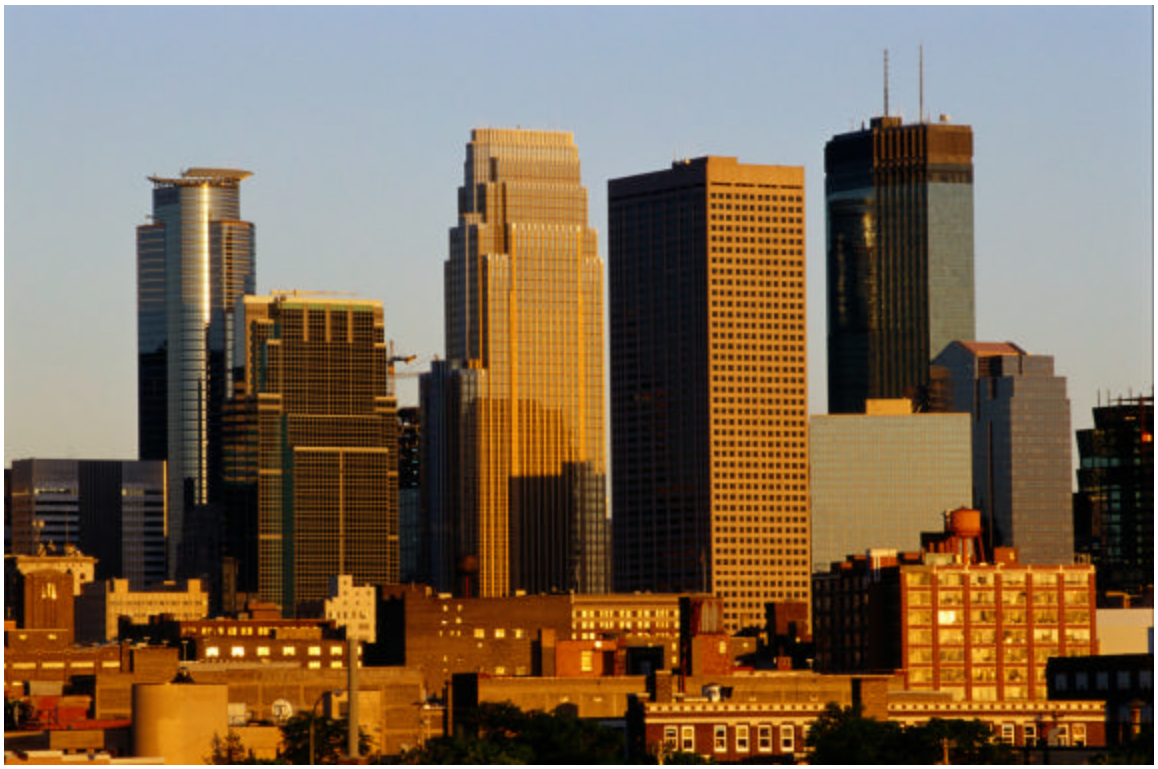
MARSHALL & SWIFT / BOECKH

EXPRESS



Reference Guide

BVS Commercial™

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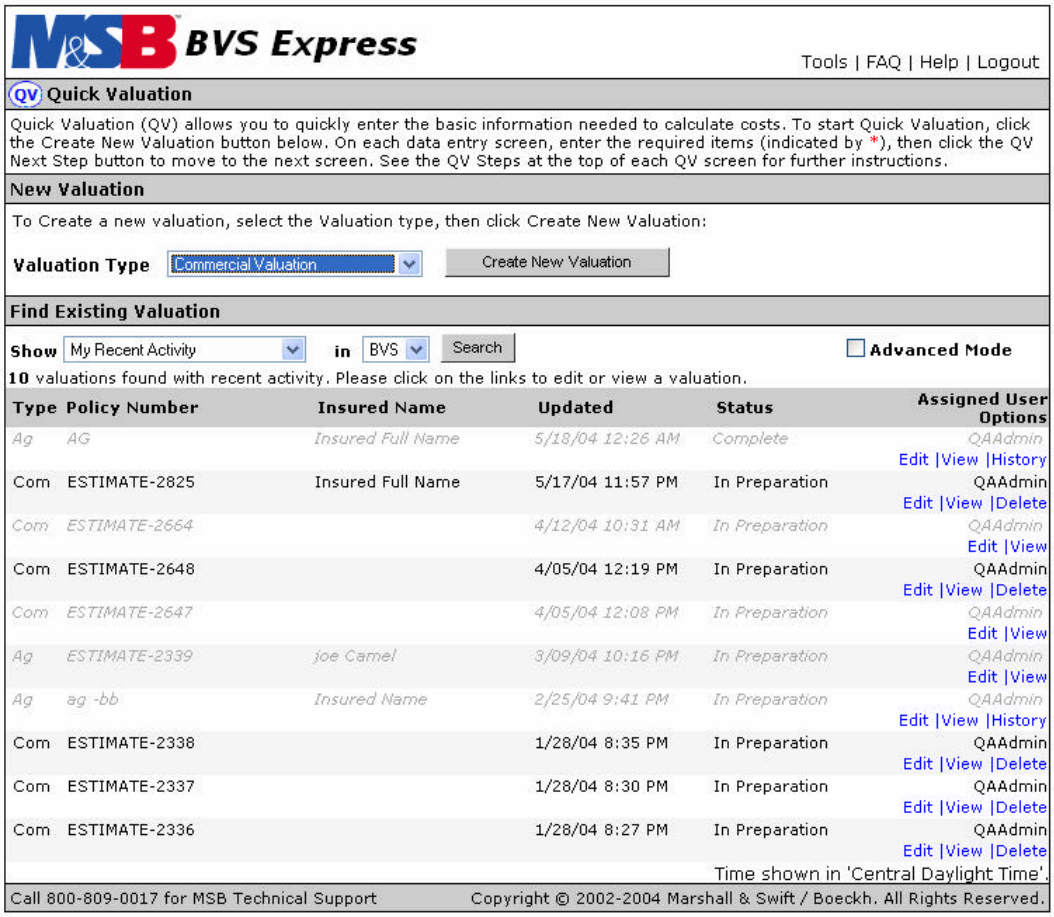
This reference guide is designed to quickly give you the information you need to create a valuation from beginning to end. It is broken down into seven different sections (Getting Started, General Information, Exterior Features, Interior Features, Cost Adjustments, Reports/Calculate, and Administration) for ease of use. Remember, you can always reference the on-line help file as you work with the system by simply pressing F1 in any field or clicking on the field label.

VALUATION / RECORD SCREEN

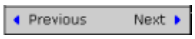
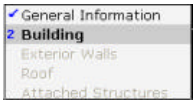
This screen allows you to create a new valuation file, edit an existing file, search for an existing file, access your user profile and system options, or log out of the system.



1 - Create a Valuation File(s)

This option allows you to create a new valuation file.

Entry Information	The required fields are Policy, Property Zip/Postal Code, Occupancy, Number of Stories, Gross Floor Area, and Construction Type. You can enter additional information as known. **NOTE:** Depending upon your company preferences, additional fields can be set as required.

   	To navigate through the required fields easily, click the Next Step link and you will be brought directly to the next required field. You can also navigate sequentially through the navigation links/pages (listed in the navigation links on the left-hand side of the screen) by clicking the <Previous and Next> links. You will also notice the blue checkmarks and numbers next to some of the navigation links on the left-hand side. The numbers denote that there are required fields on these pages and what the next step in the valuation process is. Once the required information has been entered, the numbers turn to blue checkmarks.
How To	1. Under **New Valuation**, use the drop-down list to select the appropriate **Valuation Type** (commercial or agricultural). 2. Click the **Create New Valuation** button. The valuation file opens to the General Information screen. 3. The **Policy Number** and the **Estimate Expiration Date** are the only required fields on this screen. **NOTE:** The valuation is automatically filled in with an estimate number (ie: Estimate - 1000). You can enter the actual policy number when you click the **Assign the Policy** button. 4. Enter the remaining information as applicable. 5. To quickly move to the next required step, click the **Next Step** button, otherwise, once the information is entered, click the **Building** navigation link on the left handside. 6. Enter the **Property Address** information. **NOTE:** The **Zip/Postal Code** is the only required field on this screen. 7. Enter the **Insurance Information** (separate insurance exclusions, coverage amount, and co-insurance requirement) as applicable. 8. The system will automatically set the **Location Adjustments** (climate, high wind, and seismic) based upon the ZIP/Postal code you entered. If necessary, you can make a change to this setting. 9. Again, once the information is entered, click **the Next Step** button or click the next navigation link (**Construction**) to continue.

	10. Enter the **Occupancy** information (see page 19 for detailed information on adding occupancies). 11. Under the **Construction Details** section, enter the remaining information (number of stories, gross floor area, and construction type). 12. Repeat these steps, clicking on the **Next Step** button or next navigation link in the list (Exterior Walls, Roof, Interior Walls, etc...) until all the information has been entered for the valuation file.

2 – Edit a Valuation File(s)
This option allows you to edit or change a valuation file.

How To	1. Simply click on the **Edit** option on the right-hand side of the screen for the valuation file you wish to open. 2. If you do not see the desired estimate or policy in the list, you can use the **Search** function to locate the file. See Search for a Valuation File(s) below for additional information. 3. Once the valuation file is open, use the navigation links on the left-hand side to navigate the file. 4. Make your changes or additions to the file.

3 – Search for a Valuation File(s)
This option allows you to find specific valuations by selecting a pre-determined search field and then entering the specific criteria. **NOTE:** Depending upon the role/access levels, different search fields will appear in the drop-down list.

How To	1. At the top of the Valuations screen, use the **Search** drop-down list to select a search field. **NOTE:** The default setting is always set to **My Recent Activity**. 2. If applicable, type the specific criteria in the next field. 3. Click the **Search** button. All the files matching the search criteria will appear in the grid. 4. You can then sort the information that appears in the grid by simply clicking on the column heading. The files will appear in ascending/descending order based upon the column selected. 5. Now simply select the desired valuation.

Example	1. Select *Policy Number* for the search field 2. Type the number *1* in the criteria field 3. Click the **Search** button. 4. All the valuations starting with a 1 will appear in the grid.

Search Options
Below is a list of the most common search field options with definitions and/or examples. When searching, you can enter a combination or alpha and numeric characters and symbols like dashes, apostrophes, quotes, etc… can also be used. Also, the search function is not case sensitive.

My Recent Activity	The Valuation List will show the valuation files that you recently worked on (usually the last 10 files).
My Records	The Valuation List will show all the valuation files that are assigned to you.
Policy Number	Allows you to search for a valuation file based upon the estimate or policy number. **NOTE:** To search for an estimate file, you must first type in Estimate- then the beginning number.
Insured Name	Allows you to search for valuation files based upon the insured's name. **For Example:** If you type in john, the search will return valuation files that have john, Johnson, john's, etc... in the insured name field.
Address	Allows you to search for valuation files based upon the address of the property being valued. **For Example:** If you type in 23, the search will return valuation files that have 2300, 1234, 523, etc.... in the building address field.
City	Allows you to search for valuation files based upon the city of the property being valued.
State	Allows you to search for valuation files based upon the state of the property being valued.
Zip	Allows you to search for valuation files based upon the zip/postal code of the property being valued.
Valuation Type	Allows you to search for valuation files based upon the type of valuation being done (ie: commercial or agricultural).

Assigned User	Allows you to search for valuation files based upon the user assigned to the valuations.
Agency	Allows you to search for valuation files based upon the agency assigned to the valuations.
Updated within Last # of Days	Allows you to search for valuation files created within the last number of days, regardless of user, agency, etc...

USING BVS

This section explains how to use some of the features in BVS.

Using Online Help

Clicking the **Help** link at the top of the screen will open the on-line help system at the Table of Contents or main page of the on-line help system.

Clicking on the heading for each page (ie: General Info) will display the help topic for that specific page.

You can also access the on-line help from anywhere within the program by simply pressing the **F1** key on your keyboard when the cursor is in a field, or by clicking on the field label. The help system will open and display the topic that corresponds to your actual location in the application.

How To	**Contents** Using the table of contents, simply click on a topic listed on the left-hand side of the screen and the help topic will be displayed on the right-hand side. **Index** This option allows you to scroll through all the help topics in the on-line help system, or type in a keyword to find a particular topic. 1. Simply click on a topic listed in the index on the left-hand side of the screen and the help topic will be displayed on the right-hand side. 2. Or, type in a keyword (as you are typing, the program will begin searching for all corresponding topics) then select the appropriate topic. The help topic will be displayed on the right-hand side. **Search** This option allows you to search the entire on-line help system for any references to a particular item or topic.

	1. Type in the word(s) you are searching for. You can use the "**?**" or "*" as wildcards when searching (ie: * *ceramic* would bring up all topics that contained ceramic in it). When you are done typing in your search, either click on the **List Topics** button or hit **Enter**. All appropriate topics will be displayed in the list below the search criteria. 2. From the list, select the desired topic. The help topic will be displayed on the right-hand side. 3. Repeat for additional searches

Using The Knowledge Base
When you click the **FAQ** link at the top of the screen, the Knowledge Base page appears. The Knowledge Base to search for answers to questions you may have about using BVS. Also, this page allows you to see the most Frequently Asked Questions (FAQ's) as determined by MS/B, display the questions and answers most viewed by BVS Express users, and submit questions to MS/B Technical Support.

1 - FAQ's
When you display the Knowledge Base page, the FAQ's automatically appear in the **Search Results** section. You can scroll through the list to see all of the FAQ's.

How To	If you search the knowledge base, etc., the FAQ's no longer appear in the **Search Results** section, do the following: 1. Click the **Show FAQ's** button. The FAQ's appear in the **Search Results** section. 2. To display the full answer to a FAQ, click the answer (in italics). Another page appears with the full answer displayed. You can print the answer by clicking the **Print** button, or click **OK** to return to the list.

2 - Searching the Knowledge Base
Enter information in the **Search Options** section to search the knowledge base.

How To	1. Type a word or series of words into the **Search** field. 2. To find questions containing the search word(s), click the **Questions** option button. To find answers containing your search word(s), click the **Answer Key Words** option button. 3. Click the **Search** button. The questions and answers that match your search words appear in the **Search Results** section.

	4. To display the full answer to a question, click the answer (in italics). Another page appears with the full answer displayed. You can print the answer by clicking the **Print** button, or click **OK** to return to the list.

3 - Displaying the Most Viewed Questions and Answers
You can display the Knowledge Base questions and answers most viewed by BVS Express users by clicking the **Most Viewed** button. By default, the **Search Results** section will display the 15 most viewed pages. However, your company may display a different number of questions and answers in this section.

4 - Submitting Questions to MS/B Technical Support
Occasionally, the answer to your question is not in the Knowledge Base. You can submit questions to MS/B Technical Support.

How To	1. Click the **Ask?** button. A new page appears. 2. Type your question in the field to the right of **Q:** 3. Click the **OK** button to send your question to MS/B Technical Support. 4. The question will be reviewed and, if applicable, the answer will be added to the Knowledge Base.

Buttons
Buttons tell BVS to perform some action.

How To	To click a button: • **Mouse:** Click the button (i.e., position the mouse pointer over the button, then press the left mouse button). • **Keyboard Only:** Press the **Tab** key until the button is highlighted, then press the **Enter** key. A button is highlighted when a dotted rectangle surrounds the label (name) on the button.
Example	The following button is on the Valuation/Record screen. It creates a new valuation record when you click it.

Checkboxes
Checkboxes are used to indicate that you want to select a given item.

How To	To select or deselect a checkbox: • **Mouse:** Click the checkbox or the text to the right of it. • **Keyboard Only:** Press the **Tab** key until the checkbox is highlighted, then press the space bar.
Example	The following checkboxes are on the Reports screen. When selected, these checkboxes indicate that you want to print the Summary and Equipment reports.

Data Fields
Data fields allow you to enter information for a single data item, such as the insured's name.

How To	To enter data in these fields: • **Mouse:** Click in the field, then type the desired data. • **Keyboard Only:** Press the **Tab** key until the cursor is in the field, then type the desired data.
Example	The following data field is on the General Information screen. You can type in the insured's name in the field.

Drop-Down Lists
Drop-down lists have three elements:

- **Display Button:** The button ( ) you press to display the drop-down list.
- **Selection List:** The drop-down list itself, which displays the possible selections. The currently selected item is highlighted in this list.
- **Selected Item:** A field at the top that displays the item from the list currently selected.

How To	To select an item from a drop-down list: • **Mouse:** Click to display the drop-down list, then click on the desired item. If the drop-down list has more items than can be displayed at once, use the scroll bar that

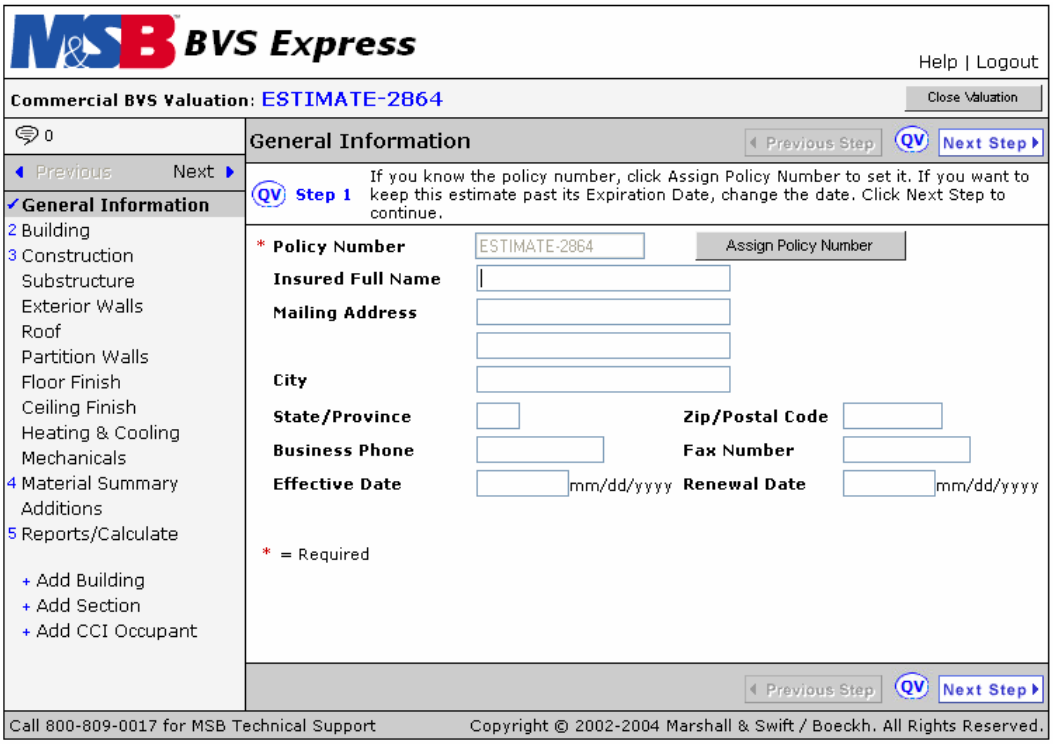
	automatically appears to the right of the list to move to the desired item. • **Keyboard Only:** Press the **Tab** key until the currently selected item in the drop-down list is highlighted, then press the **Up Arrow** or **Down Arrow** key until the desired item is displayed.
Example	The following drop-down list is on the General Information screen. You can select the appropriate item for the valuation.

Option Buttons

Option buttons (also called radio buttons) are used in instances in which you have two or more choices and can only select one of them.

How To	To select an option button: • **Mouse:** Click the button or the text following it. • **Keyboard Only:** Press the **Tab** key until the option button currently selected in the group is highlighted, then use the **Right Arrow** or **Left Arrow** key to move to the desired option button, then press the **Tab** key to select it.

GENERAL INFORMATION



Policy Number

The policy or record identifier assigned to the valuation.

How To	When creating a new valuation, an estimate number (i.e.: Estimate - 1000) is automatically filled in for you and cannot be changed. However, you can enter the actual policy number when you click the Assign Policy Number button. When entering the actual policy number, you can enter a combination of alpha and numeric characters, up to 32 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used.

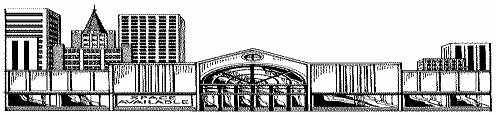
Estimate Expiration Date

The date the "Estimate" will expire and be removed from the system if the estimate has not been assigned a policy or record number. Typically this date has been set to 90 days from the creation of the valuation.

Assign Policy Button

This functionality allows you to assign a policy or record number to an "Estimate".

How To	Type in the Policy/Record number, then click the **OK** button.



Insured Full Name

Enter the name of the owner of the property being valued.

How To	You can enter a combination of alpha and numeric characters, up to 32 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used.

Mailing Address

The street or mailing address for the owner of the property being valued. Enter the address for the owner of the property being valued. Use these fields when the address is different than the address of the property being valued.

How To	**Address Line 1 and Address Line 2** Enter a combination of alpha and numeric characters, up to 32 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used. **City** Enter a combination of alpha and numeric characters, up to 32 characters. Symbols like dashes, apostrphes, quotes, etc. can also be used. **State/Province** Enter the two-character state or province code abbreviation for the property. **ZIP/Postal Code** You can enter a combination of alpha and numeric characters. For a U.S. address, you must enter a valid 5-digit ZIP code. For a Canadian address, you must enter a valid 6-digit alpha/numeric Canadian postal code.

Business Phone Number

The business phone number of the Insured property owner.

How To	You can enter a combination of alpha and numeric characters, up to 14 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used.

Fax Number

The fax number of the Insured property owner.

How To	You can enter a combination of alpha and numeric characters, up to 14 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used.

Effective Date

Enter the date when the policy is put into effect.

How To	Enter this using a two-digit month, slash, two-digit date, then a four-digit year as follows: 01/01/2001.

Renewal Date

The expiration date is the date when the policy is up for renewal.

How To	Enter this using a two-digit month, slash, two-digit date, then a four-digit year as follows: 01/012001.

Value Basis

The program can create values based upon new construction/replacement costs or reconstruction costs.

How To	Use the drop-down list to switch between new construction or reconstruction. The system default is Reconstruction.

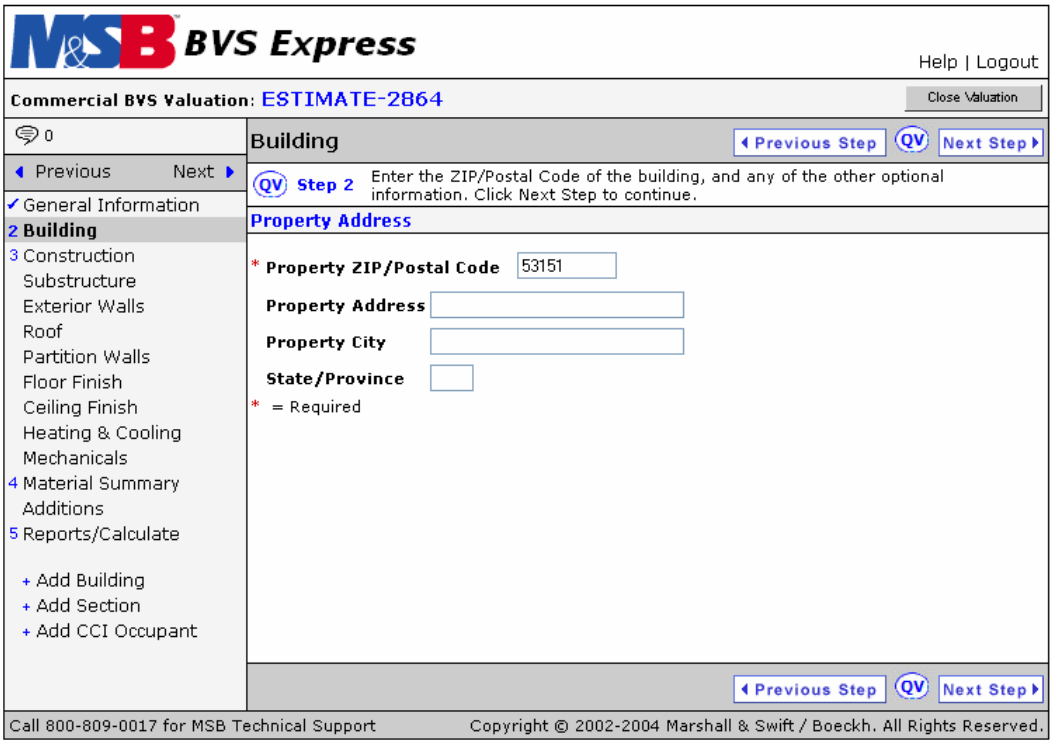
Reassign Button

This screen allows you to change the User assigned to a specific valuation, as well as, change the currently assigned "Agency". **NOTE:** Depending upon roles/access levels, not everyone will be able to access this screen.

