

# Projects, Models, Tasks, & Markups

This chapter describes all of the components of projects that you see in the BSD CostLink/AE interface. It also provides explanations and instructions for working with projects, adding tasks to your estimate, and applying markups.

- Working with projects
- Summary Info dialog box
- Using cost models
- Folder form
- Task form
- About the supplied cost data
- About assemblies
- About line items
- Copying tasks into projects
- Creating line items
- Applying markups

## Working with Projects

Project databases are used to build estimates. Each estimate that you create in BSD CostLink/AE is a separate project database, which is a file with the extension .mpj.

### Opening a Project

Use these instructions to open an existing estimate. To open a project:

1. Choose File > Open > Open Project Database.

The Open Database dialog box opens, showing the projects in the Projects folder.


2. Select a project in the folder, or use the dialog box to navigate to a different folder.
3. Click Open.

The project database opens.

### Opening a Recently Used Project

The bottom of the File menu lists the last four projects that were opened. Click the name of the project to open it.

Existing projects can also be opened using the Recently Used dialog box. To open a recently used project using the Recently Used dialog box:

1. Choose File > Open > Recently Used Window, or click the *Open recently used project dialog* toolbar button .

The Recently Used dialog box opens, showing the projects that have been opened on this computer.

2. Select a project and click Open.

The project opens.

Tips on using the Recently Used dialog box:

- If the project you want to open is not listed, click the Browse button.
- If you are not sure which project you edited last, or if you would like to know where each project is located, under View, click the Details option. You can scroll to the right to view additional information about each project, and/or resize the Recently Used window.

- If there is a project in this window that you no longer want listed here, click once on the name of the project, and then click the Remove button. This does not remove the project from your computer; it removes it from the list of Recently Used projects.

## Creating a New Project

You can create a new project based on one of the templates supplied with BSD CostLink/AE or based on any existing project. Your new project inherits the folders, tasks, and Summary Info from the selected template or existing project. You can change this information once the project is created.

1. Choose File > New, or click the *Create a new project* toolbar button .

The New dialog box opens, showing the available project templates.

2. Choose a template from the list area, or click the Browse button to select a different template or existing project.
3. Click New.

The Save New Project Database As dialog box opens.

4. If desired, select a different folder to save your project in, and type a filename for your project in the File name field. Click Save.

BSD CostLink/AE creates and opens the new project and its Summary Info dialog box. (See the next topic for information on the Summary Info dialog box.)

CostLink/AE comes with four templates for starting new projects. The templates are located in the CostLink AE\system\templates folder.

- Uniformat II Project Template with Models
- MasterFormat 2004 Project Template.MPJ
- MasterFormat (16 division) Project Template
- No WBS Project Template


**NOTE:** WBS stands for Work Breakdown Structure. In projects, folders represent the WBS. Therefore, the Uniformat II template contains folders that match Uniformat II, the MasterFormat templates contains folders that match CSI's (Construction Specification Institute's) MasterFormat-95 16 divisions and the MF-2004 50 divisions. The No WBS template has no folders.

If you are creating an estimate for a client who requires a specific WBS that does not follow Uniformat II or MasterFormat, then create the new project using the No WBS Project Template and add folders that match the client's WBS. The folders will be the major headings in the reports.

## Summary Info Dialog Box

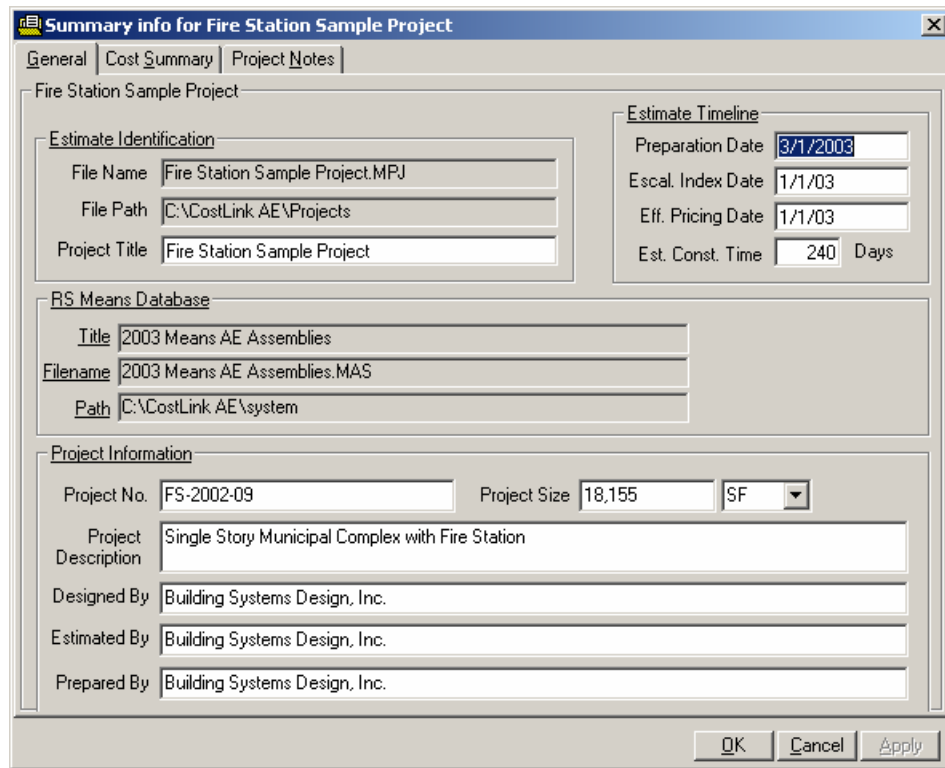
Use the Summary Info dialog box to display and edit information about the project. This includes descriptive information that will print on the report title page, cost markup information, cost models, model additives, and notes about the project as a whole.

