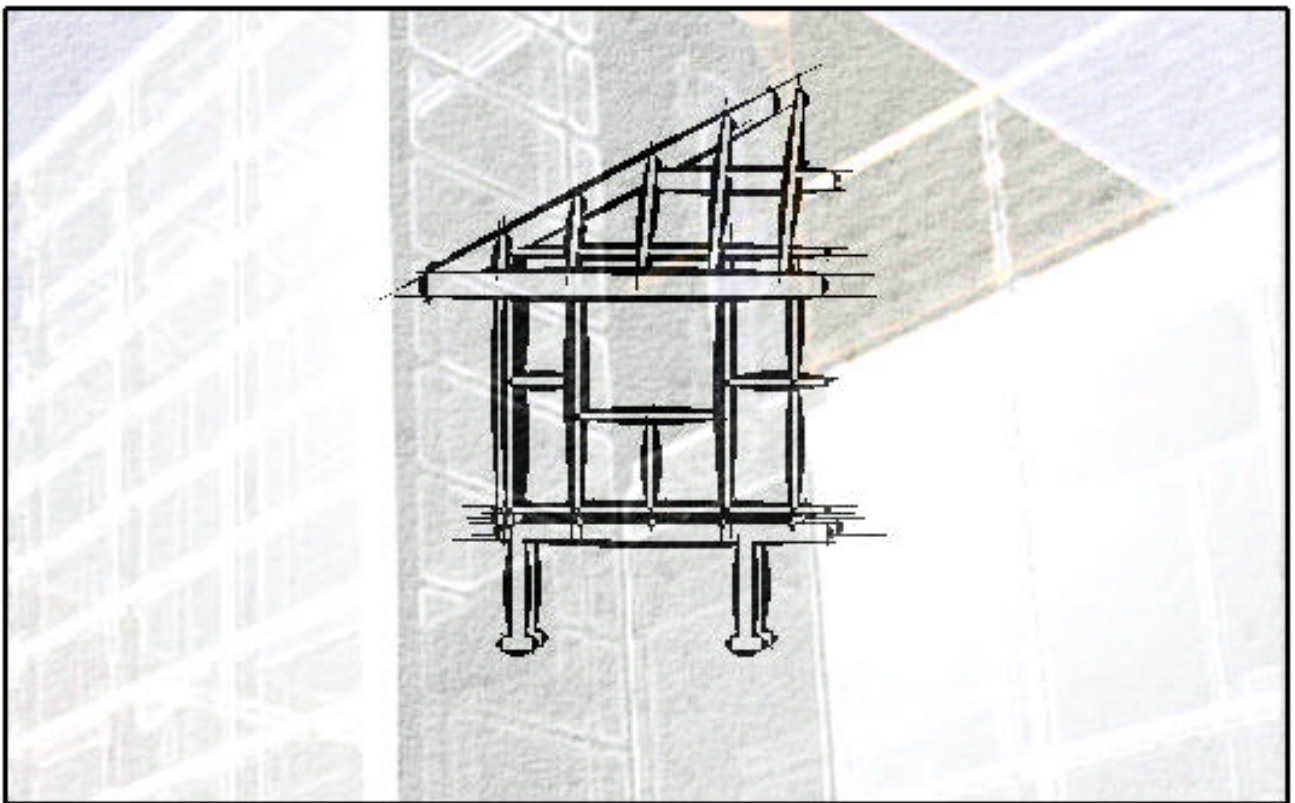


AUSTRALIAN *FLEXIBLE LEARNING* FRAMEWORK

Section/Elevation Tool



Framework Timber Framed Walls – Sections & Elevations Tool



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An initiative within the Australian Flexible Learning Framework for the National Vocational Education and Training System 2000 – 2004.

Background

In August 1999, the Australian National Training Authority Chief Executive Officers (ANTA CEOs) endorsed the *Australian Flexible Learning Framework for the National Vocational Education and Training System 2000 - 2004 (AFL Framework)*. The AFL Framework has been developed by the Flexible Learning Advisory Group (FLAG) and represents a strategic plan for the five- year National Project allocation for flexible learning. It is designed to support both accelerated take-up of flexible learning modes and to position Australian Vocational Education and Training (VET) as a world leader in applying new technologies to vocational education products and services.

Role of the Flexible Learning Advisory Group

In broad terms, FLAG is a strategically-focused group of senior VET personnel advising ANTA CEOs, the ANTA Board, the Department of Education, Science and Training (DEST) the Australian Information and Communication Technology Education Committee (AICTEC - formerly known as the EdNA Reference Committee), on national issues relating to the directions and priorities for flexible learning in VET, with particular reference to online technologies.

The Project

Building Blocks to Reality is a series of three instructional frameworks that direct building and construction apprentices and pre-vocational learners in the virtual building of a simple timber dwelling. The learning is based on an architectural 3D drawing package (archiCAD) and covers the construction of the, Sub floor, Timber Walls and the Hip and Truss Roofs.

Project Team consisted of:

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An Overview

Building Blocks to Reality consists of three distinct frameworks with two of the frameworks having supporting sections.

The three distinct frameworks are:

- **Sub Floor Framing**
- **Timber Framed Walls**
- **Roof Framing**

The **Sub Floor framework** is a standalone module and will give the instructions necessary to virtually build the sub floor of the dwelling.

