# COMFEN

## Creating Projects and Scenarios with CSV Import File.

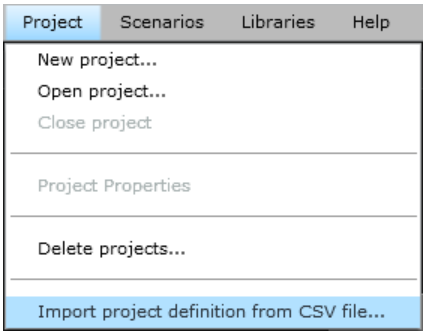
It is possible to import a Project and associated Scenarios using a CSV file, that contains definitions for project scenarios and their associated windows and shading systems.

The assumption is that you have already defined Frames, Glazing Systems, and Shading Systems in the COMFEN Libraries, and therefore the CSV file only contains the ID references to those library records, rather than a complete description of them.

## General

You must not have any project open when you import the CSV file

Under the Project menu, select the “Import project definition from CSV file” option




Then browse to the location where the CSV file is to be imported from, select it and click OK.

## CSV Format

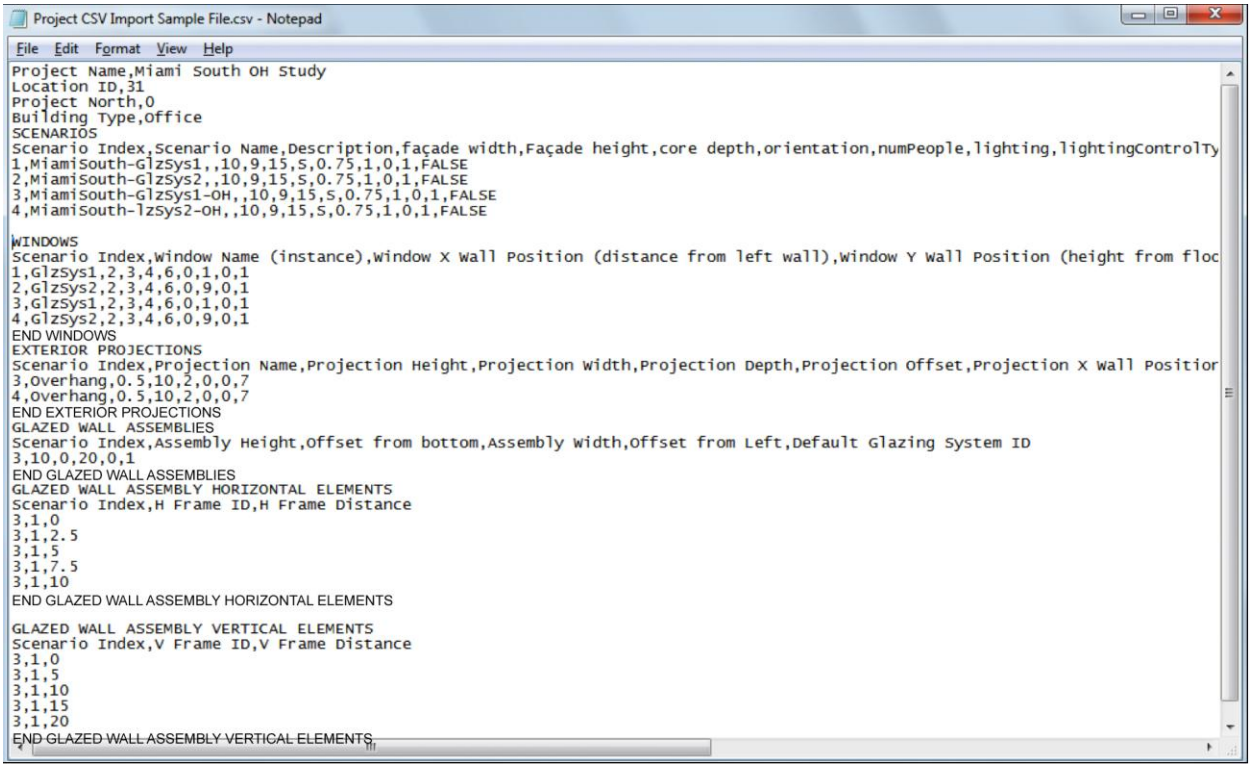
This is what the CSV file looks like in Excel (remember not to save it as an XLS file, but as a CSV (text) file)

When COMFEN imports the CSV file, it will assume that the values with units will be in the units that the program is set to upon import. So if the CSV file is created in IP units, make sure that COMFEN is set to "IP" when you import the CSV file.

