintenance and rehabilitation activities, and to plan and defend maintenance budgets.

The primary measure used in BUILDER is the *condition index* (CI) rating, using a 0-to-100 point scale. After real property inventory has been subdivided into hierarchical levels of increasing fineness, down to the Component-Section level, the condition index for each Component-Section is computed from inspection data that records the type, severity, and density of each distress found.

Deterioration curves, developed from experience over time, show the optimal point at which work should be done to avoid more costly rehabilitation projects later.

Another measure available in BUILDER is the *functionality index* (FI), also on a 0-to-100 point scale in keeping with the SMS design philosophy. It is computed from assessment data that records the functionality issues present in a building. Based on the severity and density of those issues, building modernization requirements can be identified.

Based on condition index and/or functionality index scores, BUILDER can generate recommended work items automatically. Using cost books associated with BUILDER, cost estimates are attached to the work items. Managers can then choose which work items to fund. The cost of *not* funding work items can be determined using Scenarios.

With the assistance of the Scenarios simulation engine included as part of BUILDER, managers can develop long-range work plans based on a sound investment strategy. By providing an objective description of condition (a core BUILDER functionality) and an automated means of exploring various options under different budget scenarios (Scenarios), BUILDER and Scenarios together make multi-year work plans easier to formulate and funding requests easier to justify. The goal is optimal facility performance for the dollars invested.

For information, announcements, links to documents, and discussion forums, visit the SMS community user's group website at https://www.sms.erdc.dren.mil.

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1/11/2018

BRED Impact of Upgrading from Version 3.3.6

If you (1) use BuilderRED and also (2) have not yet upgraded to a version of BUILDER higher than 3.3.6, it is important to read the information below. This topic documents the impact of upgrading from BUILDER and BuilderRED (BRED) 3.3.6 on the import and export of BRED files.

If you don't use BuilderRED, the impact described here does not apply.

> **Note:** In this explanatory section, "older" BRED files means BRED files created with BUILDER Versions 3.3.0 through 3.3.6. "Older" versions of BUILDER and BuilderRED means Versions 3.3.0 through 3.3.6.

With the first upgrade of BUILDER from Version 3.3.6 to a more recent version, the underlying software formatting of BRED (BuilderRED) files created by BUILDER Versions 3.3.7 and later will change. You will not be able to use older versions of BuilderRED to work on BRED files created by BUILDER Version 3.3.7 or later. Therefore, you should carefully consider (1) the timing of upgrading from BUILDER and BuilderRED Version 3.3.6, and (2) whether your organization wishes to establish any procedures to minimize confusion about compatibilities. See "An Approach To Consider" on page 8 below for an example of such a procedure.

If there will be a need to work with both pre-upgrade and post-upgrade BRED files, contact your BUILDER support representative before upgrading from BuilderRED Version 3.3.6.

> **Note:** BUILDER Versions 3.3.7 through 3.3.12 will continue to accept import of BRED files created with older versions of BUILDER. Older BRED files you have outstanding can always be imported back into BUILDER.

Upgrade BUILDER First

Best practice is to upgrade BUILDER from Version 3.3.6 *before* you upgrade BuilderRED from Version 3.3.6 to a higher version number. The BuilderRED upgrade may either be done immediately after the BUILDER upgrade, or it may be delayed.

What to Expect

Before Your BuilderRED Upgrade

Before upgrading from BuilderRED 3.3.6, you will be able to work only on BRED files created with BUILDER versions prior to 3.3.7.

If you have not yet upgraded from BuilderRED Version 3.3.6 and have time for some advance planning, see "An Approach To Consider" on the next page below.

After Your BuilderRED Upgrade

Once you have upgraded from BuilderRED 3.3.6, you will be able to work on BRED files created with BUILDER Version 3.3.7 or later. You will *not* be able to work on older BRED files.

After the upgrade, you will still be able to import older BRED files back into BUILDER. Then you can re-export them from your newer version of BUILDER and work on them.

What Works

1. After your system has been upgraded from BUILDER 3.3.6, you will continue to be able to import outstanding BRED files back into BUILDER, regardless of whether they have been created using a post-3.3.6 version of BUILDER or an older version of BUILDER.
2. After you upgrade from BuilderRED 3.3.6, you will continue to be able to import outstanding BRED files back into BUILDER, regardless of whether they have been created using a post-3.3.6 version of BUILDER or an older version of BUILDER.
3. If you delay upgrading from BuilderRED 3.3.6, you will be able to work directly on your outstanding BRED files with BuilderRED. However, you will not be able to use your BuilderRED to work on BRED files created using BUILDER Version 3.3.7 or later, until you upgrade.

What Doesn't Work

1. **Working on Old with the New Won't Work.** After upgrading from BuilderRED Version 3.3.6, you will not be able to use BuilderRED 3.3.7 or later to continue work on older, outstanding BRED files in . *What to do:* First, import the older BRED file back into your newer, updated version of BUILDER. Then re-export the information to BuilderRED, creating a fresh BRED file.
2. **Working on New with the Old Won't Work, Either.** If, after upgrading BUILDER from Version 3.3.6, you delay upgrading your version of

BuilderRED, you will not be able to use your older version of BuilderRED to work on BRED files generated by BUILDER Version 3.3.7 or later.

An Approach To Consider

If you are comfortable delaying creation of new BRED files for a period of time, you can (a) upgrade BUILDER from Version 3.3.6, but (b) delay upgrading BuilderRED for that period, using it as a transition time for Inspectors and inventory takers to complete their in-progress work on older BRED files using the older version of BuilderRED, and to import them into BUILDER. Any older BRED files not completed during the transition period can be handled as follows: import them into the newer, upgraded version of BUILDER; then, after BuilderRED is upgraded from version 3.3.6, re-export them from the newer version of BUILDER to be worked on in the newer version of BuilderRED.

What's New in BUILDER™ 3.3.12

This topic describes changes made in BUILDER Version 3.3.12. For a description of previous incremental versions of BUILDER 3.3, you can download the *BUILDER™ Update History* PDF from the SMS community user's group website at https://www.sms.erdc.dren.mil.

> **Note: SMS with BUILDER no longer provides support for IE9, Internet Explorer version 9.** You should use Internet Explorer version 10 or greater to access SMS with BUILDER.

BUILDER 3.3.12

- **Session Timeout**
  The default period of inactivity that triggers session timeout has been changed from 20 minutes to 10 minutes.

  > **Note:** In the Web.session.config file, the system administrator can configure the length of inactive time that triggers session timeout. The default 10-minute setting can be altered by changing "10" in the line <sessionState mode="InProc" cookieless="false" timeout="10" />. DoD system administrators should note that the SMS makes no distinction between admin and non-privileged accounts, and should consult Rules SV-83865r1_rule and SV-83867r1_rule from the Application Security and Development STIG before configuring this value.

- **User Accounts**
  1. Changes to user accounts are now saved in audit records.
  2. Changes to user accounts now trigger e-mail notifications to administrators.
- **Inspections**
  Multiple inspections on the same day are now all used to compute condition indexes
- **FCI**
  The formula used to calculate the Facility Condition Index (FCI) has been changed from that used by the Federal Real Property Council to a formula that produces a value on the 0-100 scale. Using the new formula, a higher number indicates better condition, rather than the reverse as with the previous version of the formula. The change of formula for calculating the FCI took place in Version 3.3.10.

Introduction to Inventory

Planning Inventory

This topic

- Provides valuable advice about how to plan the organizational structure of your inventory.
- Provides links to features that can potentially help streamline the inventory process.

Your BUILDER™ inventory serves as the foundation for all that you will do with the BUILDER application. The first step in using BUILDER is to plan the hierarchical "tree" that describes the physical inventory you manage (the subject of this topic) and to construct the upper levels of that tree. The second step is to perform inventory to fill the database represented by that hierarchical tree. The process of putting initial data into BUILDER will probably be your single most intensive effort in working with the program, but it is a one-time effort that can be aided by features described in the section on Rapid Inventory Methods.

> **Tip:** in the planning of a new implementation of BUILDER is "Who decides the scope and organization of the hierarchical tree?" It is recommended that this higher-level planning step not be contracted out even if "filling in" the inventory tree at the lower levels (Buildings or Complexes and below) will be performed by contractors. A useful planning guidance document for government agencies and their contractors is ERDC/CERL SR-16-3, *BUILDER™ Sustainment Management System Implementation Planning Guide*.

Planning the Organizational Structure

Organization Level

Because the BUILDER navigational structure can be added to only from the top down, if you are introducing BUILDER for the first time and creating the tree structure for your real property data, it is imperative to analyze in advance the final scope anticipated for entry and management of properties, and to create the Organization levels that will be needed in the long run even if they will not be filled with content in the short run. Consult the (currently pending) BUILDER Implementation Tips guide if available.

Organizations are unique in the BUILDER hierarchy in that they can be nested multiple levels deep if desired. Note, however, that this flexibility brings with it the responsibility for careful planning.

Site Level

Begin by grouping your Buildings into logical management units, typically by their geographic regions, which are represented by Site records in the BUILDER database. The Site provides a natural way to group Buildings and to apply properties that are regional in nature, such as the cost of operations and maintenance (O&M) work and the heating, ventilation and cooling (HVAC) climate.

Building Level

Next, create Building records for the Buildings at one of your Sites. A Building record includes critical information such as how the Building is used, its size, age, and number of floors. You will find that BUILDER also allows you to store, at your option, a variety of other information about a Building, such as whether it is a historical structure or a whether it is a child-occupied facility. You will also have the option to establish a Mission Dependency Index to measure quantitatively how critical the Building is to the mission for which it is used.

Complex Level

Conceptually, the Complex level in the BUILDER hierarchy comes between the Site level and the Building level. However, unlike a Site, a Complex for organizing Buildings is *optional*, and a Complex is often not created until after its constituent Buildings (or at least some of them) have been added to BUILDER.

System Level

From the Building level you begin working down toward the end level of Component-Sections hierarchically, starting with the major Systems of a Building. There are 17 of these Systems in BUILDER, and they are specified by the ASTM UNIFORMAT II Classification for Building Elements (Level 2).

You will create the Building's Systems by selecting each applicable System from a dropdown pick list. See BUILDER Systems and Components for a list of available Systems.

For advice on how best to allocate inventory into Systems, Components, and Sections, see "About Identifying Systems, Components and Sections" on page 79.

Component Level

Each System is further decomposed into Components (UNIFORMAT Level 3 elements). Again, you will create the Component records by selecting from a pick list

of Components applicable to a given system. The topic BUILDER Systems and Components shows a selection of typical Components for some of the BUILDER Systems.

Component-Section Level

After you have created records for at least one System and at least one Component of that System, you are ready to add records that describe the individual physical items that are in the Building: the doors, walls, windows, plumbing fixtures, heating units, etc. These items are called Component-Sections, or simply Sections.

Component-Sections are the management unit in BUILDER. You inspect them and plan work for them, and BUILDER applies its condition assessment algorithms to them in calculating their condition index.

BUILDER uses embedded data and automated processes to determine a wealth of information about each Component-Section: its expected service life, its likely subcomponents and how its condition affects the Section as a whole, and the cost of replacing, painting, repairing, and removing it. As you might imagine, for an automated system to be able to do all of this, there are some strict rules about how you define Component-Sections. Creating the Component-Section records is the most difficult and time-consuming aspect of creating the BUILDER inventory.

A Component-Section consists of items that all belong to the same Component and, moreover, are all of the same type and material/equipment category. For example, in the Component "Exterior Doors", glass personnel doors and metal overhead doors belong in different Sections.

As long as the requirement for not mingling (a) types or (b) material/equipment category in the same Component-Section is met, you will have considerable flexibility in how you group similar items together to form a Component-Section. For example, wood doors on different sides of the Building could be grouped together. Alternatively, if weather degradation based on compass orientation is a significant factor, then west doors, north doors, etc. might be assigned to separate Component-Sections.

Once a Component-Section has been identified by (1) Component type and (2) material/equipment category, BUILDER will have sufficient information to establish a clear link between the Section (Component-Section) and the embedded data and computations that BUILDER brings to the process in order to help you with your management tasks.

Additional Guidance

Details, examples, and some suggestions about how to undertake the process of completing your BUILDER inventory are contained in the topic Identifying Systems, Components and Sections.

Inventory Rollup

Plant replacement value and remaining service life are inventory-related pieces of information that are aggregated upwards through the inventory tree by use of a "rollup". This topic introduces both automated and manual rollups in BUILDER.

Only inventory-related processes performed by a rollup are explained here; condition and functionality information aggregated by a rollup are explained elsewhere in the documentation.

What does a Rollup Do?

Inventory-related processes accomplished by a rollup are as follows:

- The current remaining service life (RSL) is estimated for all Sections.
- RSL information is reflected upwards through the inventory tree.
- Plant Replacement Value (PRV) is updated at all levels. For example, if new Sections, Components, or Systems have been added to a Building, its PRV will increase.

To see a full list of all rollup processes, not just those pertaining to inventory, see "APPENDIX A: About Rollup" on page 187

Automated Rollup

BUILDER automatically "rolls up" inventory, condition, and functionality information nightly. (For installations with U.S. Army Corps of Engineers support service, this begins at about 6:00 p.m.). Starting at the Section level, aggregated Section-level information in each Component is recorded for the Component; aggregated Component-level information is recorded for each System; aggregated System-level information is recorded for each Building, and so forth up the entire inventory tree.

Manual Rollup

You can manually initiate a rollup if you wish. It's a good idea to do so when:

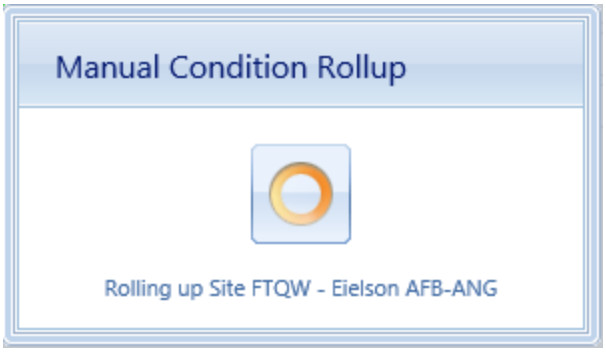
- You have entered a large quantity of inventory into BUILDER; or
- You believe that PRV or RSL information has changed since the last automated rollup and you wish to see the latest values.

Roll Up a Building

To roll up a Building,

1. Navigate to the Building in the inventory tree.
2. Right-click.
3. Select "Rollup Building" from the list of options.

While the rollup is being performed, a popup window similar to the one below will be shown onscreen:

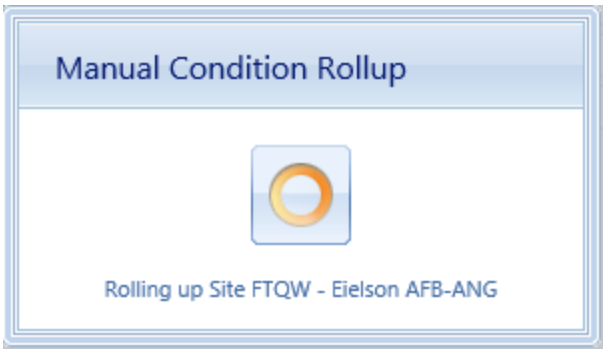


Roll Up a Complex

To roll up a Complex,

1. Navigate to the Complex in the inventory tree.
2. Right-click.
3. Select "Rollup Complex" from the list of options.

While the rollup is being performed, a popup window similar to the one below will be shown onscreen:



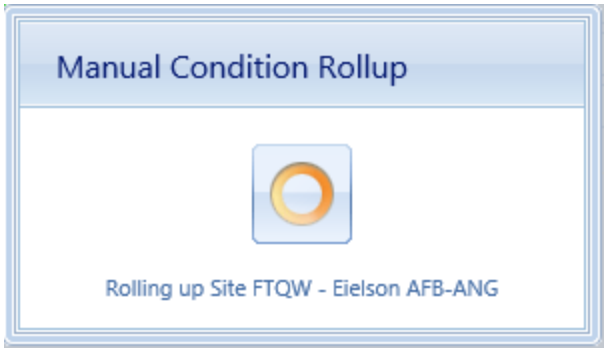
Roll Up a Site

> **Caution:** Rolling up an entire Site can take an extremely long time (sometimes hours). If you initiate this rollup and want to cancel it, the only way to do this is to activate the "X" at the upper right of your browser window to close the window. Then log back into BUILDER from another browser window.

To roll up a Site,

1. Navigate to the Site in the inventory tree.
2. Right-click.
3. Select "Rollup Site" from the list of options.

While the rollup is being performed, a popup window similar to the one below will be shown onscreen:



Full Rollup

If you have Administrator permission in BUILDER, you can initiate a manual rollup of the entire tree by selecting **Tools > Administration > Manual Condition Rollup** from the main menu. See the BUILDER Administration section of the documentation for instructions and screen shots.

Working with Organizations

An Organization is the highest level possible in the hierarchical tree. This topic briefly introduces the features of an Organization, and how to use it in organizing real property inventory. It also provides links to the operations that can be performed at the Organization level.

Organization is the highest level in the hierarchical tree. Tasks performed at the Organization level are generally prioritization, planning, and budgeting, rather than day-to-day management.

The Organization level in the BUILDER hierarchy is an optional level above the Site level, enabling progressive aggregation of information up the inventory tree. Progressive aggregation in possible because unlike other levels in the BUILDER hierarchy, Organizations can be nested multiple levels deep if desired. This allows the hierarchical structure of the inventory tree to be made as deep as it needs to be to reflect the structure of your company or organization.

The usefulness of an Organization is that if multiple Sites are to be managed, or if it is desired to aggregate BUILDER information across a region or network comprising more than one Site, then Sites can be grouped into one or more Organizations. However, Even though Organization is the highest level available, it is not a required level in the hierarchy. An individual inventory tree may start with either one (and only one) Organization, or one (and only one) Site at the topmost level of that tree.

> **Note:** Organizations must be established before Sites. This task is best assigned to a BUILDER Administrator, once the initial planning stage has been performed.

Organization Tasks

Tasks that can be performed on Organizations are:

"Add an Organization" on the facing page
"Edit Organization Inventory Data" on page 20
"Delete an Organization" on page 24

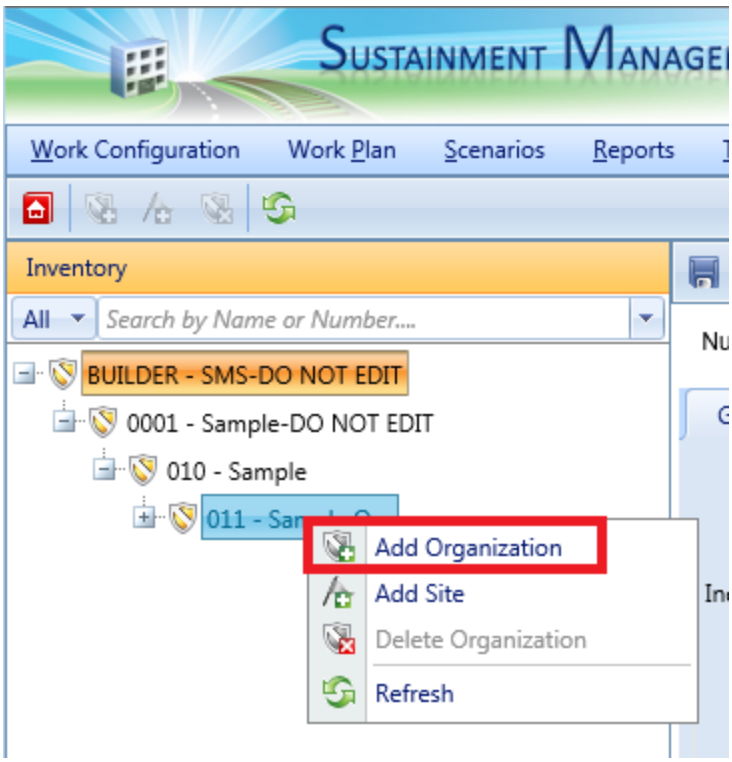
Add an Organization

This topic shows how to add an Organization and describes the required information to be entered. Additional information that can be entered is described in "Edit Organization Inventory Data" on page 20.

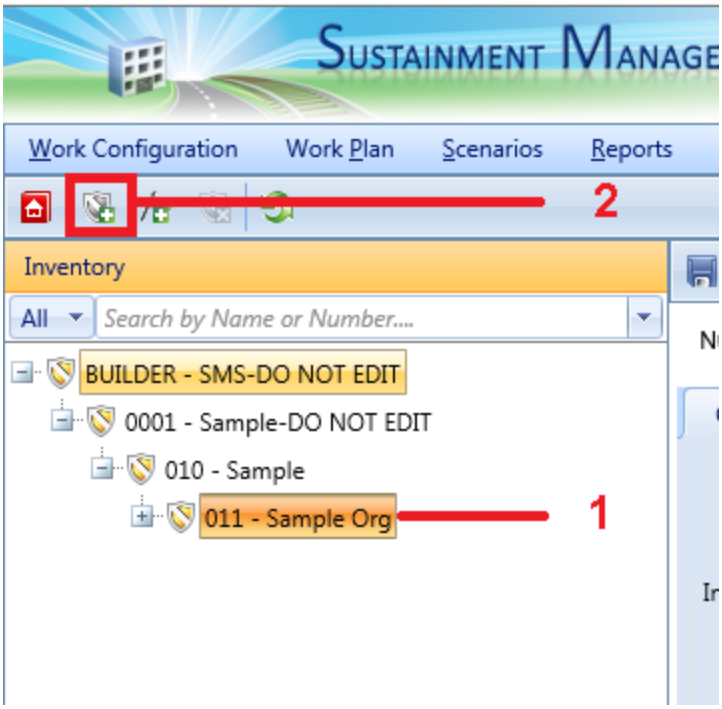
> **Permissions Note:** This action requires Master Planner or Administrator permission for the relevant location in inventory.

To add a new Organization, navigate in the inventory tree to the Organization you wish to add the new Organization under, and do one of the following:

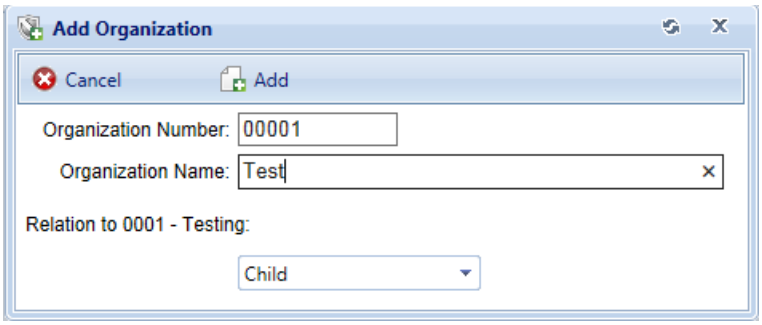
a. Right-click the existing (parent) Organization. Then select "Add Organization" from the options.



b. Alternatively, select the existing (parent) Organization. Then activate the **Add Organization** icon on the main toolbar, above the navigation tree.



The "Add Organization" popup window will appear.



Enter Required Organization Data

This section describes the minimum data to be entered when creating a new Organization. Other data that can be entered is described in "Edit Organization Inventory Data" on page 20.

In the "Add Organization" popup window, enter the following required data:

1. **Organization ID Number**. Enter the identifying number for the Organization. Organization Number may be left blank if you wish to supply only a name.

You must enter at least Organization name or an Organization number, and the combination of the two must be unique among the Organizations in the navigation tree.

> **Specifications:** The ID Number is limited to 12 alphanumeric characters.

2. **Organization Name**. Enter the identifying name for this Organization, limited to 50 alphanumeric characters. Organization Name may be left blank if you wish to supply only a number. You must enter at least a Organization name or an Organization number, and the combination of the two must be unique among the Organizations in the navigation tree.

   > **Specifications:** The name is limited to 50 alphanumeric characters.
   >
   > **Best Practice Recommendation:** Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

3. **Relation**. Specify the relation of the Organization being created to the selected existing Organization or Site on the inventory tree. There are three options for the relation:
   a. **Child** - The Organization will be placed under the selected Organization. Note that a child Organization can only be created when an Organization is selected in the inventory tree.
   b. **Parent** - The Organization will be placed above the selected Organization or Site.

      > **WARNING:** Do NOT use the parent relation option without engaging in close *advance* coordination with a BUILDER support representative.

   c. **Sibling** - The Organization will be placed at the same level as the selected Organization.

      > **Note:** The top ("root") level Organization is not allowed to have a sibling Organization.

Confirm or Cancel

Once the required minimum Organization data is entered,

a. Activate the **Add** button on the popup toolbar to create the Organization.
b. Alternatively, to close the window without creating the Organization, activate the **Cancel** button.

Login Again to View

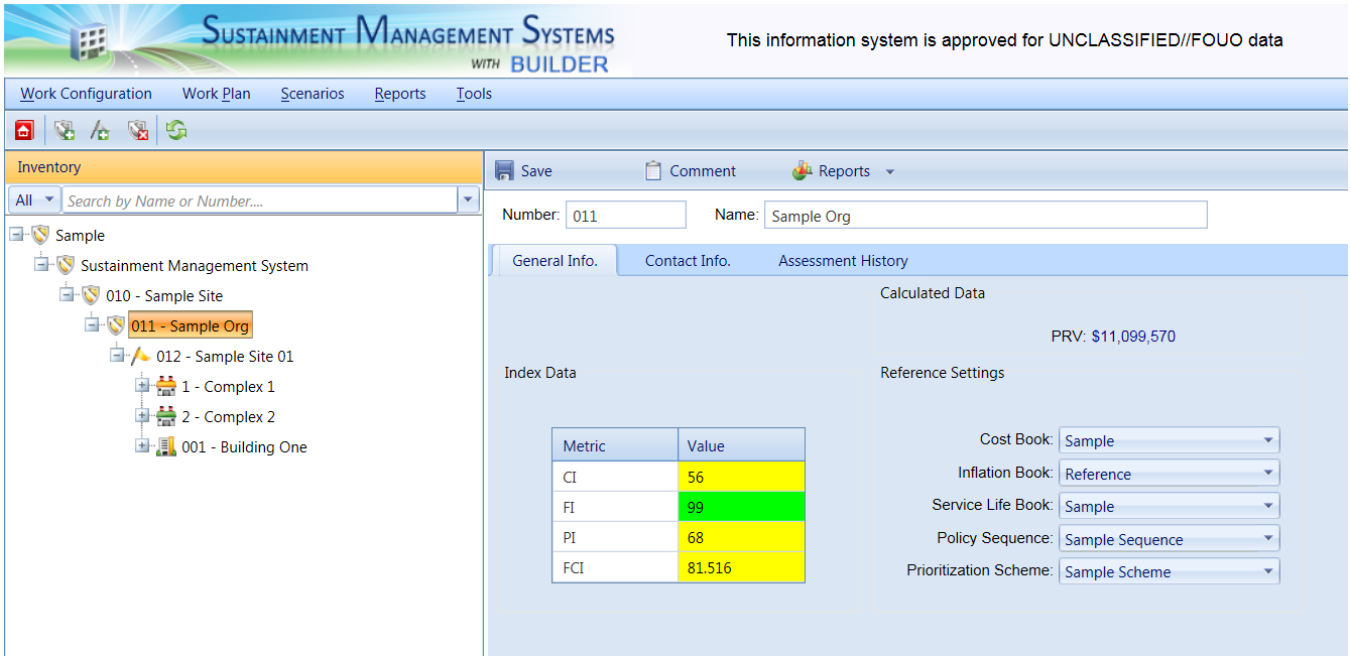
To see the new Organization in the inventory tree, log out of the program and then log back in again.

> **Note:** This action is needed only for newly created Organizations. Other levels of newly-created inventory will appear immediately in the tree.

Edit Organization Inventory Data

This topic describes the information that can be found and edited at the Organization data screen.

To edit data in an Organization, select the Organization in the inventory tree. This section describes what you will encounter in the content area of the screen



Toolbar

- **Save**. Saves changes made to the Organization data.
- **Comment**. Allows you to add, edit, and view comments about the Organization.
- **Reports**. Launches the Report Selection tool, which gives you access to a list of standard reports relevant to Organization inventory. See "Generate a Report" on page 184.

ID Line

On the ID line, you can edit the following:

- **Organization ID Number**. The ID Number is limited to 12 alphanumeric characters.
- **Organization Name**. Organization Name is allowed 50 alphanumeric characters. **Best Practice Recommendation:** Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

General Information Tab

Initially after an Organization is selected in the inventory tree, the General Information (**General Info.**) tab is shown and the following information can be edited:

- **Index Data** (Read-Only).
  - **Organization Condition Index (CI)**. The Organization CI displays the average CI of the Buildings in the Organization, weighted by replacement cost. This metric provides an overall sense of the condition of the group as a whole.
  - **Organization Functionality Index (FI)**. The Organization FI displays the average FI of the Buildings in the Organization, weighted by replacement cost. This metric provides an overall sense of the functionality of the Organization as a whole.
  - **Organization Performance Index (PI)**. The Organization PI displays the average PI of the Buildings in the Organization, weighted by replacement cost. This metric provides an overall sense of the performance of the Organization as a whole.
- **Calculated Data** (Read-Only).
  - **Plant Replacement Value (PRV)**. The aggregate Plant Replacement Value of the Buildings in the Organization.
- **Reference Settings**.
  - **Cost Book**. Select the cost book from the dropdown list you wish to use for the entire inventory of the Organization. The cost book selected will provide inventory replacement costs for inventory.
  - **Inflation Book**. From the dropdown list, select the inflation book you wish to use for the entire inventory of the Organization. The inflation book selected provides inflation multipliers per year for the projected replacement costs and defect repair costs for the inventory.
  - **Service Life Book**. Select the service life book from the dropdown list you wish to use for the entire inventory of the Organization. The service life book selected will estimate the remaining service life of

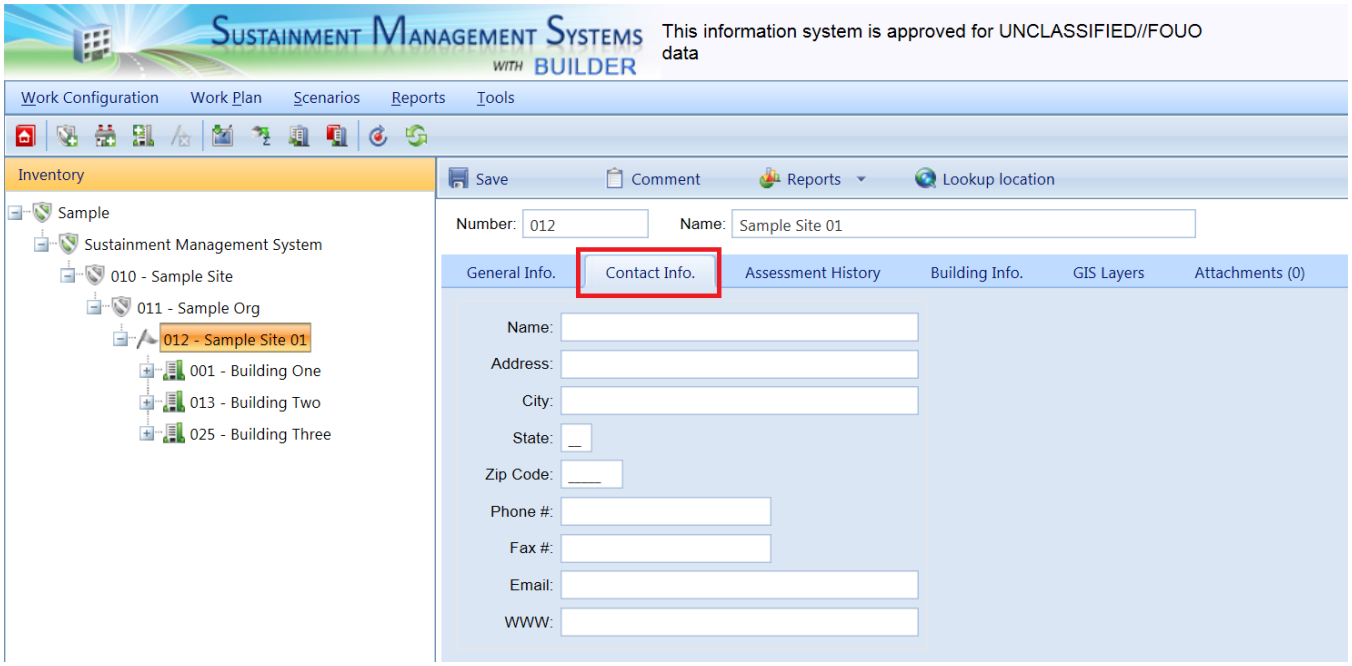
Component-Sections in the inventory on the basis of its life expectancy and condition. Also, the service life is used in estimating a rate of deterioration in the condition index of a Component-Section when no more than one inspection has been recorded.

- **Policy Sequence**. Select the policy sequence from the dropdown list you wish to use for the entire inventory of the Organization. The policy sequence selected will establish the order of precedence for applying policies so that only one standard is chosen for the inventory in the Building.
- **Prioritization Scheme**. Select the prioritization scheme from the drop-down list you wish to use for the entire inventory of the Organization. The prioritization scheme selected will prioritize and rank your work plan in a quick, objective, repeatable, and representative method with the touch of a button.

Note: Reference data can be set at the Organization level and at the Site level. If this data is set at both levels, the reference settings at the Site level will override the reference settings at the Organization level. Similarly, reference settings associated with a lower-level Organization will override the reference settings of Organizations above it.

Contact Information Tab

The contact information for the Organization can be viewed and edited by selecting the Contact Information (**Contact Info.**) tab.

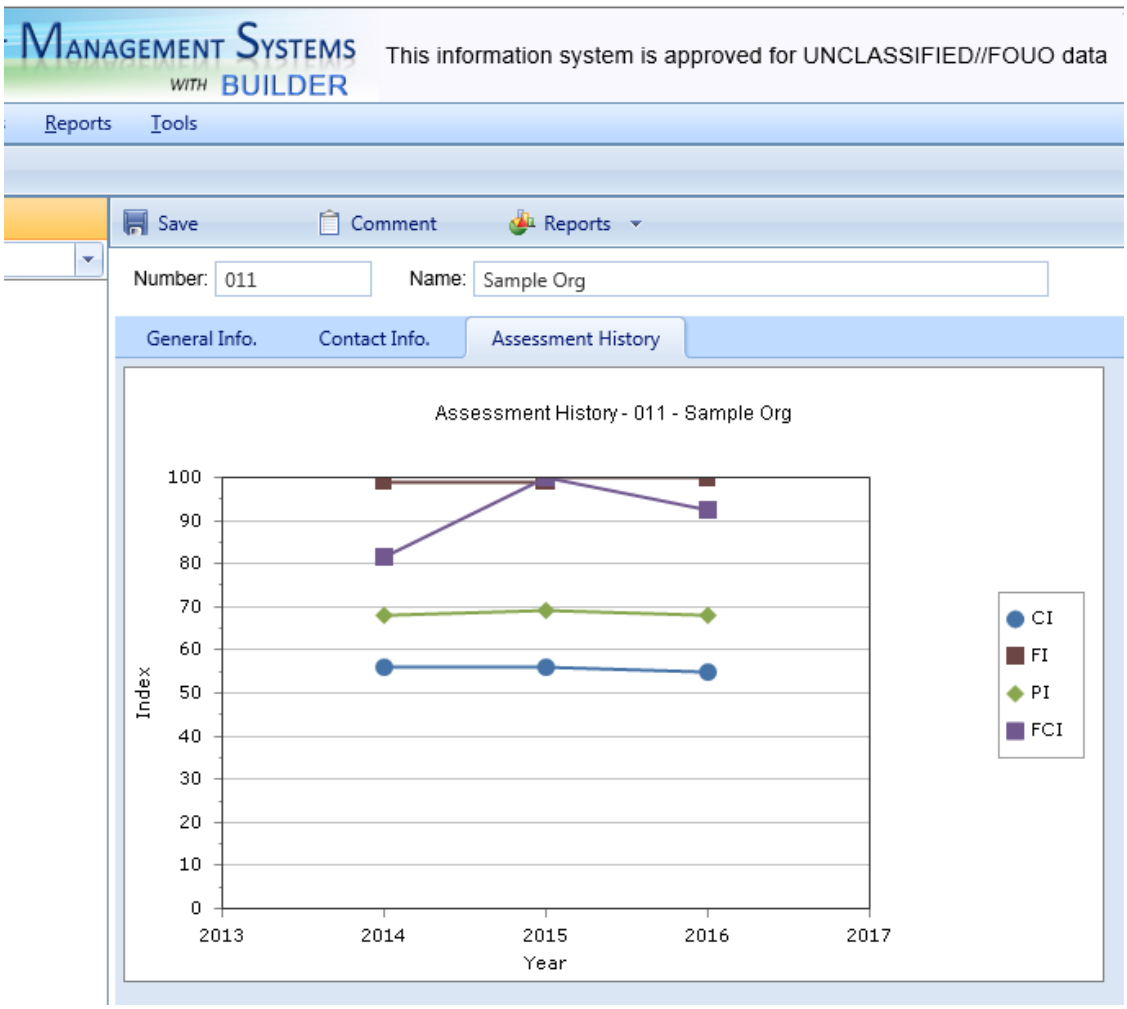


All of the additional Organization information is optional. It includes data regarding the official point of contact (POC) for the Organization:

- **Name**. Enter the name of the Organization point of contact, limited to 30 alphanumeric characters.
- **Address**. Enter the official street address of the Organization, limited to 30 alphanumeric characters).
- **City**. Enter the city of the Organization, limited to 15 alphanumeric characters.
- **State**. Enter the state of the Organization, limited to 2 alphanumeric characters.
- **Zip Code**. Enter the zip code of the Organization, limited to 10 alphanumeric characters.
- **Phone Number**. Enter the phone number of the Organization POC, limited to 20 alphanumeric characters.
- **FAX Number**. Enter the FAX number of the Organization POC, limited to 20 alphanumeric characters.
- **Email Address**. Enter the email address of the Organization POC, limited to 75 alphanumeric characters.
- **WWW**. Enter the URL (Web address) for the Organization, limited to 75 alphanumeric characters.

Assessment History Tab

The **Assessment History** tab provides a graph of the condition, functionality, performance, and FCI history of the Organization, displaying the Organization CI, Organization FI, Organization PI, and Organization FCI over time.



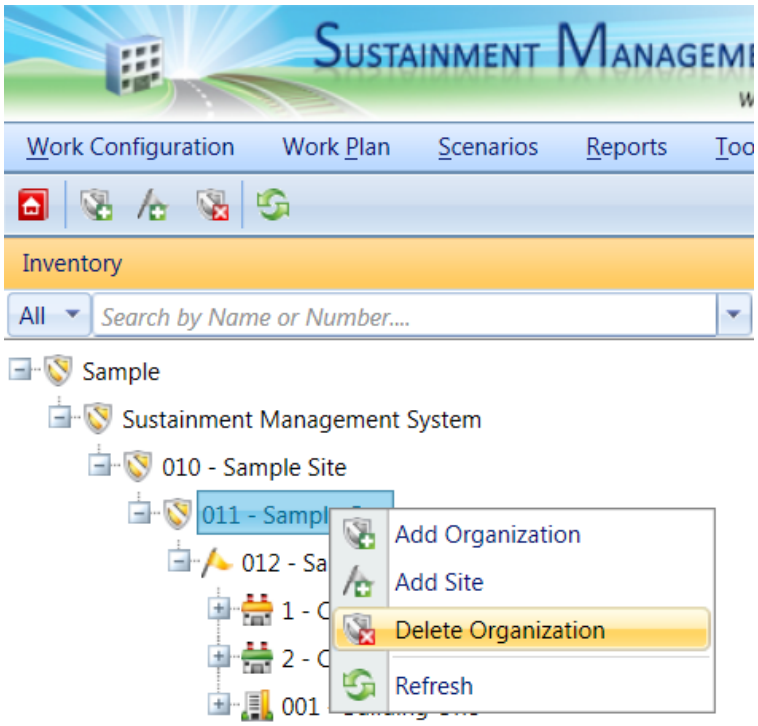
Delete an Organization

This topic shows how to delete an Organization, which also deletes all other records (Sites, Buildings, etc.) contained in the Organization.

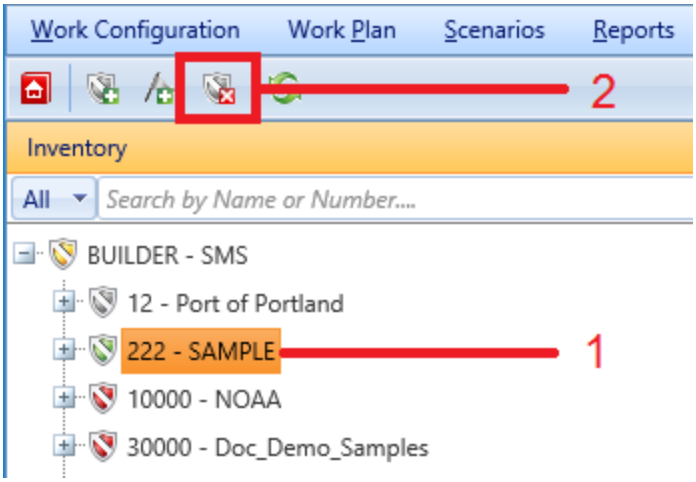
> **Permissions Note:** This action requires Administrator permission. If the inventory item is empty of any contents, then the deletion may also be performed by a Master Planner with permission for the relevant location in inventory.

To delete an Organization, navigate to it in the inventory tree and do one of the following:

a. Right-click the Organization. Then select "Delete Organization" from the options, as shown below.



b. Alternatively, select the Organization, then activate the **Delete Organization** icon on the menu toolbar.



WARNING: Deleting an Organization will also delete all inventory (Complexes, Buildings, Systems, Components, and Sections) in that Organization. This is a significant step to take and should only be done when you are certain that you wish to clear the entire inventory of the Organization you have selected.

Best Practice Recommendation: Making frequent backups of your inventory database will protect you from significant data losses if mistakes in deleting are made.

Working with Sites

A Site is the level in the hierarchical tree that ties your real property inventory to a physical location. This topic briefly introduces the features of a Site and how to use it in organizing your real property inventory. It also provides links to the operations that can be performed at the Site level.

Your BUILDER inventory can contain Buildings or facilities at a number of different geographic locations (Sites). If this is the case, then multiple Sites will be needed in your inventory tree structure, one for each geographic location. Alternatively, if all Buildings or facilities to be managed (or to be gleaned for information) are in the same geographic location, one Site will usually suffice.

The Importance of Geography to the Site Level

Knowing the geographic location of a Building is extremely important; therefore it is necessary to create a Site record for each geographic location before you can add Buildings to the database.

When creating a Site, keep in mind that the Site level in the hierarchy is not simply a method for subdividing inventory. It is the level where geographic factors are incorporated into BUILDER calculations, and therefore a Site needs to be confined to a relatively limited geographic area. A larger area can be covered by an Organization made up of multiple Sites.

Site-Level Properties

Several properties of Buildings are determined or affected by the Building's geographic location, most critically the Area Cost Factor, a multiplier that adjusts national average labor/material/equipment costs to local costs.

In BUILDER, the following properties are also affected by a Building's geographic location:

- The HVAC Zone, and
- The Seismic Zone of the Site.

Other factors set at the Site level are:

- Prioritization scheme(s).
- Selections for the cost book, inflation book, and service life book.

Property Inheritance

The Area Cost Factor, HVAC Zone (BUILDER only), Seismic Zone (BUILDER only), prioritization schemes, and selections for the cost book, inflation book, and service life book can also be set at the Organization level. If the Site and Organization values differ, then the Site level settings take priority.

Site Tasks

Tasks that can be performed on Sites are:

"Add a Site" below
"Edit Site Inventory Data" on page 31
"Delete a Site" on page 39

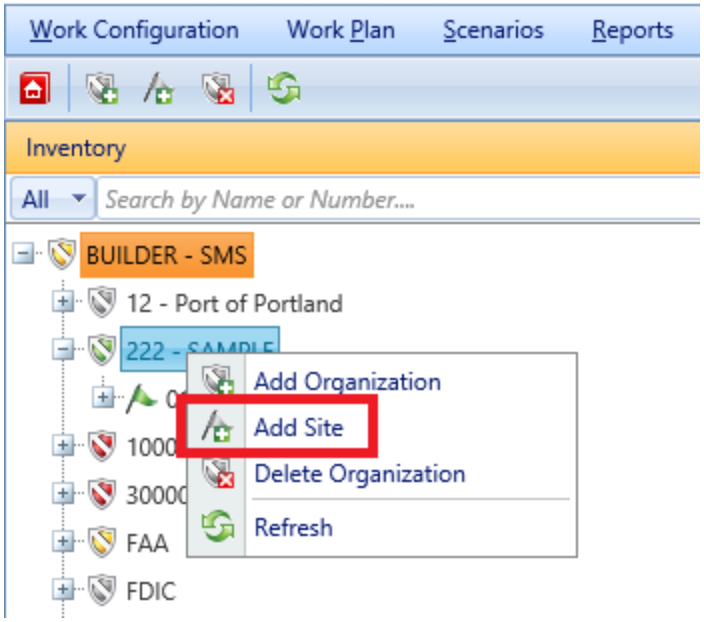
Add a Site

This topic shows how to add a Site and describes the required information to be entered. Additional information that can be entered for the Site is described in "Edit Site Inventory Data" on page 31.

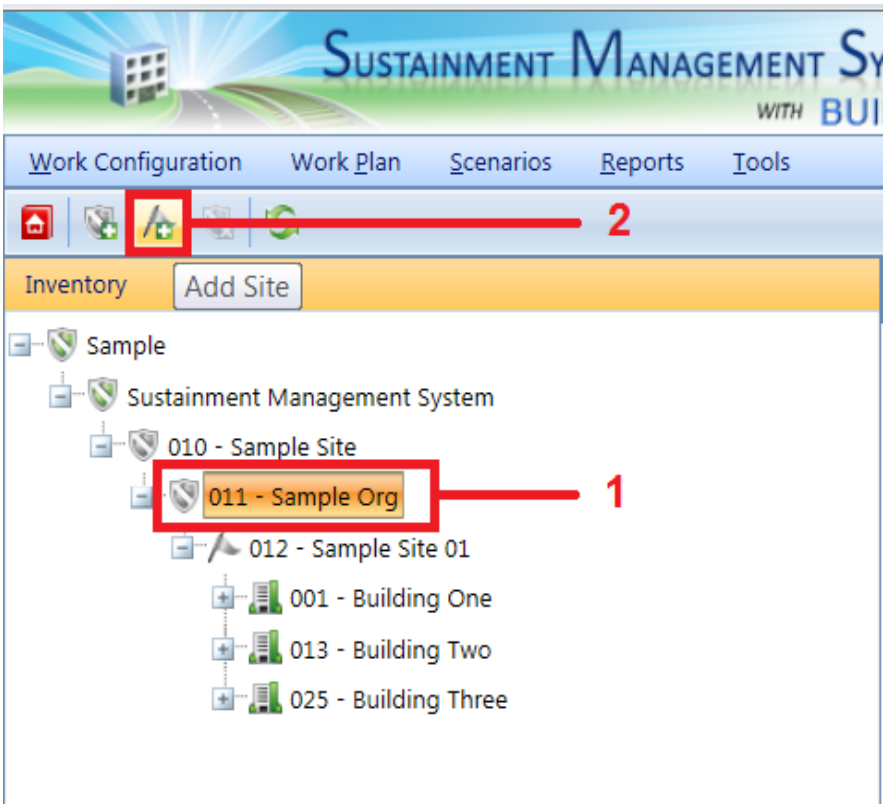
> **Permissions Note:** This action requires Master Planner or Administrator permission for the relevant location in inventory.

To add a new Site to an Organization, navigate to that Organization in the inventory tree and do one of the following:

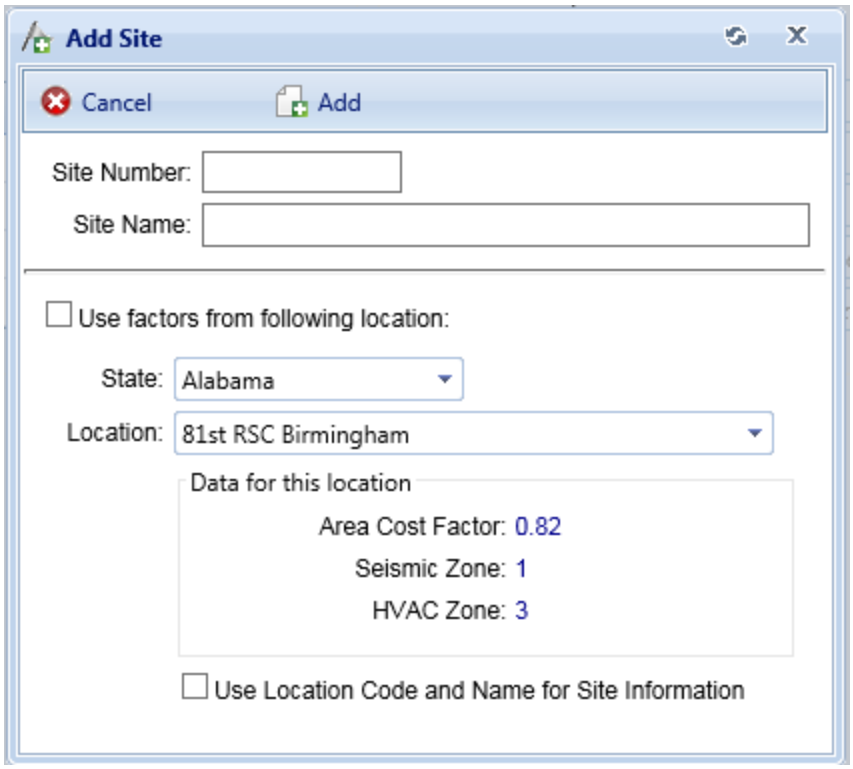
a. Right-click the Organization where the Site is to be located. Then select "Add Site" from the options.



b. Alternatively, select the Organization. Then activate the **Add Site** icon on the main toolbar, as shown below.



The "Add Site" popup window will appear.



Enter Required Site Information

This section describes the minimum data to be entered when creating a new Site. Other data that can be entered is described in "Edit Site Inventory Data" on the facing page.

In the "Add Site" popup window, enter the following required data:

1. **Site Number**. Enter the identifying number for the Site. Site Number may be left blank if you wish to supply only a name. You must enter at least a Site name or a Site number, and the combination of the two must be unique in the navigation tree.

   Specifications: The ID Number is limited to 12 alphanumeric characters.

2. **Site Name**. Enter the identifying name for this Site. Site Name may be left blank if you wish to supply only a number. You must enter at least a Site name or a Site number, and the combination of the two must be unique in the navigation tree.

   Specifications: The name is limited to 50 alphanumeric characters.

Best Practice Recommendation: Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

Copy Factors from a Listed Location (Optional)

In the popup window, you are also given the opportunity to copy Site location factors (Area Cost Factor, seismic zone, and HVAC zone) from an existing location. The BUILDER database contains this data for most major cities in the United States as well as Department of Defense installations. To copy factors, mark the "Use factors from following location" checkbox and select a location from the dropdown lists.

Copying factors from an existing location can also be done later by selecting **Lookup Location** from the Site toolbar.

Note: Until you set location factors, they will all be set by default to 1.00.

WARNING: Selecting the checkbox "Use Location Code and Name for Site Information" will overwrite your Site information with that of the location you are copying factors from.

Confirm or Cancel

Once the required minimum Site data is entered,

a. Activate the **Add** button on the popup toolbar to create the Site. Additional Site details can then be added as described in "Edit Site Inventory Data" below.
b. Alternatively, to close the window without creating the Site, activate the **Cancel** button.

Edit Site Inventory Data

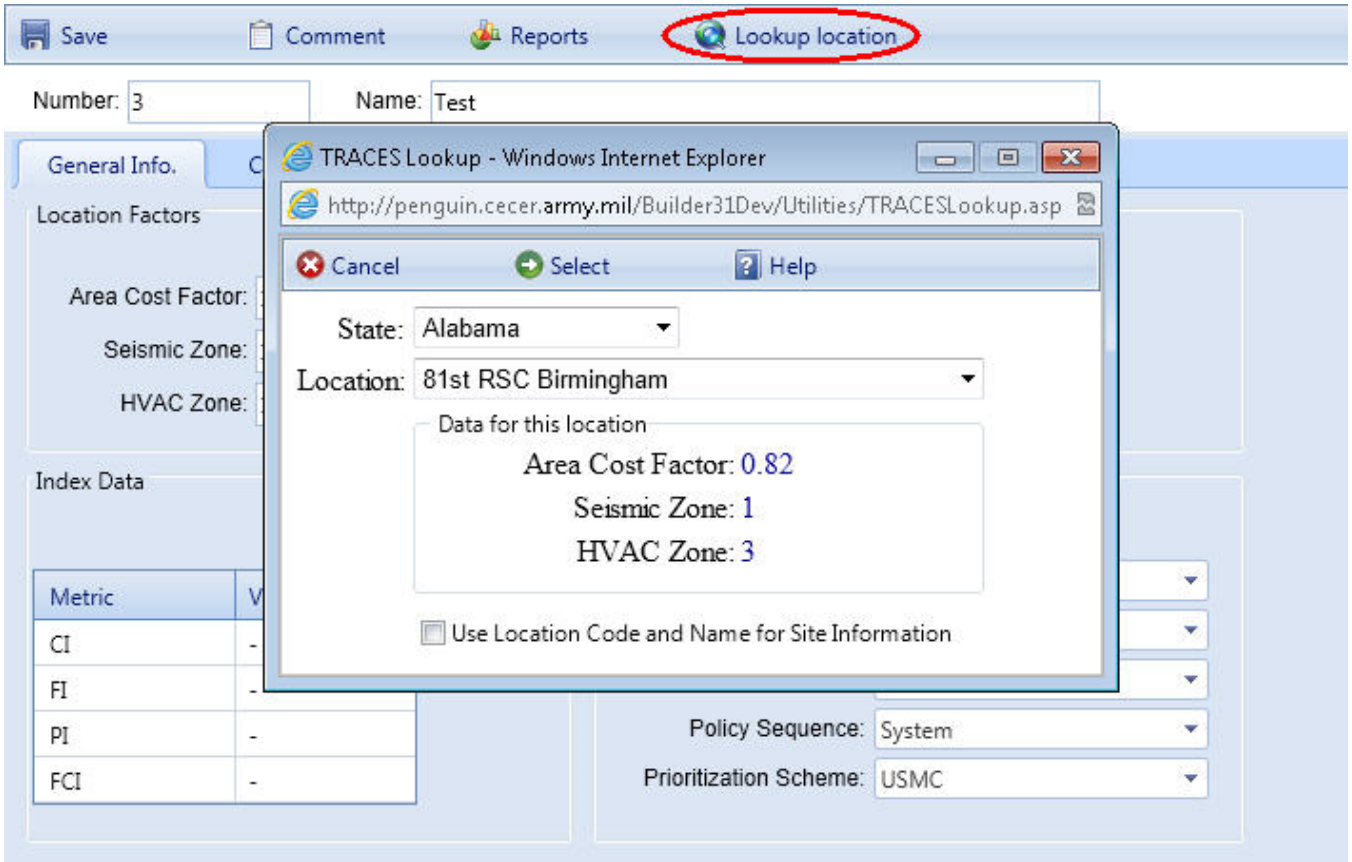
This topic describes the information that can be found and edited at the Site data screen.

To edit the inventory data for a specific Site, first select the Site in the inventory tree. The following sections describe information that can be obtained and actions that can be performed on the Site.

Toolbar

- **Save**. Saves changes made to the Site data.
- **Comment**. Allows you to add, edit, and view comments about the Site.

- **Reports**. Launches the Report Selection tool, which gives you access to a list of standard reports relevant to Site inventory. See "Generate a Report" on page 184.
- **Lookup Location**. Launches the site selection window, where you can adopt location factors (Area Cost Factor, seismic zone, and HVAC zone) from an existing location:



How to Use the Lookup Location Button to Set Site Location Factors

Select the state and then the location within that state where your Site is. The location list includes Department of Defense installations and most major cities in the United States. After the state and location are selected, activate the **Select** (Proceed) button to automatically fill in the factor data fields at your Site's **General Information** tab. If you activate the **Cancel** button, you will return to the Site content screen without making changes. If the location of your particular Site is not listed, choose a location close to your Site.

If you mark the "Use Location Code and Name for Site Information" checkbox, the location from the lookup list will be used as the name of your Site. If you leave that checkbox unmarked, your designated Site Number and Site Name will be pre-

served. If you mark the checkbox unintentionally, then you can rename your Site at the ID line in the Site content pane.

ID Line

On the ID line, you can edit the following:

- **Site ID Number**. The ID Number is limited to 12 alphanumeric characters.
- **Site Name**. Site Name is allowed 50 alphanumeric characters. **Best Practice Recommendation:** Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

General Information Tab (Site Level)

Initially, after a Site is selected in inventory tree, the **General Information** tab (abbreviated **General Info.**) is shown with the following information:

Location Factors

- **Area Cost Factor**. The Area Cost Factor is a multiplier used to adjust national average cost for labor/materials/equipment to local costs. It is generally a number between 0.8 and 1.2 for continental U.S. locations, but it can be even greater than 2.0 in high-cost geographic locations. The Area Cost Factor is set at the Site level.
- **Seismic Zone**. The seismic zone is an integer from 1 to 7 following the Federal Emergency Management Agency's (FEMA) U.S. seismic zoning. Determine your Site's seismic zone by consulting the seismic map of the U.S. seismic zones, which can be accessed by clicking the **Map** button next to the Seismic Zone dropdown selection box. the Seismic Zone is set at the Site level.
- **HVAC Zone**. The HVAC zone is an integer from 1 to 11. You can set your Site's HVAC zone by clicking the **Lookup Location** button on the toolbar, then selecting "State" and "Location" from the dropdown lists in the popup window, and finally clicking the **Select** button on the toolbar in the popup. Alternatively, you can consult the map of the U.S. HVAC zones, which can be accessed by activating the **Map** button next to the HVAC Zone text box. The HVAC Zone is set at the Site level.

