

Extend and Extend Adjust Elevations for the Model

Purpose:

These tools are similar to the line editing functionalities that appear in 2D CAD applications. This allows users to utilize those familiar tools as they migrate into modeling structural framing in the 3D environment of Tekla Structures. These tools also reduce the number of commands required by the Tekla Structures user when modifying sloping, or skewed framing geometry in the model.

Installation:

Copy the following files into your XS_MACRO_DIRECTORY/modeling directory.

- Extend.bmp
- Extend_big.bmp
- Extend.cs
- Extend_Adjust Elevations.bmp
- Extend_Adjust Elevations_big.bmp
- Extend_Adjust Elevations.cs

This by default in Tekla Structures USimperial environment is:

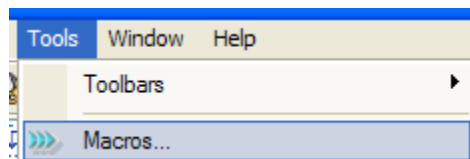
C:\TeklaStructures\15.0\environments\usimp\common\macros\modeling

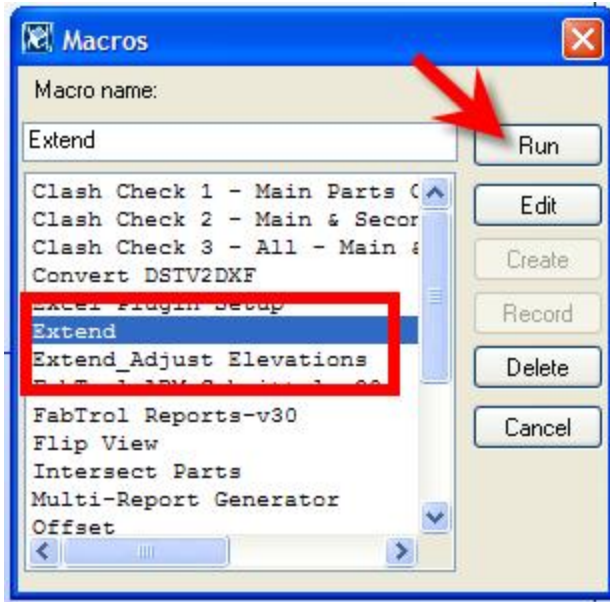
And in version 16.0 (Windows XP)

C:\Documents and Settings\All Users\Application Data\Tekla
Structures\16.0\environments\usimp\us_common\macros\modeling

Activate the command from the interface:

To run the Extend commands, go to Tools>Macros menu within Tekla Structures.