How To	1. To change a valuation assignment, open or edit the desired valuation. 2. Make sure the **Reports/Calculate** navigation link is selected on the left-hand side of the screen. 3. Click the **+ Reassign Valuation** link under the Valuation Dates section. 4. To change the assigned user, type in the user name you are looking for then click the **Find** button (ie: type in Kevin). 5. If more than one user matches what you typed in, a **Select User** drop-down list will appear. Use the drop-down to select the appropriate new user. 6. To change the assigned agency, type in the name you are looking for, then click the **Find** button. 7. If there is more than one match, a **Select Agency** drop-down list will appear. Use the drop-down to select the appropriate agency, group, etc...

	8. Click the **OK** button when you are done. You will be returned to the Reports/Calculate screen.

BUILDING INFORMATION



PROPERTY ADDRESS

ZIP/Postal Code

The zip code or Canadian postal code for the property being valued.

How To	You can enter a combination of alpha and numeric characters. For a U.S. address, you must enter a valid 5-digit ZIP code. For a Canadian address, you must enter a valid 6-digit alpha/numeric Canadian postal code.

Building Name

The name for the property being valued.

How To	You can enter a combination of alpha and numeric characters, up to 32 characters.

Building Address

Enter the address for the property being valued.

How To	**Address Line 1 and Address Line 2** Enter a combination of alpha and numeric characters, up to 32 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used. **City** Enter a combination of alpha and numeric characters, up to 32 characters. **State/Province** Enter the two-character state or province code abbreviation for the property.

INSURANCE INFORMATION

Separate Insurance Exclusion Costs

If checked, the program will separate insurance exclusion costs for the building being valued. MS/B defines and separates the following insurance exclusion costs: site prep, foundation wall, interior foundations, and approximately 12% of plumbing.

How To	Click the checkbox if you want separate insurance exclusion costs. These costs will be listed in a separate column in your valuation reports.

Current Coverage

The current dollar amount of insurance carried on the property.

How To	Enter up to $999,999,999 in whole dollar amounts only. Do not enter the dollar sign or commas.

Co-Insurance Requirement

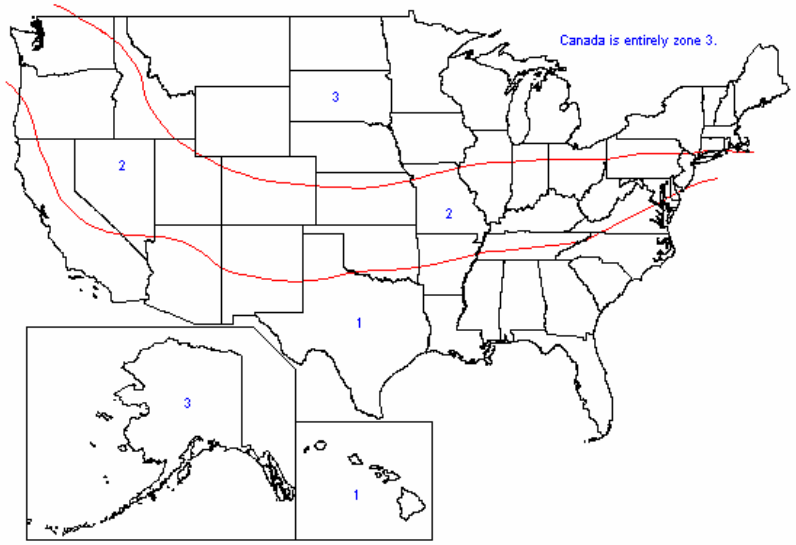
The minimum amount of insurance that must be carried on the policy, usually 80%, but your co-insurance requirement for the policy may be different as determined by your company.

How To	Enter a percentage between 1 and 100. Do not enter the percent sign.

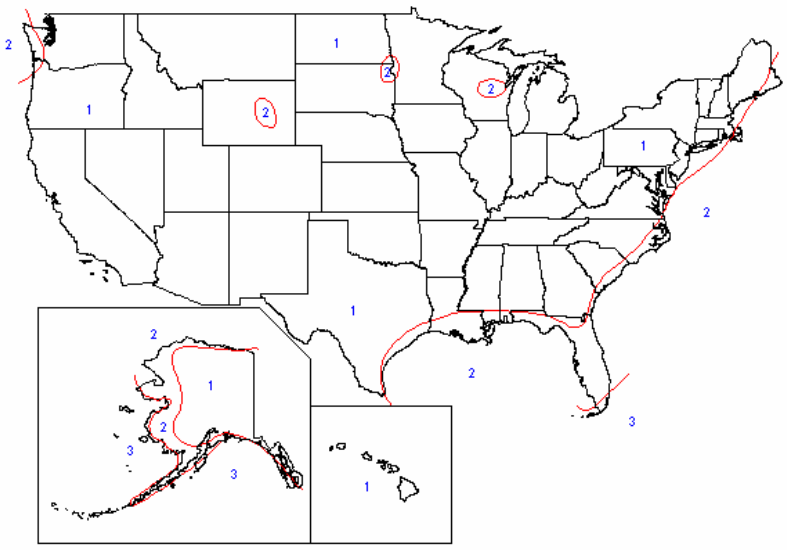
LOCATION ADJUSTMENTS

This section is used to adjust for the location's environmental factors (climate, seismic, and high wind zones) for the building.

How To	For the location adjustments (climate, seismic zone, and high wind zone) use the drop-down list to select the appropriate option. **NOTE:** The system will automatically fill this information in based upon the zip/postal code you entered earlier, but can be overridden by you.

Climate	 Use the drop-down list to select the climate that applies to this building section: (1) Warm, (2) Moderate, or (3) Cold. Each climate has different requirements (and associated costs) for heating and cooling, thermal resistance, and foundation depth. In addition to the levels of insulation, the climate affects other aspects of a building such as the foundation depth, roof structure, and heating and cooling loads. Buildings in cold climates require more insulation, deeper foundation walls (to be below the frost line), stronger roof structures (to support snow loads), and greater heating requirements.

High Wind Zones

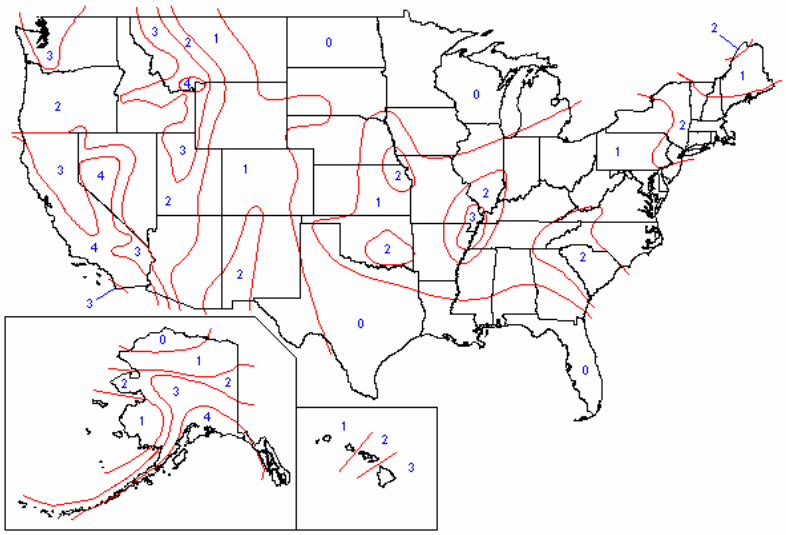


Select the high wind zone that applies to this building section. The three high wind zones labeled 1-3 on the map, indicate where wind damage is likely to occur (1=minor damage, 2=moderate damage, and 3=major damage). The zones represent the cost increase associated with meeting the

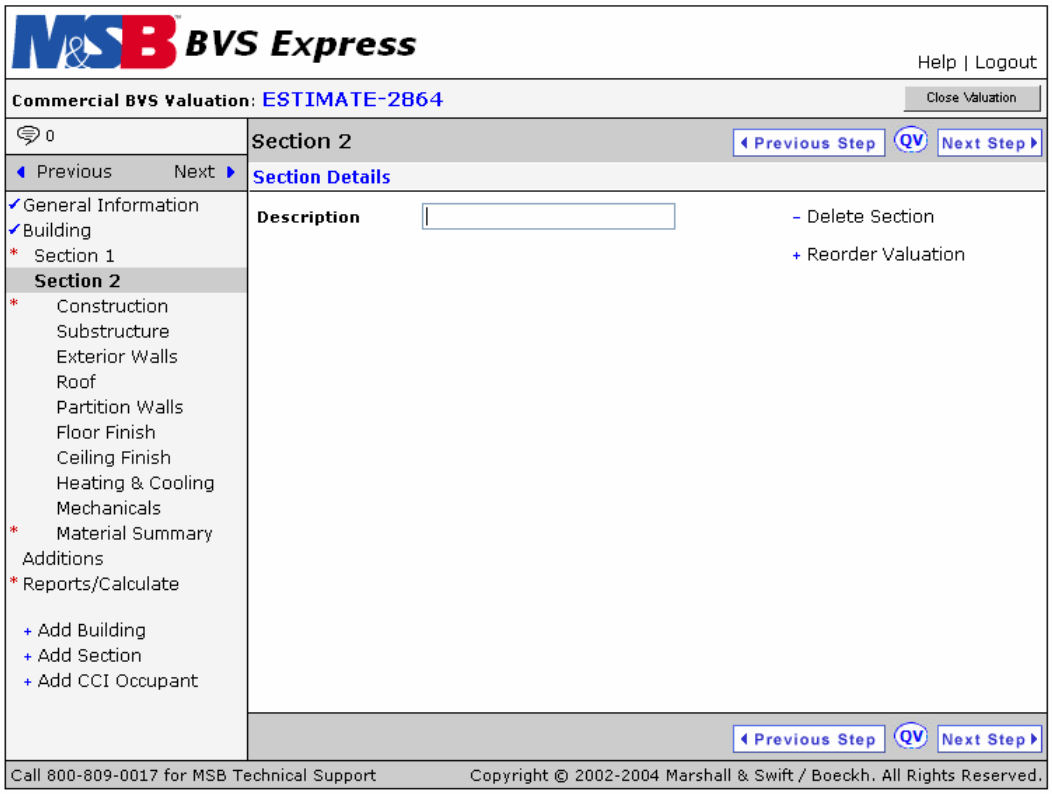
national building codes and engineering requirements for high wind resistance.

To minimize building damage and the subsequent injury and loss of life, national building codes have been created to specify the minimum engineering requirements for buildings in high wind situations. Usually, the requirements affect the design of the building shell and its ability to withstand the uplift, overturn and torsional pressures caused by wind.

For inland zones, there is no cost increase as common building practices have been found to meet current code requirements. For coastal areas, where sustained wind speed can exceed 90 miles per hour, code requirements include steel strapping applied to sill plates, exterior wall sheathing, and the connection of the rafters to the exterior wall.

Seismic Zones	 Select the seismic zone that applies to this building section. The five seismic zones labeled 0-4 on the map (see graphic), indicate where earthquake damage is likely to occur (0=no damage, 1=minor damage, distant, 2=moderate damage, 3=major damage, and 4=major damage, near the fault). The zones represent the cost increase associated with meeting the national building codes and engineering requirements for seismic resistance. To minimize building damage and the subsequent injury and loss of life, national building codes have been created to specify the minimum engineering requirements for buildings in earthquake prone areas. These requirements generally involve the structural elements of the building, which ultimately affect construction costs.

SECTION INFORMATION

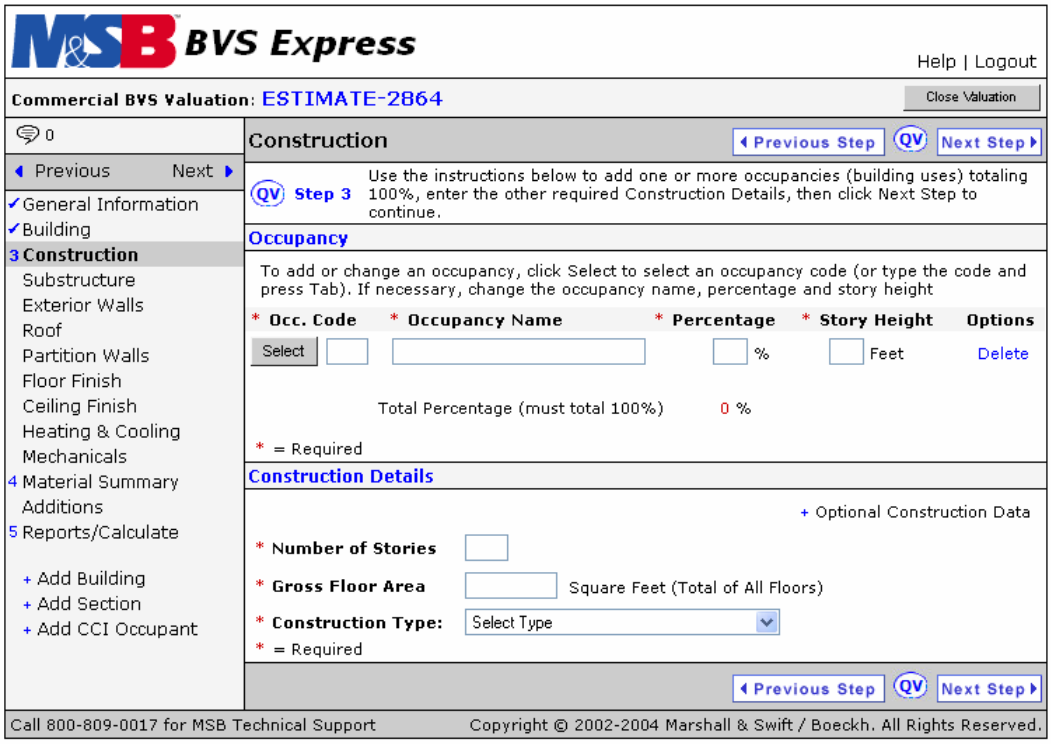


Section Description

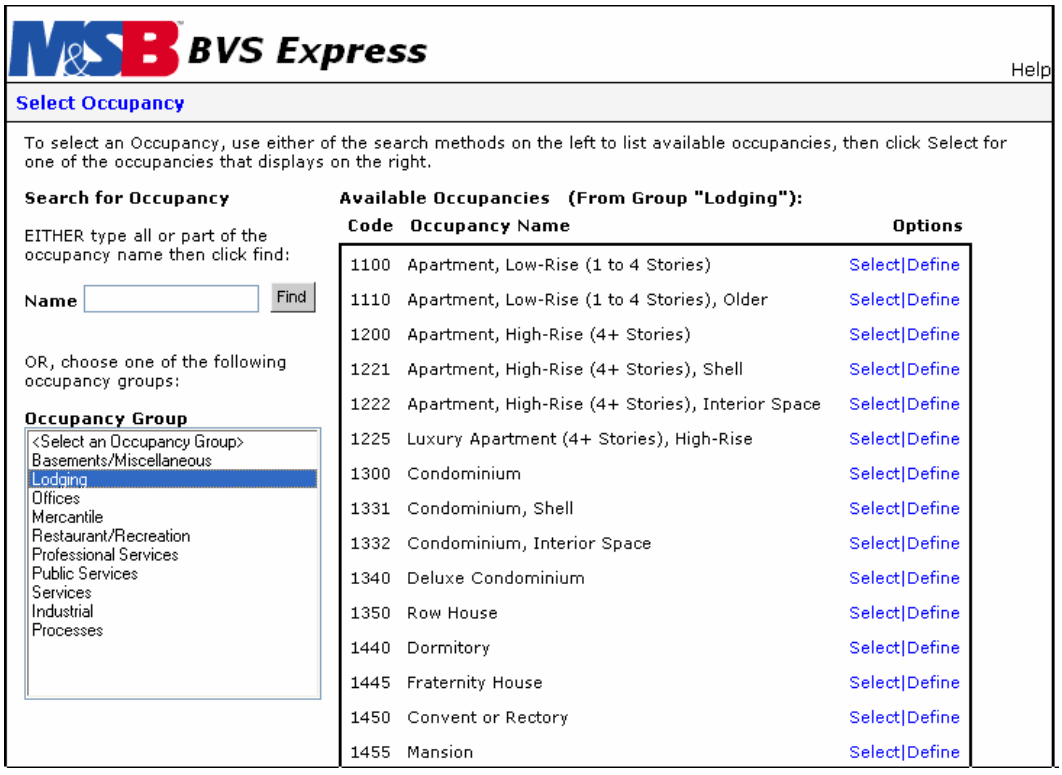
Section description is the identifier for the section. This description will appear on the screen as well as on the valuation reports.

How To	Enter a combination of alpha and numeric characters, up to 32 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used. This screen will only appear when there is more than 1 section for the building. Once the 2nd section has been added, simply click on the "Section 1", "Section 2", etc… navigation link on the left-hand side of the screen, then enter the description.

CONSTRUCTION INFORMATION



This section determines the occupancy that will be used for the valuation.

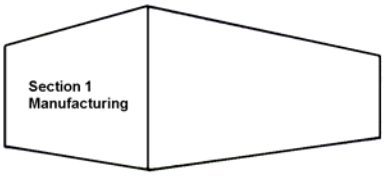


Occupancies

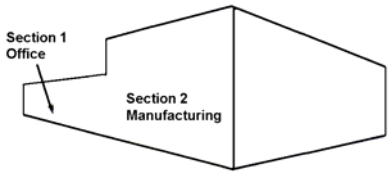
Enter the occupancy code and the percentage of the building section that conforms to the model. For example, if you are performing a valuation on a high-rise apartment, enter occupancy code 1200 and a percentage for that code of 100%. If half of this building is office space, then enter the high-rise apartment at 50% and the high-rise office at 50%. You may split the building into as many as five different occupancies, as long as the sum of the percentages equals 100%.

How To	1. Make sure the **Construction** navigation link is selected on the left-hand side of the screen. 2. Enter or select the **Occupancy Code** (click the Occupancy Selection link below for details on how to select an occupancy). 3. The **Occupancy Name** is automatically entered when you enter the occupancy code. 4. Enter the **Percentage** of the building or section that the occupancy you selected above is. 5. Enter the average **story height** for the building or section. 6. If your total percentage does not equal 100%, an additional occupancies line will appear and you can repeat the steps above. 7. To remove an occupancy that you have entered, click the **Delete** link in the **Options** column, next to the one to be removed. **NOTE:** Make sure you adjust the other occupancy percentages so that they equal 100%.
Occupancy Selection	1. When you do not know the occupancy code, click the **Select** button next to the Occ. Code field and the Occupancy Selection screen will appear. 2. Select the appropriate occupancy group from the **Occupancy Group** list. If you need, you can use the **Find** feature to locate a specific occupancy. 3. To see a brief description of any occupancy, click the **Define** link to the right of the desired occupancy. 4. Select the appropriate occupancy from the **Available Occupancies** list by clicking the **Select** link to the right of that occupancy. You will automatically be returned to the Construction screen.

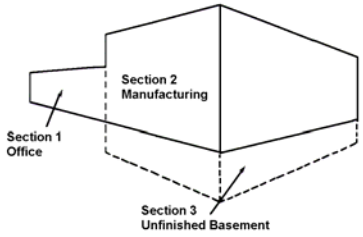
Examples



Manufacturing Building
In the case of a manufacturing building with a small amount of office space within, a single section would be appropriate.
Section 1 = Manufacturing



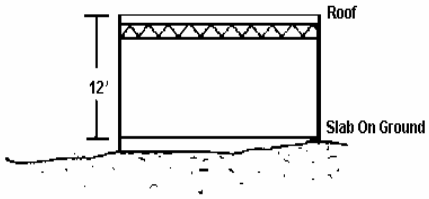
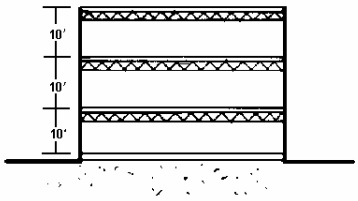
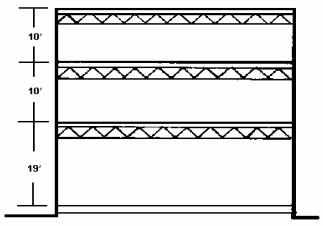
Manufacturing Building with Office
If there is a large amount of office space within the manufacturing building, or if the office is a distinct structural area, use two occupancies.
Section 1 = Office
Section 2 = Manufacturing

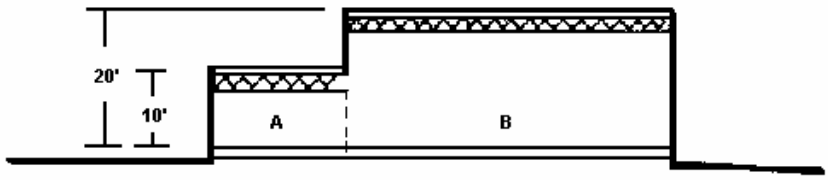


Manufacturing Building with Office and Basement
If the building is like Example 1 or 2, but includes a basement, a basement base cost should be used for that additional section.
Section 1 = Office
Section 2 = Manufacturing
Section 3 = Unfinished Basement

Story Height

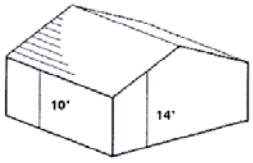
Occupancies have been developed using an average story height for each occupancy. For cases where the story height of a building differs from the average listed, you can adjust accordingly. The adjustment is made to allow for the additional framing and exterior wall cost to provide the additional height or for the decrease in cost for a lower height.

How To	Story height is determined by measuring the distance from the top of one floor to the top of the next floor or roof. The following drawings illustrate how to determine the story height in most cases.
Examples	 **Single Story** In this case determination is relatively simple. Remember not to measure from the top of the floor to the ceiling finish, but from the top of the floor to the top of the roof. **Story Height = 12'**  **Multiple Stories of Equal Height** Again, determination is relatively simple. Since all story heights are equal, story height would be measured from the top of the floor to the top of the next floor, or to the top of the roof. **Story Height = 10'**  **Story Height Varies but Floor Area is Equal** In cases when the heights of one or more floors vary and floor areas are equal, the height should be determined by taking an average story height. **Average Story Height = 13'** (10' + 10' + 19')/3 = 13'



Story Height Varies and Floor Area Varies
Where the story heights of the building vary and the areas are not equal, further adjustments are necessary to reflect the average story height.
Average Story Height = 17'

Area A = 3,000 SF
Area B = 7,000 SF
10,000 SF
[(20 x 7,000) / 10,000] + [(10 x 3,000) / 10,000] =
14' + 3' = 17'



Buildings with Pitched Roofs and Gable Ends
For buildings with pitched roofs and gable ends, average the story height of the gable end walls with the lower sidewalls. Measure the gable end story height from the midpoint of the roof slope, and average this with the height of the sidewalls.
Average Story Height = 12'

(10' + 14' + 10' + 14')/4 = 12'

CONSTRUCTION DETAILS

Construction details include the number of stories, gross floor area, and construction type.