The **Timber Framed Walls framework** provides instructions to virtually build the wall frames for the dwelling. The sub sections to support Timber Framed Walls are:

- *Placing Studs*
- *Window Spaces*
- *Door Spaces*
- *Window/Door Spaces*

These give specific instructions to aid the virtual building of the dwelling. It is intended that each of these sub-sections be completed as standalone modules and then used as notes to aid the completion of the Timber Framed walls.

The **Roof Framing framework** consists of two sections:

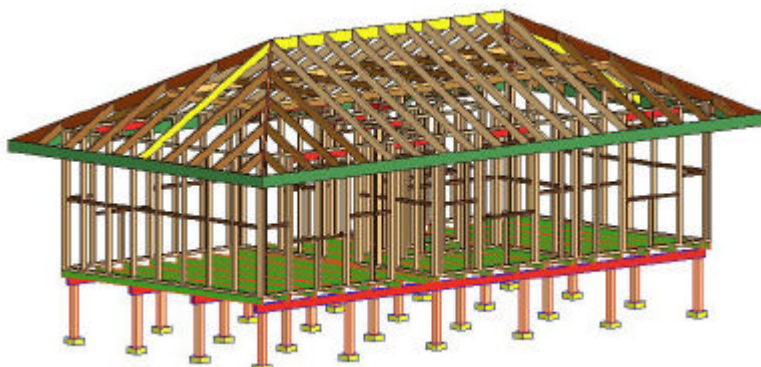
- *Roof Truss*
- *Hip Roof*

These modules provide instructions for the virtual building of a roof for the dwelling, depending on the roof type required.

An additional module '**Section/Elevation Tool**' is also available and must be referred to when developing the Hip Roof, although the principles covered can be practiced in any of the other frameworks.

It is intended that each of the frameworks be drawn separately, following the given guidelines, but it is possible that all the files of the three main sections can be merged to develop the completed dwelling in its entirety.

A template file providing set parameters is available and recommended for use when working with these frameworks.



Section/Elevation Tool


For this exercise you will need to open a drawing you have completed or are working on using ArchiCAD. It may be helpful to turn the dimensioning layer off if you have already placed dimensions.

Through the placement of section axis on the Floor Plan, the *section/elevation* tool allows you to derive building *sections and elevations* from the floor plan drawing, and to create them as separate drawings.

The *section/elevation tool* creates a section line with identifiers and orientation markers on the floor plan.

This *section/elevation* symbol is automatically linked to a separate new window in which the sections or elevations can be viewed, this is found in the **window menu** below the 3D view.

Section/Elevation Settings

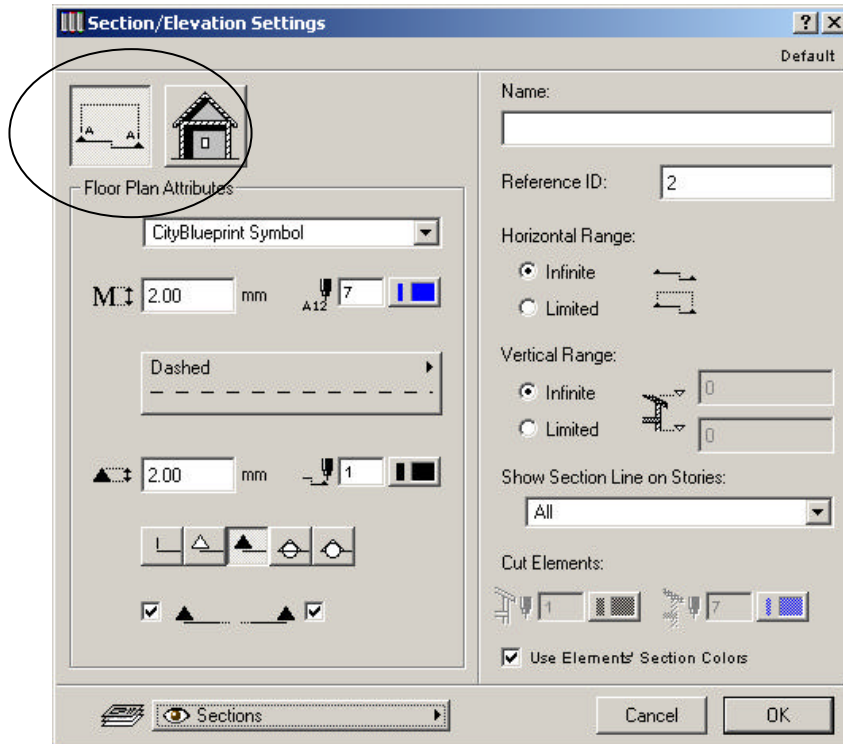
Open the section/elevations  settings dialog box from the Toolbar by **double clicking** on it



Framework Timber Framed Walls – Sections & Elevations Tool

The dialog box comprises of two areas, (see below). The general checkboxes are positioned on the right.

On the left you can switch back and forth between floor plan attributes and model effects using the two large buttons on the top left hand side, circled.



Layers and Pen Numbers

Same as other tools, alter as required.

Line Types

You can choose any line type from the pop-up list to represent the section line on the floor plan.

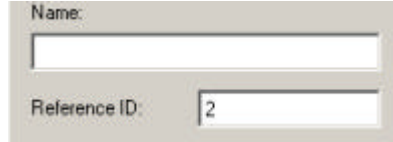
Arrowheads



The controls for the marker settings on the left side of the dialog box, allows you to select the desired arrow head type and to define whether it should appear at one or both ends of the line, or not at all.