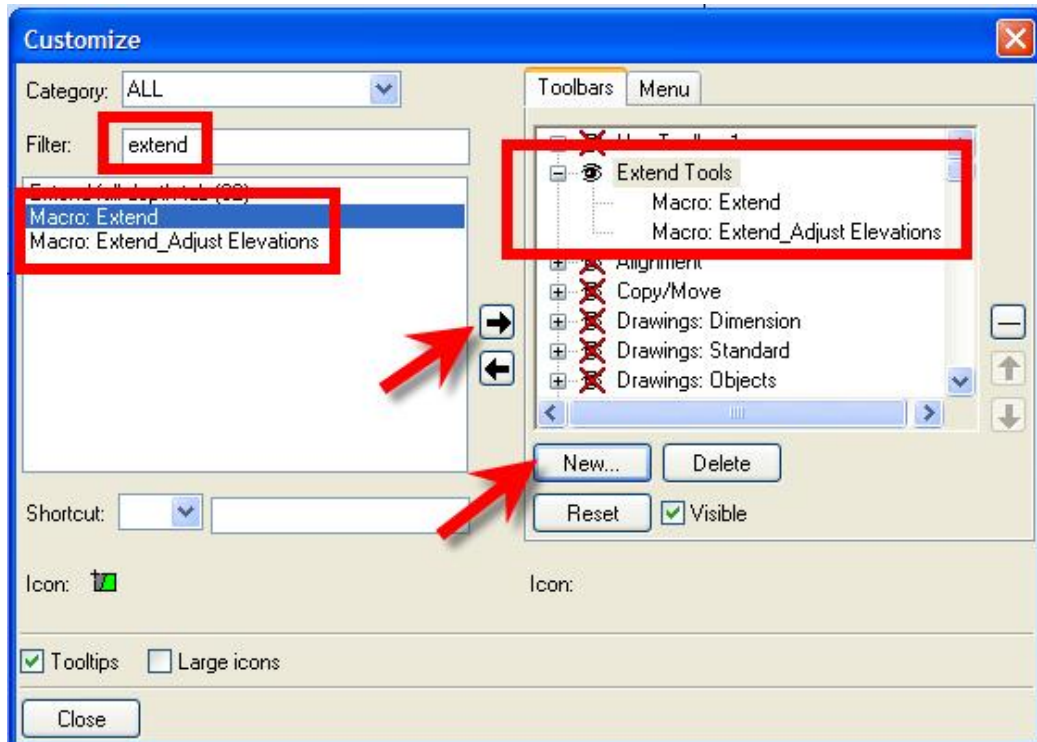




You can also create a custom toolbar by going to the Tools>Customize

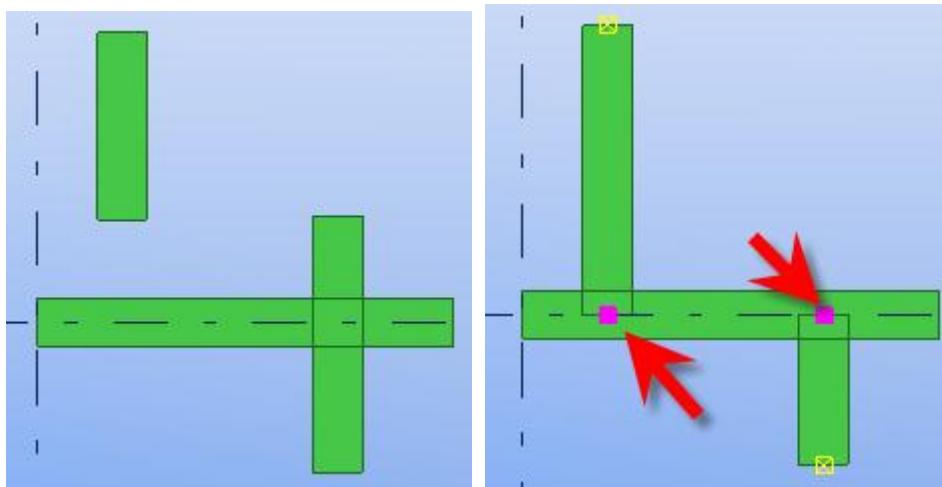


DO NOT USE LARGE ICONS if trying to create these toolbars in Tekla Structures versions prior to 15.0



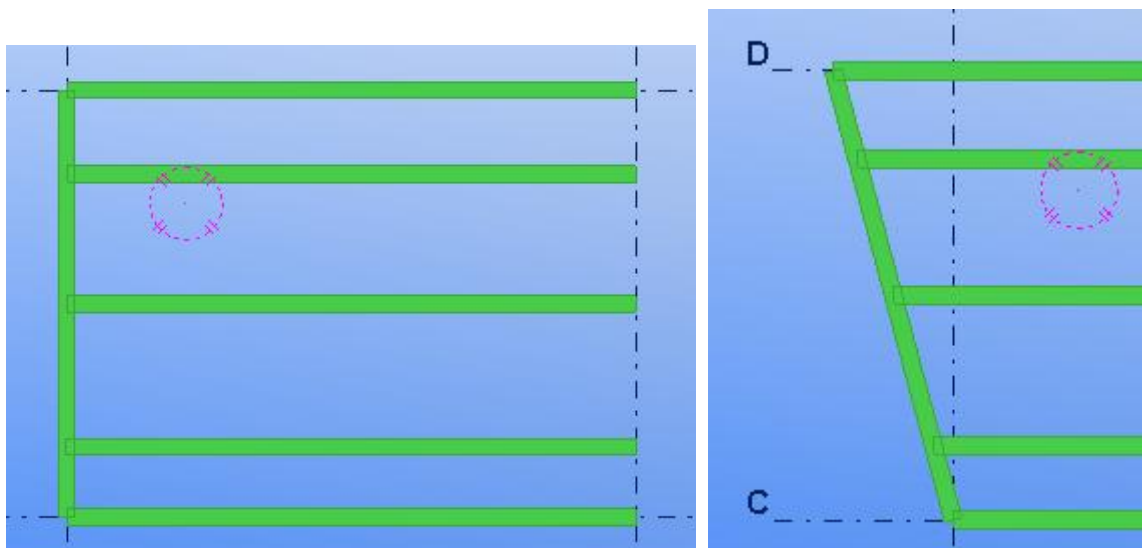
How to use the tools:

After the command has been started from the macros dialog box or your custom toolbar, you are prompted to pick the primary part. This primary/first part will be the control part that other parts are extended/trimmed to. Once you have selected this part, you are then immediately prompted to pick the secondary parts. You can select more than one secondary part. Simply pick as many secondaries that will extend/trim to the primary/first picked part. Once you have selected all of the secondaries, just click the middle mouse button, then the secondaries will extend/trim, and the command will start over automatically. If you do not want to repeat the command, just press Esc on the keyboard, or right click and choose interrupt. As you can see in the pictures below, the work points on the secondaries were moved to the intersection of the line formed by the start and endpoint of the primary beam.