A scenario can have punched windows *or* one GWA, but not both types of windows. The example below shows a CSV file, open in Microsoft Excel, for a project with a GWA definition.

| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Project Name | Miami South OH Study | | | | | | | | | | |
| 2 | Location ID | 31 | | | | | | | | | | |
| 3 | Project North | 0 | | | | | | | | | | |
| 4 | Building Type | Office | | | | | | | | | | |
| 5 | SCENARIOS | | | | | | | | | | | |
| 6 | Scenario Index | Scenario Name | Description | façade width | Façade height | core depth | orientation | numPeople | lighting | lighting Control Type | equipment | glareControl ("true"/"false") |
| 7 | 1 | MiamiSouth-GlzSys1 | | 10 | 9 | 15 | S | 0.75 | 1 | 0 | 1 | FALSE |
| 8 | 2 | MiamiSouth-GlzSys2 | | 10 | 9 | 15 | S | 0.75 | 1 | 0 | 1 | FALSE |
| 9 | 3 | MiamiSouth-GlzSys1-OH | | 10 | 9 | 15 | S | 0.75 | 1 | 0 | 1 | FALSE |
| 10 | 4 | MiamiSouth-IzSys2-OH | | 10 | 9 | 15 | S | 0.75 | 1 | 0 | 1 | FALSE |
| 11 | WINDOWS | | | | | | | | | | | |
| 12 | Scenario Index | Window Name (instance) | Window X Wall Position (distance from left wall) | Window Y Wall Position (height from floor) | Window Height | Window Width | Window Reveal | Glazing System ID | Shading System ID | Frame ID | | |
| 13 | 1 | GlzSys1 | 2 | 3 | 4 | 6 | 0 | 1 | 0 | 1 | | |
| 14 | 2 | GlzSys2 | 2 | 3 | 4 | 6 | 0 | 9 | 0 | 1 | | |
| 15 | 3 | GlzSys1 | 2 | 3 | 4 | 6 | 0 | 1 | 0 | 1 | | |
| 16 | 4 | GlzSys2 | 2 | 3 | 4 | 6 | 0 | 9 | 0 | 1 | | |
| 17 | END WINDOWS | | | | | | | | | | | |
| 18 | EXTERIOR PROJECTIONS | | | | | | | | | | | |
| 19 | Scenario Index | Projection Name | Projection Height | Projection Width | Projection Depth | Projection Offset | Projection X Wall Position (distance from left wall) | Projection Y Wall Position (height from floor) | | | | |
| 20 | 3 | Overhang | 0.5 | 10 | 2 | 0 | 0 | 7 | | | | |
| 21 | 4 | Overhang | 0.5 | 10 | 2 | 0 | 0 | 7 | | | | |
| 22 | END EXTERIOR PROJECTIONS | | | | | | | | | | | |
| 23 | GLAZED WALL ASSEMBLIES | | | | | | | | | | | |
| 24 | Scenario Index | Assembly Height | Offset from bottom | Assembly Width | Offset from Left | Default Glazing System ID | | | | | | |
| 25 | 3 | 10 | 0 | 20 | 0 | 1 | | | | | | |
| 26 | END GLAZED WALL ASSEMBLIES | | | | | | | | | | | |
| 27 | GLAZED WALL ASSEMBLY HORIZONTAL ELEMENTS | | | | | | | | | | | |
| 28 | Scenario Index | H Frame ID | H Frame Distance | | | | | | | | | |
| 29 | 3 | 1 | 0 | | | | | | | | | |
| 30 | 3 | 1 | 2.5 | | | | | | | | | |
| 31 | 3 | 1 | 5 | | | | | | | | | |
| 32 | 3 | 1 | 7.5 | | | | | | | | | |
| 33 | 3 | 1 | 10 | | | | | | | | | |
| 34 | | | | | | | | | | | | |
| 35 | END GLAZED WALL ASSEMBLY HORIZONTAL ELEMENTS | | | | | | | | | | | |
| 36 | GLAZED WALL ASSEMBLY VERTICAL ELEMENTS | | | | | | | | | | | |
| 37 | Scenario Index | V Frame ID | V Frame Distance | | | | | | | | | |
| 38 | 3 | 1 | 0 | | | | | | | | | |
| 39 | 3 | 1 | 5 | | | | | | | | | |
| 40 | 3 | 1 | 10 | | | | | | | | | |
| 41 | 3 | 1 | 15 | | | | | | | | | |
| 42 | 3 | 1 | 20 | | | | | | | | | |
| 43 | END GLAZED WALL ASSEMBLY VERTICAL ELEMENTS | | | | | | | | | | | |

