

BUILDER™ Work Planning and Scenarios Guide

Version 3.5.4

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Table of Contents

Welcome to BUILDER™	3
Using This Guide	4
Prerequisites	4
Companion Guides	4
Version 3.5.4 Scenarios Change	4
Work Planning Overview	5
Definitions	5
What's Involved in Work Planning?	6
Work Planning Tasks	6
Work Plans	8
About Work Plans	8
View a Work Plan	9
Add a Work Plan	14
Edit a Work Plan	17
Work Plan Data	25
Prioritize Work Items in a Work Plan	27
View Work Item Rankings	30
Export a Work Plan or Work Items to Excel	32
Delete a Work Plan	34
Work Items	36
About Work Items	36
View a Work Item	38
Add a Work Item	42
Edit a Work Item	47
Section-Level Work Item Data	50
Building-Level Work Item Data	53
View Work Item Rankings	60
Fund Work Items	61
Export Work Items	63

About Work Item Cost Analysis	66
Delete a Work Item	72
Work Projects	76
About Work Projects	76
View a Work Project	77
Add a Work Project	79
Edit a Work Project	84
Work Project Data	87
Organize Work Items into a Project	90
Export a Work Project	92
Delete a Work Project	95
Scenarios	97
About Scenarios	97
About Scenario Management	101
View a Scenario	102
Add a Scenario	104
Edit a Scenario	106
Scenario Data	109
Run a Scenario Simulation	115
Create a Work Plan from a Scenario	117
Scenario Visualization / Analysis	118
Delete a Scenario	128
What's New in BUILDER 3.5	130
Glossary	135
Index	143

Welcome to BUILDER™

BUILDER, part of the Sustainment Management System, provides facility managers with the tools needed 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.erdcdren.mil>.



Developed by U.S. Army ERDC-CERL
2/18/2020

Using This Guide

This guide explains how to generate work plans in the Sustainment Management System with BUILDER™. Work plans can be automatically generated, based on condition assessments and work configuration.

Prerequisites

This guide assumes you are already familiar with the following guides, which can be downloaded from the user support site:

- *BUILDER™ Getting Started Guide*
- *BUILDER™ Inventory Guide*
- *BUILDER™ Condition Assessment Guide*

The *BUILDER™ Work Configuration Guide* itself is not a prerequisite for understanding this guide. However, in the BUILDER program, work configuration needs to be performed before work items and work plans can be generated as described in this guide. The *BUILDER™ Work Configuration Guide* explains how to use standards, policies, policy sequences, and prioritization schemes to configure automatic generation of work plans in the Sustainment Management System with BUILDER™.

Companion Guides

The following guides have been or will be made available at the user support site to assist with additional tasks:

- *BUILDER™ Work Configuration Guide*
- *BUILDER™ Reference Data Guide*

Version 3.5.4 Scenarios Change

The **Inventory Events** tab has been restored to Scenarios ("New Management" option). This allows future changes in a Building's status to be simulated in Scenarios. It also allows entire new Buildings to be created in future years of a Scenario.

For more details on changes to BUILDER 3.5 versions, see ["What's New in BUILDER 3.5" on page 130](#).

Work Planning Overview

This work planning overview lays out the interrelationship between the work items, (optional) work projects, and work plans needed for successful work management.

After work configuration standards, policies, and policy sequences have been established in the work configuration phase, you can use BUILDER's automated processes to generate a work plan. A work plan is a collection of work items planned for a Building, Site, or Organization. After a work plan has been auto-generated, you also have the option to manually create work items.

Note: You can't manually create a work item until after BUILDER has generated a work plan.

Definitions

Work Item

A work item is a discrete work activity applied to a single managed object and intended to improve its life cycle performance. The "managed object" is most typically a Component-Section, but it can also be a group of work items called a [work project](#), which is described separately below.

There are multiple ways that work items can come into being:

- Work items can be created by BUILDER's automated work generator, using (1) thresholds defined in work configuration standards, (2) policies governing what standards to apply to which types of assets, and (3) policy sequences that determine the priority order in which the policies are applied. These are described in the *BUILDER Work Configuration Guide*.
- A work item can be manually generated.
- Work items can be copied into a work plan from a Scenario.

Work Project

A work project is a work item type that allows you to group other work items together and manage them as a single work effort that is prioritized and funded as a whole. The work items selected for the work project need not be in the same System or even in the same Building. An example of a work project would be a renovation effort that affects multiple Systems in a Building. A work project is the most customizable level of work item organization.

Work Plan

A work plan is a collection of work items and/or work projects planned within a designated scope. The scope of a work plan will be all of the work items pertaining to a particular Building, Complex, Site, or Organization.

What's Involved in Work Planning?

The automated processes use condition assessment data to plan maintenance and repair work at the Component-Section level, and they use functionality assessment data to plan modernization work at the Building or Functional Area level.

Work planning will consist of:

- Prioritizing the work items for funding using tools such as BUILDER's standards, policies, and policy sequences, which are found under the **Work Configuration** main menu item. This preparation process is what allows BUILDER to automatically generate appropriate work items.
- Creating work items. As mentioned in the [definition of a work item](#), this can be accomplished by (a) automation, (b) manual addition of work items, or (c) import from a Scenario.
- (Optional) Grouping some or all of the work items into work projects. This process is described in the topic ["Organize Work Items into a Project" on page 90](#). (Alternatively, for more detail, you can start at ["About Work Projects" on page 76](#)).
- Entering or editing anticipated funding levels by year, at **Work Configuration > Funding > Expected Funds** tab; see the topic "Add a Funding Stream" in the *BUILDER Work Configuration Guide*.

Regardless of the type of work planned, a work item record is generated for each work activity needed.

The work item stores basic information about what work is planned, including the type of work, description, estimated cost, funding year, and quantity. Groups of work items can be viewed in several useful ways, such as:

- a list of all past, present, and future work in the Building
- a list filtered by year, status, System, Component, and/or Component-Section

Work Planning Tasks

To learn about work planning tasks, start with the topics ["About Work Plans" on page 8](#), ["About Work Items" on page 36](#), and ["About Work Projects" on page 76](#).

Work Plans

About Work Plans

For a higher-level overview encompassing work plans, work projects, and work items, see ["Work Planning Overview" on page 5](#).

What is a Work Plan?

The work plan is what will define, guide, and track progress on sustainment, modernization, or demolition work that needs to be done. Creating the work plan is the goal of the inventory, assessment, data reference, and work configuration efforts that precede it.

In the BUILDER software, a work plan is an aggregate of [work items](#)

- with a given scope—a particular Organization, Site, Complex, or Building
- for a given time period, such as the current fiscal year or next fiscal year

Within the work plan, the work items may or may not be organized into discrete work projects.

How is a Work Plan Created?

Work plans are generated by BUILDER, based on the condition and/or functionality index of assets, using specifications defined by condition standards, condition policies, etc., which together comprise work configuration. For more information about work configuration, see the *BUILDER™ Configuration Guide*.

After initial generation, manual entry of work items into a work plan is also possible.

Related Links

Links to work plan tasks are listed below. For more about the work items contained in a work plan, start with the topic ["About Work Items" on page 36](#).

Work Plan Tasks

["View a Work Plan" on the facing page](#)

["Add a Work Plan" on page 14](#)

["Edit a Work Plan" on page 17](#)

["Work Plan Data" on page 25](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["Export a Work Plan or Work Items to Excel" on page 32](#)

["Delete a Work Plan" on page 34](#)

Instructional Link

["Work Planning Overview" on page 5](#)

View a Work Plan

When you select an inventory item in the navigation pane at the work plan page, work items relevant to that inventory location and below it in the tree will display in the main content area. This topic explains filtering, sorting, and other methods you can use to find work items and arrange them in a particular order.

Another way to view work plan data is to use BUILDER's Reports feature.

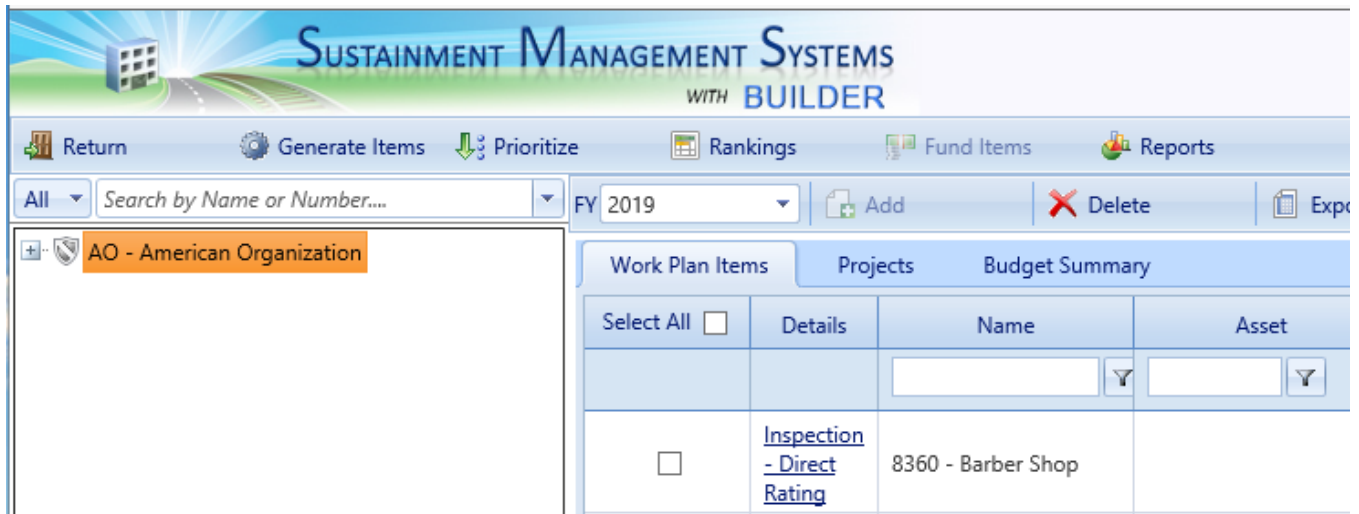
Note: If, when you reach the desired work plan location, the message "No records to display" appears, this may be for one of two reasons:

- a. A work plan might not have been generated yet. See ["Add a Work Plan" on page 14](#).
- b. It's possible that no work is needed at the selected inventory location following the standards, policies, etc. established.

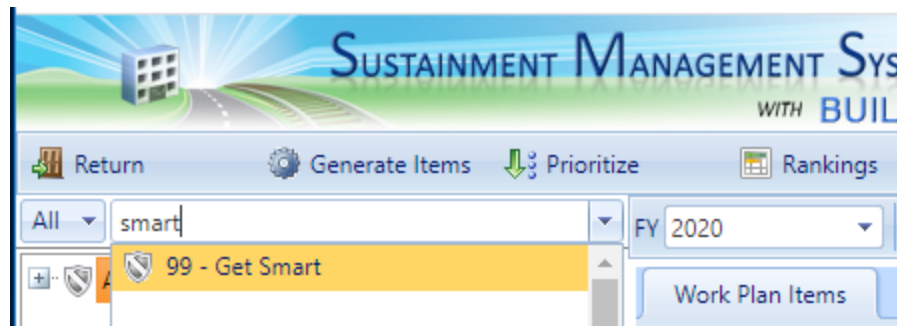
Open Work Plan

To open a work plan to view it,

1. Select **Work Plan** from the BUILDER main menu. *The work items window will appear, initially showing just the top level Organization.*



2. In the work items window select the inventory item whose work plan you want to view, add, or edit, using one of two methods—(a) expansion plus navigation, or (b) search:
 - a. *Expansion plus navigation* - In the navigation tree (left pane), expand the tree as needed to navigate to the desired location and select it.
 - b. *Search* - Alternatively, you can use the search function by typing the number, name, or part of the name of the desired inventory item into the search field just above the navigation tree (this field will be labeled "Search by Name or Number" until you click in it). Then click on the inventory item's name in the list of results, as shown below.

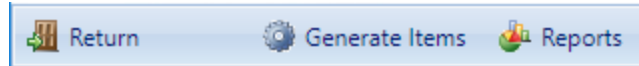


For an explanation of the columns of a work plan, see the topic ["Work Plan Data" on page 25](#). To change the presentation of the work plan on the screen, see ["Change/Refine Work Plan View" on the facing page](#) in this topic.

Work Plan Toolbar

Toolbar Before a Work Plan Is Generated

If a work plan has not yet been generated for the selected location, the toolbar will contain only the buttons shown below:



After a work plan has been generated, the toolbar will contain the buttons listed below.

Toolbar After a Work Plan Has Been Generated

- **Return.** Closes the work plan screen.
- **Generate Items.** Automatically generates work items. Note that if you desire to add work items manually, generating work items is required at least once first, to establish a work plan.
- **Prioritize.** [Prioritizes the work items](#) for a work plan.
- **Rankings.** Shows [rankings of the work items](#) for a work plan.
- **Fund Items.** [Allocates funding to the work items](#) in a work plan.
- **Reports.** Launches the Report Selection tool, which gives you access to a list of standard reports relevant to the work items.

Change/Refine Work Plan View

The work plan screen initially shows the work plan

- for the current fiscal year
- at the highest inventory level

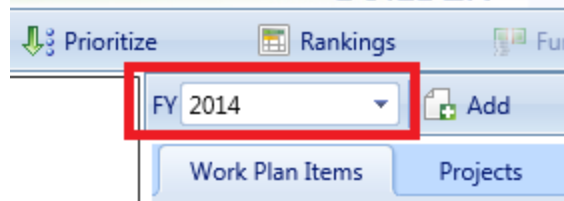
To view the work plan for a different inventory level, navigate the tree at the left side of the window to the desired level, or use the search bar, which is just above the tree. The work plan for the selected inventory level will be shown for the current fiscal year. To change the fiscal year, see the section "Select Fiscal Year," below.

In addition to constraining the work plan view by inventory item and by fiscal year, you can further constrain it by using filters, and determine the order of presentation of the work items using the sort function. More detail is presented below.

Note: The sort function does not appear on the toolbar or in the table. It is activated by clicking or double-clicking on the desired column.


Select Fiscal Year

To view the work plan for past or future fiscal years, select the desired fiscal year from the dropdown list at the top of the window:






Note: The selected fiscal year will remain active if you change your location in the navigation tree.

Filter

You can filter by any column or by multiple columns having a blank field for entry and a  filter icon below the column header.

To filter,

1. Enter a search term in the blank field.
2. Next, activate the filter icon and select from the dropdown a condition such as "Contains" or "StartsWith" or "EqualTo". *This should activate the filter. When the filter finishes, only entries that meet the filter criterion will remain.*
Example:

Description	Cost	Status
ROOF 		
Replace B3010 ROOF COVERINGS B301090 OTHER ROOFING Other	\$136,000	Awaiting Funds
Replace B3010 ROOF COVERINGS B301003 ROOF INSULATION & FILL General	\$50,000	Awaiting Funds
Replace B1020 ROOF CONSTRUCTION B102003 ROOF DECKS AND SLABS Deck - Other	\$447,000	Awaiting Funds

Note: If you change your location in the navigation tree, the selected filter will remain active and still apply.

To clear the filter, re-activate the filter button and select the first option, which is "NoFilter."

Sort

Primary Sort

Once the desired work plan year is shown and ideally any desired filtering has been done (because filtering an unsorted list should be faster than filtering a sorted list), choose an ascending or descending primary sort as follows:

1. For an ascending sort, click on the desired column. *The column header will stay highlighted to indicate that a sort has been performed.*
2. For a descending sort, double-click on the desired column to perform a primary sort in ascending or descending order. *The column header will stay highlighted to indicate that a sort has been performed.*

Secondary Sort

If a column header is already highlighted (indicating that a primary sort has been performed) and you then click or double-click on a second column, that will perform a secondary sort within each of the distinctive entries in the primary sort column. The screenshot below shows a primary sort on the **Name** column followed by a secondary sort on the **Cost** column.

Work Plan Items Projects Budget Summary					
Select All <input type="checkbox"/>	Details	Name ▲	Asset	Description	Cost ▲
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	Replace	0002 - Direct rating building		Replace C2010 STAIR CONSTRUCTION distress-tester C201001 INTERIOR AND EXTERIOR STAIRS Interior Stairs - Concrete (24 Riser Flight)	\$314,000
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D3050 TERMINAL & PACKAGE UNITS D305006 PACKAGE UNITS A/C Unit, Split Systems w/ Air Cooled Condenser	\$9,100
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D2010 PLUMBING FIXTURES D201006 DRINKING FOUNTAINS AND COOLERS Drinking Fountain	\$10,000
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace B1010 FLOOR CONSTRUCTION B101090 OTHER FLOOR CONSTRUCTION Other	\$10,500
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D2010 PLUMBING FIXTURES D201002 URINALS General	\$19,500
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D5030 COMMUNICATIONS & SECURITY D503090 OTHER COMMUNICATIONS & ALARM SYSTEMS Other	\$23,000
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D5020 LIGHTING & BRANCH WIRING D502090 OTHER LIGHTING AND BRANCH WIRING Other	\$25,500
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D2010 PLUMBING FIXTURES D201001 WATERCLOSETS General	\$27,500

View a Work Item

To view details of an individual work item, activate the link in the **Details** column.

Return

Generate Items

Prioritize

Rankings

Fund Items

Reports

All

Search by Name or Number...

FY 2019

Add

Delete

Export

AO - American Organization

Work Plan Items

Projects

Budget Summary

Select All	Details	Name	Asset
<input type="checkbox"/>	Inspection - Direct Rating	8360 - Barber Shop	

If the work item is a Section-level work item, you will see the ["Section-Level Work Item Data" on page 50](#) in the "Details: popup. If the work item is a Building-level work item, the "Details" popup will show ["Building-Level Work Item Data " on page 53](#).

Related Links

Task Links

- ["Add a Work Plan" below](#)
- ["Edit a Work Plan" on page 17](#)
- ["Work Plan Data" on page 25](#)
- ["Prioritize Work Items in a Work Plan" on page 57](#)
- ["Export a Work Plan or Work Items to Excel" on page 32](#)
- ["Delete a Work Plan" on page 34](#)

Instructional Links

- ["About Work Plans" on page 8](#)
- ["Work Planning Overview" on page 5](#)

Add a Work Plan

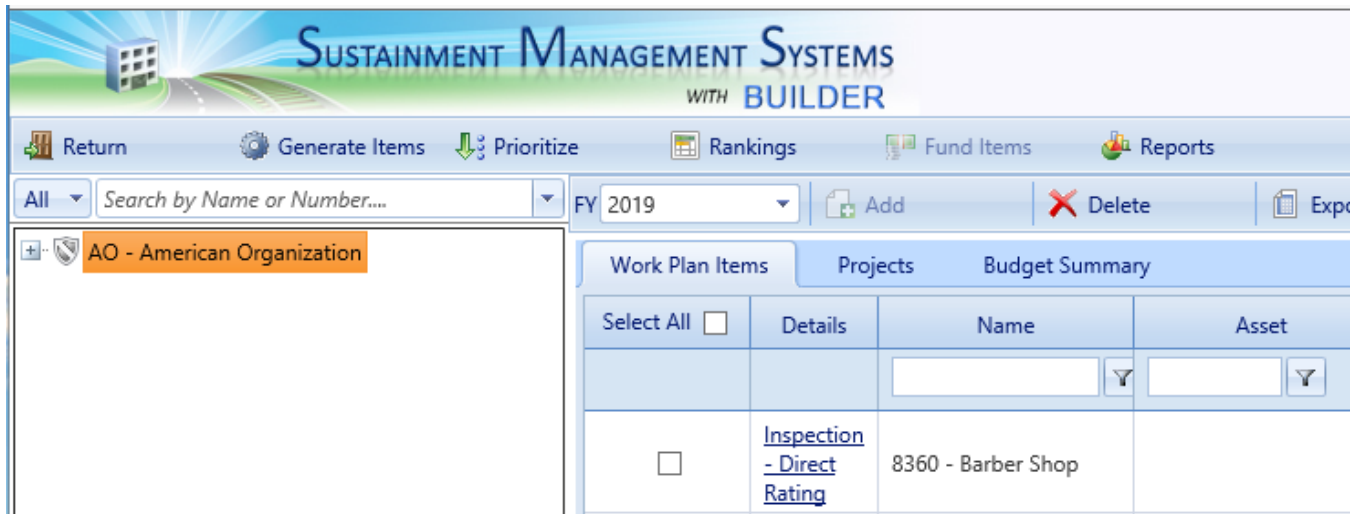
This topic shows how to create a work plan using BUILDER's automatic generation process.

To add a work plan, you must use BUILDER's automated process to generate a plan after establishing work configuration standards, policies, and policy sequences in the work configuration phase, which is discussed in the *BUILDER™ Work Configuration Guide*.

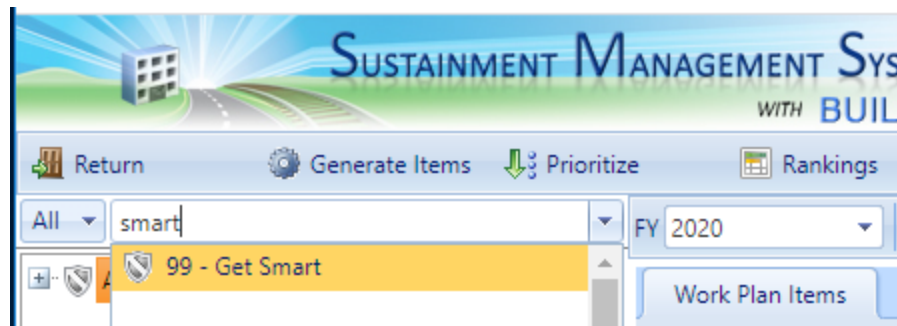
Navigate to Work Plan Location

To navigate to the desired work plan location,

1. Select **Work Plan** from the BUILDER main menu. *The work items window will appear, initially showing just the top level Organization.*



2. In the work items window select the inventory item whose work plan you want to view, add, or edit, using one of two methods—(a) expansion plus navigation, or (b) search:
 - a. *Expansion plus navigation* - In the navigation tree (left pane), expand the tree as needed to navigate to the desired location and select it.
 - b. *Search* - Alternatively, you can use the search function by typing the number, name, or part of the name of the desired inventory item into the search field just above the navigation tree (this field will be labeled "*Search by Name or Number*" until you click in it). Then click on the inventory item's name in the list of results, as shown below.



Note: The inventory item you select determines the *scope* of the work plan. The work plan generated will cover that inventory item (Organization, Site, Complex, or Building) and all inventory items below it in the tree.


Generate Plan

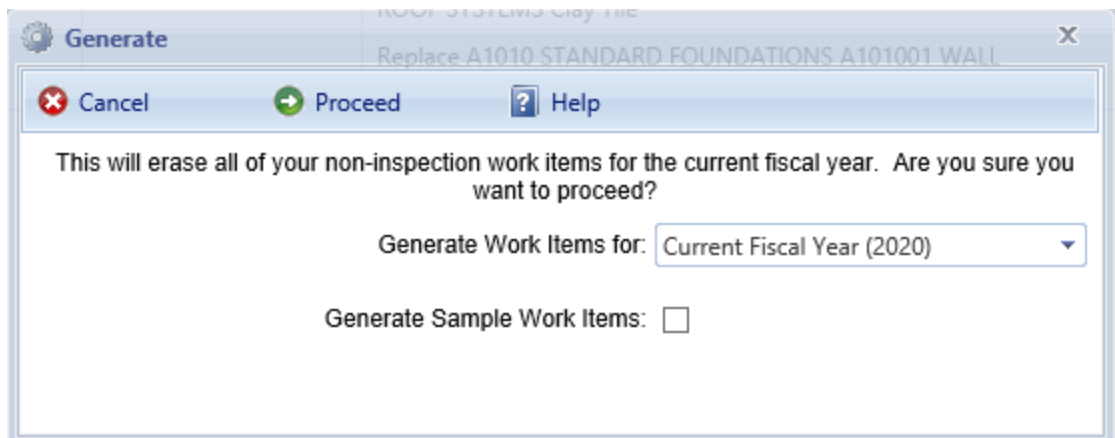
Note that when generating a work plan, BUILDER will use the policy sequence defined in the Site data and compare the value for each applicable Component-



Section, Functional Area, and/ or Building property with the threshold value set in the standards, to determine where and what type of work should be performed. Additionally, the estimated cost of each work item is computed using the Cost Book assigned to the Site in the Site's **General Information** tab. When the process is complete, the work plan will appear in the work plan screen, displaying all of the newly generated work items. All of the newly generated work items will have the status "Awaiting Funds." You may then refine the work item list as you wish.

CAUTION: BUILDER's work generation algorithms are still primitive in the sense that they are unable to detect work conflicts and precedences. For example, they may generate a need to repair a roof deck without a concurrent effort to repair the roof surface. Your own manual processing of the work item list must address such problems.

To generate the work plan,

1. At the topmost toolbar, activate  **Generate Items**. *The "Generate" popup will appear.*



2. In the field titled **Generate Work Items for**, select "Current Fiscal Year" or "Next Fiscal Year" in the dropdown.
3. (Optional) If you want the condition of inspection samples to be each considered separately in generating the work plan, rather than using the overall condition of the Component-Section, mark the **Generate Sample Work Items** checkbox.
4. When ready, activate  **Proceed** on the popup menu bar. (Alternatively, activate  **Cancel** to avoid erasing and re-generating work items.)

Result: Except for work items that have been manually edited, when you proceed with generating work items all BUILDER-generated work items at that inventory location and all inventory items below it in the tree will be regenerated.

Note: Work items that were manually generated or edited will be preserved in the work plan; they will not be eliminated by work plan regeneration.

Related Links

Task Links

["View a Work Plan" on page 9](#)

["Edit a Work Plan" below](#)

["Work Plan Data" on page 25](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["Export a Work Plan or Work Items to Excel" on page 32](#)

["Delete a Work Plan" on page 34](#)

Instructional Links

["About Work Plans" on page 8](#)

["Work Planning Overview" on page 5](#)

Edit a Work Plan

This topic introduces multiple ways by which you can change a work plan.

Edits to a work plan can be made in any of the following ways:

- Make one or more changes to work configuration specifications, and regenerate the work plan
 - See ["Regenerate Work Items under Different Conditions" on the next page](#)
- Add or alter one or more inventory items within the scope of the work plan, preferably also performing assessments on them, and regenerate the work plan
 - See ["Regenerate Work Items under Different Conditions" on the next page](#)
- Add or change one or more condition or functionality assessments pertaining to assets within the scope of the work plan, and regenerate the work

plan

- See ["Regenerate Work Items under Different Conditions" below](#)
- Change the target fiscal year and regenerate the work plan
 - See ["Change Fiscal Year" on the facing page](#)
- Manually add one or more work items
 - See ["Manually Add a Work item" on page 20](#)
- Manually delete one or more work items
 - See ["Delete a Work Item" on page 25](#)
- If the work plan was created by a Scenario, change the Scenario inputs, re-run the Scenario, and re-import the results to the work plan
 - See the topic ["Create a Work Plan from a Scenario" on page 117](#); also referred to below at ["Change a Scenario" on page 25](#)

Each of these editing options is described in this topic; however, for some of them full detail may require consulting other, linked topics.

To change properties (other than fiscal year) of work items, see the documentation section on work items, starting with ["About Work Items" on page 36](#).

Regenerate Work Items under Different Conditions

Because BUILDER generates work plans automatically based on work configuration and the results of assessments, you can change a work plan either by altering the underlying configuration specifications, or by making entries into BUILDER that change a condition or performance index enough to cross a threshold set in work configuration.

Options are:

- Make one or more changes to work configuration specifications, and regenerate the work plan. See the *BUILDER™ Work Configuration Guide* if you want more information about work configuration.
- Alter one or more inventory items that are within the scope of the work plan, or add new ones, preferably also performing assessments on them, and regenerate the work plan
- Add or change one or more condition or functionality assessments pertaining to assets within the scope of the work plan, and regenerate the work plan

After changing the inputs (work configuration settings, entries in the inventory tree, and/or condition and/or functionality inspections), navigate to the desired location in the work item tree (if needed, see instructions at ["Add a Work Plan" on page 14](#)), and regenerate the work plan following the instructions at ["Regenerate the Work Plan" on the facing page](#).

Note: Work items that were manually generated or edited will be preserved in the work plan; they will not be eliminated by work plan regeneration when you activate **Generate Items** on the Work Items screen toolbar.

Change Fiscal Year

When *viewing* a work plan, you can set the fiscal year to a present, past or future year. This is done at the main work plan screen.

When *generating* a work plan, however, you have the choice only of the current fiscal year or next fiscal year. This is done in the "Generate" popup window.