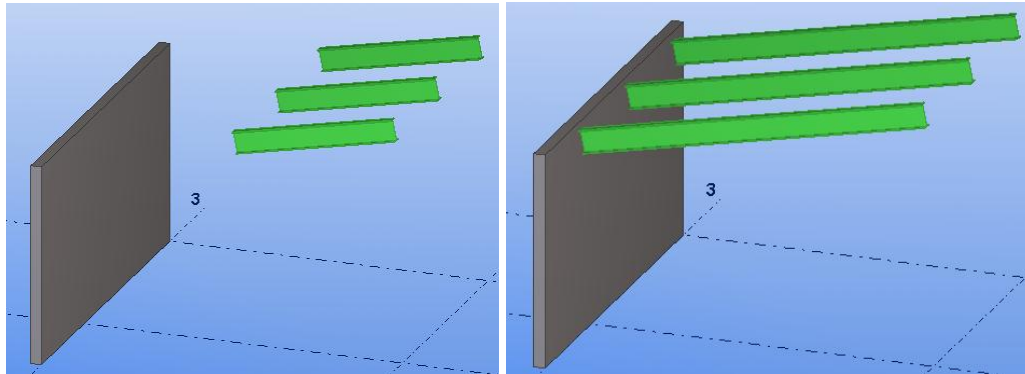


When to use Extend Command:

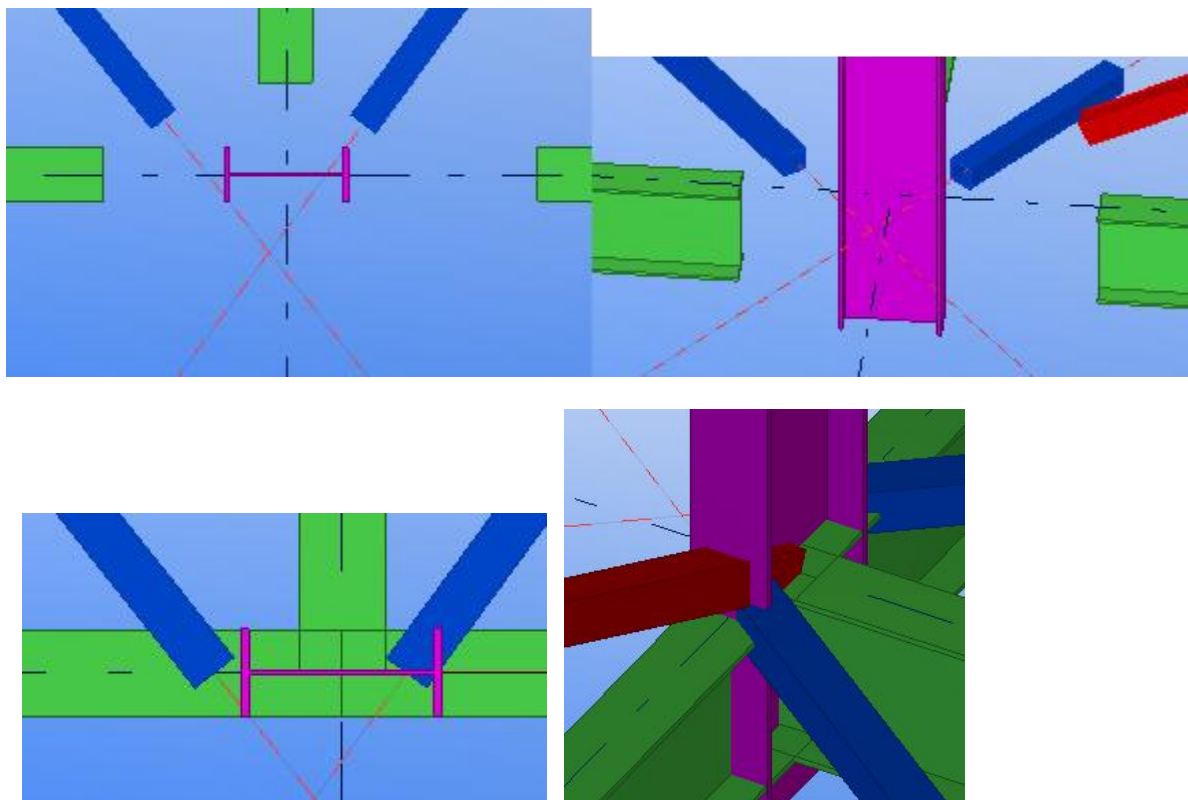
This tool is best used for most of the Extend/Trim conditions you will encounter on the project. Below are some sample use cases. Skew a Primary beam, then extend the secondary framing into it.