Index Data (Read-Only)

- **Site Condition Index (CI)**. The Site CI displays the average CI of the Buildings in the Site, weighted by replacement cost. This metric provides an overall sense of the condition of the Site as a whole.

- **Site Functionality Index (FI)**. The Site FI displays the average FI of the Buildings in the Site, weighted by replacement cost. This metric provides an overall sense of the functionality of the Site as a whole.
- **Site Performance Index (PI)**. The Site PI displays the average PI of the Buildings in the Site, weighted by replacement cost. This metric provides an overall sense of the performance of the Site as a whole.
- **Site Facility Condition Index (FCI)**. The Site FCI metric provides an overall sense of deferred repair work at the Site level. It differs from the Site CI in that it is a monetary based metric. The formula is: FCI = (1- $current repair needs/$PRV) x 100, where the dollar amount of repair needs is obtained from BUILDER work items. More information about the FCI is available at "Appendix B: Facility Condition Index" on page 189.

Calculated Data

- **Number of Facilities**. Displays the number of Buildings included in the Site inventory.
- **PRV**. Displays the aggregate Plant Replacement Value of the Buildings at the Site, computed by adding the individual Building replacement costs.

Reference Settings

- **Cost Book**. From the dropdown list, select the cost book to be used for the entire inventory of the Site. The cost book selected will provide inventory replacement and defect repair costs for inventory.
- **Inflation Book**. From the dropdown list, select the inflation book to be used for the entire inventory of the Site. The inflation book selected provides inflation multipliers per year for the projected replacement costs and defect repair costs for the inventory.
- **Service Life Book.** From the dropdown list, select the service life book to be used for the entire inventory of the Site. The service life book selected will estimate the remaining service life of Component-Sections in the inventory on the basis of its life expectancy and condition. Also, the service life is used in estimating a rate of deterioration in the condition index of a Component-Section when no more than one inspection has been recorded.
- **Policy Sequence**. From the dropdown list, select the policy sequence to be used for the entire inventory of the Site. The policy sequence selected will establish the order of precedence for applying policies so that only one standard is chosen for the inventory in the Building.
- **Prioritization Scheme**. From the dropdown list, select the prioritization scheme to be used for the entire inventory of the Site. The prioritization scheme selected will prioritize and rank your work plan in a quick, objective, repeatable, and representative method with the touch of a button.

WARNING: Reference data can be set at the Organization level and at the Site level. If this data is set at both levels, the reference settings at the Site level will override the reference settings at the Organization level.

Additional Site Data

In addition to data available at the **General Information** tab, further Site information is displayed and can be edited at the tabs listed below.

All of the additional Site information listed below is optional, or else generated by BUILDER.

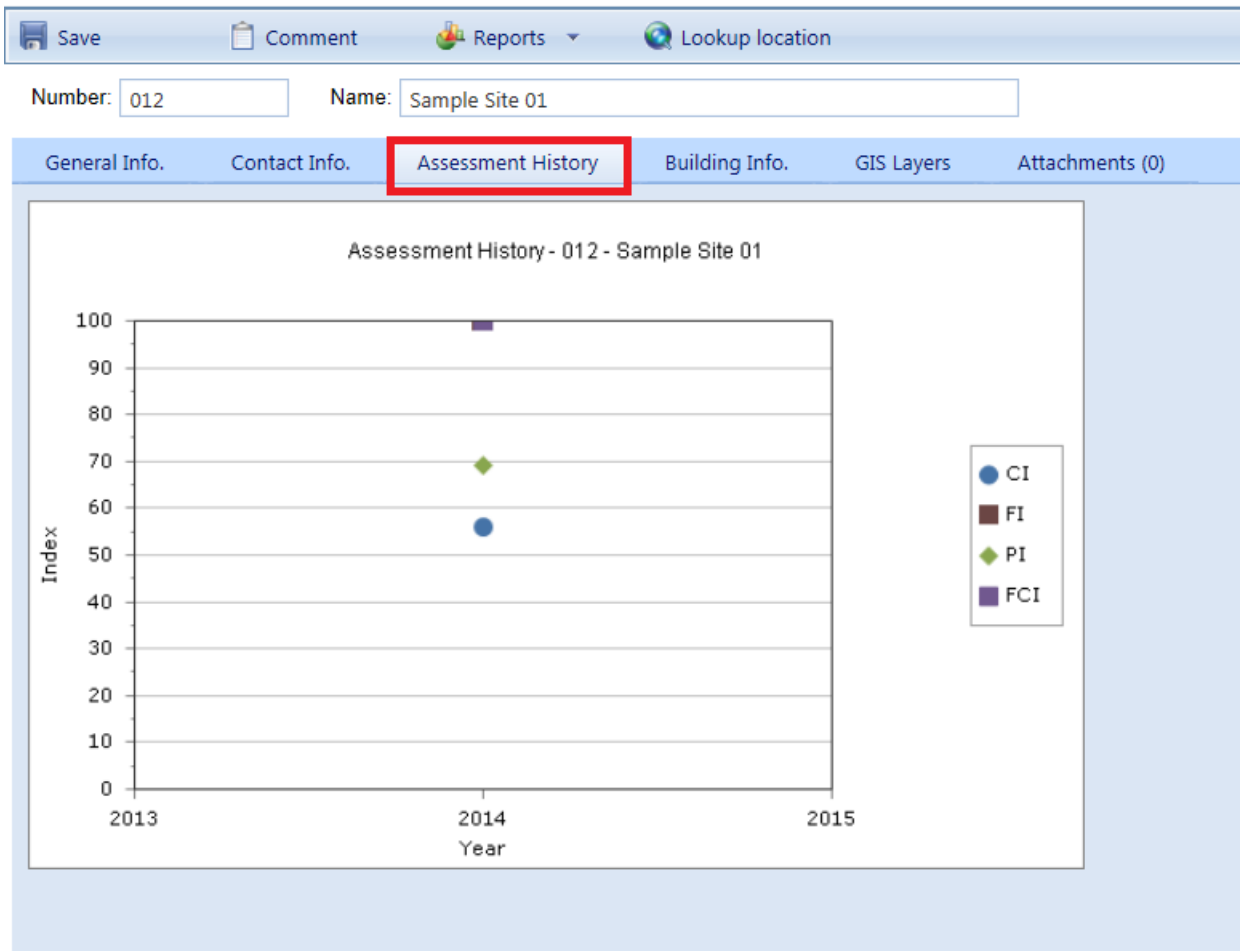
Contact Information Tab

Point of contact (POC) information for the Site may be viewed and edited by selecting the Contact Information (**Contact Info.**) tab. The available fields are as follows:

- **Name.** Enter the name of the Site point of contact, limited to 30 alphanumeric characters.
- **Address**. Enter the official street address of the Site, limited to 30 alphanumeric characters).
- **City**. Enter the city where the Site is located, limited to 15 alphanumeric characters.
- **State**. Enter the state where the Site is located, limited to 2 alphanumeric characters.
- **Zip Code**. Enter the zip code of the Site, limited to 10 alphanumeric characters.
- **Phone Number**. Enter the phone number of the Site POC, limited to 20 alphanumeric characters.
- **FAX Number**. Enter the FAX number of the Site POC, limited to 20 alphanumeric characters.
- **Email Address**. Enter the email address of the Site POC, limited to 75 alphanumeric characters.
- **WWW**. Enter the URL (Web address) for this Complex, limited to 75 alphanumeric characters.

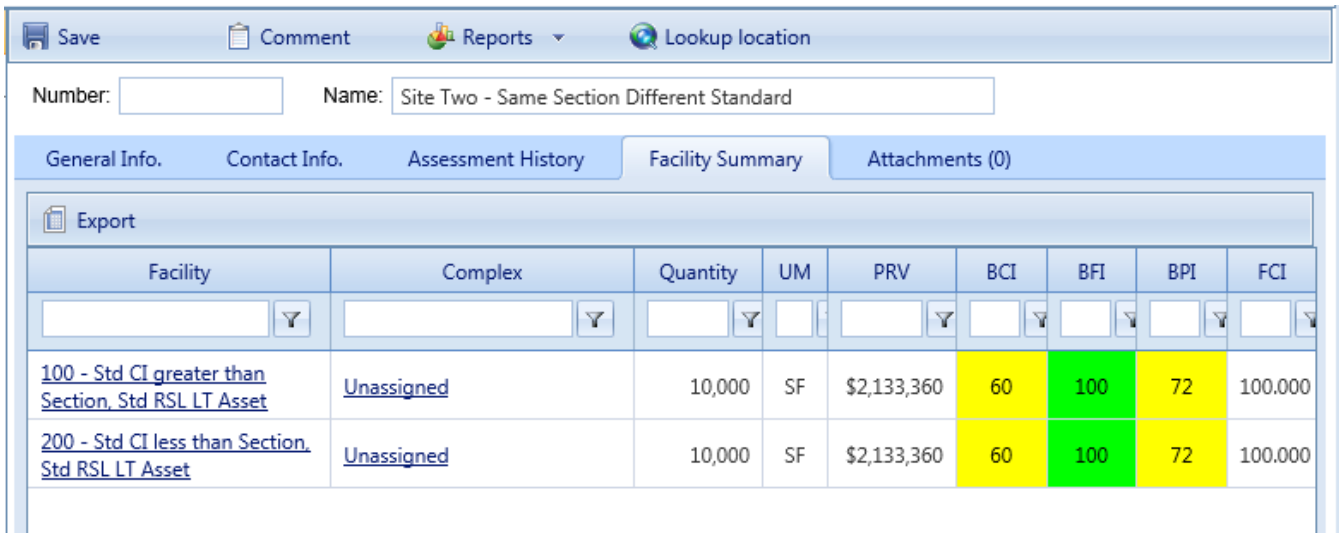
Assessment History Tab

The Assessment History tab provides a graph of the condition, functionality, and performance history of the Site, displaying the Site CI, Site FI Site PI, and Site FCI over time.



Facility Summary Tab

Basic information regarding Buildings at the Site is available under the **Facility Summary** tab. All of the data shown at this tab is read-only; however, which information is displayed can be influenced using the search filters provided. Each column shown at the **Facility Summary** tab is described below.

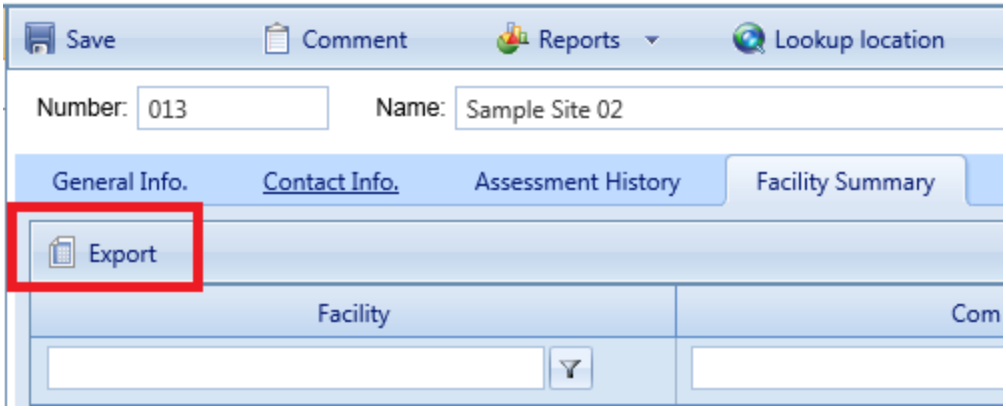


- **Facility**. Displays the Building number and name of each Building at the Site.
- **Complex**. Displays the Complex that the Building is part of, if applicable.
- **Quantity.** This is the primary measure of the size of the facility. For buildings, it will usually be square feet, if the unit of measure (UM) selected at User Preferences is "English".
- **Unit of Measure (UM).** Displays the unit of measure in use.
- **Plant Replacement Value (PRV)**. Displays the aggregate Plant Replacement Value of the Buildings at the Site.
- **Building Condition Index (BCI)**. Displays the current BCI of each Building at the Site.
- **Building Functionality Index (BFI)**. Displays the current BFI of each Building at the Site.
- **Building Performance Index (BPI)**. Displays the current BPI of each Building at the Site.
- **Facility Condition Index (FCI)**. Displays the current FCI of each Building at the Site. For more information about the Facility Condition Index, see "Appendix B: Facility Condition Index" on page 189.

Additionally, the Site CI, Site FI, Site PI and Site FCI are shown at the top of the tab, which are the average of each index of the Buildings at the Site, weighted by replacement cost.

Export Information from the Facility Summary Tab

All the information at the **Facility Summary** tab can be exported to a Microsoft Excel spreadsheet by activating the **Export** button, located below "Number" on the ID line.



Attachments Tab

The **Attachments** Tab allows files such as an image file to be attached to the Site's record. An image might be a photograph, or it could be an electronic image of written notes or diagrams made during inventory.

The attachment may be in any of the following formats:

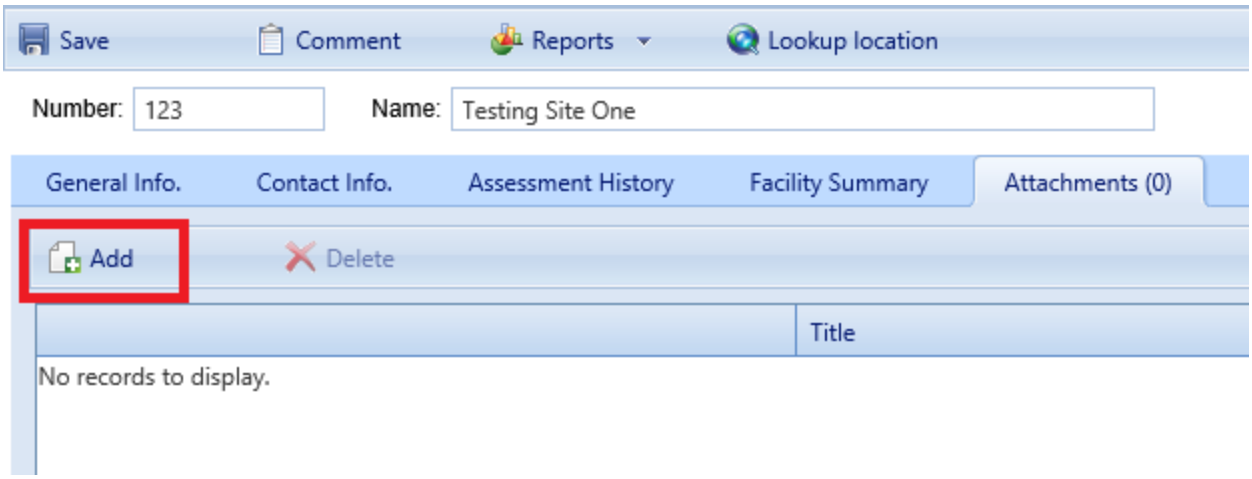
- .jpg
- .jpeg
- .png
- .zip
- .doc
- .pdf

Note: As of July 26, 2016, .doc format is allowed, but not .docx.

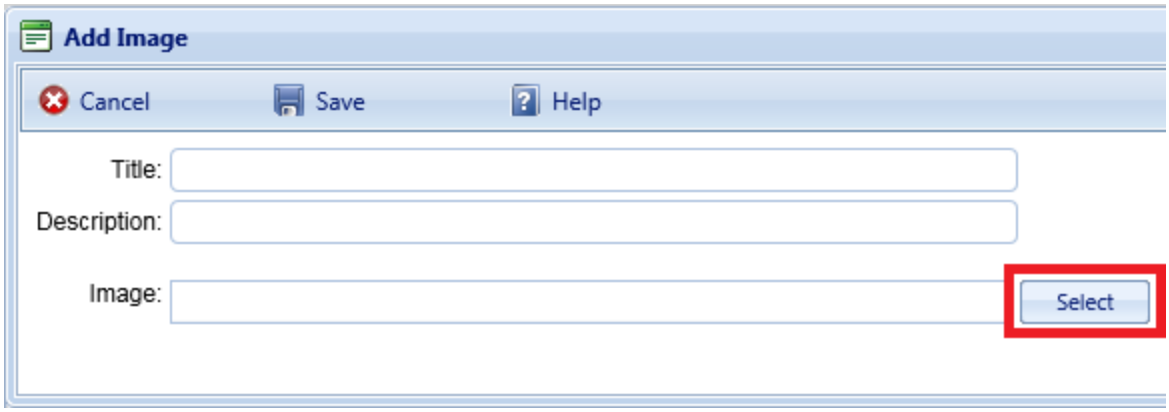
Attach a File

To attach a file,

1. At the **Attachments** tab, activate the **Add** button in the toolbar below the row of tabs.



This will open the "Add Image" popup window:



2. Enter Title and Description information for the attachment.
3. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file.
4. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".
5. Once the required attachment data is entered, activate the **Save** button on the popup toolbar. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.

Delete a Site

This topic shows how to delete a Site, which also deletes all other records (Buildings, Systems, etc.) contained in the Site.

Permissions Note: This action requires Administrator permission. If the inventory item is empty of any contents, then the deletion may also be performed by a Master Planner with permission for the relevant location in inventory.

To delete a Site, navigate to it in the inventory tree and do one of the following:

a. Right-click the Site. Then select "Delete Site" from the options.
b. Alternatively, select the Site, then activate the **Delete Site** icon on the menu toolbar.

WARNING: Deleting a Site deletes all inventory (Complexes, Buildings, Systems, Components, and Sections) in that Site. This is a significant step to take and should only be done when certain that you wish to clear the entire inventory of the selected Site.

Best Practice Recommendation: Making frequent backups of the inventory database will protect you from significant data losses if an unintended deletion is performed.

Working with Complexes

A Complex is an optional level in the hierarchical tree, used to group Buildings/facilities together into one management unit. This topic briefly introduces the features of a Complex and how to use it in organizing your real property inventory. It also provides links to the operations that can be performed at the Complex level.

Grouping Buildings into Complexes

BUILDER allows you to group multiple Buildings at a Site into an organizational level between Sites and Buildings, called a Complex. This is especially useful if your inventory has a large number of Buildings at a single location.

The grouping may be based on a similarity between the Buildings, or it may have a different basis such as who manages the group, or who the Buildings are leased from or to.

Each Building may belong to at most one Complex, but it is not required for a Building to be in a Complex at all. Three alternative strategies are possible:

a. You may choose not to use Complexes at all, in which case Buildings will be listed directly under their Site in the inventory tree.
b. You can group all of your Buildings into Complexes.
c. You can create Complexes, but you may also have Buildings at your Site that are not assigned to any Complex. In this case, you may choose either to list unassigned Buildings directly under their Site, or to create a Complex named "Unassigned" which will have all such Buildings listed under it in the inventory tree.

Complex Tasks

Tasks that can be performed on Complexes are:

"Add a Complex" on the next page
" Edit Complex Inventory Data" on page 47
"Delete a Complex" on page 53

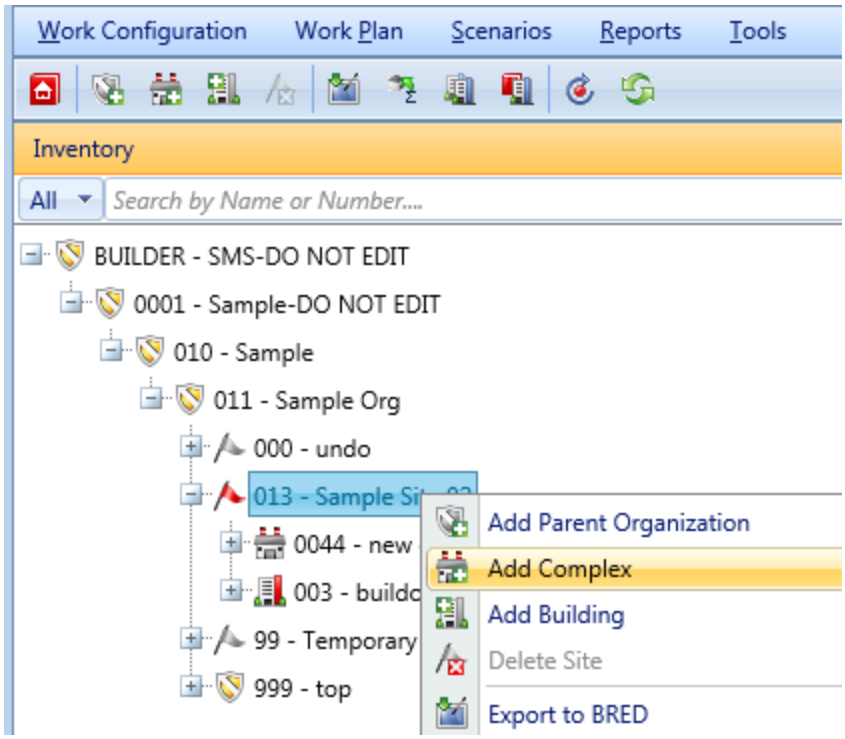
Add a Complex

This topic shows how to add a Complex and describes the required information to be entered. Additional information that can be entered is described in " Edit Complex Inventory Data" on page 47.

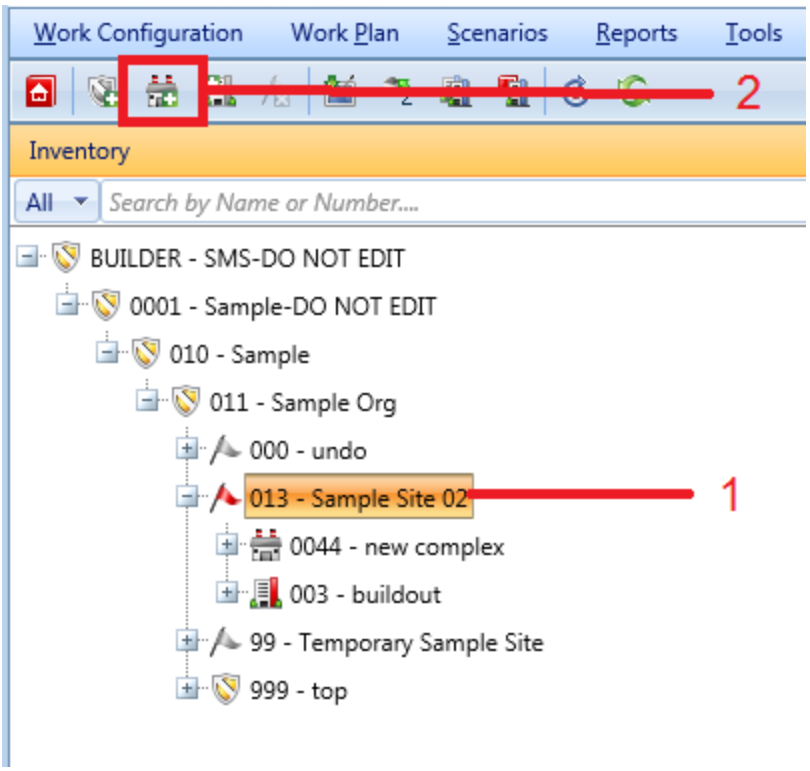
> **Permissions Note:** This action requires Work Planner permission or above for the relevant location in inventory.

To add a new Complex to a Site, navigate to that Site in the inventory tree and do one of the following:

a. Right-click the Site. Then select "Add Complex" from the options.



b. Alternatively, select the Site, then activate the **Add Complex** icon on the main toolbar, as shown below.



The "Add Complex" popup window will appear.

Enter Required Complex Data

This section describes the minimum data to be entered when creating a new Complex. Other data that can be entered is described in " Edit Complex Inventory Data" on page 47

In the "Add Complex" popup window, enter the following required data:

1. **Complex Number**. Enter the identifying number for the Complex. The Complex Number field may be left blank if you wish to supply only a name. You must enter at least a Complex name or a Complex number, and the combination of the two must be unique within the Site.

   Specifications: The Complex The ID Number is limited to 12 alphanumeric characters.

2. **Complex Name**. Enter the identifying name for this Complex. The Complex Name field may be left blank if you wish to supply only a number. You must enter at least a Complex name or a Complex number, and the combination of the two must be unique within the Site.

   Specifications: The name is limited to 50 alphanumeric characters.

   Best Practice Recommendation: Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

Confirm or Cancel

Once the required minimum Complex data is entered,

a. Activate the **Add** button on the popup toolbar to create the Complex. Additional Complex details can then be added as described in " Edit Complex Inventory Data" on page 47
b. Alternatively, to close the window without creating the Complex, activate the **Cancel** button.

Assign One or More Buildings to a Complex

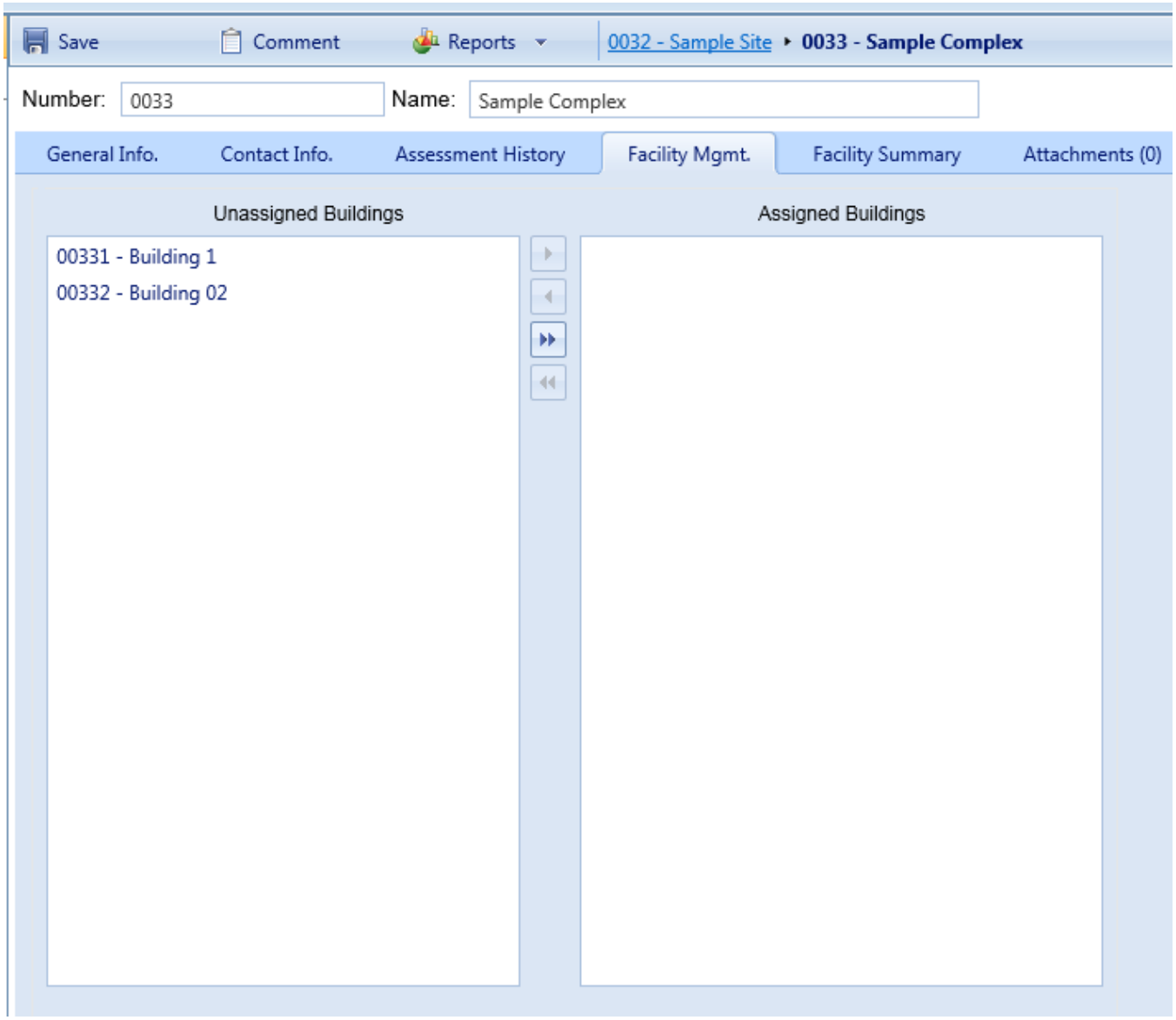
Complexes can be used to group similar Buildings, but assigning a Building to a Complex is optional. The steps below outline how to assign (move) or unassign (remove) a Building to/from a Complex.

To prepare for assigning Buildings to a Complex, first navigate to the Complex in the inventory tree and select it.

In the content area (illustrated below), select the **Facility Mgmt.** tab. This will bring up two columns:

- "Unassigned Buildings" (the column on the left) lists Buildings available to be assigned to a Complex.
- "Assigned Buildings" (the column on the right) lists Buildings already assigned to the selected Complex.

Note: The Buildings and the Complex must be in the same Site.



Move Buildings into a Complex

To move one or more Buildings from the "Unassigned Buildings" column into the Complex, use the arrow keys located between the two columns as described below.

To move all of the Buildings into the Complex,

1. Activate the button with double right-pointing arrows.
2. Use the **Save** button on the content area toolbar to lock in your change.

To move one Building into the Complex,

1. Select the Building in the "Unassigned Buildings" column.
2. Activate the single right-pointing arrow.
3. Use the **Save** button on the content area toolbar to lock in your change.

To move multiple Buildings into the Complex,

1. Select the Buildings in the "Unassigned Buildings" column, using the Shift and Tab keys as needed.
2. Activate the single right-pointing arrow.
3. Use the **Save** button on the content area toolbar to lock in your change.

Remove Buildings from a Complex

To move one or more Buildings from the Complex back into the "Unassigned Buildings" column, use the arrow keys located between the two columns as described below.

To move all of the Buildings,

1. Activate the button with double left-pointing arrows.
2. Use the **Save** button on the content area toolbar to lock in your change.

To move one Building,

1. Select the Building in the "Assigned Buildings" column.
2. Activate the single left-pointing arrow.
3. Use the **Save** button on the content area toolbar to lock in your change.

To move multiple Buildings,

1. Select the Buildings in the "Assigned Buildings" column, using the Shift and Tab keys as needed.
2. Activate the single left-pointing arrow.
3. Use the **Save** button on the content area toolbar to lock in your change.

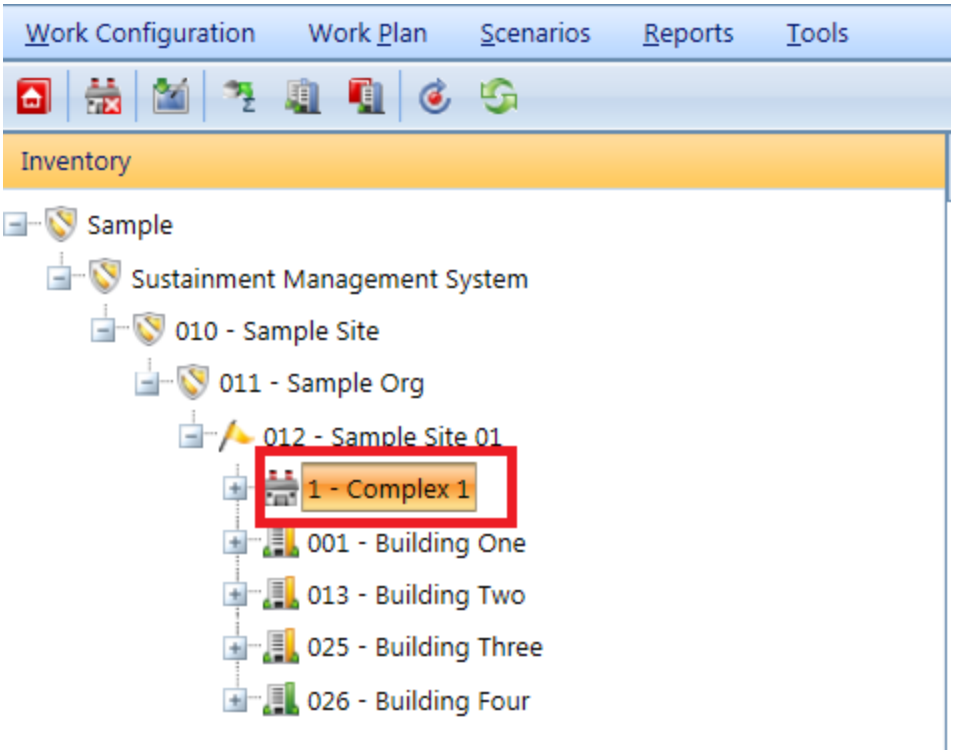
Move Buildings from one Complex to Another

To move a Building from one Complex to a different one, you must first navigate to the Complex it is assigned to and unassign it (see *Remove Buildings from a Complex*, immediately above). Then navigate to the destination Complex and follow the instructions in *Move Buildings into a Complex*, above).

Edit Complex Inventory Data

This topic describes the information that can be found and edited at the Complex data screen.

To edit the inventory data for a specific Complex, first select the Complex in the inventory tree.



The following sections describe information that can be obtained and actions that can be performed on the Complex.

Toolbar

The following options are available at the content screen toolbar:

- **Save**. Saves changes made to the Complex data.
- **Comment**. Allows you to add, edit, and view comments about the Complex.
- **Reports**. Launches the Report Selection tool, which gives you access to a list of standard reports relevant to Complex inventory. See "Generate a Report" on page 184.

ID Line

On the ID line, you can edit the following:

- **Complex ID Number**. The ID Number is limited to 12 alphanumeric characters.
- **Complex Name**. Complex Name is allowed 50 alphanumeric characters. **Best Practice Recommendation:** Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

General Complex Information Tab

Initially, after a Complex is selected in the inventory tree, the **General Information** tab (abbreviated **General Info.**) is shown with the following information:

- **Index Data (Read-Only)**.
  - **Complex Condition Index (CI)**. The Complex CI displays the average CI of the buildings in the Complex, weighted by replacement cost. This metric provides an overall sense of the condition of the Complex as a whole.
  - **Complex Functionality Index (FI)**. The Complex FI displays the average FI of the buildings in the Complex, weighted by replacement cost. This metric provides an overall sense of the functionality of the Complex as a whole.
  - **Complex Performance Index (PI)**. The Complex PI displays the average PI of the buildings in the Complex, weighted by replacement cost. This metric provides an overall sense of the performance of the Complex as a whole.
  - **Complex Facility Condition Index (FCI)**. The Complex FCI metric provides an overall sense of deferred repair work at the Complex level. It differs from the Complex CI in that it is a monetary based metric. The formula is: FCI = (1- $current repair needs/$PRV) x 100, where the dollar amount of repair needs is obtained from BUILDER work items. More information about the FCI is available at "Appendix B: Facility Condition Index" on page 189.
- **Calculated Data (Read-Only)**.
  - **Number of Facilities**. Displays the number of Buildings included in the Complex inventory.
  - **PRV**. Displays the aggregate Plant Replacement Value of the Buildings at the Complex, computed by adding the individual Building replacement costs.

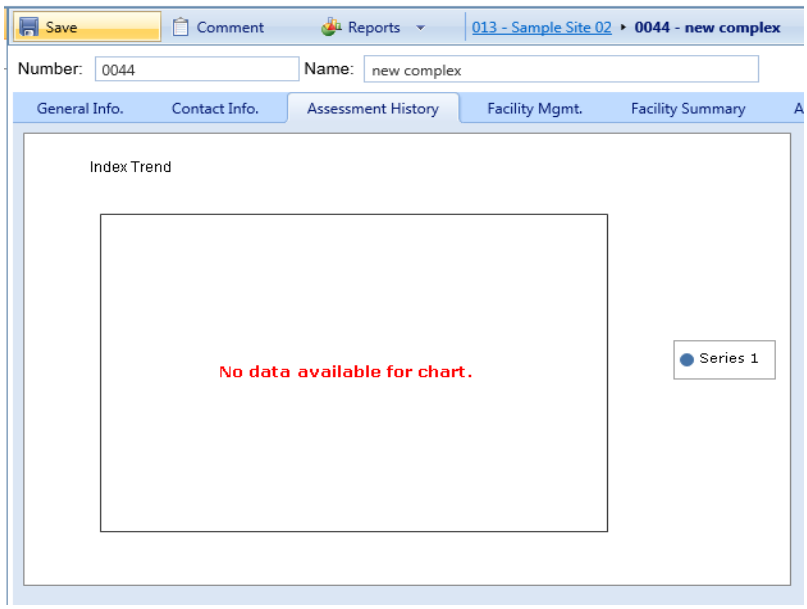
Contact Information Tab

Point of contact (POC) information for the Complex may be viewed and edited by selecting the Contact Information (**Contact Info.**) tab. The available fields are as follows:

- **Name**. Enter the name of the Complex point of contact, limited to 30 alphanumeric characters.
- **Address**. Enter the official street address of the Complex, limited to 30 alphanumeric characters.
- **City**. Enter the city where the Complex is located, limited to 15 alphanumeric characters.
- **State**. Enter the state where the Complex is located, limited to 2 alphanumeric characters.
- **Zip Code**. Enter the zip code of the Complex, limited to 10 alphanumeric characters.
- **Phone Number**. Enter the phone number of the Complex POC, limited to 20 alphanumeric characters.
- **FAX Number**. Enter the FAX number of the Complex POC, limited to 20 alphanumeric characters.
- **Email Address**. Enter the email address of the Complex POC, limited to 75 alphanumeric characters.
- **WWW**. Enter the World Wide Web (WWW) URL address for this Complex, limited to 75 alphanumeric characters.

Assessment History Tab

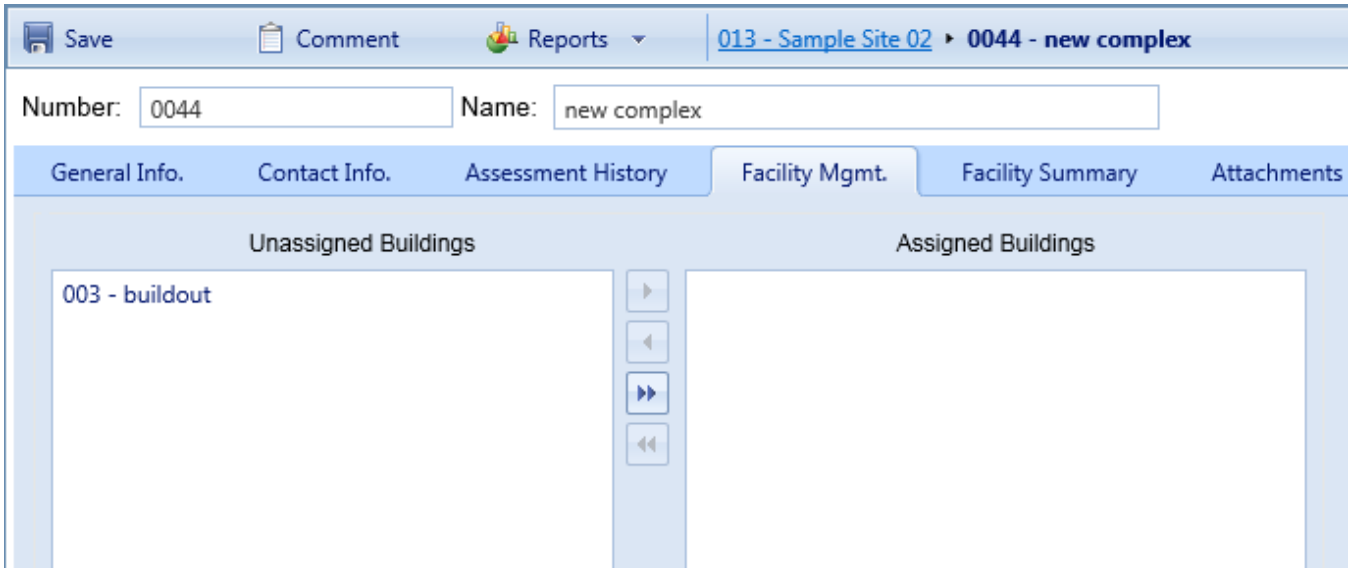
The Assessment History tab provides a graph of the condition, functionality, performance and FCI history of the Complex, displaying the Complex CI, Complex FI, Complex PI and Complex FCI over time.



Facility Management Tab

The Facility Management (**Facility Mgmt.**) tab lists the Buildings currently assigned to the Complex. Buildings can be assigned to or removed from the Complex at this tab. The Buildings are separated into two columns:

- **Unassigned Buildings**. Lists the Buildings at the Site that are not assigned to a Complex.
- **Assigned Buildings**. Lists the Buildings assigned to the current Complex.

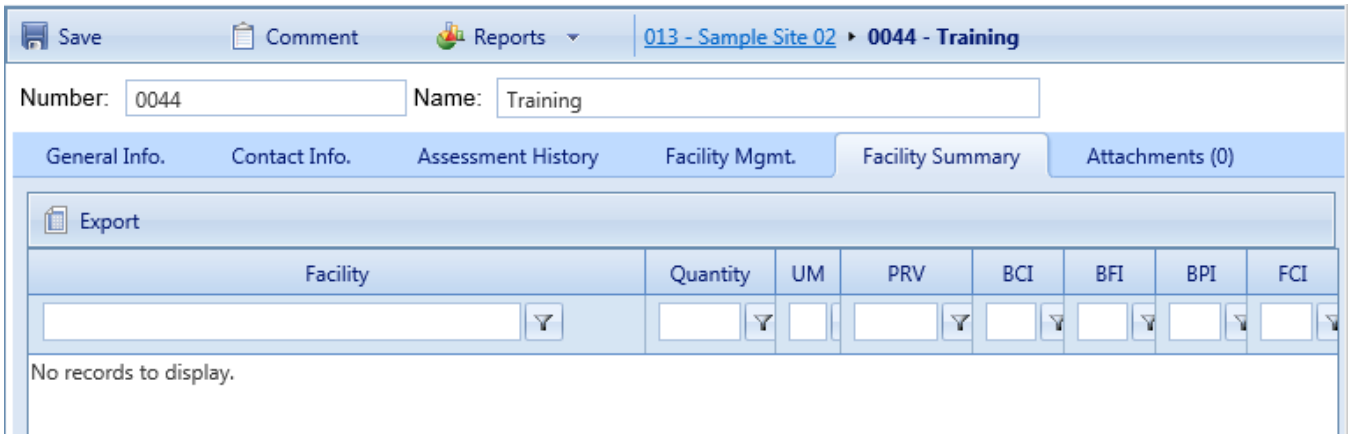


Select the desired Building and use the arrow keys to move unassigned Buildings onto the assigned list or to remove Buildings from the assigned list to the

unassigned list. Only Buildings that are not assigned to a Complex will appear in the list on the left. If you wish to move a Building from one Complex to another, you must remove it from the first Complex before you can add it to the second.

Facility Summary Tab

Basic information regarding Buildings at the Complex is available under the **Facility Summary** tab. All of the data shown at this tab is read-only; however, which information is displayed can be influenced using the search filters provided. Each column shown at the **Facility Summary** tab is described below.

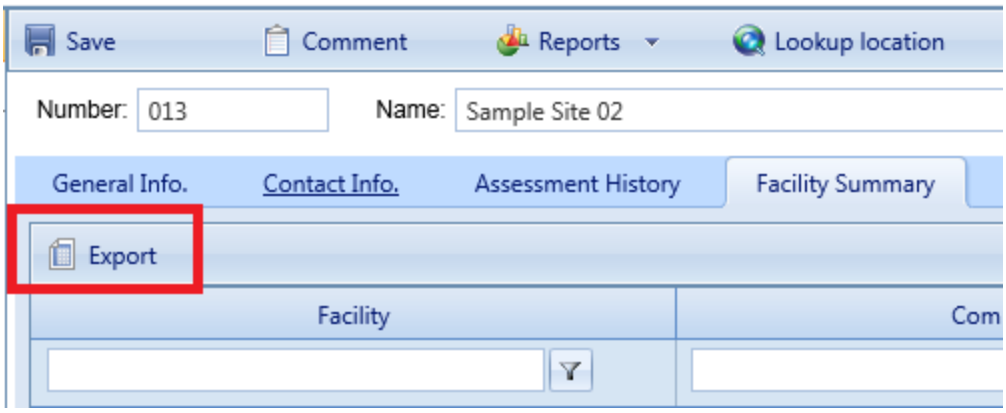


- **Facility**. Displays the number and name of each Building in the Complex.
- **Quantity**. This is the primary measure of the size of the facility. For buildings, it will usually be square feet, if the User Preferences (UM) selected at User Preferences is "English". (User preferences are explained in the *BUILDER Getting Started Guide*)
- **Unit of Measure (UM)**. Displays the unit of measure in use.
- **Plant Replacement Value (PRV)**. Displays the aggregate Plant Replacement Value of the Buildings in the Complex.
- **Building Condition Index** (BCI). Displays the current Building Condition Index of each Building in the Complex.
- **Building Functionality Index (BFI)**. Displays the current Building Functionality Index of each Building in the Complex.
- **Building Performance Index (BPI)**. Displays the current Building Performance Index of each Building in the Complex.
- **Facility Condition Index (FCI)**. Displays the current Facility Condition Index of each Building in the Complex. For more information about the Facility Condition Index, see "Appendix B: Facility Condition Index" on page 189.

Additionally, the Complex CI, Complex FI Complex PI and Complex FCI are shown at the top of the tab, which are the average of each index of the Buildings in the Complex weighted by replacement cost.

Export Information from the Facility Summary Tab

All the information at the **Facility Summary** tab can be exported to a Microsoft Excel spreadsheet by activating the **Export** button, located below "Number" on the ID line.



Attachments Tab

The **Attachments** Tab allows files such as an image file to be attached to the Complex's record. An image might be a photograph, or it could be an electronic image of written notes or diagrams made during inventory.

The attachment may be in any of the following formats:

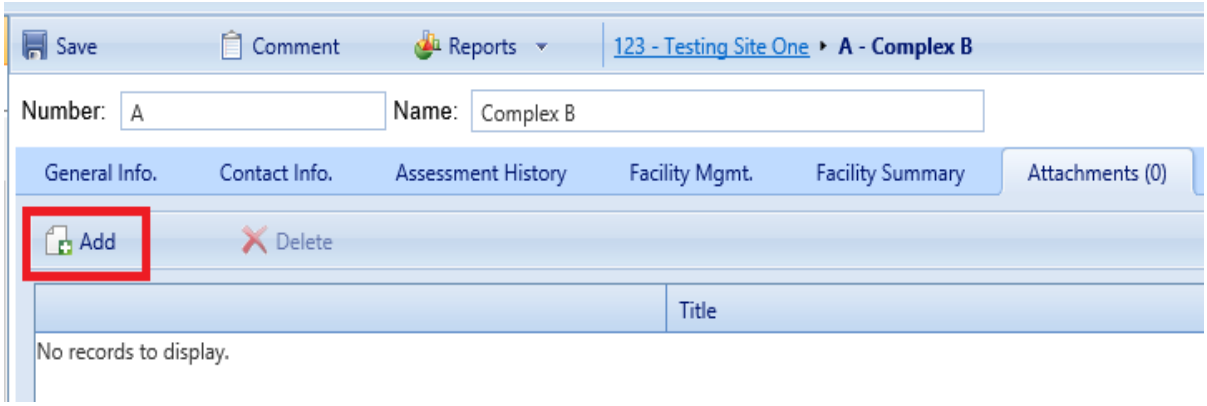
- .jpg
- .jpeg
- .png
- .zip
- .doc
- .pdf

  Note: As of July 26, 2016, .doc format is allowed, but not .docx.

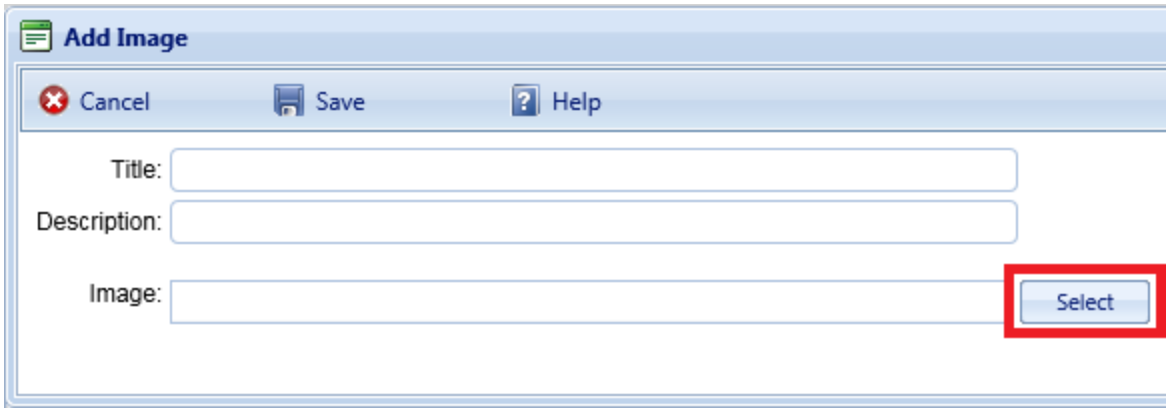
Attach a file

To attach a file,

1. At the **Attachments** tab, activate the **Add** button in the toolbar below the row of tabs.



This will open the "Add Image" popup window:



2. Enter Title and Description information for the attachment.
3. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file.
4. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".
5. Once the required attachment data is entered,
    a. Activate **Save** on the popup toolbar.
    b. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.

Delete a Complex

This topic shows how to delete a Complex, which also deletes all other records (Buildings, Systems, etc.) contained in the Complex.

Permissions Note: This action requires Administrator permission. If the inventory item is empty of any contents, then the deletion may also be performed by a Master Planner with permission for the relevant location in inventory.

To delete a Complex, navigate to it in the inventory tree and do one of the following:

a. Right-click the Complex. Then select "Delete Complex" from the options.
b. Alternatively, select the Complex, then activate the **Delete Complex** icon on the main toolbar.

WARNING: Deleting a Complex deletes all inventory (Buildings, Systems, Components, and Sections) in the Complex. This is a significant step to take and should only be done when you are certain that you wish to clear the entire inventory of the Complex you have selected.

Best Practice Recommendation: Making frequent backups of your inventory database will protect you from significant data losses if mistakes in deleting are made.

Working with Buildings

A large amount of information is stored at the Building level of the hierarchical tree. This topic describes what a Building is and how to use it in organizing your real property inventory. It also provides links to the operations that can be performed at the Building level.

The Building level is a pivotal level in BUILDER. Levels above the Building level give the organizational and geographic context of the Building. Levels below the Building exist to conceptually subdivide the Building to create an organization for the Component-Sections that represent the physical parts of the Building.

The Building level is the lowest level in the SMS hierarchy that is shared by both BUILDER and ROOFER. (Below the Building level, ROOFER has just one more hierarchical level, the roof section.)

> **Note:** Because a Building record is almost always larger and more complex than any other hierarchical record in BUILDER, it will take longer for a Building record to process and appear on the screen than it will for records at other levels in the hierarchy.

Building Tasks

Tasks that can be performed on Buildings are:

"Add a Building" on the next page
"Edit Building General Information" on page 60
"Edit Additional Building Inventory Data" on page 65
"Delete a Building" on page 71

Additional useful information can be found here:

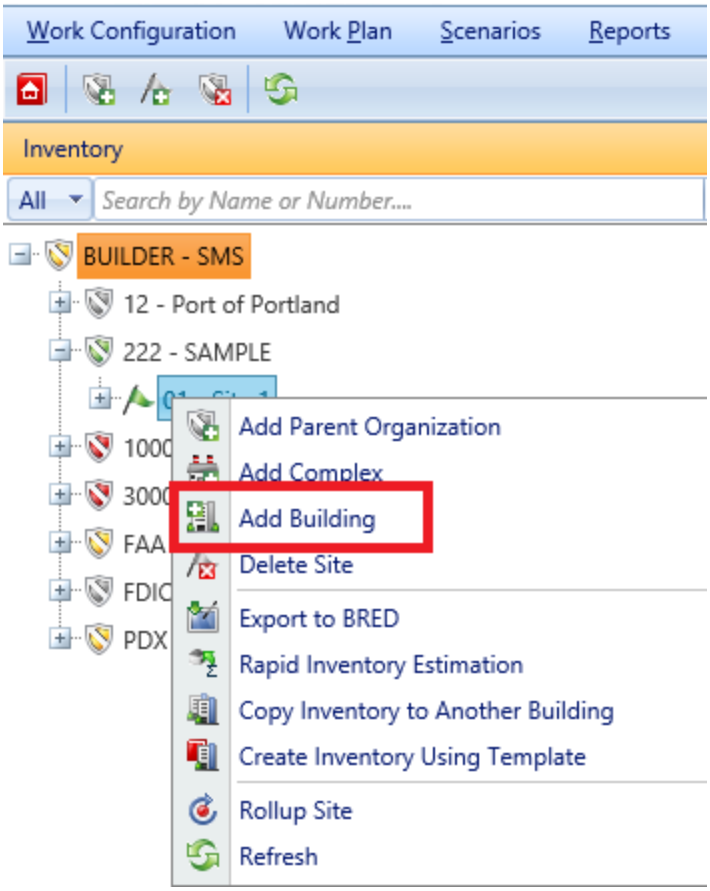
"About the Current Status Property" on page 73
"Use Current Status to Track Non-Current Inventory" on page 76

Add a Building

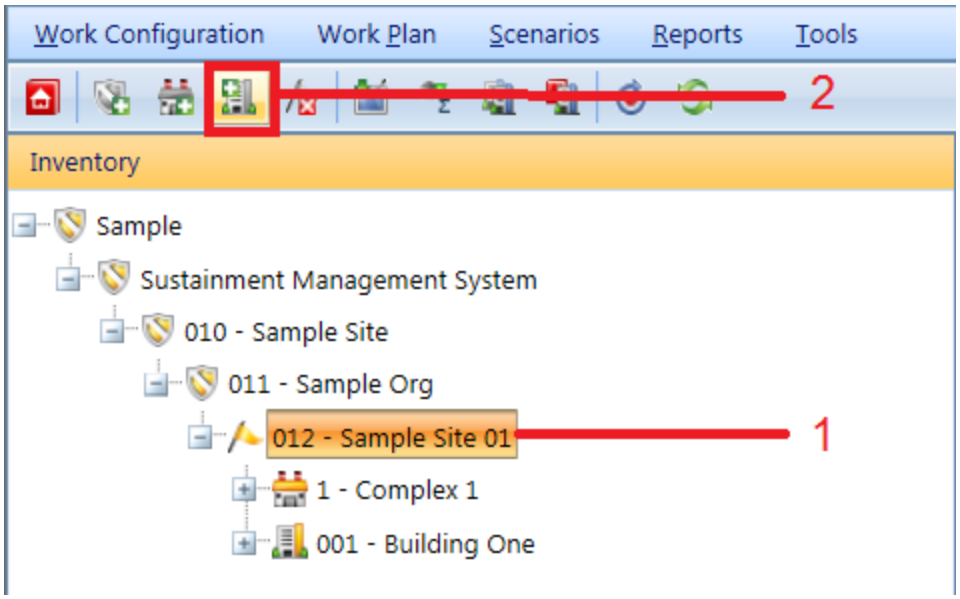
This topic shows how to add a Building and describes the required information to be entered. Additional information that can be entered is described in "Edit Building General Information" on page 60 and "Edit Additional Building Inventory Data" on page 65.

After you "Add a Site" on page 28, you can add Buildings to your inventory. To add a new Building to a Site, navigate to that Site in the inventory tree and do one of the following:

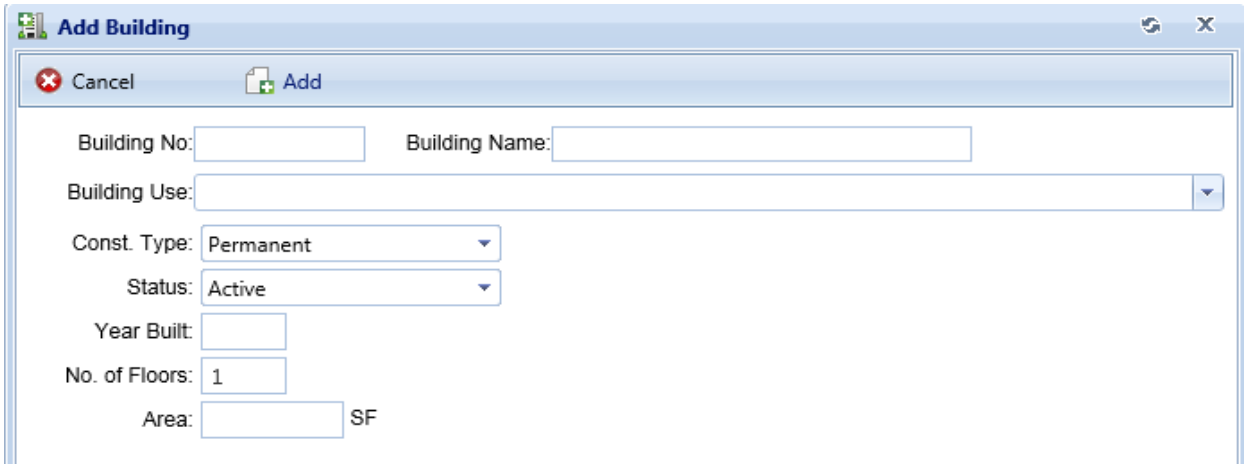
a. Right-click the Site. Then select "Add Building" from the options.



b. Alternatively, select the Site, then activate the **Add Building** icon on the main toolbar, as shown below.



The "Add Building" popup window will appear.