To change the fiscal year, starting at the work item screen,

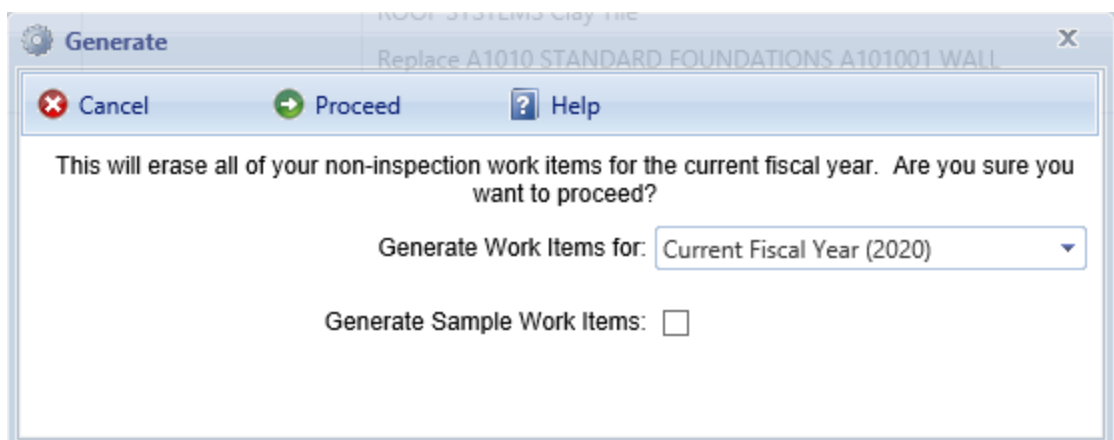
1. While at the desired location in the tree, activate **Generate Items** on the toolbar.
2. In the **Generate Work Items for** field, select current fiscal year or next fiscal year from the dropdown list.
3. Activate **Proceed** on the popup toolbar.

Regenerate the Work Plan

After changing either the FY (fiscal year) setting or the work configuration settings, you will need to regenerate the work plan.

To generate the work plan,

1. At the topmost toolbar, activate  **Generate Items**. *The "Generate" popup will appear.*



2. In the field titled **Generate Work Items for**, select "Current Fiscal Year" or "Next Fiscal Year" in the dropdown.

3. (Optional) If you want the condition of inspection samples to be each considered separately in generating the work plan, rather than using the overall condition of the Component-Section, mark the **Generate Sample Work Items** checkbox.
4. When ready, activate ➡ **Proceed** on the popup menu bar. (Alternatively, activate ✖ **Cancel** to avoid erasing and re-generating work items.)

Result: Except for work items that have been manually edited, when you proceed with generating work items all BUILDER-generated work items at that inventory location and all inventory items below it in the tree will be regenerated.

Note: Work items that were manually generated or edited will be preserved in the work plan; they will not be eliminated by work plan re-generation.

Manually Add a Work item

Note: Work items that were manually generated or edited will be preserved in the work plan; they will not be eliminated by work plan re-generation when you activate the **Generate Items** button.

Section-Level Work Item

To manually add a Section-level work item to an existing work plan,

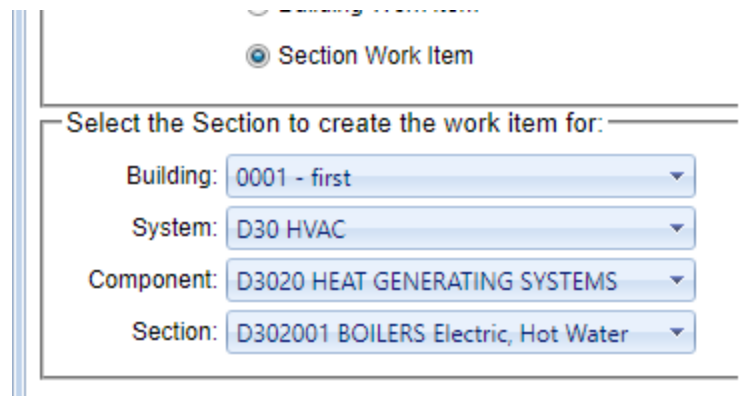
1. Activate **Work Plan** in the main menu.
2. Navigate in the tree to the desired work plan.

IMPORTANT: This must be at Site level or below in order to add a Section-level work item.

3. On the second-level toolbar, activate **Add**. *The "New Work Item" popup will appear.*
4. In the popup, select **Section Work Item**.

Troubleshooting Tip: If you are unable to select **Section Work Item**, check to see if you are at the Organization level in the navigation tree. Only a **Project** may be added at the Organization level.

5. Use the dropdowns to specify the relevant Section.



The screenshot shows a software window titled "Section Work Item" with a radio button selected. Below the title bar, there is a label "Select the Section to create the work item for:". Under this label, there are four dropdown menus arranged vertically. The first dropdown is labeled "Building:" and shows "0001 - first". The second dropdown is labeled "System:" and shows "D30 HVAC". The third dropdown is labeled "Component:" and shows "D3020 HEAT GENERATING SYSTEMS". The fourth dropdown is labeled "Section:" and shows "D302001 BOILERS Electric, Hot Water".

6. Activate ➡ **Proceed** in the popup toolbar. *The "Component-Section Work Item" popup will appear.*

Component-Section Work Item

Close Save Calculate Help

Section Description: D3020 HEAT GENERATING SYSTEMS - D302001 BOILERS Electric, Hot W Quantity: 1 EA

Details Cost Analysis

*Projected CI: 95 *Projected RSL: 20

Current Type: D302001 BOILERS Electric, Hot Water

Section Name:

Description: Repair D3020 HEAT GENERATING SYSTEMS D302001 BOILERS Electric, Hot Water

Work Request ID: Status: Awaiting Funds

Funding FY: 2020 Must Complete as planned

Work FY: 2020 Funding Source:

Estimated Cost: \$710.00

Score: 0 Override automatic cost estimate

Work Code: Sustainment Modernization Year:

Work Activity: Repair Actual Cost: \$710.00

Quantity: 1 EA Cost Book: ABC3

ROI Information

Return: \$12,000 ROI: 1690%

*Projected values are estimated based upon the Work FY

7. Fill in fields as needed at the **Details** tab. To enter your own amount in the **Estimated Cost** field, you will first need to mark the **Override automatic cost estimate** checkbox. To revert to an automated estimate, activate the **Estimate** button.
8. **Save** either as you go, or when finished.
9. Activate **Close**.

A manually added work item will appear in the work plan in italics:

FY 2020		Add		Delete		Export	
Work Plan Items		Projects		Budget Summary			
Select All <input type="checkbox"/>	Details	Name	Asset	Description			
		<input type="text"/>	<input type="text"/>	<input type="text"/>			
<input type="checkbox"/>	Repair	0001 - first		Repair C1020 INTERIOR DOORS Door with costmetic issues C102001 STANDARD INTERIOR DOORS Wood Door/Wood Frame - paint damaged during office move			
<input type="checkbox"/>	Replace	0001 - first		Replace B3010 ROOF COVERINGS old Illini Union B301001 STEEP SLOPE ROOF SYSTEMS Clay Tile			
<input type="checkbox"/>	Replace	0001 - first		Replace A1010 STANDARD FOUNDATIONS Bad foundation A101001 WALL FOUNDATIONS Foundation Wall			

Building-Level Work Item

To manually add a Building-level work item to an existing work plan,

1. Activate **Work Plan** in the main menu.
2. Navigate in the tree to the desired work plan.

IMPORTANT: This must be at Site level or below in order to add a Building-level work item.

3. On the second-level toolbar, activate **Add**. The "New Work Item" popup will appear.
4. In the popup, select **Building Work Item**.

Troubleshooting Tip: If you are unable to select **Building Work Item**, check to see if you are at the Organization level in the navigation tree. Only a **Project** may be added at the Organization level.

5. Select the relevant Building in the dropdown.

Select the type of Work Item to create:

☐ Project
☒ Building Work Item
☐ Section Work Item

Select the Building to create the work item for:

Building:

6. Activate **Proceed** in the popup toolbar. The "Building Work Item" popup will appear.

7. In the first column, select the **Work Code** and **Work Activity** from the drop-downs.
8. In the second column, select/fill in fields as needed. To enter your own amount in the **Estimated Cost** field, you will first need to mark the **Override automatic cost estimate** checkbox.
9. **Save** either as you go, or when finished.
10. Activate **Close**.

A manually added work item will appear in the work plan in italics:

FY 2020		Add	Delete	Export	
Work Plan Items		Projects Budget Summary			
Select All <input type="checkbox"/>	Details	Name	Asset	Description	Cost
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	<u>Demolish</u>	0003 - third		Demolish 0003 - third	\$8,000

Project

You can edit a work plan by gathering collections of work items into one or more work projects. The ability to do this simplifies management of work plans by reducing the number of separate items to be managed. See the topic ["Organize Work Items into a Project" on page 90](#), or begin with the topic ["About Work Projects" on page 76](#).

Delete a Work Item

You can edit a work plan by deleting one or more work items as described in the topic ["Delete a Work Item" on page 72](#). If, however, these items were generated instead of manually added, they will re-appear if the work plan is re-generated under the same conditions. So, after regeneration, you may need to re-check for these work items and delete them again.

Change a Scenario

If the work plan was created by importing from Scenario results, you can change a work plan by changing the Scenario inputs, re-running the Scenario, and re-importing the results to the work plan. See the Scenarios topics ["Edit a Scenario" on page 106](#) and ["Run a Scenario Simulation" on page 115](#) and ["Create a Work Plan from a Scenario" on page 117](#).

Related Links

Task Links

- ["View a Work Plan" on page 9](#)
- ["Add a Work Plan" on page 14](#)
- ["Work Plan Data" below](#)
- ["Prioritize Work Items in a Work Plan" on page 57](#)
- ["Export a Work Plan or Work Items to Excel" on page 32](#)
- ["Delete a Work Plan" on page 34](#)

Instructional Links

- ["Edit a Work Plan" on page 17](#)
- ["Work Planning Overview" on page 5](#)

Work Plan Data

This topic explains the contents of a work plan table that is displayed when you activate **Work Plans** from the main menu.

The columns in the table at the **Work Plan Items** tab are as follows:

- **Select All** - Marking or unmarking the checkbox next to the **Select All** column title will mark or unmark all the checkboxes in the column. Alternatively, you can manually mark desired checkboxes in the column to select

a customized collection of individual work items to be dealt with as a group.

- **Details** - Activating a link-formatted entry in the **Details** column will trigger a popup showing details for that work item.
- **Name** - Shows the Building number and name where the work will take place.
- **Asset** - The inventory asset that the work item applies to.
- **Description** - Description of the work that needs to be done.
- **Cost** - Estimated cost of the work to be done.
- **Status** - Status choices are listed at the **Status** field in work item Details (activate a link in the second column of the table to view work item Details).
- **Score** - If you have prioritized the work items, then this work item's score will be displayed here. The default value is 0, which indicates that the work items have not been prioritized.
- **Date Completed** - Expected work completion date.
- **Must Do (Checkbox)** - If this box is checked, the work item has been marked "Must Complete as planned" in the work item Details and will be funded before all other competing work items that are not marked as Must Do.
- **Project Name** - If the work item has been grouped into a work project, the name of that project will be listed in this column.

Related Links

Task Links

["View a Work Plan" on page 9](#)

["Add a Work Plan" on page 14](#)

["Edit a Work Plan" on page 17](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["Export Work Items" on page 63](#)

["Delete a Work Plan" on page 34](#)

Instructional Links

["About Work Plans" on page 8](#)

["Work Planning Overview" on page 5](#)

Prioritize Work Items in a Work Plan

This topic shows how to prioritize Section-level work items, and suggests when to prioritize. It also explains how prioritizing can be used to calibrate a prioritization scheme.

After you prioritize, you can ["View Work Item Rankings" on page 60](#).

Note: Prioritizing work items in your work plan can only be done if a prioritization scheme that applies to the area of the tree you are working in has been established as part of work configuration.

If a prioritization scheme has been created for the area of the tree you are working in, you can prioritize the work items in your work plan using the **Prioritize** button on the toolbar of the work plan screen. This will generate a *priority score* for each work item or work project in the plan, with the exception of Building-level work items.

Building-Level Work Items

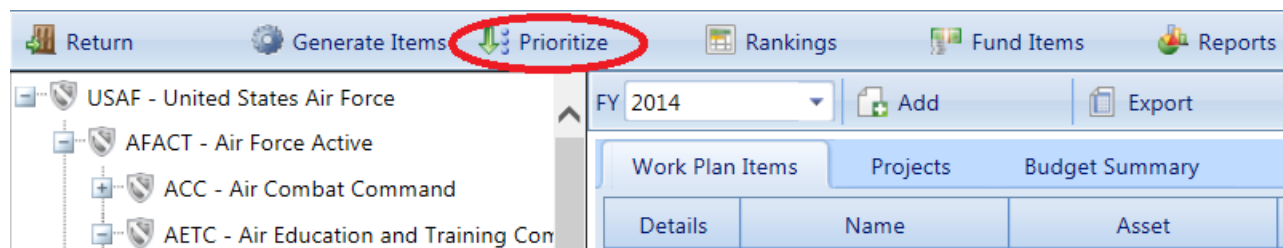
Building-level work items, such as a Building-level Modernization, do not participate in prioritization; their scores will remain at zero. However, you can cause a Building-level work item to be completed in Scenarios by marking it "Must do as planned" and providing a fund source with a criteria the work item can satisfy.

Note: Scenarios capability is provided with the BUILDER module only.

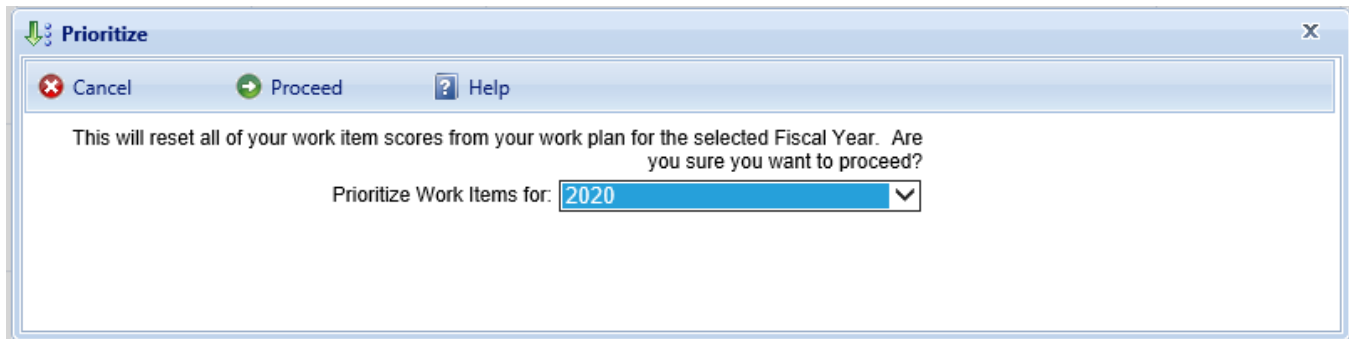
Section-Level work Items

To prioritize Section-level work items,

1. With the **Work Plan Items** tab selected, activate **Prioritize** on the toolbar.



A popup warning box will appear, stating that all current work item scores from your work plan for the selected fiscal year will be reset if you continue.



2. **IMPORTANT:** Select the desired fiscal year in the "Prioritize Work Items for" field (see screenshot above).
3. Activate **Proceed** on the popup toolbar if you still wish to delete the current scores for the for Section-level work items and recompute new prioritization scores. The prioritization scores will be computed using the prioritization scheme selected in the Reference Settings area at the Site or Organization's **General Information** tab. (Alternatively, activate the **Cancel** button if you do not wish to perform these actions; you will be returned to the work plan.)

Result:

After a priority score has been computed for each work item, all work items will be shown in the work plan ranked from highest score to lowest. Project priority scores are computed by averaging the priority scores of the work items in the project, weighted by cost.

Projects

Project priority scores are computed by averaging the priority scores of the work items in the project, weighted by cost.

When to Prioritize

You can prioritize the work plan as often as you wish. Listed below are situations where prioritizing is recommended.

When Adding New Work Items

If you add new work items, you should re-prioritize to include the new items.

To Calibrate a Prioritization Scheme

You may also want to evaluate a prioritized work plan in order to calibrate the weights and points you have assigned in a particular prioritization scheme. To calibrate,

1. Prioritize the work plan.
2. Consider the order in which work items have been ranked, and their scores.
3. When you see ordering discrepancies or score differences from your expert judgment, this might allow you to identify measures that should carry more relative weight, or measure values that warrant higher points such that the order of the work items will come out correct.
4. Adjust measures and re-prioritize so that the order of the work items is acceptable.

The goal of a prioritization scheme, which is established as part of Work Configuration, is to rank work items by algorithmic calculation into the same order that expert facility managers at your agency would rank them by following sound engineering principles.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" on page 38](#)

["Add a Work Item" on page 42](#)

["Edit a Work Item " on page 47](#)

["Section-Level Work Item Data" on page 50](#)

["Building-Level Work Item Data " on page 53](#)

["Fund Work Items" on page 61](#)

["View Work Item Rankings" on page 60](#)

["Export Work Items" on page 63](#)

["Delete a Work Item" on page 72](#)

Instructional Links

["About Work Items" on page 36](#)

["About Work Item Cost Analysis" on page 66](#)

["Work Planning Overview" on page 5](#)

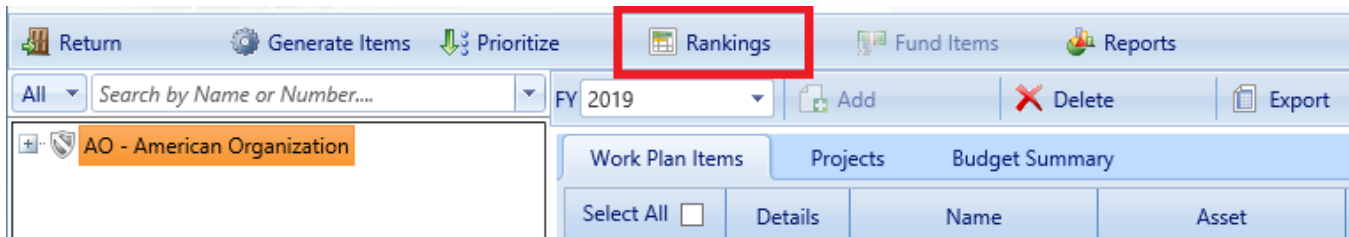
View Work Item Rankings

If you have created a [prioritized work plan](#), you can view the rankings of the work items in your work plan, broken down into the constituent scores for each measure used in the prioritization scheme. This topic shows the steps for viewing the rankings and briefly explains the results.

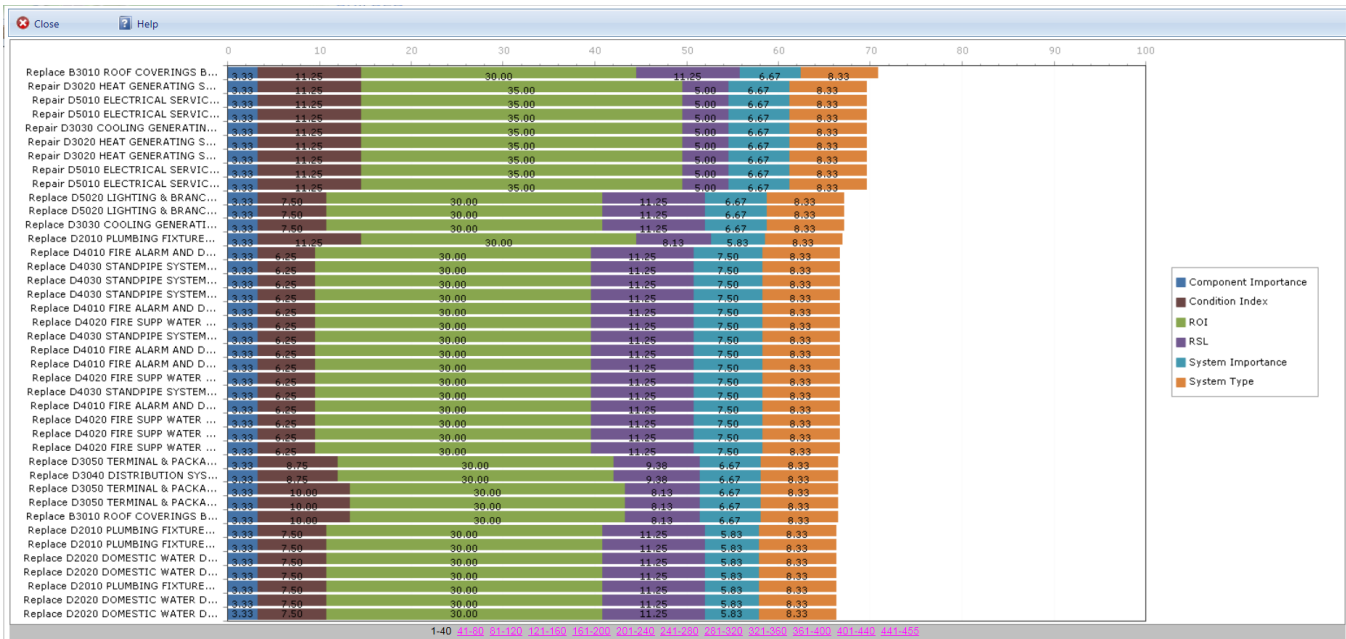
Note: This can only be done if a prioritization scheme that applies to the area of the tree you are working in has been established as part of work configuration.

To rank work items,

1. At the work plan screen, navigate to or search-select the desired Organization or Site. This sets the scope for the ranking.
2. Activate **Rankings** on the toolbar.



The Rankings window will appear.



Result:

The rankings of each Section-level work item will be shown from highest priority score to lowest. The score for each work item will be broken down into the constituent scores for each measure used in the prioritization scheme established in Work Configuration. A legend will be displayed, correlating the colors to their respective measures.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

- ["View a Work Item" on page 38](#)
- ["Add a Work Item" on page 42](#)
- ["Edit a Work Item " on page 47](#)
- ["Section-Level Work Item Data" on page 50](#)
- ["Building-Level Work Item Data " on page 53](#)
- ["Fund Work Items" on page 61](#)
- ["Prioritize Work Items in a Work Plan" on page 57](#)
- ["Export Work Items" on page 63](#)
- ["Delete a Work Item" on page 72](#)

Instructional Links

["About Work Items" on page 36](#)

["About Work Item Cost Analysis" on page 66](#)

["Work Planning Overview" on page 5](#)

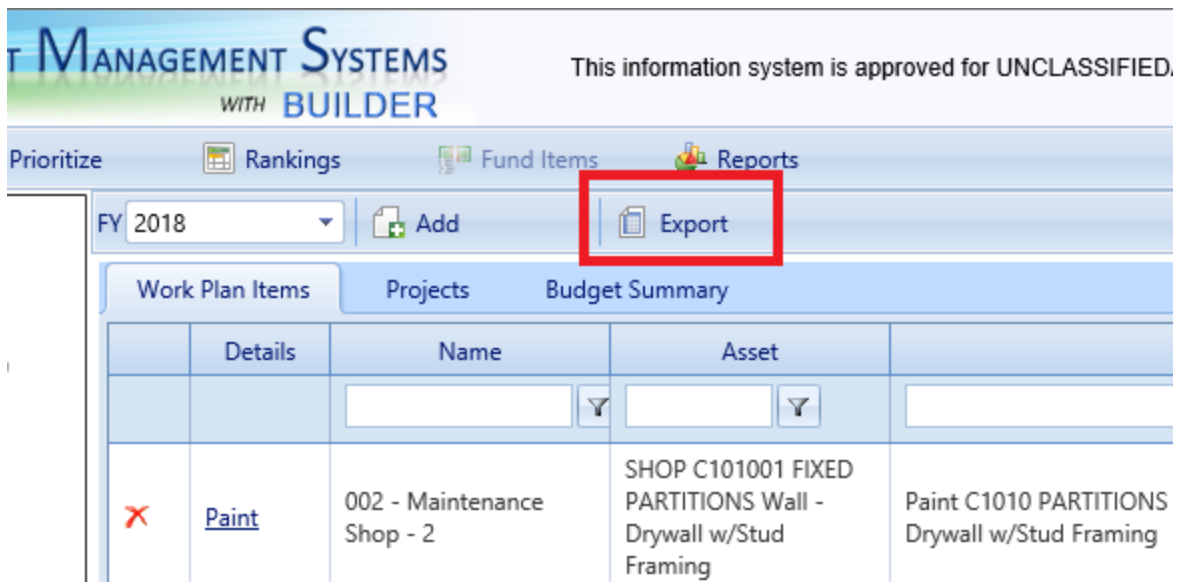
Export a Work Plan or Work Items to Excel

This topic explains multiple ways to export a work plan or work items. Work items can be exported to a Microsoft Excel spreadsheet, either from the work plan or from the Scenario visualization / Scenario analysis screen.

Export Work Items from the Work Plan

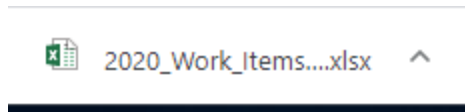
To export a work plan to an Excel spreadsheet from the **Work Plan Items** tab on the work plan screen,

1. On the BUILDER main menu, activate **Work Plan**.
2. At the work plan screen, select the desired location in the navigation tree at the left. This will determine the scope of the work plan, which will contain all work items for that location and below it in the tree.
3. On the secondary toolbar, activate **Export**.



4. When the Excel work plan shows as downloaded in the lower left corner of the window (see illustration immediately below), double-click on it to open. Alternatively, you can activate the up arrow to be able to select between

opening the file and showing it in its Downloads folder location.



5. If you want to save the opened spreadsheet, you need to activate the **File** tab in the spreadsheet, then specify the location, and re-name as desired (the spreadsheet will have been assigned a default filename).

Export Work Project Work Items

You can choose to export just those work items contained in a particular work project. To do so,

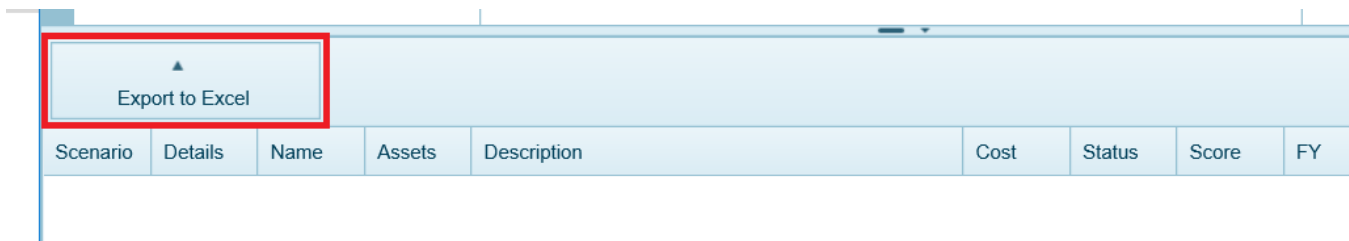
1. At the work plan screen, open the **Projects** tab. *All projects pertaining to the current tree location on down will be listed in the content area.*

Tip: If you are at the head of the navigation tree and too many projects are listed, you can choose to navigate farther down in the tree towards or to the work plan containing the project.

2. Open the "Details" popup for the desired project by activating its Details link in the first column of the desired work project.
3. In the popup, open the **Work Items** tab.
4. If the **Only Show Selected Project Work Items** checkbox is not marked, mark it to restrict the view to just those work items that are in the project.
5. Activate the **Export** button on the popup toolbar.
6. When the Excel tab with the project name on it appears at the lower left of the screen, activate it to open the Excel file containing the project work items.
7. Save the exported file if desired (you can also rename it).

Export Work Items from Scenario Analysis

At **Scenarios > Analysis** (aka Scenario visualization), an **Export** button has been added above the grid of work items at the bottom of the Scenario analysis screen. This button will export to Microsoft Excel any work items listed in the grid:



Note: The tiny arrow at the bottom of the Scenario analysis screen is what opens or closes the drawer containing the grid of work items (if there are work items for the selected Component-Section).



Related Links

Task Links

["View a Work Plan" on page 9](#)

["Add a Work Plan" on page 14](#)

["Edit a Work Plan" on page 17](#)

["Work Plan Data" on page 25](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["Delete a Work Plan" below](#)

Instructional Links

["About Work Plans" on page 8](#)

["Work Planning Overview" on page 5](#)

Delete a Work Plan

A work plan is created automatically from work configuration specifications and can not be deleted.

Individual work items *can* be deleted. However, you need to keep the following distinctions in mind:

- **Automatically generated work items:** Depending on (1) whether and how the work configuration specifications may have been altered and (2) how assessment values or age may have changed the condition index or performance index of inventory items within the scope of the work plan, work items that were automatically generated will very likely re-appear when the **Generate Items** button is activated
- **Manually entered work items:** Individual work items that have been added after initial work plan generation can be deleted, as outlined in ["Delete a Work Item" on page 72](#).