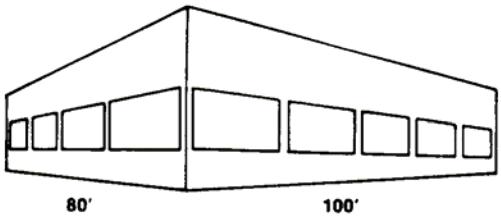
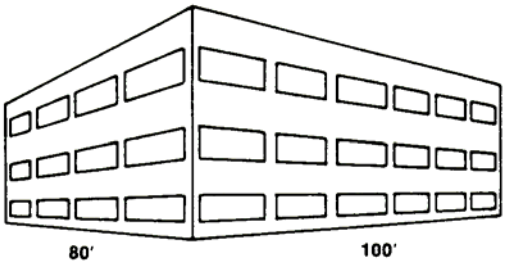
Number of Stories

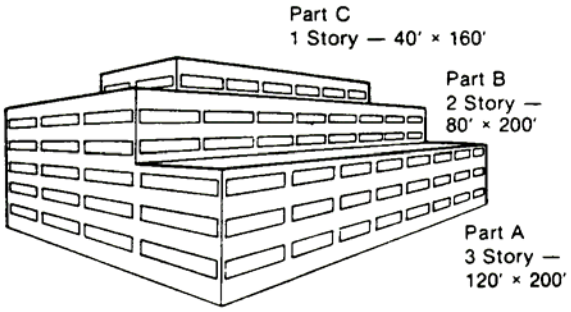
The total number of stories for the section of the building you are entering. If your building has a varying number of stories, you would need to enter each as a separate section within the valuation.

How To	Enter up to a total of 99. For single digit numbers, there is no need to enter a 0 before the number.

Gross Floor Area

The gross floor area is the total floor area (measured in square feet or meters) of all floors in the building that you would like considered in your valuation. This would include stairwells and elevator shafts, but would not include areas such as basements and mezzanines. A one-story building with exterior wall dimensions of 100' x 100' would have a gross floor area of 10,000 square feet. If that same building was three-stories, the gross floor area would be 30,000 square feet. If the first two stories were 10,000 square feet each and the third floor was 5,000 square feet, then the gross floor area would be 25,000 square feet.

How To	1. To determine the gross floor area, you first need to figure the ground floor area. For a valuation to be accurate, proper determination of the floor area is crucial. 2. Once the individual ground floor areas have been figured, the gross floor area can be computed by multiplying the ground floor area by the total number of stories. Enter an area up to a total of 9,999,999. You do not need to enter the commas, the system will automatically put them in once you tab off the field.
Examples	 **1-Story Building** One-Story Building 80 ft. x 100 ft. Ground Floor Area 80 ft. x 100 ft = 8,000 SF **GROSS FLOOR AREA 8,000 SF x 1 story = 8,000 SF**  **3-Story Building** Three-Story Building 80 ft. x 100 ft. Ground Floor Area 80 ft. x 100 ft. = 8,000 SF **GROSS FLOOR AREA 8,000 SF x 3 stories = 24,000 SF**

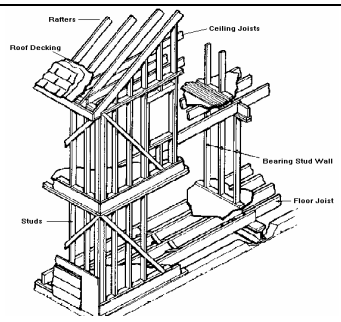
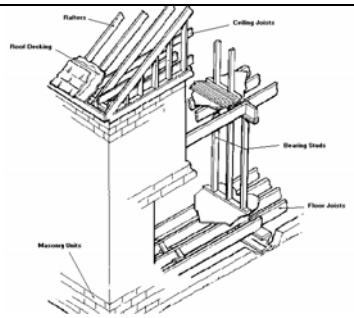


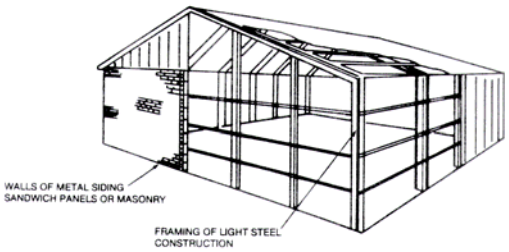
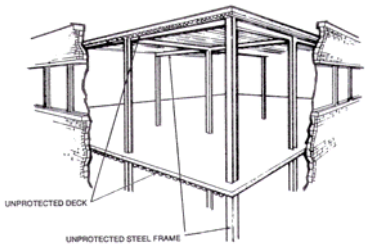
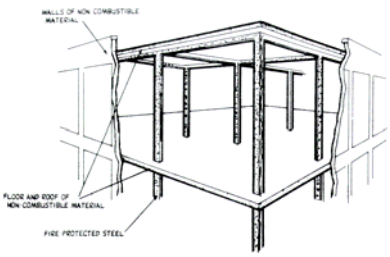
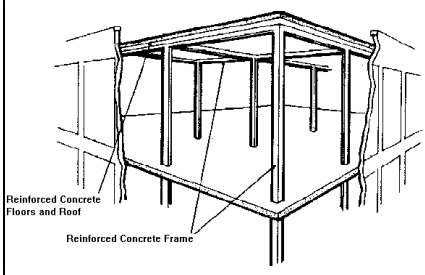
6-Story Building, Varying Sizes

Part A: Three-Stories	120 ft. x 200 ft.			
	24,000 x 3	=	72,000 SF	
Part B: Two-Stories	80 ft. x 200 ft.			
	16,000 x 2	=	32,000 SF	
Part C: One-Story	40 ft. x 160 ft.			
	6,400 x 1	=	6,400 SF	
GROSS FLOOR AREA			**= 110,400 SF**	

Construction Types

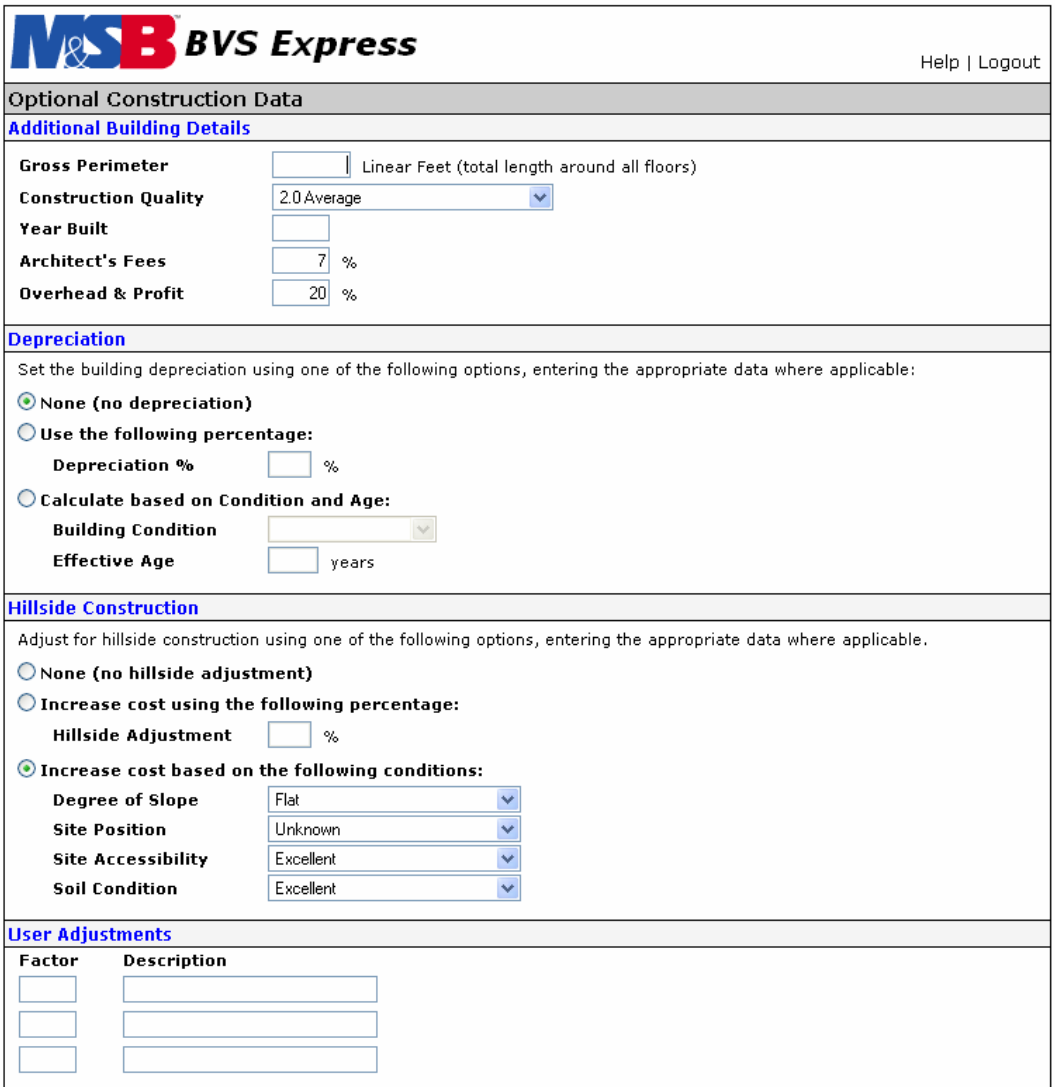
To distinguish between the six different construction materials and assembles, their corresponding cost differences, and fire-related characteristics, the following construction types are used (the term listed first is the MS/B standard term with the ISO terms listed second).

How To	Enter up to six different percentages for each type of construction that applies to this building section. Entries must total 100%.
Frame	 A building where the exterior walls, bearing walls and partitions, and the structural floors and roof, and their supports, are wood or light-gauge metal. This includes buildings where the wood or light-gauge metal has been combined with other materials to form composite components such as wood or metal studs with brick or stone veneer, stucco or metal siding. Buildings classified as ISO Class 1 are characteristic of this type.
Masonry / Joisted Masonry	 A building that has the exterior walls constructed of a material such as brick, hollow or solid concrete block, concrete, gypsum block, clay tile, stone, or similar materials. The structural floors and roof are of wood or light-gauge metal. Buildings classified as ISO Class 2 are characteristic of this type.

Pre-Engineered Metal / Non-Combustible	 A building that employs a system of pre-engineered rigid steel framing members. The exterior walls are of metal siding, sandwich panels, or masonry, and the roof is clad with metal roofing or sandwich panels. Buildings classified as ISO Class 3 are characteristic of this type. Due to the repetitive characteristics of pre-engineered metal buildings, it is advisable to reduce the 7% architectural fees included in the base costs.
Steel Frame / Masonry Non-Combustible	 A building where the structural floors and roof are of unprotected non-combustible materials such as metal decking or concrete on metal decking, and are supported by an unprotected structural steel frame, fire resistive exterior walls, or a combination of both. Buildings classified as ISO Class 4 are characteristic of this type.
Protected Steel Frame / Modified Fire Resistive	 A building where the structural floors and roof, and their supports are of non-combustible construction with a fire rating of not less than one hour. A building very similar to Construction Type D - Steel Frame; however, in Type E the non-combustible floor, roof, and framing components are protected with sprayed-fiber fireproofing. Buildings classified as ISO Class 5 are characteristic of this type.
Reinforced Concrete Frame / Fire Resistive	 A building where the structural floors and roof, and their supports are of materials such as precast or poured-in-place reinforced concrete, with a fire resistive rating of not less than two hours. Buildings classified as ISO Class 6 are characteristic of this type.

OPTIONAL CONSTRUCTION DATA

The optional construction data screen allows you to enter the additional building details, depreciation, and user adjustment information.

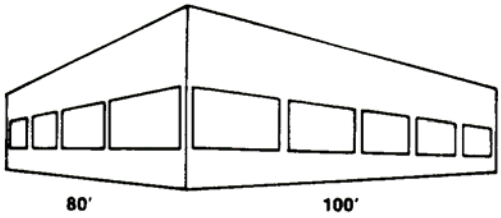
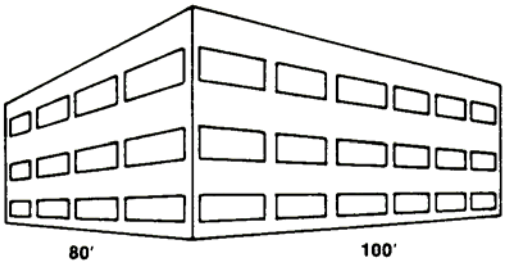
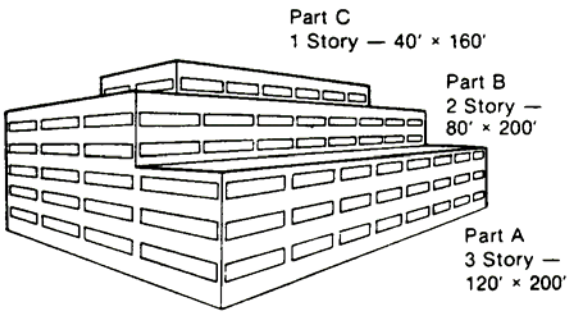


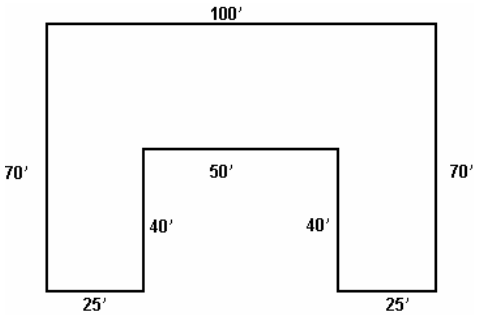
Gross Perimeter

The gross perimeter is the total distance around the outside of the building for each floor, or for the building section. For multiple story buildings, combine the perimeters of each floor together to arrive at the gross perimeter. If you are dividing the building into different sections, then enter only the perimeter of the building section. See the following examples for determining perimeter.

Buildings having the same area but different configurations, or perimeters, will have different costs. In any cost per square foot method of valuation, the costs of the exterior wall must be converted to a square foot cost. The models developed for this program use the most typical building size and shape to calculate the contributing cost of the exterior walls.

As more information becomes known on a particular building, base costs can be refined to more accurately represent the cost of that building. The area must be calculated to arrive at the replacement cost of a building. If the perimeter can be calculated, this area and perimeter relationship can be used to arrive at a factor that will accurately attribute the cost of the exterior wall. The actual perimeter will always produce a more accurate value and should be used when available.

How To	Enter an area up to a total of 999,999. You do not need to enter the commas; the system will automatically put them in once you tab off the field.
Examples	 **1-Story Building** One-Story Building 80 ft. x 100 ft. Ground Floor Perimeter 80 + 80 + 100 + 100 = 360 ft. **TOTAL PERIMETER 360 ft. x 1 story = 360 ft.**  **3-Story Building** Three-Story Building 80 ft. x 100 ft. Ground Floor Perimeter 80 + 80 + 100 + 100 = 360 ft. **TOTAL PERIMETER 360 SF x 3 stories = 1,080 ft.**  **6-Story Building, Varying Sizes** Part A: Three-Stories 120 ft. x 200 ft. (120+120+200+200) = 640 X 3 = 1,920 ft. Part B: Two-Stories 80 ft. x 200 ft.

	(80+80+200+200) = 560 X 2 = 1,120 ft. Part C: One-Story 40 ft. x 160 ft. (40+40+160+160) = 400 X 1 = 400 ft. **TOTAL PERIMETER = 3,440 ft.**  **1-Story Irregular Shape** Ground Floor Perimeter (70+100+70+25+40+50+40+25) = 420 ft. **TOTAL PERIMETER 420 ft. x 1 story = 420 ft.**

Irregular Wall Adjustment

If you want the valuation to account for the building's perimeter but you don't know what the perimeter is, you can enter a wall adjustment by selecting the shape of the building. This adjustment is used to increase the default perimeter for buildings that are not a simple rectangle in shape without having to enter the gross perimeter.

How To	Using the drop-down list, select none, irregular, or very irregular. **NOTE:** This field will not be available if the gross perimeter has been entered. You can enter either the gross perimeter or select an adjustment option, but not both.
Examples	 Irregular Very Irregular

Construction Quality

Occupancies have been constructed based on average characteristics for the occupancy, with average defined as the common characteristics of a majority of buildings within that occupancy. The quality adjustment to be made is not one of an office quality versus a factory quality, but rather the quality of the office being valued versus the average quality of offices. The construction quality adjustments are meant to be guidelines only. Economy is not the lowest cost for which the structure could be built and superior is not the highest cost for buildings of a particular type. Rather, they are typical for buildings of superior or economy construction quality.

How To	Either enter a number between 1.0 and 5.0 (economy, average, superior, and premium), or use the drop-down list and select the appropriate number. If the building is judged to be between two quality designations, then enter a factor between the two. For example, if the building is slightly better than average, then enter a quality factor of 2.2. If no entry is made, the quality is assumed to be average.

Year Built

How To	Enter a four-digit year for the year that the section was completed.

Architectural Fees

Architectural fees are compensation paid for architectural or engineering services rendered. The default percentage is 7%.

How To	Enter a percentage up to 99.9%. Any entries you make will override the default percentage.

Overhead and Profit

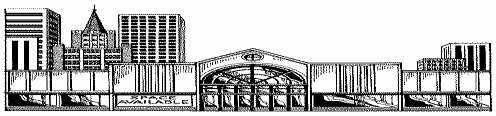
The general cost of operating and maintaining a business in addition to specific costs related to a particular job and the profit from construction activities is referred to as overhead and profit. The default percentage is 20%.

How To	Enter a percentage up to 99.9%. Any entries you make will override the default percentage.

Depreciation

Depreciation is a lessening in value or worth of a building caused by wear and tear from use, structural defects, building service deficiencies and exposure to elements. Two items are taken into account when determining normal depreciation:

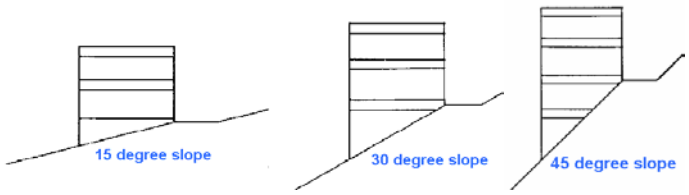
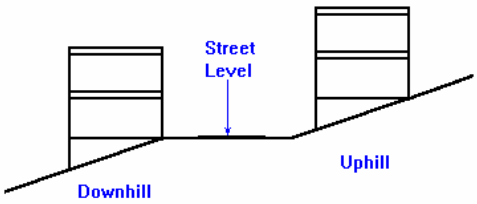
Building Condition	The general, overall condition of the building (considers the desirability and usefulness of the building). **Excellent** The building is in perfect, like-new condition. It is very well maintained with no evidence of physical deterioration and is occupied by the use for which originally intended. All building services are modern, proper and adequate.

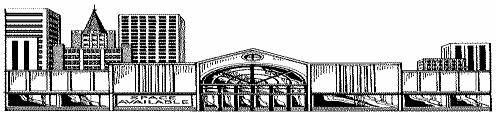


	Good Although it has been well maintained, some minor deterioration is visible and the building is still being used as originally intended. Its building services are proper and adequate. **Average** The building is beginning to show signs of normal wear and tear. The building is still used as originally intended or occupied by a use for which it was renovated. The building services are functional. **Poor** Definite deterioration is obvious throughout the building. The building may be occupied by a use other than originally intended and the building services may be partially removed, unused, or made adequate through adaptation for the present occupancy. **Very Poor** The building is approaching unsound condition. The building or portions thereof may be unusable and some building services may be unused.
Effective Age	Effective age is the number of years of apparent age, sometimes determined by deducting the estimated remaining life from normal life. Remodeling or renovating the building can reduce effective age. The effective ageot the actual age, is used in combination with the Building Condition to estimate an appropriate amount of depreciation. Actual age is the number of years between the date the building was constructed and the inspection date.
Depreciation Percentage	You can enter a depreciation percentage, which overrides the depreciation percentage that is calculated based on the condition and effective age.
How To	Click the appropriate radio button (None, Use the Following Percentage, or Calculate Based upon Condition and Age). If you choose to enter the actual percentage, enter a percentage between 0 and 99. If you want the system to calculate the depreciation percentage for you, enter the building condition and effective age.

Hillside

Hillside construction is broken into four categories: Degree of Slope, Site Position, Site Accessibility, and Soil Condition. The total replacement cost for the building is multiplied by the percentage increase factors determined here.

How To	Click the appropriate radio button (Increase Cost Using the Following Percentage, or Increase Cost Based on the Following Conditions). If you choose to enter the actual percentage, enter a percentage between 0 and 99. If you want the system to calculate the hillside increase percentage for you, click the appropriate radio button and select the specific conditions from the drop-down lists.
Degree of Slope	 Constructing a building on a sloping lot almost always increases its replacement cost. It is important to remember that hillside adjustments take into account the added costs of constructing a sloping foundation system. These adjustments are much more than simply excavating into the hillside to form a flat pad on which to build.
Site Position	 Downhill sites are below the street level and uphill sites are above the street level. Generally, construction costs increase for uphill sites due to the increased excavation and retaining wall costs.
Site Access	Site accessibility refers to the ease of getting people, equipment and materials, to, in and around the site. Items such as a place for workers to park their vehicles, a level area for unloading and storing building materials, and the ability of delivery trucks to get to the site must be considered. Remote sites and sites that are physically difficult to access will increase construction costs. There are no hard and fast rules for determining the quality of site accessibility. You must weigh and judge these conditions to determine the quality for each unique situation.



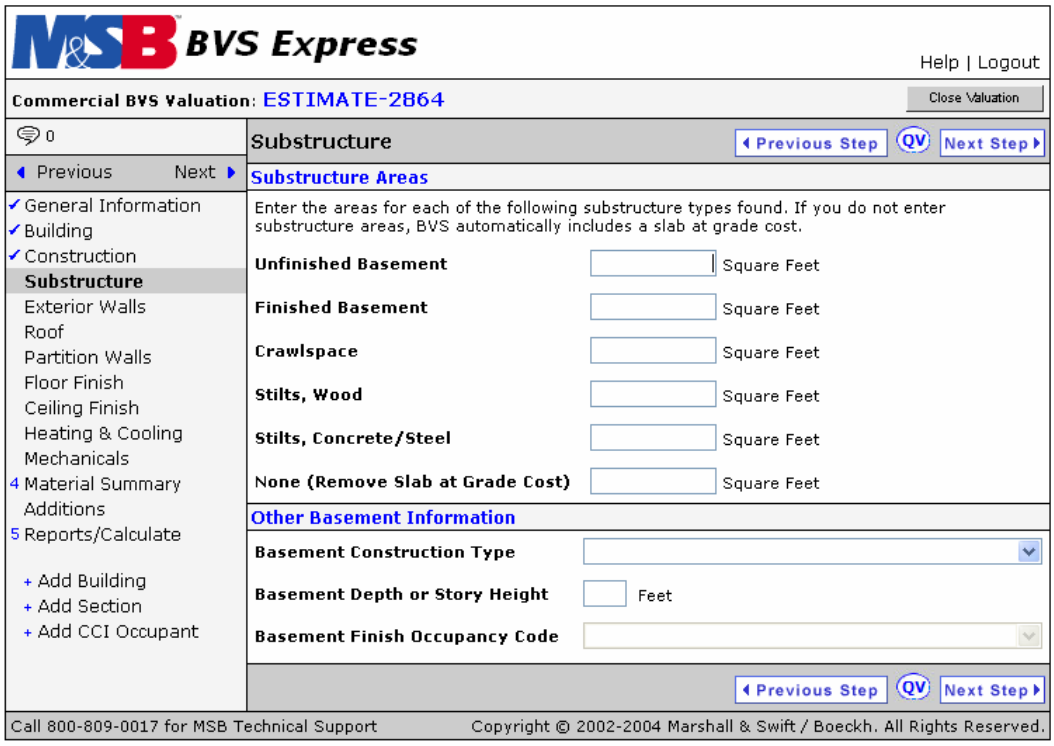
Soil Condition	Hillside sites will often require test borings and a soil/geology report to determine the type of soil and the underground conditions. The type of soil and its bearing characteristics affect the engineering requirements and associated costs for the foundation. Unstable soil and soil that has poor bearing capacity results in higher costs. There are no hard and fast rules for determining the quality of the soil condition. You must weigh and judge these conditions to determine the quality for each unique situation.