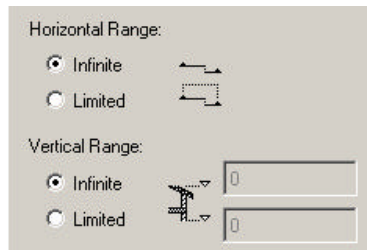
Section Name and Reference ID

The text input fields allow you to define a name for the current section. This name will then appear in both the sections/elevations submenu (window menu) and the title bar of the window displaying the section elevation. The reference ID will appear on the Floor Plan together with the orientation markers.



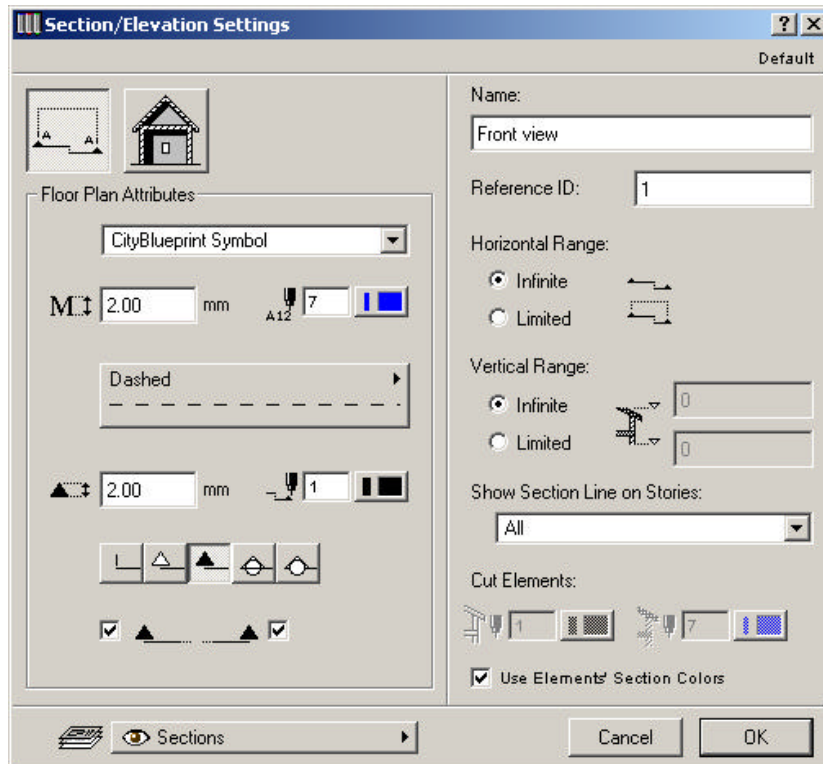
Section Depth

Can be defined as either infinite or limited in both horizontal and the vertical ranges. If the section depth is set to limited the view will not show any element beyond the limit line. (Initially set the horizontal range at infinite)



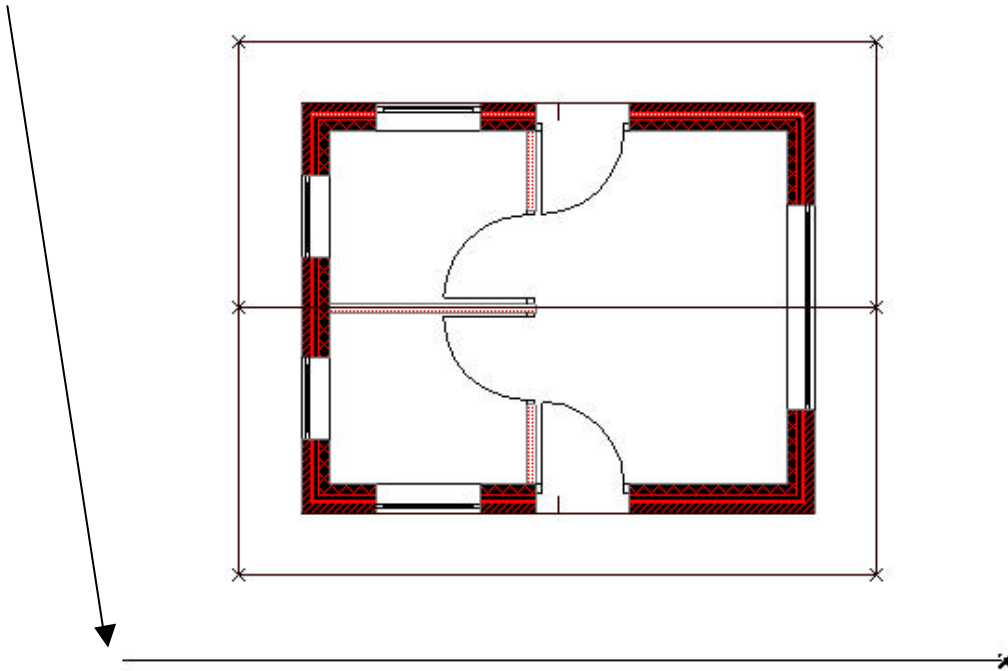
We will now place two section lines in the drawing and check the views.


