

PlansXpress® Tutorial

PlansXpress® Tutorial
Version 4

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HOW TO USE THIS BOOK AND GET STARTED

Thank you for purchasing **PlansXpress®**. We hope that you will find it an invaluable tool for helping your business draft professional building plans and elevations quickly and easily.

What can PlansXpress® do?

PlansXpress® is straightforward to use and has all the tools you need to produce planning application and building regulation compliant working drawings. What's more, **PlansXpress®** integrates with **EstimatorXpress®** to fully price up your building work directly from your plans! With **PlansXpress® Total Toolkit edition** you can draft plans for loft conversions, extensions, new build including timber frame construction, plus you can produce 3D visualisations of your projects.

To upgrade to **PlansXpress® Total Toolkit edition** or purchase **EstimatorXpress®**, call the **HBXL Sales Team** on **0845 1234 065**.

How to use this guide and get started with PlansXpress®

To get the most benefit from **PlansXpress®**, we recommend that all new users work through the Tutorials in this User Guide. The first Tutorial guides you through drawing plans and elevations for a sample house before estimating the job by importing it into **EstimatorXpress®**. The second Tutorial, which refers to features available only in **PlansXpress® Total Toolkit edition**, shows you how to draw plans and sections for a loft conversion. As the first Tutorial teaches you many of the basic skills required to use **PlansXpress®**, we recommend that you complete the first Tutorial before embarking on the second. After completing the Tutorials, you will have all the knowledge and skills required to undertake your own drawings. The first Tutorial will take around 4 hours and the second Tutorial will take around 2 hours.

This User Guide contains instructions for installing **PlansXpress®** on page 7. On page 11, you will find an overview of the basics you need to know to start using **PlansXpress®**. For a guide to the Shortcut Keys, see page 17. The House Tutorial, which talks you through drafting a typical new build house, starts on page 19. The Loft Tutorial, which guides you through drafting a loft conversion, starts on page 213.

Additional Help

Support for **PlansXpress®** is available from the **HBXL Help Team** on **0845 1234 085**. Please note support is only available with a valid Support and Updates subscription. For more information, call the **Help Team** on **0845 1234 085**.

Help is also available by pressing the **F1** key on your keyboard at any time or pressing the **Help button** on screen.

In addition, extra **PlansXpress® Tutorials** are available online at www.hbxl.co.uk.

Disclaimer

House Builder XL (HBXL) has made every effort to ensure that the information regarding **PlansXpress®** contained in this User Guide is accurate at the time of going to press.

House Builder XL shall have no liability or responsibility insofar as **PlansXpress®** is applied by you to your business's construction projects in an inappropriate way. The Company does not warrant, guarantee or make any representations regarding the use, or the result of use, of the software or written materials in terms of correctness, accuracy, reliability, currentness or otherwise.

CONTENTS

HOW TO USE THIS BOOK AND GET STARTED	3
INSTALLING PLANSXPRESS®	7
WHAT CAN PLANSXPRESS DO?	9
BASIC PRINCIPLES	11
SHORTCUT KEYS	17
THE PLANSXPRESS® SCREEN IN DETAIL	18
HOUSE TUTORIAL	19
<i>House Plans</i>	20
<i>Launching PlansXpress® & Setting up the Drawing Page</i>	27
<i>Setting Out the Construction Lines</i>	29
<i>Drawing the External Walls</i>	36
<i>Drawing the Internal Walls</i>	45
<i>Placing the Windows</i>	58
<i>Placing the Doors</i>	67
<i>Placing the Staircase</i>	75
<i>Creating the First Floor</i>	81
<i>Setting Out the Suspended Floor</i>	90
<i>Setting Out the House Slab</i>	103
<i>Adding Walls, Doors and Windows to the First Floor</i>	110
<i>Adding a Structural Opening</i>	113
<i>Adding Bathroom, Cloaks & Kitchen SYMBOLS</i>	117
<i>Drawing the Roof</i>	123
<i>Adding the Drain Runs & Manholes</i>	139
<i>Creating Elevation Views</i>	160
<i>Adding Hatch Patterning to the Elevations</i>	171
<i>Adding Dimension Lines to the Plans</i>	180
<i>Adding Labels & Drawing Details to the Plans</i>	184
<i>Printing Plans</i>	189
CREATING AN ESTIMATE IN ESTIMATORXPRESS® BASED ON A PLANSXPRESS® DRAWING	198
IMPORTING TECHNICAL NOTES INTO PLANSXPRESS® FROM ESTIMATORXPRESS®	201
CREATING A 3D VISUALISATION OF THE PLANS	204
LOFT TUTORIAL	213
<i>Loft Plans</i>	214
<i>Creating the Loft Plan</i>	219
<i>Forming the Loft Opening</i>	235
<i>Drawing the Dormer</i>	242
<i>Placing the Upstand Walls</i>	253
<i>Placing the Collared Ceiling</i>	263
<i>Marking out the Sloping Ceiling</i>	267

<i>Drawing the Stud Walls</i>	272
<i>Placing the Doors</i>	279
<i>Placing the Roof Windows</i>	283
<i>Marking out the Loft Floor</i>	288
<i>Adding the Bathroom Suite</i>	301
<i>Finishing off the Loft Plan</i>	306
<i>Developing the Loft Section</i>	309
<i>Applying Plaster and Decoration Treatment to Gable Walls</i>	328
<i>Creating a Rear Elevation</i>	332
<i>Printing the plans</i>	337
TERMS & CONDITIONS	344
<i>Terms & Conditions for PlansXpress®</i>	344

INSTALLING PLANSXPRESS®

Before installing PlansXpress® please ensure your computer meets the following minimum system requirements:

- 1.5 GHz Processor
- 600 MB Hard Drive Space
- 1 GB Ram
- Windows® XP/Vista /7/8
- Graphics Card 1024x768 Resolution
- SVGA Monitor
- 3 Button Mouse with Scroll Wheel
- Internet Connection

In order to estimate directly from your PlansXpress® drawings, you must also have the following installed:

- EstimatorXpress® v.8.56 or later

INSTALLING YOUR PLANSXPRESS® SOFTWARE

1. Insert the **PlansXpress®** CD into your CD/DVD drive. The CD should autorun.
2. If Autorun has been disabled and you're running Windows® 2000/XP, select Run from the Start Menu, type in D:\Setup.exe (where D: is your CD/DVD drive). If you're running Windows® Vista or Windows 7, the Run option may not be available on the Start Menu, so instead type D:\Setup.exe into the Search box at the bottom of the Start Menu. If you are using Windows 8 then from the start screen type the word 'run' and then select the 'Run' option that the search will find to launch the Run box.
3. After the installation wizard has started, follow the onscreen instructions until the installation is complete.

LAUNCHING PLANSXPRESS® FOR THE FIRST TIME



1. To launch the software either double click on the **PlansXpress®** icon or go to **Start, All Programs, HBXL, PlansXpress** and click on the **PlansXpress®** icon.
2. You will then be required to follow the registration wizard to fill in your company contact details and register your copy of **PlansXpress®**.

WHAT CAN PLANSXPRESS DO?

A straightforward to use program, **PlansXpress®** has all the professional tools you need from a CAD package – without the hassle!

Simply lay out your plans on-screen using the software's intuitive construction tools and comprehensive library of architectural symbols.

With a click of the mouse you can accurately place walls, roofs and floors, staircases, doors, windows, electrics and plumbing, drainage, kitchens and bathrooms, landscaping, lofts and more.

Quickly add intelligent auto-hatching and auto-dimension lines, insert sections and notes from the software's library, and personalize with your company information.

Suitable for planning applications and building regulations, you can print your professional drawings in plan format and the software will automatically generate elevations too.

Pricing the job from your plans is easy[∞]. At the click of a button simply import your **PlansXpress®** file into EstimatorXpress® and the job will be fully costed and quantified with a business winning quote*!

Already got plans from your customer or architect? Scan or import them into **PlansXpress®** and trace over them with your mouse[^] to create instant estimates[∞], customer quotes* and 3D visualizations†!

- Comprehensive range of construction tools
- Comprehensive architectural symbol library
- Construction-standard hatch patterns
- Auto-dimension walls
- Auto-hatch elevations
- Object dimensioning tools
- Automatic 2D elevation generation
- 3D visualizations†
- Insert sections
- Insert notes
- Insert images
- Insert text
- Custom Layers, Views & Layouts
- Snap and X-Y drawing modes
- Additional pens
- Advanced functions
- Integrates with EstimatorXpress[∞]
- DWG/DXF/PDF/WMF/BMP/JPG/GIF File export
- DWG/DXF import

[∞]Requires EstimatorXpress® v.8.56 (or later) Lite or Total Toolkit edition

†Requires **PlansXpress® Total Toolkit edition**

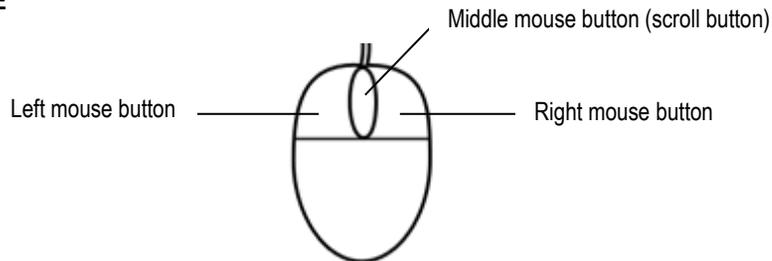
*Quote facility requires EstimatorXpress® v.8.56 (or later) Total Toolkit edition

[^]Requires **PlansXpress® ScanPack** (available separately)

BASIC PRINCIPLES

This section will teach you some important things you need to know about how to use **PlansXpress®**. It's a good idea to read through this section whilst referring to the software, before embarking on your first drawing.

USING YOUR MOUSE



The Left Mouse Button



DRAWING

Unlike other drawing packages you may have used, when drawing anything in **PlansXpress®**, you must click and release the left mouse button to place the start and subsequent points of whatever you are drawing. Do not hold down the left mouse button and drag because this will not work.

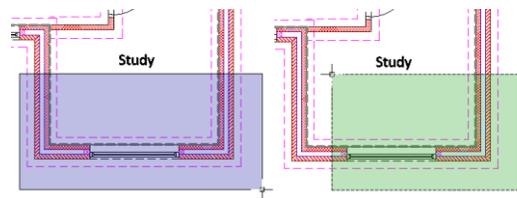
SELECTING INDIVIDUAL ITEMS

You can select an individual item by clicking on it with the left mouse button.

SELECTING MULTIPLE ITEMS

Ctrl

You can select multiple items by holding down the Ctrl key on your keyboard and clicking with the left mouse button on every item you wish to select. Alternatively, you can select multiple items by holding down the left mouse button and dragging the cursor so that all the items you wish to select are captured inside the rectangle which appears. If you drag from left to right, a blue rectangle with a solid line appears and only the items entirely within the rectangle are selected. If you drag from right to left, a green rectangle with a dotted line appears and all items which are partly or entirely within the rectangle are selected.



Left to right selection.

Right to left selection.

The Middle Mouse Button (Scroll Button/Wheel)



A scroll mouse is a system requirement because it is crucial to drawing with **PlansXpress®**. If you don't already have a scroll mouse, it's definitely worth investing in one.

ENTERING DIMENSIONS WHEN DRAWING

If you click the middle mouse button while drawing an item, a menu will pop up with input boxes to enter horizontal and vertical dimensions for the next point.

ACCESSING MIDDLE CLICK OPTIONS

A number of options can be accessed by clicking the middle mouse button when you have an item (or multiple items) selected. The options which appear on the popup menu are dependent on the item you have selected.

GRABBING AND MOVING THE PAGE

If you click and hold down the middle mouse button at any time, you can grab and move the page in order to get a better view. Release the middle mouse button once you're happy with the position of the page.

ZOOMING

Unlike in Microsoft® and other software packages, the scroll wheel does not scroll around the page but can be used to zoom in and out. Scrolling the scroll wheel upwards zooms in and scrolling the scroll wheel downwards zooms out.

The Right Mouse Button



CANCELLING AN ACTION

When you want to cease drawing whatever you are drawing, you can click the right mouse button. This will cancel whatever action the Command Window is prompting you to do.

This is equivalent to pressing the Esc key  on your keyboard.

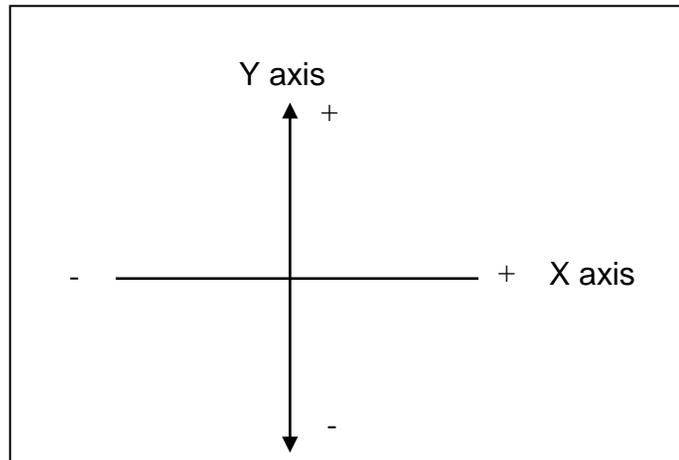
REPEATING THE LAST ACTION

You can also click the right mouse button to repeat your last action. For example, if you have just drawn a brick and block cavity wall, you can draw another brick and block cavity wall of the same specification by clicking the right mouse button.

USING X AND Y COORDINATE MODES

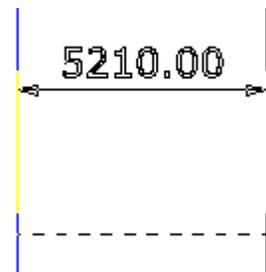
In order to accurately place items on the page, X-Y Coordinate mode must be switched on by pressing the XY Coordinate button  or pressing F8  on your keyboard.

When in X-Y Coordinate mode, **PlansXpress**® is set up like a graph with X and Y coordinates (see diagram below). The origin is located at the bottom left corner of the page. When placing an item on a page, the X coordinate defines its position along the horizontal plane/axis. The Y coordinate defines its position along the vertical plane/axis.



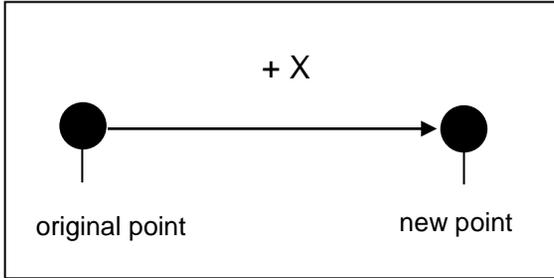
You can use X and Y coordinates to accurately place the start point of an item, such as a wall or drain run. You may also use X and Y coordinates to place subsequent points of an item, relative to the previously defined point.

You will see that the X-Y Coordinate mode is switched on once you've positioned the first point of an item. Dimensions will appear onscreen next to the cursor to show its dimensions relative to the previous point. As you move your cursor, the values are updated to reflect the position of your cursor. You can click the left mouse button to accept the coordinates and cursor position.

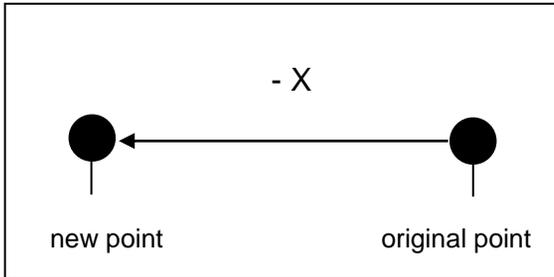


Also, X and Y input boxes will appear at the top of the screen to allow you to enter X and Y coordinates. The X coordinate is shown in the left hand box and the Y coordinate value is shown in the right hand box. You can type in the X and Y values of the next point by clicking in either the X or Y input box and editing the value as required (double click on the existing text to select the current value which can then be deleted or overtyped as required). As soon as you enter a value, **PlansXpress**® will lock the dimension and the cursor will be locked along that axis. You can click the lock button to unlock the dimension and release the cursor. To accept the dimensions typed into one or both boxes click the left mouse button when the cursor is within the drawing area. Both values are unlocked automatically as soon as the point is accepted.

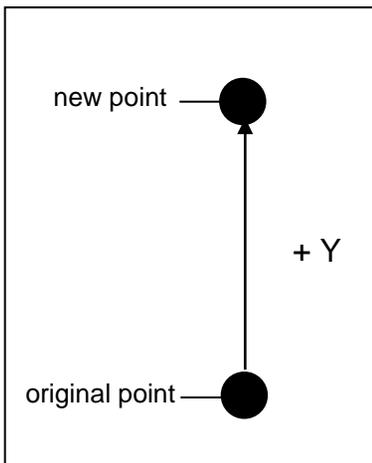
When placing a new point to the right of an existing point (be it the origin or a previously defined point), you need to enter a positive value into the X input box (see diagram below). However, you do not need to enter a plus sign (+) before the dimension.



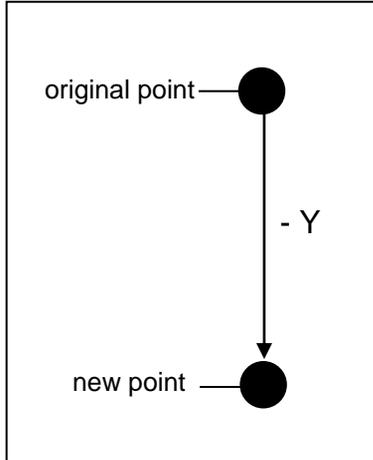
When placing a new point to the left of an existing point, you need to enter a negative value into the X input box. Therefore you must enter a minus sign (-) before the dimension.



When placing a new point above an existing point, you need to enter a positive value into the Y input box. Again, you don't need to enter a plus sign.



When placing a new point below an existing point, you need to enter a negative value into the Y input box. Therefore you must enter a minus sign (-) before the dimension.



USING SNAP AND NEAREST SNAP MODES

Snap Points

You can draw items without using X and Y coordinates. Instead you can snap items you are drawing onto existing items.



You must first ensure you are in Snap mode by pressing the Snap button or pressing the F7 key  on your keyboard.

The different snap point options are indicated by different symbols. When the background is set to white, the symbols are blue and when the background is set to black they are yellow.

See below for the different snap point options. In the following explanation, where the word 'line' is used it refers to any linear item such as walls, drains, fencing etc. Equally where the word 'rectangle' is used, it refers to any rectangular item such as slab, tarmac drive and block paving.

End  means End point. End points are found on either end of a line, the corners of a rectangle, either end of a dimension arrow and on the ends of an arc.

Mid  means Mid point. Mid points are located at the middle point of a line.

Cen  means Centre point. Centre points are found at the centre point of an arc or circle.

Int  means Intersection point. Intersection points are found where lines, circles and arcs cross over.

Quad  means Quadrant point. Quadrant points are found on circles and arcs at 0, 90, 180 and 270 degree positions (3 o'clock is 0).

Ins  means Insertion point. Insertion points are found at the point where text symbols have been inserted into the page.

Tan  means Tangent point. The system will find a tangent point when the cursor passes over a tangency position on an arc or circle (from the current point). This snap will therefore only appear if a current point exists i.e. selecting the second point when drawing a line.

Perp  means Perpendicular point. The system will find a perpendicular point when the cursor passes over a position on a line/arc/circle that is at a right angle to the current point. This snap will therefore only appear if a current point exists i.e. selecting the second point when drawing a line.

Locate the desired snap point by holding your mouse over the appropriate region of the item i.e. at the end of a line to find the 'End' point. Click the left mouse button to register the snap point.

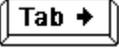
Nearest Snap

Near  means Near point. Near points are found at any point on an item where there is no other specific snap point.

At times, you may wish to snap the item you are drawing onto another item, but not necessarily onto a specific snap point. For example, when drawing setting out lines, known as construction lines, you may wish to snap onto an existing construction line. In this instance, you can use the Nearest Snap function which can be switched on by pressing the Nearest Snap button.

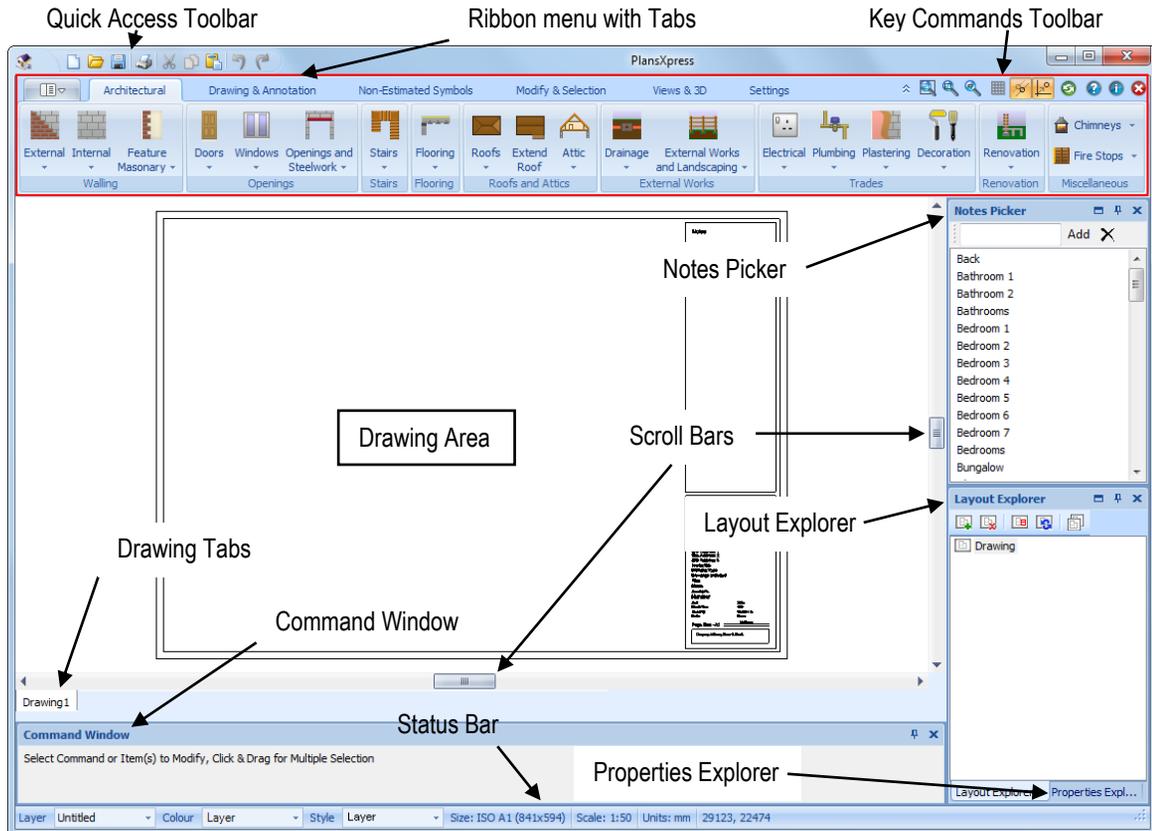


SHORTCUT KEYS

Key	What does it do?	How do I use it?
	Switch on Snap mode	Press F7 to switch the Snap mode on in order to snap to End, Intersection and Perpendicular points etc. See 'Basic Principles' for more information on Snap points.
	Switch on XY mode	Press F8 to switch the XY mode on in order to place items using X and Y coordinates. See 'Basic Principles' for more information on XY coordinates.
	Enter direction and distance	Press one of the arrow keys to specify the direction of the next point, and enter the distance into the dialog box.
	Enter relative input	Hold the cursor over an existing point (End, Intersection etc.) and press the R key to use the Snap point as a point of reference when placing a new point. Snap mode must first be enabled.
	Snap to X coordinate	Hold the cursor over an existing point (End, Intersection etc.) and press the X key to fix the new point to the X coordinate of the existing point. Snap mode must first be enabled.
	Snap to Y coordinate	Hold the cursor over an existing point (End, Intersection etc.) and press the Y key to fix the new point to the Y coordinate of the existing point. Snap mode must first be enabled.
	Force snap	When in Snap mode, press either the E, M, P or T key to automatically snap to an End, Middle, Perpendicular or Tangent point respectively.
	Close entity by snapping to the first point	Press the C key after you've placed the last point of the entity you're drawing. PlansXpress ® automatically links the last point with the first point to close the shape.
	Draw straight line	Hold down the Shift key to draw a straight or diagonal line. As you move the cursor it will be restricted to drawing lines at 0°, 45°, 90°, 135°, 180° etc.
	Select multiple items	Hold down the Ctrl key while left clicking on items to select multiple items.
	Move between input boxes in Dimensions Wizards	Press the Enter key to move around the input boxes in the Dimensions Wizards, in order to enter dimensions.
	Delete one or multiple items	Press the Delete key to delete items you have selected.
	Cancel the current action	Press the Escape key to cancel the current action.
	Toggle measurement for positioning Windows/Doors	When placing Windows or Doors, press the Tab key to change the side PlansXpress ® is measuring from.

THE PLANSXPRESS® SCREEN IN DETAIL

This is how your screen appears when you first open **PlansXpress®**. The main areas of the screen are labelled. You will be referred to these during the Tutorial.



HOUSE TUTORIAL

The House Tutorial is a hands-on Tutorial for those with little or no experience of using **PlansXpress®**. The Tutorial talks you through drawing a five bedroom house, teaching you all the basic skills required to draw architectural plans and elevations in **PlansXpress®**.

During the Tutorial you will work through sections which will teach you how to:

- Set out construction lines
- Draw internal and external walls
- Place windows, doors and a structural opening
- Place a staircase
- Copy a ground floor plan to create the first floor
- Set out a suspended floor
- Set out a house slab
- Place bathroom, cloaks and kitchen symbols
- Draw a roof
- Draw drain runs and manholes
- Create elevations
- Add dimension lines
- Add labels and title information
- Print plans and elevations
- Import the drawing into EstimatorXpress®
- Import technical information from EstimatorXpress® to create notes.



The time required to complete each section is indicated by this symbol at the start of each chapter:

The whole Tutorial should take around 4 hours to complete from start to finish.

When working through the Tutorial, we recommend that once you start a particular section, you continue until it is complete. At the end of each section, you are reminded to save the document, and you can then exit **PlansXpress®** and come back to the Tutorial at a later date.

Please note, the aim of this Tutorial is to teach you how to draft plans and elevations with **PlansXpress®**. Throughout the Tutorial, the Dimensions Wizards will not be discussed in detail as most of the information they request is required by EstimatorXpress® for estimating purposes. The dimensions required to draft the plans are highlighted in yellow for easy identification. For full instructions on how to use EstimatorXpress®, and the Dimensions Wizards, please consult the EstimatorXpress® Getting Started Guide.

HOUSE PLANS

Diagram A: A1 Layout

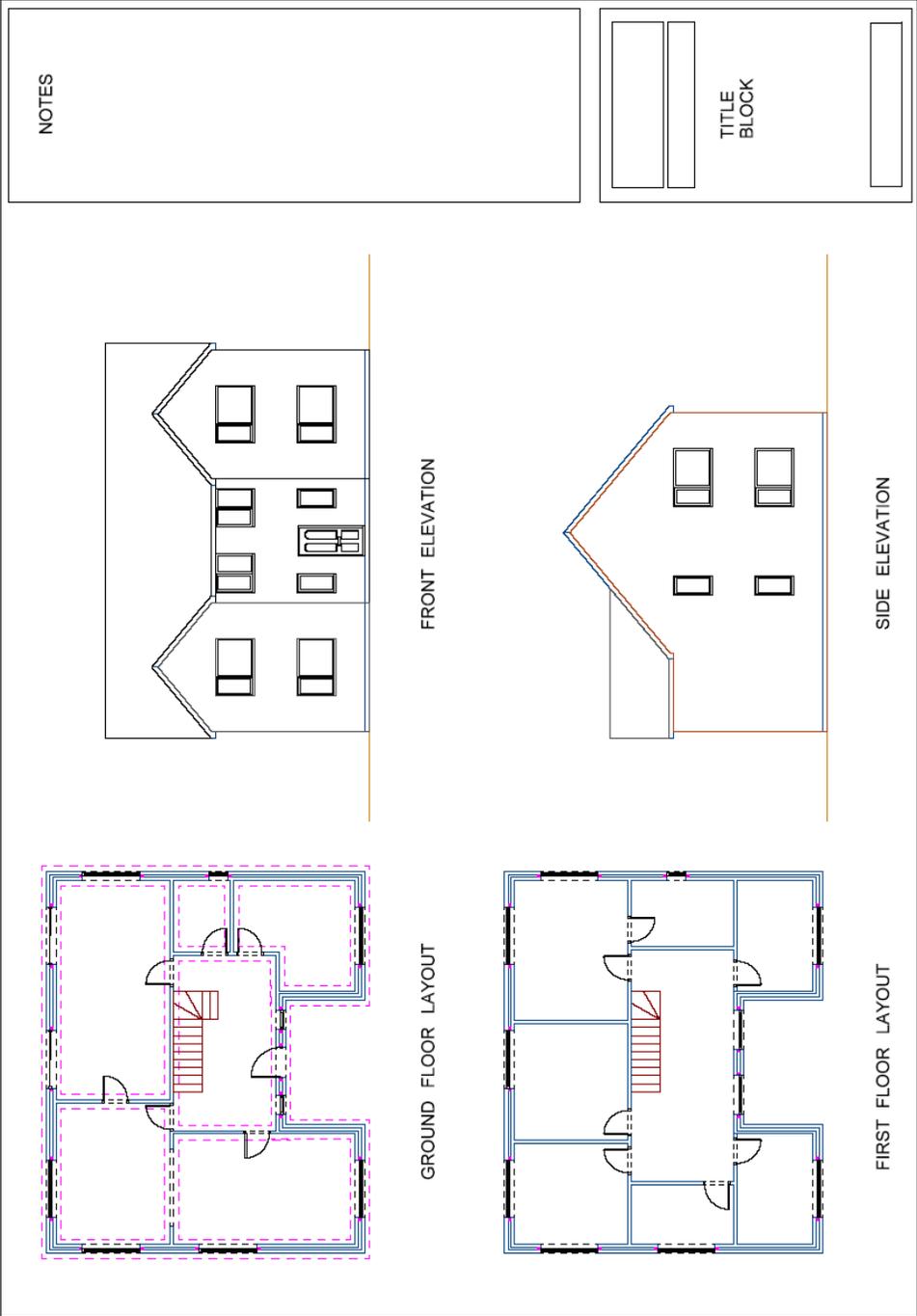


Diagram B: Ground Floor Layout

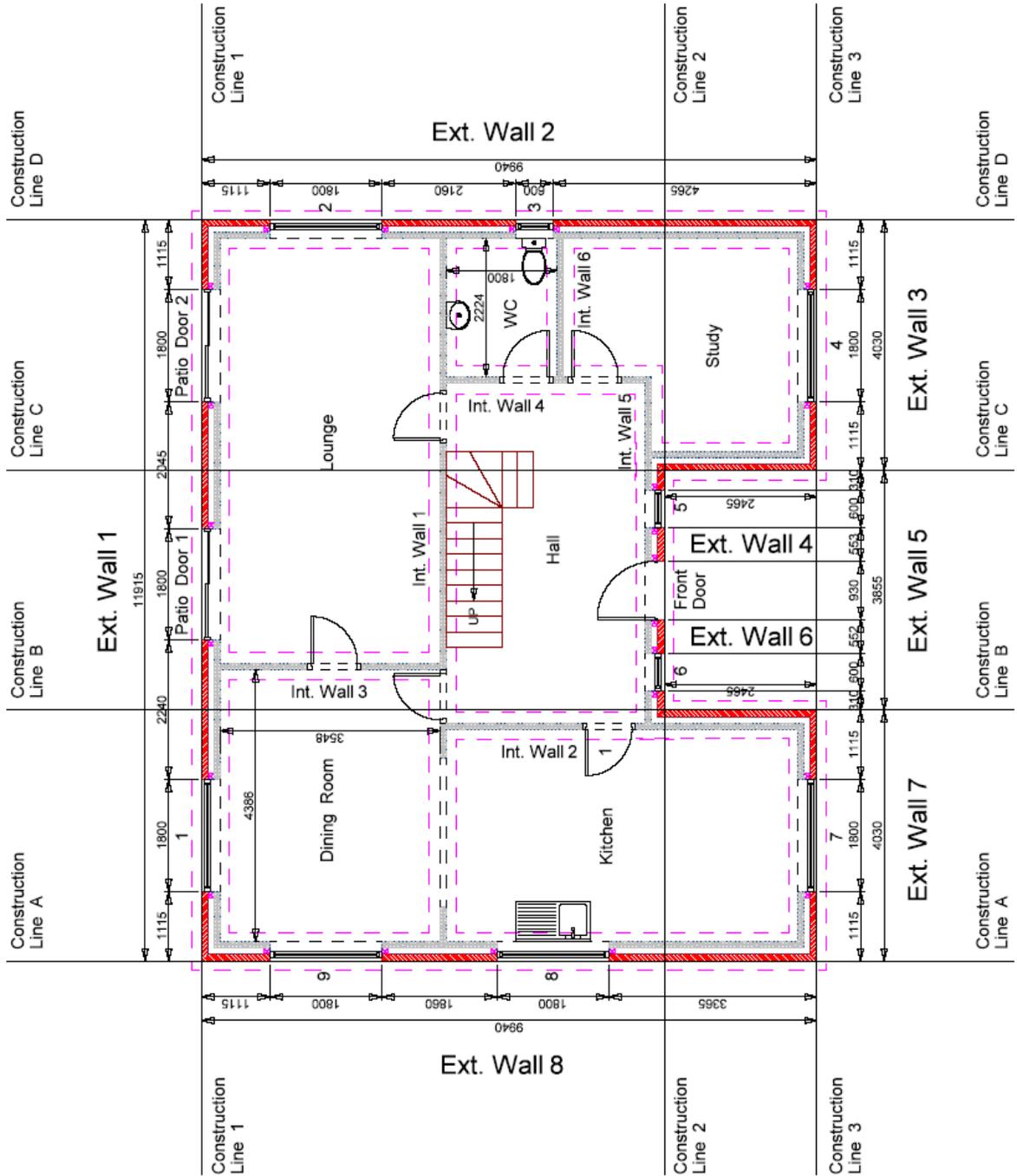


Diagram C: First Floor Layout

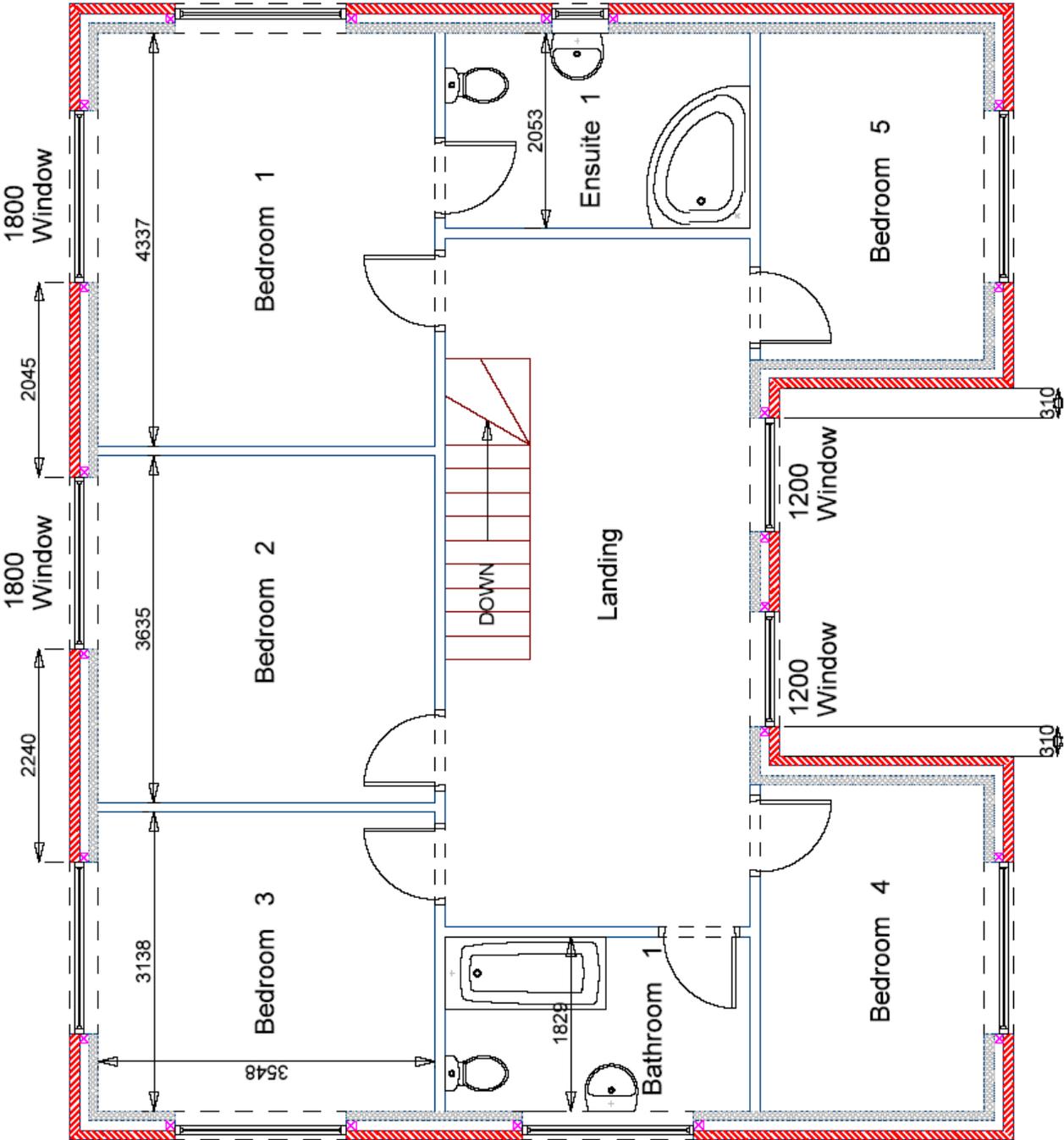


Diagram D: Suspended Floor Layout

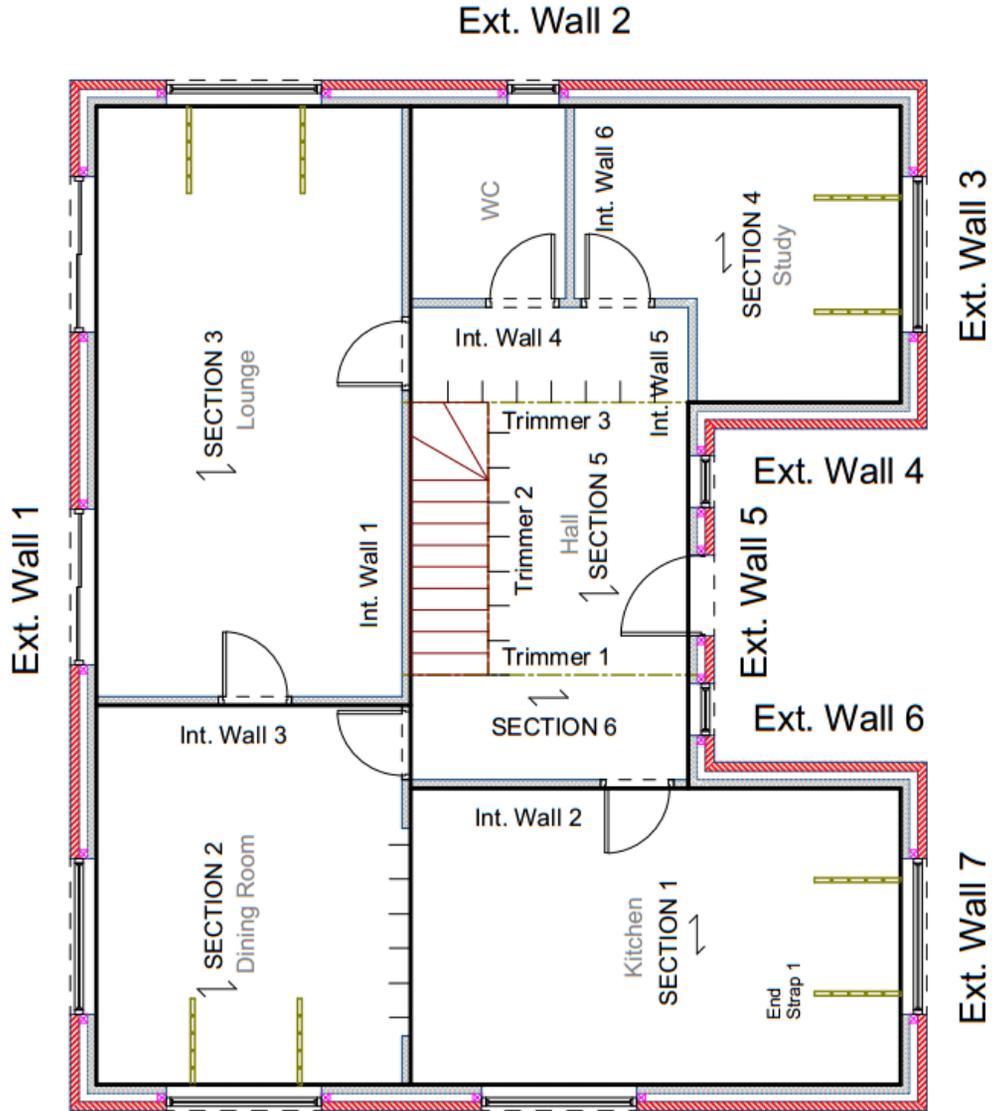
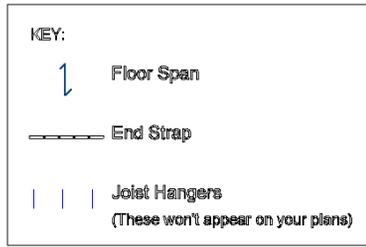


Diagram E: House Slab Layout

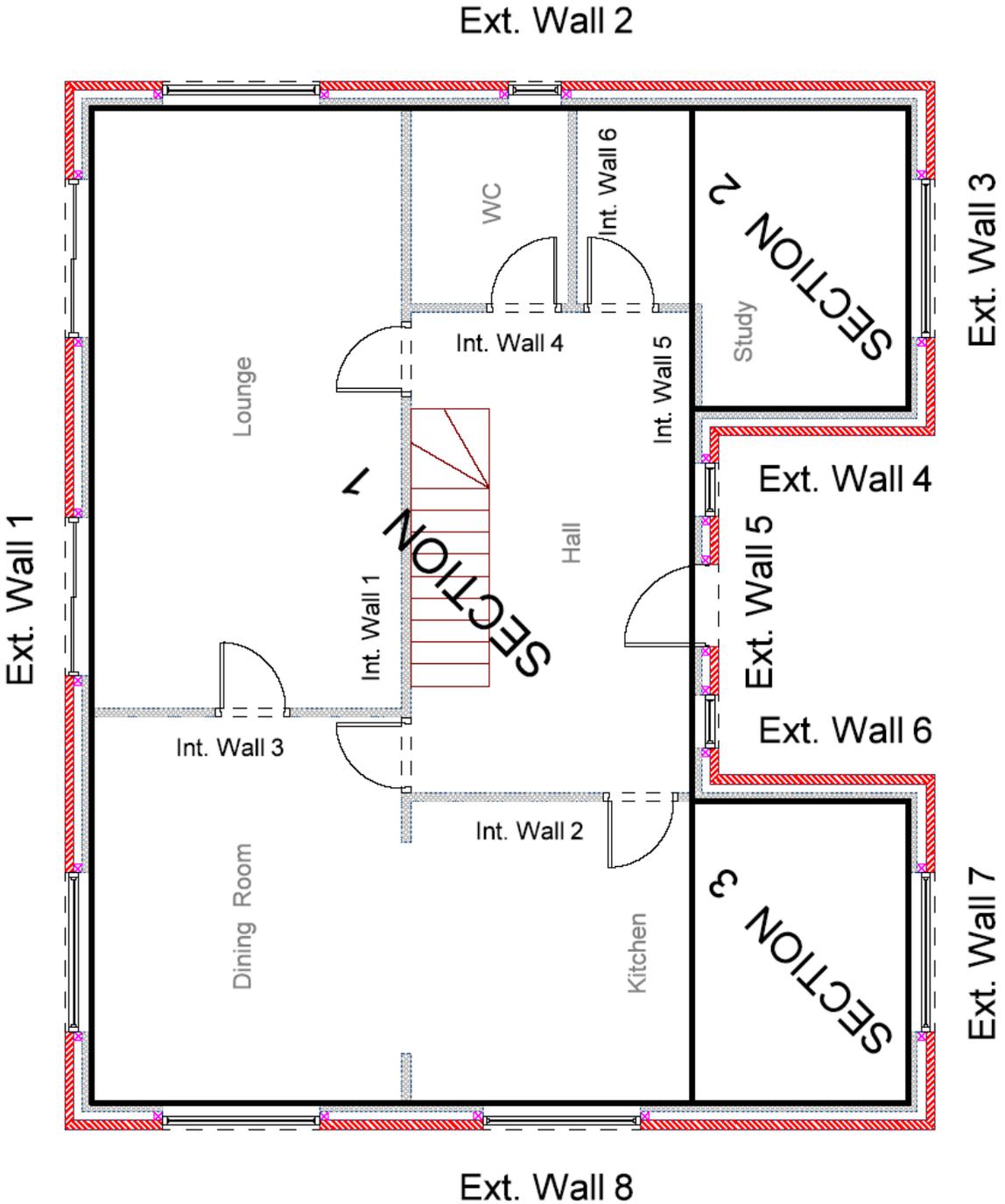


Diagram F: Roof Plan

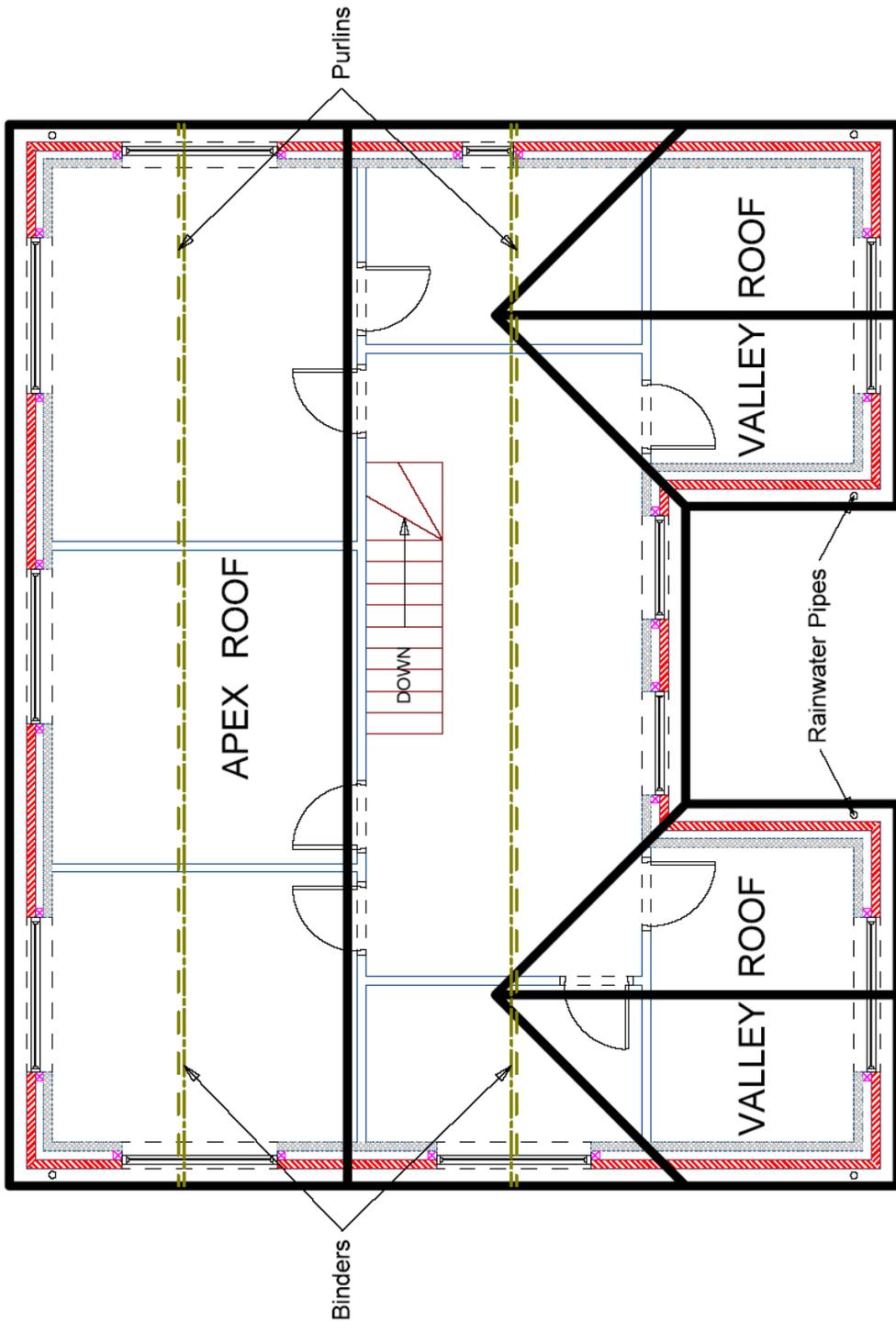
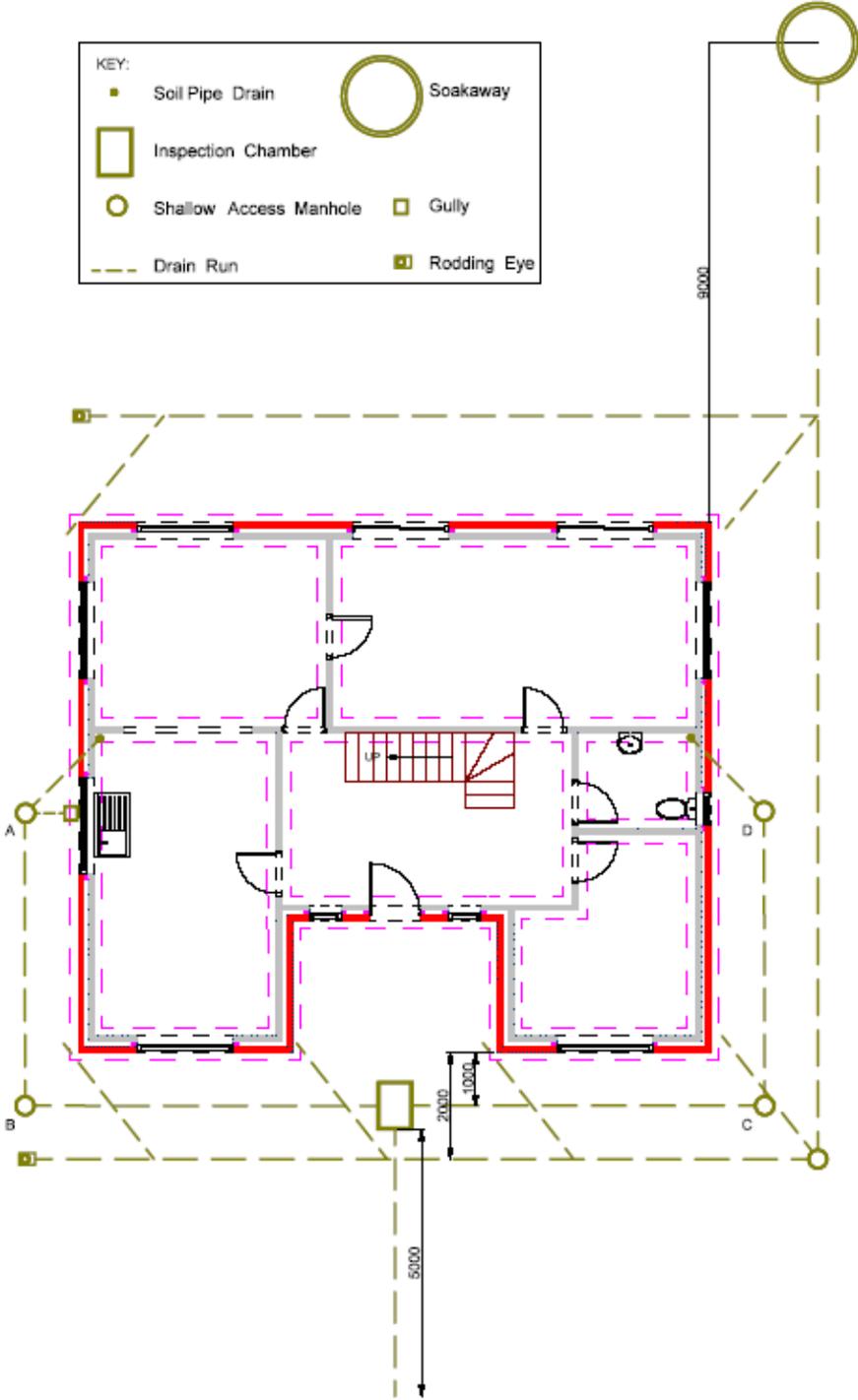


Diagram G: Drainage Layout



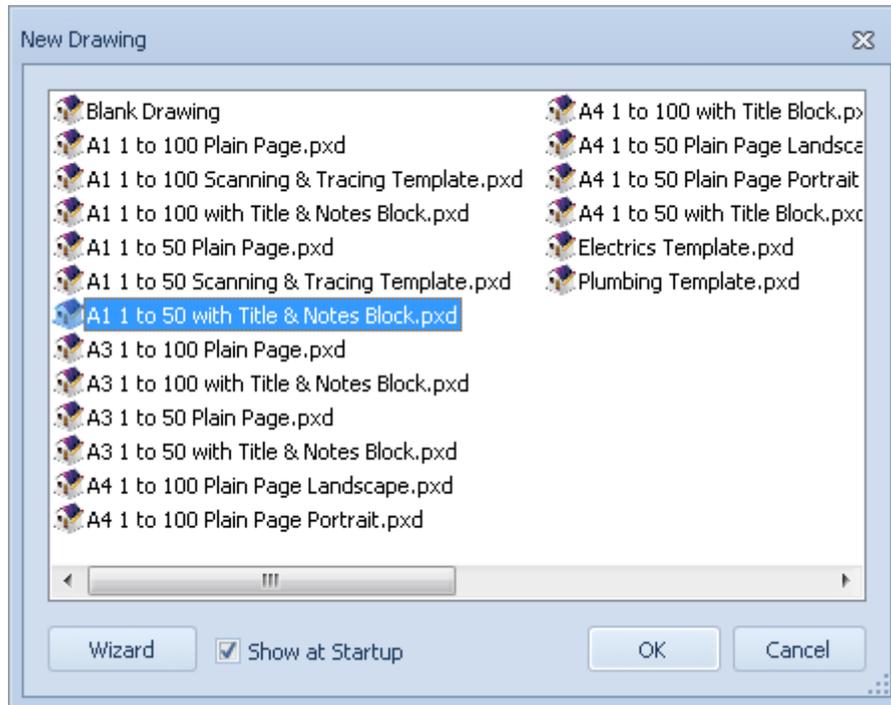
LAUNCHING PLANSXPRESS® & SETTING UP THE DRAWING PAGE



This section of the Tutorial talks you through launching **PlansXpress®** and selecting an appropriate drawing template. By the end of this section you'll be ready to commence drawing.

1. To launch the software either double click on the **PlansXpress®** icon on your desktop or go to **Start, All Programs, HBXL, PlansXpress 4** and click on the **PlansXpress®** icon.

Once you have launched **PlansXpress®**, the New Drawing dialog box pops up.



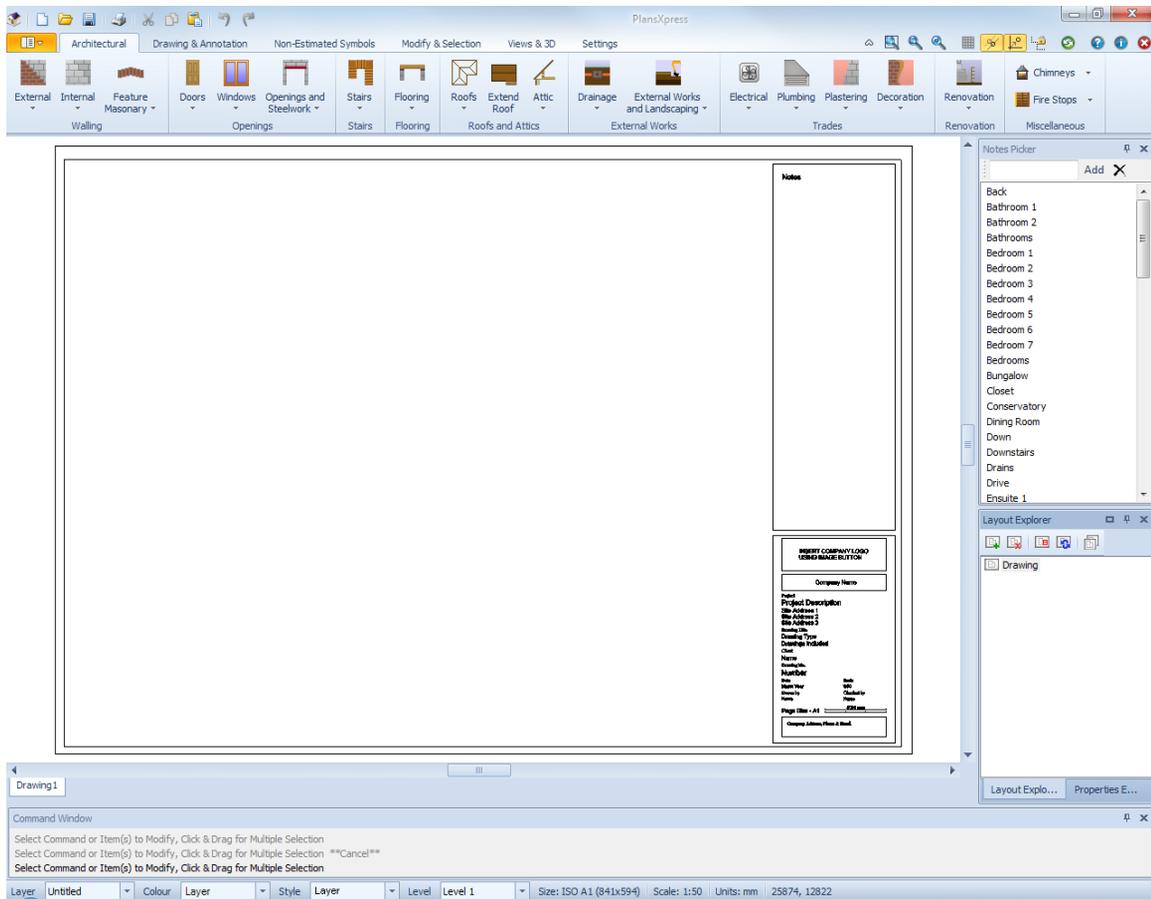
The New Drawing dialog box contains templates which define elements of your drawing such as the page size and scale, unit of measurement, pen colours and line weights, and text sizes and styles. You can either select one of the drawing templates, or define your own drawing settings using the Wizard button at the bottom left of the New Drawing dialog box.

For now, we're going to use the template called **A1 1 to 50 with Title & Notes Block**.

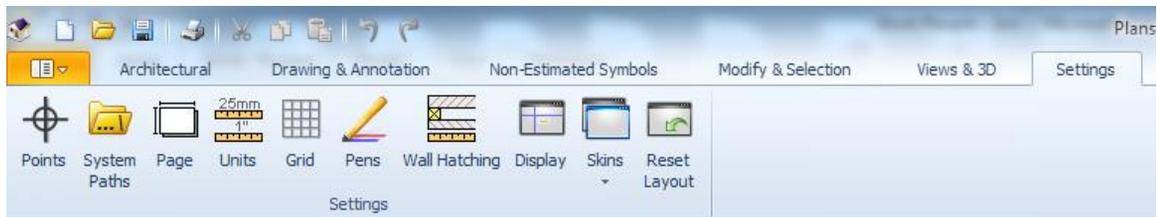
2.  Click on the drawing template called **A1 1 to 50 with Title & Notes Block**.
3.  Click OK to select the highlighted template.

PlansXpress® sets up the page according to the settings within the selected template. The drawing template you have chosen has set up your page to be A1 in size, with a 1:50 scale, a 1mm unit of measurement and no grid. The page also has a border and contains a Notes and Title Block section on the right hand side of the page, ready for you to fill out later on.

28 Tutorial Launching PlansXpress® & Setting up the Drawing Page



Once the drawing template is open, you can adjust any of the settings, if required, using the Settings Menu. If you go to Settings, and then Page, you can alter the page size, orientation and scale. From within Units, you can amend the unit of measurement, the display precision of dimension lines and cursor increment when drawing. From within Grid, you can define the size of the grid, and switch it on or off. From within Display, you can alter the background colour of the page. It's worth taking a few moments to look at the different Settings options, as they will be useful in the future.



For now, as the page is set up appropriately, you're ready to start drawing.

SETTING OUT THE CONSTRUCTION LINES



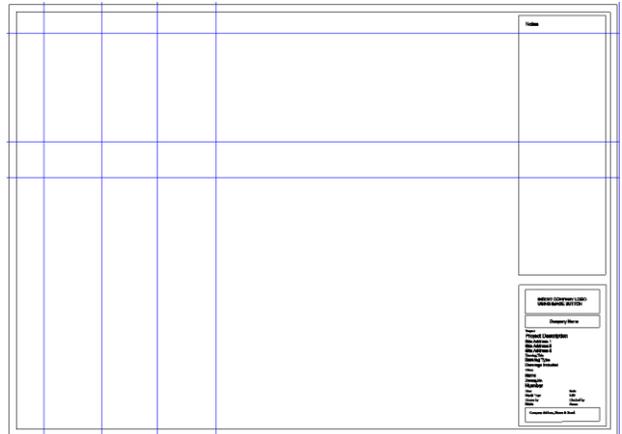
This section of the Tutorial guides you through adding construction lines to your page in order to produce a ground floor plan. Construction lines allow you to set out the boundaries of the building and help speed up the process of drawing the external walls. The construction lines should be placed to the exterior of the walls so that they reflect the external measurements of the walls.

During this exercise you will learn how to:

- draw horizontal and vertical construction lines;
- position a construction line by using another construction line as a point of reference to measure from;
- use the arrow keys on your keyboard to tell **PlansXpress**[®] where to place a construction line.

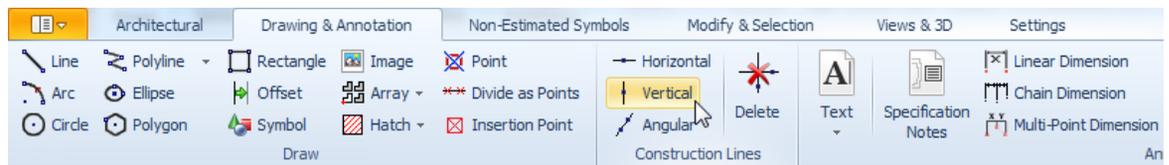
You will need to refer to Diagrams A and B during this exercise on pages 20 and 21.

At the end of this exercise, your page will look like this:



First, we're going to define the top left hand corner of the ground floor plan. To do this we need to place the vertical construction line, Line A, and the horizontal construction line, Line 1, which intersect at the top left of the house, towards the top left of the page. See Diagrams A and B on pages 20 and 21 for reference. The placement of these construction lines isn't critical at this time as the rest of the construction lines will be placed relative to these lines.

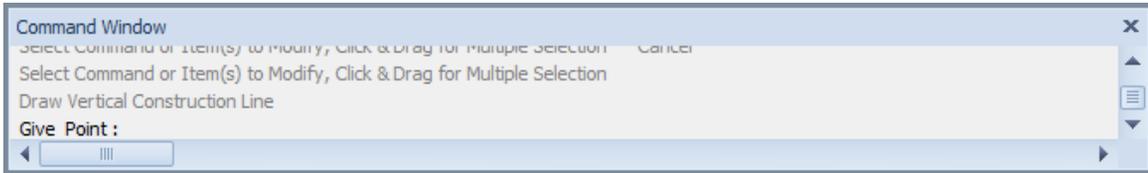
1.  **Vertical Line** Press the Vertical Construction Line button.



The Command Window prompts: Give Point.

The Command Window is the window which is located, as default, directly below the drawing area. When you press a button

on a toolbar, instructions appear prompting you what to do next.



2. You may wish to zoom in so the page fills the screen by using the scroll wheel on your mouse and the onscreen scroll bars.
3. Move your cursor to the position on screen where you want to place the vertical construction line, Line A, towards the left hand side of the page.
4.  Once you're happy with the position of the line, click the left mouse button.

If you move your cursor away you will see that the vertical construction line has been permanently placed.



Now let's place the horizontal construction line.

5.  Press the Horizontal Construction Line button.

The Command Window prompts: Give Point.

6. Move your cursor towards the top of the page to the position where you want to place the horizontal construction line, Line 1.
7.  Once you're happy with the position, click the left mouse button.

Again, the horizontal construction line is placed in the position selected with the cursor.



Now we will place the remaining lines, relative to the position of the original construction lines.

8.  Press the Vertical Construction Line button again.

The Command Window prompts: Give Point.

The next construction line we want to draw is Line B. As you can see from Diagram B on page 21, Line B is 4030mm (or 4.03m) to the right of the original vertical construction line, Line A. We are going to use Line A as our point of reference to measure from to draw Line B.

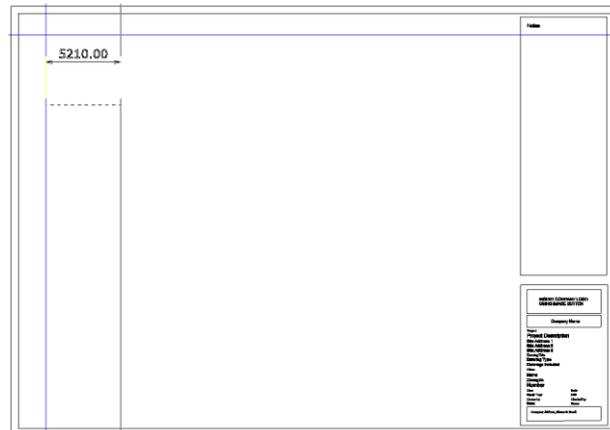
9.  Press the Nearest Snap button (near the top right corner of PlansXpress®). This allows you to snap to existing construction lines to use as a point of reference.
10. Hold your mouse over Line A until  appears along with the message 'Near'.
11.  Once the 'Near' message has appeared, press and release the R key on your keyboard.

This process of holding your mouse over the existing construction line until the 'Near' message appears and pressing the R key tells **PlansXpress®** that we want to use the construction line as a point of reference to place the new construction line.

You will notice that a dimension appears, indicating the distance between the construction line we are using as a point of reference, and the position of the new construction line.

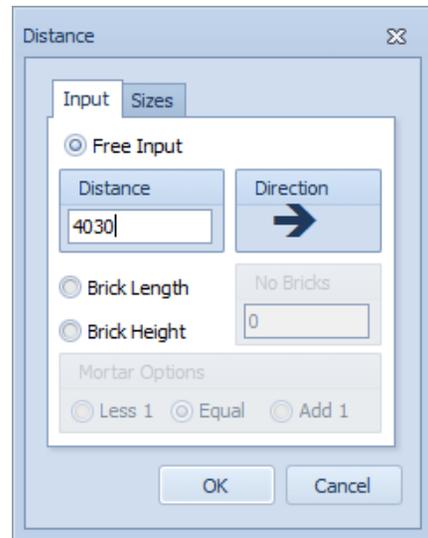
As you move your mouse, you will see that the dimension changes. We want to place Line B 4030mm to the right of Line A (our reference point). We can do this either by using the onscreen dimension to guide us and place it by eye, or to place the line more accurately, we can type the desired distance into **PlansXpress®**. We will do the latter.

12.  Press the right arrow key on your keyboard.

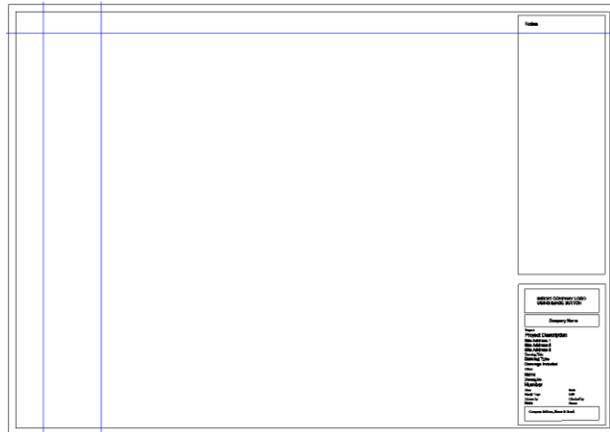


A dialog box pops up asking you to enter a distance. The arrow in the dialog box indicates which direction **PlansXpress**® is measuring in.

13. Type 4030 into the Distance box (you don't need to type mm as the drawing is set up in mm).
14. Click OK.



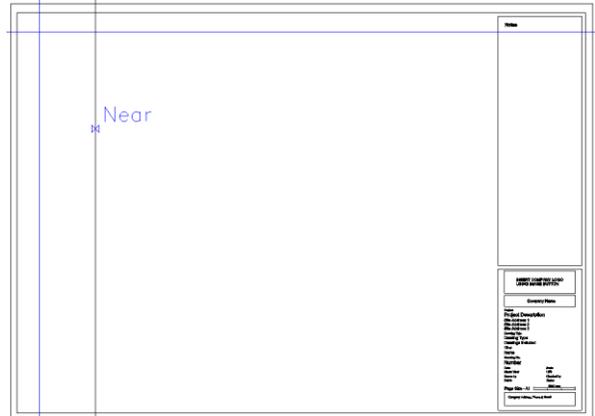
We have told **PlansXpress**® to draw a vertical construction line 4030mm to the right of Line A. You will see Line B has appeared 4030mm to the right of Line A.



Now we're going to repeat the process of drawing a construction line using an existing line as a point of reference. This time we'll use the construction we've just drawn, Line B, as a point of reference to draw Line C. Line C is 3855mm to the right of Line B.

15.  **Vertical** **PlansXpress**® should still be ready to draw a Vertical Construction Line. You can tell by looking at the onscreen Command Window above the drawing area which should read: Give Point. If not, press the Vertical Construction Line button.
16. Snap mode is switched off, as entering a dimension activates X-Y Coordinate mode, so press the F7 key  or Snap button  to turn it on. The Snap button can be found at the very bottom right corner of the plan when placing the construction lines.

17. Hold your mouse over Line B until  appears along with the message 'Near'.



18.  Once the 'Near' message has appeared, press and release the R key on your keyboard.

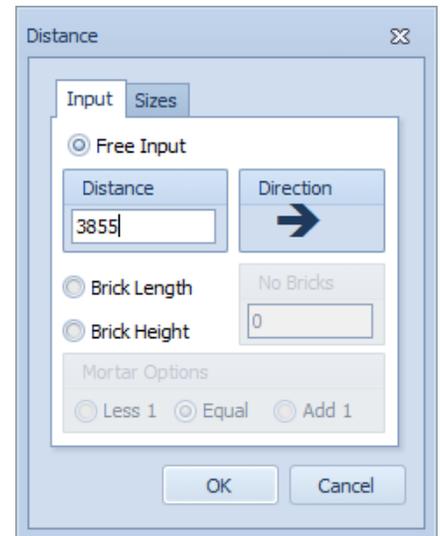
19. Move your mouse to the right.

20.  Press the right arrow key on your keyboard.

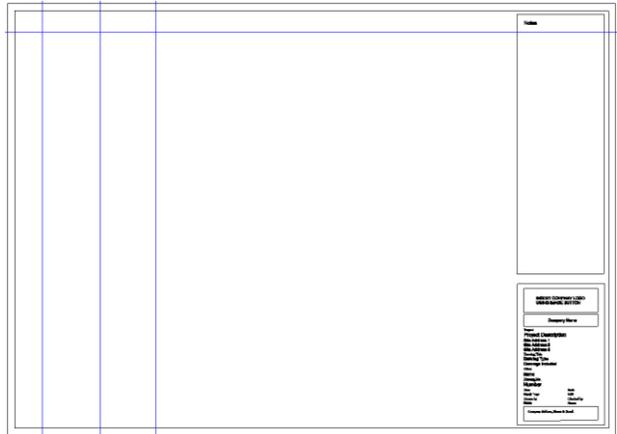
A dialog box pops up asking you to enter a distance. The arrow on the dialog box indicates which direction **PlansXpress**[®] is measuring in.

21. Type 3855 into the Distance dialog box.

22. Click OK.



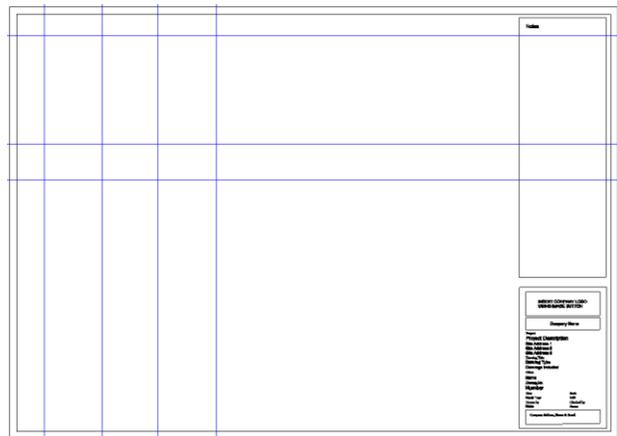
You will see Line C has appeared 3855mm to the right of Line B.



23. Repeat this process to place Line D, using Line C as the point of reference to measure from. Line D is 4030mm to the right of Line C. Remember you will need to turn Snap mode on again either by clicking the Snap button  or pressing F7  on your keyboard.
24. Next place the horizontal construction Lines 2 and 3 in the same way, clicking the Horizontal Construction Line button  , switching on Snap mode, and using the down arrow key  on your keyboard to enter the distance between the construction line you're using as the point of reference and the new construction line. Refer to the table below for guidance on placing each construction line.

Line	How to place it
Line 2	7475mm below Line 1
Line 3	2465mm below Line 2

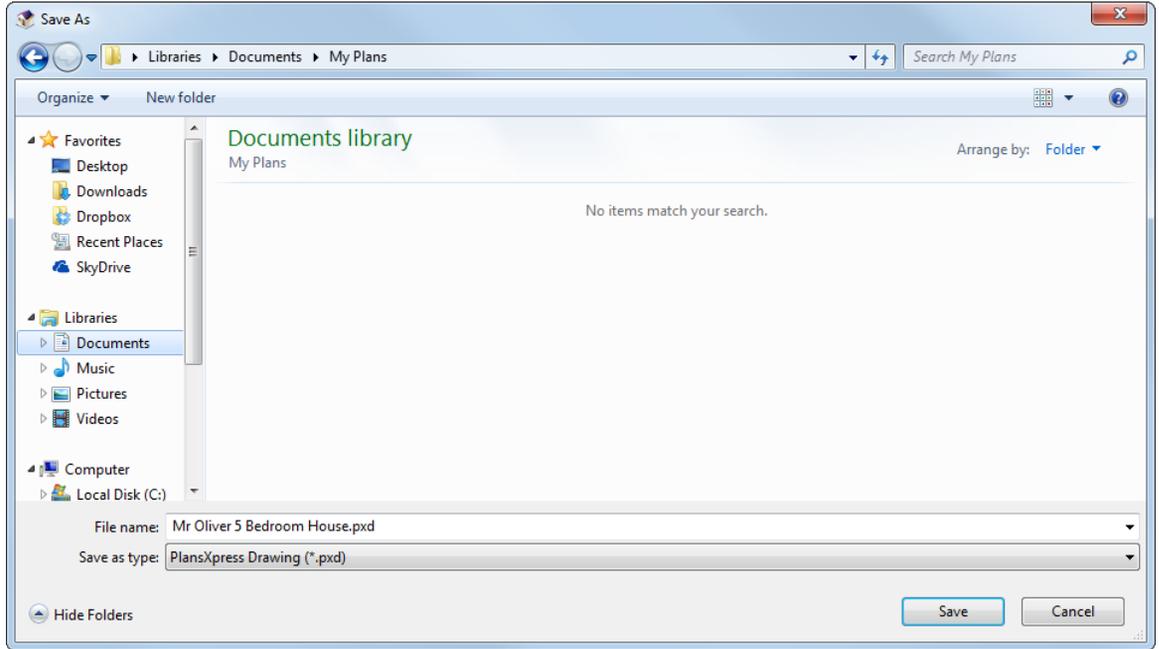
Once complete your page should look like this:



Let's save the work we've done so far.

25. Click Save on the top menu. 

The Save As dialog box pops up.



26. Locate and click on the Folder you wish to save the File in.

27. Type **Mr Oliver 5 Bedroom House** into the File name input box.

28. Click Save.

All your work is saved. We recommend that you save periodically.

DRAWING THE EXTERNAL WALLS



10-15
Minutes

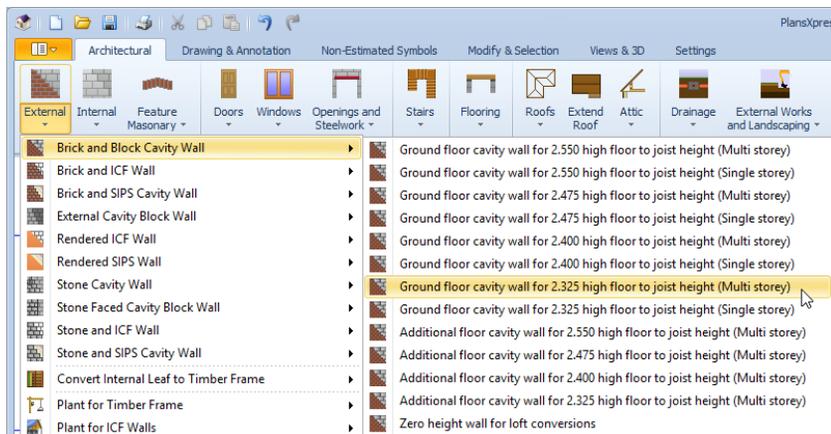
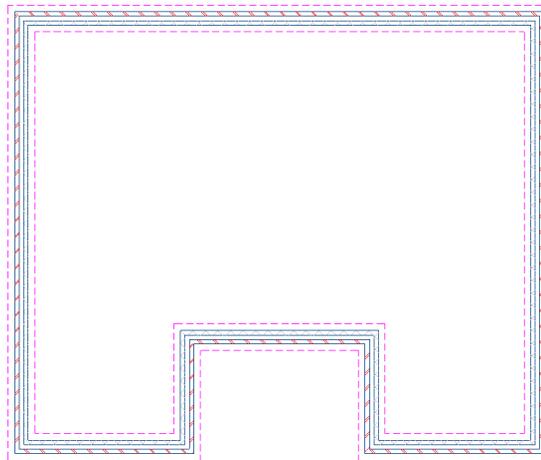
This section of the Tutorial guides you through drawing the external brick and block cavity walls for the ground floor plan, using the construction lines to guide you.

During this exercise you will learn how to:

- draw brick and block cavity walls;
- use Interception ('Int') points on construction lines to position the walls;
- join walls which haven't automatically joined;
- flip over the internal and external leaf of the walls.

You will need to refer to Diagram B during this exercise on page 21.

At the end of this exercise your page will look like this:





1. Press the External Walls dropdown button on the Architectural ribbon.
2. Click on the external wall type called Brick and Block Cavity Wall.
3. Click on the dimensional template called Ground floor cavity wall for 2.325 high floor to joist height (Multi storey).

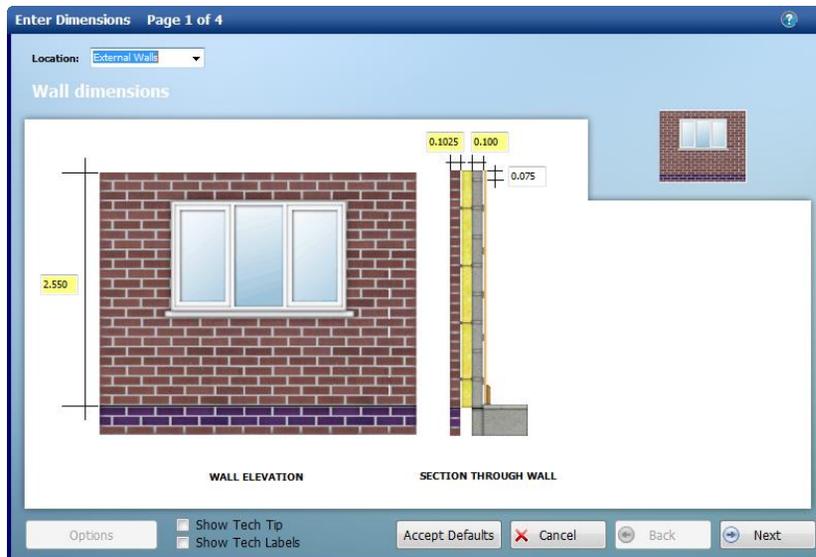


IMPORTANT! When using **PlansXpress**® in combination with EstimatorXpress®, you need to draw, and thus estimate, each floor individually.

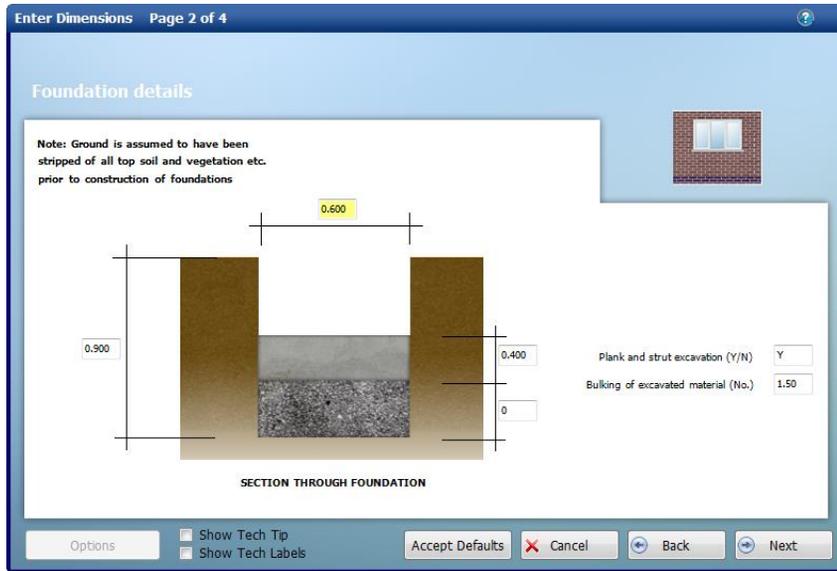
After selecting the dimensional template, the Dimensions Wizard pops up. Some of the information you enter here is used to draw your plans and elevations (such as Height of wall and Thickness of each leaf). These dimensions are highlighted in yellow. Other information is required purely for estimating. For now, we're going to focus on entering the information which impacts on the appearance of the drawings by concentrating on the input boxes highlighted in yellow. For guidance on using the Dimensions Wizards for estimating, please refer to your EstimatorXpress® Getting Started Guide.



IMPORTANT! The unit used by the Dimensions Wizards (and EstimatorXpress®) is metres, irrespective of the unit specified for drawing in **PlansXpress**®.

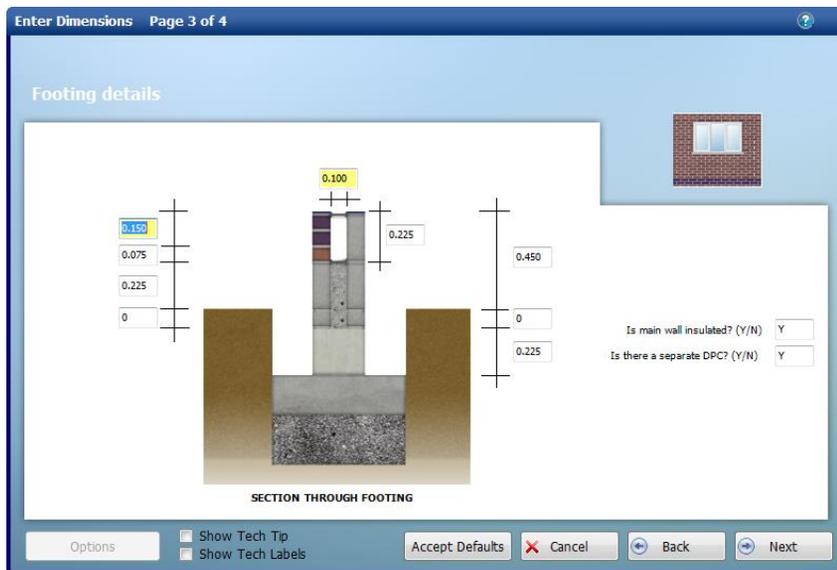


4. Enter the height of wall of 2.55m. Use the Enter key  to move to the next input box.
5. Enter the external leaf thickness of 0.1025 (102.5mm wide brick) and the internal leaf thickness of 0.1 (100mm wide block), moving between the input boxes using the Enter key. .
6. Click Next.



7. Review the foundation details.

8. Click Next.



9. Check the Cavity Width (below ground) is set to 0.100 and review the other footing details.

10. Click Next.

- Review the plastering and decoration details.

NOTE: You can click Back at any point to review the details on previous pages.

- Once you're happy with the information you've entered, click Finish.

Enter Dimensions Page 4 of 4

Plastering and decoration

INTERNAL PLASTERED WALL ELEVATION

Is main wall blockwork plastered? (Y/N)

Is main wall plastering/blockwork decorated? (Y/N)

Number of skirting boards to main wall

Is main wall skirting primed? (Y/N)

Is main wall skirting decorated? (Y/N)

Options Show Tech Tip Show Tech Labels

Accept Defaults

NOTE: If you are happy with the default settings you can click the Accept Defaults button at the bottom of the any Dimensions Wizard page to close the wizard and begin drawing.