Related Links

Task Links

["View a Work Plan" on page 9](#)

["Add a Work Plan" on page 14](#)

["Edit a Work Plan" on page 17](#)

["Work Plan Data" on page 25](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["Export a Work Plan or Work Items to Excel" on page 32](#)

Instructional Links

["About Work Plans" on page 8](#)

["Work Planning Overview" on page 5](#)

Work Items

About Work Items

A work item describes work that needs to be performed either on a Component-Section (*Section work item*) or on a Building (*Building work item*). Information stored with the work item shows

- what was done or is to be done
- when it is to be done or was done
- its cost or expected cost
- its funding source
- its importance relative to other work items competing for the same resources at the same time

An additional work item type, described below, is the *project*.

Work Item Types

Building Work Item

Building-level work item types are

- Demolish
- Modernize
- Replace

Section Work Item

Section-level work item types are

- Repair
- Replace

Best Practice Tip: Graphs generated by the work item cost analysis feature can be used to compare costs and length of extended service life for repair, stop gap repair, and replacement of a Section. For details, see the topic ["About Work Item Cost Analysis" on page 66](#).

Project

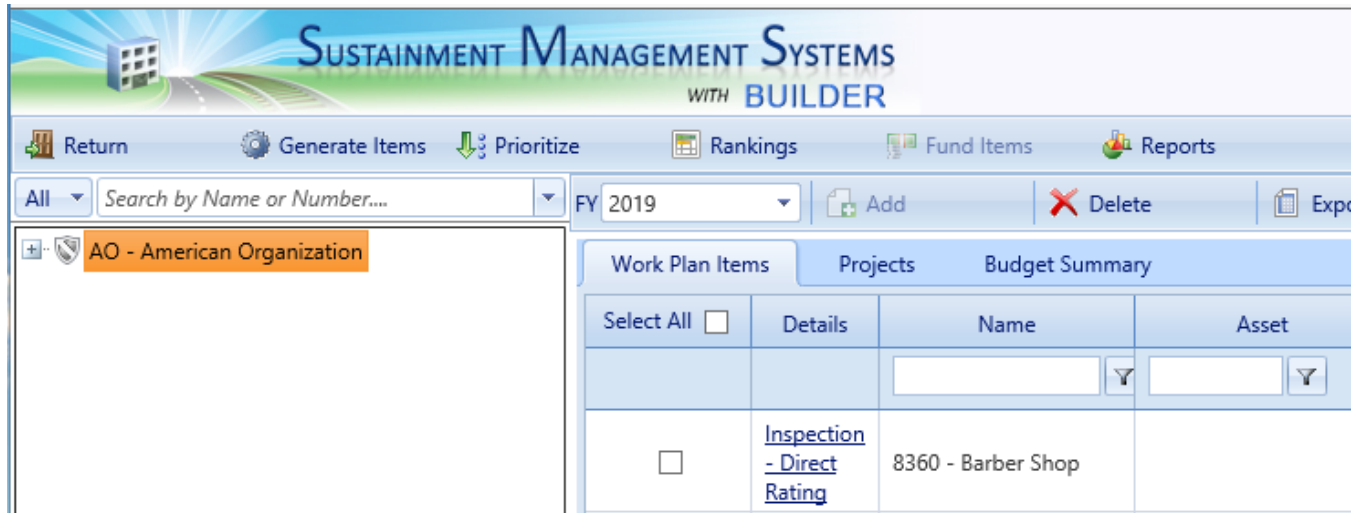
Optionally, you can group selected Section and/or Building work items into one or more projects. Project is the third type of work item available. Once grouped into a work project, the work to be performed is treated as one unit for funding. For more information about projects, start with ["About Work Projects" on page 76](#).

Work Item Groupings

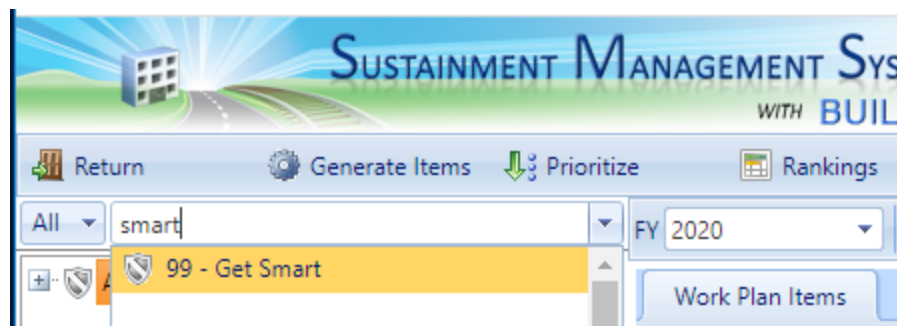
Fiscal Year (Work Plan)

Work items are automatically grouped by fiscal year into *work plans*. Work plans can be viewed in the work plan screen. To access a work plan,

1. Select **Work Plan** from the BUILDER main menu. *The work items window will appear, initially showing just the top level Organization.*



2. In the work items window select the inventory item whose work plan you want to view, add, or edit, using one of two methods—(a) expansion plus navigation, or (b) search:
 - a. *Expansion plus navigation* - In the navigation tree (left pane), expand the tree as needed to navigate to the desired location and select it.
 - b. *Search* - Alternatively, you can use the search function by typing the number, name, or part of the name of the desired inventory item into the search field just above the navigation tree (this field will be labeled "Search by Name or Number" until you click in it). Then click on the inventory item's name in the list of results, as shown below.



Note the fiscal year (**FY**) field on the lower toolbar, where you can select the fiscal year from the dropdown.

Work Project

Another type of grouping you can use, which is optional, is the *work project*, briefly described above in ["Project" on page 36](#).

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" below](#)
["Add a Work Item" on page 42](#)
["Edit a Work Item " on page 47](#)
["Section-Level Work Item Data" on page 50](#)
["Building-Level Work Item Data " on page 53](#)
["Fund Work Items" on page 61](#)
["Prioritize Work Items in a Work Plan" on page 57](#)
["View Work Item Rankings" on page 60](#)
["Export Work Items" on page 63](#)
["Delete a Work Item" on page 72](#)

Instructional Links

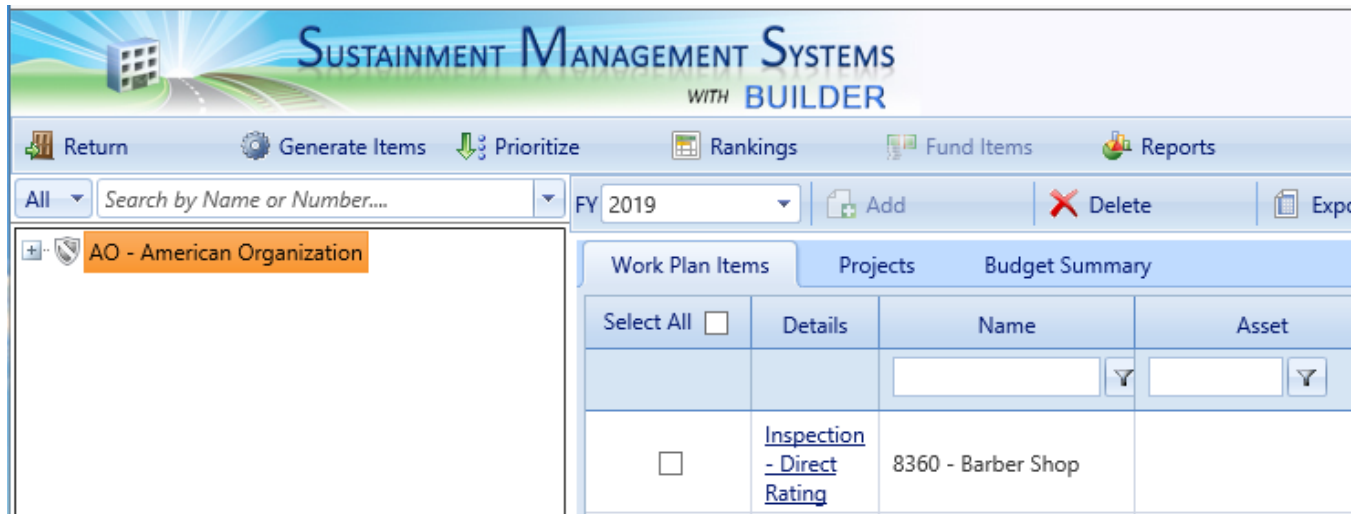
["About Work Item Cost Analysis" on page 66](#)
["Work Planning Overview" on page 5](#)

View a Work Item

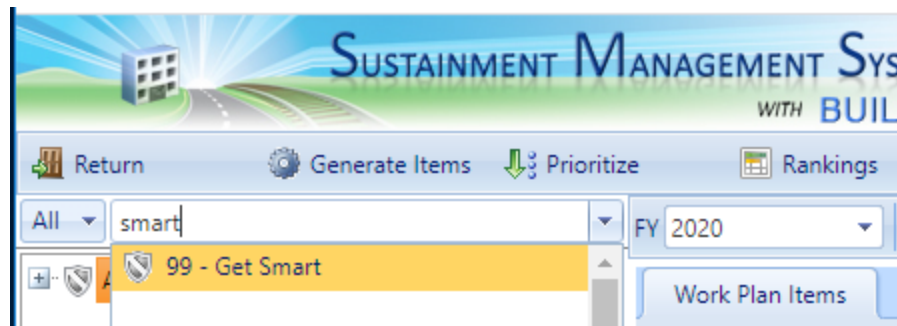
Navigate to Work Plan

To view a work item, you must first navigate to the work plan it is contained in. To navigate to a work plan,

1. Select **Work Plan** from the BUILDER main menu. *The work items window will appear, initially showing just the top level Organization.*



2. In the work items window select the inventory item whose work plan you want to view, add, or edit, using one of two methods—(a) expansion plus navigation, or (b) search:
 - a. *Expansion plus navigation* - In the navigation tree (left pane), expand the tree as needed to navigate to the desired location and select it.
 - b. *Search* - Alternatively, you can use the search function by typing the number, name, or part of the name of the desired inventory item into the search field just above the navigation tree (this field will be labeled "*Search by Name or Number*" until you click in it). Then click on the inventory item's name in the list of results, as shown below.

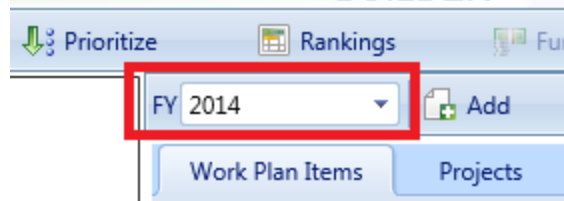


Customize View of Work Items (Optional)

As also described in ["View a Work Plan" on page 9](#) under the heading "Change/Refine Work Plan View," you can customize what work items appear on screen, and the order that they appear in, as described immediately below.


Select Fiscal Year

To view the work plan for past or future fiscal years, select the desired fiscal year from the dropdown list at the top of the window:






Note: The selected fiscal year will remain active if you change your location in the navigation tree.

Filter

You can filter by any column or by multiple columns having a blank field for entry and a  filter icon below the column header.

To filter,

1. Enter a search term in the blank field.
2. Next, activate the filter icon and select from the dropdown a condition such as "Contains" or "StartsWith" or "EqualTo". *This should activate the filter. When the filter finishes, only entries that meet the filter criterion will remain.*
Example:

Description	Cost	Status
ROOF 		
Replace B3010 ROOF COVERINGS B301090 OTHER ROOFING Other	\$136,000	Awaiting Funds
Replace B3010 ROOF COVERINGS B301003 ROOF INSULATION & FILL General	\$50,000	Awaiting Funds
Replace B1020 ROOF CONSTRUCTION B102003 ROOF DECKS AND SLABS Deck - Other	\$447,000	Awaiting Funds

Note: If you change your location in the navigation tree, the selected filter will remain active and still apply.

To clear the filter, re-activate the filter button and select the first option, which is "NoFilter."

Sort

Primary Sort

Once the desired work plan year is shown and ideally any desired filtering has been done (because filtering an unsorted list should be faster than filtering a sorted list), choose an ascending or descending primary sort as follows:

1. For an ascending sort, click on the desired column. *The column header will stay highlighted to indicate that a sort has been performed.*
2. For a descending sort, double-click on the desired column to perform a primary sort in ascending or descending order. *The column header will stay highlighted to indicate that a sort has been performed.*

Secondary Sort

If a column header is already highlighted (indicating that a primary sort has been performed) and you then click or double-click on a second column, that will perform a secondary sort within each of the distinctive entries in the primary sort column. The screenshot below shows a primary sort on the **Name** column followed by a secondary sort on the **Cost** column.

Work Plan Items Projects Budget Summary					
Select All <input type="checkbox"/>	Details	Name ▲	Asset	Description	Cost ▲
		<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	Replace	0002 - Direct rating building		Replace C2010 STAIR CONSTRUCTION distress-tester C201001 INTERIOR AND EXTERIOR STAIRS Interior Stairs - Concrete (24 Riser Flight)	\$314,000
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D3050 TERMINAL & PACKAGE UNITS D305006 PACKAGE UNITS A/C Unit, Split Systems w/ Air Cooled Condenser	\$9,100
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D2010 PLUMBING FIXTURES D201006 DRINKING FOUNTAINS AND COOLERS Drinking Fountain	\$10,000
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace B1010 FLOOR CONSTRUCTION B101090 OTHER FLOOR CONSTRUCTION Other	\$10,500
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D2010 PLUMBING FIXTURES D201002 URINALS General	\$19,500
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D5030 COMMUNICATIONS & SECURITY D503090 OTHER COMMUNICATIONS & ALARM SYSTEMS Other	\$23,000
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D5020 LIGHTING & BRANCH WIRING D502090 OTHER LIGHTING AND BRANCH WIRING Other	\$25,500
<input type="checkbox"/>	Replace	314 - Eng Test Bug 314		Replace D2010 PLUMBING FIXTURES D201001 WATERCLOSETS General	\$27,500

Open Work Item

To view details of an individual work item, activate its hyperlink in the **Details** column.

Return Generate Items Prioritize Rankings Fund Items Reports					
All ▼	Search by Name or Number....	FY 2019 ▼	Add	Delete	Export
<div> <div> </div> <div> <div>Work Plan Items</div> <div>Projects</div> <div>Budget Summary</div> </div> </div>					
Select All <input type="checkbox"/>	Details	Name	Asset		
		<input type="text"/>	<input type="text"/>		
<input type="checkbox"/>	Inspection - Direct Rating	8360 - Barber Shop			

The "Details" popup that will appear will differ in format depending on what kind of work item you have selected. Connect to one of the topics below for details about the data shown:

- If the work item is a Building-level work item, see ["Building-Level Work Item Data " on page 53](#).
- If the work item is a Section-level work item or an inspection, see ["Section-Level Work Item Data" on page 50](#).

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

- ["Add a Work Item" below](#)
- ["Edit a Work Item " on page 47](#)
- ["Section-Level Work Item Data" on page 50](#)
- ["Building-Level Work Item Data " on page 53](#)
- ["Fund Work Items" on page 61](#)
- ["Prioritize Work Items in a Work Plan" on page 57](#)
- ["View Work Item Rankings" on page 60](#)
- ["Export Work Items" on page 63](#)
- ["Delete a Work Item" on page 72](#)

Instructional Links

- ["About Work Items" on page 36](#)
- ["About Work Item Cost Analysis" on page 66](#)
- ["Work Planning Overview" on page 5](#)

Add a Work Item

A BUILDER work item may be added in any one of the following ways:

- Generate a work plan (this will likely add more than one work item)
- Manually add the work item to an already generated work plan and fill in appropriate details

- Copy a work item or multiple work items from Scenario results (not available for Building-level modernization work)

This topic will explain each of these ways, referring to other topics for more detail as needed.

Add Work Items by Generating a Work Plan

Generating a work plan automatically with BUILDER will create a work plan composed of one or more individual work items. Re-generating a work plan may change how many work items are in the plan, and what they are.

For how to generate a work plan, see ["Add a Work Plan" on page 14](#). Alternatively, for more in-depth information, you can start at either ["Work Planning Overview" on page 5](#) or ["About Work Plans" on page 8](#).

For how to re-generate a work plan, see ["Edit a Work Plan" on page 17](#).

Add a Work Item Manually

Test link type here: ["Copy Work Item from Scenario" on page 46](#)

The manual method of entering work items is especially useful for recording past work efforts. It gives you an opportunity to capture institutional memory regarding what work you have done and when it was accomplished. In addition to basic details such as when the work was completed, its actual cost, and its funding source, the work item description allows you to add multiple notes about that particular work effort.

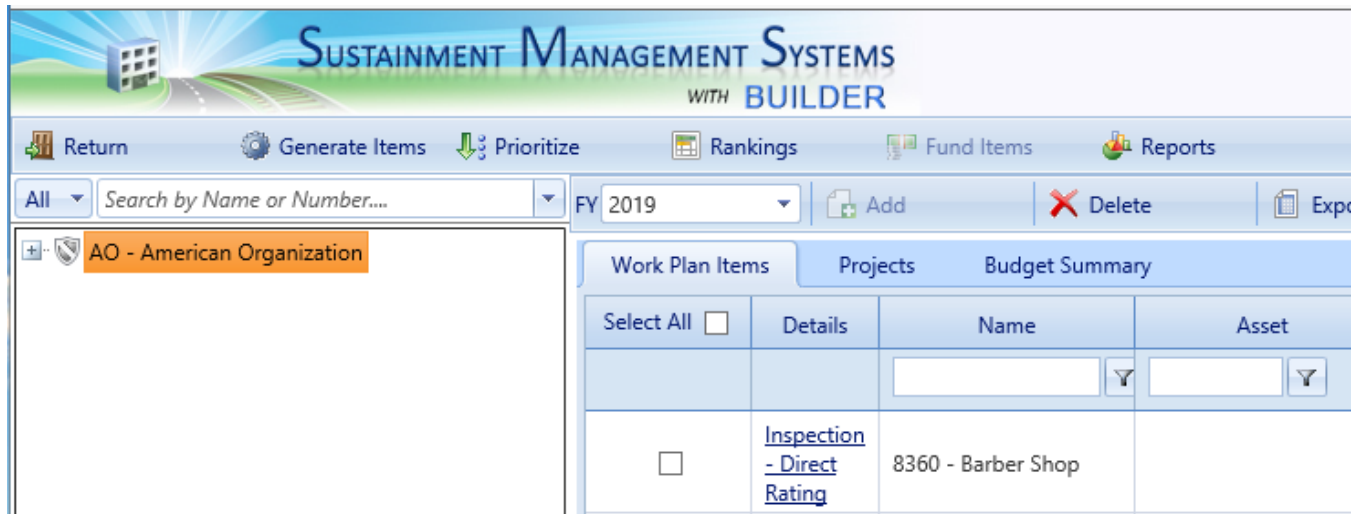
Note: A work plan must already be generated by BUILDER before you can add a work item to it. See the section ["Add Work Items by Generating a Work Plan" above](#) for a brief description and/or for links to more detailed information.

Note: Manually added or edited work items will be preserved intact when a work plan is regenerated.

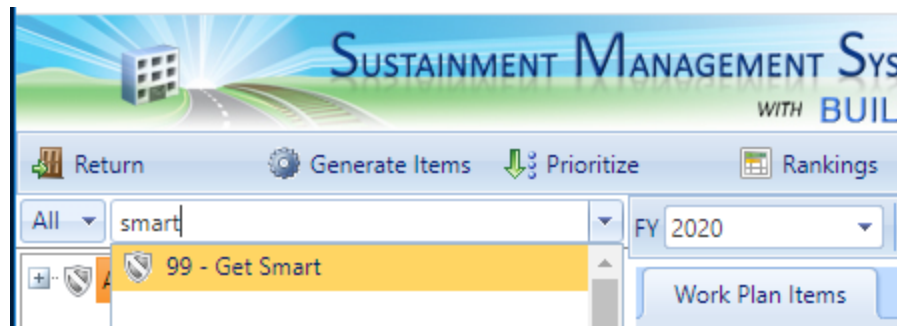
Navigate to Work Plan

First, navigate to the appropriate work plan (that you want to add the work item to) as follows:

1. Select **Work Plan** from the BUILDER main menu. *The work items window will appear, initially showing just the top level Organization.*




2. In the work items window select the inventory item whose work plan you want to view, add, or edit, using one of two methods—(a) expansion plus navigation, or (b) search:
 - a. *Expansion plus navigation* - In the navigation tree (left pane), expand the tree as needed to navigate to the desired location and select it.
 - b. *Search* - Alternatively, you can use the search function by typing the number, name, or part of the name of the desired inventory item into the search field just above the navigation tree (this field will be labeled "Search by Name or Number" until you click in it). Then click on the inventory item's name in the list of results, as shown below.

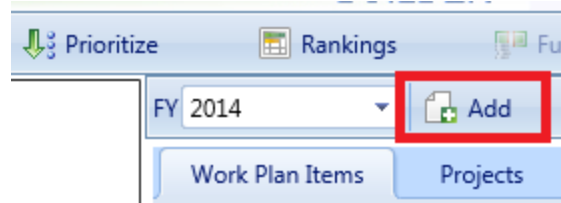


Add Work Item

After you have navigated to the desired work plan,

1. Make sure that the **Add** button on the secondary toolbar is not grayed out. If it is grayed out, you may need to click on your node in the tree in the left pane in order to make the **Add** button visible. This is especially the case if you are working at the default, top-level node of the tree.

2. Activate the  **Add** button while the **Work Plan Items** tab is selected.



The "New Work Item" popup will appear.

3. In the popup, select the work item type: **Project**, **Building Work Item**, or **Section Work Item**.
4. Activate **Proceed** on the popup toolbar.
5. Enter as much data as is needed in the "Details" popup window. See the next three steps to determine what documentation topic to refer to for helpful information.
6. If the new work item is a Building-level work item, refer to ["Building-Level Work Item Data" on page 53](#).
7. If the work item is a project, refer to ["Work Project Data" on page 87](#).
8. If the work item is a Section-level work item, refer to ["Section-Level Work Item Data" on page 50](#).

Save

After entering the data for the work item, activate **Save** on the popup toolbar to save the information.

(Alternatively, if you do not wish to save the changes made to the work item, activate **Cancel** on the toolbar.)

Reasons for Manual Entry

You might choose to enter work items manually as a basic business practice. The following steps describe a procedure you could follow:

- Review BUILDER reports regarding remaining service life, condition index (CI) trends, functionality index (FI) trends, and performance index (PI) trends to identify possible work requirements.
- Verify possible work requirements by re-inspecting, especially if you have recorded no recent condition/functionality assessment data for the items. At the same time, collect the more detailed data needed for the work item specifications (exact quantities, manufacturer, scheduling restrictions, etc.).
- Compile a list for approval by your chain of command.
- Enter each work item as it clears the process.

Another reason for manual entry is that manually entered work items will never be deleted in the work plan regeneration process.

Copy Work Item from Scenario

Note: Modernization work, whether at the Building or Functional Area level, is not generated in Scenarios because FIs are step functions over time, unlike the smooth, continuous functions seen in the condition indexes. Because the FIs are not smooth, continuous functions, future FIs cannot be predicted and modernization work cannot be planned. The only way to determine when and by how much the functionality changes and the associated modernization work is to physically perform functionality assessments in the Building.

For how to copy work items from a Scenario, see the topic ["Create a Work Plan from a Scenario" on page 117](#).

Using Scenarios to Create Out-Year Work Plans

BUILDER offers the use of [Scenarios](#), a simulation model integrated with BUILDER's business rules and databases, to create condition-related work items for your inventory. Scenarios use your inventory database and a set of initial Scenario parameters to simulate how your inventory will evolve over the next 5 to 10 years. The simulation works by stepping through each future year generating work items using the standards and policies, [prioritizing the work items](#) based on the prioritization scheme established in Work Configuration, and [funding work items](#) by priority ranking until all funding levels have been exhausted.

When a Scenario is complete, the Scenario database contains a record of annual work plans constrained by budget. These work plans can be used as the foundation for your out-year plans.

Copying Work Items from a Scenario to a Work Plan

If you have run a [Scenario](#), you may copy its results to the work plan by right-clicking on that Scenario in the Scenarios module. This will create a work plan for the current year as well as future years. See the topic ["Create a Work Plan from a Scenario" on page 117](#) for more information on using this tool.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

- ["View a Work Item" on page 38](#)
- ["Edit a Work Item " below](#)
- ["Section-Level Work Item Data" on page 50](#)
- ["Building-Level Work Item Data " on page 53](#)
- ["Fund Work Items" on page 61](#)
- ["Prioritize Work Items in a Work Plan" on page 57](#)
- ["View Work Item Rankings" on page 60](#)
- ["Export Work Items" on page 63](#)
- ["Delete a Work Item" on page 72](#)

Instructional Links

- ["About Work Items" on page 36](#)
- ["About Work Item Cost Analysis" on page 66](#)
- ["Work Planning Overview" on page 5](#)

Edit a Work Item

This topic explains how to manually edit an existing work item. To change work items by regenerating a work plan, see ["Edit a Work Plan" on page 17](#).

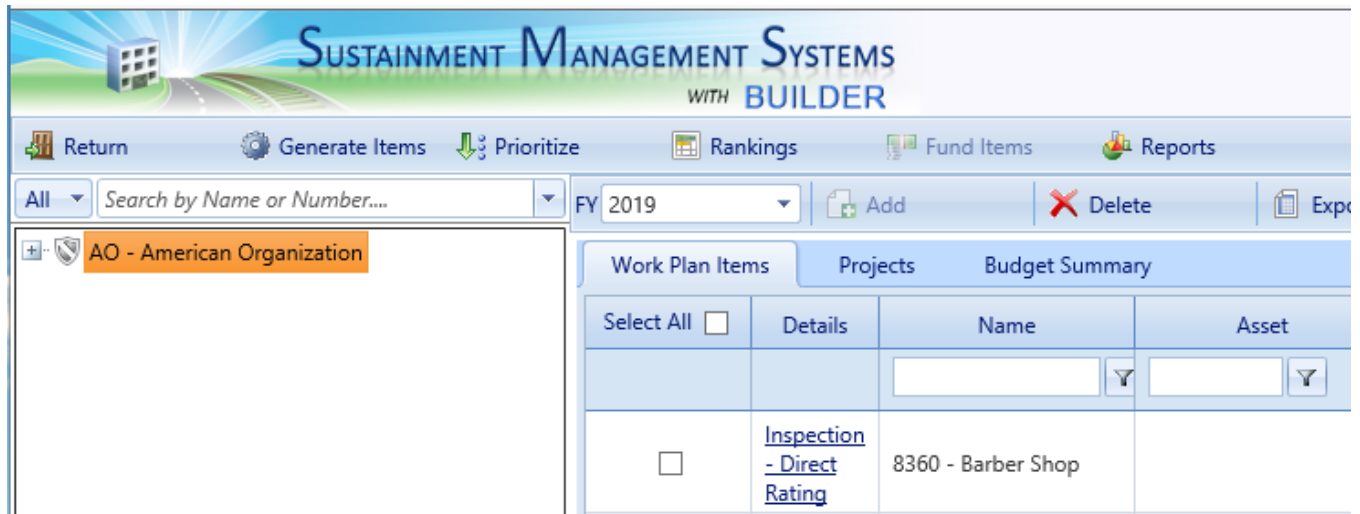
Tip: Because manually added or edited work items will be preserved intact when a work plan is regenerated, manually editing a work item is a way to ensure that the work item will not disappear when the work plan is regenerated. (Marking the item "Must Do" is another way to accomplish this.)

Note: To change a work project, see ["Edit a Work Project" on page 84](#).

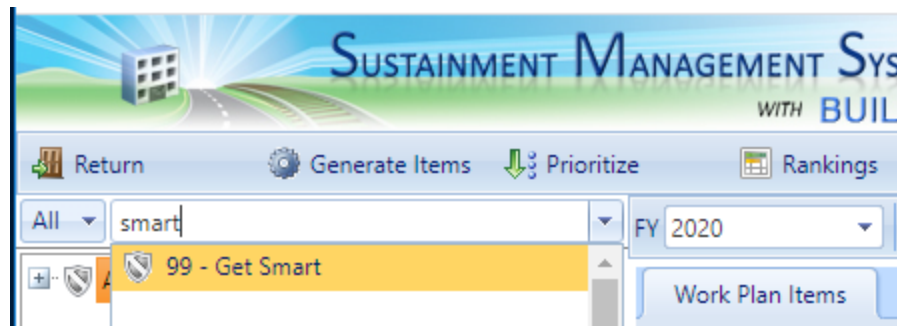
Navigate to Work Plan

First, navigate to the appropriate work plan (that you want to add the work item to) as follows:

1. Select **Work Plan** from the BUILDER main menu. *The work items window will appear, initially showing just the top level Organization.*



2. In the work items window select the inventory item whose work plan you want to view, add, or edit, using one of two methods—(a) expansion plus navigation, or (b) search:
 - a. *Expansion plus navigation* - In the navigation tree (left pane), expand the tree as needed to navigate to the desired location and select it.
 - b. *Search* - Alternatively, you can use the search function by typing the number, name, or part of the name of the desired inventory item into the search field just above the navigation tree (this field will be labeled "Search by Name or Number" until you click in it). Then click on the inventory item's name in the list of results, as shown below.