User Adjustments

A user adjustment factor allows you to make a global modification to all the costs generated by the system.

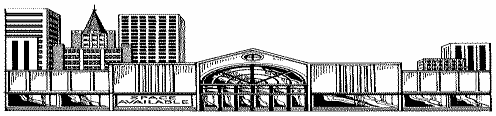
How To	Enter up to three factors and descriptions. The factor is expressed as <, =, > 1.00. For example, 1.10 equals adding 10% to the costs generated by the system and .90 equals subtracting 10% from the costs generated by the system. For the description, you can enter a combination of alpha and numeric characters, up to 32 characters. Symbols like dashes, apostrophes, quotes, etc. can also be used.

SUBSTRUCTURE - BASEMENT



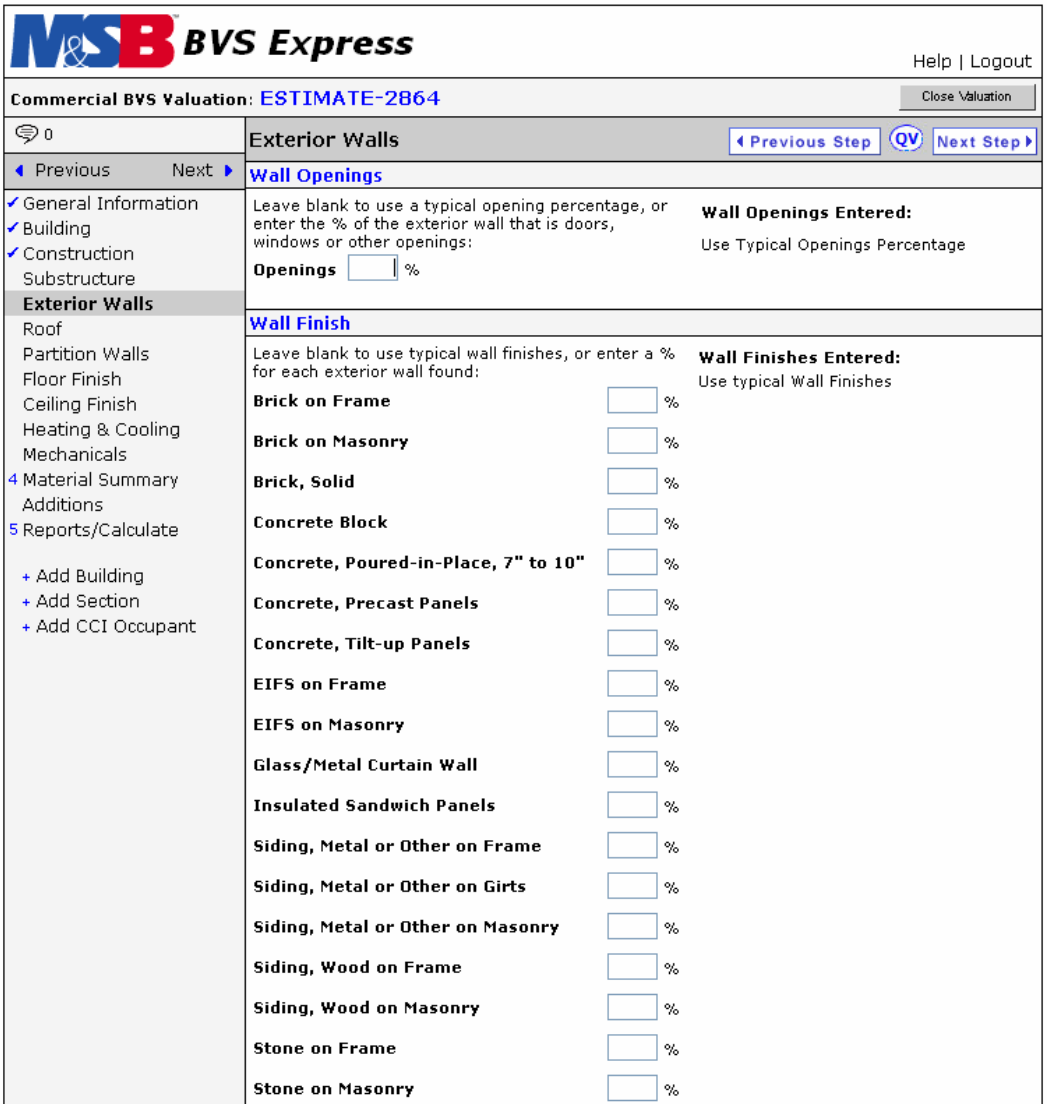
How To	1. Make sure the **Substructure** navigation link is selected on the left-hand side of the screen. 2. Enter the area for each substructure found in the building or section under the **Substructure Areas** section. 3. Under **Other Basement Information** enter the additional basement details.

Substructure	**Unfinished Basement** Enter the total square footage for an unfinished basement. The costs include: structural floor, stairs, electrical, and floor drains. Costs do not include: slab, heating and cooling, plumbing, ceiling, wall or floor finishes, interior partitions, or elevators. **Finished Basement** Enter the total square footage for a finished basement. A finished basement will include the finishes for the selected occupancy of the section if you have not chosen a Basement Finish Occupancy Code. If you have chosen an occupancy code, the finishes for the basement will include the finishes for that selected occupancy. **Crawlspace** An unfinished accessible space below the first floor, generally less than full-story height.



	Stilts, Wood Long wooden posts driven into the ground which are designed to support and elevate the building above the ground. **Stilts, Concrete/Steel** Long concrete or steel posts driven into the ground which are designed to support and elevate the building above the ground. **None (Remove Slab at Grade Cost)** To remove the slab cost, enter the total square footage of the slab to be removed.
Other Basement Information	**Basement Construction Type** The basement construction type is selected based on the type of exterior wall (of the basement), and the type of structural floor (for the first floor). For example, If the basement walls are concrete block, and the structural floor is wood frame, then the construction type for the basement is Masonry (Joisted Masonry). Select the type of construction from the drop-down list. **NOTE:** the description cannot be modified. **Basement Depth or Story Height** The basement construction type is selected based on the type of exterior wall (of the basement), and the type of structural floor (for the first floor). For example, If the basement walls are concrete block, and the structural floor is wood frame, then the construction type for the basement is Masonry (Joisted Masonry). Enter the depth or story height, up to 99, for any basement areas that apply to this building section. If an entry is not made, a story height of 10’ is assumed. **Basement Finish Occupancy** If you have entered an area for a finished basement, you can select the type of finish that is included by entering an occupancy code. The basement will be finished using the same heating, cooling, plumbing, and interior finishes that are included in this occupancy. If a code is not entered, the basement will be finished the same as the superstructure occupancy.

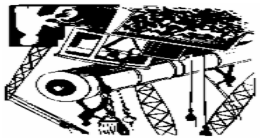
EXTERIOR WALLS



Exterior Wall Openings

Exterior wall openings consist of exterior doors and windows. Each occupancy has its own ratio of exterior wall openings to exterior wall finishes. By entering a percentage here, the program will use this percentage to calculate a new ratio and exterior wall cost.

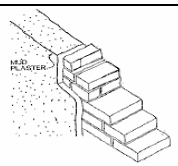
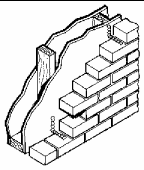
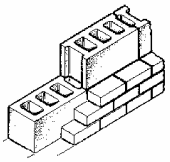
How To	If you want to have the system calculate the percentages for you, leave this field blank, otherwise enter a percentage up to 100%. **NOTE:** Adjustments should not be made in this field if a building's exterior is glass panels (typically found on high rises). This type of glass is considered a Glass Curtain Wall and can be found under the exterior wall finish section.

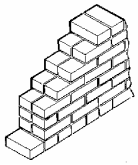
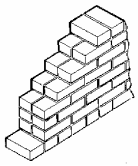
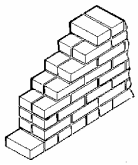
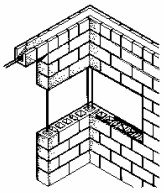
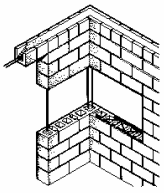


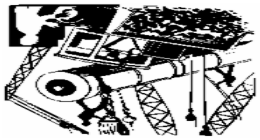
Exterior Wall Finishes

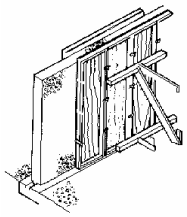
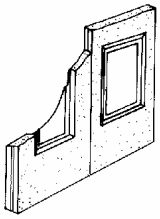
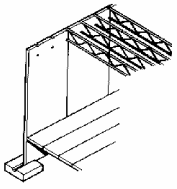
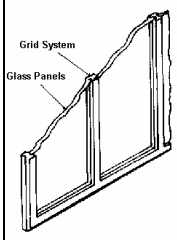
The exterior wall finish is the outer skin of the building, minus the windows and doors. There are 31 different choices (including none) available for exterior wall finish materials.

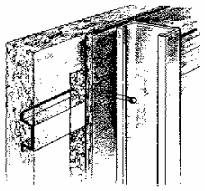
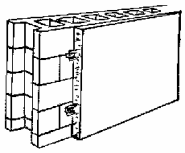
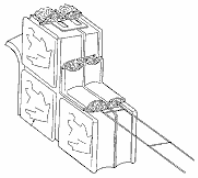
How To	If you want to have the system calculate the percentages for you, leave these fields blank, otherwise enter the percentage, up to 999, of each exterior wall finish material found on the building or section. You do not need to take into consideration the wall openings (doors and windows) as the program will do this for you. Generally, your exterior wall percentages should equal 100%. However, the program will allow for those situations where entries over 100% are necessary. The program also has an entry field for None that when used, will remove that percentage of the wall finishes from the occupancy. If you enter a total percentage of less than 100%, the program will automatically default the remaining percentage to None.

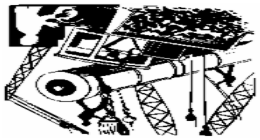
Adobe Block	 Adobe block is a stacked solid masonry unit that is sun dried from adobe soil found in arid regions, generally rough in shape and texture. The wall may also be grouted and reinforced. Unless covered with some other material, each block is easily recognized. **Included in Cost:** Adobe block and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Brick on Frame	 Face brick attached to a wood or metal stud frame structure using corrugated steel ties. The brick provides ornamentation only, not structural support for the building. **Included in Cost:** Face brick, mortar, steel or wood studs, and sheathing. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Brick on Masonry	 Face brick attached with masonry ties to a reinforced concrete block or masonry backup wall. The brick provides ornamentation only, not structural support for the building. **Included in Cost:** Face brick, mortar, steel or wood studs, and sheathing. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.

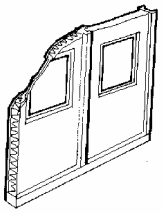
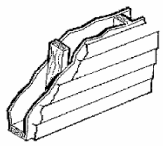
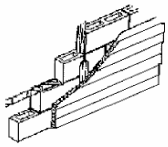
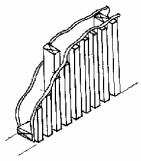
Brick, Solid	 This is a solid brick wall, two rows thick, with varying mortar thicknesses depending upon the structural requirements. This wall is used for full structural support. **Included in Cost:** Face brick, brick backup and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Brick, Solid, 18" Thick	 This is a solid brick wall, 18 inches thick, with varying mortar thicknesses depending upon the structural requirements. This wall is used for full structural support. **Included in Cost:** Face brick, brick backup and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Brick, Solid, 24" Thick	 This is a solid brick wall, 24 inches thick, with varying mortar thicknesses depending upon the structural requirements. This wall is used for full structural support. **Included in Cost:** Face brick, brick backup and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Concrete Block	 Concrete formed into an 8" x 16" (depth usually varies) block and allowed to set until it hardens. The inside of the block is usually hollow but can be solid in some areas of a wall. Unless covered with some other material, each block is easily recognized. **Included in Cost:** 8" x 16" concrete block and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Concrete Block, Split Face	 Concrete formed into an 8" x 16" (depth usually varies) block and allowed to set until it hardens. The exposed face of the block has a rough texture which gives the appearance of the block being a naturally split stone. The inside of the block is usually hollow but can be solid in some areas of a wall. Unless covered with some other material, each block is easily recognized. **Included in Cost:** 8" x 16" concrete block and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.

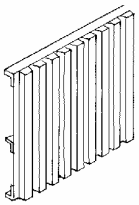
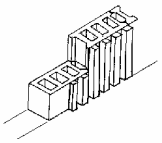
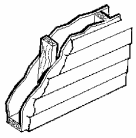
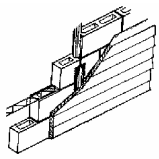
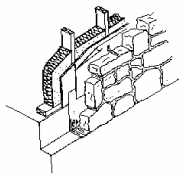


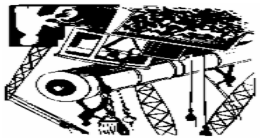
Concrete, Poured-in-Place, 7” to 10”	 A solid 7" to 10" concrete wall. The wall is created by laying forms where the wall will be, then trucking in or making on site, a concrete mix that is then poured into those forms. Once poured, the wall will not be moved to a different location. The finished product may be made to look like stone, brick, or wood. **Included in Cost:** Building and removal of the forms, reinforcing, and concrete. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Concrete, Precast Panels	 Concrete structural components that are cast separately, either at a separate location or on a building site. The panels will resemble a poured-in-place concrete wall except for the obvious seams between the panels. **Included in Cost:** Concrete panels, shipped and erected on site. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Concrete, Tilt-up Panels	 Concrete wall sections that are cast horizontally, on site, and tilted or lifted into building position. Because these panels are poured on site, they can be much larger than a precast panel and are generally taller than a poured-in-place wall. **Included in Cost:** Building and removal of the forms, reinforcing, and the concrete necessary to create the panel. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Curtain Wall, Glass	 An exterior wall made of glass and metal that encloses, but does not support, the structural frame of a building. A glass/metal curtain wall is a wall finish and should not be considered as part of the door and window opening percentage. **Included in Cost:** Glass panels and steel framing. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.

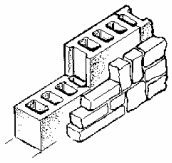
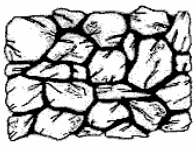
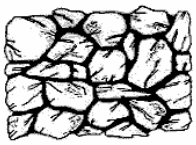
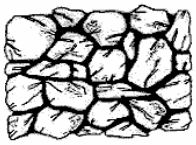
Curtain Wall, Granite	An exterior wall made of granite and metal that encloses, but does not support, the structural frame of a building. The stone panel is a wall finish and should not be considered as part of the door and window opening percentage. **Included in Cost:** Granite panels and steel framing. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
EIFS on Frame	 Exterior Insulation and Finish System (EIFS) is an exterior wall coating system that resembles stucco. It incorporates a substrate covered with a foam insulation board, a reinforcing mesh, a base coat, and a finish coat of synthetic stucco material, applied to a stud frame wall. Common trade names for this type of wall are Dryvit, Insul-Crete, R-Wall, Powerwall and Sure-Wall. **Included in Cost:** Foam insulation board, reinforcing mesh, synthetic stucco, and steel or wood studs. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
EIFS on Masonry	 Exterior Insulation and Finish System (EIFS) is an exterior wall coating system that resembles stucco. It incorporates a substrate covered with a foam insulation board, a reinforcing mesh, a base coat, and a finish coat of synthetic stucco material, applied to a masonry wall. Common trade names for this type of wall are Dryvit, Insul-Crete, R-Wall, Powerwall and Sure-Wall. **Included in Cost:** Foam insulation board, reinforcing mesh, synthetic stucco, and masonry load bearing wall. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Glass Block	 Glass formed into an 8" x 8" (depth usually varies) block. The block is usually placed in stacked fashion and mortar is applied to the joint in between blocks. The block allows light to pass through yet controls sound and security. **Included in Cost:** Glass block and mortar. Also labor necessary to erect the wall.
Granite Block, Solid, 24" Thick	Solid granite block is a solid cut stone masonry block comprised of granite 24" thick. **Included in Cost:** Masonry comprised of granite and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.

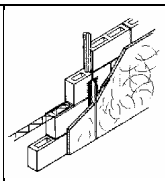


Insulated Sandwich Panels	 A panel material used to sheath a building. The panel is made up of two sheets of plywood sandwiching a layer of foam insulation. This should not to be confused with SIP, which is a structural material. **Included in Cost:** Insulated sandwich panel. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Siding, Fiber Cement on Frame	 This board is composed of asbestos free fiber and Portland cement combined under pressure. This siding is typically beveled, embossed wood texture finish, and is usually 7.5" wide by 12' long. They are attached directly to the framed exterior wall. **Included in Cost:** Beveled fiber cement boards and 2" x 6" wood or steel studs. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Siding, Fiber Cement on Masonry	 This board is composed of asbestos free fiber and Portland cement combined under pressure. This siding is typically beveled, embossed wood texture finish, and is usually 7.5" wide by 12' long. They are attached directly to the framed exterior wall. **Included in Cost:** Beveled fiber cement boards and 2" x 6" wood or steel studs. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Siding, Metal or Other on Frame	 Corrugated metal siding applied to a stud frame wall. **Included in Cost:** Steel siding and 2" x 6" wood or steel studs. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.

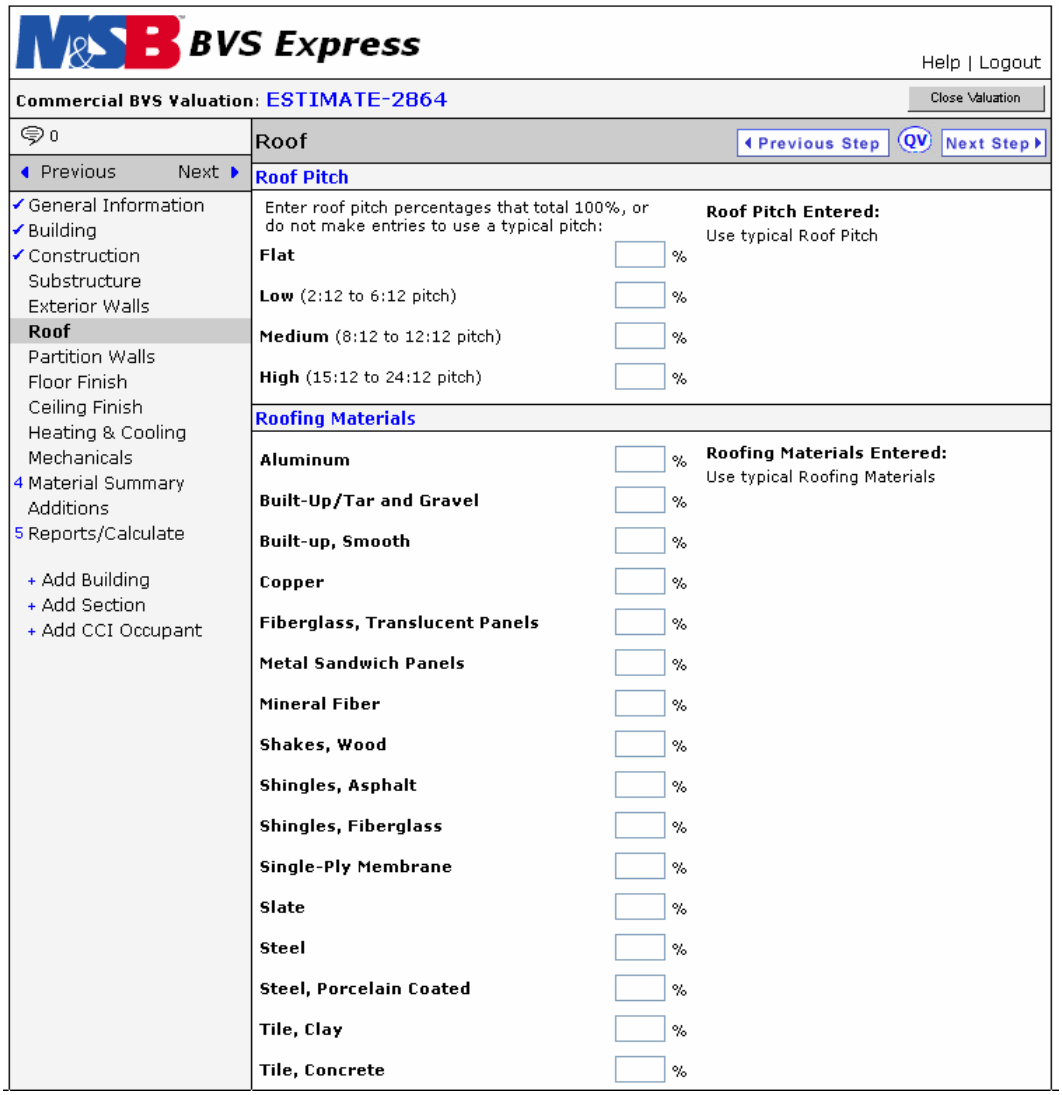
Siding, Metal or Other on Girts	 Corrugated metal siding applied to secondary horizontal framing members extending between columns or studs. Because of the use of girts, this exterior wall option is normally associated with pre-engineered metal, steel frame, and pole frame buildings. Girts are the horizontal bracing that provides a surface for the siding to be fastened to. **Included in Cost:** Corrugated or ribbed steel siding and 2" x 4" blocking 2' on center. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Siding, Metal or Other on Masonry	 Corrugated metal siding applied over a wall made of concrete block. **Included in Cost:** Concrete block wall, corrugated or ribbed steel siding, and 1" x 3" wood furring strips. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Siding, Wood on Frame	 Wood panels that are usually 4' x 8' sheets with shallow vertical groves, attached directly to the framed exterior wall. Typically referred to as T-111. **Included in Cost:** Wood panels (typically T-111) and 2" x 6" wood or steel studs. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Siding, Wood on Masonry	 Wood panels that are usually 4' x 8' sheets with shallow vertical groves, attached to wood or metal furring strips that have been anchored to the masonry frame wall. Typically referred to as T-111. **Included in Cost:** Concrete block wall, wood panels, and 1" x 3" wood furring strips. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Stone on Frame	 Stone such as granite, fieldstone, or limestone that is either found or quarried locally then is applied to a wood or steel stud frame wall. The stone provides ornamentation only, not structural support for the building. **Included in Cost:** Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.



Stone on Masonry	 Stone such as granite, fieldstone, or limestone that is either found or quarried locally then is anchored to a masonry wall. The stone provides ornamentation only, not structural support for the building. **Included in Cost:** 8" concrete block wall, stone and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Stone, Solid, 12" Thick	 This is a solid, 12" thick stone wall such as field stone or limestone that is either found or quarried locally. The wall may have varying mortar thicknesses depending upon the structural requirements. This wall is used for full structural support. **Included in Cost:** Stone and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Stone, Solid, 18" Thick	 This is a solid, 18" thick stone wall such as field stone or limestone that is either found or quarried locally. The wall may have varying mortar thicknesses depending upon the structural requirements. This wall is used for full structural support. **Included in Cost:** Stone and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Stone, Solid, 24" Thick	 This is a solid, 24" thick stone wall such as field stone or limestone that is either found or quarried locally. The wall may have varying mortar thicknesses depending upon the structural requirements. This wall is used for full structural support. **Included in Cost:** Stone and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.
Stucco on Frame	A cement plaster used as an exterior wall surface finish that is usually applied to metal lath attached to a stud wall base. The plaster consists of Portland cement, lime, sand and water. **Included in Cost:** Stucco, 2" x 6" wood or steel studs, mortar, and wood sheathing. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.