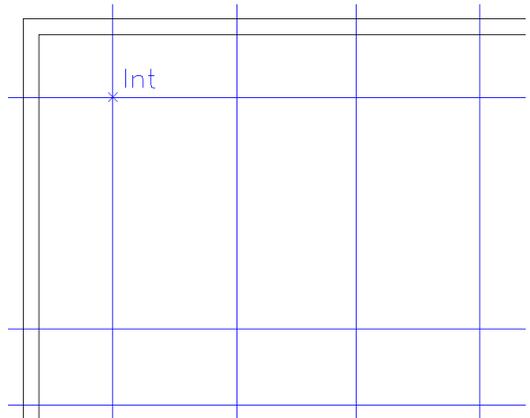
Now we're ready to start drawing our external walls. We will start by drawing the back wall of the house, External Wall 1.

On screen, you'll notice the grey Command Window prompts:
Give Start Point.

- Hold your mouse over where Construction Line A and Line 1 intersect and a  will appear along with the message 'Int'.

'Int' stands for Intersection. This tells us that the mouse is hovering over the Intersection of Lines A and 1.

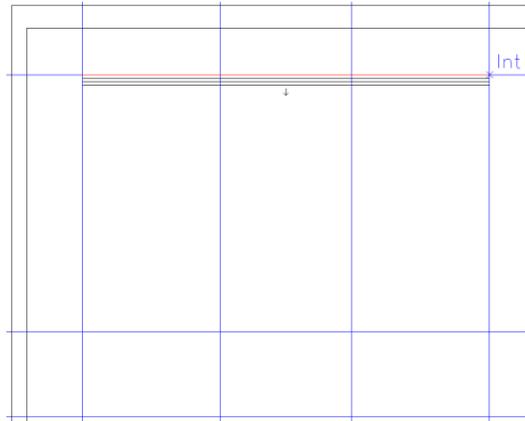
-  Click the left mouse button to register the Start Point of External Wall 1 at this intersection point.



The onscreen Command Window now prompts: Give Next Point. We now need to tell **PlansXpress**® where External Wall 1 ends, on the intersection of Line 1 and Line D.

- 15. Hold your mouse over the Line 1 and D intersection until  and 'Int' appear.

- 16.  Click the left mouse button to register this corner of the walls.



The Command Window now prompts: Give Next Point. We now need to indicate the next corner of the house, where Line 3 and Line D intersect.

- 17. Hold your mouse over the Line 3 and D intersection until  and 'Int' appear.

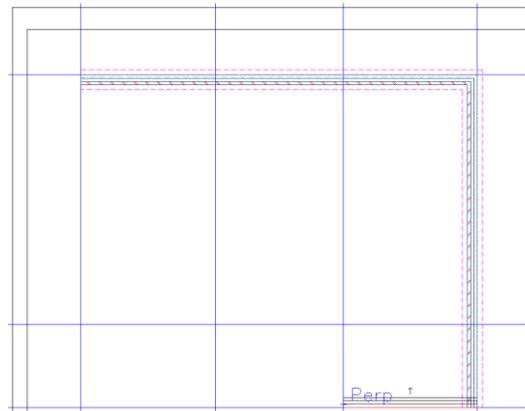
- 18.  Click the left mouse button to register this corner of the walls.



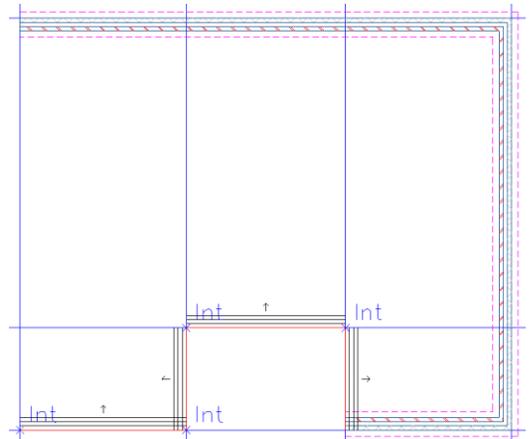
The Command Window prompts: Give Next Point.

- 19. Hold your mouse over the Line 3 and C intersection until  and 'Int' appear.

- 20.  Click the left mouse button.



21. Continue in this way, drawing the external walls by clicking on the construction line intersections, as per Diagram B on page 21, until you have clicked on the point where Lines 3 and A intersect.



Now we need to connect the final point on the wall with the first point placed.

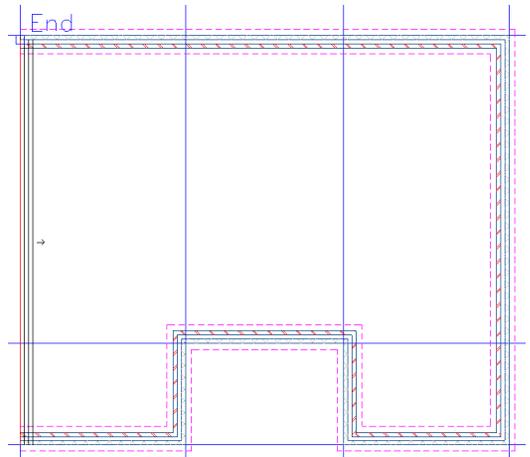
22. Hold your mouse over the Line 1 and A intersection until and 'End' appear.

This ensures the wall snaps to the end of the original wall.

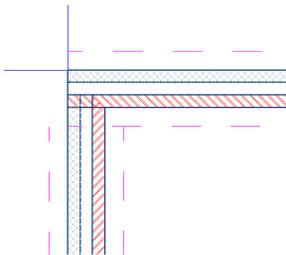
23.  Click the left mouse button.

PlansXpress® is ready to draw the next wall, but as we have finished drawing the external walls, we need to tell PlansXpress® that we've finished drawing this stretch of wall.

24.  Click the right mouse button.



PlansXpress® is no longer in external wall drawing mode.



Zoom closely into the corner you have joined by scrolling the scroll wheel upwards. Use the horizontal and vertical scrollbars on screen to zoom in on the desired area. You may notice that the walls have not joined properly.

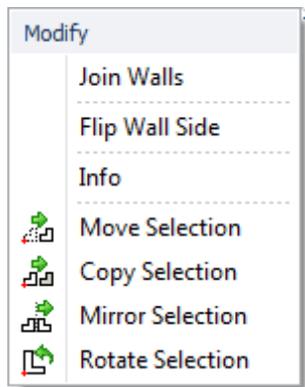
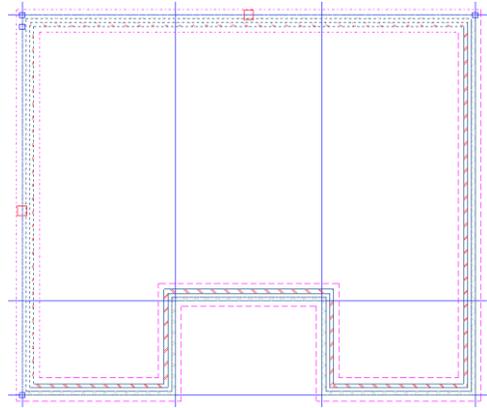
25.  To get them to join, click on the left-hand wall of the house.

26.  Hold down the Ctrl key on your keyboard and click on the back wall of the house.

Both walls should now be highlighted.

27. Release the Ctrl key.

28.  Click the middle mouse button (scroll button).

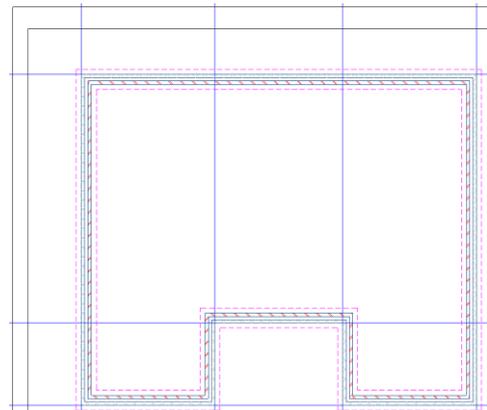


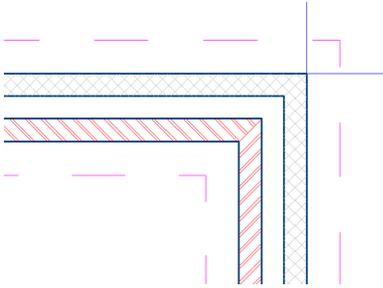
A pop up menu appears.

29. Click Join Walls.

The walls are now joined.

30.  Click anywhere on a blank area of screen to deselect the walls.





Zoom closely into the external walls once again, by scrolling the scroll wheel upwards. Use the horizontal and vertical scrollbars on screen to zoom in on the desired area. If you inspect the walls closely, you will notice that each leaf has a different hatching pattern. The blockwork is represented by a grey crisscross pattern and the brickwork is represented by a red diagonal stripe pattern. If your external walls look like the adjacent picture, the walls have been drawn inside out and need turning the right way round, so continue from the next step. If your walls are the right way round, continue from step 37.

To flip the walls the right way round, we first need to select all the walls.

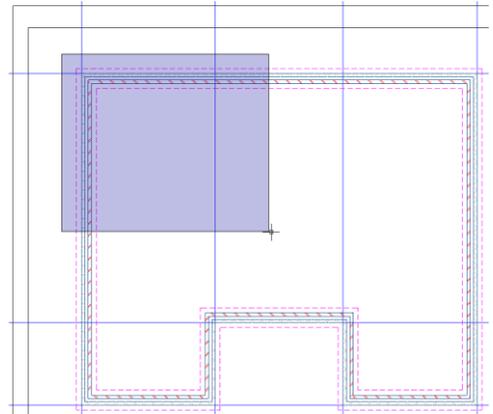
31. Zoom out so you can see the entire footprint of the house by scrolling the scroll wheel downwards.

32. Move your mouse above and to the left of the plans.

33.  Click and hold down the left mouse button.

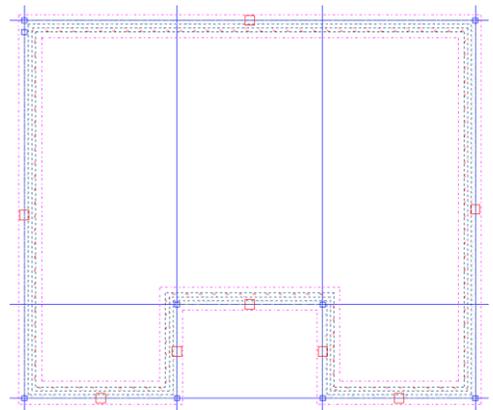
34. Drag your mouse down and to the right. You will notice a blue rectangle appears.

35. Move your mouse until all the walls are contained within the blue rectangle and then release the left mouse button.

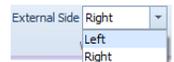


All the walls are now highlighted and these shapes  appear, indicating that the walls are selected.

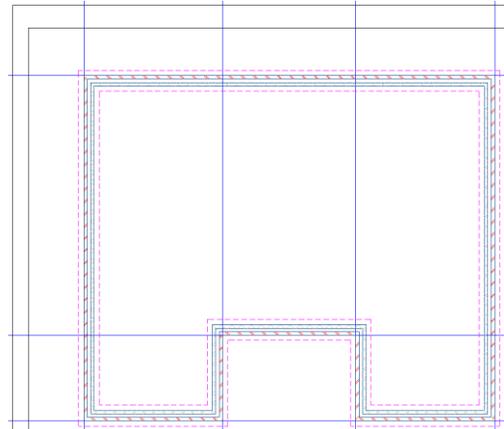
We're now ready to flip the walls.



36. In the External Side drop down box towards the top of the screen, click the arrow button to open the menu and click on 'Left'.

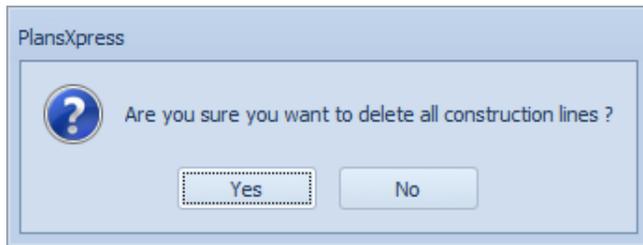
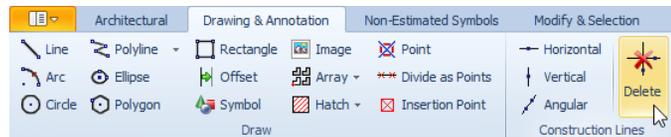


The walls are now flipped the right way round, and the blockwork, represented by the grey crisscross pattern, is on the internal leaf of the wall and the brickwork, represented by the red diagonal pattern, is on the external leaf.



Now you've finished drawing the external walls, you can delete the construction lines as they're no longer required.

37. Press the Delete Construction Lines button.

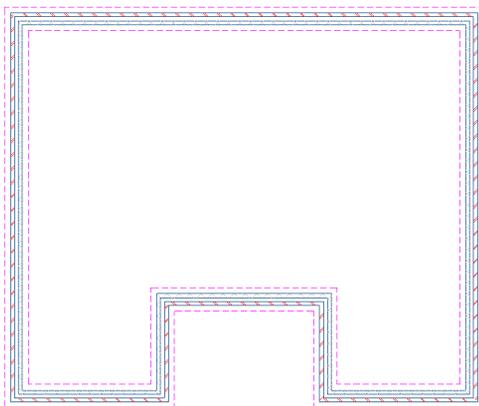


A dialog box pops up asking if you're sure you wish the delete the construction lines.

38. Click Yes.

All the construction lines are deleted from the page.

Your page should now look like this:



During this section of the Tutorial, you've learnt how to place walls using construction lines.

An alternative way of drawing walls is to use the Arrow Key method. Once you've placed the first corner of the wall, you can use the Arrow Keys on your keyboard to place the subsequent corners. For example, with this house, you might click to place the top left corner of the external walls, then press the Right key to place the top right corner. The Distance dialog box pops up, allowing you to enter the distance to this point. After placing the second corner, click the Down key to place the bottom right corner of the house, entering the dimension in the Distance dialog box. Continue in this way until the walls are complete.

39.  Press the Save button.

DRAWING THE INTERNAL WALLS



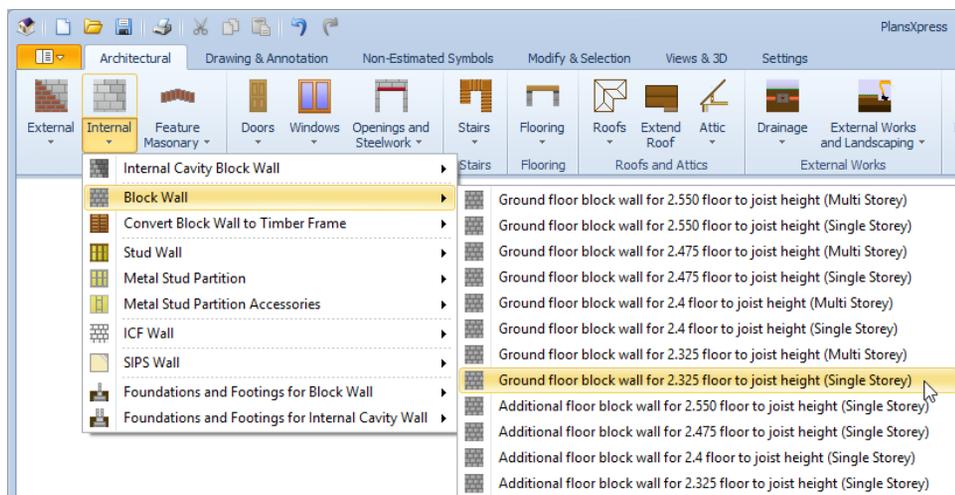
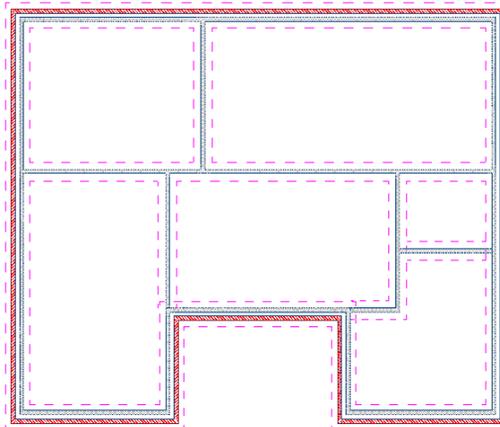
This section of the Tutorial guides you through drawing the internal block walls in the ground floor plan. We will place the internal walls by measuring from points of reference on the external walls. This section only deals with drawing the internal walls; doors and openings are dealt with later in the tutorial.

During this exercise you will learn how to:

- draw block walls using End ('End') and Perpendicular ('Perp') points on existing walls to position the walls;
- use the arrow keys on your keyboard to tell **PlansXpress**® where you want to place a new wall;
- alter the Justification of a wall (tell **PlansXpress**® whether the points you are placing are on the left or right of the wall).

You will need to refer to Diagram B on page 21 during this exercise.

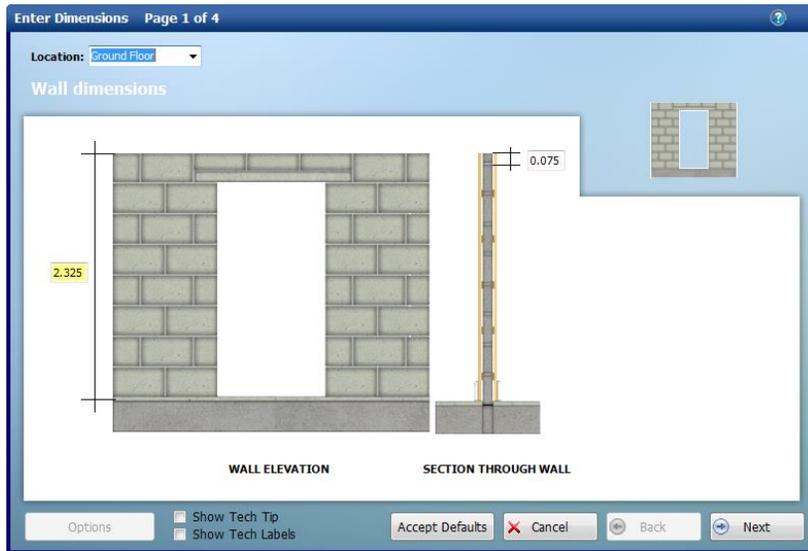
At the end of this exercise your page will look like this:





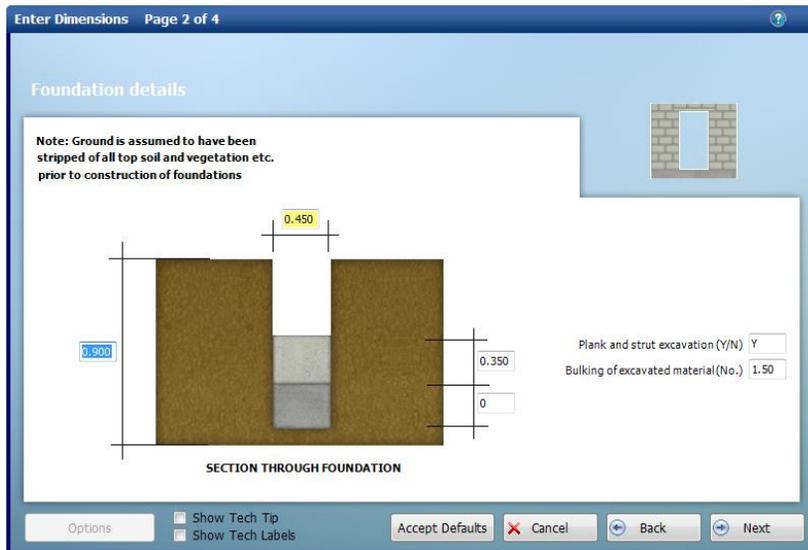
1. Press the Internal Walls dropdown button under Architectural.
2. Click on the internal wall type called Block Wall.
3. Click on the dimensional template called Ground floor block wall for 2.325 floor to joist height (Single Storey).

The Block Wall Dimensions Wizard pops up.



4. Enter the height of wall of 2.325.

5. Click Next.

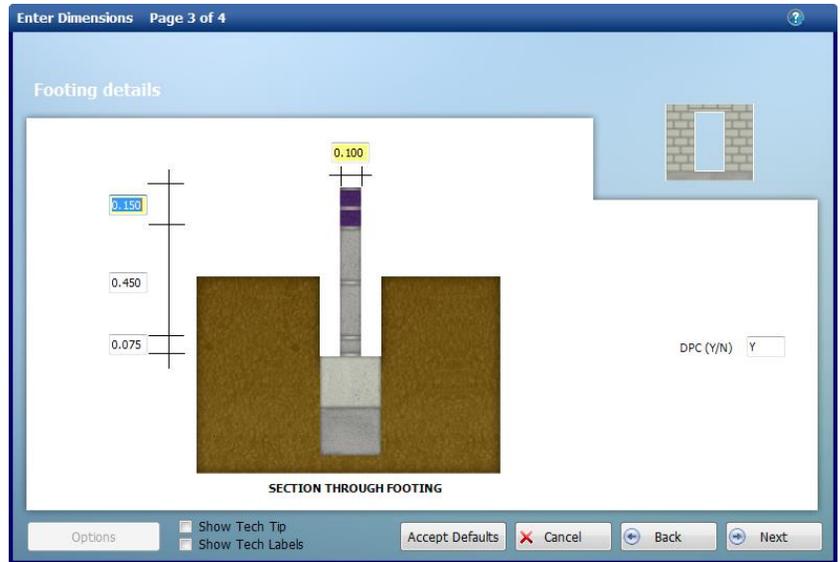


6. Review the foundation details.

7. Click Next.

- Confirm the Overall width of wall (below ground) is set to 0.1 and review the other footing details.

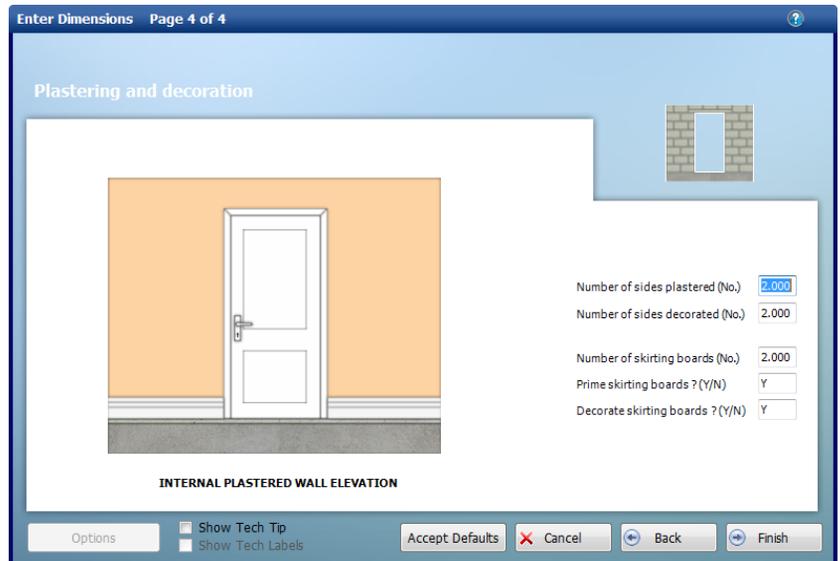
- Click Next.



- Review the plastering and decoration details.

NOTE: Remember you can click Back at any point to review the details on previous pages.

- Once you're happy with the information you've entered, click Finish.



Now we're ready to start drawing our internal walls.

The Command Window now prompts: Give Start Point. We will start by drawing Internal Wall 1 which spans the house from External Wall 8 to External Wall 2. See Diagram B on page 21 for reference. Internal Wall 1 is 3548mm (3.548 metres) from the back wall of the house so we will use the back wall of the house, External Wall 1, as the point of reference from which to measure Internal Wall 1.

12. Hold your mouse over the inside of the top left corner of the house (where External Walls 1 and 8 meet) and a  will appear along with the message 'End'.

13.  Press and release the R key on your keyboard.

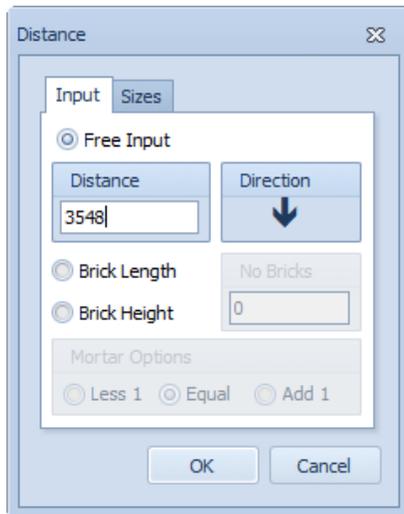
The action of holding the mouse over the 'End' point and pressing the R key tells **PlansXpress®** that you want to measure from the 'End' point.

14. Move your mouse down the page.

You will notice that dimensions appear, indicating the distance between the point of reference we are measuring from and the position of the cursor.

As you move your mouse, you will see that the dimensions change. We want to place Internal Wall 1 3548mm below the External Wall 1 (our point of reference). You can do this by using the onscreen dimensions to guide you, but to place the line more accurately, we will type the desired distance into **PlansXpress®**.

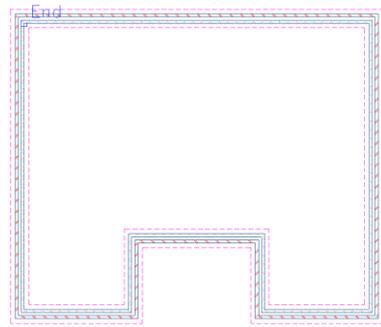
15.  Press the down arrow key on your keyboard.



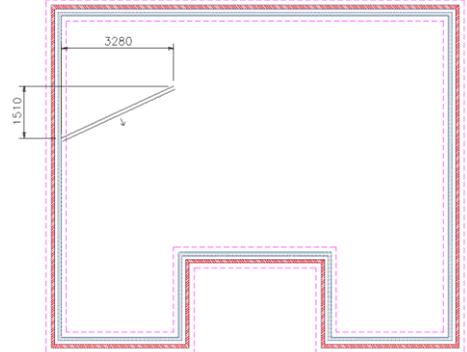
The Distance dialog box pops up asking you to enter a distance. The arrow indicates which direction **PlansXpress®** is measuring in.

You'll notice that there are two different methods of entering a dimension in the Distance dialog box. You can either type in a dimension using the Free Input option, or use the Brick Length and Height options to calculate the dimension required by entering the number of bricks. This can be helpful when drawing brick walls using the Arrow Key method. The Brick Sizes are set up in the Sizes tab.

16. For now, simply type 3548 into the Distance input box (you don't need to type mm as the drawing is set up in mm).
17. Click OK.



We have told **PlansXpress**® to start drawing an Internal Wall 1 3548mm below the point of reference (where External Walls 1 and 8 meet). You will see that the start point of Internal Wall 1 has appeared 3548mm below the point of reference.



You can see that Internal Wall 1 spans the entire house to the right-hand wall, External Wall 2. The Command Window now prompts: Give Next Point. We now need to give the end point of Internal Wall 1 on External Wall 2.

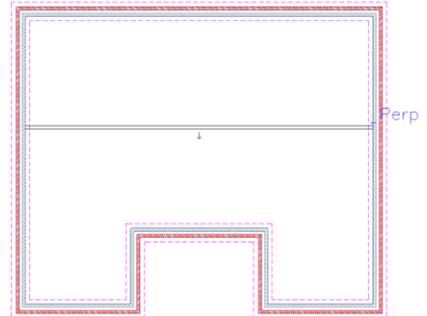
18.  or  Press F7 or the Snap button.

19. Move your mouse to the right until it is over External Wall 2 and a  appears along with the message 'Perp'.

'Perp' indicates that the wall you are drawing will be perpendicular to the wall it is joining. Thus, Internal Wall 1 will be at right angles to both External Wall 8 and External Wall 2, and parallel to the back wall of the house, External Wall 1.

20.  Click your left mouse button to register the end point of the wall.

21.  Click your right mouse button to finish this wall.



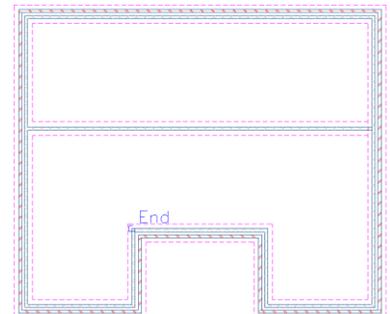
Now let's draw Internal Wall 2. This wall is easy to draw as it is an extension of External Wall 6.

22.  Click the right mouse button to tell **PlansXpress**® you want to repeat the latest action, i.e. draw an internal wall of the same specification as the one we have just drawn.

The Command Window prompts: Give Start Point.

23. Hold your mouse over the inside corner of where External Walls 6 and 5 meet. A  will appear along with the message 'End'.

24.  Click your left mouse button to register the start point.

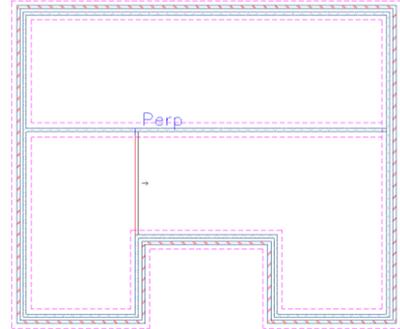


The Command Window prompts: Give Next Point.

- 25. Move your mouse up until it is over the wall we have just drawn, Internal Wall 1, and a T appears along with the message 'Perp'.

If the wall we are drawing is perpendicular to Internal Wall 1, we know it is straight.

- 26.  Click your left mouse button to register the end point of the wall.
- 27.  Click your right mouse button to finish drawing this stretch of wall.



Now we'll draw Internal Wall 3 which is 4386mm to the right of the external wall to the left of the house, External Wall 8. We will use External Wall 8 of the house as the point of reference from which to measure Internal Wall 3.

- 28.  Click your right mouse button to tell **PlansXpress®** you want to start drawing a wall of the same specification.

The Command Window prompts: Give Start Point.

- 29. Hold your mouse over the inside of the top left corner of the house (where External Walls 8 and 1 meet) and a □ will appear along with the message 'End'.

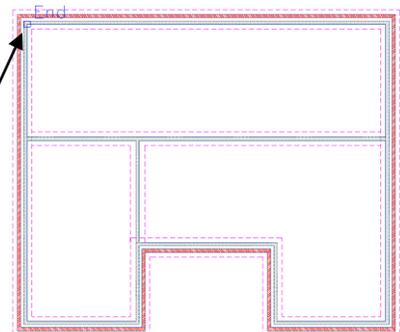
- 30.  Press and release the R key.

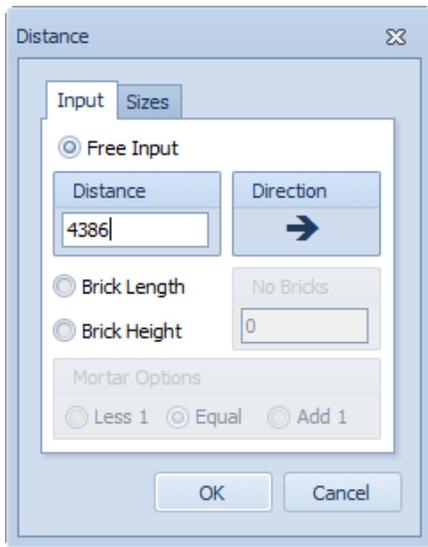
- 31. Move your mouse across to the right.

We have told **PlansXpress®** that we are measuring from the inside of where External Walls 1 and 8 meet. Dimensions appear indicating the distance between the point of reference, and the position of the cursor.

As before, we can type the desired distance to the start of Internal Wall 3 of 4386 into **PlansXpress®**.

- 32.  Press the right arrow key on your keyboard.





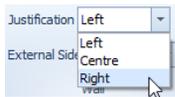
A dialog box pops up asking you to enter a distance. The arrow indicates which direction **PlansXpress**® is measuring in.

33. Type 4386 into the box.

34.  Click OK.

We have told **PlansXpress**® to start drawing Internal Wall 3 4386mm to the right of the point of reference. You will see that the start point of Internal Wall 3 had appeared 4386mm to the right of the point of reference.

If you look at the Properties toolbar at the top of the screen, you'll see that the Justification of the Wall is set to Left, which means the points you're placing are on the left-hand side of the wall from the direction you're drawing. We want to place the points on the right side of the wall from the direction we're drawing the wall (although it looks like the left side as you view it on screen!) so that the measurement you've entered is used as the internal room measurement.



35. In the Justification drop down box, click the arrow button to open the menu and click on Right'.

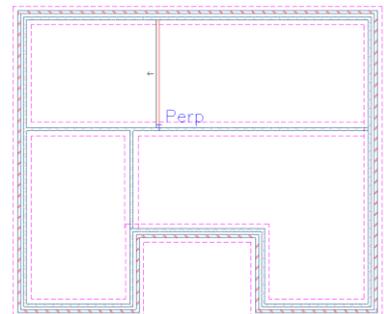
The Command Window now prompts: Give Next Point. Again we will snap Internal Wall 3 to the 'Perp' point on Internal Wall 1 to ensure it's straight.

36.  Press F7 to switch on Snap mode.

37. Move your mouse down until it is over Internal Wall 1, and a **T** appears along with the message 'Perp'.

38.  Click your left mouse button to register the end point of the wall.

39.  Click your right mouse button to finish this stretch of wall.



Next we'll draw Internal Wall 4. We're going to use External Wall 2 as the point of reference from which to measure the start point of Wall 4. We're going to learn a new technique for drawing the end point of the wall.

40.  Click your right mouse button to tell **PlansXpress®** you want to start drawing a wall of the same specification.

The Command Window prompts: Give Start Point.

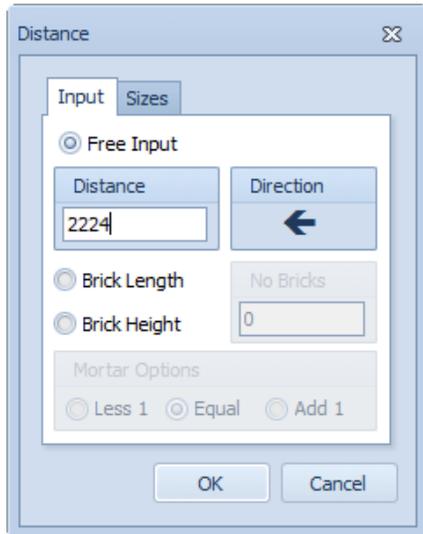
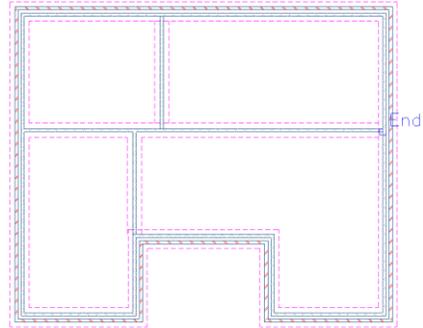
41. Hold your mouse over the underside of where External Wall 2 and Internal Wall 1 meet and a  will appear along with the message 'End'.

42.  Press and release the R key.

43. Move your mouse across to the left.

The dimensions appear indicating the distance between the point of reference and the position of the cursor. As before, we can type the desired distance to the start of Internal Wall 4 into **PlansXpress®**.

44.  Press the left arrow key on your keyboard.

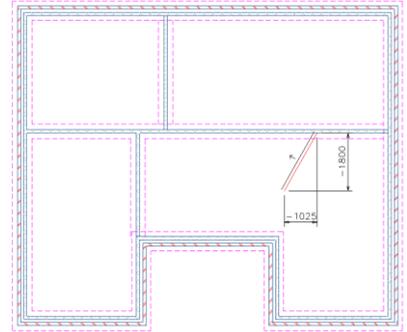


The Distance dialog box pops up asking you to enter a distance. The arrow indicates which direction **PlansXpress®** is measuring in.

45. Type 2224 into the box (you don't need to type mm as the drawing is set up in mm).

46.  Click OK.

We have told **PlansXpress**® to start drawing Internal Wall 4 2224mm to the left of the point of reference. You will see that the start point of Internal Wall 4 has appeared 2224mm to the left of the point of reference.



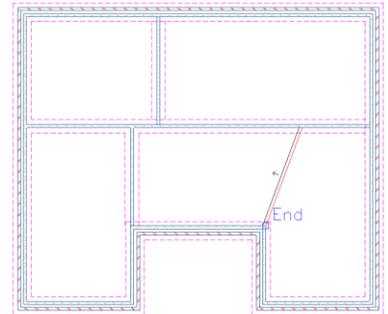
The Command Window now prompts: Give Next Point. Because the end of Internal Wall 4 will not intersect another wall until we draw the next wall, instead of finding a 'Perp' point as we have done before, we are going to make the end point of Internal Wall 4 level with the corner where External Walls 4 and 5 meet. This means the end point of Internal Wall 4 will have the same Y coordinate as the inside corner of External Walls 4 and 5.

47. In the Justification drop down box, click 'Left' so that the dimension you've entered is used as the measurement to the *inside* of the Internal Wall 4.

48.  Press F7.

49. Hold your mouse over the inside corner of the External Walls 4 and 5 intersection until a  appears along with the message 'End'.

50. Hold your mouse there until the Command Window gives you the message "(Intelli-Snap Found)".

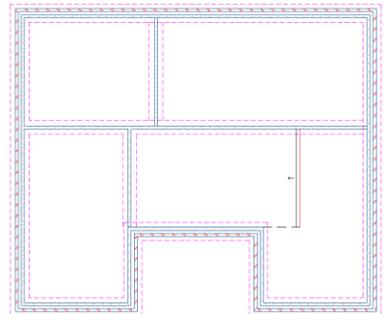


51. Move your mouse to the right. You will see a dotted line running parallel to the interior corner of External Walls 4 and 5.

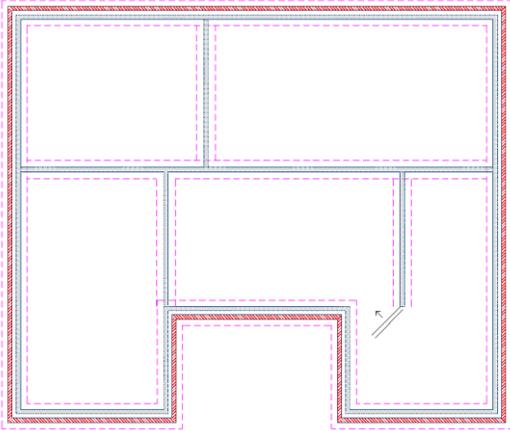
52.  Hold down the Shift key.

Holding down the Shift key ensures the wall you are drawing is straight. If **PlansXpress**® knows that the line we are drawing is straight, and already knows the Y coordinate of the end point, it can work out the X coordinate.

53.  Click your left mouse button to register the end point of the wall.

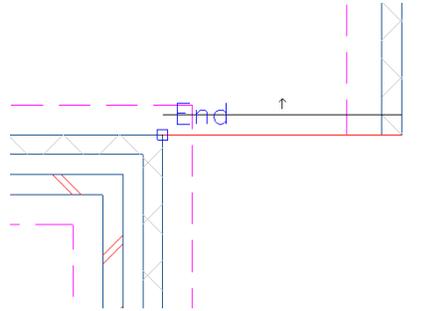


Your page should now look like this:



The Command Window prompts: Give Next Point. We can continue from the end point of Internal Wall 4 to draw Internal Wall 5. All we need to do is find the End point on External Wall 4.

54. Hold your mouse over the internal corner of where External Walls 4 and 5 meet until a  appears along with the message 'End'.



You may notice that the line indicating where Internal Wall 5 will be shows the wall will not be flush with the inside of External Wall 5. This is because the Justification of the Wall is set to Left which means that we are marking out the points on the left-hand side of the wall. If we set the Justification of the wall to Right, we can draw the right-hand side of the wall to be flush with External Wall 5. If the Justification is already set to Right in your **PlansXpress**®, continue from step 56.

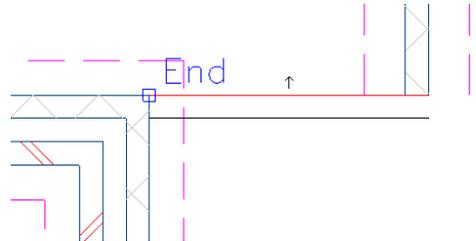
55. In the Justification drop down box, click the arrow button to open the menu and click on 'Right'.



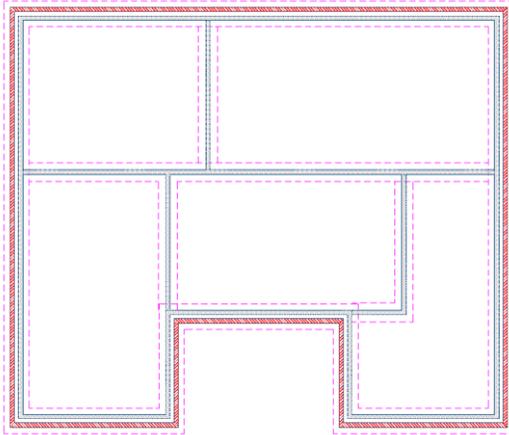
56. Find the 'End' point again on the corner of External Walls 4 and 5.

57.  Click your left mouse button to register the end point.

58.  Click your right mouse button to finish this wall.



Your page should now look like this:



Now we're going to draw Internal Wall 6. To do this we'll measure its start point from where External Wall 2 and Internal Wall 1 meet.

59.  Click your right mouse button to start drawing another internal wall of the same specification.

The Command Window prompts: Give Start Point.

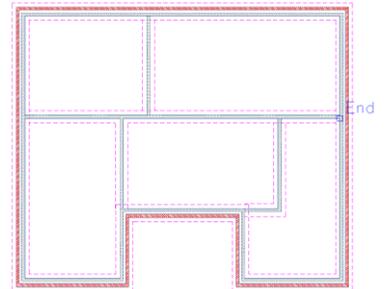
60. Hold your mouse over the underside of where External Wall 2 and Internal Wall 1 meet until a  appears along with the message 'End'.

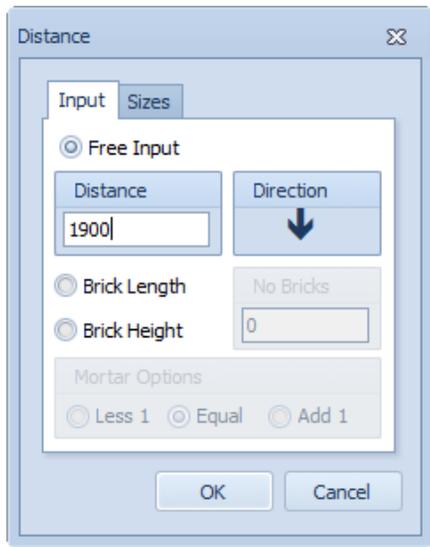
61.  Press and release the R key.

62. Move your mouse down.

We'll enter the distance to Internal Wall 6 of 1900mm.

63.  Press the down arrow key on your keyboard.





The Distance dialog box pops up.

64. Type 1900 into the input box.

65.  Click OK.

The start point of Internal Wall 6 is positioned 1900mm below Internal Wall 1.

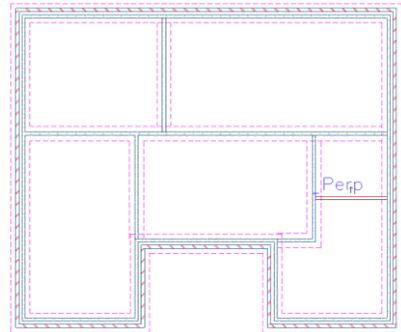
The Command Window prompts: Give Next Point.

66.  Press F7.

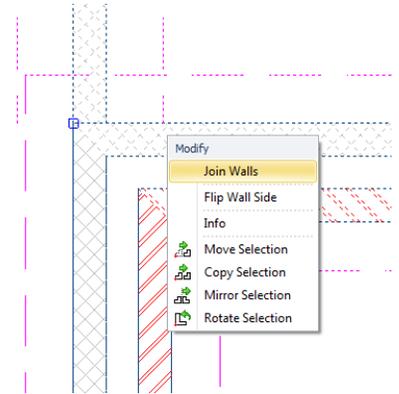
67. Move your mouse to the left until it's over Internal Wall 4 and a **T** appears along with the message 'Perp'.

68.  Click the left mouse button to register the end point of Internal Wall 6.

69.  Click your right mouse button to tell **PlansXpress®** that this wall is finished.



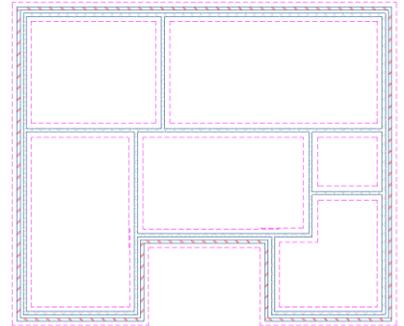
NOTE: If you find that any of the internal block walls have failed to tee into the external blockwork, you can force the walls to join by holding down the Ctrl key whilst clicking on the internal wall and the perpendicular external wall, clicking the middle mouse button, and selecting the Join Walls option.



Your plans should now look like this:



NOTE: You can switch off the foundation outline by pressing the Layers button (Views & 3D tab), locating the Foundations Layer, and un-ticking the adjacent Light bulb tick box. This will hide the foundations from view. Click OK to close the Layers dialog box and return to the drawing area.



Now we'll turn our attention to adding windows to the plan.

70.  Press the Save button.

PLACING THE WINDOWS



15-20
Minutes

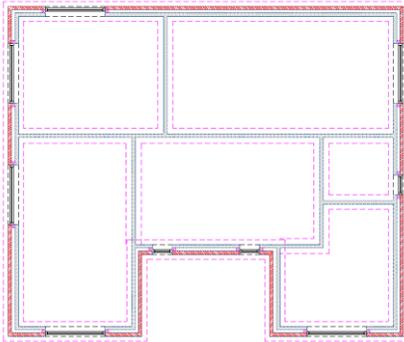
This section of the Tutorial guides you through accurately placing the windows on your ground floor plans.

During this exercise you will learn how to:

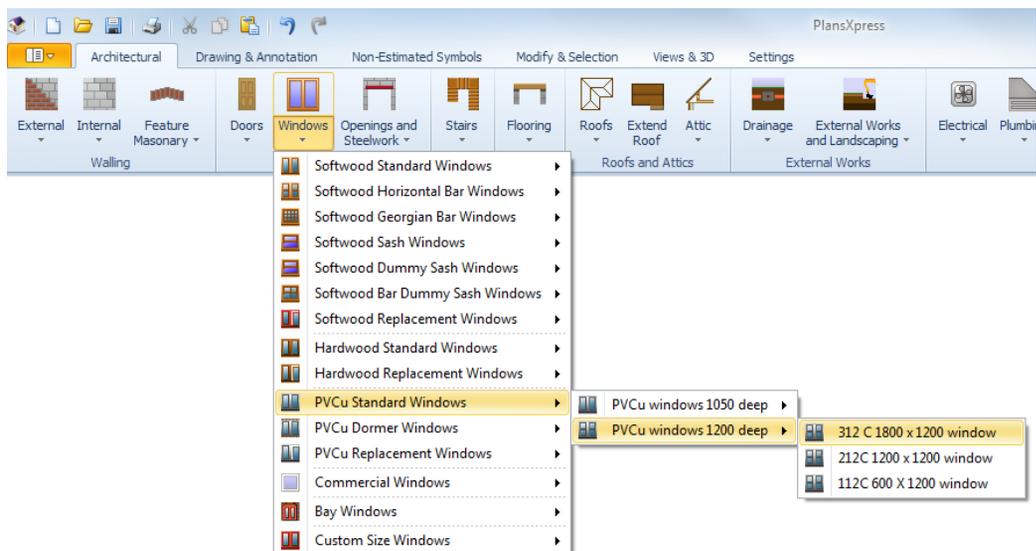
- add windows to the plans.
- place the windows by measuring along the exterior or interior of the walls.

You will need to refer to Diagram B during this exercise on page 21.

At the end of this exercise your page will look like this:



If you look at Diagram B, you'll notice that there are two different window sizes on the ground floor plan: 1800 x 1200 and 600 x 1200. Firstly we'll place all the 1800 x 1200 windows and then we'll place the 600 x 1200 windows.

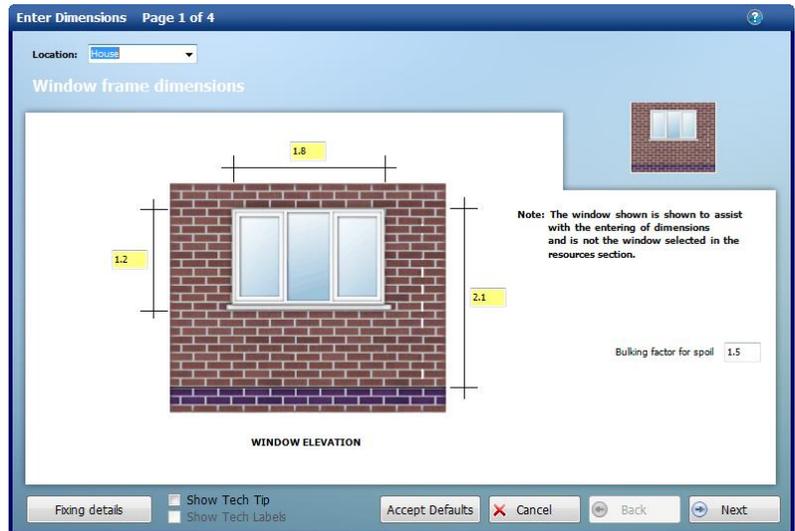




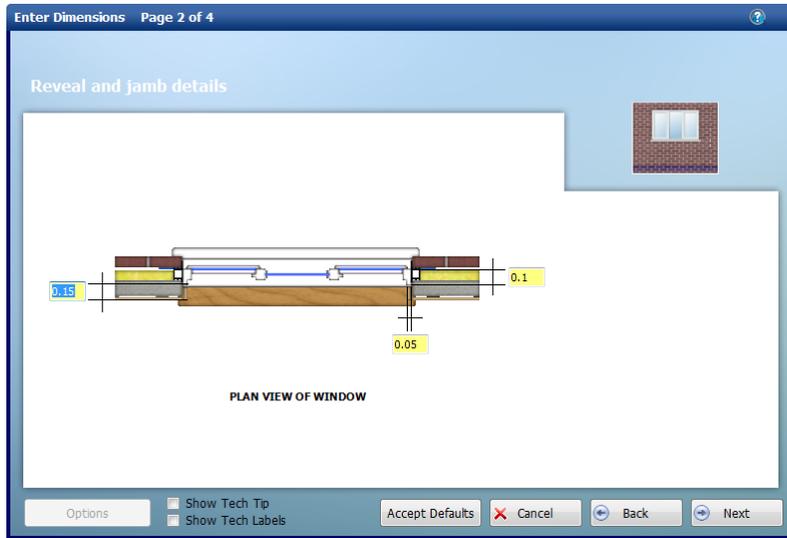
1. Press the Windows dropdown button.
2. Click on the sub-menu called PVCu Standard Windows.
3. Click on the Window type called PVCu windows 1200 deep.
4. Click on the dimensional template called 312 C 1800 x 1200 window.

The PVCu Window Dimensions Wizard pops up.

5. Review the window frame dimensions.
6. Click Next.



IMPORTANT! You can adjust the window dimensions to take into account the minor variations which exist in the size of different manufacturers' window units (e.g. altering the width from 1.8 to 1.805). However, we recommend that you refrain from making significant changes to the dimensions of windows with pre-specified dimensions, as the window symbol which appears in any elevations you draw may become distorted. In addition, the Workbook which the window imports to in EstimatorXpress® is set up with a pre-specified window, and thus will not be appropriate for a different size window. If you want to draw a window with significantly different dimensions, select an alternative dimensional template or create your own size of window using one of the Custom Size Windows.

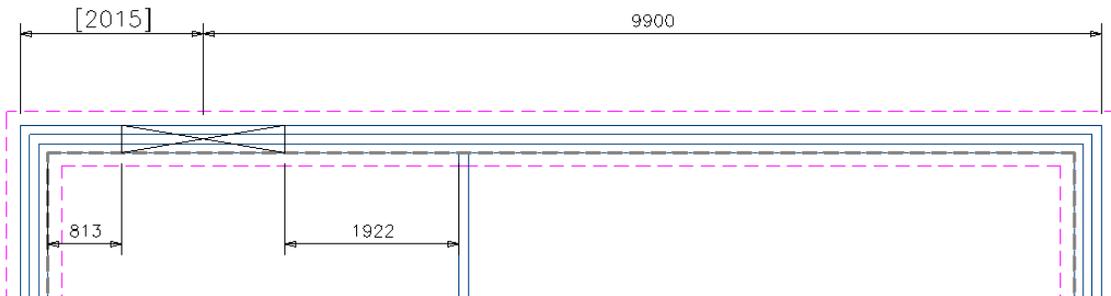


7. Review the remaining window details, clicking Next to move onto the next page of the Dimensions Wizard.
8. Once you've reviewed the decoration information on the final page of the Dimensions Wizard, click Finish.

We're now ready to place our 1800 by 1200 windows. First, let's place Window 1 on the rear wall of the ground floor plan.

The Command Window prompts: Give Insertion point on wall :

9. Scroll the wheel on the mouse upwards to zoom in until you can clearly see the section of External Wall 1 where Window 1 is going to be placed (as shown in Diagram B on page 21). You may need to use the horizontal and vertical scroll bars on screen to focus in on the desired area.
10. Hover the mouse cursor over the left-hand end of External Wall 1. Dimensions will show you the internal and external measurements from the window to the nearest perpendicular wall on either side. If you can't see four dimensions, you may need to zoom out or scroll around until they're all in view.



The dimension shown in square brackets indicates where the measurement will be made from, in the example above the window will be placed 2015mm from the external left corner.

The line extending from the window shows that the justification is currently set to centre, meaning measurements are being made to the centre of the window.

We want the external distance from the corner of the house (where External Wall 1 meets External Wall 8) to Window 1 to be 1115mm or 5 brick lengths less 1 mortar length.

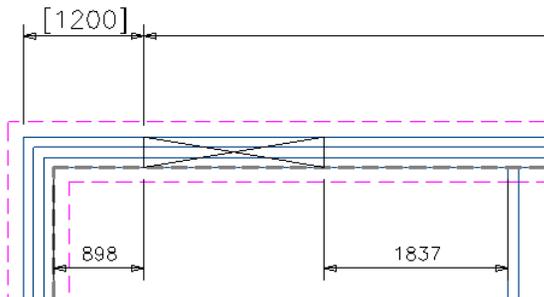


- In the Justification drop down box on the top menu, select 'Left' if it's not already selected.

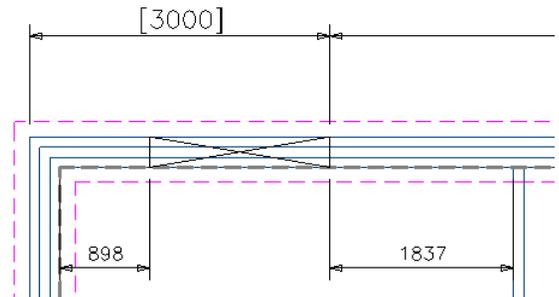
- Move your mouse cursor back to the external leave of wall 1.

You should now see a line coming from the side of the window that is being measure to; you can see an example below.

If your walls were drawn in different direction you might find PlansXpress is measuring from the opposite corner. If this is the case changing the justification to be Right should correct this and show the measurement from the corner to the left side of the window. Now let's tell **PlansXpress**® the distance from the corner of the wall to Window 1.



Correct - measured from corner to left side of window.



Incorrect - Measured from corner to right side of window.

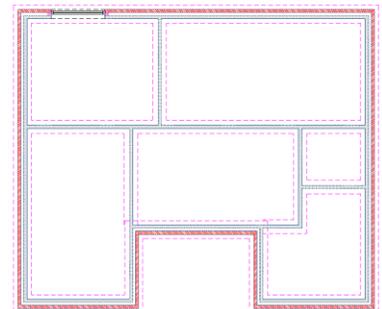
- Just under the bottom right corner of your plan you should see a text box displaying the length from the left corner of the building to the left side of the window.



- Click in the text box and type 1115 then move the mouse cursor back to the outer leave of the wall.
- You should now see that the position of the window is fixed at 1115mm away from the corner. Single left click to place the window.

Window 1 is now placed 1115mm from the corner where External Walls 1 and 8 meet. Let's repeat this process to place Window 2. Because we haven't right-clicked to cancel the action, **PlansXpress**® is ready to place another window of the same size and specification.

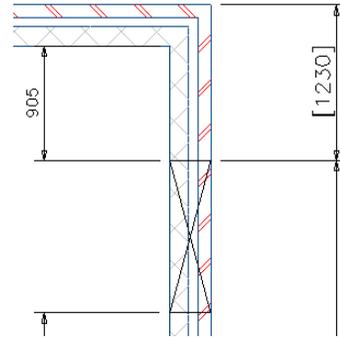
The Command Window prompts: Give Insertion point on wall.



- Scroll across and down the page so that you can see where we are placing Window 2 on External Wall 2.

- 17. Move your mouse to the right side of wall 1. We want to measure from the corner where wall 1 and 2 meet so make sure the dimensions on the external right side of the wall are in square brackets.
- 18. We also want to make sure that this time we are measuring to the side of the window nearest the corner so you may have to change the justification from left to right. (This might be the other way around if you have drawn the walls in a different direction.)

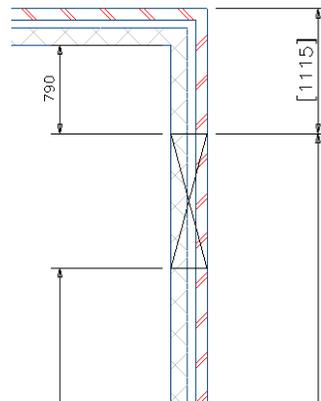
The dimensions should look like this when placing the window.



Click in the dimension box at the bottom right corner and enter 1115

The dimension on the wall should now look like this.

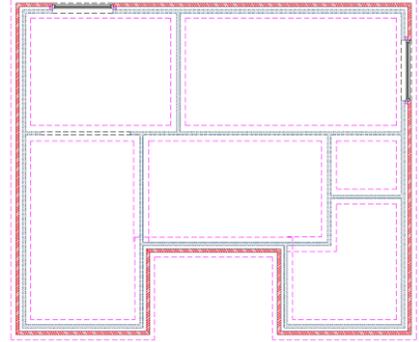
- 19. Single left click to place the window.



You've now successfully placed the first two windows.

The Command Window prompts: Give Insertion point on wall.

20. Now have a go at placing the remaining 1800 x 1200 windows (Windows 4, 7, 8 and 9) yourself. Use Diagram B on page 21 along with the table below to accurately place each window. You have already inserted the windows shown in *italic* on the table. Refer back to steps 9 to 20 to remind yourself of the process of inserting windows.

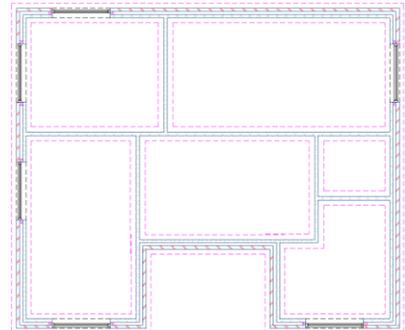


Window no.	Window size	How to place the window
<i>1</i>	<i>1800 x 1200</i>	<i>Place 1115mm (5 brick lengths) from the corner where External Walls 1 and 8 meet.</i>
<i>2</i>	<i>1800 x 1200</i>	<i>Place 1115mm (5 brick lengths) from the corner where External Walls 1 and 2 meet.</i>
<i>4</i>	<i>1800 x 1200</i>	<i>Place 1115mm (5 brick lengths) from the corner where External Walls 2 and 3 meet.</i>
<i>7</i>	<i>1800 x 1200</i>	<i>Place 1115mm (5 brick lengths) from the corner where External Walls 6 and 7 meet.</i>
<i>8</i>	<i>1800 x 1200</i>	<i>Place 3365mm (15 brick lengths) from the corner where External Walls 7 and 8 meet.</i>
<i>9</i>	<i>1800 x 1200</i>	<i>Place 1115mm (5 brick lengths) from the corner where External Walls 8 and 1 meet.</i>

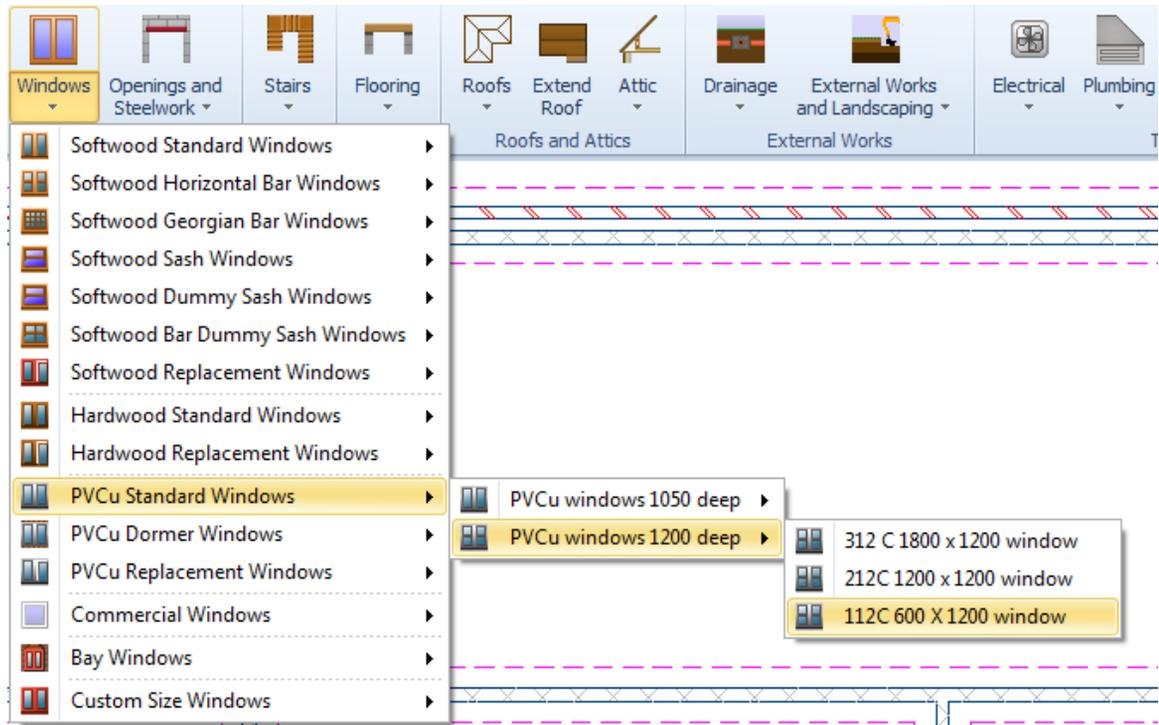
If you get stuck at any point when placing the windows, remember the following 4 things:

- [1] Justification – is **PlansXpress**[®] measuring to the correct side of the window? If not, use the Justification drop down to set **PlansXpress**[®] to measure to the left, centre or right of the window.
- [2] Dimension – have you entered the dimension into the input box at the top of the screen?
- [3] Tab Key – is **PlansXpress**[®] measuring to the correct end of the wall? If not, use the Tab key to alter the end **PlansXpress**[®] is measuring to.
- [4] Mouse position – does **PlansXpress**[®] think the dimension you entered is an external or internal dimension? Tell **PlansXpress**[®] whether it's an internal or external dimension using your mouse. Place it on the external leaf to enter an external measurement and place it on the internal leaf to enter an internal measurement.

After inserting all the 1800 x 1200 windows, your page will now look like this:



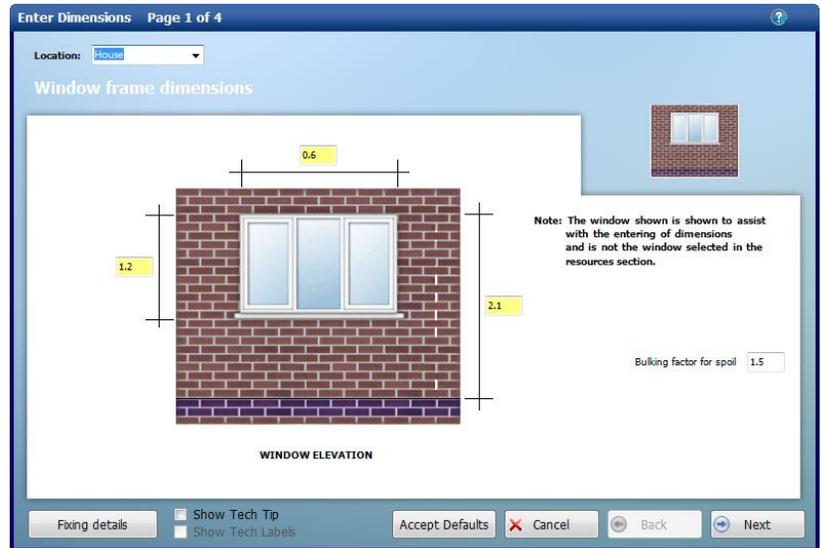
Now let's place the 600 x 1200 windows, starting with Window 3.



21.  Press the dropdown arrow next to the Windows button.
22. Click on the sub-menu called PVCu Standard Windows.
23. Click on the Window type called PVCu windows 1200 deep.
24. Click on the dimensional template called 112 C 600 x 1200 window.

The PVCu Window Dimensions Wizard pops up.

25. Review the window frame dimensions.
26. Click Next to work through and review the remaining pages of the Dimensions Wizard.
27. Once you're happy with the information you've entered on the final page of the Dimensions Wizard, click Finish.



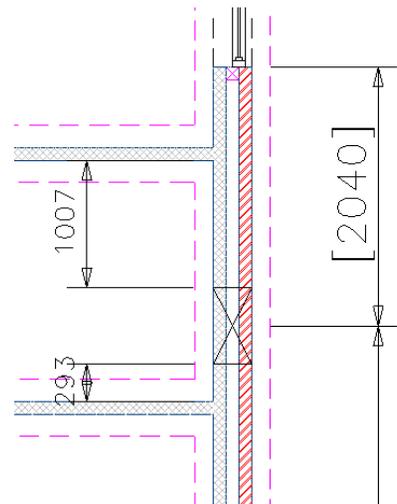
We're now ready to insert our 600 x 1200 windows. This time, instead of measuring from the corner of an external wall, we'll place Window 3 by measuring from a window we have already placed, Window 2.

The Command Window prompts: Give Insertion point on wall.

28. Zoom into the desired area (where Window 3 is shown on Diagram B on page 21) using the scroll wheel on your mouse and the scroll bars on screen.

29. Hover the mouse cursor over External Wall 2, below Window 2.

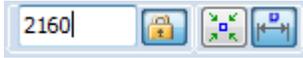
Dimensions will pop up on either side of the wall showing you the internal and external measurements from the existing window, Window 2, to the new window, Window 3. We need the Justification to be set to 'Left' in order to measure the distance to the left-hand side of Window 3.



30. Check the Justification is set to 'Left' and change it if it isn't.

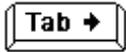
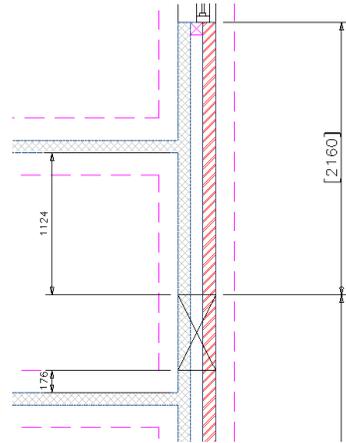
The dimensions should now be showing measurements to the left-hand side of the window. We want the external distance between the windows to be 2160 mm.

Just under the bottom right corner of your plan you should see a text box displaying the length from Window 2 to Window 3.



31. Type 2160 into the text box.

32. Hold your mouse over the external leaf of External Wall 2 to tell **PlansXpress®** that the dimension entered is the external measurement. The dimension we entered, 2160, should appear in brackets showing the external measurement. We need **PlansXpress®** to be measuring from Window 2 to Window 3 rather than from the corner of where External Walls 2 and 3 meet. If it's measuring from the wrong place, continue from step 33. If it's measuring from the right place, continue from step 34.



33. Press the Tab key on your keyboard.

The dimension between Windows 2 and 3 should now be set to 2160 mm.

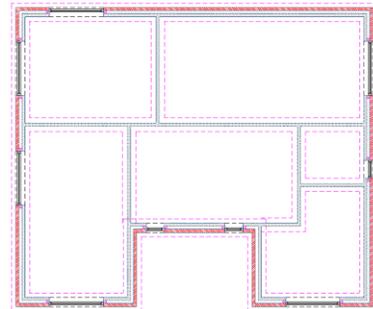


34. Click the left button of your mouse to register the position of the window.

35. Now have a go at placing the remaining 600 x 1200 windows (Windows 5 and 6) yourself. Use Diagram B on page 21, along with the table below to accurately place each window. You have already inserted the windows shown in italics.

Window number	Window size	How to place the window
3	600 x 1200	<i>Place 2160mm from Window 2.</i>
5	600 x 1200	Place 310mm from the external corner where External Walls 4 and 5 meet.
6	600 x 1200	Place 310mm from the external corner where External Walls 5 and 6 meet.

Once you've placed Window 6, you're ready to move on to inserting doors into your plans. Your page should now look like this:



36. Press the Save button.

PLACING THE DOORS



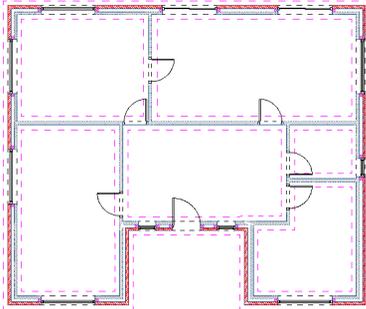
This section of the Tutorial leads you through adding all the doors to the ground floor plan. As you can see from Diagram B on page 21, the ground floor has a front door, two patio doors on the rear wall and internal doors. The process of adding doors is the same as for adding windows.

During this exercise you will learn how to:

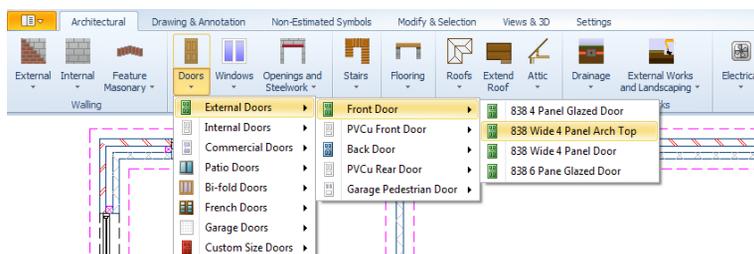
- place the doors on the plans;
- set the doors to open inwards or outwards;
- set the doors to open to the left or to the right.

You will need to refer to Diagram B on page 21 during this exercise.

At the end of this exercise your page will look like this:



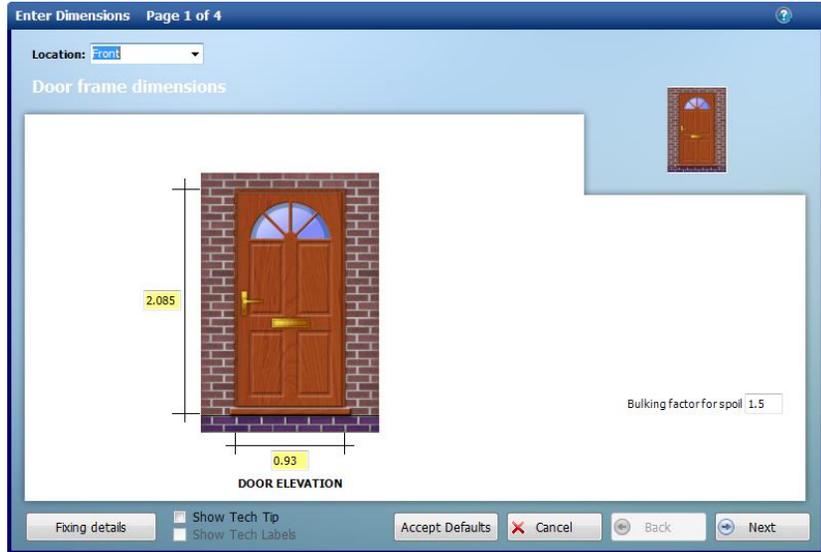
Although there are a few different types of door on our plan, the principle for inserting them is the same irrespective of the door type. Let's start by inserting the front door.



1.  Press the dropdown arrow next to the Doors button.
2. Click on the sub-menu called External Doors.
3. Click on the Door type called Front Door.
4. Click on the dimensional template called 838 Wide 4 Panel Arch Top.

The Front Door Dimensions Wizard pops up.

5. Review the door frame dimensions.
6. Click Next to work through the pages of the Dimensions Wizard.
7. Once you've reviewed the decoration details for the door, click Finish.



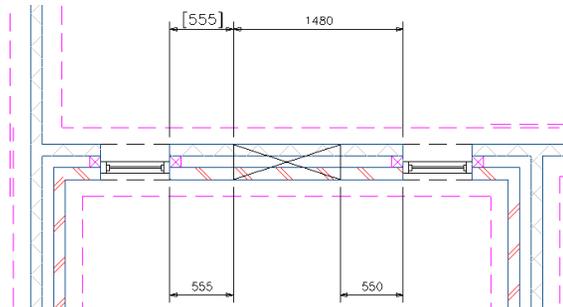
IMPORTANT! As with windows, the door dimensions can be tweaked to take into account any variation in the size of different manufacturers' doors. Again, we recommend that you refrain from making significant changes to the dimensions of a door with pre-specified dimensions, as the door symbol which appears in any elevations you draw may become distorted. In addition, the Workbook which the door imports to in EstimatorXpress® is set up with a pre-specified door, and thus will not be appropriate for a door of a different size. If you want to draw a door with significantly different dimensions, select an alternative dimensional template or create your own size of door using one of the Custom Size Doors.

We're now ready to place our Front Door.

The Command Window prompts: Give Insertion point on wall.

8. Zoom in using the scroll wheel and onscreen scroll bars until you can clearly see External Wall 5.
9. Hover your mouse over the middle of External Wall 5.

Dimensions will pop up on either side of the wall showing you the internal and external measurements from the door to the windows on either side. We want the distance from Window 6 to the Front Door to be 552mm.



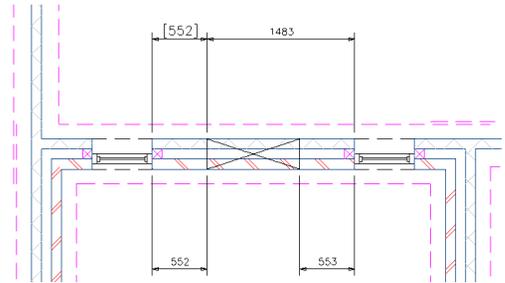
10. Use the Justification drop down box if needed to change the justification. Make sure the measurement is being made to the left side of the door. The side of the door being measured to is indicated by a single line extending to the dimensions in square brackets.

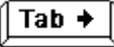
The dimensions are now indicating the measurements to the left-hand side of the Front Door. Now let's tell **PlansXpress®** the distance from Window 6 to the Front Door.



11. Type 552 into the input box on the Properties toolbar at the bottom of the screen.

It doesn't matter if we use the internal or external measurement to place the Front Door, as in this instance they are the same. Hold your mouse over either leaf of the wall. 552 should appear in two places, indicating the measurement from Window 6 to the left of the front door. The measurement to the right of the door is shown as 553 due to rounding.



12.  You will see that one measurement on screen will be in brackets. This is the place where PlansXpress® is trying to measure your 552mm from. You may need to press the Tab key to make 552 appear in the correct place.

13.  Click the left button of your mouse to register the position of the Front Door.

The Command Window now prompts: Give door alignment

We want the front door to open into the house.

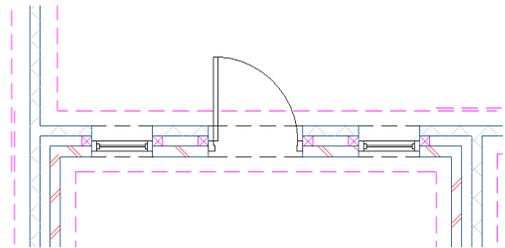
14. Move your cursor up the page so that the door symbol shows that the door is opening inwards.

We also want the door to open into the hall to the left (i.e. the hinges are on the left as you look at the page).

15. Move your cursor to the left hand side of the door so that the door symbol shows the door is opening to the left.

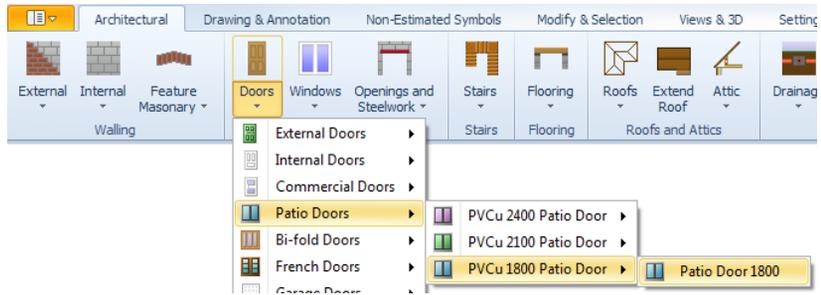
16.  Click the left mouse button to register the direction the door opens in.

The Front Door is now successfully placed, so let's move on to placing the patio doors located on the rear wall of the house.

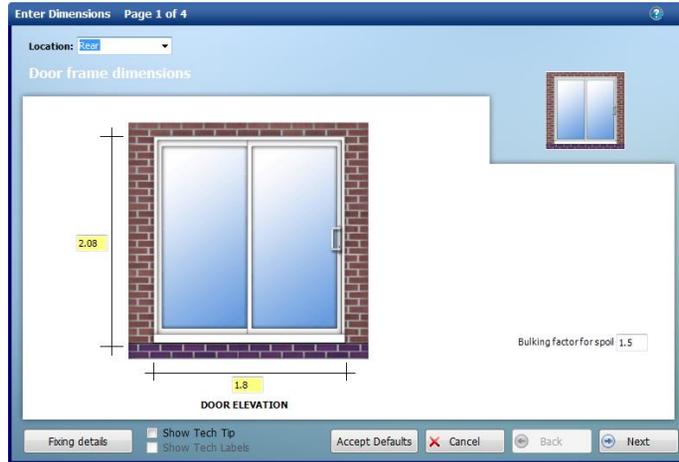


17.  Press the dropdown arrow at the bottom of the Doors button.
18. Click on the sub-menu called Patio Doors.
19. Click on the Door type called PVCu 1800 Patio Door.
20. Click on the dimensional template called Patio Door 1800.

The Patio Door dimensions wizard pops up.



21. Review the door frame dimensions.
22. Click Next and review the details on the remaining pages of the Dimensions Wizard.
23. Once you're happy with the decoration details on the final page of the Dimensions Wizard, click Finish.

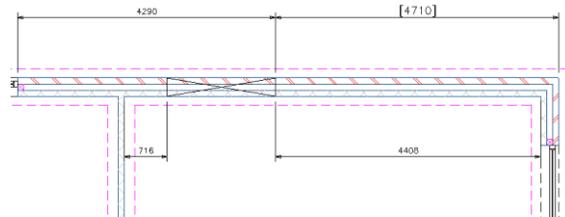


PlansXpress® is now ready to place the first set of patio doors, Patio Door 1.

The Command Window prompts: Give Insertion point on wall :

24. Zoom in using the scroll wheel and onscreen scroll bars until you can clearly see External Wall 1, the rear wall of the house.
25. Hover your mouse over the middle of External Wall 1.

Dimensions will pop up on either side of the wall showing you the internal and external measurements from the door to the nearest window or wall on either side. We want the distance from Window 1 to the Patio Door 1 to be 2240mm. We want to measure to the left of the patio door so we need to set the Justification to 'Left'.



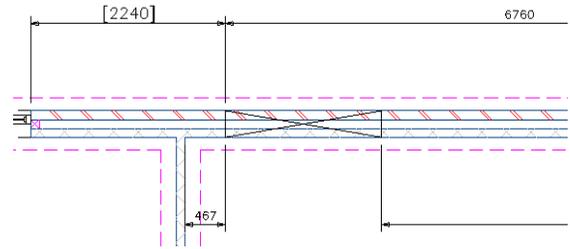
26. In the Justification drop down box, select 'Left'.

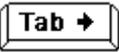
The dimensions are now indicating the measurements to the left-hand side of Patio Door 1. Now let's tell **PlansXpress®** the distance from Window 1 to Patio Door 1.



27. Type 2240 into the input box at the bottom right of the plan.

28. Hold your mouse over the external leaf of the wall to tell **PlansXpress**® that the measurement entered is an external measurement. If 2240 appears in the desired place, indicating that **PlansXpress**® is measuring from Window 1, continue from step 30. If **PlansXpress**® is measuring from the opposite side, we need to tell it to measure from the correct side using the Tab key.



29.  Press the Tab key on your keyboard.

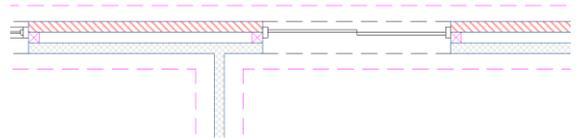
The measurement from Window 1 to the left side should now read 2240 and be shown in brackets.

30.  Click the left button of your mouse to register the position of Patio Door 1.

The Command Window now prompts: Move your mouse to either side of the Wall to indicate the Direction that the Door is to Open.

As you move your mouse around the patio door you will see the position of the doors changes.

31.  Once you're happy with the direction the patio doors open, click the left mouse button.



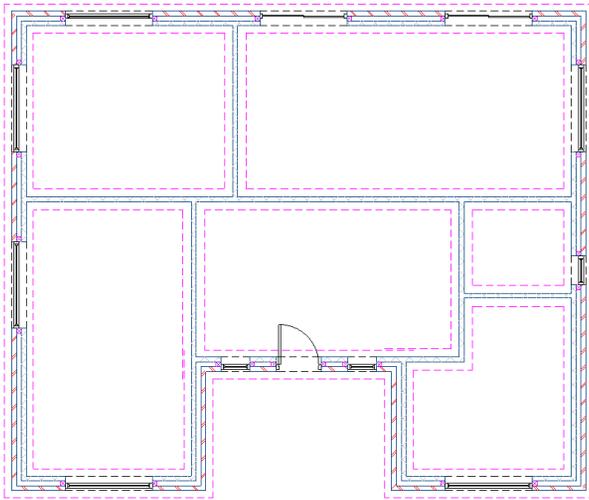
32. Now have a go at placing Patio Door 2 for yourself, using Diagram B on page 21 and the table below to help you. **PlansXpress**® is already set up to place 1800 wide PVCu Patio Doors so you don't need to go through the Dimension Wizard again.

Patio Door number	How to place the Patio Doors
1	Place 2240 mm from Window 1.
2	Place 2045 mm from Patio Door 1.

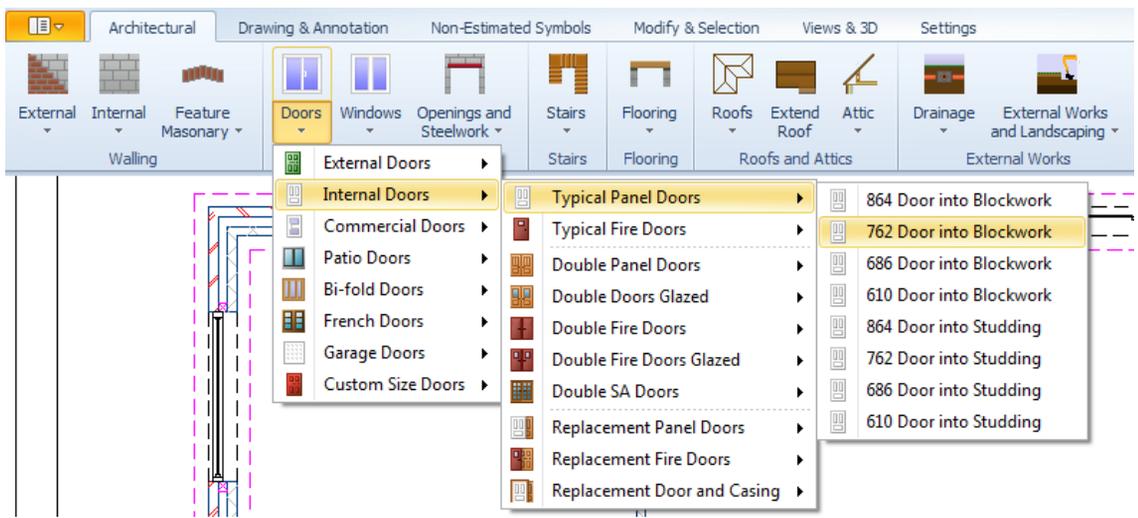
If you're stuck at any point when placing the doors, remember the following 6 things:

- [1] Justification – is **PlansXpress**® measuring to the correct side of the door? If not, use the Justification drop down to set **PlansXpress**® to measure to the left, centre or right of the door.
- [2] Dimension – have you entered the dimension into the input box at the top of the screen?
- [3] Tab Key – is **PlansXpress**® measuring to the correct end of the wall? If not, use the Tab key to alter the end **PlansXpress**® is measuring to.
- [4] Mouse position – does **PlansXpress**® think the dimension you entered is an external or internal dimension? Tell **PlansXpress**® whether it's an internal or external dimension using your mouse. Place it on the external leaf to enter an external measurement and place it on the internal leaf to enter an internal measurement.
- [5] Open inwards/outwards – after placing the door, move your mouse onto the side of the wall to register the direction you want it to open in.
- [6] Open to the left/right – also place your cursor on the side of the door you want the hinges to be on.