Edit Work Item

After you have navigated to the desired work plan,

1. If needed, use filters and/or sorting to locate the desired work item. Refer to the ["Change/Refine Work Plan View" on page 11](#) section in ["View a Work Plan" on page 9](#) for details.

2. At the **Work Plan Items** tab, in the **Details** column, activate the link to the work item's details. *The "Details" popup will appear.*
3. Refer to ["Building-Level Work Item Data " on page 53](#) or ["Section-Level Work Item Data" on the next page](#) for information about the data that can be edited in the "Details" popup.
4. Edit fields as desired.

Note: To change a work project, see ["Edit a Work Project" on page 84](#).

Save

After editing the data for the work item, activate **Save** on the popup toolbar to save the changes to the work item.

(Alternatively, if you do not wish to save the changes made to the work item, activate **Cancel** on the toolbar.)

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" on page 38](#)
["Add a Work Item" on page 42](#)
["Section-Level Work Item Data" on the next page](#)
["Building-Level Work Item Data " on page 53](#)
["Fund Work Items" on page 61](#)
["Prioritize Work Items in a Work Plan" on page 57](#)
["View Work Item Rankings" on page 60](#)
["Export Work Items" on page 63](#)
["Delete a Work Item" on page 72](#)

Instructional Links

["About Work Items" on page 36](#)
["About Work Item Cost Analysis" on page 66](#)
["Work Planning Overview" on page 5](#)

Section-Level Work Item Data

This topic explains the data fields for a Section-level work item. This will help with understanding both the "Component-Section Work Item" popup when adding a Section-level work item, or the "Details" popup that appears when viewing or editing a Section-level work item.

A Section-level work item is an individual record of repair or replacement needed for an item in your BUILDER inventory. The information stored with the work item shows

- what was or is to be done
- when it was or is to be done
- its cost
- its funding source (at the **Budget Summary** tab)
- its importance relative to the other work items competing for the same resources at the same time (in the **Score** field)

In the "Component-Section Work Item" popup or "Details" popup, the following data for the Section-level work item is or can be recorded:

Below the menu bar and above the tabs, the **Section Description** (of the Component-Section the work item pertains to) and **Quantity** (the inventory quantity for the Component-Section) will be listed. Then, at the **Details** tab, the following data for the work item is displayed. Some of the data is read-only, and some can be entered or edited.

- **Projected CI (Read-Only)** - Displays the projected condition index (CI) for the Section in the funding FY. If the funding FY changes, BUILDER will recalculate the projected CI for the new funding FY.
- **Projected RSL (Read-Only)** - Displays the projected remaining service life (RSL) for the Section in the funding FY. If the funding FY changes, BUILDER will recalculate the projected RSL for the new funding FY.
- **Current Type (Read-Only)** - Displays the material/equipment type and component subtype of the Component-Section.
- **New Type (For "Replace" only)** - For a Replace work activity (where the link in the **Details** column of the work plan table is Replace), the default is to replace in kind with the same type. However, you do have the option to replace the current Component-Section type with a different type. To do so, select a different type and material/equipment type from the dropdown list of available options.

- **Description** - Description of the work item. *Limit: 255 alphanumeric characters.*
- **Work Request ID**. If applicable, your agency's work request number for the project. *Limit: 50 alphanumeric characters.*

Note: **Work Request ID** is not used by BUILDER in any analyses. The field is available for customer use.

- **Status**. Current status of the work item, selected from the dropdown. The status will change over time as the work item moves from planning to completion. The values **Status** can take are:
 - Awaiting Contract Award
 - Awaiting Funds
 - Awaiting Funds (Special Project)
 - Budgeted
 - Canceled
 - Completed
 - Deferred
 - Funded
 - Funded (Service Call)
 - Funded (Special Project)
 - In Design
 - In Progress
 - On hold
- **Funding FY** - The four-digit fiscal year that the work item was or will be funded.
- **Must Complete as Planned (Checkbox)** - Mark this box if the work item falls into the "must do" category. Marking it will force the work item to be funded in a Scenarios projection before all other competing work items that are not marked as "Must Complete as Planned" (also called "Must Do" in the work plan column heading).
- **Work FY** - This is the year in which the Section falls below the standard and when the work should start.
- **Funding Source** - The funding source to be used for this work item, selected from the dropdown.
- **Date Completed** - The date the work item was completed. *This field will appear only if **Status** is "Completed."*
- **Estimated Cost** - The estimated cost of performing the work item. If you activate **Calculate** in the popup toolbar, BUILDER will estimate the initial cost once you have entries or appropriate selections in the **Funding FY**,

Work Activity, **Cost Book**, and **Quantity** fields. Alternatively, if you have sufficient permissions, you can mark the **Override automatic cost estimate** checkbox and enter a different cost.

Note: The cost module is unable to estimate the cost of activities to Add/Install and Alter, so the **Calculate** button is grayed out for those work activities.

- **Score (Read-Only)** - If you have [prioritized the work items](#), then this work item's score will be displayed here. The default value is 0, indicating that the work items have not been prioritized.
- **Override Automatic Cost Estimate** - Mark this checkbox if you wish to override the cost estimated using the **Calculate** button and enter your own estimated cost of the work item instead.
- **Work Code** - Work code of the work item, selected from the dropdown. The available work codes are:
 - Demolition
 - New Footprint
 - Modernization
 - Sustainment
- **Efficiency Savings (Optional)** - When used, this number is entered by the user. If replacing an asset with a higher efficiency model will generate operational cost savings due to efficiency (such as energy or water savings), then enter here the amount you would expect to save each year by the replacement. This will then be factored into the ROI calculation at the **Cost Analysis** tab.
- **Work Activity** - The work activity associated with this work item, selected from the dropdown. The work activities are:
 - Inspection - Direct Rating
 - Inspection - Distress Survey
 - Inspection - Distress Survey with Quantity
 - Remove
 - Repair
 - Replace
 - Stop Gap
- **Actual Cost** - The actual cost of the work item after completion. *Before the work item is completed, the contents of this field will mirror the contents in the **Estimated Cost** field.*
- **Quantity** - The quantity of Section applicable to the work item. The value listed in **Quantity** near the top of the popup is the actual Component-Section

quantity, but the quantity applicable to the work item may be different. For example, you might replace only 5 of the 10 doors in a Component-Section.

- **Cost Book** - The cost book to be used in estimating the cost of the work item, selected from the dropdown.
- **ROI Information (Read-Only)** - Displays the **Return** and **ROI** (return on investment), which summarize the calculations on the [Cost Analysis tab](#).

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

- ["View a Work Item" on page 38](#)
- ["Building-Level Work Item Data " below](#)
- ["Add a Work Item" on page 42](#)
- ["Edit a Work Item " on page 47](#)
- ["Fund Work Items" on page 61](#)
- ["Prioritize Work Items in a Work Plan" on page 57](#)
- ["View Work Item Rankings" on page 60](#)
- ["Export Work Items" on page 63](#)
- ["Delete a Work Item" on page 72](#)

Instructional Links

- ["About Work Items" on page 36](#)
- ["About Work Item Cost Analysis" on page 66](#)
- ["Work Planning Overview" on page 5](#)

Building-Level Work Item Data

This topic explains the data fields for a Building-level work item. This will help with understanding both the "Building Work Item" popup when adding a Building-level work item, or the "Details" popup that appears when viewing or editing a Building-level work item.

The screenshot shows a 'Details' window with a toolbar containing 'Close', 'Save', and 'Help' buttons. The main area contains the following fields:

- Section Name:** (empty)
- Description:** Modernize 0002 - Smart Building initiative
- Work Request ID:** 34546
- Status:** Budgeted (dropdown)
- Funding FY:** 2020
- Must Complete as planned:** ☐
- Work FY:** 2020
- Funding Source:** (empty dropdown)
- Estimated Cost:** \$60,000.00 (with an 'Estimate' button)
- Override automatic cost estimate:** ☒
- Score:** 0
- Work Code:** Modernization (dropdown)
- Actual Cost:** \$60,000.00
- Work Activity:** Modernize (dropdown)
- Cost Book:** ABC3 (dropdown)

In the "Building Work Item" popup or "Details" popup, the following data for the Building-level work item is or can be recorded:

- **Description** - Description of the work item. *Limit: 255 alphanumeric characters.*
- **Work Request ID.** If applicable, your agency's work request number for the project. *Limit: 50 alphanumeric characters.*

Note: **Work Request ID** is not used by BUILDER in any analyses. The field is available for customer use.

- **Status.** Current status of the project, selected from the dropdown. The status will change over time as the project moves from planning to completion. The values **Status** can take are:
 - Awaiting Contract Award
 - Awaiting Funds
 - Awaiting Funds (Special Project)
 - Budgeted
 - Canceled
 - Completed
 - Deferred
 - Funded
 - Funded (Service Call)

- Funded (Special Project)
- In Design
- In Progress
- On hold
- **Funding FY** - The four-digit fiscal year that the work item was or will be funded.
- **Must Complete as Planned (Checkbox) (aka "Must Do")** - Mark this checkbox if the work item falls into the "must do" category. Marking it will force the work item to be funded in a Scenarios projection before all other competing work items that are not marked as "Must Complete as Planned" (also called "Must Do" in the work plan column heading).
- **Work FY** - The four-digit fiscal year in which the work should be performed.
- **Funding Source** - The funding source to be used for this work item, selected from the dropdown.
- **Date Completed** - The date the work item was completed. *This field will appear only if **Status** is "Completed."*
- **Estimated Cost** - This field is for the estimated cost of the work item. BUILDER may be able to estimate the cost if you have (1) chosen a cost book in the **Cost Book** field and (2) the cost book contains information relevant to the work to be done. To have BUILDER make the estimate, activate the **Estimate** button next to the **Estimated Cost** field, if the button is active (not grayed out). Alternatively, you can mark the **Override Automatic Cost Estimate** checkbox to enter your own estimated cost for the work to be done.
- **Score** - Work prioritization score.

Note: Work items to demolish Buildings are not scored by prioritization schemes in BUILDER, so the score is defaulted to 0. Despite the score of zero, however, you can take special steps to ensure that the work item is completed. See **Must Complete as Planned** above, in this list of fields.
- **Override Automatic Cost Estimate (Checkbox)** - If you wish to override the cost that has been estimated using the **Calculate** button, mark this checkbox and enter your own estimated cost for the work to be done.
- **Work Code** - Select the work code of the work item. The available work codes are:
 - Demolition
 - New Footprint
 - Modernization
 - Sustainment

- **Work Activity** - Select the activity of the work item from the dropdown list. The available activities are **Demolish**, **Modernize**, and **Replace**.
- **Actual Cost**. The actual cost of the work item after completion. Before completion, this will equal the **Estimated Cost** field.
- **Cost Book** - The cost book to be used in estimating the cost of the work item, selected from the dropdown.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" on page 38](#)
["Section-Level Work Item Data" on page 50](#)
["Add a Work Item" on page 42](#)
["Edit a Work Item " on page 47](#)
["Fund Work Items" on page 61](#)
["Prioritize Work Items in a Work Plan" on the facing page*](#)
["View Work Item Rankings" on page 60](#)
["Export Work Items" on page 63](#)
["Delete a Work Item" on page 72](#)

Instructional Links

["About Work Items" on page 36](#)
["About Work Item Cost Analysis" on page 66](#)
["Work Planning Overview" on page 5](#)

***Note:** ["Prioritize Work Items in a Work Plan" on the facing page](#) does not apply to Building-level work items; the score for Building-level work items will be 0.000. To have a Building-level work item completed in Scenarios, mark the work item as "Must do as planned" and provide a fund source with a criteria the work item can satisfy.

Prioritize Work Items in a Work Plan

This topic shows how to prioritize Section-level work items, and suggests when to prioritize. It also explains how prioritizing can be used to calibrate a prioritization scheme.

After you prioritize, you can ["View Work Item Rankings" on page 60](#).

Note: Prioritizing work items in your work plan can only be done if a prioritization scheme that applies to the area of the tree you are working in has been established as part of work configuration.

If a prioritization scheme has been created for the area of the tree you are working in, you can prioritize the work items in your work plan using the **Prioritize** button on the toolbar of the work plan screen. This will generate a *priority score* for each work item or work project in the plan, with the exception of Building-level work items.

Building-Level Work Items

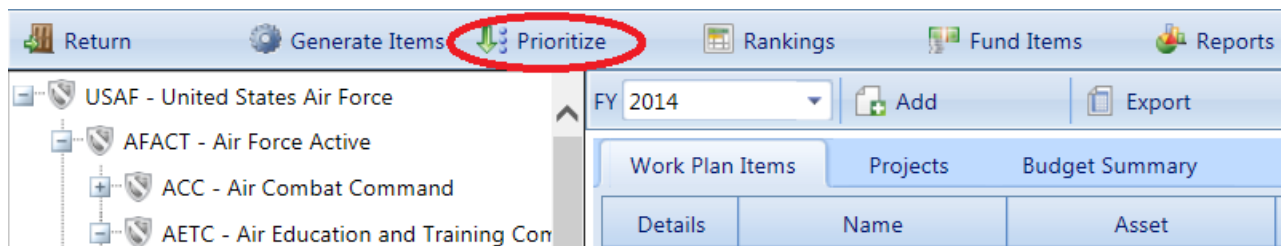
Building-level work items, such as a Building-level Modernization, do not participate in prioritization; their scores will remain at zero. However, you can cause a Building-level work item to be completed in Scenarios by marking it "Must do as planned" and providing a fund source with a criteria the work item can satisfy.

Note: Scenarios capability is provided with the BUILDER module only.

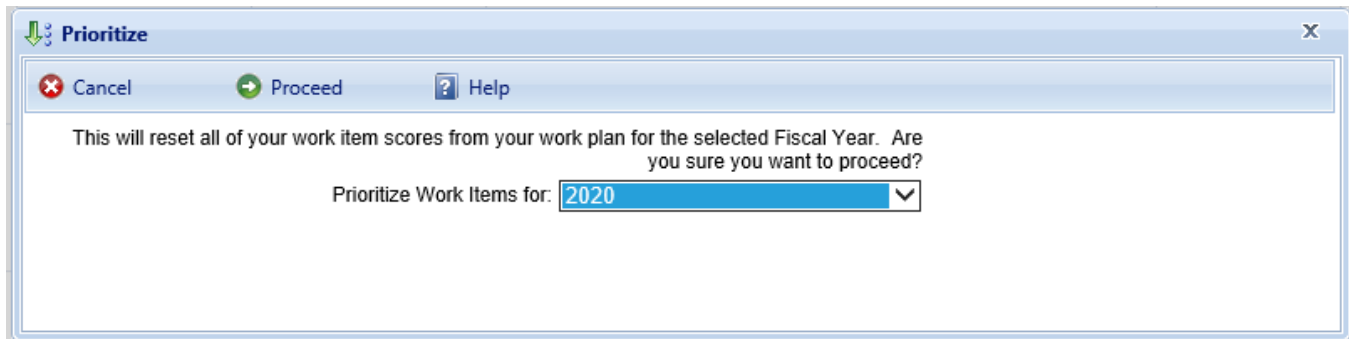
Section-Level work Items

To prioritize Section-level work items,

1. With the **Work Plan Items** tab selected, activate **Prioritize** on the toolbar.



A popup warning box will appear, stating that all current work item scores from your work plan for the selected fiscal year will be reset if you continue.



2. **IMPORTANT:** Select the desired fiscal year in the "Prioritize Work Items for" field (see screenshot above).
3. Activate **Proceed** on the popup toolbar if you still wish to delete the current scores for the for Section-level work items and recompute new prioritization scores. The prioritization scores will be computed using the prioritization scheme selected in the Reference Settings area at the Site or Organization's **General Information** tab. (Alternatively, activate the **Cancel** button if you do not wish to perform these actions; you will be returned to the work plan.)

Result:

After a priority score has been computed for each work item, all work items will be shown in the work plan ranked from highest score to lowest. Project priority scores are computed by averaging the priority scores of the work items in the project, weighted by cost.

Projects

Project priority scores are computed by averaging the priority scores of the work items in the project, weighted by cost.

When to Prioritize

You can prioritize the work plan as often as you wish. Listed below are situations where prioritizing is recommended.

When Adding New Work Items

If you add new work items, you should re-prioritize to include the new items.

To Calibrate a Prioritization Scheme

You may also want to evaluate a prioritized work plan in order to calibrate the weights and points you have assigned in a particular prioritization scheme. To calibrate,

1. Prioritize the work plan.
2. Consider the order in which work items have been ranked, and their scores.
3. When you see ordering discrepancies or score differences from your expert judgment, this might allow you to identify measures that should carry more relative weight, or measure values that warrant higher points such that the order of the work items will come out correct.
4. Adjust measures and re-prioritize so that the order of the work items is acceptable.

The goal of a prioritization scheme, which is established as part of Work Configuration, is to rank work items by algorithmic calculation into the same order that expert facility managers at your agency would rank them by following sound engineering principles.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

- ["View a Work Item" on page 38](#)
- ["Add a Work Item" on page 42](#)
- ["Edit a Work Item " on page 47](#)
- ["Section-Level Work Item Data" on page 50](#)
- ["Building-Level Work Item Data " on page 53](#)
- ["Fund Work Items" on page 61](#)
- ["View Work Item Rankings" on the next page](#)
- ["Export Work Items" on page 63](#)
- ["Delete a Work Item" on page 72](#)

Instructional Links

- ["About Work Items" on page 36](#)
- ["About Work Item Cost Analysis" on page 66](#)
- ["Work Planning Overview" on page 5](#)

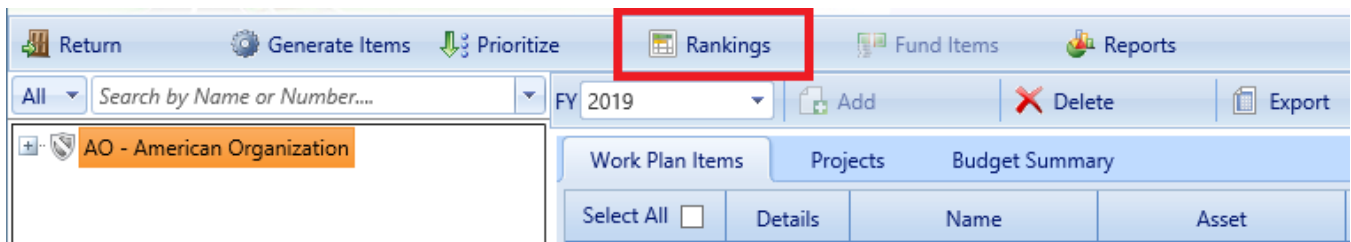
View Work Item Rankings

If you have created a [prioritized work plan](#), you can view the rankings of the work items in your work plan, broken down into the constituent scores for each measure used in the prioritization scheme. This topic shows the steps for viewing the rankings and briefly explains the results.

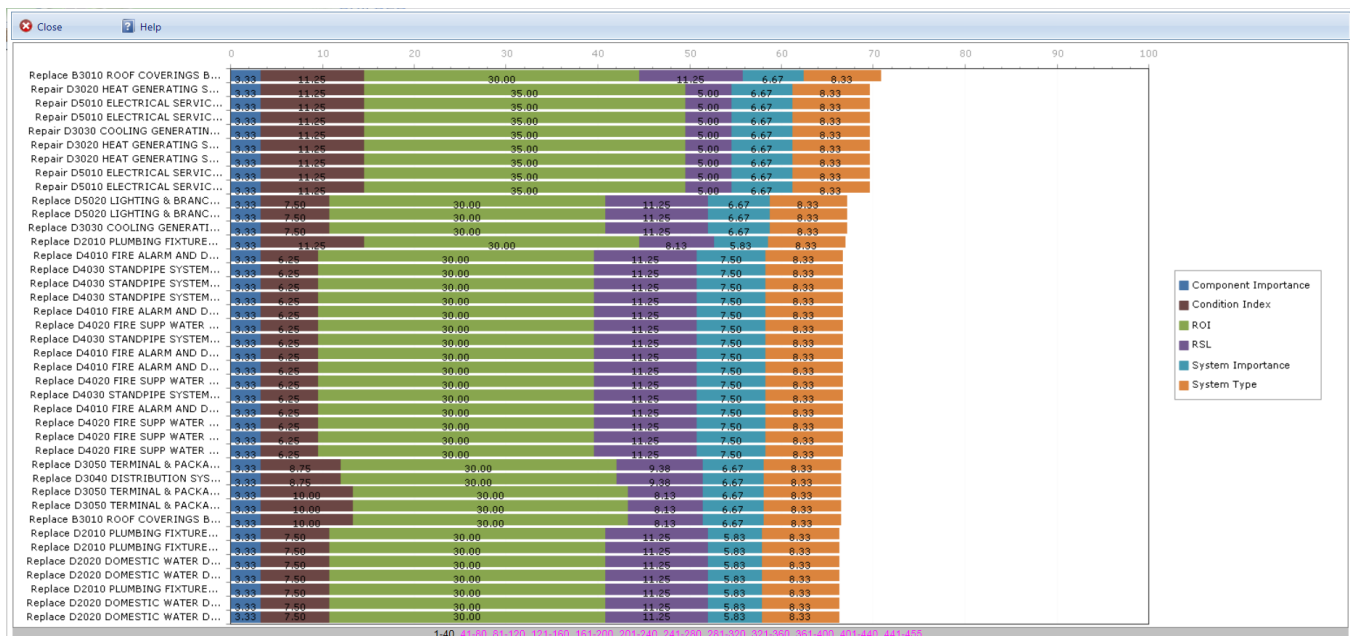
Note: This can only be done if a prioritization scheme that applies to the area of the tree you are working in has been established as part of work configuration.

To rank work items,

1. At the work plan screen, navigate to or search-select the desired Organization or Site. This sets the scope for the ranking.
2. Activate **Rankings** on the toolbar.



The Rankings window will appear.



Result:

The rankings of each Section-level work item will be shown from highest priority score to lowest. The score for each work item will be broken down into the constituent scores for each measure used in the prioritization scheme established in Work Configuration. A legend will be displayed, correlating the colors to their respective measures.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" on page 38](#)

["Add a Work Item" on page 42](#)

["Edit a Work Item " on page 47](#)

["Section-Level Work Item Data" on page 50](#)

["Building-Level Work Item Data " on page 53](#)

["Fund Work Items" below](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["Export Work Items" on page 63](#)

["Delete a Work Item" on page 72](#)

Instructional Links

["About Work Items" on page 36](#)

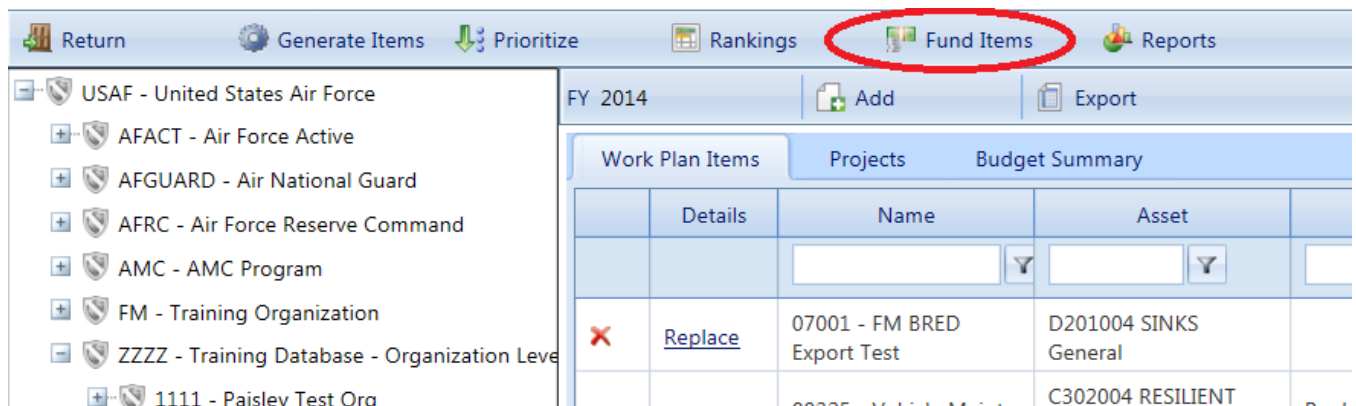
["About Work Item Cost Analysis" on page 66](#)

["Work Planning Overview" on page 5](#)

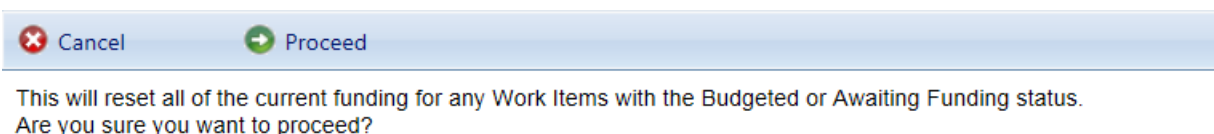
Fund Work Items

BUILDER can automatically fund work items based on their priority scores and the available fund sources. If you choose to use this tool, the work items with the highest priority scores will have their status changed to "budgeted" until all of the funds are exhausted. All remaining work items that are not budgeted will have their status changed to "Awaiting Funding." It is important to note that the funding sources are subject to all the restrictions and precedences that are set in the funding screen during work configuration.

To fund the work items in a work plan, activate **Fund Items** on the work plan toolbar.



The Fund Work Items screen will appear.



From this window, you have the option of funding the work items for the current or next fiscal year.

Select the year you wish to fund the work items in and activate the **Proceed** button. After completion,

- The work items with the highest priority scores will be marked as "Budgeted" until all applicable sources are allocated.
- Remaining work items will be marked as "Awaiting Funds."

If you do not wish to fund the work items, simply activate the **Cancel** button in the window to be returned to the Work Items window.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic

["About Work Plans" on page 8](#). Priority scores and fund sources are discussed in the *BUILDER™ Work Configuration Guide*.

Task Links

["View a Work Item" on page 38](#)

["Add a Work Item" on page 42](#)

["Edit a Work Item " on page 47](#)

["Section-Level Work Item Data" on page 50](#)

["Building-Level Work Item Data " on page 53](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["View Work Item Rankings" on page 60](#)

["Export Work Items" below](#)

["Delete a Work Item" on page 72](#)

Instructional Links

["About Work Items" on page 36](#)

["About Work Item Cost Analysis" on page 66](#)

["Work Planning Overview" on page 5](#)

Export Work Items

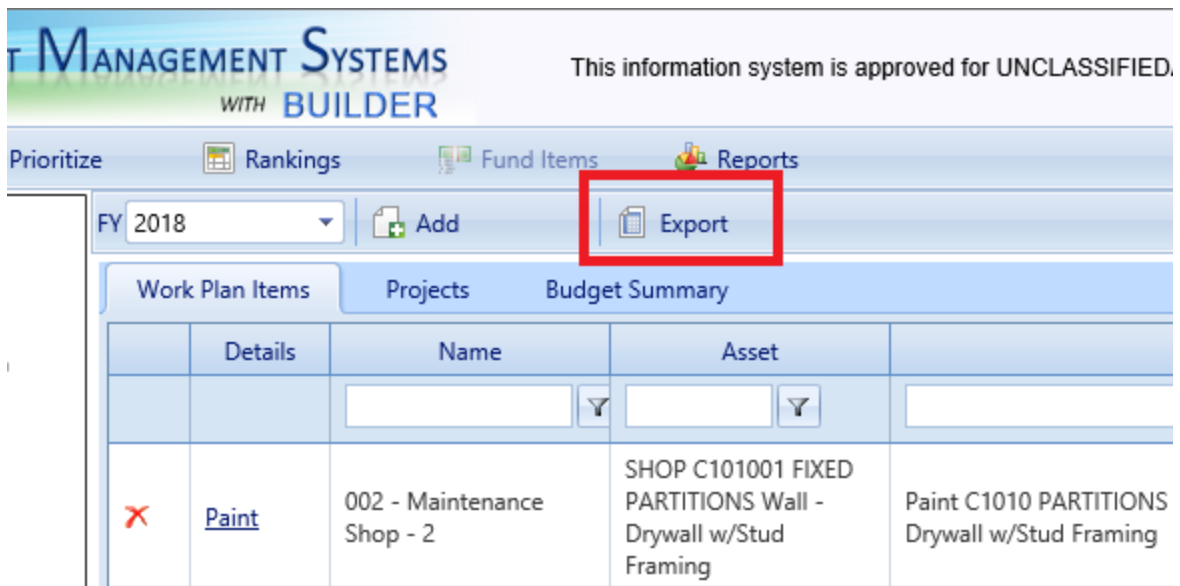
This topic explains multiple ways to export work items. Work items can be exported to a Microsoft Excel spreadsheet, either from the work plan or from the Scenario visualization / Scenario analysis screen.