Enter Required Building Information

In the "Add Building" popup window, enter the following required data:

1. **Building Number**. Enter the identifying number for the Building. For DoD applications, the RPUID is helpful here. The Building Number field may be left blank if you wish to supply only a name. You must enter at least a Building name or a Building number, and the combination of the two must be unique within the Site.

   Specifications: The Building The ID Number is limited to 12 alphanumeric characters.

Best Practice Recommendation: Because the Building number is alphanumeric instead of numeric, the alphabetic ordering of Buildings in a list will follow character order rather than number order: for example, Building number 10 will be listed before Building number 2. To avoid this situation, use the correct number of leading zeros (for example, use 02 or 002 or 0002 instead of 2), depending on the maximum number of digits used in numbering Buildings.

2. **Building Name**. Enter the identifying name for this Building. The Building Name field may be left blank if you wish to supply only a number. You must enter at least a Building name or a Building number, and the combination of the two must be unique within the Site.

   Specifications: The name is limited to 50 alphanumeric characters.

   Best Practice Recommendation: Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

3. **Building Use**. Select the Building Use type from the dropdown list that most closely matches the Building's use. If you are a Department of Defense activity, BUILDER should display familiar category codes for your service.
4. **Construction Type**. Select the construction type from the dropdown list that matches the Building. Construction type options include:
   - Permanent
   - Semi-Permanent
   - Temporary
   - Leased
5. **Status (Current Status)**. Select the appropriate status of the Building from the dropdown list. See "About the Current Status Property" on page 73 for more information. Status type options include:
   - Active
   - Vacant
   - To be transferred
   - To be demolished
   - To be acquired
   - To be built
   - Transferred
   - Demolished

The default Building status is "Active." The last four of these values indicate that the designated Building is not currently part of the inventory, and two others indicate that the Building will be removed from the inventory in the future. In essence, the Current Status property allows you to enter future Buildings into the inventory and to plan for their maintenance even though they are not presently owned. In addition, the Current Status property allows you to keep records for Buildings that are no longer in the physical inventory. Such records are ignored in processes that should only consider current Buildings, such as condition rollups and work planning.

6. **Year Built**. Enter the year construction of the Building was completed. This data element determines the age of the Building, which is a critical factor in BUILDER's decision-making processes.
7. **Number of Floors**. Enter the number of floors of the Building. This data element is used to estimate the size of the Building's footprint by dividing the area by the number of floors.
8. **Area**. Enter the gross area of the Building.

This data is required because BUILDER's internal algorithms generally have parameters determined by the Building's Building Use, size, age, number of floors, status, and construction type, so it is essential that the information be provided as a part of creating the Building record.

Confirm or Cancel

Once the required minimum Building data is entered,

a. Activate the **Add** button on the popup toolbar to create the Building. *The Building Summary window will open to allow you to immediately add to and*

edit the Building data at the various tabs. These tabs are described in "Edit Building General Information" below and "Edit Additional Building Inventory Data" on page 65.

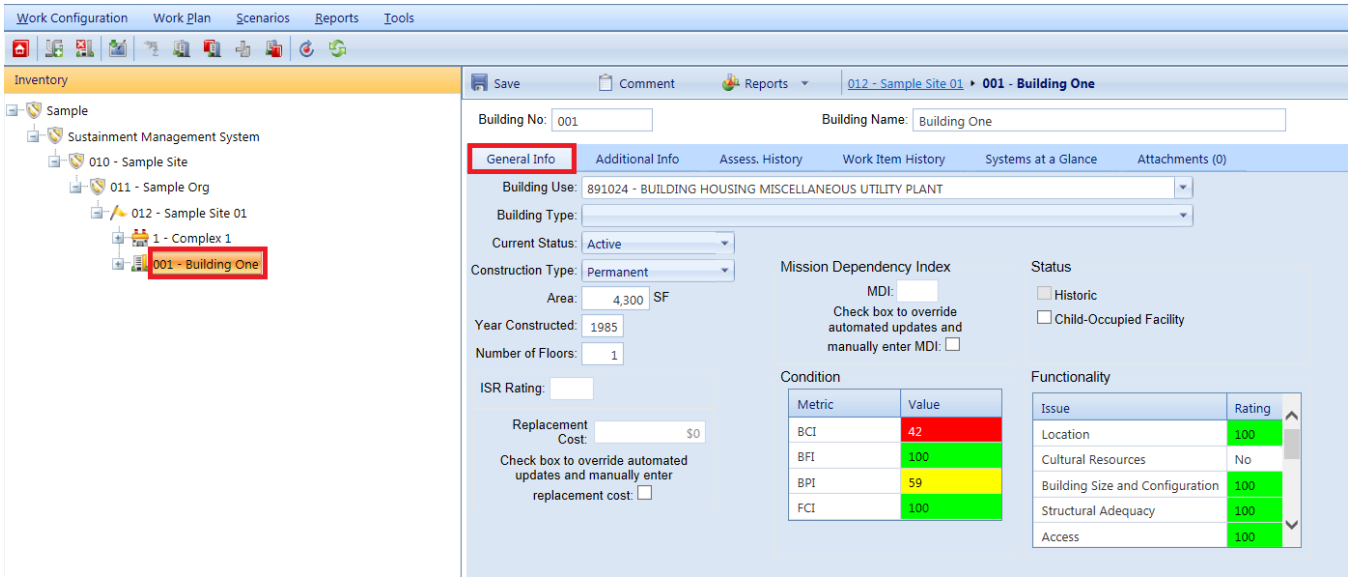
b. Alternatively, to close the window without creating the new Building, activate the **Cancel** button.

Edit Building General Information

This topic describes the information that can be found and edited at the **General Information** tab on the Building screen. Additional Building information is described in the topic "Edit Additional Building Inventory Data" on page 65.

The sections below, as well as the topic "Edit Additional Building Inventory Data" on page 65, describe information that can be obtained about and actions that can be performed on the Building.

To view and edit Building inventory data, select the Building in the navigation pane:



*By default, the **General Information** tab (abbreviated General Info) will appear.*

Toolbar

The following buttons and information are available at the content screen toolbar:

- **Save**. Saves changes made to the Building data.
- **Comment**. Allows you to add, edit, and view comments about the Building.

- **Reports**. Launches the Report Selection tool, which gives you access to a list of standard reports relevant to Building inventory. See "Generate a Report" on page 184.
- **Breadcrumbs**. The breadcrumbs shown on the toolbar provide both orientation and an alternative method of navigation:

ID Line

On the ID line, you can edit the following:

- **Building ID Number**. The ID Number is limited to 12 alphanumeric characters.
- **Building Name**. Building Name is allowed 50 alphanumeric characters. **Best Practice Recommendation:** Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

General Building Information Tab

Initially after a Building is selected in the inventory tree, the **General Information** tab is shown with the following information, all of which is required:

Type, Age, and Size Data

- **Building Use**. From the dropdown list, select the Building Use category that most closely matches the Building's use. For a Department of Defense activity, BUILDER should display familiar category codes for your service.
- **Current Status**. From the dropdown list, select the appropriate Building status. See "About the Current Status Property" on page 73 for more information. Status type options include:
  - Active
  - To be acquired
  - To be built
  - To be demolished
  - To be transferred
  - Demolished
  - Transferred
  - Vacant

  The options "To be acquired" and "To be built" allow you to enter future Buildings into the inventory and to plan for their maintenance in Scenarios

even though they are not presently owned. Along with Transferred and Demolished, these options allow you to keep information about the Building in your database without the data on these Buildings affecting your current condition indices.

The options "Transferred" and "Demolished" allow you to keep records for Buildings that are no longer in the physical inventory. Such records are ignored in processes that should only consider current Buildings, such as condition rollups and work planning.

- **Effective Year of Status**. When you choose a Building status other than the default "Active" status, you must also provide a year in which the permanent status will take effect. For vacant, demolished, and transferred Buildings, the effective year is the year the action occurred. For future ("To be") status options, the effective year is the year the future event will occur–i.e., the year the Building will actually be built, acquired, transferred, or demolished.
- **Construction Type**. Select the construction type from the dropdown list that matches the Building. Construction type options include:
  - Permanent
  - Semi-Permanent
  - Temporary
  - Leased
- **Area**. Enter the gross area of the Building.
- **Year Constructed**.Enter the year that construction of the Building was completed. This data element determines the age of the Building, which is a critical factor in BUILDER's decision-making processes.
- **Number of Floors**. Enter the number of floors of the Building. This data element is used to estimate the size of the Building's footprint by dividing the area by the number of floors.

Calculated Data

Data calculated by BUILDER is usually read-only. However, Replacement Cost and Mission Dependency Index (MDI) each have a checkbox that allows manual entry or manual override of the system-calculated figure.

- **Replacement Cost**. This data element contains the current replacement cost for a Building of the current Building's use and size under current construction standards. BUILDER provides a cost module to estimate the replacement cost. If you do not check the manual override checkbox, the cost module will update the replacement cost using the default , adjusted for inflation and geographic location, when costs are updated. If you check the manual override checkbox, the cost module will not affect this Building's

replacement cost, and you will have to periodically update its replacement cost manually to account for inflation.

> **Note:** For further Information about working with cost books and inflation books, see Work Configuration documentation.

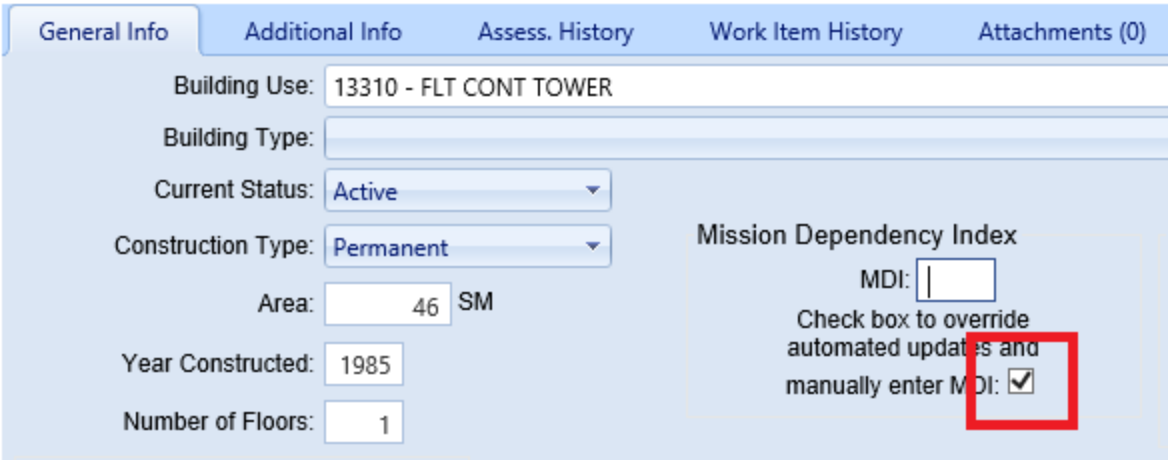
- **Mission Dependency Index**. The availability of the Mission Dependency Index (MDI) is the result of ongoing U.S. Navy research to develop a process for computing a 0-100 index that measures how critical the facility is to the overall mission of its owner. This measure allows user input to shape an automated planning process that uses metrics and rules to identify and prioritize budget allocations and work plans. See "About the Mission Dependency Index" on page 73 for more information about the MDI.

> **Note:** As of July 2016, the MDI is currently not calculated within BUILDER. See the following section, "How To Enter or Change the Mission Dependency Index (MDI)" below.

How To Enter or Change the Mission Dependency Index (MDI)

To enter or change the MDI,

1. First check the override box at the Building's **General Information** tab:



2. Next, enter the desired MDI score in the entry box above the checkbox.
3. Finally, activate the **Save** icon in the content area toolbar.

Index Data (Read-Only)

All of the indices below are updated every time a rollup is performed.

- **Building Condition Index** (BCI). The BCI measures the condition of the Building as a whole. It is computed by averaging the condition indices of the Building's Systems, weighted by the replacement costs of the systems.

- **Building Functionality Index** (BFI). The BFI measures the functionality of the Building as a whole. It is computed from the results of a functionality assessment of the Building as a whole.
- **Building Performance Index** (BPI). The BPI measures the overall performance of the Building as a whole. It is computed using a weighted combination of the BCI and BFI.
- **Facility Condition Index** (FCI). The FCI metric provides an overall sense of deferred repair work. It differs from the BCI in that it is a monetary based metric. The formula is: FCI = (1- $current repair needs/$PRV) x 100, where the dollar amount of repair needs is obtained from BUILDER work items. More information about the FCI is available at "Appendix B: Facility Condition Index" on page 189.

Status

- **Historic Building (Read-Only)**. This checkbox indicates whether or not the Building is historic. It is automatically marked if a functionality assessment has been performed in the Building and it has been determined that the Building is historic or has cultural resources in the Building.

  > **Note:** This feature is not selectable. It is calculated by BUILDER.

- **Child-Occupied Facility**. This checkbox indicates whether or not the facility is child-occupied. You can mark or un-mark this box as appropriate.
- **High Security**. This checkbox indicates whether or not the facility is deemed High Security. You can mark or un-mark this box as appropriate. Because working at a high security location generally increases labor time and other costs, this feature will apply higher security-related cost factors if the cost books have been set up for this in advance.

  > **Note:** This feature will have no effect unless the cost books have been appropriately modified.

- **Additional Access**. This checkbox indicates whether or not the facility has access issues, such as radioactivity or remote location. You can mark or un-mark this box as appropriate. Because working at a location with access issues generally increases labor time and other costs, this feature will apply higher access-related cost factors if the cost books have been set up for this in advance.

  > **Note:** This feature will have no effect unless the cost books have been appropriately modified.

Additional Information Tabs

See "Edit Additional Building Inventory Data" below for details available at additional information tabs in the Building level.

Edit Additional Building Inventory Data

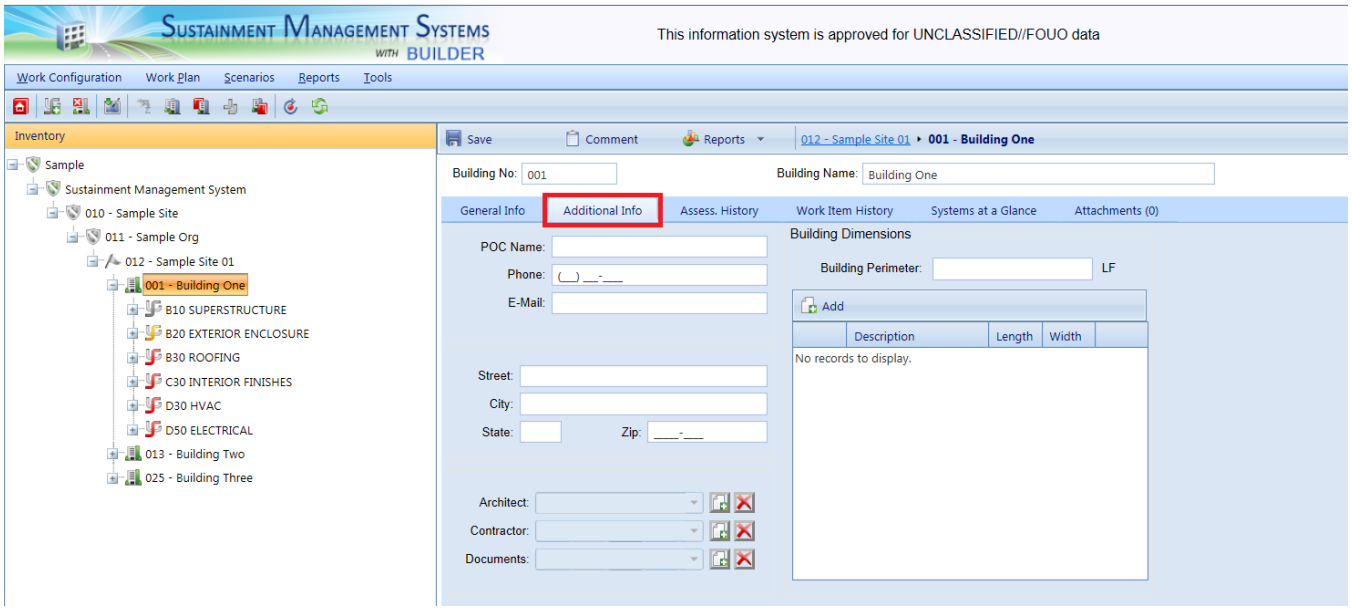
This topic describes information available at all of the Building screen tabs except the **General Information** tab. Information at the General Information tab is described in the topic "Edit Building General Information" on page 60.

Additional Building data is displayed and can be edited at the **Additional Information**, **Assessment History**, **Work Item History**, **Systems at a Glance**, and **Attachments** tabs when a Building is selected in the inventory tree.

Additional Information Tab

Additional information shown at this tab includes address, point of contact, architect, contractor, and documents information for the Building, plus various Building dimensions...if they have been entered.

To view or edit this information, select the **Additional Information** tab on the Building screen:



All of the additional Building information is optional and includes:

Point of Contact

- **POC Name**. The name of the point of contact for the Building, limited to 30 characters.
- **Phone**. The Building POC's phone number, limited to 20 characters.
- **Email**. The Building POC's Email address, limited to 75 characters.

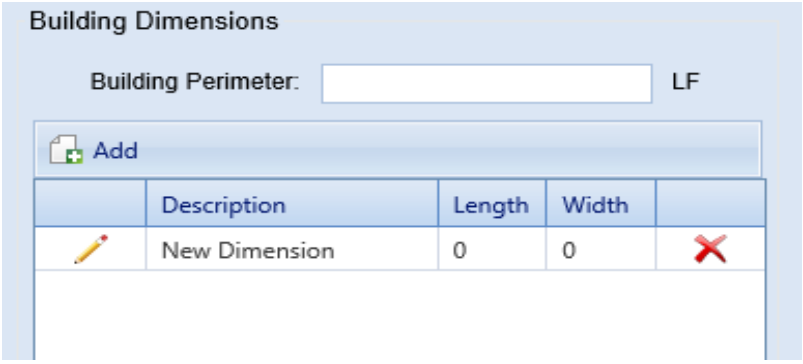
Address

- **Street**. The Building's street address, limited to 30 characters.
- **City**. The city portion of the Building's address, limited to 15 characters.
- **State**. The state portion of the Building's address, limited to 2 characters.
- **Zip**. The zip code of the Building's address, limited to 10 characters.

Building Design

- **Architect**. Lists the architects of the Building. Add and delete names by using the adjacent buttons. Each architect's name is limited to 30 characters.
- **Contractor**. Lists the contractors of the Building. Add and delete names by using the adjacent buttons. Each contractor's name is limited to 30 characters.
- **Documents**. Lists the documents related to the Building. Add and delete document names by using the adjacent buttons. Each document's name is limited to 24 characters.

Dimensions



The "Building Dimensions" area contains information about perimeter, description, length, and width. The Building perimeter can be entered directly in the form field; however, for Description, Length, or Width, see instructions below about adding or editing an entry.

Add an Entry

If there are no entries in the Description/Length/Width table, activate the **Add** button above the table, then select the pencil icon in the leftmost column of the table to enable data entry. When finished with entry, make sure to activate the blue check mark to the left of the entry, then **Save** at the content area toolbar.

Alternatively, if you wish to cancel the entry, select the red no-entry button below the blue check mark. This will erase any data you have entered into the table, but that row of the table will persist unless you fail to activate **Save** at the content area toolbar.

Edit an Entry

If there is an entry you wish to edit in the Description/Length/Width table, select the pencil icon of that entry to enable editing. When you are finished editing, make sure to activate the blue check mark to the left of the entry, then **Save** at the toolbar.

Alternatively, if you wish to cancel the edit, activate the red no-entry button below the blue check mark.

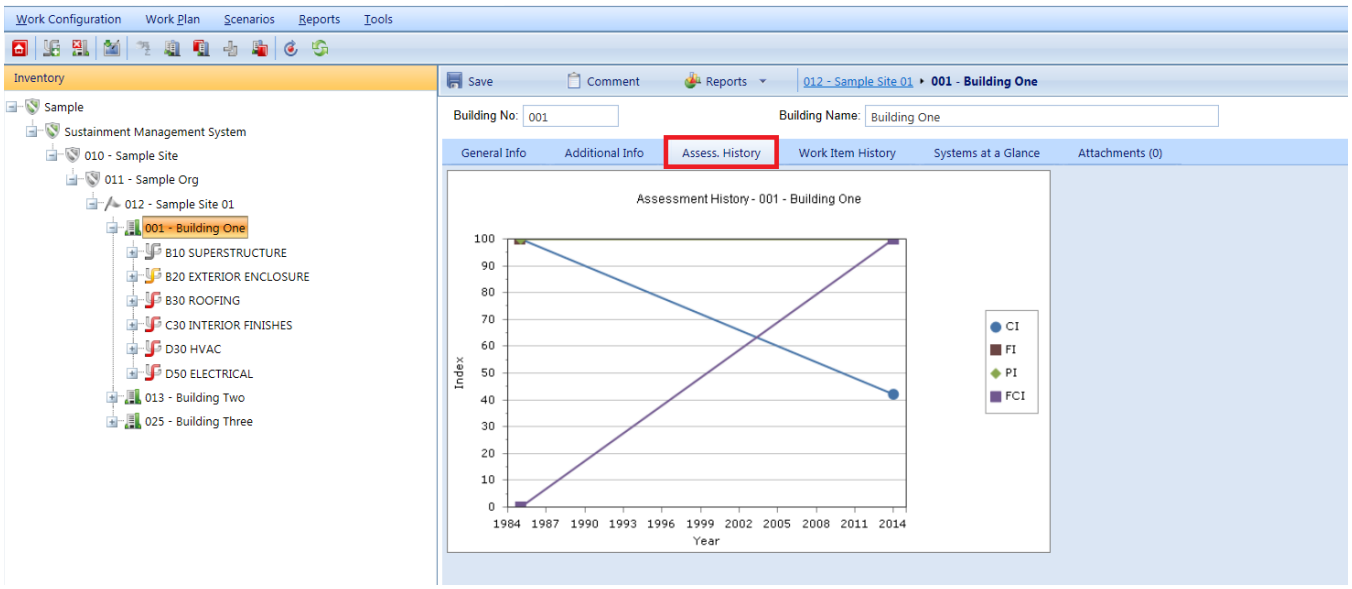
The following information can be added or edited here:

- **Perimeter**. Enter the linear measure of the perimeter of the Building.
- **Description**. Enter a description of the distinct areas of the Building you wish to add dimensions for. For example, you may list "East Wing/West Wing", or "Offices/Library/Warehouse", or "Public Areas/Secure Areas." Each description is limited to 50 characters.
- **Length**. Enter the length of the area identified in the description.
- **Width**. Enter the width of the area identified in the description.

> **Note:** The unit of measure is indicated just after the Building Perimeter field above the table.

Assessment History Trends Tab

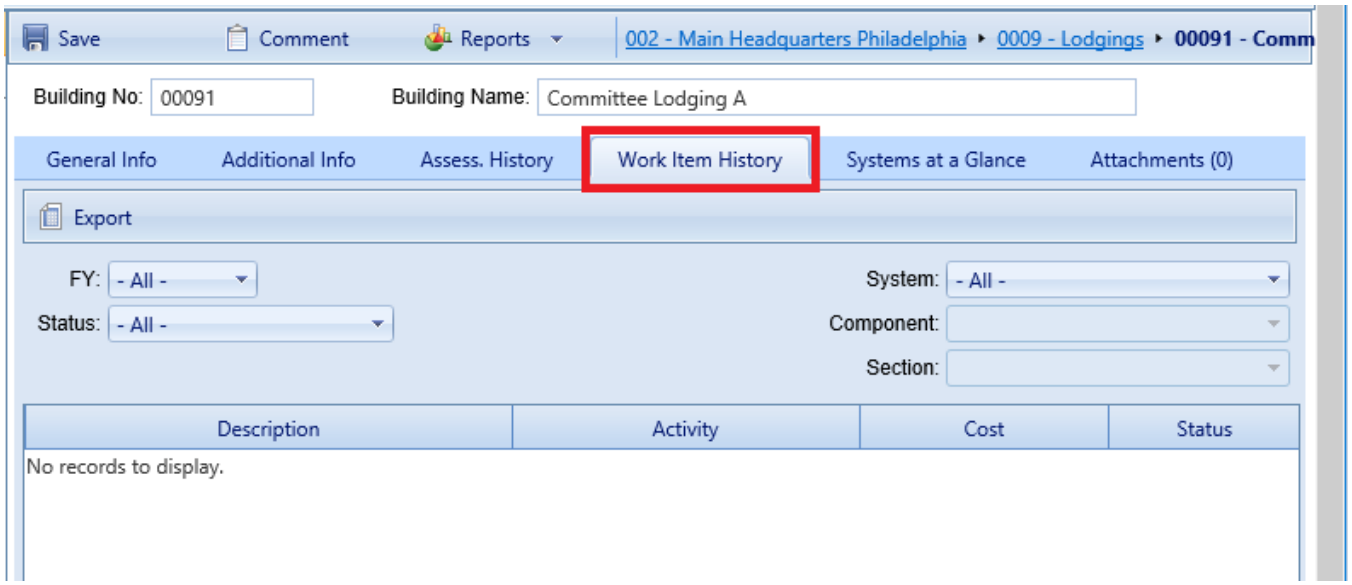
This tab displays two graphs showing how different metrics in the Building have changed over time. The graph on the displays the condition, functionality, performance and FCI history of the Building (by displaying the BCI, BFI, BPI, and FCI) from the year the Building was constructed to the current fiscal year.



Work Item History Tab

This tab shows a list of the work items that have been performed and/or are scheduled to be performed in the Building. The work items can be filtered by FY, status, System, Component, or Section using the dropdown lists on the screen.

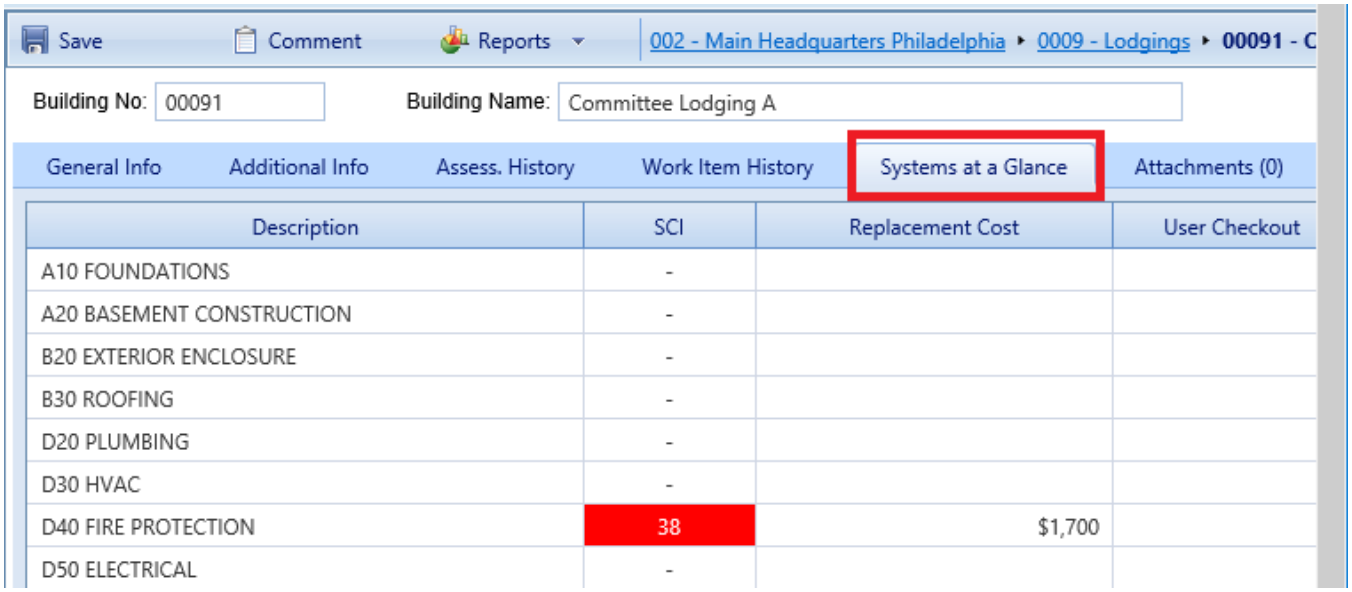
For more information on work items, see the Work Planning Overview in the *Work Planning Guide* (not yet published) or consult the online Help documentation.



Systems at a Glance Tab

Note: All of the data shown at this tab is read-only.

Basic information regarding the Systems in the Building can be viewed by selecting the **Systems at a Glance** tab. The **Systems at a Glance** tab shows the systems inventoried in the Building, each system's condition index (SCI), and the replacement cost of each system. If the Building file is checked out for BuilderRED use, the "User Checkout" column shows who has the Building file checked out.



Attachments Tab

This tab allows files such as an image file to be attached to the Building's record. An image might be a photograph, or it could be an electronic image of written notes or diagrams made during inventory.

The attachment may be in any of the following formats:

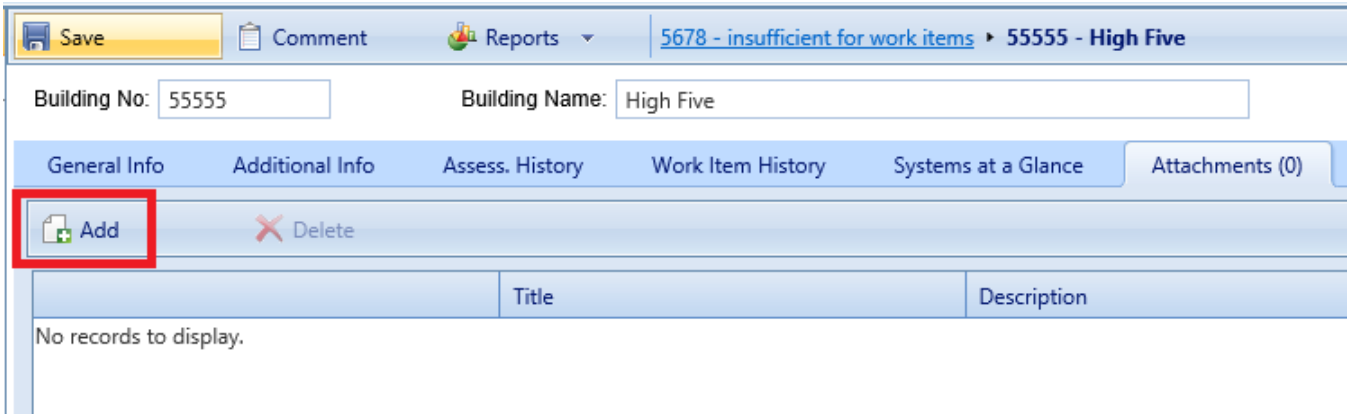
- .jpg
- .jpeg
- .png
- .zip
- .doc
- .pdf

Note: As of July 26, 2016, .doc format is allowed, but not .docx.

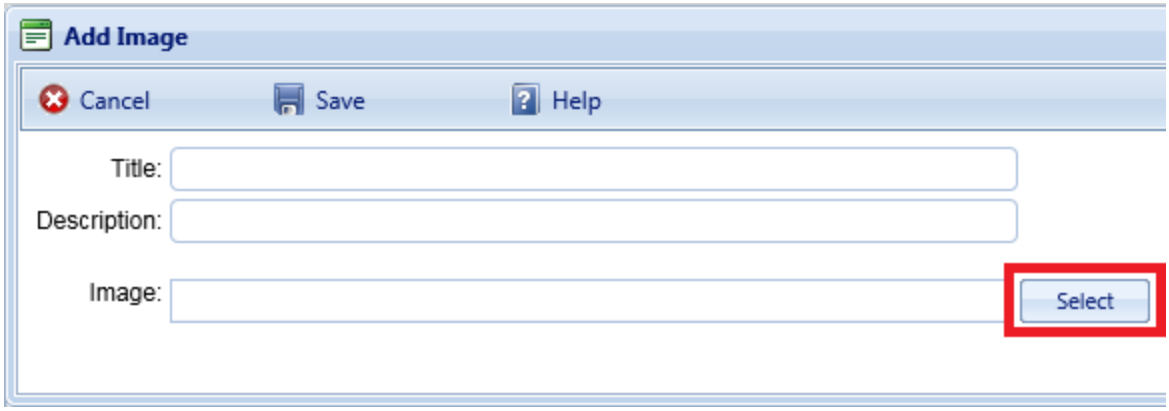
Attach a File

To attach a file,

1. At the **Attachments** tab, activate the **Add** button in the toolbar below the row of tabs.



This will open the "Add Image" popup window:



2. Enter Title and Description information for the attachment.
3. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file.
4. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".
5. Once the required attachment data is entered,
   a. Activate the **Save** button on the popup toolbar.
   b. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.

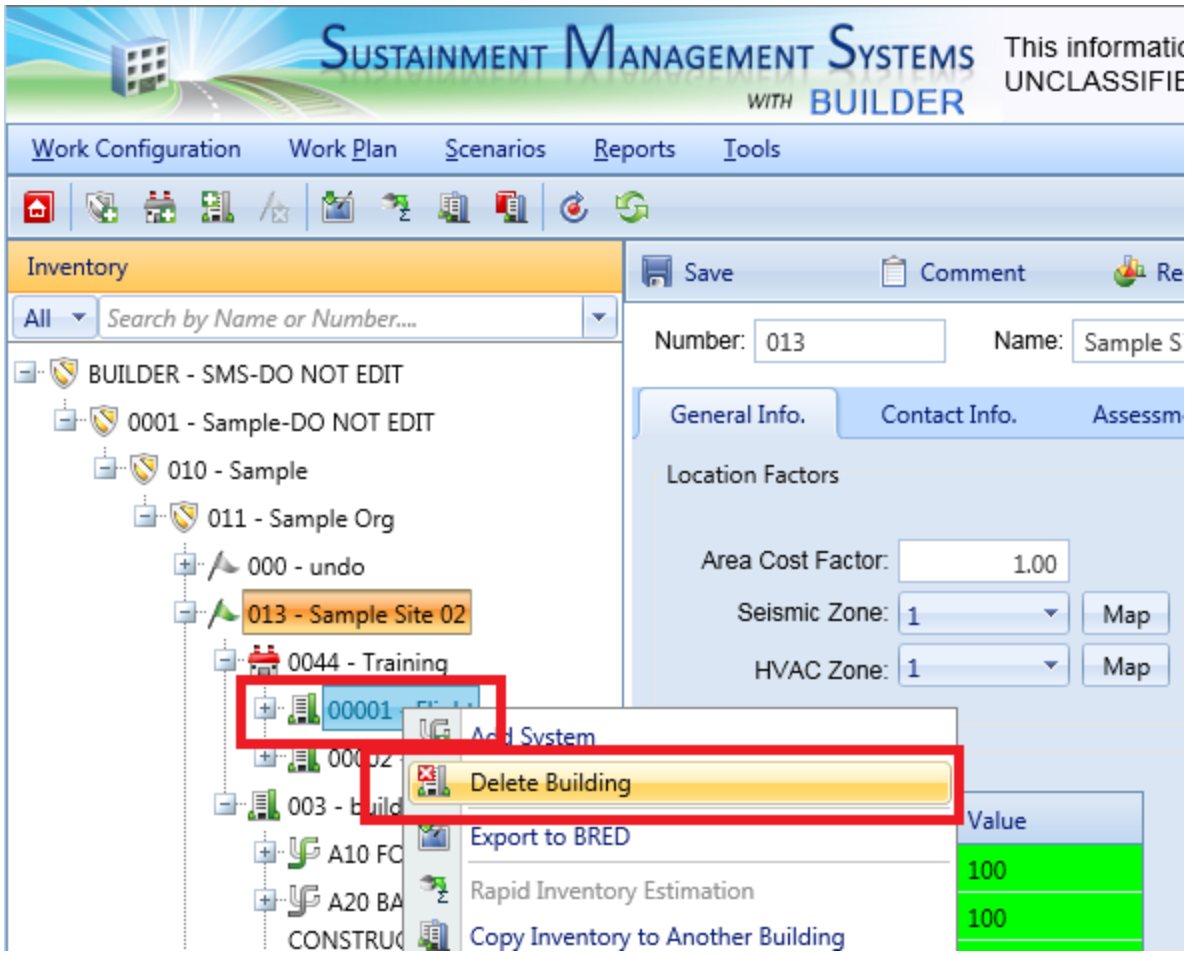
Delete a Building

This topic shows how to delete a Building. It also recommends an alternative to deletion that preserves Building records without allowing them to affect the calculation of indices.

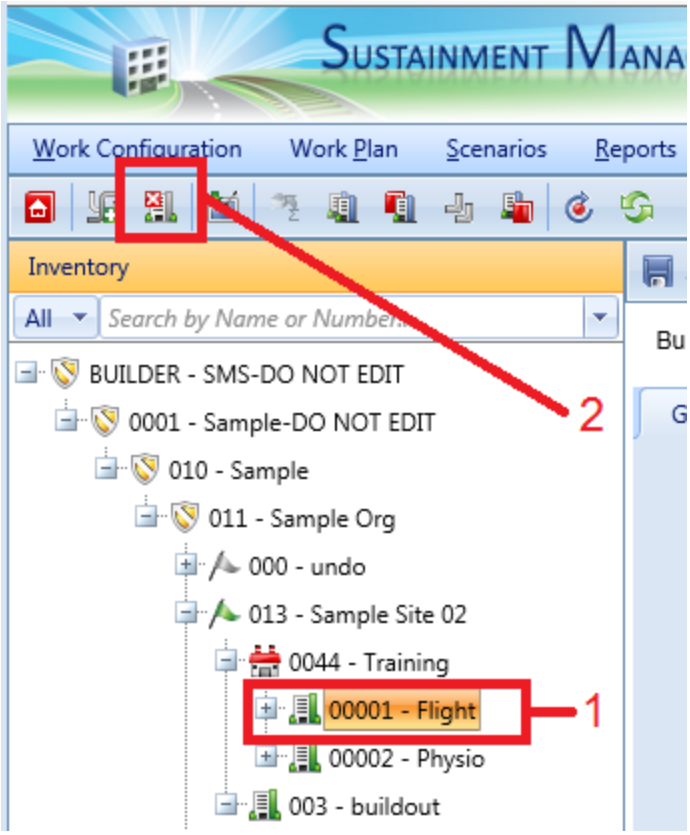
> **Permissions Note:** This action requires Work Planner permission or above for the relevant location in inventory.

To delete a Building, navigate to it in the inventory tree and do one of the following:

a. Right-click the Building. Then select "Delete Building" from the options, as shown here:



b. Alternatively, select the Building, then activate the **Delete Building** icon on the menu toolbar:



WARNING: Deleting a Building deletes all the inventory (Systems, Components, and Sections) in the Building. This is a significant step to take and should only be done when you are certain that you wish to clear the entire inventory of the Building you have selected. Making frequent backups of your inventory database will protect you from significant data losses if mistakes in deleting are made.

Best Practice Recommendation: Instead of deleting a Building, you can use the Current Status property to mark buildings that have been demolished or transferred to another owner. With this method, the Building's records remain in the database, but the Building is ignored in processes that should only consider current buildings. See "Use Current Status to Track Non-Current Inventory" on page 76.

About the Mission Dependency Index

The Mission Dependency Index (MDI) is a risk-based metric to link facilities to specific mission elements, and it measures how important a particular Building or facility is to the mission.

Each Building can have an MDI score in the 0-100 range, where 100 is most critical and 0 is least critical. With such a score available, the most critical Buildings can be easily identified, especially by the automated computer decision processes used by BUILDER.

The Mission Dependency Index is typically obtained from an organization's real property database of record. For those organizations where the MDI is not a real property data element, the score can be entered directly on the Building Summary screen, as shown in "How To Enter or Change the Mission Dependency Index (MDI)" on page 63.

For more information about determining the score for the Mission Dependency Index, users can refer to the following links:

http://ascelibrary.org/doi/pdf/10.1061/9780784409589#page=152
http://www.assetinsights.net/Glossary/G_Mission_Dependency_Index.html
http://www.dtic.mil/dtic/tr/fulltext/u2/a552791.pdf

The MDI was developed by the Naval Facilities Engineering Command Engineering Service Center (Antelman and Miller 2002) and the U.S. Coast Guard Office of Civil Engineering. MDI scores identify the severity of loss of mission-enabling facilities and infrastructure.

About the Current Status Property

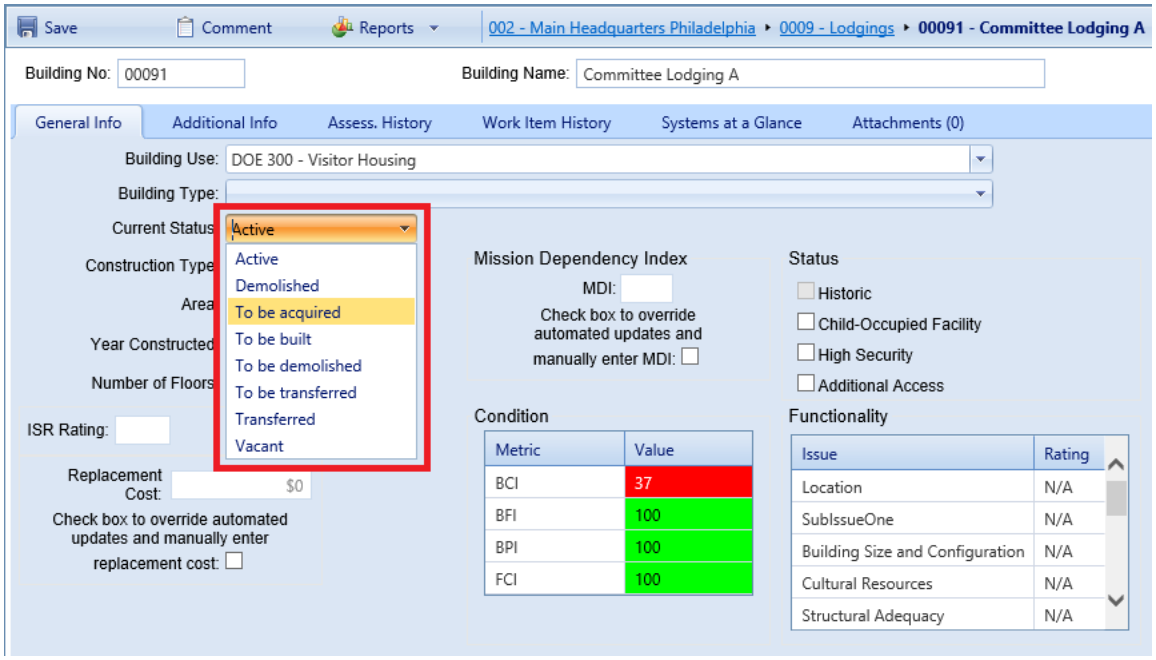
The Current Status property of a Building allows you to maintain database records for Buildings not currently in your physical inventory, whether for historical purposes or future planning. A Building's current status is used in the decision processes of both BUILDER and Scenarios, and it is the basis for a number of useful capabilities, including allowing you to:

- Define policies so that Buildings scheduled for demolition are maintained at a lower standards than might generally apply. Simply use the Current Status as one of the attributes used to define a policy and assign standards as appropriate to each status type.
- Define work prioritization schemes that consider future changes in a Building's status in prioritizing work items. This can be done by using the Current Status property as an initial split in your prioritization scheme and assigning

weights appropriate for each status type (probably using 0 weight for non-current status types).

- Plan for the maintenance load of Buildings to be added to your inventory in the future by analyzing a Scenario.
- Change the status of a Building dynamically during a Scenario simulation to study the effects of a changing inventory on the budget and the work load.

The Current Status property is set on the Building Summary screen. Local variation (typically an added option) is possible due to database customization, but generally this property has one of the following values:



- **Active**. This is the default status. Use this status for Buildings that are currently in use. This status is the end status for Buildings with status "To be built" or "To be acquired."
- **Demolished**. Use this status to remove a Building from BUILDER's automated processes for condition/service life assessment and work planning but leave the inventory and inspection records intact. *The effective year for this status is the year in which the Building is demolished.* This status is the end status of the "To be demolished" status.
- **To be acquired**. Use this status to enter inventory records for an existing Building prior to its acquisition. *The effective year of this status is the year in which the Building is expected to be acquired.* You will be able to edit the Building and inspection data for this type of Building, and BUILDER's condition and remaining service life predictions will be applied based on the inspection data entered. In this way, you will be able to estimate the

maintenance requirements of such a Building prior to its acquisition. In a Scenarios simulation, this feature allows you to acquire Buildings as the simulation progresses.

- **To be built**. Use this status to enter inventory records for a new Building prior to its commissioning for occupancy. *The effective year of this status is the year in which the Building is expected to be recognized as part of your physical inventory*. In BUILDER, you will be able to edit the Building data on the Building Summary screen but will not be able to add inspection records until the status changes to "Active." In a Scenarios simulation, this feature allows you to add new Buildings dynamically as the simulation progresses.
- **To be demolished**. Use this status for Buildings that will be demolished in the future. *The effective year of this status is the year in which the Building is to be demolished.* In a Scenarios simulation, a Building-level work item to demolish the Building will be generated, including a cost estimate for the work. In addition, maintenance policies may be associated with this status that lower the standards usually required for this type of Building.
- **To be transferred**. Use this status for Buildings that will be transferred to another owner in the future. *The effective year of this status is the year in which the transfer will take place.* No BUILDER or Scenarios cost is associated with such a transfer. However, maintenance policies may be associated with this status that yield different standards than would ordinarily be in effect.
- **Transferred**. Use this status to force BUILDER's automated processes for condition/service life assessment and work planning to skip the Building but leave the inventory and inspection records intact. *The effective year for this status is the year in which the transfer takes place.* This status is the end status of the "To be transferred" status.
- **Vacant**. This status replaces the "Vacant" checkbox property used in earlier versions of BUILDER. Use this status for Buildings that are currently in your physical inventory but not in use.

Four of these values indicate that the designated Building is not currently part of the inventory: "To be acquired", "To be built", "Transferred", and "Demolished".

Two other status values ("To be transferred" and "To be demolished") indicate that the Building will be removed from the inventory in the future.

At the current time, "Active" and "Vacant" are treated the same by BUILDER.

The Current Status property allows you to enter future Buildings into the inventory and to plan for their maintenance in Scenarios even though they are not presently owned. In addition, the Current Status property allows you to keep records for Buildings that are no longer in the physical inventory. Such records are ignored in

processes that should only consider current Buildings, such as condition rollups and work planning.

> **Best Practice Recommendation:** When you delete a Building you actually remove all database records associated with that Building. If you wish to keep the records, whether for historical purposes, analysis, or possible transfer to another BUILDER database (perhaps the Building is being transferred from one property book to another), you should simply set the Current Status property to an appropriate value.

Use Current Status to Track Non-Current Inventory

This topic shows how the Current Status property can be used to keep historical records of demolished or transferred Buildings, or to anticipate short-term and long-term needs for Buildings about to be built or otherwise acquired.

The Building-level Current Status property allows you to have records in your BUILDER database for Buildings that are not currently in your physical inventory. This is useful for Buildings at both ends of the lifecycle. You may keep records for Buildings that have been demolished or transferred, and you may add Buildings planned for future construction or acquisition.

Add Future Buildings

Using the Current Status property, it is possible to enter Buildings into the database before they are actually in the physical inventory. This includes Buildings under construction (designated with status "To be built") and existing Buildings being considered for acquisition from another owner (designated with status "To be acquired").

"To Be Acquired"

By setting the Current Status property to "To be acquired" and entering data in advance, you will be able to anticipate short-term work requirements for existing Buildings about to be acquired. In BUILDER, the "To be acquired" status can also be used to plan long-term maintenance requirements for future Buildings using Scenarios.

Enter Inventory Records

Use this status to enter inventory records for a new Building prior to its acquisition.

Record Inspection Results

Once you have entered inventory records for a Building with status "To be acquired", you may record inspection results prior to acquisition. The BUILDER processes that determine remaining service life and condition prediction will track the condition of the Building after it is first entered and prior to its acquisition.

Generate a Work Plan

With inspection results, BUILDER will be able to generate a work plan for the Building to upgrade it (or its roofing, in the case of ROOFER) to your established standards. Such information could be invaluable in planning for the load such a Building will place on both short and long term budgets.

"To Be Built"

Enter Inventory Records

Use this status to enter inventory records for a new Building prior to its commissioning for occupancy.

No Recording of Inspection Results

If you enter a Building with status "To be built", you may not record new inspections until the status changes to "Active". The BUILDER processes that determine remaining service life and condition prediction will skip such a Building under the assumption that quality assurance during the construction process will force all Systems to a condition index of 100 prior to commissioning.

Use Scenarios to Simulate "Active" Status (BUILDER Only)

The advantage of entering the Building before it is built is that you may include it in Scenarios to measure its long-term effects on work plans and budgets That is, the Scenario can change the status of a new Building to "Active" at a scheduled time and begin treating it as a normal Building with predictable deterioration rates and work requirements.

Keep Records of Past Buildings (Demolished, Transferred)

In earlier versions of BUILDER, the only way to exclude a Building from automated assessment and planning processes was to delete the Building. With this approach, all records related to the Building were actually deleted from the database.

Now, the Current Status property gives you another option.

If you have records in the BUILDER database for a Building which is to be demolished or transferred to another owner, you can keep the inventory, inspection, and work history records in the database, while at the same time making the Building invisible to BUILDER's automated processes, simply by changing the Building's status to "Demolished" or "Transferred".

> **Best Practice Recommendation:** When you delete a Building, you actually remove all database records associated with that Building. If you wish to keep the records, whether for historical purposes, analysis, or possible transfer to another BUILDER database (perhaps the Building is being transferred from one property book to another), then you should simply set the Current Status property to the appropriate value, either "Demolished" or "Transferred".

Below is a summary of what happens when a Building has the status of either "Demolished" or "Transferred":

- **Inventory records are locked.** You will be unable to change the Building's data properties or its composition.
- **Condition and Functionality Assessment records are locked.** You will be unable to change existing records or to add new records.
- **Functionality Assessment records are locked (BUILDER only).** You will be unable to change existing records or to add new records.
- **Work Planning records are locked.** You will be unable to change existing records or to add new records.
- **Cost data is not updated.** The Building's cost data will not be affected by annual cost updates at the beginning of the calendar year.
- **The RSL and CI or RCI values will not be updated** for the Building.
- **The Building will not be considered during automatic work generation.**
- **The Building will not appear in Scenarios simulations (applies to BUILDER only).** If the Building's status is changed to "Demolished" or "Transferred" during a Scenarios simulation, it will have records for the years prior to its status change and then after that date in the Scenario, it will be treated as above. That is, there will be no further updates of data, no new inspections, no changes in condition or service life, etc.

About Identifying Systems, Components and Sections

This topic provides valuable advice to assist in the process of dividing Buildings into their constituent Systems, Component, and Component-Sections.

After you "Add a Building" on page 56 and have entered its required data elements, you should identify the Systems, Components and Sections in the Building. Your decomposition of a Building into its Systems and the decomposition of those Systems into Components will be very straightforward. The formation of Sections, however, will require some thought on your part. BUILDER manages Buildings at the Section level, and you will inspect Sections and plan work for Sections.

BUILDER's representation of Building Sections has been designed to be very flexible. With flexibility comes choices; choices that add complexity to the process. Pay particular attention to the "Defining Sections" on the next page subsection below.

As an alternative option to adding all Systems, Components, and Sections manually, BUILDER provides several mechanisms to speed the inventory process. For example, you can "Copy Inventory to Another Building" on page 144 or "Add Building Inventory Using a Template" on page 152.

Defining Systems

Systems are used to help you organize the records for the actual physical items in your Building. You may create only one System of each System type for any given Building. When you add a new System to a Building, the dropdown list of choices for which kind of System to add will include only those Systems that have not already been added to the Building. See "Add, View, or Delete a System" on page 86 for details.

Defining Components

Like Systems, Components are used to help organize the records of the actual physical items in the Building. The Components that can be added to a System will depend on the System representation you have chosen for the Building. You may create only one Component of each type for each System. In creating a new Component, the list of choices will only include those Components of the appropriate System that have not already been created. See "Add, View, or Delete a Component" on page 95 for details.

If you have a Component that is not in the list of available Component types, please contact your SMS support agent. BUILDER does not have a feature for user-defined Components. Each Component has a number of data elements associated with it (varieties of types and materials, costs, service lives, standard units of measure, inspectable subcomponents, etc.) which must be researched before the Component can be added.

Defining Sections

Building Sections are the key structures in a BUILDER inventory. The System and Component structures are organizational in nature, serving to categorize what is in a Building into manageable groups. Building Sections actually represent the physical items of a Building, belong to a particular Component, and have the following properties:

- Component Type
- Material/Equipment Type
- Quantity
- Age
- Whether or not it is painted, and, if so, when it was last painted and paint type

BUILDER has been designed to be flexible in allowing you to represent your Building's Sections in a number of ways to support how you intend to manage them. Some examples may be helpful:

- Building A has 5 exterior doors (System: Exterior Closure, Component: Exterior Door). Four of the doors are metal personnel doors and the fifth is a metal overhead door. Because there are two different types of doors (personnel, overhead), you will have to create at least two Sections. In this situation, you should create a Section for the metal overhead door and enter the appropriate data about it. You do not need to create a Section name for this door since there is only one. For the four metal personnel doors, if you intend to manage them as a unit, create one more Section and enter the appropriate data about the doors. Again, you do not need to enter a Section name because you are only creating one Section of this material and type.
- Building A has 5 exterior doors (System: Exterior Closure, Component: Exterior Door). You lease Building A to two tenants X and Y. Two metal personnel doors and a metal overhead door are in the tenant X area, and the other two metal personnel doors are in the tenant Y area. Because you plan to inspect and maintain the doors by tenant, you create three Sections:
    - Tenant X Metal Personnel with quantity 2

- Tenant X Metal Overhead with quantity 1
- Tenant Y Metal Personnel with quantity 2.

When you create each Section for Tenant X, you use "Tenant X" as the name of the Section. Do the same for Tenant Y. In fact, you may want to name every Section (especially Interior Construction Sections) in the Tenant X area "Tenant X". When you inspect the Building, you can use the Section name to distinguish Sections belonging to each of the tenants.

- Building A has two reciprocating 20-ton chillers (System: HVAC, Component: Cooling Unit/Plant). If they are the same age and you plan to manage them as a unit, then create one Section with quantity 2. However, if you want to manage them individually, or if they were installed at different times and may therefore have different maintenance requirements, then create two Sections of quantity 1 each. Since both Sections have the same equipment type (Reciprocating 20-30 Ton) and component type (Chillers), you will have to have distinct Section Names for the two Sections. You may use their barcode IDs as the Section names of you wish.
- Building B has 50 interior wood personnel doors, all alike and all installed when the Building was built. You originally create one Section with quantity 50 for these doors. You may have several years of inspection data regarding the doors, which have deteriorated uniformly over time. With the current inspection, however, two of the doors are found to be severely damaged and will have to be replaced. If the two doors remain in their original Section, inspection samples for these two doors will have to be marked as "non-representative". When the condition index is calculated, the condition of the two doors, which are only 4% of the Section, will have only a small impact on the overall Section CI. Since you will be replacing the two doors, perhaps with a different quality of door since they may be subject to higher user abuse, you should use component sectioning to isolate the two doors. To do this, reduce the original Section quantity to 48. Then create a new Section for the two damaged doors and enter the current inspection data for this new Section, which will then have a low CI.

From these examples you can see that some thought will have to be given to how you decompose a Building into Sections. Hopefully, you can also see that BUILDER is flexible enough to allow you to manage at the level of detail that you choose. See "Add, Edit, or Delete a Section" on page 104 for details.

Inventory Suggestions

It is not necessary to do a complete inventory initially. Implementation funds and/or time may be limited, so it is possible and permissible to begin with only some of the Component-Sections and expand the inventory on an as-needed

basis. If the desire is to begin with a limited set, the following suggestions are made:

- Focus on the Components that are most critical to Building function
- Focus on the Components that traditionally dominate Maintenance and Rehabilitation (M&R) needs.

When sectioning, a few rules of thumb are offered:

- To avoid a data burden, use the smallest number of Sections possible to meet managerial needs. For example, it is usually not necessary to individually Section every room, each exterior wall, etc.
- Since material differences (e.g. wood vs. masonry) are criteria for sectioning, only create Sections for material differences when the quantity is significant enough to warrant individual management attention. For example, an exterior wall may be made of wood, but a few square feet of wall is made of masonry, essentially for decoration. The wood wall is clearly a Section, but what about the masonry? Should it be its own Section? If the masonry quantity is a mere fraction of the wood and work would be accomplished on the masonry at the same time as the wood (in other words, the entire wall is being managed as a unit), then there is no need to create a Section just for the masonry. However, if the quantities of both the wood and masonry are significant, then create Sections for both.
- Equipment sectioning should be thought out carefully when multiple units of the same equipment are present. For example, there may be three air handling units of the same type, age, etc. In this case, there could be one Section with the quantity of three, or three Sections with the quantity of one. Which approach should be taken? If the desire is to manage them as essentially one unit as far as planning repair and replacement, then one Section will suffice. However, if it is expected that over time, they will be replaced individually, etc, then each should be its own Section.
- Obtaining accurate an accurate quantity can be difficult, and often times there are many sources for obtaining quantity. These include drawings, actual measurement or count, or other records. It must be understood that the more detailed or accurate the count or measurement, the more costly it is to collect the data. Extracting information from records, including drawings, and doing a field validation is the most costly. Reasonable estimates within reasonable error are very acceptable as it will result in reasonable error in BUILDER's analyses. For example, the wall finish may truly be 10,634 SF. An estimate of 11,000 SF will suffice for planning purposes especially if the cost to get the true value is twice that for an estimate. Component-Sections that cover an area (SF or SM) are the most difficult to obtain with precision whereas those that are "each" are the easiest.