Set the *Section/Elevation* settings as below:



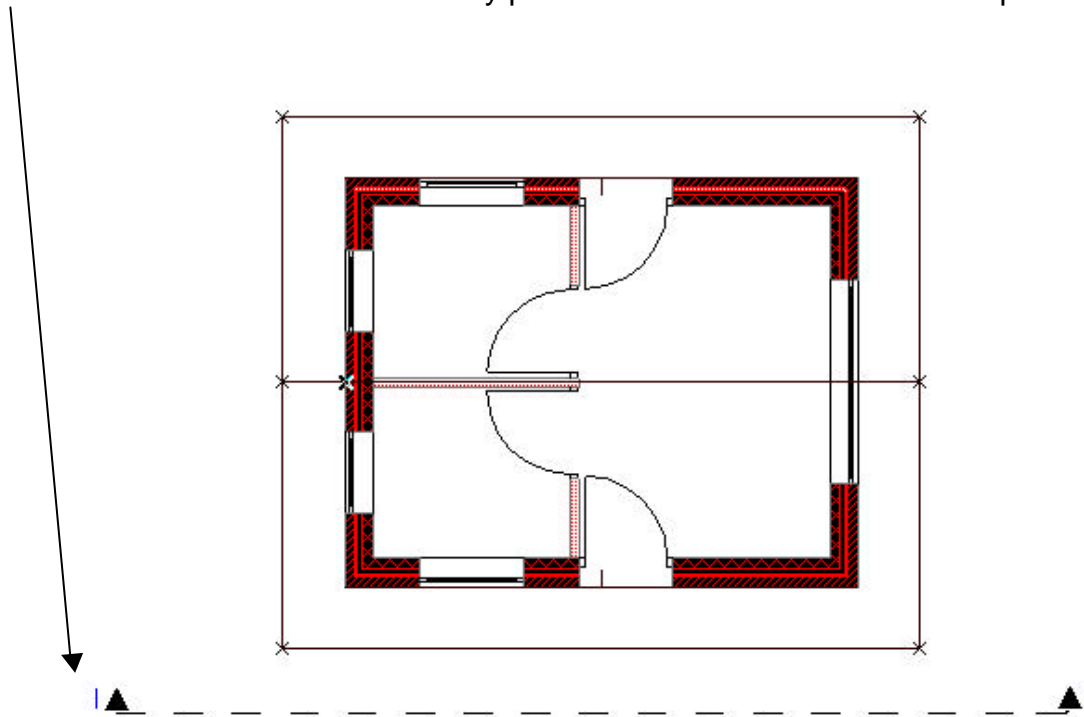
Framework Timber Framed Walls – Sections & Elevations Tool

Click to set the starting point of the section line and draw a horizontal line as below, remember us the **shift key** to obtain a straight line.

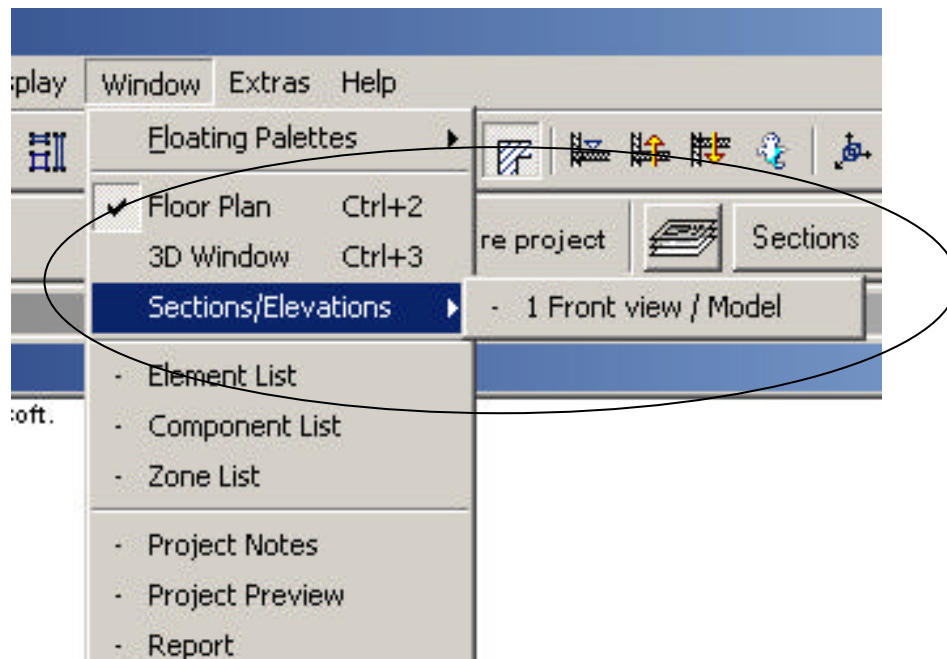


Double click at the end of the line. The eyeball cursor  appears. **Click** with the **eyeball cursor facing towards the drawing** to set the orientation of the section.