Export Work Items from the Work Plan

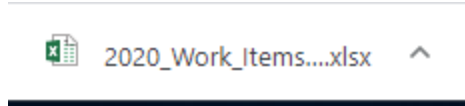
To export a work plan to an Excel spreadsheet from the **Work Plan Items** tab on the work plan screen,

1. On the BUILDER main menu, activate **Work Plan**.
2. At the work plan screen, select the desired location in the navigation tree at the left. This will determine the scope of the work plan, which will contain all work items for that location and below it in the tree.

3. On the secondary toolbar, activate **Export**.



4. When the Excel work plan shows as downloaded in the lower left corner of the window (see illustration immediately below), double-click on it to open. Alternatively, you can activate the up arrow to be able to select between opening the file and showing it in its Downloads folder location.



5. If you want to save the opened spreadsheet, you need to activate the **File** tab in the spreadsheet, then specify the location, and re-name as desired (the spreadsheet will have been assigned a default filename).

Export Work Project Work Items

You can choose to export just those work items contained in a particular work project. To do so,

1. At the work plan screen, open the **Projects** tab. *All projects pertaining to the current tree location on down will be listed in the content area.*

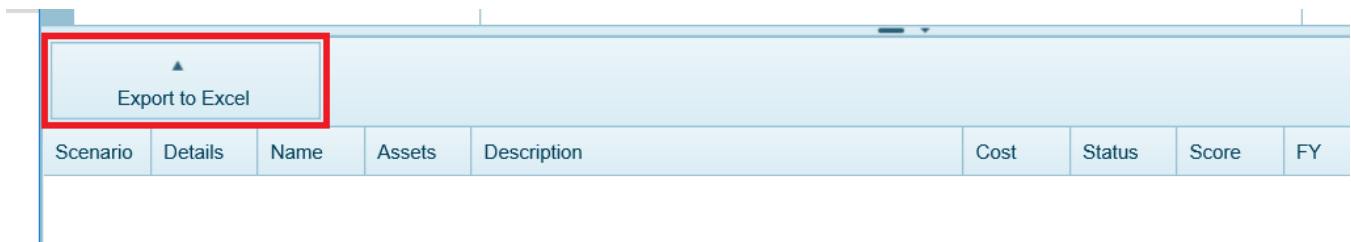
Tip: If you are at the head of the navigation tree and too many projects are listed, you can choose to navigate farther down in the tree towards or to the work plan containing the project.

2. Open the "Details" popup for the desired project by activating its Details link in the first column of the desired work project.
3. In the popup, open the **Work Items** tab.

4. If the **Only Show Selected Project Work Items** checkbox is not marked, mark it to restrict the view to just those work items that are in the project.
5. Activate the **Export** button on the popup toolbar.
6. When the Excel tab with the project name on it appears at the lower left of the screen, activate it to open the Excel file containing the project work items.
7. Save the exported file if desired (you can also rename it).

Export Work Items from Scenario Analysis

At **Scenarios > Analysis** (aka Scenario visualization), an **Export** button has been added above the grid of work items at the bottom of the Scenario analysis screen. This button will export to Microsoft Excel any work items listed in the grid:



Note: The tiny arrow at the bottom of the Scenario analysis screen is what opens or closes the drawer containing the grid of work items (if there are work items for the selected Component-Section).



Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" on page 38](#)

["Add a Work Item" on page 42](#)

["Edit a Work Item " on page 47](#)

["Section-Level Work Item Data" on page 50](#)

["Building-Level Work Item Data " on page 53](#)

["Fund Work Items" on page 61](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["View Work Item Rankings" on page 60](#)

["Delete a Work Item" on page 72](#)

Instructional Links

["About Work Items" on page 36](#)

["About Work Item Cost Analysis" below](#)

["Work Planning Overview" on page 5](#)

About Work Item Cost Analysis

Work item cost analysis is a feature available at the **Cost Analysis** tab on a work item's "Details" popup window. This feature provides additional data regarding the work items in your inventory to ensure that the most cost-effective work activity can be chosen and performed. It displays the possible work activities for the Section, showing for each the return on investment (typically this is the most important information needed) and other cost data, to aid in choosing the best work activity to perform.

To view a work item's cost analysis,

1. Select **Work Plan** at the main menu. *The navigation tree will change to showing the topmost Organization (or Site), and the corresponding work plan items will be displayed in the content area.*

SUSTAINMENT MANAGEMENT SYSTEMS
WITH BUILDER

This information system is approved for UNCLAS

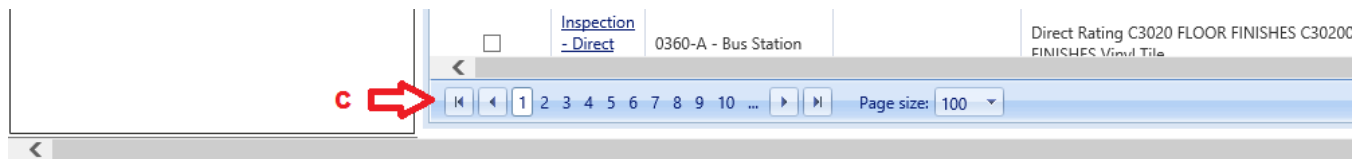
Return Generate Items Prioritize Rankings Fund Items Reports

All Search by Name or Number... FY 2019 Add Delete Export

AO - American Organization

Work Plan Items Projects Budget Summary

Select All <input type="checkbox"/>	Details	Name	Asset	Description
<input type="checkbox"/>	Inspection - Direct Rating	8360 - Barber Shop		Direct Rating B2020 EXTERIOR WINDOWS Aluminum Windows



2. To bring the desired work item record into view, use one or more of the following as needed (labeled in red on image above):
 - a. tree navigation (left pane)
 - b. filters (second row of the table at the **Work Plan Items** tab)
 - c. page navigation (at the bottom of the content pane)
3. When you have located the desired work item record, click its Repair or Replace link in the **Details** column. *The "Details" popup will appear.*

Note: Inspection links will not show cost analysis.

Details

Close Save Calculate Help

Section Description: D3030 COOLING GENERATING SYSTEMS - H-6-Condensing Unit D3030
Quantity: 1 EA

Details

Cost Analysis

Component Info

Year Installed: 2012
Designed SL: 15
Modified SL: 11.2
Replace Cost: \$29,000
Repair Cost Factor: 1.9

	Will Fail In	Current CI	RSL	Calculate			
Do Nothing	2023	63	3.9				
	In Year	Hold CI @	ASL	RSL	\$ Generated	Work Cost	ROI
Stop Gap Repair	2019	63	0.9	4.7	\$1,700	\$3,550	48%
					<input type="checkbox"/> Overwrite Estimate		Select
	In Year	Repair To	ASL	RSL	\$ Generated	Work Cost	ROI
Repair	2019	95.0	4.7	8.6	\$9,200	\$11,500	80%
					<input type="checkbox"/> Overwrite Estimate		Select
Section will become inactivated or is part of modernization project in year:							
	In Year		ASL	RSL	\$ Generated	Replace Cost	ROI
Replace	2019		15.0	15.0	\$29,000	\$29,000	100%
					<input type="checkbox"/> Overwrite Estimate		Select
Replacing Component will lower annual Operational/Maintenance costs by:							
\$0							

Component Information

Just under the popup toolbar, the following general information regarding the work item will be displayed:

- **Section Description (Read-Only).** Displays a description of the Section for the work item.
- **Quantity (Read-Only).** Displays the quantity inventory quantity of the Section.

Under **Component Info** at the **Cost Analysis** tab, the following information is displayed:

- **Year Installed.** Year Installed is taken from inventory information.
- **Designed SL.** Service life from the associated Service Life book.
- **Modified SL.** Service life as modified by the latest inspection results.
- **Replace Cost.** Replacement cost from the associated cost book.
- **Repair Cost Factor.**

Comparison Graph

Just below the general component information is a graph of the condition indices over time when different work activities are performed on the Section. There are four work activities for each Component-Section, each with data elements associated with them. Each of these is described under **Action Alternatives**.

Action Alternatives

Do Nothing

This option displays the data for the Section if no work is performed on it:

- **Will Fail In (Read-Only).** Displays the year the Section will reach the terminal CI, based on the current CI and deterioration rate.
- **Current CI (Read-Only).** Displays the current CI of the Section.
- **RSL (Read-Only).** Displays the current remaining service life of the Section.

Stop Gap Repair

This option displays the data for the Section if a stop gap repair, where the CI is held constant for one year, is performed on the Section:

- **In Year.** Enter the year the stop gap repair will be performed on the Section. Initially this field is defaulted to the value of the **Completed FY** field at the **Details** tab.
- **Hold CI @ (Read-Only).** Displays the CI value the Section will be held at for one year. This value will be the current CI if the work item is performed in the current year, other wise it will be computed based on the current CI and deterioration rates.
- **ASL(Read-Only).** Displays the additional service life of the Section gained by performing the stop gap work activity.
- **RSL (Read-Only).** Displays the remaining service life of the Section after performing the stop gap work activity. This value is computed by adding the ASL from this work activity and the RSL from the Do Nothing work activity.

- **\$ Generated (Read-Only)**. Displays the money generated, or saved over time, by performing the stop gap work activity.
- **Work Cost**. Displays the BUILDER-estimated cost (using the default cost book and current CI) of performing the stop gap work activity. This field can be manually edited if the **Overwrite Estimate** checkbox is marked.
- **Return on Investment(Read-Only)**. Displays the return on investment for performing the stop gap on the Section. This value is calculated by dividing the \$ Generated by the Work Cost and converting to a percentage.

Repair

This option displays the data for this Section if it is repaired:

- **In Year**. Enter the year the Section will be repaired. Initially this field is defaulted to the value in the **Completed FY** field at the **Details** tab.
- **Repair To (Read-Only)**. Displays the CI value the Section will be restored to after the repair is completed. The CI will always be repaired to 95, unless the current CI is greater than 95. If the CI is greater than 95, the CI will be restored to 100.
- **ASL (Read-Only)**. Displays the additional service life of the Component-Section after repairing the Section.
- **RSL (Read-Only)**. Displays the remaining service life of the Section after repairing the Section. This value is computed by adding the ASL from this work activity and the RSL from the Do Nothing work activity.
- **Section will become inactivated or is part of a modernization project in**. Enter the year the Section will become inactive or will be removed/replaced in a modernization project. If the Section becomes inactive or is replaced during modernization, the saving generated by repairing the Section after this year will not be included in the **\$ Generated** field.
- **\$ Generated (Read-Only)**. Displays the money generated, or saved over time, by repairing the Section.
- **Work Cost**. Displays the BUILDER-estimated cost (using the default cost book and current CI) of repairing the Section. This field can be manually edited if the **Overwrite Estimate** checkbox is marked. If this box is marked, enter the cost of the repair work activity.
- **Return on Investment (Read-Only)**. Displays the return on investment for repairing the Section. This value is calculated by dividing the \$ Generated by the Work Cost and converting to a percentage.

Replace

This option displays the data for the Section if it is replaced:

- **In Year.** Enter the year the Section will be replaced. Initially this field is defaulted to the value in the Completed FY field on the Details tab.
- **ASL (Read-Only).** Displays the additional service life of the Section after replacement.
- **RSL (Read-Only).** Displays the remaining service life of the Section after replacement. This value is computed by adding the ASL from this work activity and the RSL from the Do Nothing work activity.
- **Replacing Component will lower annual Operational/Maintenance cost by.** Enter the annual amount saved on operation and/or maintenance due to the replacement of the Section. This amount multiplied by the number of years will be added to the \$ Generated field.
- **\$ Generated (Read-Only).** Displays the money generated, or saved over time by performing the replacement.
- **Work Cost.** Displays the BUILDER-estimated cost (using the default cost book) of performing the replacement. This field can be manually edited if the **Overwrite Estimate** checkbox is marked. If this checkbox is marked, enter the cost of the replacement.
- **Return on Investment (Read-Only).** Displays the return on investment for performing the replacement. This value is calculated by dividing the \$ Generated by the Work Cost and converting to a percentage.

Selecting the Work Activity to Perform

After all of the applicable data has been entered and edited for each work activity, the **Calculate** button can be used to compute the return on investment (ROI) for each work activity. *The work activity with the highest ROI should be selected for the Section.* To select a work activity, activate the **Select** button next to the ROI of the preferred work activity. Activating the **Select** button will update the following fields on details tab for the work item based on the data entered for the work activity:

- **Description of Work Item**
- **Completion FY**
- **Estimated Cost**
- **Activity**
- **ROI Information** (Return and ROI).

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on page 76](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" on page 38](#)

["Add a Work Item" on page 42](#)

["Edit a Work Item " on page 47](#)

["Section-Level Work Item Data" on page 50](#)

["Building-Level Work Item Data " on page 53](#)

["Fund Work Items" on page 61](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["View Work Item Rankings" on page 60](#)

["Export Work Items" on page 63](#)

["Delete a Work Item" below](#)

Instructional Links

["About Work Items" on page 36](#)

["Work Planning Overview" on page 5](#)


Delete a Work Item

This topic shows how to delete work items at the work plan screen accessed via **Work Plan** on the main menu.

Productivity Tip: If you are using a version of BUILDER (3.3.13 and later) that allows selecting multiple work items at one time, and if some or all of the work items you wish to delete are all of the work items contained in a particular node of the tree in the left pane, then it will save time to navigate to that node and delete all of its work items with one **Select All** checkbox selection, even if those work items are not all of the ones you wish to delete. You can then continue to delete work items from other locations in the tree if necessary.

Navigate to Work Plan

If you are not already looking at the work item(s) you wish to delete, do the following:

1. Activate **Work Plan** in the main menu. *You should now be viewing the work plan screen, which has a  Return button at the upper left.*
2. Navigate in the tree to the lowest inventory node containing the work item(s) you wish to delete. *You should be viewing the work items at the **Work Plan Items** tab.*

Bulk Delete Work Items Where Possible

In BUILDER Version 3.3.13 or later, you can easily delete *all* work items at the current node of the work item tree. This requires careful selection of your starting point.

To delete work items in bulk,

1. In the left pane, navigate in the tree to the lowest node in which you want to delete *all* of the work items. Don't worry if this is not all of the work items you want to delete; you can continue to (a) repeat these steps to bulk delete at other locations in the tree and/or (b) delete individually selected work items as shown in ["Delete Selected Work Item\(s\) " on the next page.](#)
2. Make sure you are at the **Work Plan Items** tab in the content pane.
3. Mark the **Select All** checkbox at the top of the first column.

FY 2018	Add	Delete	Export
Work Plan Items	Projects	Budget Summary	
Select All <input type="checkbox"/>	Details	Name	Asset
		<input type="text"/>	<input type="text"/>
<input type="checkbox"/>	Replace	Warehouse (Log Whse-B)	WATER SYSTEMS Chiller, Scroll
<input type="checkbox"/>	Replace	1415 - Medical Warehouse (Log Whse-B)	B102001 STRUCTURAL FRAME Truss/Joist - Metal
<input type="checkbox"/>	Replace	1415 - Medical Warehouse (Log Whse-B)	2001 D203003 FLOOR DRAINS General
<input type="checkbox"/>	Replace	1415 - Medical Warehouse (Log Whse-B)	MAIN LIGHT POWER SWITCH D501005 ENCLOSED CIRCUIT BREAKERS General

- Finally, activate **Delete** on the toolbar above the work items table.

The screenshot shows the top toolbar with 'FY 2018', 'Add', 'Delete' (highlighted with a red box and a red arrow), and 'Export'. Below the toolbar is the 'Work Plan Items' tab, which contains a table with columns: 'Select All', 'Details', 'Name', and 'Asset'. The 'Select All' column has a checkbox highlighted with a red box. The table lists four items, all with 'Replace' in the 'Details' column.

Select All	Details	Name	Asset
<input type="checkbox"/>	Replace	Warehouse (Log Whse-B)	WATER SYSTEMS Chiller, Scroll
<input type="checkbox"/>	Replace	1415 - Medical Warehouse (Log Whse-B)	B102001 STRUCTURAL FRAME Truss/Joist - Metal
<input type="checkbox"/>	Replace	1415 - Medical Warehouse (Log Whse-B)	2001 D203003 FLOOR DRAINS General
<input type="checkbox"/>	Replace	1415 - Medical Warehouse (Log Whse-B)	MAIN LIGHT POWER SWITCH D501005 ENCLOSED CIRCUIT BREAKERS General

Delete Selected Work Item(s)

To delete one or more individually selected work items from the current work plan,

- Select one or more item(s) you wish to delete by marking the corresponding checkbox(es) in the first column of the work item table.

The screenshot shows the 'Work Plan Items' tab with a table that includes a 'Description' column. The third row's checkbox in the 'Select All' column is checked and highlighted with a red box. The table lists five items with various details and descriptions.

Select All	Details	Name	Asset	Description
<input type="checkbox"/>	Repair	0001 - first		Repair D3020 HEAT GENERATING SYSTEMS D302001 BOILERS Electric, Hot Water
<input type="checkbox"/>	Replace	0001 - first		Replace B3010 ROOF COVERINGS old Illini Union B301001 STEEP SLOPE ROOF SYSTEMS Clay Tile
<input checked="" type="checkbox"/>	Replace	0001 - first		Replace D1010 ELEVATORS AND LIFTS D101001 GENERAL CONSTRUCTION ITEMS General
<input type="checkbox"/>	Repair	0001 - first		Repair C1020 INTERIOR DOORS Door with cosmetic issues C102001 STANDARD INTERIOR DOORS Wood Door/Wood Frame
<input type="checkbox"/>	Replace	0001 - first		Replace A1010 STANDARD FOUNDATIONS Bad foundation A101001 WALL FOUNDATIONS Foundation Wall

- Activate **Delete** on the toolbar above the work items table.

Related Links

Links to work item tasks are listed below.

To learn about grouping work items into projects, start with the topic ["About Work Projects" on the next page](#). Or, for information about work plans, start with the topic ["About Work Plans" on page 8](#).

Task Links

["View a Work Item" on page 38](#)

["Section-Level Work Item Data" on page 50](#)

["Building-Level Work Item Data " on page 53](#)

["Add a Work Item" on page 42](#)

["Edit a Work Item " on page 47](#)

["Fund Work Items" on page 61](#)

["Prioritize Work Items in a Work Plan" on page 57](#)

["View Work Item Rankings" on page 60](#)

["Export Work Items" on page 63](#)

Instructional Links

["About Work Items" on page 36](#)

["About Work Item Cost Analysis" on page 66](#)

["Work Planning Overview" on page 5](#)

Work Projects

About Work Projects

This topic answers common questions about work projects and provides links to work project tasks.

- **What is a work project?**

A Maintenance and Rehabilitation (M&R) *work project* allows you to group work items together to manage them as a single work effort that is prioritized and funded as a whole. The work items in a project may span different Systems in a single Building, as in a renovation effort. A project may also span multiple Buildings.

In general, a project is a collection of any work items grouped together in an "all or nothing" work unit with a single funding source and a single work year.

- **What is the benefit of using work projects?**

Constructing logical groupings of work items can help simplify and reduce the workload of tracking work items.

- **What can I put in a work project?**

A work project can contain Section work items and/or Building work items. It can *not* contain another project.

Related Links

Links to work project tasks are listed below. For more about the work items contained in a work project, start with the topic ["About Work Items" on page 36](#).

Work Plan Tasks

["View a Work Project" on the facing page](#)

["Work Project Data" on page 87](#)

["Add a Work Project" on page 79](#)

["Organize Work Items into a Project" on page 90](#)

["Edit a Work Project" on page 84](#)

["Export a Work Project" on page 92](#)

["Delete a Work Project" on page 95](#)

Instructional Link

["About Work Projects" on the previous page](#)

["Work Planning Overview" on page 5](#)

View a Work Project

If one or more work projects have been created in a work plan, you can view project information starting at the work plan's **Projects** tab. You can view information displayed in the projects table at the **Projects** tab (this provides a smaller amount of detail), or by navigating to the project's "Details" popup. Both ways are described in this topic.

Projects Table Information

The columns displayed at the Projects tab of a work plan are a subset of those shown at the **Work Plan Items** tab. For additional details about the work project, you can

- (Details) - Activating a link-formatted entry in the first column will trigger a popup showing details for that work project.
- **Name** - Name of the project.
- **Description** - Description of the project.
- **Cost** - The aggregated cost of the estimates for performing the work items in the project.
- **Status** - Current status of the project.
- **Score** - If work items in the project have been prioritized, the score will be displayed here. The default value is 0, indicating that the work items have not been prioritized.
- **Date Completed** - Date the project was completed, if it has been completed.
- **Must Do (Checkbox)** - If the "Must Do" checkbox is marked, then in Scenarios the project will be the project to be funded in a Scenarios projection before all other competing work items that are not marked as "must do."

"Details" Popup Information

For a greater level of detail, activate the project's Details link in the first column of the projects table. This will bring up the "Details" popup where you can view the following information:

- **Project Name** - Name of the project. *Limit: 30 alphanumeric characters. The project name will be used for selecting, tracking and reporting.*
- **Description** - Description of the work project. *Limit: 255 alphanumeric characters.*
- **Work Request ID**. If applicable, your agency's work request number for the project. *Limit: 50 alphanumeric characters.*

Note: **Work Request ID** is not used by BUILDER in any analyses. The field is available for customer use.

- **Status** - Current status of the project, selected from the dropdown. The status will change over time as the project moves from planning to completion. The values **Status** can take are:
 - Awaiting Contract Award
 - Awaiting Funds
 - Awaiting Funds (Special Project)
 - Budgeted
 - Canceled
 - Completed
 - Deferred
 - Funded
 - Funded (Service Call)
 - Funded (Special Project)
 - In Design
 - In Progress
 - On hold
- **Funding FY** - The four-digit fiscal year that the project was or will be funded.
- **Must Complete as Planned** - Mark this box if the project falls into the "must do" category. Marking it will force the project to be funded in a Scenarios projection before all other competing work items that are designated "Must Do."
- **Work FY** - The four-digit fiscal year in which the work is expected to be performed.
- **Funding Source** - The funding source to be used for this project, selected from the dropdown.
- **Completion FY** - Enter the four-digit fiscal year that the project was or will be completed.
- **Date Completed** - The date the project was completed. *This field will appear only if **Status** is "Completed."*

- **Estimated Cost** - The estimated cost of the project, as a total of the costs of the work items contained in the project.
- **Score** - If you have prioritized the work items, then this project's score will be displayed here. The score for a project is computed as the average of its work items' scores weighted by their estimated cost. The default value is 0.000, which indicates that the work items in the project have not been prioritized.
- **Override automatic cost estimate** - Mark this box if you wish to override the cost estimate provided by BUILDER and enter your own estimated cost of the project instead.
- **Work Code** - The work code for the project. The available work codes are:
 - Demolition
 - New Footprint
 - Modernization
 - Sustainment
- **Actual Cost**. The actual cost of the project after completion. Before completion, this will equal the **Estimated Cost**.

Related Links

Task Links

["Work Project Data" on page 87](#)

["Add a Work Project" below](#)

["Organize Work Items into a Project" on page 90](#)

["Edit a Work Project" on page 84](#)

["Export a Work Project" on page 92](#)

["Delete a Work Project" on page 95](#)

Instructional Link

["View a Work Project" on page 77](#)

["Work Planning Overview" on page 5](#)

Add a Work Project

Project Location

Before adding a work project, you should give thought as to its best position in the navigation tree. For example, if the project entails re-roofing at multiple Sites, then you should add the project at an Organization level that is above all of those

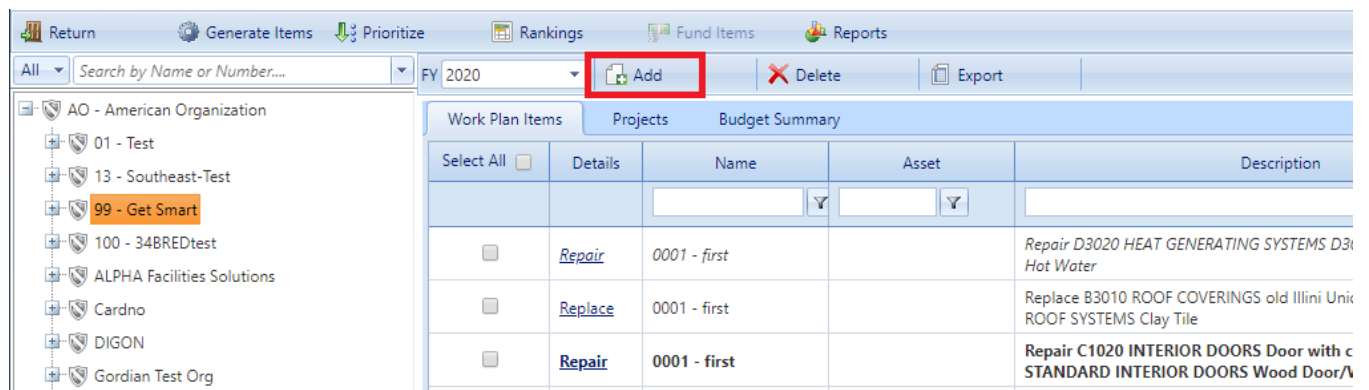
Sites. Ideally, a project should be placed low enough in the tree that you don't have a lot of unnecessary work items to wade through, but high enough in the tree to accommodate all of the work items to be included in the project.

Steps to Add Work Project

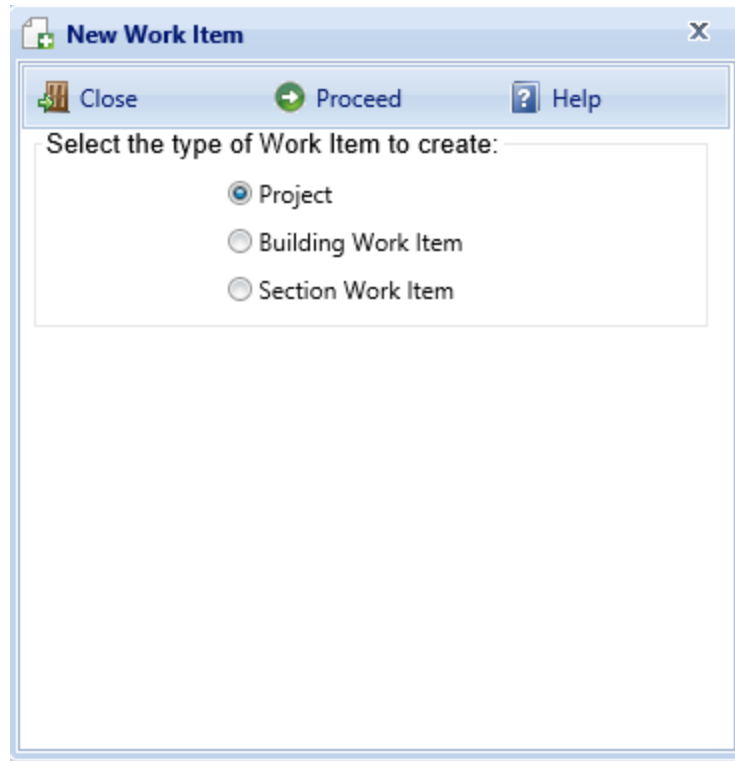
To add a work project,

1. At the work plan screen, navigate to the appropriate location where the project should reside (see commentary at ["Project Location" on the previous page](#) above).
2. Activate **Add** on the secondary toolbar on the work plan screen.

Troubleshooting Tip: If the **Add** button is grayed out, click again on the desired location in the navigation tree; this should refresh the button.



The "New Work Item" window will appear:



3. In the popup window, select the **Project** radio button option.
4. Next, activate **Proceed** on the toolbar.

*The "Project" popup window will appear, opened to the **General Information** tab.*

Close Save Help

Project Name: Testing Projects 123

General Information Work Items

Description:

Work Request ID:

Funding FY: 2012

Work FY: 2012

Score: 0

Work Code: Sustainment

Status: Awaiting Funds

☐ Must Complete as planned

Funding Source:

Estimated Cost: \$0.00

☐ Override automatic cost estimate

Actual Cost: \$0.00

ROI Information

Return:

ROI:

5. In the "Project" popup, fill in the following data as needed at the **General Information** tab:

- **Project Name** - Name of the project. *Limit: 30 alphanumeric characters. The project name will be used for selecting, tracking and reporting.*
- **Description** - Description of the work project. *Limit: 255 alphanumeric characters.*
- **Work Request ID**. If applicable, your agency's work request number for the project. *Limit: 50 alphanumeric characters.*

Note: **Work Request ID** is not used by BUILDER in any analyses. The field is available for customer use.