Generally, field count the "each" Component-Sections and estimate the others. The estimates can be refined in the future when projects are developed for M&R work.

- *Care should be taken when establishing Year Built/Renewed*. Error here will result in erroneous remaining service lives and add error to the projected year when M&R should be performed. Experience has shown, however, that sometimes the year in which Component-Sections were replaced, rehabilitated, or initially installed/constructed is truly unknown as the records are no longer available. In those cases, make a reasonable estimate and mark the "Estimated" checkbox. Often, there are people who will remember when that work was done, at least in a generalized way (e.g. early 1990's). Fortunately, through subsequent inspections and condition assessments, the Year Installed/Built becomes less important, as BUILDER's prediction models will use the condition assessment information to adjust the remaining service life and to predict when M&R will be required in the future.

BUILDER Systems and Components

To divide a Building into Systems and Components, BUILDER uses the ASTM UNIFORMAT II classification for building elements (Level 2 and 3):

Level 2	Level 3
A10 Foundations	A1010 Standard Foundations
	A1020 Special Foundations
	A1030 Slab on Grade
A20 Basement Construction	A2010 Basement Excavation
	A2020 Basement Walls
B10 Superstructure	B1010 Floor Construction
	B1020 Roof Construction
B20 Exterior Closure	B2010 Exterior Walls
	B2020 Exterior Windows
	B2030 Exterior Doors
B30 Roofing	B3010 Roof Coverings
	B3020 Roof Openings
C10 Interior Construction	C1010 Partitions
	C1020 Interior Doors
	C1030 Specialties
C20 Staircases	C2010 Stair Construction
	C2020 Stair Finishes
C30 Interior Finishes	C3010 Wall Finishes
	C3020 Floor Finishes
	C3030 Ceiling Finishes
D10 Conveying Systems	D1010 Elevators
	D1020 Escalators & Moving Walks
	D1030 Material Handling Systems
D20 Plumbing	D2010 Plumbing Fixtures
	D2020 Domestic Water Distribution
	D2030 Sanitary Waste
	D2040 Rain Water Drainage
	D2050 Special Plumbing Systems

D30 HVAC	D3010 Energy Supply
	D3020 Heat Generating Systems
	D3030 Cooling Generation Systems
	D3040 Distribution Systems
	D3050 Terminal & Package Systems
	D3060 Controls & Instrumentation
	D3070 Special HVAC Systems & Equipment
	D3080 Systems Testing & Balancing
D40 Fire Protection	D4010 Fire Protection Sprinkler Systems
	D4020 Stand Pipe & Hose Systems
	D4030 Fire Protection Specialties
	D4040 Special Electrical Systems
D50 Electrical	D5010 Electrical Service & Distribution
	D5020 Lighting & Branch Wiring
	D5030 Communication & Security Systems
	D5040 Special Electrical Systems
E10 Equipment	E1010 Commercial Equipment
	E1020 Institutional Equipment
	E1030 Vehicular Equipment
	E1040 Other Equipment
E20 Furnishings	E2010 Fixed Furnishings
	E2020 Movable Furnishings
F10 Special Construction	F1010 Special Structures
	F1020 Integrated Construction
	F1030 Special Construction Systems
	F1040 Special Facilities
	F1050 Special Controls & Instrumentation
F20 Selective Building Demolition	F2010 Building Elements Demolition
	F2020 Hazardous Components Abatement

Working with Systems

Add, View, or Delete a System

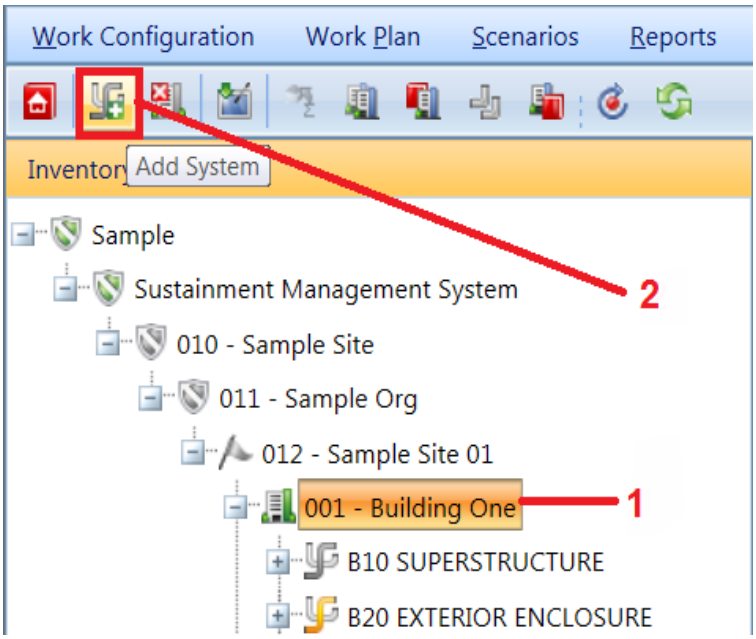
The System level in the BUILDER hierarchy is what allows your real property inventory to conform to Level 2 of the ASTM UNIFORMAT II system. This topic describes the operations that can be performed at the System level.

> **Tip:** Please be familiar with the topic Identifying Systems, Components and Sections before proceeding with this topic.

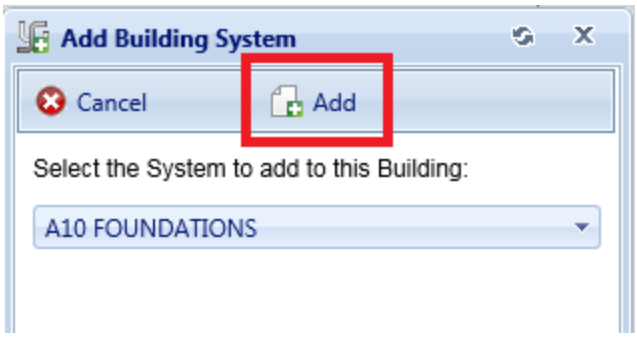
Add a System

To add a new System to an existing Building, navigate to the Building in the inventory tree and do one of the following:

a. Right-click the Building. Then select "Add System" from the options.
b. Alternatively, as shown below, select the Building (1). Then activate the **Add System** icon (2) on the main toolbar:



The "Add Building System" popup window will appear.



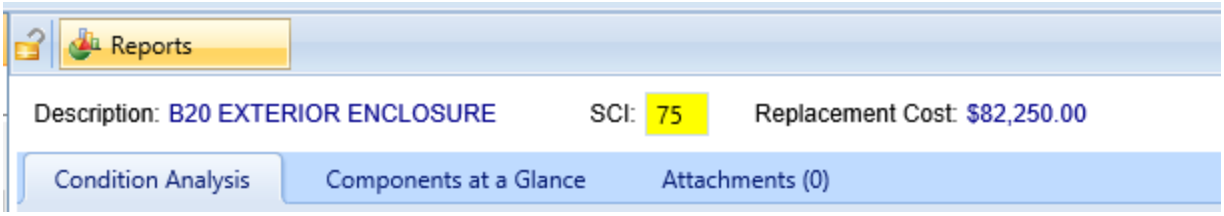
Activate the dropdown list and select the System you wish to add to the Building. Then activate the **Add** button on the popup toolbar to add the System. If you do not wish to add a System to the Building, activate the **Cancel** button instead.

> **Note:** Each Building can contain only one System of each type. The dropdown list for adding a System will display only the System types that do not already exist in the building.

System Data

Once the System is added, you can navigate to it in the tree and activate it to view or edit its data, or to add attachments.

At the top of the System data page you will see the System description. The System Condition Index (SCI) and System replacement cost field will be blank until underlying inventory has been entered and a rollup has been performed. The replacement cost is calculated via rollup from the underlying Sections.



Additional information regarding the System is found at these tabs:

- **Condition Analysis Tab**
- **Components at a Glance Tab**
- **Attachments**

The first two tabs contain read-only information described in "View a System" on page 90. The **Attachments** tab is where you can associate one or more attachments (images and other documents) with that particular System.

Attach a File

At the **Attachments** tab on the System's data page, you have the option to attach files to the System's record. An attached file might be a photograph, an electronic image of written notes or diagrams made during inventory, or a file generated on a computer.

Acceptable Attachment Formats

The attachment may be in any of the following formats:

- .jpg
- .jpeg
- .png
- .zip
- .doc
- .pdf

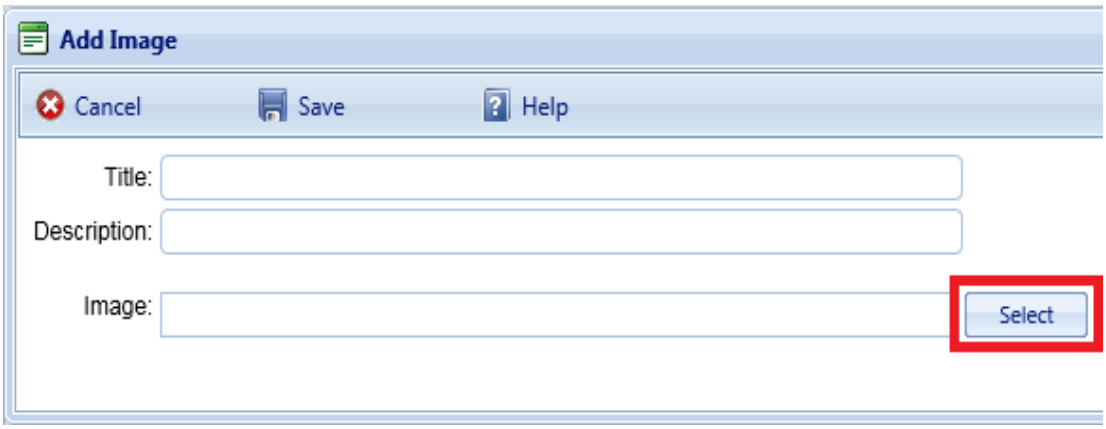
  Note: As of July 26, 2016, .doc format is allowed, but not .docx.

Attach

To attach a file,

1. At the **Attachments** tab, activate the **Add** button in the toolbar below the row of tabs.

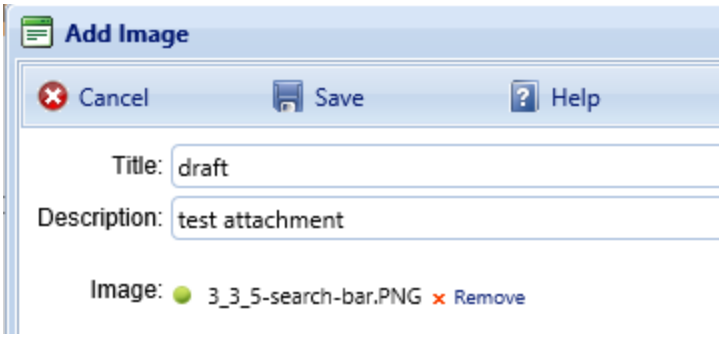
This will open the "Add Image" popup window:



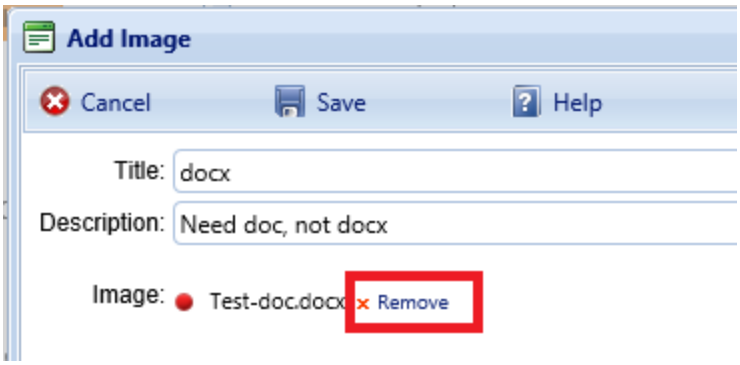
2. Enter Title and Description information for the attachment.
3. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file.
4. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".
5. Once the required attachment data is entered,
   a. Activate **Save** on the popup toolbar.
   b. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.

Troubleshooting

If the selected attachment is in an acceptable format, the "Image" field will be replaced with a green dot (plus a label that gives you the option to remove the attachment).



However, if it is not in an acceptable format, the "Image" field will be replaced with a red dot. Activate "Remove" and select an attachment file in one of the formats listed at "Acceptable Attachment Formats" on the previous page.

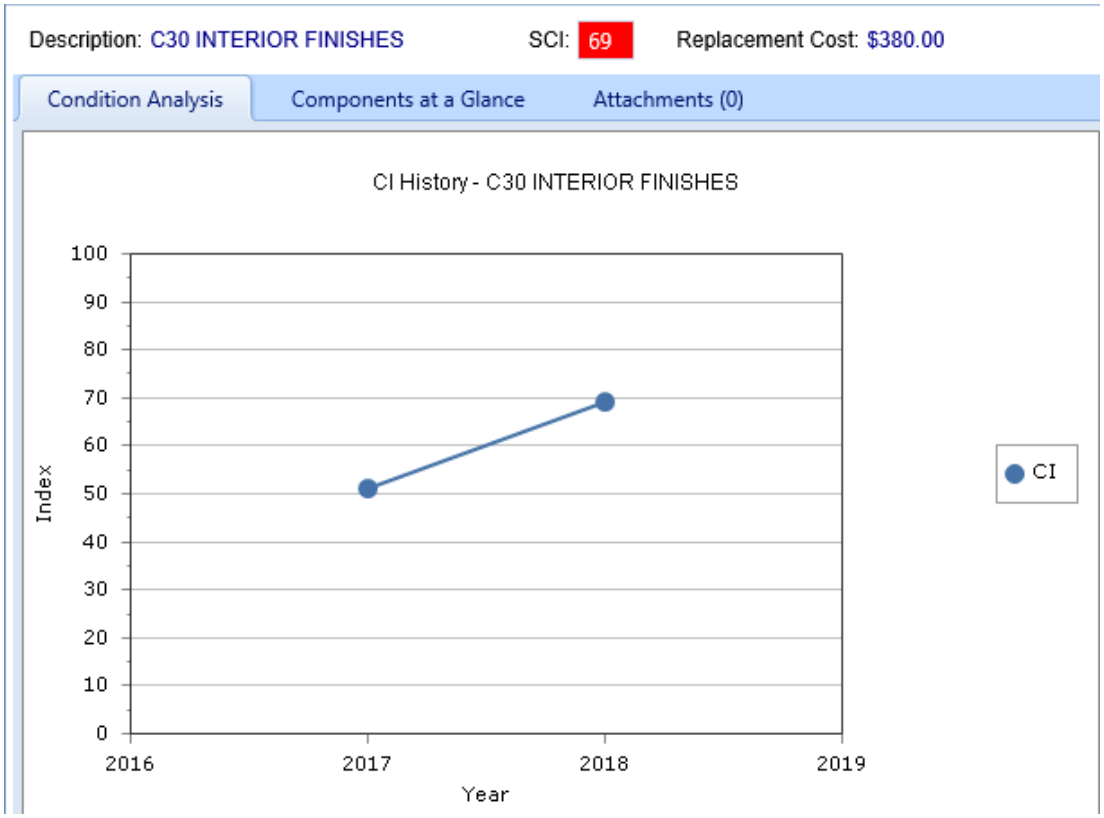


View a System

Data for an existing System can be viewed by selecting the System in the inventory tree. At the top of the content area, the System description, System Condition Index (SCI), and System replacement cost are shown. Additional information regarding the System is found at the tabs described below.

Condition Analysis Tab

The Condition Analysis tab displays a graph of the CI history of the System over time.



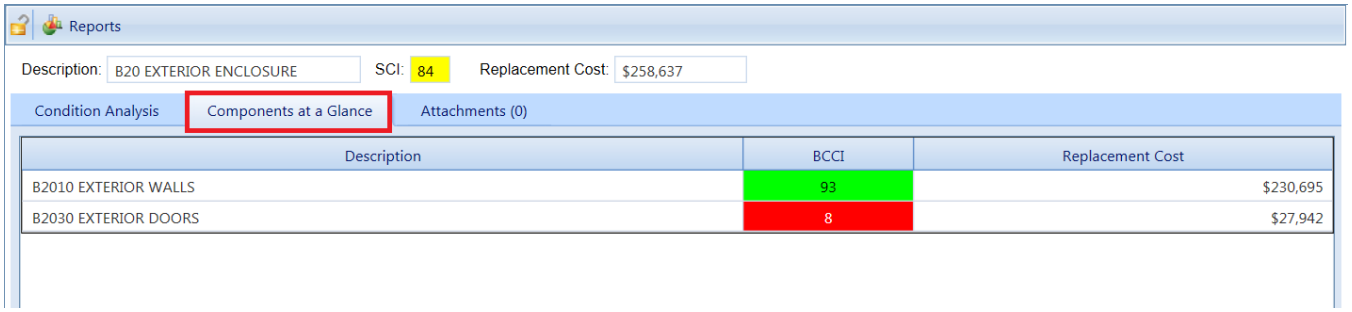
Components at a Glance Tab

Basic information regarding the Components in the System can be viewed by selecting the "Components at a Glance" tab. The table at this tab shows:

- The Components inventoried in the System,
- Each Building Component's condition index (BCCI), and
- The replacement cost of each Component.

The replacement cost is computed from BUILDER's cost models based on Component type and quantity, and the BCCI is computed based on condition assessment data for the Sections contained in the Component.

All of the data shown at this tab is read-only.



Attachments Tab

The **Attachments** tab will show whether any files have been attached to the System's record. The number in parentheses after the word "Attachments" shows how many of them have been attached. Ann attachment might be a photograph, an electronic image of written notes or diagrams made during inventory, or a file generated on a computer.

To view one or more attachments,

1. Navigate to/activate the **Attachments** tab. *If attachments are present, a table will display their type, title, and description*.
2. Activate the link in the "Title" column. *The attachment will appear in the "Image Viewer" popup window.*
3. When finished viewing, activate the **Close** button on the popup window toolbar. and you will be returned to the table of attachments.
4. Repeat the two steps immediately above for additional attachments as desired.

Edit a System

The only changes that can be made at the System level are to add an attachment, remove an attachment, or to edit the title and/or description of an attachment.

You can edit the title and/or description of an attachment as follows:

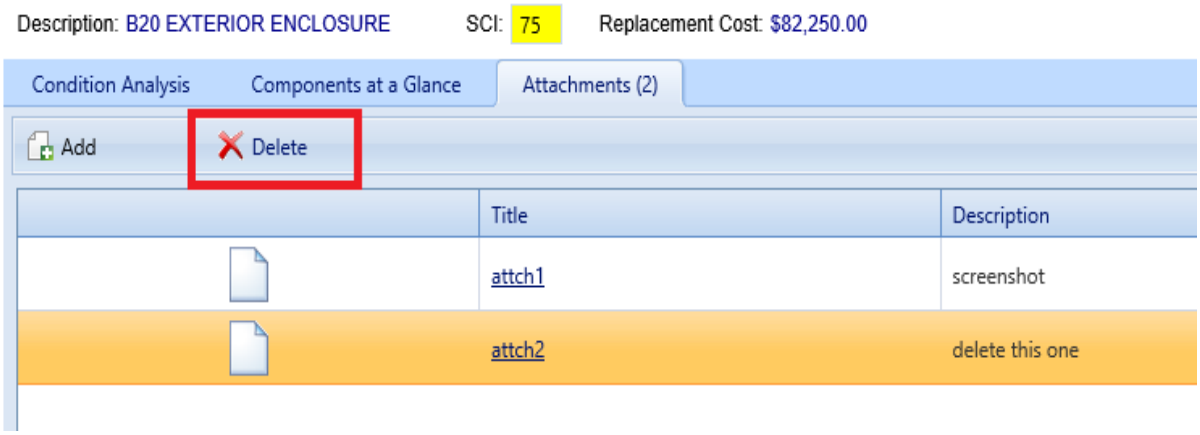
1. Navigate to the **Attachments** tab to view the attachments table.
2. Activate a link in the "Title" column. *The attachment will appear in the "Image Viewer" popup window.*
3. In the header area above the attachment, make the desired changes in the "Title" and/or "Description" text box(es).
4. Activate **Save** on the popup toolbar to store your changes and return to the table of attachments.
5. Alternatively, if you want to cancel the change, activate **Close** on the popup toolbar. *You will be returned to the table of attachments*.

If you wish to change the contents of the attachment, you will need to delete the existing attachment file and add a new one.

For information about adding an attachment, see "Attach a File " on page 88.

To delete an attachment,

1. Navigate to the **Attachments** tab to view the attachments table.
2. Select the attachment you wish to delete (do *not* activate the link in the "Title" column). *When properly selected, that record in the table will change background color as illustrated below:*

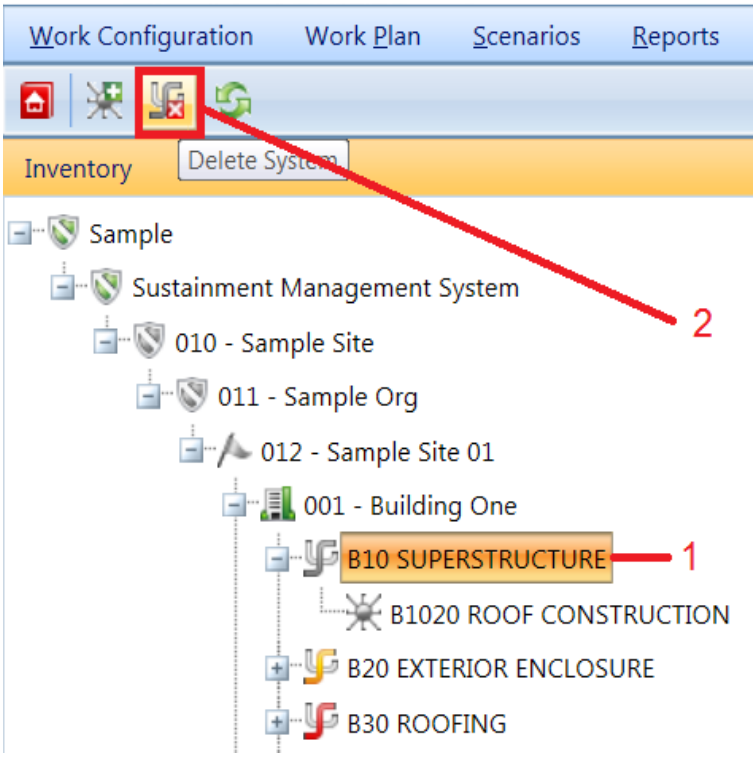


3. Activate the **Delete** button above the table.
4. Activate **Yes** in the confirmation box to delete the attachment, or **No** to cancel.

Delete a System

To delete a System from a Building, navigate to the System in the inventory tree and do one of the following:

a. Right-click the System. Then select "Delete System" from the options.
b. Alternatively, select the System. Then activate the **Delete System** icon in the menu toolbar.

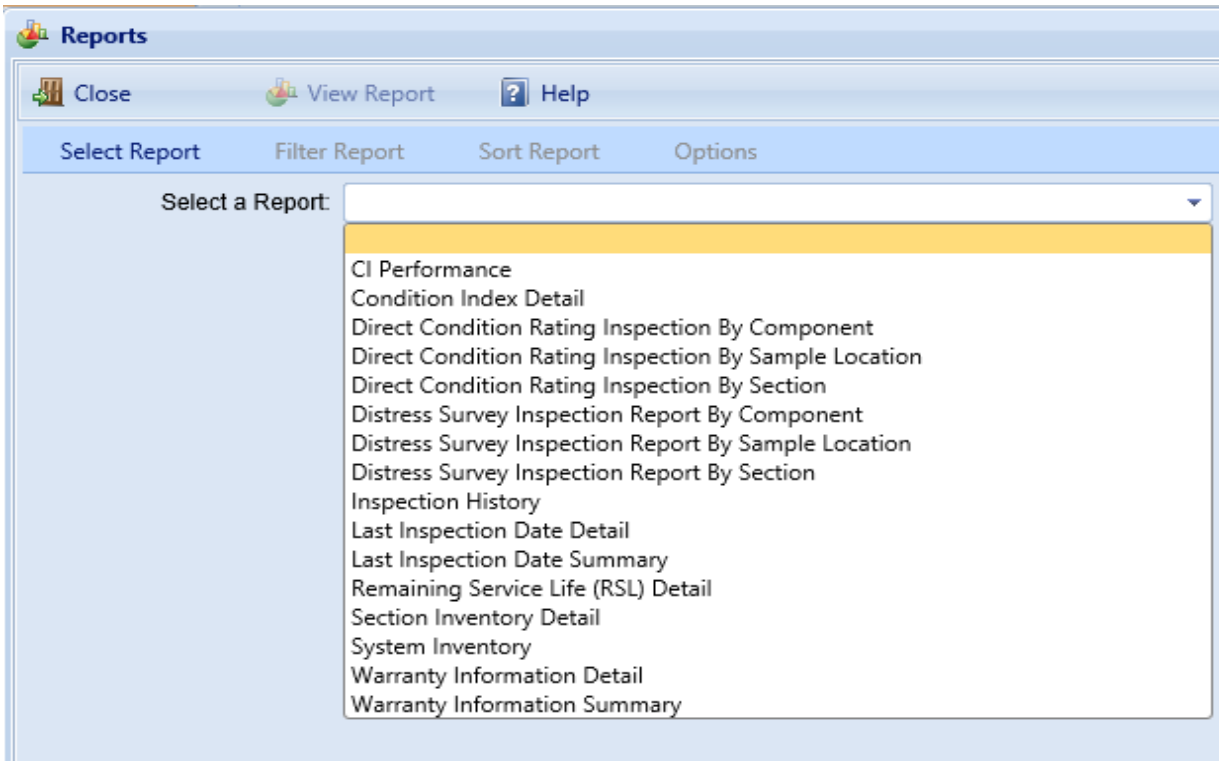


WARNING: Deleting a System will delete all inventory (Components and Sections) in the System. This is a significant step to take and should only be done when you are certain that you wish to clear the entire inventory of the System you have selected.

Best Practice Recommendation: Making frequent backups of your inventory database will protect you from significant data losses if mistakes in deleting are made.

Reports Available at the System Level

When you activate the **Reports** button on the toolbar, the following selection of reports shown in the screen shot is available. To see the list of reports, activate the down arrow in the "Select a Report" text box.



To generate and view a report, select it in the list, then activate the **View Report** button.

See "Generate a Report" on page 184 for more details.

Working with Components

Add, View, or Delete a Component

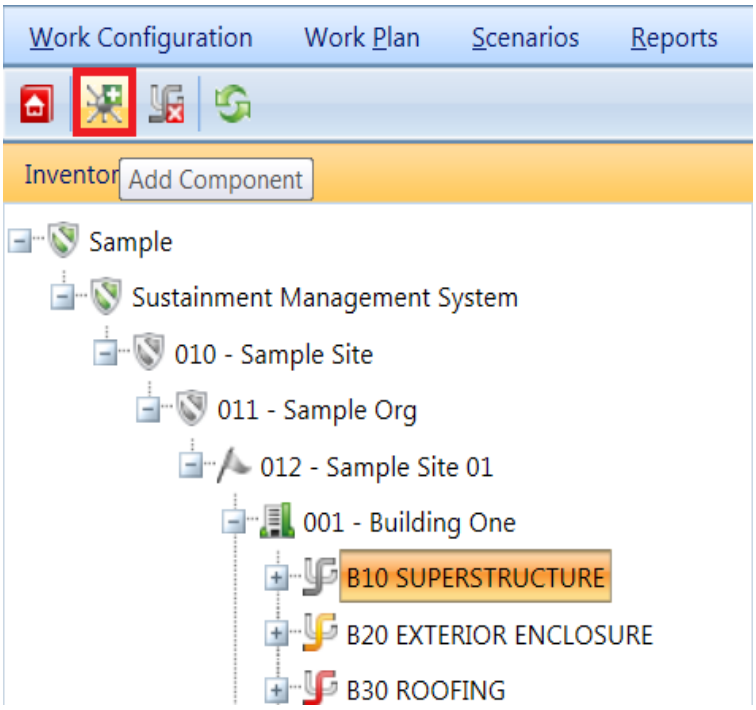
The Component level in the BUILDER hierarchy is what allows your real property inventory to conform to Level 3 of the ASTM UNIFORMAT II system. This topic describes the operations that can be performed at the Component level.

> **Note:** Please be familiar with the topic Identifying Systems, Components and Sections before proceeding with this topic.

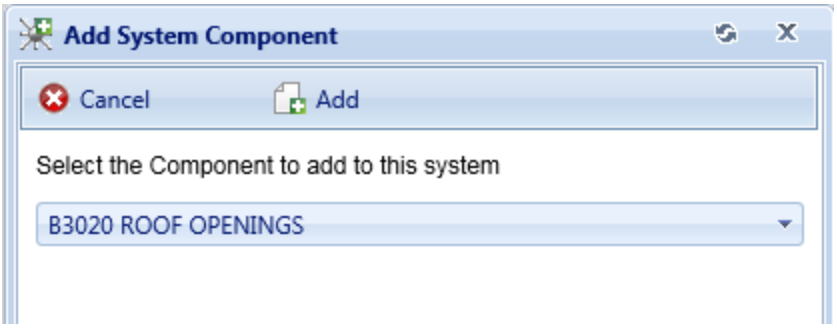
Add a Component

To add a new Component to an existing System, navigate to the System in the inventory tree and do one of the following:

a. Right-click the System. Then select "Add Component" from the options.
b. Alternatively, as shown below, select the System in the inventory tree. Then activate the **Add Component** icon on the main toolbar:



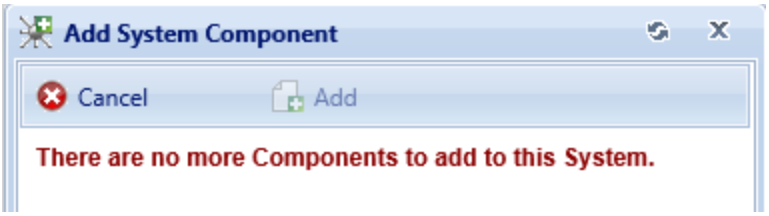
The "Add System Component" popup window will appear.



From the dropdown list, select the Component you wish to add. Then activate the **Add** button on the popup toolbar to add the Component.

Alternatively, if you do not wish to add a Component to the System, activate the **Cancel** button instead.

> **Note:** Each System can contain at most one Component of each type. The dropdown list for adding a Component will display only the component types that do not already exist for the System. If the System already contains all permissible Component types, you will see this message:



Component Data

Once the Component is added, you can navigate to it to view its data or add attachments.

At the top of the data page you will see the Component description. The (Building) Component Condition Index (BCCI) and Component replacement cost fields will be blank until underlying inventory has been entered and a rollup has been performed. The replacement cost is calculated via rollup from the underlying Sections.

Additional information regarding the Component is found at these tabs:

- **Condition Analysis**,
- **Sections at a Glance**, and
- **Attachments**.

The first two tabs contain read-only information described under "View a Component" on page 99. The **Attachments** tab is where you can associate one or more attachments (images and other documents) with that particular Component.

Attach a File

At the **Attachments** tab on the Component's data page, you have the option to attach files to the Component's record. An attached file might be a photograph, an electronic image of written notes or diagrams made during inventory, or a file generated on a computer.

Acceptable Attachment Formats

The attachment may be in any of the following formats:

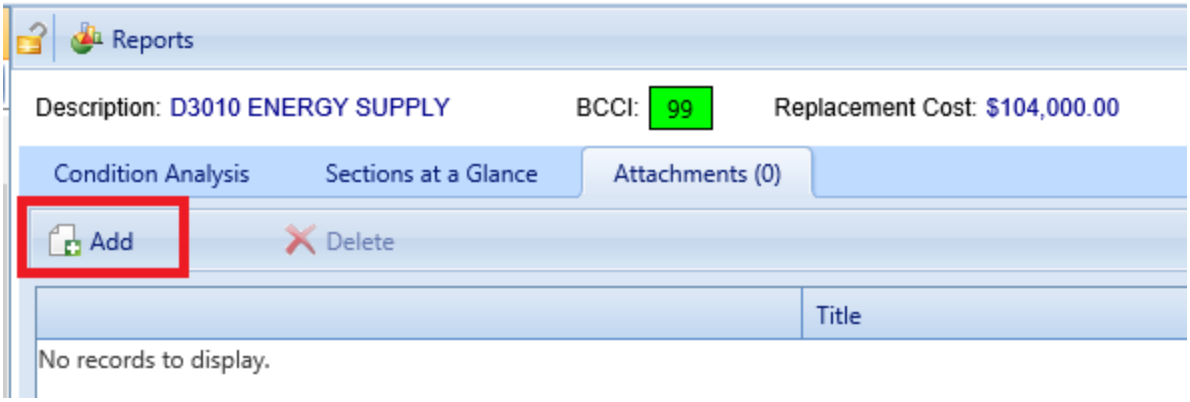
- .jpg
- .jpeg
- .png
- .zip
- .doc
- .pdf

Note: As of July 26, 2016, .doc format is allowed, but not .docx.

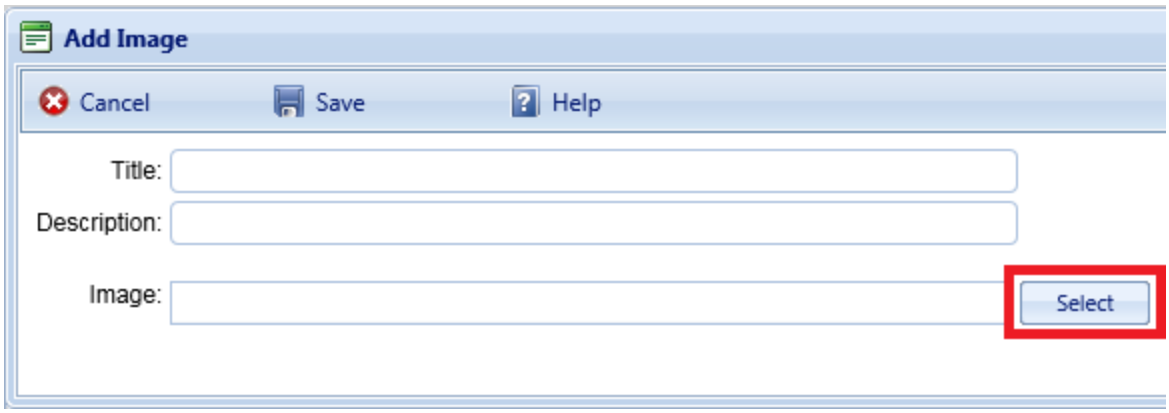
Attach

To attach a file,

1. At the **Attachments** tab, activate the **Add** button in the toolbar below the row of tabs.



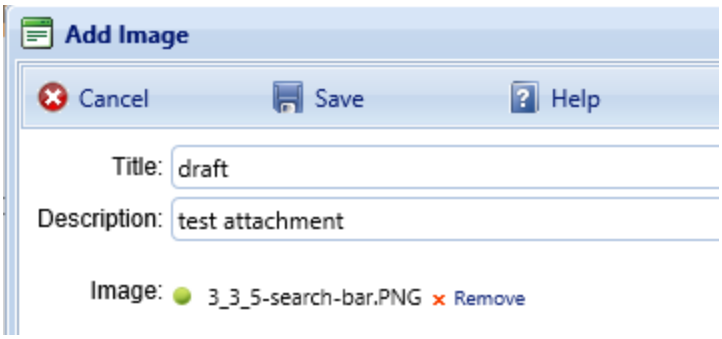
This will open the "Add Image" popup window:



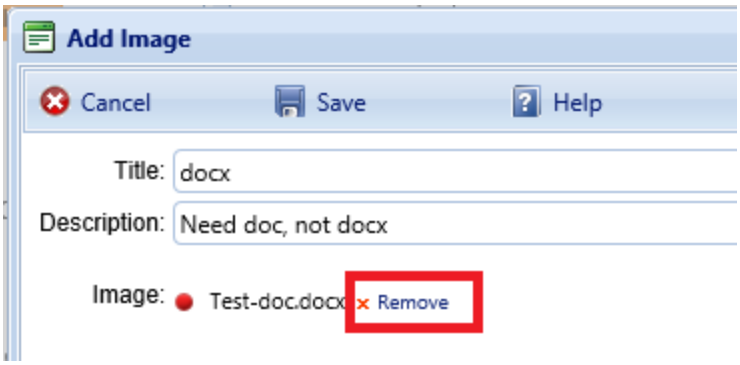
2. Enter Title and Description information for the attachment.
3. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file.
4. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".
5. Once the required attachment data is entered,
   a. Activate **Save** on the popup toolbar.
   b. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.

Troubleshooting

If the selected attachment is in an acceptable format, the "Image" field will be replaced with a green dot (plus a label that gives you the option to remove the attachment).



If it is not in an acceptable format, the "Image" field will be replaced with a red dot. Activate "Remove" and select an attachment file in one of the formats listed at "Acceptable Attachment Formats" on the previous page.

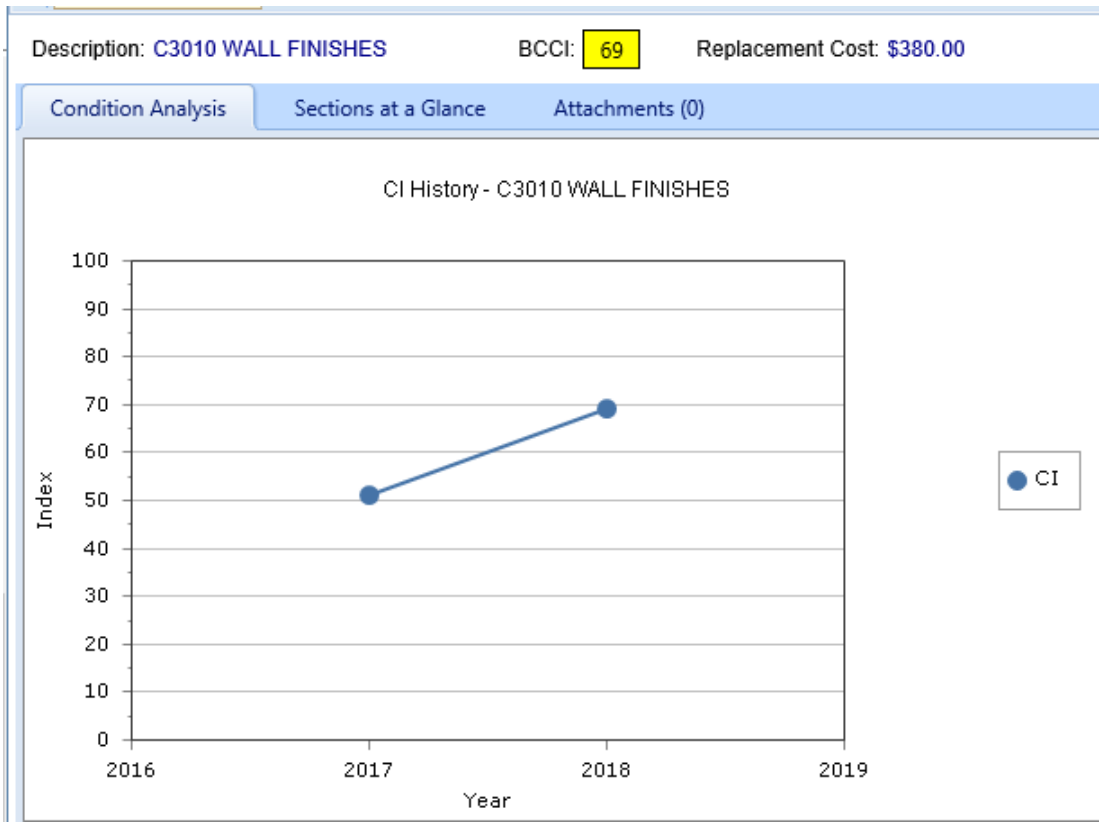


View a Component

Data for an existing Components can be viewed by selecting the Component in the inventory tree. At the top of the context area, the component description, Building Component condition index (BCCI), and component replacement cost are shown. Additional information regarding the component is found in the different tabs and is described below.

Condition Analysis Tab

The Condition History tab displays a graph of the CI history of the Component over time.



Sections at a Glance Tab

Basic information regarding the Sections in the Component can be viewed by selecting the "Sections at a Glance" tab. The table at this tab shows:

- The Sections inventoried in the Component,
- Each Component-Section's condition index (CSCI), and
- The replacement cost of each Section. All of the data shown at this tab is read-only.

Description	CSCI	Replacement Cost
North windows B202001 WINDOWS Aluminum Windows	88	$19,500
South windows B202001 WINDOWS Aluminum Windows	61	$19,500
West windows B202001 WINDOWS Aluminum Windows	100	$19,500
East windows B202001 WINDOWS Aluminum Windows	50	$19,500

Attachments Tab

The **Attachments** tab will show whether any files have been attached to the Component's record. The number in parentheses after the word "Attachments" shows how many of them have been attached. Ann attachment might be a photograph, an electronic image of written notes or diagrams made during inventory, or a file generated on a computer.

To view one or more attachments,

1. Navigate to/activate the **Attachments** tab. *If attachments are present, a table will display their type, title, and description*.
2. Activate the link in the "Title" column. *The attachment will appear in the "Image Viewer" popup window.*
3. When finished viewing, activate the **Close** button on the popup window toolbar. and you will be returned to the table of attachments.
4. Repeat the two steps immediately above for additional attachments as desired.

Edit a Component

The only changes that can be made at the Component level are to add an attachment, remove an attachment, or to edit the title and/or description of an attachment.

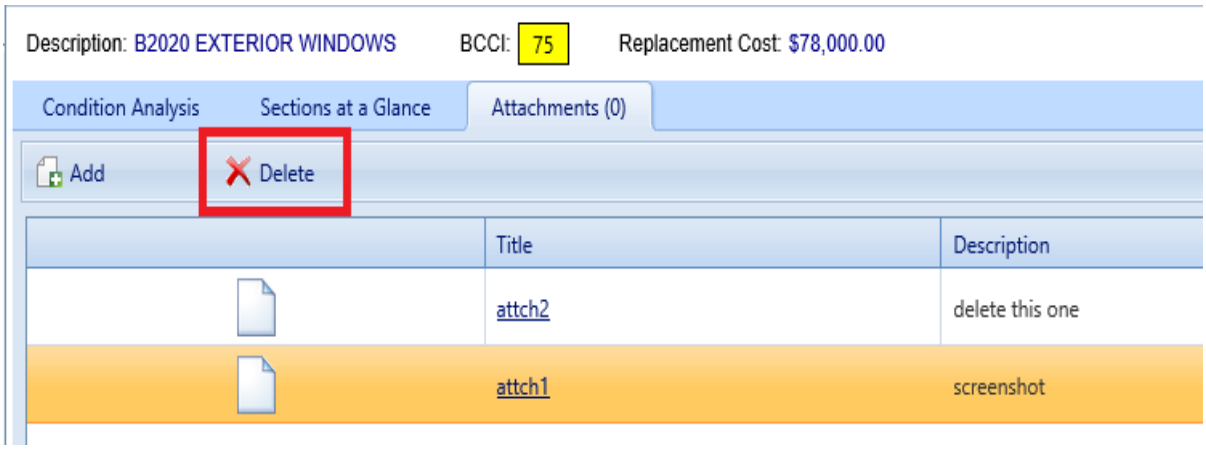
You can edit the title and/or description of an attachment as follows:

1. Navigate to the **Attachments** tab to view the attachments table.
2. Activate a link in the "Title" column. *The attachment will appear in the "Image Viewer" popup window.*
3. In the header area above the attachment, make the desired changes in the "Title" and/or "Description" text box(es).
4. Activate **Save** on the popup toolbar to store your changes and return to the table of attachments.
5. Alternatively, if you want to cancel the change, activate **Close** on the popup toolbar. *You will be returned to the table of attachments*.

If you wish to change the contents of the attachment, you will need to delete the existing attachment file and add a new one.

For information about adding an attachment, see "Attach a File " on page 97.

1. Navigate to the inspection's **Attachments** tab to view the attachments table.
2. Select the attachment you wish to delete (do *not* activate the link in the "Title" column). *When properly selected, that record in the table will change background color as illustrated below:*



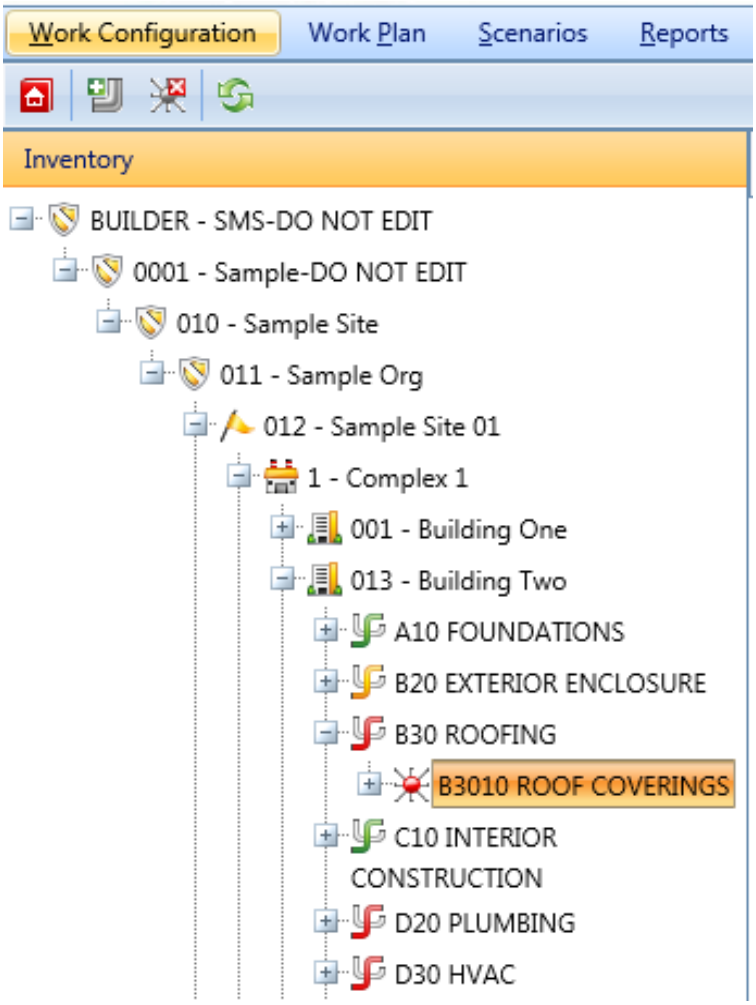
3. Activate the **Delete** button above the table.
4. Activate **Yes** in the confirmation box to delete the attachment, or **No** to cancel.

Delete a Component

To delete a Component, navigate to it in the inventory tree and do one of the following:

a. Right-click the Component. Then select "Delete Component" from the options.

b. Alternatively, select the Component, then activate the **Delete Component** icon on the menu toolbar.

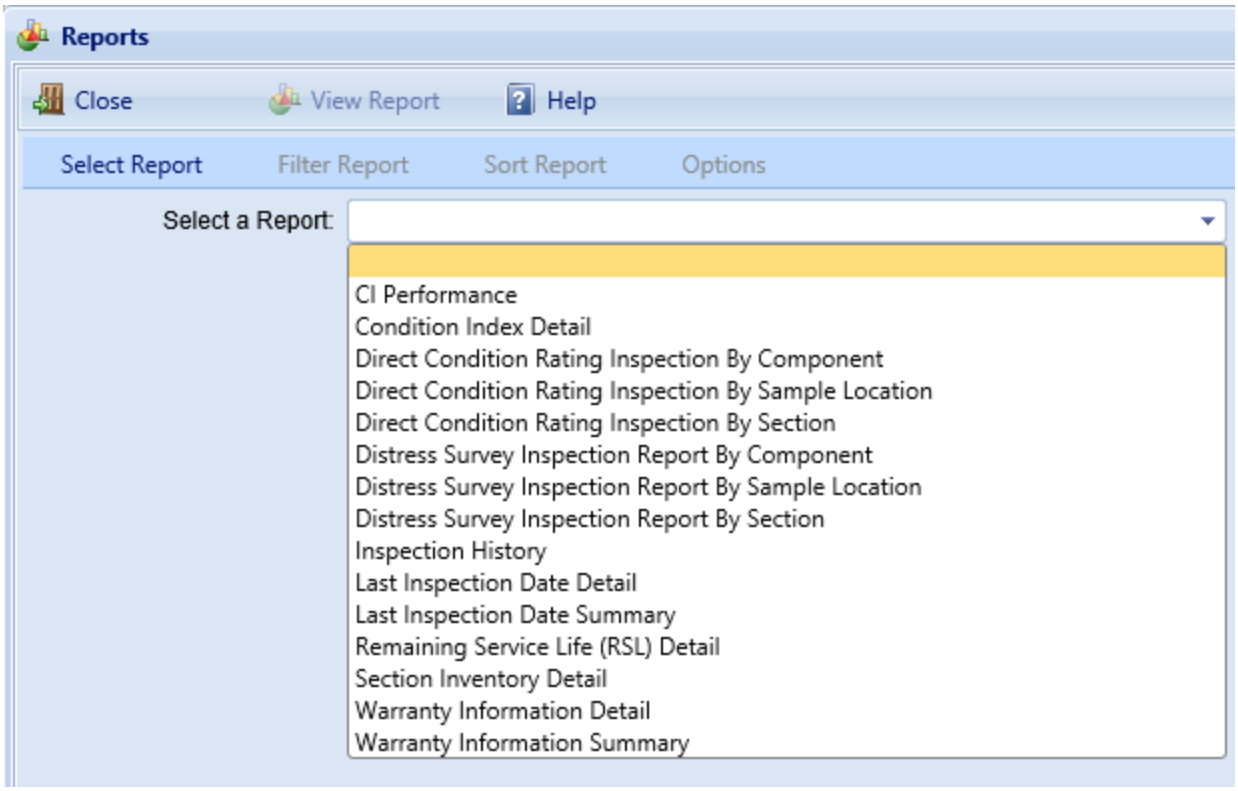


WARNING: Deleting a Component will delete all Sections in the Component. Be sure that you wish to take this action. This is a significant step to take and should only be done when you are certain that you wish to clear the entire inventory of the Component you have selected.

Best Practice Recommendation: Making frequent backups of your inventory database will protect you from significant data losses if mistakes in deleting are made.

Reports Available at the Component Level

When you activate the **Reports** button on the toolbar, the following selection of reports shown in the screen shot is available. To see the list of reports, activate the down arrow in the "Select a Report" text box.



To generate and view a report, select it in the list, then activate the **View Report** button.

See "Generate a Report" on page 184 for more details.

Working with Sections

Add, Edit, or Delete a Section

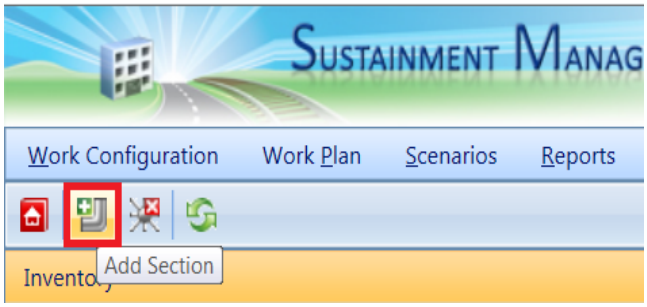
The Section level in the BUILDER hierarchy is where inspections actually take place. This topic describes operations that can be performed at the Section level.

> **Note:** Please be familiar with the topic Identifying Systems, Components and Sections before proceeding with this topic.

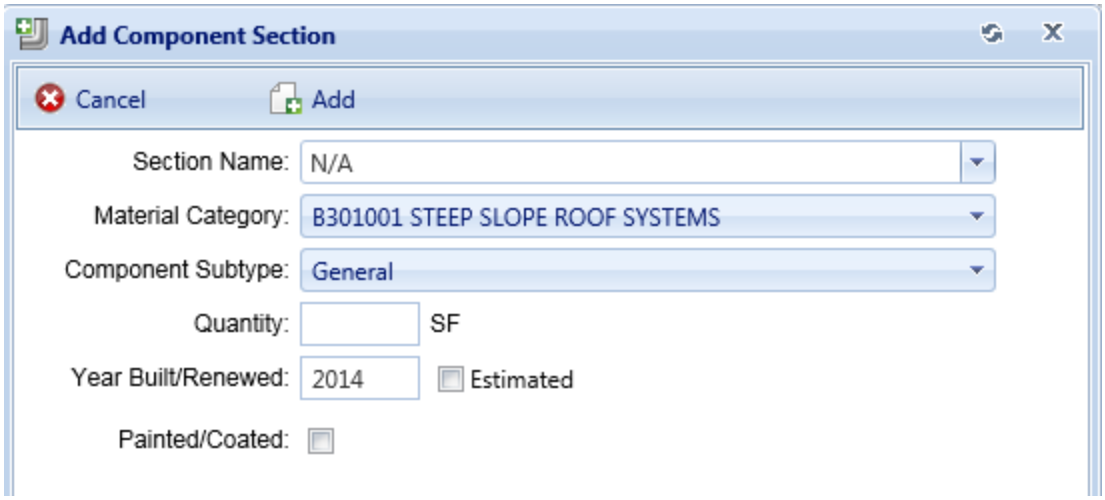
Add a Section

To add a new Section to an existing Component, navigate to the Component in the inventory tree and do one of the following:

a. Right-click on the Component. Then select "Add Section" from the options.
b. Alternatively, select the Component in the inventory tree. Then activate the **Add Section** icon on the main toolbar:



The "Add Component Section" popup screen will appear.



Section Data

Before adding the Section, the following data must be recorded:

- **Section Name**. Enter the name of the Section. A Section is described by its name, its material/equipment category, and its Component subtype. You may have multiple Sections of the same material/equipment category and Component subtype, but each such Section must have a unique name. A given Section name may be used, however, for the Sections of different Systems and Components, which allows the Section name to be used in organizing your inventory and condition assessment procedures. For example, you may use the Section name "Room 101" for the floor, walls, doors, plumbing, HVAC etc. Sections in Room 101. When inspecting Room 101, all of the Building Sections with the name "Room 101" can be easily selected. To simplify the process of creating multiple types of Sections with the same Section name, the Section Name property includes a dropdown list of current Section names for the building. You may either type in a new Section name or choose a name from the dropdown list.
- **Material/Equipment Category**. Select the material/equipment category of the Section from the dropdown list. Each Component has a set of distinct material/equipment categories. For example, a "Door" Component has material categories "Wood", "Metal", "Glass", etc.
- **Component Subtype**. Select the Component subtype of the Section from the dropdown list. Each Component type and material/equipment category has a set of distinct Component subtypes. For example, a "Door" Component with material category "Wood" has Component subtypes of "Personnel", "Overhead", etc.
- **Quantity**. Enter the quantity of the Section.
- **Year Built/Renewed**. Enter the four-digit year the Section was built (or installed if equipment) or renewed. If you have no record of the year the Section was last replaced, you can enter an estimated year and mark the "Estimated" checkbox. Initially, BUILDER algorithms estimate the year the Section was last replaced. The default value is the Building's year of construction if the age of the building is less than 1.5 times the expected service life of the Section. If the estimating algorithm is used or you are unsure of when the Section was built or renewed, make sure you mark the "Estimated" checkbox.
- **Painted/Coated**. Mark this checkbox if Section is painted or has a surface coating.
- **Year Painted/Coated**. If the Section is marked as painted/coated, enter the four-digit year the Section was last painted. If you have no record of the year the Section was last painted/coated, you can enter an estimated year and

mark the "Estimated" checkbox. Initially, BUILDER algorithms estimate the year in which the Section was last painted/coated. The default value is the Building's year of construction if the age of the building is less than 1.5 times the expected paint life of the Section. If the estimating algorithm is used or you are unsure of when the Section was last painted/coated, make sure you mark the "Estimated" checkbox.

- **Paint/Coating Type**. If the Section is marked as painted/coated, select the paint/coating type from the dropdown list.

After adding the Section data,

a. Activate the **Add** button on the popup toolbar to add the Section to your inventory.
b. Alternatively, if you do not wish to add the Section, activate the **Cancel** button to close the popup.

Attach a File

At the **Attachments** tab on the Section's data page, you have the option to attach files to the Section's record. An attached file might be a photograph, an electronic image of written notes or diagrams made during inventory, or a file generated on a computer.

Acceptable Attachment Formats

The attachment may be in any of the following formats:

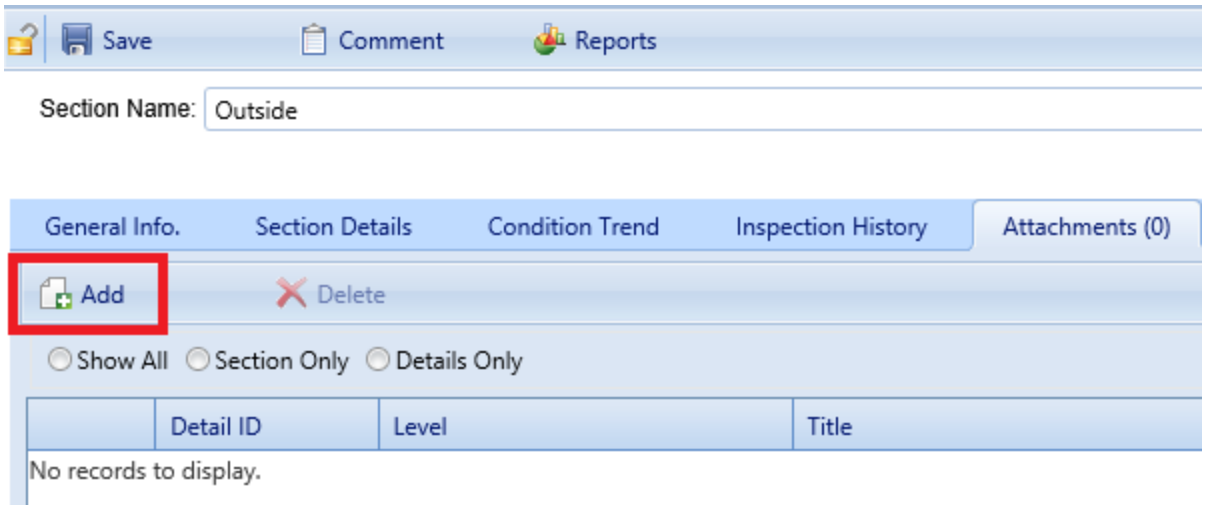
- .jpg
- .jpeg
- .png
- .zip
- .doc
- .pdf

Note: As of July 26, 2016, .doc format is allowed, but not .docx.