Stucco on Masonry	 A cement plaster used as an exterior wall surface finish that is usually applied over a concrete block base. The plaster consists of Portland cement, lime, sand and water. **Included in Cost:** Stucco, 8" concrete block wall, and mortar. Also associated with the exterior wall costs are the interior wall finishes appropriate for the occupancy, insulation, and the labor necessary to erect the wall.

ROOF



Roof Pitch

Roof slope is expressed as a ratio of total rise to total run (i.e. 6 on 12, 12 on 12). Pitch indicates the incline of the roof in units of vertical rise per units of horizontal run or distance.

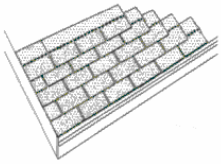
How To	If the entire building has one type of roof pitch, enter 100%. If the building has a combination of different types of roof pitches, enter the percentage for each type. Entries must total 100%.

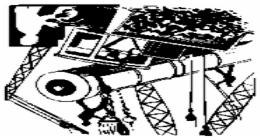
	Flat A roof with no pitch. **Low** Low pitch is defined as 2:12 to 6:12. **Medium** Medium pitch is defined as 8:12 to 12:12. **High** High pitch is defined as 15:12 to 24:12.

Roofing Materials

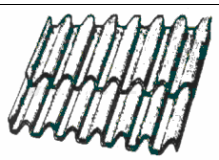
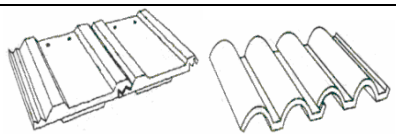
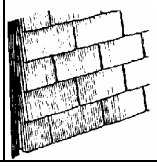
There are 18 different choices (including none) for roof materials.

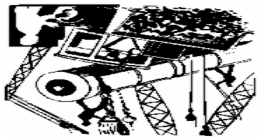
How To	If you want to have the system calculate the percentages for you, leave these fields blank, otherwise enter a percentage, up to 999, for all types of roof materials found on the building or section.

Aluminum	A thin, typically 22 or 24 gauge, sheet style roofing. Attached with screws or a standing seam (no penetrations) system. Aluminum roofing is usually left unpainted. **Included in Cost:** Aluminum sheets, insulation, and drainage.
Shingles, Asphalt	 A composition shingle made of asphalt-impregnated felt and surfaced with mineral granules. **Included in Cost:** Shingle, felt, insulation, and drainage.
Built-up, Smooth	A built-up roof is composed of three different and distinct elements: felt, bitumen, and surfacing. Felt paper is used to resist the expansion and contraction forces and does not waterproof the roof, but rather allows more bitumen to be applied. The felt is applied in layers over insulation with bitumen mopped over the top of each layer, holding the layers together. After the layers of felt are applied, a layer of rubber membrane is applied to the exposed area of the roof providing an excellent surface to protect the layers of felt. **Included in Cost:** 3-ply asphalt, built-up smooth, insulation, and drainage.



Built-up/ Tar and Gravel	A built-up roof is composed of three different and distinct elements: felt, bitumen, and surfacing. Felt paper is used to resist the expansion and contraction forces and does not waterproof the roof, but rather allows more bitumen to be applied. The felt is applied in layers over insulation with bitumen mopped over the top of each layer, holding the layers together. After the layers of felt are applied, a layer of gravel or slag, mineral granules, or a mineral-coated cap sheet is applied to the exposed area of the roof providing an excellent surface to protect the layers of felt. **Included in Cost:** 3-ply asphalt, built up with roofing stone on top, insulation, and drainage.
Copper	A thin (24-28-gauge) copper sheet formed to provide an interlocking, waterproof roof covering. Normally, this type of roof is left unfinished to allow for weathering to the patina finish. **Included in Cost:** Formed copper roofing, felt, insulation, and drainage.
Fiberglass, Translucent Panels	Fiberglass sheets used in conjunction with a metal roof system to allow natural lighting. Most commonly used with steel roofs and found on pre-engineered buildings or "pole barns". The translucent panels have the same profile (corrugation) as the steel panels. These panels can also be used on the wall of the building. **Included in Cost:** Fiberglass panel
Shingles, Fiberglass	A composition shingle made of asphalt-impregnated fiberglass and surfaced with mineral granules. **Included in Cost:** Shingle, felt, insulation, and drainage.
Metal Sandwich Panels	A composite roof system incorporating a solid foam insulation "sandwiched" between two sheets of light gauge steel or aluminum. Typical insulation thickness is ½" – 3". **Included in Cost:** Metal sandwich panel, insulation, and drainage.
Mineral Fiber	A roofing material made up of fiberglass mesh and asphalt topped with mineral stones. **Included in Cost:** Mineral fiber shake, felt, insulation, and drainage.
Single-Ply Membrane	A sheet-type roofing made of asphalt-impregnated felts with a granule finish, or a composite material resembling rubber. The composite material is fastened with mechanical fasteners or kept in place with stone ballast (on a flat application). **Included in Cost:** 55 mil EPDM fully adhered membrane, insulation, and drainage.

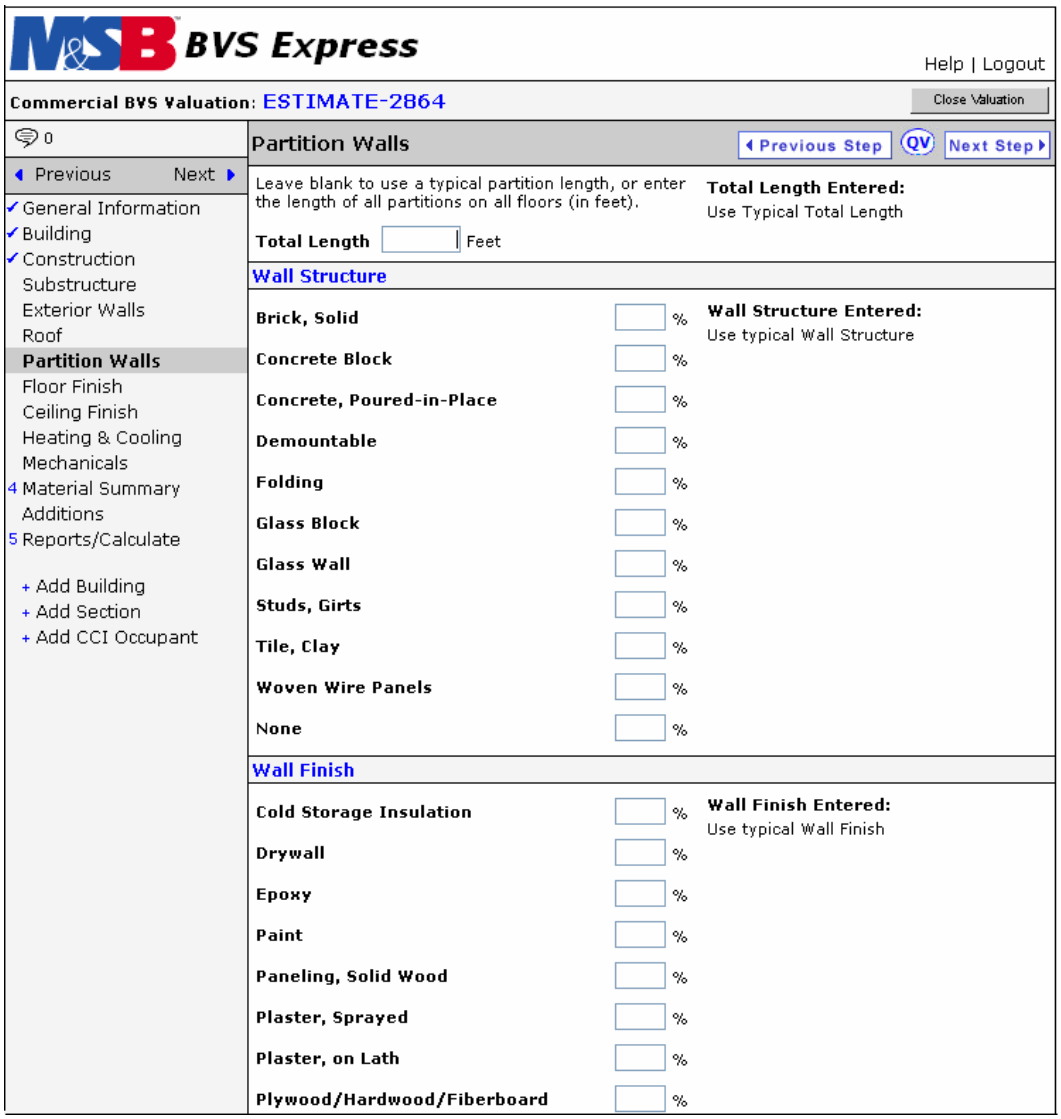
Slate	A dense, fine grained, metamorphic rock produced by the compression of various sediments, cut into thin shingles. Slate comes in any number of sizes, thicknesses and finishes. **Included in Cost:** Slate shingles, felt, insulation, and drainage.
Steel	Corrugated steel sheets applied over a pitched roof. **Included in Cost:** Colored steel roofing, insulation, and drainage.
Steel , Porcelain Coated	A light gauge steel sheet material laminated with a porcelain finish. Often called porcelain enamel, this finish is durable and a premium cost material. **Included in Cost:** Porcelain coated steel panels, insulation, and drainage.
Tile, Clay	 A roof material made from different types of clay and fired in kilns to dry. Clay tiles can be divided into two categories: flat or roll. **Included in Cost:** Clay tile, insulation, and drainage.
Tile, Concrete	 A thin piece of concrete made from Portland cement, fine aggregate, and pigments. These tiles can be manufactured to resemble clay tile or wood shakes. **Included in Cost:** Concrete tile, insulation, and drainage.
Tin (Terne)	A thin gauge sheet of tin (terne) that is typically fastened with a standing seam system. Tin alloys have a long life span and are a premium cost product. Tin roofs are not to be confused with the steel roofs commonly found on pre-engineered structures. **Included in Cost:** Monel standing seam roofing, insulation, and drainage.
Shakes, Wood	 Shakes split from a bolt of wood, generally in random dimensions. Wood shakes are normally installed over a pitched roof on spaced sheathing covered with building paper.



INTERIOR FEATURES

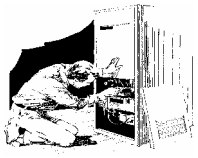
Interior features include partition wall length, partition wall structure, partition wall finish, floor finish, and ceiling finishes.

PARTITION WALLS



Partition Wall Length

How To	Enter the total lineal feet of partition walls, up to 999,999. You do not need to enter the commas; the system will automatically put them in once you tab off the field.



Partition Wall Structures

Partition walls consist of the framing materials and the finishes that cover them. There are 11 different choices (including none) available for partition wall structure materials.

How To	If you want to have the system calculate the percentages for you, leave these fields blank, otherwise enter the percentage, up to 999, for each partition wall structure material found in the building or section. **NOTE:** Although the program does not prohibit you from entering greater than or less than 100%, it is recommended that if you enter data into these fields, your totals equal 100%. **NOTE:** If an entry is made in any Partition Wall Structure field, an entry must also be made in Partition Wall Finish.

Brick, Solid	A solid brick interior wall that is either load bearing or non-load bearing and is used to separate rooms. **Included in Cost:** Face brick, brick backup, and mortar.
Concrete, Poured-in-Place	A solid concrete wall. The wall is created by laying forms where the wall will be, then trucking in or making on site, a concrete mix that is then poured into those forms. Once poured, the wall will not be moved to a different location. The finished product may be made to look like stone, brick, or wood. **Included in Cost:** Building and removal of the forms, reinforcing, and concrete.
Concrete Block	Concrete formed into a 8" x 16" (depth usually varies) block and allowed to set until it hardens. The inside of the block is usually hollow but can be solid in some areas of a wall. Unless the block is covered with some other material, each block is easily recognized. **Included in Cost:** Concrete block and mortar.
Demount-able	Demountable partitions require tools for installation or removal and are considered partitions, not furniture. These partitions may not be full height (floor to ceiling). **Included in Cost:** Pre-built panels and the hardware to install them.
Folding	A retractable divider made of lightweight acoustic damping materials, supported by tracks in the ceiling and/or floor when being used. Most folding partitions are stored flush to the wall in spaces designed expressly for them. **Included in Cost:** Lightweight panels or curtains and the hardware to install them.

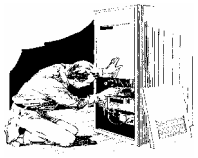
Glass Block	A glass material that is cast into square or rectangle shapes with various patterns and translucency. Usually, the blocks are built into a wall using Mason's mortar for the joints. **Included in Cost:** Glass block and mortar.
Glass Wall	Glass panes installed between vertical and horizontal frames, usually aluminum that is attached to the structure. **Included in Cost:** Glass panels and the tracking or framing.
Studs, Girts, etc.	Wood or steel framing that can either be load bearing or non-load bearing walls. Common spacing of the studs is 12", 16", or 24" on center. **Included in Cost:** Wood or steel studs and girts.
Tile, Clay	Clay tile is a predecessor to concrete block. Clay tiles have hollow cores to provide structural strength and typically have a 12" x 12" face. As an interior wall, they are often finished with plaster. **Included in Cost:** 12" x 12" x 6" glazed and baked bricks, and mortar.
Woven Wire Panels	Heavy gauge wire panels shaped in a grid pattern. **Included in Cost:** Woven wire panels and the hardware to install them.

Partition Wall Finishes

There are 15 different choices (including none) for partition wall finishes.

How To	If you want to have the system calculate the percentages for you, leave these fields blank, otherwise enter the percentage, up to 999, for each partition wall finish material found in the building or section. **NOTE:** It is important to remember that a partition wall has finishes on both sides of the wall. If your partition wall has drywall on both sides, your total percentage for drywall would be 200%. **NOTE:** If an entry is made in any Partition Wall Finish field, an entry must also be made in Partition Wall Structure.

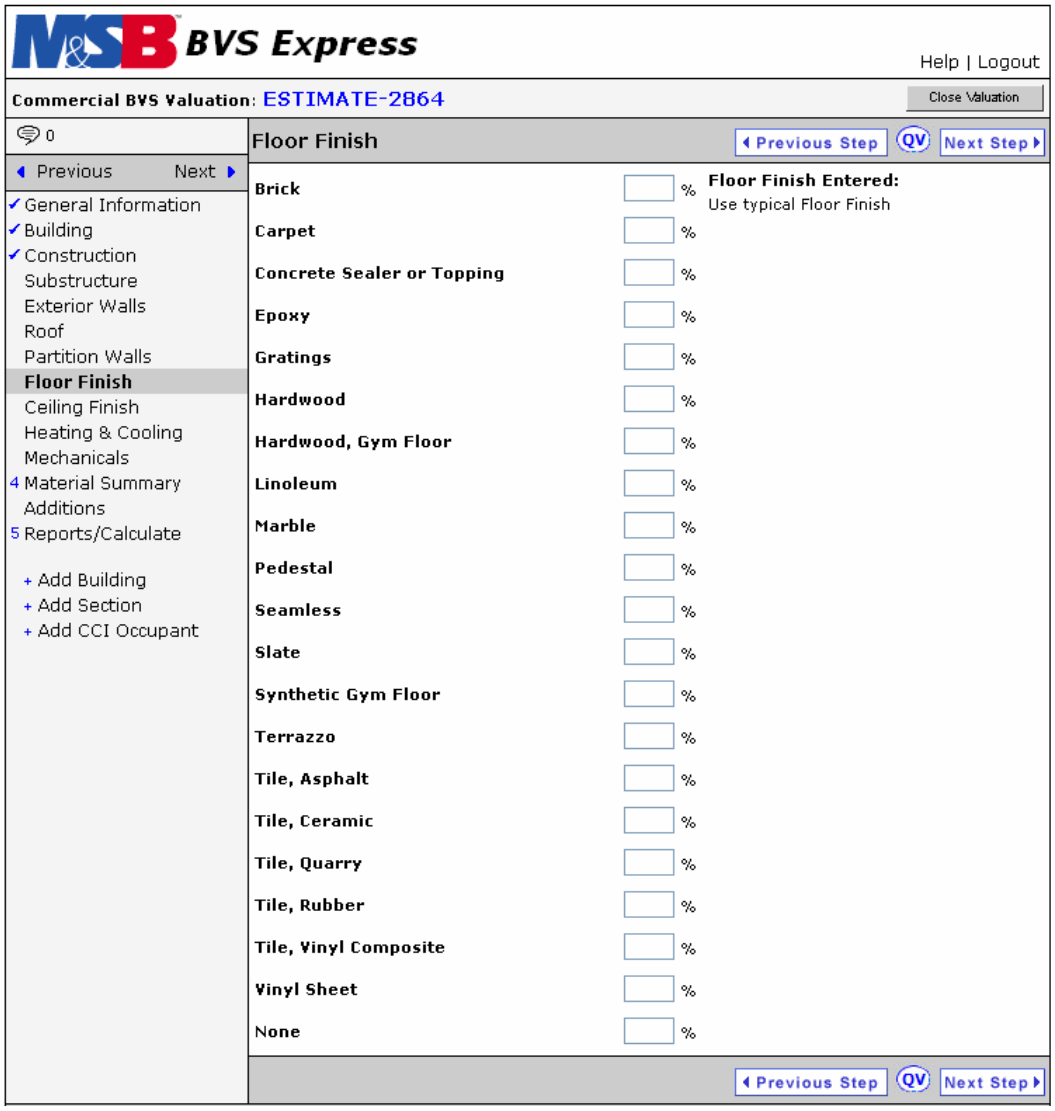
Cold Storage Insulation	Typically a 4" insulated panel with the finish material either aluminum, galvanized steel, or stainless steel.
Drywall	Drywall, also called plasterboard, sheetrock, gypsumboard or wallboard, comes in sheets typically 4' x 8' or 4' x 12'. It is a hard, chalk-like material covered with paper on both sides. It forms a smooth surface on a wall that can be painted or finished in any number of ways.



Epoxy	Wall finish made by applying a liquid material to the partition wall. Epoxy can be mixed with a variety of colors or chips for assorted appearances. Epoxy wall finish is more durable than a painted wall.
Paint	A liquid wall covering made of pigment and oil, latex, solvent or water, that is used to color or decorate a surface. One coat of primer and two finish coats are included in the cost.
Paneling, Solid Wood	Solid wood paneling with a protective finish, usually in sheets of 4’ x 8’ or boards of 4" - 12" in width.
Plaster, on Lath	Plaster is a mixture of cement and aggregate that when mixed with water forms a plastic mass that hardens when applied. The plaster is applied to a metal mesh lath with hand trowels. The lath is supported by framing channels that are either fixed to the ceiling or suspended from the floor or roof joists.
Plaster, Sprayed	Plaster is a mixture of cement and aggregate that when mixed with water forms a plastic mass that hardens when applied. The plaster is applied to a metal mesh lath with the help of a high pressure spray gun. The lath is supported by framing channels that are either fixed to the ceiling or suspended from the floor or roof joists.
Plywood/ Hardwood/ Fiberboard	This is a fabricated wood product constructed of three or more layers of veneer joined with glue, and usually laid with grain of adjoining piles at right angles. Sheets are usually 4’ x 8’ in dimension.
Sheet-Metal	A corrugated metal sheet attached to an interior partition surface.
Textured Finish	A rough or irregular finish usually obtained by special methods such as stippling, dashing, troweling, floating, or a combination of these.
Tile, Acoustical	A wall tile finishing material with an inherent property to absorb sound. Usually, the tile is made of mineral fiber or insulated metal materials.
Tile, Ceramic	A thin, flat piece of fired clay that is attached to the wall surface with cement or other adhesive. Normally used for its durability, easiness to clean, and relatively waterproof finish. The most common sizes are 4½" x 4½" and 4" x 6". Ceramic mosaic tiles are unglazed 1" tiles.
Tile, Quarry	A thin piece of stone mined from a open excavation. Normally used for its durability, easiness to clean, and relatively waterproof finish. A shale, clay type of unglazed tile, most commonly 6" x 6" x ½" in size.

Wallpaper, Vinyl	Sheets of decorative paper or vinyl wallpaper backed with an adhesive and pasted to the wall surface.

FLOOR FINISH



There are 21 different choices (including none) for floor finishes.

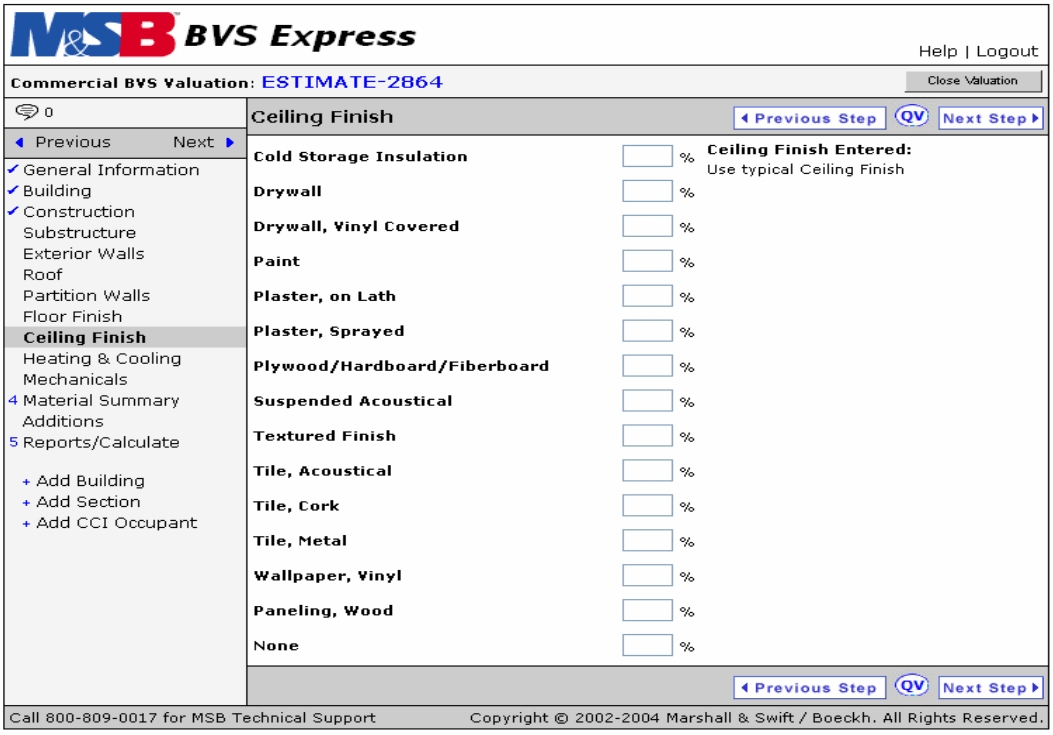
How To	If you want to have the system calculate the percentages for you, leave these fields blank, otherwise enter a percentage, up to 999, for all types of floor finishes found in the building or section.

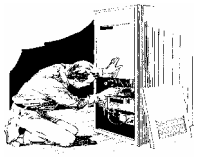
Brick	Floor finish made from bricks with a smooth or rough texture face. The bricks are set in thin mortar, with mortar filled joints.