- **Status** - Current status of the project, selected from the dropdown. The status will change over time as the project moves from planning to completion. The values **Status** can take are:
 - Awaiting Contract Award
 - Awaiting Funds
 - Awaiting Funds (Special Project)
 - Budgeted
 - Canceled
 - Completed

- Deferred
- Funded
- Funded (Service Call)
- Funded (Special Project)
- In Design
- In Progress
- On hold
- **Funding FY** - The four-digit fiscal year that the project was or will be funded.
- **Must Complete as Planned** - Mark this box if the project falls into the "must do" category. Marking it will force the project to be funded in a Scenarios projection before all other competing work items that are designated "Must Do."
- **Work FY** - The four-digit fiscal year in which the work is expected to be performed.
- **Funding Source** - The funding source to be used for this project, selected from the dropdown.
- **Completion FY** - Enter the four-digit fiscal year that the project was or will be completed.
- **Date Completed** - The date the project was completed. *This field will appear only if **Status** is "Completed."*
- **Estimated Cost** - The estimated cost of the project, as a total of the costs of the work items contained in the project.
- **Score** - If you have prioritized the work items, then this project's score will be displayed here. The score for a project is computed as the average of its work items' scores weighted by their estimated cost. The default value is 0.000, which indicates that the work items in the project have not been prioritized.
- **Override automatic cost estimate** - Mark this box if you wish to override the cost estimate provided by BUILDER and enter your own estimated cost of the project instead.
- **Work Code** - The work code for the project. The available work codes are:
 - Demolition
 - New Footprint
 - Modernization
 - Sustainment

- **Actual Cost.** The actual cost of the project after completion. Before completion, this will equal the **Estimated Cost**.

6. Activate **Save** on the popup toolbar.
7. Activate **Close** on the popup toolbar.

Related Links

Task Links

- ["View a Work Project" on page 77](#)
- ["Work Project Data" on page 87](#)
- ["Organize Work Items into a Project" on page 90](#)
- ["Edit a Work Project" below](#)
- ["Export a Work Project" on page 92](#)
- ["Delete a Work Project" on page 95](#)

Instructional Links

- ["Add a Work Project" on page 79](#)
- ["Work Planning Overview" on page 5](#)

Edit a Work Project

To edit a work project,

1. At the work plan screen, open the **Projects** tab (you do not have to be at the work project's location to do this; you can be anywhere above it in the navigation tree as well).
2. In the first column of the work plan table, activate the Details link for the desired work project.

FY 2012		Add		Export				
Work Plan Items		Projects		Budget Summary				
	Name	Description	Cost	Status	Score	Date Completed	Must Do	
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Details	Testing Projects 123		\$0.00		0		<input checked="" type="checkbox"/>	

The project's Details popup window will appear, opened to the **General Information** tab.

The screenshot shows a software window titled 'Project Details' with a menu bar containing 'Close', 'Save', and 'Help'. The 'General Information' tab is selected, and the 'Project Name' field is populated with 'Testing Projects 123'. Below the tab bar, there are two main sections: 'General Information' and 'ROI Information'. The 'General Information' section contains several fields: 'Description' (a large text area), 'Work Request ID' (a text field), 'Funding FY' (a text field with '2012'), 'Work FY' (a text field with '2012'), 'Score' (a text field with '0'), 'Work Code' (a dropdown menu with 'Sustainment'), 'Status' (a dropdown menu with 'Awaiting Funds'), 'Funding Source' (a dropdown menu), 'Estimated Cost' (a text field with '\$0.00'), and 'Actual Cost' (a text field with '\$0.00'). There are also two checkboxes: 'Must Complete as planned' and 'Override automatic cost estimate'. The 'ROI Information' section is currently empty.

3. In the popup, edit the following data as needed at the **General Information** tab:

- **Project Name** - Name of the project. *Limit: 30 alphanumeric characters. The project name will be used for selecting, tracking and reporting.*
- **Description** - Description of the work project. *Limit: 255 alphanumeric characters.*
- **Work Request ID**. If applicable, your agency's work request number for the project. *Limit: 50 alphanumeric characters.*

Note: **Work Request ID** is not used by BUILDER in any analyses. The field is available for customer use.

- **Status** - Current status of the project, selected from the dropdown. The status will change over time as the project moves from planning to completion. The values **Status** can take are:
 - Awaiting Contract Award
 - Awaiting Funds
 - Awaiting Funds (Special Project)
 - Budgeted

- Canceled
 - Completed
 - Deferred
 - Funded
 - Funded (Service Call)
 - Funded (Special Project)
 - In Design
 - In Progress
 - On hold
- **Funding FY** - The four-digit fiscal year that the project was or will be funded.
 - **Must Complete as Planned** - Mark this box if the project falls into the "must do" category. Marking it will force the project to be funded in a Scenarios projection before all other competing work items that are designated "Must Do."
 - **Work FY** - The four-digit fiscal year in which the work is expected to be performed.
 - **Funding Source** - The funding source to be used for this project, selected from the dropdown.
 - **Completion FY** - Enter the four-digit fiscal year that the project was or will be completed.
 - **Date Completed** - The date the project was completed. *This field will appear only if **Status** is "Completed."*
 - **Estimated Cost** - The estimated cost of the project, as a total of the costs of the work items contained in the project.
 - **Score** - If you have prioritized the work items, then this project's score will be displayed here. The score for a project is computed as the average of its work items' scores weighted by their estimated cost. The default value is 0.000, which indicates that the work items in the project have not been prioritized.
 - **Override automatic cost estimate** - Mark this box if you wish to override the cost estimate provided by BUILDER and enter your own estimated cost of the project instead.
 - **Work Code** - The work code for the project. The available work codes are:
 - Demolition
 - New Footprint

- Modernization
 - Sustainment
 - **Actual Cost.** The actual cost of the project after completion. Before completion, this will equal the **Estimated Cost**.
4. To change what work items are associated with the project, follow instructions in ["Organize Work Items into a Project" on page 90](#).
 5. Activate **Save** on the popup toolbar. (Alternatively, if you do not wish to save the changes made to the project, activate **Close** on the toolbar without selecting **Save** first.)
 6. Activate **Close** on the popup toolbar.

Related Links

Task Links

["View a Work Project" on page 77](#)
["Work Project Data" below](#)
["Add a Work Project" on page 79](#)
["Organize Work Items into a Project" on page 90](#)
["Export a Work Project" on page 92](#)
["Delete a Work Project" on page 95](#)

Instructional Link

["Edit a Work Project" on page 84](#)
["Work Planning Overview" on page 5](#)

Work Project Data

This topic explains the data fields for a work project. This will help with understanding both the "Project" popup when adding a work project, or the "Details" popup that appears when viewing or editing a work project at the Projects tab in the work plan table.

A Maintenance and Rehabilitation (M&R) work *project* allows you to group work items together to manage them as a single work effort that is prioritized and funded as a whole. The work items in a project may span different Systems in a single Building, as in a renovation effort. A project may also span multiple Buildings.

In general, a project is a collection of any work items grouped together in an "all or nothing" work unit with a single funding source and a single work year.

Below is a description of the data fields in a work project, to assist you when you view, add, or edit a work project.

General Information Tab

At the **General Information** tab, the following general data for the project is or can be recorded:

- **Project Name.** Name of the project. This field is located between the toolbar and the tabs. *Limit: 30 alphanumeric characters. The project name will be used for selecting, tracking and reporting.*
- **Description.** Description of the work item. *Limit: 255 alphanumeric characters.*
- **Work Request ID.** If applicable, your agency's work request number for the project. *Limit: 50 alphanumeric characters.*

Note: Work Request ID is not used by BUILDER in any analyses. The field is available for customer use.

- **Status.** Current status of the project, selected from the dropdown. The status will change over time as the project moves from planning to completion. The values **Status** can take are:
 - Awaiting Contract Award
 - Awaiting Funds
 - Awaiting Funds (Special Project)
 - Budgeted
 - Canceled
 - Completed
 - Deferred
 - Funded
 - Funded (Service Call)
 - Funded (Special Project)
 - In Design
 - In Progress
 - On hold
- **Funding FY** - The four-digit fiscal year that the project was or will be funded.
- **Must Complete as Planned (Checkbox) (aka "Must Do")** - Mark this box if the project falls into the "must do" category. Marking it will force the work

items in the project to be funded before all other competing work items that are not marked as "Must Complete as Planned" (also called "Must Do" in the work plan column heading).

- **Work FY** - The four-digit fiscal year in which the work item will be performed.
- **Funding Source** - The funding source to be used for the project, selected from the dropdown
- **Date Completed** - The date the work item was completed. *This field will appear only if **Status** is "Completed."*
- **Estimated Cost** - The estimated cost of the project. BUILDER provides a means of estimating the initial cost using the **Calculate** button next to this field once you have chosen the work items in the project under the **Work Items** tab.
- **Score** - If you have prioritized the work items, then this project's score will be displayed here. The score for a project is computed as the average of its work items' scores weighted by their estimated cost. The default value is 0.000, indicating that the work items in the project have not been prioritized.
- **Override Automatic Cost Estimate** - Mark this box if you wish to override the cost estimated using the **Calculate** button and enter your own estimated cost of the project instead.
- **Work Code** - The work code of the work item, selected from the dropdown. The available work codes are:
 - Sustainment
 - Modernization
 - Demolition
 - New Footprint
- **Actual Cost** - Enter the actual cost of the project after completion.
- **ROI Information** - Displays information pertaining to the work items in the project.

Work Items Tab

The **Work Items** tab is used to build the list of work items for a project. The top grid on this tab displays the list of work items in the project and the bottom grid lists the work items not currently assigned to a project that can be added to the project. Note that work items from all fiscal years are available for selection to the project. If a work item from a different fiscal year is chosen, its fiscal year will be changed to the project's fiscal year before the project is saved.

To add a work item to the project, select the check box next to the work item. To remove a work item from the project, unmark the checkbox next to the work item. If

you are returning to add more work items to the project, unmark the **Only Show Selected Project Work Items** checkbox to see all work items for the Site.

After entering the data for the project on the **General Information** and **Work Items** tabs, activate **Save** on the toolbar to save the changes to the project.

Alternatively, if you do not wish to save the changes made to the project, activate **Close** on the toolbar.

Related Links

Task Links

- ["View a Work Project" on page 77](#)
- ["Add a Work Project" on page 79](#)
- ["Organize Work Items into a Project" below](#)
- ["Edit a Work Project" on page 84](#)
- ["Export a Work Project" on page 92](#)
- ["Delete a Work Project" on page 95](#)

Instructional Link

- ["Work Project Data" on page 87](#)
- ["Work Planning Overview" on page 5](#)

Organize Work Items into a Project

The **Work Items** tab at a work project's "Details" popup is used to build and display the list of work items contained in a project. By use of the checkbox **Only Show Selected Project Work Items**, the list of all work items and the list of work items selected for the project are layered into the same space.

Prerequisite: Add Work Project

If the work project doesn't already exist that you want to organize work items into, see ["Add a Work Project" on page 79](#).

Open Work Project

To open the work project that will contain the work items,

1. Activate **Work Plan** at BUILDER's main menu.
2. Activate the **Projects** tab. If you are at the head of the navigation tree, this should list all projects.
3. Activate the Details link for the desired project. *The "Details" popup will appear.*

Tip: If too many projects are listed, you can navigate in the tree to or closer to the work plan where the work project is located.
The list of work projects will automatically adjust.

Designate Work Items

To designate work items to be included in the project,

1. In the project's "Details" popup, open the **Work Items** tab.
2. In the upper left corner, below the tabs, if the **Only Show Selected Project Work Items** checkbox is marked, unmark it to display all work items.
3. In the first column, mark the checkbox for each work item you wish to include in the project.
4. Optionally, if you see an error in a work item while you are selecting work items for the project, you can correct it immediately by following these sub-steps:
 - a. Activate the work item's Details link.
 - b. Correct any fields needed at the work item's "Details" popup.
 - c. Activate **Save** on the work item's "Details" popup toolbar.
 - d. Activate **Close** on the work item's "Details" popup toolbar (NOT the work project "Details" popup).
5. When you have all of the desired work items selected, mark the **Only Show Selected Project Work Items** checkbox to restrict the view to just those work items that are in the project. *The display will collapse to show just the highlighted, checkmarked work items.*

Save

1. **IMPORTANT:** Make sure to save your work item designations by activating **Save** on the popup toolbar.
2. You can then activate **Close** to return to the work plan screen.

Related Links

Task Links

["View a Work Project" on page 77](#)

["Work Project Data" on page 87](#)

["Add a Work Project" on page 79](#)

["Edit a Work Project" on page 84](#)

["Export a Work Project" below](#)

["Delete a Work Project" on page 95](#)

Instructional Links

["Organize Work Items into a Project" on page 90](#)

["Work Planning Overview" on page 5](#)

Export a Work Project

At the "Details" popup for a work project, you can choose to export just those work items pertaining to that project. Instructions are contained in this topic.

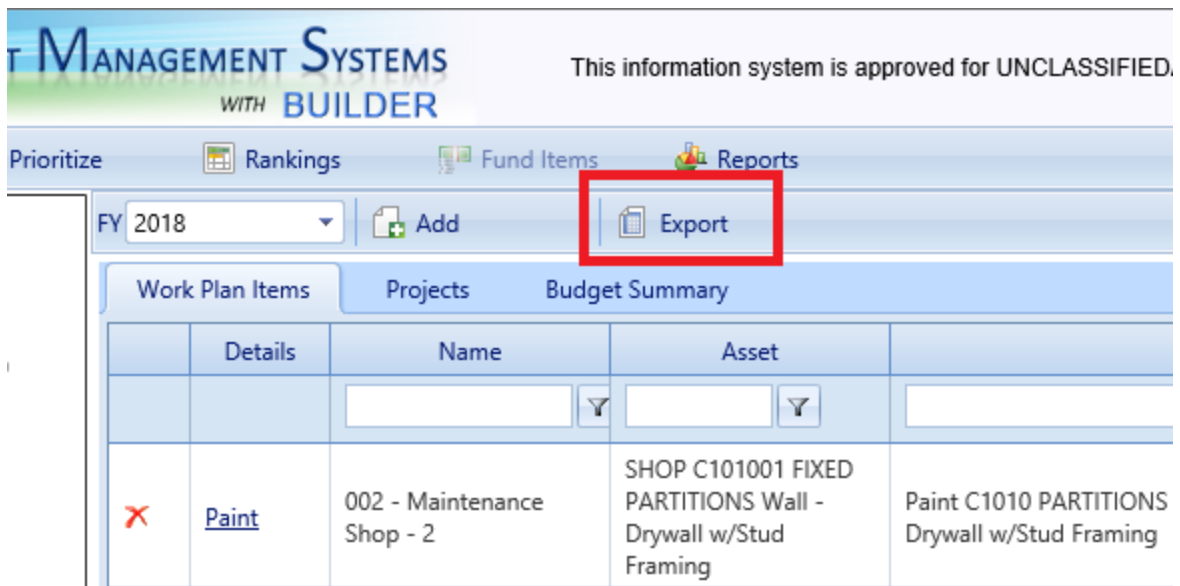
To export a work project, see "Export Work Project Work Items" in the export choices below. (All export methods have been clustered in this topic, to allow users to discover other methods that might be useful.)

Export Work Items from the Work Plan

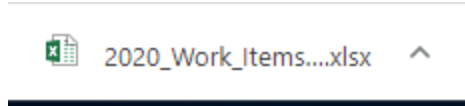
To export a work plan to an Excel spreadsheet from the **Work Plan Items** tab on the work plan screen,

1. On the BUILDER main menu, activate **Work Plan**.
2. At the work plan screen, select the desired location in the navigation tree at the left. This will determine the scope of the work plan, which will contain all work items for that location and below it in the tree.

3. On the secondary toolbar, activate **Export**.



4. When the Excel work plan shows as downloaded in the lower left corner of the window (see illustration immediately below), double-click on it to open. Alternatively, you can activate the up arrow to be able to select between opening the file and showing it in its Downloads folder location.



5. If you want to save the opened spreadsheet, you need to activate the **File** tab in the spreadsheet, then specify the location, and re-name as desired (the spreadsheet will have been assigned a default filename).

Export Work Project Work Items

You can choose to export just those work items contained in a particular work project. To do so,

1. At the work plan screen, open the **Projects** tab. *All projects pertaining to the current tree location on down will be listed in the content area.*

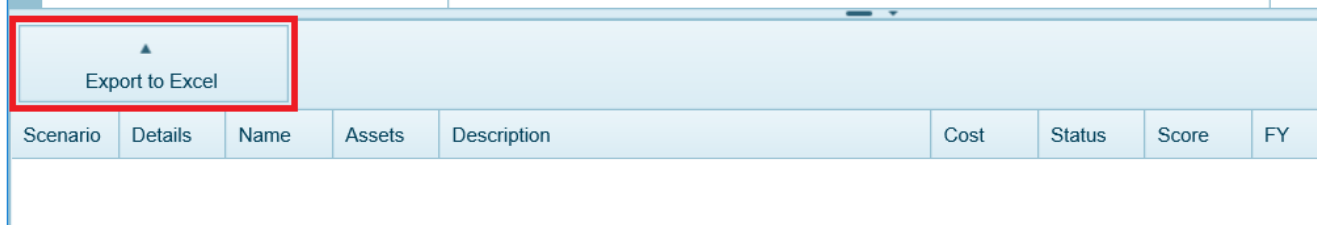
Tip: If you are at the head of the navigation tree and too many projects are listed, you can choose to navigate farther down in the tree towards or to the work plan containing the project.

2. Open the "Details" popup for the desired project by activating its Details link in the first column of the desired work project.
3. In the popup, open the **Work Items** tab.

4. If the **Only Show Selected Project Work Items** checkbox is not marked, mark it to restrict the view to just those work items that are in the project.
5. Activate the **Export** button on the popup toolbar.
6. When the Excel tab with the project name on it appears at the lower left of the screen, activate it to open the Excel file containing the project work items.
7. Save the exported file if desired (you can also rename it).

Export Work Items from Scenario Analysis

At **Scenarios > Analysis** (aka Scenario visualization), an **Export** button has been added above the grid of work items at the bottom of the Scenario analysis screen. This button will export to Microsoft Excel any work items listed in the grid:



Note: The tiny arrow at the bottom of the Scenario analysis screen is what opens or closes the drawer containing the grid of work items (if there are work items for the selected Component-Section).



Related Links

Task Links

- ["View a Work Project" on page 77](#)
- ["Work Project Data" on page 87](#)
- ["Add a Work Project" on page 79](#)
- ["Organize Work Items into a Project" on page 90](#)
- ["Edit a Work Project" on page 84](#)
- ["Delete a Work Project" on the facing page](#)

Instructional Links







- ["Export a Work Project" on page 92](#)
- ["Work Planning Overview" on page 5](#)

Delete a Work Project

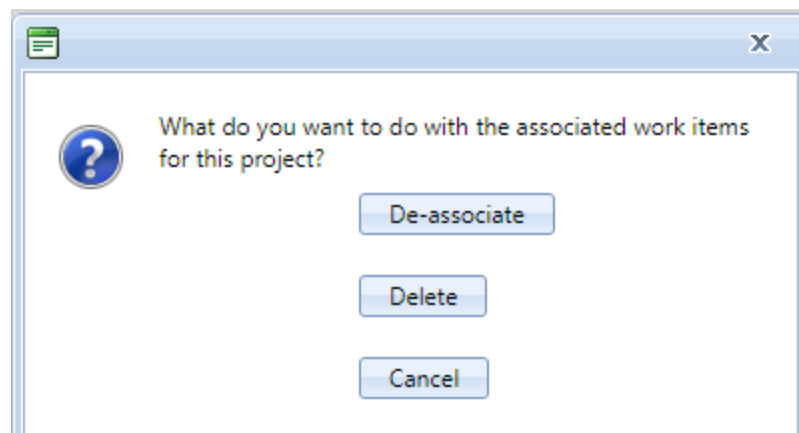
CAUTION: If a red X doesn't appear in the first column at the **Projects** tab, that might mean you don't have permission to delete the project, or it may just be an artifact of the method you used to navigate to the project listing.

To delete a work project,

1. At the work plan screen, select the node in the tree where the work project is located. (Although you can select a project from a listing generated at the head of the tree, the delete indicator(s) might not display properly if you do so.)
2. Open the **Projects** tab.
3. Activate the red X in the first column of its row in the projects table.

FY 2020		 Add	 Delete	 Export		
Work Plan Items		Projects			Budget Summary	
		Name	Description		Cost	
		<input type="text"/>		<input type="text"/>		<input type="text"/>
	Details	Interior work	Performing interior work together as a project.		\$89,595.00	

4. At this point, you will be presented with a choice to be made in a popup. Activate the button of your choice; the implications of each choice are described in the list below.



- a. If you choose to de-associate the work items contained in the project, the project will be deleted, but the work items will remain in the work

- plan. If it is your only project at that location, "No records to display" should appear after a time at the **Projects** tab.
- b. If you choose to delete the work items associated with the project, then both the project and the work items will be deleted. If it is your only project at that location, "No records to display" should appear after a time at the **Projects** tab.
 - c. The third option is to cancel the deletion; both the project and the work items will remain.
5. If you return to the **Work Plan Items** tab on the work plans screen, you can check whether the work plan items have remained or been deleted as desired.

Related Links

Task Links

["View a Work Project" on page 77](#)

["Work Project Data" on page 87](#)

["Add a Work Project" on page 79](#)

["Organize Work Items into a Project" on page 90](#)

["Edit a Work Project" on page 84](#)

["Export a Work Project" on page 92](#)

Instructional Links

["Delete a Work Project" on the previous page](#)

["Work Planning Overview" on page 5](#)

Scenarios

About Scenarios

The Scenarios simulation tool allows you to project facilities sustainment work requirements for up to ten years in the future. This can be done at the Site level (by the installation manager, for example). Simulations can also be run across an entire Organization, at any Organization level.

The purpose of this overview is to explain how Scenarios do this and how you can benefit from using its projections to improve your facility management practices.

Advantages of Using Scenarios

This section shows how this tool can be used advantageously to

- Establish and defend a long-term facilities sustainment budget
- Base your facilities sustainment budget on your actual inventory in its current condition
- Identify and quantify the consequences of an facilities sustainment backlog

The ability to run the simulation with different settings makes Scenarios a valuable tool in creating a credible long-term facilities sustainment budget. For a manager of a large number of buildings, establishing and defending a budget for the next 5 to 10 years is a very difficult problem. Often, managers use industry-standard planning factors to prepare a budget. Figures such as 2% - 4% of building replacement cost per year are often used. The DoD Facility Cost Handbook publishes a cost per square foot for facilities sustainment by Building Use (category code), a planning tool similar to several commercial tools which also use a per-square-foot factor for building sustainment. One problem with these methods of forecasting costs is that they are each based on the assumption of a continuing investment that allows the manager to repair what needs to be repaired when it needs to be repaired, which assumes no backlog of facilities sustainment. Very few managers have ever had sufficient funds to meet that assumption. Another problem with these methods is that they are averages that could miss the mark in any given year for any given Building by a factor of 2, 3, or much more. The manager of a thousand buildings could be faced with a very large shortfall. Still another problem, budgets prepared with planning factors are difficult to defend. If cuts are to be made, the manager is hard pressed to identify what will suffer. Without the ability to identify consequences, erosion of funds is inevitable.

Scenarios give you the opportunity to prepare a long-term facilities sustainment budget based on your actual inventory in its current condition. When Scenarios

have finished a Scenario run, it has produced records that tell the story about what is forecast to happen under the Scenario parameters. Each Component-Section in the inventory is tracked during the simulation. Dated condition assessments track expected deterioration. Dated work items show when work was done and how much it costs. When grouped by year, the work items provide an annual work plan constrained by expected funding levels. Annual work plans can be summarized by cost of completed and incomplete work, allowing you know what the backlog was each year and you know which work went unfunded. With rolled-up CI values, you can determine how well buildings or even locations did over the simulated period.

Scenarios allow you to run a Scenario either constrained or unconstrained by budget. With an unconstrained budget, all work items are completed when they are first recognized. Analysis of this type of Scenario will provide estimates of your total annual requirement. With a constrained budget, work items are funded in rank order until funds are exhausted. Work items not completed in one year will be generated the following year at a higher cost due to inflation and, for repair work types, to the cost for additional deterioration. Analysis of a constrained Scenario will give you insight into what parts of your inventory will suffer at a given funding level.

Required Data

The data required to construct a BUILDER database and its embedded knowledge and methods regarding condition assessment, component life expectancy, and costs combine to provide a complete model of your facilities and business processes includes:

- Where your facilities are and the effect of location on costs
- Records of each Building's use, age, size, construction type, etc.
- Decomposition of each Building into its Component-Sections, specified as to type, material, quantity, age, etc.
- History of past condition assessments of each Component-Section, with a dated condition index rating for each
- History of facilities sustainment work performed
- Cost estimating capability for various work activities related to Building components
- Expected service life and paint life of each component by material category and type
- Models for projecting condition and remaining service life on the basis of past condition assessment results

- Standards, policies and policy sequences for determining when work is required
- Prioritization schemes for ranking a given set of work items by their importance to you
- Funding sources with their future expected levels of funding, their restrictions, and their order of allocation.

Scenarios use all of this information as the basis for predicting how your inventory will change over time. BUILDER shows you the past and present for your inventory. Scenarios show you the future. It is able to show you the future in very much the same way that BUILDER is able to show you the past and present. That is, Scenarios show you the future by adding and changing records in your database at each step in simulated time the same way that you add or change records with the passing of real time. The difference is that, for example, when you add a new condition assessment record, it is based on a physical observation, whereas when Scenarios adds a new condition assessment, it has calculated the expected condition based on prior condition, deterioration rates, and work activity records. As another example, a work item in BUILDER may be subject to a good deal of off-line planning and debate before it is finally funded and complete, while in Scenarios the prioritization scheme and funding algorithms methodically calculate whether or not a particular work item can be completed.

Outline of Scenarios

The following list is a brief description of how Scenarios simulates change in your inventory over a 1- to 10-year period, starting at the date the Scenario is run.

- With the current inventory, updates all time-sensitive data elements (CI, RSL, Cost) for every Component-Section as of the current date.
- Uses the selected policy sequence to determine the appropriate standard for each Component-Section.
- Cycles through all of the Component-Sections in the inventory, and uses each Component-Section's standard to identify and generate necessary work items.
- [Prioritizes the work items](#) for the current year using the selected prioritization scheme.
- Allocates funding sources to the work items in [rank order](#), following the funding amounts, precedence rules, and restrictions established for each funding source.
- Schedules completion of funded work items for later in the current year.
- Sets current date to the date scheduled for work item completion, and registers the effect of the work as follows: creates a condition assessment

for the current date with appropriate findings, changes the Component-Section record if replaced or painted, and marks work item as completed.

- Sets current date to the end of the current year and calculate CIs for all Component-Sections, taking into account the appropriate prior CI, deterioration rate, and any work completed.
- *The previous steps have completed one year*; advance the current date to the start of next year and go back to the first step until 10 years have been simulated, or the established length of the Scenario set in the set-up process.

This very simple outline of what Scenarios do shows that you will have to specify several key elements of the process before it is able to move through these steps. They include the policy sequence, the prioritization scheme, and the funding levels. You will do this when you [manage a scenario](#). The particular policy sequence you choose will affect what work is identified. The particular prioritization scheme you choose will affect which work items rank highest in a year's work plan. The particular funding levels you choose will affect the amount of work that can be accomplished in any given year. As you might imagine, Scenarios in which different policy sequences, prioritization schemes, and/or funding levels are used will yield very different outcomes and can be compared and analyzed to determine the optimal work plan for your inventory.