The Summary Info dialog box opens automatically when you create a new project. To display the Summary Info dialog box for the current project at any other time:

- Choose File > Summary Info or click the *Open the summary info dialog* toolbar button .

### General Tab

Use the General tab to display and edit general information about the estimate.



**Summary info for Fire Station Sample Project**

General | Cost Summary | Project Notes

Fire Station Sample Project

**Estimate Identification**

File Name: Fire Station Sample Project.MPJ  
 File Path: C:\CostLink AE\Projects  
 Project Title: Fire Station Sample Project

**Estimate Timeline**

Preparation Date: 3/1/2003  
 Escal. Index Date: 1/1/03  
 Eff. Pricing Date: 1/1/03  
 Est. Const. Time: 240 Days

**RS Means Database**

Title: 2003 Means AE Assemblies  
 Filename: 2003 Means AE Assemblies.MAS  
 Path: C:\CostLink AE\system

**Project Information**

Project No.: FS-2002-09    Project Size: 18,155    SF  
 Project Description: Single Story Municipal Complex with Fire Station  
 Designed By: Building Systems Design, Inc.  
 Estimated By: Building Systems Design, Inc.  
 Prepared By: Building Systems Design, Inc.

OK    Cancel    Apply

Summary Info dialog box, General tab

**NOTE:** The tabs available on the Summary Info dialog box will vary, depending on the project template used. If the *Uniformat II Project Template with Models* is selected, the Summary Info dialog box will have two tabs in addition to those shown on the preceding page. All other templates will open a Summary Info dialog box with the three tabs shown.

### ***Estimate Identification***

File Name	File name for the project that was entered when you created the project. (This cannot be changed here. To change the filename of a project, close the project and change the name in Windows Explorer.)
File Path	Drive and directory where the project is stored. (This cannot be changed here. To change the File Path, close the project and use Windows Explorer to move the project.)
Project Title	Name of the project that appears on reports and on the folder at the top level of the tree panel.


### ***Estimate Timeline***

Preparation Date	Date of preparation of the estimate.
Escal. Index Date	The date of publication of the escalation index table used in the project.
Eff. Pricing Date	Date for which the pricing in the project is effective.
Est. Const. Time	Estimated number of workdays to complete the project.

### ***Cost Database***

This area displays the Title, Filename, and Path of the cost database being referenced by the project.

### ***Project Information***

Project No.	Number to identify project. Will be the folder tag on the level 0 folder (visible only when you are viewing the project with single tab turned on -  ). On reports, this number appears on the left side of the footer and as a folder tag for the top-level folder in summary reports.
Project Size and UOM	The estimated size and unit of measure of the project that is being estimated. This displays a unit cost for the project on the top-level folder in the tree panel, on the Cost Summary tab, and on the bottom line of the reports.
Project Description	A description of the project. Can be up to 255 characters.

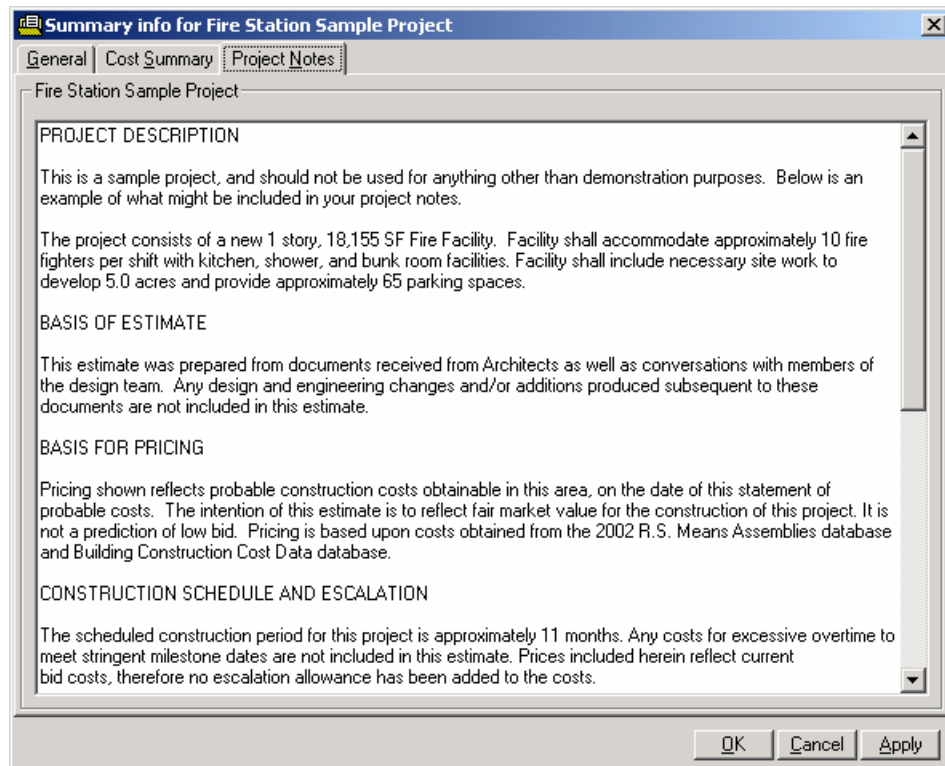
Designed By	The architect's or engineer's name or the firm's name.
Estimated By	The estimator's name or firm's name.
Prepared By	The estimator's firm or consulting firm and location.