Carpet	A heavy woven fabric attached to a rubber or burlap like backing. It is attached to the floor either by an adhesive, or by nailing strips located along the perimeter of the room.
Concrete Sealer or Topping	A concrete floor covering made by applying a thin film sealing compound, such as chlorinated rubber, to the surface once the concrete has set.
Epoxy	Flooring made by applying a liquid material to a dense subfloor. Epoxy can be mixed with a variety of colors or chips for assorted appearances. Epoxy flooring is more durable than a painted floor.
Gratings	Constructed of flat steel or aluminum bearing bars and are usually attached by welding. Spaces in the gratings are typically ¼ inch or less so canes, crutches, and women's shoes will not go through the openings.
Hardwood	Hardwood flooring can be manufactured from any commercially available species of wood. Board sizes vary and the installation of the hardwood floor depends upon the board size. An average grade of hardwood flooring has been used in this product.
Hardwood, Gym Floor	Narrow boards of maple laid edge-to-edge to form a finished floor surface such as a gymnasium floor.
Linoleum	This resilient type of flooring consists of cork, wood, and oleoresins. Linoleum flooring is used where floor loads are 75psi or less and when stain resistance is a must.
Marble	Flooring made from stone slabs or tiles.
Pedestal	This access floor system is typically used in computer rooms, hospitals, schools, and offices. The flooring is raised and supported in place by a steel tube base and steel stringers. The flooring material is typically grounded to avoid static electricity and dust accumulation.
Seamless	A resilient flooring made of any version of thermoplastic resins, pigment and clay-based fillers. This material is usually found in 6 and 12 foot wide rolls up to 120 feet in length depending on the manufacturer.
Slate	A dense, fine grained rock that is softer than granite or quartz. Slate can easily be fractured or split into thin layers and applied over a thin set bed of mortar. Depending upon where it is quarried, slate typically comes in earth tone grays, reds, and greens.
Synthetic Gym Floor	Manufactured from rubber tires containing nylon fibers for strength, this flooring is applied to the subfloor with cement and can be found in gymnasiums and golf stores.

Terrazzo	A durable floor finish made of small chips of colored stone or marble, embedded in cement and polished in place to a high glaze.
Tile, Asphalt	A resilient flooring comprised of resins, typically 12” x 12" in size and applied over a subfloor with a bonding coat.
Tile, Ceramic	A thin, flat piece of fired clay that is attached to the floor surface with cement or other adhesive. Normally used for its durability, easiness to clean and relatively waterproof finish. The most common sizes are 4½" x 4½" and 4" x 6". Ceramic mosaic tiles are unglazed 1" tiles.
Tile, Quarry	A thin piece of stone mined from a open excavation. A shale, clay type of unglazed tile, most commonly 6" x 6" x ½" in size.
Tile, Rubber	Typically interlocking rubber tiles made in various thicknesses, applied to the subfloor with an adhesive.
Tile, Vinyl Composite	A resilient flooring consisting of vinyl resins and fillers. Also referred to as VCT, the maximum recommended load limit is 50psi.
Vinyl Sheet	A sheet made of any version of thermoplastic resins, pigment and clay-based fillers. Found in sheet form, it has asbestos or felt backing.

CEILING FINISH





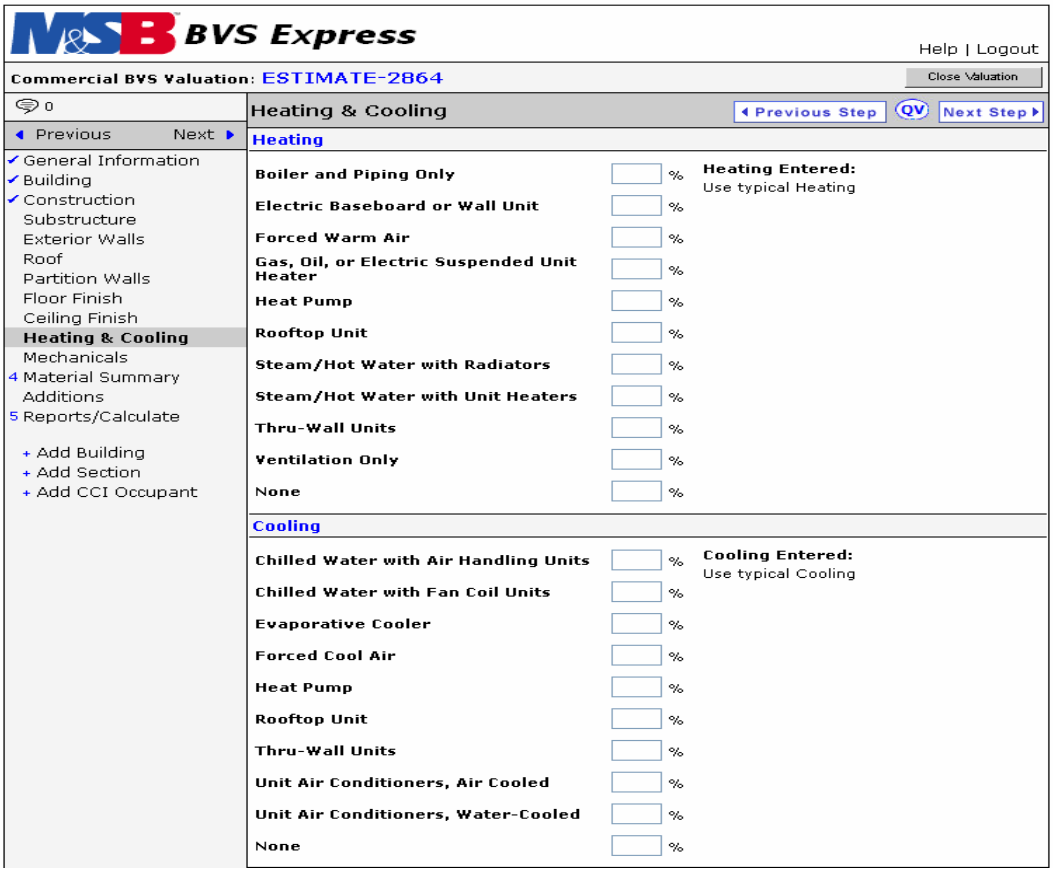
There are 15 different choices (including none) for ceiling finishes.

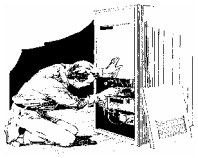
How To	If you want to have the system calculate the percentages for you, leave these fields blank, otherwise enter a percentage, up to 999, for all types of ceiling finishes for the building or section.

Cold Storage Insulation	Typically a 4" insulated panel with the exterior skin made of aluminum or galvanized steel.
Drywall	Drywall, also called plasterboard, sheetrock, gypsumboard or wallboard, comes in sheets typically 4' x 8' or 4' x 12'. It is a hard, chalk-like material covered with paper on both sides. It forms a smooth surface on a wall that can be painted or finished in any number of ways.
Drywall, Vinyl Covered	Drywall, also called plasterboard, sheetrock, gypsumboard or wallboard, comes in sheets typically 4' x 8' or 4' x 12'. It is a hard, chalk-like material covered with paper on the back side and a decorative vinyl wallpaper on the front side. It forms a smooth surface on a wall that can be painted or finished in any number of ways.
Paint	A liquid wall covering made of pigment and oil, latex, solvent or water, that is used to color or decorate a surface.
Paneling, Wood	A veneer or solid wood ceiling finish, usually in 4’ x 8’ sheets or 4" - 12" boards, nailed directly to the joists.
Plaster, on Lath	Plaster is a mixture of cement and aggregate that when mixed with water forms a plastic mass that hardens when applied. The plaster is applied to a metal mesh lath with hand trowels. The lath is supported by framing channels that are either fixed to the ceiling or suspended from the floor or roof joists.
Plaster, Sprayed	Plaster is a mixture of cement and aggregate that when mixed with water forms a plastic mass that hardens when applied. The plaster is applied to a metal mesh lath with the help of a high pressure spray gun. The lath is supported by framing channels that are either fixed to the ceiling or suspended from the floor or roof joists.
Plywood/ Hardwood/ Fiberboard	This ceiling finish is a fabricated wood product constructed of three or more layers of veneer joined with glue, and usually laid with grain of adjoining piles at right angles. Sheets are usually 4’ x 8’ in dimension.
Suspended Acoustical	Acoustic tiles that are suspended from the ceiling with the help of wire hangers and a light weight metal grid system. Acoustic tiles are typically 2' x 2' or 2' x 4' squares that have an inherent property to absorb sound. The tiles are generally made of mineral fiber or some other similar insulated material.

Textured Finish	A rough or irregular finish usually obtained by special methods such as stippling, dashing, troweling, floating, or a combination of these.
Tile, Acoustical	Acoustic tiles that are glued or nailed directly to the ceiling structure or they may be attached to furring strips that are fastened to the ceiling structure. Acoustic tiles are typically are 2' x 2' or 2' x 4' squares that have an inherent property to absorb sound. The tiles are generally made of mineral fiber or some other similar insulated material.
Tile, Cork	This finish is comprised of raw cork and resins and is typically suspended in the same fashion as suspended acoustical tiles.
Tile, Metal	Metal ceiling tiles that are bent or stamped out of metal such as steel, aluminum, or stainless steel. They are nailed to furring strips or directly to the ceiling joists. In some commercial applications, they may be suspended from the roof or floor joists.
Wallpaper, Vinyl	Sheets of decorative paper or vinyl wallpaper backed with an adhesive and pasted to the wall surface.

HEATING AND COOLING

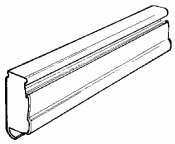
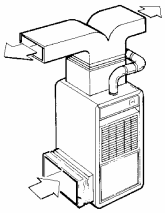
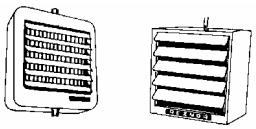
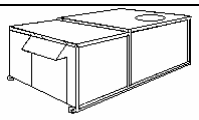
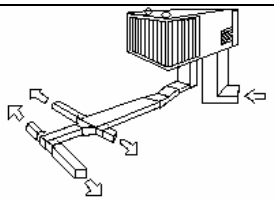


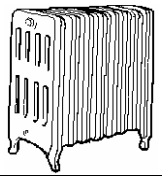
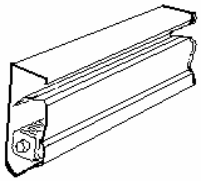
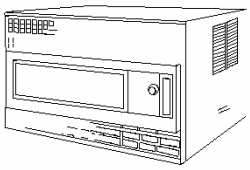
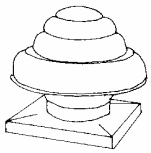


Heating

There are 11 different choices (including none) for heating systems.

How To	If you want to have the system calculate the percentages for you, leave these fields blank, otherwise enter a percentage, up to 999, for all types of heating systems for the building or section.

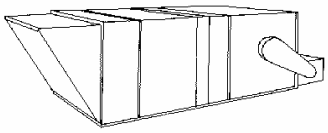
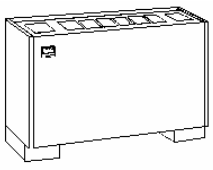
Boiler and Piping Only	A boiler is defined as a vessel in which a liquid is heated or vaporized. Depending upon the system, water is heated to a desired temperature by either coal, oil, gas, wood, or electricity, creating hot water or steam. The heating medium is then piped to the convection device.
Electric Baseboard or Wall Unit	 This system utilizes an electric resistance element that is protected by an enclosure. A thermostat regulates the room temperature by acting as a switching device.
Forced Warm Air	 A forced warm air system consists of a fan or blower, a fuel burner, ductwork, and registers. The fuel source may be electricity, gas, oil, coal, or wood. By adding a cooling coil to the supply ducting, either warm or cool air can be supplied on demand.
Gas, Oil, or Electric Suspended Unit Heater	 A unit heater consists of a heating element and a motor driven fan within a factory-assembled housing. The units using steam, hot water, electricity, gas, or oil as a fuel source provide a relatively low-cost means of heating. Another type of suspended unit heater is an infrared heater. Fuel sources for this type of heater can be either electric or gas.
Heat Pump	 A heat pump is an energy-efficient means of providing both heating and cooling. Through a reversible heat transfer cycle, components within the unit serve dual purposes. Except for periods when ambient temperatures are very low, most heat pumps are self-sufficient.
Rooftop Unit	 A rooftop package unit is a self-contained unit that comes from the factory ready to be installed and operated. It can supply cooling only, or heating and cooling together. Electric and gas-fired units are most popular.

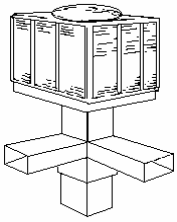
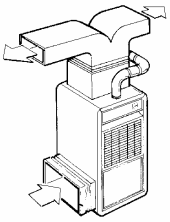
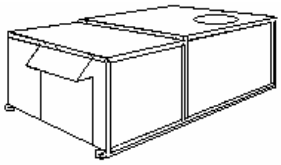
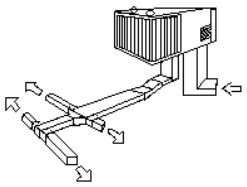
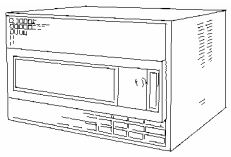
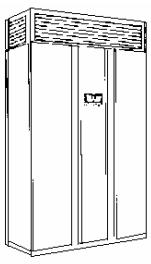
Steam/ Hot Water with Radiators	 Radiators are usually made of cast iron and connected in sections as needed. The heating medium is either steam or hot water provided by a boiler which is included in the system price.
Steam/ Hot Water with Unit Heaters	 A convector is a heating element in an enclosure, placed at a low level in the area to be heated. It may be free standing, wall mounted, or baseboard. The heating medium is either steam or hot water provided by a boiler which is included in the system price.
Thru-Wall Units	 These are factory-selected wall sleeves with a separate uncased combination of heating and cooling components, assemblies, or sections intended for mounting through the wall to serve a single room or zone. It includes heating capacity by hot water or electricity.
Ventilation Only	 In some instances when heating of a space is not required but air circulation is, fans, blowers, or ventilators are used. These motor-driven devices supply fresh air as needed.

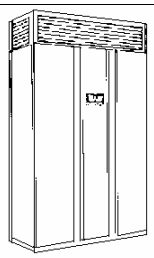
Cooling

There are 10 different choices (including none) for heating systems.

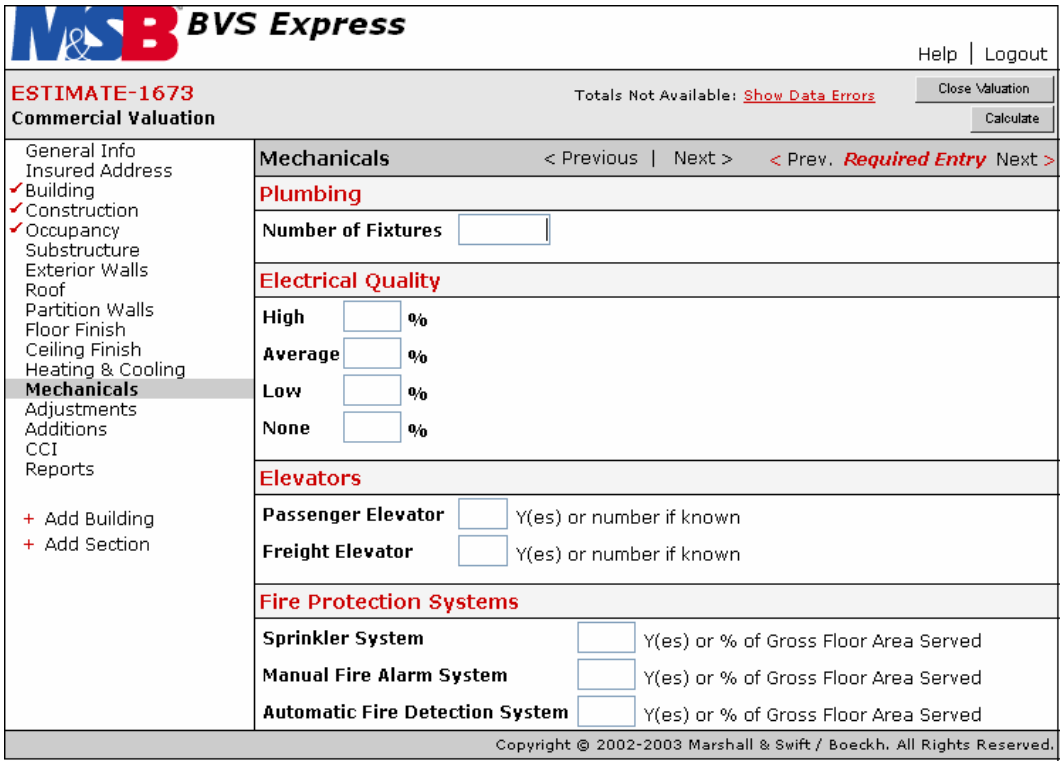
How To	Enter a percentage, up to 999, for all types of heating systems for the section. The base costs were calculated using a typical or "average" cooling cost. If specific data is known, adjust accordingly.

Chilled Water, with Air Handling Units	 This unit represents the cooling part of a heating and cooling system. The cost of the duct work or distribution system is included with the heating system. The unit itself consists of a fan and a motor, a heating element, and a cooling coil housed in an enclosure. The unit is usually concealed from view by placing it in an equipment room or above the ceiling. Air from the unit is ducted to the desired location and controlled by dampers and thermostats.
Chilled Water, with Fan Coil Unit	 This unit represents the cooling part of a heating and cooling system. The cost of the duct work or distribution system is included with the heating system. The most noticeable part of this system is the

	cooling towers either located on the roof or alongside the building. In a fan coil unit, water is circulated through the unit's coils as air is forced across it by a fan and discharged into the room.
Evaporative Coolers	 An air-conditioning unit that cools using water evaporation. Outdoor air is drawn through a moistened filter pad in a cabinet, and the cooled air is then circulated throughout the residence. Typically found in areas with low humidity. Also known as a "swamp cooler".
Forced Cool Air	 A forced air system consists of a fan or blower, a fuel burner, ductwork, and registers. The fuel source may be electricity, gas, oil, coal, or wood. By adding a cooling coil to the supply ducting, either warm or cool air can be supplied on demand.
Heat Pump	 Since most heat pumps can both heat and cool, the cost of the unit has been included as a heating adjustment. A heat pump is an energy-efficient means of providing both heating and cooling. Through a reversible heat transfer cycle, components within the unit serve dual purposes. Except for periods when ambient temperatures are very low, most heat pumps are self-sufficient.
Rooftop Unit (cooling)	 A rooftop package unit is a self-contained unit that comes from the factory ready to be installed and operated. It can supply cooling only, or heating and cooling together. Electric and gas-fired units are most popular.
Thru-Wall Units (cooling)	 These are factory-selected wall sleeves with a separate unencased combination of heating and cooling components, assemblies, or sections intended for mounting through the wall to serve a single room or zone. It includes heating capacity by hot water or electricity.
Unit Air Condi-tioner, Air-Cooled	 Most unit air conditioners, which resemble freestanding cabinets, are used for cooling only. When used in conjunction with a heat source, these units can be used for year-round air conditioning. An air-cooled conditioner relies on a remote air-cooled condensing unit. The heat source is steam, hot water, or electric resistive elements.

Unit Air Condi-tioner, Water-Cooled		Most unit air conditioners, which resemble freestanding cabinets, are used for cooling only. When used in conjunction with a heat source, these units can be used for year-round air conditioning. A water-cooled conditioner will use water from a cooling tower or city supply. The heat source is steam, hot water, or electric resistive elements.

MECHANICALS

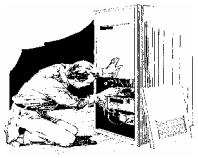


Mechanicals include plumbing, electrical quality, elevators, and fire protection systems.

Plumbing

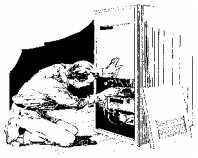
This field allows you to enter the actual number of plumbing fixtures for the building/section you are valuing. **NOTE:** An entry made here will override any system defaults.

How To	Click the appropriate radio button (No Plumbing, Use Typical Number of Fixtures, or Use This Number of Fixtures). If you choose to enter the number, enter the total number of plumbing fixtures, up to 999,999, for the building or section. When figuring out the total number, do not include plumbing in an office space. Listed below is a guideline of which plumbing fixtures to include in your total count.



Occupancy Group	Count	Do Not Count
1000's - Lodging	Kitchen Sinks Bathroom Sinks Water Closets (Toilets) Bath Tubs Water Heaters Laundry Sink	Floor Drains Mop Sinks
2000's – Offices	Kitchen Sinks Bathroom Sinks Water Closets (Toilets) Urinals Water Coolers Water Heaters Floor Drains	Toilet Partitions Towel / Air Dryers Mirrors Shower Heads
3000's – Mercantile	Bathroom Sinks Water Closets (Toilets) Urinals Water Coolers Water Heaters Mop Sinks	Toilet Partitions Towel / Air Dryers Mirrors Shower Heads Kitchen Sinks Floor Drains
4000's – Restaurant/ Recreation	Kitchen Sinks Bathroom Sinks Water Closets (Toilets) Urinals Water Heaters Floor Drains Grease Interceptors Mop Sinks	Toilet Partitions Towel / Air Dryers Mirror Shower Heads (**should** be counted for occupancies 4210, 4230, 4235, 4300, and 4305 though)
5000's – Professional Services	Bathroom Sinks Large Wash Tubs Water Closets (Toilets) Urinals Water Coolers Water Heaters Shower Heads Mop Sinks Floor Drains Bathtubs (occupancy 5200 only)	Toilet Partitions Towel / Air Dryers Mirrors Kitchen Sinks **NOTE:** Occupancies 8525 and 8530 are the same as the 5000 occupancies.

6000's – Public Buildings	Kitchen Sinks Bathroom Sinks Water Closets (Toilets) Urinals Water Coolers Water Heaters Mop Sinks Floor Drains	Toilet Partitions Towel / Air Dryers Mirror Shower Heads (**should** be counted for occupancies 6330, 6426, and 6505 though)
7000's – Services	Kitchen Sinks Bathroom Sinks Water Closets (Toilets) Urinals Water Coolers Water Heaters Mop Sinks Trench Drains	Toilet Partitions Towel / Air Dryers Mirrors Shower Heads
8000's – Warehouse	Bathroom Sinks Water Closets (Toilets) Urinals Water Heaters Floor Drains	Kitchen Sinks Mop Sinks Water Coolers Toilet Partitions Towel / Air Dryers Mirrors
8000's – Industrial	Bathroom Sinks Kitchen Sinks Mop Sinks Water Closets (Toilets) Urinals Shower Heads Water Coolers Water Heaters	Toilet Partitions Towel / Air Dryers Mirrors
9000's – Processes	Bathroom Sinks Water Closets (Toilets) Urinals Mop Sinks Water Coolers Shower Heads Floor Drains	Toilet Partitions Towel / Air Dryers Mirror Kitchen Sinks
Basement Occupancies	Floor Drains – Unfinished Floor Drains – Partially Finished Floor Drains – Finished Water Closet Bathroom Sink **NOTE:** Occupancies 0104 and 0105 should be counted the same as the Industrial 8000's.	



Electrical Quality

There are three different electrical quality types, as well as none.

How To	Enter a percentage, up to 999, for each electrical quality for the section.

	Low Based on the national building codes, low-electrical quality is below the standards set for each occupancy. **Average** Based on the national building codes, average-electrical quality meets the requirements set for each occupancy. **High** Based on the national building codes, high-electrical quality goes above the requirements set for each occupancy.

Elevators

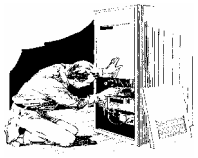
There are two different elevator types that can be entered: Passenger and Freight.

How To	Click the appropriate radio button (No Elevators, Use Typical Number of Elevators, or Use This Number of Elevators). If you choose to enter the number, enter the total number of elevators, up to 99, for the building or section.
	Passenger Elevator Has well-defined requirements regarding the usable area of the car platform and the load that must be carried. **Freight Elevator** Depending upon its classification, can have various platform loading versus area depending upon the intended use of the elevator. Freight elevators are prohibited by elevator codes from carrying any passengers other than those required to handle freight.