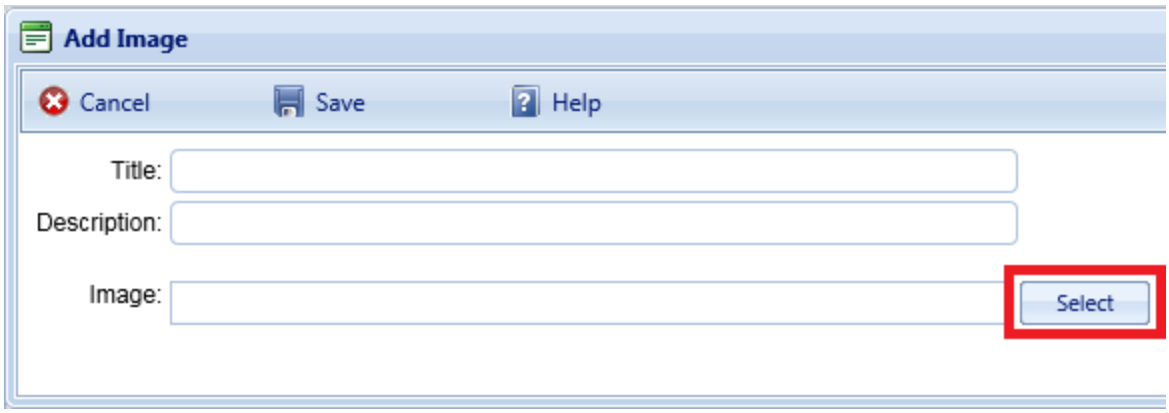
Attach

To attach a file,

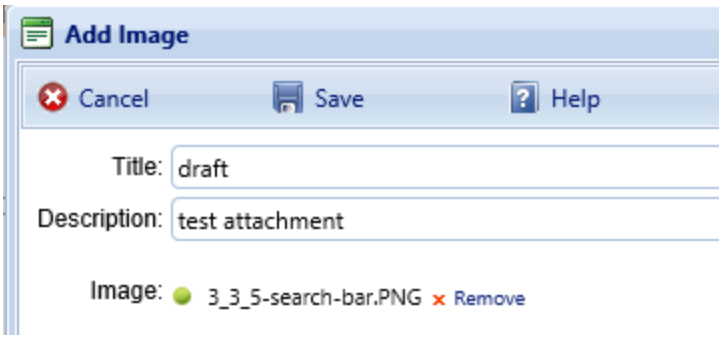
1. At the **Attachments** tab, activate the **Add** button in the toolbar below the row of tabs.



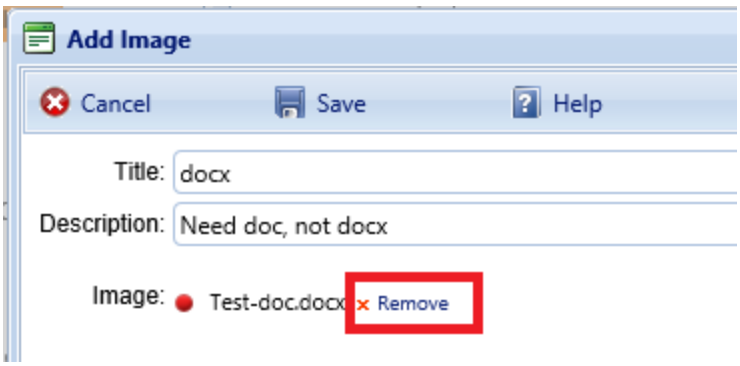
This will open the "Add Image" popup window:



2. Enter Title and Description information for the attachment.
3. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file.
4. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".
5. Once the required attachment data is entered,
   a. Activate **Save** on the popup toolbar.
   b. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.
   c. *Troubleshooting*
   d. If the selected attachment is in an acceptable format, the "Image" field will be replaced with a green dot (plus a label that gives you the option to remove the attachment).

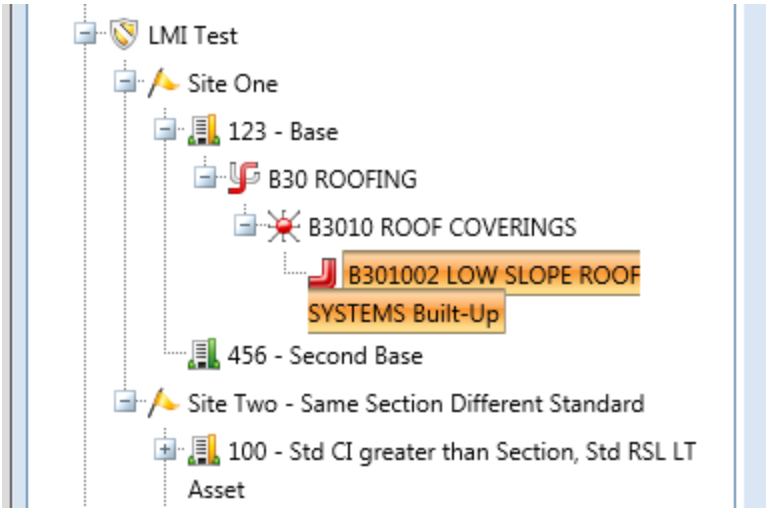
e. 

f. If it is not in an acceptable format, the "Image" field will be replaced with a red dot. Activate "Remove" and select an attachment file in one of the formats listed at "Acceptable Attachment Formats" on page 106.

g. 

Edit Section Data

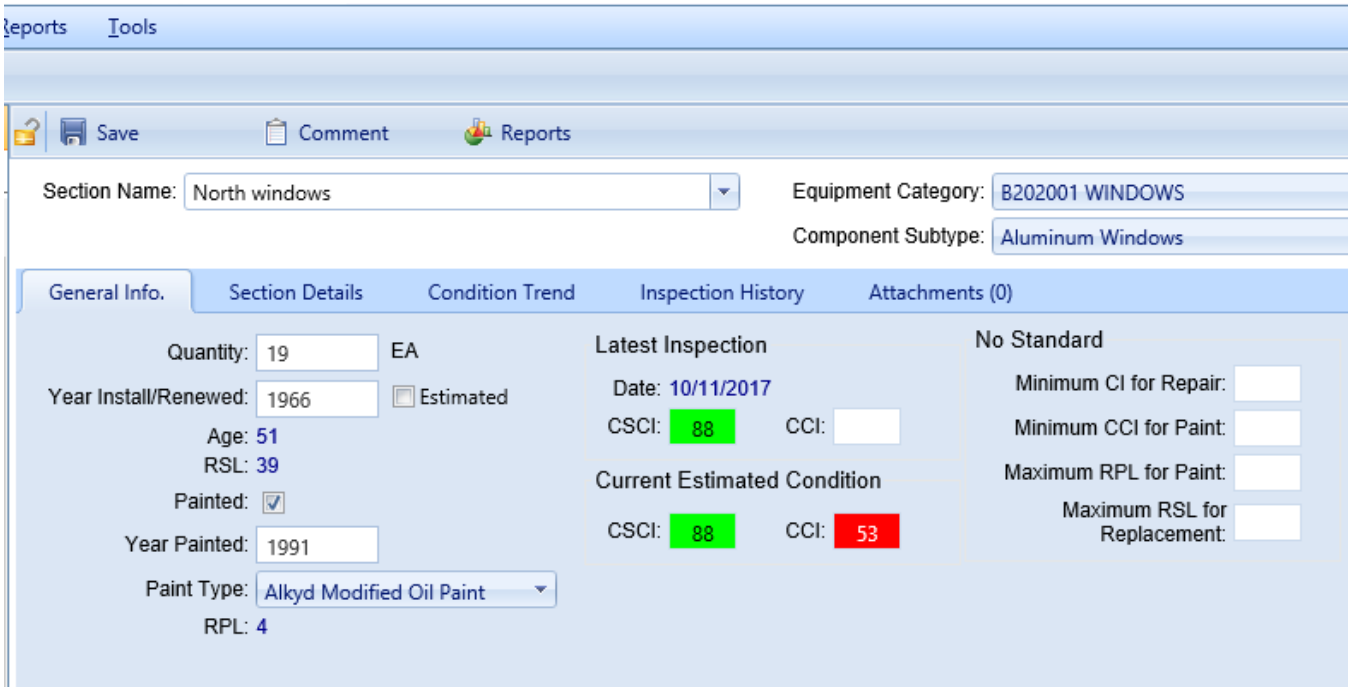
Data for a given Section can be viewed and edited by selecting the Section in the inventory tree:



The Section information is distributed over several tabs:

General Information Tab

After a Section is selected in the inventory navigation tree, the **General Information** (abbreviated **General Info.**) tab is shown, where all of the Section data described above can be edited. Be sure to save the edits using the **Save** icon in the content area toolbar.



Additional data on this tab includes:

- **Age** (Read-Only). Displays the age of the Section calculated from the Year Installed/Built.
- **RSL** (Read-Only). Displays the remaining service life, in years, of the Section. The remaining service life is calculated during the rollup process using age, Section service life, and Section condition index trend.
- **Latest Inspection** (Read-Only). Displays the date that the last condition assessment was performed on the Section. Also displayed is the Component-Section condition index (CSCI) computed on the inspection date based on the assessment results. If the Section is painted, the Coating Condition Index (CCI) computed at the last inspection date will also be shown.
- **Current Estimated Condition** (Read-Only). Displays the estimated CSCI based on service life and condition index trend. The estimated CSCI is computed during the rollup process, If the Section is painted, the CCI computed

at the last inspection date will also be shown. If the Section is painted, the current estimated CCI will also be shown.

The following fields show numbers that have been set using BUILDER's "Standards" capability to generate work items, if this procedure has been done. For more information about applying standards, see the Work Configuration Guide.

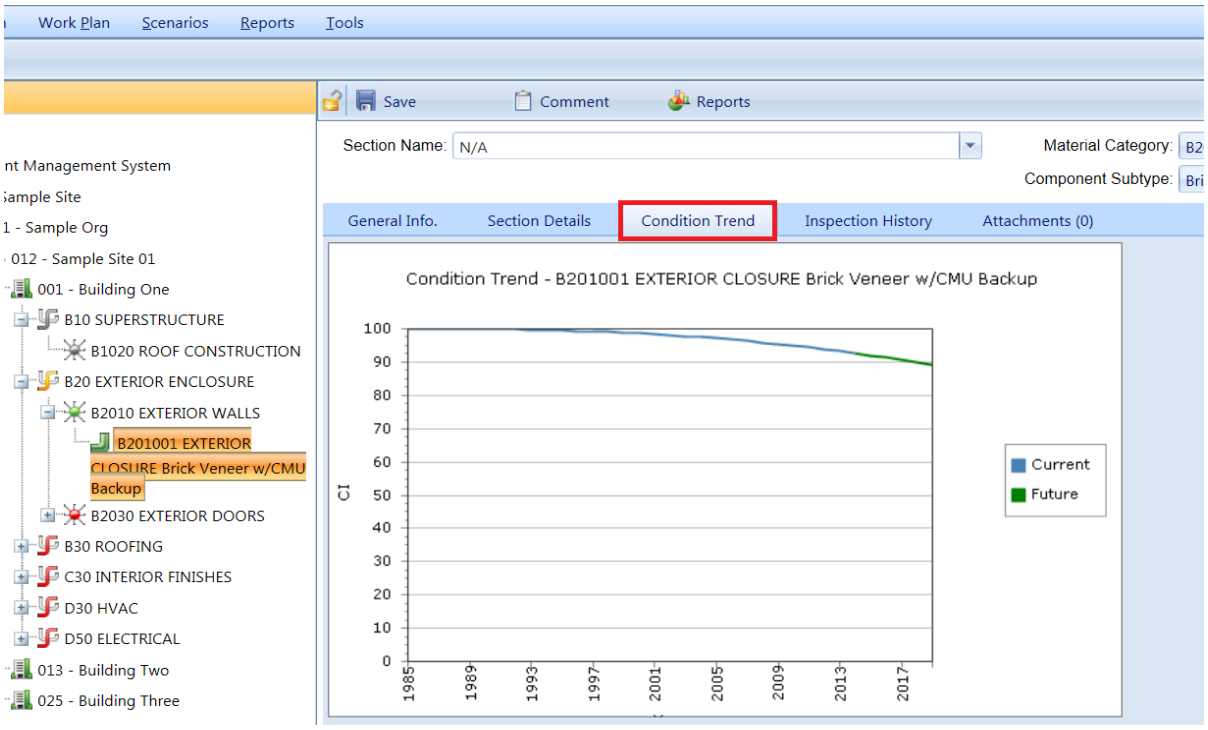
- **Minimum CI for Repair** (Read-Only). This field shows what threshold Condition Index value will trigger a work item. For Sections with a CI above this value, no work item is triggered. For Sections with a CI at or below this value, a work item is triggered.
- **Minimum CCI for Paint** (Read-Only). This field shows the threshold value for the Coating Condition Index. For painted Sections with a CCI above this value, no paint work item is triggered. For painted Sections with a CCI at or below this value, a paint work item is triggered.
- **Maximum RPL for Paint** (Read-Only). This field shows the threshold value for remaining paint life. For painted Sections with a RPL greater than this value, no paint work item is triggered. For painted Sections with a CCI at or less than this value, a paint work item is triggered.
- **Maximum RSL for Replacement** (Read-Only). This field shows the threshold value for remaining service life. For Sections with a RSL above this value, replacement would not be considered as an option unless it is more cost effective to replace than to repair.

Section Details Tab

In addition to information at the **General Information** tab, details regarding individual pieces of equipment that are part of the Section can be stored at the Section Details tab.

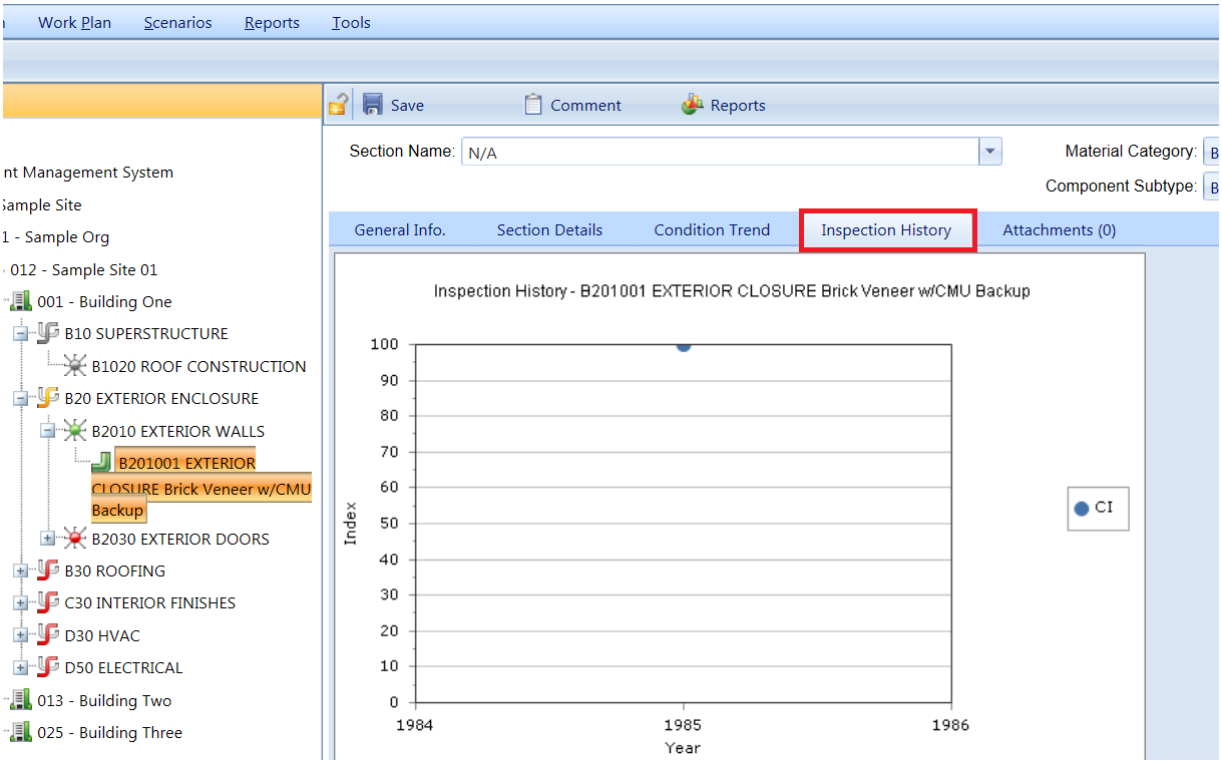
Condition Trend Tab (Read-Only)

The Condition Trend tab shows the trend of the CSCI based on inspection information, as well as the projected CSCI trend into the future based on observed deterioration rates and expected service life.



Inspection History Tab (Read-Only)

The Inspection History tab displays a graph of the CSCI history of the Section over time, based on inspection information.



Attachments Tab

The **Attachments** tab will show whether any files have been attached to the Section's record. The number in parentheses after the word "Attachments" shows how many of them have been attached. At the **Attachments** tab, you have the option to view or change the Section's attachments, as well as attachments to the Section's Section Details.

An attachment can be a photograph, an electronic image of written notes or diagrams made during inventory, or a computer file. For acceptable file formats, see "Acceptable Attachment Formats" on page 106.

You can edit the title and/or description of an attachment as follows:

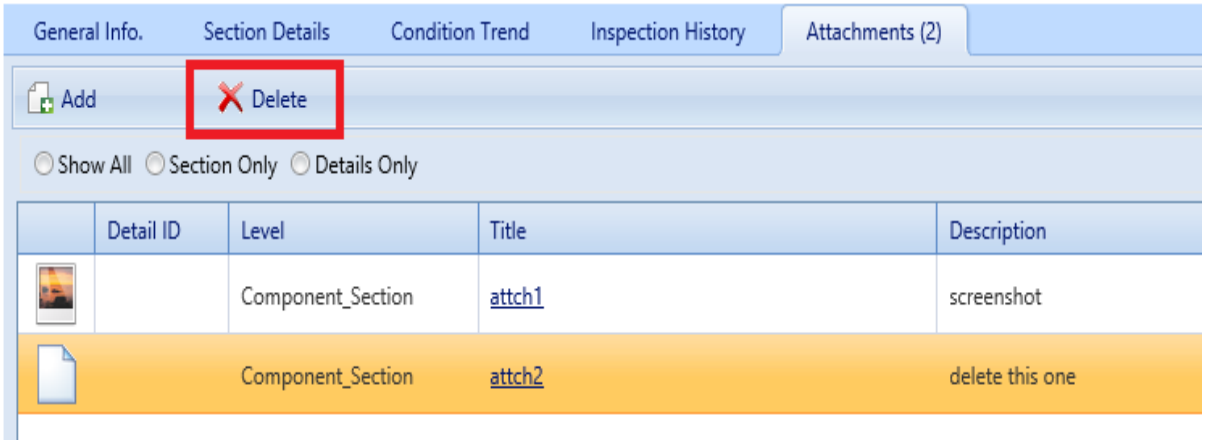
1. Navigate to the **Attachments** tab to view the attachments table.
2. Activate a link in the "Title" column. *The attachment will appear in the "Image Viewer" popup window.*
3. In the header area above the attachment, make the desired changes in the "Title" and/or "Description" text box(es).
4. Activate **Save** on the popup toolbar to store your changes and return to the table of attachments.
5. Alternatively, if you want to cancel the change, activate **Close** on the popup toolbar. *You will be returned to the table of attachments*.

If you wish to change the contents of the attachment, you will need to delete the existing attachment file and add a new one.

To add an attachment, see "Attach a File " on page 106.

To delete an attachment,

1. Navigate to the **Attachments** tab to view the attachments table.
2. Select the attachment you wish to delete (do *not* activate the link in the "Title" column). *When properly selected, that record in the table will change background color as illustrated below:*



3. Activate the **Delete** button above the table.
4. Activate **Yes** in the confirmation box to delete the attachment, or **No** to cancel.

To add an additional attachment,

1. At the **Attachments** tab, activate the **Add** button in the toolbar below the row of tabs. *The "Add Image" popup will appear.*
2. Enter Title and Description information for the attachment.
3. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file. (Alternatively, you can enter the path to the image in the "Image:" field.)
4. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".
5. Once the required attachment data is entered,
   a. Activate **Save** on the popup toolbar.
   b. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.

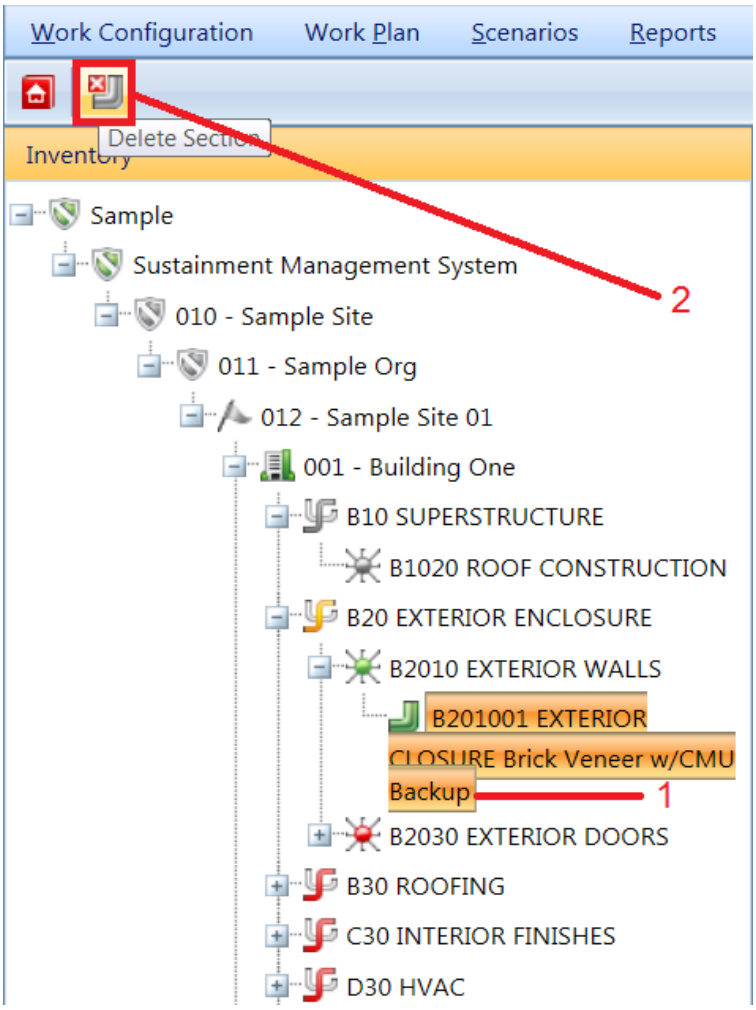
Toolbar Options

- **Save**. Saves changes made to the Section.
- **Comment**. Allows you to add, edit, and view comments about the Section.
- *Deleted:* **Images**. Note that this toolbar option has been removed; it has been replaced with the **Attachments** tab in the content area.
- **Reports**. Launches the Report Selection tool, which gives you access to a list of standard reports relevant to Section inventory. See "Generate a Report" on page 184 for details about how to select and generate a report, or below for a list of reports available at the Section level of inventory.

Delete a Section

To delete a Section, navigate to it in the inventory tree and do one of the following:

a. Right-click the Section, then select "Delete Section" from the options. Or,
b. Select the Section, then activate the **Delete Section** icon on the menu toolbar, as shown below.

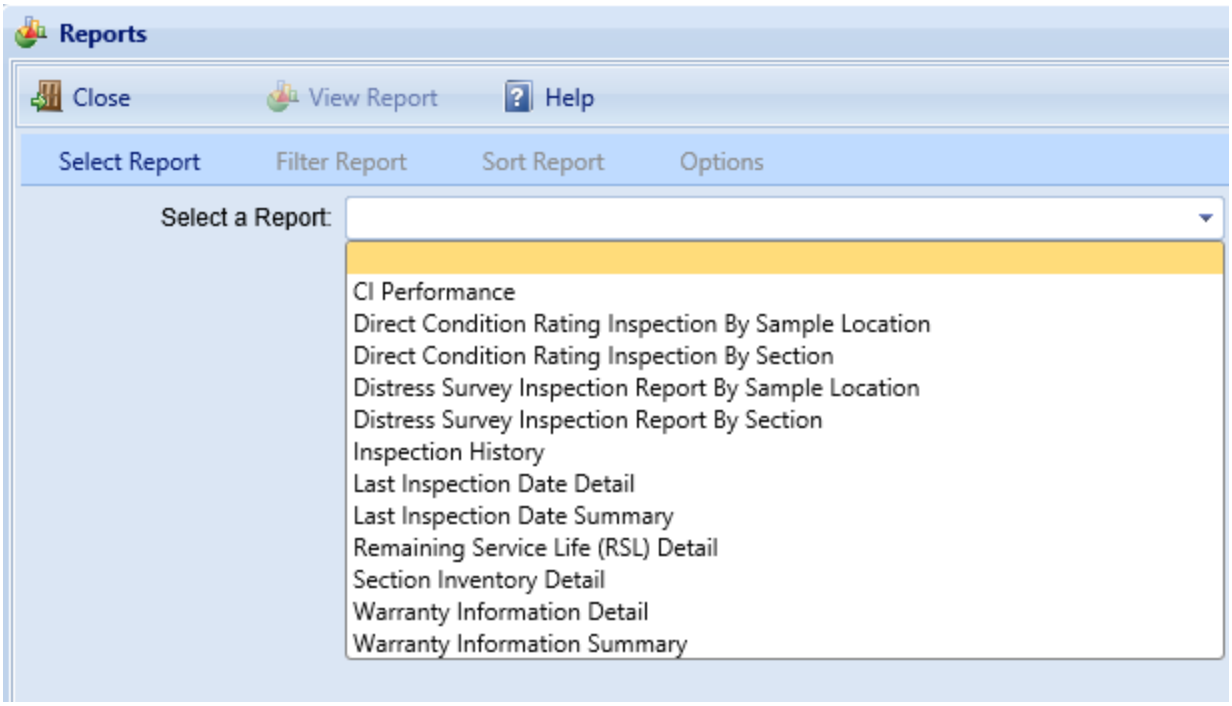


Note: This is a significant step to take and should only be done when you are certain that you wish to clear the Section you have selected from the inventory in the Building.

Best Practice Recommendation: Making frequent backups of your inventory database will protect you from significant data losses if mistakes in deleting are made.

Reports Available at the Section Level

When you activate the **Reports** button on the toolbar, the following selection of reports shown in the screen shot is available. To see the list of reports, activate the down arrow in the "Select a Report" text box.



To generate and view a report, select it in the list, then activate the **View Report** button.

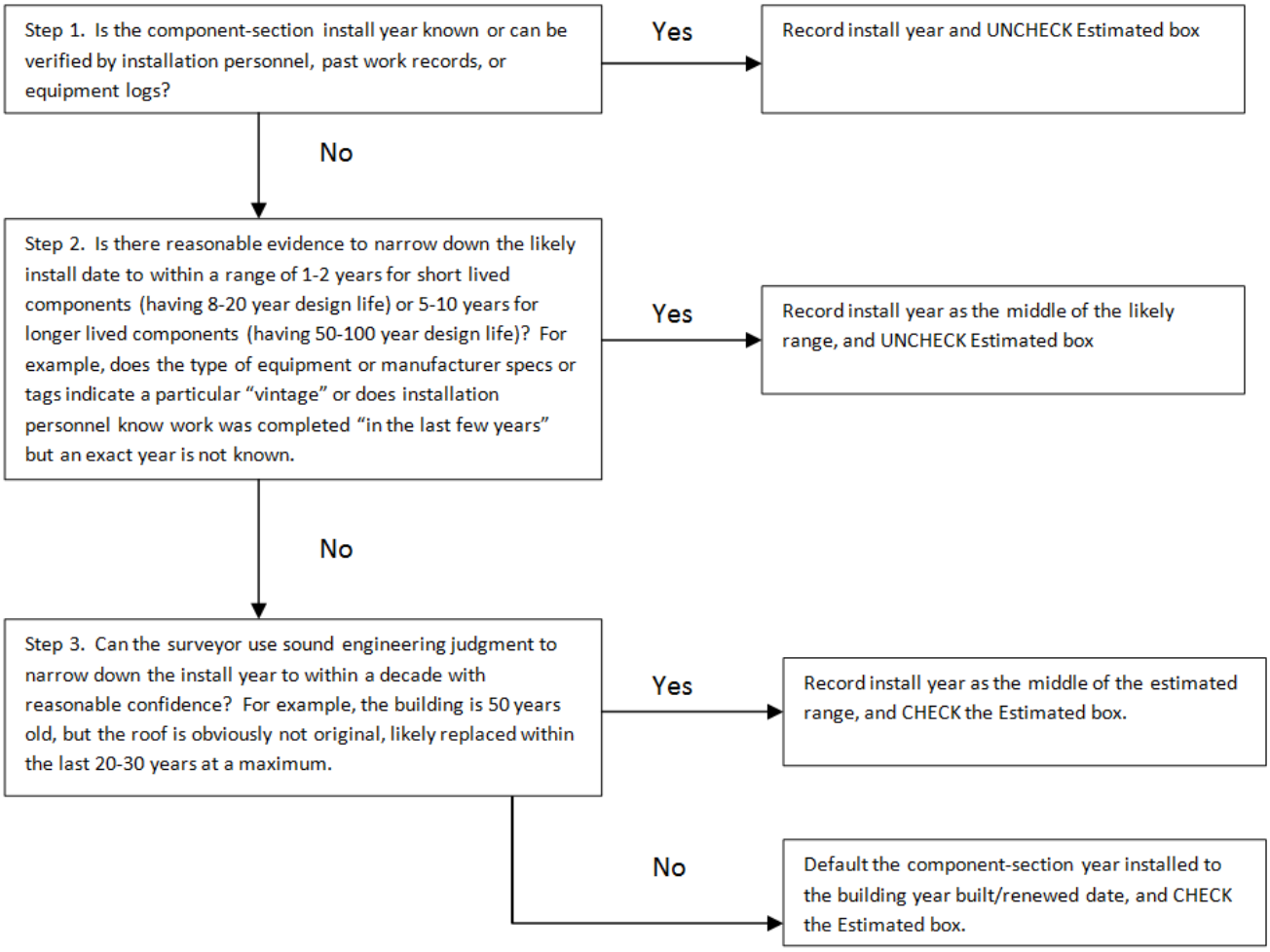
See "Generate a Report" on page 184 for more details.

The Effect of the "Estimated" Checkbox for a Component-Section

When entering the inventory for a Component-Section in BUILDER, one of the primary data elements that gets recorded is the year that Component-Section was installed or constructed. This denotes the time that the Component-Section was put in service, and is used by BUILDER to determine the Component-Section age and its projected life-cycle condition. It is a fundamental data element in the determination of a component's condition index.

There are cases where the Component-Section install date is explicitly known, such as if the component is original to the Building, or if the component was replaced recently and work records exist. There are also many cases where obtaining the exact install year for a Component-Section is difficult. This may be the case, for example, if the Component-Section is very old but not original to the

Building, and the year when it was installed or replaced is not known. In these situations, the surveyor collecting and entering the data for that Component-Section should enter a year installed that best reflects the observed age based on professional judgment, and the year estimated check box shall be checked in BUILDER to reflect that. As a guide to determine the year installed for a Component-Section, the following flow diagram should be considered.

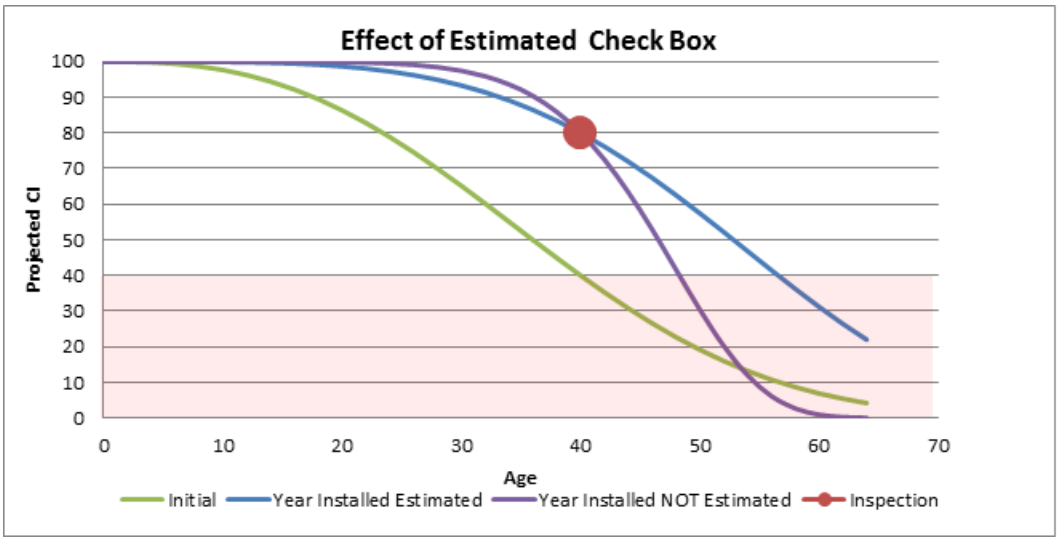


If a Component-Section's install year is estimated, as denoted by the check box, BUILDER will factor that into account when projecting the current condition index. The condition index reflects the expected condition state, based on life cycle information such as its age in relation to its expected service life, as well as inspection based observations against that component. When no inspection are recorded against the Component-Section, the projection of current Component-Section CI (CSCI) is solely based on age of the component calculated from the year installed value, whether it is estimated or not. However, if an inspection is

performed, the expected value gets adjusted based on the condition based observations that are observed.

Basically, what BUILDER is doing is reconciling any differences between the expected CI based on age, and the observed condition at a point in time based on the inspection. If the expected age based CI projection and observation-based inspected CI are not significantly different, the adjustments to the projected CI curve over time are relatively minor and the projected CI tends to be close to the last inspected CI in the time frame immediately after that inspection.

However, if the difference between the age-based expected CI and observation based inspected CI are drastically different, as may be the case where a component receives a high condition rating when its age is past its expected service life, the adjustment will be more significant. In these situations, BUILDER has to determine whether to place more emphasis on the age of the component, or the observed condition. If the estimated year installed box is check, BUILDER places less emphasis on the age-based CI, and the latest observation-based inspected CI controls the projected CI calculation. If the year installed check box is not checked, we have a higher confidence in the age of the Component-Section, and the age-based CI projection has more emphasis on the current CI calculation, limiting the amount that the expected service life is allowed to be adjusted.

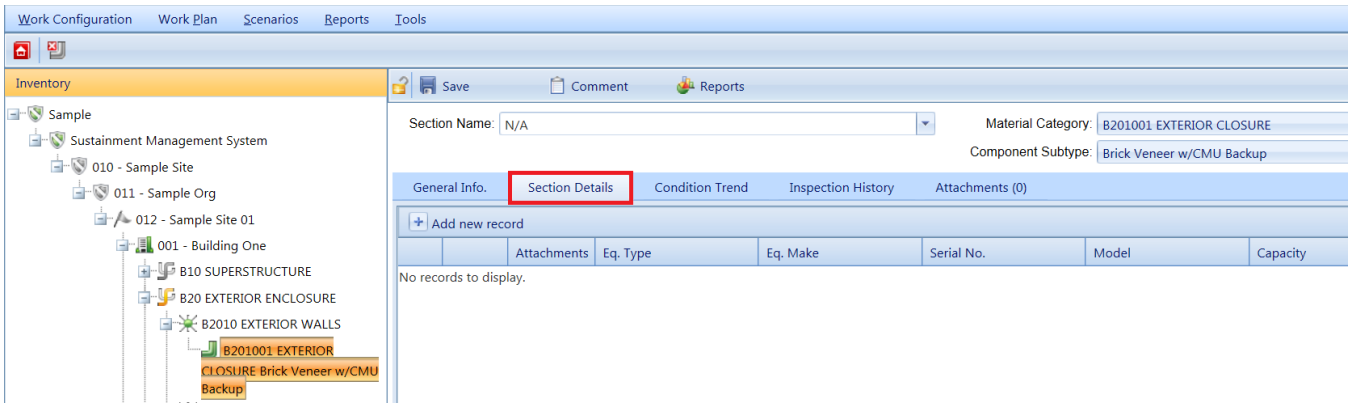


Working with Section Details

Add, Edit, or Delete Section Details

The Section Details level in the BUILDER hierarchy is where you can record detailed information, such as serial number and warranty date, for equipment that constitutes a Section or is part of one. This topic describes operations that can be performed at the Section Detail level.

Section Details include critical information regarding warranties, model number, manufacturer, equipment serial numbers and property identifiers, and location. After defining a Section, you may add details regarding individual items of equipment or constructed elements (materials) at the **Section Details** tab, as shown below.

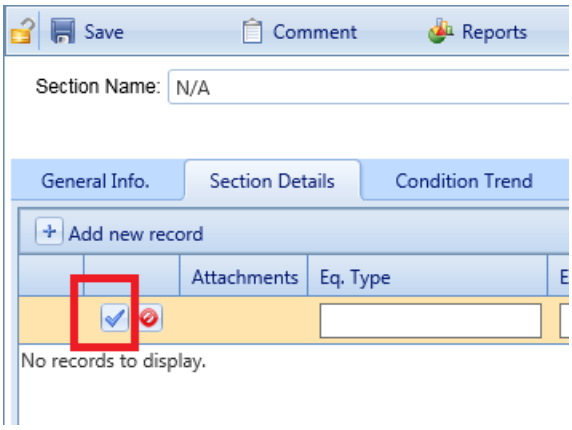


Add Section Details

To add Section Details,

1. Activate the **Add new record** button (located just above the Section Details table column headers).
2. Enter information; each of the fields is described in "Edit Section Detail Data " on page 122 below. You can use the **Tab** key to proceed left to right, from one entry field to another, or **Shift-Tab** to move from right to left.
3. **IMPORTANT:** After entering the information, activate the checkmark icon, as shown below.

   Note: You may need to scroll back to the left side of the table to see the checkmark icon.



Alternately, to exit the record without saving the data, activate the red **Cancel** icon next to the checkmark icon.

4. When finished with entries, or intermittently, activate **Save** on the toolbar.

Attach a File

From the **Attachments** column of the Section Details table, you have the option to attach files to the Section Detail's record. An attached file might be a photograph, an electronic image of written notes or diagrams made during inventory, or a file generated on a computer.

Acceptable Attachment Formats

The attachment may be in any of the following formats:

- .jpg
- .jpeg
- .png
- .zip
- .doc
- .pdf

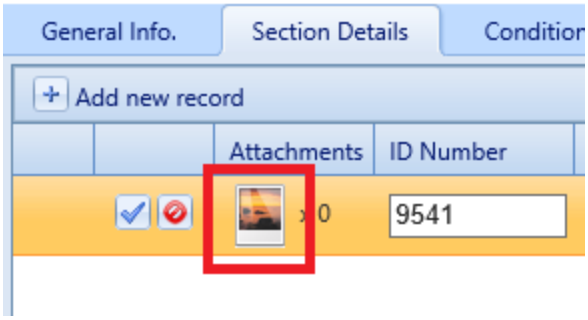
Note: As of July 26, 2016, .doc format is allowed, but not .docx.

You have the option to attach one or more files to the Section Detail's record.

Attach

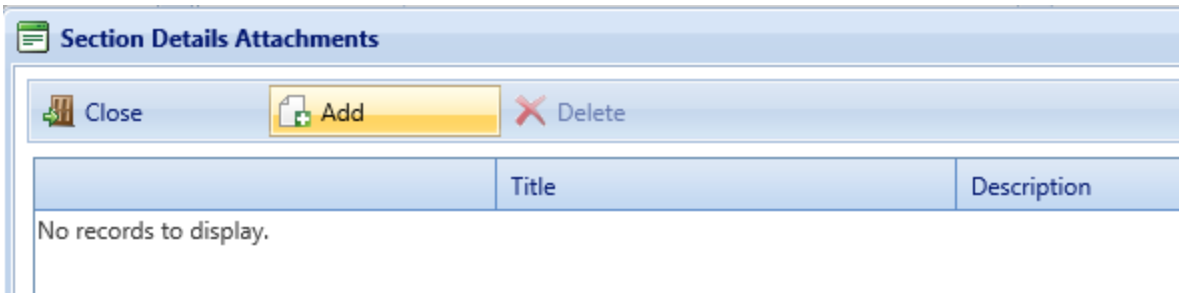
To attach a file,

1. Activate the image in the "Attachments" column of the desired row in the Section Details table.

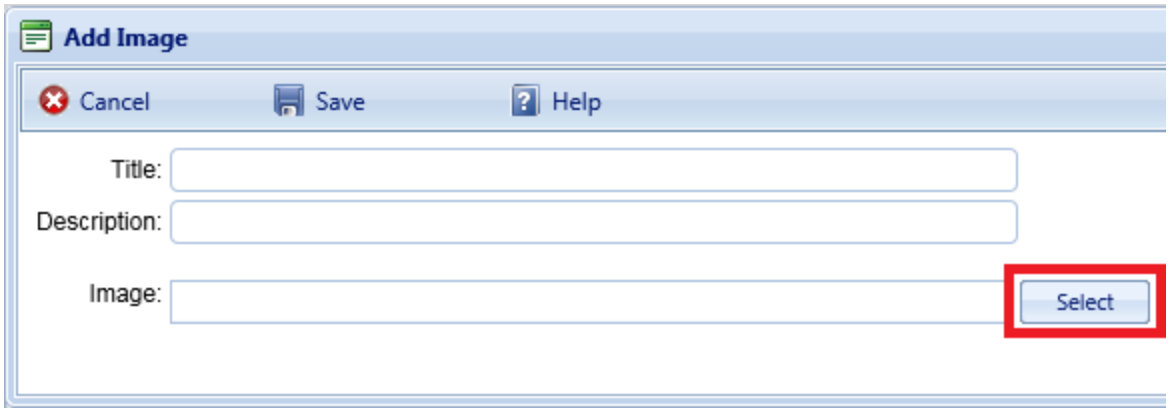


The "Section Details Attachments" popup window will appear.

2. In the "Section Details Attachments" popup window, activate the **Add** button on the toolbar.



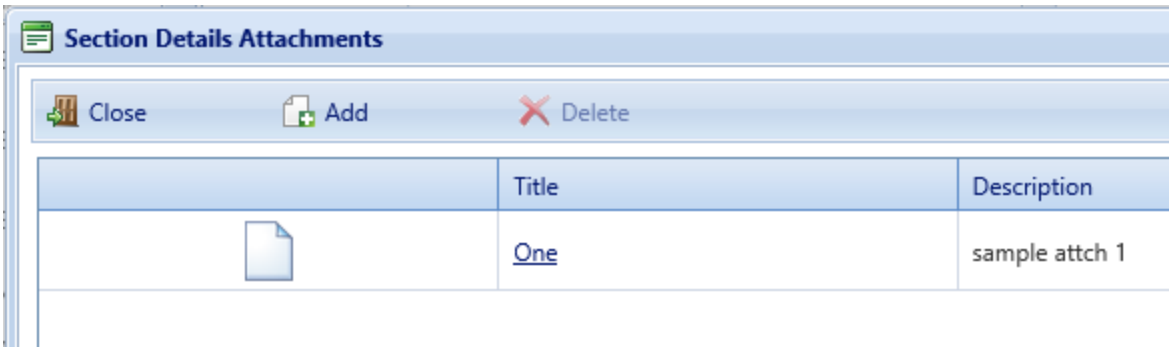
This will open the "Add Image" popup window:



5. Enter Title and Description information for the attachment.
6. Activate the **Select** button to the right of the "Image" field to browse to the desired image or other file.
7. If you are adding an attachment at the Building level, use the "Image Type" radio buttons to indicate whether the attachment is a Key Plan, a Section Plan, or "Other".

8. Once the required attachment data is entered,
    a. Activate **Save** on the popup toolbar.
    b. Alternatively, to close the popup window without attaching the selected file or image, activate the **Cancel** button.

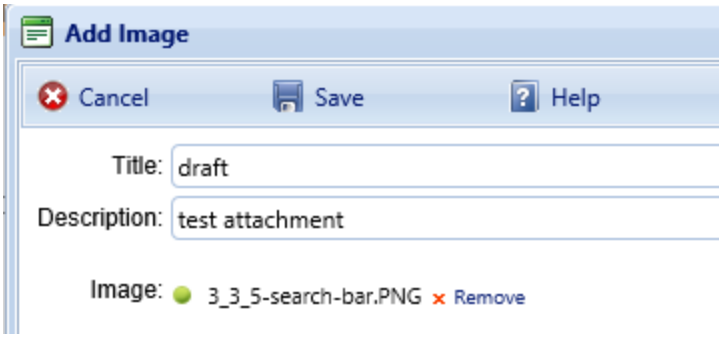
After you activate **Save** on the popup toolbar, an entry for the attachment will appear in the "Section Details Attachments" table in the popup.



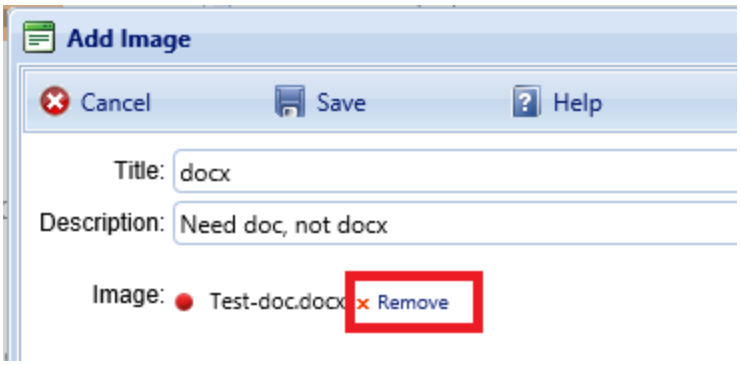
Section Detail attachments can also be accessed from the **Attachments** tab at the Section data screen by selecting either the "Show All" or "Details Only" radio button above the Section Attachments table.

Troubleshooting

If the selected attachment is in an acceptable format, the "Image" field will be replaced with a green dot (plus a label that gives you the option to remove the attachment).



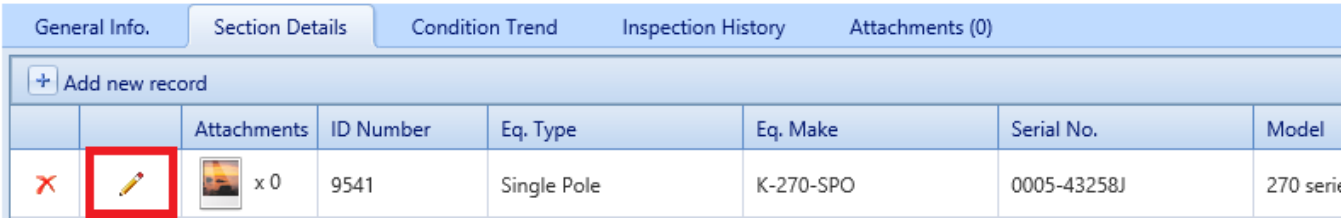
If it is not in an acceptable format, the "Image" field will be replaced with a red dot. Activate "Remove" and select an attachment file in one of the formats listed at "Acceptable Attachment Formats" on page 119.



Toolbar Options

- **Save**. Saves changes made to the Section Detail.
- **Comment**. Allows you to add, edit, and view comments about the Section Details.
- *Deleted:* **Images**. Note that this toolbar option has been removed. Images and other attachments are now initiated or accessed via the "Attachments" column of the Section Details table, or from the **Attachments** tab in the Section data page.
- **Reports.** Allows you to run standard BUILDER reports appropriate to the current inventory level.

Edit Section Detail Data



Because Section Detail data can be recorded for both equipment and non-equipment Section Detail items, some of the data elements (columns in the table of items at the **Section Details** tab) might not apply to a particular Section. Simply fill in the applicable data fields and leave the non-applicable fields blank. Section Detail data that can be entered includes:

- **ID Number** (Required for individual items of equipment; not used for non-equipment types of Section Detail items). Enter the identifier for the individual equipment, limited to 20 alphanumeric characters.
- **Equipment Type**. Enter the equipment type, limited to 50 alphanumeric characters.
- **Equipment Make**. Enter the equipment make, limited to 30 alphanumeric characters.

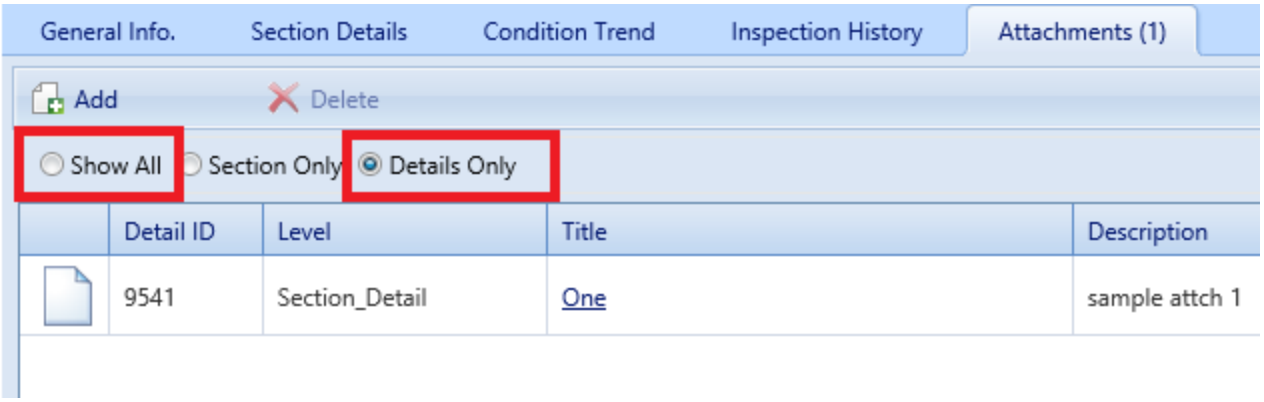
- **Serial Number**. Enter the serial number, limited to 30 alphanumeric characters.
- **Model**. Enter the model, limited to 20 alphanumeric characters.
- **Capacity**. Enter the capacity (such as gallons, horsepower, or MBH, depending on equipment type). Limited to 70 alphanumeric characters.
- **Manufacturer**. Enter the manufacturer, limited to 40 alphanumeric characters.
- **Warranty Company**. If the item has a warranty, enter each warranty company, which is limited to 50 alphanumeric characters each. For each item, up to two warranty companies may be listed.
- **Warranty Date**. If the item has a warranty, select each warranty date using the dropdown calendar. For each item, up to two warranty dates may be listed, numbered to match the warranty company.
- **Location**. Enter where the time is located, limited to 40 alphanumeric characters.
- **Date Manufactured**. Select the date the item was manufactured, using the dropdown calendar.
- **Control Type/Make**. Enter the Section control type or make, limited to 50 alphanumeric characters.
- **Year Installed**. Enter the 4-digit year in which the item was installed.
- **Comment**. Enter comments about the Section Detail.

View Section Detail Attachments

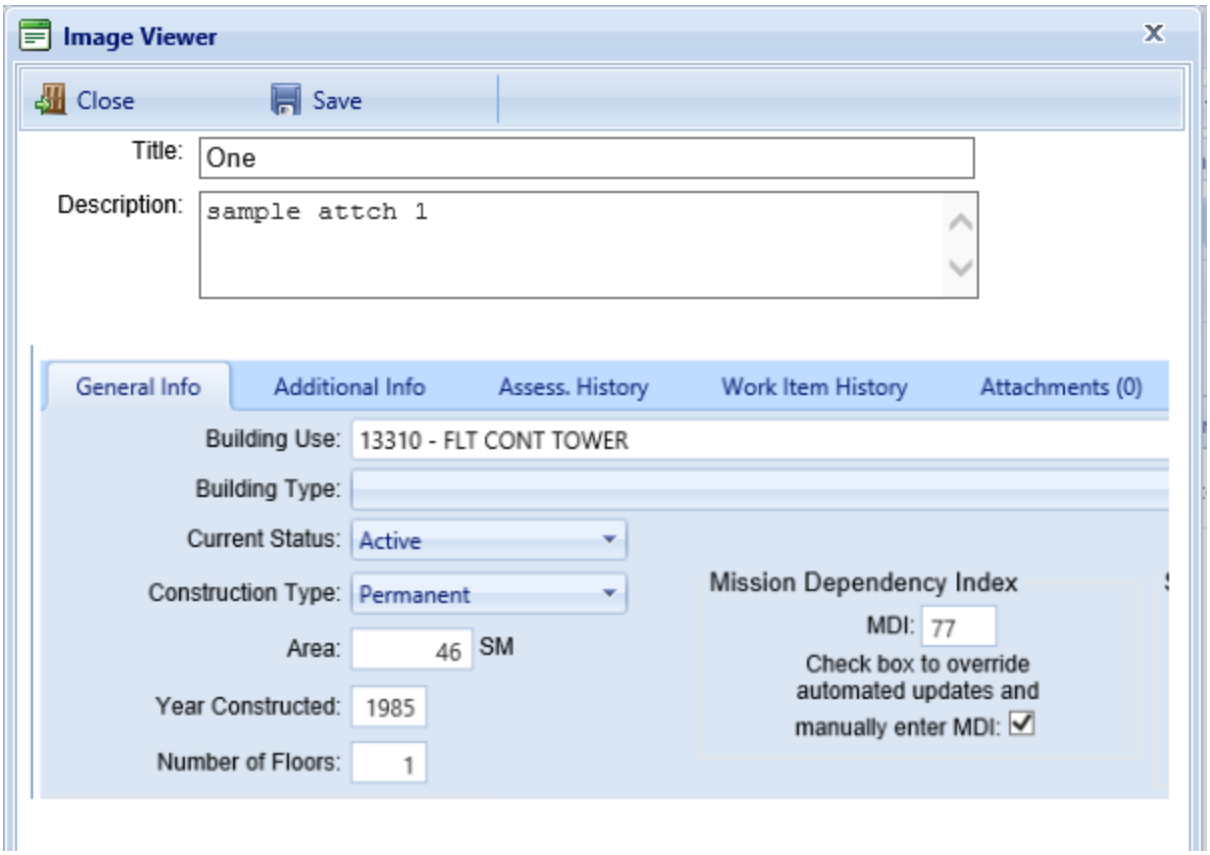
Two methods are available to view Section Detail attachments: They can be accessed from either the **Attachments** or **Section Details** tab of the Section data page.