## Cost Summary Tab

The fields on the Cost Summary tab and how to enter the markups are explained in the last section of this chapter under Applying Markups.

## Project Notes Tab

Use this tab to enter any project level descriptive notes that you want to include with the estimate. Project Notes can be printed on reports.



*Summary Info dialog box, Project Notes tab*

**NOTE:** If you would like to spell check your notes, type them in your word processor using its spell checker. Then use your word processor's Copy command to copy your notes, click in the Project Notes tab, and use CTRL+V to paste the notes.

## Cost Models Tab

Use this tab to select an RS Means cost model to use as the basis for your project cost estimate. This tab also allows you to enter critical data about your project, to select an exterior closure and framing option, and to make adjustments to the model building parameters that drive the formulas embedded in the cost model.

**Summary info for Office Building**

General | Cost Summary | **Cost Models** | Model Additives | Project Notes

Office Building

Select Model

None

Commercial

Industrial

Institutional

Office, 5-10 Story

Enter Dimensions

Building Size  SF

Building Perimeter  LF

Select Exterior Closure and Framing

Precast Concrete Panel / R/Conc. Frame

Model Building Parameters

Default (Baseline) Building Area (GSF)	80000	SF
Default (Baseline) Building Perimeter	420	LF
Number of Floors	8	FLRS
Average Floor to Floor Height	12	LF
Partition Density (GSF per SF of Partition)	30	SF/SF
Average Partition Height	10	LF
Door Density (GSF per Door)	400	SF/EA
Suggested Architectural Fees (% of Construction)	6	PCT

Reset Parameters

OK Cancel Apply

*Summary Info dialog box, Cost Models tab*

**NOTE:** This tab is available only if you started your project by using the Uniformat II Project Template with Models.

**Select Model**

- |               |   |
|---------------|---|
| None          | Selecting this option nullifies the modeling template.  |
| Commercial    | Selecting this option changes the models available in the adjacent pull-down to all available commercial models. Click on arrow to pull down list and click on list to choose model.    |
| Industrial    | Selecting this option changes the models available in the adjacent pull-down to all available industrial models. Click on arrow to pull down list and click on list to choose model.    |
| Institutional | Selecting this option changes the models available in the adjacent pull-down to all available institutional models. Click on arrow to pull down list and click on list to choose model. |

**Enter Dimensions**

- |                    |   |
|--------------------|---|
| Building Size      | Enter total gross square footage of project. Note that model cost estimate may not be accurate if area entered here is significantly greater or smaller than default (baseline) building area indicated under Model Building Parameters.          |
| Building Perimeter | Enter total linear feet of building perimeter. Note that model cost estimate may not be accurate if length entered here is significantly greater or smaller than default (baseline) building perimeter indicated under Model Building Parameters. |

**Select Exterior Closure and Framing**

- |                |  |
|----------------|--|
| Pull-Down List | Click on arrow to pull down list of six possible exterior closure and framing options available for specific model selected. Click on option to select exterior closure and framing. |
|----------------|--|

**Model Building Parameters**

- |                  |   |
|------------------|---|
| Fixed Parameters | <i>Default (Baseline) Building Area (GSF)</i> is the gross area of the building on which the model is based. <i>Default (Baseline) Building Perimeter</i> is the length of the perimeter of the building on which the model is based. These two parameters are stated for informational purposes and cannot be adjusted here, but alternative size and perimeter may be entered above in the same dialog box (see <i>Enter Dimensions</i> , above). <i>Suggested Architectural Fees</i> also cannot be altered here but may be adjusted on the Cost Summary tab of the Summary Info dialog box. |
|------------------|---|

Adjustable  
Parameters

The remaining building parameters -- Number of Floors, Average Floor to Floor Height, Partition Density, Average Partition Height, and Door Density may be adjusted here by entering alternative numbers for the default values used in the model. However, caution is advised in making significant changes to model building parameters.

## Model Additives Tab

After you have selected a model, use this tab to enter quantities for special items not included in the base building cost estimate. The items that appear on this tab will vary with the model chosen. Entering a quantity adjacent to any item automatically adds the cost of the item to your model cost estimate.