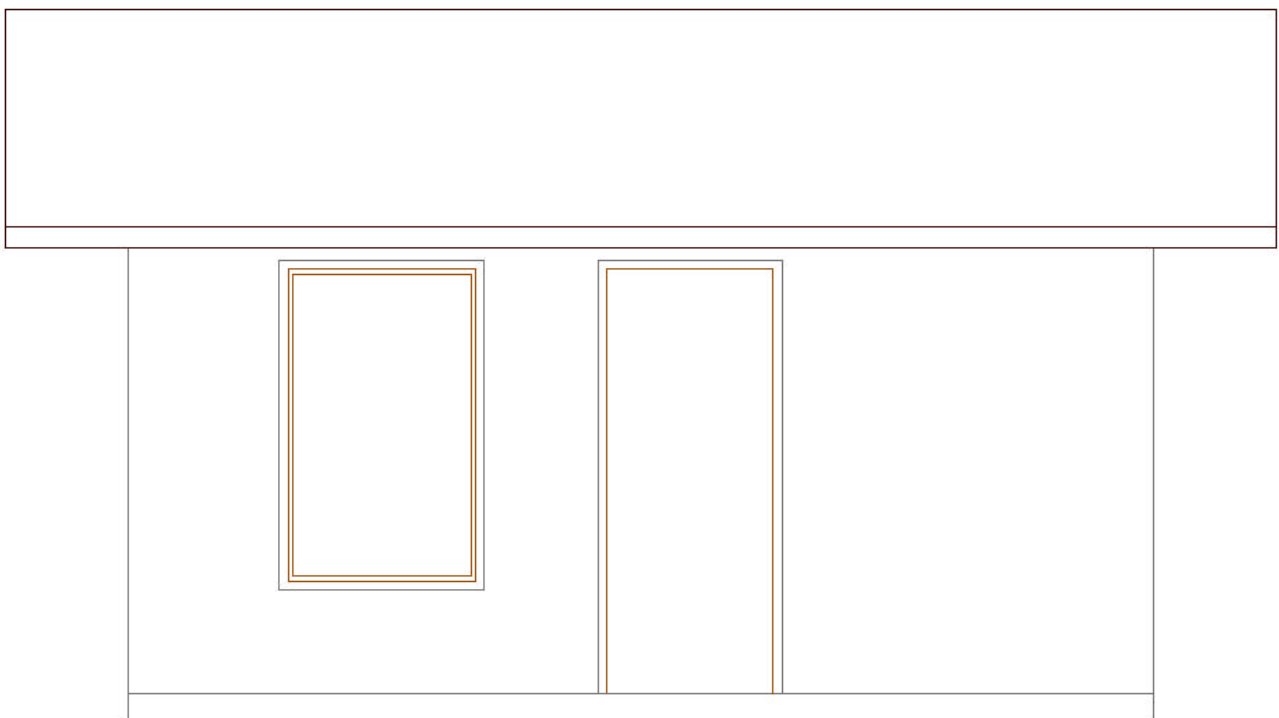
Arrowheads and ID's are automatically placed after the section line is completed as below:



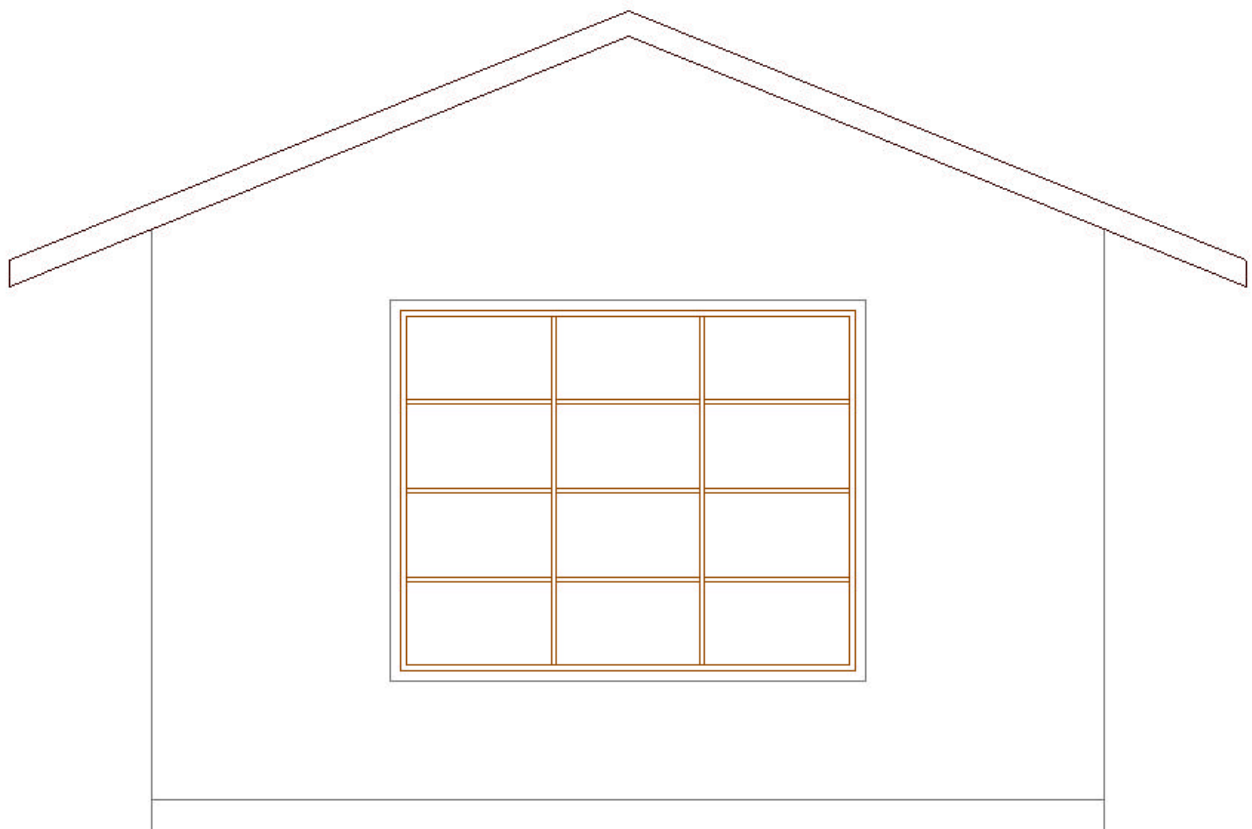
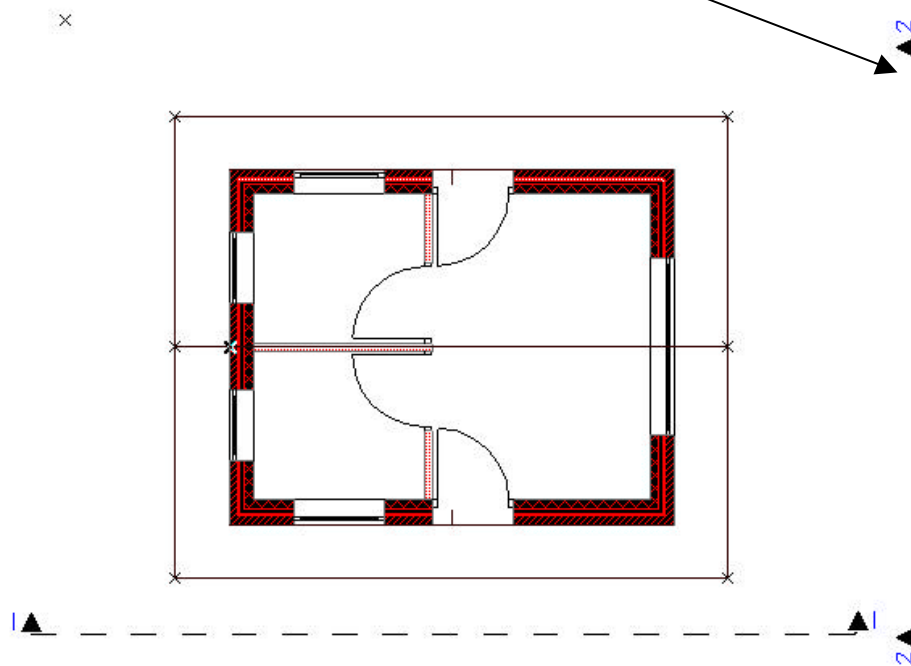
Choose the section you have just defined from the pull down menu **Windows** ä **Section Elevation**.