Now you've placed the two Patio Doors, your page should look like this:

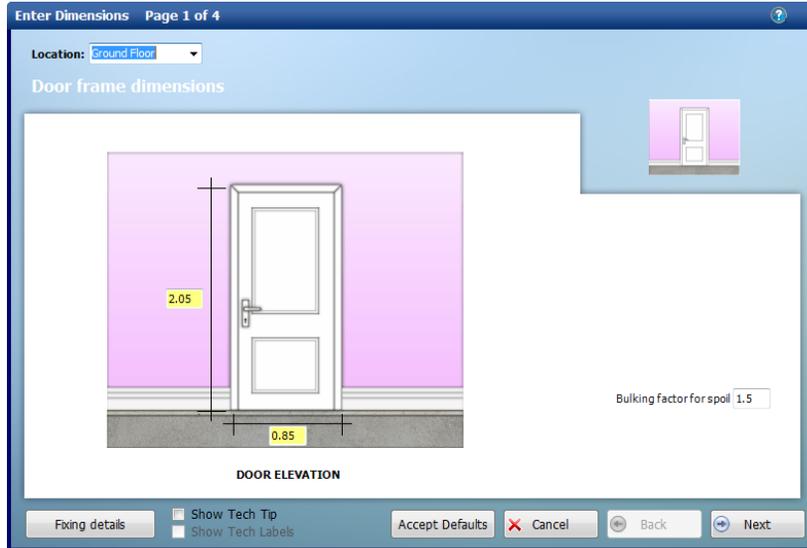


Let's move on to placing the Internal Doors. Let's start with Internal Door 1.



- 33.  Press the dropdown arrow next to the Doors button.
- 34. Click on the sub-menu called Internal Doors
- 35. Click on the Door type called Typical Panel Doors.
- 36. Click on the dimensional template called 762 Door into Blockwork.

The Typical Panel Doors dimensions wizard pops up.



37. Review the door frame dimensions.
38. Click Next and review the remaining pages of the Dimensions Wizard.
39. Once you're happy with the dimensions you've entered for the decoration to the door, click Finish.

PlansXpress® is now ready to start placing the internal doors.

The Command Window prompts: Give Insertion point on wall :

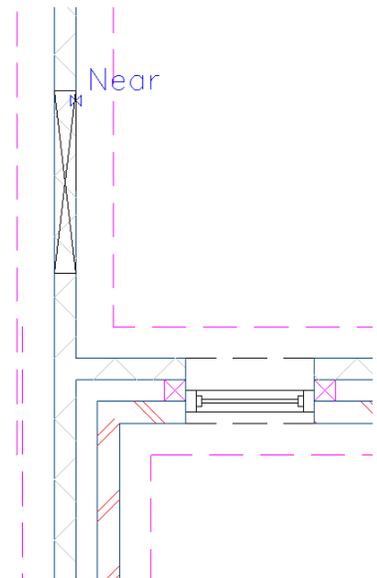
As the process of placing internal doors is not such an exact process, we will place them using Snap mode.

40.  Press F7 or click the Snap button  to turn on Snap mode.

41. Hold your mouse over Internal Wall 2 until you're happy with the location of Internal Door 1. You may need to zoom in to see the door clearly.

42.  Click the left mouse button to register the position of Internal Door 1.

The Command Window now prompts: "Move your mouse to either side of the Wall to indicate the Direction that the Door is to Open." We want the door to open into the Kitchen.

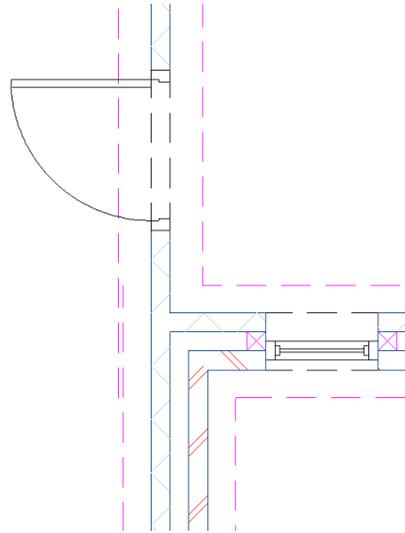


- 43. Move your mouse to the left of Internal Wall 2 so that the door symbol shows that the door is opening into the Kitchen.

We also want the door to open to the right (i.e. the hinges are on the right as you look at the door from the hall).

- 44. Move your mouse to the right hand side of the door so that the door symbol shows the door is opening to the right.

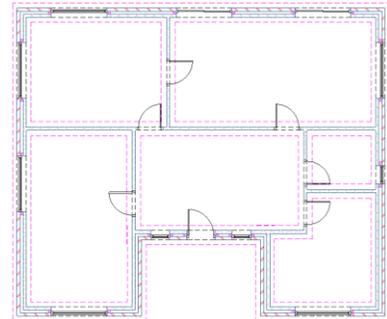
- 45.  Click the left mouse button to register the direction the door opens in.



You've successfully placed Internal Door 1.

- 46. Now have a go at placing the remaining Internal Doors (2, 3, 4, 5 & 6) yourself. Use Diagram B on page 21 to help you place each door by eye.

After placing all the single Internal Doors, your page will now look like this:



- 47.  Press the Save button.

PLACING THE STAIRCASE



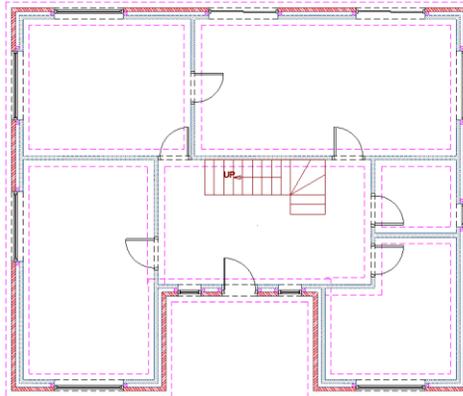
This section of the Tutorial guides you through placing the staircase on the ground floor plan.

During this exercise you will learn how to:

- select a staircase type to add to the plans;
- enter the number of risers in each flight of stairs;
- position a staircase.

You will need to refer to Diagram B on page 21 during this exercise.

At the end of this exercise, your page will look like this:

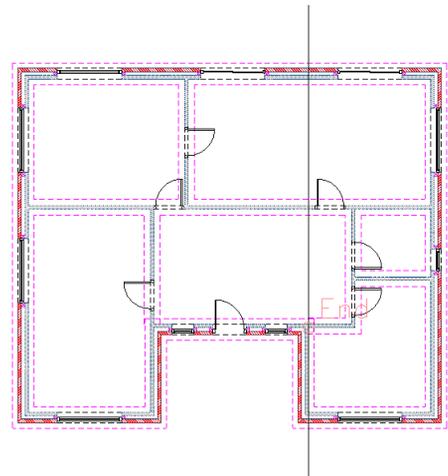


We need to start by adding a vertical construction line to help with the setting out of the staircase. The construction line needs to be placed running along the inside of External Wall 4.

1.  **Vertical** Press the Vertical Construction Line button.
(Found on the Drawing & Annotation tab)

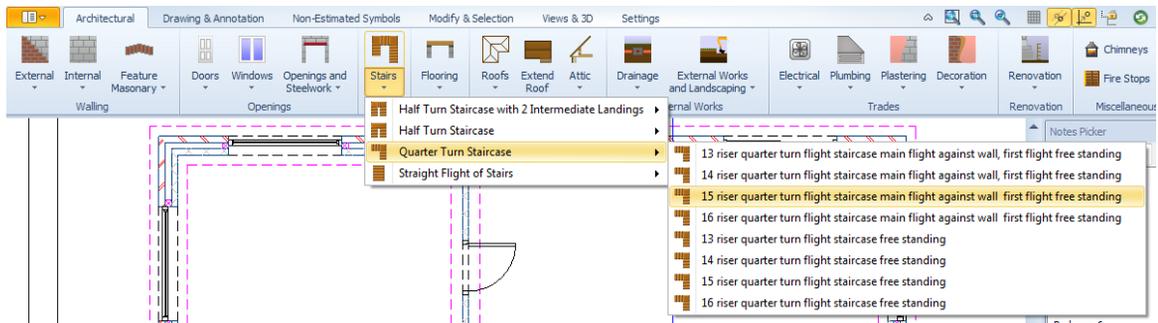
The Command Window prompts: Give Point.

2. Hold your mouse over the inside of External Wall 4, until  appears along with the message 'Near'.
3.  Click the left mouse button to place the construction line.
4.  Click the right mouse button to tell **PlansXpress®** you don't wish to place any further construction lines.



We're now ready to place the staircase.

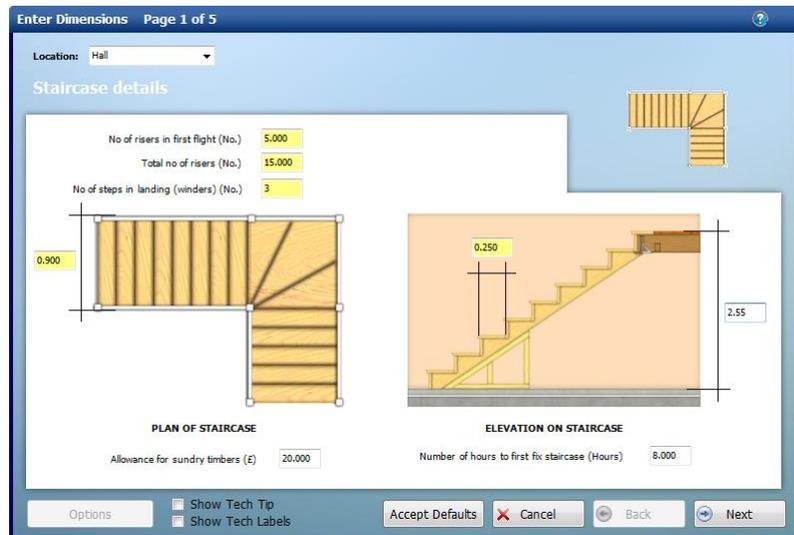
76 Tutorial Placing the Staircase



5. Press the dropdown arrow next to the Staircase button.
6. Click on the Staircase type called Quarter Turn Staircase.
7. Click on the 15 riser quarter turn flight staircase main flight against wall first flight free standing dimensional template.

The Quarter Turn Staircase Dimensions Wizard pops up.

8. Set the No of risers in first flight to 3.
9. Set the Number of steps in landing (winders) to 3.
10. Enter a floor to floor height of 2.55.
11. Click Next



Enter Dimensions Page 2 of 5

Hand rail details

% wall mounted handrail to first flight outer side (%)

% handrail and spindles to first flight outer side (%)

Clearance of handrails (M)

Width of handrail to side 1 (M)

Width of handrail to side 2 (M)

% wall mounted handrail to first flight inner side (%)

% handrail and spindles to first flight inner side (%)

% wall mounted handrail to second flight inner side (%)

% handrail and spindles to second flight inner side (%)

50.000 % wall mounted handrail to half landing (%)

50.000 % handrail and spindles to half landing (%)

100.00 % wall mounted handrail to second flight outer side (%)

0 % handrail and spindles to second flight outer side (%)

Do handrails extend beyond stairs (Y/N)

4.000 Length of balustrade to main landing (M)

HANDRAIL AND SPINDLE DETAILS

Options Show Tech Tip Show Tech Labels

Accept Defaults Cancel Back Next

12. Set Width of handrail to side 1 to 0.

13. Set the Width of handrail to side 2 to 0.

14. Click Next.

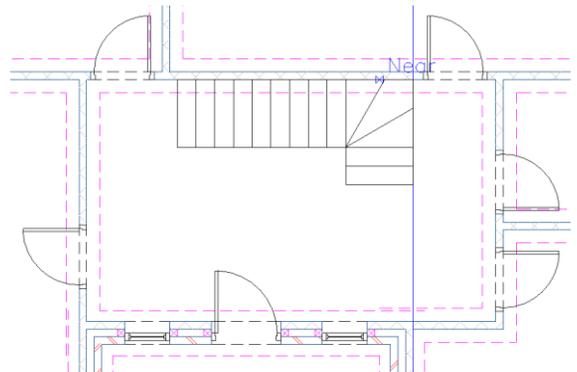
15. Review the next 3 pages of the wizard. Once you've reviewed the staircase decoration details on the final page of the Dimensions Wizard, click Finish.

You're now ready to add the staircase to the plans. Use Diagram B on page 21 to help you place the staircase.

The Command Window prompts: Give top point for first landing.

16. Move your mouse so that the staircase is flush against Internal Wall 1 and the construction line.

17.  Click the left mouse button to register the position of the half landing.



The Command Window now prompts: Give control point for bottom of staircase.

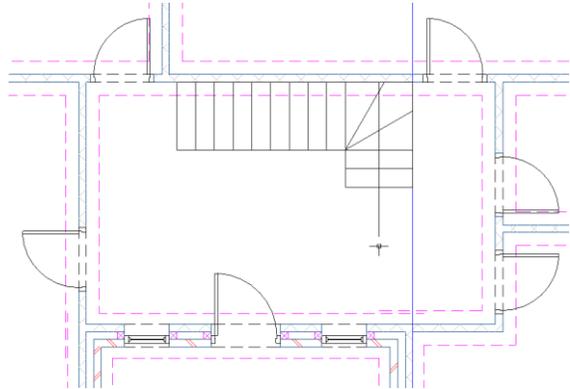
18.  Hold down the Shift key.

Holding down the Shift key ensures the staircase is placed at a right angle.

19. Move your mouse down the page.

20.  Click the left mouse button to register the location of the bottom of the staircase.

21. Release the Shift key.

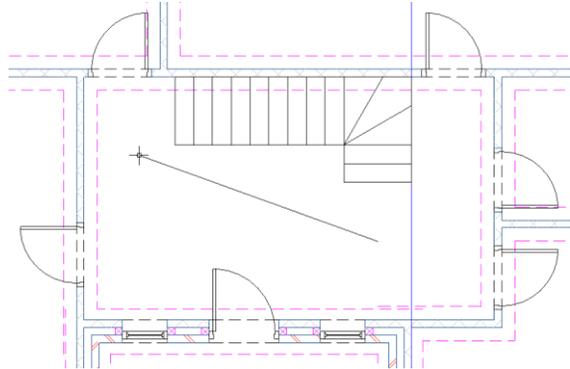


The Command Window now prompts: Give control point for top landing.

22. Move your mouse to the left.

This tells **PlansXpress**® that the staircase turns to the left.

23.  Click the left mouse button to register the position of the top of the stairs.



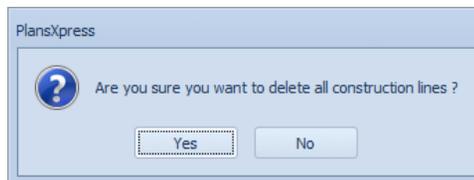
Remember you can always move the staircase afterwards if required by clicking on it with the left mouse button. Click on the red square which appears and drag the staircase into the desired position.

Let's delete the construction line because we no longer need it.

24.  Press the Delete Construction Lines button. (Found on the Drawing & Annotation tab)

A dialog box pops up asking if you wish to delete the construction line.

25. Click Yes.



All that remains is to add an up arrow to the staircase to show their direction.

26. Press the Leader Arrow button from the Arrows dropdown on the Drawing & Annotation tab.



27. Select Untitled from the Layer drop down box at the bottom of the screen.

Arrows are normally placed on the Arrows Layer, but we want to put the arrow we're about to place on a different Layer.

The Command Window prompts: Give Arrow Point. The Start Point is the arrowhead end of the arrow.

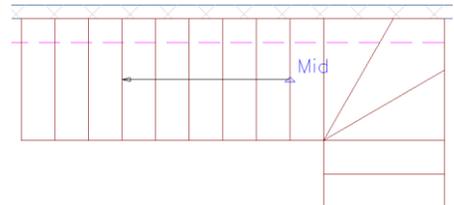
28. Hold the cursor towards the top of the staircase in the centre of a stair until  appears along with the message 'Mid'.



29.  Click the left mouse button to register the arrow Start Point.

The Command Window prompts: Give End Point.

30. Move your cursor towards the bottom of the staircase until  appears along with the message 'Mid'.



31.  Once you're happy with the size of the arrow, click the left mouse button to register the arrow End Point.

32.  Click the right mouse button to indicate that you've finished drawing the arrow.

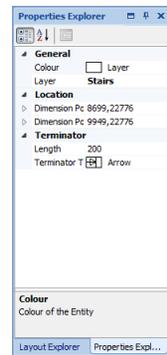
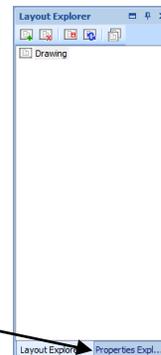
33.  Left click to select the arrow that we've just placed.

34. In the Properties Explorer set the Terminator length to 200.

You may need to go to the Views & 3D tab and tick Properties to view the Properties Explorer.

The Properties Explorer may also be hidden behind another Explorer window such as Layout Explorer (on the right side of the screen)

If this is the case there should be a small tab labelled Properties explorer just below the Layout Explorer Window.



Now let's add an UP label to indicate that the arrow is going up the stairs.

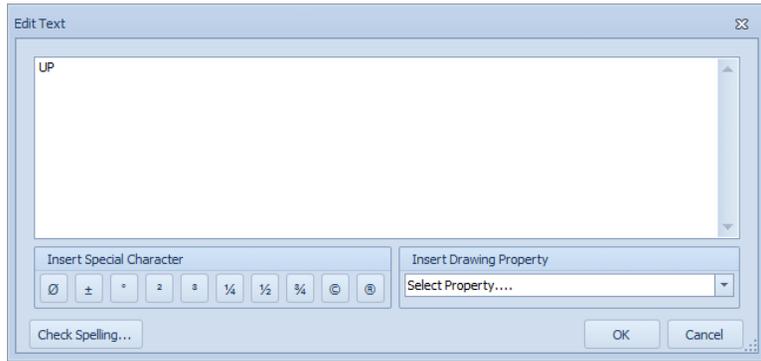


- 35. Press the Text button, found under the Drawing and Annotation tab.

The Edit Text dialog box pops up.

- 36. Type UP into the white text box.

- 37. Click OK.



You are returned to the page where your cursor controls the position of the text.

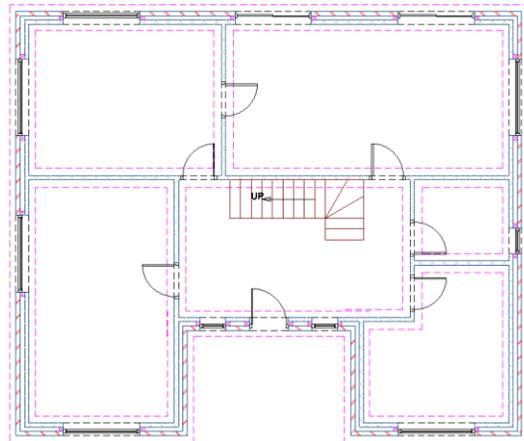
The Command Window prompts: Give Text Point.

- 38. In the Text Properties that will appear in the Ribbon set the Height textbox to 150. This is the text size.

- 39. Move your mouse to the arrowhead end of the arrow.

- 40.  Click the left mouse button to place the UP label.

Once complete, your page should look like this:



- 41.  Press the Save button.

CREATING THE FIRST FLOOR



10-15
Minutes

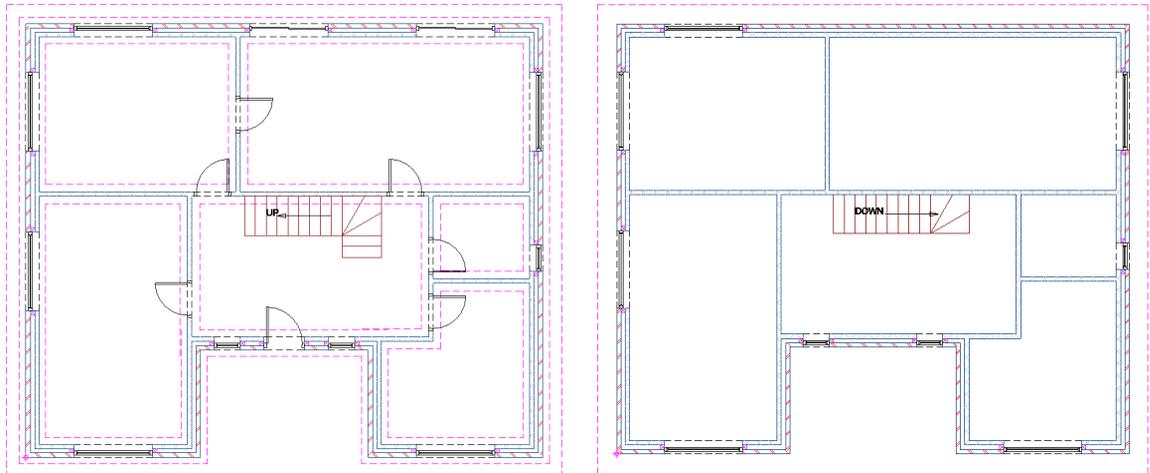
This section of the Tutorial talks you through copying the ground floor to use as a template for the first floor. The brickwork shell will be retained, along with the windows, but the external doors will be deleted as they obviously won't be required on the first floor. The block walls will be retained so that we can lay out the suspended floor but will subsequently be deleted and replaced with stud partitions. The staircase will remain in its current position.

During this exercise you will learn how to:

- set the level of the ground floor.
- copy the ground floor level to create the first floor.

You will need to refer to Diagrams B and C on pages 21 and 22 during this exercise.

At the end of this exercise, your page will look like this:



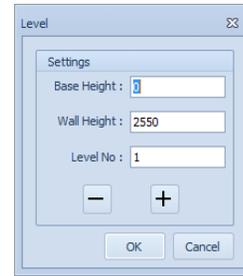
First let's set the level of the ground floor.





1. Click the **Level** button on the 3D panel on the Views & 3D tab.

The **Level** dialog box pops up.



You'll notice that there are three input boxes in the **Level** dialog box. **Base Height** refers to the height at which the floor/storey starts. So for a ground floor the **Base Height** would be 0 and for a first floor it might be 2500 (remember you're working in mm). **Wall Height** refers to the height of the wall of that particular floor/storey so the **Wall Height** might be 2500 or 2700. **Level No** refers to the Level this floor appears e.g. ground floor is 0, first floor is 1, second floor is 2 etc.

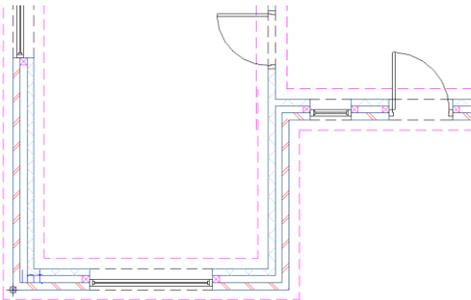
Let's enter the appropriate details for the ground floor.

The Level dialog box loads with the default settings of a **Base Height** of 0, **Wall Height** of 2550 and **Level No** of 1. These settings are correct for our house.

2. Click OK.
3. The Command Window prompts: Give Reference Point :

When setting up Levels, you need to ensure you place the reference point on the same position on every Level you create, so that when you view the 3D model or create an elevation they appear stacked on top of each other.

4. Move the mouse cursor to where external walls 7 and 8 meet until 'End'  or 'Int'  snap point appears.



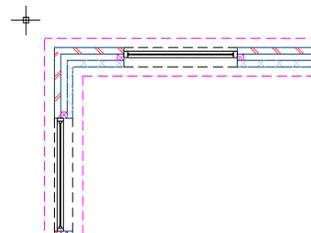
5.  Single left click.

The Command Window prompts: Give first point of box to define level :

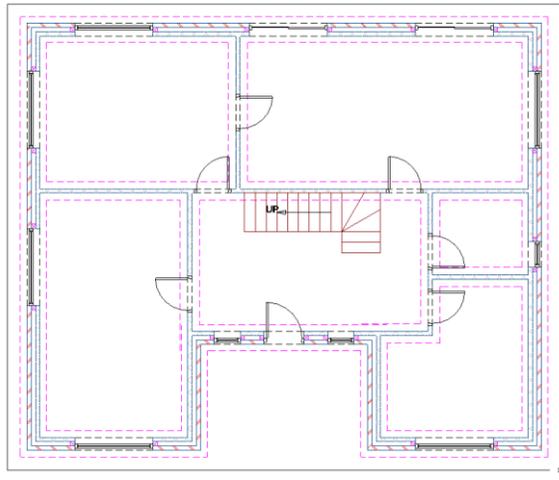
5. Move the mouse cursor just past the top left corner of the plan where external walls 1 and 8 meet.

6.  Single left click.

The Command Window prompts: Give second point of box to define level :

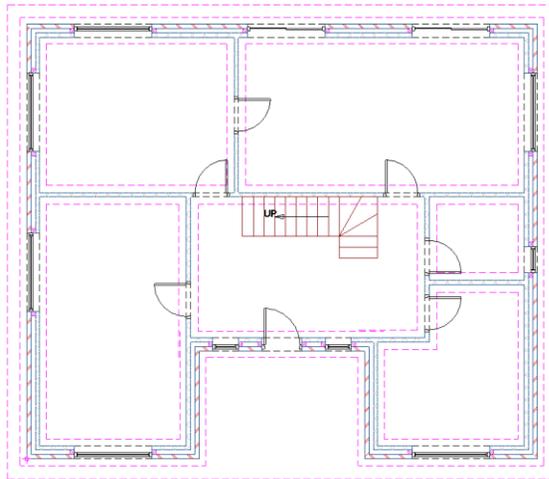


7. Move the mouse cursor to past the bottom right corner of the plan where external walls 2 and 3 meet. You should see a box drawn around the entire ground floor.



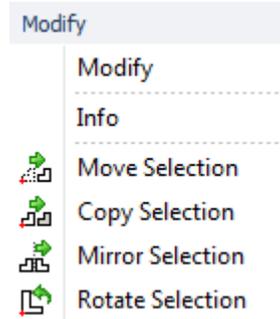
8.  Single left click. The box should then appear as a dotted pink line.

This line represents the boundary of the level you have set, everything within the line is on the same level.



Now we're ready to copy our ground floor plan to create our first floor.

9.  Single left click on the level boundary to select the level.
10.  Middle click to bring up the **Modify** menu.
11.  Click on 'Copy Selection'.

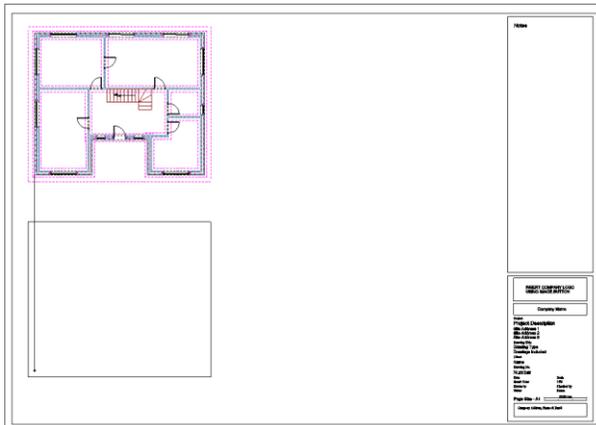


This will copy the level and the ground floor plan contained within it. The copy will become the floor plan for the first floor.

When placing the first floor, your cursor click will register the position of the equivalent point on the first floor.

The Command Window prompts: Give Reference Point

12.  Left click on the bottom left corner of the boundary level.



The Command Window prompts: Give Point To Copy To. We want to place the first floor directly below the ground floor.

12.  Hold down the Shift key and move your cursor below the ground floor.

This ensures the first floor is placed directly below the ground floor.

13. Once the first floor layout is placed in the desired position, click the left mouse button to register the point to copy to.

After a few seconds, the first floor layout appears below the ground floor and the **Copy Plan Options** dialog box pops up. The **Copy Plan Options** dialog box allows you to select which walls, doors, windows and openings from the ground floor you wish to retain for the first floor. You can also set the level for the copied floor plan at the same time.

We obviously want to retain the external walls as the layout is the same for the ground floor and first floor. We also want to retain the windows because the placement is similar for both floors, but we won't need the external doors in the first floor. We need to retain the internal block walls to draw the first floor suspended floor, but will replace them with stud walls later. However, we can delete the doors, windows and openings associated with the internal walls now. We need to tell **PlansXpress®** that the first floor height is 2.325m, and that we don't need foundations and DPC etc. for the first floor walls.

Firstly, let's select the elements of the External Walls we want to copy to create the first floor.

14. Ensure the External Walls tick box is ticked.
15. Untick the Doors tick box because we don't want to retain the external doors.
16. Ensure the Windows tick box is ticked.
17. It doesn't matter if the Openings tick box is ticked because there are no structural openings in the external walls.

Now let's select the elements of the Internal Walls we want to copy to create the first floor.

18. Ensure the Internal Walls tick box is ticked.
19. Untick the Doors, Windows and Openings tick boxes because we don't want to retain these in the internal walls.
20. Enter the External and Internal wall height of 2325 (remember we're working in millimetres).
21. Ensure the Remove Foundations & Footings tick boxes for the External and Internal Walls are ticked to tell **PlansXpress®** that we don't need foundations, footings and DPC in the first floor walls.
22. Click the + button in the level section and change the Wall Height to 2325 to match the height we have set the walls to.

This means that **PlansXpress®** will automatically strip out the foundations, footings and DPC for the first floor. Obviously this is an important step if you are later going to export the data in **EstimatorXpress®**. If we don't tell **PlansXpress®** that the first floor doesn't have foundations, and footings like the ground floor, **EstimatorXpress®** will calculate two lots of foundations and footings!

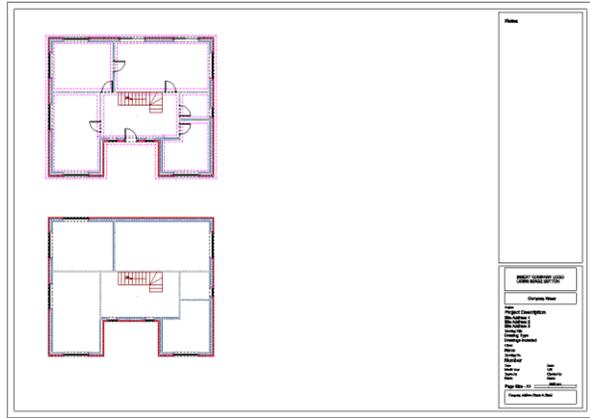
Changing the level of the first floor will help **PlansXpress®** to draw elevations and create a 3D model with the first floor sitting on top of the ground.

23. Click OK.

After a few seconds, **PlansXpress®** strips out all the unnecessary elements according to the options you have chosen.

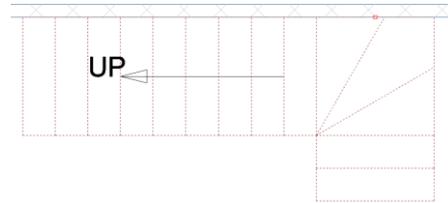
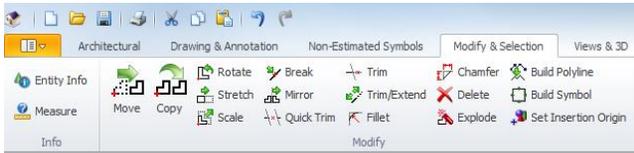
The footprint of the first floor is left.

You'll notice that the staircase for the first floor appears as it does in the ground floor layout. We need to explode the stairs symbol and delete the first flight section of staircase which wouldn't be visible from the first floor.



24. Single click on the stairs to select the entire staircase.

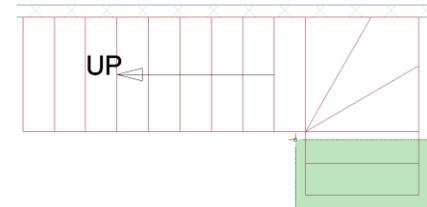
25. Click the Modify & Selection tab.



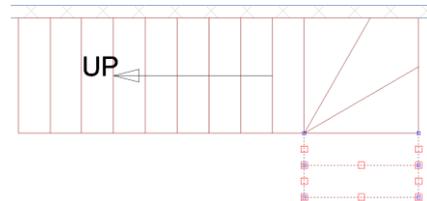
26.  Click the Explode button.

27. Select the lines representing first flight of stairs by clicking and dragging the mouse right to left.

The green box will select everything it touches so you don't need to complete surround all the lines you want to select.



28.  Press the Delete key on your keyboard.

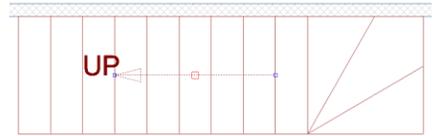


The first flight of stairs is removed from the first floor view. This will not affect the staircase estimate as the first floor view of the staircase is merely a copy of the ground floor staircase and is not estimated.



We now need to rotate the UP arrow and turn it into a DOWN arrow.

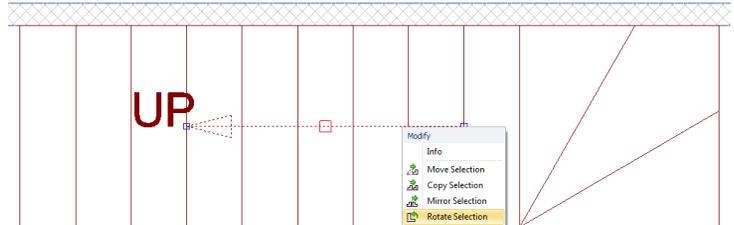
29.  Click on the arrow with the left mouse button to select it.



30.  Click the middle mouse button.

A menu pops up.

31. Click Rotate Selection.



The Command Window prompts: Give Point to Rotate About.

32. Hold your mouse over the middle of the arrow until  appears along with the message 'Mid'.

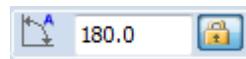
33.  Click the left mouse button.



The Command Window prompts: Give Reference Point to Rotate.

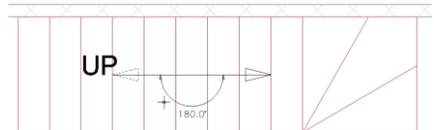
34. Hold your mouse over the left end of the arrow until  or  appears with the message 'End'.

35.  Click the left mouse button.



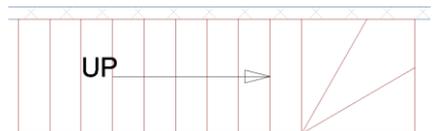
36. Type 180 into the Angle input box on the Properties toolbar at the bottom of the screen.

The angle of rotation is shown on the arrow on the drawing.



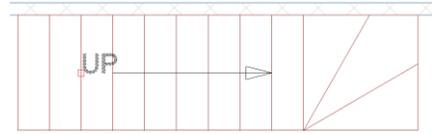
37.  Click the left mouse button to register the angle of rotation.

The arrow is now pointing down the stairs.



Now let's amend the UP label to create the DOWN label.

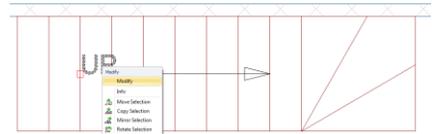
38.  Click on the UP text with the left mouse button.



39.  Click the middle mouse button.

The **Modify** menu pops up.

40. Click **Modify**.



The **Edit Text** dialog box pops up.

41. Overtyping UP with DOWN.

42. Click OK.



You are returned to the page where the text is automatically updated. We now need to move the arrow so it's not overlapping the label.

43.  Click on the arrow with the left mouse button to select it.

44. Click on the red square which appears.

This allows you to move the arrow.



45.  Hold down the Shift key.

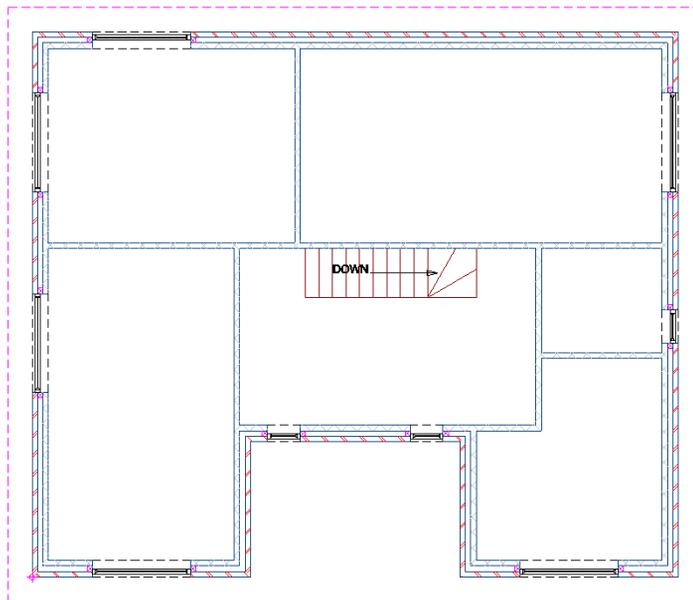
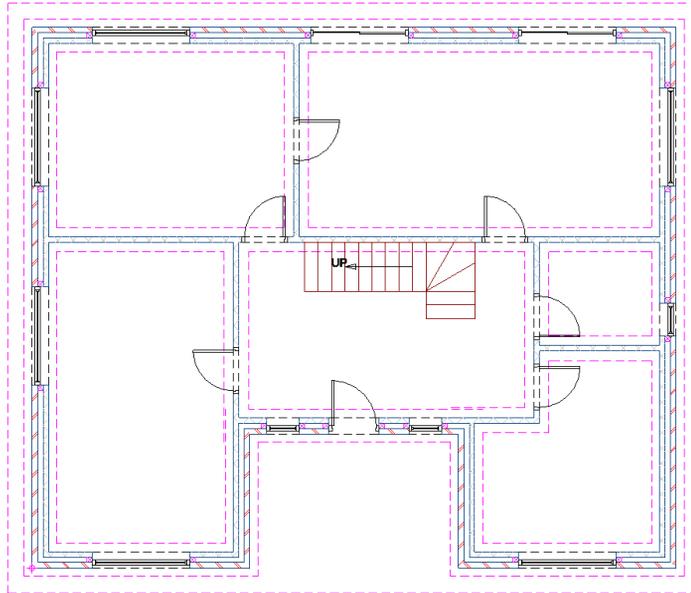
This restricts the arrow to moving in either the horizontal or vertical plane.

46. Move your mouse to the right.

47.  Click the left mouse button to register the new position of the arrow once it's clear of the label.



Once complete, your plans should look like this:



48.  Press the Save button.

SETTING OUT THE SUSPENDED FLOOR



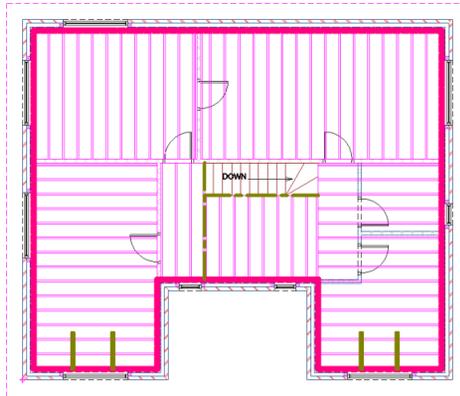
This section of the Tutorial guides you through drawing the suspended floor. First of all we will mark out each section of flooring, before placing the perimeter sealant, trimmers and end straps.

During this exercise you will learn how to:

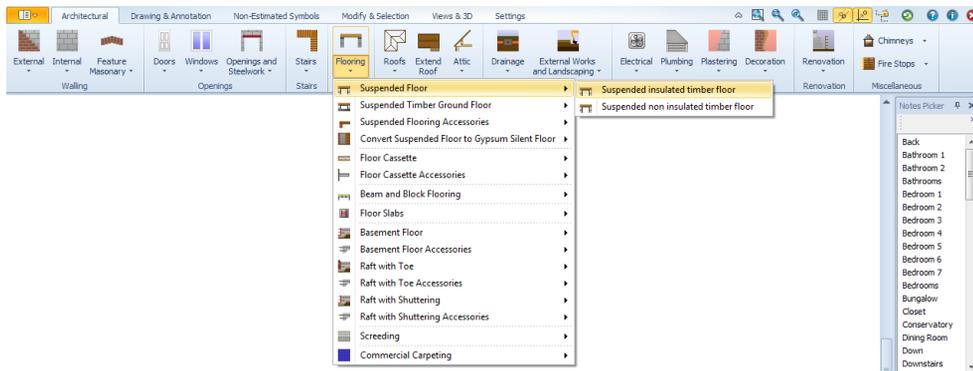
- draw sections of suspended floor;
- add perimeter sealant, trimmers and end straps.

You will need to refer to Diagram D on page 23 during this exercise.

At the end of this exercise, your first floor plan will look like this:



We will draw the suspended floor section by section. Firstly we're going to mark out the sections of floor which don't require joist hangers, Sections 1, 3 and 6.

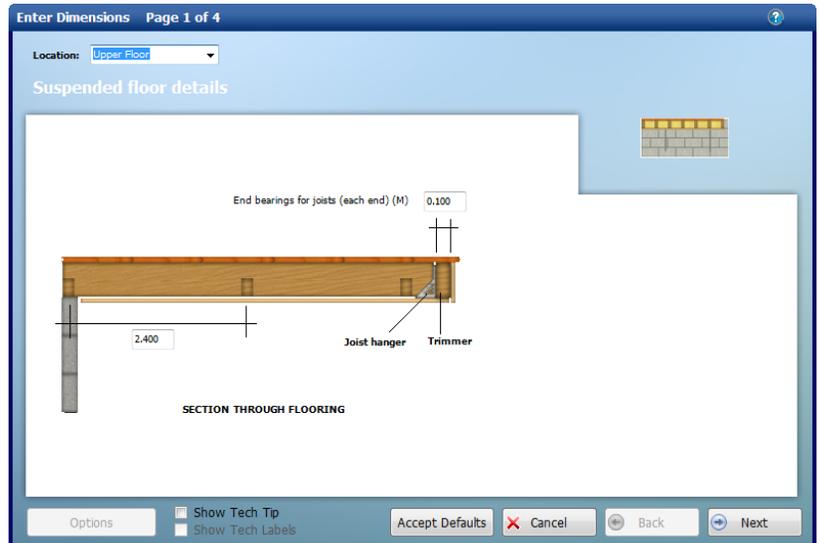


1.  Press the dropdown arrow next to the Flooring button.
2. Click on the Flooring type called Suspended Floor.

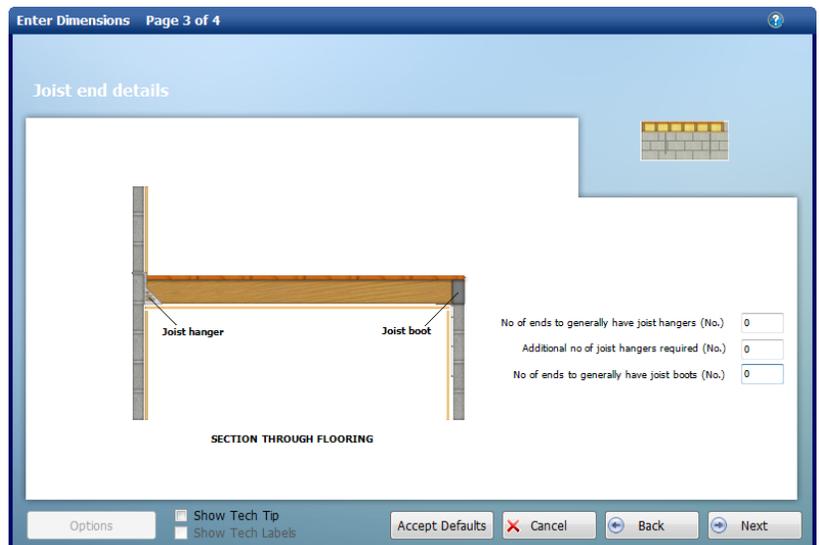
- Click on the dimensional template called Suspended insulated timber floor.

The Suspended Floor Dimensions Wizard pops up.

- Review the Suspended Floor details.
- Click Next and review the next page of suspended floor details.
- Click Next again.



- Set the No. of ends to generally have joist hangers to 0.
- Set the No. of ends to generally have joist boots to 0.
- Click Next and review the plastering and decoration details.
- Once you're happy with the information you've entered, click Finish.

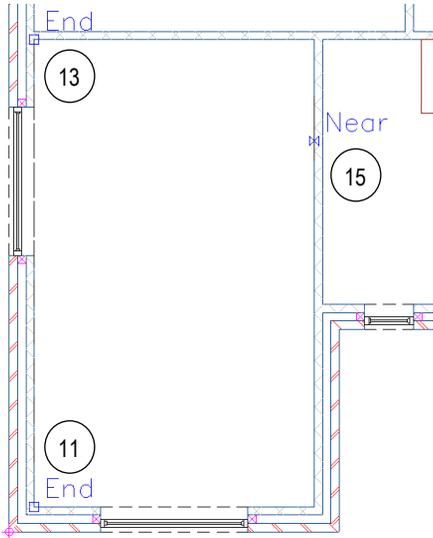


Let's start by drawing Section 1.

! IMPORTANT! Remember to draw the floor on the first floor plan!

The Command Window prompts: Give First Corner of Floor (on Supporting Wall 1).

On this occasion, let's assume External Wall 8 is Supporting Wall 1. We need to tell **PlansXpress®** that the inside corner of where External Walls 7 and 8 meet is the First Corner on Supporting Wall 1.



11. Hold your mouse over the inside corner of where External Walls 7 and 8 meet until  appears with the message 'End'.

12.  Click the left mouse button to register the First Corner.

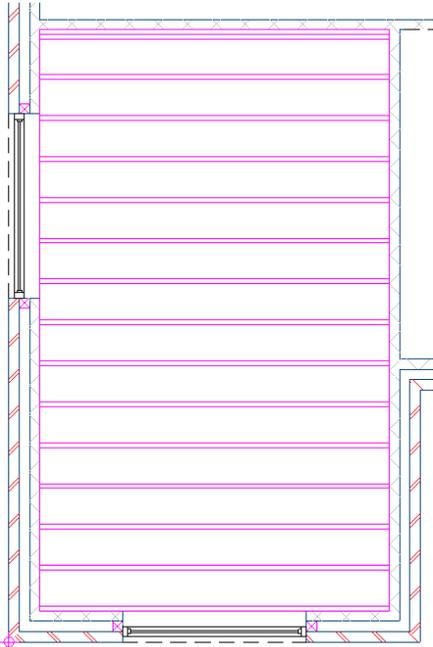
The Command Window prompts: Give Second Corner of Floor (on Supporting Wall 1 to indicate Floor Width at Right Angles to the Joists).

13. Hold your mouse over the corner of where External Wall 8 and Internal Wall 1 meet, on the Kitchen side of the walls, until  appears with the message 'End'.

14.  Click the left mouse button to register the Second Corner at Right Angles to the Joists.

The Command Window prompts: Indicate the Length of the Floor (to give Clear Span of Joists).

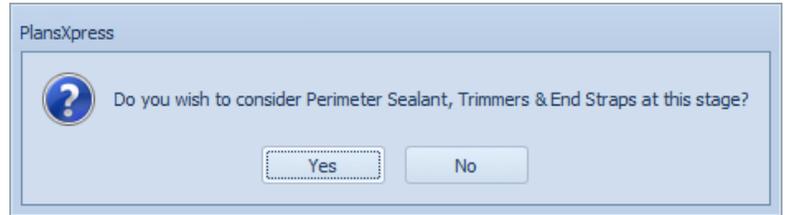
15. Hold your mouse over the Kitchen side of Internal Wall 2 until  appears along with the message 'Near'.



16.  Click the left mouse button to give the Floor Length to give Clear Span of Joists.

A dialog box pops up asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps. If you click Yes, you'll be able to mark out Perimeter Sealant, Trimmers and End Straps for this section of flooring.

We'll click No for now, and we'll place all the Perimeter Sealant, Trimmers and End Straps after marking out each section of suspended floor.



17. Click No.

Section 1 of the suspended floor is now complete, so let's draw Section 3. We'll come back and do Section 2 later because we will need to go through the Dimensions Wizard again and tell **PlansXpress**® that Sections 2, 4 and 5 of the flooring have joist hangers.

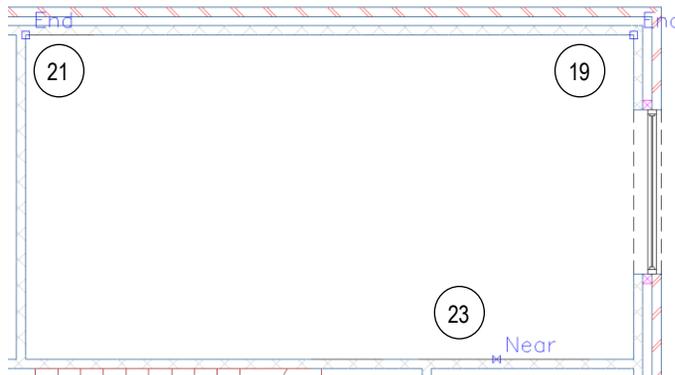


18. Press the Suspended Floor button which is now visible on the Flooring menu.

PlansXpress® is now ready to draw another Suspended Floor of an identical specification.

The Command Window prompts: Give First Corner of Floor (on Supporting Wall 1).

On this occasion, let's assume External Wall 1 is Supporting Wall 1 for Section 3. We need to tell **PlansXpress**® that the inside corner of where External Walls 1 and 2 meet is the First Corner on Supporting Wall 1.



19. Hold your mouse over the inside corner of where External Walls 1 and 2 meet until appears with the message 'End'.

20.  Click the left mouse button to register the First Corner.

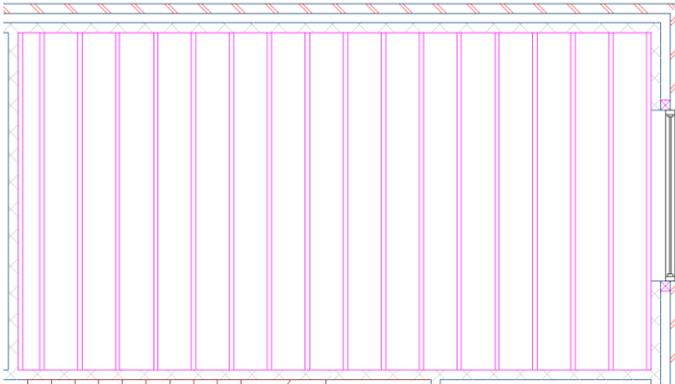
The Command Window prompts: Give Second Corner of Floor (on Supporting Wall 1 to indicate Floor Width at Right Angles to the Joists).

21. Hold your mouse over the corner of where External Wall 1 and Internal Wall 3 meet, on the Dining Room side of the walls, until appears with the message 'End'.

22.  Click the left mouse button to register the Second Corner at Right Angles to the Joists.

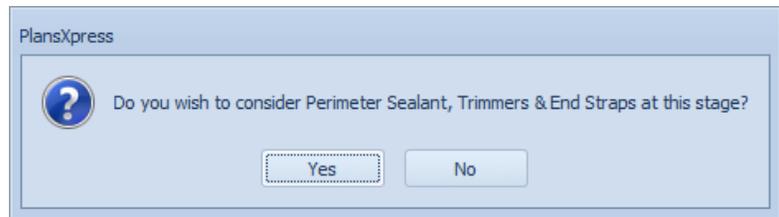
The Command Window prompts: Indicate the Length of the Floor (to give Clear Span of Joists).

23. Hold your mouse over the Dining Room side of Internal Wall 1 until  appears along with the message 'Near'.



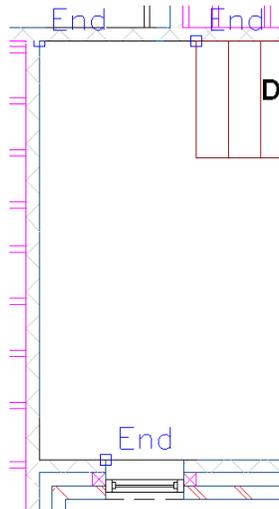
24.  Click the left mouse button to give the Floor Length to give Clear Span of Joists.

A dialog box pops up asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps. Again, we'll leave this until later.

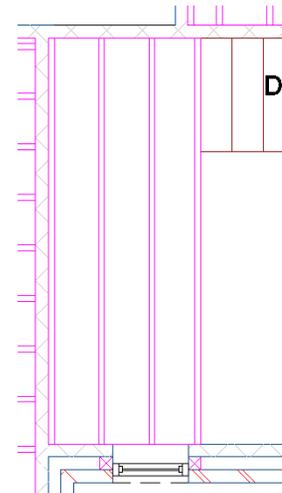


25. Click No.

26. Repeat this process to mark out Section 6, using Internal Wall 1 as the supporting wall.



27. After you've drawn the section of flooring, click No to the dialog box asking if you want to consider Perimeter Sealant, Trimmers and End Straps.



Now we need to go through the Dimensions Wizard again and set the No. of ends to generally have joist hangers to 1, as Sections 2, 4 and 5 require joist hangers to one side.

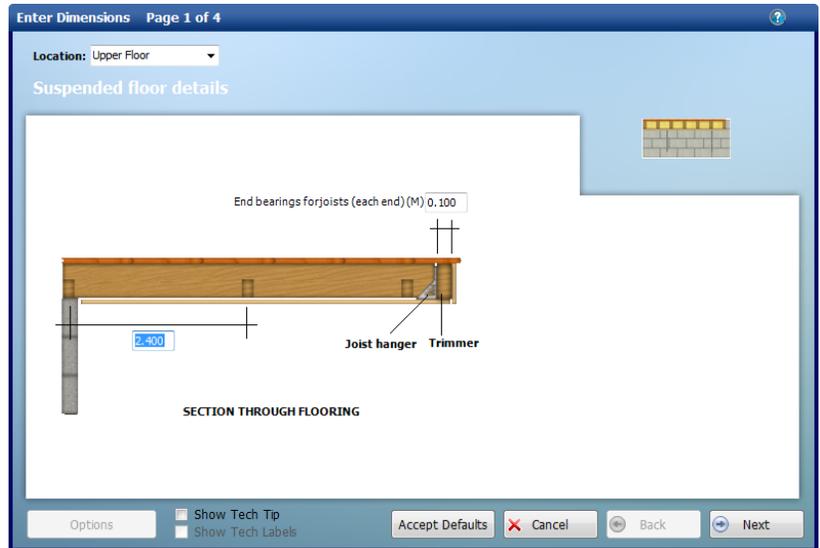


28. Right click on the Flooring button.

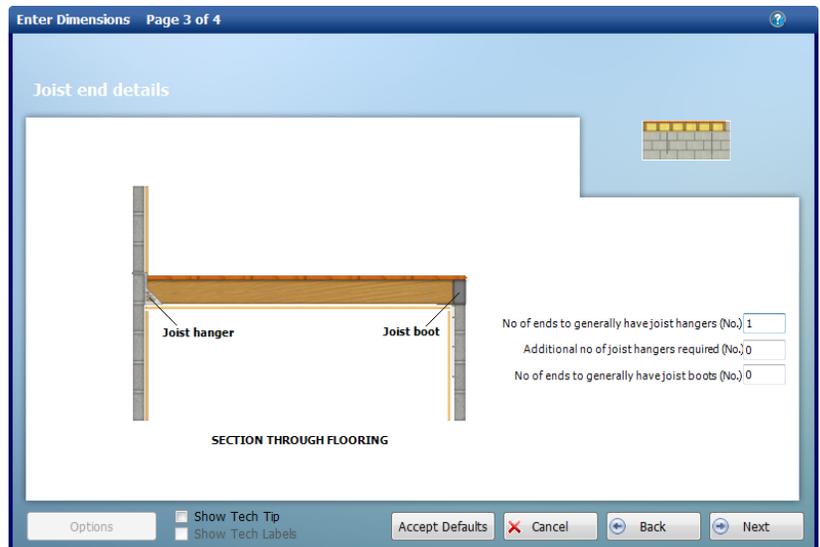
This tells **PlansXpress**® that we want to draw the same type of Floor again, but brings up the Dimensions Wizard to allow us to alter the specification of the floor.

The Suspended Floor Dimensions Wizard pops up.

29. Review the Suspended Floor details.
30. Click Next and review the next page of suspended floor details
31. Click Next.



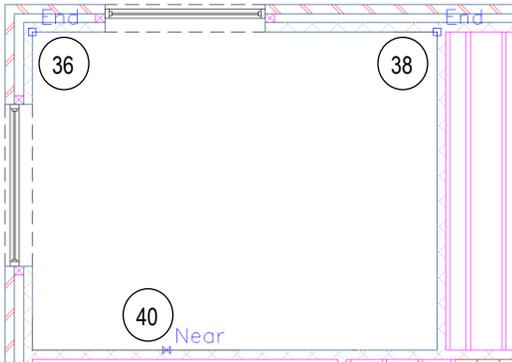
32. Set the No. of ends to generally have joist hangers to 1.
33. Set the No. of ends to generally have joist boots to 0.
34. Click Next and review the plastering and decoration details.
35. Once you're happy with the information you've entered, click Finish.



Now let's mark out Section 2, as shown on Diagram D on page 23.

The Command Window prompts: Give First Corner of Floor (on Supporting Wall 1).

On this occasion, let's assume External Wall 1 is Supporting Wall 1. We need to tell **PlansXpress**® that the inside corner of where External Walls 8 and 1 meet is the First Corner on Supporting Wall 1.



36. Hold your mouse over the inside corner of where External Walls 8 and 1 meet until appears with the message 'End'.

37.  Click the left mouse button to register the First Corner.

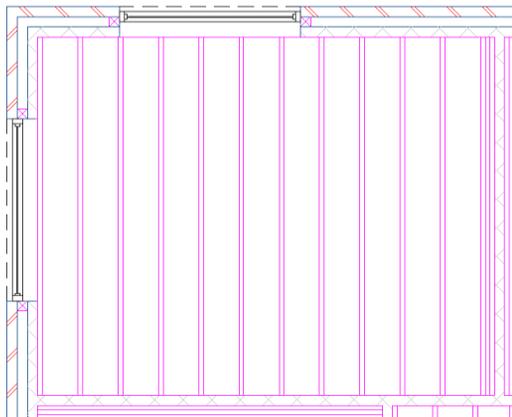
The Command Window prompts: Give Second Corner of Floor (on Supporting Wall 1 to indicate Floor Width at Right Angles to the Joists).

38. Hold your mouse over the corner of where External Wall 1 and Internal Wall 3 meet, on the Dining Room side (so that Section 2 meets up with Section 3) of the walls, until appears with the message 'End'.

39.  Click the left mouse button to register the Second Corner at Right Angles to the Joists.

The Command Window prompts: Indicate the Length of the Floor (to give Clear Span of Joists).

40. Hold your mouse over the Kitchen side of Internal Wall 1 until appears along with the message 'Near'.

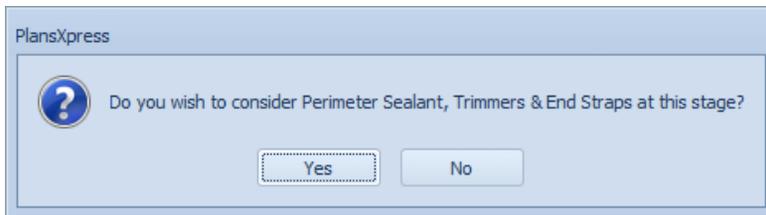
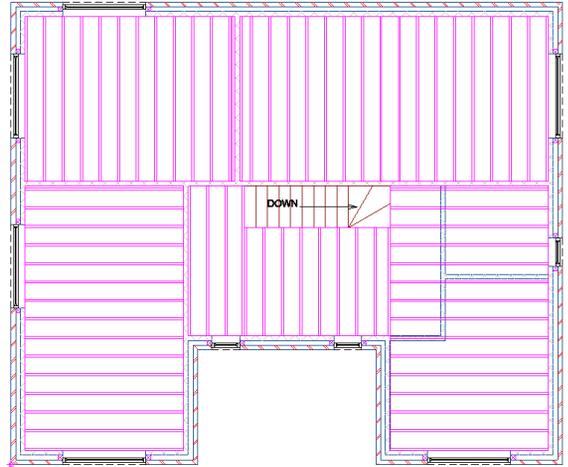


41.  Click the left mouse button to give the Floor Length to give Clear Span of Joists.

A dialog box pops up asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps. Again, we'll leave this until later.

42. Click No.

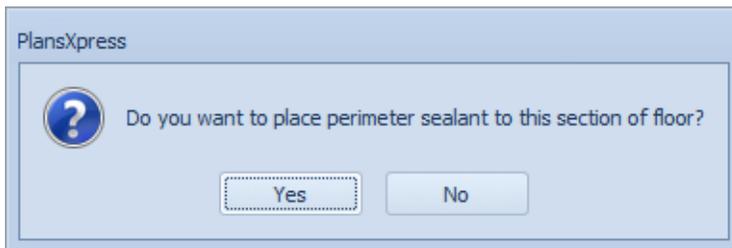
43. Repeat this process to mark out Sections 4 and 5, using External Wall 2 and External Wall 5 as the supporting wall respectively. After marking out the Section 5 of the floor, the Perimeter Sealant, Trimmers and End Straps dialog box pops up.



You may prefer to estimate these flooring accessories in **EstimatorXpress®**.

44. For now, click Yes.

A dialog box pops up asking if you wish to place perimeter sealant.



45. Click Yes.

The Command Window prompts: Give Start Point.

To place the sealant, you have to mark out where the sealant will go by clicking round the perimeter of the floor.

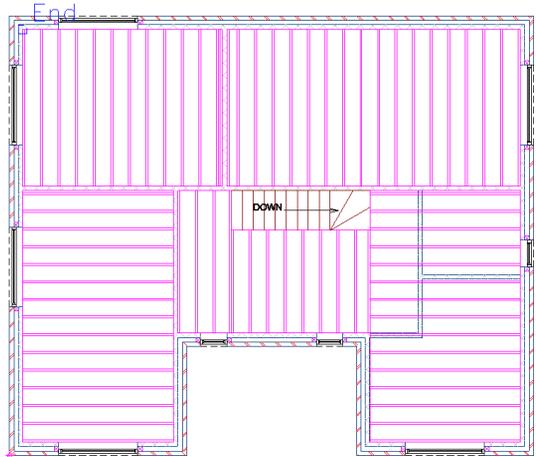
- 46. Hold your mouse over the interior corner of where External Wall 8 meets External Wall 1 until appears with the message 'End'.

- 47.  Click the left mouse button to register the first point on the perimeter of the wall.

The Command Window prompts: Give Next Point.

- 48. Hold your mouse over the interior corner of where External Wall 1 meets External Wall 2 until appears with the message 'End'.

- 49.  Click the left mouse button to register the next point on the perimeter of the wall.

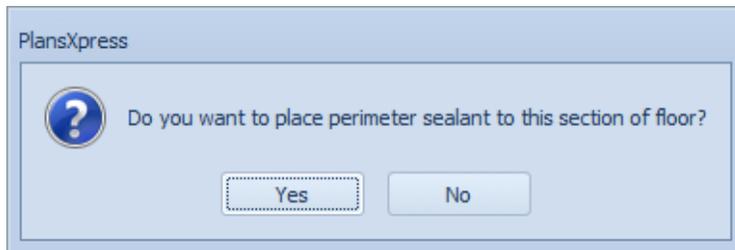


- 50. Repeat this process to register each corner point on the perimeter of the floor area.

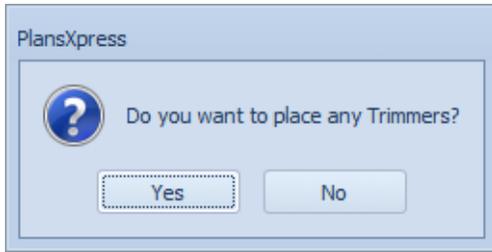
- 51.  Once you've completed marking out the perimeter of the flooring, click the right mouse button to tell **PlansXpress®** you've finished setting out this stretch of sealant.



After you connect the last point of the sealant to the first point of the sealant to complete the perimeter of the floor, a dialog box pops up asking if you wish to place another perimeter of sealant. On this occasion we don't need to.



- 52. Click No.

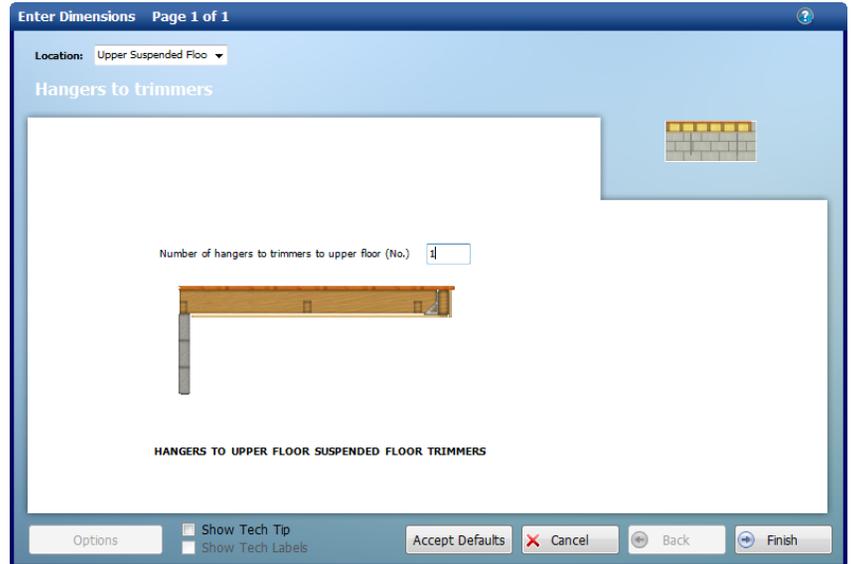


53. A dialog box pops up asking if you wish to place any Trimmers.
54. Click Yes.

A Dimensions Wizard pops up which requires you to enter the Number of hangers to trimmers to upper floor.

55. Trimmer 1 intersects with one other trimmer and requires 1 hanger, so enter 1.

56. Click Finish.



The Command Window prompts: Give Start Point.

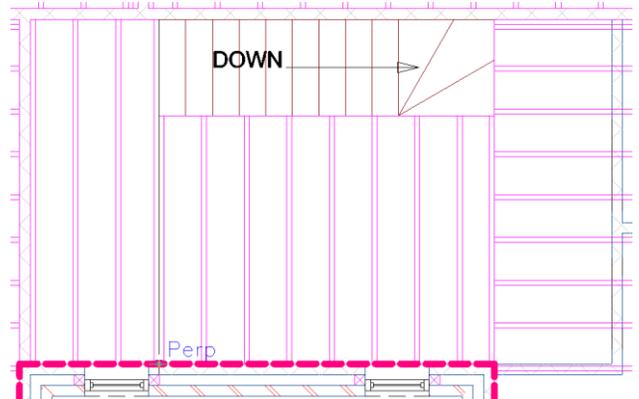
Let's start by drawing Trimmer 1, which as you can see from Diagram D on page 23, runs from the top of the staircase to the front wall of the house. You will see that Trimmer 1 runs along one side of Section 6 of the suspended floor.

57. Hold your mouse over the top of the staircase where it meets Internal Wall 1 (the top right corner of suspended floor Section 6) until appears with the message 'End'.

58.  Click the left mouse button to register the Start Point of the Trimmer.

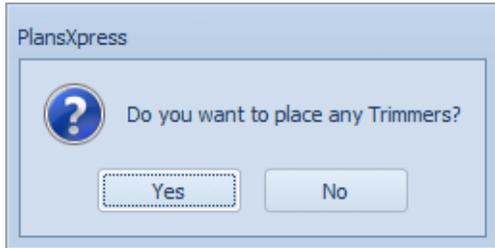
The Command Window prompts: Give Next Point.

59. Hold your mouse over the cavity side of the blockwork on External Wall 5 until or appears with the message 'Perp' or 'End'.



60.  Click the left mouse button to register the Next Point of the Trimmer.

61.  Click the right mouse button to tell **PlansXpress®** you've finished drawing this Trimmer.



A dialog box pops up asking if you wish to place any Trimmers. Let's now place Trimmer 2.

62. Click Yes.

A Dimensions Wizard pops up which requires you to enter the Number of hangers to trimmers to upper floor. We have already estimated for a hanger to support where Trimmer 1 and Trimmer 2 meet, so we just need to estimate a hanger for where Trimmer 2 meets Trimmer 3.

63. Enter 1.

64. Click Finish.

The Command Window prompts: Give Start Point.

65. Hold your mouse over the bottom of the staircase, where Trimmers 2 and 3 will meet (refer to Diagram D on page 23) until  or  appears with the message 'Mid' or 'Int'.

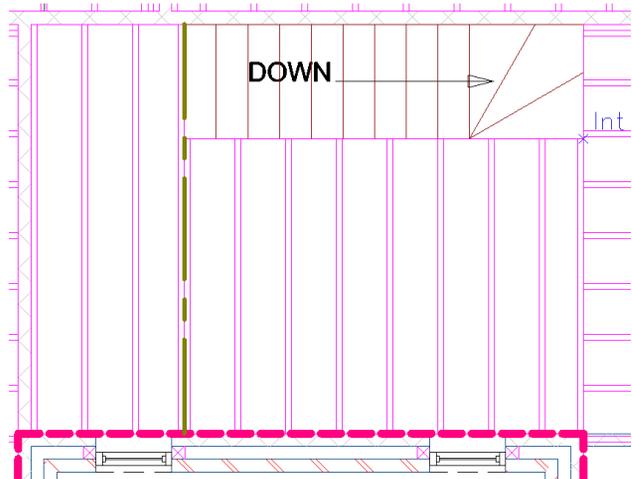
66.  Click the left mouse button to register the Start Point of the Trimmer.

The Command Window prompts: Give Next Point.

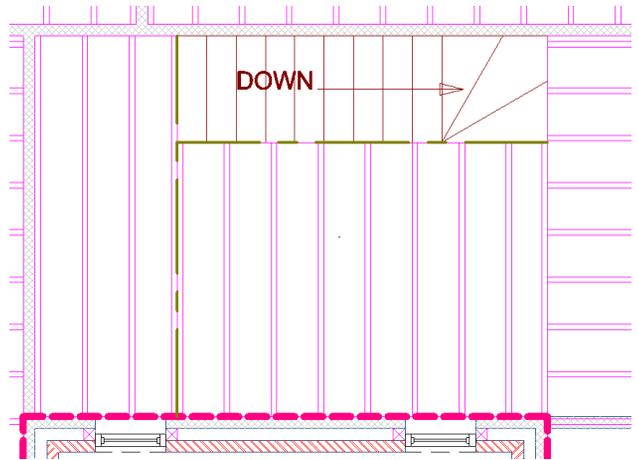
67. Move your mouse over Trimmer 1 until  or  appears with the message 'Int' or 'End'.

68.  Click the left mouse button to register the Next Point of the Trimmer.

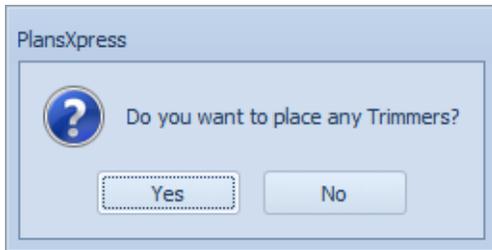
69.  Click the right mouse button to tell **PlansXpress®** you've finished drawing this Trimmer.



70. Repeat this process to place Trimmer 3. This time set the Number of hangers to trimmers to upper floor to 0 because we've already estimated for the 2 required trimmer hangers.



After you've registered the Next Point of the Trimmer and clicked the right mouse button to tell **PlansXpress®** you've finished drawing Trimmer 3, a dialog box pops up asking if you wish to draw another Trimmer.



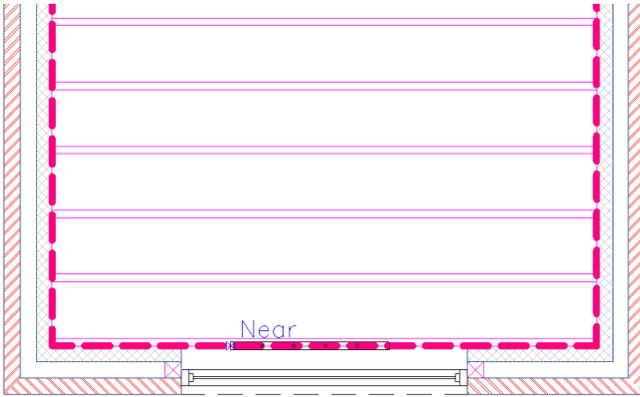
71. Click No.



A dialog box pops up asking if you wish to place any End Straps.

72. Click Yes.

Let's place the End Strap labelled 1 on Diagram D on page 23.

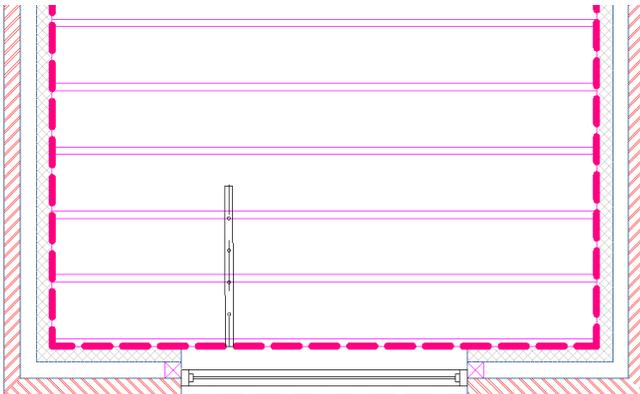


The Command Window prompts: Give Insertion Point.

73. Hold your mouse over the point where End Strap 1 meets External Wall 7 (as shown on Diagram D on page 23) until  appears along with the message 'Near'.

74.  Click the left mouse button to register the point where the End Strap meets External Wall 7.

The Command Window prompts: Give Point to Rotate To.



75.  Hold down the Shift key.

76. Move your mouse up the screen until the End Strap is vertical.

77.  Click the left mouse button to register the orientation of the End Strap.

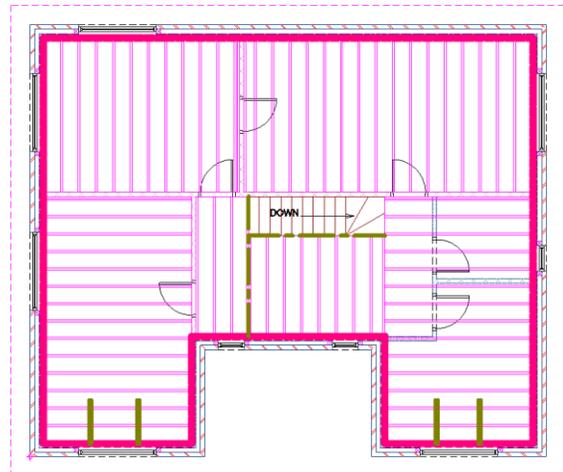
78. Release the Shift key.

79. Repeat this process to place all the remaining End Straps.

After you've placed the final End Strap, click No to the dialog box asking if you wish to place an End Strap.

Your first floor plan should now look like this:

80.  Press the Save button.



SETTING OUT THE HOUSE SLAB



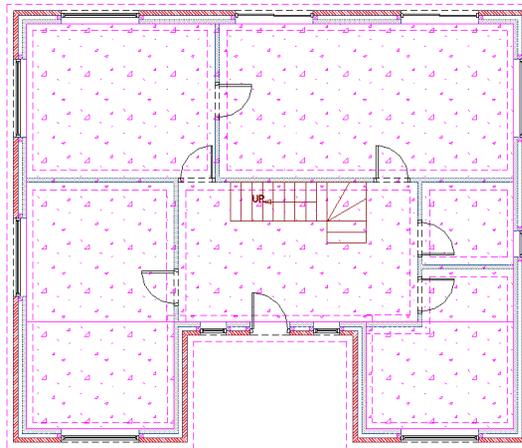
This section of the Tutorial guides you through placing the house slab on the ground floor plan by marking out each section of the slab. Drawing the house slab is only necessary if you wish to go on to estimate the plans using **EstimatorXpress®**. It is obviously not required on production drawings.

During this exercise you will learn how to:

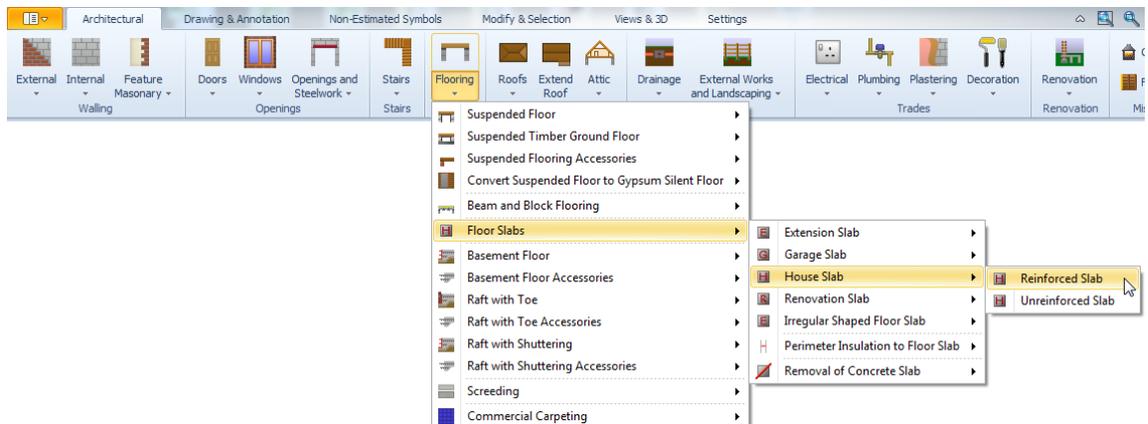
- mark out each section of the house slab;
- place perimeter insulation.

You will need to refer to Diagram E on page 24 during this exercise.

During this exercise, you will draw a slab which looks like this:



We're going to place the house slab by marking out the largest section of Slab, Section 1.

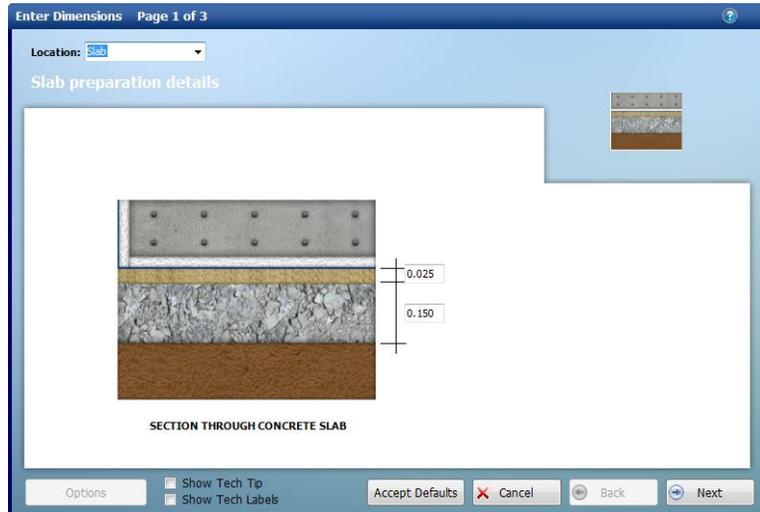




1. Press the dropdown arrow next to the Flooring button.
2. Click on the sub-menu called Floor Slabs.
3. Click on the option called House Slab.
4. Click on the dimensional template called Reinforced Slab.

The Slab Dimensions Wizard pops up.

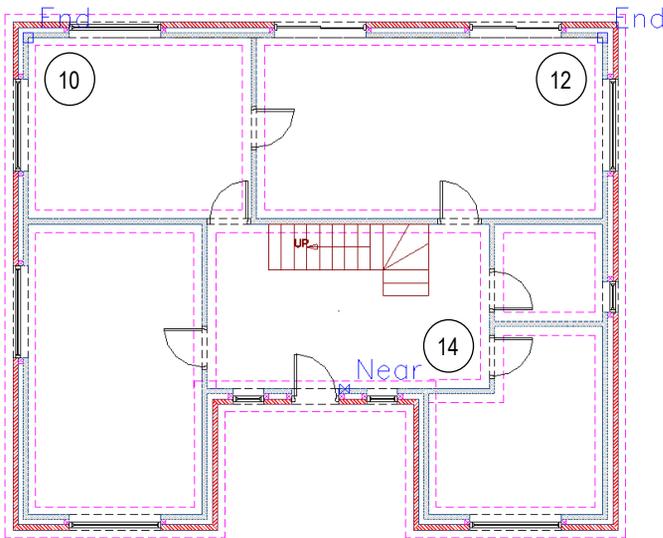
5. Review the Slab preparation details.
6. Click Next.
7. Review the remaining slab details, clicking Next to move through the pages of the Dimensions Wizard.
8. Once you're happy with the details you've entered into the last page of the Dimensions Wizard, click Finish.



PlansXpress® is now ready to draw the slab.

The Command Window prompts: Give First Corner of Floor. Ignore the bit in brackets – you may recall this helped you draw the suspended floor but is not relevant to the slab.

9. Zoom in so that you can clearly see the ground floor layout.



10. Hold your mouse over the inside of where External Walls 1 and 8 meet until appears with the message 'End'.

11.  Click the left mouse button to register the first corner of this section of slab.

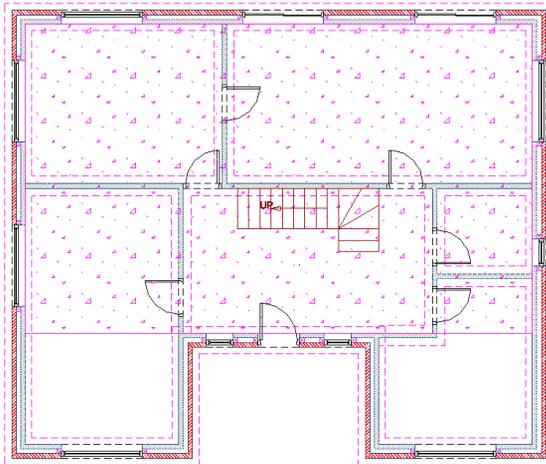
The Command Window prompts: Give Second Corner of Floor.

12. Hold your mouse over the inside of where External Walls 1 and 2 meet until appears with the message 'End'.

13.  Click the left mouse button to register the second corner of this section of slab.

The Command Window prompts: Indicate the length of the floor.

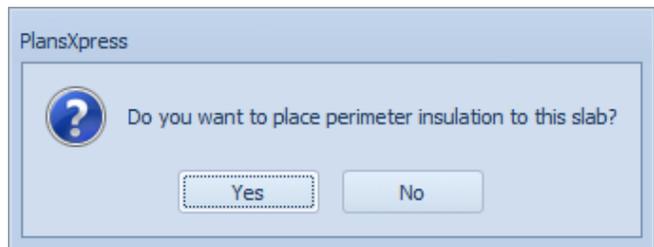
14. Hold your mouse over the inside of External Wall 5 until  appears along with the message 'Near'.



15.  Click the left mouse button to register the length of the floor.

A dialog box pops up asking if you wish to add perimeter insulation to the slab. We'll place the perimeter insulation after drawing each section of slab.

16. Click No.



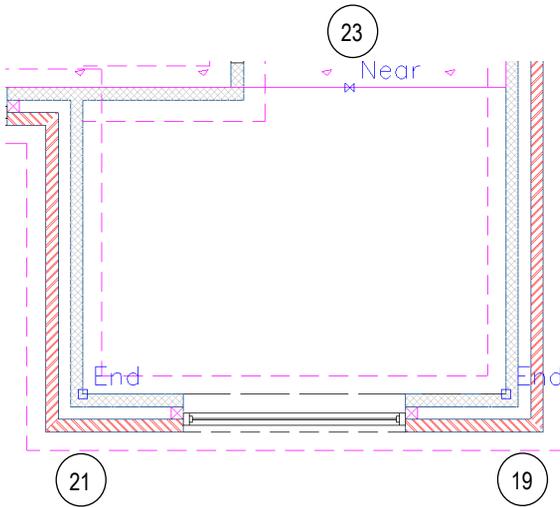
Let's now draw Section 2 of the slab.



- Press the House Slab button on the Flooring menu or right click with the cursor over the drawing to start the new section of slab.

This tells **PlansXpress**® that we want to draw a slab with the same specification.

- Review each page of the dimensions wizard again to make sure you're happy with the values set. You will notice that the last page has plant requirements that you will typically set for the entire slab, but only allow for them in one instance of the wizard. Once complete, click Finish.



The Command Window prompts: Give First Corner of Floor.

- Hold your mouse over the inside of where External Walls 2 and 3 meet until appears with the message 'End'.

- Click the left mouse button to register the first corner of this section of slab.

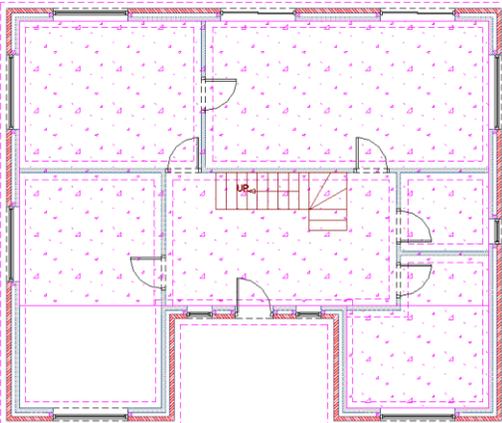
The Command Window prompts: Give Second Corner of Floor.

- Hold your mouse over the inside of where External Walls 3 and 4 until appears with the message 'End'.

- Click the left mouse button to register the second corner of this section of slab.

The Command Window prompts: Indicate the length of the floor.

- Hold your mouse over the edge of Section 1 of the slab until appears along with the message 'Near'.

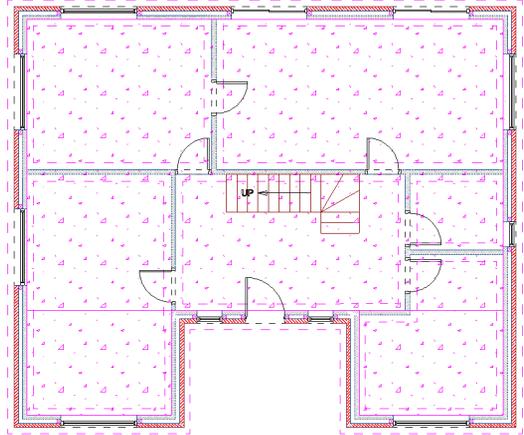


- Click the left mouse button to register the length of the floor.