Description	Quantity	Units	Cost	Total Cost
Clock System				
20 room	0.00	EA	\$13,466.50	\$0
50 room	0.00	EA	\$32,800.00	\$0
Closed Circuit Surveillance, One station				
Camera and monitor	0.00	EA	\$1,407.04	\$0
For additional camera stations, add	0.00	EA	\$760.37	\$0
Directory Boards, Plastic, glass covered				
30" x 20"	0.00	EA	\$517.03	\$0
36" x 48"	0.00	EA	\$1,081.90	\$0
Aluminum, 24" x 18"	0.00	EA	\$476.60	\$0
36" x 24"	0.00	EA	\$539.97	\$0
48" x 32"	0.00	EA	\$702.93	\$0
48" x 60"	0.00	EA	\$1,597.30	\$0
Elevators, Electric passenger, 5 stops				
2000# capacity	0.00	EA	\$102,023.33	\$0
3500# capacity	4.00	EA	\$108,210.83	\$432,844
5000# capacity	0.00	EA	\$112,638.33	\$0
Additional stop, add	0.00	FLR	\$5,839.25	\$0
Emergency Lighting, 25 watt, battery operated				
Lead battery	0.00	EA	\$233.30	\$0
Nickel cadmium	0.00	EA	\$667.80	\$0
Intercom System, 25 station capacity				



Summary Info dialog box, Model Additives tab

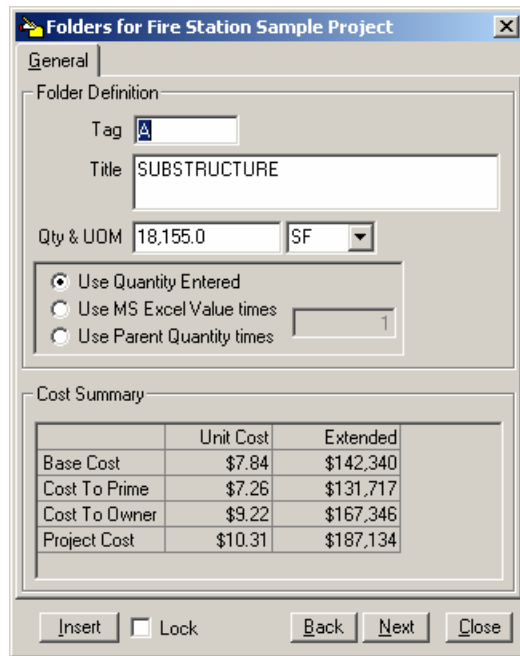
**NOTE:** This tab is available only if you started your project by using the Uniformat II Project Template with Models. The tab will be blank until you have chosen a model from the Cost Models tab.

## Folder Item Form

The folder item form shows information for the folder currently selected in the Tree or Sheet panel.

Use any of the following methods to open a folder item form:


- Select a folder in the tree panel, and then choose View > Tree Items Form, or click the *Open item form on the Tree panel* toolbar button .
- Select a folder in the sheet panel, and then choose View > Sheet Items Form, or click the *Open item form on the Sheet panel* toolbar button .
- Right-click on a folder in the tree panel and from the context menu choose Edit Folder.
- Right-click on a folder in the sheet panel and from the context menu choose Edit Item.
- Double-click on a folder in the tree panel.
- Double-click on a folder in the sheet panel.




**Folders for Fire Station Sample Project**

General

Folder Definition

Tag 

Title SUBSTRUCTURE

Qty & UOM 18,155.0 SF 

Use Quantity Entered  
 Use MS Excel Value times   
 Use Parent Quantity times

Cost Summary

	Unit Cost	Extended
Base Cost	\$7.84	\$142,340
Cost To Prime	\$7.26	\$131,717
Cost To Owner	\$9.22	\$167,346
Project Cost	\$10.31	\$187,134

Lock

*A project folder item form*

## General Tab

### **Folder Definition**

Tag	Optional ID for the folder. The tag is sometimes used to specify the folder's position or sequence in the group of folders at this database level, although the Folder Tag does not affect the position or sequence of the folder. Can be displayed in the Tree panel by choosing Tree > Show Folder Tags.
Title	Description you assign to the section of the project represented by this folder.
Qty	Quantity associated with this element of the project. Entering a quantity value here enables BSD CostLink/AE to compute a unit cost for this project element. If a Quantity is not entered, then the unit and extended costs shown in the cost grid below are the same.
UOM	Unit of measure associated with the Quantity.
Use Quantity Entered	Select this option (the default) to enter a quantity in the Qty field to calculate the Unit Cost.
Use MS Excel Value times	Select this option to link the quantity to a value in an MS Excel spreadsheet. When selected, the grayed out 'times' field becomes available and turns white. The default value is 1. <b>For more information</b> on linking, see Chapter 7.
Use Parent Quantity times	Select this option to link the quantity to the quantity of the folder that contains the current folder. When selected, the grayed out 'times' field becomes available and turns white. The default value is 1. Enter a different factor if necessary to calculate the quantity. As the quantity is changed on the parent folder, the quantity on this folder will change. <b>For more information</b> on linking, see Chapter 7.

### **Cost Summary**

The grid shows the unit and extended costs for all tasks beneath this folder.

Base Cost	The Base Cost is the Direct Cost. Cost of the tasks beneath this folder before any of the adjustments or markups are applied from the Cost Summary tab of the Summary Info dialog box.
Cost To Prime	Cost To the Prime Contractor. The Unit Cost plus the Location Adjustment and Sales Tax (as set in the Summary Info dialog box on the Cost Summary tab) for this element.
Cost To Owner	Cost To the Project Owner. The Cost To Prime plus the Contractor Fees (as set in the Summary Info dialog box on the Cost Summary tab) for this element.