This is what it will look like in a text editor (such as Notepad)




The best strategy is to make all the scenarios and windows in Excel, then export it out as a CSV (text) file, then open it in Notepad to do a quick check to see what it looks like. My experience with Excel 2007 is that it put a bunch of extra commas in various places. COMFEN will ignore these commas.

The instructions below describe each of the input values in the CSV file

## Header section:

```
Project Name, CSV Test Input
Location ID,38
Project North,180
Building Type,Office
```

| | | |
|---|---|---|
| Field 1 | Project Name | Input the name of the project<br><br>***This name must be unique for each project that is imported into one database.*** |
| Field 2 | Location ID | ID of the Location in the Location Library |
| Field 3 | Project North | Compass orientation of whole project. Set this to 0 to have the Scenario Orientation input be the four cardinal orientations |
| Field 4 | Building Type | Value from the following choices:<br>• Office<br>• Mid-rise<br>• Hotel<br>• Hospital<br>• Retail<br>• School |

## Scenario section:

```
SCENARIOS

Scenario Index,Scenario Name,Description,facade width,Facade height,core
depth,orientation,numPeople,lighting,lightingControlType,equipment,"glareControl
(""true""/""false"")",economizerType,Natural Ventilation

1,Example 1,No overhang,10,9,15,E,0.75,1,0,1,FALSE,0,FALSE
2,Example 2,With overhang,10,9,15,E,0.75,1,0,1,FALSE,0,FALSE
3,Example 3,No overhang,10,9,15,E,0.75,1,0,1,FALSE,0,FALSE
4,Example 4,With overhang,10,9,15,E,0.75,1,0,1,FALSE,0,FALSE

END SCENARIOS
```

| | | |
|---|---|---|
| Field 1 | Scenario Index | This is an index number that associates the Scenario with the Window. (This is not the same as Scenario ID, which will be automatically assigned to each scenario when it is imported into the program) |
| Field 2 | Scenario Name | Any alpha-numeric string. Cannot include a comma |
| Field 3 | Description | Any alpha-numeric string. Cannot include a comma. This can be blank if no description is desired |
| Field 4 | façade width | The width of the scenario (interior wall to interior wall). This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; IP = Feet |
| Field 5 | Façade height | The height of the scenario (floor to ceiling). This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; IP = Feet |
| Field 6 | core depth | The depth of the room (interior wall to interior wall). This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; IP = Feet |
| Field 7 | orientation | From the values N, E, S, W |
| Field 8 | numPeople | Number of people in the space |
| Field 9 | lighting | Lighting load for the scenario. This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Watts/m2; IP = Watts/ft2 |
| Field 10 | lightingControlType | 0 = None<br>1 = Continuous<br>2 = Stepped<br>3 = Continuous / off |
| Field 11 | equipment | Plug load for the scenario. This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Watts/m2; IP = Watts/ft2 |
| Field 12 | glareControl (“true”/”false”) | Values: TRUE or FALSE. |

| | | |
|---|---|---|
| Field 13 | economizerType | |
| Field 14 | Natural Ventilation | Whether natural ventilation is being modeled or not:<br><br>• FALSE: Natural Ventilation is not being modeled<br>• TRUE: Natural Ventilation is being modeled – ***this option is not currently supported for punched windows, only for Glazed Wall Assemblies***<br><br>***This field was added in COMFEN 4.1*** |