Your view should be as below. (Depending on the drawing chosen)



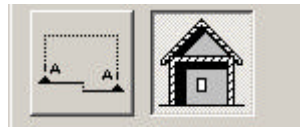
Repeat the above for a side view of your drawing.



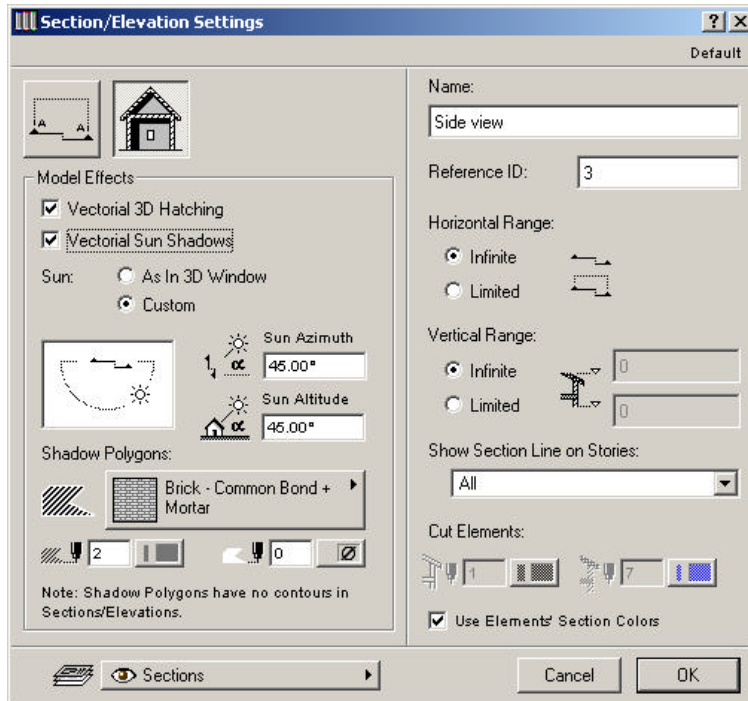
Practice again with a section view through the building.