Project Cost	Total Cost. The Cost To Owner plus any Other Costs (as set in the Summary Info dialog box on the Cost Summary tab) for this element.
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### Buttons on the Folder Form


These buttons and controls appear at the bottom of the form.

Insert	Clicking this button adds a new folder at the same level as and above the current folder. It also displays a blank folder form for the new folder.
Lock	Select this option to lock the form on the current folder. You can then click in a different window without the form disappearing.
Back	Displays the form for the previous folder displayed in the tree or sheet panel.
Next	Displays the form for the next folder displayed in the tree or sheet panel.
Close	Applies any changes you have made on the form, and closes the form.

## Task Item Form

The task item form shows information for the project task currently selected in the sheet panel.

To open a task item form for an assembly or line item use one of the following methods:

- Select the task in the sheet panel, and then choose View > Forms > for Sheet Items, or click the *Open item form on the Sheet panel* toolbar button .
- Right-click on the task in the sheet panel, and from the context menu choose Edit Item.
- Double-click on the task in the sheet panel.

The task item form shown and described below is for a task located in a project. Tasks in resource windows are described later in this chapter.

**Tasks for Office Building**

General

B10201122700 - St jsts, bms, \_dk on col,20x25' 40PSF supimp,20'd,60PSF total

Task Description: St jsts, bms, & dk on col,20x25' 40PSF supimp,20'd,60PSF total

Quantity: 10,277.7778 SF Task Type: Assembly MDL B10201122700

Use Quantity Entered  
 Use MS Excel Value Times \\  
 Use Parent Quantity Times -- 1  
 Use Formula Value Times /  
 Average Floor Size

Task Cost Data		
	Unit Cost	Extended
Base Cost	\$3.80	\$39,006.22
Cost To Prime	\$3.53	\$36,320.98
Cost To Owner	\$4.49	\$46,145.80
Project Cost	\$4.93	\$50,619.64



Assembly Members			
Description	Quantity	Units	Total Cost
Structural Steel	14,611.92	LB	\$13,876.94
Open Web Joists, K Series, Horiz Bridging, Up To 30', Minimum	18,540.08	LB	\$13,528.70
Metal Decking, Open, Galv, 1-1/2" Deep, 22 Ga, Over 50 Sq.	10,786.53	SF	\$11,599.83

Lock

*A task item form*

**NOTE:** In order to see more information on the form, you can resize the form, change the location of the splitter bar between Task Cost Data and Assembly Members, and change the width of the fields.

### **Description**

Task Description	Description of the task.
Quantity/UOM	Quantity and unit of measure associated with the task.
Task Type	Indicates whether the task is an Assembly or a Line Item. (This corresponds with the icon in the first column of the Sheet panel:  for assembly;  for line item.)
Source	Indicates the source of the task: ADD – Additive line item from model ASM – Assembly copied from Assemblies resource window. MDL – An assembly or line item from the base model. RSM – Line item copied from Unit Prices resource window. USR – User-added line item.
Source Tag	Displays a code that is used as a unique identifier for the task.

Use Quantity Entered	Select this option (the default) to enter a quantity in the Qty field to calculate the Extended Cost.
Use MS Excel Value Times	Select this option to link the quantity to a value in an MS Excel spreadsheet. When selected, the grayed out 'times' field becomes available and turns white. The default value is 1. <b>For more information</b> on linking, see Chapter 7.
Use Parent Quantity Times	Select this option to link the quantity to the quantity of the folder that contains the current folder. When selected, the grayed out 'times' field becomes available and turns white. The default value is 1. Enter a different factor if necessary to calculate the quantity. As the quantity is changed on the folder, the quantity on this task will change. <b>For more information</b> on linking, see Chapter 7.
Use Formula Value Times (Model Building Parameter)	This is the default option for any project that uses a model as the basis for the project estimate and does not appear if any of the other templates are used. You can select one of the other options to establish a quantity, but in so doing, you will disconnect the assembly or item from the model after receiving a warning message.

**NOTE:** Be absolutely certain you want to disconnect the task from the model before choosing one of the other options, because you will not be able to reconnect them.

**Task Cost Data**

This grid shows the unit and extended costs for the task.

Base Cost	Unit and extended direct costs. Type a new value in the Unit Cost column to override the cost of the assembly or line item. Changing this value in a model task will permanently disconnect it from the model and will change the Source.
Cost To Prime	Cost To the Prime Contractor. The Total Bare plus the Location Adjustment and Sales Tax (as set in the Summary Info dialog box on the Cost Summary tab) for this task.

**NOTE:** If the task is a user-added line item, Cost To Prime will be the same as Base Cost. Location Adjustments and Sales Tax do not get added to user-added line items.

Cost to Owner	Cost To the Project Owner. The Cost To Prime plus the Contractor Fees (as set in the Summary Info dialog box on the Cost Summary tab) for this task.
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Project Cost            Total Cost. The Cost To Owner plus any Other Costs (as set in the Summary Info dialog box on the Cost Summary tab) for this task.

### **Assembly Members**

If the task is an assembly, this area lists the line items in the assembly. If the task is a line item, this area is blank.

Description	Description of the line item.
Quantity	Quantity of the line item.
Units	Unit of measure of the line item.
Total Cost	Total direct cost of the line item.