This example shows extending sloped beams into intersection of the face of the wall. Note: this may not work if the wall was made from multiple polybeam points.

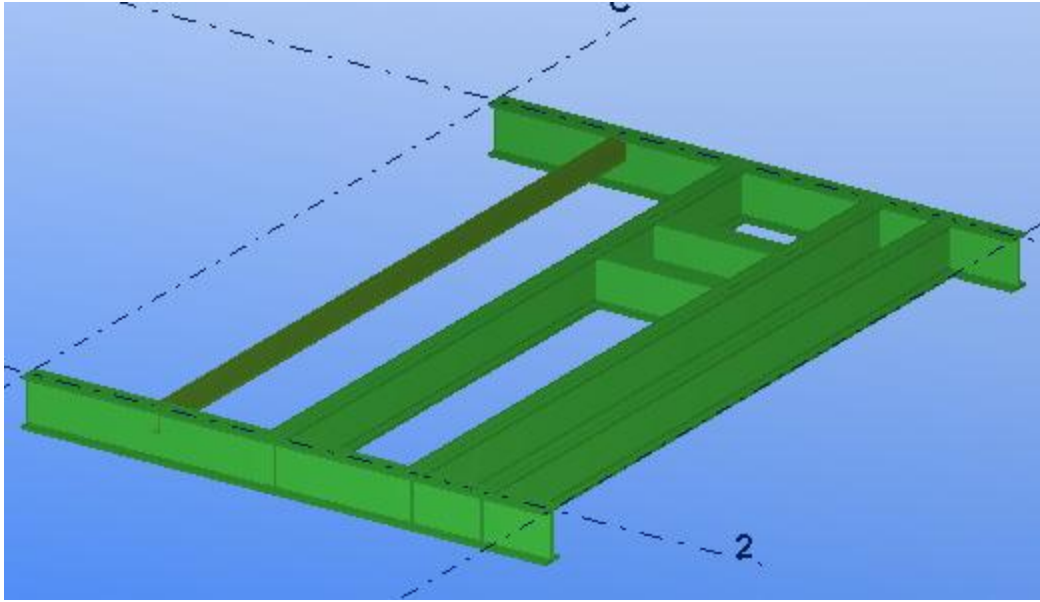


In this example there are sloped braces, skewed beams, and perpendicular beams framing into or near the column. After using the Extend command with the column being the primary, the results are shown in the bottom two pictures.