Model Effects

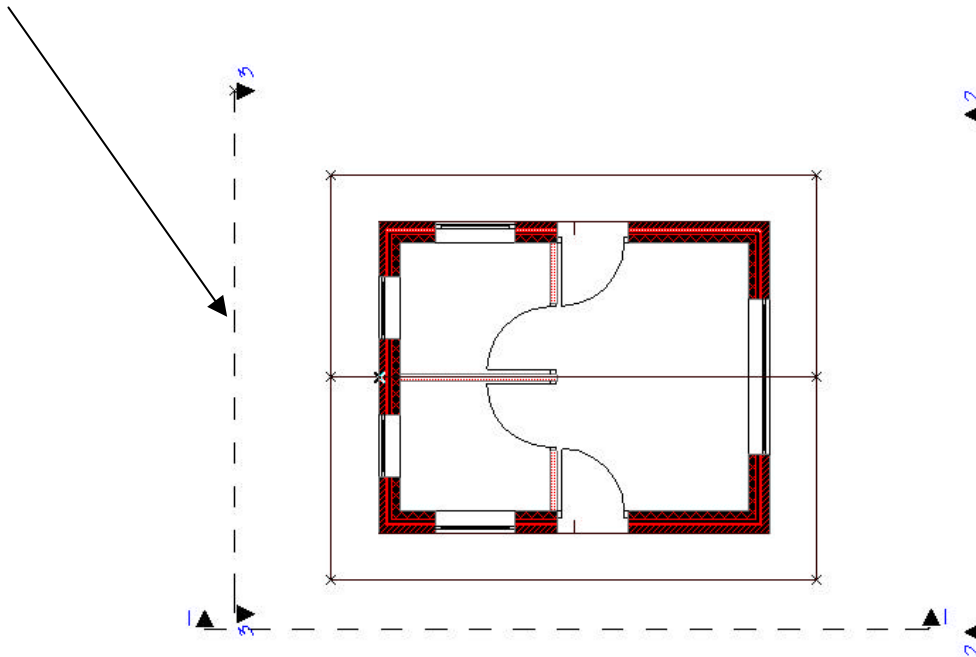
Using this function you can activate vectorial shadows and vectorial 3D fill patterns on model surfaces. (Need to draw new views in this mode)



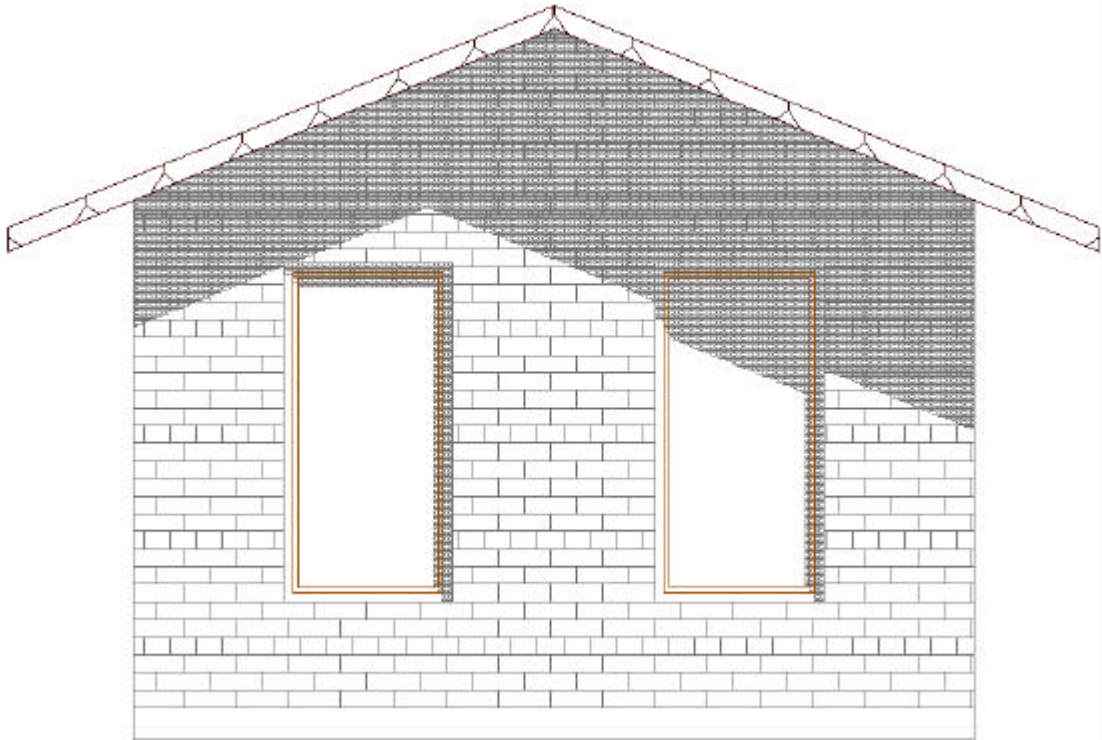
Set out as shown below:



Check the view after placing in the section line in your plan.