## Buttons on the Task Item Form

The task item form has the same buttons as the folder item form as described earlier in this chapter, with the Addition of the Apply button. If you change the quantity or Base Cost, you can click Apply to view the changes in the form. Clicking Apply is not required. You can just change the quantity or Base Cost and then click on a different task or close the form. Your edits will be saved and applied whether you click Apply or not. The Insert button will add a new user-defined line item.

## Adding Direct Costs to the Estimate

BSD CostLink/AE gives you four options for entering Direct Cost data in an estimate. You can create an estimate using a cost model, copy assemblies from the assemblies resource window, copy line items from the unit prices resource window, and insert user-defined line items directly into the project.

**NOTE:** Tasks may also be copied from another BSD CostLink/AE project.

## About the Supplied Assemblies and Line Items

The assemblies and line items that come with your subscription are the current year's R.S. Means AE Assemblies and Building Construction Cost Data. See Chapter 1 for R.S. Means' explanation of what is included in the costs.

## Working With Resource Windows

Each project you create has two resource windows from which you copy assemblies and line items into your estimate. The resource windows are:

- Assemblies resource window - stores assemblies
- Unit Prices resource window - stores line items.

### Opening Resource Windows

In order to copy assemblies or line items into your project, you will need to open the desired resource window. To open a resource window, first open your project, and then use one of the following methods:

- Click the appropriate button on the toolbar:




Open Assemblies resource window



Open Unit Prices resource window


- Or, from the File menu, choose Open, and then choose the appropriate resource window.

The resource window will open in a separate window. Depending on whether or not your project window is maximized, the resource window may cover up your project window. In order to view both windows at the same time (which makes it easier to copy tasks from the resource window to the project), tile the windows side-by-side using one of the following methods:

- Click the *Tile windows vertically* button on the toolbar ,
- Or, from the Window menu, choose Tile Vertically.

The resource window and the project window will display side-by-side.

**NOTE:** You can also tile the windows horizontally or cascade the windows; however, in most cases it is easier to copy tasks with the windows tiled vertically.

If more than two windows are open, the extra windows will also be tiled. If you do not need the extra windows, close them by clicking their close buttons . If you do not want to close the extra windows, minimize them and Tile Vertically again.

## Copying Tasks From Resource Windows Into Projects

Once you have both a resource window and your project open side-by-side, copy the task into your project using the following steps:





1. Use Find to locate the task you want to copy, or if you know where the desired task is located, click the plus signs on the folders to navigate to it.


The assemblies and line items have many abbreviations in their descriptions. Because of this, it is usually easier to locate items by searching for the folder that would contain the task rather than for the description of the task.

To find out what the abbreviations stand for, enter the abbreviation into the Index tab of the Help dialog box. You can also enter a term in order to find out what its abbreviation is.



**For more information** on using Find, see Chapter 6. See Chapter 3 for information on using Help.

2. Click on the folder that contains the task so you can see the task in the sheet panel.


**NOTE:** Make sure the task you want to copy is a task, not a folder. Folders will show a folder icon (  or  ) in the first column in the sheet panel, and tasks will show an assembly (  ) or line item (  ) icon. If you copy a folder, you will not only be copying the folder into your project, but also all of that folder's subfolders and tasks.

3. Copy the task into your project using one the following methods:
  - **Drag and Drop:** In the sheet panel of the resource window click and hold your left or right mouse button on any field for that task and, still holding down the mouse button, drag to the folder in your project where that task belongs. When the folder where you want to place the task becomes highlighted and your mouse pointer is a hand holding a sheet of paper (  ), release the mouse button. If you use the left mouse button, a confirmation message may open asking if you want to copy the task – click OK to copy the task. If you use the right mouse button, a context menu will open – click *Copy Tasks Here* to copy the task.

**NOTE:** If the resource window is located on the left side of the screen and you drag the task with the left mouse button, the sheet panel may scroll to the right as you drag. Dragging with the right mouse button, or dragging from the gray box to the left of the task, does not cause the sheet panel to scroll.

- **Copy and Paste:** In the sheet panel of the resource window, copy the task as follows:
  - Left-click anywhere on the task. The current record indicator (an arrow ) will appear to the left of the task you clicked on. Then either click the *Copy* button on the toolbar , or from the Edit menu choose Copy.

Then in the Tree Panel of the project, paste the task using one of the following methods:

- Left-click on the folder in the Tree Panel where you want the task located. Then either click the *Paste* button on the toolbar , or from the Edit menu choose Paste.
- Or, right-click on the folder in the Tree Panel where you want to paste the task, and from the context menu choose Paste.

A confirmation message may open asking if you want to copy the task – click OK to copy the task. The task will be added to the folder.

**NOTE:** You can also use CTRL+C to Copy and CTRL+V to Paste.

4. After you copy a task into your project, if necessary click on the folder that contains the task so that you can see the task in the Sheet Panel. Then enter the quantity in the quantity field.

## About Assemblies


In BSD CostLink/AE, an *assembly* is a group of line items that represent all the costs required to accomplish some piece of a project. The quantities for each of the component tasks in the assembly are linked to the assembly quantity. When you copy an assembly into a project and then supply the assembly quantity, BSD CostLink/AE automatically computes the quantities and costs for all of the line items in the assembly.