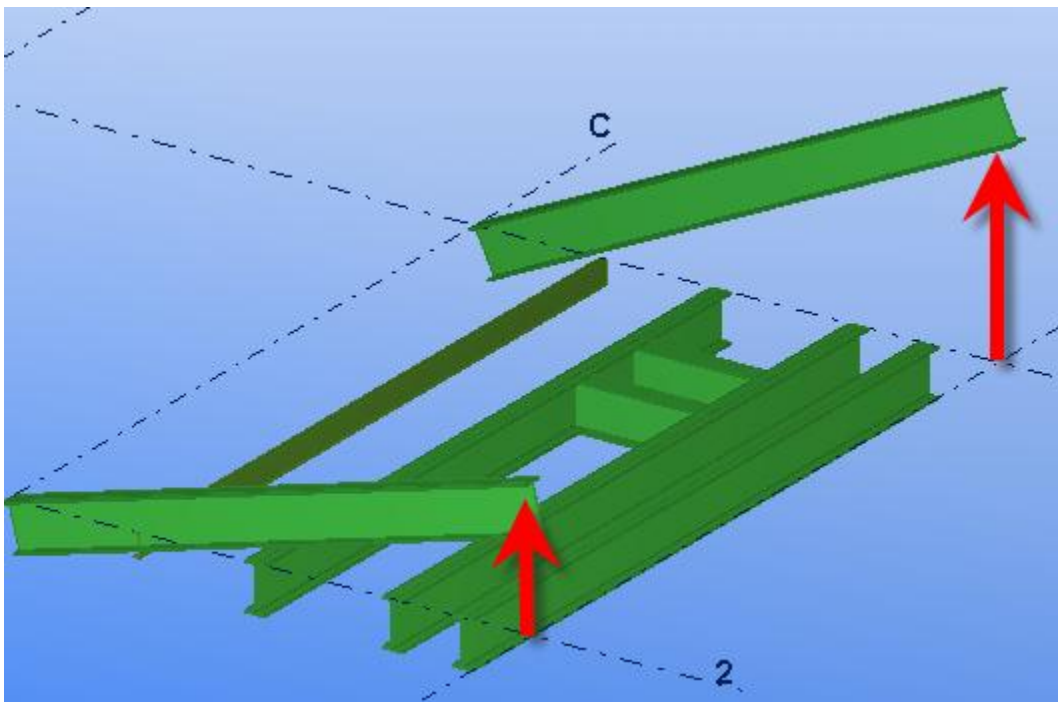


When to use Extend Adjust Elevations Command:

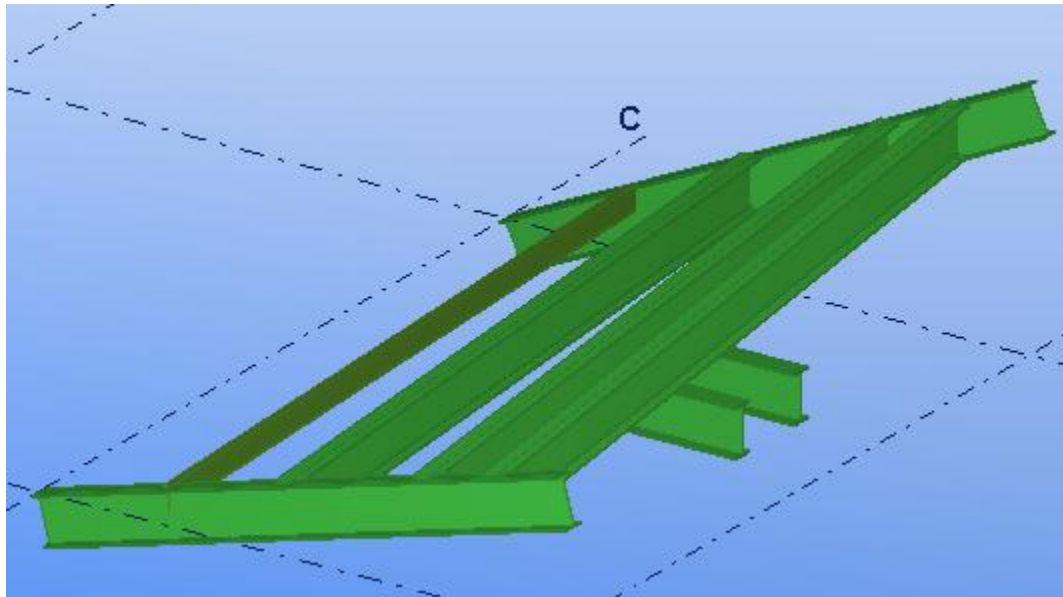
This tool is best used on beam framing more specifically at a roof and you want to change the slope of the primary beams, then just select all the other secondary framing beams to adjust their elevations to match exactly the new slope of the primary.