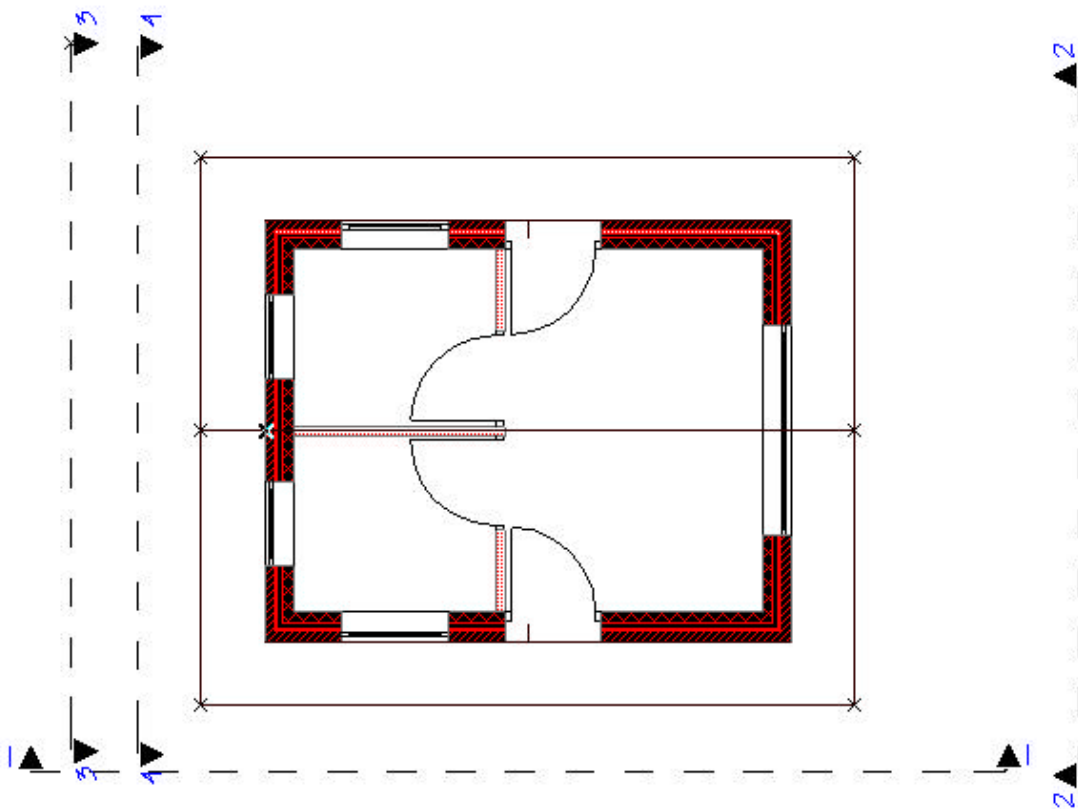


Section View

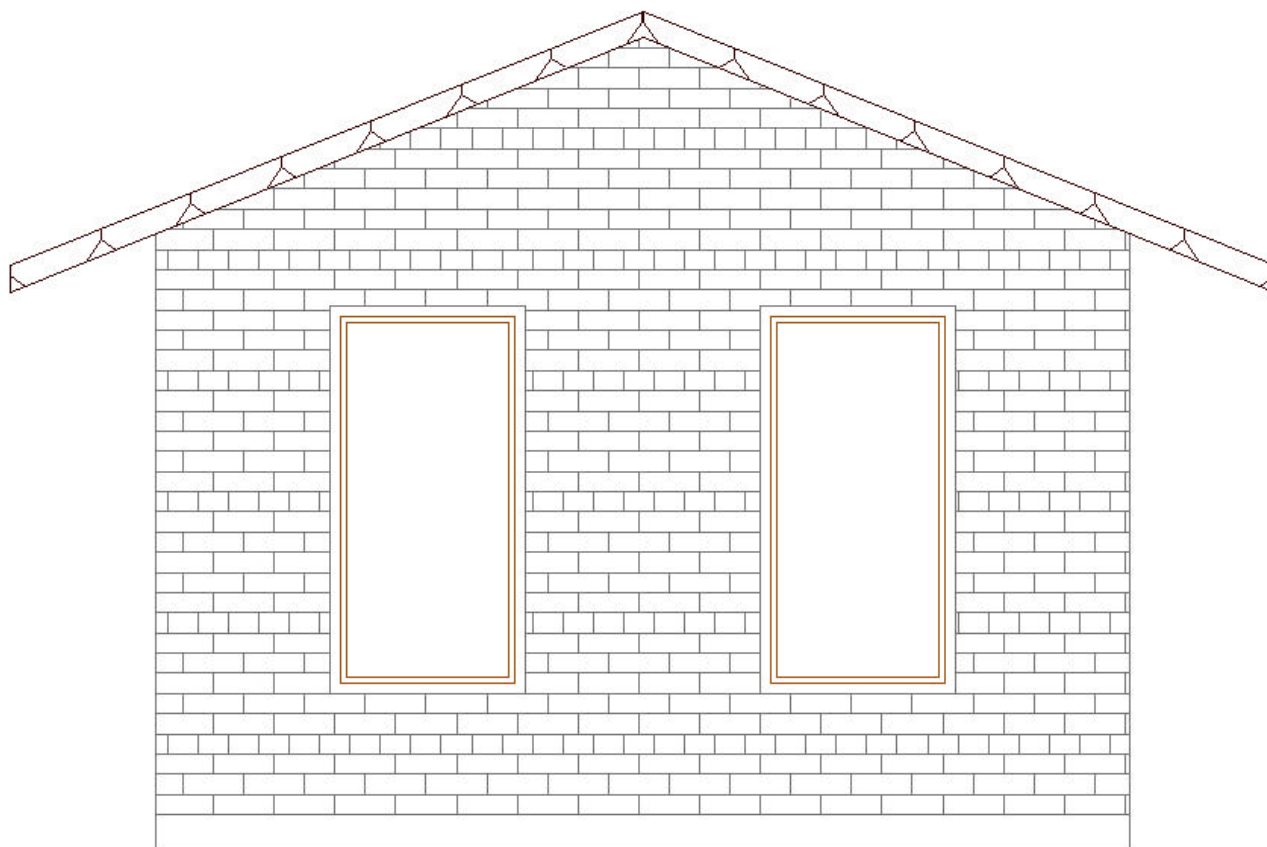


Repeat with the Vectorial sun shadow turned off.

You will need to **draw a new section line** to achieve this.



Section View



Note: *In the section view it is possible to place dimensions and manipulate elements, practice these aspects to gain a feel for what can be achieved.*