## Window section:

This section is used to define all the windows associated with each scenario. There can be one or many windows associated with the same scenario, as shown in the example below. The Windows are associated with Scenarios by the Scenario Index. Scenario Index 3 has 4 different windows associated with it, so there are 4 separate lines, one for each window.

```
WINDOWS

Scenario Index,Window Name (instance),Window X Wall Position (distance from
left wall),Window Y Wall Position (height from floor),Window Height,Window
Width,Window Reveal,Glazing System ID,Shading System ID,Frame ID

1,Window1,0.25,0.25,8.5,9.5,0,1,0,1
2,Window2,0.25,0.25,8.5,9.5,0,2,0,1
3,Upper Clerestory,1,6,3,18,0.25,1,0,1
3,Lower Left,1,1,4,5,0.25,1,0,1
3,Lower Middle,7.5,1,4,5,0.25,1,0,1
3,Lower Right,14,1,4,5,0.25,1,0,1

END WINDOWS
```

If the CSV file has **only Glazed Wall Assembly components**, include the WINDOWS, field headers and END WINDOWS elements, without any data for actual windows.

```
WINDOWS

Scenario Index,Window Name (instance),Window X Wall Position (distance from
left wall),Window Y Wall Position (height from floor),Window Height,Window
Width,Window Reveal,Glazing System ID,Shading System ID,Frame ID

END WINDOWS
```

| | | |
|---|---|---|
| Field 1 | Scenario Index | This value needs to match the Scenario Index value from the Scenarios section. |
| Field 2 | Window Name (instance) | Alpha numeric value, should not contain commas |
| Field 3 | Window X Wall Position (distance from left wall) | The distance of the window from the left wall. This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; IP = Feet |
| Field 4 | Window Y Wall Position (height from floor) | The height of the window from the floor (sill height). This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; IP = Feet |
| Field 5 | Window height | The height of the window (including the frame width). This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; IP = Feet |
| Field 6 | Window Width | The width of the window (including the frame width). This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; |

| | | |
|---|---|---|
| | | IP = Feet |
| Field 7 | Window Reveal | The frame setback . This value should be in the units that COMFEN will be set to when the CSV file is imported. SI = Meters; IP = Feet |
| Field 8 | Glazing System ID | The ID (from the COMFEN Glazing Library) of the glazing system associated with this window |
| Field 9 | Shading System ID | The ID (from the COMFEN Shading System Library) of the shading system associated with this window |
| Field 10 | Frame ID | The ID (from the COMFEN Frame Library) of the Frame associated with this window |
| Field 11 | Operating Type | 0 = None<br>1 = Awning<br>2 = Casement<br>3 = Hopper<br>6 = Single-hung<br>7 = Horizontal Slider |
| Field 12 | Override Effective Open Area | -1 = No override<br><br>If you want to override the default effective open area for a window that is operable, you can enter a value from 1-100 (units are percent of total window area). |

## Exterior Projections Section:

This section is used to define all the exterior projections (fins and overhangs) associated with each scenario. There can be one or many exterior projections associated with the same scenario, as shown in the example below. The Exterior Projections are associated with Scenarios by the Scenario Index. Scenario Index 3 has 4 different exterior projections associated with it, so there are 4 separate lines, one for each exterior projection.

If you do not have any exterior projections in any scenarios, this section can be omitted from the CSV file.