Fire Protection Systems

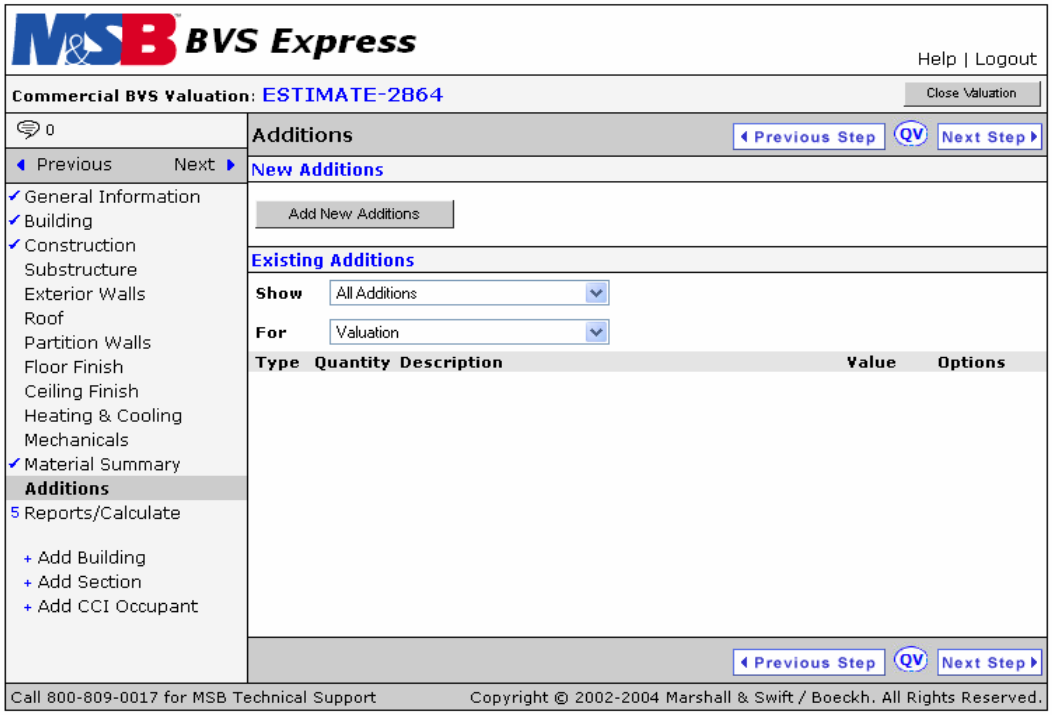
Fire Protection Systems area divided into three separate systems: Sprinkler System, Manual Fire Alarm System, and Automatic Fire Detection System.

How To	Click the appropriate radio button (No System, System Serving Entire Gross Floor Area, or System Serving This % of Gross Floor Area). If the system doesn't cover the entire gross floor area, enter a percentage, up to 999, of the gross floor area served by the fire protection system. **Sprinkler System** An automatic fire sprinkler system, consisting of piping and sprinkler heads that discharge water upon activation by a flame. Lower quality systems employ PVC piping and higher quality systems employ either copper or iron pipe. Cost includes installation. **Manual Fire Alarm System** A manual fire alarm system includes pull stations with either a horn or bell, or a light. This system is not connected to any other systems or the fire department. **Automatic Fire Detection System** An automatic fire detection system includes a smoke and/or fire detection system that activates the manual fire alarm systems. This system typically activates fire doors, shuts down the air conditioning system, and notifies the fire department.



ADDITIONS

This section allows you to add new equipment, building items, site improvements, and miscellaneous items to the current valuation file, as well as make changes to existing additions. Additions can be made to the valuation overall or to a specific section within the valuation.



Miscellaneous Additional Features

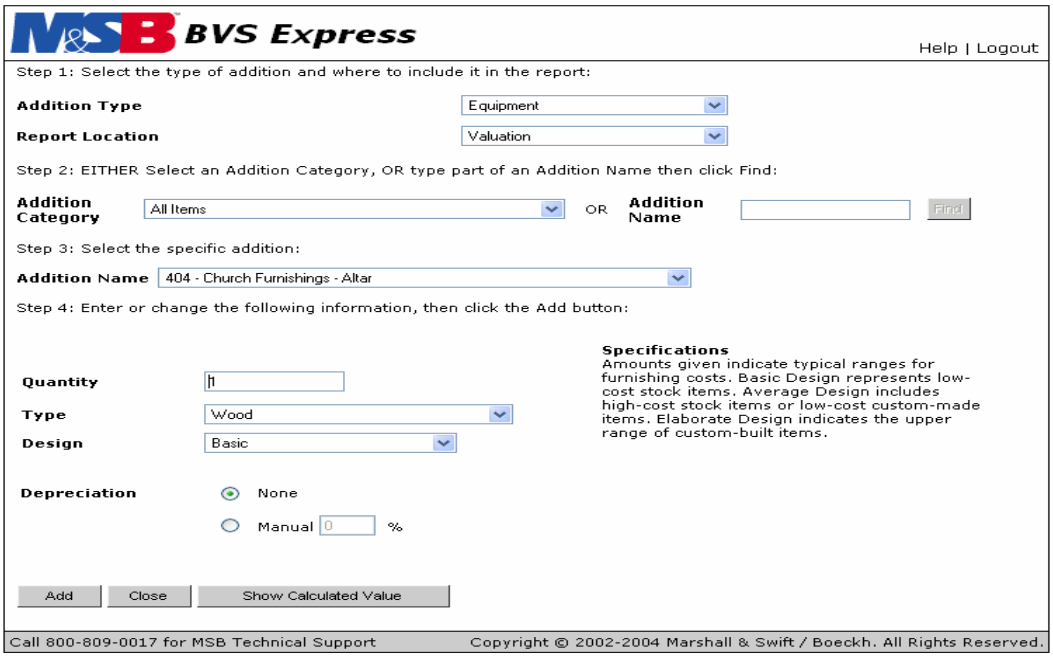
Use this window to record any additional items you want included in the valuation amount, but are not found in the system.

How To	1. Make sure the **Additions** navigation link is selected on the left-hand side of the screen. 2. Using the **Show** drop-down list, select the Miscellaneous Adjustments then use the **For** drop-down list to select where the addition should be placed (valuation or section).

3. Click the **Add** button.
4. **Type** will already be filled in with Miscellaneous Adjustment.
5. **Report Location** will also be filled in based upon your choice in the For drop-down list mentioned above.
6. Type in a **Description**, up to 32 characters.
7. Enter a whole dollar amount, up to $9,999,999, in **Value**. The cost can be expressed as a positive or negative dollar amount. Do not enter the dollar signs or commas.
8. Click the **Add** button.
9. To add additional adjustments, repeat steps 2-8.
10. When all adjustments have been added, click the **Close** button.
11. To make a change to an existing adjustment, simply find the desired addition in the list and click the **Edit** link under Option.
12. To remove an existing adjustment, simply find the desired addition in the list and click the **Delete** link under Option.

Equipment, Building Items, and Site Improvements

Use this window to add equipment, building items, and site improvements to the valuation.



How To	1. To add a new addition, make sure the **Additions** navigation link is selected on the left-hand side of the screen. 2. Using the drop-down lists, select the **Addition Type** and **Report Location** for the addition. 3. **Addition Type** will already be filled in with your addition selection. 4. Using the **Addition Category** and **Addition Name** fields, select the specific addition you wish to enter. 5. If you would rather search by equipment name, type in the partial name then click the **Find** button. 6. Enter the specific information (quantity, criteria, etc..) for your addition. 7. Specify the depreciation by clicking the **None** or **Manual** radio buttons. If manual is selected, type in the desired percentage. If same as section is selected, the percentage will automatically be filled in based upon the depreciation entered for the section. 8. Finally, in the **Adjustments** section, click the checkboxes on or off and change the input value to represent the specific equipment or structure you have. 9. Once all the information has been entered, click the **Add** button to continue. The Additions screen will appear again and you can repeat the steps above to add additional items. 10. If the item you want to add is not in the list, you can manually enter the item. Select the ID code **ND** for non-descript, enter a description for the item you are entering, then enter the quantity and the base value for the item. 11. If you would like to see what the calculated value is for the selected equipment, click the **Show Calculated Value** button.

Entry Information	Equipment, Building Items, and Site Improvements include the following, but keep in mind that all options may not be available for each: **Addition Type** Use the drop-down list to select the what you are adding (equipment, building items, or site improvements). **Addition Category** Use the drop-down list to select the equipment, building items, or site improvements category. **Addition Name** Use the drop-down list to select the equipment or structure **ID**. **NOTE:** If you know the ID number, you can type in the ID in this field. The description will automatically be filled in. **Entry Type** When applicable, use the drop-down to select between the entry types (i.e., chromed, aluminum and stainless steel) for determining which criteria to enter for the equipment or structure. **Quantity** Enter the number of the items up to 999,999. **Criteria** The criteria specifications for each piece of equipment, building items, or site improvements may be different. There are two types of criteria that are used in conjunction with quantity: drop-down or data entry. All pieces of criteria must be filled out for each piece of equipment, building item, or site improvement. The possible criteria may include one or more of the following: HP KW Width Length Square Feet Diameter Number of Gallons Type Lineal Feet Type of System Each Item Design Lbs. per Hour Sq.ft. of Building Height Capacity Number Bushel Arch Speed Range Depth Gallons Size

	Depreciation Here you can specify whether the equipment, building item, or site improvements have depreciation or not. **Basic Specifications** This section lists information on the equipment, building item, or site improvement selected and is automatically filled in by the program and cannot be modified. **Adjustment** Where available, a listing of adjustments for the equipment, building item, or site improvement selected will appear. Choose which adjustments to make by clicking on the box to the left of each appropriate adjustment then changing the input value. **Input Value** This is a numerical field, related to the input caption (i.e., quantity, linear feet, etc.). Based upon the caption, enter the appropriate numeric value of 1-999999999. **NOTE:** if entering a value with a decimal, you can enter between 1 – 9999999.99. **Base Value** This is the cost of the equipment, building item, and/or site improvement without adjustments and is automatically filled in by the program and cannot be modified. **NOTE:** This is available when you click the **Show Calculated Values** button. **Total Value / Total Depreciated Value** This is the cost of the equipment, building item, or site improvement plus adjustments multiplied by the total quantity and is automatically filled in by the program and cannot be modified.

Valuation Totals Summary

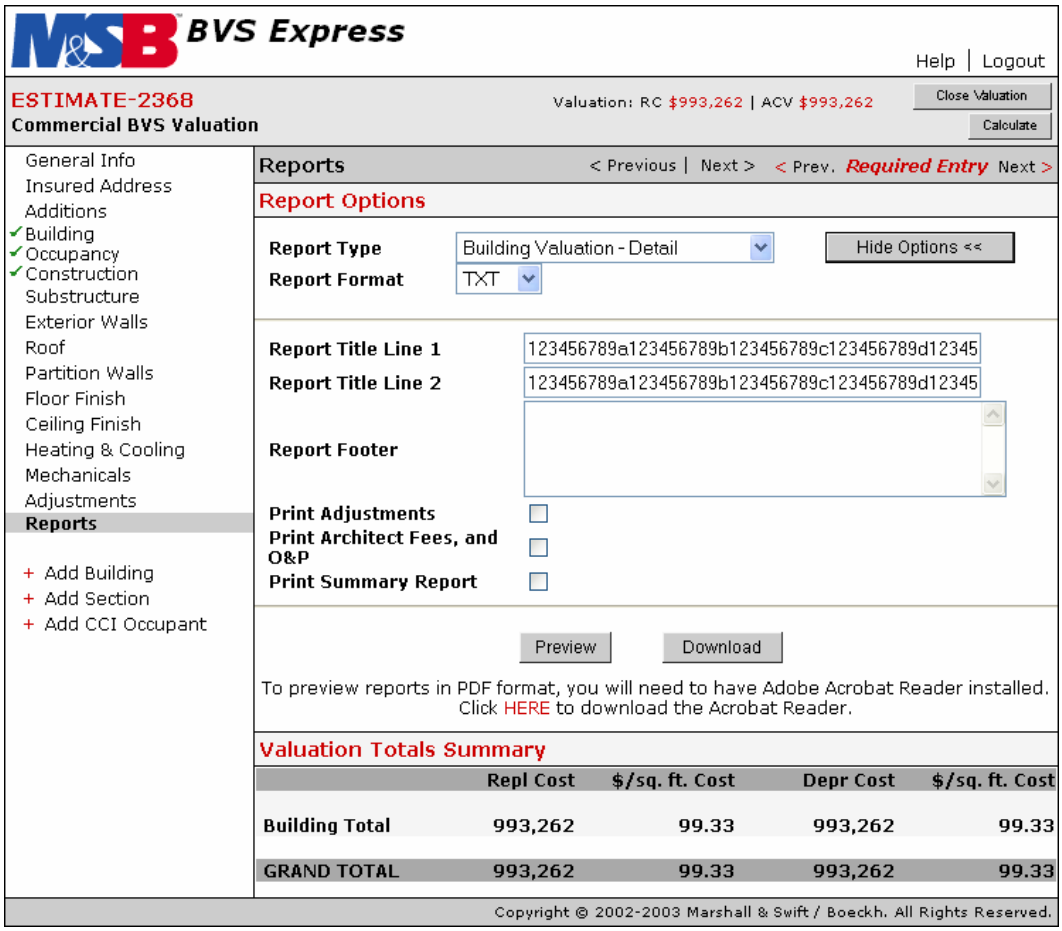
This section shows you the total replacement, depreciation, actual cash value, and $/sq.ft. costs for the valuation, as well as the cost as of date for the valuation report.

NOTE: These are display only fields.

How To	
	1. Make sure the **Reports/Calculate** navigation link is selected on the left-hand side of the screen. 2. View the summary information for the valuation under the **Valuation Totals Summary**.

Printing

There are four different reports available: Detailed, Standard, Summary, and Equipment. You can specify which options you want to see printed on the report, as well as define the header and footer for the reports.



How To	Click the **Reports** navigation link on the left-hand side of the screen. Once you choose to print the report, there are several options to take note of:

Report Type	**Standard Report** The Standard report contains the same information as the detailed report, but instead of individual component details, this report only includes the total component costs. **Detailed Report** The Detailed report includes the owner, structure information, location adjustments, individual component details and costs, and the total depreciated cost. **Summary Report** The Summary report includes the owner, the replacement cost (new) total, the depreciated cost, and the total cost per square foot for each section. It also includes the total replacement costs for equipment and structures for each section. **Equipment Report** The Equipment and Building Items report includes the owner, individual equipment and building item details, their associated costs, and the total replacement cost for all equipment, building items, and site improvements.

Report Format

Selecting this option will print the selected valuation report to an HTML File Format, a PDF File Format, a RTF File Format, or a Delimited Text Format.

How To	Select the desired Format using the drop-down box. The default format is HTML. **NOTE:** Internet Explorer version 5.5 or greater is required to run the reports.

Report Options

Here you can choose which options you want to see printed on the report. The information displayed will either be the information used when the valuation file was last printed, or if the valuation was not printed, all defaults will be used.

Header and Footer	Here you can enter two separate Report Title lines (up to 50 characters each) as you want them to appear on the report. You can also enter the Footer information as you want it to appear on the report. NOTE: Once you enter information for either the Header or Footer, that information will appear each time you print a report until you change these fields again.

Report Options	**Print Adjustments** Check this option on if you want climate, seismic zone and high wind adjustments, and hillside construction adjustments on the report. **Print Architect Fees, and O&P Percentages** Check this option on if you want architect fees, and overhead and profit percentages printed on the report. **Print Substructure Detail** Check this option on if you want itemized substructure details printed on your report. **Print Summary Report** When printing a Standard or Detailed report, a Summary report will also print. **Print Equipment Report** When checked on, an equipment report will automatically print if equipment has been added to the valuation.

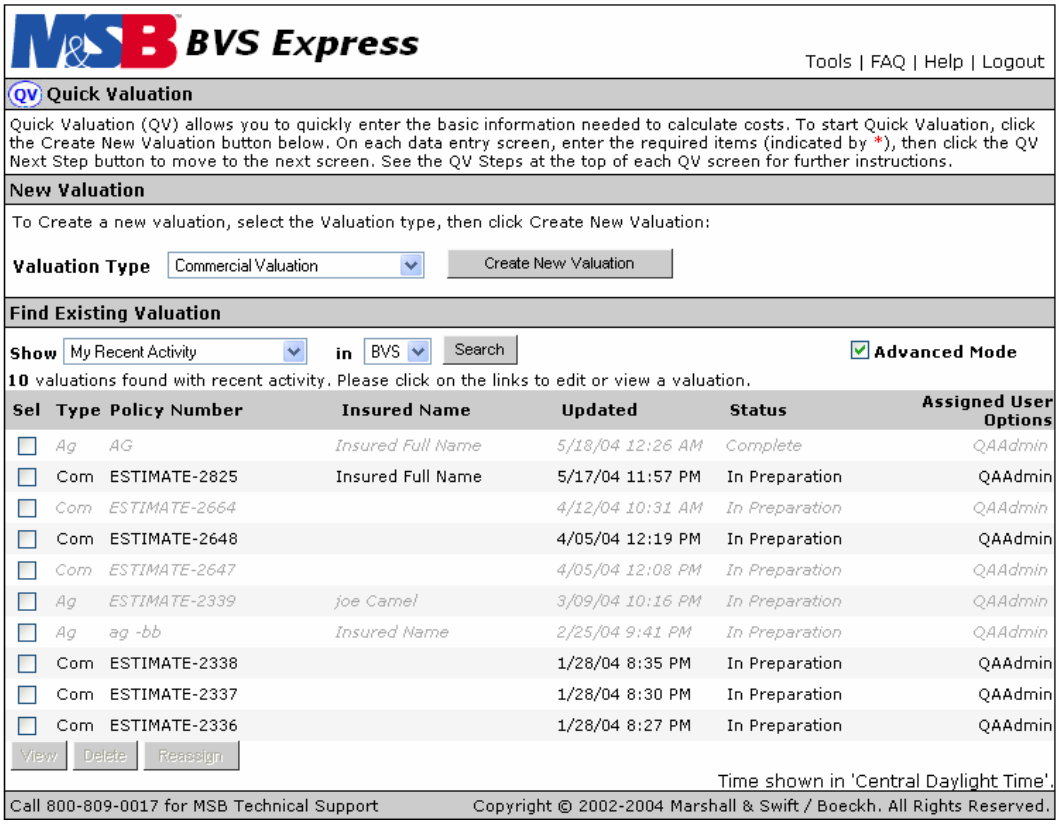
Printing Reports

How To	1. Make sure the **Reports** navigation link is selected on the left-hand side of the screen. 2. Choose the **Report Type** using the drop-down list. See Report Types for additional information. 3. Choose the **Report Format** (HTML, PDF, RTF, or, TXT). 4. Click the **Show Options>>** button to specify what options you want to print on the report and to enter the report titles and footer. See Report Options for additional information. 5. Click the **Preview** button to preview the report on screen, or print it.

For those who have administration rights, you will be able to add, edit, and delete users as well as agencies. You will be able to create and assign system roles to your users. You will also be able to re-assign valuations from one user to another, or from one agency to another. Remember that you can always reference the on-line help file as you work with the system by simply pressing F1 in any field or clicking on the field label.

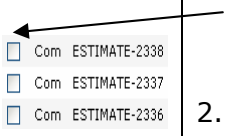
ADVANCED MODE

When advanced mode is checked on, you will be able to view, delete, or reassign any valuation within your database.



How To	1. Log into the system by typing your **Username** and **Password**. 2. In the upper right-hand corner, the **Advanced Mode** checkbox is available. **NOTE:** You must be logged in as an administrator for this option to be visible. 3. The **View**, **Delete**, or **Reassign** buttons will now be available on the bottom of the screen.

1 – View a Valuation File(s)
This option allows you to bring up a report preview of a selected valuation without actually opening the valuation file.

How To	
	1. Click the checkbox next to the desired valuation file. **NOTE:** You will only be able to view a single valuation file at a time. 2. Click the **View** button. The Building Valuation Report window will appear. 3. From this screen, you can preview, print, or download the report. 4. To close the report window, click the **Close** button.

2 – Delete a Valuation File(s)
This option allows you to either delete a single valuation file or multiple files at one time.

How To	
	1. Just as with viewing a valuation file, click the checkbox next to the desired valuation file(s) to select. 2. Click the **Delete** button. 3. When asked to confirm the deletion, click the **OK** button to delete the file(s). **NOTE:** Once you delete the valuations, you will not be able to retrieve them.

3 – Reassign a Valuation File(s)
This option allows you to re-assign a valuation file from user to another and/or from one agency to another.

How To	
	1. Just as with viewing or deleting a valuation file, click the checkbox next to the desired valuation file(s) to select. 2. Click the **Reassign** button. The Reassign Valuation screen will open. 3. To change a user, type in the user name or part of the name on the **Assigned User** line, then click the **Find** button. Using the **Select User** drop-down list, select the appropriate user. 4. To change an agency, type in the agency name or part of **the name on the Assigned Agency line, then click the Find** button. Using the **Select Agency** drop-down list, select the appropriate agency. 5. Once all the changes have been made, click the **OK** button. You will be returned to the BVS Valuations screen.

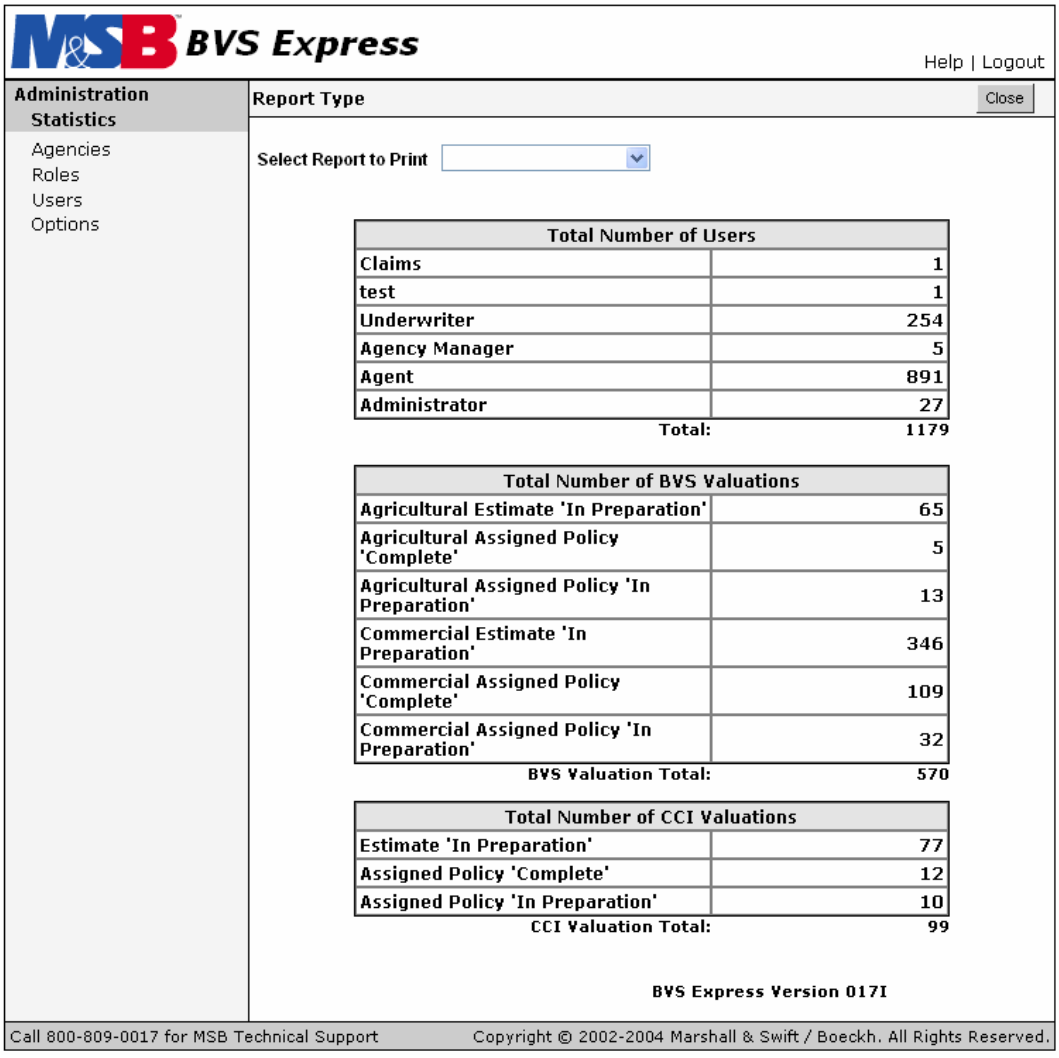
TOOLS LINK

The Tools option shows you the System Summary Statistics, as well as allowing you to create and/or update User Profiles, Agencies, User Roles, etc...