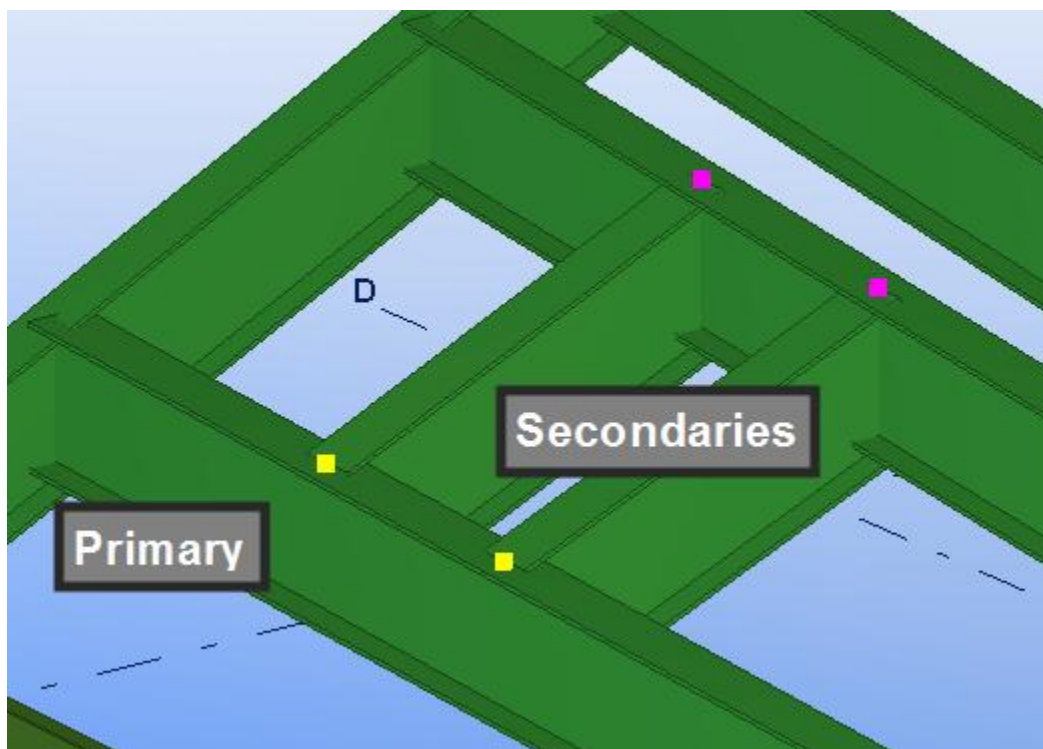
The Main Supporting beam endpoints are raised 4'-0 and 7'-0.



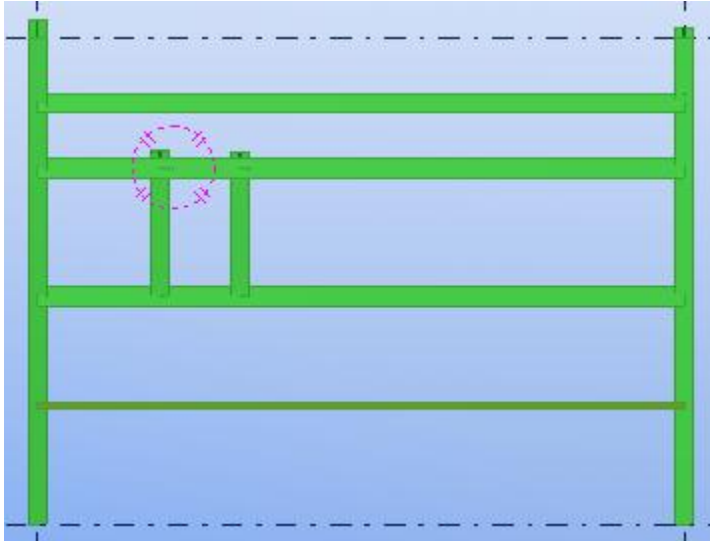
The Extend Adjust Elevations command is then used by first picking the primary now sloped parts, then picking only the beams framing into them to get the results shown below.



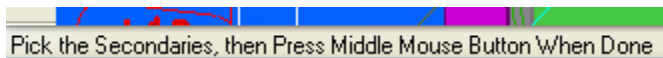
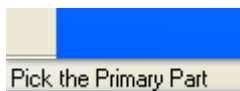
Then the command is used again on the interior opening framing as shown below.



In the end you can see that all of the framing X & Y coordinate geometry has been maintained in the plan view.



Localize the Prompt Strings to your language (Version 16.0):



Edit the *.cs files with NotePad or Wordpad and you change the text inside of the quotes to whatever text you would like.

```
// Generated by Tekla.Technology.Akit.ScriptBuilder
using System.Windows.Forms;
using Tekla.Structures;
using Tekla.Structures.Model;
using Tekla.Structures.Geometry3d;
using TS3D = Tekla.Structures.Geometry3d;

namespace Tekla.Technology.Akit.UserScript
{
    public class Script
    {
        public static void Run(Tekla.Technology.Akit.IScript akit)
        {
            string Prompt1 = "Pick the Primary Part";
            string Prompt2 = "Pick the Secondary Parts, then Press the Middle Mouse Button When Done";
            Model Model1 = new Model();
            Tekla.Structures.Model.UI.Picker Pick1 = new Tekla.Structures.
            bool keepgoing = true;
            while (keepgoing)
            {
                try
```