The dialog box pops up asking if you wish to add perimeter insulation to the slab. Again, we'll decline.

25. Click No.

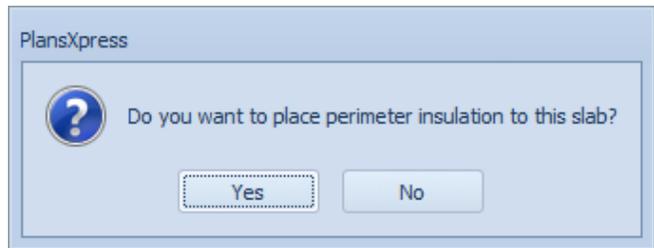
26.  Press the House Slab button again or right click and repeat the process to draw Section 3 of the slab, until the dialog box pops up asking if you wish to place perimeter insulation.



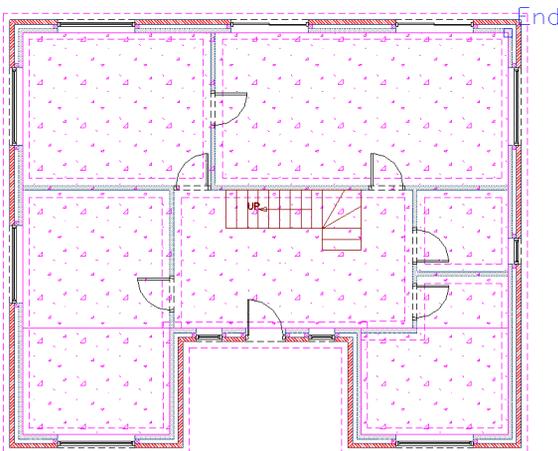
27. Click Yes.

28. Review the depth of perimeter insulation and click Finish.

To place the perimeter insulation, all you have to do is mark out where the insulation will go by clicking round the perimeter of the floor, just as you did with the perimeter sealant for the suspended floor.



The Command Window prompts: Give First Point.



29. Hold your mouse over the interior corner of where External Wall 8 meets External Wall 1 until appears with the message 'End'.

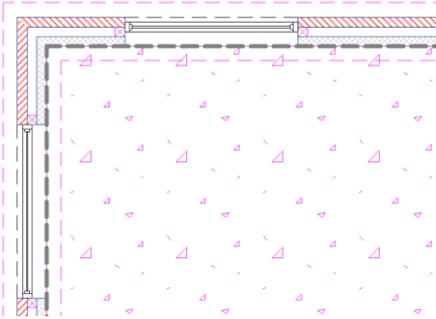
30.  Click the left mouse button to register the first point on the perimeter of the wall.

The Command Window prompts: Give Next Point.

31. Hold your mouse over the interior corner of where External Wall 1 meets External Wall 2 until appears with the message 'End'.

32.  Click the left mouse button to register the next point on the perimeter of the wall.

33. Repeat this process to register each corner point on the perimeter of the floor area.



34.  Once you've clicked back on to the original point of the floor, click the right mouse button to tell **PlansXpress®** you've finished drawing the perimeter insulation.

The dialog box pops up asking if you wish to draw another length of perimeter insulation.

35. Click No.

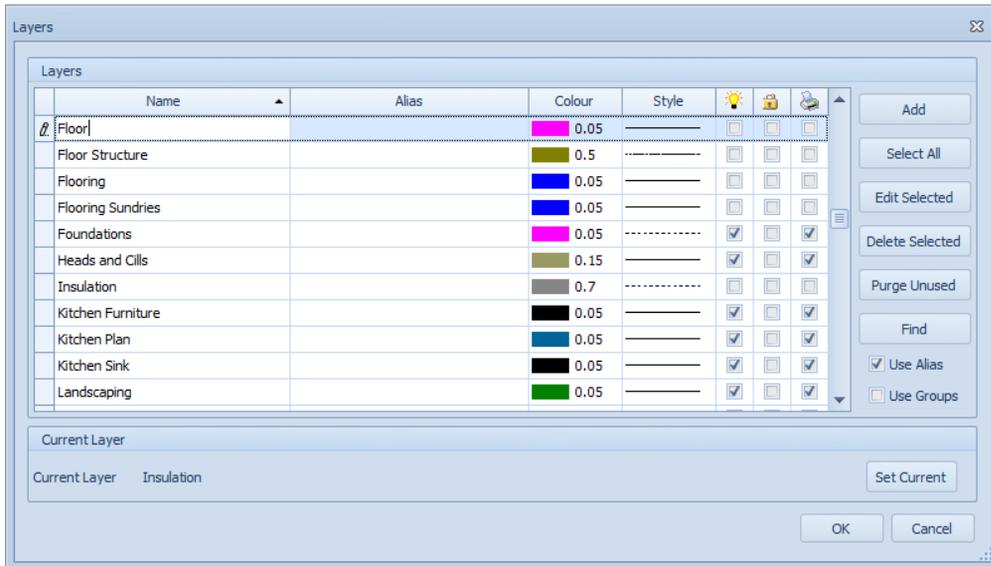
You've now finished drawing the slab and associated perimeter insulation.

We now need to turn off the Floor Layers so that they don't get in the way while we're drawing the rest of the house and so they don't appear on any printouts.



36. Press the Layers button (Found under the Views & 3D tab).

The Layers dialog box pops up.

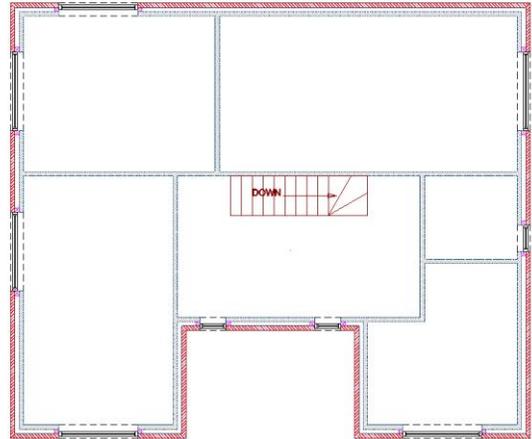
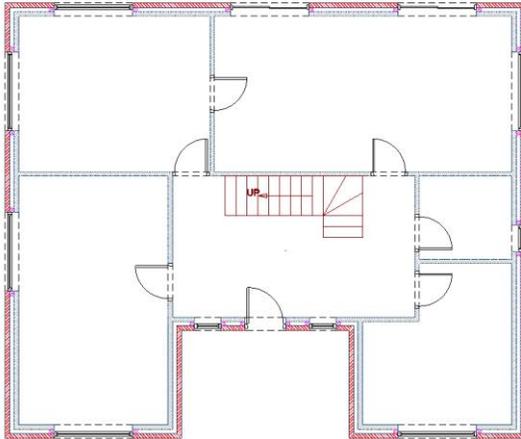


37. Locate the Floor Layer using the scroll bar.

38. Untick the Light bulb (view on screen) and Printer (print) tick boxes associated with the Floor Layer.

39. Untick the Light bulb (view on screen) and Printer (print) tick box associated with the Floor Structure Layer.
40. Repeat this process to hide the Flooring, Flooring Sundries, Insulation and Sealant Layers so that they don't appear on screen or on printouts.
41. Click OK.

You'll notice both the Suspended Floor and House Slab are hidden onscreen. They will no longer appear in any printouts.



42.  Press the Save button.

ADDING WALLS, DOORS AND WINDOWS TO THE FIRST FLOOR



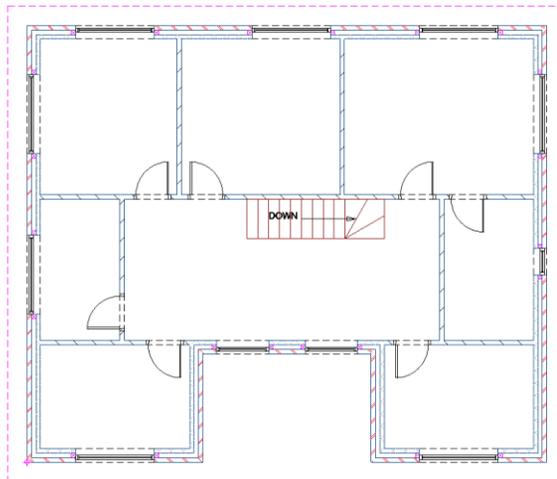
This section of the Tutorial talks you through adding the stud walls, internal doors and any additional windows to the first floor plan.

During this exercise you will revise how to:

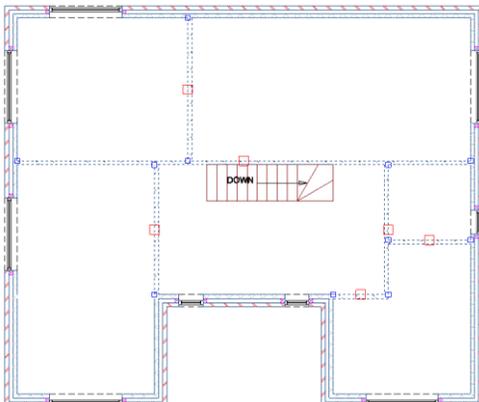
- draw internal walls;
- insert windows and doors.

You will need to refer to Diagram C on page 22 during this exercise.

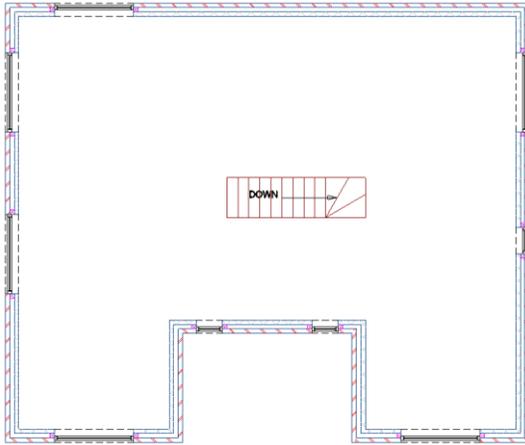
At the end of this exercise, your first floor plan will look like this:



We need to start by deleting the internal block walls.

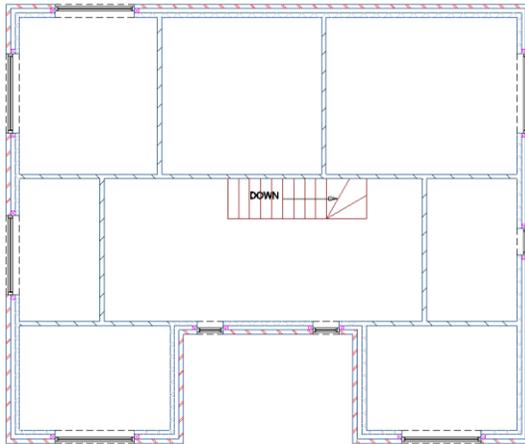


1.  Hold down the Ctrl key.
2.  Click on each of the internal walls in turn to select them.



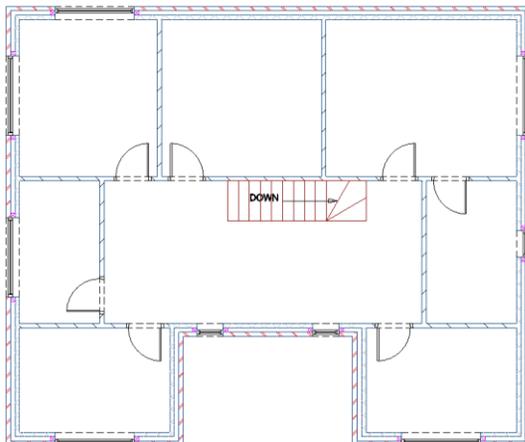
3.  Press the Delete key to delete all of the block walls.

Now use Diagram C (page 22) to place the stud walls in the same way as you placed the block walls.



4.  From the **Internal Wall** dropdown, select the **Stud Wall** type and click on the dimensional template called **Typical 2.325 floor to joist height stud wall**.

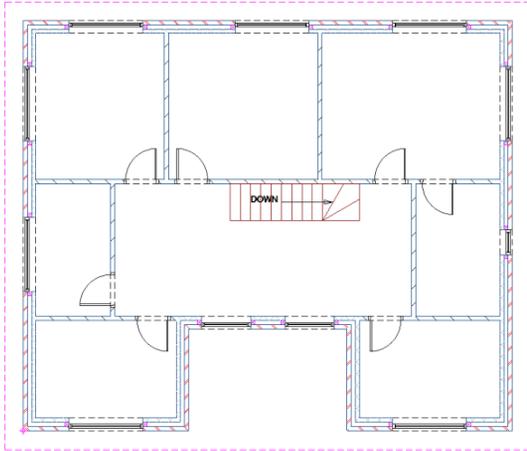
When working your way through the Dimensions Wizard, ensure the **Width of wall** is set to 0.1. Refer back to the section on drawing internal walls, starting on page 45, if you need a reminder on how to draw internal walls.



5. Once you've placed the stud walls, you can place the internal doors.

From the **Doors** dropdown menu, click on the **Internal Doors** type, click on **Typical Panel Doors** and select the **762 Door into studding** dimensional template.

Place the doors according to Diagram C on page 22. Refer back to the section on placing doors (starting on page 67, if you need any tips).



9.  Press the Save button.

6.  Referring to Diagram C on page 22, add the 1800 wide windows to External Wall 1 (these will be positioned exactly as per the 1800 patio doors on the ground floor).

In the **Windows** dropdown menu, click on **PVCu Standard Windows**, select the **PVCu windows 1200 deep window** option and use the **312C 1800 x 1200** window dimensional template. Refer back to the section on placing windows (starting on page 58 if you need any tips).

7. Delete the 600 wide windows on the front face of the house ready to replace with 1200 wide windows.

8.  To place the 1200 wide windows, select the **PVCu windows 1200 deep window** type from the **Windows** dropdown menu and click on the **212C 1200 x 1200** window dimensional template.

ADDING A STRUCTURAL OPENING



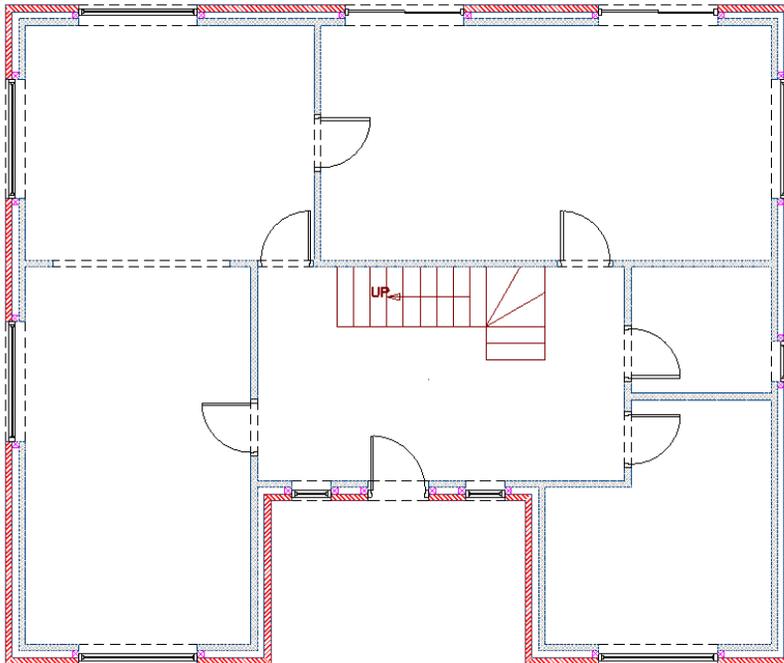
This section of the Tutorial takes you through adding the structural opening between the breakfast kitchen and dining room. The process for placing a structural opening is similar to that of placing a door or window.

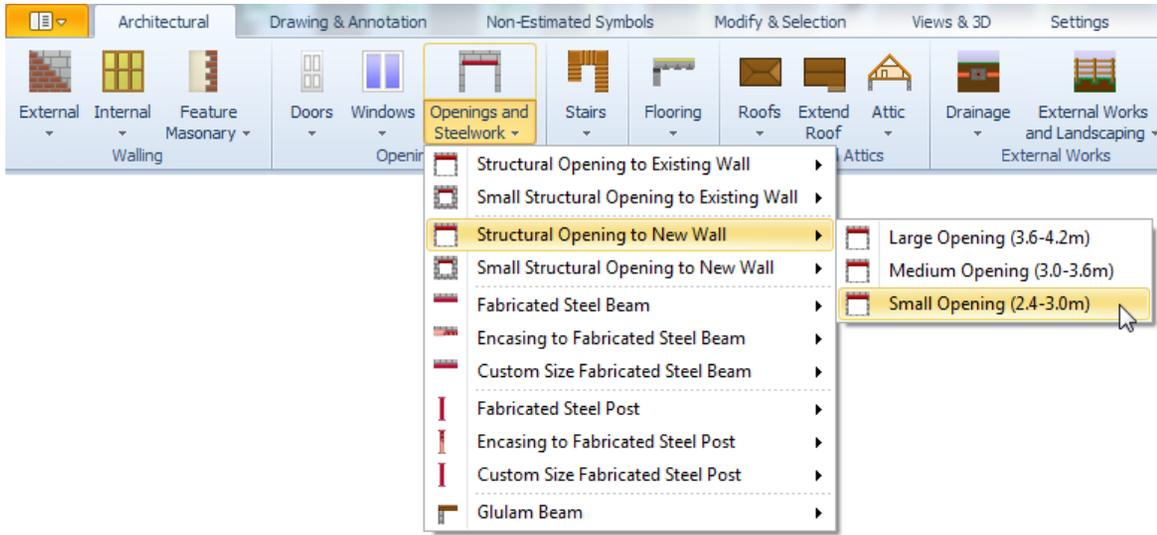
During this exercise you will learn how to:

- place a structural opening.

You will need to refer to Diagram B on page 21 during this exercise.

At the end of this exercise, your ground floor plans will look like this:

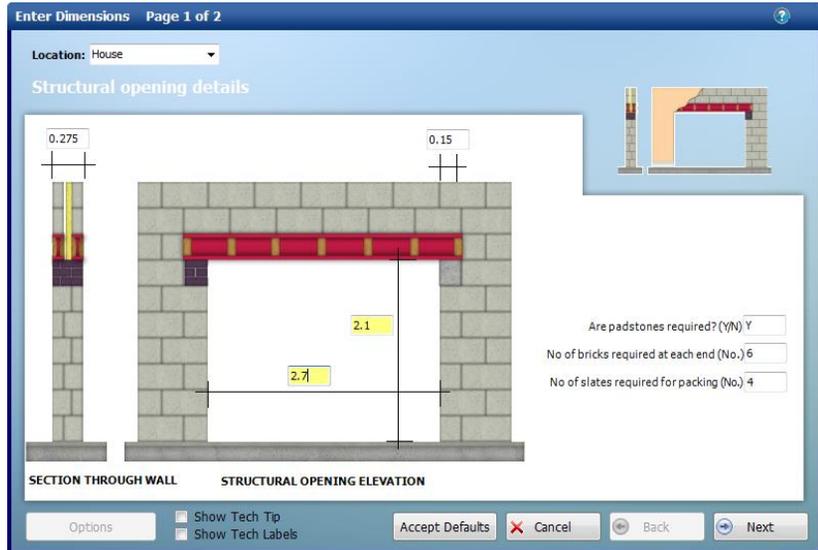




1.  Press the Openings and Steelwork dropdown.
2. Click on the Structural Opening type called Structural Opening to New Wall.
3. Click on the dimensional template called Small Opening (2.4-3.0m).

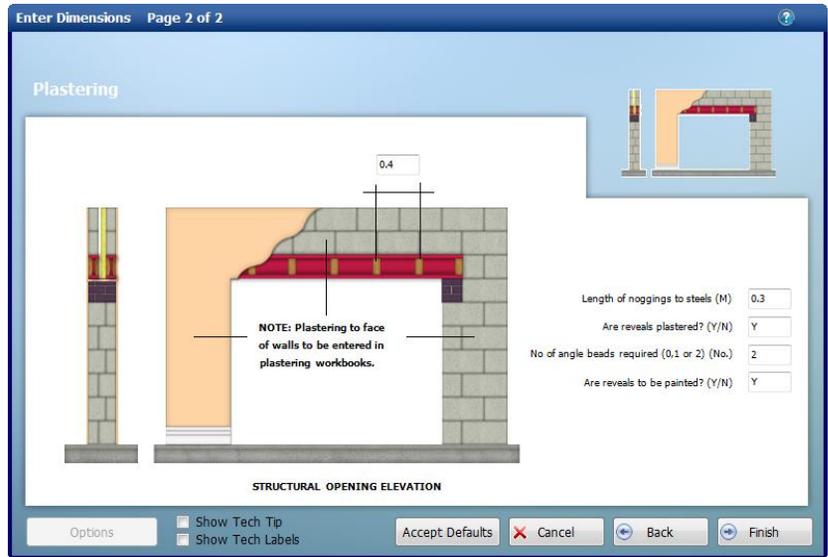
The Structural Opening Dimensions Wizard pops up.

4. Enter an Opening Width of 2.7 (Later you will need to check the size of the lintel specified in **EstimatorXpress®**).
5. Review the structural opening details.
6. Click Next.



7. Review the plastering details.

8. Click Finish.



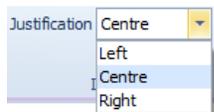
PlansXpress® is now ready to place the structural opening.

The Command Window prompts: Give Insertion point on wall.

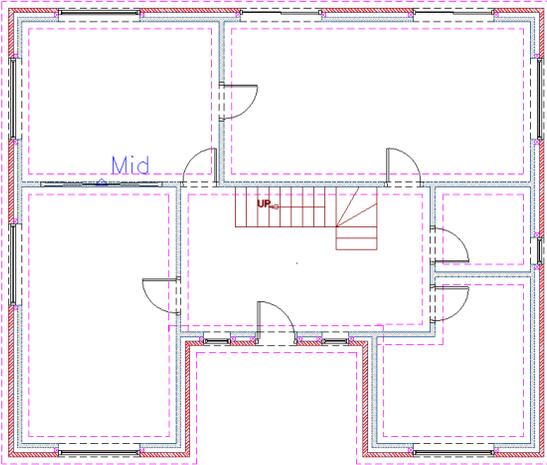
9. Press F7  or the Snap button  to ensure you're in Snap mode.

We want to place the opening in the middle of the wall between the Kitchen and the Dining Room using the Mid snap point.

To do this we need to ensure the Justification of the opening is set to Centre. This will ensure the Centre of the opening will be placed on the Mid point of the wall.



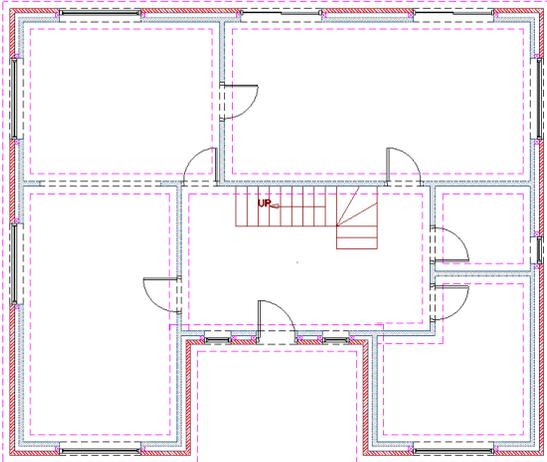
10. Check that Centre is selected in the Justification drop down box.



11. Hold your mouse over the section of Internal Wall 1 where the opening is to be placed until  appears along with the message 'Mid'.

12.  Click the left mouse button to place the opening.

The opening is now shown in the plans, and your page should look like this:



13.  Press the Save button.

ADDING BATHROOM, CLOAKS & KITCHEN SYMBOLS



This section of the Tutorial guides you through adding both estimated and non-estimated symbols to the plans.

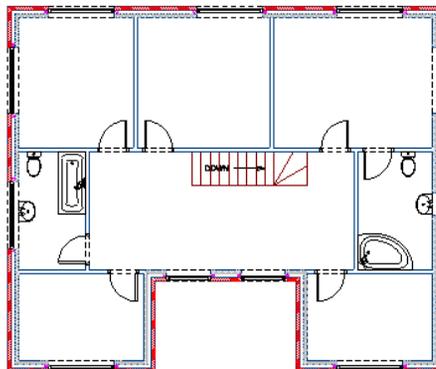
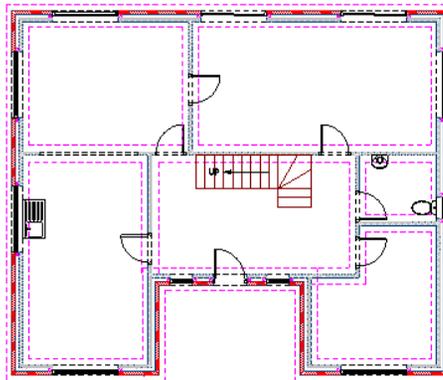
During this exercise you will learn how to:

- add estimated sanitaryware, baths and showers*;
- add symbols for non-estimated kitchen items.

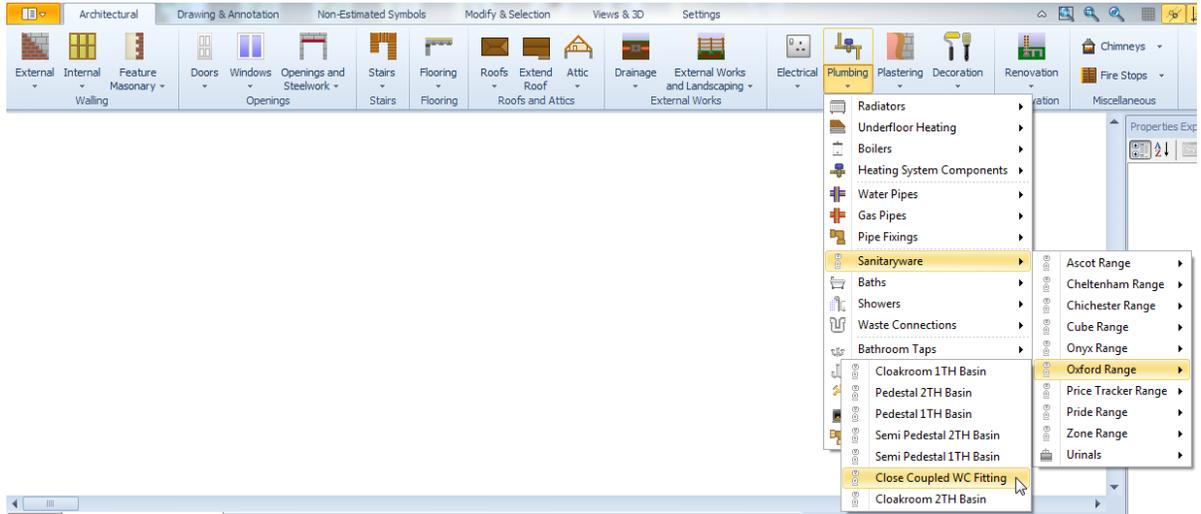
* Estimating items from the Plumbing menu – such as sanitaryware, baths and showers - requires **EstimatorXpress® Plumbing and Heating edition** or **EstimatorXpress® Ultimate Edition**. To upgrade to either edition, call the **HBXL Sales Team** on **0845 1234 065**. Without either of these editions you can still add items from the Plumbing menu to your drawing but you won't be able to estimate them when you import the drawing into **EstimatorXpress®**.

You will need to refer to Diagrams B and C on pages 21 and 22 during this exercise.

At the end of this exercise, your page will look like this:



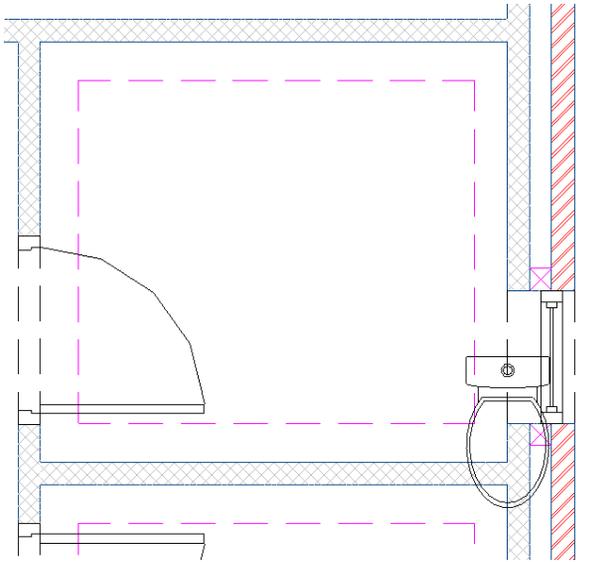
Let's start by adding the toilet and wash basin to the ground floor W.C. First we'll place the toilet.



1.  Press Plumbing dropdown from the Architectural tab.
2. Click on the category called Sanitaryware.
3. Click on the Oxford Range.
4. Select the Close Coupled WC Fitting option.

PlansXpress® is now ready to place the estimated toilet symbol.

5. Zoom into the W.C. by hovering your cursor over it and scrolling the scroll wheel away from you.



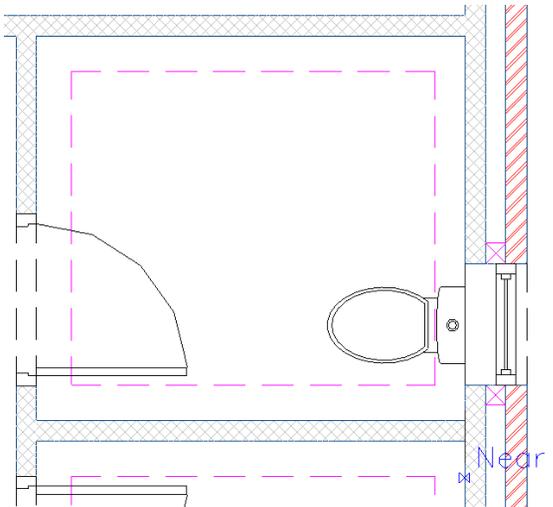
The Command Window prompts: Give Insertion Point.

As you can see from Diagram B on page 21, the toilet is flush with External Wall 2 under the window.

6.  Click your left mouse button on the point where the middle of the toilet cistern meets the wall.

The Command Window prompts: Give point to rotate to.

You'll see that as you move the mouse, the toilet rotates.



7.  Hold down the Shift key on your keyboard to lock the rotation of the toilet to 45 degree increments.

We obviously want the toilet to be straight so it's flush with the wall.

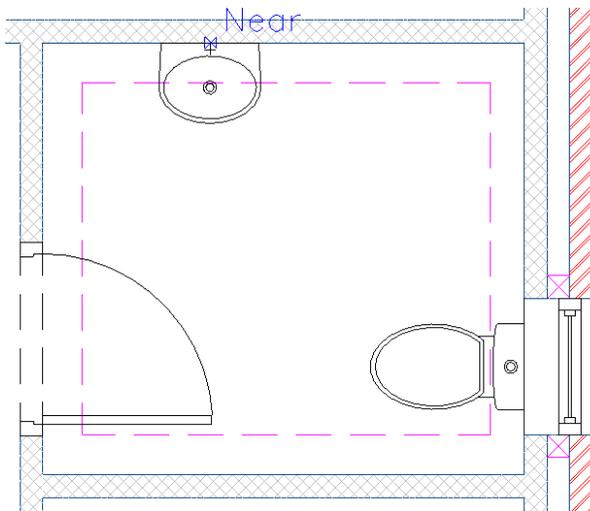
8. Move your cursor down the screen until the toilet symbol is flush with the wall.

9.  Click the left mouse button to register the position of the toilet and release the Shift key.

Let's repeat this process to add the wash basin.

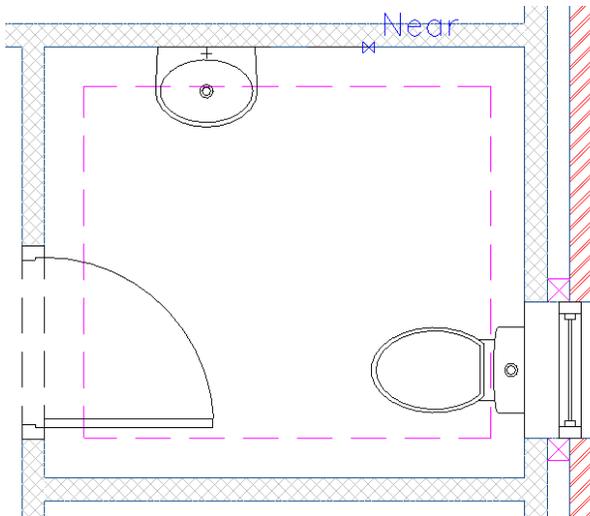


10. Press the dropdown arrow on the Plumbing menu.
11. Click on the category called Sanitaryware.
12. Click on the Oxford Range.
13. Select the Cloakroom 1TH Basin.



The Command Window prompts: Give Insertion Point.
As you can see from Diagram B on page 21, the wash basin is flush with Internal Wall 1.

14.  Click your left mouse button on the point where the middle of the wash basin meets the wall.



The Command Window prompts: Give point to rotate to.

15.  Hold down the Shift key on your keyboard to lock the rotation of the wash basin to 45 degree increments.
16. Move your cursor to the right of the wash basin symbol until the wash basin is flush against the wall.
17.  Click the left mouse button to register the position of the wash basin and release the Shift key.

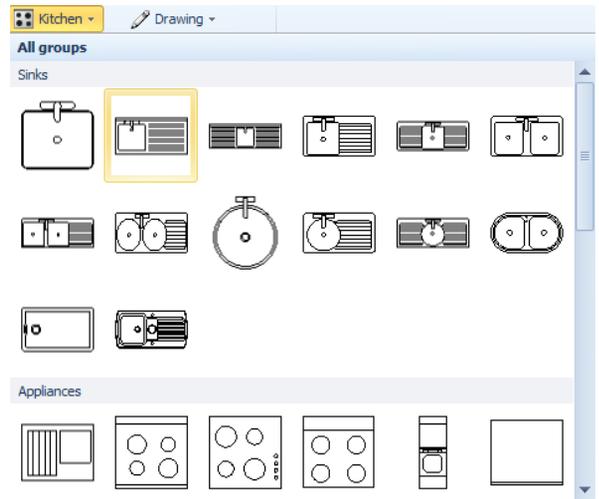
18. Repeat this process to add estimated toilets, wash basins and baths to the bathrooms. Use the category called Baths in the Plumbing menu to add baths. Remember, you can move any symbol once you've placed it by clicking on it with your left mouse button and clicking on the red square which appears.

If you zoom in closely to the plumbing symbols, you'll notice that they don't have any taps. You can add estimated taps to bathroom symbols using the Bathroom Taps option on the Plumbing menu.

You can't add estimated kitchen fittings to your drawings and consequently there aren't any kitchen fittings in the Architectural toolbar. However, you can add non-estimated kitchen fittings using the Non Estimated Symbols menu. Let's add a kitchen sink symbol.



19. Press the Kitchen dropdown on the Non-Estimated Symbols tab.



20. Click on a suitable sink symbol.

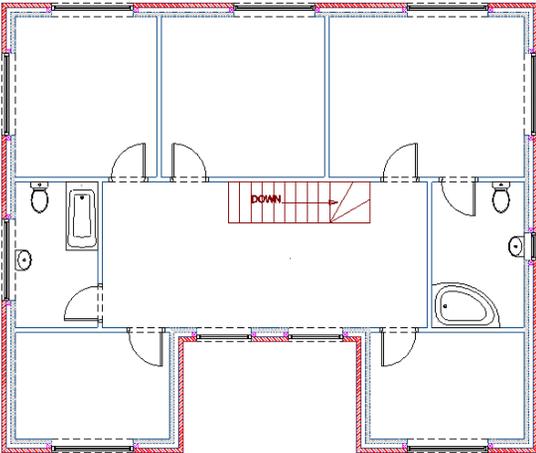
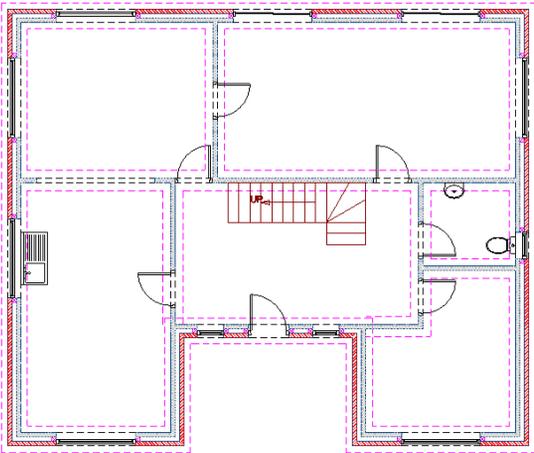
The Command Window prompts: Give Insertion Point.

21. Place the sink as per the Diagram B on page 21.

If you wanted, you could create plans for a full plumbing installation – including a boiler, pipes and radiators – using the other options on the Plumbing menu.

In this case, we're happy just to show the plumbing items for the bathroom and kitchen fitting out.

Once you've placed all the bathroom, W.C. and kitchen symbols, your plans should look something like this:



22.  Press the Save button.

DRAWING THE ROOF



15-20
Minutes

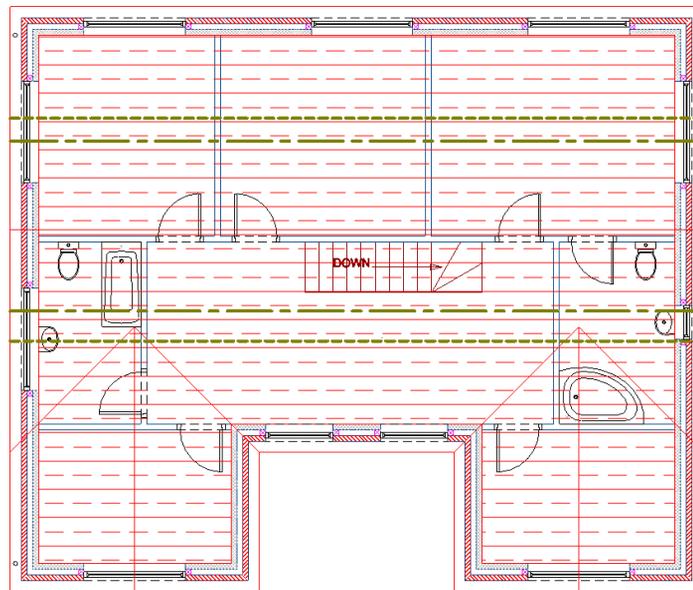
This section of the Tutorial guides you through adding the roof to the first floor plan. In order to draw the roof, you must first break it down into sections and draw the roof section by section.

During this exercise you will learn how to:

- set out a roof, section by section;
- set out purlins and binders;
- place rainwater pipes.

You will need to refer to Diagrams A and F on pages 20 and 25 during this exercise.

At the end of this exercise, your first floor plan will look like this:



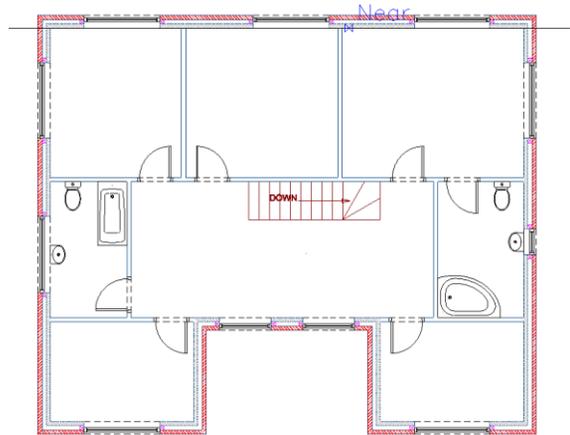
First let's place horizontal construction lines on the first floor layout which will guide us when placing the rainwater pipes later in this section.

1.  Press the Horizontal Construction Line button (Drawing & Annotation tab).

The Command Window prompts: Give Point.

2. Move your mouse so that it's level with the internal side of External Wall 1 and a 'Near'  snap point appears.

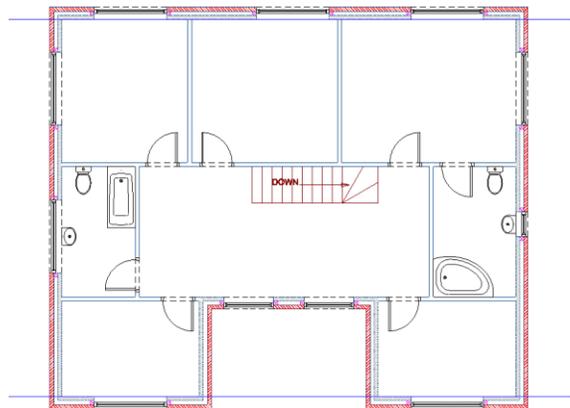
3.  Click the left mouse button to register the position of the construction line.



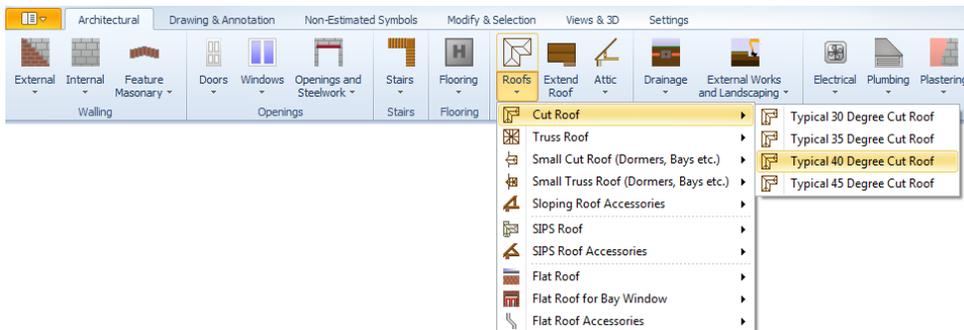
The Command Window prompts: Give Point.

4. Repeat this process to add a construction line running along the internal side of External Walls 3 and 5.
5.  Right click after you've placed the construction line to tell **PlansXpress®** you've finished placing construction lines.

Your plans should now look like this:



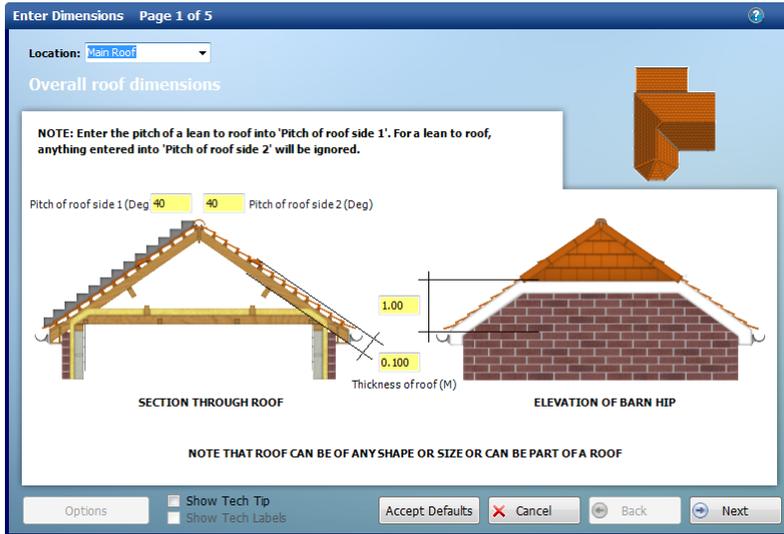
Take a look at the roof elevations on Diagram A on page 20 and the roof plan on Diagram F on page 25. Firstly, we will draw the main apex roof and then we will draw each of the apex valley roofs.





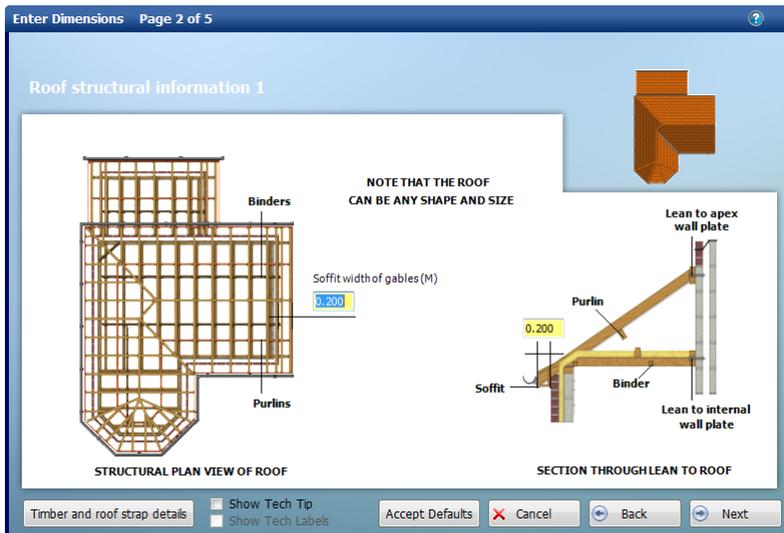
6. Press the dropdown arrow next to the Roof button.
7. Click on the Roof type called Cut Roof.
8. Click on the dimensional template called Typical 40 Degree Cut Roof.

The PlansXpress Cut Roof Dimensions Wizard pops up.



9. Make sure Pitch of roof side 1 and 2 is set to 40 and Thickness of roof is set to 0.100

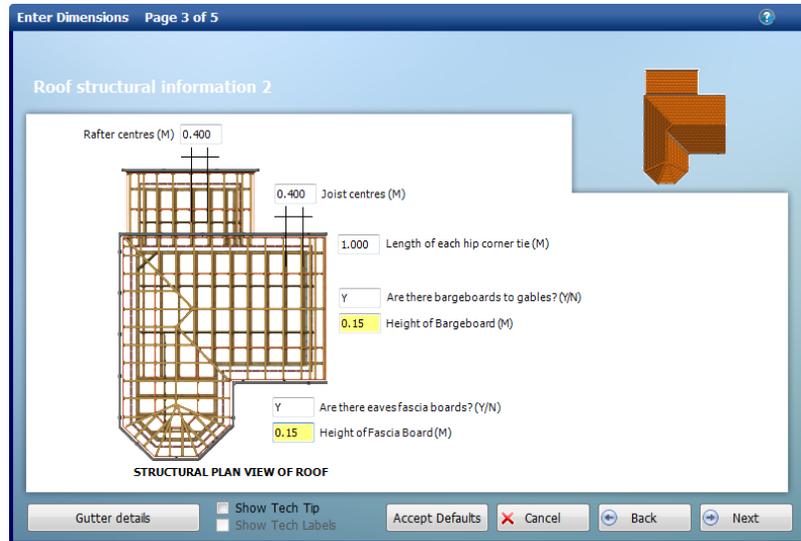
10. Click Next.



11. Review the Roof structural information 1.

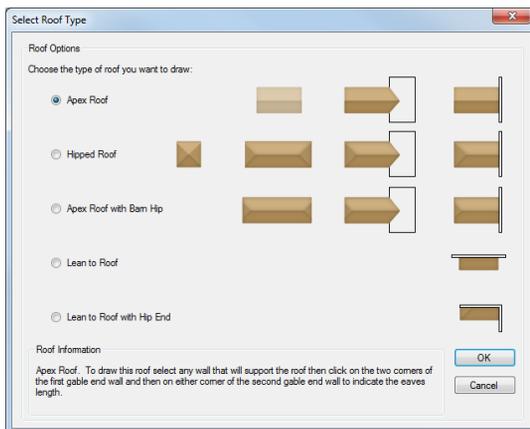
12. Click Next.

13. Set the Height of Bargeboard to 0.15.
14. Set the Height of Fascia Board to 0.15.
15. Review the remaining roof structural information 2.
16. Click Next.



17. Review the remaining roof details, clicking Next to move onto the last page of the Dimensions Wizard.
18. Once you're happy with the information you've entered, click Finish.

A dialog box pops up asking you what type of roof you're drawing.



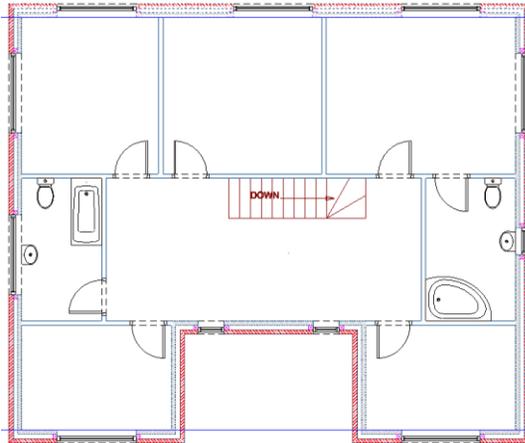
19. Select Apex Roof.

20. Click OK.

PlansXpress® is now ready to start drawing the roof. Refer to Diagram F on page 25.



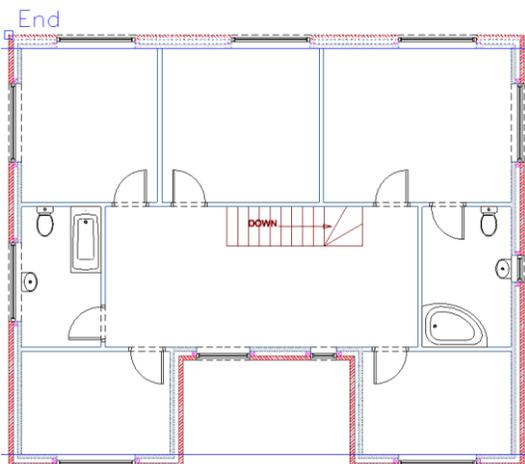
IMPORTANT! Remember to draw the roof on the first floor plan so that it appears in the right place on the elevations!



The Command Window prompts: Indicate wall line that roof is on

21.  Click on the rear wall of the first floor plan with the left mouse button.

The selected walls lines should be shown appear dotted.



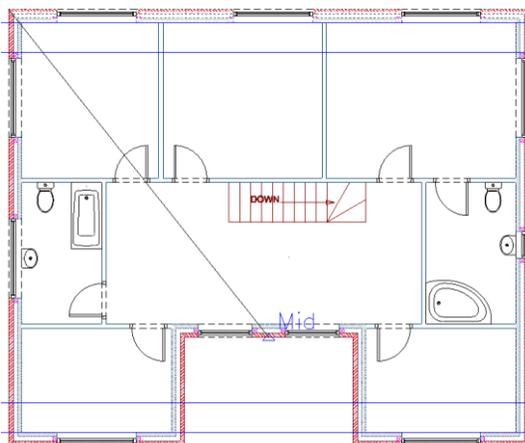
The Command Window prompts: Select First Corner for Width of Building.

When **PlansXpress**® refers to “Width of Building” and you’re drawing an apex roof, it means the gable end of the roof.
When **PlansXpress**® refers to “Length of Building”, it means length along the eaves of the roof.

22. Hold your mouse over the external corner of the house where External Walls 1 and 8 meet until  appears along with the message ‘End’.

23.  Click the left mouse button to register the first corner of the building.

The Command Window prompts: Indicate Second Corner for Width of Building.

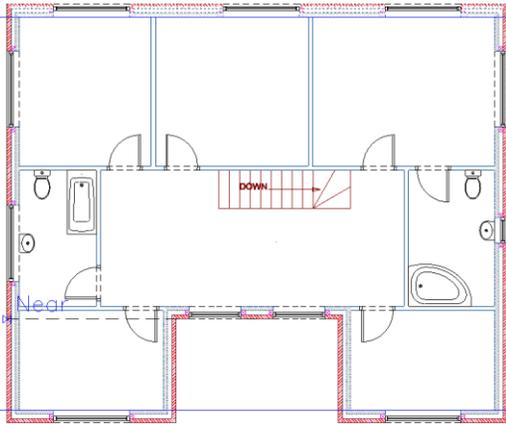


As you can see from Diagram F on page 25, the main roof runs over External Wall 5. Therefore we need to indicate to **PlansXpress**® the point on External Wall 8 in line with the outside of External Wall 5 so that it knows the width of the roof.

24. Hold your mouse over the outside of External Wall 5 until  appears along with the message ‘Mid’.

25.  Press and release the Y key on your keyboard.

This tells **PlansXpress**® that the point we are registering must have the same Y co-ordinate as the point the mouse is hovering over.



26. Move your mouse to the left until it's over External Wall 8.

You will see that the movement of the mouse is restricted in the Y axis.

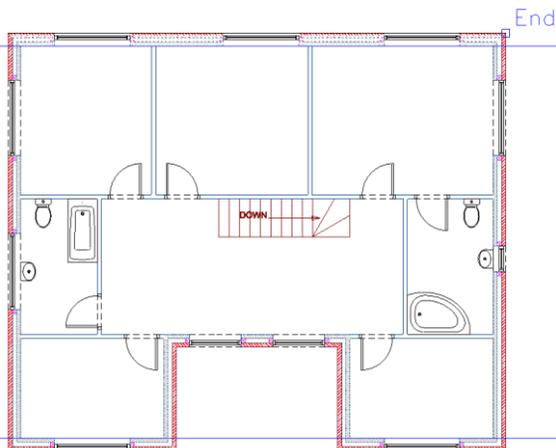


27. Hold down the Shift key.

This tells **PlansXpress**® to draw a straight line between the first point we have registered and the point we are registering now, thus finding the correct point on External Wall 8.



28. Click the left mouse button to register the second corner of the building.



The Command Window prompts: Indicate Corner for Length of Building or [T]ee to join to existing wall/roof.

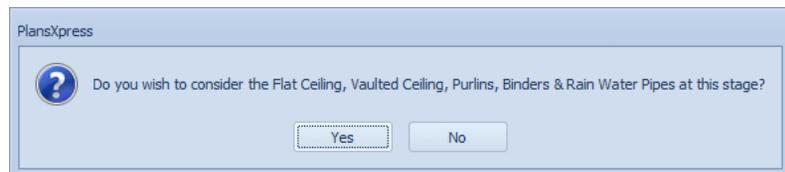
On this occasion we're not teeing into an existing roof or wall. We need to indicate the length of the building measured from the first corner of the roof which you will recall is the back left corner of the house.

29. Hold your mouse over the back right corner of the house where External Walls 1 and 2 meet until appears along with the message 'End'.
30. Click the left mouse button to register the length of the roof.

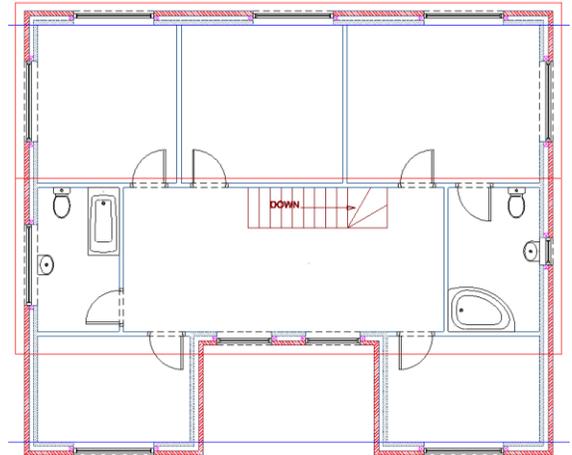
A dialog box pops up asking if you wish to add Purlins, Binders and Rainwater Pipes.

31. Click No.

We'll add these once we've drawn the entire roof.



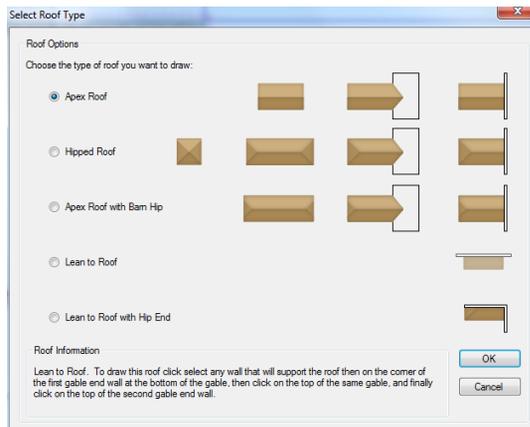
You'll see that the outline of the roof and the ridge line has appeared.



Let's now add the two apex valley roofs, starting with the left gable.

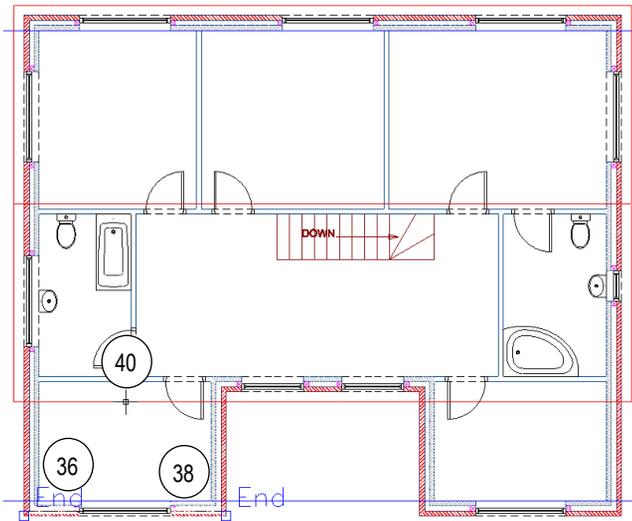
32.  Click the right mouse button to repeat the action of drawing a roof.

A dialog box pops up asking you what type of roof you're drawing.



33. Select Apex Roof.

34. Click OK.



The Command Window prompts: Indicate wall line that roof is on.

35.  Click on the front wall of the gable, External Wall 7, with the left mouse button.

The wall will be highlighted in red.

The Command Window prompts: Select First Corner for Width of Building.

Remember "Width of Building" is referring to the gable end of the roof.

36. Hold your mouse over where External Walls 7 and 8 meet until  appears along with the message 'End'.

37.  Click the left mouse button to register the first corner of the building.

The Command Window prompts: Indicate Second Corner for Width of Building.

38. Hold your mouse where External Walls 7 and 6 meet until  appears along with the message 'End'.

39.  Click the left mouse button to register the second corner of the building.

The Command Window prompts: Indicate corner for length of building, or [T]ee to join to existing wall/roof.

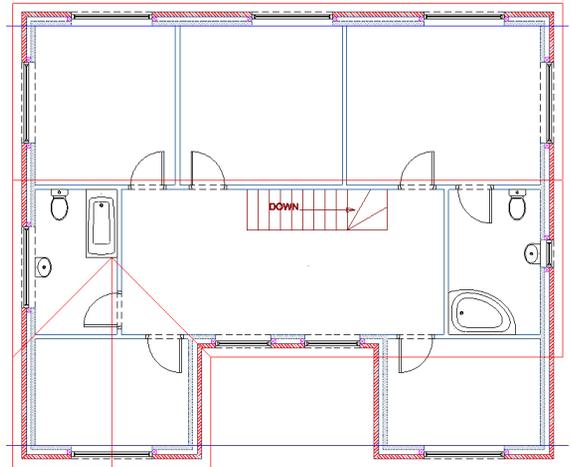
This time we are teeing the valley roof into the main apex roof. Therefore we need to press the T key on the keyboard to tell **PlansXpress**® that the roof we are drawing is teeing into an existing roof.

40.  Press the T key on your keyboard.

The Command Window prompts: Select Wall/Roof line to Tee into.

41.  Click on the eaves line of the main roof which the valley is teeing into.

The valley roof appears teed into the main roof.

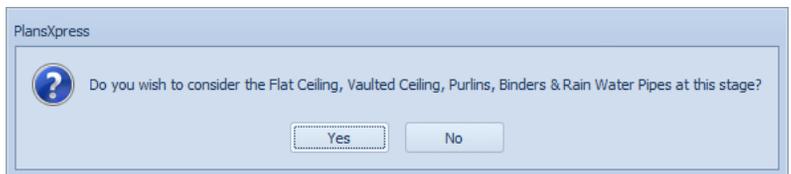


A dialog box pops up asking if you wish to add Flat Ceiling, Purlins, Binders and Rainwater Pipes.

42. Click No.

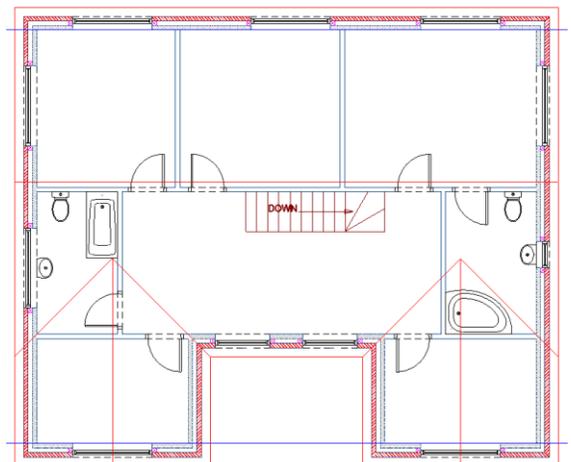
We'll add these later.

The valley roof appears teed into the main roof.



43. Repeat steps 32 to 41 to draw the second apex valley section of the roof.

After marking out the position of the second valley roof, your plans should look like this:



Once you've teed the second valley roof into the main roof, the dialog box pops up again asking if you wish to add Flat Ceiling, Purlins, Binders and Rainwater Pipes. This time we do.

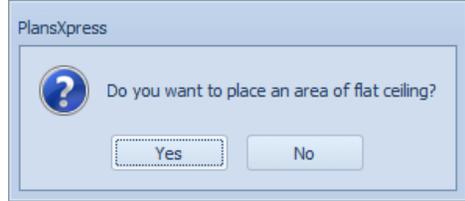
44. Click Yes.

Refer to Diagram F on page 25 for the placement of the Purlins, Binders and Rainwater Pipes.



A dialog box pops up asking specifically if you wish to place an area of flat ceiling.

45. Click Yes.



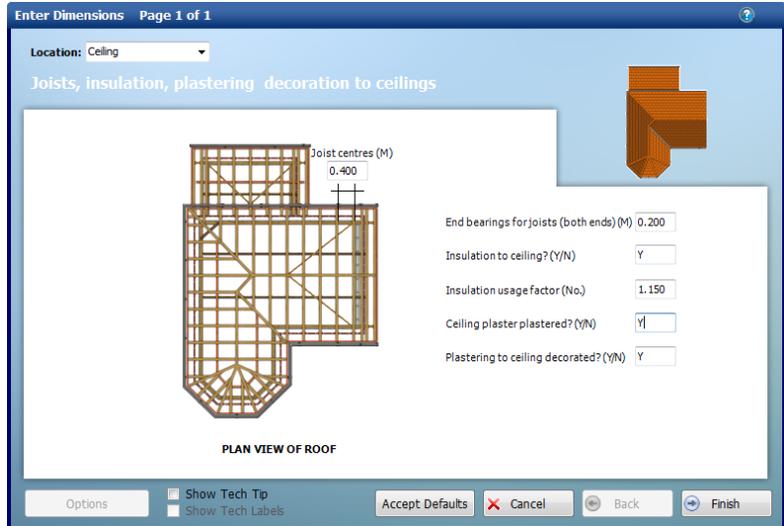
The Ceiling Dimensions Wizard pops up.

46. Check that Insulation to ceiling is set to Y.

47. Check that Ceiling plastered is set to Y.

48. Check that Plastering to ceiling decorated is set to Y.

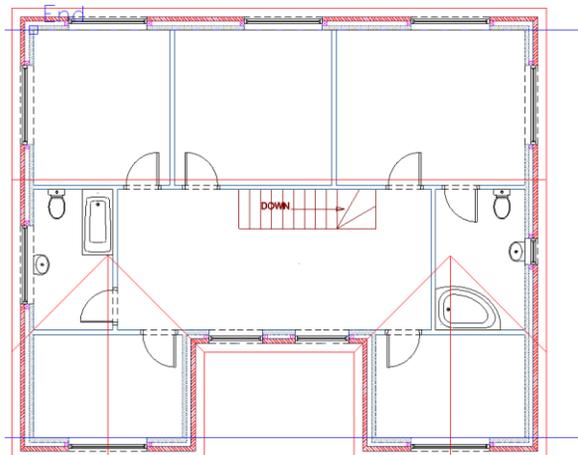
49. Click Finish.



The Command Window prompts: Give Start Point.

50. Hold your mouse over the internal corner of where External Walls 8 and 1 meet until  appears along with the message 'End'.

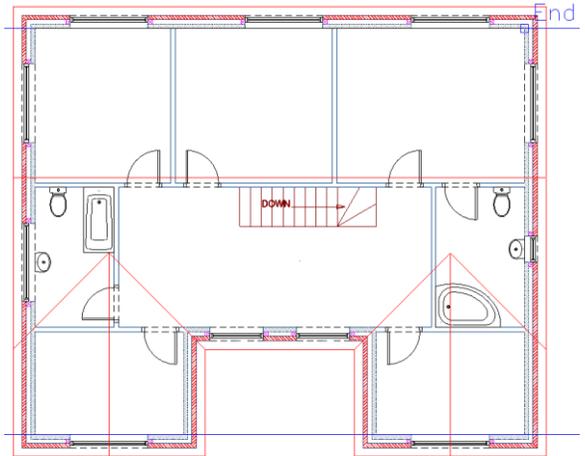
51.  Click the left mouse button to register the start point of the ceiling.



The Command Window prompts: Give Next Point.

52. Hold your mouse over the internal corner of where External Walls 1 and 2 meet until  appears along with the message 'End'.

53.  Click the left mouse button to register the next point of the ceiling.



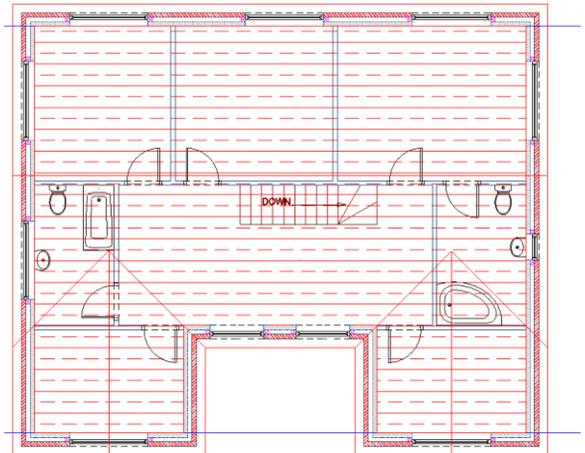
The Command Window prompts: Give Next Point.

54.  Continue in this way, clicking on each internal corner of the house to mark out the ceiling area, until you're placed the last point.

55.  Press the C key to complete the ceiling area.

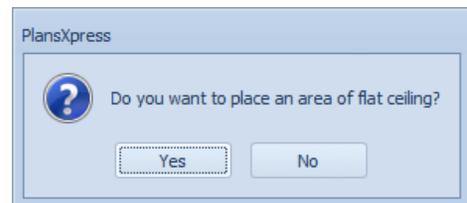
Hatching appears to indicate the position of the ceiling.

56.  Click the right mouse button to tell **PlansXpress®** that you've finished drawing the ceiling.



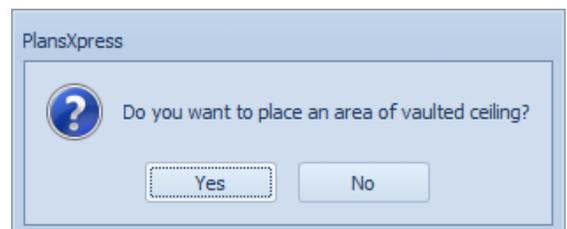
The dialog box pops up asking if you wish to place another area of ceiling.

57. Click No.



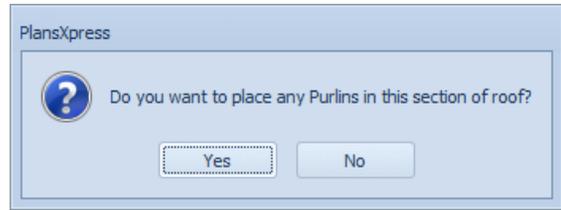
Another dialog box pops up specifically asking if you wish to place an area of vaulted ceiling.

58. Click No.



Another dialog box pops up specifically asking if you wish to place purlins.

59. Click Yes.



The Command Window prompts: Give Start Point.

60. Hold your mouse over the rear slope of the left gable end of the main apex roof until  appears along with the message 'Mid'.

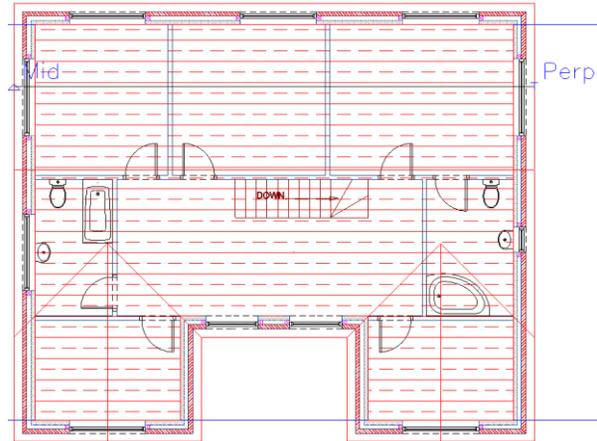
61.  Click the left mouse button to register the start point of the purlin.

The Command Window prompts: Give Next Point.

62. Hold your mouse over the same point on the right gable of the main roof until  pops up along with the message 'Perp'.

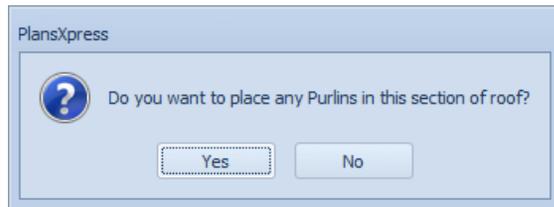
63.  Click the left mouse button to register the next point of the purlin.

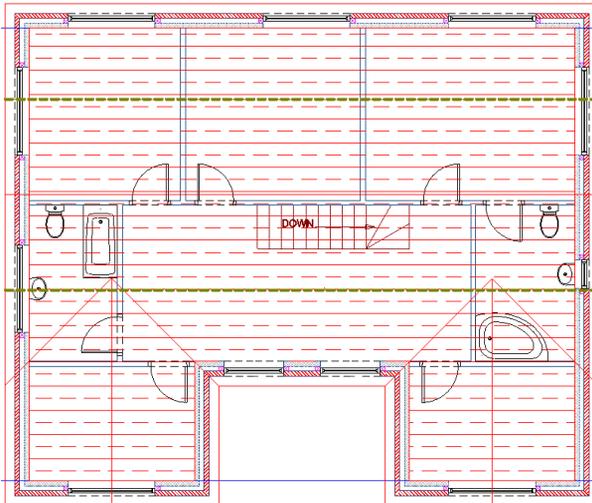
64.  Click the right mouse button to tell **PlansXpress**® you've finished drawing this stretch of purlin.



The dialog box pops up again asking if you wish to place another purlin.

65. Click Yes.



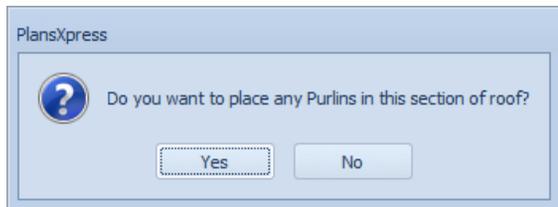


66. Repeat the process detailed above to place a purlin on the front slope of the main apex roof.

67.  Once you've drawn the purlin on the front slope of the roof, click the right mouse button to tell **PlansXpress®** you've finished drawing the purlins.

The dialog box pops up asking if you want to place any more purlins.

68. Click No.

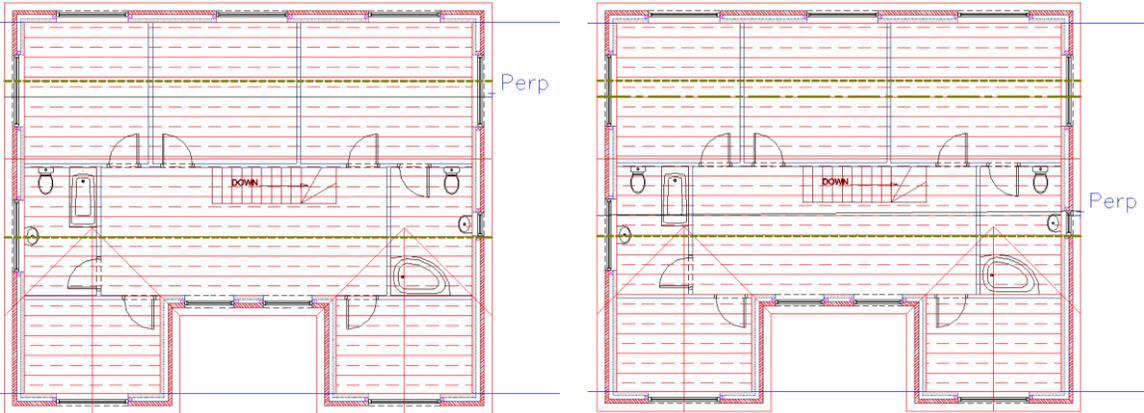


Another dialog box pops up asking if you wish to place any binders.

69. Click Yes.

70. In the same way as you placed the purlins, place the binders on the main roof. You'll see from Diagram F on page 25 that the binders span each slope of the main roof from gable to gable, slightly closer to the ridge than the purlins.

 Remember to right click after drawing the first binder, and click yes to the dialog box asking if you wish to place Binders, in order to place the second binder.



71.  Once you've drawn the second binder, click the right mouse button to tell **PlansXpress®** you've finished drawing the binder.

The dialog box pops up asking if you wish to place Binders.

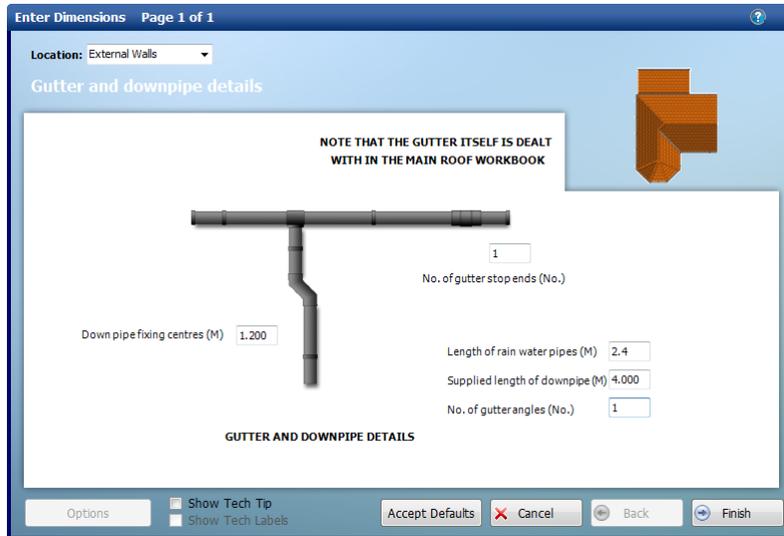
72. Click No.



A dialog box pops up asking if you wish to place Rain Water Pipes.

73. Click Yes.

The Rain Water Pipe Dimensions Wizard pops up.



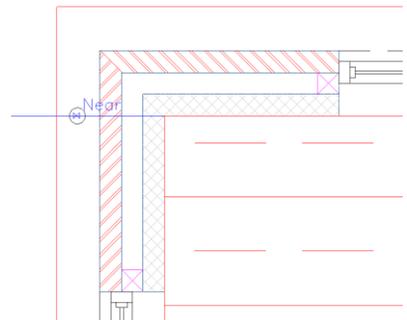
74. Set the number of gutter stop ends to 1.
75. Set the number of gutter angles to 1.
76. Review the remaining gutter details.
77. Click Finish.

You're now ready to place the Rain Water Pipe.

The Command Window prompts: Give Insertion Point.

78. Hold your mouse just to the left of where the upper construction line intersects with the outside of External Wall 8.

79.  Click the left mouse button to register the position of the rainwater pipe.



The Command Window prompts: Give Point to Rotate To.

80.  Click anywhere to register the rotation of the rain water pipe – because it's circular it doesn't matter.

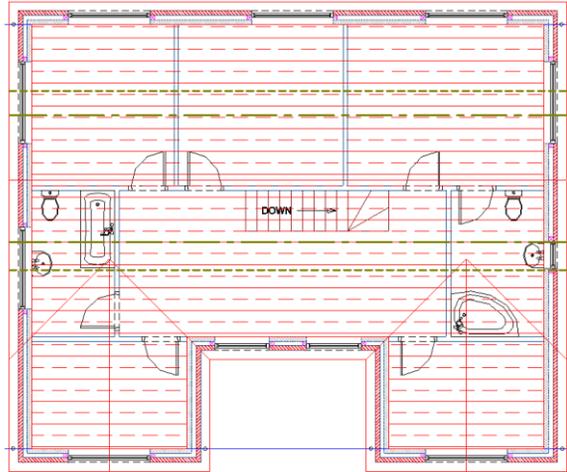
The dialog box pops up asking if you wish to place Rain Water Pipes.

81. Click Yes.



82. Repeat steps 73 to 80 to place the remaining Rain Water Pipes using the construction lines for guidance. Refer to Diagram F on page 25 for the positioning of the Rain Water Pipes.
83. After placing the final Rain Water Pipe, click No to the dialog box asking if you wish to place Rain Water Pipes.

Your first floor plan should now look like this:

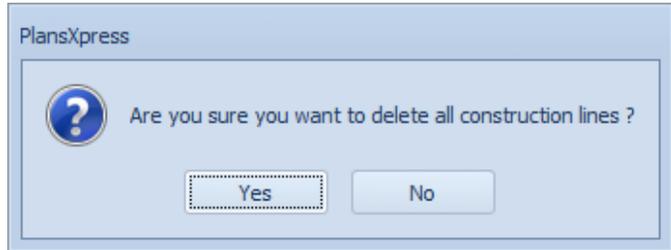


All we need to do now is delete the construction lines.



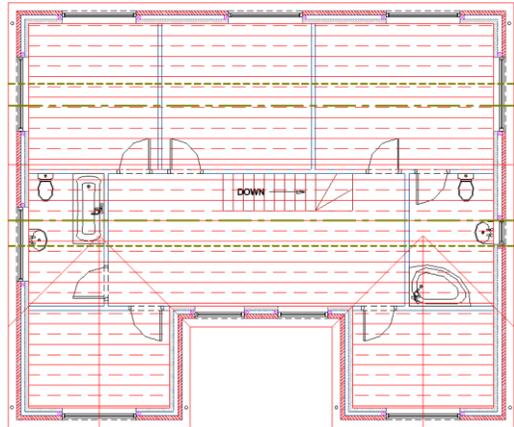
84. Press the Delete Construction Lines button (found on the Drawing & Annotation tab).

A dialog box pops up asking if you wish to delete the construction lines.



85. Click Yes.

Your first floor plan should look like this:



86.  Press the Save button.

ADDING THE DRAIN RUNS & MANHOLES



20-25
Minutes

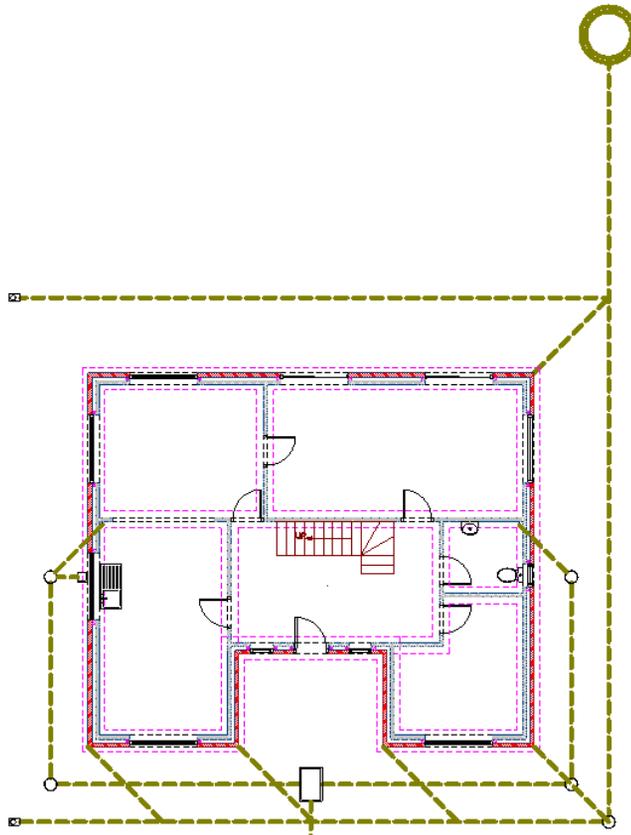
This section of the Tutorial guides you through adding drain runs and manholes for the foul drainage and surface water drainage.

During this exercise you will learn how to:

- add manholes and soakaways;
- add soil vent pipes and gullies;
- draw drain runs;
- switch off the Drainage and Drain Run Layers.

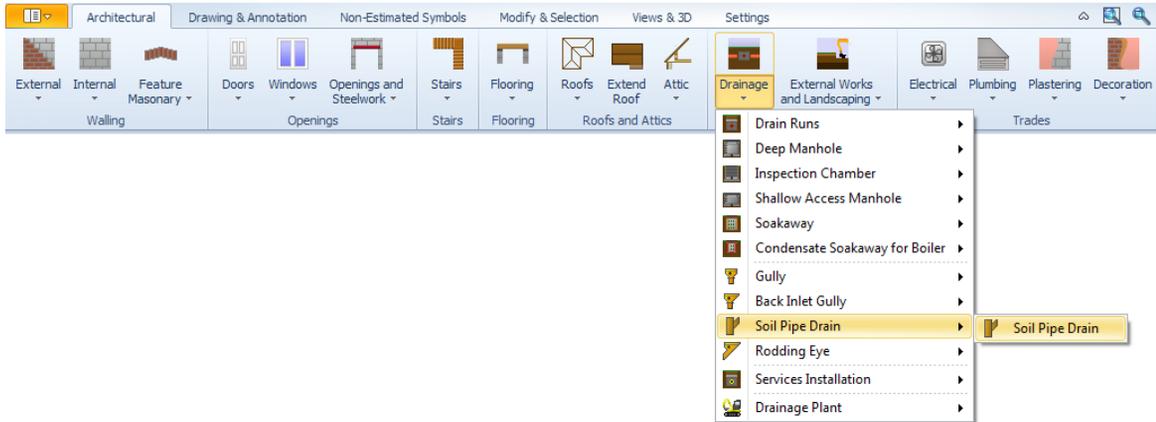
You will need to refer to Diagram G on page 26 during this exercise.

At the end of this exercise, you will have drawn this drainage system:



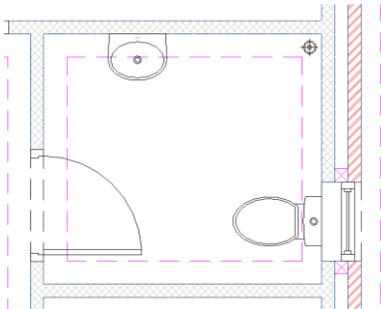
We don't want the drains to appear on the printouts of the ground floor layout, but we do want to estimate them. Therefore we're going to draw them on our ground floor plan, then switch off the Drainage Layer so they don't appear on screen or on any printouts.

Let's start by placing the Soil Pipe Drain in the W.C. and Kitchen.



1.  Press the Drainage dropdown.
2. Click on the Drainage type called Soil Pipe Drain.
3. Click on the dimensional template called Soil Pipe Drain.

PlansXpress® is now ready to place the Soil Pipe Drain. The Command Window prompts: Give Insertion Point.



4. Referring to Diagram G on page 26, move your mouse to the location of the Soil Pipe Drain in the W.C.

5.  Click the left mouse button to register the position of the Soil Pipe Drain.

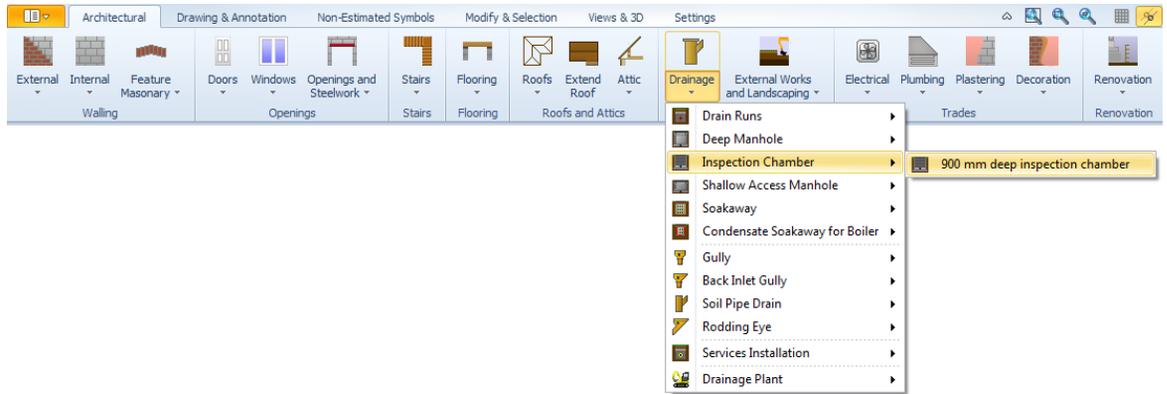
The Command Window prompts: Give Point to Rotate to.

6. As the symbol for a Soil Pipe Drain is circular, its orientation does not matter.  Click the left mouse button (don't worry about the position of your cursor) to register the orientation of the symbol.

The W.C. Soil Pipe Drain is now positioned.