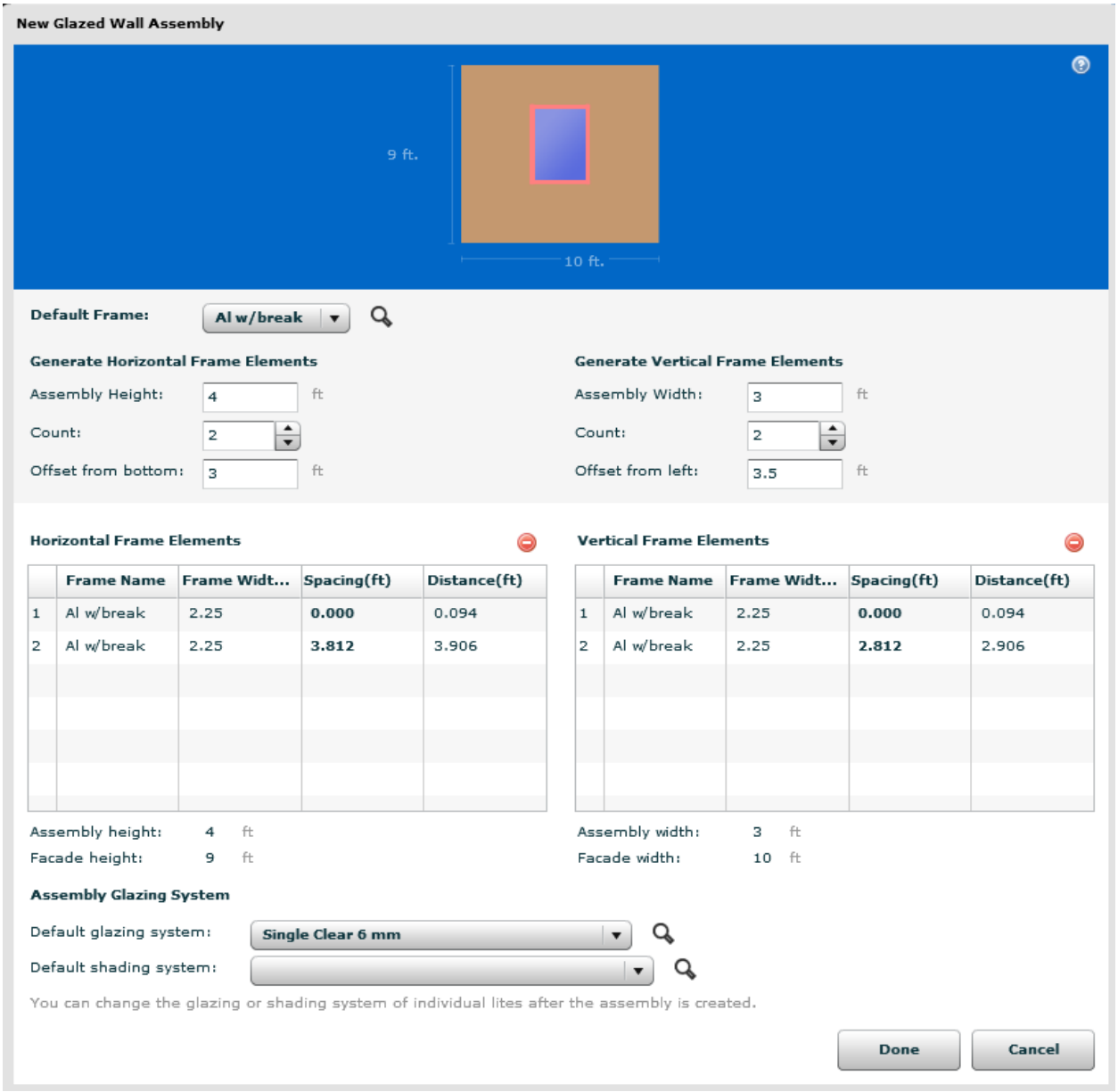
```
EXTERIOR PROJECTIONS

Scenario Index,Projection Name,Projection Height,Projection Width,Projection
Depth,Projection Offset,Projection X Wall Position (distance from left
wall),Projection Y Wall Position (height from floor)
3,Overhang,0.5,10,2,0,0,7
4,Overhang,0.5,10,2,0,0,7
```

| | | |
|---|---|---|
| Field 1 | Scenario Index | This value needs to match the Scenario Index value from the Scenarios section. |
| Field 2 | Projection Name | Name of the Exterior Projection; if the name has commas, enclose it in parentheses. |
| Field 3 | Projection Height | Looking at the projection in elevation, the height of the projection. Units: feet (IP); meters (SI) |
| Field 4 | Projection Width | Looking at the projection in elevation, the width of the projection. Units: feet (IP); meters (SI) |
| Field 5 | Projection Depth | Looking at the projection in elevation, the depth (into the screen) of the projection. Units: feet (IP); meters (SI) |
| Field 6 | Projection Offset | ?? |
| Field 7 | X Wall Position (distance from left wall) | Looking at the projection in elevation, the distance of the projection from the left hand side of the wall. |
| Field 8 | Projection Y Wall Position (height from floor) | Looking at the projection in elevation, the distance of the projection from the floor |

## Glazed Wall Assembly Definition:

A COMFEN scenario façade system can be defined in two ways, either as “punched opening”, where a series of windows are defined, or as a “glazed wall assembly” where a grid of horizontal and vertical framing members are defined. The Glazed Wall Assembly definition dialog box from COMFEN is shown below.