A. To view Section Details at the **Attachments** tab,

1. Select either the "Show All" or "Details Only" radio button.

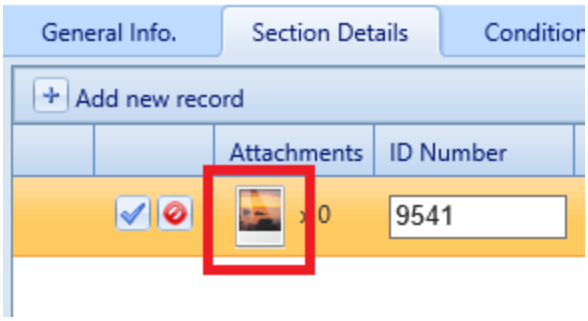


2. Next, activate the attachment's link, located in the "Title" column of the table.
   The attachment will show in the "Image Viewer" popup window:



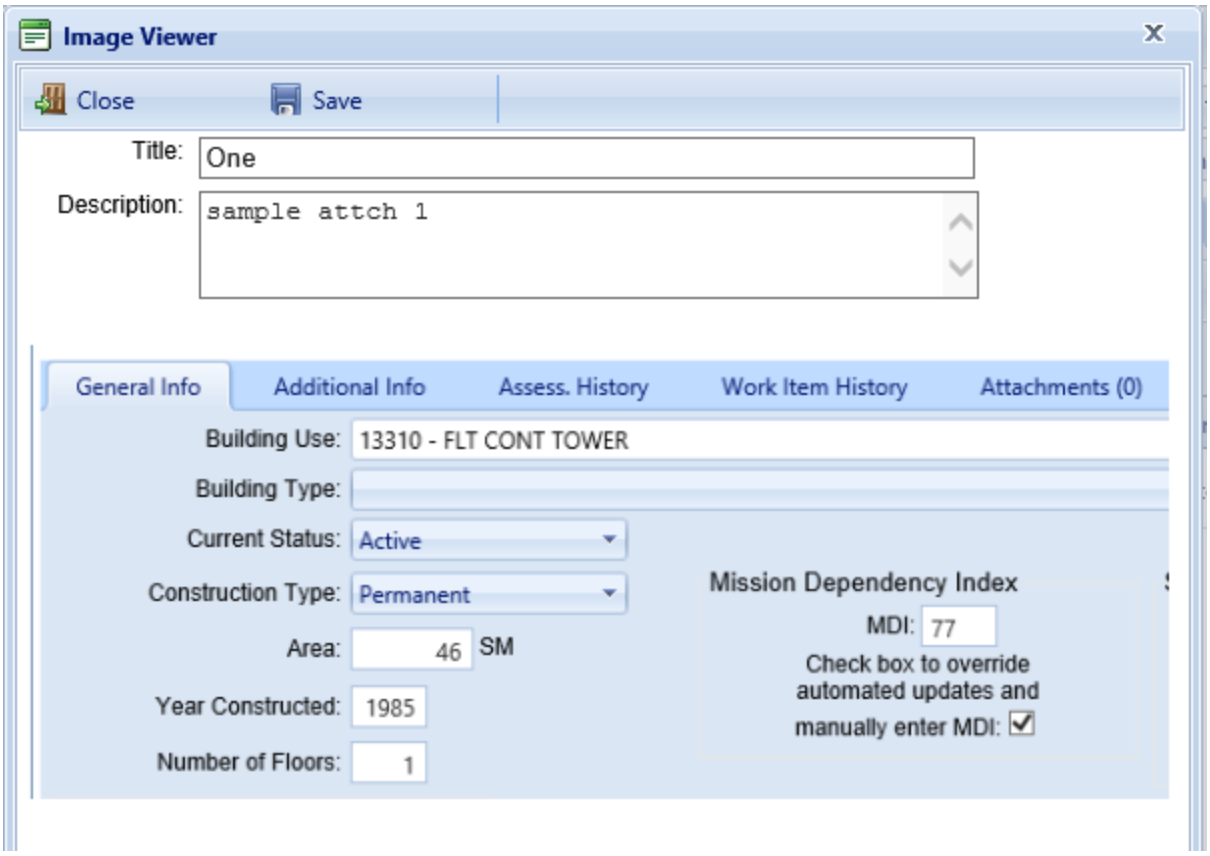
B. To view Section Details via the Section Details table,

1. Activate the image in the "Attachments" column of the desired row in the Section Details table.



2. Next, activate the attachment's link, located in the "Title" column of the table.

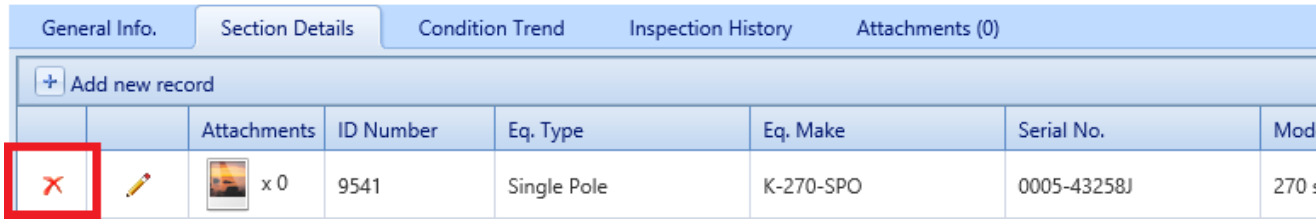
The attachment will show in the "Image Viewer" popup window:



Delete a Section Detail

To delete a Section Detail,

1. Open the **Section Details** tab at the data page for the relevant Section.
2. In the row containing the Section Detail to be deleted, activate the red "X" in the first column by double-clicking:

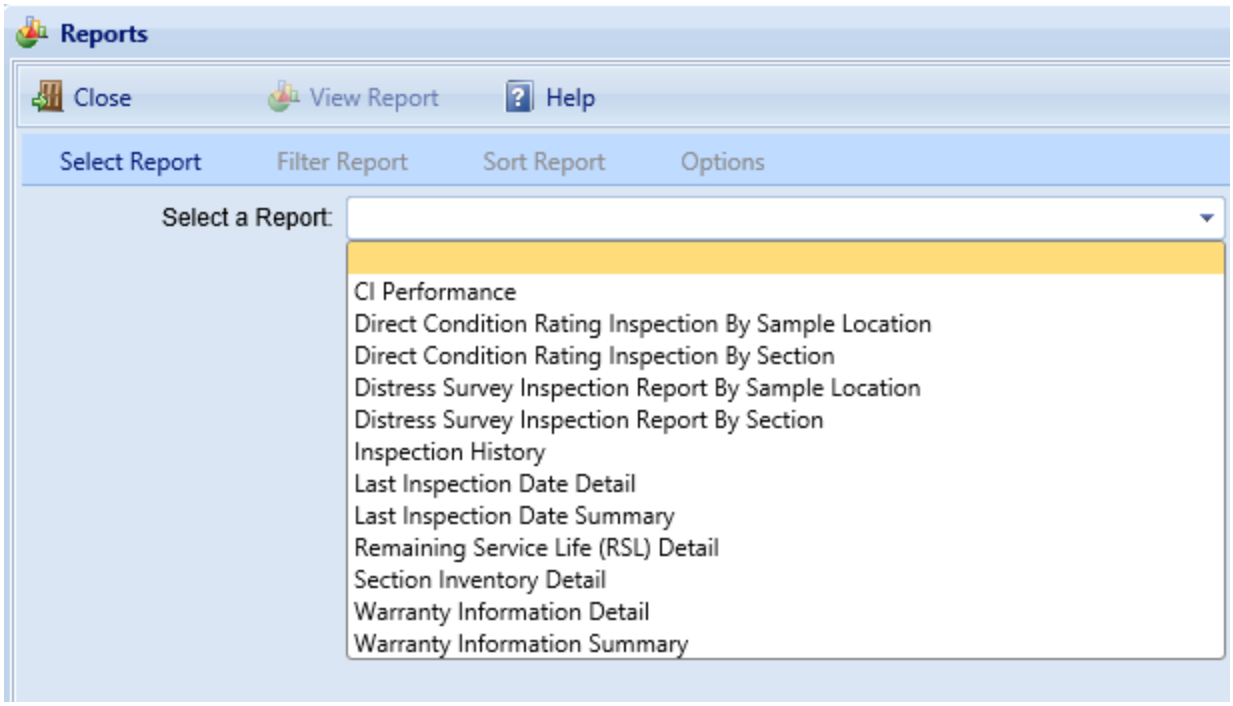


3. Activate **Yes** in the "Confirm Action" confirmation popup.

Reports Available at the Section Details Level

At the **Reports** button on the toolbar, the following selection of reports (shown in the screen shot) is available. To see the list of reports, activate the down arrow in

the "Select a Report" text box. These are the same reports as those available at the Section level.



Remote Inspection and Inventory Entry Using BuilderRED

This topic

- Introduces the BUILDER Remote Entry Database (BuilderRED) tool.
- Provides the download location.
- Explains briefly what the tool can do.
- Links to topics giving detailed instructions for exporting to and importing from BuilderRED.

What is BuilderRED?

The BUILDER™ Remote Entry Database (BuilderRED, or BRED) is an optional tool designed for use with BUILDER. It allows you to (1) capture and collect inventory and inspection data using a Windows tablet or laptop as you walk through a Building, and then (2) later, load that data into the BUILDER database.

You can download BRED from the **PRODUCTS > BUILDER > Downloads** section of the SMS community user's group website, under the heading **BUILDER Remote Entry Database (BRED)**.

Collecting Inventory Data

When performing inventory, Buildings and their subparts can be created in BuilderRED, then imported into BUILDER. If the Buildings have already been created in BUILDER, they can be exported to BuilderRED, where inventory details can be entered on-site, then imported back into BUILDER.

Performing Inspections

Inspectors can use BuilderRED to enter condition assessment data in BUILDER format and then import it into BUILDER. Standard functionality assessments are also built into BuilderRED. These assessments can be initiated and filled in in the field, then imported into BUILDER.

Export and Import

The following topics cover how to Export Data to BuilderRED and Import Data from BuilderRED.

Export Data to BuilderRED

You can choose to export database items to BuilderRED (aka BRED) either (a) with or (b) without the images that are linked to these items.

> **WARNING:** In BUILDER releases prior to 3.3.10, non-image files such as PDFs may prevent *all* images from exporting to BuilderRED or importing into BUILDER from BuilderRED. This known issue of image export from BUILDER is due to file size precautions: overlarge files can cause the export to fail.

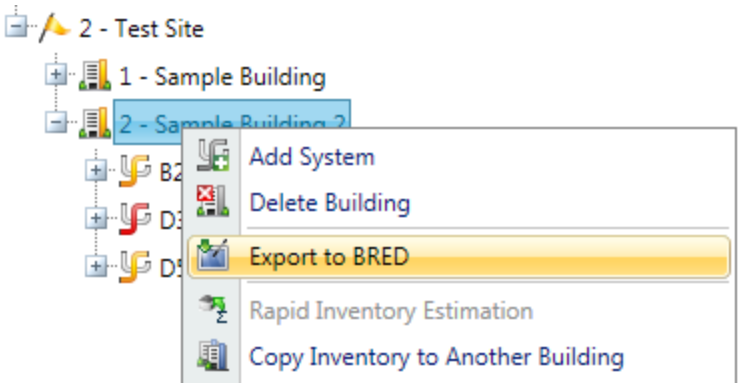
Below are some recommendations for best practices to follow to help ensure successful and less time-consuming export of files to BuilderRED:

> **Best Practice Recommendation #1:** Be sure to observe the 30-day time limit on editing inspections and re-importing them into BUILDER, or the time limit in effect for your implementation of BUILDER if it differs from 30 days.
>
> **Best Practice Recommendation #2:** Some Facilities (Buildings) within your Site can already contain several hundred photos. If you know beforehand that you will not need to view or edit these existing photos in BuilderRED, the best practice is to just download the BRED file without images.
>
> **Best Practice Recommendation #3:** 800 pixels is the recommended maximum width and maximum height for images to be used in BuilderRED.

The next section describes how to export both database information and images to BuilderRED. For instructions on exporting database information without images, see Export Database Information Alone to BuilderRED.

Export Database Information and Images to BuilderRED

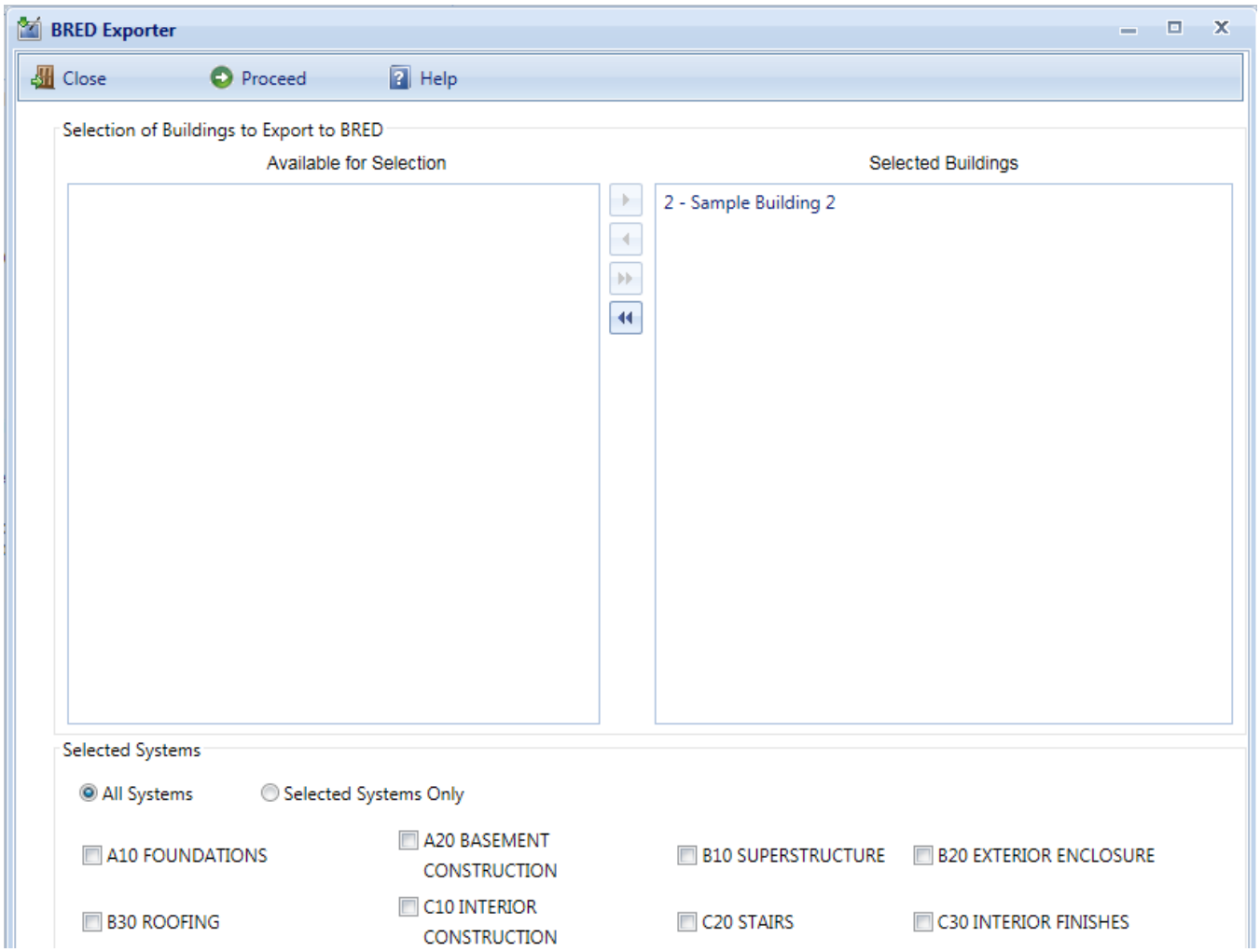
1. In the BUILDER navigation tree, right-click the lowest level node (Site, Complex, or Building) that contains the items you wish to export.
2. Select the “Export to BRED” option:



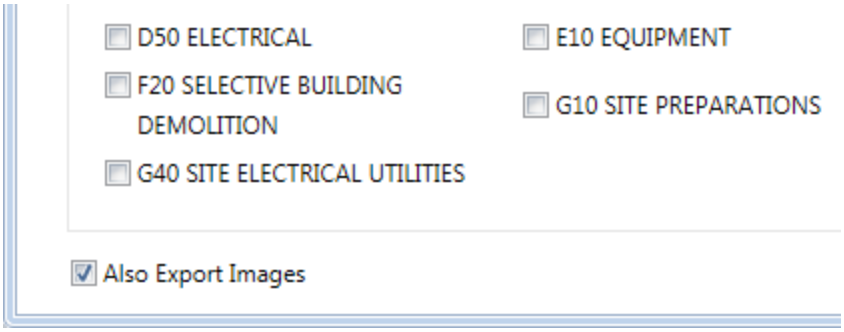
3. In the "BRED Exporter" popup window, highlight the Building(s) you want to export, using the arrows to move Buildings in or out of the Selected Buildings list. Click here to see different ways you can select Buildings.[1]

1

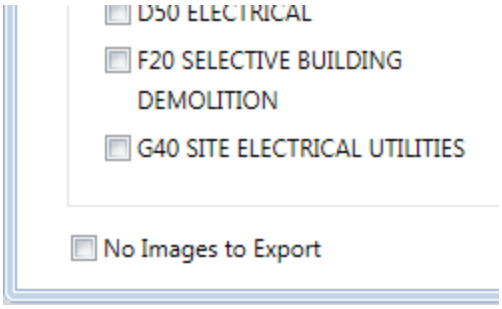
All Buildings:	Activate the double arrow.
One Building:	1. Select the Building. 2. Activate the single arrow.
Multiple Buildings, contiguous in the list:	1. Select the first Building. 2. Press and hold **SHIFT**, then select the last Building. 3. Release **SHIFT**. 4. Activate the single arrow.
Multiple Buildings, not contiguous in the list:	1. Select the first Building. 2. Press and hold **CTRL**, then select each subsequent Building desired. 3. Release **CTRL**. 4. Activate the single arrow.
To deselect a highlighted Building from the list:	a. Press and hold **CTRL**, then select the Building. b. Alternatively, you can wait until the Building has been moved to the right-hand column under "Selected Buildings", then select the Building, and activate the single arrow pointing to the left. This will move the Building back into the "Available for Selection" column.



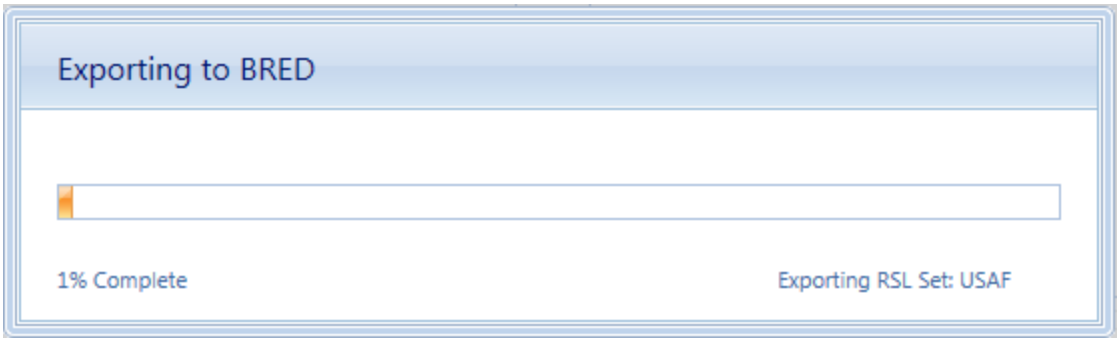
4. Once the desired Buildings are in the Selected Buildings column, do one of the following in the lower section of the "BRED Exporter" window:
   a. Choose “All Systems” (radio button; this is the default), or
   b. Select specific systems (using radio button and checkboxes).
5. (Optional) In order to download images with the BRED file, you must select “Also Export Images” at the bottom of BRED Exporter Window, as shown below:



Note: If instead of “Also Export Images” you see “No Images to Export” it means that the Building(s) you have selected to export do(es) not currently have any images:



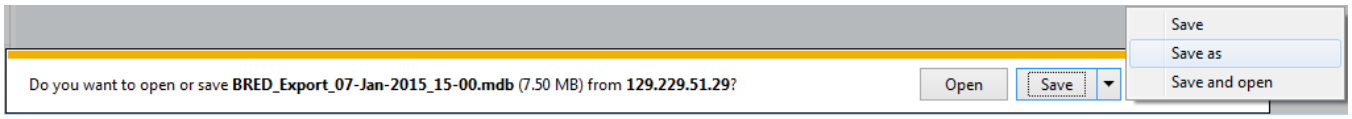
6. To start the export, click the **Proceed** button near the top of the window. *A progress bar will display as the BRED database file is downloaded*:



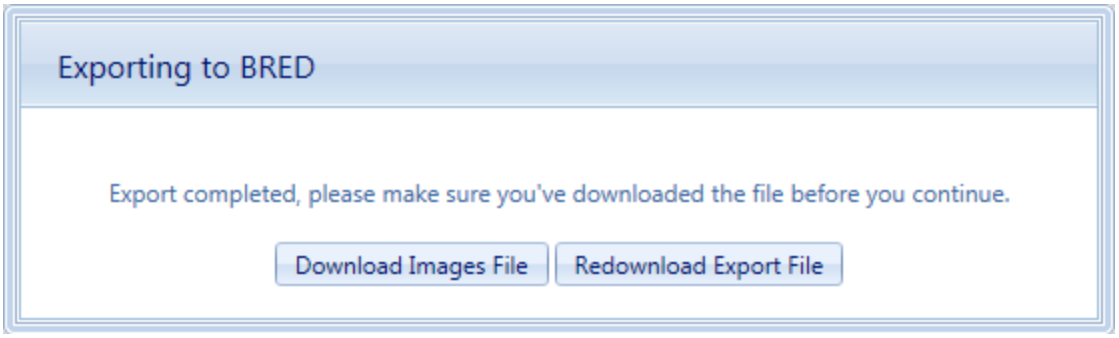
By clicking the **Proceed** button, the following tasks area accomplished:

- A Microsoft Access database is created, which will be identified by the path and name you choose after the export has completed. The database will contain the inventory and condition assessment data for the selected systems in the buildings in the Selected Buildings list. This database is accessible to a computer with the BRED software, where inventory and/or condition assessment data can be recorded. Once complete, this file can be imported into BUILDER to add the new data is added to the database.
- The building inventory records of the selected systems that were exported are locked so changes cannot be made to them in BUILDER while being edited with BRED. The records are unlocked when the BRED data is imported back into the database.

7. After the database file has successfully downloaded, select the “Save As” option to choose a file location for it:

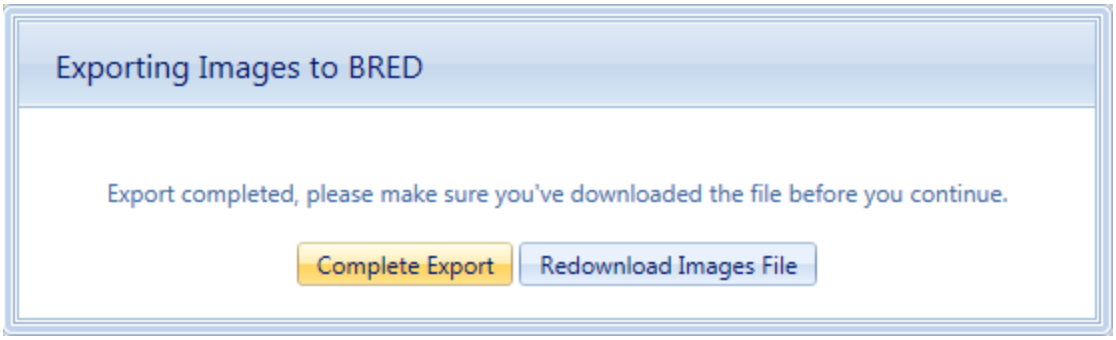


8. If the BRED file did not download correctly, select “Redownload Export File.” Otherwise, select “Download Images File” to start the second download (the download of the images file into BRED):



9. After the second download completes, click “Save As” and choose the **same file location** as your BRED database file.

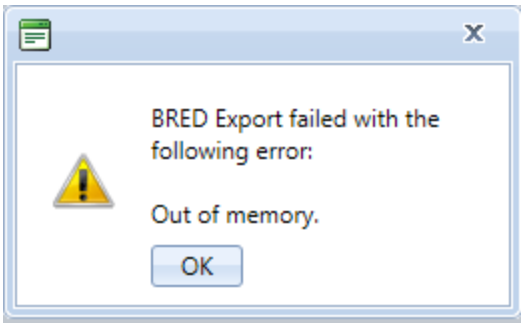
10. Lastly, select “Complete Export” to finish the export process:



Time Limit on Editing Inspections

Once the export is complete, you can use BuilderRED to collect Inventory data or perform Inspections. Note that it is a common standard to have a 30-day time limit from the date of an Inspection to edit the Inspection or the comments in it. This time limit applies both in BuilderRED and after the data has been imported back into BUILDER.

Known Issue with Image Export from Builder



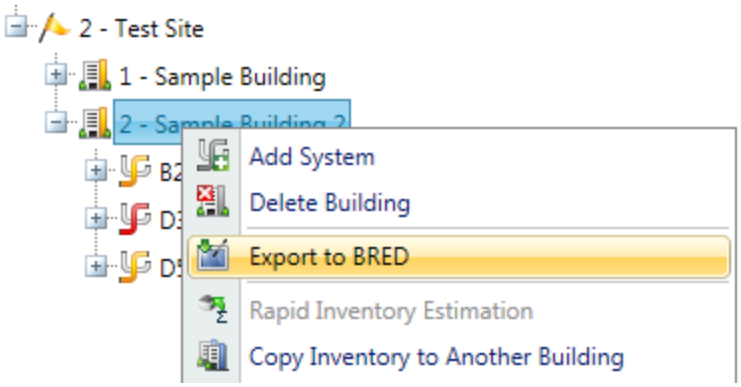
This issue applies to versions of BUILDER 3.3.9 and older.

If the BRED Export error message shown above displays after you try to download the image file from BUILDER, that indicates that somewhere in the exported files there is an attachment (such as a PDF, an Excel file, etc.) that is not an image. The workaround is to export the Building(s) without images.

Export Database Information Alone to BuilderRED

This section outlines the procedure to export data from BUILDER to BuilderRED without any of the associated image files.

1. In the BUILDER navigation tree, right-click the lowest level node (Site, Complex, or Building) that contains the items you wish to export.
2. Select the “Export to BRED” option:

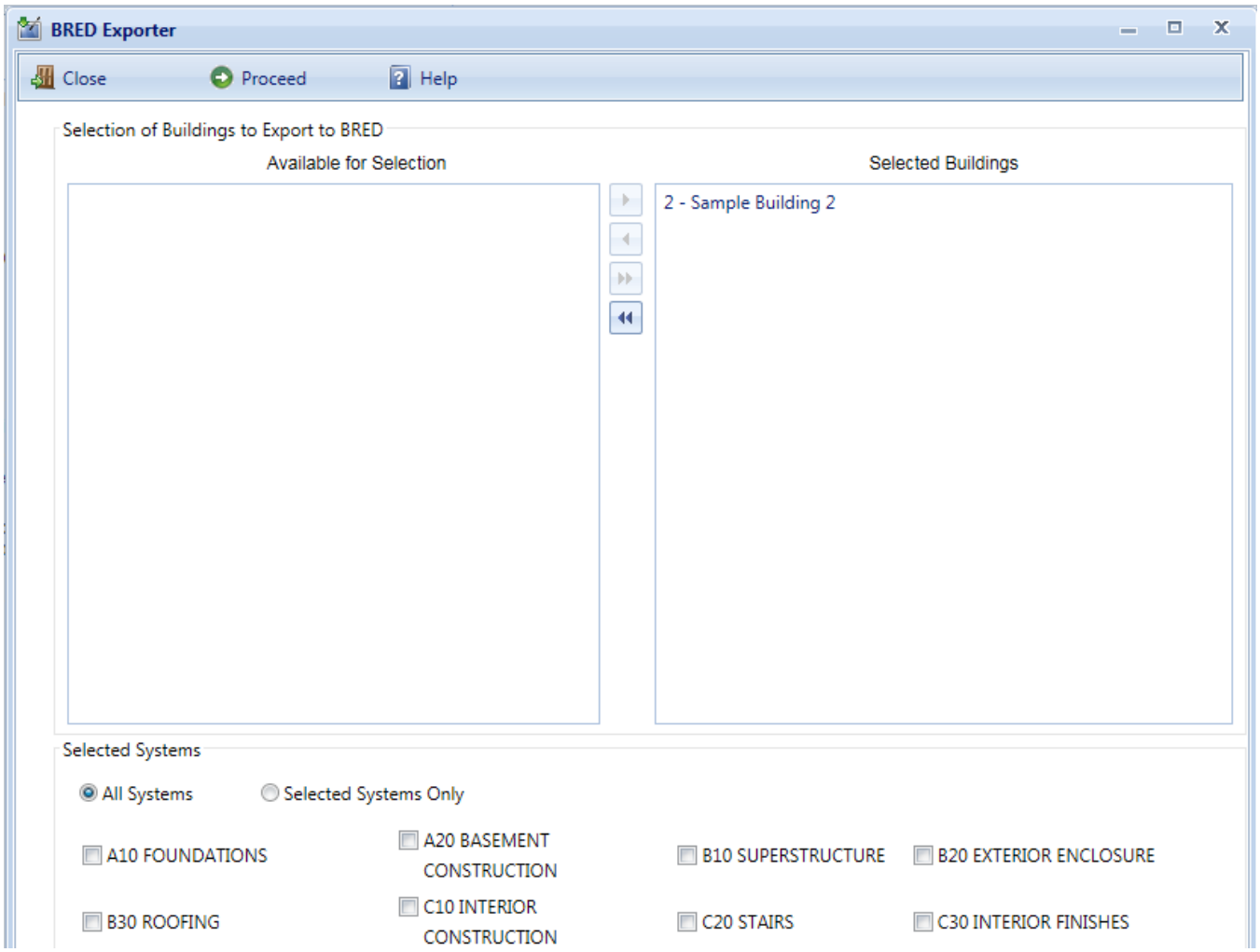


3. In the "BRED Exporter" popup window, highlight the Building(s) you want to export, using the arrows to move Buildings in or out of the Selected Build-

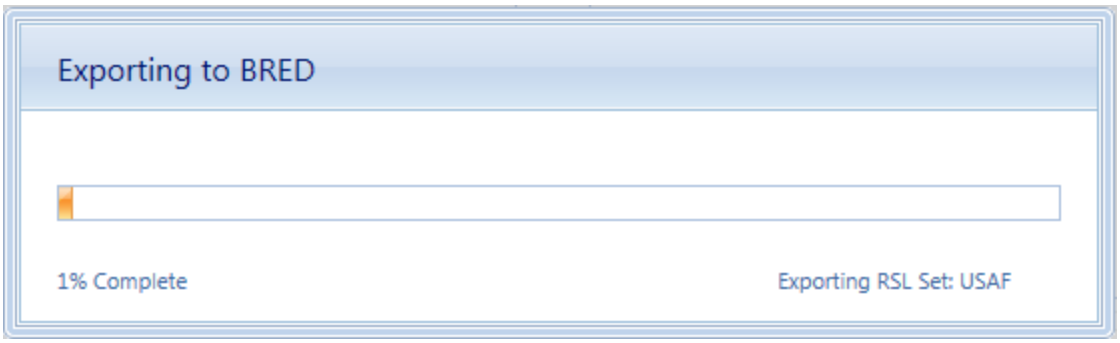
ings list. Click here to see different ways you can select Buildings.[1]

1

All Buildings:	Activate the double arrow.
One Building:	1. Select the Building. 2. Activate the single arrow.
Multiple Buildings, contiguous in the list:	1. Select the first Building. 2. Press and hold **SHIFT**, then select the last Building. 3. Release **SHIFT**. 4. Activate the single arrow.
Multiple Buildings, not contiguous in the list:	1. Select the first Building. 2. Press and hold **CTRL**, then select each subsequent Building desired. 3. Release **CTRL**. 4. Activate the single arrow.
To deselect a highlighted Building from the list:	a. Press and hold **CTRL**, then select the Building. b. Alternatively, you can wait until the Building has been moved to the right-hand column under "Selected Buildings", then select the Building, and activate the single arrow pointing to the left. This will move the Building back into the "Available for Selection" column.



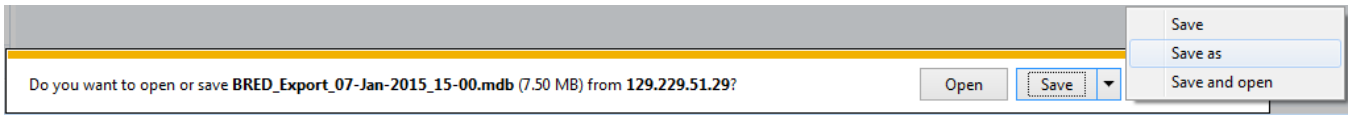
4. Once the desired Buildings are in the Selected Buildings column, do one of the following in the lower section of the "BRED Exporter" window:
   a. Choose “All Systems” (radio button; this is the default), or
   b. Select specific systems (using radio button and checkboxes).
5. In order to download the BRED file without downloading the associated images, make sure that the “Also Export Images” checkbox at the bottom of the BRED Exporter Window is *not* checked.
6. To start the export, click the **Proceed** button near the top of the window. *A progress bar will display as the BRED database file is downloaded*:



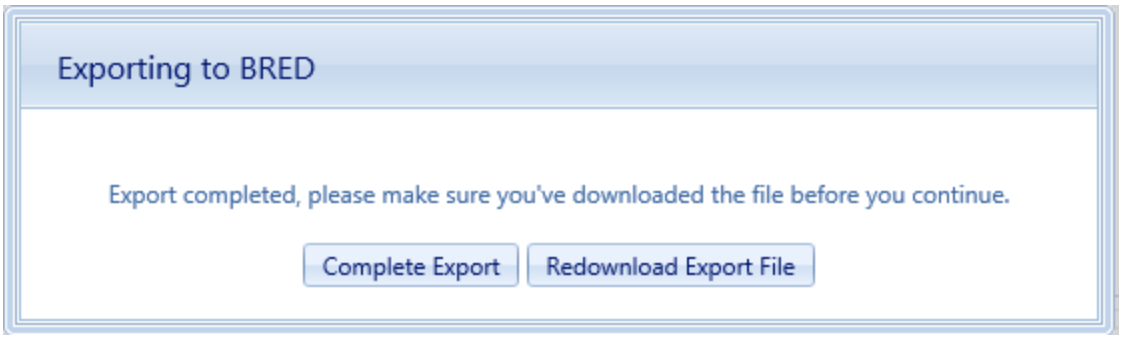
By clicking the **Proceed** button, the following tasks area accomplished:

- A Microsoft Access database is created, which will be identified by the path and name you choose after the export has completed. The database will contain the inventory and condition assessment data for the selected systems in the buildings in the Selected Buildings list. This database is accessible to a computer with the BRED software, where inventory and/or condition assessment data can be recorded. Once complete, this file can be imported into BUILDER to add the new data is added to the database.
- The building inventory records of the selected systems that were exported are locked so changes cannot be made to them in BUILDER while being edited with BRED. The records are unlocked when the BRED data is imported back into the database.

7. After the database file has successfully downloaded, select the “Save As” option to choose a file location for it:



8. If the BRED file did not download correctly, select “Redownload Export File.” Otherwise, select “Complete Export” to finish the export process:



Time Limit on Editing Inspections

Once the export is complete, you can use BuilderRED to collect Inventory data or perform Inspections. Note that it is a common standard to have a 30-day time limit from the date of an Inspection to edit the Inspection or the comments in it. This time limit applies both in BuilderRED and after the data has been imported back into BUILDER.

Import Data from BuilderRED to BUILDER

Overview of the Import Process

In order to load data collected using BRED into the BUILDER database, you will need to import the database from BRED into BUILDER. It is important to note that the database file containing your new data must be loaded so that the BUILDER program has access to its path and can complete the importing process.

If you added new images during Inventory or Inspections, then importing your information back into BUILDER will be done in two steps: (1) importing the BRED database into BUILDER, and (2) importing the image archive file.

These two steps may be followed by an optional third step: (3) performing a manual condition rollup. This step is optional because the system performs automated rollups nightly.

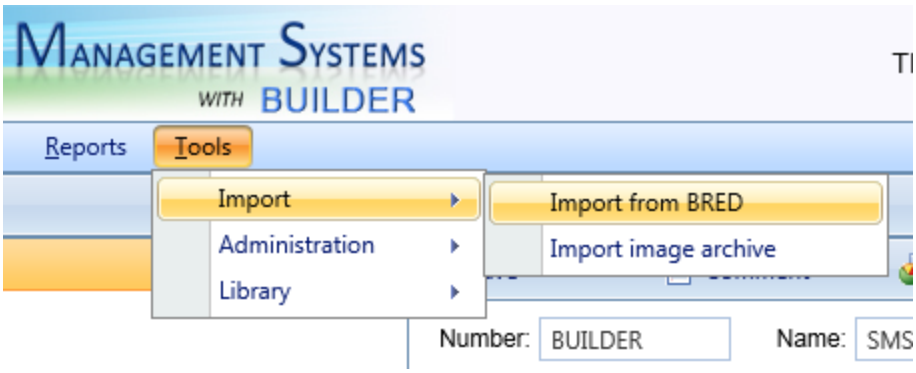
If you have no images to import, then you can go straight from importing the BRED database information into BUILDER to performing a rollup.

How To Import Database Information

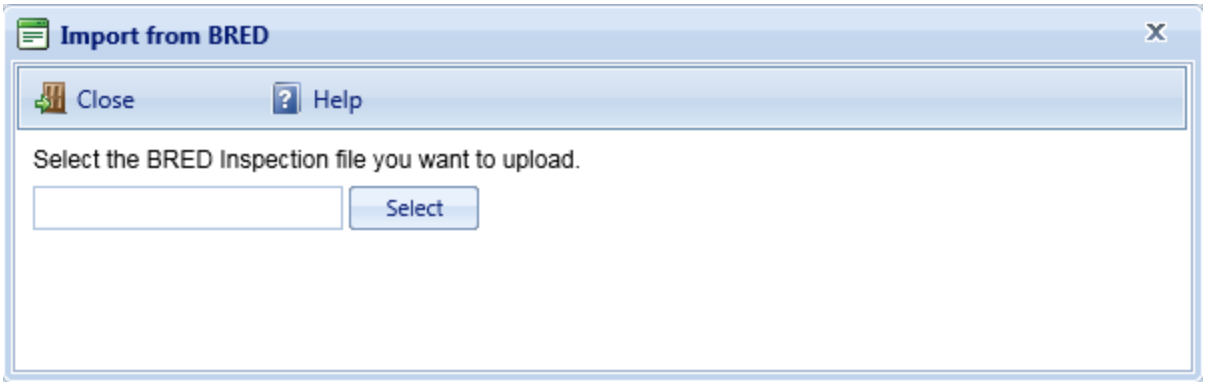
After you have finished adding, editing, and deleting Inventory and/or Inspections data, the updated database must be imported back into BUILDER, to assess the condition of the installation and to plan maintenance and repair.

To import database information into BUILDER from BuilderRED:

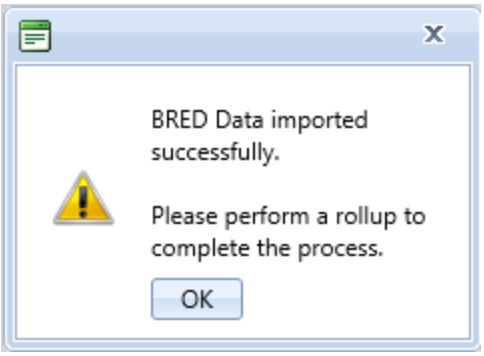
1. Save all changes to the database in BuilderRED.
2. Open BUILDER.
3. Select **Tools > Import > Import from BRED** starting at the main menu.



The "Import from BRED" popup window will appear:



4. Locate the database you wish to import, by either (a) entering the full path and file name in the text box or (b) clicking the **Select** button, navigating to the database file, and selecting it.
5. All changes to the database will be imported into BUILDER and you will see a popup window with the following message:



6. If you don't have any images to be imported into BUILDER, activate **OK**. You are finished with the import, and can perform a rollup if you wish.
7. **IMPORTANT: I**f you have images to import from BuilderRED, it is recommended that you NOT click **OK** to perform a manual condition rollup at this point. Instead, close the popup box by activating the "x", then follow the instructions in the next section:

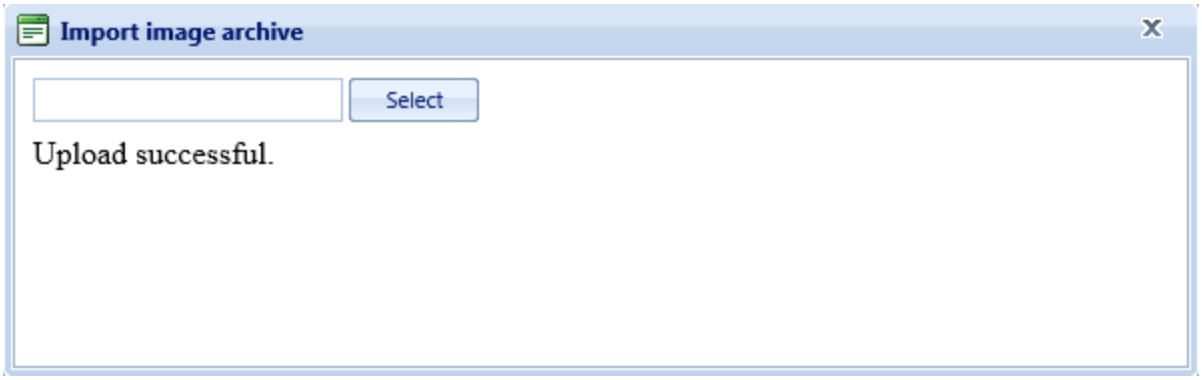
How To Import Images

The process of importing images makes use of an image archive file that has the extension .bredpackage. By default, the image archive file has the same name as the .mdb BRED data file containing the imported data, except for the extension.

> **WARNING:** It is very important that the name of the image archive file match the name of the .mdb data file. If you rename one of these files, be sure to rename the other one identically (except for the extension). Images will not be found by the BRED (.mdb) file if the .bredpackage file name doesn't match.

To import images into BUILDER from BuilderRED:

1. If you have new images that need to be imported from BRED, this procedure needs to be done *after* importing the database information (see section above).
2. Select **Tools > Import > Import image archive** starting at the main menu. *(The "Import image archive" popup window will appear.)*
3. Locate the image ("bredpackage") file corresponding to the database you just imported, by either (a) entering the full path and file name in the text box or (b) clicking **Select**, navigating to the database file, and selecting it. The image archive will be in the same location as the database file, and similarly named except that the extension is .bredpackage instead of .mdb.
4. When you see the message "Upload successful," close the "Import image archive" window. Follow with a manual condition rollup as warranted (see next section).



Should I Perform a Rollup after Import?

The items you import are unlocked as soon as the import is complete, whether you do a manual condition rollup or not. However, the Condition and Functionality Indexes will not yet have been updated.

If you only performed inventory with BuilderRED, you don't need to do a rollup unless:

- The cost books or other reference books have changed.
- You wish to see updated PRVs or RSLs immediately instead of waiting on BUILDER's automated rollup (performed overnight).

If you entered inspection data in BuilderRED, performing a rollup after the import is completed allows you to see the changes in the following indexes right away:

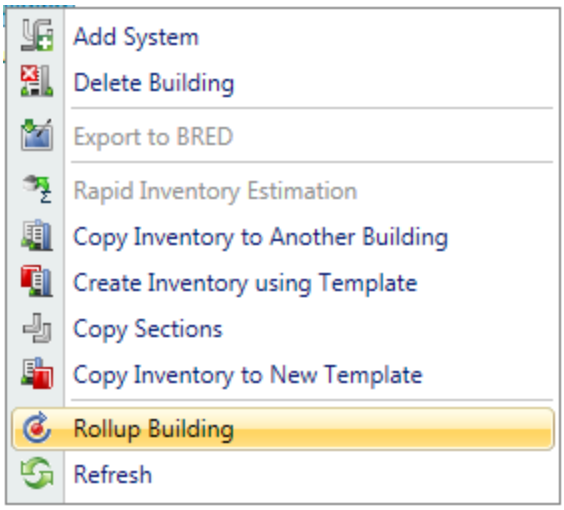
- Condition Indexes
- Functionality Indexes
- Performance Indexes

If you do not perform a rollup at this time, the SMS will do the rollup automatically overnight, and the updated index figures will be available the next day.

How To Perform a Manual Rollup after Importing from BuilderRED

To perform a manual rollup, do one of the following:

a. Right-click on the affected Building (or Complex, if multiple Buildings were exported from the same Complex). Then select **Rollup Building** or **Rollup Complex**.



b. Alternatively, select the Building (or Complex, if multiple Buildings were exported from the same Complex) and click the Rollup icon on the toolbar.

You have the option to roll up the entire Site in similar fashion, but be aware that a Site rollup can take an extremely long time. It would typically be less time consuming to sequentially select the applicable Complexes and Buildings for manual rollup.

Working With Rapid Inventory Methods

This topic gives an overview of three ways that the BUILDER inventory creation process can be made faster. These methods depend on a level of similarity between Sections or Buildings.

One of the most time-consuming aspects of inventory is the decomposition of a Building into its Systems, Components, and Sections. To help with this Building decomposition, BUILDER™ has multiple alternative methods designed to help you quickly establish an inventory database for your Buildings. The main toolbar icon for each is shown in the listing below.

1. Copy the inventory of one Building into another Building ("Copy Inventory to Another Building")
2. Copy Sections using the Copy Sections tool (within the same Building only).
3. Create and use Building templates

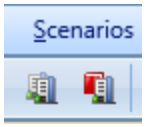
Method Availability

Site and Complex Level

At the Site and Complex level, these methods are available:

- Copy the inventory of one Building into another Building
- Create and use Building templates

The icons for these methods sit side by side on the BUILDER toolbar at the inventory levels where they are available for use.



Building Level

At the Building level, the Copy Sections tool also becomes available:

List of Rapid Inventory Methods

Method 1: Copy the Inventory of One Building into Another

One method that can ease the data input process is to copy the existing inventory of one Building into another Building. This provides a starter set of Systems, Components, and Sections that can then be refined, instead of all entered from scratch The amount of refinement needed will depend on the amount of similarity between the structures.

This inventory creation method is especially useful if you have a number of Buildings in your inventory that were all built at the same time using the same plans and specifications.

> **Tip:** If you have more than two or three Buildings or facilities that are very similar to each other, you should consider creating a Building template instead of copying from another Building. If one of the applicable Buildings is already created and populated, it can be used to create that template.

For instructions on copying inventory from another Building, see "Copy Inventory to Another Building" on the next page.

Method 2: Copy Sections

Within a Building, the process of adding inventory can be accelerated by using the Copy Sections tool, which allows you to copy pre-existing Sections from one area of a Building to another area of the same Building. An example of when to use this tool is in a multistory building with similar or identical inventory on multiple floors. The first floor can be inventoried and then copied to other floors, saving time and reducing inventory costs.

For instructions, see "Copy Sections" on page 146.

Method 3: Create and Use Building Templates

Building templates are "cookie cutter" models that can be used to create Buildings with identical features. These template-generated Buildings can be used to get your inventory task off to a fast start, because their contents only need editing and adapting instead of each inventory item and sub-item being entered from scratch.

For an overview and a jumping-off location for instructions, see "Working with Building Templates" on page 149.

Copy Inventory to Another Building

BUILDER™ has been designed to help you quickly establish an inventory database for your Buildings. One of the most time-consuming aspects is the decomposition of a Building into its Systems, Components, and Sections. One method that eases the data input process is copying a Building's inventory from one Building (the source Building) to another (the target Building). This feature is very useful if you have a number of Buildings in your inventory that were all built at the same time using the same plans and specifications.

Follow the steps below to copy Building inventory.

☐ *Prepare the Source Building*

Before you can copy a Building's inventory from one Building to another, you must first create the source Building and complete its inventory as fully as possible, including all of the related Building data.

☐ *Activate "Copy Inventory to Another Building"*

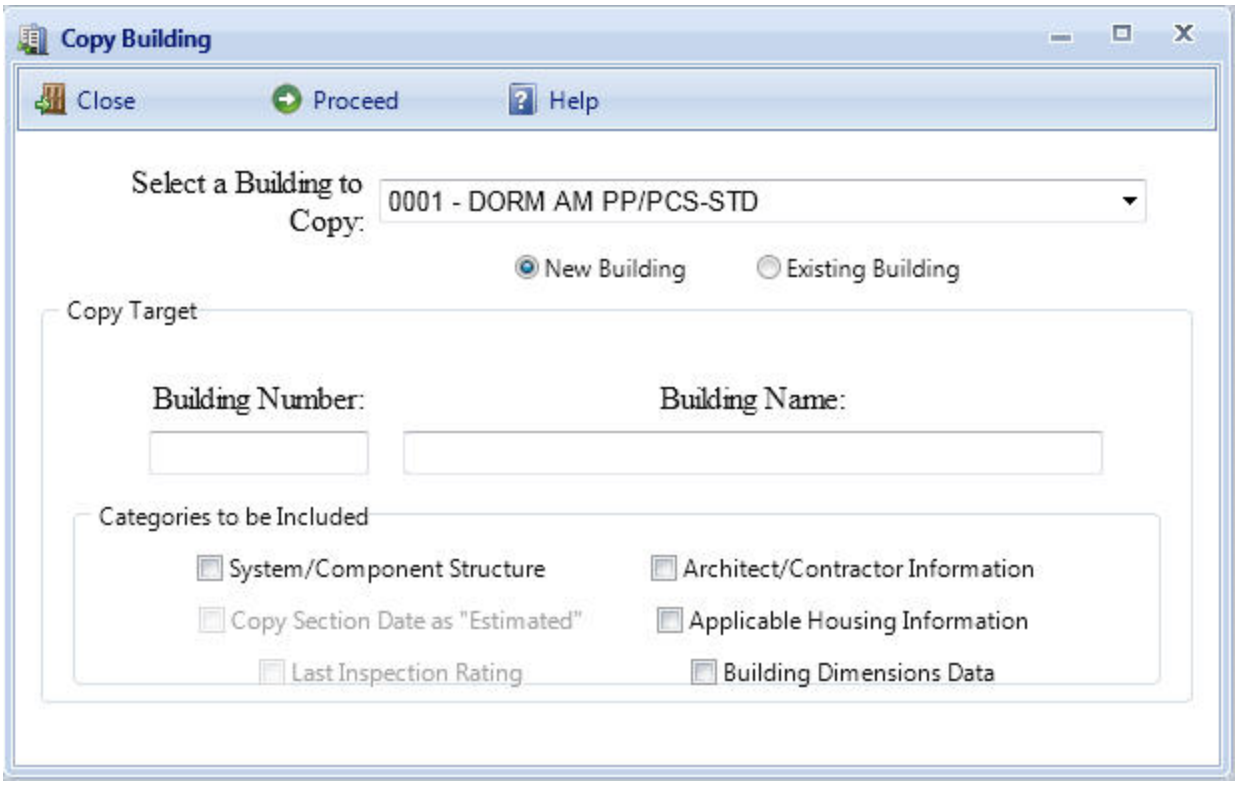
Once the source Building has been created, navigate to it in the inventory tree and do one of the following:

a. Right-click on the source Building in the inventory tree. Then select "Copy Inventory to Another Building" from the options.
b. Alternatively, select the source Building in the inventory tree. Then activate the **Copy Inventory to Another Building** icon on the toolbar.

The "Copy Building" popup window will appear. The number and/or name of the source Building whose inventory you wish to copy, should appear in the "Select Building to Copy" dropdown list.

☐ *Enter Required Data*

In the "Copy Building" popup, enter the data listed below.



1. Just above the "Copy Target" area of the window, use the radio buttons to select whether you want to copy that Building's inventory to a New Building or into an Existing Building:
   a. If you select a **New Building**, you must supply Building Number and Building Name in the "Copy Target" area of the window. Building summary information such as year constructed will automatically be transferred into the new Building when you later activate **Proceed**.
   b. If you select an **Existing Building**, a dropdown list of Buildings currently in the inventory will be provided. Do the following:
      1. From the list, select the Building you wish to copy the source Building's inventory to.
      2. If you wish to use the Inventory Summary Information (such as year constructed, number of floors) of the source Building into the target Building, mark the "Copy Inventory Summary Information". Otherwise, leave the checkbox blank.
2. In the "Categories to be Included" area of the window, check all of the categories you wish to have copied to the target Building. The following record categories can be copied to the target Building:
   - **System/Component Structure**. Marking this checkbox will copy all of the Systems, Components, and Sections to the target Building.

    - **Copy Section Date as "Estimated"**. Marking this checkbox will mark all of the Section install dates in the target Building as estimated. This checkbox can only be marked if the "System/Component Structure" checkbox is marked.
    - **Last Inspection Rating**. Marking this checkbox will copy the last condition assessment rating for each Section to the target Building. This checkbox can only be marked if the "System/Component Structure" checkbox is marked.
  - **Architect/Contractor Information**. Marking this checkbox will copy all of the architect and contractor information to the target Building.
  - **Building Dimension Data**. Marking this checkbox will copy all of the dimension data to the target Building.

☐ *Confirm or Cancel*

Once the required data is entered, do one of the following:

a. Activate the **Proceed** button on the popup window's toolbar to start the copy process. After the copy process is complete, you can edit any of the copied Building's records if adjustments are necessary.
b. Alternatively, if you do not wish to copy the Building, activate the **Close** button on the popup window's toolbar.

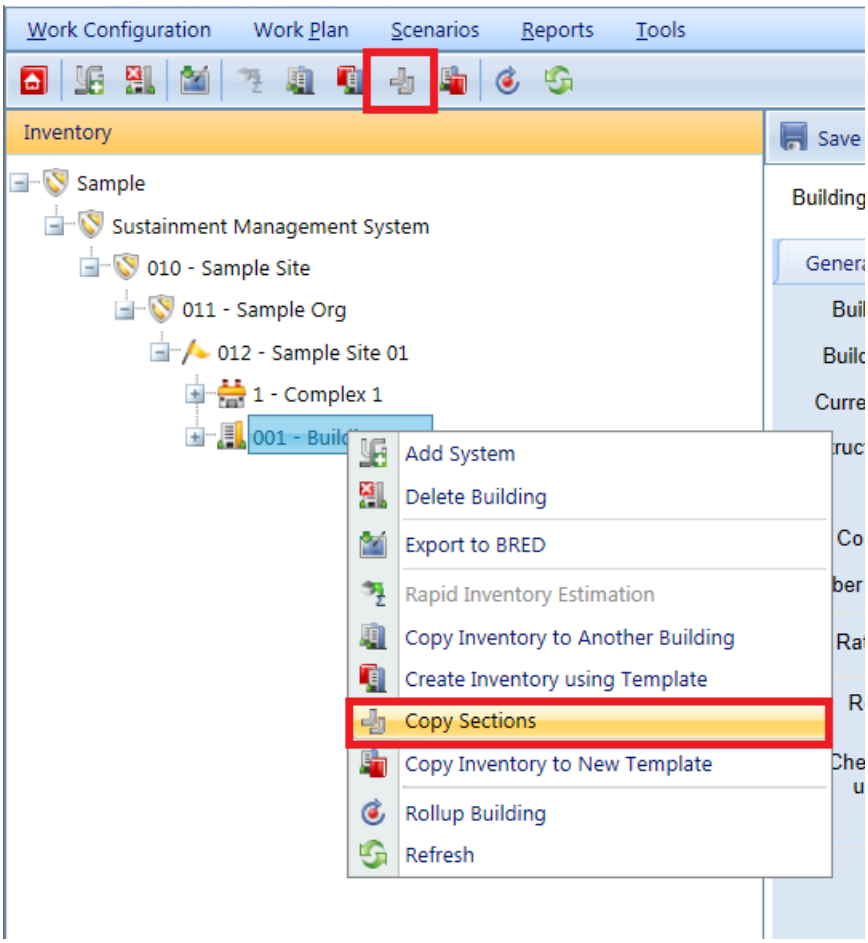
Copy Sections

BUILDER™ has been designed to help you quickly establish an inventory database for your Buildings. One of the most time-consuming aspects is the decomposition of a Building into its Systems, Components, and Sections. One method that eases the data input process is the Copy Sections tool, which allows you to copy pre-existing Sections from one area of a Building to another area of the same Building. An example of when to use this tool is in a multistory building with similar or identical inventory on multiple floors. The first floor can be inventoried and then copied to other floors, saving time and reducing inventory costs.

To use the Copy Sections tool,

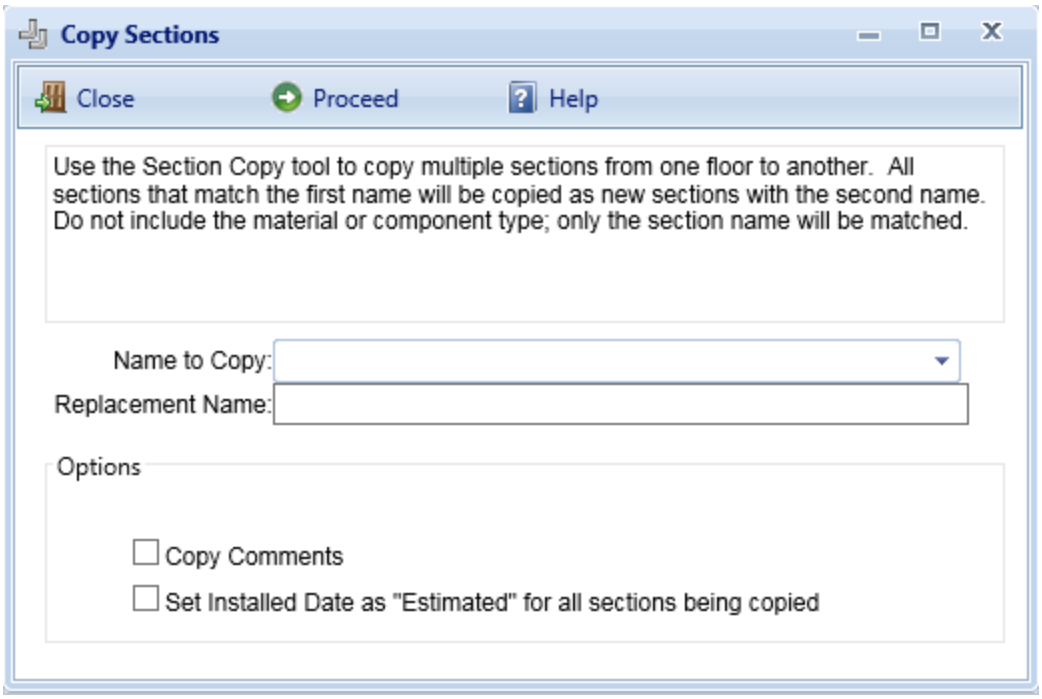
1. Navigate in the inventory tree to Building into which you wish to copy the Section, then do one of the following:

    a. Right-click the Building. Then select "Copy Sections" from the options. (This is illustrated in the lower half of the screen shot below).



b. Alternatively, select the Building, then activate the **Copy Sections** icon in the toolbar as shown above.

After your selection, the "Copy Sections" popup window will appear.



2. In the "Copy Sections" window, enter the following data:
   - **Name to Copy** (Required). Choose the existing Section name to copy from the dropdown list. All Sections that match the selected name will be copied as new Sections.
   - **Replacement Name** (Required). Enter the replacement name for the copied Sections. The replacement name will appear as the Section name for the copied Sections.
   - **Copy Comment** (Optional). Mark the "Copy Comments" checkbox if you wish to copy the comments associated with the copied Sections and associate them with the replacement Sections also.
   - **Set Installed Date as "Estimated" for all Sections being copied** (Optional). Mark this checkbox if you want all of the replacement Sections' year installed to be marked as estimated.
3. After all of the data has been entered, activate the **Proceed** button in the popup window toolbar to copy the Sections. The copied Sections will be added to the database and appear on the inventory tree. Alternatively, if you do not wish to copy the Sections, activate the **Cancel** button instead.