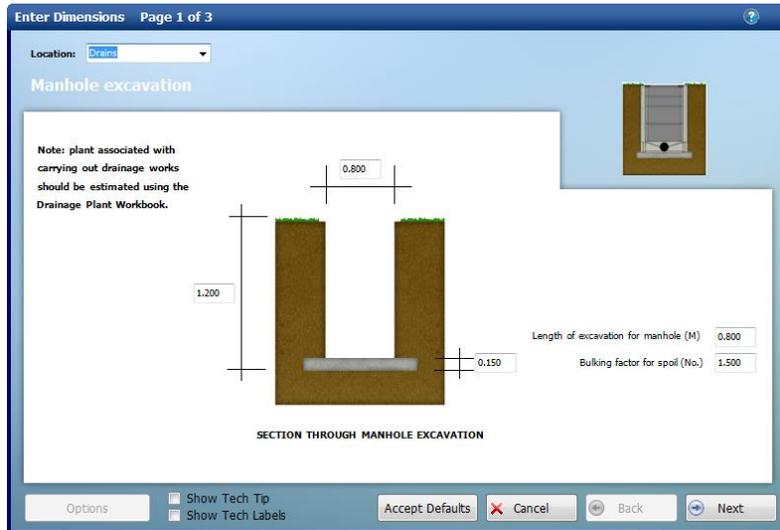
7.  Right click to tell **PlansXpress®** you want to place another Soil Pipe Drain.
8. Repeat the process to register the position and orientation of the Soil Pipe Drain in the Kitchen.

Now let's place the 0.9m Inspection Chamber outside the front of the house, which connects to the 1.2m drain in the road.



9.  Press the dropdown arrow next to the Drainage button.
10. Click on the Drainage type called Inspection Chamber.
11. Click on the dimensional template called 900 mm deep inspection chamber.

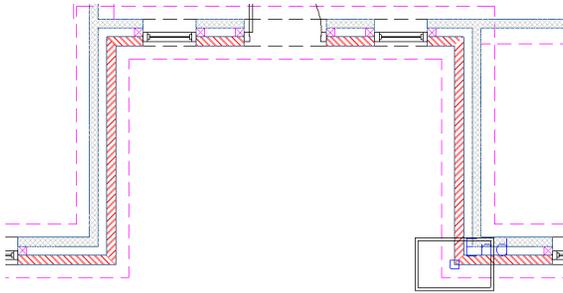
The Inspection Chamber Dimensions Wizard pops up.



12. Review the Manhole excavation details.
13. Click Next.
14. Review the remaining details for the inspection chamber, clicking Next to move onto the next page of the Dimensions Wizard.
15. Once you're happy with the information you've entered, click Finish.

PlansXpress® is now ready to place the Inspection Chamber. The Command Window prompts: Give Insertion Point.

As you can see from Diagram G on page 26, the Inspection Chamber is 1m from the front of the house, half way between the two gables. We'll place the Inspection Chamber by measuring from the corner of one of the gables, where External Walls 3 and 4 meet.

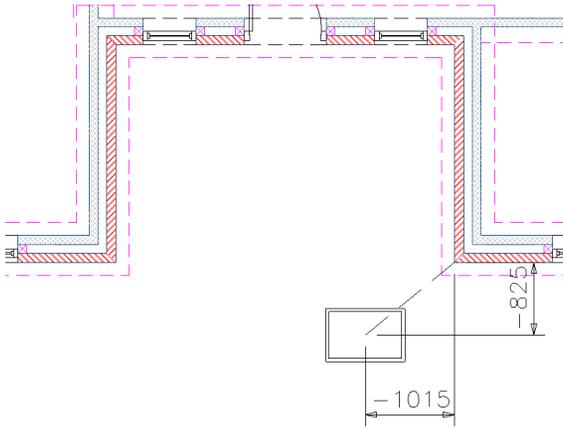


16. Hold your mouse over the corner where External Walls 3 and 4 meet until  appears with the message 'End'.

17.  Press and release the R key on your keyboard.

18. Move your mouse down and to the left.

You'll see dimensions pop up showing you the distance from the point of reference, the corner of the house, to the cursor.



Below the bottom right corner of the plan you should be able to see X and Y axis input boxes.

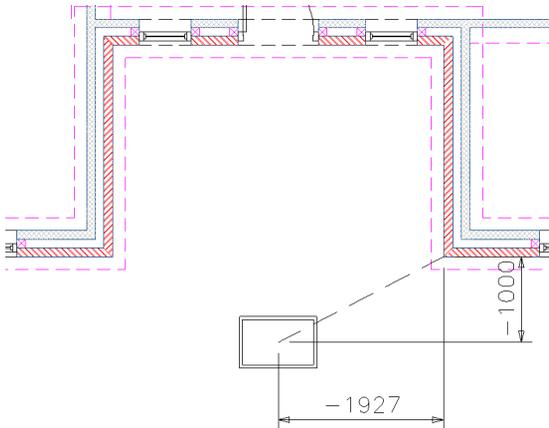


19. Type -1927 into the X input box in the bottom right corner of the screen.

This tells **PlansXpress**® that the Inspection Chamber is 1927mm (or 1.927m) from the point of reference, along the X axis.

20. Type -1000 into the Y input box.

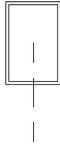
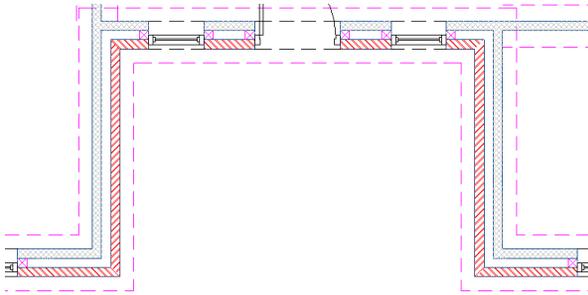
This tells **PlansXpress**® that the Inspection Chamber is 1000mm (or 1m) from the point of reference, along the Y axis.

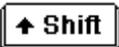


The Inspection Chamber is positioned according to the dimensions you have entered.

21.  Click the left mouse button to register the position of the Inspection Chamber.

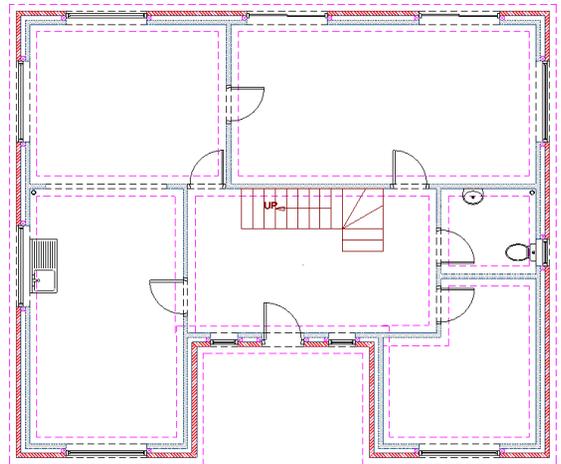
The Command Window prompts: Give Point to Rotate to.

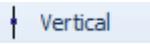


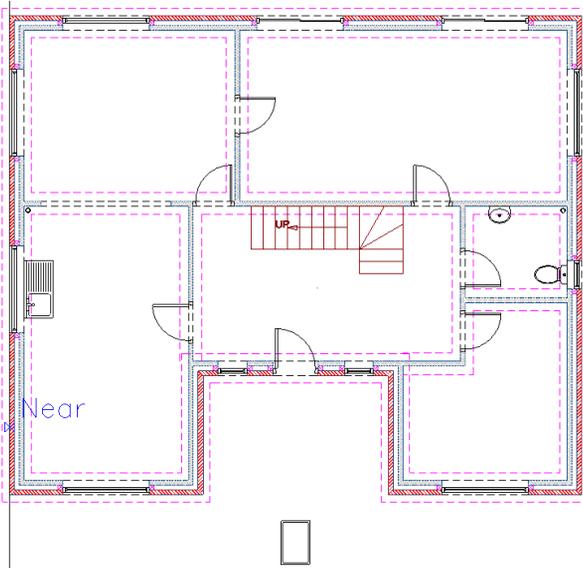
22.  Hold down the Shift key and move your mouse down the screen until the Inspection Chamber is positioned as shown on Diagram G on page 26.
23.  Click the left mouse button to register the orientation of the Inspection Chamber.
24. A box pops up asking if you want to allow for any plant. If you are estimating for the drainage you will need to do this at some point. For the purpose of the tutorial click No.

You've now placed the Inspection Chamber.

Let's place the Shallow Access Manholes. The Shallow Access Manholes and associated drain runs run around the house, 1m from the walls. We're going to add construction lines to help us place the Shallow Access Manholes and drain runs.



25.  Press the Vertical Construction Line button (Drawing & Annotation tab).



The Command Window prompts: Give Point.

26.  Ensure Nearest Snap is on.
27. Hold your mouse over the exterior of External Wall 8 until  appears with the message 'Near'.
28.  Press and release the R key.

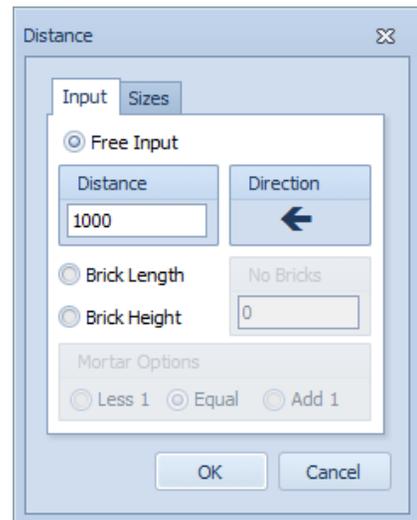
29. Move your mouse to the left.

The dimension between the wall and mouse pops up.

30.  Press the left arrow key.

A dialog box pops up asking you to enter a distance.

31. Enter 1000 into the dialog box.
32. Click OK.



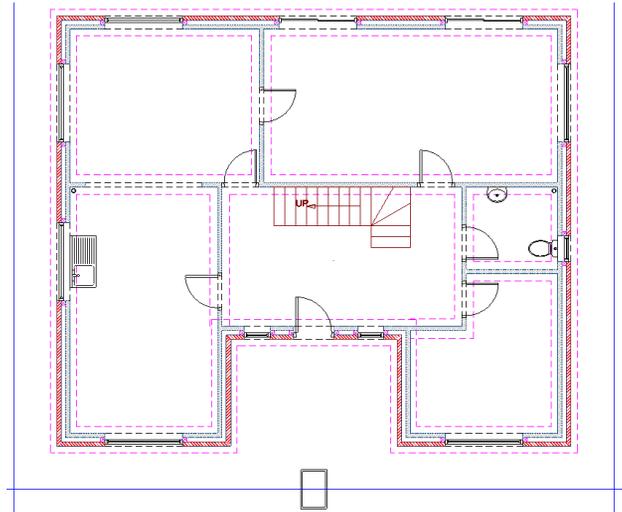
A construction line appears 1000mm (1m) to the left of External Wall 8.

PlansXpress® is ready to draw another vertical construction line.

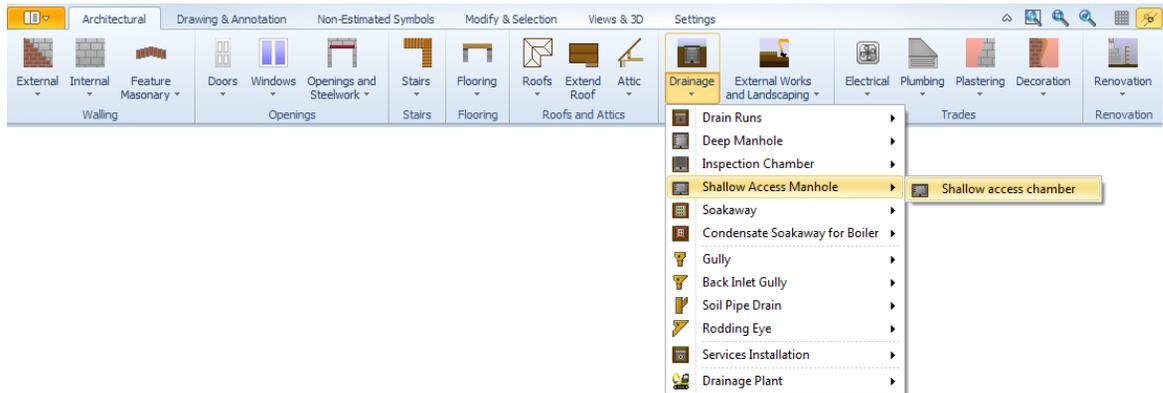
33. Repeat this process to add construction lines 1m to the right of External Wall 2 and 1m under External Walls 3 and 7.

You will need to turn Snap mode back on by pressing the F7 key  because Snap mode is switched off when you enter a dimension. Refer to the section on setting out construction lines, starting on page 29 if you need a reminder about adding construction lines to your page.

Once you've done this, your page should look like this:



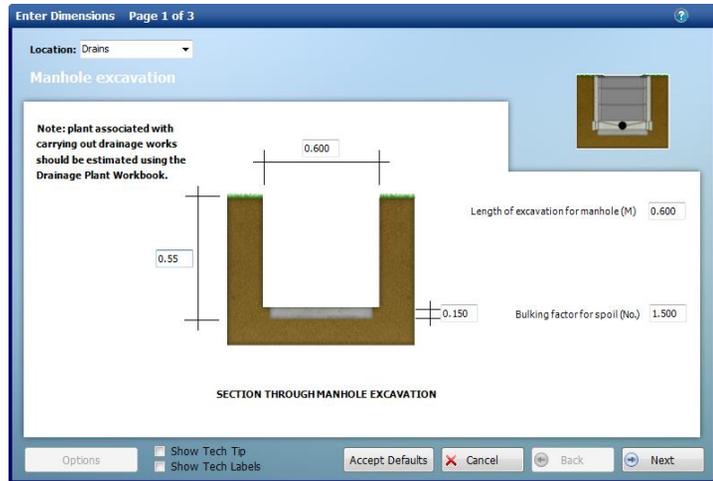
We're ready to place the Shallow Access Manhole, starting with Shallow Access Manholes A and D which have an excavation depth of 0.55m. See Diagram G on page 26 for their location.



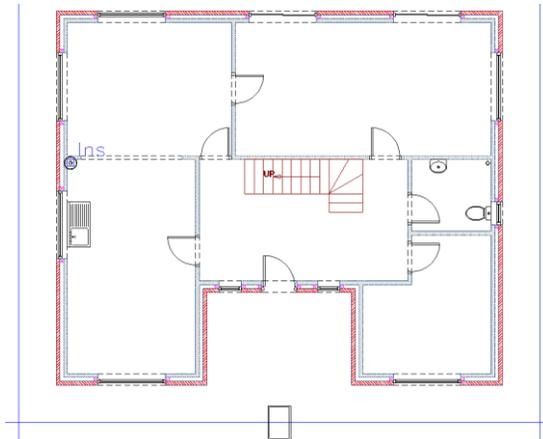
34.  Press the dropdown arrow next to the Drainage button.
35. Click on the Drainage type called Shallow Access Manhole.
36. Click on the dimensional template called Shallow access chamber.

The Shallow Access Manhole dimensions Wizard pops up.

37. Enter a Depth of excavation for manhole of 0.55.
38. Review the Manhole excavation details.
39. Click Next.
40. Review the details on the remaining pages of the Dimensions Wizard.
41. Once you're happy with the information you've entered on the final page of the Dimensions Wizard, click Finish.



PlansXpress® is now ready to place the Shallow Access Manholes. Let's start by placing Shallow Access Manhole A.



The Command Window prompts: Give Insertion Point.

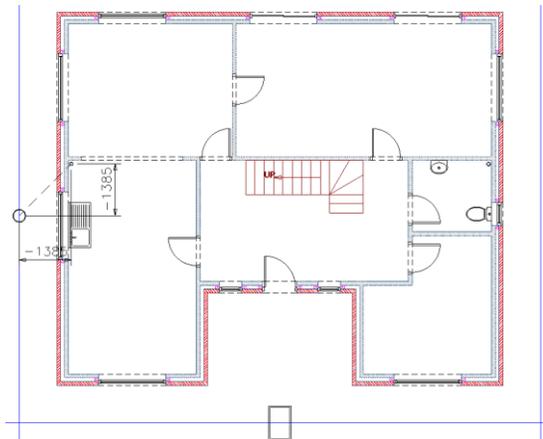
42. Hold your mouse over the Soil Pipe Drain in the kitchen until and 'Ins' appears.

43.  Press and release the R key on your keyboard.

We're placing Shallow Access Manhole A 45° from the Soil Pipe Drain so that the drain run is also at 45°.

44.  Hold down the Shift key on your keyboard.

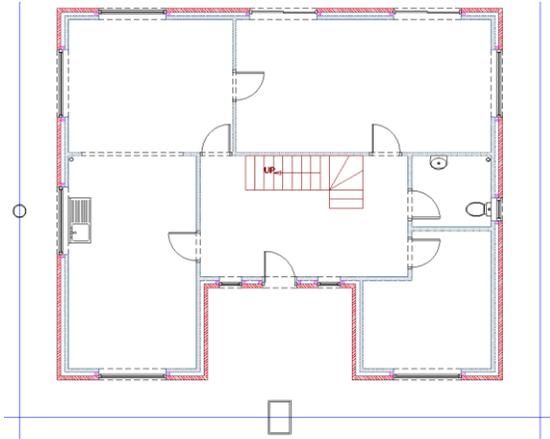
This locks the cursor into moving in 45 degree increments.



45. Move your mouse until the Shallow Access Manhole is intersecting the construction line, diagonally down and to the left.

46.  Once you're happy with its position, click the left mouse button.

47. Release the Shift key.

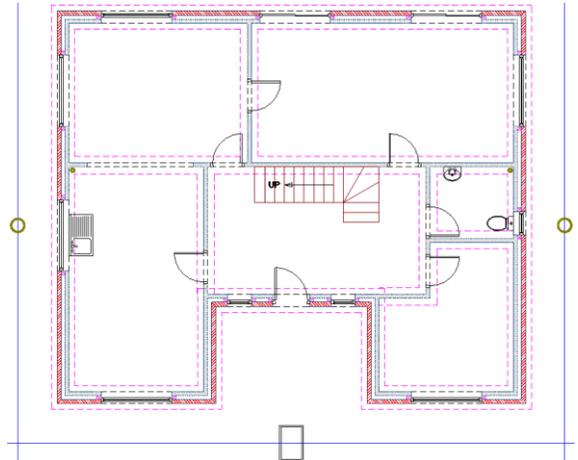


The Command Window prompts: Give Point to Rotate to.

48.  Click the left mouse button again to accept the orientation of the Shallow Access Manhole (again orientation doesn't matter because the Shallow Access Manhole is circular).

49.  Click the right mouse button to tell **PlansXpress**[®] you want to place another identical Shallow Access Manhole.
50. Repeat this process to place Shallow Access Manhole D on the opposite side of the house, positioning it adjacent to the W.C. on the right hand construction line.

Your page should now look like this:

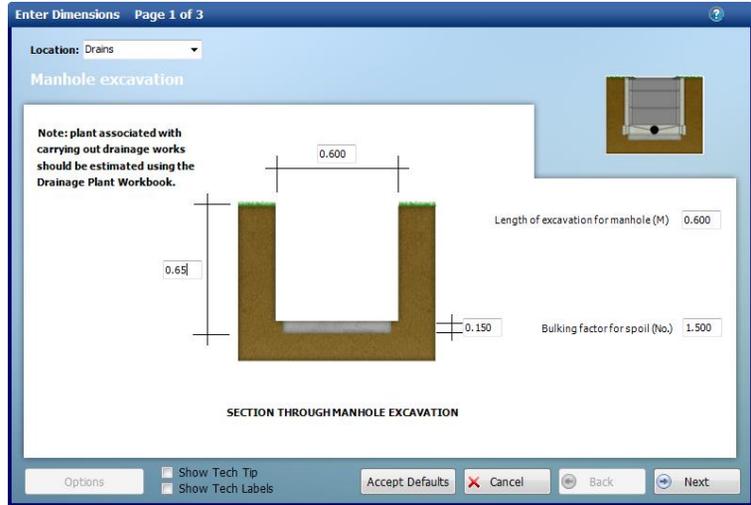


Let's now place Shallow Access Manholes B and C. These Manholes are deeper than the two we have just placed so we need to go through the Dimensions Wizard again, and enter an excavation depth of 0.65.

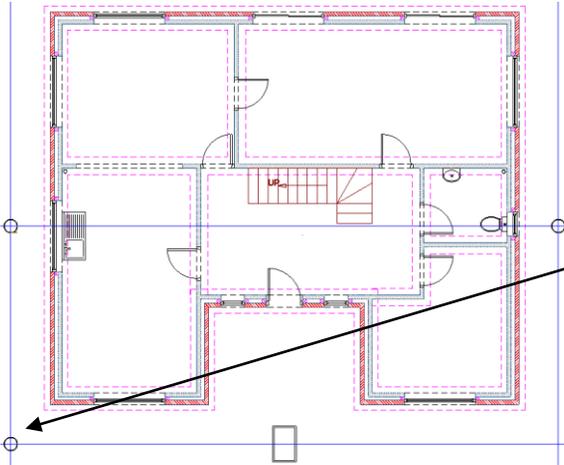
51.  Right-click on the Drainage icon to launch the dimensions wizard for the Shallow Access Manhole.

The Shallow Access Manhole dimensions Wizard pops up.

52. Enter a Depth of excavation for manhole of 0.65.
53. Review the Manhole excavation details.
54. Click Next.
55. Review the details on the remaining pages of the Dimensions Wizard.
56. Once you're happy with the information you've entered on the final page of the Dimensions Wizard, click Finish.



PlansXpress® is now ready to place the Shallow Access Manholes.



The Command Window prompts: Give Insertion Point.

57. Hold your mouse to the bottom left of the house, where the construction lines meet, until and 'Ins' appear.

58.  Click the left mouse button to accept the placement of the Shallow Access Manhole at the intersection of the construction lines.

The Command Window prompts: Give Point to Rotate to.

59.  Click the left mouse button again to accept the orientation of the Shallow Access Manhole.

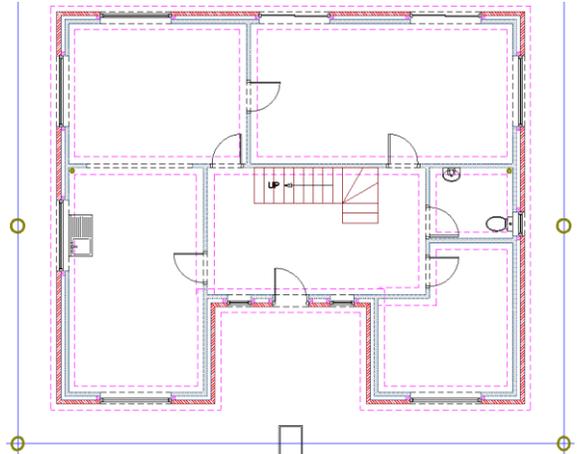
60. Say No to placing any Plant.

61.  Click the right mouse button to tell PlansXpress® you want to place another identical Shallow Access Manhole.

62. Repeat the process to place Shallow Access Manhole C on the opposite side of the house, where the construction lines meet.

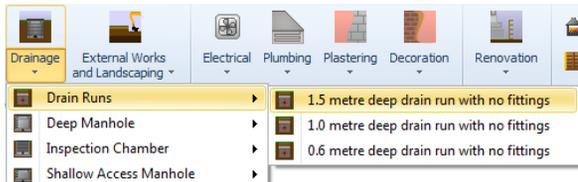
Once you've placed Shallow Access Manhole C, your page should look like this:

We've drawn all the manholes for the foul drainage system. Now let's draw the drain run which runs from the Inspection Chamber along to the existing drainage in the road. This stretch of drain run will have a nominal depth of excavation of 1.25m. The drain run slopes from 0.9m at the Inspection Chamber to 1.2m at the road so the average depth of drain is 1.05. A 1.25m excavation allows for 0.2m of bedding material.



When you draw the drain run it will overlap the first floor plan. This doesn't matter because we're only drawing the drainage for estimating purposes. Later we will switch off the drainage Layers so they don't feature in the drawings.

63. Click the Drainage dropdown then Drain runs and select 1.5 metre deep drain run with no fittings.



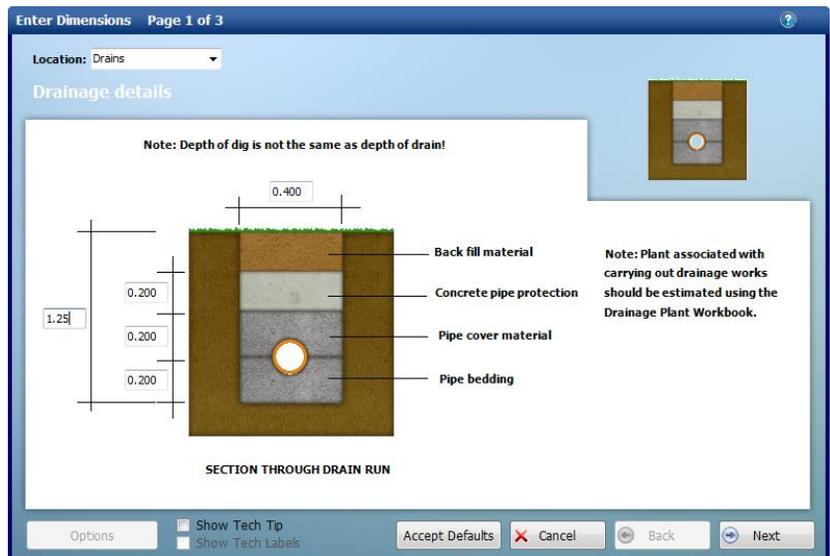
The Drain Runs dimensions wizard pops up.

64. Enter a Depth of excavation of 1.25m.

65. Click Next.

66. Review the details on the remaining pages of the Dimensions Wizard.

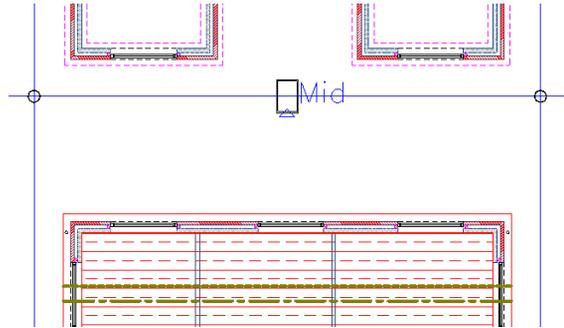
67. Once you're happy with the information you've entered on the final page of the Dimensions Wizard, click Finish.



PlansXpress® is now ready to start drawing the drain runs.

The Command Window prompts: Give Start Point. Firstly we want to find the 'Mid' point of the bottom of Inspection Chamber to place the start point.

- 68. Hold your mouse over the middle of the bottom of the Inspection Chamber until  appears along with the message 'Mid'.



- 69.  Click the left mouse button to register the start point.

The Command Window prompts: Give Next Point.

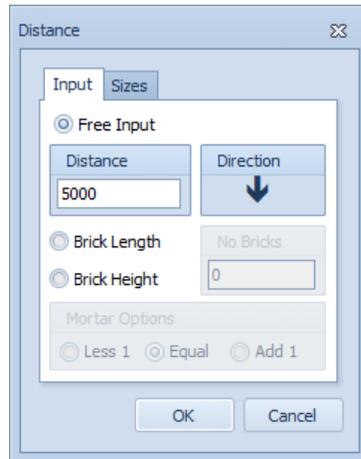
The drain run connecting the Inspection Chamber and existing drainage runs 5m (5000mm) away from the house.

- 70.  Press the down arrow key on your keyboard.

A Distance dialog box pops up.

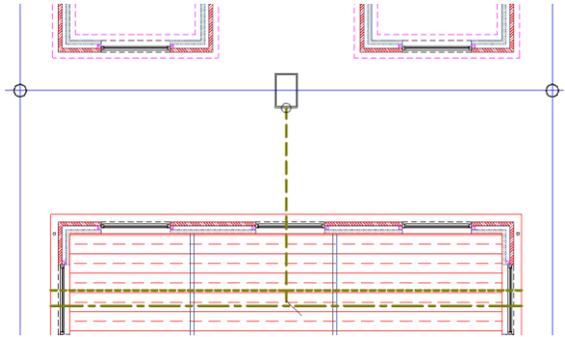
- 71. Type 5000 into the Free Input box.

- 72. Click OK.

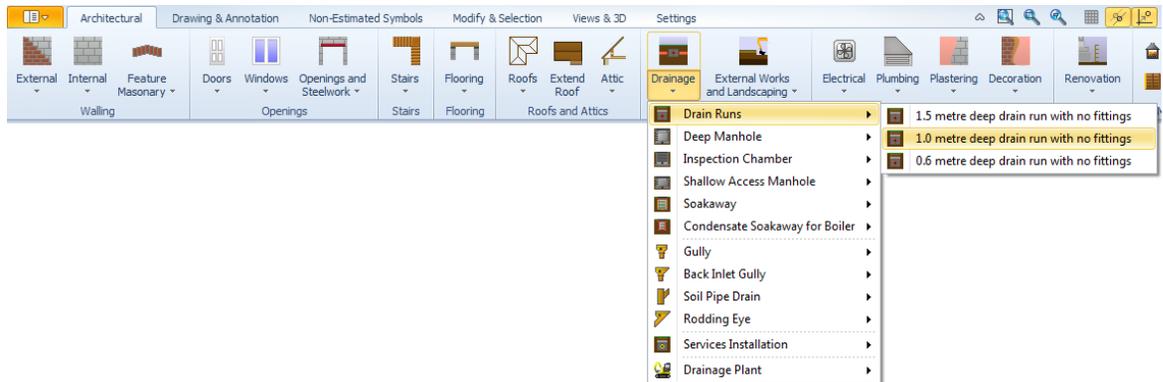


PlansXpress® draws the drain run ending 5m below the Inspection Chamber.

73.  Click the right mouse button to tell PlansXpress® you've finished drawing this stretch of drain run.



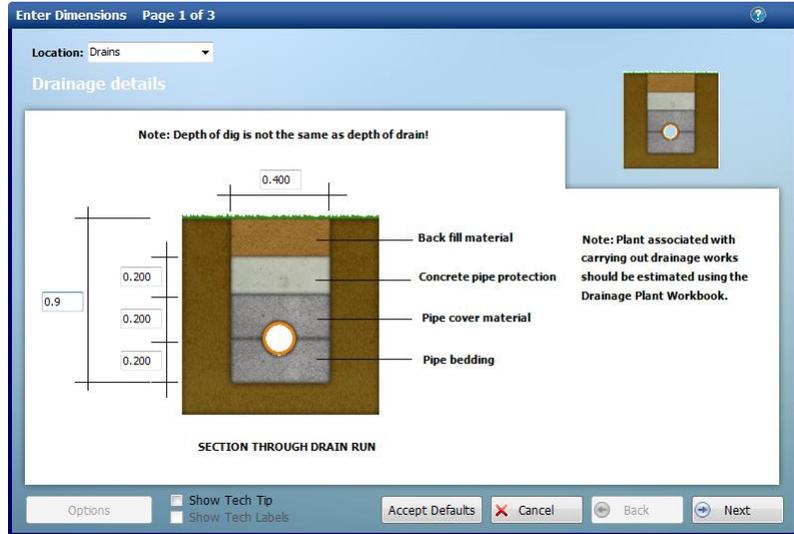
We've now drawn the drain run to the existing drainage. To do the other drains, with different depths, we need to go through the Drain Run Dimensions Wizard again. Let's draw the stretch of drain run from the Inspection Chamber to Shallow Access Manhole C. This stretch of drain run will have a nominal depth of excavation of 0.9m.



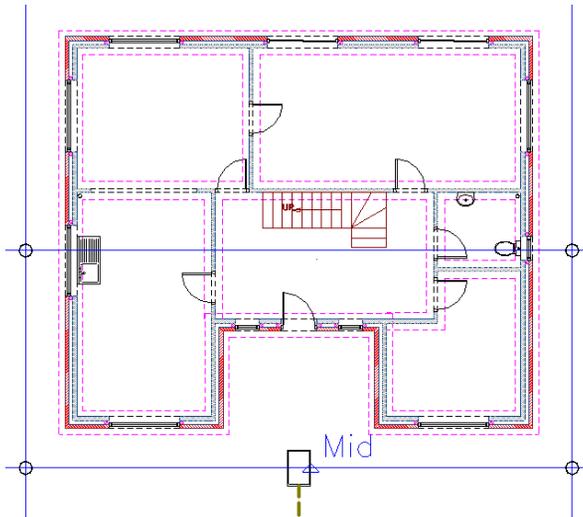
74. Press the Drainage dropdown (found on the Architectural tab).
75. Click on the Drain Runs dimensional template called 1.0 metre deep drain run with no fittings.

The Drain Runs dimensions wizard pops up.

76. Enter a Depth of excavation of 0.9m.
77. Click Next.
78. Review the remaining pages of the Drain Runs Dimensions Wizard.
79. Once you're happy with the information you've entered, click Finish.

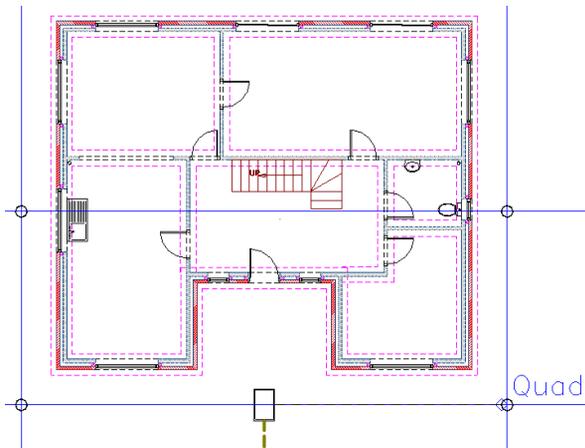


PlansXpress® is now ready to start drawing the drain runs.



The Command Window prompts: Give Start Point. Firstly we want to find the Mid-point of the right hand side of the Inspection Chamber to place the start point.

80. Hold your mouse over the middle of the right of the Inspection Chamber until  appears along with the message 'Mid'.
81.  Click the left mouse button to register the start point.



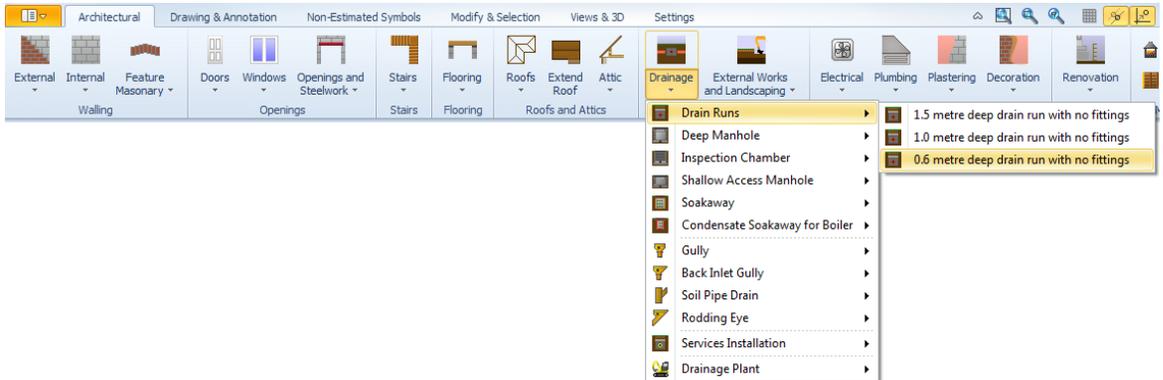
The Command Window prompts: Give Next Point.

82. Move your mouse to the right until it's hovering over the left hand side of Shallow Access Manhole C until  appears along with the message 'Quad'.

83.  Click the left mouse button to register the end point.

84.  Click the right mouse button to finish drawing this length of drain run.

Let's now draw the length of drain run connecting Shallow Access Manholes C and D, which has an average excavation depth of 0.65.

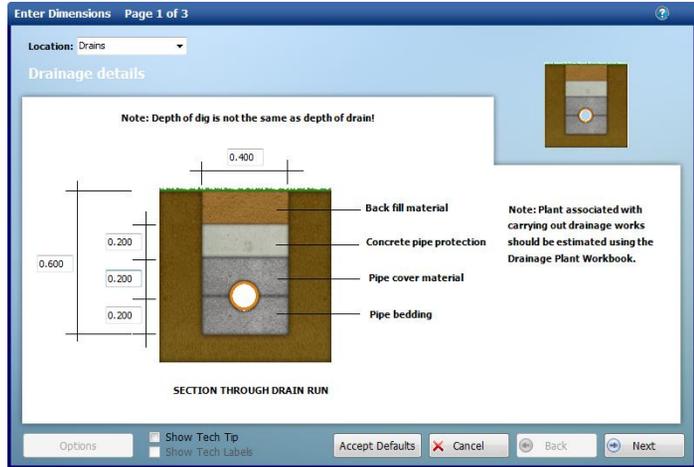


85. Press the Drainage dropdown (found on the Architectural tab).

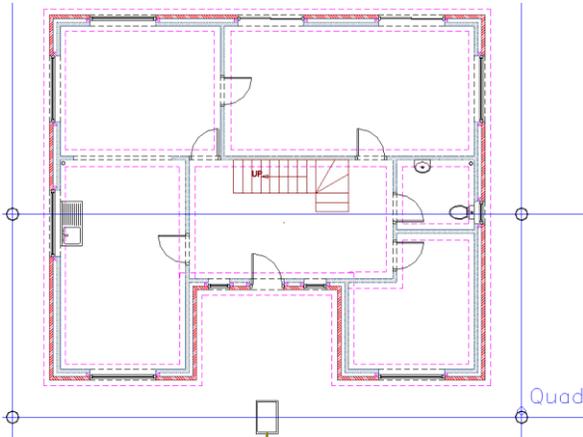
86. Click on the Drain Runs dimensional template called 0.6 metre deep drain run with no fittings.

The Drain Runs Dimensions Wizard pops up.

87. Enter a Depth of excavation of 0.65m.
88. Click Next.
89. Review the other pages of the Dimensions Wizard.
90. Once you're happy with the details you've entered, click Finish.

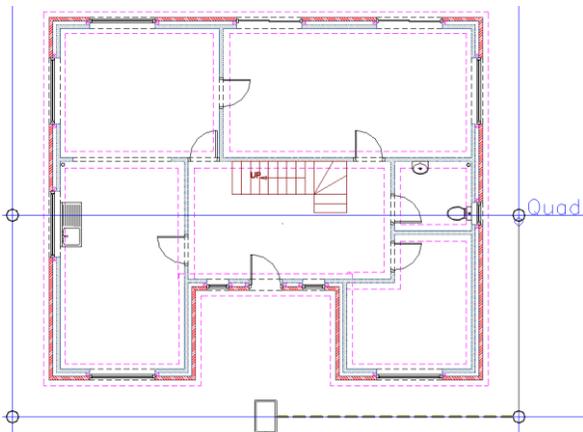


PlansXpress® is now ready to start drawing the drain runs.



The Command Window prompts: Give Start Point.

91. Hold your mouse over the top of Shallow Access Manhole C until \diamond appears along with the message 'Quad'.
92.  Click the left mouse button to register the start point of the drain.



The Command Window prompts: Give Next Point.

93. Move your mouse up the page until it's hovering over the bottom of Shallow Access Manhole D and \diamond appears along with the message 'Quad'.
94.  Click the left mouse button to register the end point.
95.  Click the right mouse button to finish drawing this length of drain run.

96. Let's now draw the length of drain run from Shallow Access Manhole D to the Soil Pipe Drain in the W.C., with an excavation depth of 0.6m.

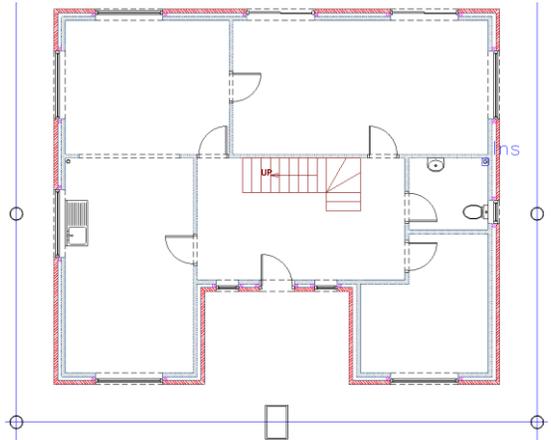
First we'll insert diagonal construction lines to act as guides when placing the drain runs.

97.  Press the Angular Construction Line button (Drawing & Annotation tab).

The Command Window prompts: Give Point.

98. Hold your cursor over the 'Ins'  point of the bathroom soil pipe drain.

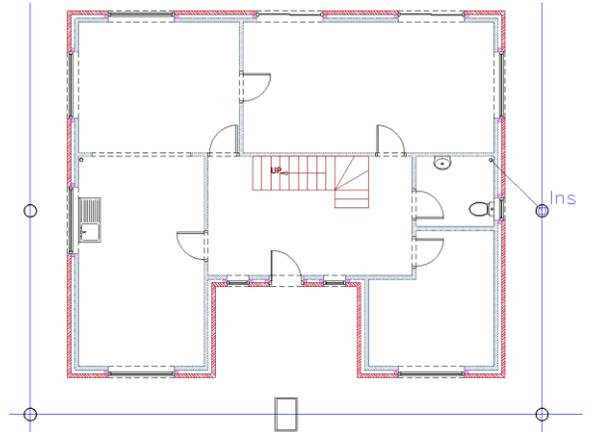
99.  Click the left mouse button to place one point of the Angular Construction Line.



The Command Window prompts: Give Second Point.

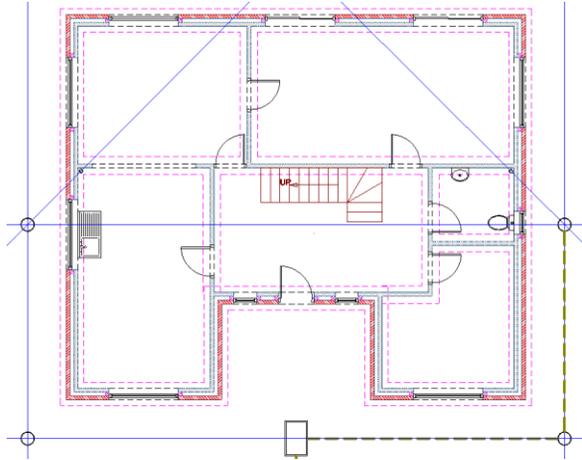
100. Hold your cursor over the 'Ins'  point of the Shallow Access Manhole D.

101.  Click the left mouse button to place second point on the Angular Construction Line.



Click the right mouse button to place another Angular Construction Line.

102.  Repeat this process to add a Construction Line linking the 'Ins' point of the kitchen soil pipe drain and the 'Ins' point of Shallow Access Manhole A.



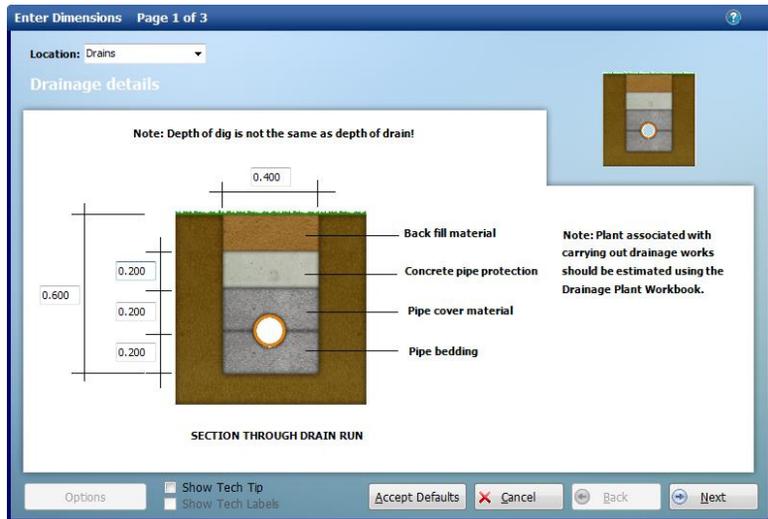
103.  Click the right mouse button on the Drainage button to launch the Drain Runs dimensions wizard again.

The Drain Runs dimensions wizard pops up.

104. Enter a Depth of excavation of 0.6.

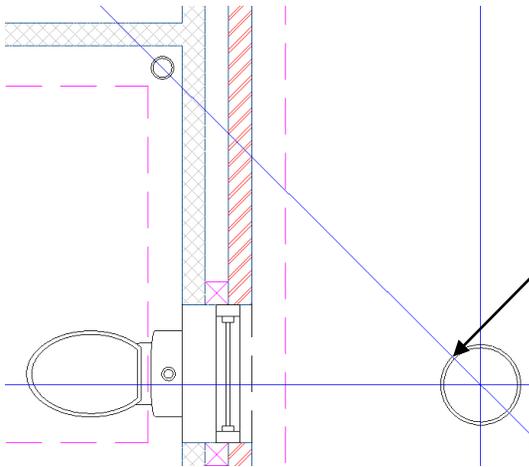
105. Review the other pages of the Dimensions Wizard.

106. Once you're happy with the details you've entered, click Finish.



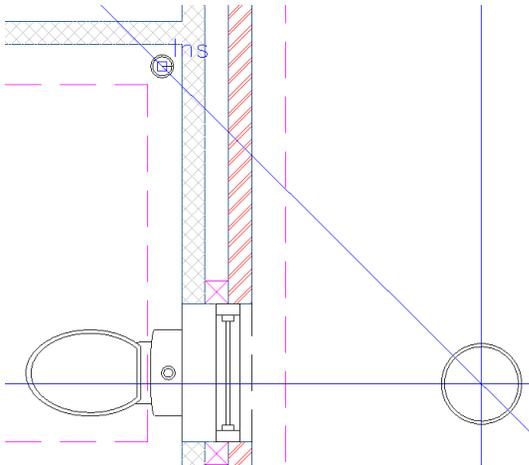
PlansXpress® is now ready to start drawing the drain runs.

The Command Window prompts: Give Start Point.



107. Hold your cursor over the point where the Angular Construction Line meets the top left edge of Shallow Access Manhole.

108.  Click the left mouse button to register the start point.

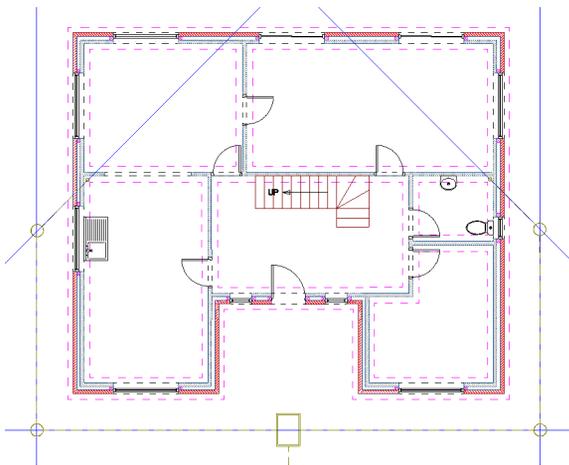


The Command Window prompts: Give Next Point.

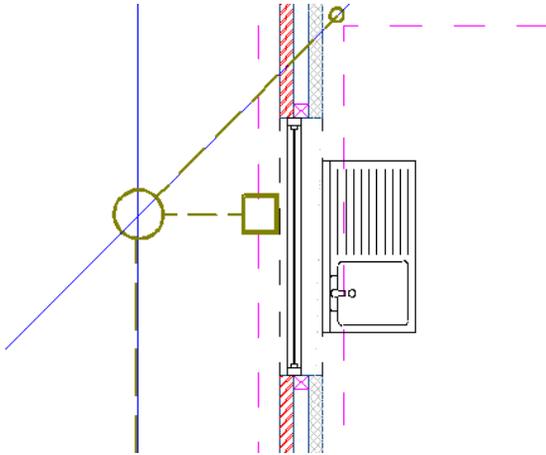
109. Hold your mouse over the centre of the Soil Pipe Drain until  and 'Ins' appears.

110.  Click the left mouse button to register the end point.

111.  Click the right mouse button to finish drawing this length of drain run.



112. Using the same processes as described previously, draw the drain run from the Inspection Chamber to Shallow Access Manhole B (with an excavation depth of 0.9m), the drain run from Shallow Access Manhole B to Shallow Access Manhole A (with an excavation depth of 0.65m) and the drain run from Shallow Access Manhole A to the Soil Pipe Drain in the kitchen (with an excavation of depth 0.6m).



113. Insert a gully under the kitchen window by clicking on the Drainage dropdown menu, clicking on Gully and selecting the Gully template. After placing it, add a drain run to Shallow Access Manhole A with a 0.4m excavation depth.

Now have a go at drawing the surface drainage system.

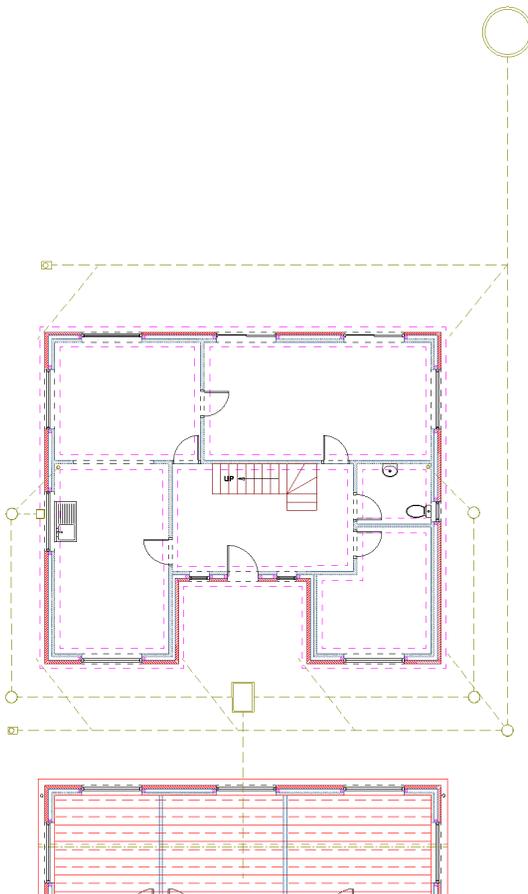
114. To draw the surface water drainage system, start by placing a Soakaway 9 metres behind the house. Go to the Drainage dropdown, click on Soakaway and select the Medium pre-cast soakaway. Place the Soakaway by measuring 9 metres (9000mm) from the back of the house and 2 metres to the right. The soakaway will appear off the page – this doesn't matter, it will still be estimated.

115. Place a Shallow Access Manhole for the surface water drainage and place all the drain runs for the surface water drainage according to Diagram G on page 26, entering suitable drain run depths. The surface water drains run around the house 2m from the walls. Each rain water pipe is connected to the drains with a drain run at approximately 45°. You may want to add additional Construction lines 2m from the external walls to help you.

116. Once you've placed the drain runs, add Rodding Eyes by going to the Drainage dropdown, clicking on Rodding Eye and selecting the Rodding Eye dimensional template.



117. **Delete** Press the Delete Construction Lines button to delete any construction lines on the page. Click Yes to the dialog box asking if you wish to delete the construction lines.



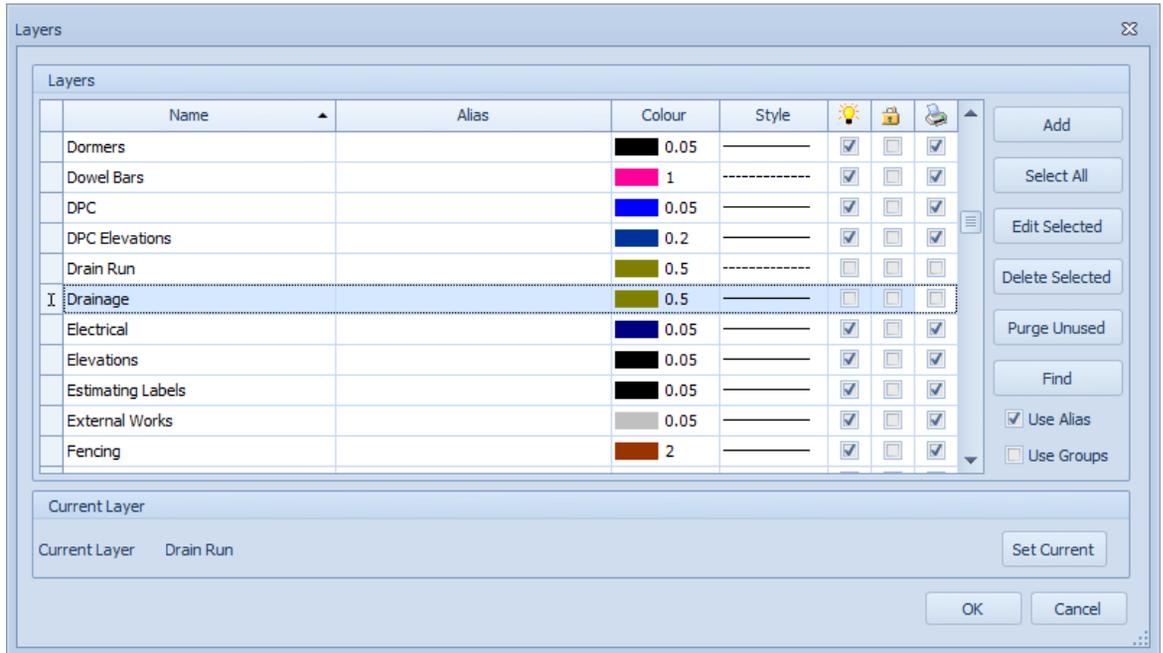
Once you have finished adding all the elements of the surface water drainage, you can switch off the Drainage layer so the drains don't appear on the plans.



118. Press the Layers button (found on the Views & 3D tab).

The Layers dialog box pops up.

119. Locate the Drainage and Drain Run Layers in the list.



120. Untick the Light bulb and Printer tick boxes so that the Drainage and Drain Run Layers are no longer visible onscreen.

121. Click OK.

When you are returned to the page, the drainage will no longer be visible.



122. Press the Save button.

CREATING ELEVATION VIEWS



15-20
Minutes

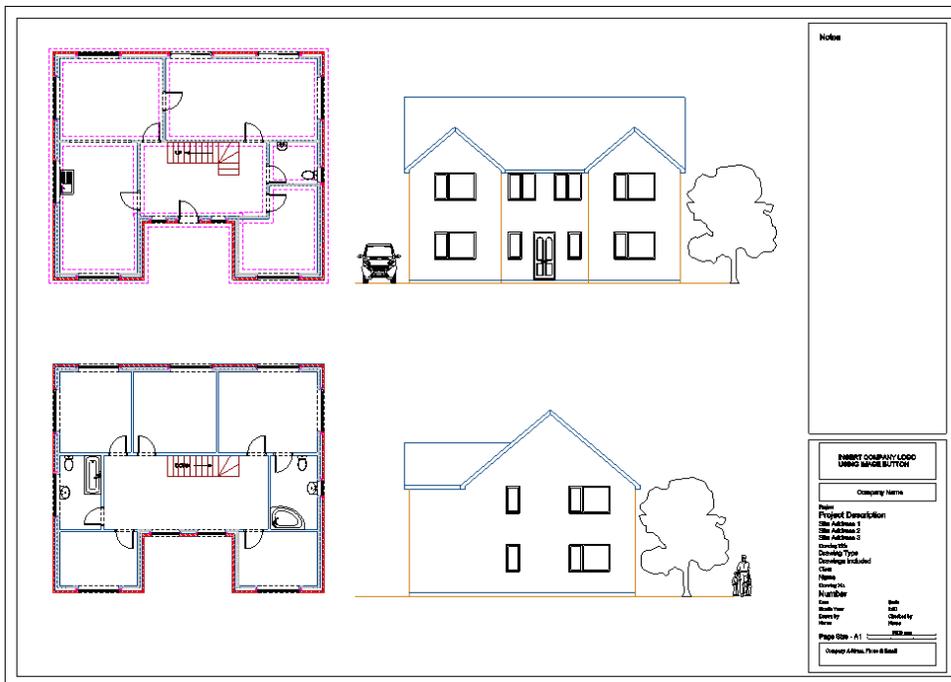
This section of the Tutorial leads you through generating front and side elevations of the house based on the plan layouts you have drawn. It also guides you through adding detail to the elevations.

During this exercise you will learn how to:

- create ground and first floor elevations;
- add detail to the elevations such as ground, trees, shrubs and cars;
- switch off the Roof Layer.

You will need to refer to Diagram A on page 20 during this exercise.

At the end of this exercise, your page will look like this:



Let's draw the front elevation of the house to begin with. To draw a multi-storey elevation, you work from the ground floor upwards so we'll start by drawing the front elevation of the ground floor.

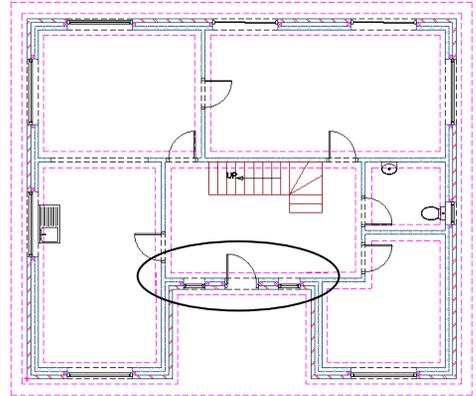


1. **Draw Elevation** Press the Draw Elevation button on the Views & 3D tab.

The Command Window prompts: Give wall on which elevation will be based :

2.  Click on External Wall 5 (The wall with the Front Door)

This tells **PlansXpress**® that the selected wall is to be included in the Elevation.

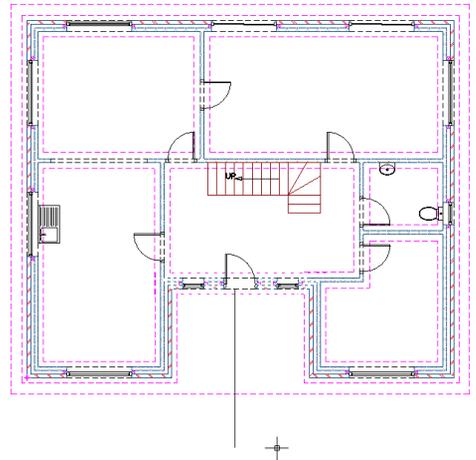


The Command Window prompts: Give observation point for elevation.

3. Move your mouse down the page so it's in front of the forward-most elevation of the house.

This way, all three front walls of the house will appear in the elevation.

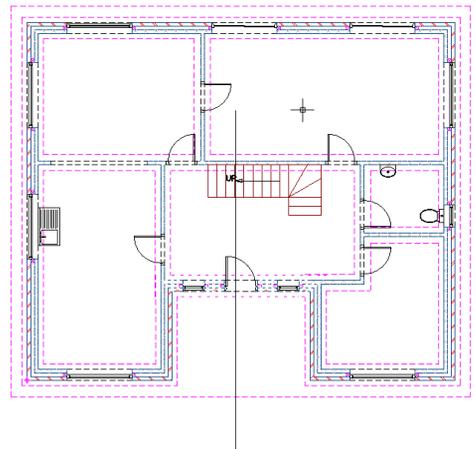
4.  Click the left mouse button to indicate where the elevation is being viewed from.



The Command Window prompts: Give depth of view for elevation.

5. Move the mouse up the page so it's behind the wall with the front door and past where the roof ridge would be on the first floor. You need to do this so that when the elevation for the first floor is drawn the roof is included.

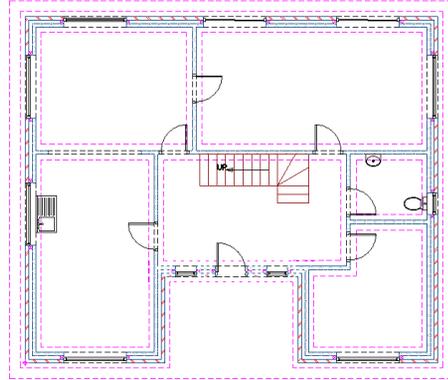
6.  Click the left mouse button to indicate that this is the furthest point to be viewed on the elevation.



The Command Window prompts: Give left extent point for elevation :

7. Move your mouse to the left until it's beyond the left wall of the house.

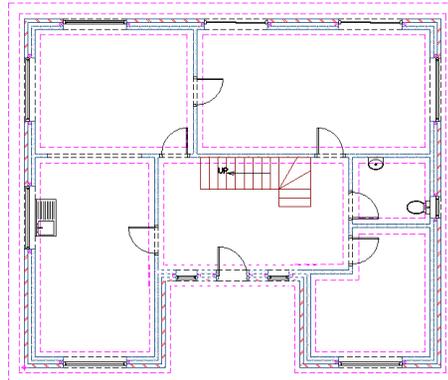
8.  Click the left mouse button to indicate the left extent of the elevation.



The Command Window prompts: Give right extent point for elevation :

9. Move your mouse to the right until it's beyond the right wall of the house.

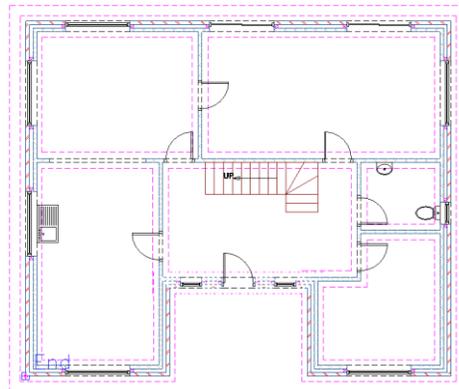
10.  Click the left mouse button to indicate the right extent of the elevation.



The Command Window prompts: Give reference point for elevation :

11. Hold your mouse over the bottom left corner of the house until  appears along with 'End'.

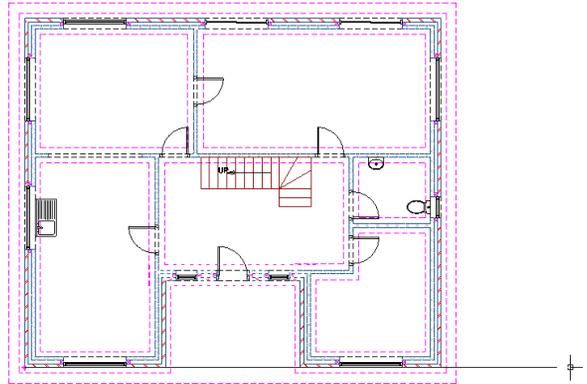
12.  Click the left mouse button to register the Point of Reference.



The Command Window prompts: Give relative point for elevation :

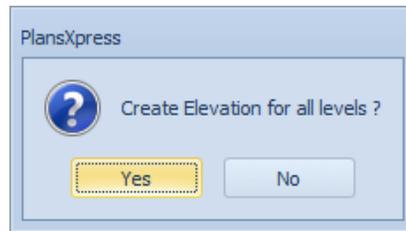
Note that the 'Point of Reference on the Plan' will be Placed on the given Point. We want to place the front elevation to the right of the ground floor layout. Your cursor will dictate where the left-most point of the elevation will be, because we selected the left corner of the house as our Point of Reference.

13.  Hold down the Shift key on the keyboard.
14. Move your mouse to the right, until you are happy with the position of where the elevation will be.
15.  Click the left mouse button to register the position of the elevation.



A message box will pop up asking if you want to create elevation for all levels?

16.  Click Yes.

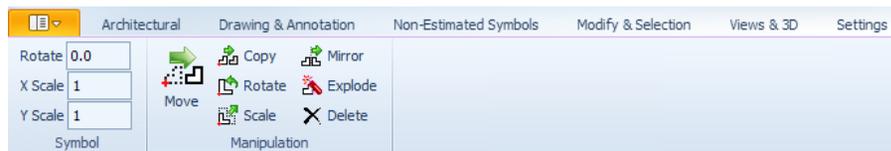


When we created the first floor by copying the ground floor we also set it to be a level above the ground floor.

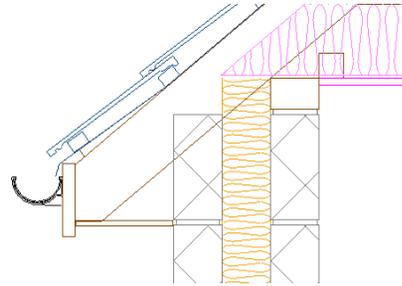
PlansXpress® now uses these levels to automatically generate the elevations for the ground floor, first floor and roof.



17. Single click the elevation to select it and click the explode button on the top menu. 



You will notice that the middle windows are showing as being behind the fascia board in the elevation. This is down to the fact that PlansXpress® does not take into account the tricks that are used on-site to cut off the bottom of a rafter, add a tilting fillet or adjust how far down the fascia board hangs below the rafter's end. The upshot of this is that the bottom of the roof in this case needs to be shifted up to take this into account.



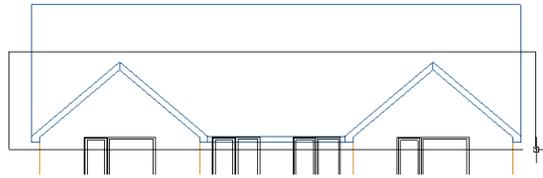
18.  **Stretch** Press the Stretch button (Modify & Selection Tab).

The Command Window reads: Give first corner of box to Stretch.

19.  Move the mouse to the left of the roof, around half way up then left.

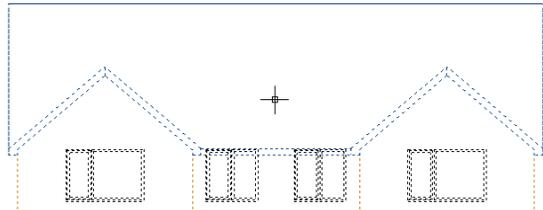
The Command Window reads: Give second corner of box to Stretch.

20.  Move the mouse to the bottom and right of the roof and left click again.



The Command Window reads: Give reference point.

21.  Click on any point around the middle of the roof



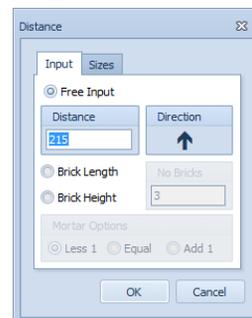
The Command Window reads: Give Point to Stretch To.

22.  Press the up arrow key on your keyboard.

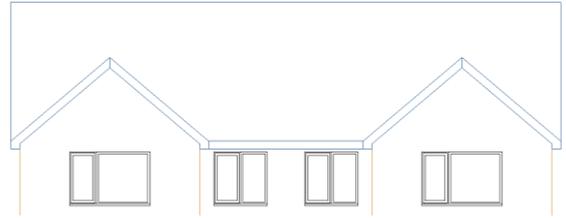
The Distance dialog box pops up.

23. Type 215 into the Free Input box.

24. Click Ok.



The roof should now be moved up above the windows and appear correctly, as it would be built.

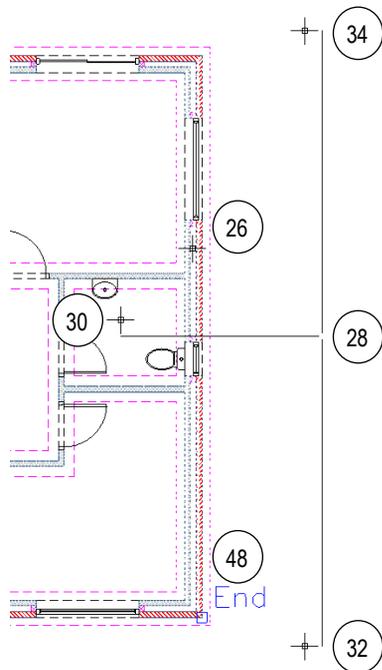


Let's now generate a side elevation of the house, viewing the right wall of the house. Again, we'll start by creating the ground floor side elevation.



25. **Draw Elevation** Press the Elevation button.

The Command Window prompts: Select One Wall to be Shown in Elevation.



26.  Click on the right wall of the ground floor plan, External Wall 2.

The Command Window prompts: Give observation point for elevation.

27. Move your mouse to the right of the house.

28.  Click the left mouse button to indicate where the elevation is being viewed from.

The Command Window prompts: Give depth of view for elevation.

29. Move the mouse to the left so it's beyond Internal Wall 4 so that we get the ridge line of the roof in our elevation.

30.  Click the left mouse button to indicate that this is the furthest point to be viewed on the elevation.

The Command Window prompts: Move your Mouse to Indicate the Left Extent of the Elevation.

Imagine you're standing directly in front of the right wall of the house. The left extent of the elevation is the front wall of the house, and the right extent of the elevation is the back wall of the house. First, we need to indicate the left extent of the elevation.

31. Move your mouse down until it's beyond the front of the house.

32.  Click the left mouse button to indicate the left extent of the elevation.

The Command Window prompts: Move your Mouse to Indicate the Right Extent of the Elevation.

33. Move your mouse up until it's beyond the back of the house.

34.  Click the left mouse button to indicate the right extent of the elevation.

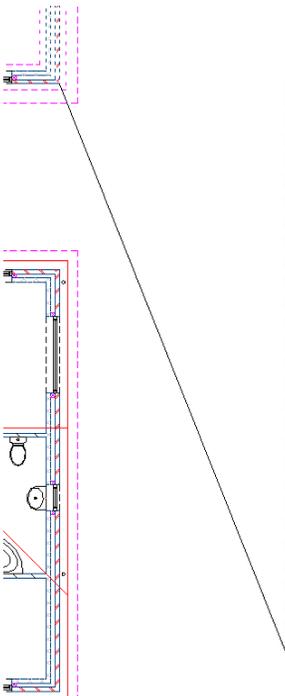
The Command Window prompts: Give reference point for elevation.

35. Hold your mouse over the bottom right corner of the house until  appears along with 'End'. This is the bottom left corner of the elevation.

36.  Click the left mouse button to register the Point of Reference.

The Command Window prompts: Give relative point for elevation. Note that the 'Point of Reference on the Plan' will be Placed on the given Point.

We want to place the side elevation directly below the front elevation of the house, adjacent to the first floor layout. As before, your cursor will dictate where the left-most point of the elevation will be, because we selected the left corner of the elevation as our Point of Reference.



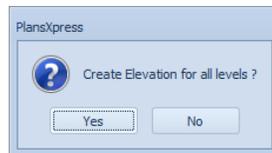
37. Hold your mouse over the bottom left corner of the existing front elevation until the Command Window displays (Intelli-Snap Found).

38. Hold your mouse over the bottom right corner of the first floor layout until the Command Window displays (Intelli-Snap Found).

39. Move mouse to the position shown until the dotted lines appear. The dotted lines indicate your mouse is aligned with the Intelli-Snap points you've just registered.

40.  Click the left mouse button to register the position of the elevation.

A box will show asking you if you want to create elevation for all levels?



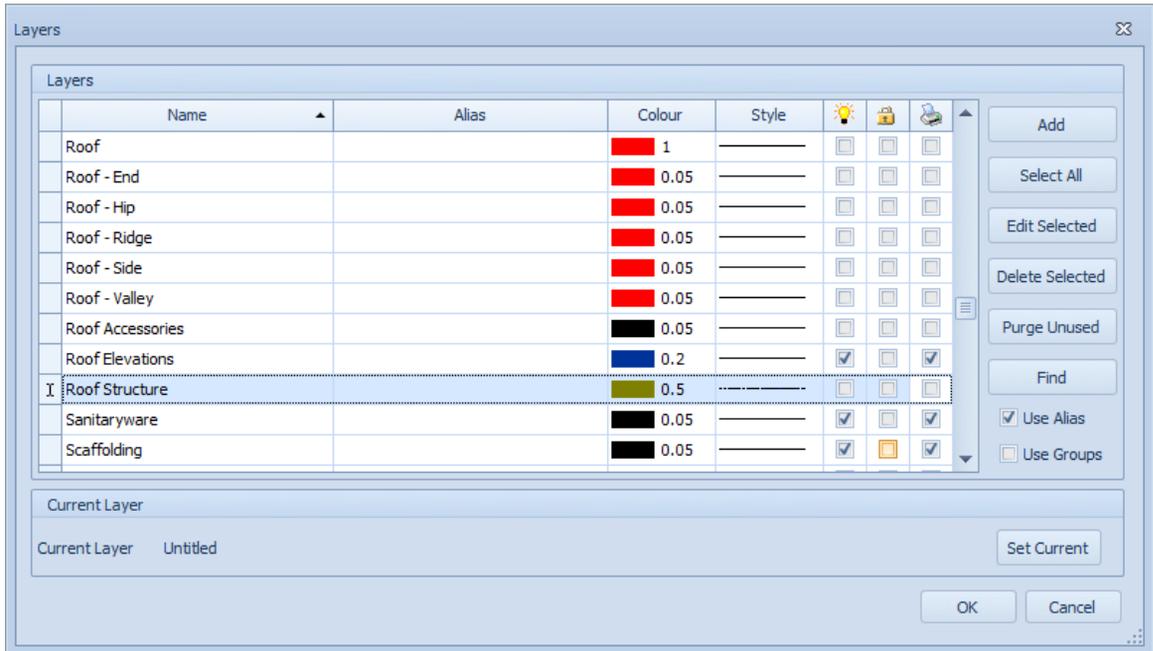
41.  Click Yes.

You will now see the side elevation of the house below the front elevation.

We can switch the Roof Layers off so that the roof does not appear in the plan views onscreen or on printouts. It will still, of course, appear in the elevation views. This is because the roof elevations have their own Roof Elevations Layer.



42. Press the Layers button (found on the Views & 3D tab).



43. Locate the Binders, Ceiling, Purlins, Roof, Roof – End, Roof – Hip, Roof – Ridge, Roof – Side, Roof – Valley, Roof Accessories and Roof Structure Layers (not the Roof Elevations Layer!) and untick their associated View on screen (light bulb) and Print (printer) tick boxes.

44. Click OK.

You are returned to the page where the roof is no longer visible in the plan view. The roof will not appear in plan views on printouts.

We can now add some detail to the elevations.

Firstly, let's add the ground level to both elevations so that they're not floating around the page. Let's assume that the ground is flat. We can create the ground level by extending the line which delineates the bottom of the house on each elevation.



45. Press the Trim/Extend button on the Modify & Selection tab.

The Command Window prompts: Give Arc/Line to Trim/Extend.

46.  Click on the line which delineates the bottom of the right gable on the front elevation.

PlansXpress® now knows that you want to trim or extend this line. On this occasion, we want to extend the line.

The Command Window prompts: Give Point to Trim/Extend to.

47. Move your cursor to the right of the elevation.

You'll see that the line is extended and now also indicates the ground level.



48.  Once you're happy with the length of the ground line to the right of the house, click the left mouse button to register the extension of the line.

Now let's repeat this process to extend the ground level on the other side of the elevation.

49.  Press the Trim/Extend button on the Modify & Selection tab.

The Command Window prompts: Give Arc/Line to Trim/Extend.

50.  Click on the line which delineates the bottom of the left gable on the front elevation.

The Command Window prompts: Give Point to Trim/Extend to.

51. Move your mouse to the left of the elevation.

You'll see that the line is extended and now also indicates the ground level on the other side of the house.



52.  Once you're happy with the length of the ground line to the left of the house, click the left mouse button to register the extension of the line.

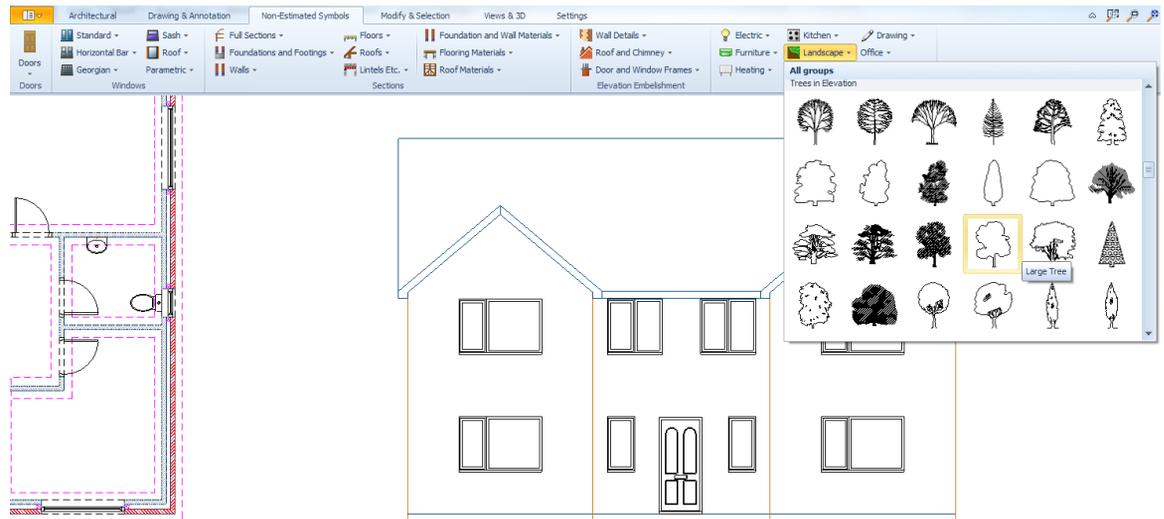
53. Repeat this process to add the ground level lines to the side elevation. Don't forget to explode the elevation so that you can edit it before trying to Trim/Extend the line.



Now let's add some trees and shrubs to the elevations.

54. Click on the Non Estimated Symbols tab.

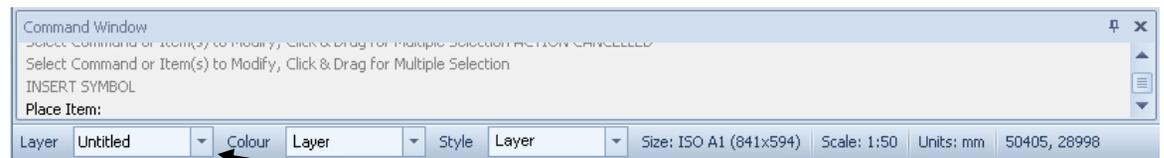
55. Press the Landscape Symbols dropdown.



56. Scroll down the symbols until you find a suitable tree elevation symbol.

57. Click on a suitable tree symbol.

The Command Window prompts: Give Insertion Point.

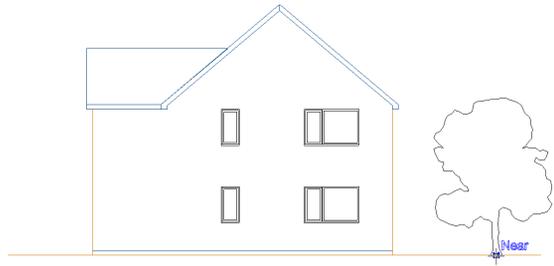


58. To ensure the tree symbol appears on the desired Layer, select Untitled from the Layer drop down box (found in the very bottom left corner of the PlansXpress window).

PlansXpress® will now place the tree symbol, and all the symbols you place subsequently (until you add a different, estimated item to the page) on the Untitled Layer.

59. Move your cursor to where you wish to place the tree.

60.  Click the left mouse button to register the position of the tree.



61. Repeat this process to add landscaping features to the elevations.

You can add extra detail to the elevations, such as cars and people, by clicking on the Non Estimated Symbols tab then clicking the Landscape dropdown button and scrolling down the list. The Non Estimated Symbols drop down menu also contains additional details to add to the elevations, such as guttering and down pipes.



Once you're happy with the appearance of the elevations, you can move on to the next section.

62.  Press the Save button.

ADDING HATCH PATTERNING TO THE ELEVATIONS



This section of the Tutorial talks you through adding tile and brick detail to the elevations of the house.

During this exercise you will learn how to:

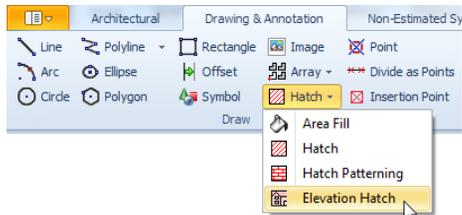
- add hatching to elevations;
- create new Pens;
- create new Layers;
- assign hatching to a Layer.

You can automatically add texture and patterns to your elevations using the Elevation Hatch button in the Hatch dropdown on the Drawing & Annotation tab.

At the end of this exercise, your elevations will look like this:



Let's start by adding tile hatching to the roof on the front elevation.



1. Press the Elevation Hatch button on the Hatch dropdown (Found under the Drawing & Annotation tab).

The Command Window prompts: Give Hatch Point Inside Boundary.



2. Click anywhere inside the roof on the front elevation.

The Command Window prompts: Give Hatch Origin Point.

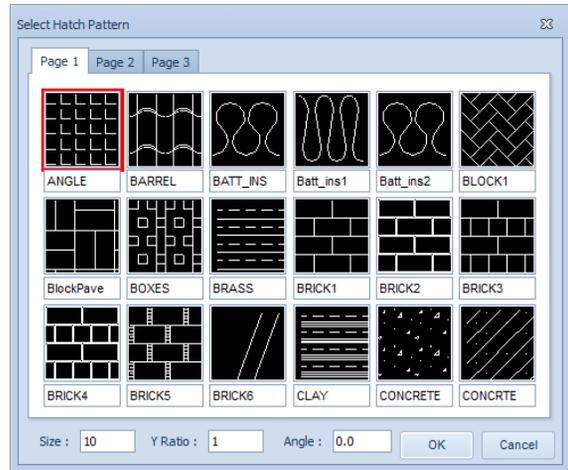
3. As we want to show a full tile at the top of the roof, click on the 'End' snap point on the top left corner of the roof.



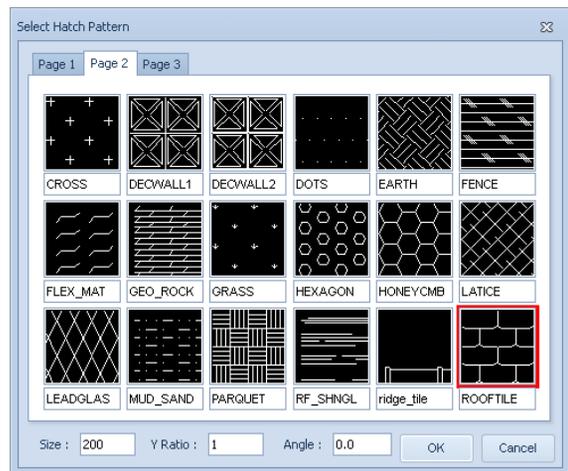
PlansXpress® will draw the hatch pattern starting at the top left corner of the roof.

The Hatch Patterning dialog box pops up.

There are three tabs containing different types of hatch pattern. You can control the size of the pattern by changing the figure in the Size input box at the bottom left of the dialog box.



4. Click on the Page 2 tab.
5. Click on the hatch pattern at the bottom right of the dialog box called ROOFTILE.
6. Type 200 into the Size input box.
7. Click OK.



After a few moments, the roof is automatically hatched with the hatch pattern you have chosen.



You can repeat this process to add brick detail to the walls. This time you want the hatch origin point to be at ground level so that you have a full brick's height at the bottom of the walls.

8.  Click the right mouse button to draw another area of hatching.

The Command Window prompts: Give Hatch Point Inside Boundary.

9. Click anywhere inside the walls, taking care not to click on a window or door.



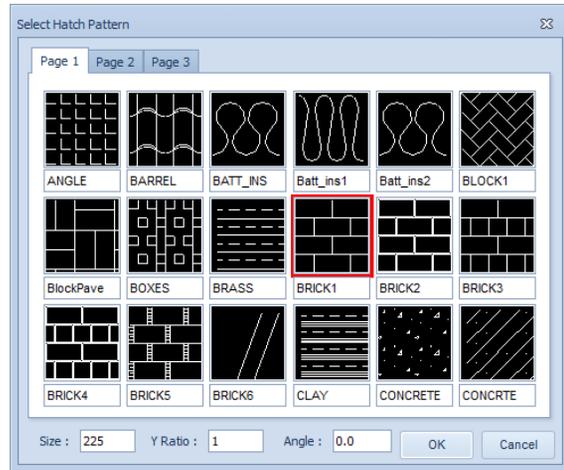
The Command Window prompts: Give Hatch Origin Point.

10. Click on the 'End' snap point at the bottom left corner of the middle section of wall where it meets the DPC line.



The Select Hatch Pattern dialog box pops up.

11. Click on the Page 1 tab.
12. Click on the hatch pattern called BRICK1.
13. Check the Size input box is set to 225.
14. Click OK.



After a few moments, brick hatching automatically appears on the walls.



15. Repeat this process to add hatching to the remaining two sections of wall on the front elevation, and to the roof and walls of the side elevation of the house.

You can also add colour to the hatch patterning. First let's create a pen for the brick hatching.

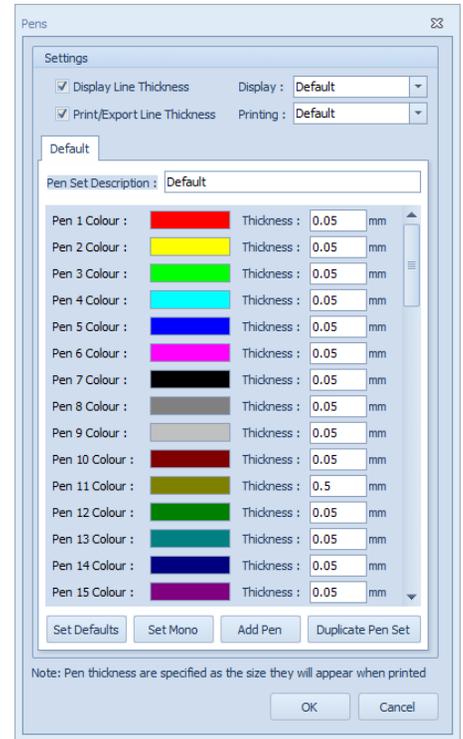
16. Go to the Views & 3D Menu and click Pens.



The Pens dialog box pops up.

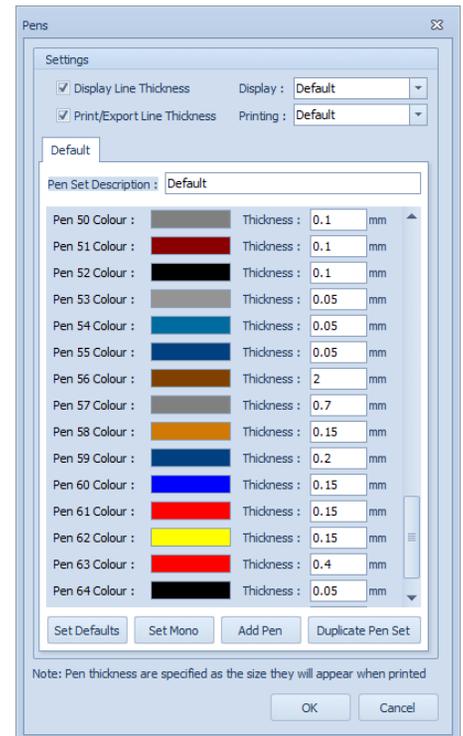
The Pens dialog box contains all the Pens which are set up as default and assigned to certain Layers. From here, you can alter the colour and thickness of existing Pens, and add new Pens.