If you do not want to define a Glazed Wall Assembly in any scenarios, this section can be omitted from the CSV file.

The order is that the GLAZED WALL ASSEMBLY section goes after the EXTERIOR PROJECTIONS section. Also, it is necessary to have the WINDOWS section (WINDOWS, then END WINDOWS) even though there will not be any input for that section.

The CSV import definition for a Glazed Wall Assembly is as follows:

```
GLAZED WALL ASSEMBLIES
Scenario Index,Assembly Height,Offset from bottom,Assembly Width,Offset from
Left,Default Glazing System ID,Default Shading System ID,Operating Type
3,10,0,20,0,1,0,0

GLAZED WALL ASSEMBLY HORIZONTAL ELEMENTS
Scenario Index,H Frame ID,H Frame Distance
3,1,0
3,1,2.5
3,1,5
3,1,7.5
3,1,10

GLAZED WALL ASSEMBLY VERTICAL ELEMENTS
Scenario Index,V Frame ID,V Frame Distance
3,1,0
3,1,5
3,1,10
3,1,15
3,1,20
```

GLAZED WALL ASSEMBLY SECTION

| | | |
|---|---|---|
| Field 1 | Scenario Index | This value needs to match the Scenario Index value from the Scenarios section. |
| Field 2 | Assembly Height | Height of the glazed wall assembly. Can be equal to or less than the height of the scenario. |
| Field 3 | Offset from bottom | Offset of glazed wall assembly from the bottom of the scenario façade. This will move the assembly up relative to the bottom of the scenario wall elevation. Make sure that if you use this value that the assembly height plus the offset is not greater than the scenario height. |
| Field 4 | Assembly Width | Width of the glazed wall assembly. Can be equal to or less than the width of the scenario |
| Field 5 | Offset from Left | Offset of glazed wall assembly from the left hand edge of the scenario elevation. This will move the assembly to the right. Make sure that if you use this value that the assembly width plus the offset is not greater than the scenario width. |
| Field 6 | Default Glazing System ID | ID of the default glazing system to be used in this glazed wall assembly. |
| Field 7 | Shading System ID | ID of the default shading system to be used in the glazed wall assembly. Can be |

| | | |
|---|---|---|
| | | blank (?) or set to 0 for None. |
| Field 8 | Operating Type | ID of the operating type of the window. Set to "0" if you are not modeling Natural Ventilation. This will apply the operating type setting to all the "lites" in the GWA.<br><br>*At this time, there is not a way to set the operating type for individual lites separately through the CSV file.*<br><br>0 = None<br>1 = Awning<br>2 = Casement<br>3 = Hopper<br>6 = Single-hung<br>7 = Horizontal Slider<br><br>***This field was added in COMFEN 4.1*** |

FRAME ELEMENTS

Frame elements for a Glazed Wall Assembly area defined in two blocks: one for the horizontal elements and one for the vertical elements. As of now, COMFEN only allows one frame type for all elements in a GWA. (This may change in a future version.)

GLAZED WALL ASSEMBLY HORIZONTAL ELEMENTS

This section must have at least 2 records, and can have as many records (lines) as needed to define all the horizontal frame elements. Each element must have the same Frame ID. Each element must have a different Frame Distance.

| | | |
|---|---|---|
| Field 1 | Scenario Index | This value needs to match the Scenario Index value from the Scenarios section. |
| Field 2 | H Frame ID | ID of the Horizontal Frame for this element |
| Field 3 | H Frame Distance | Distance of ***the centerline*** of the horizontal frame from bottom of the GWA |

GLAZED WALL ASSEMBLY VERTICAL ELEMENTS

This section must have at least 2 records, and can have as many records (lines) as needed to define all the vertical frame elements. Each element must the same Frame ID. Each element must have a different Frame Distance.

| | | |
|---|---|---|
| Field 1 | Scenario Index | This value needs to match the Scenario Index value from the Scenarios section. |
| Field 2 | H Frame ID | ID of the Vertical Frame for this element |

| | | |
|---|---|---|
| Field 3 | H Frame Distance | Distance of ***the centerline*** of the vertical frame from from left side of the GWA |