Building Templates

Building Templates are explained in detail in the next section, starting with "Working with Building Templates" on the facing page.

Working with Building Templates

Building templates are one of BUILDER's methods for speeding up the process of initial inventory. They provide a convenient way to rapidly create Building inventory when:

- You have multiple Buildings with the same design and composition; or
- An existing template can be obtained that is similar to the Building you wish to create and populate with inventory.

A template stores the basic data about a generic Building that can be used to create many Buildings at one time using an automated process that copies the structure of the template to each desired Building.

> **Recommendation:** The template feature is designed to be used as an initial step in the construction of your inventory database. However, in order to achieve the greatest benefit from using templates, you must be very familiar with BUILDER's approach to inventorying a Building. See "Add a Building" on page 56 and "About Identifying Systems, Components and Sections" on page 79 for important information regarding how Buildings and their template counterparts are structured in the database.

One of the most time-consuming aspects of inventory is the decomposition of a Building into its Systems, Components, and Sections. The Building Template feature is designed to ease the inventory development process in BUILDER.

If your physical inventory contains a number of Buildings that are essentially of the same design and composition, you can establish a template for that design to use as a "cookie cutter" and then apply an automated process with the template to create the matching Buildings in your BUILDER inventory with little additional effort. These matching Buildings can then be edited to reflect any individual features that differ from the template used to create them.

Additionally, due to the ability to import and export Building templates, you may be able to save time by either importing or finding in your template library an existing template that is similar to the Building you wish to create and populate with inventory.

What Is a Building Template?

A Building template looks very much like a Building in BUILDER. Every data element belonging to a template or one of its substructures has a corresponding data element in a Building. A template has general Building data such as use, size, and number of floors as well as a decomposition into Systems, Components, Sections (including Section Details). If the template is designated as family housing, then you may specify data about each dwelling unit regarding number of rooms and types and makes of appliances. A template does *not* contain data that is only known for each specific Building, such as its year of construction, its condition ratings, its costs, its location, etc.

Successful use of Building templates consists of three tasks:

1. Creating or importing a template;
2. Managing the template library; and
3. Using a template to create one or more new Buildings.

About Creating a Template

BUILDER offers multiple options for creating a template:

Option A: Import

You can import templates from another user's template library for use in your own library. This import capability is especially useful for military installations, which may have many Buildings constructed from a few standard service-wide designs.

For instructions, see "Import Procedure" on page 160 under "Import a Building Template" on page 159.

Option B: Use the Inventory of an Existing Building

Each Building in your inventory database is equipped with data elements comparable to those of a Building template. Therefore, you can use BUILDER's feature of copying a Building's inventory into a template to create a template quickly.

For instructions, see "Copy Building Inventory to a Template" on page 162.

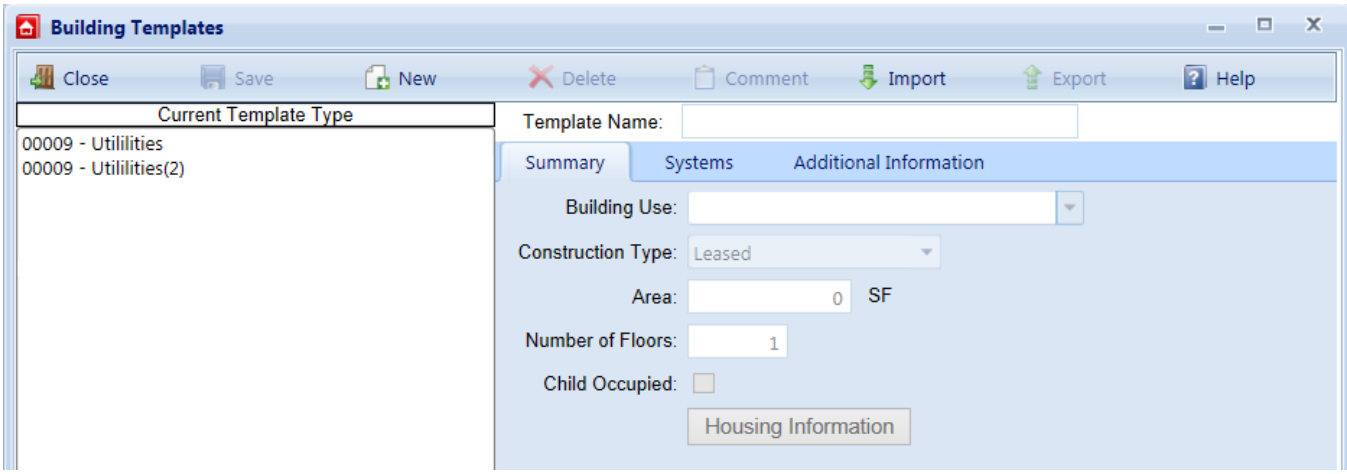
Option C: Enter Template Inventory

You can create a template by inputting each data element in much the same way that you create a Building.

For instructions, see "Add a Building Template" on page 164.

About Managing the Template Library

The "Building Templates" window serves as a dashboard for most of the tasks you can do with respect to Building templates.



An exception is creating a template by copying the inventory of an existing Building. This is done from the inventory tree.

Using the "Building Templates" window, you can add, edit, delete, import, or export a template. The topic titled "Manage the Template Library" on page 180 gathers together in one place a collection of links to these tasks.

About Using a Template to Create Inventory

Once a template is established, a Building with the same design can be created in an automated fashion by copying the template data into the appropriate Building data elements. This process can save hours of manual input if you have multiple Buildings for which the template applies.

To learn how to use a template to create or expand the data either for one Building at a time, or for multiple Buildings at the same time, see "Add Building Inventory Using a Template" on the next page.

You can also share your template with others using the feature "Export a Building Template" on page 182.

Building Template Tasks

Building template tasks that can be performed are:

- Add Building Inventory Using a Template
- Import a Building Template
- Copy Building Inventory to a Template

Add a Building Template
Edit Building Template Data
Delete a Building Template
Manage the Template Library
Export a Building Template

Add Building Inventory Using a Template

This topic describes how you can use an existing Building template to create new Buildings in your inventory. If you do not yet have an appropriately useful template in your template library, you can do one of the following:

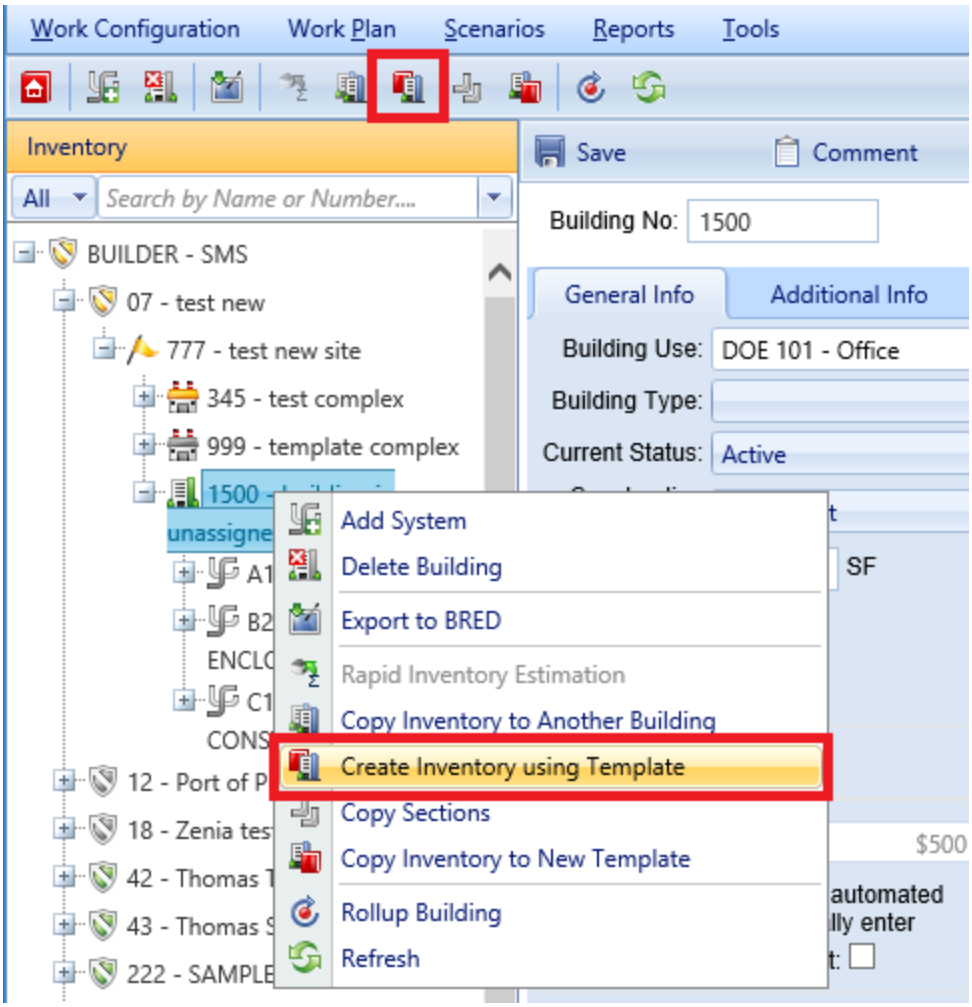
- Copy and edit an existing template
- Import a template
- Create a new template from an existing Building, or
- Create a new template "from scratch" and enter inventory into it.

Building templates provide a convenient method for rapidly creating your Building inventory when you have multiple Buildings with the same design and composition. A template stores the basic data about a generic Building and can be used to create many Buildings at one time using an automated process that copies the structure of the template to each desired Building. For more information about templates, see "Working with Building Templates" on page 149.

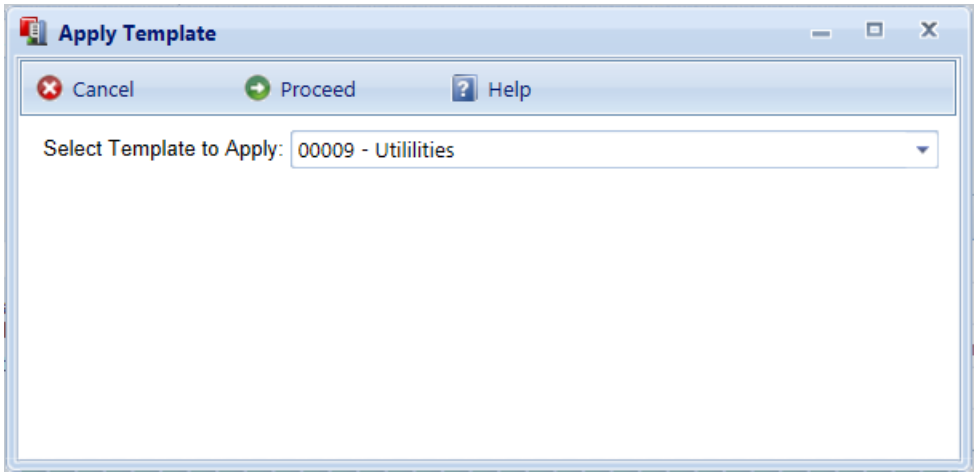
Add Building Template Inventory to One Existing Building

Once you have created a template, you can use it to create Building inventory. If you have an single existing Building and wish to expand its inventory using the template,

1. Select the Building in the inventory tree.
2. Take a look at the general information for the Building to make sure that the data for important properties such as Building Use, Area, and number of floors is correct.
3. If you still wish to expand its inventory using the template, do one of the following:
    a. Right-click the Building whose inventory you wish to copy, and select the "Create Inventory Using Template" option.
    b. Alternatively, activate the **Create Inventory Using Template** icon in the main toolbar, as shown below:



The "Apply Template" popup window will appear.



4. Select from the dropdown list the template you wish to apply to the Building, then activate **Proceed**. Alternatively, if you do not wish to apply the template

to the Building, activate the **Close** button.

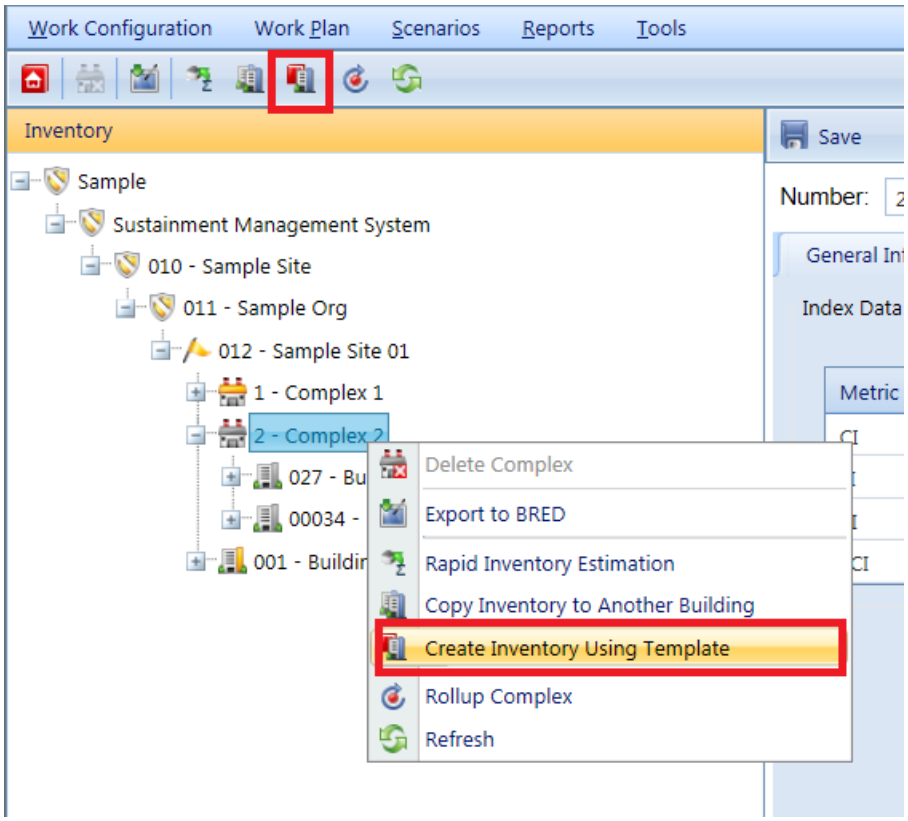
> **WARNING:** When you activate **Proceed**, existing general information for the Building *may or may not be replaced with the template data*:
>
> a. If no Systems have been created for a Building, the template's Systems, Components, Sections, and Section Details will be copied to it.
> b. However, if a Building already has Systems, the template's Systems structure will not be copied to it.
>
> This same pattern applies to building dimensions, architects, contractors, and family housing records. That is, each of these template lists will be copied to a Building if and only if the Building's corresponding list is empty. Otherwise, the Building's existing list will be left unchanged.
>
> **Tip:** If you are adding inventory to an existing Building, and Building Dimensions (**Additional Info** tab) have been populated by the template, double check these dimensions against the Area (**General Info** tab) that presumably was entered during Building creation, to see if they match.

When the template process is complete, a small popup window will announce "Application of template completed". You will be able to select each of the newly created Systems, Components, and Sections in the inventory tree and to edit the new data if adjustments need to be made. This same pattern applies to building dimensions, architects, contractors, and family housing records.

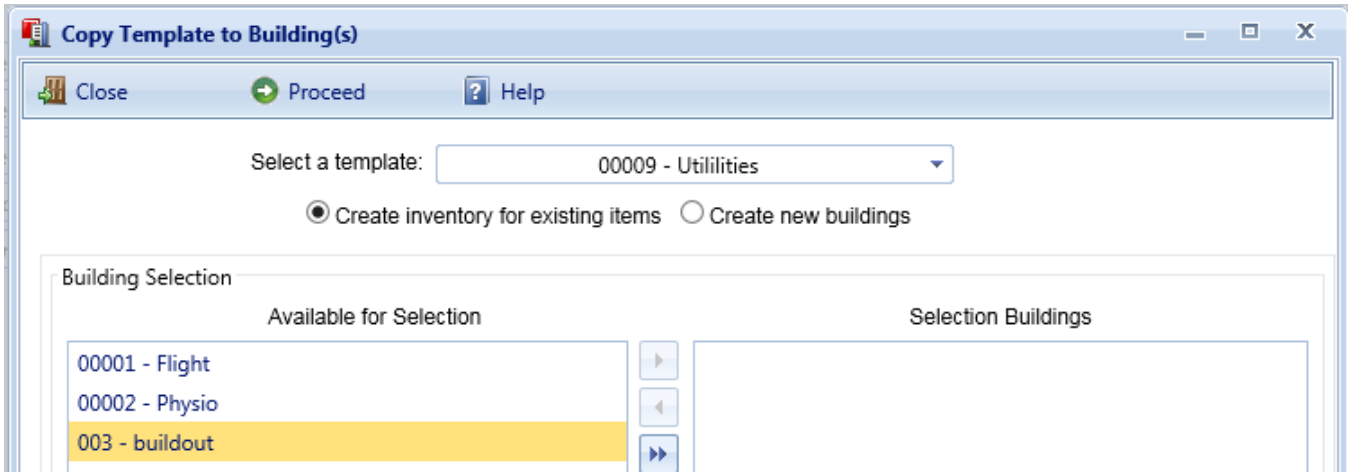
Add Building Template Inventory to Multiple Buildings

The most efficient way to use templates is to create the inventory for multiple similar Buildings at one time. To initiate the process of creating inventory for multiple Buildings using a template, follow these steps:

1. Navigate to the smallest organizational item (node) in the inventory tree that contains all of the Buildings that will have inventory created from the template. Then do one of the following:
   a. Right-click on the node. Then select **Create Inventory Using Template** from the list of options.
   b. Alternatively, select the node and then activate the **Create Inventory Using Template** button in the main toolbar.



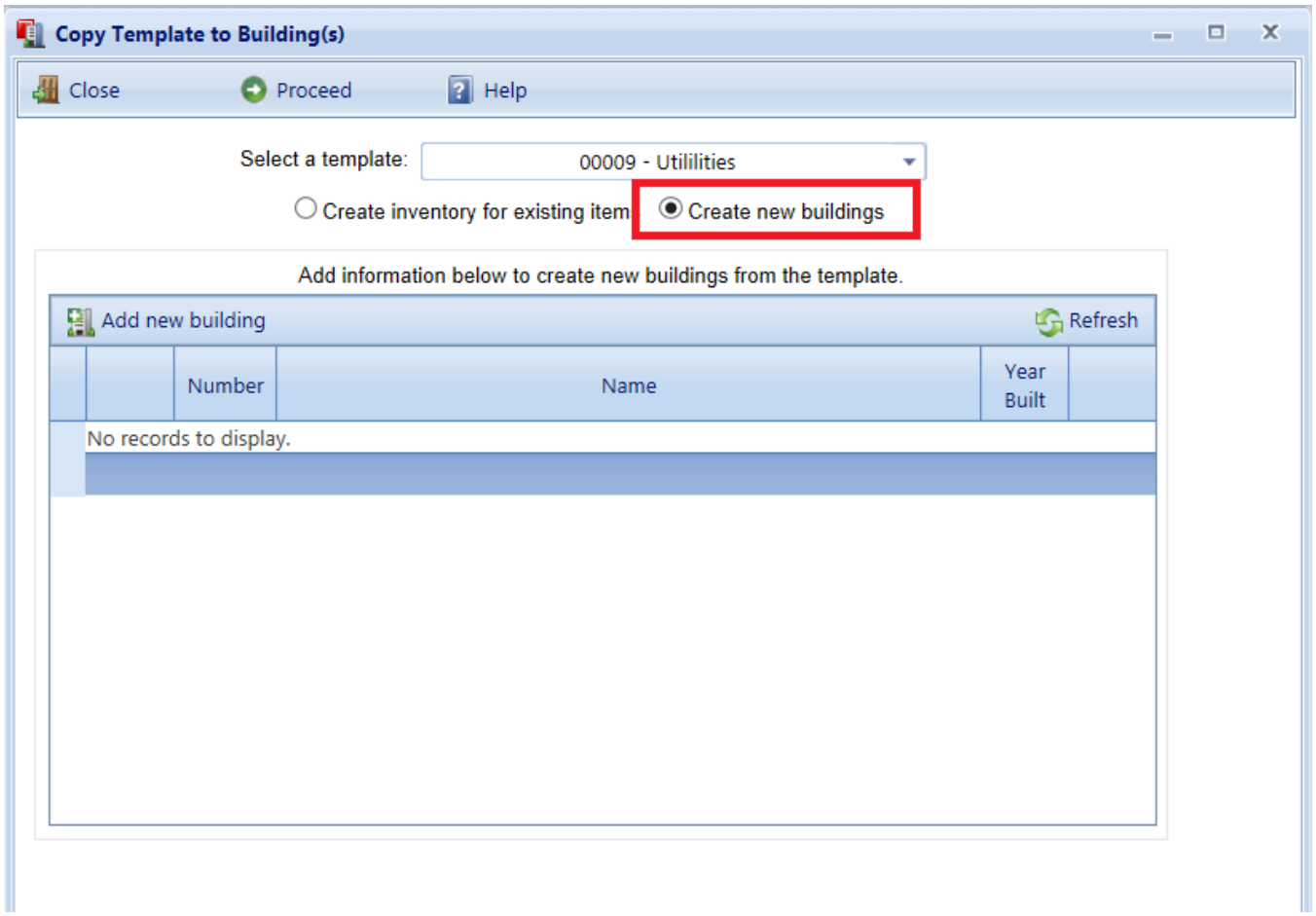
The "Copy Template to Building(s)" popup window will appear.



2. In the "Select a template:" field, activate the dropdown and select a template from the list.
3. When applying a template to multiple Buildings, you have two options to choose from:
   a. Create new Buildings along with the template (continue reading at "Option 1: Create New Buildings" on the next page).

b. Alternatively, apply the template to multiple existing Buildings (continue reading at "Option 2: Create Inventory for Existing Buildings" on page 158).

Each option is described at a heading below.

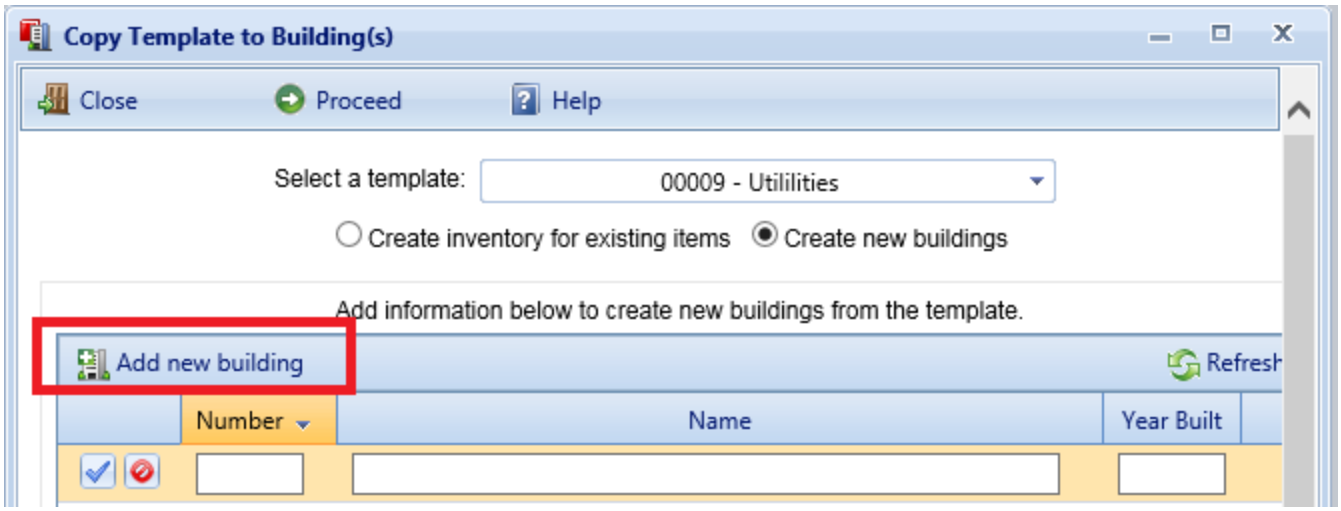


Option 1: Create New Buildings

The window shown above illustrates what happens when the **Create new buildings** radio button is activated. An information table, initially empty, will be created. Its headers are [Building] **Number**, [Building] **Name**, and **Year Built**. Year Built information may be entered later.

How to Add a Building to the Table

1. To add a new Building to receive template inventory, activate the **Add Building** button to add a new Building to the table. A new row in the table will be created and expanded to receive information.



2. For each new Building, you need to assign a Building number and/or name, and put this information in the table.
3. When you are finished with the entry, activate the checkbox at the left side of the row, to save the entry. Alternatively, to cancel and delete the entry before saving, activate the red circle with slash at the left side of the row.

   Note: Activating **Add new building** during the entry process will also clear an unsaved entry.

4. Repeat Steps 2 and 3 for each Building you wish to add and populate with template inventory.

Making Changes

5. To edit an entry, activate the pencil icon, make the changes, then activate the checkmark at the left to save the changes.
6. If you wish to delete any of the Buildings from the list, click the red "X" at the right side of its row.

Finalizing the Table of New Buildings

7. Review the list of Buildings; make changes as needed until the table accurately lists all of the new Buildings you wish to create using the template.
8. Activate the **Proceed** button near the top of the popup window. This starts the process that will create each Building and copy the template data to it.

   Note: The Building creation process may take a minute or so for each Building, depending upon the complexity of the template's data structure.

Refining the Template-Installed Inventory (Important!)

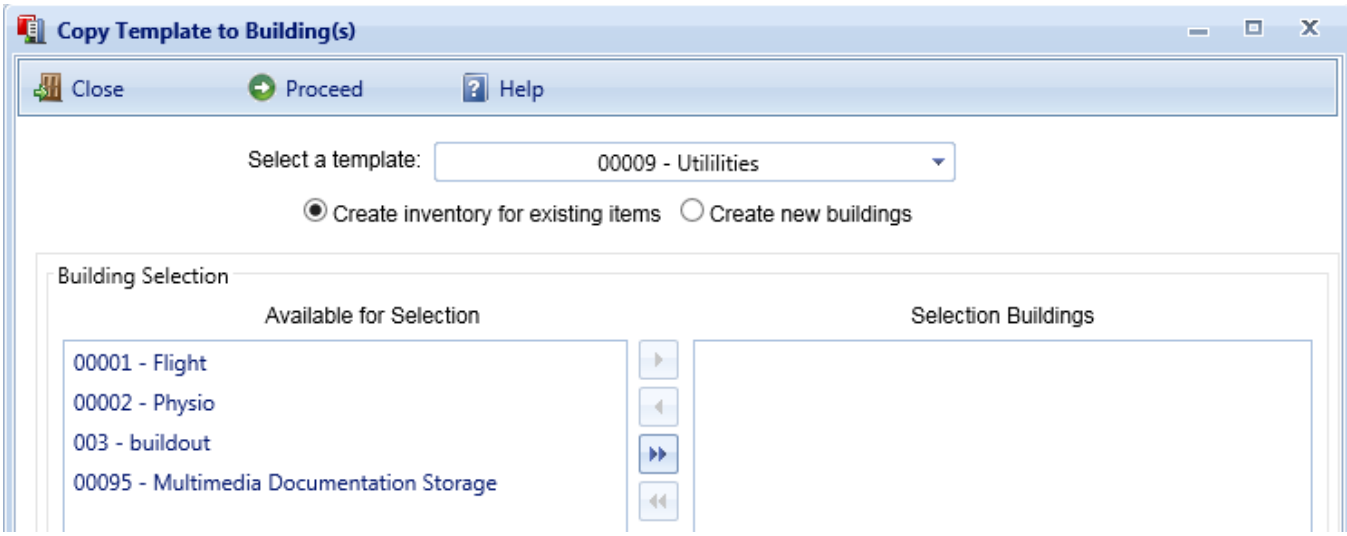
9. When the process is complete, the new Buildings with their template-installed inventory will be available for editing. In particular, critical information that applies to each specific Building should be added immediately, especially the year of construction and dates associated with Sections because these data elements are used extensively in BUILDER's algorithms.
10. Finally, when you have completed your inventory input, you should use BUILDER's cost estimating tool (cost book) to establish current costs for all Buildings and their substructures.

Option 2: Create Inventory for Existing Buildings

If you choose to create inventory for existing Buildings (called "existing items" in the selection list),

1. Activate this option by selecting the **Create inventory for existing items** radio button at the "Copy Template to Building(s)" popup window.

The appearance of the "Copy Template to Building(s)" popup window will remain as shown below:



In this window, the complete list of Buildings "Available for Selection" at the selected inventory level will be displayed on the left.

2. Select the Buildings you want to expand using the selected template, and use the arrow buttons to move these Buildings to the "Selected Buildings" list on the right.
3. When the "Selected Buildings" list is complete, activate the **Proceed** button. Alternatively, if you wish to cancel, activate the **Close** button.

WARNING: When you activate **Proceed**, existing general information for each Building *may or may not be replaced with the template data*:

a. If no Systems have been created for a Building, the template's Systems, Components, Sections, and Section Details will be copied to it.
b. However, if a Building already has Systems, the template's Systems structure will not be copied to it.

This same pattern applies to building dimensions, architects, contractors, and family housing records. That is, each of these template lists will be copied to a Building if and only if the Building's corresponding list is empty. Otherwise, the Building's existing list will be left unchanged.

Tip: If you are adding inventory to an existing Building, and Building Dimensions (**Additional Info** tab) have been populated by the template, double check these dimensions against the Area (**General Info** tab) that presumably was entered during Building creation, to see if they match.

4. When the process is complete, edit each Building to add or verify critical data elements such as the year of construction, dates associated with Sections, and all quantities since these data elements are used extensively in BUILDER's algorithms.
5. Finally, when you have completed your inventory input, you should use BUILDER's cost estimating tool (cost book) to establish current costs for all Buildings and their substructures.

Import a Building Template

BUILDER provides three methods for creating a Building template: (1) importing; (2) creating a template from an existing Building; or (3) creating a template from scratch and filling it with inventory. This topic explains the first method, importing a template.

About Importing Building Templates

Building templates provide a convenient method for rapidly creating your Building inventory when you have multiple Buildings with the same design and composition. A template stores the basic data about a generic Building and can be used to create many Buildings at one time using an automated process that

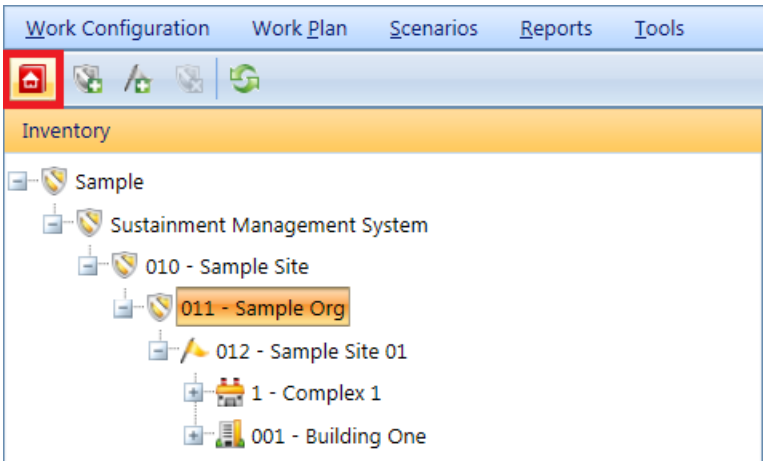
copies the structure of the template to each desired Building. For more information about templates, see "Working with Building Templates" on page 149.

BUILDER™ allows for different users to share Building templates by importing and exporting individual templates. This capability is especially useful for military installations, which may have many Buildings constructed from a few standard service-wide designs.

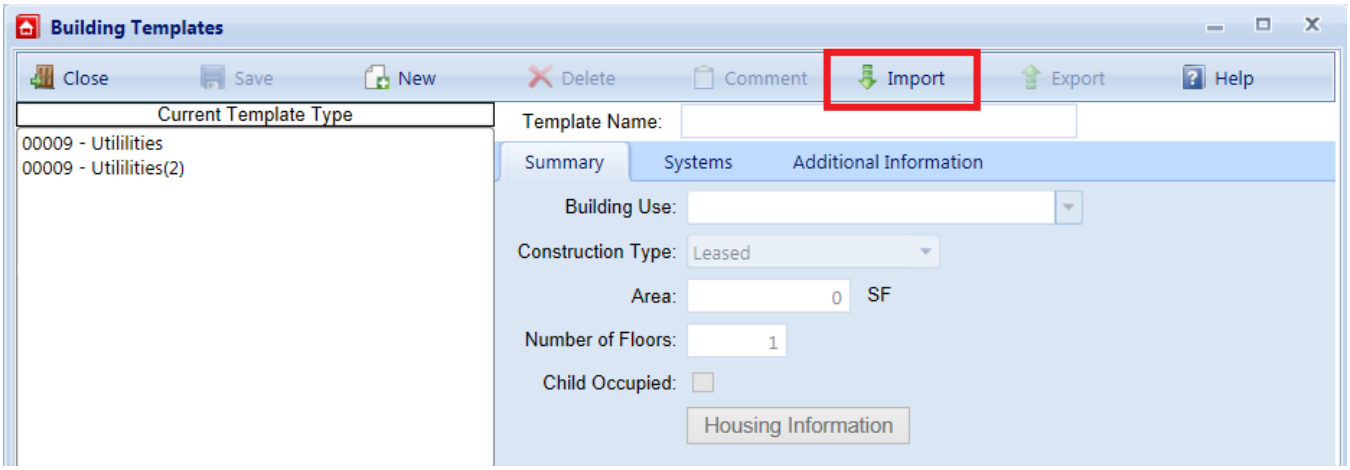
Import Procedure

To import a template,

1. Open the template library from anywhere in the navigation tree by activating the **Building Templates** button on the main toolbar.

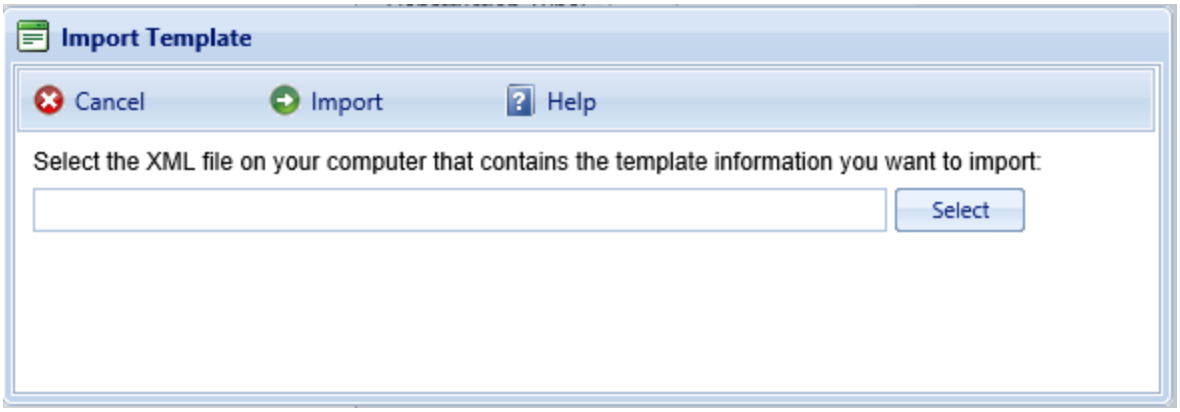


The "Building Templates" popup window will appear.



2. Select **Import** from the toolbar (see red box above).

   The "Import Template" popup window will appear.



3. Activate the **Select** button in the "Import Template" popup, then browse to and select the template you wish to import into your template library. The name of the template will appear in the text box to the left of the **Select** button.
4. Finally, do one of the following:
   a. Activate the **Import** button on the toolbar to import the template.
   b. Alternatively, select the **Cancel** button to cancel the operation and return to the "Building Templates" window.

Before BUILDER imports your selections, checks of unique identifiers (internal data hidden from view) and template names are performed to avoid conflicts between your current template library and the template(s) being imported. Possible results are as follows:

1. If duplicate identifiers are found, the selected template will not be imported because it already exists in your library.
2. If you are attempting to import a template with the same name but a different unique identifier as an existing template in your library, then the importing process will stop with an error message indicating the problem templates. If you still wish to import the problem templates, change the names of the corresponding templates in your library so that they are distinct from the templates you wish to import. See "Manage the Template Library" on page 180 for instructions regarding changing the name of a template in your library.

   Note: The Building Use property of a template is dependent on the user category (Army, Navy, Air Force, Civilian, etc.). If you are managing an installation from one user category but importing Building templates from a different user category, then the template Building Use properties will not match any of the

Building Use types in your list. When you view each imported template, the Building Use property will be blank. You will have to select an appropriate Building Use property from your list of uses for each imported template. The template name can be used help choose an appropriate use.

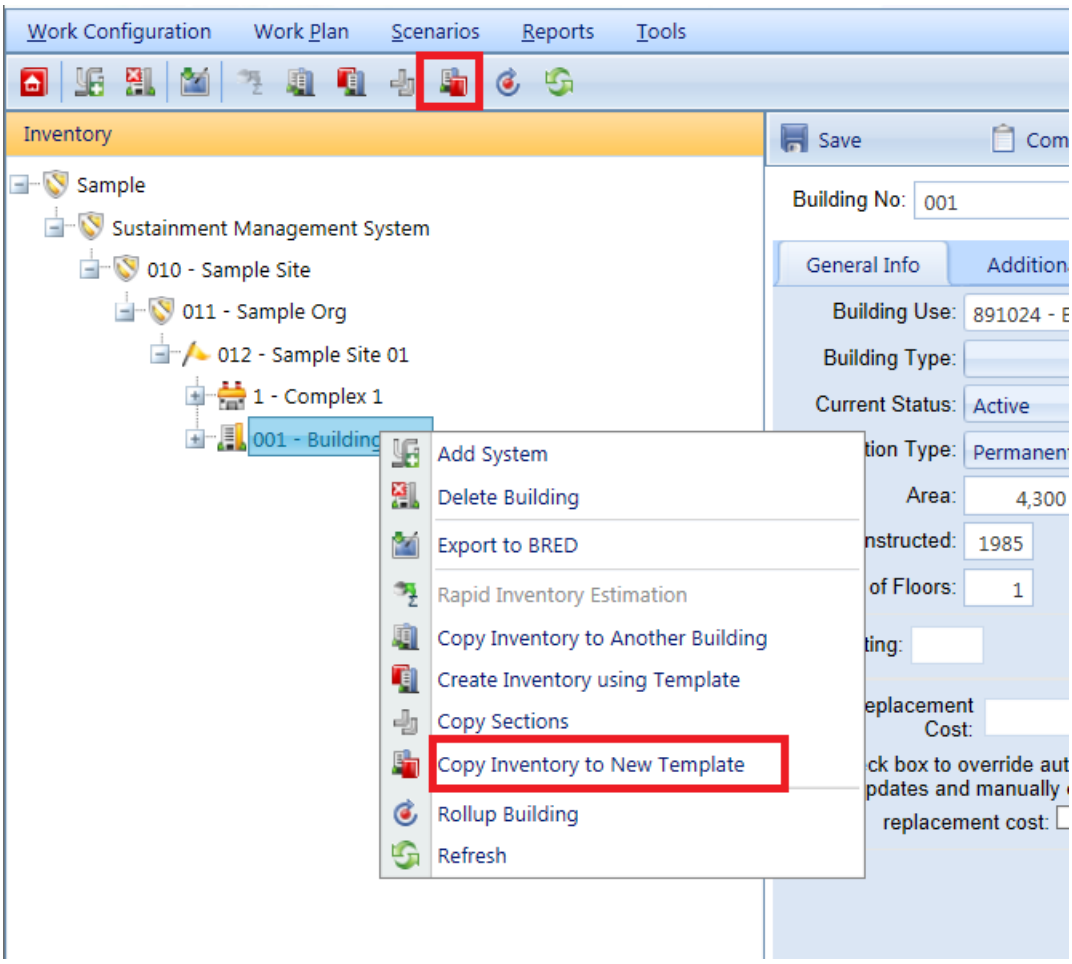
Copy Building Inventory to a Template

BUILDER provides three methods for creating a Building template: (1) importing; (2) creating a template from an existing Building; or (3) creating a template from scratch and filling it with inventory. This topic explains the second method, creating a template from an existing Building in your inventory.

Building templates provide a convenient method for rapidly creating your Building inventory when you have multiple Buildings with the same design and composition. A template stores the basic data about a generic Building and can be used to create many Buildings at one time using an automated process that copies the structure of the template to each desired Building. For more information about templates, see Using Building Templates.

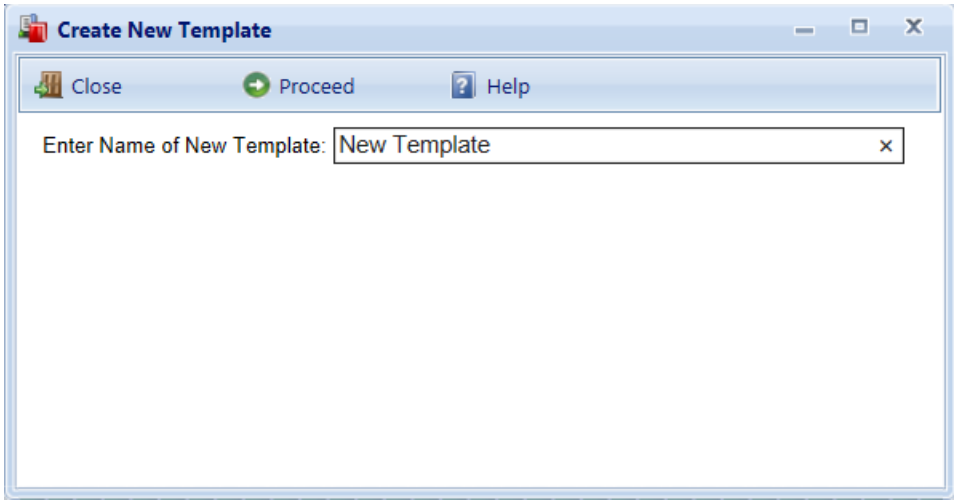
To create a template by copying a Building in your inventory,

1. Navigate to that Building in the inventory tree and do one of the following:
    a. Right-click the Building, then select "Copy Inventory to New Template" from the options, as shown in the lower part of the screen shot above.
    b. Alternatively, select the Building in the inventory tree. Then activate the **Copy Inventory to New Template** button on the main menu, above the navigation tree (see the red square in the screenshot below):



c. Alternatively,

The "Create New Template" popup window will appear.



2. Enter the name of new template, which must be unique among the templates in your library.

   Specifications: The name is limited to 50 alphanumeric characters.

   Best Practice Recommendation: Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

   Tip: If you expect to create a large template library, especially if you anticipate sharing your library with others or importing other user's templates, then the template name you choose should be sufficiently descriptive of the Building type to allow it to be safely and efficiently selected for use.

3. Finally, do one of the following:
   a. Activate the **Proceed** button on the popup toolbar to create the new template.
   b. Alternatively, activate **Close** if you wish to cancel the operation and close the popup.

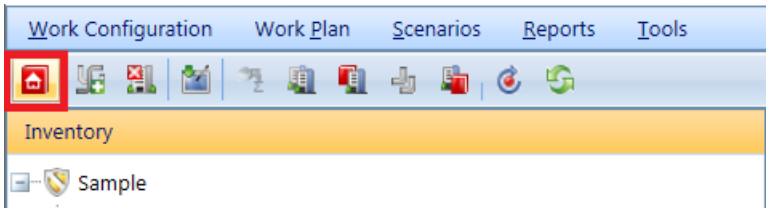
Add a Building Template

BUILDER provides three methods for creating a Building template: (1) importing; (2) creating a template from an existing Building; or (3) creating a template from scratch and filling it with inventory. This topic explains the third method, creating a template from scratch and filling it with inventory.

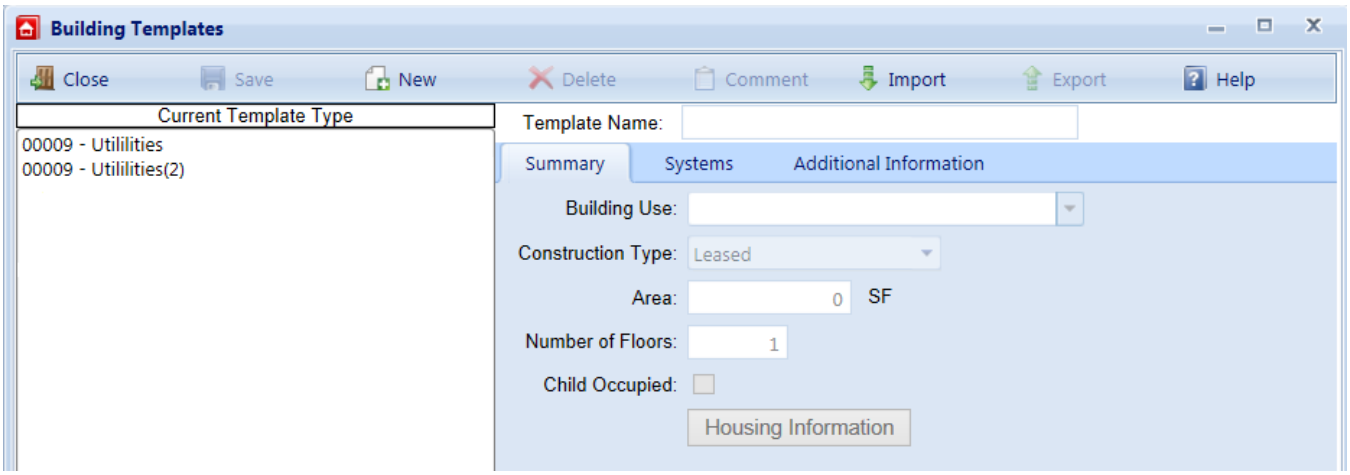
To create a new Building template and add it to the template library, perform the following steps:

☐ *Initiate and Name a New Template*

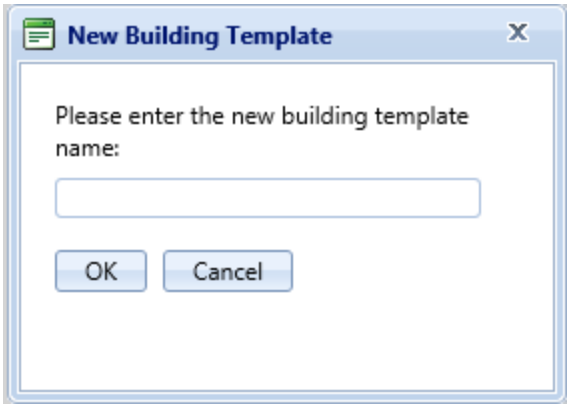
1. From anywhere in the inventory tree, activate the **Building Templates** icon on the main toolbar.



   The "Building Templates" popup window will appear.



2. Activate the **New** button on the toolbar of the "Building Templates" popup window shown above. *The "New Building Template" popup window will appear.*



3. Enter a name for the new Building template. This is the name that will appear in the template list and must be unique among the templates in your library.

   Specifications: The name is limited to 50 alphanumeric characters.

   Best Practice Recommendation: Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

Tip: If you expect to create a large template library, especially if you anticipate sharing your library with others or importing other user's templates, then the name you choose here should be sufficiently descriptive of the Building type to allow it to be safely and efficiently selected for use.

4. Activate the **OK** button on the popup. (Alternatively, activate the Cancel button to exit the operation without creating a new template.)

☐ *Enter Summary Tab Data*

Enter the following template data at the Summary tab:

- **Building Use**. From the dropdown list, select the Building Use that most closely matches the Building's use.
- **Construction Type**. Select from the dropdown list.
- **Construction Type.** Select from the dropdown list the construction type that matches the Building. Construction type options include:
  - Permanent
  - Semi-Permanent
  - Temporary
  - Leased
- **Area (Required)**. Enter the gross area of the Building; this will be square feet (SF) or square meters (SM), depending on the unit of measure selected in the User Preferences.
- **Number of Floors (Required)**. Enter the number of floors in the Building.
- **Child Occupied**. Mark this checkbox if the Building is child-occupied.

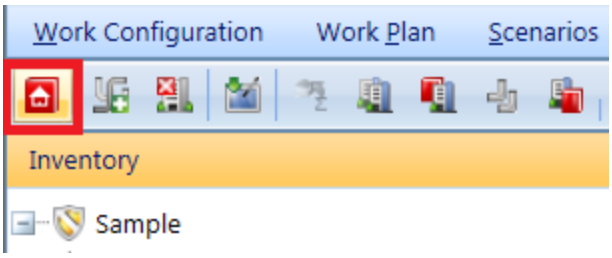
Activate **Save** on the popup toolbar to save your changes.

☐ *Enter Systems Tab Data*

At the Systems tab is where you will enter the Systems, Components, Sections, and (as applicable) Section Details of your template. You will do this starting at the Systems level because the data at the Systems tab is arranged hierarchically, with Systems containing Components which contain Sections. Once a System is added, you may define Components for that System. Once a Component is added, you may define Sections for that Component. Decomposition follows the same pattern used for Buildings. However, Building-specific data (e.g. condition, age, year installed or built, year painted, and warranty dates and companies) is not used for templates.

> **Troubleshooting Tip:** If the **Systems** tab is grayed out even though you saved all the required Summary information,
>
> 1. Activate **Save** on the popup toolbar.
> 2. Exit the popup (using the **Close** button or else the "**X**" in the upper right corner).

3. Re-activate the Building Templates icon.



4. Select your newly created and named template from the list. *All of the tabs should now display properly.*

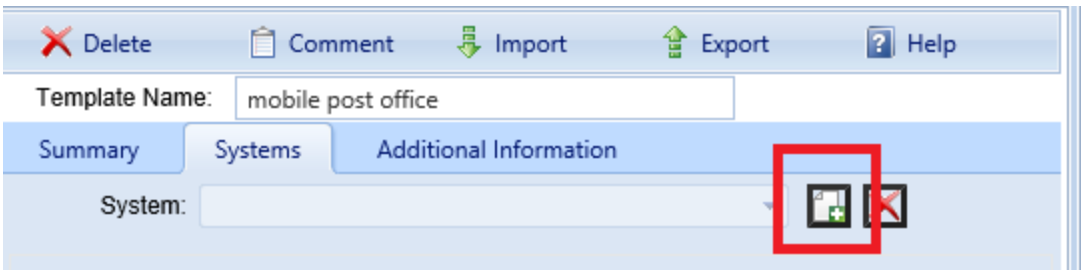
You will be using the buttons to the right of each respective field to add or delete inventory to the template.

Add a System

See Identifying Systems, Components and Sections for a description of how Buildings are decomposed by System.

To add a System to the template,

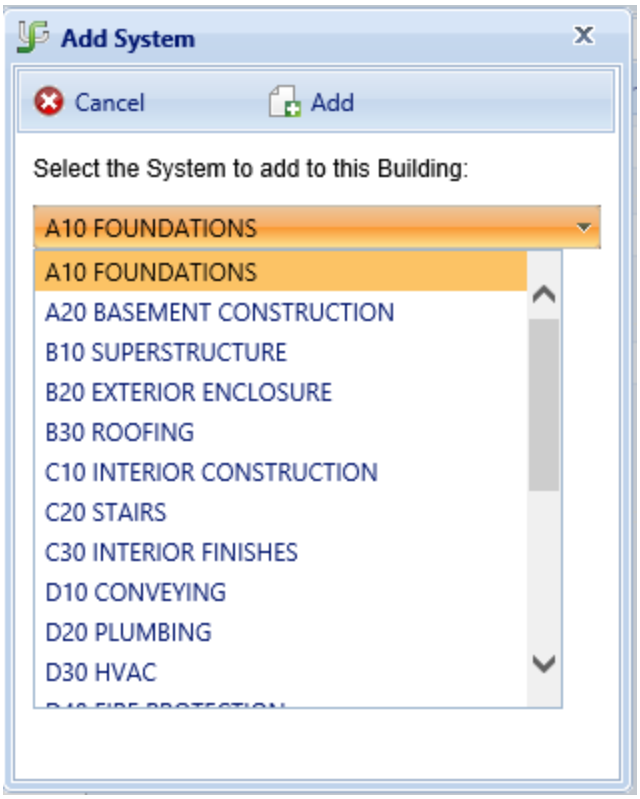
1. Activate the **New** icon on the System line.



The "Add System" popup window will appear.

2. In the "Add System" popup, activate the dropdown list.
3. In the list, activate the desired System.

Note: Only one System at a time can be added to the template at a time using the "Add System" popup.



4. Activate the **Add** button on the popup toolbar. The popup will disappear, and the selected System will be displayed on the System line at the **Systems** tab.

Repeat the steps above for all desired Systems. Alternatively, you can leave the newly added System displayed in the "System:" field and proceed to entering one or more of its Components.

> **Tip:** Once you have added all the Systems you wish, if you choose to enter each of them at this point, it's a good idea to activate **Save** on the "Building Templates" popup toolbar to lock in your changes.

Add a Component

See Identifying Systems, Components and Sections for a description of how Systems are decomposed by Component.

To add a Component to the template,

1. Make sure the appropriate System is displayed in the "System:" field.
2. Activate the **New** icon on the Component line. *The "Add Component" popup window will appear.*
3. In the "Add Component " popup, activate the dropdown list.

4. In the list, activate the desired Component .
5. Activate the **Add** button on the popup toolbar. The popup will disappear, and the selected Component will be displayed on the Component line at the **Systems** tab.

   Note: The number of Sections contained in the component will be displayed beneath the "Component :" field.

Repeat the steps above for all desired Components. Alternatively, you can leave the newly added Component displayed in the "Component:" field and proceed to entering one or more of its Sections.

Add a Section

At the Section level, you will be entering the following data for each Section in your Building template:

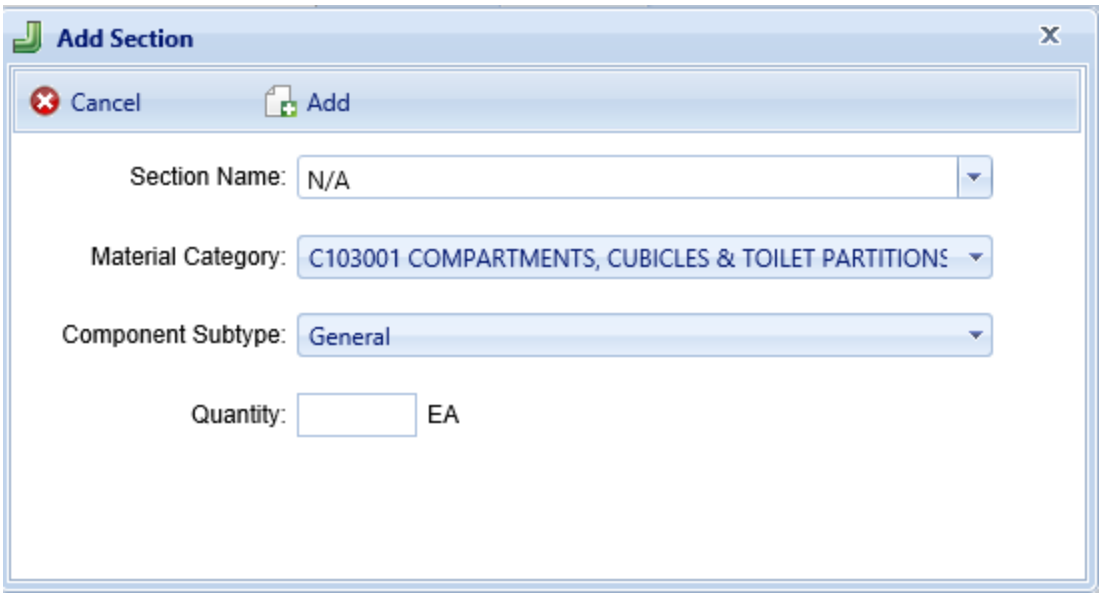
- **Section Name**. Enter a name that will distinguish this Section from others in the same Component.
- **Material Category**. Selected from the relevant dropdown list.
- **Component Subtype**. Selected from the dropdown list. This will be a material (wood, concrete, etc.), or in the case of equipment it will be equipment type.
- **Quantity**. Enter the number of items with the same specification that are contained in this Section.

See Identifying Systems, Components and Sections for a description of how Components are decomposed by Section.

To add a Section to the template,

1. Make sure the appropriate Component is displayed in the "Component:" field.
2. Activate the **New** icon on the Section line.

   The "Add Section" popup window will appear.



3. In the "Add Section" popup, enter the Section name; select the equipment or material category from the dropdown; select the Component subtype from the dropdown; and enter the Quantity. The unit of measure for the Quantity will vary depending on the type of Section.
4. Activate the **Add** button on the popup toolbar. The popup will disappear, and the Section will be displayed on the Section line at the **Systems** tab.

> **Tip:** When you've finished entering the Sections in a Component (or, alternatively, after entering each Section) it's a good idea to activate **Save** on the "Building Templates" popup toolbar to save your changes.