17. Click Add Pen.



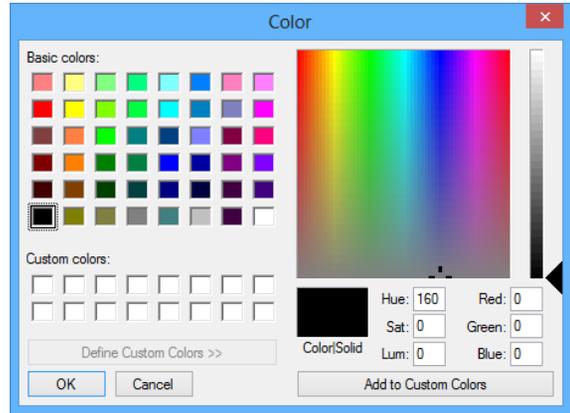
18. The Pen is added to the bottom of the list so scroll down to the bottom of the dialog box to find it.

19. Click with the left mouse button on the Colour box adjacent to the pen at the bottom of the list (the one with the highest number).



The Colour Selector dialog box pops up.

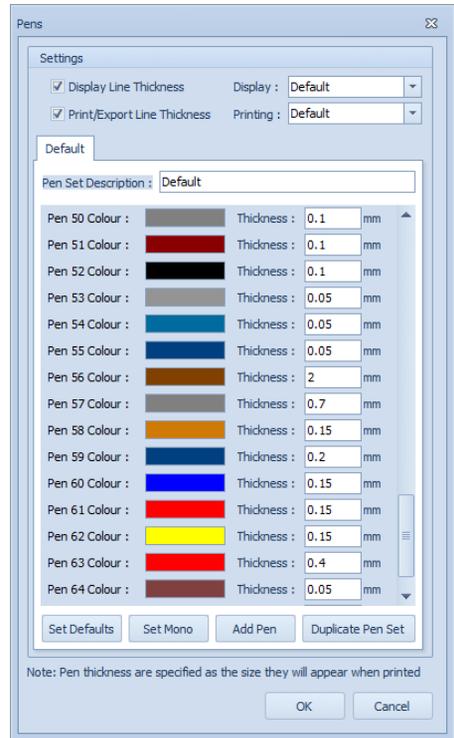
20. Choose an appropriate colour for the brick hatching using the Basic Colours or the Colour Mixer.
21. Once you're happy with the colour click OK.



You're returned to the Pens dialog box where the colour selected has been assigned to your Pen.

Note: You can alter the pen weight from the Pens dialog box by changing the figure in the Pen Thickness dialog box.

22. For now, click OK.

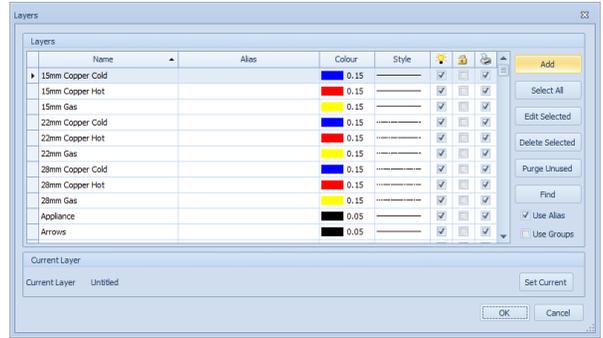


You've successfully added the pen. We will now add a Layer to put our brick hatching on and assign our Pen to that Layer.



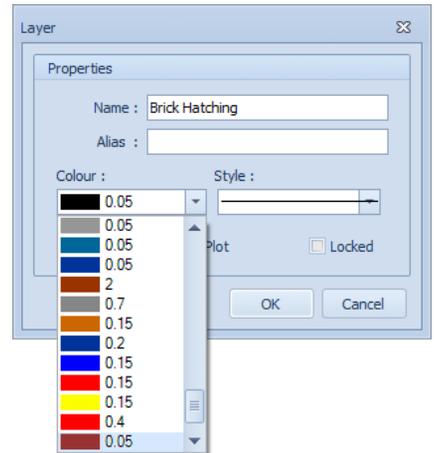
23. Press the Layers button (found on the Views & 3D tab).

The Layers dialog box pops up.



24. Click Add.

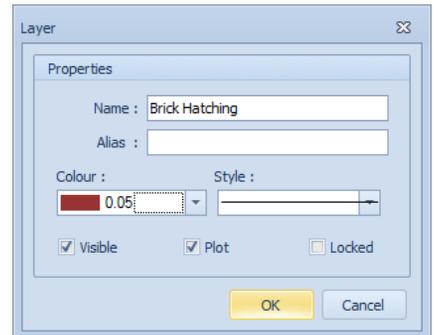
The Layer Properties dialog box pops up.



25. Enter a Name for the Layer, such as Brick Hatching.

26. Click on the Colour dropdown box, scroll to the bottom and select the pen you've just added.

You're returned to the Add Layer dialog box where the new Pen is assigned to the new Layer.



27. Click OK to finish creating the Layer.

You're returned to the Layers dialog box.

28. Click OK to close out of the Layers dialog box.

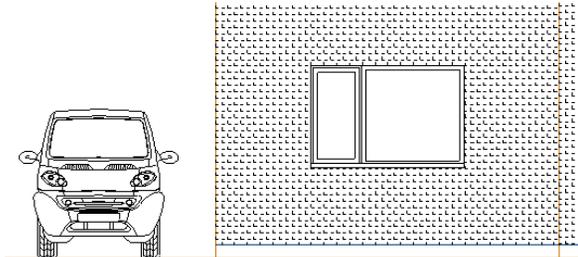
All that remains is to assign the brick hatching you drew earlier to the Brick Hatching Layer.

29.  Press and hold down the Ctrl key.

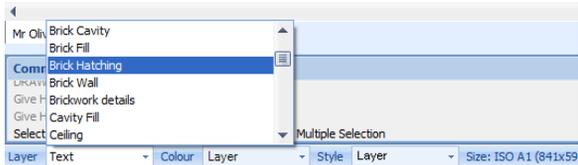
30.  Click on each of the three sections of brick hatching and the front elevation to select them.



31. Press the arrow on the Layer dropdown box.
(Found just below the Command Window at the bottom of the screen)

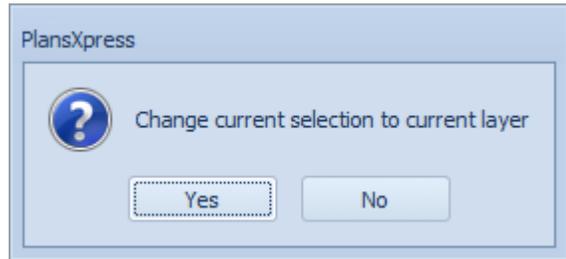


32. Locate and click on the Layer you've just created.



A dialog box pops up asking if you wish to change the current selection to this Layer.

33. Click Yes.



34.  Click anywhere on the page to deselect the brick hatching.

You'll see that brick hatching is now on the Brick Hatching Layer and drawn using the Pen you created.

35. Repeat this process to create a Pen and Layer for the Tile Hatching.

Once complete, your front elevation will look like this:



36. Repeat this process for the side elevation, assigning the brick hatching and tile hatching to the respective Layers.

37.  Press the Save button.

ADDING DIMENSION LINES TO THE PLANS

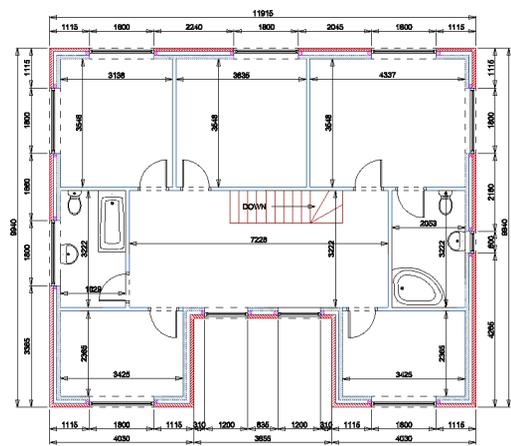
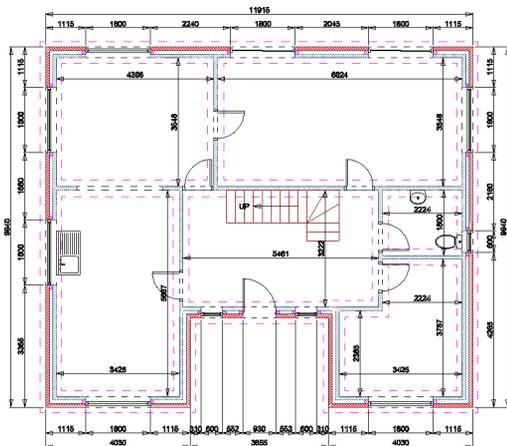


This section of the Tutorial demonstrates how to add dimension lines to your plans. You can quickly and easily add multi-point dimension lines to walls using the automatic dimension tool within **PlansXpress**®. These automatic dimension lines provide dimensions for each brick pier and each window and door along a stretch of wall. You can also manually add dimension lines to your drawings where required.

During this exercise you will learn how to:

- add auto dimensions;
- manually add dimensions.

You will need to refer to Diagrams B and C on pages 21 and 22 during this exercise.



Let's start by adding external dimension lines to the ground floor. We will do this using the automatic **PlansXpress**® wall dimensioning tool.

1.  Click on the rear wall of the ground floor plan to select it.



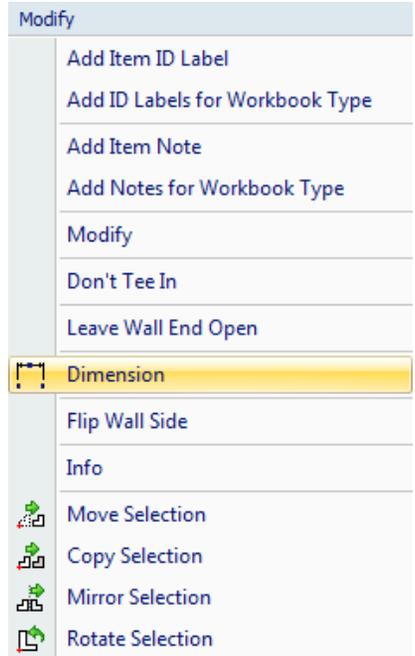
2.  Click the middle wheel of the mouse.

A menu pops up.

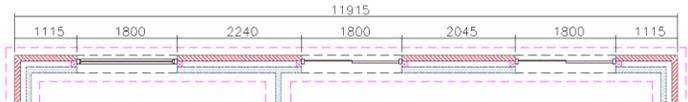
3. Click Dimension.

The Command Window prompts: Give Dimension Point.

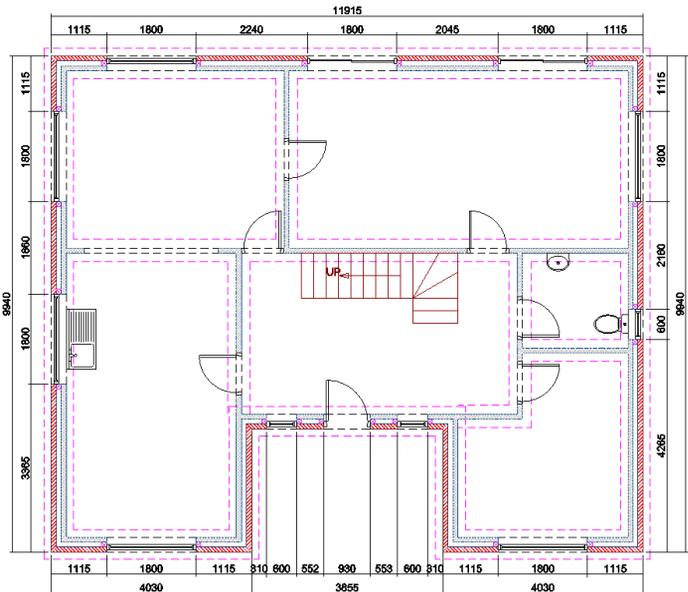
Dimensions for the wall automatically appear on screen. Depending on the position of the cursor, the dimensions will show either the internal or external dimensions for the selected wall. You'll notice that the dimensions include the length of the span of the wall and also dimensions for each section of wall and each window and door. You can register the placement of the dimension lines using your mouse.



4.  Once you're happy with the placement of the dimension lines, click your left mouse button to register their position.



5. Repeat this process to add dimension lines to each external wall for the ground floor plan.



13.  Click the right mouse button to repeat the last action.

The Command Window prompts: Give First Point.

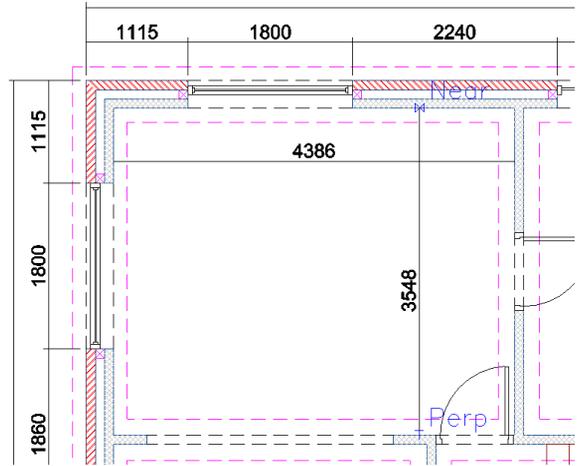
14. Hold your mouse over the internal leaf of External Wall 1 until  pops up along with the message 'Near'.

15.  Click the left mouse button to indicate the first point of the dimension line.

The Command Window prompts: Give Second Point.

16. Hold your mouse over the Dining Room side of Internal Wall 1 until  pops up along with the message 'Perp'.

17.  Click the left mouse button to register the Perp point.



The Command Window prompts: Give Dimension Point (H)orizontal, (V)ertical or (A)ligned.

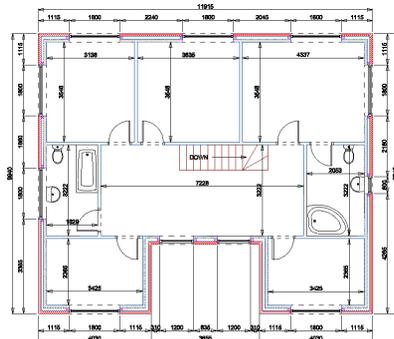
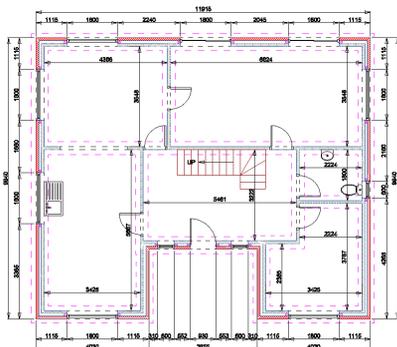
You can now move your mouse side to side to place the dimension line in a suitable place.

18.  Click your left mouse button once you're happy with the placement of the dimension line.

You've now added the internal dimensions for the dining room.

19. Repeat this process of adding dimension lines to each room on the ground floor and first floor plans.

Once complete, your plans should look like this:



20.  Once you've added the dimension lines, press the Save button.

ADDING LABELS & DRAWING DETAILS TO THE PLANS



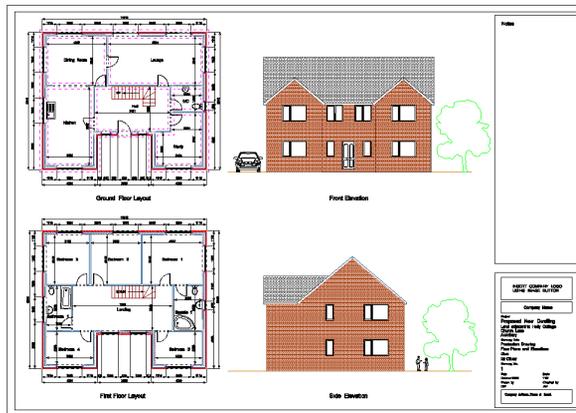
This section of the Tutorial talks you through adding different types of labels to the plans, such as room labels, diagram labels and technical information. It also shows you how to set up the Title Block with any project and drawing details.

During this exercise you will learn how to:

- add text labels to the page;
- place text labels on the plans;
- alter the text font;
- alter the text size;
- complete the Title Block with any relevant information.

Let's start by adding the room labels to the plans. Use Diagrams B and C on pages 21 and 22 for reference.

At the end of this exercise, your page will look like this:



1. You should see the Notes Picker on the right side of the plan. If you cannot see the Notes Picker make sure Notes Picker is ticked on the Show/Hide panel on the Views & 3D tab.



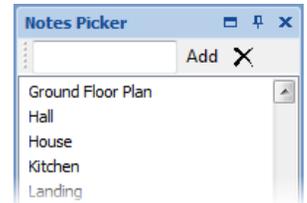
The Notes Picker tab allows you to drag and drop labels onto your drawing without you having to type a thing.

You'll see there are a number of different room and drawing labels.

Let's start by inserting a label for the Kitchen.



2.  Double click on the Kitchen label.



3. Assign this label, and any labels you subsequently place, to the Untitled Layer by selecting Untitled from the Layers drop down box.

The Command Window prompts: Give Text Point.

All you need to do is click the left mouse button to place the label in the desired position, but first let's change the style and size of the font.

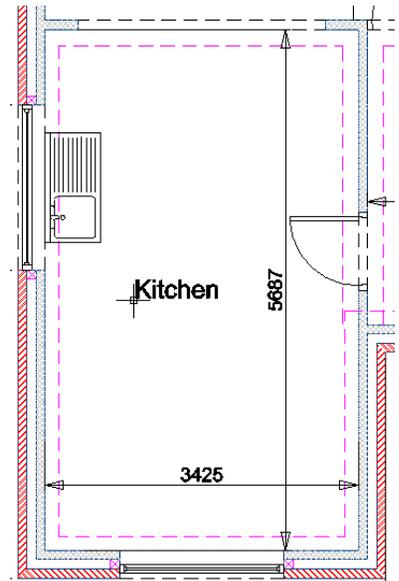
4. Select an alternative from the Font drop down box towards the top of the screen.
5. Overtyping the Height input box towards the top of the screen with 200.



This will edit the size of the text.

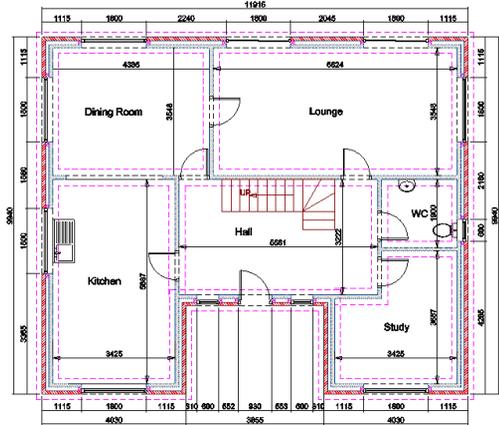
6. Place your cursor over the kitchen.

7.  Click your left mouse button once you're happy with the position of the label.



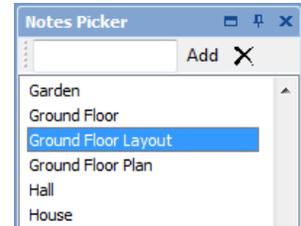
- Once you're happy with the style of the text, use the Notes Picker to add a label for each room on the ground floor and first floor. Any labels you add will automatically have the font and size you've just specified for the kitchen label.

Note: If you find you're missing a particular label, you can add it into the Notes Picker ready for use now and in the future by typing it into the input box at the top of the Notes Picker and clicking Add.



Now let's add the diagram labels to the plans. Use Diagrams B and C on pages 21 and 22 for reference.

-  Double click on the Ground Floor Layout label on the Notes Picker.



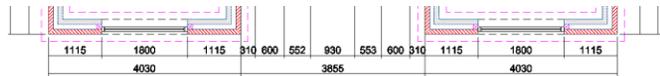
The Command Window prompts: Place Text.

- Overtyping the Height input box towards the top of the screen with 300.

This will edit the size of the text.



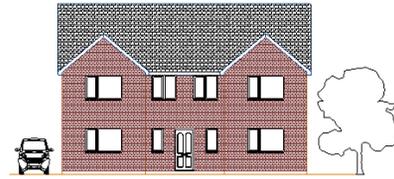
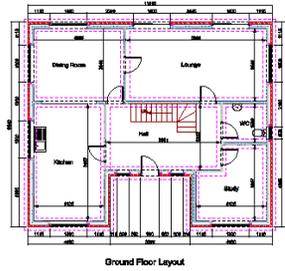
- Move your cursor under the ground floor layout.



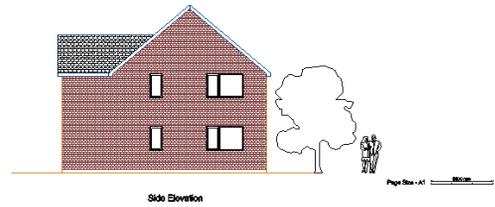
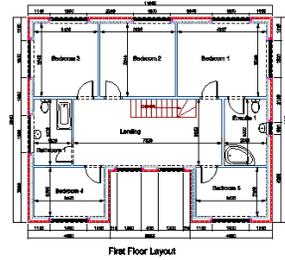
-  Click your left mouse button once you're happy with the position of the label.

Ground Floor Layout

- Use the Notes Picker to add a label for each plan layout and elevation.



All labels you add now will have a font height of 300.



- Add any other notes and labels, using either the Notes Picker or the Text button on the Drawing & Annotation Tab.

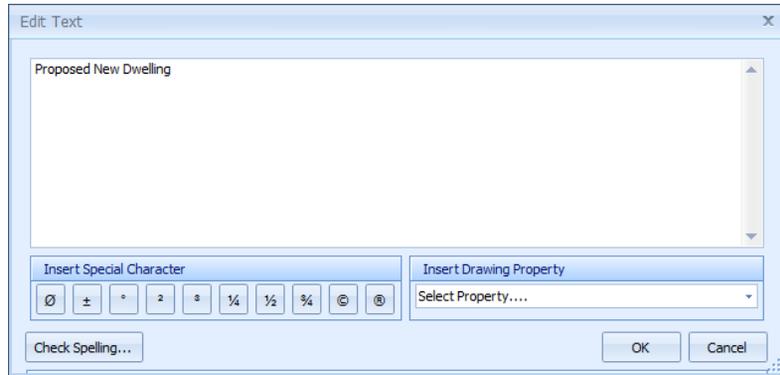
Now let's complete the Title Block on the right hand side of the page. The text within the Title Block is just like the text you have added to label the rooms and elevations so you can edit it in just the same way.

-  Double-click on the text which reads Project Description to open up the Edit Text dialog box.

INSERT COMPANY LOGO USING IMAGE BUTTON	
Company Name	
Project <input checked="" type="checkbox"/> Project Description Site Address 1 Site Address 2 Site Address 3 Drawing Title Drawing Type Drawings Included Client Name Drawing No. Number Date Month Year Drawn by Name	
Page Size - A1	Scale 1:50 Checked by Name 3000 mm
Company Address, Phone & Email	

16. Overtyping the existing text with a description such as Proposed New Dwelling.

17. Click OK.

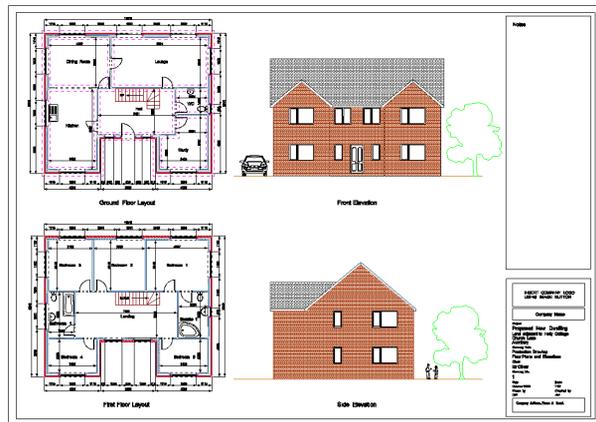


18.  Double-click on each item of text in turn to enter information as per the table below:

Current Text	Replace with...
Site Address 1	Land adjacent to Holly Cottage
Site Address 2	Church Lane
Site Address 3	Avonbury
Drawing Type	Production Drawing
Drawings Included	Floor Plans and Elevations
Name	Mr Oliver
Number	1
Month Year	[Current Date]
(Drawn by) Name	[Your Name]
Scale	1:50
Checked By	[Appropriate Name]

19.  **Image** You can also insert your Company Logo using the Image button (found on the Drawing & Annotation tab) and insert your Company Name and Company Contact Details in the spaces provided, if desired.

Once you've finished adding all the text to the page, your page should look like this:



20.  Press the Save button.

PRINTING PLANS

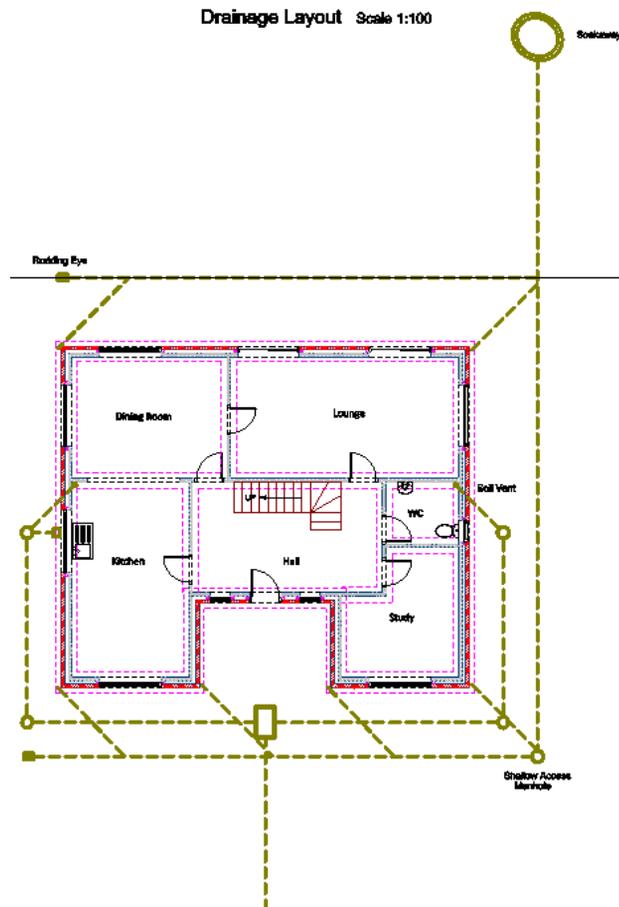


This section of the Tutorial leads you through printing an A4 Drainage Layout. You can, of course, print the whole drawing page, using Printer settings on the File menu to arrange the printout. This exercise shows you how you can be more selective about what you print, using Layouts and Views to print particular parts of a drawing, showing specific Layers in a zoomed area of the drawing page.

During this exercise you will learn how to:

- create your own Views;
- create your own Layouts;
- use Print Options and Print Setup;
- preview a printout;
- print a drawing.

At the end of this exercise, you will have printed a drainage layout which looks like this:

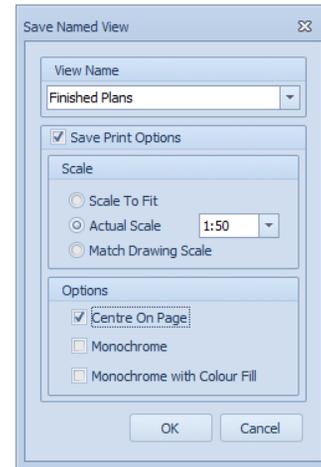


Let's start by creating a View of the existing plans which we can return to later on. Views work in two key ways. Firstly, when you save a View, it takes a snapshot of the current Layer settings. Secondly, it captures the current zoom setting. Therefore, you can use Views to save useful compositions of your drawings. Our finished plans are particularly useful, so we'll save them in a View called Finished Plans.

1.  **Save View** Press the Save View button on the Views & 3D tab.

The Save View dialog box pops up.

2. Type Finished Plans into the View Name input box.
3. Tick the Save Print Options tick box.
4. Select the Actual Scale option and select 1:50 from the Scale dropdown box.
5. Tick the Centre on Page option.
6. Click OK.



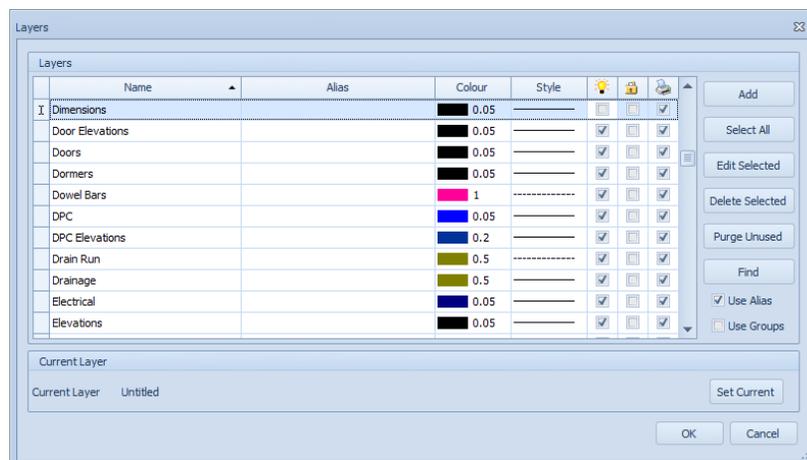
The finished plans are now safely saved in their own View, so whatever changes we make to Layers on the drawing, we can return to it in this form at any point.

Now we can prepare the drawing to create a Drainage View.

Let's start by switching the Drainage Layer on and switching the Dimensions Layer off.

7.  **Layers** Press the Layers button (found on the Views & 3D tab).

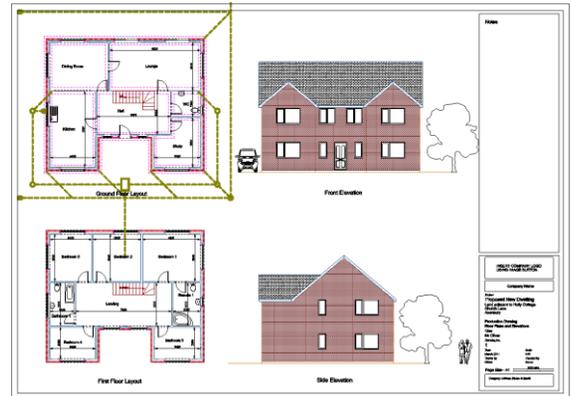
The Layers dialog box pops up. From here you can define which Layers appear on the page onscreen, which Layers are locked so can't be edited, and finally, which Layers appear on the print outs.



8. Locate the Layers called Drainage and Drain Runs.

You'll notice that each Layer has three associated tick boxes. The Light Bulb tick box controls whether the Layer appears on screen; the Padlock tick box controls whether the Layer is locked for editing; and the Printer tick box controls whether the Layer appears on printouts.

9. Ensure the Light Bulb and Printer tick boxes are ticked for the Drainage and Drains Run Layers. This will ensure the Drainage and Drain Run Layers are visible on screen and included in any printouts.
10. Ensure the Light Bulb and Printer tick boxes are unticked for the Dimensions Layer. This will ensure the Dimensions Layer does not appear on screen or in any printouts
11. Click OK.



You are returned to the page where the Drainage items should now be visible and the Dimensions should be hidden.

We can now save this particular selection of Layers in a Drainage View.

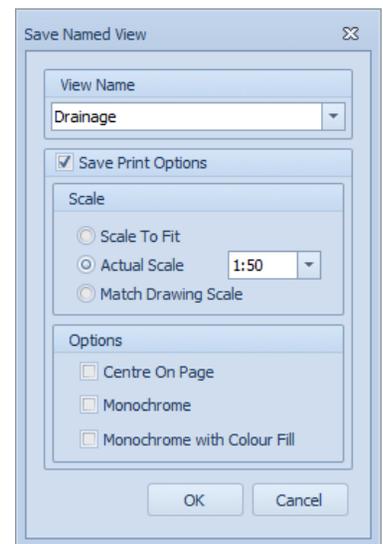
12.  **Save View** Press the Save View button on the Views & 3D tab.

The Save View dialog box pops up.

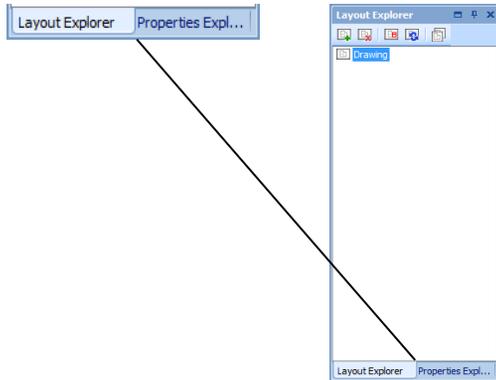
13. Type Drainage into the View Name input box.
14. Click OK.

We now want to create a Layout which shows only the ground floor plan and associated drainage.

Under the Notes Picker tab, on the right-hand side of the screen, you'll see the Layout Explorer tab.



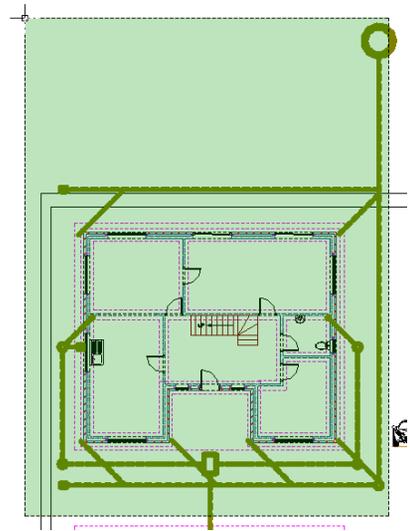
15. Remember you may need to click the Layout Explorer tab at the bottom to switch from viewing the Properties Explorer.



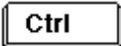
Layouts work a bit differently from Views. A Layout allows you to focus in on a selection of items – often, as the name suggests, a Layout. The key thing is that once you have created a Layout, you cannot edit any of the existing items on it, but you can add and edit new ones. A Layout exists in parallel to your original drawing – anything you add to it will only appear on the Layout, and not on the original drawing.

We need to select the ground floor and associated drainage so that we can use it in the new Drainage Layout.

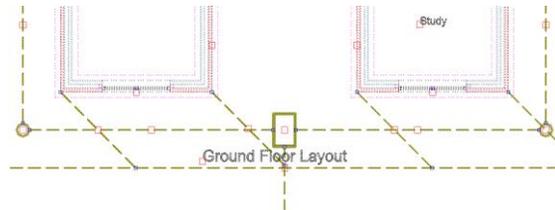
16. Place your mouse to the bottom right of the house, outside the manholes.
17.  Hold down the left mouse button as you drag your cursor up and to the left.
18. Once each item in the ground floor layout and drainage system is at least partly included in the dashed selection box, release the left mouse button.

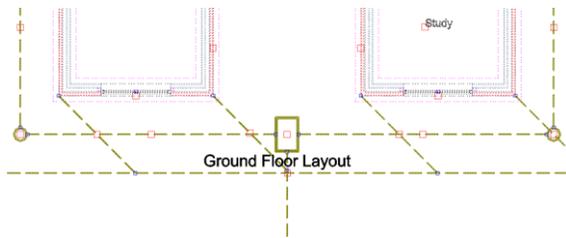


You may find that a few additional items have been inadvertently selected, such as lines bordering the page. We don't want these to appear in our printout and can easily remove them from the selection. We also need to remove the Ground Floor Layout label as we're going to add a new title for the drainage layout in the Layout we create.

19.  Hold down the Ctrl key on your keyboard.

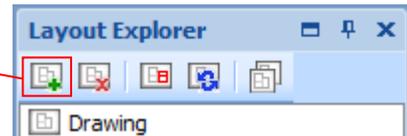
20.  Using the left mouse button, click on anywhere except the entity handles of each of the items you want to take out of the selection, including the Ground Floor Layout diagram title. Do not click on the entity handles as this will move the selection.



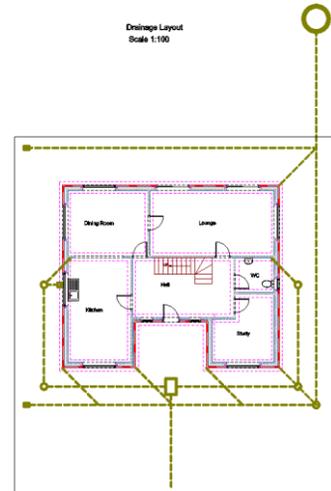


The items will no longer appear selected.

21. Once you're happy that you've only selected the items you want in the Drainage Layout, press the New Layout button.



The new Layout is created and opened up.

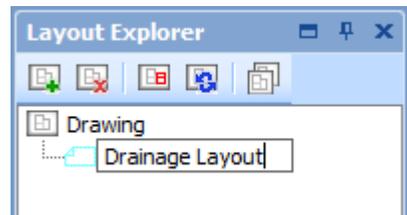


22.  Click with the left mouse button on Layout1 under Drawing in the Layout Explorer.

You can now rename the Layout.

23. Overtyping the name with Drainage Layout.

24.  Click the Enter key on your keyboard to register the new name.



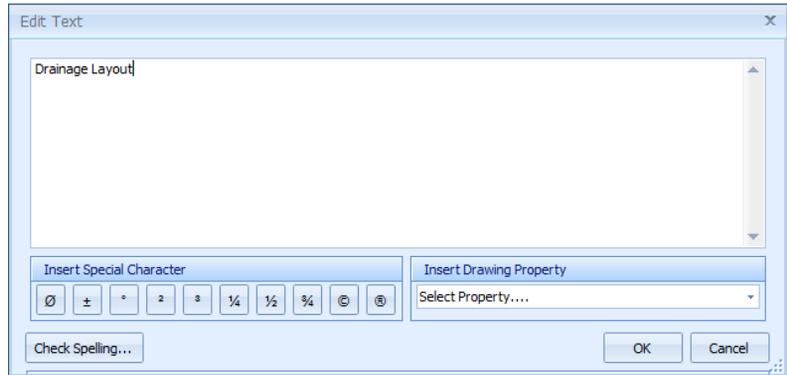
We can add labels to the diagram as desired now. Let's start by adding a diagram title.

25.  Press the Text button (Drawing & Annotation tab).

The Edit Text dialog box pops up.

26. Type Drainage Layout into the text area.

27. Click OK.



28. Overtyping the Height input box on the Properties toolbar at the top of the screen with 300.

This will edit the size of the text.

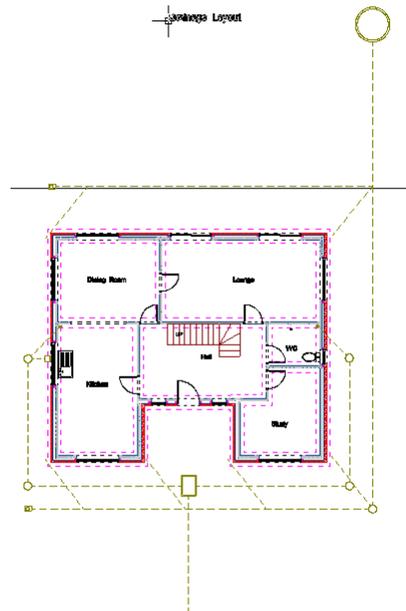


The Command Window prompts: Place Text.

29. Place your cursor above the house plan.

30.  Click the left mouse button to place the title.

31.  Click the right mouse button to add more labels.



The Edit Text dialog box pops up.

32. Enter Scale 1:100 to show the scale of the printout.

33. Click OK.

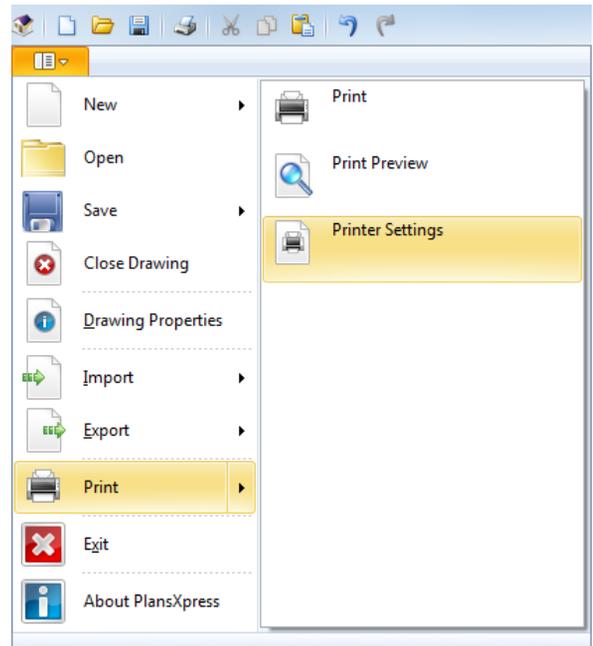


The Command Window prompts: Give Text Point

34.  Click the left mouse button to place the scale label near the diagram title.
35. Continue in this way to place any additional labels you require.

Once you're happy with the drainage layout, you can print the document.

36. Go to the File menu (top left corner of PlansXpress® window) and click Print > Printer Settings.





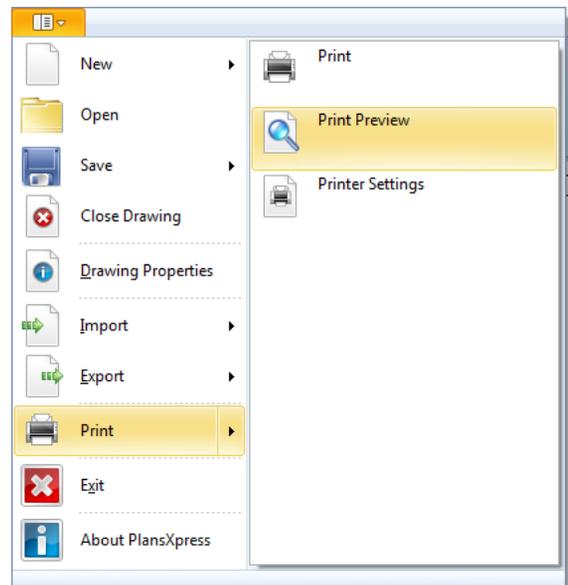
The Print Options dialog box pops up.

37. Set the Left, Right, Top and Bottom Margins to 0.
38. Click Actual Scale and select 1:100 from the dropdown menu.
39. Click Centre on Page.
40. Click OK.

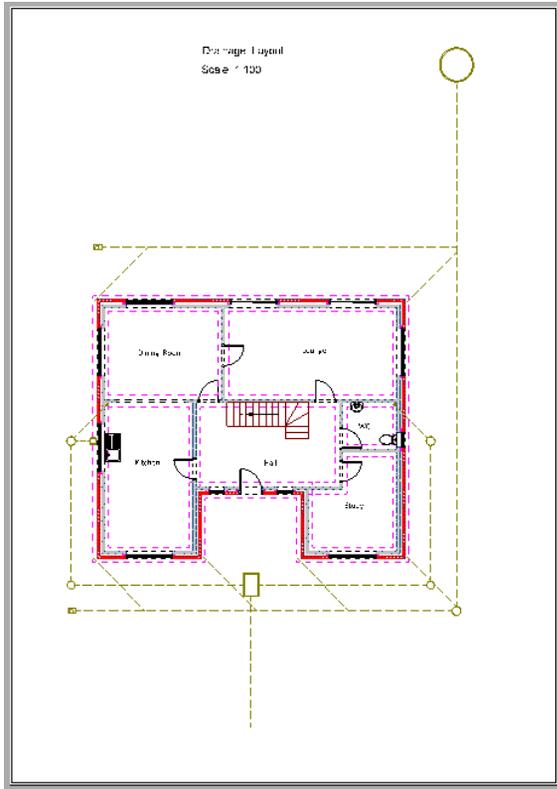
A dialog box may pop up informing you that the margins are outside the printable area and giving you the option to increase the margins to an appropriate size. If this dialog box pops up, click Yes.

You're now ready to print the document.

41. Click on the File menu at the top left of the screen and go to Print > Print Preview.



PlansXpress® now generates a Print Preview of the document.



42.  If you're happy with the Print Preview, press the Print button on the Print menu or the Print Button at the top of the PlansXpress window.
43. Click Close at the top of the screen to return to the drainage layout drawing.

PlansXpress® sends the document to print on your default printer.

Now you've printed the drainage layout, you can go back to the original View of the drawing.

44. Click Drawing in the Layout Explorer to see all of the original drawing.
45. Select Finished Plans from the View drop down box to view the plans with the drainage Layers switched off and the Dimensions Layer switched back on.
46.  Press the Save button.

Further information on printing can be found on the HBXL website, www.hbxl.co.uk.

CREATING AN ESTIMATE IN ESTIMATORXPRESS® BASED ON A PLANSXPRESS® DRAWING



Once your drawings are complete and you've saved the final version, you can import the **PlansXpress®** drawing into EstimatorXpress® in order to create an Estimate based on the dimensional data within the drawing.

During this exercise you will learn how to:

- import a **PlansXpress®** drawing into EstimatorXpress® to estimate the Job.



1. Launch EstimatorXpress® by either double clicking on the **EstimatorXpress®** icon or going to **Start, All Programs, HBXL, EstimatorXpress v.8** and clicking on the **EstimatorXpress** icon (later versions of the software may be in a different location).

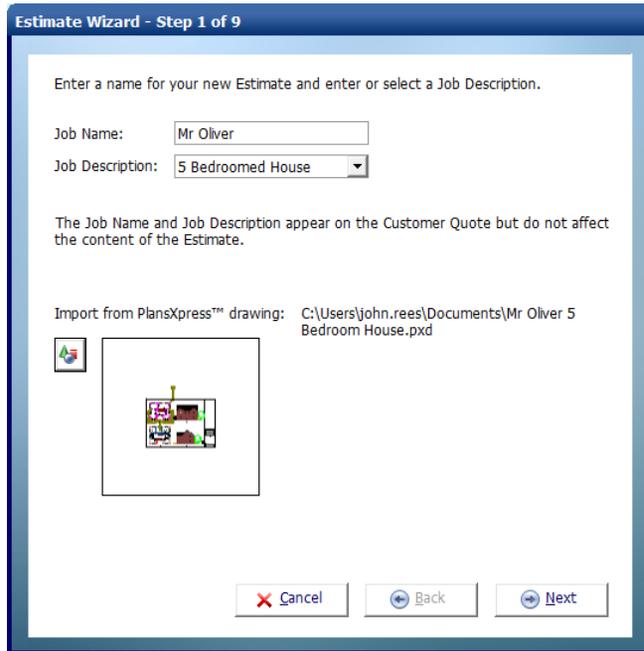


2. From the Main Menu, press the My Estimates button.



- From within My Jobs, press the New Estimate button.

The New Estimate Wizard pops up.



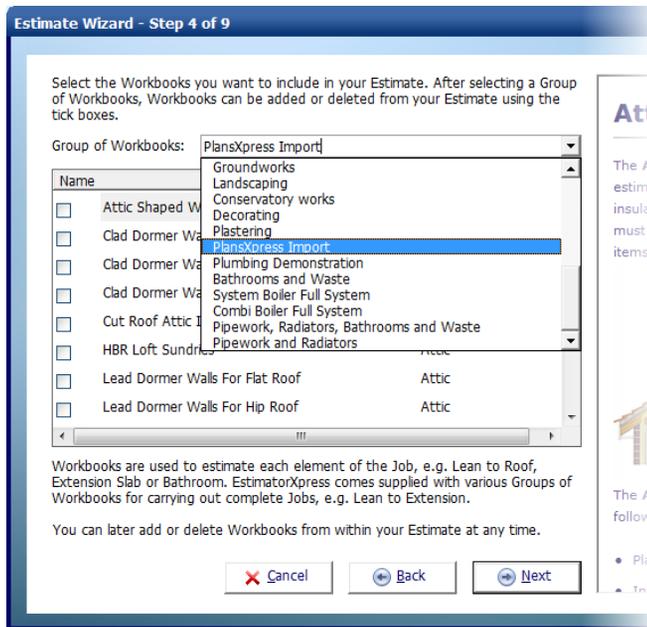
- Enter a Job Name of Mr Oliver.
- Select a Job Description of 5 Bedroomed House.
-  Press the Import button.
- Locate the **PlansXpress®** file called "Mr Oliver 5 Bedroom House.pxd" and click on it.

- Click OK.

The file path appears in the New Estimate Wizard, along with a thumbnail showing the drawing, to ensure you've selected the correct drawing.

- Click Next.

- Work your way through the following pages of the New Estimate Wizard, selecting a Price Book and Specification as indicated by the instructions.



11. When prompted to select a Group of Workbooks, select the PlansXpress Import option. The PlansXpress Import Group of Workbooks contains a number of Workbooks for items which do not feature in the PlansXpress drawing, but which you may wish to estimate – such as site preliminaries, subcontract quotations and plant. You may like to add extra Workbooks to the list for any non-estimated items on your drawing - such as kitchen fittings.

12. Work your way through the remaining pages of the New Estimate Wizard, and once you're happy with the options you've selected on page 9, click Finish.

EstimatorXpress® creates a Job based on the dimensional data from within the **PlansXpress®** drawing.

A dialog box pops up alerting you to any Workbooks which require items to be defined, such as drainage plant. This dialog box will also inform you if there are any items which can't be imported into the estimate – for example if you've drawn plumbing items in **PlansXpress®** but don't have **EstimatorXpress® Plumbing & Heating edition**. You are also advised to review any Workbooks which **EstimatorXpress®** has made automatic corrections to. If, for example, you have entered a letter into a number input box, **EstimatorXpress®** will automatically revert the data to its default setting. You may wish to revisit and amend this information. You are also prompted to review the Specification if you haven't already done so.

13. Follow the onscreen instructions to complete your Estimate import.

See the **EstimatorXpress® Getting Started Guide** for more information on estimating using **EstimatorXpress®**.

IMPORTING TECHNICAL NOTES INTO PLANSXPRESS® FROM ESTIMATORXPRESS®



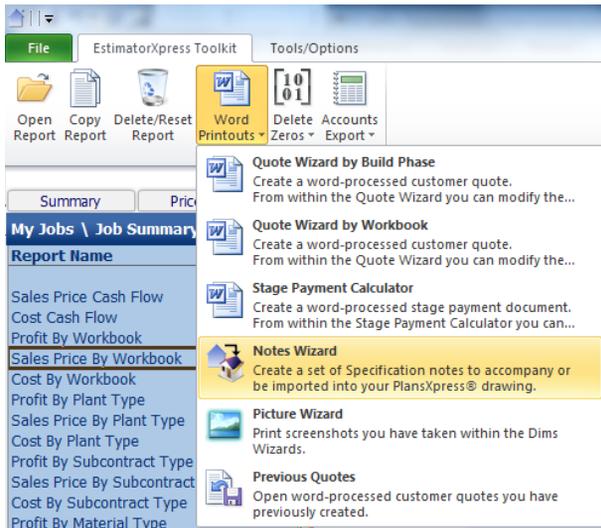
Once you've completed your Estimate, including any additional Workbooks which weren't included in the drawing, you can import the technical data from **EstimatorXpress®** into **PlansXpress®**.

During this exercise you will learn how to:

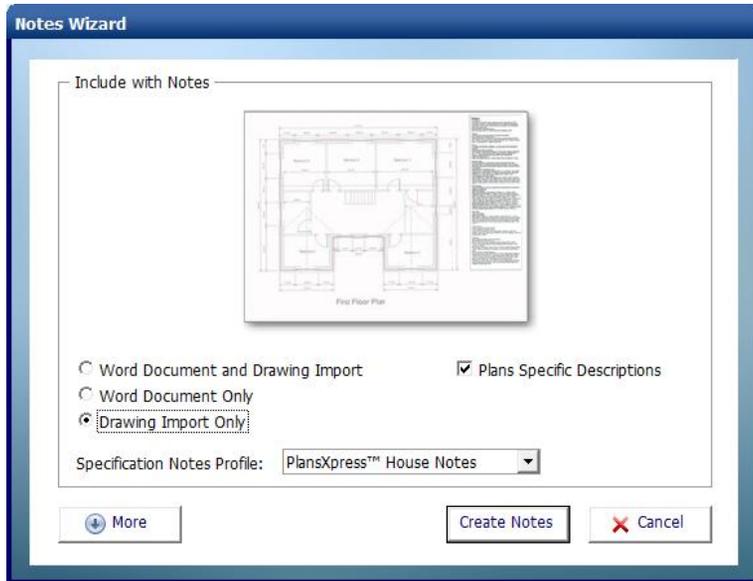
- generate technical notes based on a Job in **EstimatorXpress®**,
- import technical notes into **PlansXpress®**.



1. Launch **EstimatorXpress®** by either double clicking on the **EstimatorXpress®** icon or going to **Start, All Programs, HBXL, EstimatorXpress8** and clicking on the **EstimatorXpress** icon (later versions of the software may be in a different location).
2. Open the Mr Oliver Estimate from the My Jobs screen.
3. From within the Mr Oliver Estimate, click on the Reports tab.
4. Click on the Word Printouts dropdown button and click Notes Wizard.



The Notes Wizard dialog box pops up. From within the Notes Wizard, you can control the level of detail which appears in the drawing notes. The preview window at the top of the dialog box shows you an example of how the notes will appear with the current options selected.



5. Click Drawing Import Only.
6. Review the remaining options.
7. Once you're happy with the options, click Create Notes.



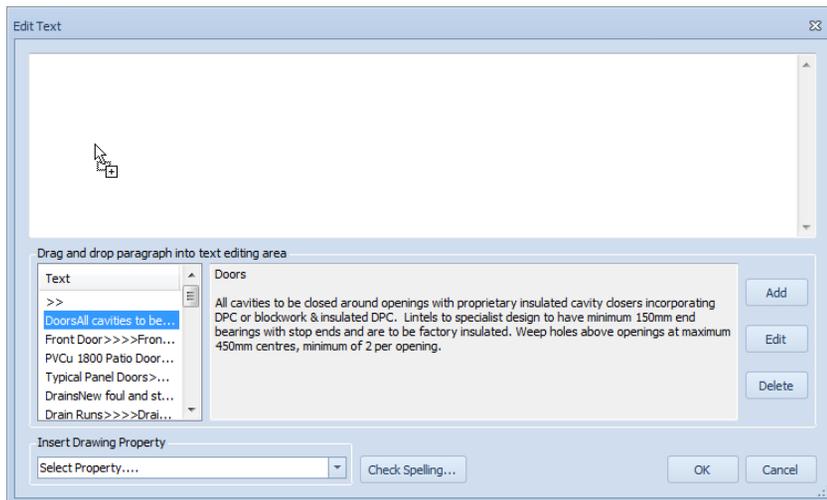
8. If it isn't already open, launch **PlansXpress®** by either double clicking on the **PlansXpress®** icon or going to **Start, All Programs, HBXL, PlansXpress** and clicking on the **PlansXpress** icon.

9. Open the Mr Oliver 5 Bedroom House drawing.

10. Go to the Drawing & Annotation tab and click Specification Notes.

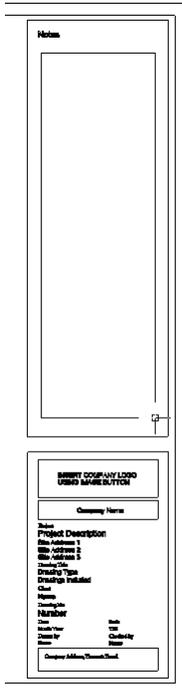


The Edit Text dialog box pops up, containing the notes you've exported from the estimate.



11.  Click on a line in the Text Window to preview the paragraph in the Preview Pane.
12.  Drag the paragraphs you want to add to your drawings from the Text Window into the Edit Text Window, where you can edit them as desired.
13. Once you're happy with the notes you've selected to appear on the drawing, click OK.

You are returned to your drawing page where you can now place the Notes.



The Command Window prompts: Give First Point.

14. Hold your mouse towards the top left corner of the Notes area.

15.  Click the left mouse button to register the first point of the rectangle in which the Notes will appear.

The Command Window prompts: Give Second Point.

16. Move your mouse towards the bottom right of the Notes area.

17.  Click the left mouse button to register the second point of the rectangle in which the notes will appear.



Your Notes will appear on screen in the Notes Block.

You may need to make the text smaller to fit the Notes into the Notes block. Click on the text to select it and enter a lower number into the Height input box on the Properties toolbar to shrink the notes.

Please be aware that all automatically generated notes are for guidance only and must not be relied upon without detailed review and adaptation for your specific projects. The Company does not warrant, guarantee or make any representations regarding the use, or the result of use, of the notes in terms of correctness, accuracy, reliability, currentness or otherwise.

18.  Press the Save button.

For further information on importing technical notes from **EstimatorXpress®** visit the HBXL website at www.hbxl.co.uk.

CREATING A 3D VISUALISATION OF THE PLANS



This section of the Tutorial talks you through creating and viewing a 3D visualisation of your plans.

Please note this feature is only available in **PlansXpress® Total Toolkit edition**. To upgrade to **PlansXpress® Total Toolkit edition**, call the **HBXL Sales Team** on **0845 1234 065**.

During this exercise you will learn how to:

- launch the PlansXpress 3D viewer;

At the end of this exercise, you will have created a 3D visualisation of the plans which looks like this:



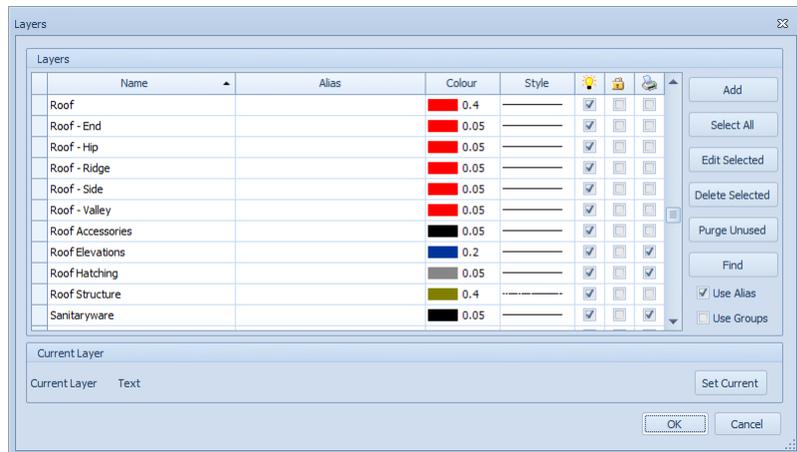
In preparation for creating the 3D visualisation, let's ensure all the Layers (except the drainage and dimension) Layers are visible on screen.



4. Press the **Layer** button on the Views & 3D tab.

The **Layers** dialog box pops up.

5. Work your way down the list, switching on all the Layers except the Drainage, Drain Run and Dimensions Layers. Ensure the Roof, Floor and Ceiling Layers are switched on by ticking the respective Light bulb tick boxes.
6. Hide the Dimensions Layer from screen by unticking the adjacent Light bulb tick box.
7. Once complete, click OK.



After a few seconds, all the roof Layers will be visible on screen and the dimensions will be hidden.

You need to move the first floor plan away from the ground floor plan so that there is plenty of space around each plan. This is an important step, as when you set out Viewpoints of the exterior of the house, if the Viewpoints are close to the building, you will only be able to see a small amount of the elevations.

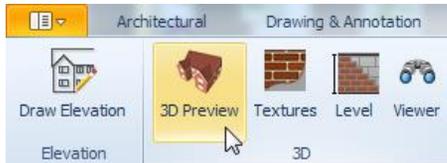
Let's turn off the hatching so that the screen refreshes quickly when moving the plans.

8. On the Show/Hide panel on the Views & 3D tab untick Hatching.



The plans and elevations are shown without hatching.

9. Click 3D Preview on the 3D panel on the Views & 3D tab



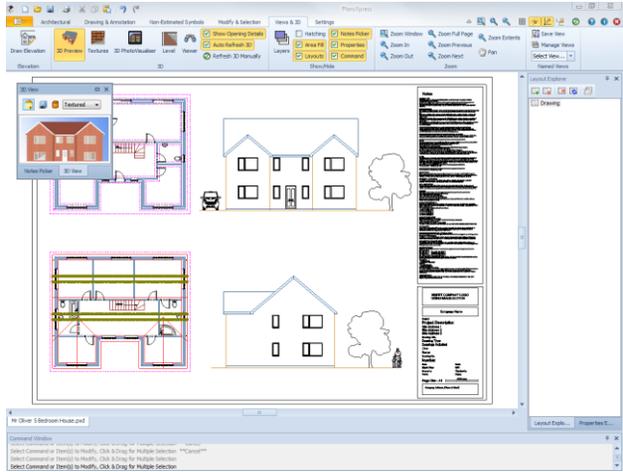
10. The 3D View should appear on the right side of the screen where the Notes Picker was. You can switch to and from the Notes Picker by using the tabs at the bottom.



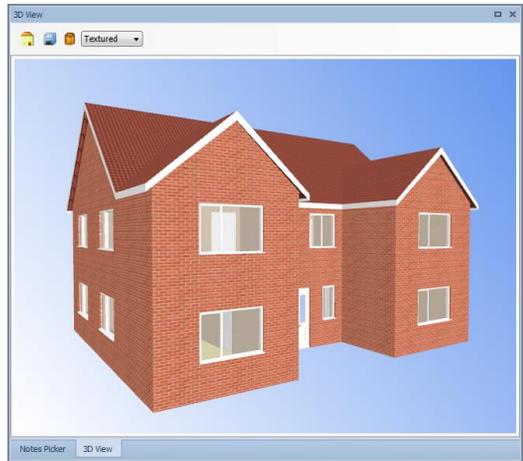
Hold the left mouse button down whilst you resize the screen to a good size for viewing the 3D model.



- 11. Click and drag the 3D View window so it appears in front of the plan.

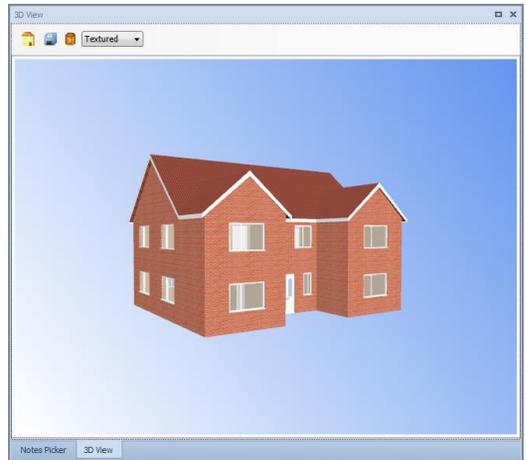


- 12. You can make the window bigger by clicking and dragging the corners of the window.

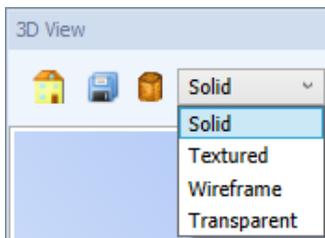
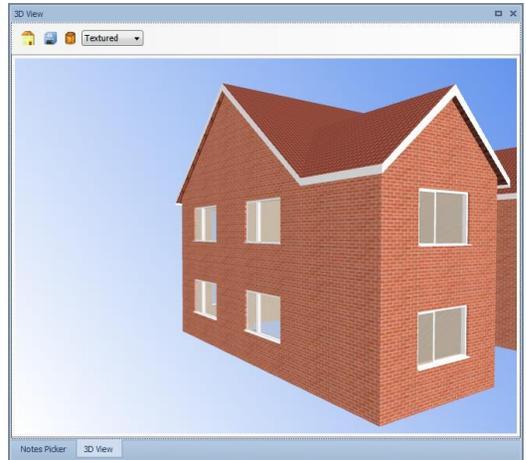


- 13.  To rotate around the drawing hold down the left mouse button and move the cursor through the centre of the screen, or point of rotation. Moving you mouse from left to right, or right to left along the x-axis will rotate around the model, and along the y-axis from top to bottom or bottom to top will spin it vertically.

14.  To zoom in or out from the centre of rotation use the scroll wheel on your mouse. Scrolling up will zoom in and scrolling down will zoom out.

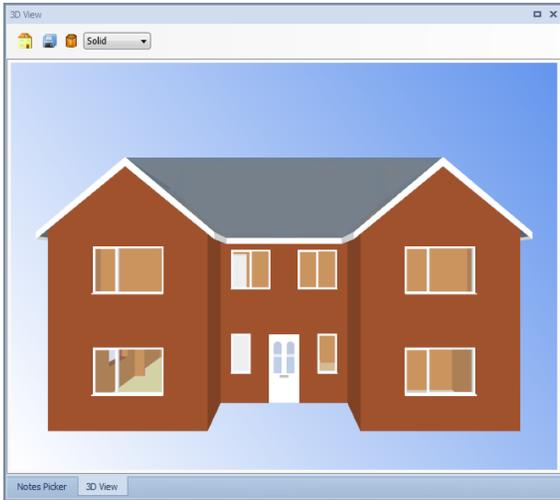


15.  Holding down the middle mouse button and move the mouse to move your point of view up, down, left and right.

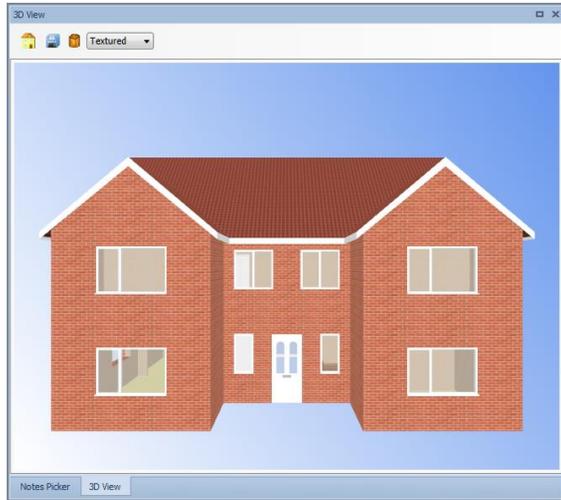


16. You can use the small dropdown box in the top right corner of the 3D View window to change the way the preview is displayed.

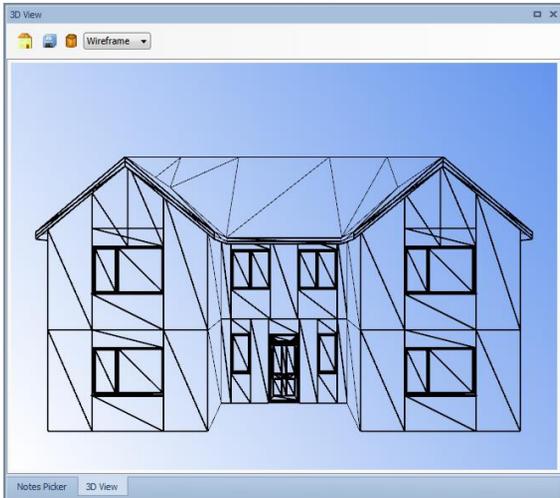
Solid



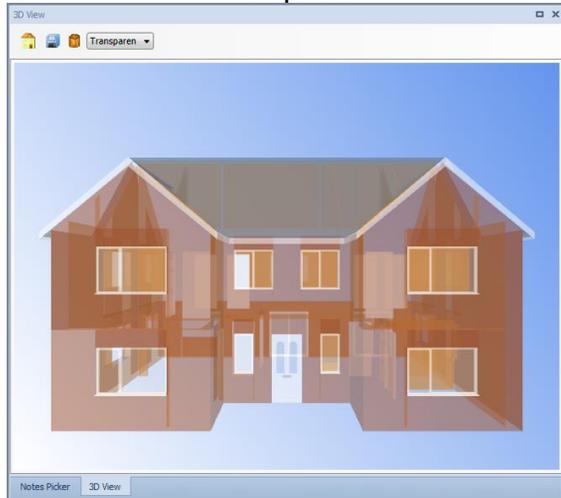
Textured



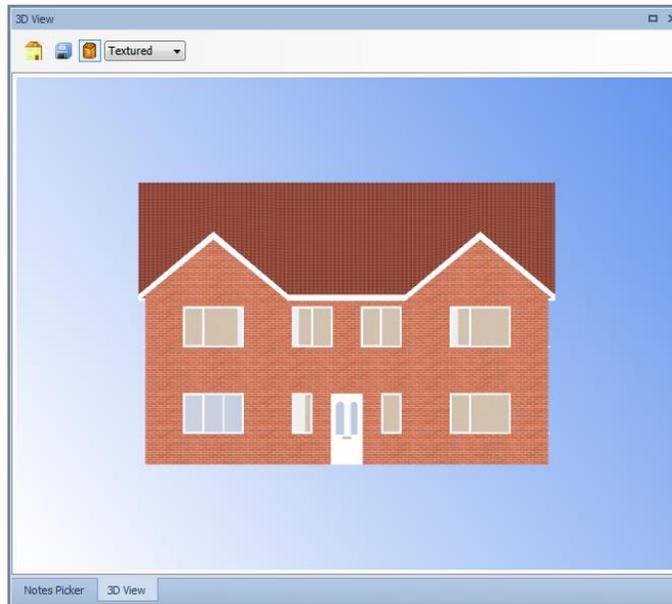
Wireframe



Transparent

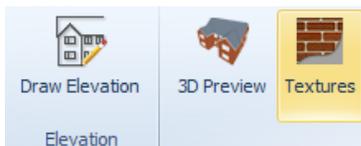


17.  If you click the Orthographic button the 3D View will be displayed without perspective.



18. Click the Reset View button  to restore the 3D view window to its original viewpoint.
19. Click the Save Image button  to save the current view as a .jpg image.

As you can see the 3D view is already setup with an appropriate colour scheme and set of textures. However you can if required change the colours and textures used.

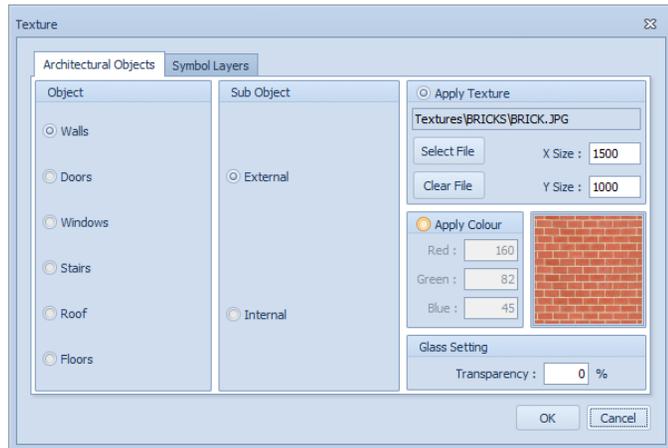


20. Click the Textures button on the 3D panel (Views & 3D tab)

The Texture window box pops up.

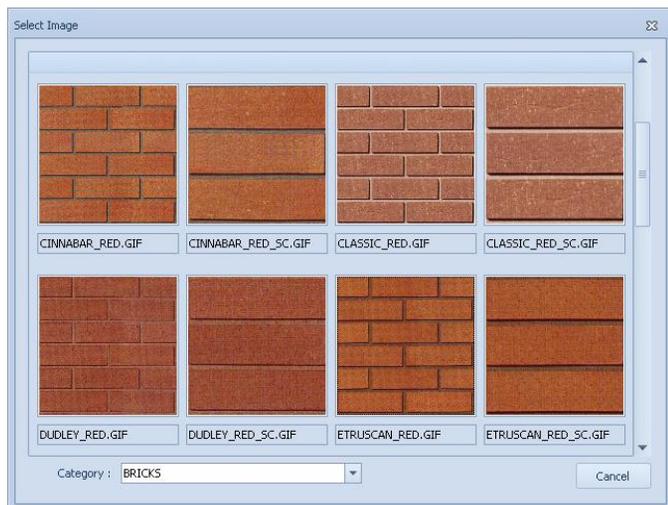
From the Texture window you can set up colours and textures for the different elements of the 3D visualisation of the house. If you click an item from the 'Object' Window on the left hand side of the dialog box, you'll see that there are options for the 'Sub Object' of the Frame, the Glass and the Furniture. This means you can set up a different textures or colours for the Glass and the Frame of the Window.

21. Tick Walls in the Object panel.
22. Tick External in the Sub Object panel.
23. Tick Apply Texture if it isn't already selected.
24. Double click on the texture preview box (the box showing the currently selected texture).



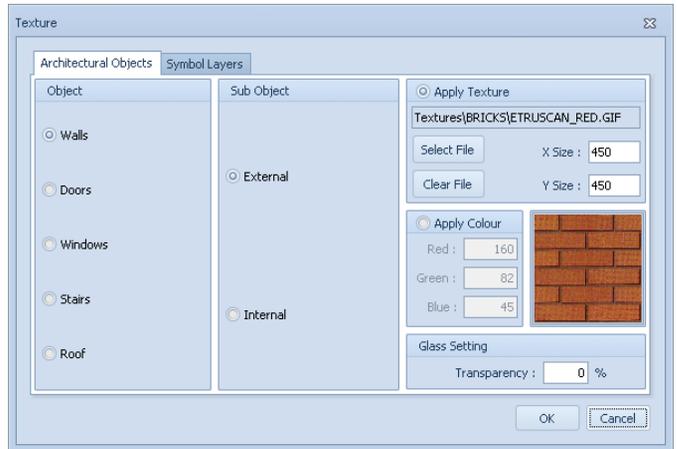
The Select Image window pops up.

25. Locate and double click on the brick texture called ETRUSCAN_RED.GIF.



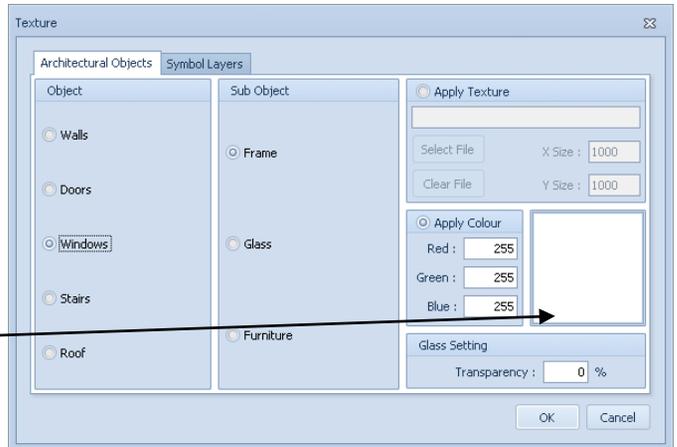
You're returned to the Texture window where the brick you selected is now assigned as the texture for the External-Outer Walls.

26. Set the X and Y size to 450.



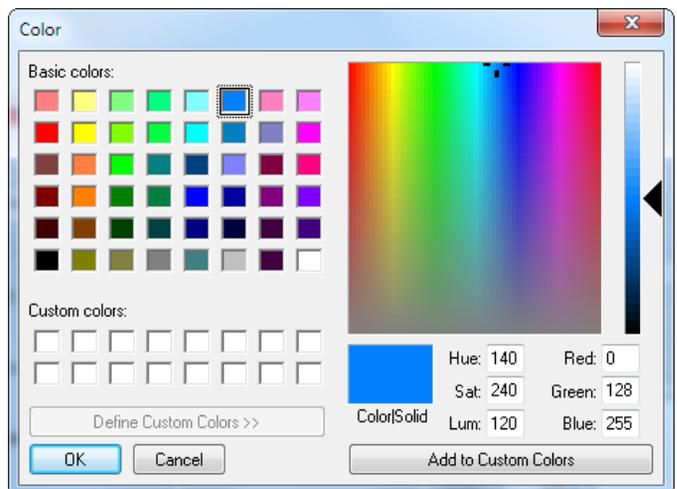
Let's change the colour of the Window Frames.

27. Tick Windows in the Object panel.
28. Tick Frame in the Sub Object panel.
29. Double click the colour preview box

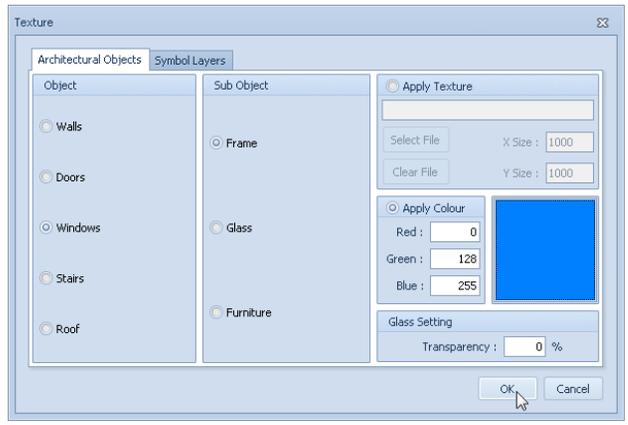


The Colour dialog box pops up. You can either select a colour from the Basic Colours or mix your own using the Custom Colours.

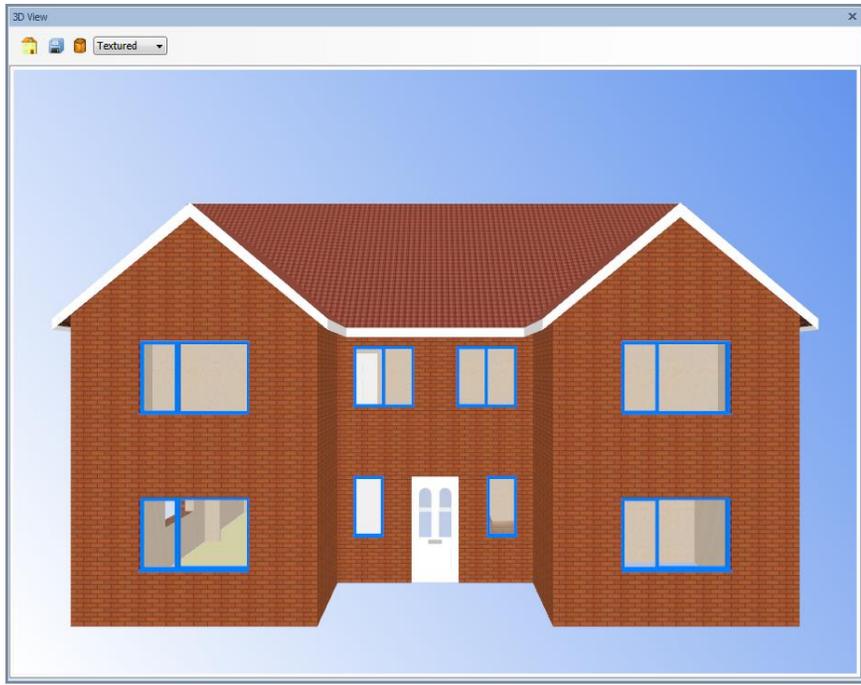
30. Click a colour from the Basic Colours.
31. Click OK.
32. Working your way through the other Objects set up textures and colours for the remaining elements of the house.



33. Once you're happy with the textures and colours click OK.



34. Click 3D Preview again to view the new textures and colours.



Depending on your computers graphics card the navigation speed around the drawing may be affected. It can be quite sensitive on faster computers but with a few minutes practice you will get the hang of navigating around the model to view the entire visualisation.

You may also wish to turn on the 3D viewer as you're designing each floor layout so that you can get a different perspective on your designs.

LOFT TUTORIAL

Before you begin this Tutorial, ensure you have completed the House Tutorial and are confident using **PlansXpress®**. The Loft Tutorial guides you through drafting a loft conversion, ready to estimate, using the house you have just completed in the House Tutorial, Mr Oliver 5 Bedroom House, as a starting point. The Loft Tutorial assumes that the conversion is taking place to an existing house and does not estimate the fabric of the house itself.

Please note that the Architectural tools for drafting lofts are only available in **PlansXpress® Total Toolkit edition**. To upgrade to **PlansXpress® Total Toolkit edition**, call the **HBXL Support Team** on **0845 1234 085**.

During the Tutorial you will work through sections which will teach you how to:

- Create a loft layout view
- Form the opening
- Draw dormers
- Place upstand walls
- Mark out a collared ceiling
- Mark out sloping ceilings
- Draw attic stud walls
- Place internal doors
- Place roof windows
- Mark out a loft floor
- Develop a loft section
- Apply plaster and decoration to an existing wall

You will also revise how to:

- Add bathroom fittings
- Add labels and dimension lines
- Create elevation views
- Print plans



The time required to complete each section is indicated by this symbol at the start of each chapter:

The whole Loft Tutorial should take around 2 hours to complete from start to finish.

When working through the Tutorial, we recommend that once you start a particular section, you continue until it is complete. At the end of each section, you are reminded to save the document, and you can then exit **PlansXpress®** and come back to the Tutorial at a later date.

Please note, the aim of this Tutorial is to teach you how to draft plans and elevations with **PlansXpress®**. Throughout the Tutorial, the Dimensions Wizards will not be discussed in detail as most of the information they request is required by **EstimatorXpress®** for estimating purposes. The dimensions required to draft the plans are highlighted in yellow for easy identification. For full instructions on how to use **EstimatorXpress®**, and the Dimensions Wizards, please consult the **EstimatorXpress® Getting Started Guide**.

For guidance on estimating the loft after completing the plans, refer back to the chapter called Creating an Estimate in **EstimatorXpress®** based on a **PlansXpress®** Drawing on page 198.