Related Links

Recommended Reading

["About Scenario Management" on the facing page](#)

Work Plan Tasks

["View a Scenario" on page 102](#)

["Add a Scenario" on page 104](#)

["Edit a Scenario" on page 106](#)

["Scenario Data" on page 109](#)

["Run a Scenario Simulation" on page 115](#)

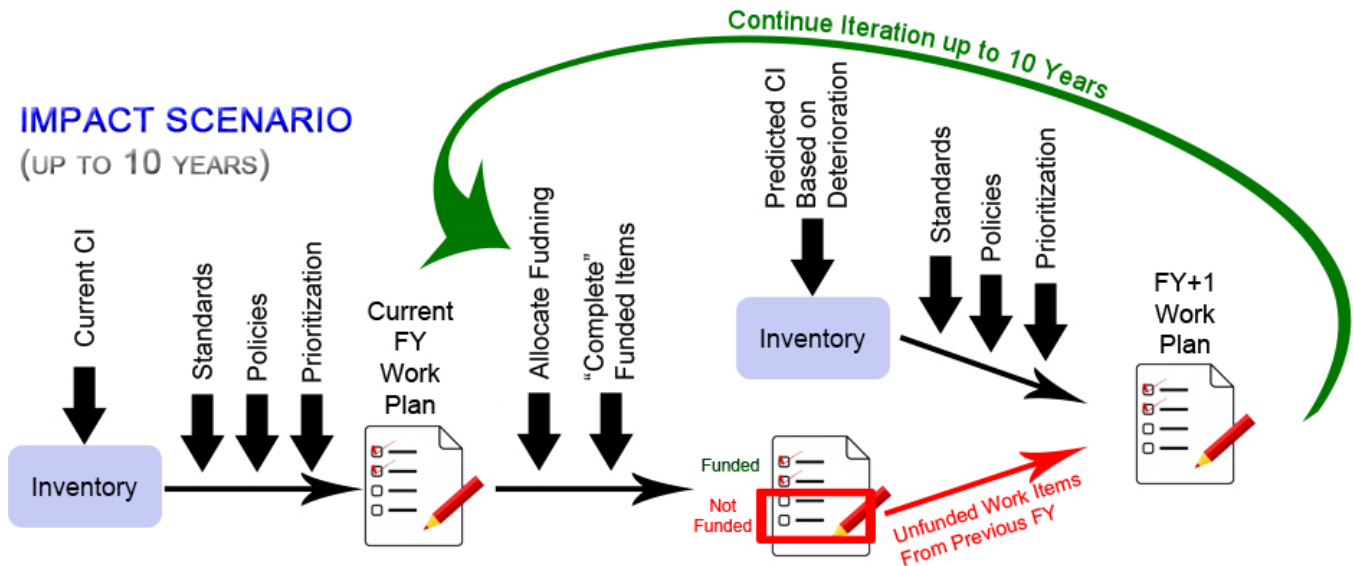
["Create a Work Plan from a Scenario" on page 117](#)

["Scenario Visualization / Analysis" on page 118](#)

["Delete a Scenario" on page 128](#)

About Scenario Management

A simplified outline of Scenario simulation steps was described in the [Scenarios Overview](#). You should review that topic before proceeding. Shown below is a conceptual illustration of the process:



In Scenario Management, a Scenario is a set of data to be presented to the simulation model consisting of particular inventory data and a set of initial parameters. The result of running the Scenario is expressed as a copy of inventory records in which the "current date" is sometime in the future, typically 5 to 10 years, and in which the time-stamped records beyond the run date are generated by the Scenario Simulation Model.

The first step in using Scenarios is to create a Scenario and establish the set of initial parameters. The initial parameters are a set of values for key elements of the simulation decision process, such as the length of time to simulate, the policy sequence to use for generating work, the prioritization scheme to use for prioritizing work, and the funding levels to use for determining whether or not work can be completed. Additional parameters include specifications for future changes in a Building's Current Status, the addition of new inventory or even entire Buildings, and the addition of new functionality assessments for Buildings and Functional Areas. After the initial parameters are set, you are ready to run the simulation.

Related Links

Task Links

- ["View a Scenario" below](#)
- ["Add a Scenario" on page 104](#)
- ["Edit a Scenario" on page 106](#)
- ["Scenario Data" on page 109](#)
- ["Run a Scenario Simulation" on page 115](#)
- ["Create a Work Plan from a Scenario" on page 117](#)
- ["Scenario Visualization / Analysis" on page 118](#)
- ["Delete a Scenario" on page 128](#)

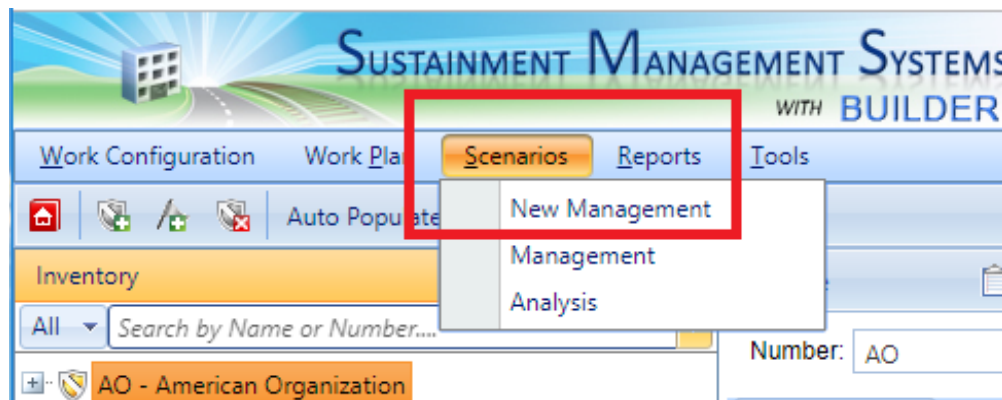
Instructional Link

- ["About Scenarios " on page 97](#)

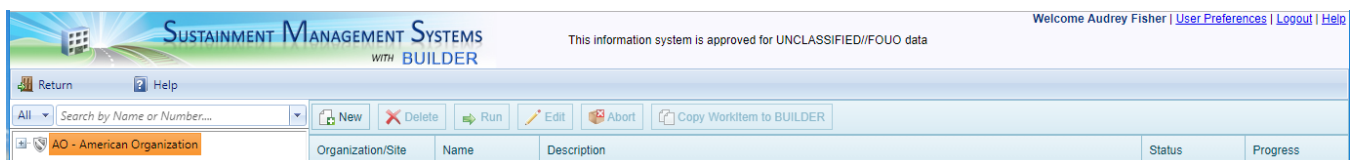
View a Scenario

Select an Organization or Site

To prepare to view, add or edit a Scenario, first select **Scenarios > New Management** from the main menu.



The Scenario Analysis window will appear.



In the navigation tree, select an Organization or Site. All available Scenarios for that scope will be listed in the grid in the content area. The **Organization/Site, Name, Description, Status,** and **Progress** columns will show additional information about each Scenario.

View

To view an existing Scenario,

1. Select its name in the grid.
2. Activate **Edit** on the toolbar. *A popup window will appear.*

Edit Scenario

Name:

Description:

Scope | General | Funding

Number of Years to Simulate:

☐ Copy first year from BUILDER (if available)

☐ Generate sample work items

Select Organization/Site/Complex

Available		Selected
DIGON		
Northern		
Midwest		
Gordian Test Org		
Mountain		
Southeast		
LMI Testbed		
Test		

☐ Select All

☐ A10 FOUNDATIONS

☐ A20 BASEMENT CONSTRUCTION

☐ B10 SUPERSTRUCTURE

☐ B20 EXTERIOR ENCLOSURE

☐ B30 ROOFING

Create Cancel

3. At the top of the popup window the following information will be shown:
 - **Scenario Name.**
 - **Scenario Description.**
4. Additional information for the Scenario is input at several tabs. These are explained in ["Scenario Data" on page 109](#). Edit the information as desired.

5. To close the Scenario after viewing, you can activate either the **Save** or **Cancel** button.

Run Scenario

For how to run the Scenario, see the topic ["Run a Scenario Simulation" on page 115](#).

Related Links

Task Links

- ["Add a Scenario" below](#)
- ["Edit a Scenario" on page 106](#)
- ["Scenario Data" on page 109](#)
- ["Run a Scenario Simulation" on page 115](#)
- ["Create a Work Plan from a Scenario" on page 117](#)
- ["Scenario Visualization / Analysis" on page 118](#)
- ["Delete a Scenario" on page 128](#)

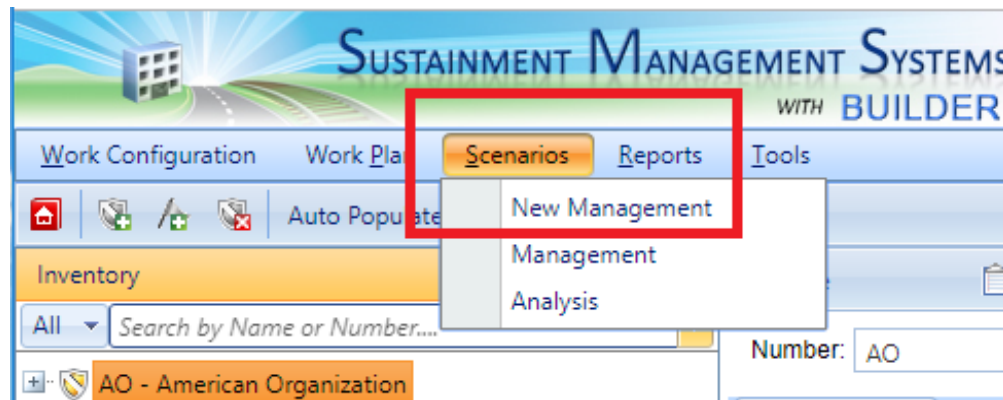
Instructional Links

- ["About Scenarios " on page 97](#)
- ["About Scenario Management" on page 101](#)

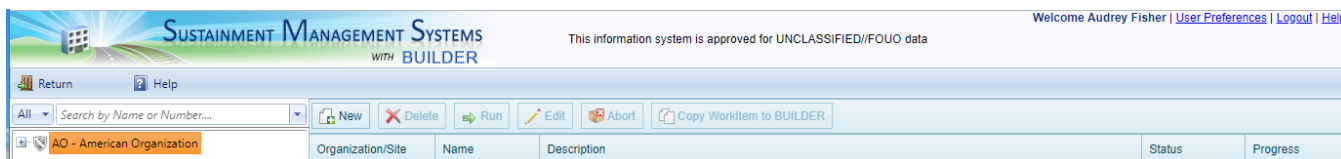
Add a Scenario

Select an Organization or Site

To prepare to view, add or edit a Scenario, first select **Scenarios > New Management** from the main menu.




The Scenario Analysis window will appear.



In the navigation tree, select an Organization or Site. All available Scenarios for that scope will be listed in the grid in the content area. The **Organization/Site**, **Name**, **Description**, **Status**, and **Progress** columns will show additional information about each Scenario.

Add

To create a new Scenario within the scope selected, activate  **New** on the toolbar. A popup window will appear, listing available Organizations/Sites in the **Available** column.

At the top of the popup window, enter the following information:

- **Scenario Name**
- **Scenario Description**

Enter additional data as described in ["Scenario Data" on page 109](#).

Create/Save Scenario

After you have finished entering data at the tabs described above, activate **Create** at the bottom of the popup, to finish creating the Scenario.

WARNING: If you select the **Cancel** button, you will lose your entry work!

Run Scenario

For how to run the Scenario, see the topic ["Run a Scenario Simulation" on page 115](#).

Related Links

Task Links

["View a Scenario" on page 102](#)

["Edit a Scenario" below](#)

["Scenario Data" on page 109](#)

["Run a Scenario Simulation" on page 115](#)

["Create a Work Plan from a Scenario" on page 117](#)

["Scenario Visualization / Analysis" on page 118](#)

["Delete a Scenario" on page 128](#)

Instructional Links

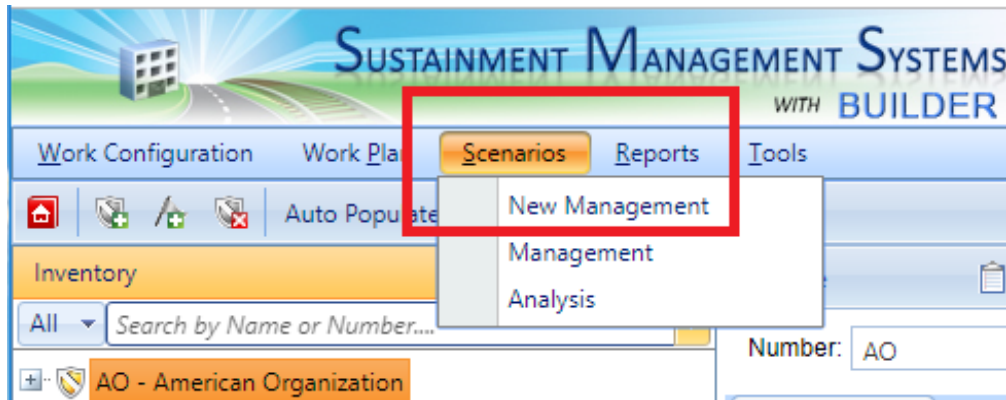
["About Scenarios " on page 97](#)

["About Scenario Management" on page 101](#)

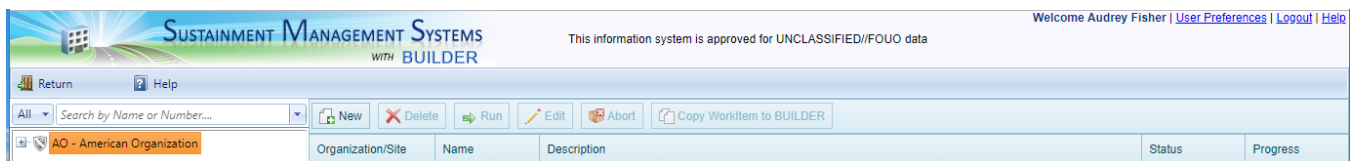
Edit a Scenario

Select an Organization or Site

To prepare to view, add or edit a Scenario, first select **Scenarios > New Management** from the main menu.



The Scenario Analysis window will appear.



In the navigation tree, select an Organization or Site. All available Scenarios for that scope will be listed in the grid in the content area. The **Organization/Site**, **Name**, **Description**, **Status**, and **Progress** columns will show additional information about each Scenario.

Edit and Save

To edit and save an existing Scenario,

1. Select its name in the grid.
2. Activate **Edit** on the toolbar. *A popup window will appear.*

3. At the top of the popup window, you can edit the following information if you wish:
 - **Scenario Name.**
 - **Scenario Description.**
4. Additional information for the Scenario is input at several tabs. These are explained in ["Scenario Data" on the facing page](#). Edit the information as desired.
5. After you have finished editing data at these tabs, activate the **Save** button at the bottom of the popup to update the Scenario. *This will save your changes.* (Alternatively, you can activate the **Cancel** button.)

WARNING: If you activate the **Cancel** button, you will lose your editing work.

Related Links

Task Links

- ["View a Scenario" on page 102](#)
- ["Add a Scenario" on page 104](#)
- ["Scenario Data" below](#)
- ["Run a Scenario Simulation" on page 115](#)
- ["Create a Work Plan from a Scenario" on page 117](#)
- ["Scenario Visualization / Analysis" on page 118](#)
- ["Delete a Scenario" on page 128](#)

Instructional Links

- ["About Scenarios " on page 97](#)
- ["About Scenario Management" on page 101](#)

Scenario Data

Information for the Scenario is input at the following tabs:

- ["Scope Tab" below](#)
- ["General Tab" on the next page](#)
- ["Funding Tab" on page 111](#)
- ["Inventory Events Tab" on page 112](#)

Scope Tab

The **Scope** tab (what you see when the popup opens) specifies the planning horizon and the specific buildings to be included in the simulation. The data entered on this tab includes:

- **Number of Years to Simulate.** Select the number of years the simulation will run (1-10) using the arrows.
- **Copy first year from BUILDER (if available).** (Checkbox)
- **Generate sample work items.** (Checkbox)
- **Select Organization/Site/Complex.** This is where you specify the Organization, Sites, and/or Complexes to be included in the simulation. The **Available** column lists all of the Organizations, Sites, and Complexes currently in the inventory. Use the arrow keys between the two columns to create, in the **Selected** column, a list of inventory that is to be included in the simulation. The Scenario will only include Buildings that are in at least one of the

Organizations, Sites, or Complexes listed in the **Selected** column.

Note: It is OK if there is overlap in the **Selected** inventory, that is, if the same Building is in more than one of the groups in the **Selected** list.

- **Systems to be included.** Using the checkboxes, select either all Systems (**Select All** checkbox) or one or more individual Systems. This selection will pertain to all Buildings selected. The ability to narrow down to a subset of Systems is especially useful if you are simply developing a long-term repair and replacement plan for a single System in one or more Buildings.

General Tab

The **General** tab allows you to set the **Cost Book**, **Inflation Book**, **Service (Life) Book**, **Policy Sequence**, and **Prioritization Scheme** to use for the Scenario. Each option can be selected from its dropdown, and is described in greater detail below.

Name: Test

Description:

Scope: General Funding Inventory Events

Cost Book: ABC3

Inflation Book: Reference

Service Book: temp test

Policy Sequence: temp test

Prioritization Scheme: test Copy

- **Cost Book.** Choose the cost book you wish to use for the Scenario from the dropdown list. A cost book is defined so the cost of each work item can be computed. See the topic About Cost Books, in the BUILDER Work Configuration Guide, for more information.
- **Inflation Book.** Choose the inflation book you wish to use from the dropdown list. An inflation book is defined to allow the Scenario to assess the inflation rates from year to year to be applied to the cost of work items.

- **Service (Life) Book.** Choose the service life book you wish to use from the dropdown list. A service life book is defined so that the service life of all Component-Sections in the inventory can be estimated.
- **Policy Sequence.** Choose the policy sequence you wish to use for the Scenario from the dropdown list. A policy sequence is defined so that when it is applied to the inventory, it will determine a standard for every Component-Section by using its default standard and then successively applying the applicable policies. See the topic Work Configuration Overview, in the BUILDER Work Configuration Guide, for general information or About Policy Sequences for links to information on how to add and edit policy sequences.
- **Prioritization Scheme.** Choose the prioritization scheme you wish to use for the Scenario from the dropdown list. A prioritization scheme is defined so that a priority score can be calculated for each Section-level work item based on the measures, point values, and weights you have assigned. See the topic , in the BUILDER Work Configuration Guide, for more information. The Prioritization Scheme will be used only when funding is constrained, but you must select a scheme here even if the funding is unconstrained.

Funding Tab

On the **Funding** tab, which is shown below, the funding levels for the different funding sources defined in BUILDER are set and the option of running the simulation with no funding constraints is provided. How to enter funding is described below.

Edit Scenario

Name

Description

Scope
General
Funding

☐ Constrained
Reset

This scenario's funding is currently unconstrained

	Name	2019	2020	2021	2022	2023	2024
<input type="checkbox"/>	Oleksiy Test	\$300	\$200	\$10	\$65	\$123	\$12
<input type="checkbox"/>	Walters Test	\$100,000	\$10,000	\$0	\$0	\$0	\$0

For funding, select or provide the following information:

To activate or deactivate funding constraints,

1. Select the **Constrained** checkbox if funding is constrained.

Note: If funding is unconstrained, the table of constraints will appear in gray color.

2. If funding is constrained, select the checkbox next to each constraint in the table that applies to the Scenario. To select all of the constraints, select the checkbox in the header row.
3. In Scenarios, you may not delete a funding source, but you can edit the dollar amount or even set it to \$0.

The constraints that appear in the table come from the Work Configuration process, which is performed by a user with Work Planner or higher permissions.

Inventory Events Tab

On the **Inventory Events** tab, which is shown below, future "whole building" events such as Current (Building) Status changes can be triggered at particular points in the simulation. In addition, completely new Buildings ("New Inventory") can be dynamically added to the inventory during the simulation. Each of these capabilities is described in greater detail below.

change for the Building in the Scenario for a different year.

- **Plan to demolish or transfer a Building** as the simulation progresses. You may do this in any of several ways:
 - a. Enter a Current Status of "To be demolished"/"To be transferred" in the BUILDER inventory, with an effective year set to the year the Building is to be removed, OR
 - b. Enter a Scenario status change to "Demolished"/"Transferred" in the appropriate change year, OR
 - c. Enter a Scenario status change to "To be demolished"/"To be transferred" in a chosen year. Note that this allows you to model the progression from (1) an active Building to (2) one that is to be demolished (accompanied perhaps by reduced maintenance standards) to (3) a demolished Building that is removed from work planning considerations.

To initiate a status change in the simulation, activate the **New** button in the Status Change portion of the screen and enter the following data elements:

- **Building.** Select the Building for which the change in status applies.
- **New Status.** Select the new status of the Building using the dropdown list.
- **Change Year.** Enter the year in which the Building's status is to change to the new status.
- **Effective Year.** Enter the effective year of the new status.
- **New Inventory.** BUILDER allows you to add a completely new Building during a Scenario, by activating the **New** button in the New Inventory portion of the screen and entering the following data:

New Inventory

BUILDER allows you to add completely new Buildings during a Scenario by activating the **New** button in the New Inventory portion of the screen and entering the following data:

- **Building Number.** Enter the number identifier for the new Building.
- **Building Name.** Enter the name identifier for the new Building.
- **Organization.** Select the Organization to add the new Building to.
- **Template.** Select the template to use to estimate the new Building's inventory.
- **Effective Year.** Enter the year the new Building will be added to the inventory.

Related Links

Task Links

["View a Scenario" on page 102](#)

["Add a Scenario" on page 104](#)

["Edit a Scenario" on page 106](#)

["Run a Scenario Simulation" below](#)

["Create a Work Plan from a Scenario" on page 117](#)

["Scenario Visualization / Analysis" on page 118](#)

["Delete a Scenario" on page 128](#)

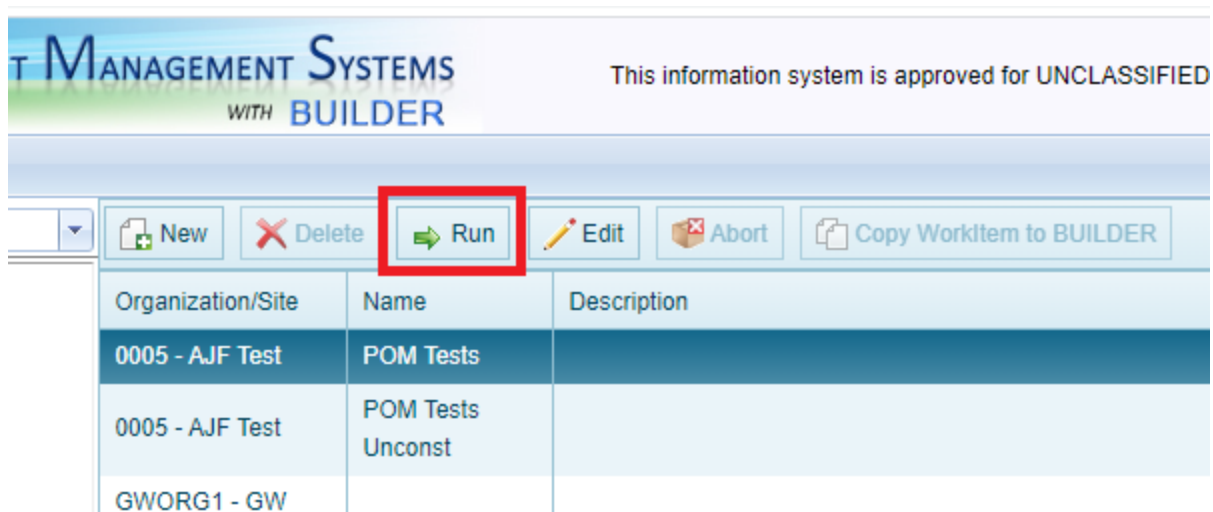
Instructional Links

["About Scenarios " on page 97](#)

["About Scenario Management" on page 101](#)

Run a Scenario Simulation

After all of the initial Scenario parameters are set, you can run the simulation by selecting the Scenario in the content pane and then activating **Run** on the toolbar.



A progress report will scroll along the bottom of the window, entering a new line each time a new activity begins. Each line of the progress report begins with the system time on your computer so that you may judge how long each step takes. After the initial setup, the activity stream will repeat from year to year for the num-

ber of years in the simulation. By calculating how long it takes to simulate one year you can estimate how long the simulation will be running.

Caution: The simulation is a computationally intensive process, and many new records will have to be created in a single run. The simulation run time is very dependent on your computer system's speed and the size of the inventory in the simulation. The simulation could take from a few minutes up to several hours to finish. It does not allow for any interaction after you have activated **Run** in the dropdown list, other than allowing you to Abort the run at any time.

If the simulation is taking too long, you have the option to abort the process by right-clicking on the Scenario and choosing **Abort**. The simulation will prepare to finish its current process and stop running the Scenario.

When the Scenario has run to completion (assuming it has not been aborted), you can do any of the following with the results:

- Use the results to [create a work plan for BUILDER](#).
- Compare the results with the results of other Scenarios using ["Scenario Visualization / Analysis" on page 118](#).
- If you are using an older version of BUILDER, you might be able to compare the results with the results of other Scenarios using the deprecated Scenario Comparison and Analysis feature.

Related Links

Task Links

["View a Scenario" on page 102](#)

["Add a Scenario" on page 104](#)

["Edit a Scenario" on page 106](#)

["Scenario Data" on page 109](#)

["Create a Work Plan from a Scenario" on the facing page](#)

["Scenario Visualization / Analysis" on page 118](#)

["Delete a Scenario" on page 128](#)

Instructional Links

["About Scenarios " on page 97](#)

["About Scenario Management" on page 101](#)

Create a Work Plan from a Scenario

After a Scenario has been run, the expected work items for all of the years in the Scenario can be copied into BUILDER™ as the work plan. If the Scenario was constrained by funding levels, then only the future work items with "Completed" status will form annual work plans constrained by budget. To create a work plan using the Scenario results, navigate to the Scenario module and expand the tree on the left hand portion of the screen to the desired Site. Once the Site has been selected, the Scenarios for this Site will load in the right portion of the screen. Right click on the Scenario to be copied and click "Copy to Work Plan."

When a Scenario is copied to the work plan, BUILDER will take the following steps:

- If your work plan contained work items for the years prior to the scope of the Scenario, those work items receive preferential treatment so that no conflicting work efforts will be generated during the Scenario and the original work items will move along in the process with the simulated work items. The original work items will have to compete for resources if the Scenario has funding constraints, so that original work items may not be "Completed" and therefore not re-imported back into your production database during the Copy Scenario process. One way to insure that the manually created future work items already in your production database do not get lost in the Scenario is to mark them as "Must Complete as Planned." This will essentially require that they be completed as planned in the Scenario.
- All current year and future work items for buildings in the scope of your Scenario will be deleted.
- All "Completed" current year and future work items in the selected Scenario will be imported into annual work plans with a status of "Awaiting Funds," a rank of "1/1," and a score of "0.000."

WARNING: These steps are rather drastic in their manipulation of work item records, and it is possible for work items to be deleted and/or lost in the shuffle. It would be wise to make a copy of the database and work with the copy to ensure nothing is lost.

By using the Scenario tool, you can refine a work plan. If you start with no future work plan, then running a Scenario should give you a first cut at constructing future work plans. Use the Copy to Work Plan option on the right click menu to import the budget-constrained, completed work items from the Scenario into your production database. You can then refine the work items from the [work plan screen](#), moving work items from year to year, changing work item properties, perhaps marking those that will definitely be completed as planned so that the next run of the Scenario will insure that each one is completed. You may even re-

inspect sections identified as needing work, especially if they have not been inspected for some time. Improvements in the accuracy of your data will improve simulation results as well.

You can then run another Scenario with your new data and the same Scenario parameters and use Scenario to Work Plan copy method described above to import the work plan from the new Scenario database. Each cycle should improve the work plan generated and the overall Scenario results. This is important because the work plan generated will begin to represent your future work plans more realistically, and the Scenario results will give you a more realistic view of the next 5 to 10 years and improve your insights into the consequences of a given funding level.

Related Links

Task Links

["View a Scenario" on page 102](#)

["Add a Scenario" on page 104](#)

["Edit a Scenario" on page 106](#)

["Scenario Data" on page 109](#)

["Run a Scenario Simulation" on page 115](#)

["Scenario Visualization / Analysis" below](#)

["Delete a Scenario" on page 128](#)

Instructional Links

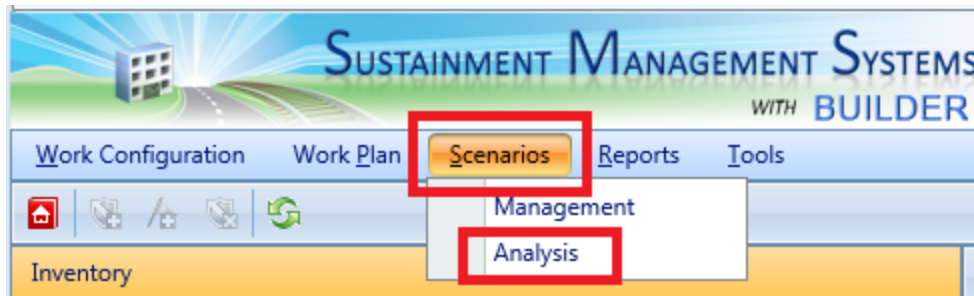
["About Scenarios " on page 97](#)

["About Scenario Management" on page 101](#)

Scenario Visualization / Analysis

Scenario Visualization allows you to visualize aspects of a Scenario or combination of Scenarios by specifying parameters and then selecting from available predefined graph types.