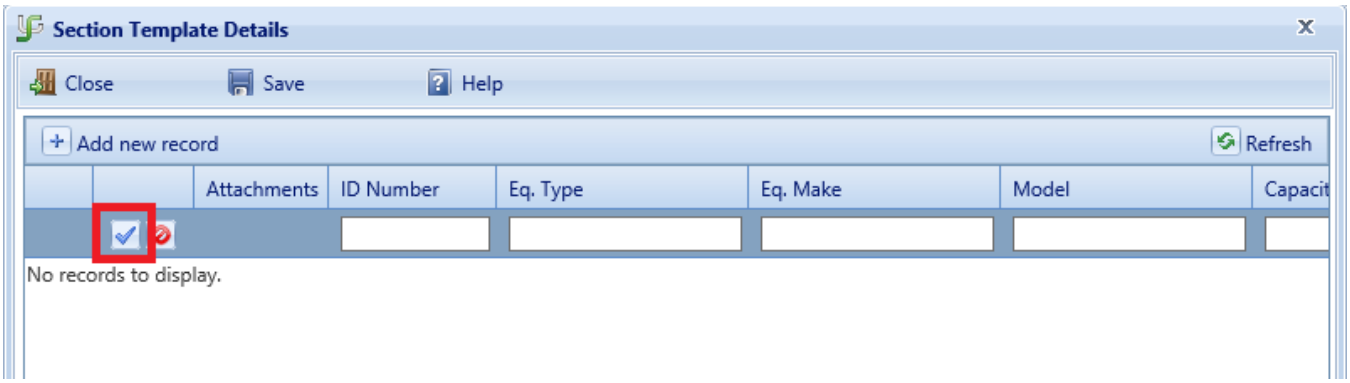
Enter Section Details

Additional data for the Section can be added by activating the **Details** button, which will launch the "Section Template Details" window.

To add Section Details,

1. Activate the **Add new record** button (located just above the Section Details table column headers).
2. Enter information; each of the fields is described in Edit Section Detail Data in the inventory entry documentation. You can use the **Tab** key to proceed left to right, from one entry field to another, or **Shift-Tab** to move from right to left.
3. **IMPORTANT:** After entering the information, activate the checkmark icon, as shown below.

Note: You may need to scroll back to the left side of the table to see the checkmark icon.

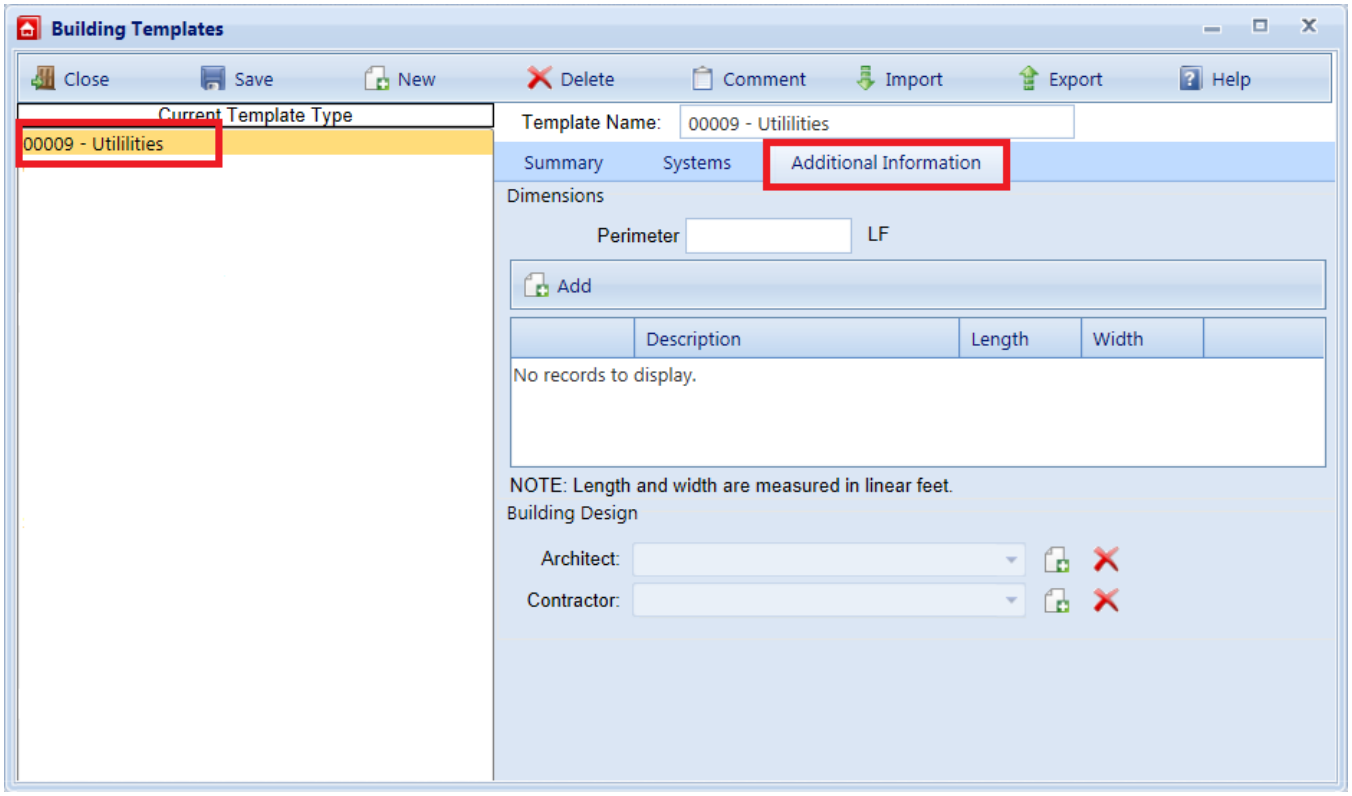


Alternately, to exit the record without saving the data, activate the red **Cancel** icon next to the checkmark icon.

4. When finished with entries, or intermittently, activate **Save** on the toolbar.

☐ *Enter "Additional Information" Tab Data*

The Additional Information tab provides a location to store additional Building data.



The data that can be recorded on this tab includes:

Dimensions

- **Perimeter.** Enter the linear measure of the perimeter of the Building.
- **Description.** Enter a description of the distinct areas of the Building you wish to add dimensions for. For example, you may list "East Wing/West Wing", or "Offices/Library/Warehouse", or "Public Areas/Secure Areas." Each description is limited to 50 alphanumeric characters. Use the **Add Dimension** and **Delete Dimension** buttons to add and delete items from the list.
- **Length.** Enter the length of the area identified in the description.
- **Width.** Enter the width of the area identified in the description.

Building Design

- **Architect.** Lists the architects of the Building. Add and delete names by using the adjacent buttons. Each architect's name is limited to 30 characters.
- **Contractor.** Lists the contractors of the Building. Add and delete names by using the adjacent buttons. Each contractor's name is limited to 30 characters.

☐ *Save*

Before closing the "Building Templates" popup window, be sure to activate **Save** on the toolbar.

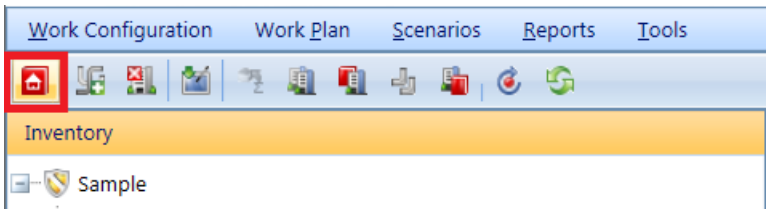
Edit Building Template Data

After a template has been added to the Building Templates library, it can be edited. It can also be enlarged by adding additional Systems, Components, or Sections. This topic explains how to edit the information in a Building template.

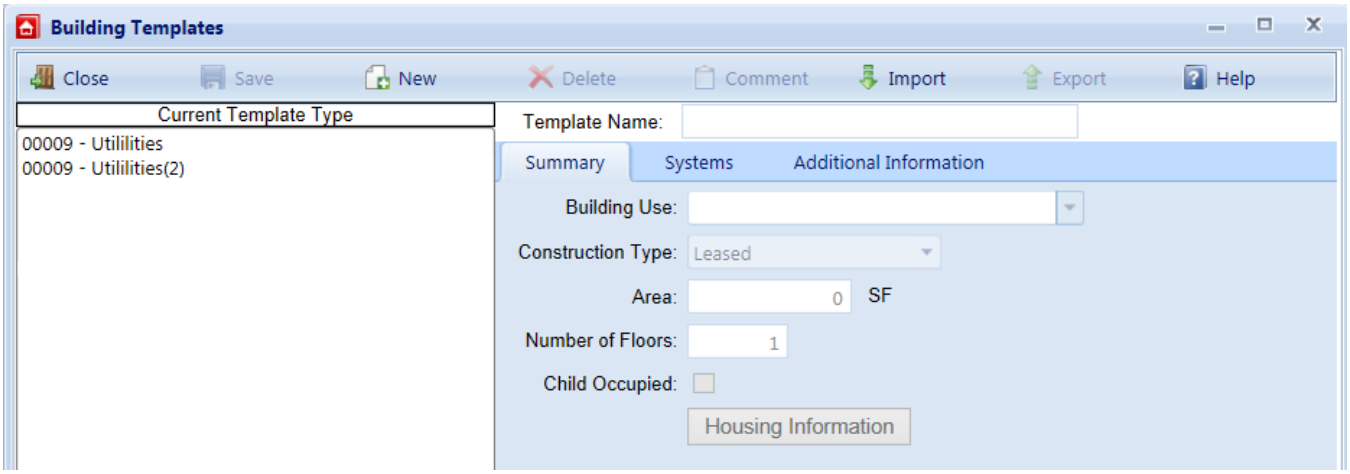
To edit a new Building template, perform the following steps:

☐ *Open a Template*

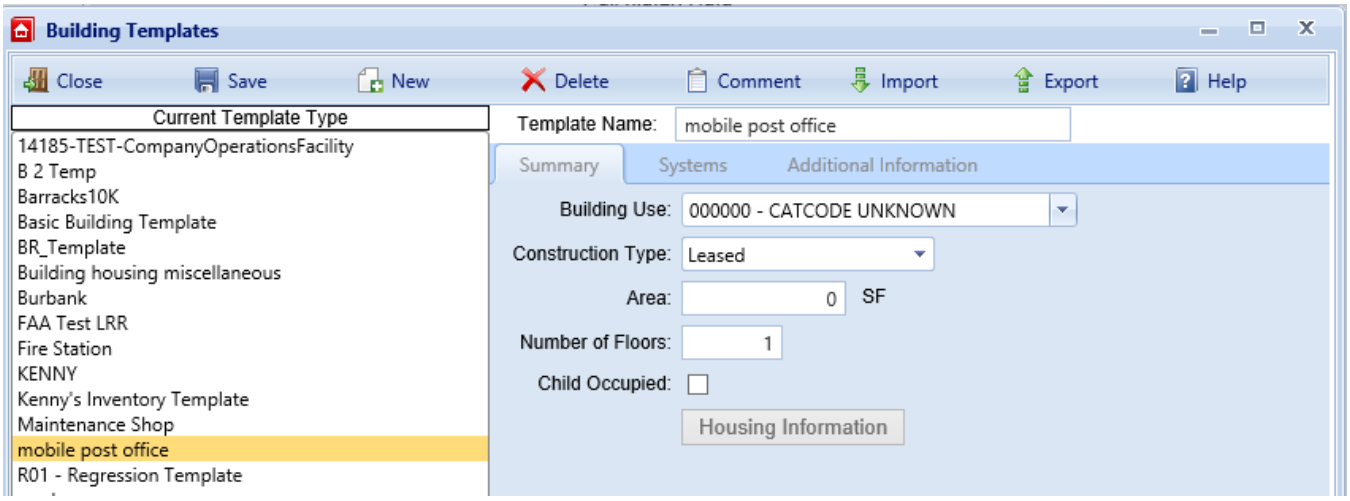
1. From anywhere in the inventory tree, activate the **Building Templates** icon on the main toolbar.



The "Building Templates" popup window will appear.



2. Select a template from the list at the left.



☐ *Edit Summary Tab Data*

The following data appears at the **Summary** tab, and can be edited.

- **Name** (Required). The name that will appear in the template list and must be unique among the templates in your library. If you expect to create a large template library, especially if you anticipate sharing your library with

others or importing other user's templates, then the name you choose here should be sufficiently descriptive of the Building type to allow it to be safely and efficiently selected for use.

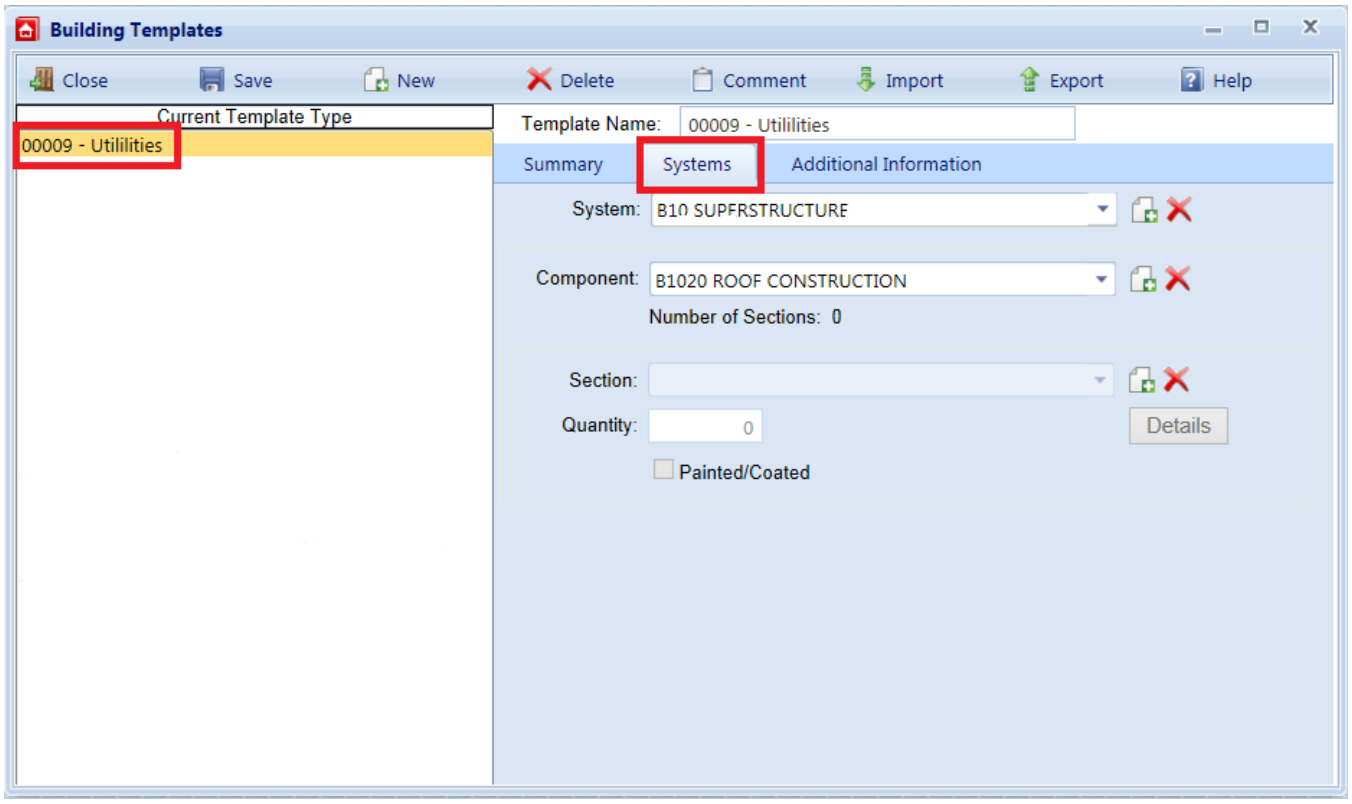
> **Specifications:** The name is limited to 50 alphanumeric characters.
>
> **Best Practice Recommendation:** Avoid using single quotes, double quotes, and ampersands. These characters can interfere with query formation.

- **Building Use.** Select the Building Use from the dropdown list that most closely matches the Building's use.
- **Construction Type.** Select the construction type from the dropdown list that matches the Building. Construction type options include:
  - Permanent
  - Semi-Permanent
  - Temporary
  - Leased
- **Area** (Required). The gross area of the Building.
- **Number of Floors** (Required). The number of floors in the Building.
- **Child-Occupied.** Mark this checkbox if the facility is child-occupied.

Activate **Save** on the "Building Templates" toolbar if you make changes at the **Summary** tab.

☐ *Edit Systems Tab Data*

The **Systems** tab gives you access to the data regarding the decomposition of the Building into Systems, Components, and Sections.



At the **Systems** tab is where you will enter or edit information about the Systems, Components, Sections, and (as applicable) Section Details of your template. You will do this starting at the System level because the data at the **Systems** tab is arranged hierarchically, with Systems containing Components which contain Sections.

Use the buttons to the right of each respective dropdown list to add or delete inventory to the template. Once a System is added, you may define Components for that System. Once a Component is added, you may define Sections for that Component. This follows the same pattern used for Buildings, except that Building-specific data (e.g., condition, age, year installed or built, year painted, and warranty dates and companies) is not used for templates. See Identifying Systems, Components and Sections for a description of how Buildings are decomposed by System.

System Level

Add a System

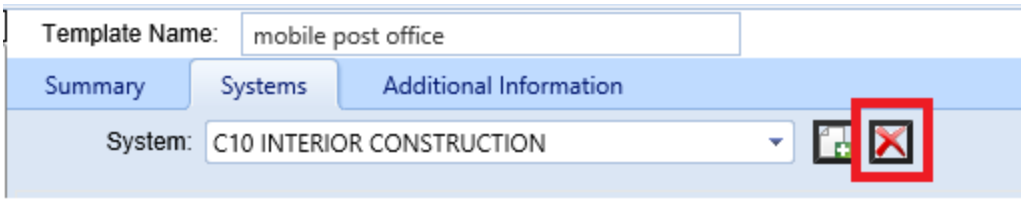
To add another System to the Building template, follow the instructions at "Add a System" on page 167 in the topic "Add a Building Template" on page 164.

Edit System Contents

To change the contents of a System that already exists in the template, you will need to select that System at the System line; then select or add the appropriate Component on the Component line; then proceed as necessary through the levels to the Section line and (if applicable), the **Details** button to make the appropriate additions or changes.

Delete a System

To delete a System, select it from the dropdown list at the System line; then activate the **Delete** icon at the right of the System line.



Component Level

Add a Component

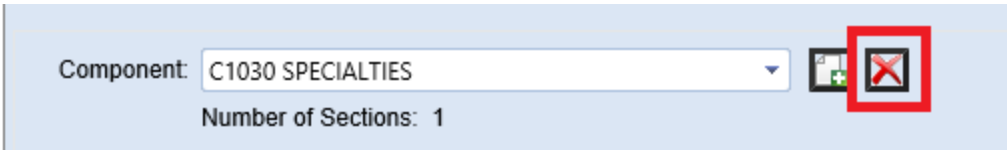
To add another Component to the Building template, follow the instructions at "Add a Component " on page 168 in the topic "Add a Building Template" on page 164.

Edit Component Contents

To change the contents of a Component that already exists in the template, you will need to select that Component at the Component line; then select or add the appropriate Section on the Section line; and (if applicable), activate the **Details** button to make the appropriate additions or changes.

Delete a Component

To delete a Component , select it from the dropdown list at the Component line; then activate the **Delete** icon at the right of the Component line.



Section Level

Add a Section

To add another Section to the Building template, navigate to the Component it will be contained in; then follow the instructions at "Add a Section " on page 169 in the topic "Add a Building Template" on page 164.

Edit Section Contents

Change Quantity

To change the quantity of a Section,

1. Highlight the quantity in the Quantity box;
2. Make the desired change; then
3. Activate **Save** on the "Building Templates" menu bar.

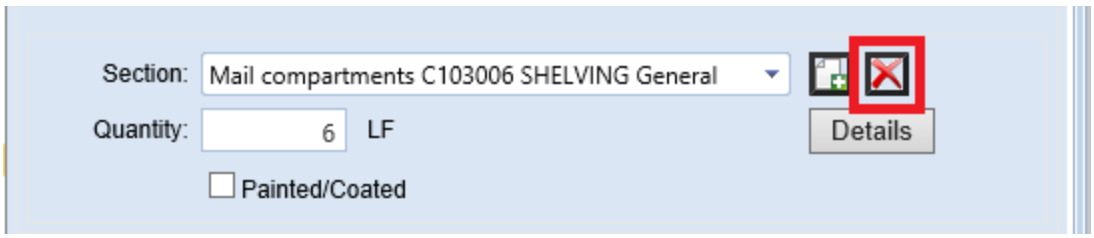
Change Section Details

To change the Section's Section Details,

1. Activate the **Details** button; then
2. Make the desired additions or changes. For more detailed instruction, see Section Details.

Delete a Section

To delete a Section, select it from the dropdown list at the Section line; then activate the **Delete** icon at the right of the Section line.

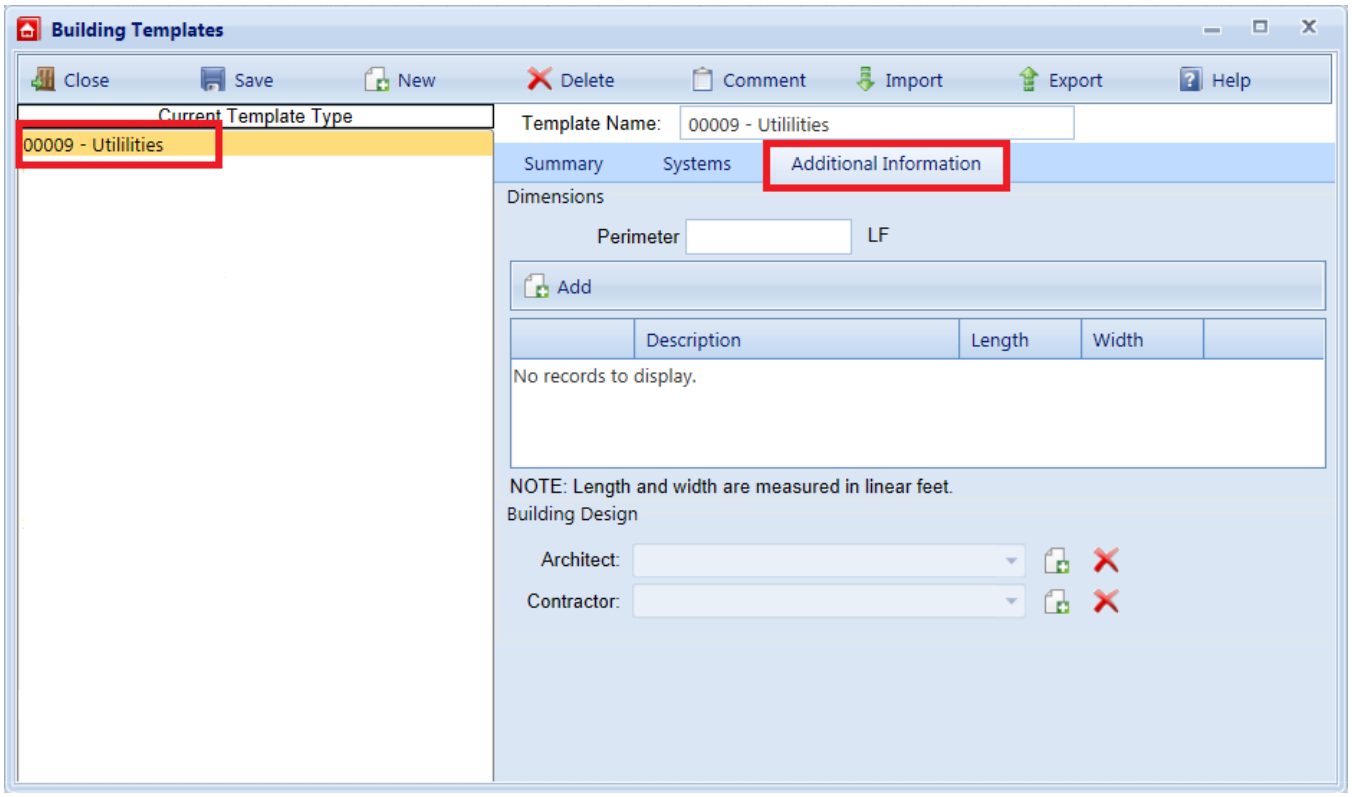


☐ *Save*

Activate **Save** on the "Building Templates" toolbar to save the changes made at the **Systems** tab.

☐ *Edit "Additional Information" Tab Data*

The **Additional Information** tab provides a location to store additional Building data.



The data that can be recorded and edited at this tab includes:

Dimensions

- **Perimeter.** Enter the linear measure of the perimeter of the Building.
- **Description.** Enter a description of the distinct areas of the Building you wish to add dimensions for. For example, you may list "East Wing/West Wing", or "Offices/Library/Warehouse", or "Public Areas/Secure Areas." Each description is limited to 50 alphanumeric characters. Use the **Add Dimension** and **Delete Dimension** buttons to add and delete items from the list.
- **Length.** Enter the length of the area identified in the description.
- **Width.** Enter the width of the area identified in the description.

Building Design

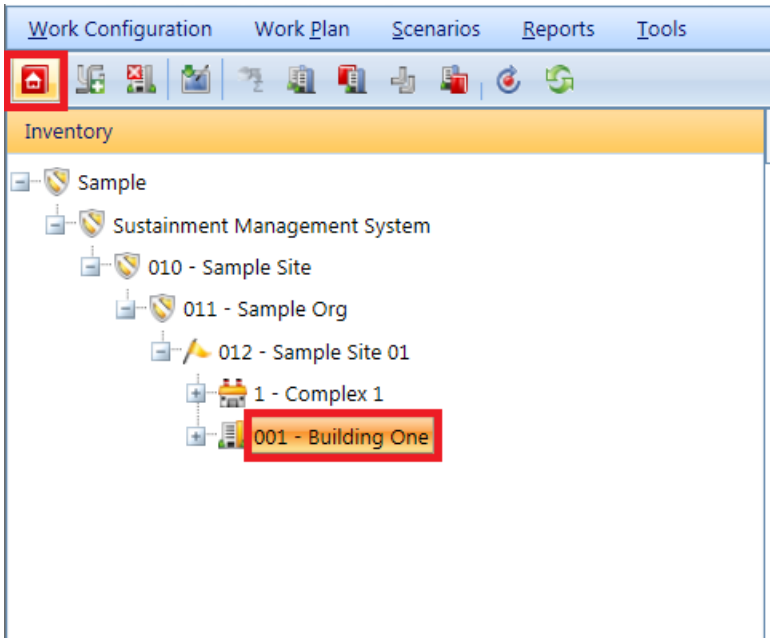
- **Architect.** Lists the architects of the Building. Add and delete names by using the adjacent buttons. Each architect's name is limited to 30 characters.
- **Contractor.** Lists the contractors of the Building. Add and delete names by using the adjacent buttons. Each contractor's name is limited to 30 characters.

Activate **Save** on the "Building Templates" toolbar if you make changes at the **Additional Information** tab.

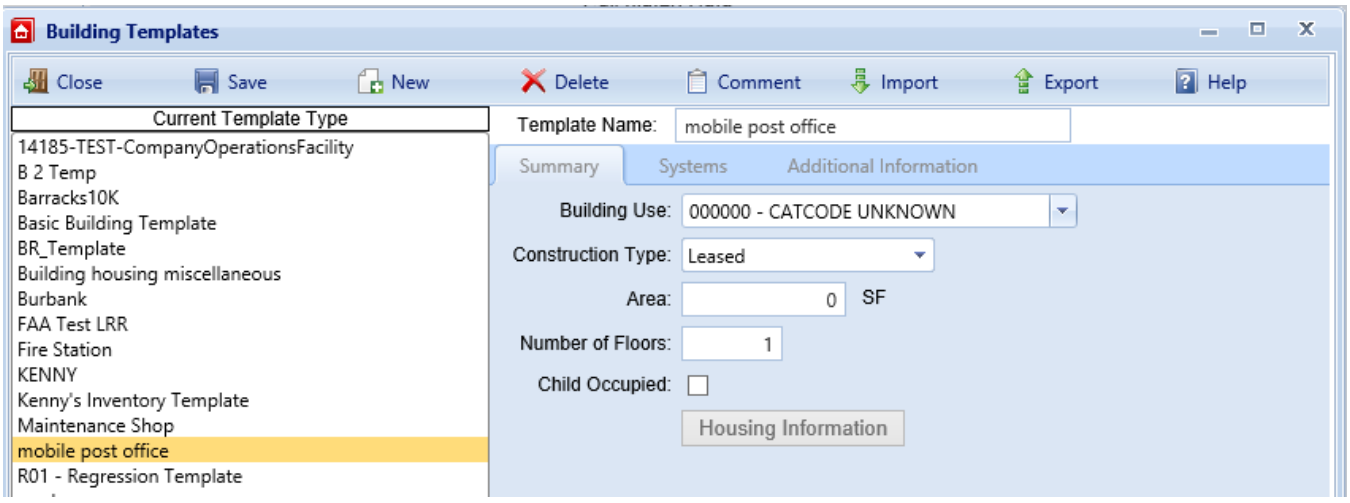
Delete a Building Template

To delete a Building template,

1. From any location in the inventory tree, activate the **Building Templates** icon on the main toolbar.

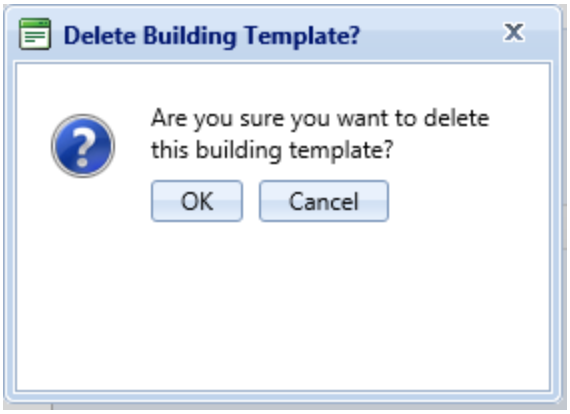


The "Building Templates" popup window will appear.



2. Select from the list of templates the one you wish to delete.

3. While that template is highlighted, activate the ✕ **Delete** button in the popup toolbar. *A confirmation popup will appear.*



4. Do one of the following:
   a. Activate the **OK** button in the confirmation popup to delete the template. The list of templates on the left side of the "Building Templates" window will refresh after the deletion.
   b. Alternatively, activate **Cancel** in the confirmation popup to cancel the operation and return to the "Building Templates" window.

.

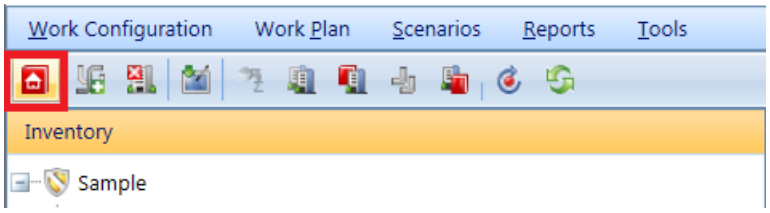
Manage the Template Library

This topic provides an overview of capabilities you can initiate at the "Building Templates" window in order to add to, manage, import to, and export from your library of Building Templates held in BUILDER.

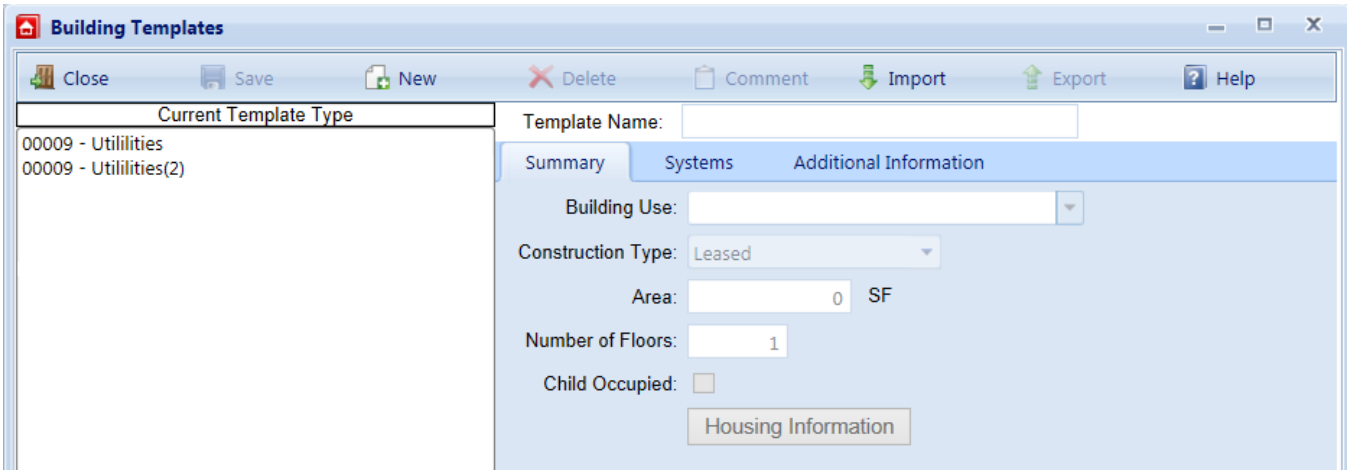
BUILDER™ stores all of the Building templates in your database in a template library. From the template library, you are able to manually add, edit, and delete templates in your database, as well as import and export templates.

Open the Templates Window

To manage the template library, activate the **Building Templates** icon on the main toolbar. This can be done from any location in the inventory tree.



The "Building Templates" popup window will appear.



On the left side, the Building Templates window lists the current templates in the library. On the right sight, it shows the data for the selected template. The data shown at the different tabs are described in the topics "Add a Building Template" on page 164 and "Edit Building Template Data" on page 172.

Toolbar Options

Options on the "Building Templates" toolbar are:

- **Close**. Closes the "Building Template" popup window.
- **Save**. Saves changes made to the Building templates.
- **New**. Initiates creating a new template "from scratch" where you can enter inventory detail. (See "Add a Building Template" on page 164.)
- **Delete**. Deletes the currently selected template.
- **Comment**. Allows you to add, edit, and view comments for the template.
- **Import**. Allows you to import templates from other sources.
- **Export**. Allows you to export templates to other sources.

Building Template Tasks

Operations that can be performed on Building templates are:

"Import a Building Template" on page 159
"Copy Building Inventory to a Template" on page 162
"Add a Building Template" on page 164
"Edit Building Template Data" on page 172
"Export a Building Template" on the next page

"Delete a Building Template" on page 179
"Add Building Inventory Using a Template" on page 152

Additional useful information can be found here:

"Working with Building Templates" on page 149

Export a Building Template

This topic explains how to export a template in order to be able to share it with others or to use it in a different instantiation of BUILDER.

About Exporting Building Templates

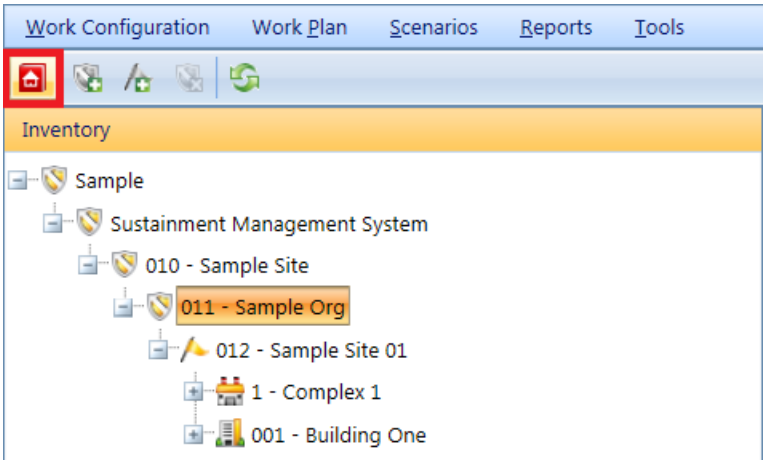
Building templates provide a convenient method for rapidly creating your Building inventory when you have multiple Buildings with the same design and composition. A template stores the basic data about a generic Building and can be used to create many Buildings at one time using an automated process that copies the structure of the template to each desired Building. For more information about templates, see "Working with Building Templates" on page 149.

BUILDER™ allows for different users to share Building templates by importing and exporting individual templates. This capability is especially useful for military installations, which may have many Buildings constructed from a few standard service-wide designs.

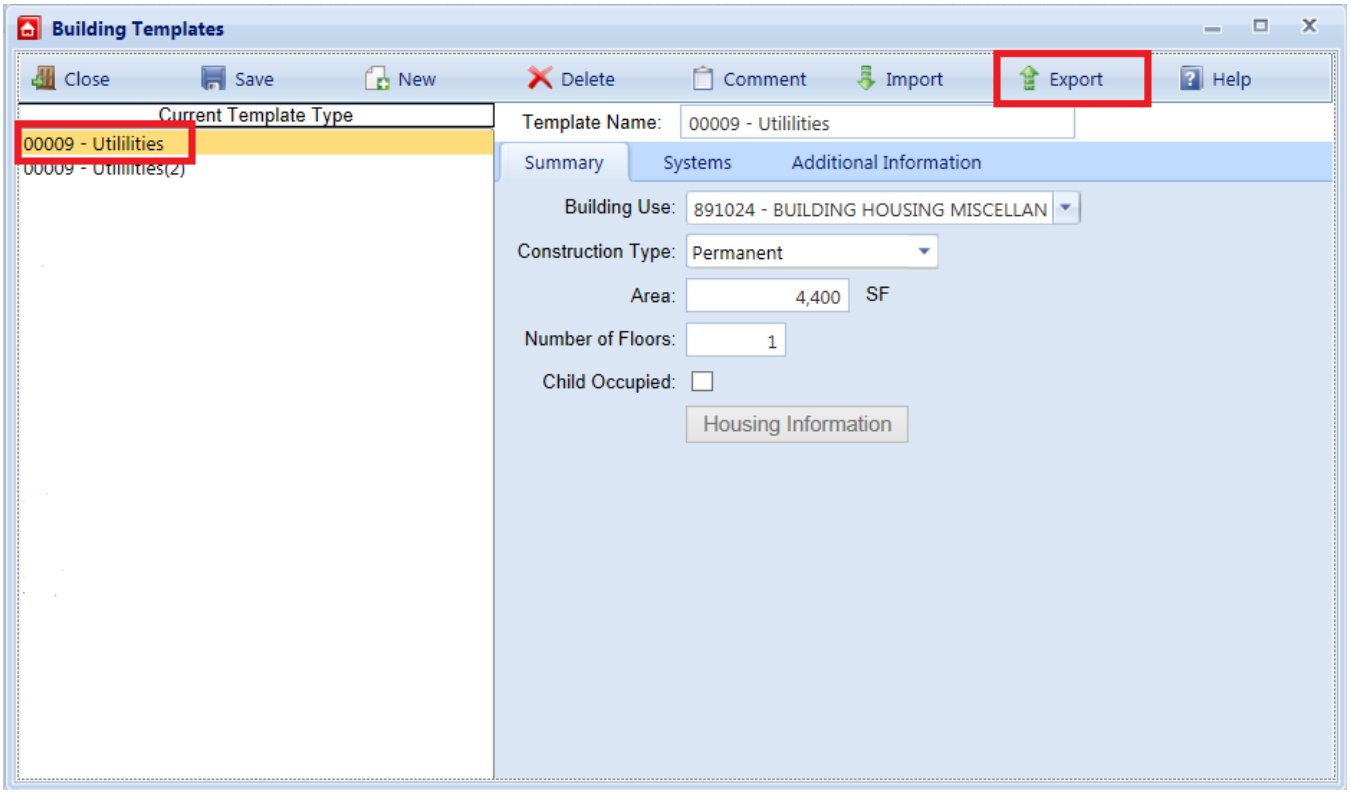
Export Procedure

To export a template,

1. From anywhere in the inventory tree, activate the **Building Templates** button on the main toolbar.



The "Building Templates" popup window will appear.



2. To export a template, highlight a template name in the listing on the left side of the Building Template window.
3. Select **Export** from the toolbar.
4. After the template has been successfully exported, you will be asked if you want to (a) save or (b) open the exported template.
   a. If you choose to save the template, you will be prompted for a path and file name for the exported template. The saved exported template can then be sent to other BUILDER users to be utilized in their template libraries.
   b. If you choose to open the exported template after the export is complete, the template will open as a XML document.

Reports

Generate a Report

BUILDER™ offers a number of standard reports. These reports can be viewed, printed, or exported to electronic files of several formats.

How To Generate and View a Report

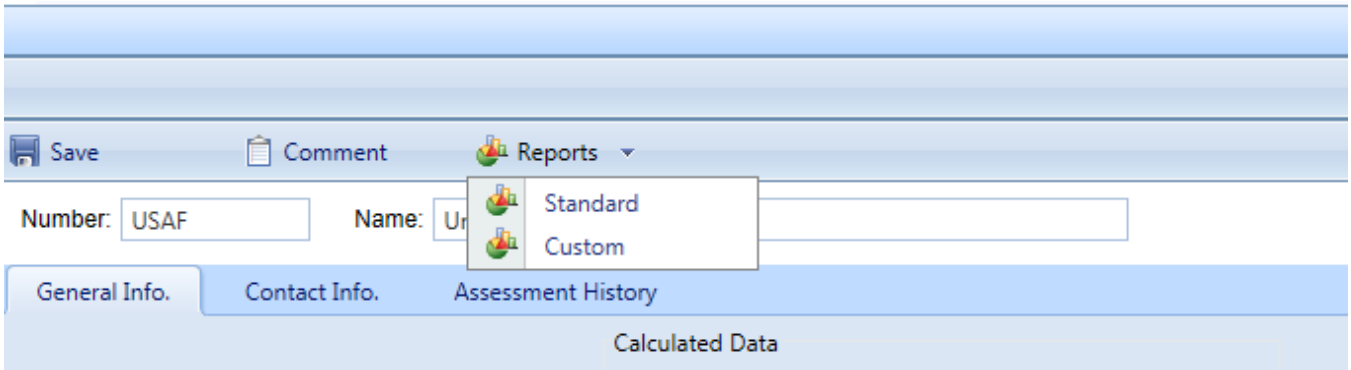
> **Note:** This topic explains how to access reports from the toolbar at the top of the Content Area, not from the main toolbar.

To view a report,

1. In the navigation tree in the left window pane, navigate to and select the node for which you want to generate a report.
2. Click the **Reports** button in the local toolbar.

   > **Note:** The **Reports** button is available if you are in the Inventory or Condition navigation tree, but not when you are in the Functionality navigation tree.
   >
   > **Note:** Selected Standard reports are also available from the **Reports** button on the main menu bar.

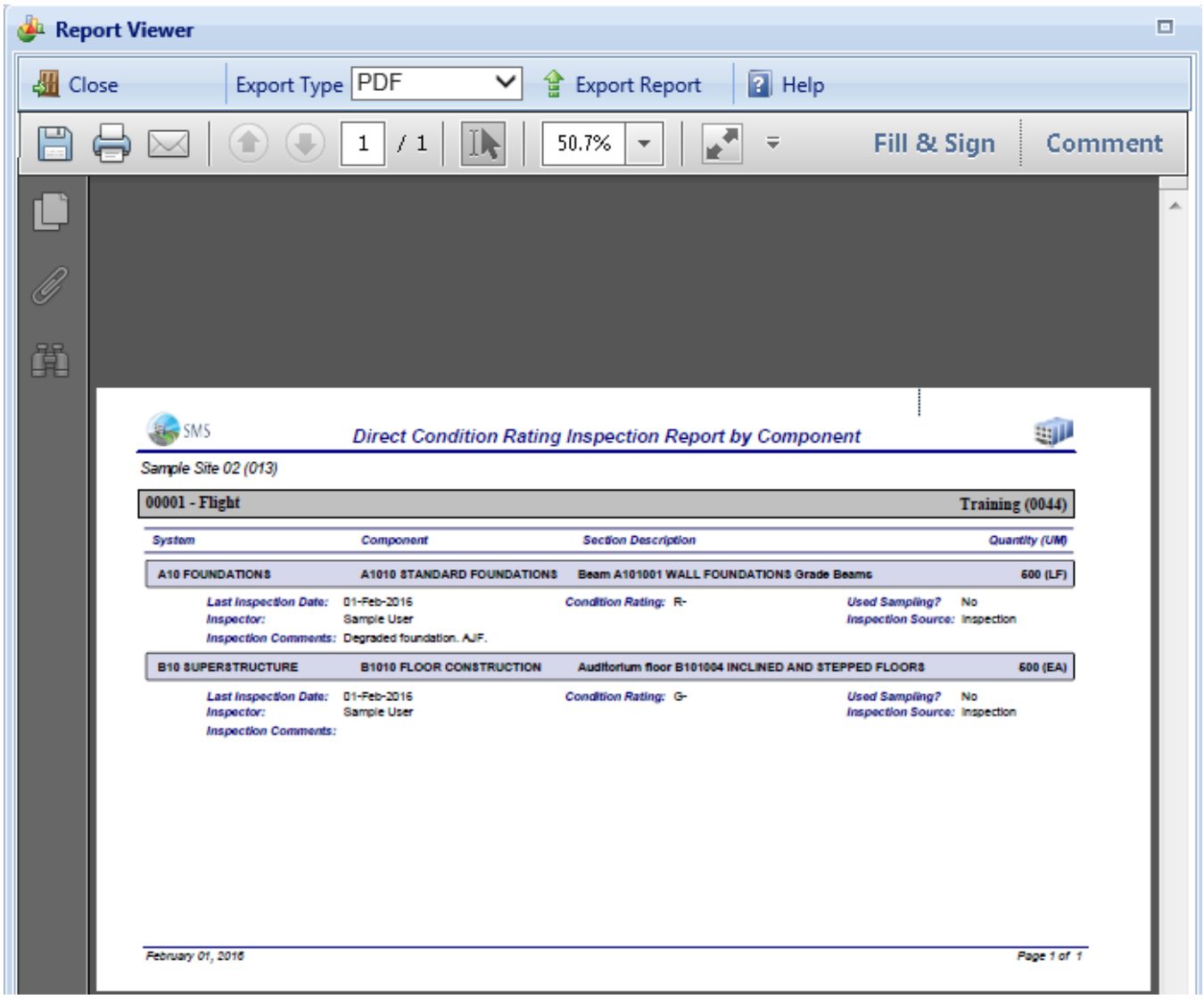
3. *For Inventory only:* Select either **Standard** or **Custom** (where available) reports:



The "Reports", "Standard Reports", or "Custom Reports" window will appear. This window contains a dropdown list of reports, which includes only reports applicable to that level. Additionally, the report will only show data for the current mode you are in. For example, if you activate the Reports button while in inspection mode, only inspection related reports will be displayed.

4. Activate the dropdown arrow in the bar, and select the desired report from the dropdown list.
5. After you have a report selected, click the **View Report** button in the popup window toolbar; or, if you have selected a Custom Report, click on the **Run Report** button in the popup window toolbar.

The selected report will launch in the Report Viewer window or in the Custom Reports window. The image below shows a sample report in the Report Viewer:



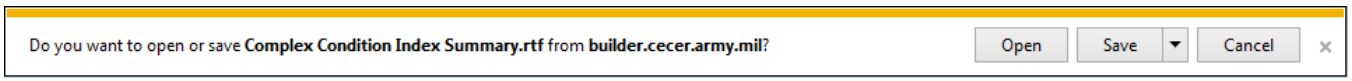
How To Export a Standard Report

To export a standard report, first follow the steps above in "How To Generate and View a Report" on the previous page. Then

1. In the Report Viewer toolbar, select the Export Type: **PDF**, **Excel**, or **Word (RTF)**.

   CAUTION: Not all reports have been adapted to Excel format.

2. In the Report Viewer toolbar, click **Export Report**.
3. At the bottom of the screen, you will be queried whether you want to save the report:

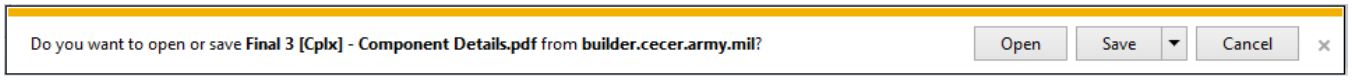


4. Click the down arrow to the right of the **Save** button.
5. Select **Save as**.
6. In the Save As popup window, browse to the desired location where you wish to save the report.
7. Name the report in the File name: bar; then activate **Save** (lower right).
8. After the download completes, the bar at the bottom of the screen will give you the option to open the report you just saved, to open the folder, or view downloads. If none of these are needed, click the "x" at the right sight of the query bar.
9. If you want to open the report to view it, select **Open**. When you close the viewing window, you will be back at the Report Viewer window.
10. Click **Close** to close the Report Viewer window.

How To Export a Custom Report

To export a custom report, first follow the steps above in "How To Generate and View a Report" on page 184. Then

1. With the desired report showing in the Custom Reports popup window, activate the **Save** icon.
2. Select the desired export format from the options in the dropdown list.
3. At the bottom of the screen, you will be queried whether you want to save the report:



4. Click the down arrow to the right of the**Save** button.
5. Select **Save as** (or **Save and open**).
6. In the "Save As" popup window, browse to the desired location where you wish to save the report.
7. Click the **Save** button.

APPENDIX A: About Rollup

Automated Rollup

BUILDER automatically "rolls up" inventory, condition, and functionality information nightly. (For installations with U.S. Army Corps of Engineers support service, this begins at about 6:00 p.m.). Starting at the Section level, aggregated Section-level information in each Component is recorded for the Component; aggregated Component-level information is recorded for each System; aggregated System-level information is recorded for each Building, and so forth up the entire inventory tree.

Manual Rollup

Users can perform a manual rollup at the Building, Complex, or Site level (subject to permissions). A user-initiated manual rollup is limited in scope to the Building, Complex, or Site where the rollup is run, including all of its sublevels of inventory. A manually initiated rollup of the entire navigation tree can only be performed by a BUILDER Administrator.

What does a Rollup Do?

The following (subcategorized) processes will occur during the rollup:

Inventory

Inventory-related processes accomplished by a rollup are as follows:

- The current remaining service life (RSL) is estimated for all Sections.
- RSL information is reflected upwards through the inventory tree.
- Plant Replacement Value (PRV) is updated at all levels. For example, if new Sections, Components, or Systems have been added to a Building, its PRV will increase.

Condition Assessment

Condition assessment-related processes accomplished by a rollup are as follows:

- **Components:** The current CI for each Component (BCCI) is estimated by calculating the average of its Component-Sections' condition indices, weighted by replacement cost.
- **Systems:** The current CI for each System (SCI) is estimated by calculating the average of its Components' condition indices, weighted by replacement cost.

- **Buildings:** The current condition index for each Building (BCI) is estimated by calculating the average of its Systems' condition indices, weighted by replacement cost.
- **Complexes, Sites, and Organizations:** The current condition index for all Complexes, Sites, and Organizations is estimated by calculating the average of their Buildings' condition indices, weighted by replacement cost.

FCI

In addition to calculating and rolling up BUILDER condition indexes, rollup also calculates the financially oriented Facility Condition Index (FCI):

- The FCI is estimated for all Buildings using the formula FCI = (1- $current repair needs/$PRV) x 100, obtaining the dollar amount of repair needs from BUILDER work items.
- The FCI is estimated for all Complexes, Sites, and Organizations, using the formula FCI = (1- $current repair needs/$PRV) x 100, obtaining the dollar amount of repair needs from BUILDER work items for the Complex, Site, or Organization.

Functionality and Performance

Processes accomplished by a rollup related to functionality and performance are:

- The latest functionality assessment records are retrieved. Based on the results of the assessments, the FI is determined for each functional area and applicable Building.
- The current FI is estimated for all Complexes, Sites, and Organizations by calculating the average of their Buildings' FIs, weighted by replacement cost.
- The current PI is estimated for each Building, using a weighted combination of the Building's CI and FI.
- The current PI is estimated for all Complexes, Sites, and Organizations by calculating the average of their Buildings' PIs, weighted by replacement cost.

After the rollup process completes, the "Manual Condition Rollup" popup window (or the "Progress" window, in case of a full-tree rollup performed by a BUILDER administrator) will close. You will be returned to the originating BUILDER screen Updated condition colors (red, amber, green) will be displayed for all elements in the inventory, condition, and functionality trees, and recalculated current condition indices will be shown in the relevant information screens.

Appendix B: Facility Condition Index

This topic defines and discusses the BUILDER term "Facility Condition Index". The definition of this term changed starting with BUILDER Version 3.3.10, from the definition used by the Federal Real Property council to a formula compatible with other BUILDER indexes by producing a value on a 0-100 scale where a higher number indicates better condition.

> **Note:** In ROOFER, "FCI" stands for Flashing Condition Index, not Facility Condition Index.

The Facility Condition Index (FCI) is a financially based index showing the relationship between the cost of deferred M&R work and the Plant Replacement Value (PRV). BUILDER uses the following formula for FCI, which produces a value between 0 and 100. A higher value indicates better condition:

FCI = [1 - ($*current repair needs* / $PRV)] x 100,

where $*current repair needs* represents the total cost of current repair needs and $PRV is the Plant Replacement Value. See the Definition section below for an explanation of what is and is not included in $*current repair needs*.

> **IMPORTANT:** Some organizations define FCI differently, as [$cost of *all* deferred M&R work] / $PRV, which should yield a result less than or equal to 1.0 if policy dictates that repair costs for an asset must not exceed the asset's replacement value.
>
> **Best Practice Recommendation:** Regenerating the work plan before calculating the dollar amount of current repair needs will give you the most accurate result.

Definition of $*current repair needs*

$*current repair needs* includes:

- Work that became a requirement in the current fiscal year (work items of the current fiscal year).
- Work that became a requirement in a past fiscal year, but has not yet been performed and is still a requirement.

$*current repair needs* does not include:

- Work that is currently funded for completion.
- Work scheduled for future years.

Glossary

Administrator
A user with Administrator Role can administer users, assign users to Roles, and change software configuration settings.

Area Cost Factor
A multiplier that adjusts national average labor/material/equipment costs to local costs. For example, in a remote area with high shipping costs and a tight labor market, the Area Cost Factor might be 1.3. The Area Cost Factor is generally a number between 0.8 and 1.2 for continental U.S. locations, but it can be even greater than 2.0 in high-cost geographic locations.

BCCI
Building Component Condition Index - a condition rating for the target Building Component. For each Component, the BCCI is computed by taking the average of its Sections' CIs, weighted by replacement cost

BCI
Building Condition Index - a condition rating for the overall Building. For each Building, the BCI is computed by taking the average of its Systems' CIs, weighted by replacement cost.

BFI
Building Functionality Index - computed from the results of a functionality assessment.

BPI
Building Performance Index - a measure of a Building's overall performance, derived from a weighted combination of the BCI and BFI, where the lower of the two values is given two-thirds of the weight and the higher of the two values is given one-third of the weight. If no functional assessment has been performed, the BFI is assigned a value of 100.

BRED
BUILDER Remote Entry Database (BuilderRED)

BUR
Built-up Roofing

CCI
Coating Condition Index

CI
Condition Index

CII
Component Importance Index

CM
Corrective Maintenance

CMC
Component material category

Complex CI
Complex Condition Index - a condition rating for the target Complex. The Complex CI is computed by taking the average of the BCIs of each Building in the Complex, weighted by replacement cost.

CSCCI
Component Section Coating Condition Index

CSCI
Component-Section Condition Index - a condition rating for the target Component-Section. For both condition assessment types, distress survey and direct rating, the CSCI is computed by first using the assessment data to calculate a deduct value, and then subtracting that deduct value from the maximum possible rating of 100. The deduct value computation differs for each condition assessment method.

Equipment Make
The series, collection or line that the equipment is included in, if applicable. For example, a Trane® gas furnace might be designated as S9V2, XC95, or XV95.

ERDC-CERL
U.S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory

ESC
Emergency Service Calls

FAFI
Functional Area Functionality Index

FCA
Facility Condition Assessment

FI
Functionality Index

HPSB
High Performance and Sustainable Building

ICI
Insulation Condition Index

Icon Color
Icon color designates the condition of an SMS element, or whether it has yet been inspected at all. If the icon is gray, no inspection has been performed. Red, amber, and green icons indicate a red-, amber-, or green-level average condition of all sublevels below the designated icon, assuming that a rollup has been performed.

Inspection Supervisor
A user with Inspection Supervisor Role has all the rights of an Inspector, and can also create roof inspection schedules

Inspector
Person who performs inspections to be input into BUILDER or ROOFER. As a permissions Role, Inspectors can input and edit inventory information in Inventory mode, and can input and edit inspection information from the Condition Assessment screen.

Inventorior
A user with Inventorior Role can add and edit records below the Building level.

KBI
Knowledge-Based Inspection

M&R
Maintenance and Rehabilitation

Master Planner
A user with Master Planner Role has all the rights of a Work Planners, and can also generate multi-year work plan scenarios, and edit any and all data saved by other users of the program. Master Planner is the highest level of user privileges.

MBH
1,000 BTU/hour

MCI
Membrane Condition Index

MDI
Mission Dependency Index - measures the relative importance of a Building

N/A
Not Applicable

PI
Performance Index. See also: BPI. The Performance Index is a weighted combination of the CI and the FI values, with the lower of the two being given two-thirds of the weight and the higher of the two values being given one-third of the weight.

PM
Preventative Maintenance

PMI
Preventative Maintenance Inspection

PRV
Plant Replacement Value. For an inventory item above the Building level, this number will be the aggregate of the PRV of all Buildings included in that item.

RCI
Roof Condition Index

RML
Remaining Maintenance Life

RPIE
Real property installed equipment

RSL
Remaining Service Life

SCCI
System Component Condition Index - a condition rating for the System Component<

SCI
System Condition Index - a condition rating for a Building System. For each System, the SCI is computed by taking the average of its Components' CIs, weighted by replacement cost.

Site CI
Site Condition Index - a condition rating for the target Site. The Site CI is computed by taking the average of the BCIs of each Building at the Site, weighted by replacement cost.

SMS
Sustainment Management System

SOW
Statement of Work

SP
Single Ply

SR
Shingle Roofing

SRM
Sustainment, Restoration, & Modernization

STIG
Security Technical Implementation Guide (DoD)

SUCI
Sample Unit Condition Index

UM
Unit of Measure. Examples: Each; English; Metric.

Work Planner
A user with Work Planner Role has all the rights of an Inspection Supervisors, and can also create and edit work plans, standards, policies, prioritization schemes, and RSL and cost books.

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