LOFT PLANS

Diagram H: A1 Layout

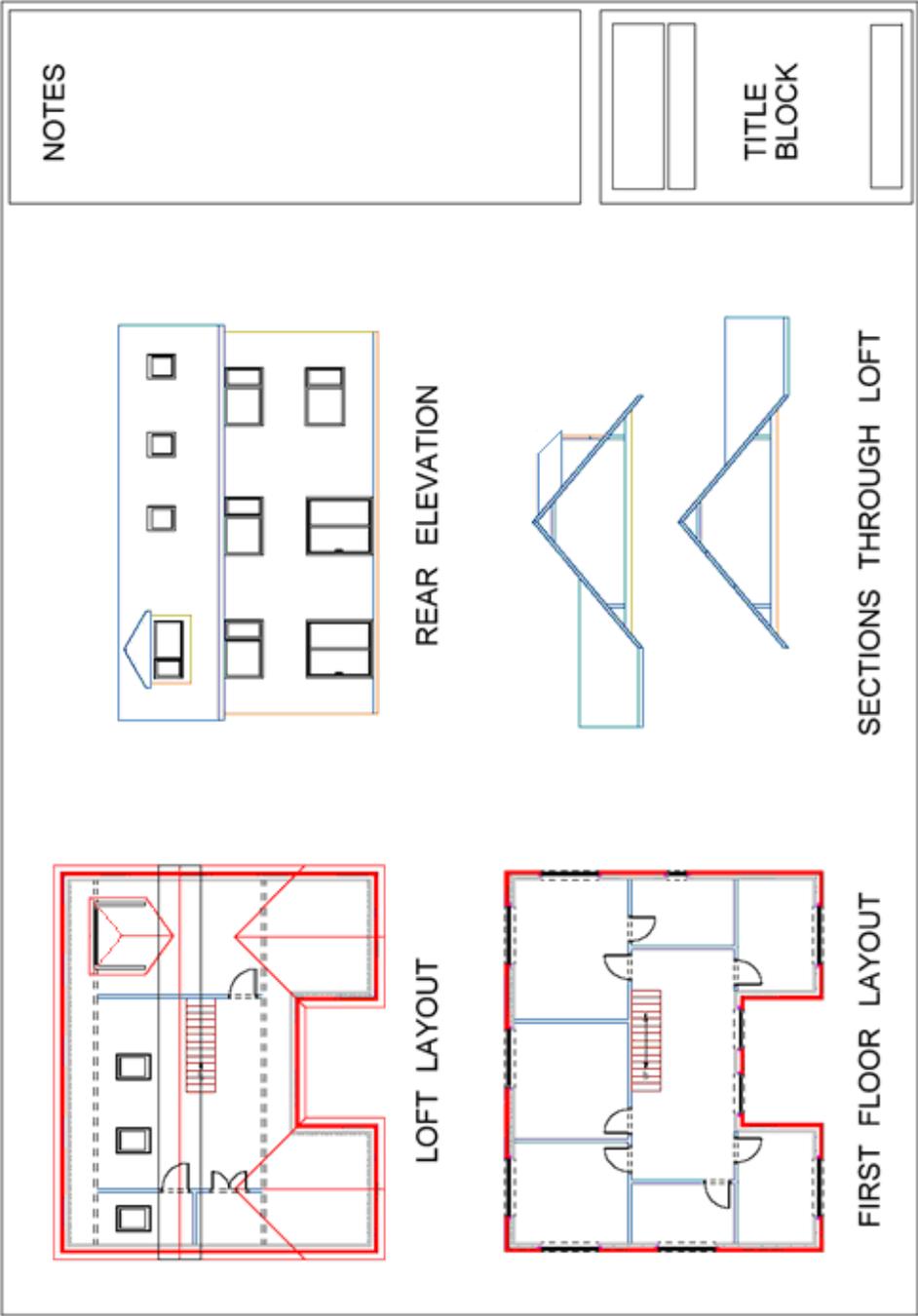


Diagram I: Loft Layout

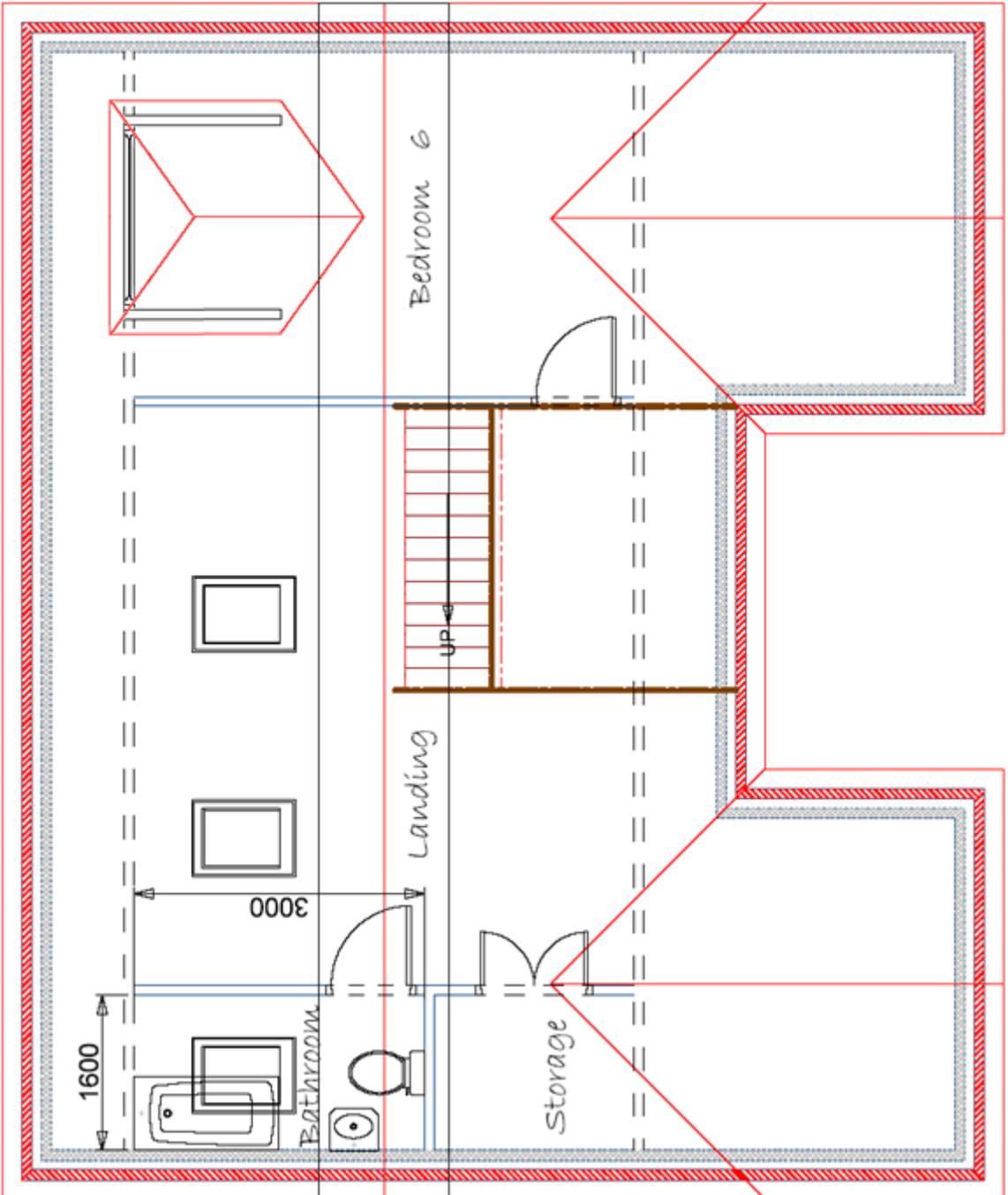


Diagram J: First Floor Layout

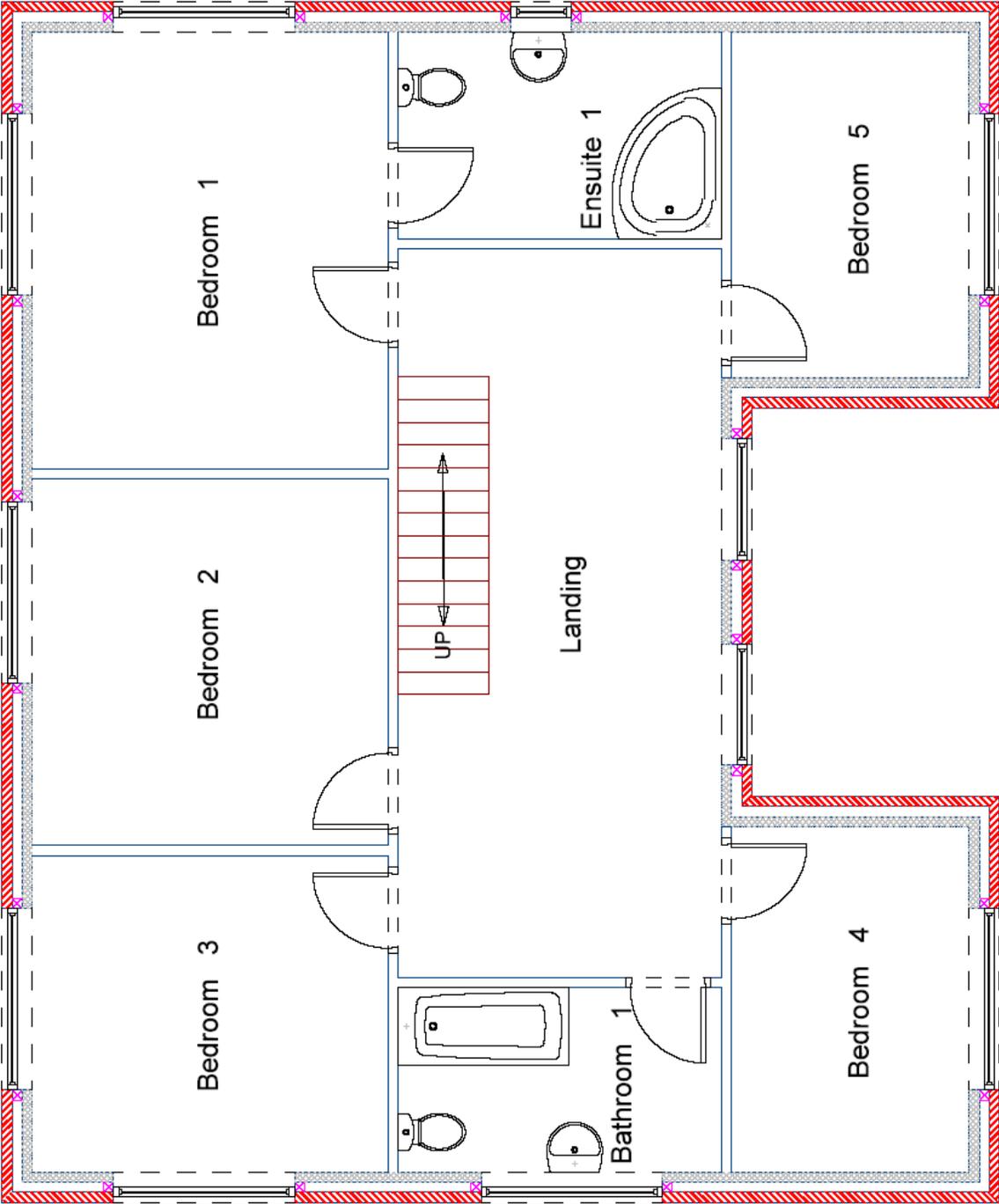
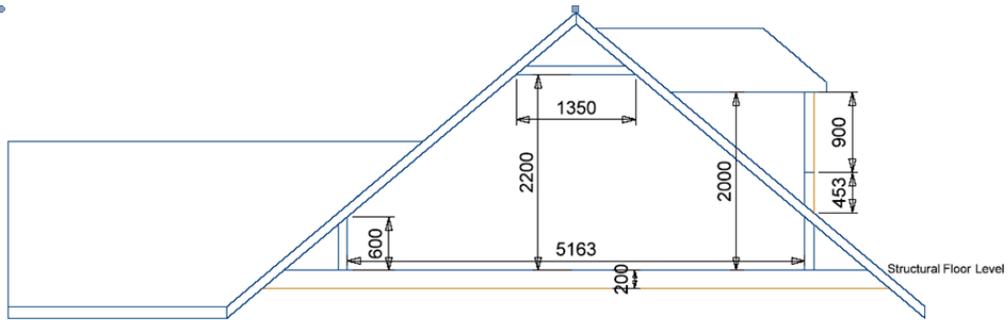
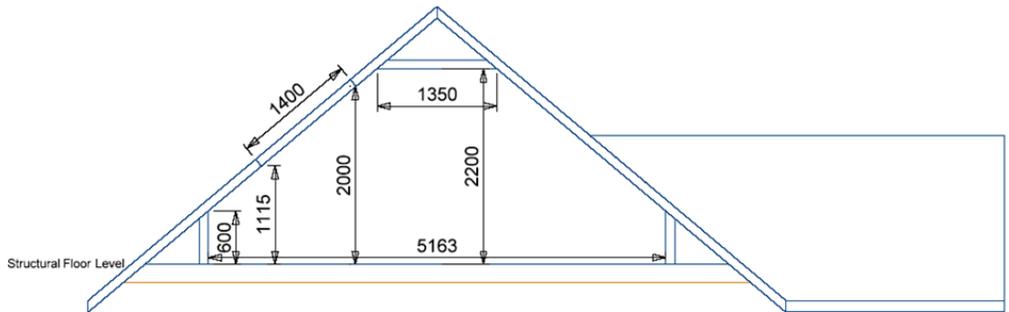


Diagram K: Structural View of Loft

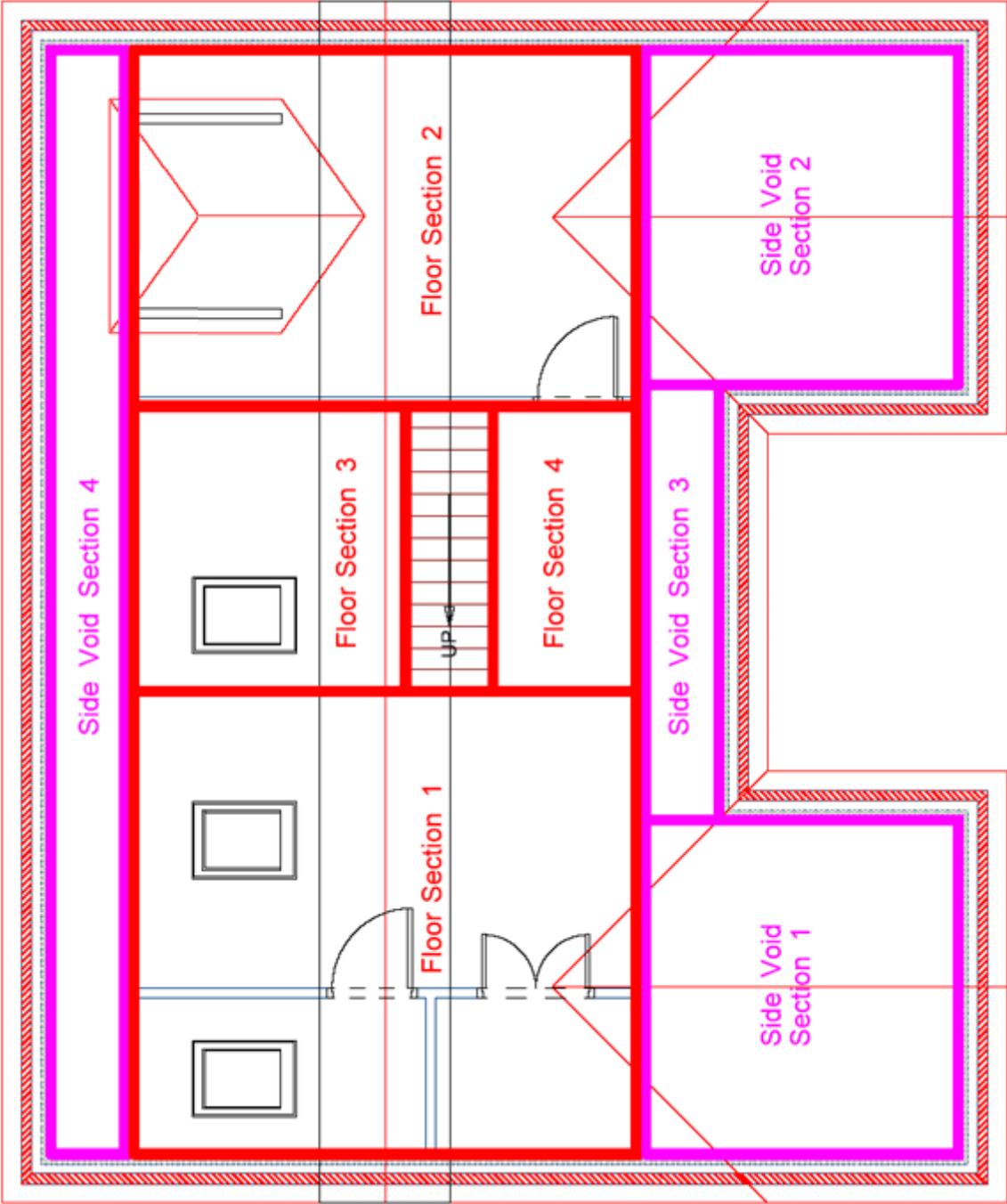


Section Through Loft Side 1



Section Through Loft Side 2

Diagram L: Attic Suspended Floor Layout



CREATING THE LOFT PLAN



15
Minutes

This section of the Tutorial talks you through creating a loft layout from plans of an existing house.

During this exercise, you will learn how to:

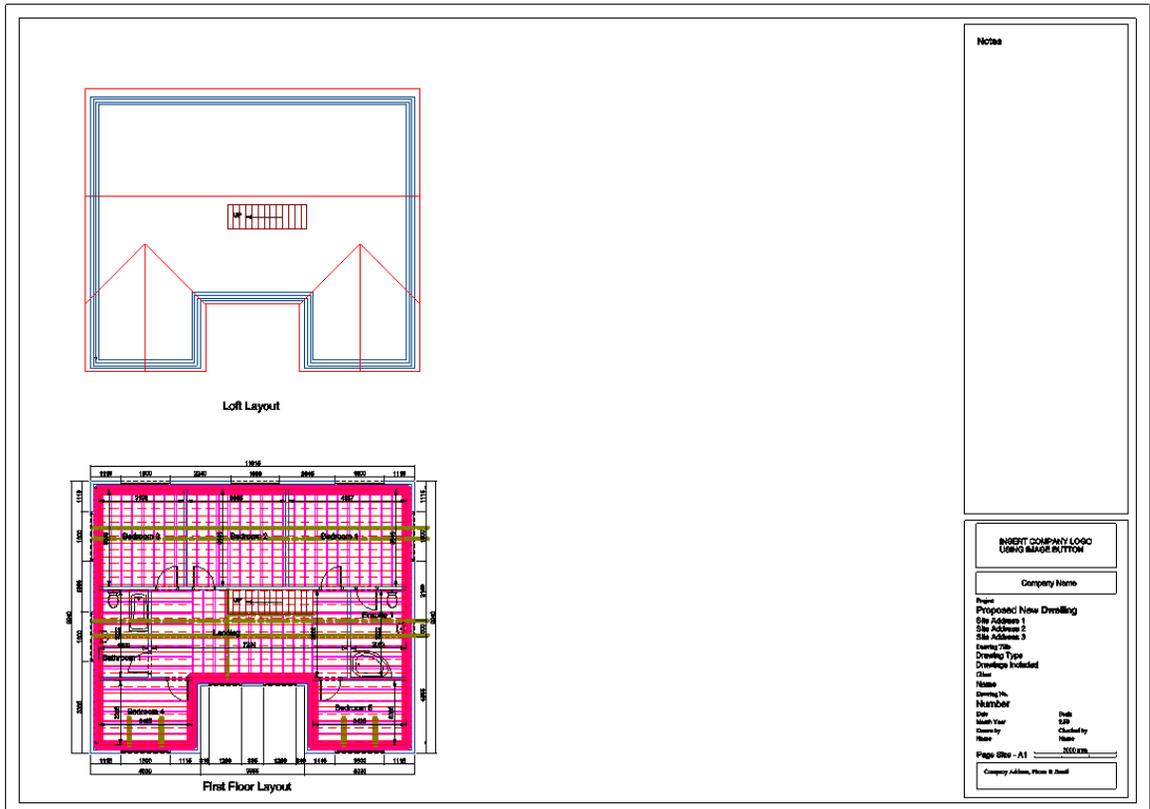
- set items on a drawing to be non-estimated;
- copy a first floor plan to make a loft plan.

You will also revise how to:

- unlock Layers to edit them;
- show and hide Layers on screen;
- use Construction Lines;
- insert staircases;
- insert arrows;
- insert text.

You will need to refer to Diagrams H, I and J, which can be found on pages 214 to 226, during this exercise.

By the end of this exercise, your plans will look like this:



First of all, we'll create a new drawing to use to draft the loft conversion. We'll use the plans from the original drawing as a basis for the loft drawing.



Note: If you were designing a loft conversion and only had a hard copy of the original house plans, you could use **ScanPack** to scan them onto your computer, import them into **PlansXpress®** using the Import Image button, and trace over them using the Architectural tools. For more information about **ScanPack**, call our **Sales Team** on **0845 1234 065**.

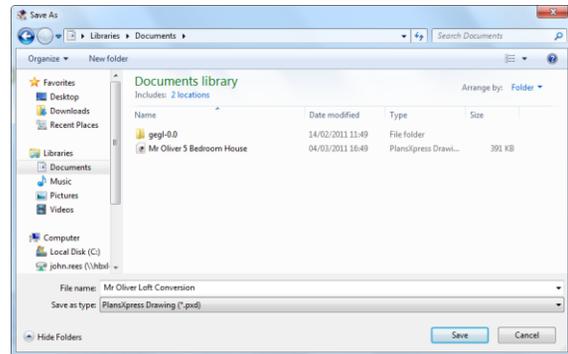
1. If it's not already open, locate and open Mr Oliver 5 Bedroom House.pxd.

2. Go to the File tab and click Save > Save As.



The Save As dialog box pops up.

3. Type Mr Oliver Loft Conversion into the File Name input box.
4. Click Save.



We've now created a separate document which we can edit without affecting the original house plans.

Let's start by deleting the elevation views of the house. The side elevation will be different once we've converted the loft and the front elevation won't be required. We'll need to select the elevation Layers in order to delete them.

5. Move your cursor above and to the left of the front elevation of the house.
6.  Click and hold down the left mouse button.
7. Move your cursor down and to the right until the front and side elevations are encompassed by the selection box.
8. Release the left mouse button.

Everything within the selection box now appears selected.



Go to the Modify & Selection tab and click Delete (alternatively, press the Del/Delete key on your keyboard).

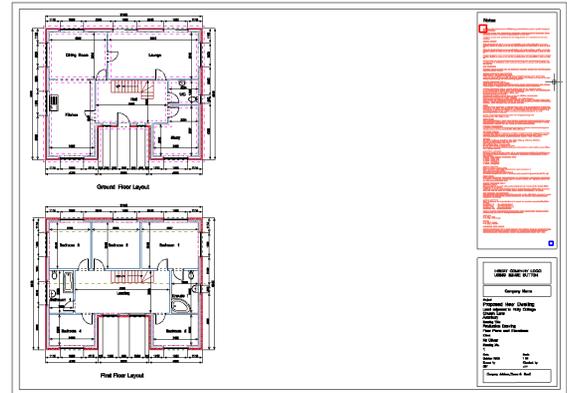
The elevations have now been removed.

The Notes are no longer required, so we'll delete them too.

9.  Click anywhere in the Notes to select them.

10.  Press the Delete key on your keyboard.

The Notes have now been removed.



The plans will be a little clearer without the dimension lines, so we'll remove them by switching off the Dimension Lines Layer. We also need to switch on the Roof Layer, so that we can copy it onto the loft layout we're about to create, and the Floor Layers, so we're ready to draw the loft floor.

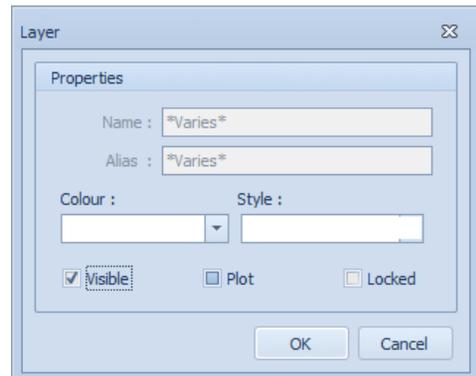
11.  Click the Layers button (found on the Views & 3D tab).

12. Click **Select All** to select all of the Layers.

13. Click **Edit Selected**.

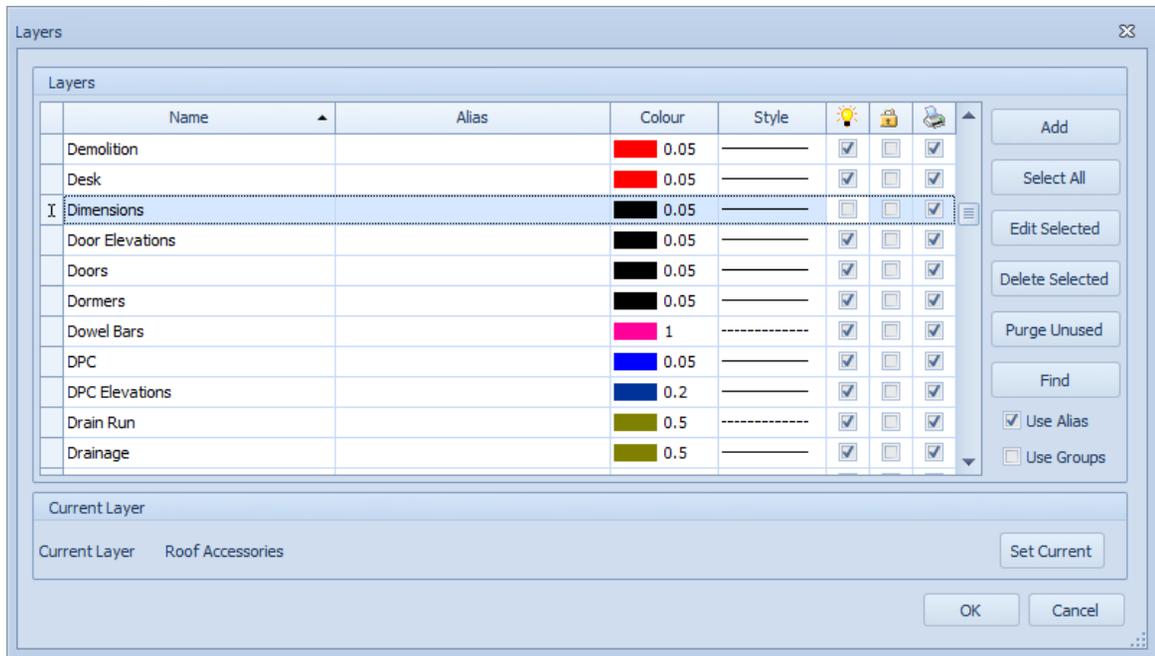
14. Click the **Visible** tick box until it shows a tick.

15. Click **OK**. All layers are now set to visible.



16. Scroll down to the Dimensions Layer and click on it to deselect all the other Layers.

17. Switch off the Dimensions Layer by unticking the adjacent Light bulb tick box.

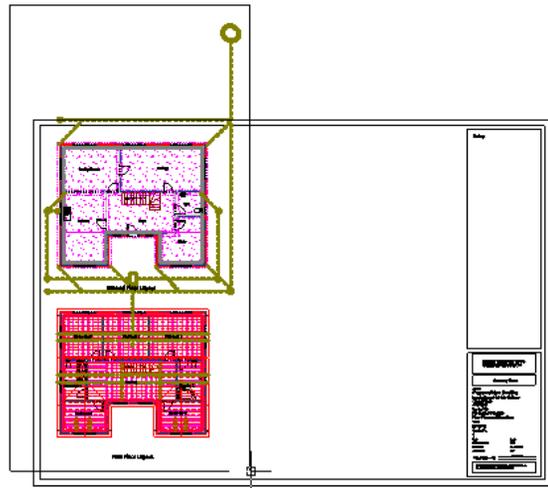


18. Once complete, click OK.

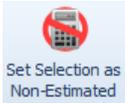
You're returned to the drawing page where the dimension lines are hidden and the roof is visible.

19. At the moment, the walls, roof, windows, doors, stairs and fittings in the existing house are still estimated items, which means that they will be estimated when the job is imported into **EstimatorXpress®**. Because we don't want to estimate the fabric of the original house, just the conversion of the loft, we need to set these items to be non-estimated.

20. Select the ground floor and first floor layouts in the same way as you selected the elevation views, by holding down the left mouse button and dragging the selection box around the plans.

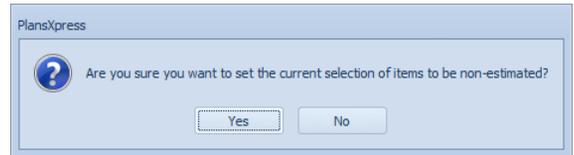


We can now set the selected items to be non-estimated.



21. Go to the Modify & Selection tab and click Set Selection as Non Estimated.

A dialog box pops up asking if you wish to set the selection as non-estimated.



22. Click Yes.

We now need to add a new staircase, which will be an estimated item, to the first floor plan. We need to delete the existing staircase symbol, which shows the flight of stairs from the ground floor to the first floor, but first we'll add some Construction Lines which will help us place the new staircase.

Before replacing the staircase we need to hide some of the detail that is shown over the top & around the staircase.



23. Press the Layers button (found on the Views & 3D tab).

24. Click **Select All** to select all of the Layers.

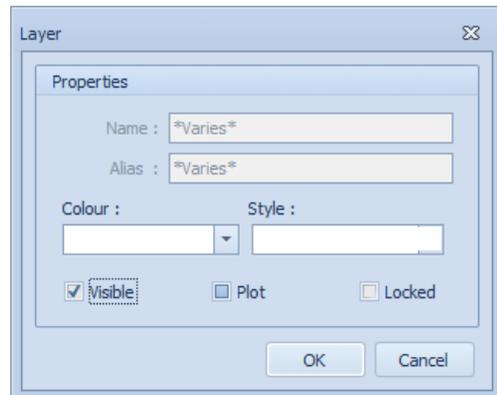
25. Click **Edit Selected**.

26. Click the **Visible** tick box until it shows a tick.

Click **OK**. All layers are now set to visible.

27. Untick the Light bulb tick box adjacent to the Binders, Ceiling, Drain Run, Drainage, Floor, Floor Structure and Purlins Layers.

28. Once complete, click **OK** then **OK** again to close the Layers window.



29. Press the Vertical Construction Line button. (Drawing & Annotation tab)

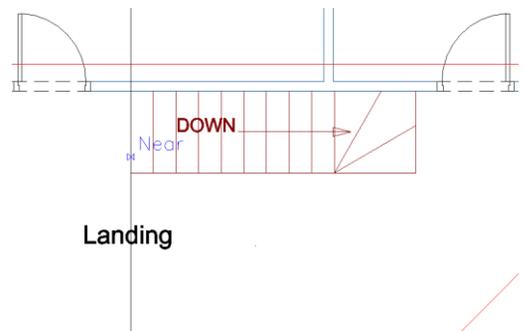
The Command Window prompts: Give Point.

30. Hold your cursor over top riser line of the staircase until a 'Near' snap point appears.



Note: If the 'Near' snap point doesn't appear, switch on Nearest snap by pressing the Nearest snap button (located at the top right corner of the screen)

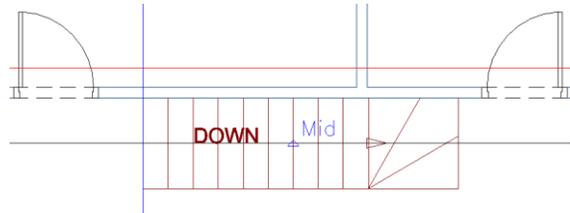
31. Click the left mouse button to place the Construction Line.



32.  Press the Horizontal Construction Line button (Drawing & Annotation tab).

The Command Window prompts: Give Point.

33. Hold your cursor in the middle of the one of the riser lines until the 'Mid'  snap point appears.



34.  Click the left mouse button to place the Construction Line.

35.  Click the right mouse button to finish drawing construction lines.

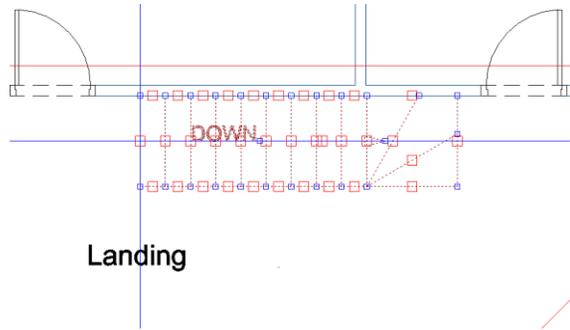
Now the staircase can be deleted.

36. Move your cursor above and to the left of the staircase.

37.  Click and hold down the left mouse button.

38. Move your mouse down and to the right until the staircase encompassed by the selection box.

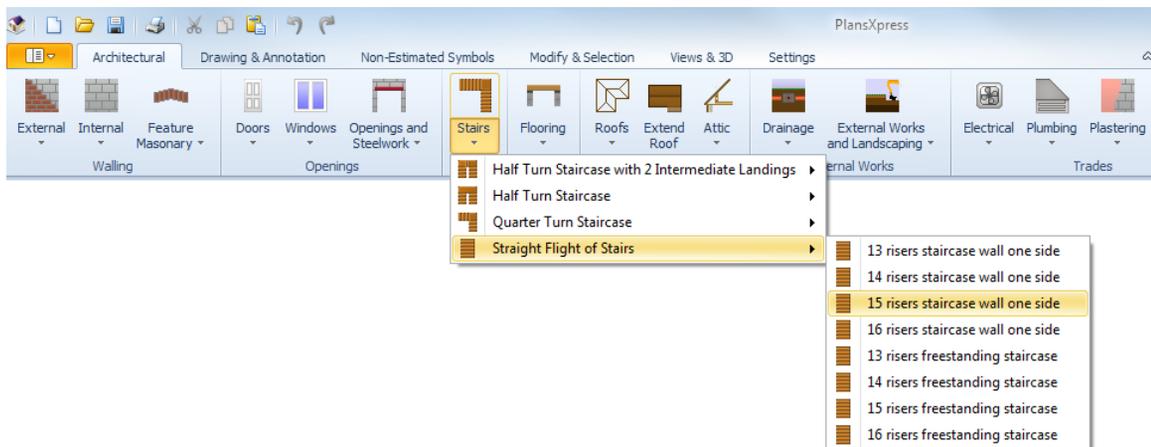
39. Release the left mouse button.



40. Ensure that no objects other than the staircase, DOWN label and arrow are selected.

41.  Press the Delete key on your keyboard.

We can now place the staircase up to the loft, which as you can see from Diagram J, on page 216, is a straight flight of stairs.



42. Press the Stairs dropdown arrow on the Architectural tab.

43. Click on the Staircase type called Straight Flight of Stairs.
44. Click on the dimensional template called 15 risers staircase wall one side.

The Straight Flight of Stairs Dimensions Wizard pops up. Remember, the yellow boxes highlight the dimensions which affect how the staircase is drawn on screen.

Enter Dimensions Page 1 of 5

Location: Hall

Staircase details

No. of risers in flight (No.) 15.000

0.900

Allowance for sundry timbers (£) 20.000

Number of hours to first fix staircase (Hours) 2.000

PLAN OF STAIRCASE

ELEVATION ON STAIRCASE

2.525

Options Show Tech Tip Show Tech Labels Accept Defaults Cancel Back Next

42. Enter a Floor to floor height of 2.525.
43. Review the remaining Staircase details and click Next.

Enter Dimensions Page 2 of 5

Handrail details

% wall mounted handrail to side 1 (%) 0

% handrail and spindles to side 1 (%) 100.00

Clearance of handrails (M) 0.035

Width of handrail to side 1 (M) 0

Width of handrail to side 2 (M) 0

Length of balustrade to main landing (M) 4.000

Do handrails extend beyond stairs? (Y/N) Y

% wall mounted handrail to side 2 (%) 100.00

% handrail and spindles to side 2 (%) 0

HANDRAIL AND SPINDLE DETAILS

Options Show Tech Tip Show Tech Labels Accept Defaults Cancel Back Next

44. Set the Width of handrail to side 1 and 2 to 0, as we don't want to show handrails in the plan.
45. Review the remaining Handrail details and click Next.
46. Click through the remaining pages of the Dimensions Wizard, checking you're happy with the dimensions and options.

Enter Dimensions Page 5 of 5

Decorating specification

DECORATION TO PLASTERING

Is plaster to be painted? (Y/N) Y

Number of hours to decorate plaster (Hours) 1.000

DECORATION TO STAIRS AND HANDRAILS ETC.

Quantity of primer required (Litres) (No.) 1.000

Quantity of undercoat required (Litres) (No.) 1.000

Quantity of top coat required (Litres) (No.) 2.000

Number of hours to prime staircase (Hours) 4.000

Number of hours to undercoat staircase (Hours) 4.000

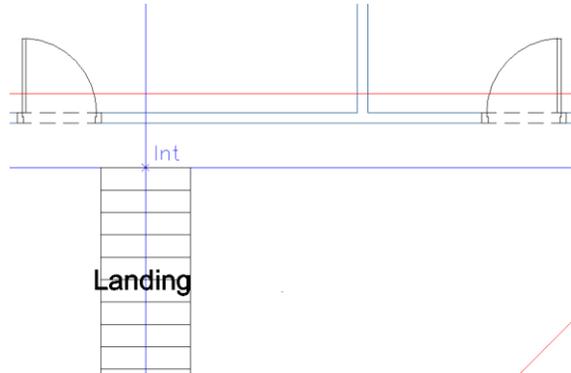
Number of hours to top coat staircase (Hours) 4.000

Options Show Tech Tip Show Tech Labels Accept Defaults Cancel Back Finish

47. Once you're happy with the information entered into the final page, click Finish.

The Command Window prompts: Give top point for landing

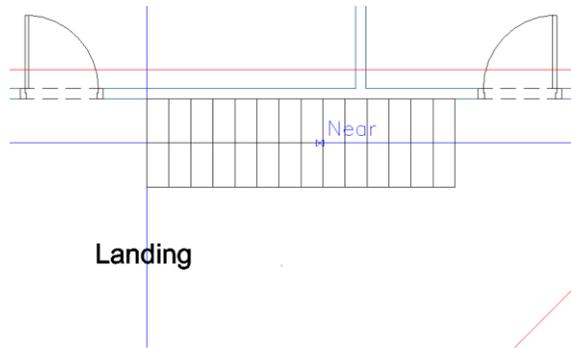
48. Hold your cursor over the point where the horizontal and vertical Construction Lines intersect until the 'Int' snap point appears.



49.  Click the left mouse button to position the top of the staircase.

The Command Window prompts: Give control point for bottom of staircase

50. Hold your mouse over the horizontal Construction Line to the right of where you placed the top of the staircase until the 'Near' snap point appears.

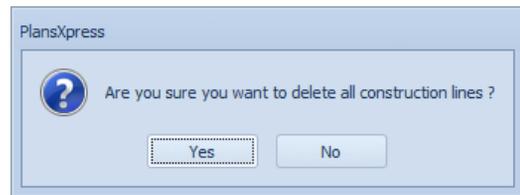


51.  Click the left mouse button to finish placing the staircase.

Using the Construction Lines ensures that the staircase is placed square. The Construction Lines can now be deleted.

52.  Press the Delete Construction Lines button. (Drawing & Annotation tab)

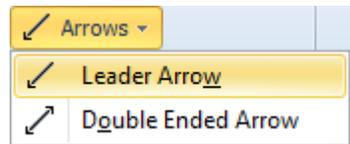
A dialog box pops up asking if you're sure you want to delete all the construction lines.



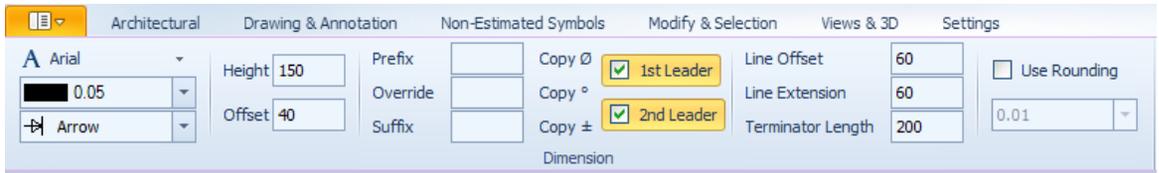
53. Click Yes.

Let's complete the staircase by adding an UP arrow, to demonstrate that the plans show the new staircase up to the loft.

54. Click the Arrows dropdown and then Leader Arrow. (Drawing & Annotation tab)

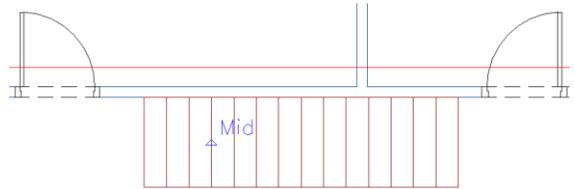


55. Type 200 into the Terminator Length box on the top menu. This increases the size of the arrowhead.



The Command Window prompts: Give ArrowPoint. The Start Point is the arrowhead end of the arrow.

56. Hold the cursor towards the top of the staircase in the centre of a riser line until you locate a 'Mid'  snap point.

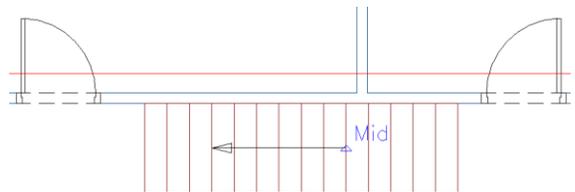


Landing

57.  Click the left mouse button to register the arrow Start Point.

The Command Window prompts: Give End Point.

58. Move your cursor towards the bottom of the staircase and locate a 'Mid'  snap point on one of the lines.



Landing

59.  Once you're happy with the length of the arrow, click the left mouse button to register the arrow end point.

60.  Click the right mouse button to indicate that you've finished drawing the arrow.

Now let's add an UP label to show that the arrow is going up the stairs.

61.  Click the Text button on the Drawing & Annotation tab.

The Edit Text dialog box pops up.

62. Type UP into the white text box.

Click OK.

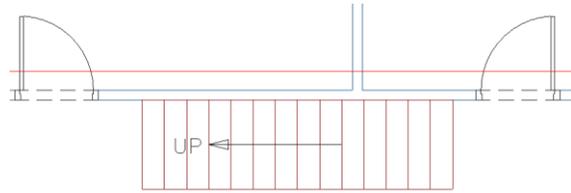


You are returned to the drawing page where your cursor controls the position of the text.

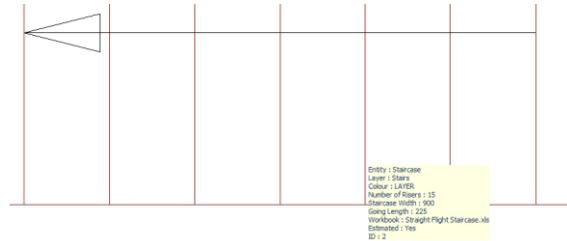
The Command Window prompts: Give Text Point

- 63. Type 150 into the text height box.
- 64. Move your cursor to the arrowhead end of the arrow.

- 65.  Click the left mouse button to place the UP label.



Landing



We have now finished drawing the staircase, which is automatically drawn as an estimated item. You can check that the staircase is estimated by hovering your cursor over it. An information box pops up, indicating, among other things, whether the staircase is an estimated item.

Let's now create the loft layout itself. We want to place the loft plan where the ground floor layout is currently placed. The ground floor plan is only needed to create elevation views, so we'll move it off the drawing page. Firstly we need to turn on the layers that we switched off so that everything gets moved together.

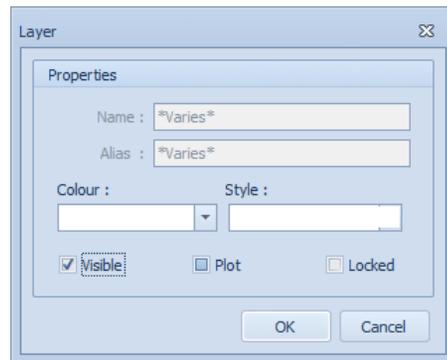
- 66.  Press the Layers button (Views & 3D tab).

- 67.  Click **Select All** to select all of the Layers.

- 68.  Click **Edit Selected**.

- 69.  Click the **Visible** tick box until it shows a tick.

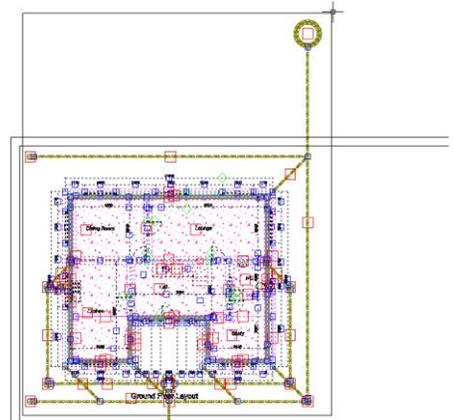
- 70.  Click **OK**, then **OK** again to close the Layers window.



All layers are now set to visible.

71. Select the whole ground floor layout by holding down the left mouse button and dragging the selection box around the layout from bottom left to top right.

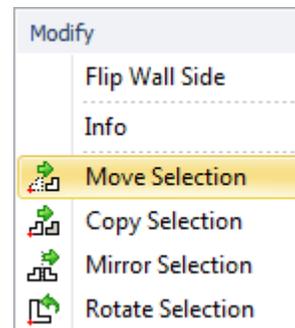
72.   Hold down the Ctrl key and click on any items that have not been selected by the group selection such as the bottom line of the drain runs.



73.  Click the middle mouse button.

A menu pops up.

74.  Click Move Selection.

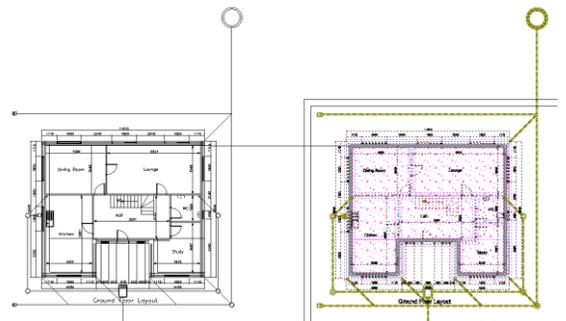


The Command Window prompts: Give Reference point.

75.  Click on the top left corner of the ground floor plan.

The Command Window prompts: Give Point to Move to.

76. Move your cursor off the drawing page to the left.



77.  Click the left mouse button to reposition the ground floor layout.

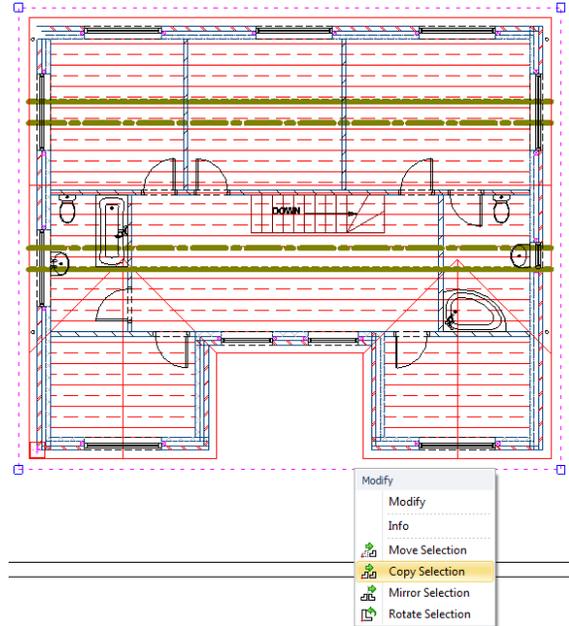
Now we're ready to copy the first floor layout to create the loft layout.

78. Click on the first floor level boundary to select the level.

79.  Click your middle mouse button.

A menu pops up.

80.  Click Copy Selection.



The Command Window prompts: Give Reference Point :

Hold your mouse over the bottom left corner of the first floor layout until you find the 'End'  snap point.

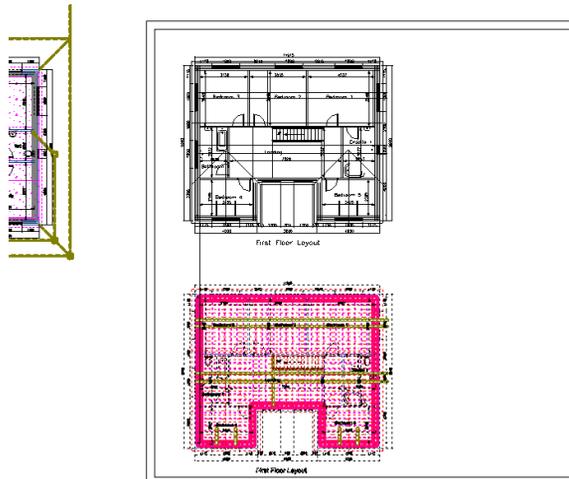
81.  Click the left mouse button to register the reference point.

The Command Window prompts: Give Point To Copy To.

82.  Hold down the Shift key.

83. Move your cursor up the screen until the copied layout sits neatly in the space above the original layout.

84.  Click the left mouse button to place the copied layout.



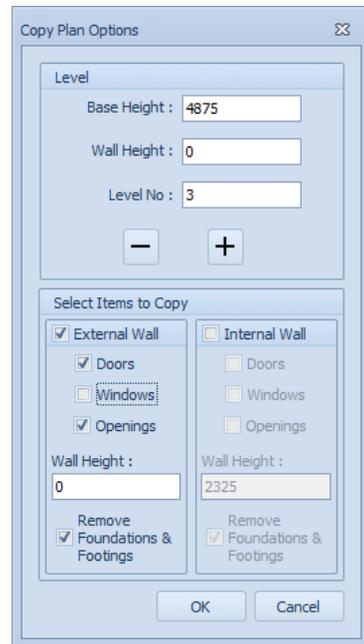
The **Copy Plan Options** dialog box pops up.

85. Set the **Base Height** to 4875 (the height of the ground floor plus the first floor) and the **Wall Height** to 0.

The level settings are used for elevations and 3D views.

86. We don't want to copy the internal walls to our loft plan so untick the Internal Walls tick box. All the associated Doors, Windows and Openings will also be removed.
87. We want to copy the External Walls, so leave the External Walls tick box ticked. However, we don't want to copy the first floor windows, so untick the associated Windows tick box.
88. Enter a Wall Height of 0 as the loft layout doesn't require any external walls. This will ensure that the roof appears in the correct place on any elevations.

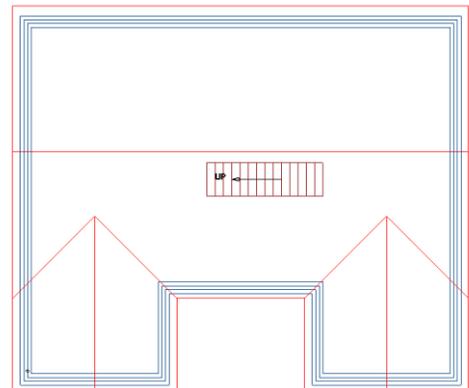
89.  Click **OK**.



PlansXpress® takes a few moments to create the new loft layout, stripping out the internal walls and windows.

90. Delete any remaining items, such as floors labels and symbols (but not the staircase or roof)

We can edit the ground floor layout title to create the loft layout title.



First Floor Layout

91.  Double click on the ground floor layout label.

The Edit Text dialog box pops up.

92. Edit the text to read Loft Layout.

93.  Click **OK**.



You may wish to reposition the label, by clicking on it and using the red entity handle to move it around the screen.



Let's now delete the lower tread from the staircase on the loft layout - it wouldn't be visible in the loft plan. If you hold your cursor over the staircase, the information box which pops up indicates that this copy of the staircase is not estimated. The copied version of the staircase is not estimated to avoid duplicating costs when importing the job into **EstimatorXpress**.

94.  **Explode** Click to select the staircase and then click the Explode button on the Modify & Selection Tab.

95. To select the lines we want to delete, we'll draw the selection box from right to left – all items which appear partly or entirely within the dashed selection box will be selected.

96. Move your cursor to the bottom right of the staircase.

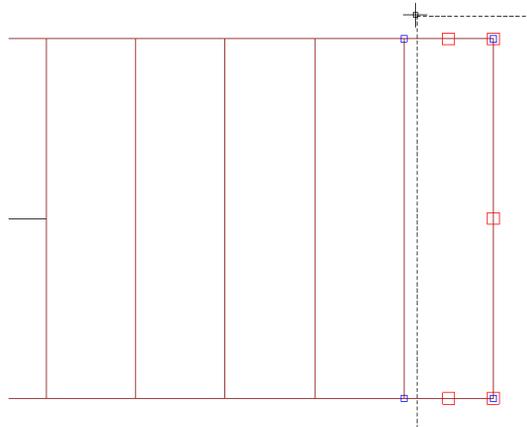
97.  Click and hold down the left mouse button.

98. Move your cursor up and to the left until the selection box is over (but not encompassing!) the bottom tread.

99. Release the left mouse button.

The lines which make up the bottom stair are now selected.

100.  Press the Delete key on your keyboard.



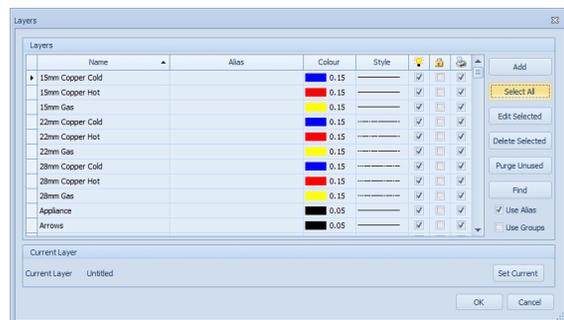
The final thing we need to do is delete the roof from the first floor plan, as it has now been copied to the loft plan. When creating elevations, the roof elevation will be taken from the loft plan, so is no longer required on the first floor plan.

101.  **Layers** Press the **Layers** button (found on the Views & 3D tab).

The Layers dialog box pops up.

102.  Click **Select All**.

103.  Click **Edit Selected**.

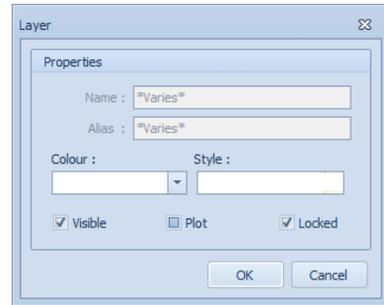


104.  Click the **Locked** tick box until it shows a tick.

All layers are now locked

105.  Click **OK**.

106. Scroll down the list until you get to the Roof Layer.

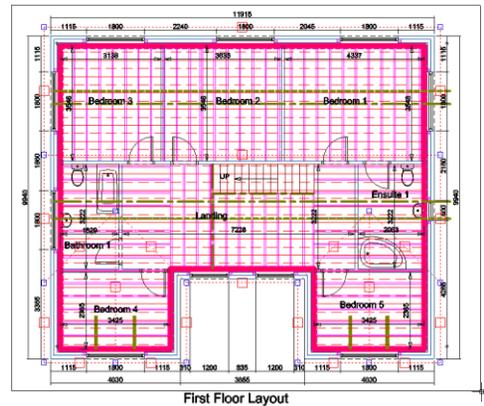


107. Untick the Lock tick box for the Roof Layers drawn with a red pen - Roof, Roof – End, Roof – Hip, Roof – Ridge, Roof – Side and Roof- Valley.

108. Click **OK**.

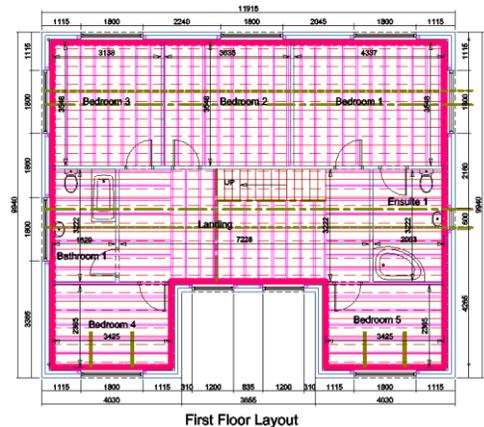
All Layers except the Roof Layers are now locked down and can't be selected or edited.

109. Select the entire roof on the first floor plan by dragging your cursor around the roof.



110.  Press the Delete key on your keyboard.

The roof from the loft floor plan will be used for elevations and the 3D view.



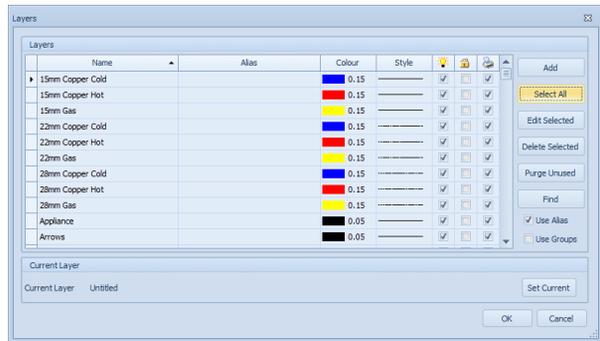


111. Press the **Layers** button (Views & 3D tab).

The Layers dialog box pops up.

112. Click **Select All**.

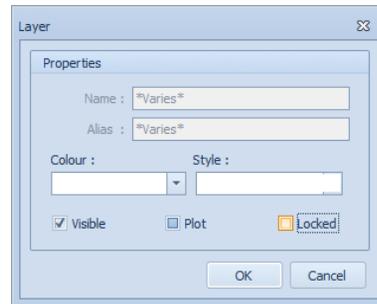
113. Click **Edit Selected**.



114.  Click the **Locked** box until it turns white.

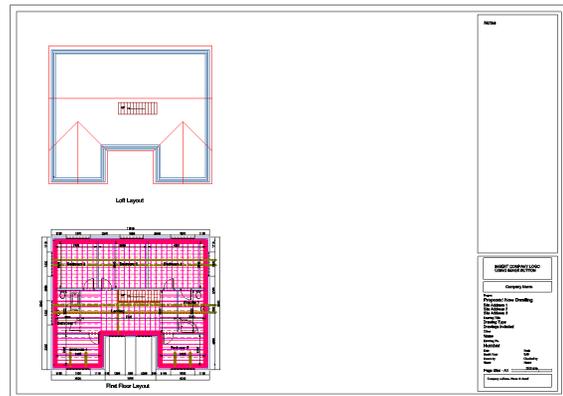
115.  Click OK & OK again to close the Layers dialog.

All of the Layers are unlocked once again.



Once complete, your drawing page should now look like this:

116.  Press the Save button.



FORMING THE LOFT OPENING



This section of the Tutorial talks you through estimating the forming of the opening into the loft.

During this exercise, you will learn how to:

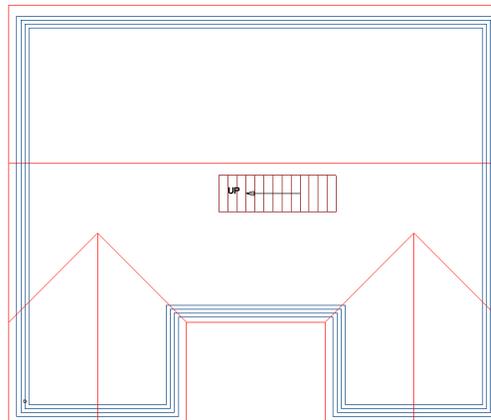
- form openings in existing floors.

You will also revise how to:

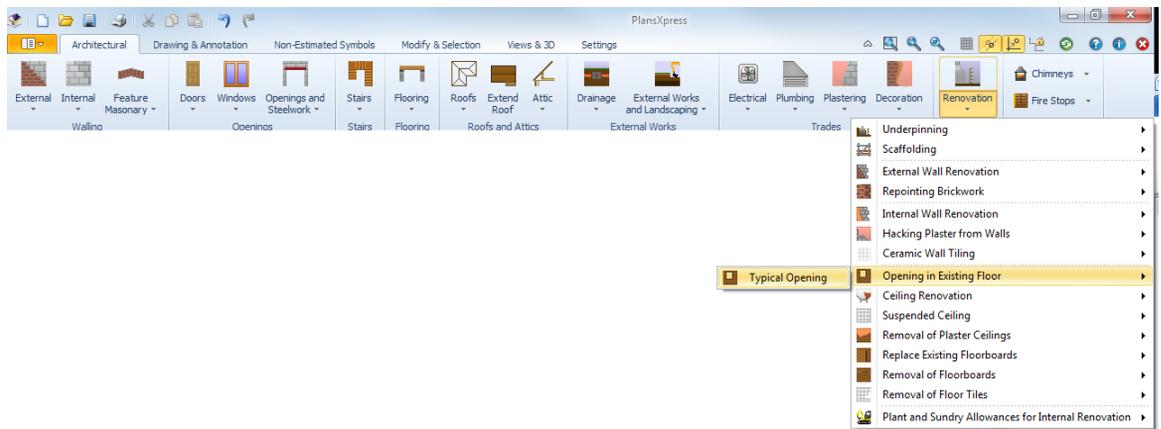
- place trimmers;
- hide Layers.

You will need to refer to Diagram L on page 218 during this exercise.

By the end of this exercise, your plans will look like this:

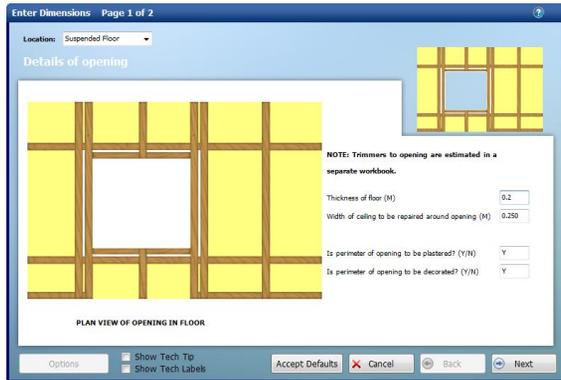


Loft Layout

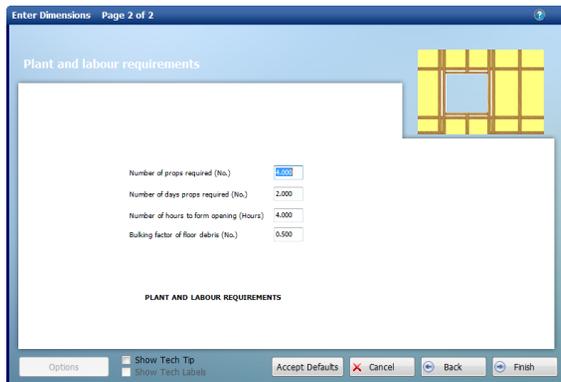


1.  Click the Renovation dropdown button on the Architectural tab.
2.  Click on the item called Opening in Existing Floor.
3. Select the dimensional template called Typical Opening.

The Opening in Existing Floor Dimensions Wizard pops up.



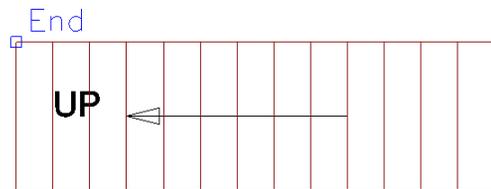
4. Set the Thickness of floor to 0.2.
5. Click Next.



6. Review the details on the final page of the Dimensions Wizard, and once you're happy, click Finish.

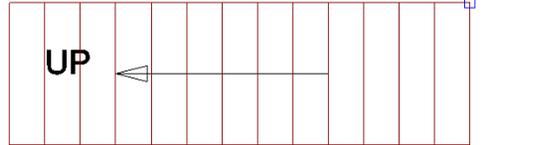
The Command Window prompts: Give Start Point.

7. Hold your cursor over the 'End'  snap point on the top left corner of the staircase, as you view it on screen.
8.  Click the left mouse button to place the start point of the opening.



The Command Window prompts: Give Next Point.

9. Hold your cursor over the 'End'  snap point on the top right corner of the staircase, as you view it on screen.



10.  Click the left mouse button to place the next point on the opening.

The Command Window prompts: Give Next Point or (A)rc or (3) Point Arc

11. Hold your cursor over the 'End'  snap point on the bottom right corner of the staircase, as you view it on screen.



We're going to place the next point of the opening 100mm from the bottom of the staircase, as you view it on screen.

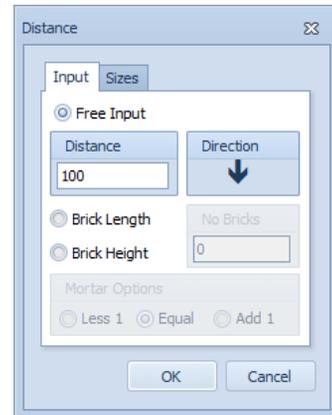
12.  Press the R key on your keyboard.

13.  Press the down arrow key on your keyboard.

The Distance dialog box pops up.

14. Type 100 into the Free Input box.

15. Click OK.

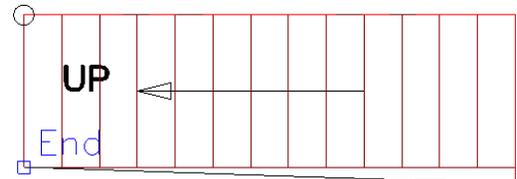


The third point of the opening is placed 100mm below the bottom right corner of the staircase.

The Command Window prompts: Give Next Point or (A)rc or (3) Point Arc

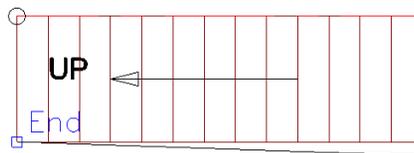
16.  Press the F7 key on your keyboard to turn Snap mode back on.

17. Hold your cursor over the End  snap point on the bottom left corner of the staircase, as you view it on screen.



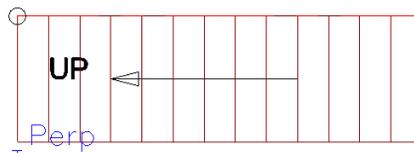
We're going to place the next point of the opening 100mm from the bottom left of the staircase, as you view it on screen.

18. Hover your mouse over the bottom left corner of the Stairs until  'End' appears.



19. Move your mouse down until  'Perp' appears.

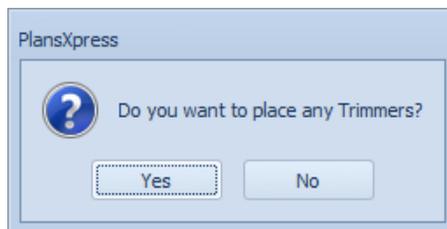
20.  Click the left mouse button to place the fourth point on the opening.



21.  Press the C key to complete the opening.

A dialog box pops up asking if you want to place any trimmers.

22. Click Yes.

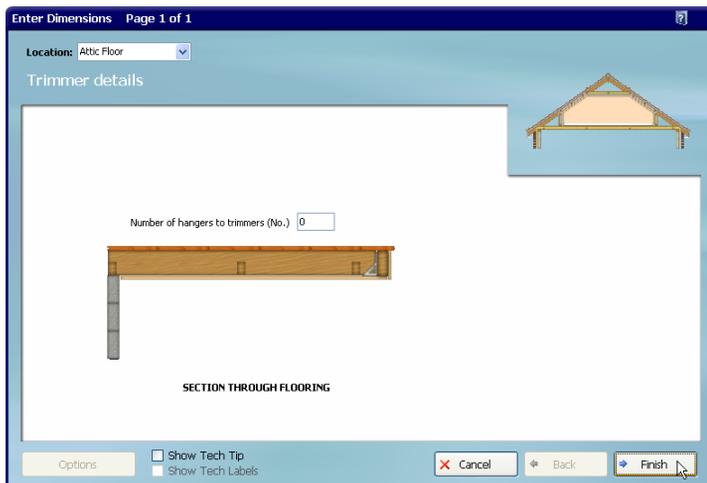


A trimmer is required either side of the staircase.

The floor trimmer Dimensions Wizard pops up.

23. Ensure the Number of hangers to trimmers to upper floor is set to 0.

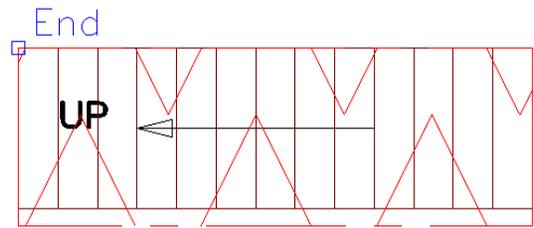
24. Click Finish.



The Command Window prompts: Give Start Point.

The trimmers bear onto the wall below, so we want to start them 100mm above the staircase as viewed on screen.

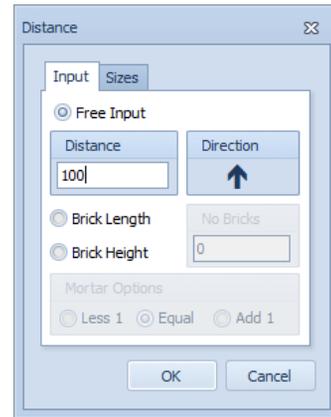
25. Hold your cursor over the top left corner of the staircase (as you look at it on screen) until you find an 'End'  or 'Int'  snap point.



26.  Press the R key on your keyboard.

27.  Press the up arrow key on your keyboard.

The Distance dialog box pops up.



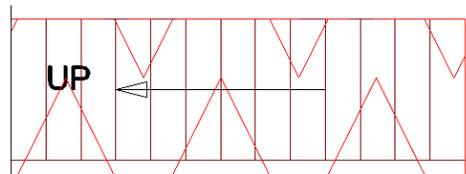
28. Type 100 into the Free Input box.

29. Click OK.

30.  Click the left mouse button to register the start of the trimmer.

The Command Window prompts: Give Next Point.

31. Hold your cursor over the cavity side of the internal leaf of the external wall to the front of the house until the 'Perp'  snap point appears.

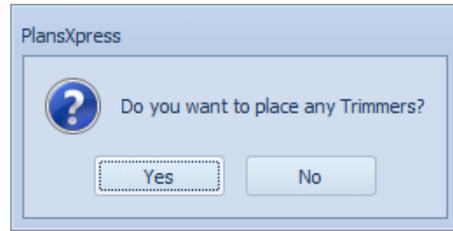


32.  Click the left mouse button to register the end of the trimmer.

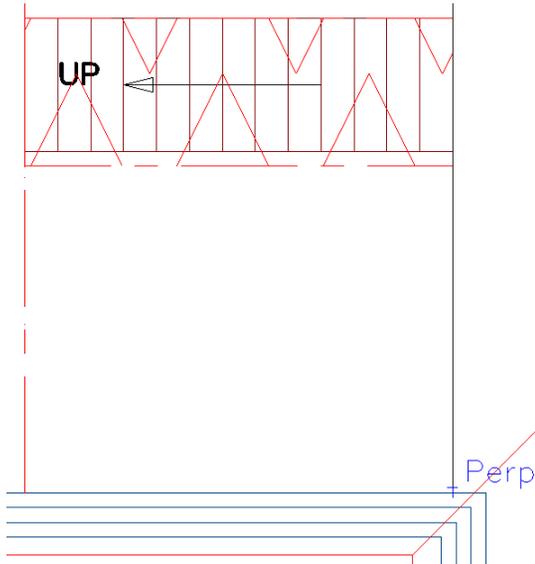
33.  Click the right mouse button to tell **PlansXpress®** you've finished drawing the trimmer.



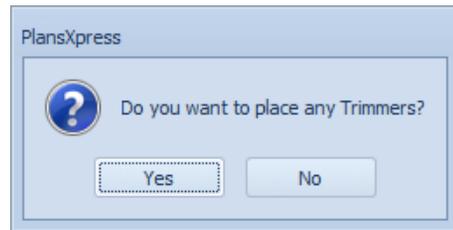
A dialog box pops up asking if you want to place any more trimmers.



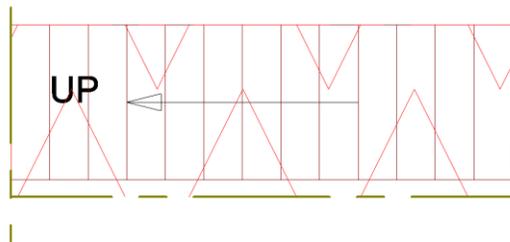
- 34. Click Yes, and repeat steps 25 to 33 to draw the second trimmer in the same place on the right-hand side of the staircase.



- 35. Once you've finished, the dialog box pops up asking if you want to place any more trimmers.
- 36. Click Yes, and place a final trimmer linking the two trimmers you have already placed at the bottom of the opening in the floor as you view it on screen.
- 37. When asked about placing any more trimmers, click No.



- 38. Your trimmers should now look like this:

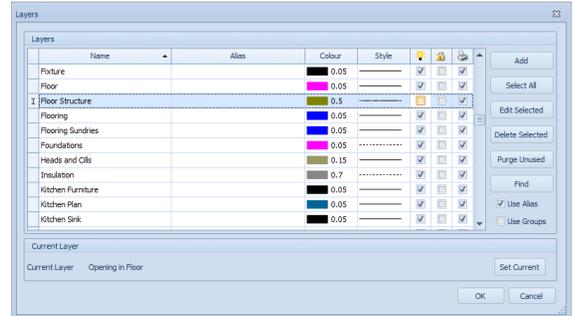


Let's switch off the Opening in Floor and Floor Structure Layers so they don't get in the way.

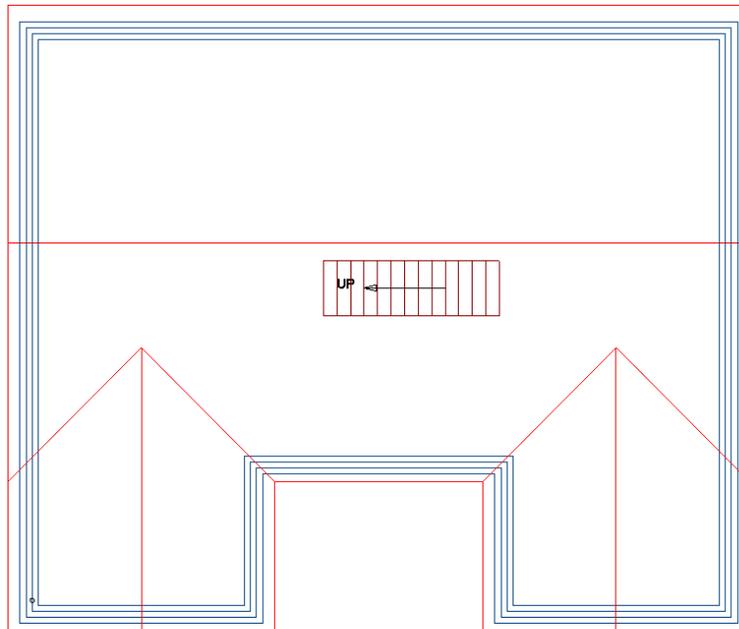


39. Press the Layers button (found on the Views & 3D tab).

40. The Layers dialog box pops up.
41. Locate the Floor Structure and untick the Light bulb and Printer tick boxes to hide the trimmers and remove them from any printouts.
42. Untick the Light bulb and Printer boxes for the Opening in Floor Layer.
43. Click OK.



You're returned to the drawing page where the trimmers and opening are no longer visible on screen:



Loft Layout

44.  Press the Save button.

DRAWING THE DORMER



8
Minutes

This section of the Tutorial talks you through adding a dormer to the loft plans. Dormers are made of up three parts - walls, windows and roofs - which must be drawn separately using the different Architectural tools.

During this exercise, you will learn how to:

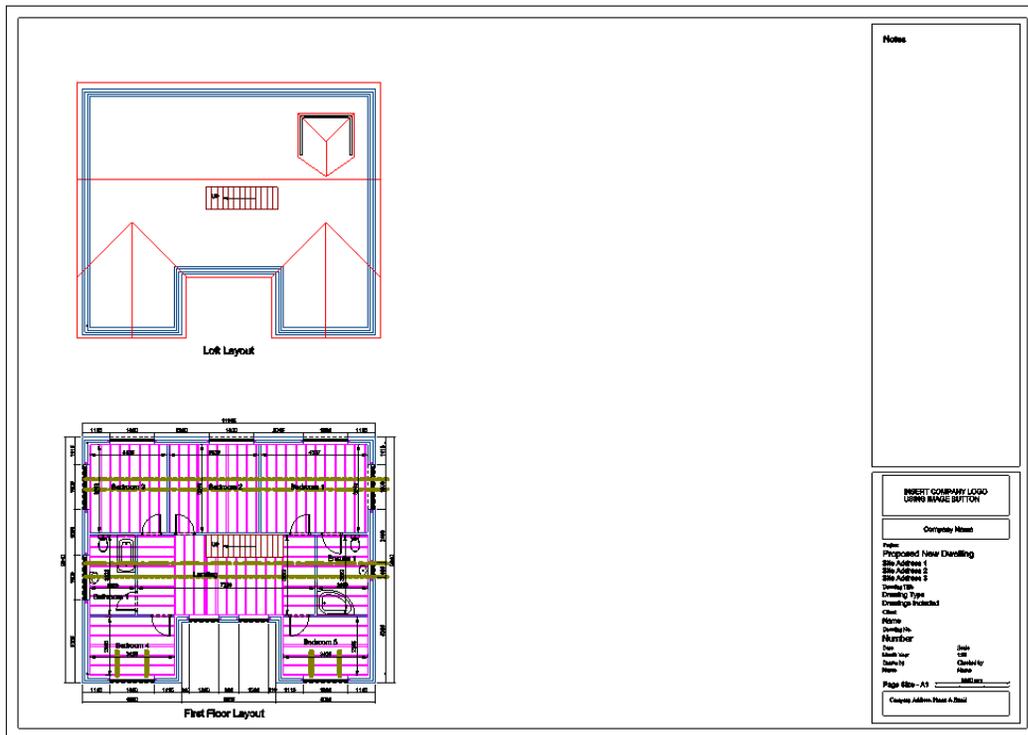
- place dormer walls;
- insert a window into a dormers;
- add a roof to a dormer.

You will also revise how to:

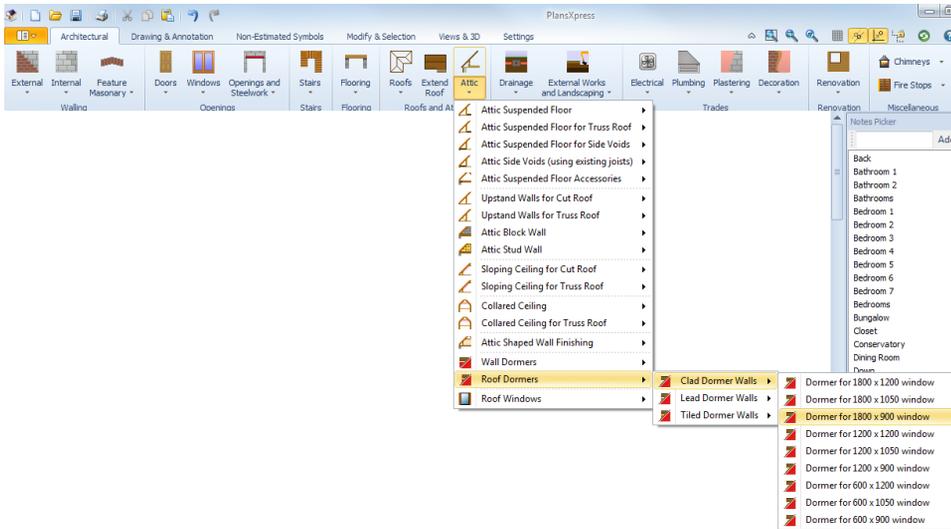
- show and hide Layers.

You will need to refer to Diagrams I and K, on pages 215 and 227, during this exercise.

By the end of this exercise, your plans will look like this:

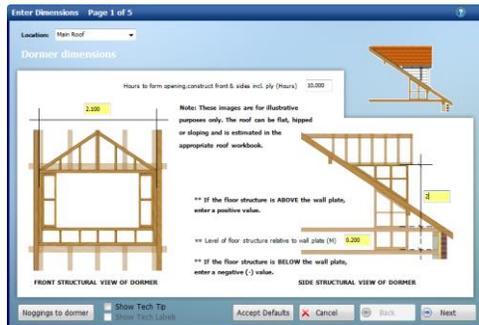


When drawing dormers, you must always start with the dormer walls. **PlansXpress®** uses the information you enter about the floor level and the height of the dormer to place the dormer walls at the correct point on the slope of the roof, so all you have to do is position the dormer horizontally along the roof. The dimensions you need to enter are shown on Diagram K on page 216.

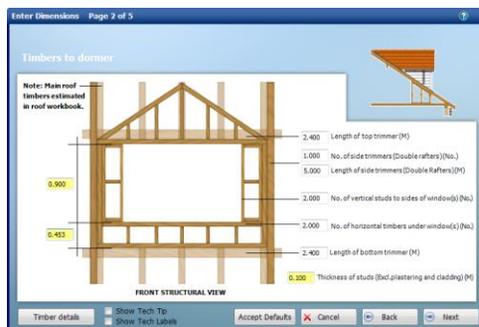


1. Press the Attic dropdown button on the Architectural tab.
2. Click on the category called Roof Dormers.
3. Click on the type called Clad Dormer Walls.
4. Select the dimensional template called Dormer for 1800 x 900 window

The Clad Dormer Walls Dimensions Wizard pops up.



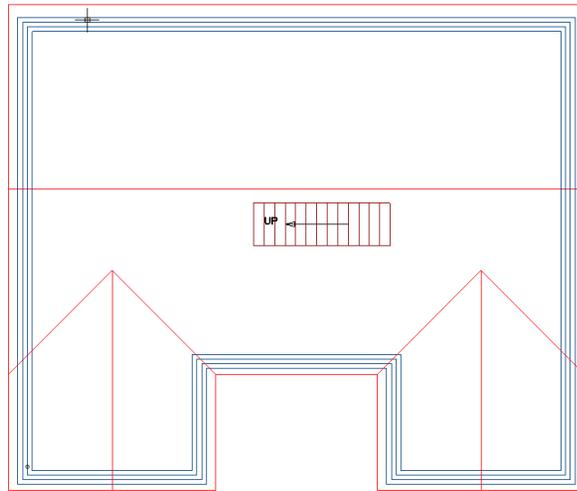
5. Set the Level of floor structure relative to wall plate to 0.2.
6. Set the Height of dormer above floor level to 2.0.
7. Click Next.



8. Set the Height of studding below window to 0.453.
9. Review the remaining pages of the Dimensions Wizard, and once you're happy with the information you've entered, click Finish.

The Command Window prompts: Select Wall to Attach Dormer to

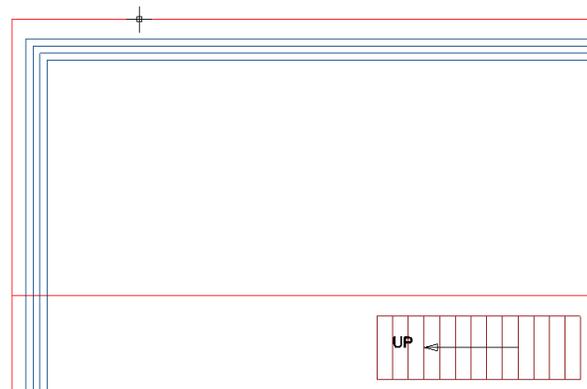
10.  Click on the rear wall of the house with the left mouse button.



Loft Layout

The Command Window prompts: Select Corresponding Roof Edge Line

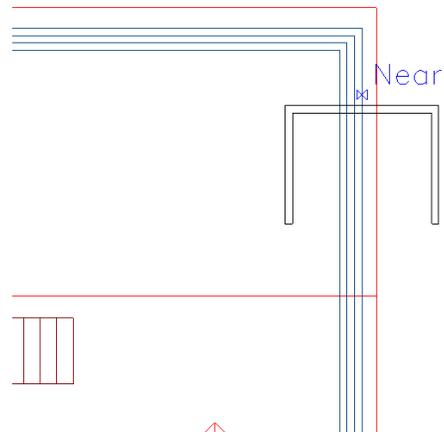
11.  Click on the rear eaves line of the roof.



The Command Window prompts: Select position for dormer centre

The dormer is locked in the Y axis, so all you have to do is place it in the X axis. We're going to measure 2m from the outside of the right wall of the house (as you look at the plans on screen) to place the dormer.

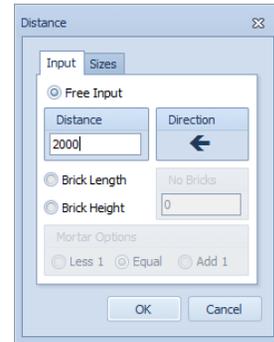
12. Hold your cursor over the outside of the wall until a 'Near'  snap point appears.



13.  Press the R key to indicate that you're going to place the dormer relative to this point on the outside of the wall.

14.  Press the left arrow key on your keyboard.

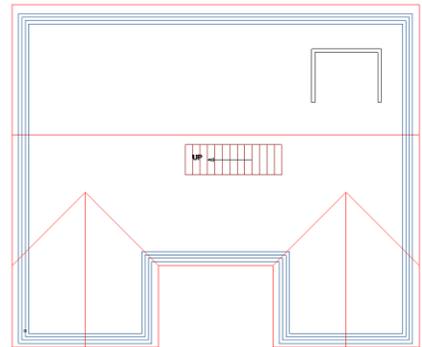
The Distance dialog box pops up.



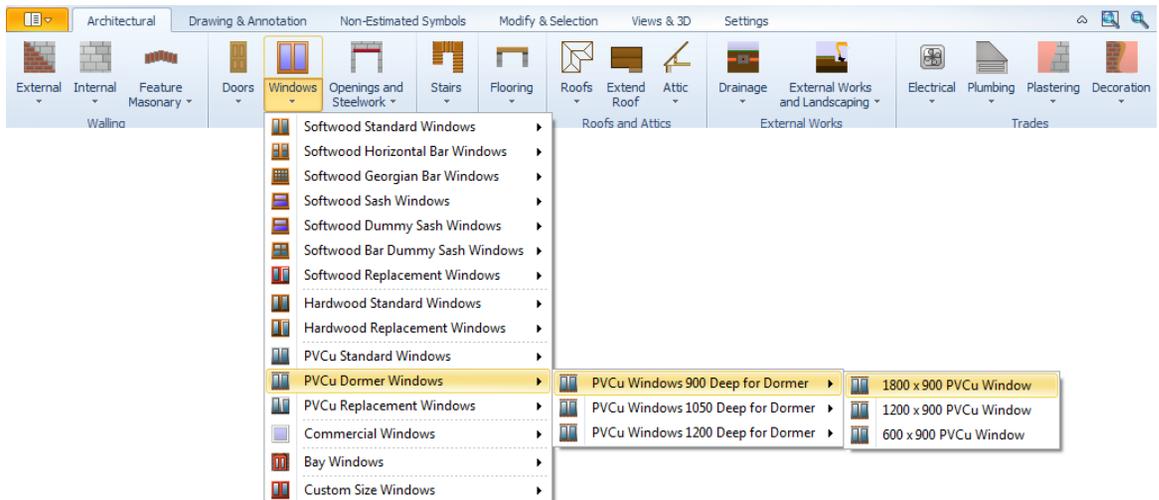
15. Enter 2000 into the Distance input box.

16. Click OK.

The dormer walls are automatically placed 2m in from the edge of the wall.



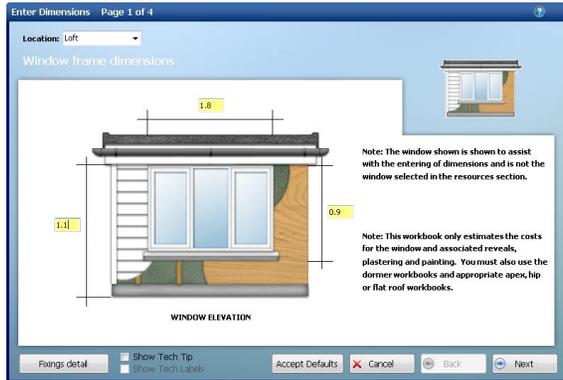
Now we can add the dormer window.



17. Press the Windows dropdown button on the Architectural tab.

18. Click on the category called PVCu Dormer Windows.
19. Click on the type called PVCU Windows 900 Deep for Dormer.
20. Select the dimensional template called 1800 x 900 PVCu Window.

The PVCu Windows 900 Deep for Dormer Dimensions Wizard pops up.

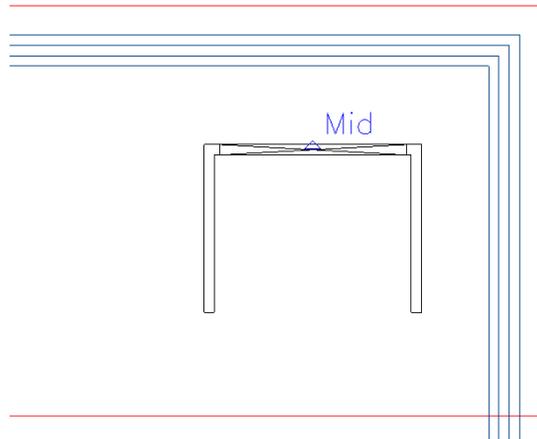


21. Set the Height to the top of the window to 1.1 This measurement is from the bottom of the dormer walls to the top of the window.
22. Click Next.
23. Review the remaining pages of the Dimensions Wizard, and once you're happy with the information you've entered on the final page, click Finish.

You're now ready to place the window.

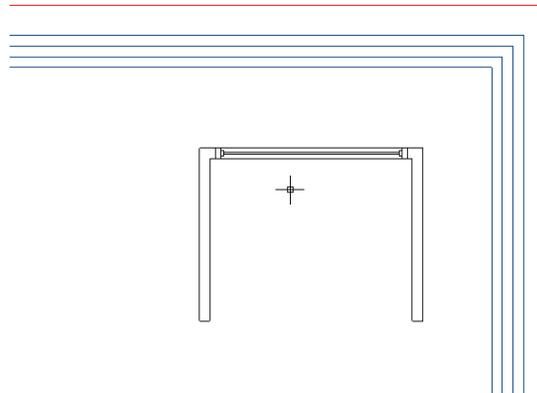
The Command Window prompts: Give Insertion point on wall

24. Move your cursor over the centre of the dormer front until the 'Mid'  snap point appears.



25.  Click the left mouse button to register the position of the dormer window.

26.  Click the right mouse button to indicate that you've finished placing windows.



Finally, let's add the roof to the dormer.