To access Scenario Visualization, select **Scenarios > Analysis** from the main menu.



For details about opening and closing items in the Scenario Visualization page, see ["About Navigating the Scenario Visualization Page" below](#). To get started creating a Scenario visualization, see ["Create a Scenario Visualization" on the next page](#).

IMPORTANT: You cannot create a Scenario at the Scenario Visualization page; you can only view and analyze Scenarios that you have already created using the steps specified in ["Add a Scenario" on page 104](#).

About Navigating the Scenario Visualization Page

The layout of the Scenario Visualization page consists of these areas:

- an **Analysis Options** column on the left
- a **Graph Options** column on the right
- a **Work Items** drawer at the bottom
- a central area (the "viewing board") where the graphs will be displayed

If the first three areas are not visible when you enter Scenario Visualization, you can bring the Analysis Options and Graph Options into view by activating/clicking on the left-hand and right-hand blue border bars. To bring the work items into view, activate the small arrow centered at the bottom of the screen to expand the Work items drawer (see ["Show and Hide Work Items" on the next page](#) in the section ["Navigating Analysis Options and Graph Options" below](#)).

Navigating Analysis Options and Graph Options

In the Scenario Visualization page, activating/clicking on the darkest colored bars, both vertical and horizontal, will expand and minimize areas of the page. The only area that does *not* minimize is the **Selected Scope** area in **Analysis Options**.

Work Items

Show and Hide Work Items

At the bottom of the page is the drawer for work items connected with the Scenario(s) being visualized.

1. To expand the Work Items drawer and show the contents, activate the tiny up arrow centered at the bottom of the page.



2. To close the Work Items drawer, activate the tiny down arrow at the top of the Work Items section.

Change the Size of the Work Items Drawer

You can change the size of the Work Items drawer when it is open by following these steps:

1. Place the cursor on the top border bar of the Work Items drawer.
2. When the cursor changes to a double-headed arrow and the top border bar turns a solid color, click the left mouse button and drag up or down the screen (up for a larger drawer, down for a smaller drawer). New position will be indicated by a dark horizontal bar.
3. When the dark bar is where you want the Work Items border bar to be, release the mouse button.

Create a Scenario Visualization

Set Analysis Options

Select Scope

Your first task in creating a Scenario Visualization is to set the scope of your visualization by selecting a location:

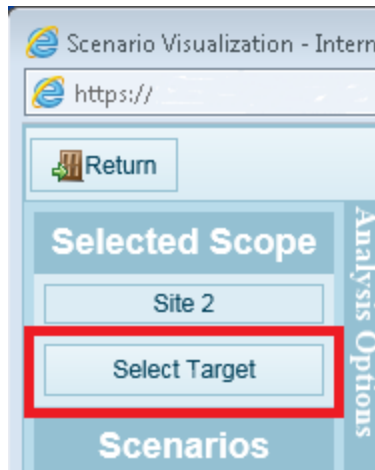
1. Under **Selected Scope** in the left column (Analysis Options), activate the **Select Target** button.
2. In the popup box (Select Scope), activate the expansion arrow next to each node in the navigation tree until you reach the location you want as your scope.

Note: The scope must be either an Organization (any level) or a Site.

Tip: As soon as the popup window appears, the **Select Target** button is renamed **Cancel**. To exit without saving, activate **Cancel**. To save what you have and exit, you can activate the white arrow that points from the top of the popup box to **Selected Scope**.

3. Click the name of your desired location in the popup box to highlight it.
4. Click **OK** at the bottom of the popup box.

At this point the popup box should disappear, and your selected location will be listed above the **Select Target** button.



Select Scenario(s)

Your second task is to select one or more Scenarios under **Scenarios**. However, if you see the message "None available" then you will need to first create a Scenario appropriate to your selected scope. To do so, activate the **Return** button at the upper left of the screen to return to the main menu, then follow instructions under ["Add a Scenario" on page 104](#).



To select one or more Scenarios,

1. Under **Scenarios** in the left column (Analysis Options), activate the **Add** button. A popup box (Select Scenarios) will appear.

Tip: As soon as the popup window appears, the **Add** button is renamed **Cancel**. To exit the selection process without saving, activate **Cancel**. To save what you have and exit, you can activate the white arrow that points from the top of the popup box to **Scenarios**.

2. In the popup box, use the up and down arrows in the vertical scroll bar to navigate through the list of available Scenarios.

Note: If the list appears blank, but the message "None available" doesn't appear, the list may contain a Scenario that has a space as its name.

3. Click the square box next to each Scenario desired. A black check mark will appear in the box.
4. Click **OK** at the bottom of the popup box to complete the Scenario selection process. The popup box should disappear.

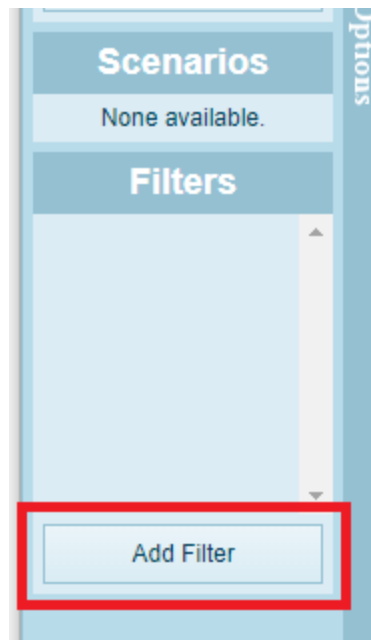
Note: If you see the message "None available" then you will need to first create a Scenario appropriate to your selected location (Scope). To do so, activate the **Return** button at the upper left of the screen to return to the main menu, then follow instructions under ["Add a Scenario" on page 104](#).

Add Filters (Optional)

An optional additional task is to create one or more filters to perform on your data.

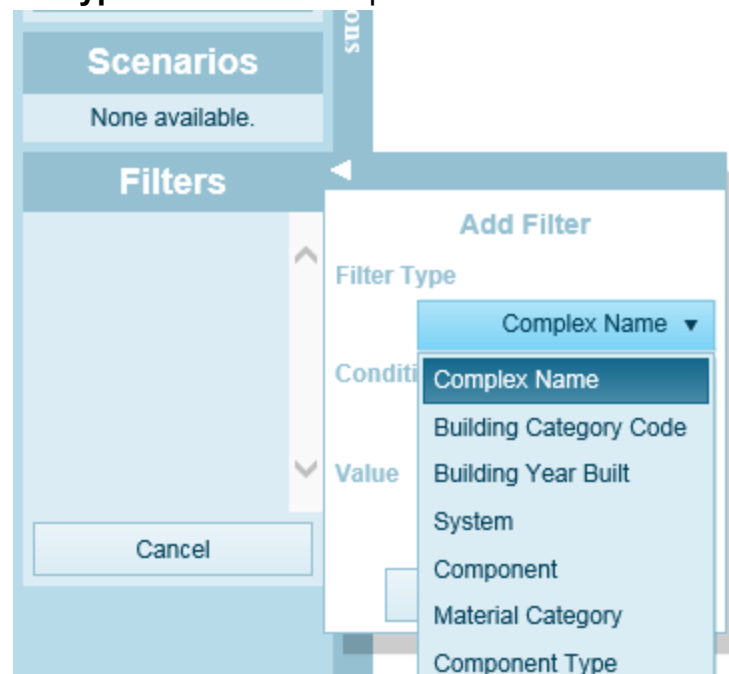
To create a filter,

1. Click the **Add Filter** button. A popup box labeled "Add Filter" will appear.

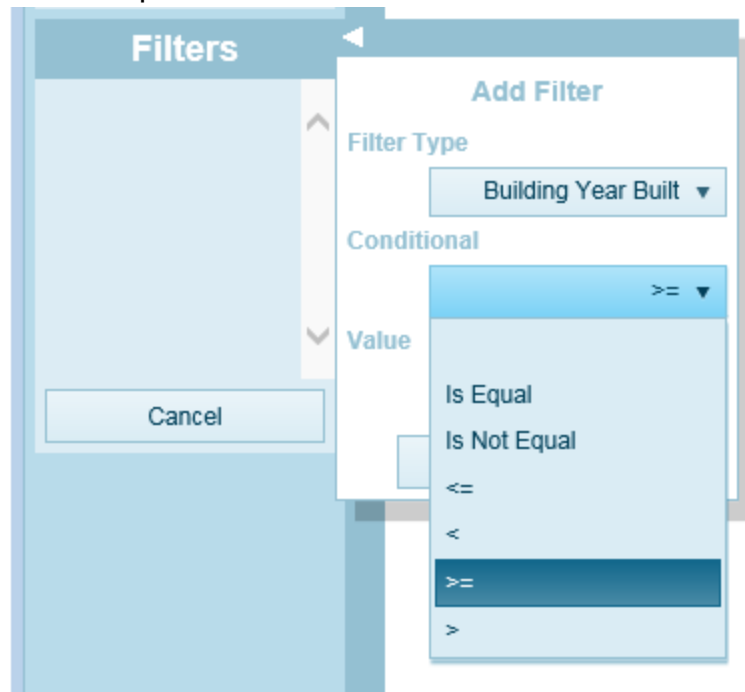


Tip: As soon as the popup window appears, the **Add Filter** button is renamed **Cancel**. To exit without saving, activate **Cancel**. To save and exit, you can activate the white arrow that points from the top of the popup box to **Filters**.

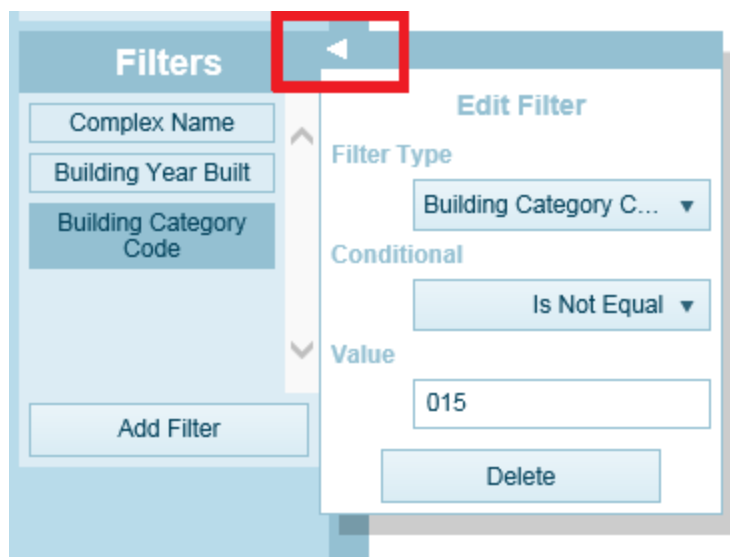
2. Select a **Filter Type** from the first dropdown list:



3. Select a **Conditional** (e.g., Is Equal, Is Not Equal, greater than, less than) from the second dropdown list:

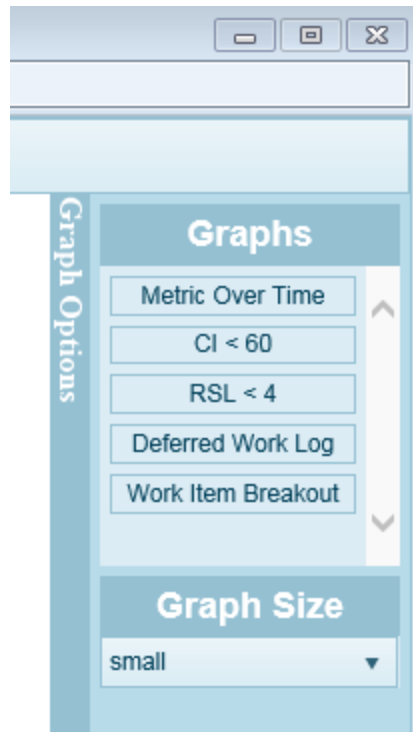


4. Click in the third box and enter a value for comparison.
5. Click **Create** at the bottom of the popup box to complete the filter. A rectangle showing the filter type should appear in the list of filters.
6. To add another filter, repeat steps 2 through 5 in the popup box.
7. When you are finished adding filters, activate the white arrow that points from the top of the popup box to **Filters**. The popup box should disappear.



Set Graph Options

In the rightmost column of the Scenario Visualization screen is a list of graphs that can be drawn for your selected package of Scenario parameters. If the list of graphs is longer than the available space, the up and down arrows in the vertical scroll bar will be black instead of gray, and you can use them to navigate the list.



Select a Graph to View

1. If the **Graph Options** column is not expanded at the right side of your screen, click on the dark vertical bar labeled **Graph Options**.
2. Hover over one of the graph names listed (it will highlight).
3. Hold down the mouse button and drag the graph to the viewing board, into box labeled "Drag a graph here."

How To Select Additional Graphs

The viewing board is able to hold at least nine graphs at one time. However, speed may suffer with a larger number of graphs. If you are placing more than two graphs on the viewing board, the process will be easier if the **Graph Size** is set to **small**.

To select additional graphs,

1. Hover over a graph name (it will highlight).
2. Hold down the mouse button and drag the graph to the box indicated by a darker color.

How To Remove a Graph from the View

To remove a graph from the viewing board,

1. If the blue header bar is showing at the top of the graph, skip to step 3.
2. Bring the cursor to the top of the graph to make the blue graph header bar appear.
3. Click the white "x" at the upper right corner of the graph.

How To Change Graph Size

Under **Graph Size** in the right column (**Graph Options**), activate the down arrow for the full dropdown list and select between **small** and **large**. This will change the size of all graphs on the viewing board.

Edit Scenario Visualization Parameters

Change Scope

To change the scope of your visualization, follow the same instructions as for initial scope selection:

1. Under **Selected Scope** in the left column (Analysis Options), activate the **Select Target** button.
2. In the popup box (Select Scope), activate the expansion arrow next to each node in the navigation tree until you reach the location you want as your scope.

Note: The scope must be either an Organization (any level) or a Site.

Tip: as soon as the popup window appears, the **Select Target** button is renamed **Cancel**. To exit without saving, activate **Cancel**. To save what you have and exit, you can click the white arrow that points from the top of the popup box to **Selected Scope**.

3. Click the name of your desired location to highlight it.
4. Click **OK** at the bottom of the popup box.

Change Scenario Selection

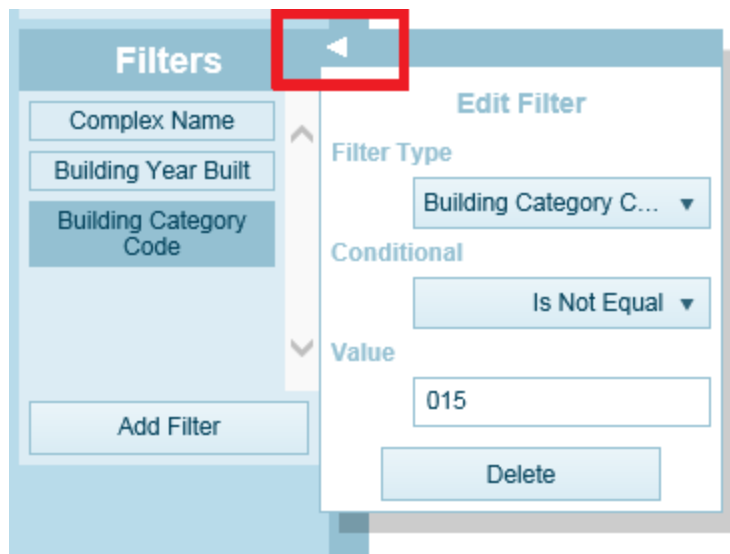
To change the selection of Scenarios,

1. Under **Scenarios** in the left column (Analysis Options), activate the **Add** button.
2. In the popup box, use the up and down arrows to navigate through the list of available Scenarios.
3. If a Scenario is selected that you do not wish, click in the square box next to it. The black check mark will disappear.
4. To select a Scenario that is not currently selected, click in the square box next to it. A black check mark will appear in the box.
5. Click **OK** at the bottom of the popup box to complete the Scenario selection process.

Change Filters

To change a filter,

1. In the list under **Filters**, activate the filter you wish to edit by selecting it. It will be highlighted, and a popup box (Edit Filter) will appear.
2. Change the **Filter Type** and/or **Conditional** and/or **Value** as desired.
3. To save your change(s) and exit, activate the white arrow that points from the top of the popup box to **Filters**:



Delete a Filter

To delete a filter,

1. In the list under **Filters**, activate the filter you wish to delete by selecting it. It will be highlighted, and a popup box (Edit Filter) will appear.
2. After checking the filter details to confirm that it's the one you wish to delete, activate the **Delete** button at the bottom of the popup box.

Exit Scenario Visualization

To exit Scenario Visualization, activate the **Return** button at the top left of the screen.

Related Links

Task Links

["View a Scenario" on page 102](#)

["Add a Scenario" on page 104](#)

["Edit a Scenario" on page 106](#)

["Scenario Data" on page 109](#)

["Run a Scenario Simulation" on page 115](#)

["Create a Work Plan from a Scenario" on page 117](#)

["Delete a Scenario" below](#)

Instructional Links

["About Scenarios " on page 97](#)


["About Scenario Management" on page 101](#)

Delete a Scenario

To delete a Scenario,

1. Select **Scenarios > New Management** from the main menu.
2. In the table of Scenarios in the content pane, select the scenario you wish to delete.

WARNING: There will be no confirmation popup after you activate the **Delete** button. Deletion will happen immediately.

3. On the toolbar, activate  **Delete**.

Related Links

Task Links

["View a Scenario" on page 102](#)

["Add a Scenario" on page 104](#)

["Edit a Scenario" on page 106](#)

["Scenario Data" on page 109](#)

["Run a Scenario Simulation" on page 115](#)

["Create a Work Plan from a Scenario" on page 117](#)

["Scenario Visualization / Analysis" on page 118](#)

Instructional Links

["About Scenarios " on page 97](#)

["About Scenario Management" on page 101](#)

What's New in BUILDER 3.5

This topic describes changes made in BUILDER Version 3.5.

Version 3.5.4 Changes

Inventory Events in Scenarios

The **Inventory Events** tab has been restored to Scenarios ("New Management" option). This allows future changes in a Building's status to be simulated in Scenarios. It also allows entire new Buildings to be created in future years of a Scenario.

Version 3.5.3 Changes

reCAPTCHA Verification Available for Web Login

reCAPTCHA verification has been added to the Web login page. reCAPTCHA is a verification tool used to determine if an agent attempting to access a system is a robot. This feature significantly hampers unauthorized users from gaining access to the site through automated login attempts.

reCAPTCHA is disabled by default to accommodate customers who do not have Internet access, because the verification requires an Internet connection.

To enable the reCAPTCHA verification feature, the table **dbo.Configuration** must have an entry where ConfigName="ReCaptchaAPI" and ConfigValue="True"

Version 3.5.2 Documentation Change

In the inventory topic "BUILDER Systems and Components", the table showing UNIFORMAT II Levels 2 and 3 (corresponding to BUILDER Systems and Components) has been expanded and revised to reflect BUILDER's conformance with the NAVFAC version of UNIFORMAT II.

New Features Introduced in BUILDER 3.5.0

Inventory Improvement

- **Component-Section Status Tracking.** Users can assign a status to individual Component-Sections. Note: In this release, business processes such as work generation, rollups, and inclusion in the navigation tree are unaffected by Component-Section status; however, the design implemented

allows for expanding this capability to alter business processes at a later date.

- **Custom Configuration of Building Templates.** BUILDER Administrators can configure the allowable maximum percent difference in square footage between a building template and the building it is to be applied to. Previously the percentage was fixed at 10%.
- **Building Summary Screen Additions and Alterations.** New to the Building summary screen:
 1. Building renovation year (last year renovated)
 2. A series of checkboxes to indicate that the Building does not contain one or more of the following Systems: Plumbing; Fire Suppression; HVAC; Electrical
 3. A checklist to indicate that the Building cannot be inspected for one or more of the following reasons: not accessible; locked; secure building (escort required); under renovation.
 4. Building Status now allows some simultaneous selections through use of a second, auxiliary field.
- **Local / Selective Inventory Unlock.** This feature allows users to select particular facilities or systems to be unlocked, instead of the former "all or nothing" approach. This granular "un-locking" ability is located under **Tools > Unlock My Buildings**.

Scenarios

- **Multi-Year Scenario Work Item Tracking.** As BUILDER customers begin to incorporate Scenarios and work plans into their standard practices, there are year-to-year overlaps in planning and execution that require additional functionality in the application. The process and construction time that can be associated with a BUILDER work item often drags a work item execution year out from the generation year. The Scenarios module now provides the option to not re-generate Work Items with statuses indicating that funds have been allocated. This will simplify the work and budget projections as Scenarios will no longer be counting work items that have been addressed via previous funding streams.
- **POM Scenarios.** Scenarios Work Generation in Support of Program Objectives Memorandum (POM) is a new feature that allows BUILDER users to set FCI targets for their facilities as a part of their Scenario configuration. This allows Scenarios to output the funding required to meet those FCI targets, in addition to the recommended work actions. To do this, FCI targets can be established alongside work configuration Policy settings. BUILDER Scenarios generates the recommended work candidates based on the user's work configuration settings (Policy Sequences / Prioritization) and

then begins "funding" work items for each facility in priority order until the FCI target is achieved. The output is a list of work items that need to be accomplished in order to meet the target FCI.

- **BUILDER Scenarios Screen Refresh.** The Microsoft Silverlight technology used to refresh BUILDER's Scenario module a few years ago is no longer supported by multiple browsers. In order to ensure continued support and access to BUILDER Scenarios, Silverlight has been replaced using Angular technology allowing for cross-browser functionality.
- **API Coverage for Scenarios.** The BUILDER web-service API has been expanded to allow privileged users to create, configure, edit, and delete Scenarios through web-based API calls.

Cost Modifiers

Users can create custom cost modifiers (adders and multipliers) that can be specified for a given BUILDER hierarchy level (Site, Building, Component-Section, etc.), and users can apply those modifiers to the specific instances that they apply to. This gives increased granularity to apply cost modifiers where they are required without over-applying them.

Functionality Assessment

- A new convenience enables assessors to select the image button for a question, take a picture with their tablet camera, and immediately attach a photo to the question.
- Users now have the ability to crop and cancel pictures.

Catalog Improvement Package (Reference Books, etc.)

- **Service Life Book Improvements** – Data fields have been added to the BUILDER database for tracking BUILDER component section service life performance; average, max, min, standard deviation, etc. This will allow easier tracking of performance trends and ultimately refined life-cycle models.
- **Revised Data Structure for Cost Storage** – Data fields have been added to the BUILDER database to allow for seamless integration with third party cost data sources. This includes the ability to name the source of a given cost book as well as link the cost record entries to a third party reference identification number.
- **Reference Book Import/Export capability** – This addition allows BUILDER users to export custom cost books to an excel sheet that can then be edited and re-imported to BUILDER for more rapid cost record updating.
- **Editable Component Importance Indexes (CII) Values** – The data storage method utilized by BUILDER's cost and service life books has been

applied to the Component Importance Indexes, allowing users to create custom CII Books in the same way as cost and service life books.

BUILDER Auditing Expansion

BUILDER's auditing capability has been expanded, allowing database administrators to track critical additions, edits or deletions made during users' work planning and work configuration tasks. For details, see the BUILDER 3.5.0 release notes.

BUILDER API Expansion

- **Electronic Acceptance of Cost Data.** The BUILDER web-service API has been expanded to allow privileged users to modify BUILDER cost book information and records via web-based API calls. This allows for more seamless integration with third-party cost sources as updates can be configured to be an automated back-end process.
- **Scenario API Additions.** The BUILDER web-service API has been expanded to allow privileged users to create, configure, edit, and delete Scenarios through web-based API calls.

BUILDER 3.5.0 Bug Fixes

For a list of bug fixes, please see the release notes.

Glossary

Administrator

A user with BUILDER or ROOFER 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 better reflect 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.

ATFP

Antiterrorism Force Protection

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 (SCIs), 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. This index may be used to rank the relative importance of components against one another. An example of its use is in Work Configuration to hold different Component-Sections to different thresholds, or to prioritize them differently based on relative importance.

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. The CSCI is computed by using the assessment data to calculate a deduct value, 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 Call

FAFI

Functional Area Functionality Index

FCA

Facility Condition Assessment

FCI (ROOFER)

Flashing Condition Index. In ROOFER the FCI, as determined by inspection and/or algorithm, is used in the calculation of the Roof Condition Index (RCI).

FEMA

Federal Emergency Management Agency

FI

Functionality Index

HABS

Historic American Buildings Survey

HAER

Historic American Engineering Record

HPSB

High Performance and Sustainable Building

IAQ

Indoor air quality

ICI (ROOFER)

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 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 (ROOFER)

Membrane Condition Index

MDI

Mission Dependency Index - measures the relative importance of a Building

MOA

Memorandum of Agreement

MOU

Memorandum of Understanding

NAGPRA

Native American Graves Protection and Repatriation Act

PCBs

Polychlorinated biphenyls

PCI (ROOFER)

Panel Condition Index. The PCI is one component making up the Roof Condition Index (RCI) for a metal panel roof, along with the Insulation Condition index (ICI) if applicable, and the Flashing Condition Index (FCI).

PI

Performance Index. See also: BPI. The Performance Index is a weighted combination of the CI value and the FI value, with the lower of the two values being given two-thirds of the weight and the higher of the two values being given one-third of the weight.

PM

Preventative Maintenance

PM inspection

Preventative maintenance inspection

POM

Program Objectives Memorandum

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 (ROOFER)

Roof Condition Index

RML

Remaining Maintenance Life

RPIE

Real property installed equipment

RSL

Remaining Service Life

SCCI

Subcomponent condition index, produced when using direct rating in a preventative maintenance (PM) inspection

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.

SCI (ROOFER)

Substrate Condition Index

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, and Modernization

STIG

Security Technical Implementation Guide (DoD)

Stop gap repair

Repair that will keep the CI at its current level for one year, without further deterioration.

SUCI

Sample Unit Condition Index

UM

Unit of Measure. Examples: Each; LF (linear feet)

Work item

A discrete work activity applied to a single managed object such as a Component-Section, intended to improve its life cycle performance.

Work plan

A collection of work items and/or work projects planned for a Building, Site, Complex, or Organization.

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.

Work project

A grouping of work items to be managed, prioritized, funded, and executed as a single work effort. The work items selected for the work project need not be in the same System or even in the same Building. An example of a work project would be a renovation effort that affects multiple Systems in a Building.

Index

A

Add

Scenario 104

work item 42

work plan 14

work project 79

Annual Work Plans 117

B

Building-level work item 53

C

Copy

work plan from Scenario 117

Copyright 2

Cost analysis 66

D

Data

Building-level work item data 53

Scenario data 109

Section-level work item data 50

work plan data 25

Definition

work item 5

work plan 6

work project 5

Delete

Scenario 128

- work item 72
- work item, bulk delete 73
- work item, selective delete 74
- work plan 34
- work project 95

Disclaimer 2

E

Edit

- Scenario 106
- work item 47
- work plan 17
- work project 84

Export

- work item 63
- work plan 63

F

Fiscal year

- set fiscal year for generating work plan 19
- set fiscal year for viewing work plan 11

Fund

- Scenario 111

Funding 61

- work items 61

G

Generate work items 15

Generate work plan 15

I

IMPACT 97

Inventory events in Scenarios 112

P

Prioritize

work items 27, 57

R

Regenerate work items 18

Regenerate work plan 18

Return on investment 66

ROI 71

Run

Scenario simulation 115

S

Scenario 97

add 104

advantages of using 97

creating work items from a Scenario 117

data 109

data requirements 97

delete 128

edit 106

funding 111

inventory events 112

overview 97

run Scenario simulation 115

view 102

Scenario analysis 118

Scenario visualization 118

Section-level work item data 50

Simulation 99, 101, 115

V

View

- Scenario 102
- work item 38
- work item rankings 30, 60
- work plan 9
- work project 77

Visualization

- Scenarios 118

W

Welcome 2

Work item 66

- about work items 36
- add 42
- Building-level work item 53
- bulk delete 73
- cost analysis 66
- creating work items from a Scenario 117
- definition 5
- delete 72
- edit 47
- export 63
- funding work items 61
- generate work items 15
- organize work items into a project 90
- prioritize work items 27, 57
- Section-level work item 50
- view 38

view work item rankings 30, 60

Work items

regenerate 18

Work plan

about work plans 8

add 14

creating work items from a Scenario 117

data 25

definition 6, 8

delete 34

edit 17

export 63

generate 15

overview of work planning 5

regenerate 18

view 9

Work project

about work projects 76

add 79

definition 5

delete 95

edit 84

organize work items into a work project 90

view 77

work project data 87