### Example of Use

An assembly representing 6-inch concrete slab on grade includes all the line items required to prepare for, form, pour, and finish the slab. The assembly unit of measure is square feet. The assembly contains the unit costs and quantities of each line item required to construct one square foot of slab.

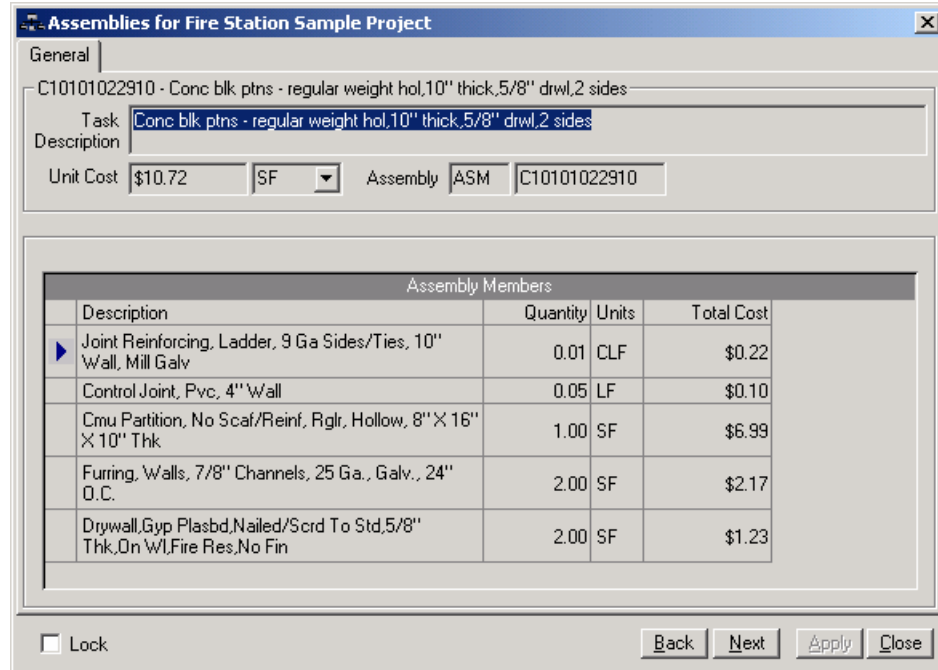
When you copy the assembly into the project, you supply the square feet of slab needed for your estimate. BSD CostLink/AE then computes the total quantities and resulting costs of all the line items in the assembly for slab on grade construction.

## How Assemblies Are Stored

In projects and in Assemblies resource windows, assemblies are tasks and can be viewed in the sheet panel. The first column of an assembly in the sheet panel will show an assembly icon . The line items in the assembly can be viewed in the Members grid of the assembly's task item form.

## Assembly Task Item Form

The Assembly task item form shows information for the assembly currently selected in the sheet panel. It is similar to the task forms in the project and is opened using the same methods as described earlier in this chapter.



Assembly Members			
Description	Quantity	Units	Total Cost
Joint Reinforcing, Ladder, 9 Ga Sides/Ties, 10" Wall, Mill Galv	0.01	CLF	\$0.22
Control Joint, Pvc, 4" Wall	0.05	LF	\$0.10
Cmu Partition, No Scaf/Reinf, Rglr, Hollow, 8" X 16" X 10" Thk	1.00	SF	\$6.99
Furring, Walls, 7/8" Channels, 25 Ga., Galv., 24" O.C.	2.00	SF	\$2.17
Drywall, Gyp Plasbd, Nailed/Scrd To Std, 5/8" Thk, On Wl, Fire Res, No Fin	2.00	SF	\$1.23

*Assemblies resource window task item form*

### **Description**

Task Description      Description of the assembly.

Unit Cost              The total cost of 1 unit of the assembly. CostLink/AE calculates this by adding together the Total Costs of the line items listed in the Assembly Members grid.

Unit of Measure      Unit of measure relevant to the assembly as a whole.

### **Task Type**

These fields indicate the original source and type of the task. In order from left to right, the fields are as follows:

Source                      ASM for assembly.  
Source Tag                 Displays a code that is used as a unique identifier for the assembly.

### **Assembly Members grid**

Description      Description of the member task.  
Quantity         The quantity of the member per unit of the assembly.  
Units              Unit of measure associated with the task.  
Total cost        Total cost of the member task per unit of the assembly.


### Buttons on the Assembly Form

The buttons on the Assembly form are the same as on the folder item form as described earlier in this chapter, with the exception of the Insert button. New assemblies cannot be added to the Assemblies resource window.

### About Line Items

To estimate a piece of the project that is smaller than an assembly, use a line item.

### How Line Items Are Stored

Line items are stored in the Unit Prices resource window. They are tasks and can be viewed in the Sheet Panel. The first column of a line item in the Sheet Panel shows a line item icon . The unit price of the line item can be viewed in the Sheet Panel.

**NOTE:** There are no item forms in the Unit Prices resource window.

## Adding Your Own Line Items

If the line item that you need cannot be found in the Unit Prices resource window, add a new line item in your project. Line items can be added for vendor or contractor lump sum quotes for pieces of the project. To add your own line item:


1. In the Tree Panel of your project, click on the folder that should contain the new line item.
2. From the Insert menu, choose Task.  
A New Item is added to the Sheet Panel.
3. Open the item form for the New Item and Enter the Description, Quantity, Unit of Measure, and Unit Cost.