How To	1. Login to the system. 2. Click the **Tools** link at the top of the screen. The Administration screen is displayed. 3. Depending upon what you want to do, click the appropriate link on the left-hand side of the screen. 4. Repeat as necessary.

1 – Statistics

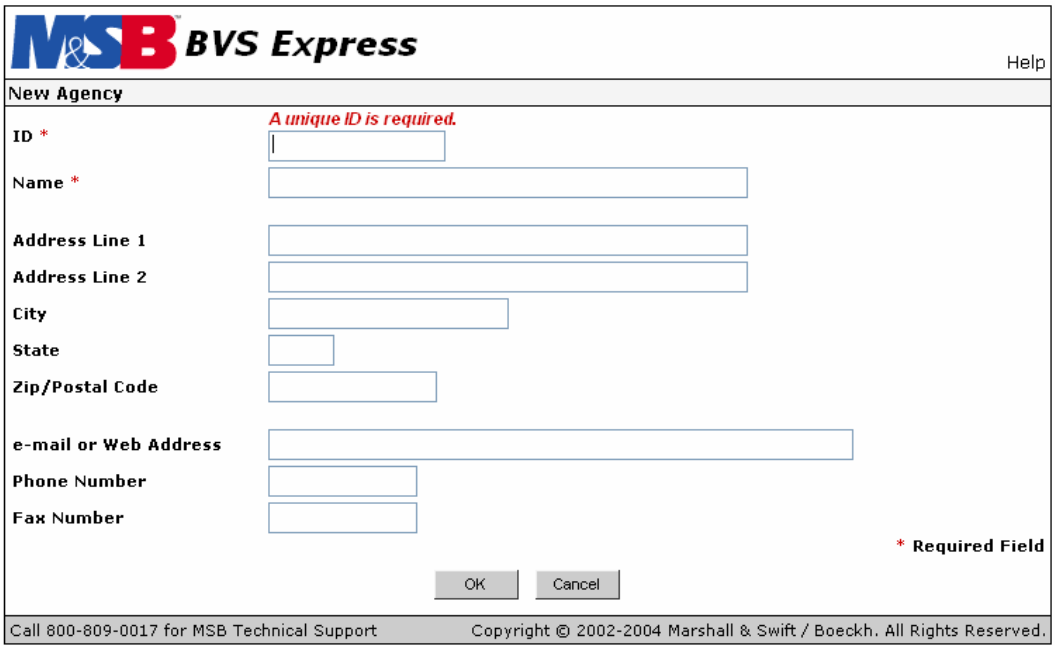
This screen, divided into two separate sections, is a display only screen. It displays the Total Number of Users and the Total Number of BVS Valuations in your database.



How To	
	1. Once the **Tools** link has been clicked, the Administration Statistics screen is displayed. 2. The **Total Number of Users** section lets you know exactly how many administrators, underwriters, and agents you have setup in your database. 3. The **Total Number of BVS Valuations** section lets you know the current status of all the valuations in your database. 4. The **Estimate 'In Preparation'** number is the number of valuations that have been created, but have not yet been converted to policies. 5. The **Assigned Policy 'Complete'** number is the number of valuations that have been created, converted to policies, and set as completed. 6. The **Assigned Policy 'In Preparation'** number is the number of valuations that have been created and converted to policies, but have not yet been completed.

2 – Agencies

The Agencies option in the Administrator allows you to create as well as change Agencies for your company.

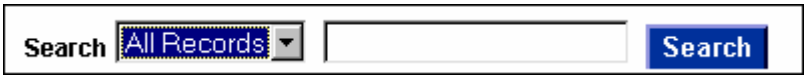


Create an Agency

1. Click on the **Tools** link at the top of the screen.
2. On the left-hand side of the screen, click the **Agencies** navigation link.
3. To create a new agency, click the **Create New** button.
4. The **ID** and **Name** are the only required fields on this screen.
5. Enter the remaining information as applicable.
6. When complete, click the **OK** button.

Edit an Agency

The Search feature allows you to find specific agencies by selecting a pre-determined search field then entering the specific criteria. **NOTE:** Depending upon the role/access levels, different search fields will appear in the drop-down list.



1. If you know the specific **Agency ID**, simply click on the **ID** link then make any necessary changes.
2. If you need to search for an agency, at the top of the screen, use the **Search** drop-down list to select a search field. **NOTE:** The default setting is always set to All Records.
3. If applicable, type the specific criteria in the next field.
4. Click the **Search** button.
5. Now simply click the desired **ID** and make your changes.

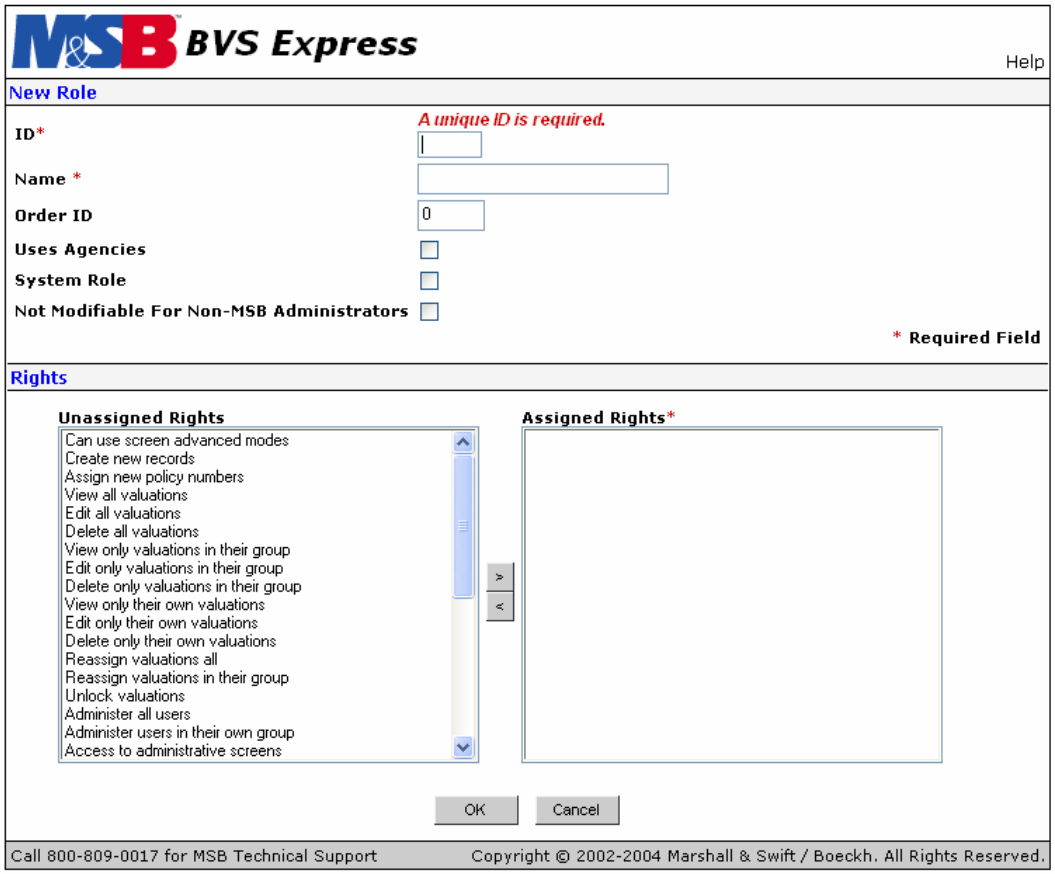
Example

1. Select *State* for the search field, then type *WI* in the criteria field.
2. Click the **Search** button. All the records with a state of WI will appear in the grid.

Delete an Agency	1. If the specific Agency is in the list on your screen, simply click on the **Delete** trash can for that agency to delete it. 2. If you need to search for an agency, at the top of the screen, use the **Search** drop-down list to select a search field. **NOTE:** The default setting is always set to All Records. 3. If applicable, type the specific criteria in the field. 4. Click the **Search** button. 5. Now simply click the **Delete** trash can for the desired agency. 6. When asked if you would like to delete the agency, click the **OK** button.

3 – Roles

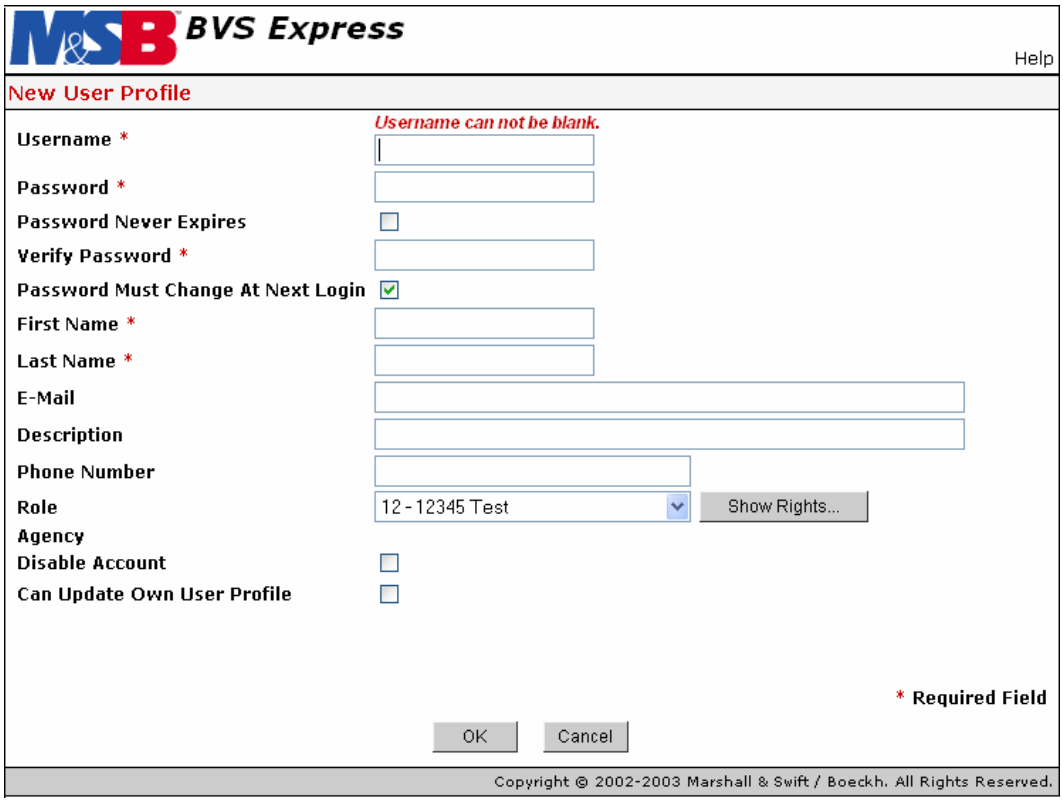
The Roles option allows you to create New User Roles, as well as change existing roles for your company. Currently, there are four defined roles within the database: Administrator (AD), Underwriter (UW), Agency Manager (AM), and Agent (AG).



Create a New Role 	1. Click on the **Tools** link at the top of the screen. 2. On the left-hand side of the screen, click the **Roles** navigation link. 3. To create a new agency, click the **Create New** button. 4. The **ID**, **Name**, and **Rights** are the only required fields on this screen. 5. Enter the remaining information as applicable. 6. Assign the rights by selecting the appropriate ones under the **Unassigned Rights** column, then clicking the right arrow to move those rights to the **Assigned Rights** column. If you need to remove a right, simply select the right in the Assigned Rights column then click the left arrow. The right will be removed from your list. 7. When complete, click the **OK** button.
Edit a Role	1. To edit an existing role, simply click on the role **Name** link then make any necessary changes. 2. Click the **OK** button to save all changes and return to the User Roles screen.
Delete a Role	1. To delete an existing role, simply click the **Delete** trash can to the right of the role you want to delete. 2. When asked to confirm the deletion, click the **OK** button.

4 – Users

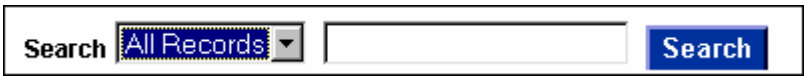
The Users option allows you to create as well as change User Profiles for each of your users.



Create a New User

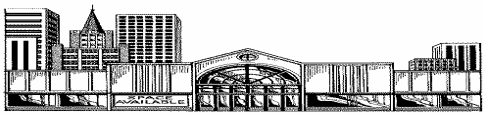
Administration
Statistics
Agencies
Roles
Users

1. Click on the **Tools** link at the top of the screen.
2. On the left-hand side of the screen, click the **Users** navigation link.
3. To create a new agency, click the **Create New** button.
4. The **Username**, **Password**, **First Name**, and **Last Name** are the only required fields on this screen.
5. Enter the remaining information as applicable.
6. Using the drop-down list, select the appropriate role for the user (i.e.: administrator, agency manager, underwriter, etc..) The roles or access levels are assigned by your company. The MS/B defaults are Administrator, Underwriter, Agency Manager, and Agent, but these can be changed to match your company environment. **NOTE:** For specific details on which options/rights are available with each role, simply click on the **Show Rights...** button.
7. When complete, click the **OK** button to save and return to the Users screen.
8. When complete, click the **OK** button.

Edit an Existing User	The Search feature allows you to find specific users by selecting a pre-determined search field then entering the specific criteria. **NOTE:** Depending upon the role/access levels, different search fields will appear in the drop-down list.  1. If you know the specific user, simply click on the **Username** link then make any necessary changes. 2. If you need to search for a specific user, at the top of the screen, use the **Search** drop-down list to select a search field. **NOTE:** The default setting is always set to All Records. 3. If applicable, type the specific criteria in the next field. 4. Click the **Search** button. 5. Now simply click the desired username and make your changes.
Delete an Existing User	1. If the specific User is in the list on your screen, simply click on the **Delete** trash can for that user to delete them. 2. If you need to search for a user, at the top of the screen, use the **Search** drop-down list to select a search field. **NOTE:** The default setting is always set to All Records. 3. If applicable, type the specific criteria in the field. 4. Click the **Search** button. 5. Now simply click the **Delete** trash can for the desired user. 6. When asked if you would like to delete the user, click the **OK** button.

EXITING ADMIN

How To	1. Once you are done in the administration options, to return to the Admin screen, click the **Close** button at the top of the screen. 2. Click the **Close** button again to return to the BVS Valuation/Record screen.



State Abbreviations

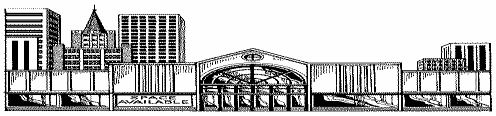
For United States addresses, the program uses a two-character state abbreviation. These are the official state abbreviations of the U.S. Postal Service:

Alabama	AL	Montana	MT
Alaska	AK	Nebraska	NE
Arizona	AZ	Nevada	NV
Arkansas	AR	New Hampshire	NH
California	CA	New Jersey	NJ
Colorado	CO	New Mexico	NM
Connecticut	CT	New York	NY
Delaware	DE	North Carolina	NC
District of Columbia	DC	North Dakota	ND
Florida	FL	Ohio	OH
Georgia	GA	Oklahoma	OK
Hawaii	HI	Oregon	OR
Idaho	ID	Pennsylvania	PA
Illinois	IL	Rhode Island	RI
Indiana	IN	South Carolina	SC
Iowa	IA	South Dakota	SD
Kansas	KS	Tennessee	TN
Kentucky	KY	Texas	TX
Louisiana	LA	Utah	UT
Maine	ME	Vermont	VT
Maryland	MD	Virginia	VA
Massachusetts	MA	Washington	WA
Michigan	MI	West Virginia	WV
Minnesota	MN	Wisconsin	WI
Mississippi	MS	Wyoming	WY
Missouri	MO		

Province Codes

For Canadian addresses, the program uses a two-character province code. These are the official province code abbreviations:

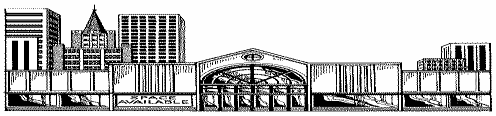
Alberta	AB
British Columbia	BC
Manitoba	MB
New Brunswick	NB
Newfoundland	NF
Northwest Territories / Nunavut	NT
Nova Scotia	NS
Ontario	ON
Prince Edward Island	PE
Quebec	PQ
Saskatchewan	SK
Yukon	YT



Occupancy Code Listing
The program uses the following occupancy codes:

BASEMENTS/MISCELLANOUS		**PUBLIC BUILDINGS continued**	
0101	Basement, Unfinished	6120	Church, Contemporary
0102	Basement, Partially Finished	6125	Church, Contemporary, High
0103	Basement, Finished	6130	Church, Contemporary, Mansard
0104	Basement, Underground Parking	6135	Church, Modern A-Frame
0105	Parking on First Level	6140	Church, Auditorium Type
LODGING		6142	Church, Narthex
1100	Apartment, Low-Rise	6145	Church with Sunday School
1110	Apartment, Low-Rise, Older	6148	Church Tower
1200	Apartment, High-Rise	6150	Church Camp Dorms
1221	Apartment, High-Rise, Shell	6152	Church Camp Cabins
1222	Apartment, High-Rise, Interior Space	6155	Educational Wing
1225	Luxury Apartment, High-Rise	6200	Fellowship Hall
1230	Apartment, 2-4 Units	6205	Fraternal Building
1300	Condominium	6300	Elementary School
1331	Condominium, Shell	6310	Junior High School
1332	Condominium, Interior Space	6314	High School
1340	Deluxe Condominium	6318	School, Older
1350	Row House	6321	Fine Arts/Crafts Building (Elementary - High School)
1440	Dormitory	6322	Classroom (Elementary - High School)
1445	Fraternity House	6324	Lecture Classroom (Elementary - High School)
1450	Convent or Rectory	6325	Library/Media Center (Elementary - High School)
1455	Mansion	6326	Manual Arts Building (Elementary - High School)
1460	Bed & Breakfast	6327	Multipurpose Buildings (Elementary - High School)
1500	Hotel, Full Service	6329	Science Classrooms (Elementary – High School)
1550	Hotel, Limited Service	6330	Gymnasium (Elementary - High School)
1560	Hotel, Older	6340	Vocational School
1570	Lodge	6345	Technical Trades Building (College)
1600	Motel	6400	University
1610	Motel, Double Row	6402	Administration Building (University or Trade School)
1620	Motel, Single Row	6404	Classroom (University)
1630	Motel, Extended Stay	6406	Laboratory (University)
1640	Rooming House	6408	Lecture Hall (University)
1645	Office-Apartment (Motel)	6410	Library (University)
OFFICES		6412	Arts and Crafts Building (College)
2100	Office, Low-Rise	6414	Commons (College)

2121	Office, Low-Rise, Shell	6420	Physical Education Building
2122	Office, Low-Rise, Interior Space	6422	Field House
2124	Office, Low-Rise, Older	6424	Auditorium
2200	Office, Mid-Rise	6426	Natatorium
2300	Office, High-Rise	6500	Public Library
2500	Bank or Savings and Loan	6505	Fire Station
2510	Bank (Mini or Branch)	6506	Fire Station, Volunteer
2600	City Hall Or Courthouse	6510	Police Station or Jail
2605	Government Community Service Building	6511	Jail, Correctional Facility
2650	Radio or TV Broadcast Center	6515	Post Office
2655	Mechanical Penthouse	6516	Post Office, Branch
MERCANTILE		6517	Post Office, Main Processing Facility
3100	Store or Shop, General	6520	Air Terminal (Small Regional)
3102	Store or Shop, Older	6522	Air Terminal (Large Commercial)
3105	Barber Shop	6525	Armory
3110	Florist Shop	6530	Atrium
3120	Bookstore	6531	Dining Atrium
3125	Drugstore	6532	Canopy
3200	Department Store	6540	Day Care Center
3215	Department Store, Discount	6550	Museum
3300	Shopping Center, Strip Type	6560	Visitor Center
3301	Shopping Center, Strip Type, Shell	**SERVICES**	
3302	Shopping Center, Strip Type, Interior space	7100	Service Station
3310	Shopping Center, Mall Type	7105	Truck Stop
3311	Shopping Center, Mall Type, Shell	7110	Auto Repair/Service Center
3312	Shopping Center, Mall Type, Interior Space	7115	Quick Oil Change Facility
3400	Store with Offices Above	7120	Car Wash
3401	Store with Apartment Above	7121	Car Wash, Self-Serve
3500	Convenience Food Store	7122	Car Wash, Automatic
3505	Supermarket	7125	Showroom with Service Area
3510	Warehouse Food Store	7126	Showroom, Automobile
3600	Furniture Warehouse/Showroom	7130	Marina
3700	Home Improvement Center	7131	Boat Storage Building
RESTAURANT/RECREATION		7140	Service Shop
4100	Fast Food without Seating	7150	Aircraft Hangar
4110	Fast Food with Seating	7151	Storage Hangar
4115	Dining	7152	T-Hangar
4120	Cafeteria	7160	Lumber Storage Facility
4125	Bar or Lounge	7165	Bus Terminal
4200	Bowling Center	7170	Truck Terminal
4205	Cinema	7175	Municipal Service Garage
4206	Theater, Live Stage	7180	Laundromat
4210	Clubhouse/Recreation Bldg	7200	Parking Structure



4215	Country Club	7300	Self-Storage Facility
4220	Community Center	7310	Mini-Warehouse
4225	Senior Clubhouse	7315	Mini-Warehouse, High-Rise
4230	Indoor Tennis Club	**INDUSTRIAL**	
4232	City Club	8100	Manufacturing, Light
4235	Health and Racquetball Club	8101	Manufacturing, Pole Frame
4240	Health Club	8200	Warehouse, Light
4242	Fitness Center	8201	Warehouse, Pole Frame
4245	Indoor Ice or Roller Rink	8210	Warehouse, Heavy
4300	Park Restroom Building	8215	Warehouse, Mega
4305	Dressing and Shower Facility	8220	Warehouse, Cold Storage
4310	Enclosed Park Pavilion	8221	Cold Storage
4315	Open Park Pavilion	8300	Industrial Mall Building
4320	Concession Stand	8301	Industrial Mall Building, Interior Space
4325	Concession Stand with Press Box	8302	Industrial Mall Building, Shell
PROFESSIONAL SERVICES		8400	Utility Building
5100	Medical Clinic	8402	Utility Building, Light Commercial
5110	Hospital	8410	Boiler House
5120	Outpatient Surgical Center	8500	Wholesale
5125	Dispensary	8510	Industrial Park Building
5130	Dental Office/Clinic	8515	Manufacturing, Heavy
5200	Nursing Home/Convalescent Center	8516	Industrial Manufacturing, Heavy
5210	Home for the Elderly	8520	Office Service Center Building
5215	Multiple Residence, Senior Citizen	8525	Production Laboratory
5220	Multiple Residence, Assisted Living	8530	High-Tech Production Facility
5225	Group Care Home	8535	Industrial Flex Building
5230	Funeral Home	**PROCESSES**	
5300	Veterinary Clinic	9000	Bakery
5305	Dog Kennel	9010	Bottling Plant
PUBLIC BUILDINGS		9020	Cannery
6100	Church, Basic	9030	Dairy
6105	Church, Average	9040	Laundry or Dry Cleaning Plant
6110	Church, Elaborate	9050	Commercial Greenhouse
6115	Church, Traditional		

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