## Cost Adjustments and Markups

Cost adjustments and markups are applied to your project using the Cost Summary tab of the Summary Info dialog box. You can apply a Location Adjustment, Sales Tax, up to three types of Contractor Fees, and up to three types of Other Costs.

### Using the Cost Summary Tab

Use the following steps to apply and edit markups in your project at any time:

1. Open the Summary Info dialog box by choosing File > Summary Info, or by clicking the *Open the database summary info dialog* button on the toolbar .
2. Click the Cost Summary tab.

Summary info for Fire Station Sample Project				
		COST	PER UNIT	
<b>Construction Priced from R.S. Means</b>		18,155 SF	<b>\$1,148,593</b>	<b>\$63.27/SF</b>
<b>Location Adjustment</b>	State: GA City: ATLANTA	-10.40 %	-\$119,454	-\$6.58/SF
<b>Sales Tax</b>	7.00 %	<b>Est Matl Cost</b> \$466,328	\$32,643	\$1.80/SF
<b>Construction Priced Locally</b>		18,155 SF	<b>\$934,310</b>	<b>\$51.46/SF</b>
<b>Cost to Contractor</b>			<b>\$1,996,093</b>	<b>\$109.95/SF</b>
<b>Contractor Fees</b>	Contractor's Gen Requirements	10.000 %	\$199,609	\$10.99/SF
	Contractor's Overhead	5.000 %	\$109,785	\$6.05/SF
	Contractor's Profit	10.000 %	\$230,549	\$12.70/SF
<b>Construction Contract</b>			<b>\$2,536,036</b>	<b>\$139.69/SF</b>
<b>Other Costs</b>	Architect's Fees	6.500 %	\$164,842	\$9.08/SF
	Contingency	5.000 %	\$135,044	\$7.44/SF
	Other	0.000 %	\$0	\$0.00/SF
<b>Estimated Project Cost</b>			<b>\$2,835,922</b>	<b>\$156.21/SF</b>

Summary Info dialog box, Cost Summary tab

- Enter the desired information. (See below for an explanation of the fields and tips on entering information.)
- Click Apply to update the Cost and Cost per Unit fields.
- Click OK to close the Summary Info dialog box.
- If necessary, recalculate the estimate ( $\Sigma$ ) to update the information in the Tree Panel.

## About the Cost Summary Tab

The following provides a description of the fields on the Cost Summary tab, tips for entering information into the fields, and an explanation of how the markups are calculated.

### **Construction Priced from R.S. Means**

This line displays the project size and unit of measure that is entered on the General tab, the direct cost for R.S. Means cost items (i.e. the cost prior to adjustments and markups), and then divides the direct cost by the project size to show the project cost per unit.

**Location Adjustment**

Use this area to adjust the national costs that you copy in from the resource windows for the costs where the project is located. The Location Adjustment and Sales Tax apply to costs copied from resource windows only. **For more information** on Location Adjustments, see chapter 1.

State	Click the arrow and then type the first letter of the state abbreviation to scroll to it quickly. Then click on the state abbreviation. The City field updates to the cities in that state. For Canadian locations, choose CN for Canada.
City	Click the arrow and then type the first letter of the city to scroll to it quickly. Then click on the correct city.
Location Adjustment Cost Columns	The field to the right of the city shows the percentage of the adjustment, positive or negative, that results from the selected city and state. Negative numbers are shown in red with a minus sign. The Cost and Per Unit fields for the Location Adjustment show the total dollar adjustment for the project and per unit.
Sales Tax	Enter the amount of sales tax that should be applied to material costs.
Est Matl Cost	Displays the Material cost of items copied in from the R.S. Means resource windows.
Construction Priced Locally	(The quantity and unit of measure displays from the General tab of the Summary Info dialog box.) The Cost field totals all user-added line items, and divides that total by the Project Size to calculate the Per Unit Cost.  <b>NOTE:</b> Location Adjustments and Sales Tax do not apply to user added line items.
Cost to Contractor	The Cost and Per Unit columns for this line show the subtotal of the Construction Priced from R.S. Means plus (or minus) the Location Adjustment, plus Sales Tax, plus Construction Priced Locally.  <b>NOTE:</b> If you change the State, City, or Sales Tax, click Apply to update these values.

**Contractor Fees**

Use this area to enter up to three types of contractor fees. If desired, edit the existing description or enter a new description for the fee in the first field for each row. This description will print on reports. In the second field for each row, enter the markup percentage.

These markups are compounded, meaning that if the Cost to Contractor is \$100,000 and the first markup is 10%, the first markup will be \$10,000, resulting in a subtotal of \$110,000. If the second markup percentage is also 10%, it will be 10% of the subtotal resulting in a markup of \$11,000. The markup percentages are applied to the subtotal of the Cost to Contractor plus the previous markup amounts. If you would like the markups compounded in a different order, reenter them in the desired order.

Construction Contract      Click Apply to update the Cost and Per Unit columns for each fee, and to update the Construction Contract line.

**Other Costs**

Use this area in the same way as the Contractor Fees area to enter up to three other types of markups such as Architect's Fees or Contingencies.

Estimated Project Cost      Click Apply to update the Cost and Per Unit columns for each Other Cost, and to update the Estimated Project Cost line.