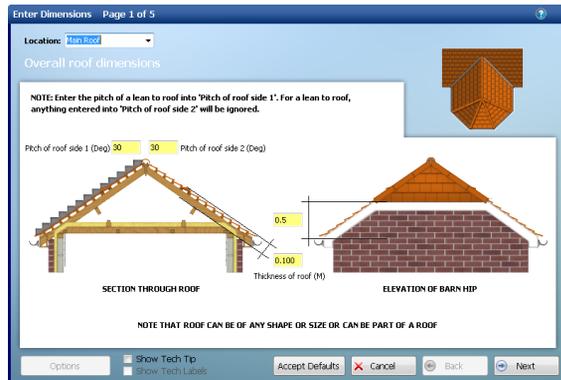
There is a Workbook specially designed for small cut roofs – such as those used on dormers – with smaller timbers specified.



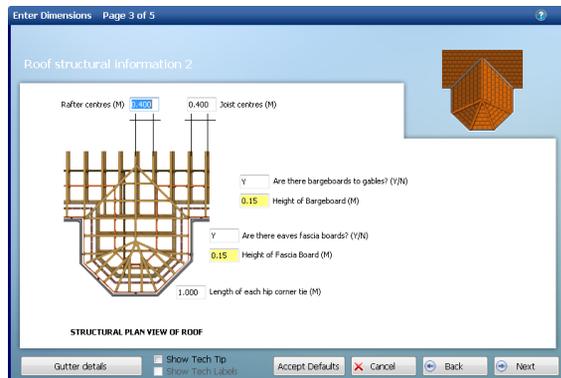
Press the dropdown arrow on the Roof menu.

27. Press the Roofs dropdown button on the Architectural tab.
28. Click on the Roof type called Small Cut Roof (Dormers, Bays etc.).
29. Select the dimensional template called Typical 30 degree Cut Roof.

The Small Cut Roof Dimensions Wizard pops up.



30. Set the Pitch of roof side 1 and side 2 to 30.
31. Ensure the Thickness of roof is set to 0.1.
32. Click Next, review the Roof Structural Information 1 and click Next again.

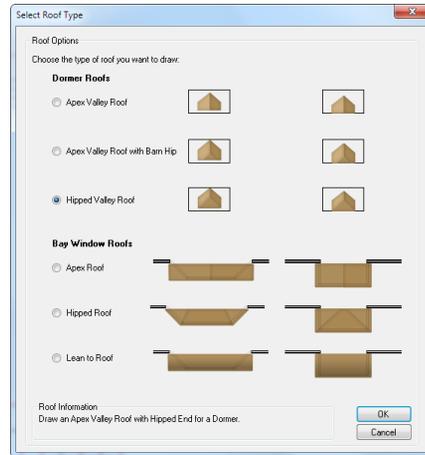


33. Set the Height of Bargeboards and Height of Fascia Boards to 0.15.
34. Review the remaining pages of the Dimensions Wizard, and once you're happy with the information you've entered, click Finish.

The Roof Type dialog box pops up.

35. Click on the Hipped Valley Roof Dormer picture in the dormer section to select it.

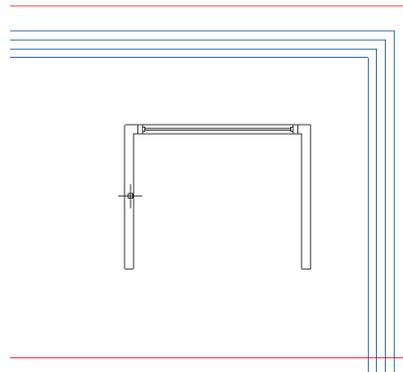
36. Click OK.



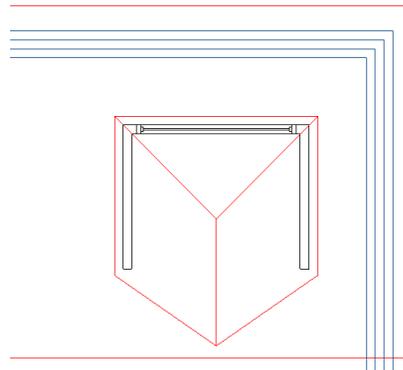
PlansXpress® is now ready to place the roof.

The Command Window prompts: Select any Wall which will Support the Roof.

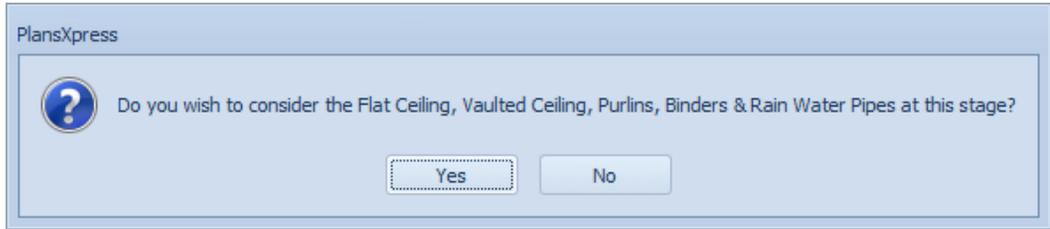
37.  Click anywhere on the dormer walls.



The hipped dormer roof is drawn automatically.



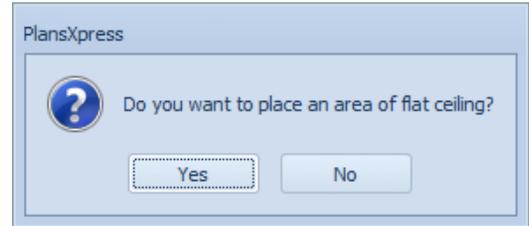
A dialog box pops up asking if you wish to consider flat ceiling, purlins, binders and rain water pipes.



38. We need to estimate the dormer ceiling, so click Yes.

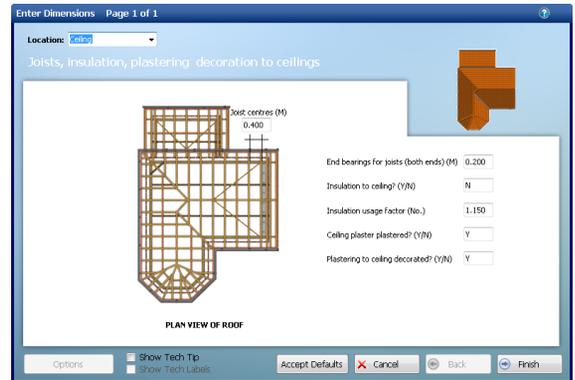
A dialog box pops up asking if you want to place an area of flat ceiling.

39. Click Yes.



The Joists, insulation, plaster decoration to Ceilings Dimensions Wizard pops up.

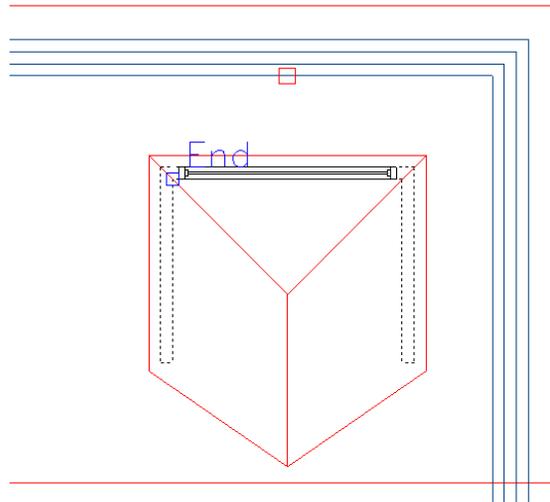
40. Review the ceiling details and click Finish.



The Command Window prompts: Give Start Point.

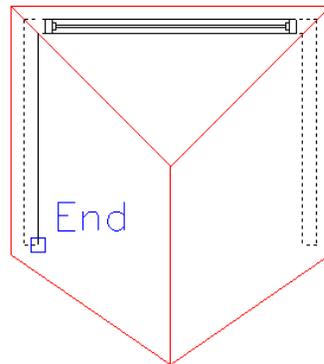
- 41. Zoom into the dormer using the scroll wheel on your mouse.

- 42.  Click on one interior corner of the dormer.

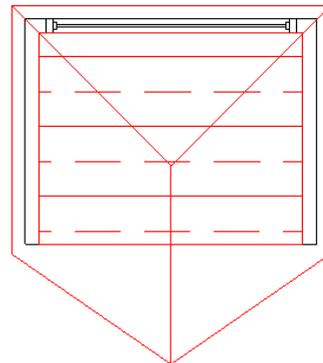


The Command Window prompts: Give Next Point.

- 43.  Mark out the perimeter of the ceiling by clicking on the three remaining interior corners of the dormer.

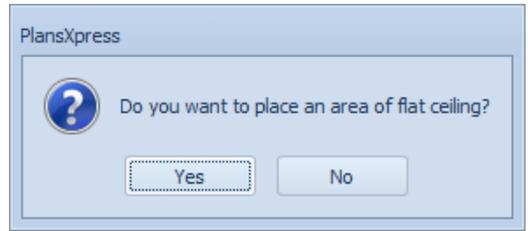


- 44.  Once you've clicked on the fourth corner of the ceiling, press the C key on your keyboard to complete the ceiling.



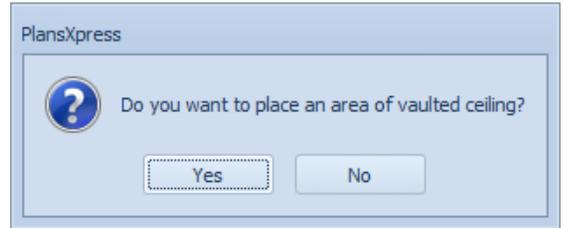
A dialog box pops up asking if you want to place any more areas of flat ceiling.

45. Click No.



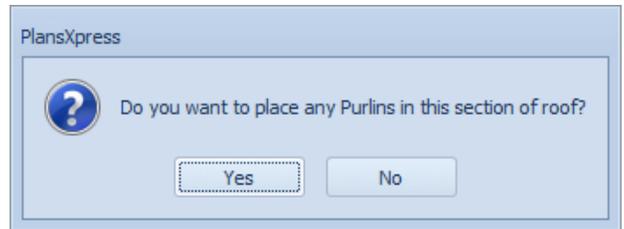
A dialog box pops up asking if you want to place an area of vaulted ceiling.

46. Click No.



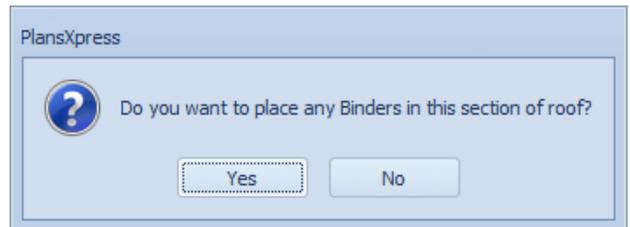
A dialog box pops up asking if you want to place any purlins.

47. Click No.



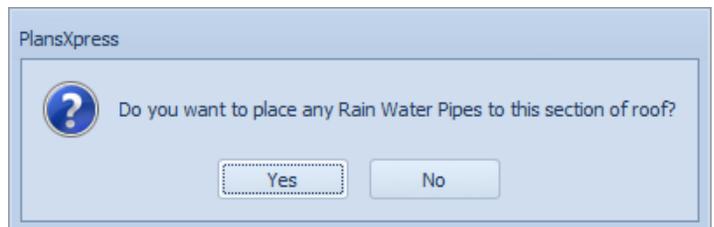
A dialog box pops up asking if you want to place any binders.

48. Click No.



A dialog box pops up asking if you want to place any rainwater pipes

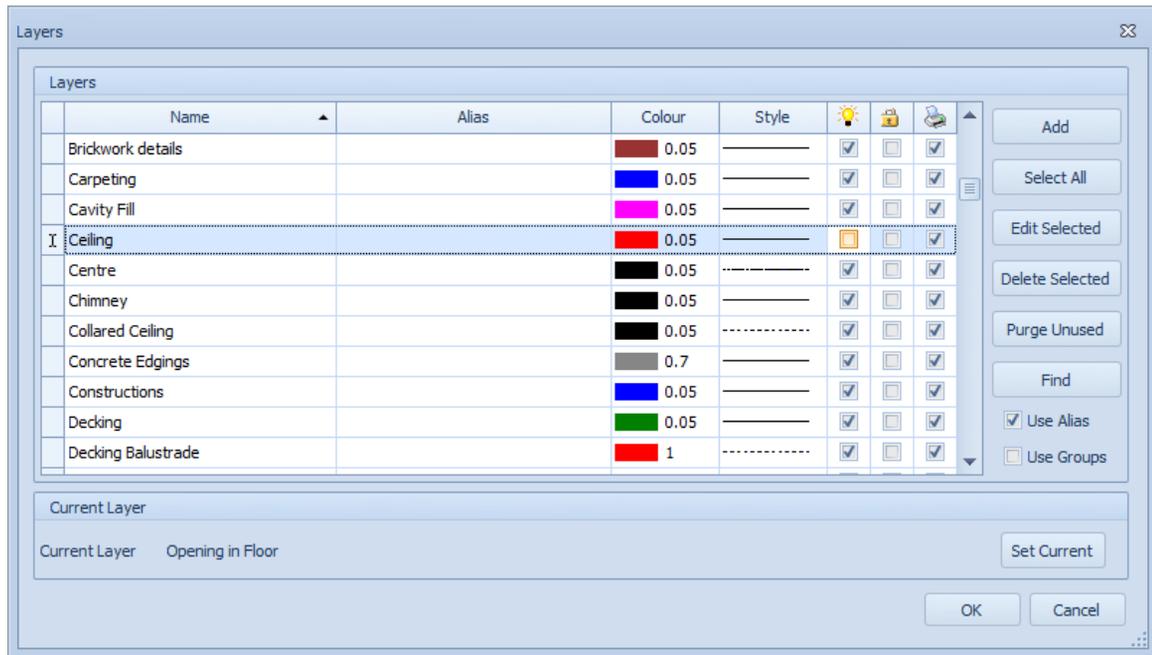
49. Click No.



Now the ceiling is complete, we can switch off the ceiling layer to keep the drawing uncluttered.



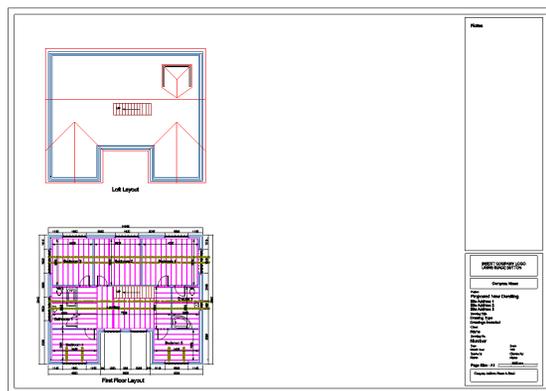
50. Press the Layers button (found on the Views & 3D tab).



51. Untick the Light bulb tick box adjacent to the Ceiling Layer.

Click OK.

The dormer is now complete and should look like this:



52. Press the Save button.

PLACING THE UPSTAND WALLS



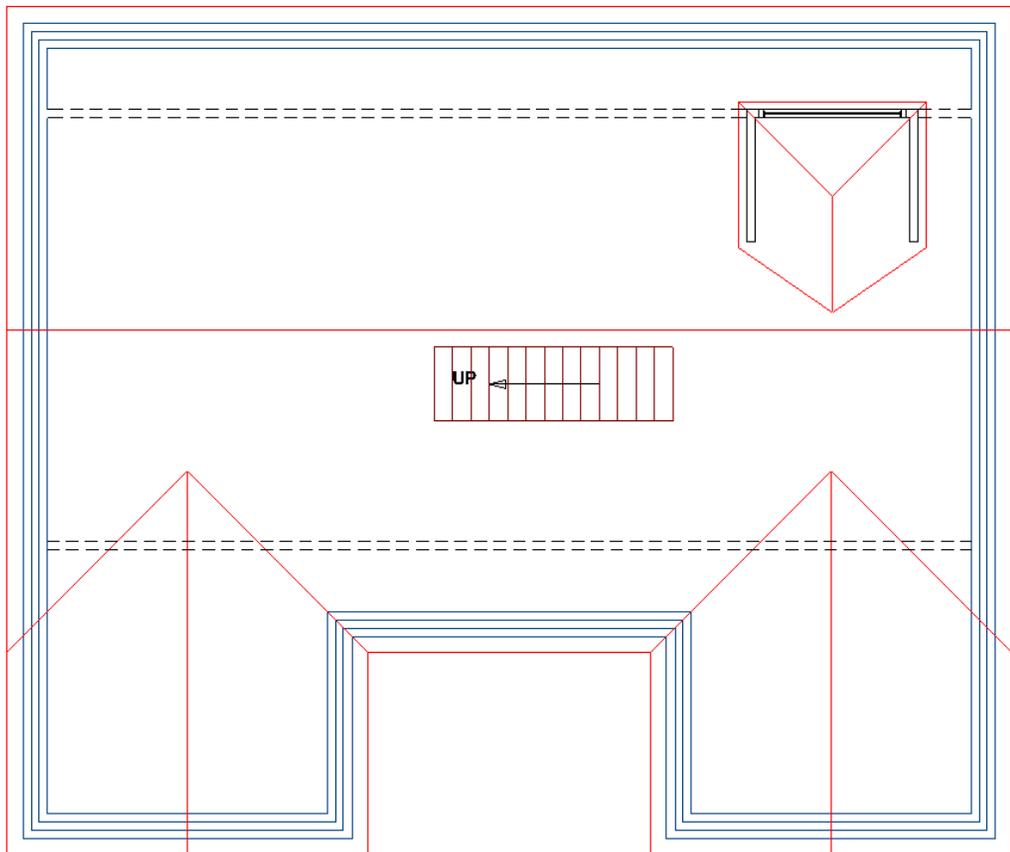
This section of the Tutorial talks you through drawing the loft upstand walls with steels incorporated.

During this exercise, you will learn how to:

- place upstands;
- resize and reposition upstands.

You will need to refer to Diagrams I and K, on pages 215 and 227, during this exercise.

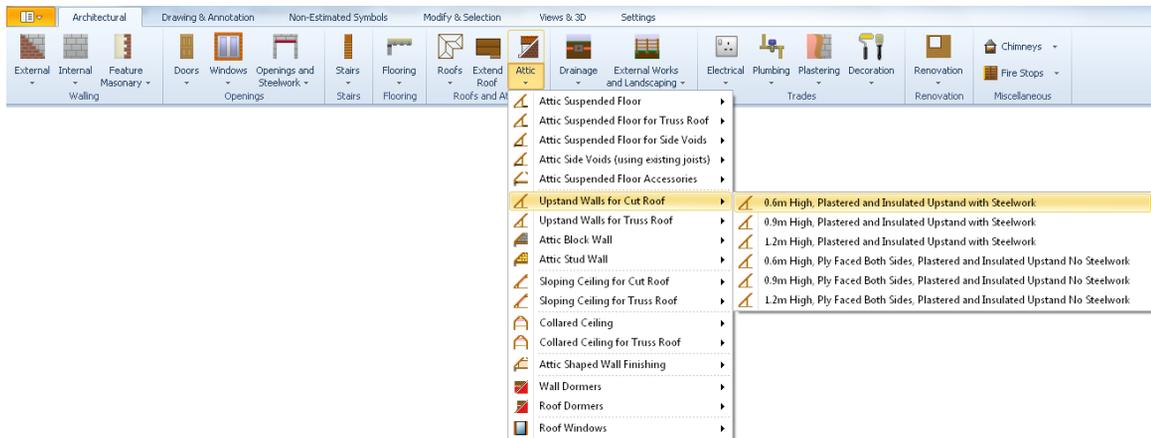
By the end of this exercise, your plans will look like this:



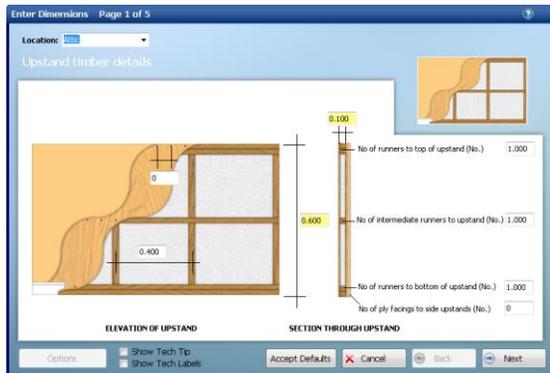
Loft Layout

When drawing Attic upstands, **PlansXpress**® automatically works out where to place the wall based on the height of the upstand. The height of the upstand is entered in the Dimensions Wizard.

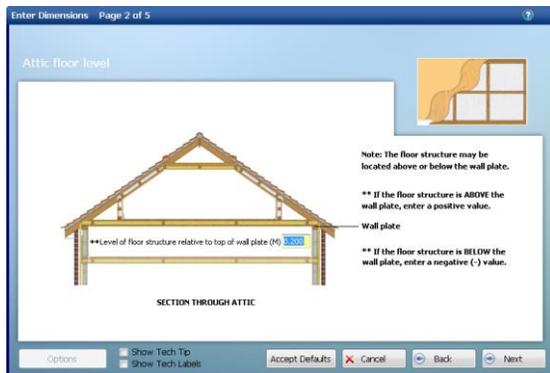
First, let's place the rear upstand.



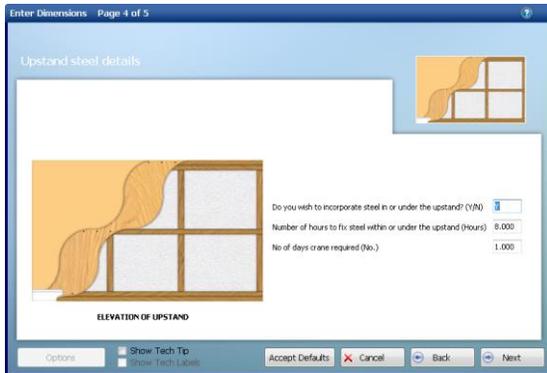
1. Press the Attic dropdown button on the Architectural tab.
2. Click on Upstand Walls for Cut Roof.
3. Click on the dimensional template called 0.6m High, Plastered and Insulated Upstand with Steelwork.



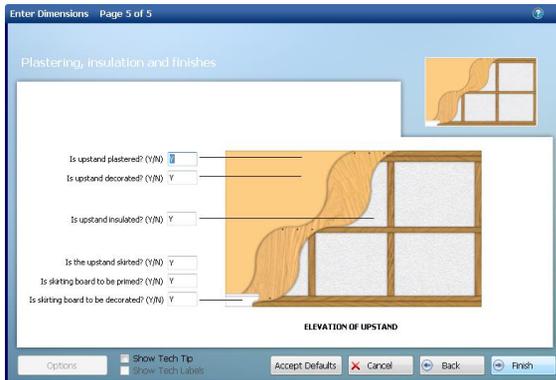
4. Set the Internal height of supporting upstands to 0.6. This measurement is used to place the upstand.
5. Review the other Upstand timber details and click Next.



6. Set the Level of floor structure relative to top of wall plate to 0.2.
7. Click Next.
8. Review the depth of birdsmouth in rafter measurement and click Next.



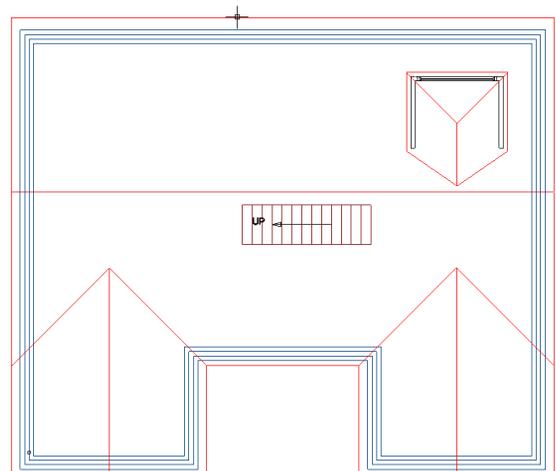
9. Enter Y to Do you wish to incorporate steel in or under the upstand?
10. Review the remaining Upstand steel details and click Next.



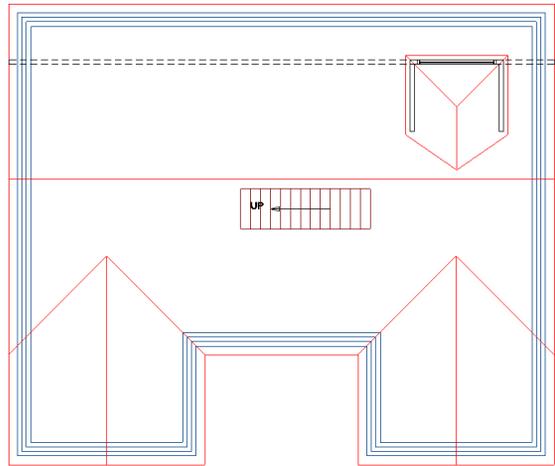
11. Once you're happy with the information you've entered on the final page of the Dimensions Wizard, click Finish.

The Command Window prompts: Select roof eaves line.

12.  Click on the eaves line of the main roof at the rear of the house.



PlansXpress® automatically draws the upstand, measuring from the roof line you selected.

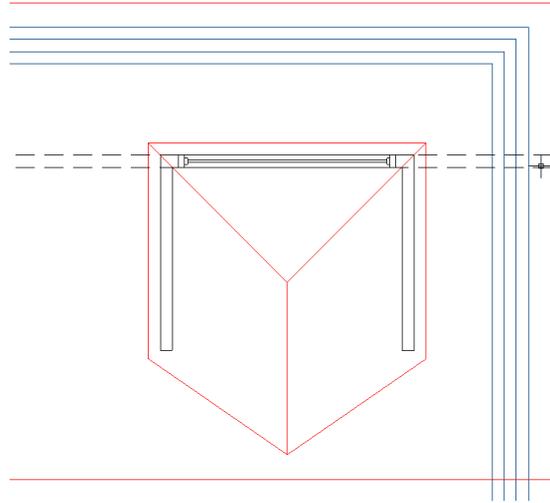


You'll notice that the upstand wall currently runs through the dormer. We need the upstand to stop at either side of the dormer, as per diagram I (page 223). We also need the upstand to stop at the blockwork of the external walls, and not continue to the roof line, as it does at present.

- 13.  Trim/Extend Click the Trim/Extend button on the Modify & Selection tab.

The Command Window prompts: Give Arc/Line to Trim/Extend

- 14.  Click on the right end of the upstand.



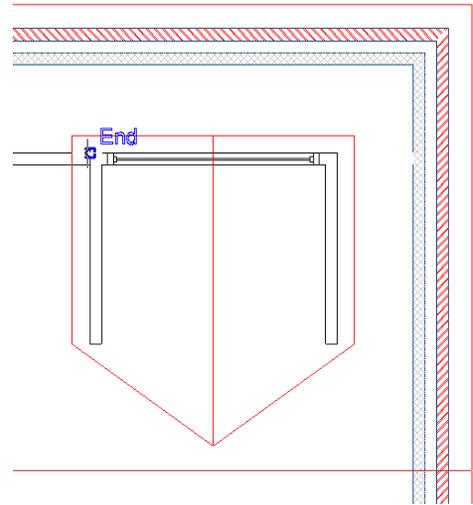
The Command Window prompts: Give Point to Trim/Extend to.

You'll notice as you move your mouse, the upstand is being resized according to the position of your cursor.

15. Place your cursor 'End'  snap point on the corner of the left dormer wall.

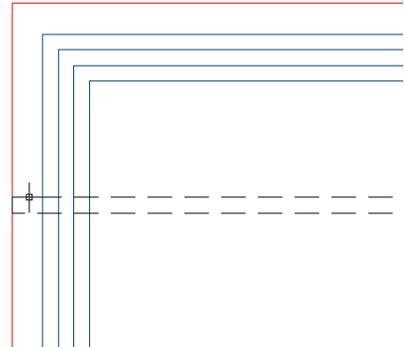
16.  Click the left mouse button to reposition the end of the upstand.

17.  Click the right mouse button to repeat your last action (using the Trim/Extend tool)



The Command Window prompts: Give Arc/Line to Trim/Extend

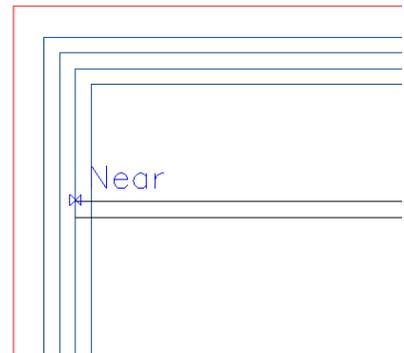
18.  Click on the left end of the upstand.



The Command Window prompts: Give Point to Trim/Extend to

19. Move your cursor to the right until it's hovering over the cavity side of the external wall blockwork and the 'Near'  snap point appears.

20.  Click the left mouse button to reposition the end of the upstand.



We need to add another small length of upstand for the other side of the dormer.



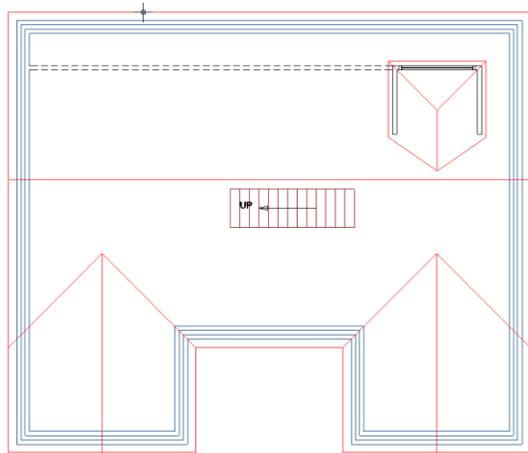
21. Press the button at the top of the Attic menu, which is currently set to Upstand Walls for Cut Roof.
22. Click the Accept Defaults button, or review each page of the wizard and click Finish.

PlansXpress® is ready to draw another stretch of upstand wall with the same specification.

The Command Window prompts: Select roof eaves line.



23. Once again, click on the eaves line of the main roof at the rear of the house.



An upstand wall spanning the roof is placed automatically. We need to resize this upstand too.

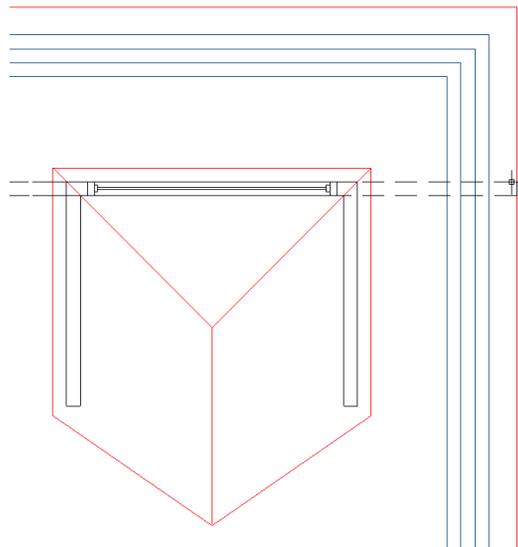


24. Press the Trim/Extend button on the Modify & Selection Tab.

The Command Window prompts: Give Arc/Line to Trim/Extend

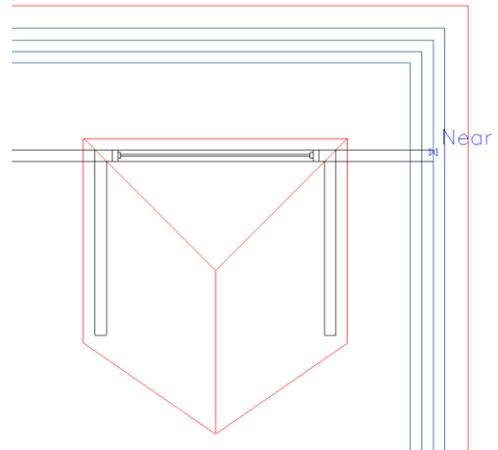


25. Click on the right end of the upstand.



The Command Window prompts: Give Point to Trim/Extend to

26. Move your cursor to the left until it's hovering over the cavity side of the external wall blockwork and the 'Near' snap point appears.

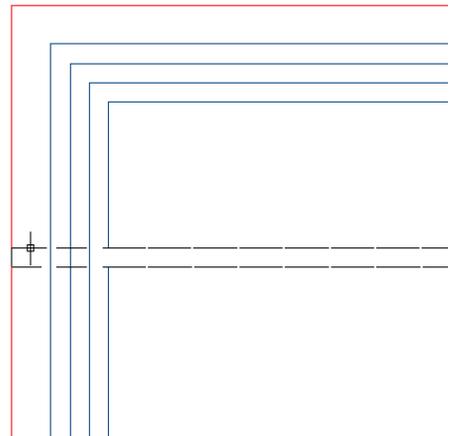


27.  Click the left mouse button to reposition the end of the upstand.

28.  Click the right mouse button to repeat your last action and use the Trim/Extend tool once again.

The Command Window prompts: Give Arc/Line to Trim/Extend

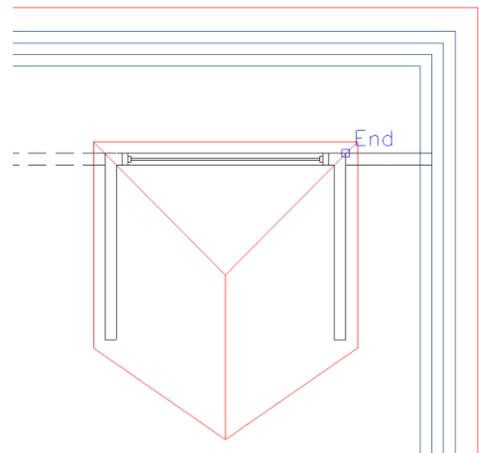
29.  Click on the left end of the upstand.



The Command Window prompts: Give Point to Trim/Extend to

30. Place your cursor 'End'  snap point on the corner of the right dormer wall.

31.  Click the left mouse button to reposition the end of the upstand.

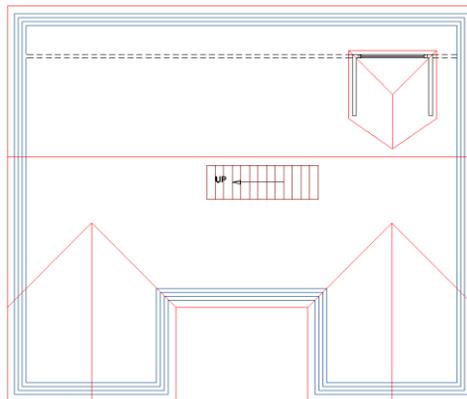


The upstand to the rear of the loft is now complete. Let's now add the upstand walls to the front of the loft. The front upstand spans the length of the roof.

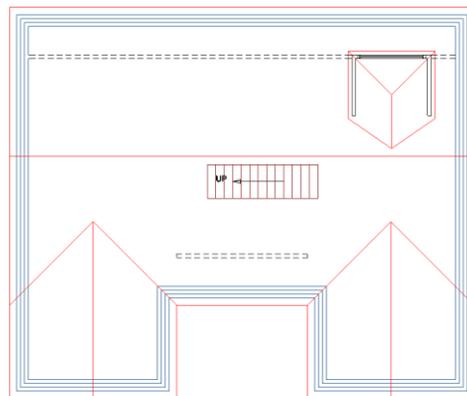
- 32. Press the button at the top of the Attic menu, which is still set to Upstand Walls for Cut Roof.
- 33. Click the Accept Defaults button, or review each page of the wizard and click Finish.

The Command Window prompts: Select roof eaves line.

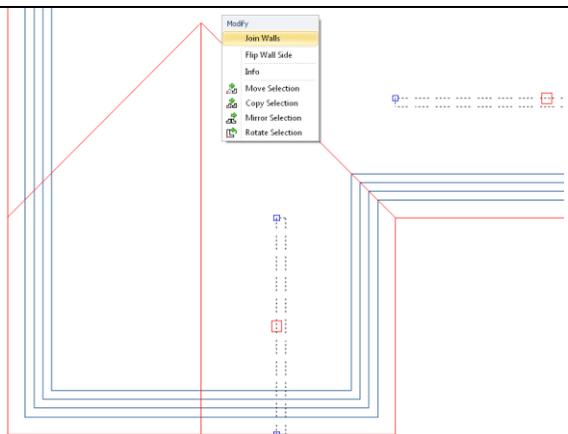
- 34.  Click on the eaves line of the main roof at the front of the house (in between the gables).



You'll see that the upstand has been drawn the same length as the eaves line.



Note: In the case of an upstand wall which has a 90 degree turn into a valley, you can place the valley upstand by clicking on the eaves line of the valley. You can then join the main roof upstand and the valley roof upstand by selecting them both, clicking the middle mouse button and clicking Join Walls.

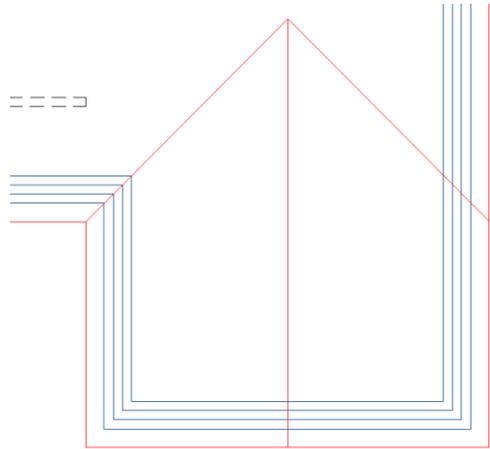


For now, we simply need to extend the upstand so it stretches from one side of the roof to the other.

35.  Trim/Extend Press the Trim/Extend button.

The Command Window prompts: Give Arc/Line to Trim/Extend

36.  Click on the right end of the front upstand.

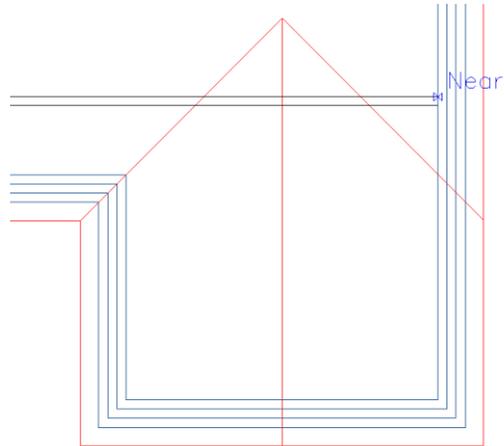


The Command Window prompts: Give Point to Trim/Extend to

37. Move your cursor to the right until it's hovering over the 'Near'  snap point on the cavity side of the external wall blockwork.

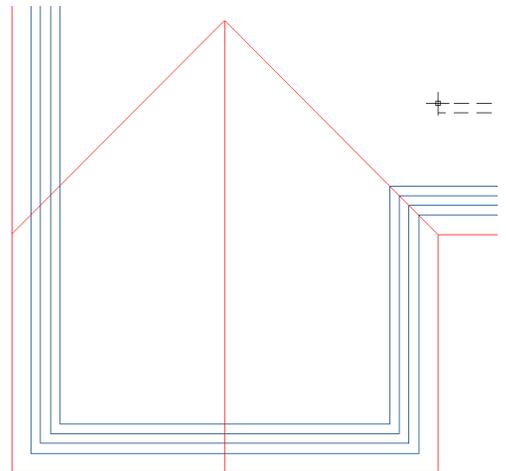
38.  Click the left mouse button to reposition the end of the upstand.

39.  Click the right mouse button to repeat the action of trimming/extending.



The Command Window prompts: Give Arc/Line to Trim/Extend

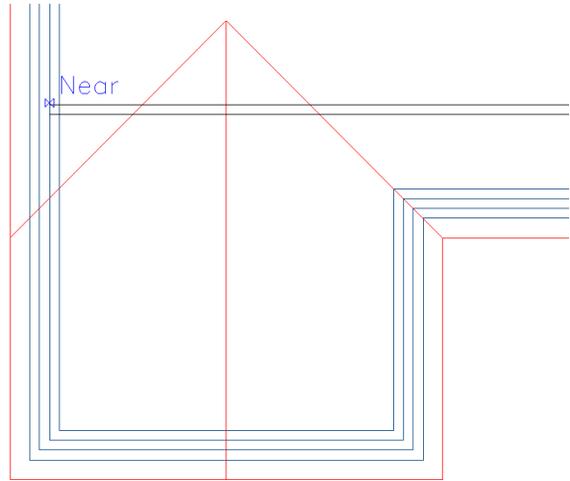
40.  Click on the left end of the front upstand.



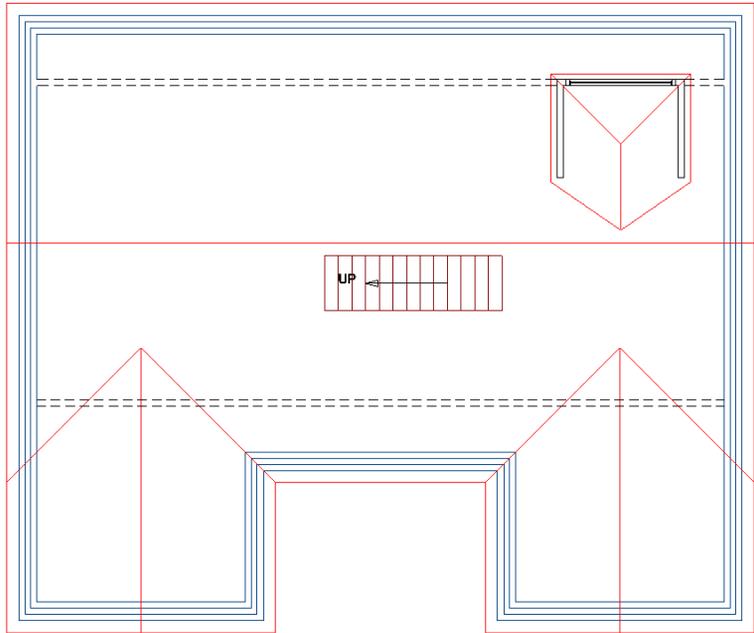
The Command Window prompts: Give Point to Trim/Extend to

- 41. Move your cursor to the right until it's hovering over the 'Near'  snap point on the cavity side of the external wall blockwork.

- 42.  Click the left mouse button to reposition the end of the upstand.



Your loft plan should now look like this:



Loft Layout

- 43.  Press the Save button.

PLACING THE COLLARED CEILING



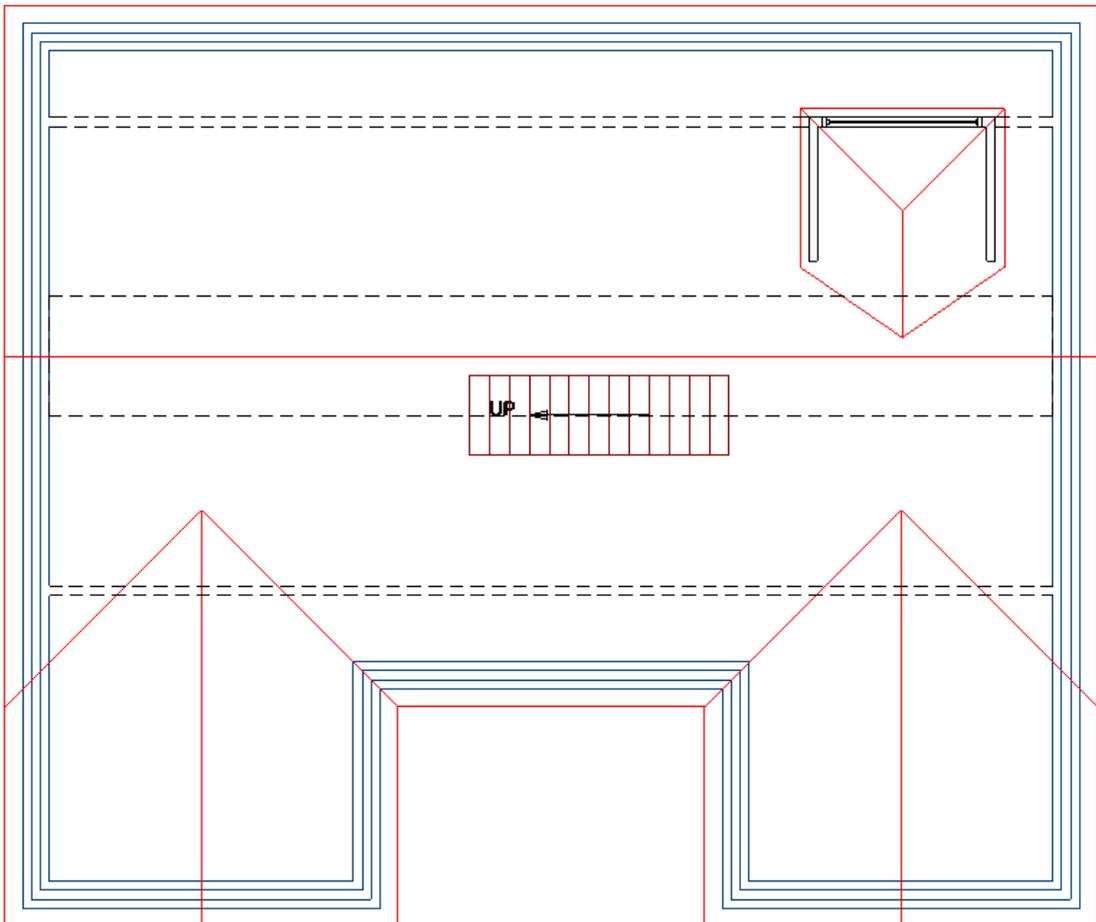
This section of the Tutorial talks you through placing the collared ceiling.

During this exercise, you will learn how to:

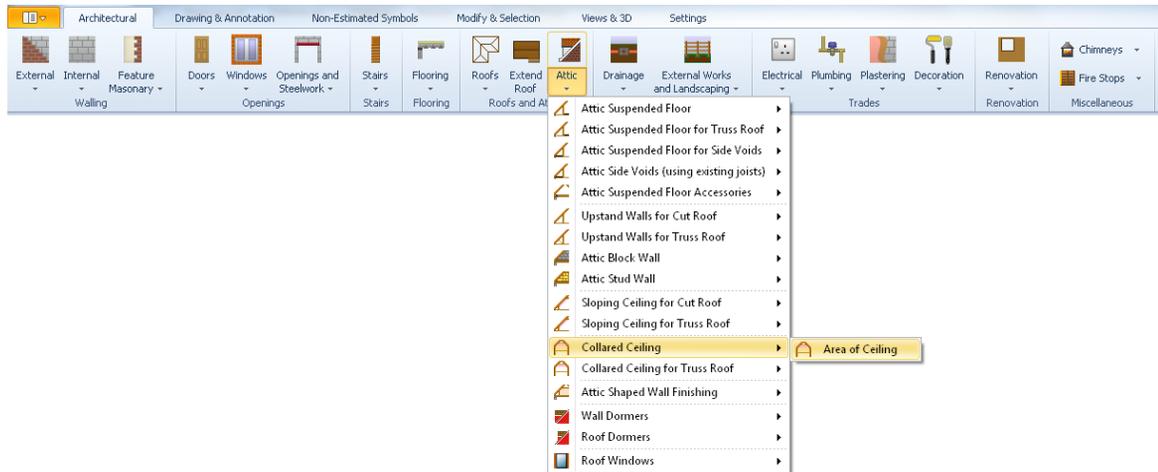
- place collared ceilings;
- resize collared ceilings.

You will need to refer to Diagrams I and K, on pages 215 and 227, during this exercise.

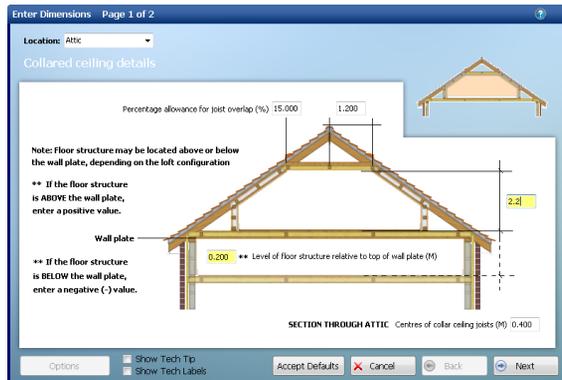
By the end of this exercise, your plans will look like this:



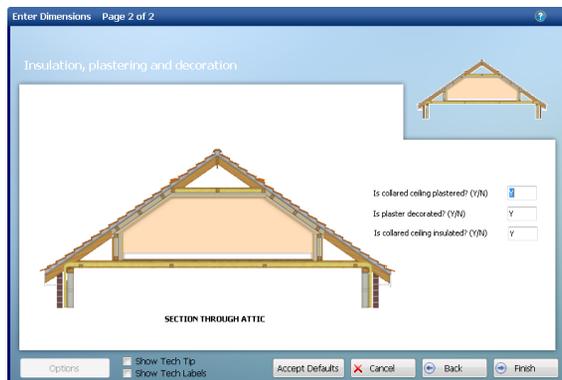
When drawing flat collared ceilings in attics, **PlansXpress**® automatically works out the width of the ceiling based on the ceiling height and the floor level. The height of the ceiling and floor level are entered in the Dimensions Wizard.



1. Press the Attic dropdown button on the Architectural tab.
2. Click on the item called Collared Ceiling.
3. Click on the dimensional template called Area of Collared Ceiling.



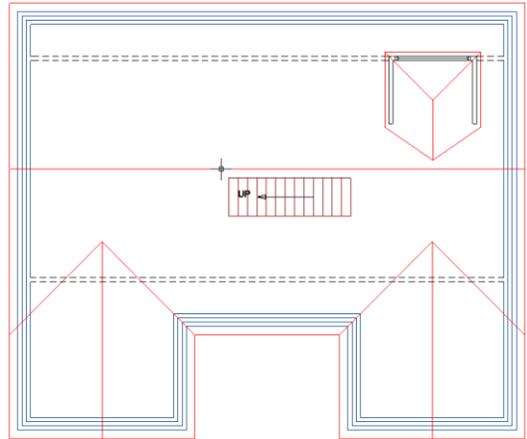
4. Set the Level of floor structure relative to top of wall plate to 0.2.
5. Set the Height of collared ceiling to 2.2.
6. Review the other collared ceiling details and click Next.



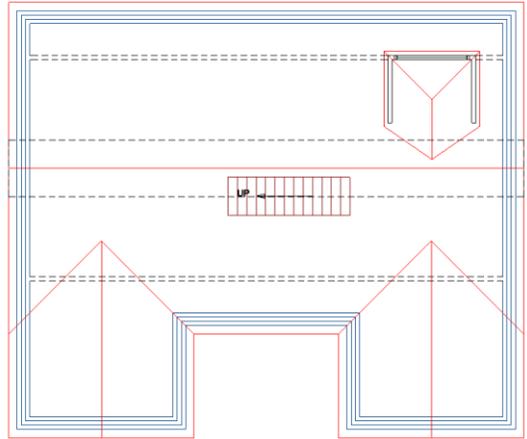
7. Once you're happy with the plastering, decoration and insulation details, click Finish.

The Command Window prompts: Select Roof Line.

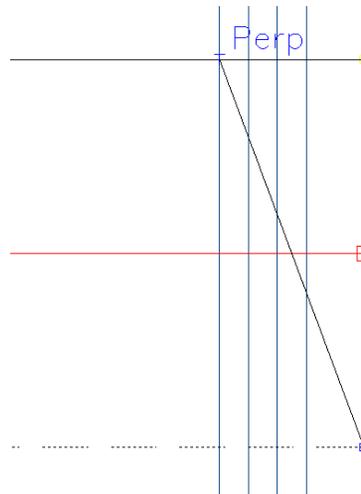
8.  Click on the apex roof ridge.



PlansXpress® automatically draws the flat collared ceiling on the roof you select, however the collared ceiling is drawn to the edge of the roof at each end.

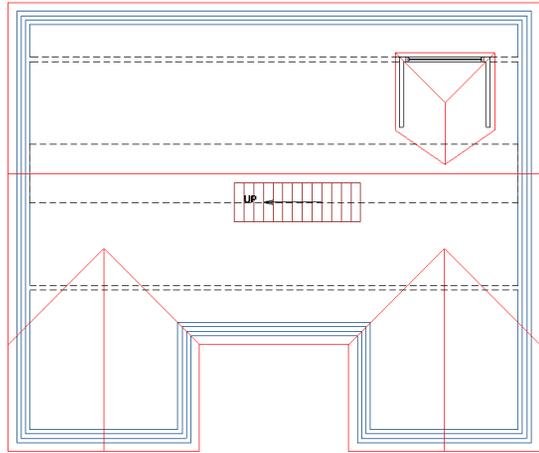


9.  Click on the collared ceiling to select it. Use the top right blue entity handle which appears to reposition the corner of the collared ceiling to the corresponding 'Perp'  snap point located on the inside of the blockwork.



10. Reposition the blue entity handles for the remaining three corners of the collared ceiling to move the collared ceiling into the correct position.

Once complete, your loft should look like this:



11.  Press the Save button.

MARKING OUT THE SLOPING CEILING



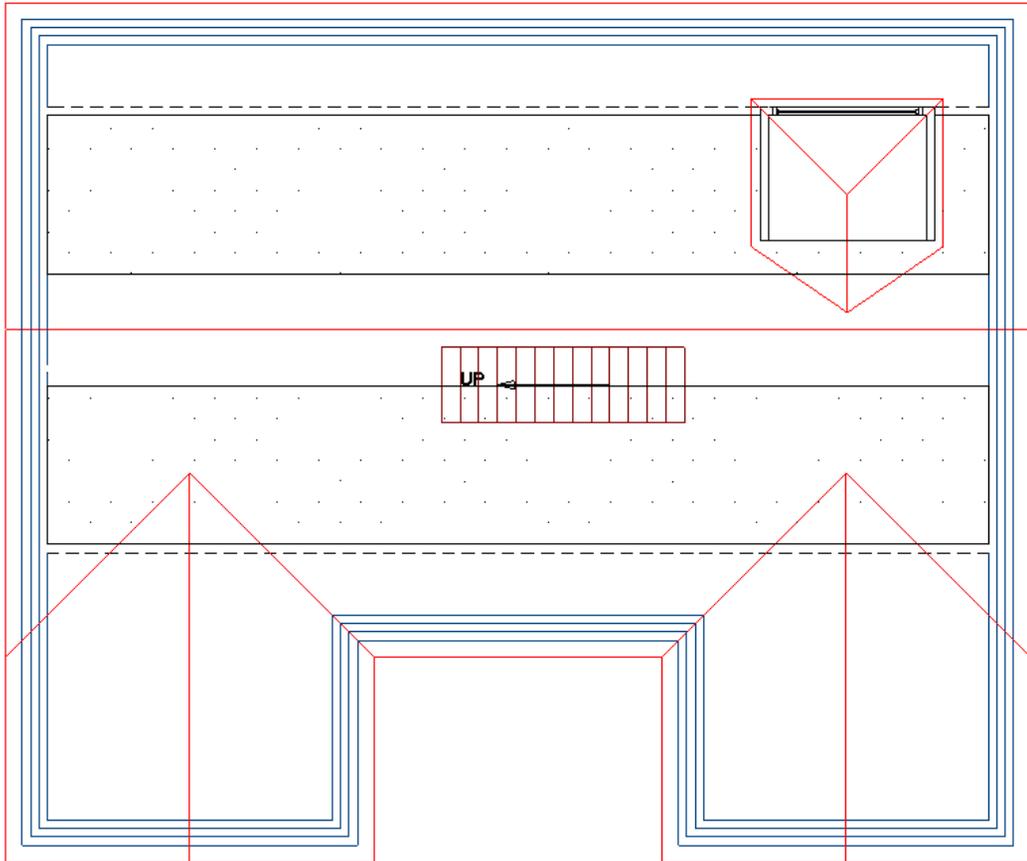
This section of the Tutorial talks you through marking out the sloping ceiling areas of the loft.

During this exercise, you will learn how to:

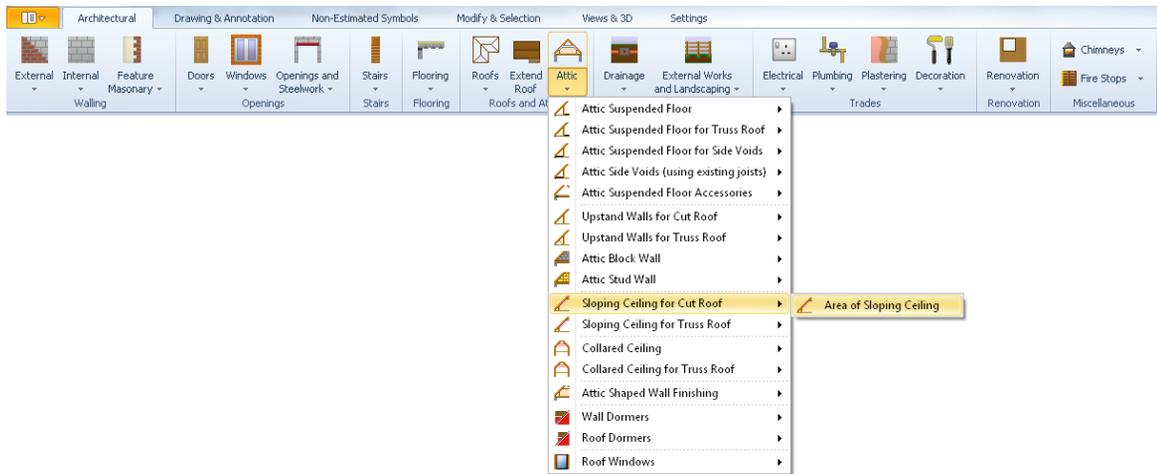
- mark out sloping ceilings.

You will need to refer to Diagram I, on page 215, during this exercise.

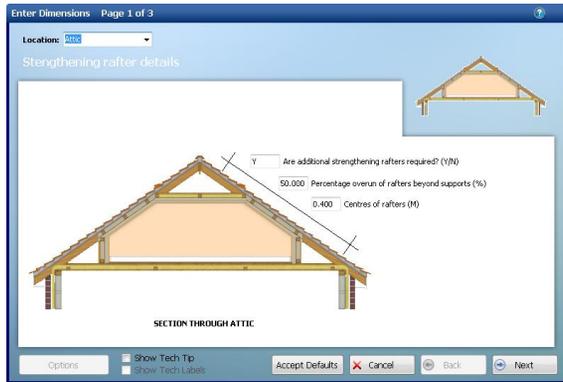
By the end of this exercise, your plans will look like this:



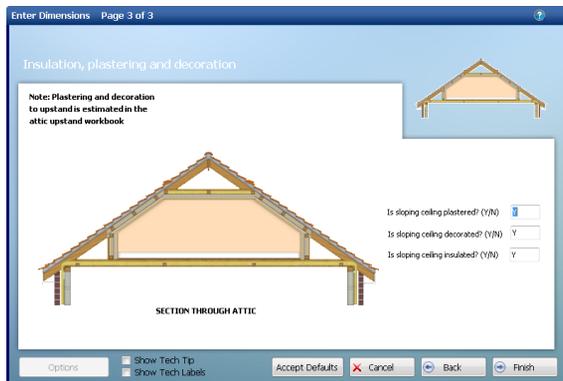
Drawing sloping ceilings in lofts is a slightly more manual process than drawing collared ceilings. You simply mark out the perimeter of each area of sloping ceiling.



1. Press the Attic dropdown button on the Architectural tab.
2. Click on the item called Sloping Ceiling for Cut Roof.
3. Click on the dimensional template called Area of Sloping Ceiling.



4. Set the Percentage overrun of rafters beyond supports to 50%.
5. Review the remaining timber details and click Next.

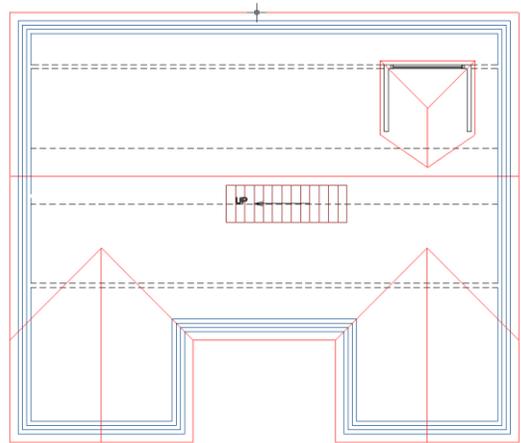


6. Once you're happy with the insulation, plastering and decoration details, click Finish.

The Command Window prompts: Select eaves line

We'll start by marking out the sloping ceiling to the rear of the loft.

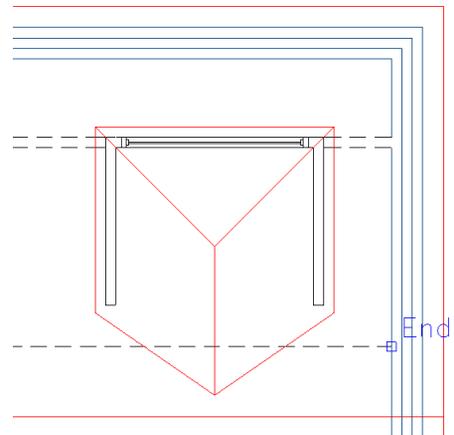
7.  Click on the rear eaves line of the roof.



The Command Window prompts: Give Start Point

8. Hold your cursor over the point where the collared ceiling meets the external wall on the right-hand side of the loft and the 'End'  snap point appears.

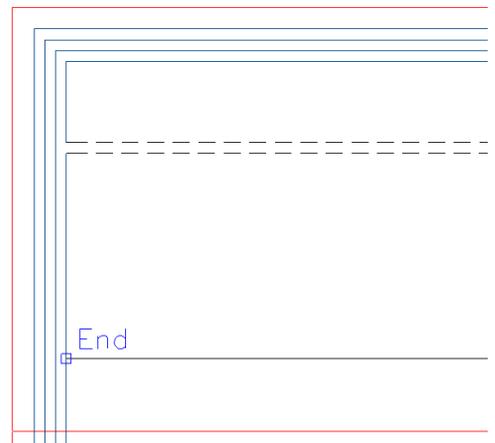
9.  Click the left mouse button to mark the top corner of the sloping ceiling.



The Command Window prompts: Give Next Point

10. Hold your cursor over the point where the collared ceiling meets the external wall on the left-hand side of the loft and locate the 'End'  snap point.

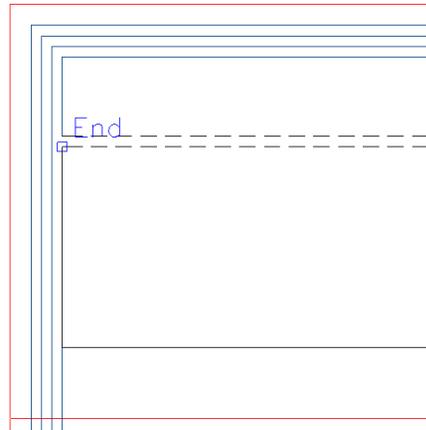
11.  Click the left mouse button to mark the next corner of the sloping ceiling.



The Command Window prompts: Give Next Point or (A)rc or (T)hree Point Arc or (Escape) to End.

- Hold your cursor over the internal corner where the rear upstand meets the external wall on the left-hand side of the loft and locate the 'End'  snap point.

-  Click the left mouse button to mark the next corner of the sloping ceiling.

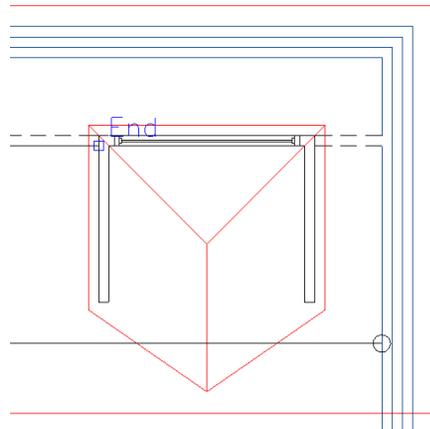


The Command Window prompts: Give Next Point or (A)rc or (T)hree Point Arc or (Escape) to End.

- Hold your cursor over the point where the rear upstand meets the left dormer wall and locate the 'End'  snap point.

-  Click the left mouse button to mark the next corner of the sloping ceiling.

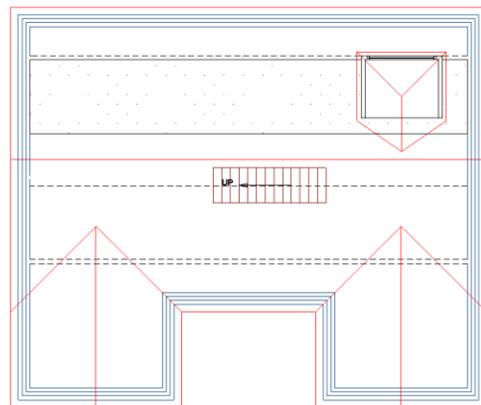
- Continue in this way, tracing around the outside of the dormer using 'End' snap points, until you've placed the point where the rear upstand meets the external wall on the right-hand side of the loft.



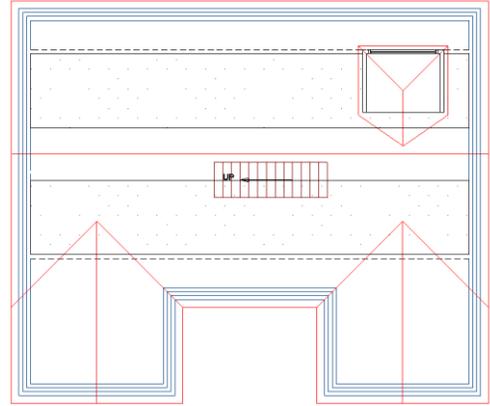
The Command Window prompts: Give Next Point or (A)rc or (T)hree Point Arc or (Escape) to End.

-  Click the C key on your keyboard to complete the sloping ceiling area.

The first area of sloping ceiling is complete and should look like this:



18.  Click the right mouse button to draw another area of sloping ceiling of the same specification.
19. You can now repeat this process to mark out the sloping ceiling area to the front of the loft. Simply select the eaves line at the front of the main roof when prompted to Select Roof Line and click on the 'End'  snap point at each corner of the ceiling, pressing the C key on your keyboard to complete the area of sloping ceiling.



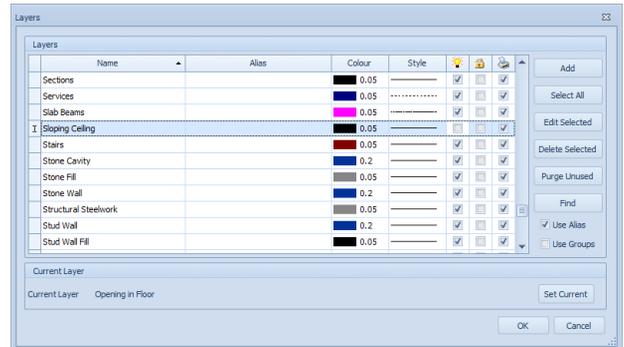
20. Once complete, your loft should look like this:

Now we can switch off the Sloping Ceiling Layer so that the outline of the sloping ceiling doesn't overlap the upstands.

21.  Press the Layers button (Views & 3D tab).

The Layers dialog box pops up.

22. Locate the Sloping Ceiling Layer and untick the adjacent Light bulb and Printer tick boxes.
23. Click OK.



The Sloping Ceiling no longer appears on screen or in any printouts.

24.  Press the Save button.

DRAWING THE STUD WALLS



This section of the Tutorial talks you through drawing the loft stud walls. Stud walls are used to partition the different rooms in the loft.

During this exercise, you will learn how to:

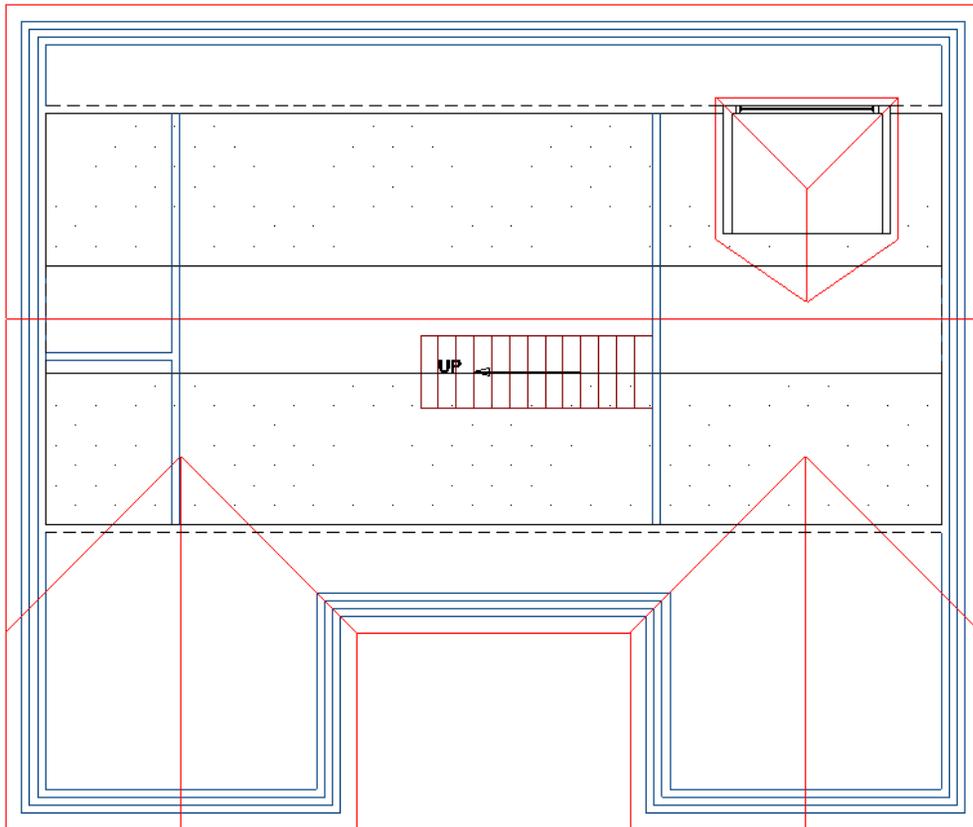
- draw attic stud walls;

You will also revise how to:

- use relative inputs.

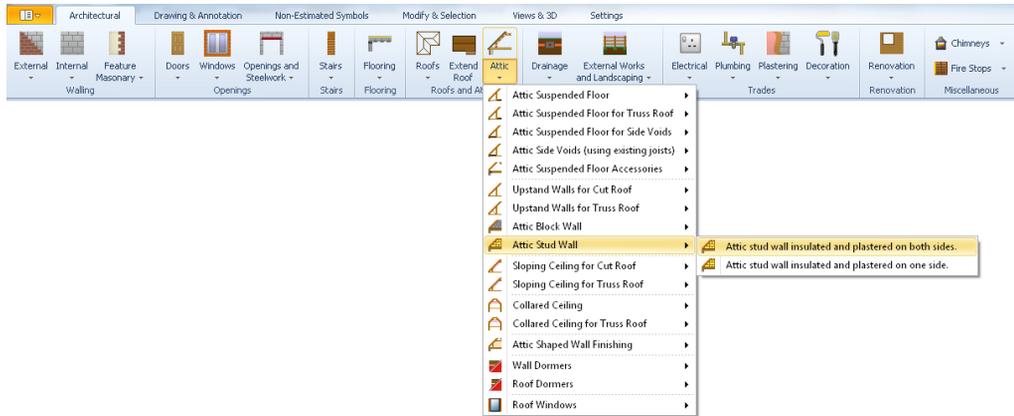
You will need to refer to Diagram I, on page 215, during this exercise.

By the end of this exercise, your plans will look like this:



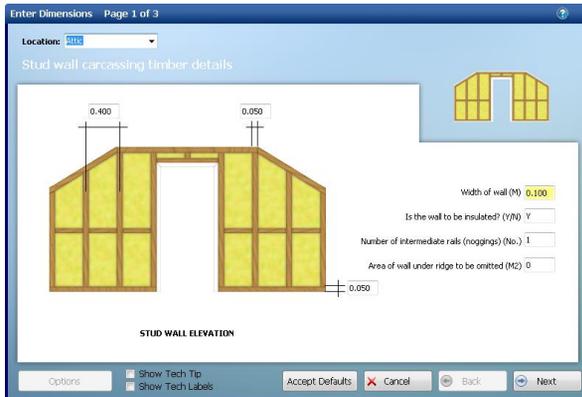
Loft Layout

Let's start by drawing the stud wall which divides the bedroom from the landing.

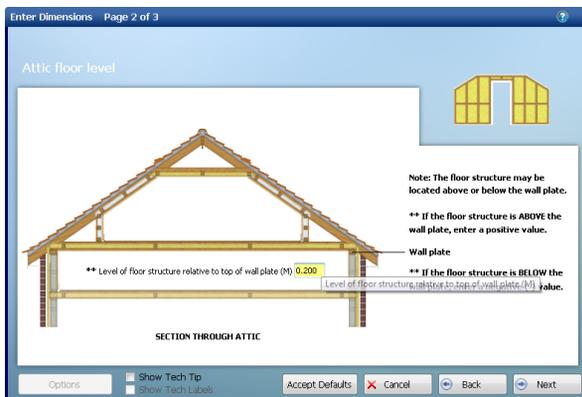


1. Press the Attic dropdown button on the Architectural tab.
2. Click on the item called Attic Stud Wall.
3. Click on the dimensional template called Attic stud wall insulated and plastered on both sides.

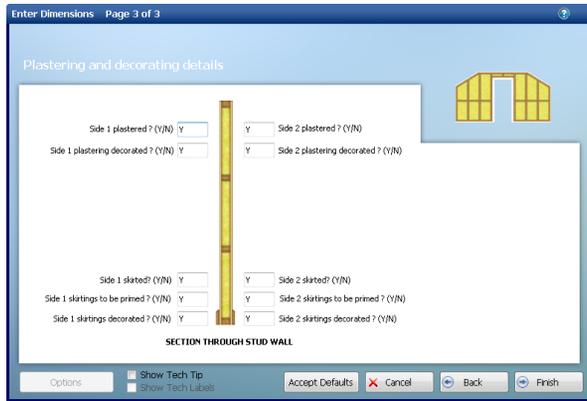
The Attic Stud Walls Dimensions Wizard pops up.



4. Set the Width of wall to 0.1.
5. Review the remaining details and click Next.



6. Set the Level of floor structure relative to top of wall plate to 0.2.
7. Click Next.

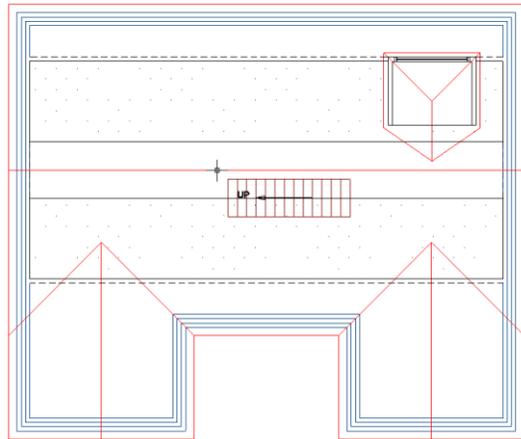


We do require finishing details to both sides of the stud walls on this occasion so enter Y next to all treatments required.

8. Review the remaining details and click Finish.

The Command Window prompts: Select Roof Line.

9.  Click on the apex roof ridge.

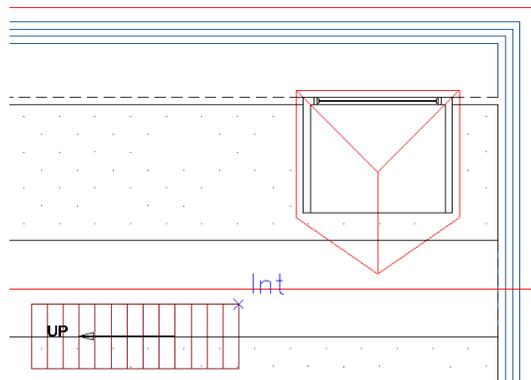


The Command Window prompts: Give Start Point.

The stud wall runs along the bottom of the staircase, so we'll use a point on the staircase to give us the X coordinate for the partition.

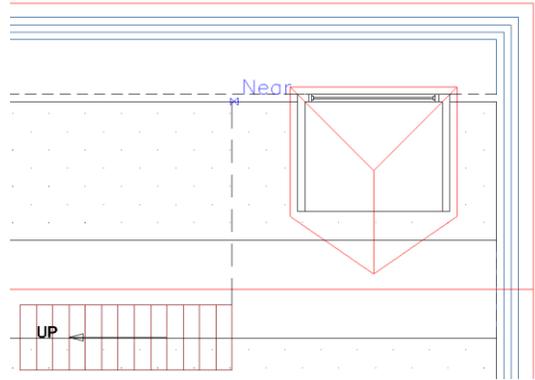
10. Hold your cursor over the top right corner of the staircase, as you view it on screen, to find the 'Int'  snap point.

11.  Press the X key on your keyboard.



12. Move your cursor up the screen until it's hovering over the inside of the rear upstand, and a 'Near'  snap point appears.

13.  Click the left mouse button to place the start of the stud wall.

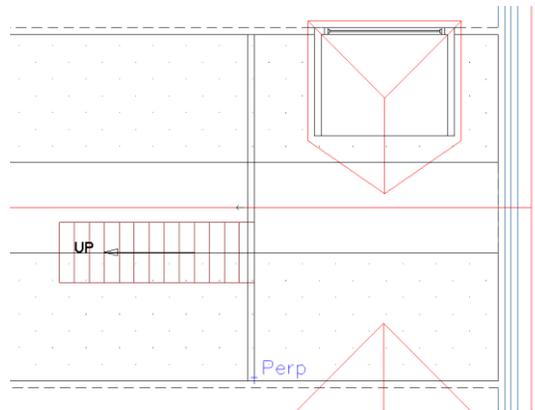


The Command Window prompts: Give Next Point

14. Move your cursor down the screen until you find the 'Perp'  snap point on the inside of the front upstand.

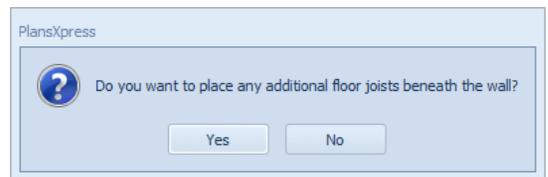
15.  Click the left mouse button to place the end of the stud wall.

16.  Click the right mouse button to stop drawing stud walls.



The dialog box pops up asking if you wish to place any additional floor joists beneath the wall.

17. Click No.



18. If, once you've placed the wall, you notice that it overlaps the staircase; you'll need to change the Justification of the wall. To alter the Justification of the wall, continue from step 19. If your wall has been placed correctly, continue from step 20.

-  Click on the wall with your left mouse button to select it.

- Click on the Justification drop down box and select Right.

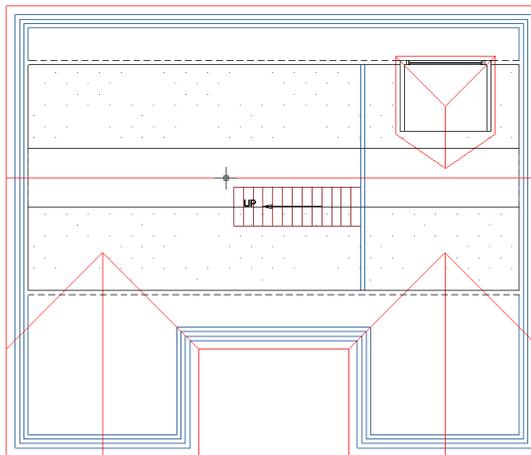


Let's now draw the stud wall which divides the bathroom and storage cupboard from the landing.



- Press the button at the top of the Attic menu to draw another length of stud wall of the same specification.

The Command Window prompts: Select Roof Line.



- Click on the apex roof ridge.

The Command Window prompts: Give Start Point.

The stud wall is 1600mm from the external wall, so we'll enter a dimension relative to a point on the external wall.

- Place your cursor over the interior corner where the left external wall meets the rear upstand, and locate the 'End' snap point.



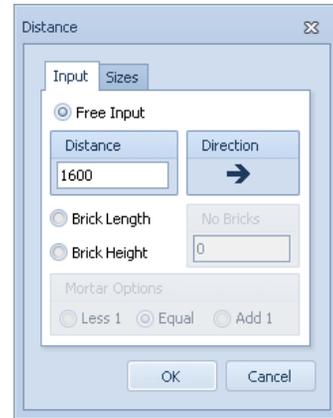
- Press the R key on your keyboard.

24.  Press the right arrow key on your keyboard.

The Distance dialog box pops up.

25. Enter a distance of 1600.

26. Click OK.



The start of the stud wall is automatically placed.

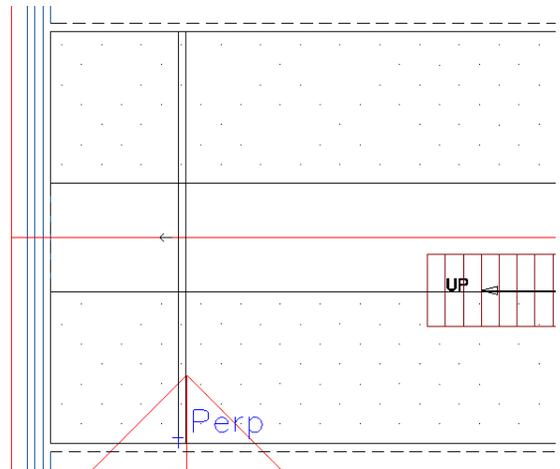
The Command Window prompts: Give Next Point

27.  Press the F7 key on your keyboard to turn on Snap mode.

28. Move your cursor down the screen until you find the 'Perp'  snap point on the inside of the front upstand.

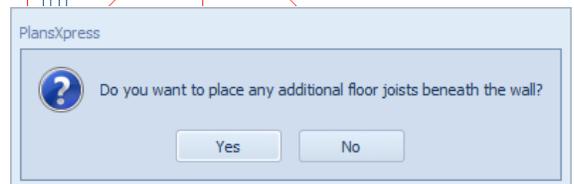
29.  Click the left mouse button to place the end of the stud wall.

30.  Click the right mouse button to indicate that you've completed this section of wall.



The dialog box pops up asking if you wish to place any additional floor joists beneath the wall.

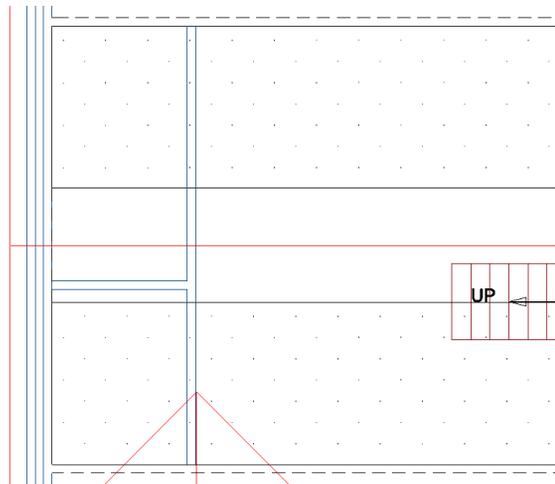
31. Click No.



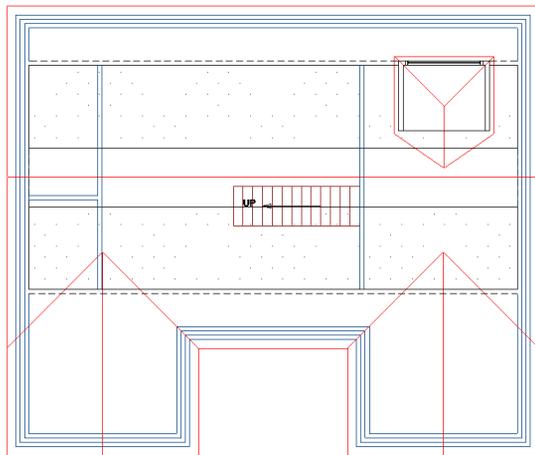
Now we need to draw the wall which divides the bathroom and storage cupboard.

32.  Press the button at the top of the Attic menu to draw another length of stud wall of the same specification.

- 33. Draw the wall which divides the bathroom and storage cupboard by selecting the ridge line, finding the point where the vertical stud wall meets the rear upstand and using the R and down arrow keys to enter a relative dimension of 3000mm. Click the right mouse button to indicate that you've completed the section of wall and say No to placing additional floor joists.



Your loft plan should now look like this:



Loft Layout

- 34.  Press the Save button.

PLACING THE DOORS



This section of the Tutorial talks you through placing standard-size and custom-size internal doors and cupboard doors in your plans.

During this exercise, you will learn how to:

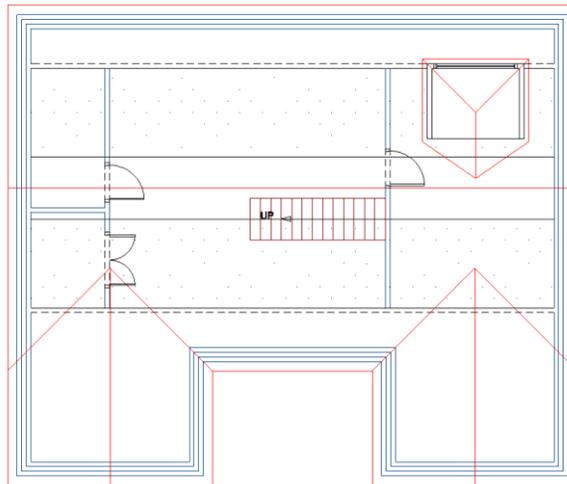
- insert custom-size doors.

You will also revise how to:

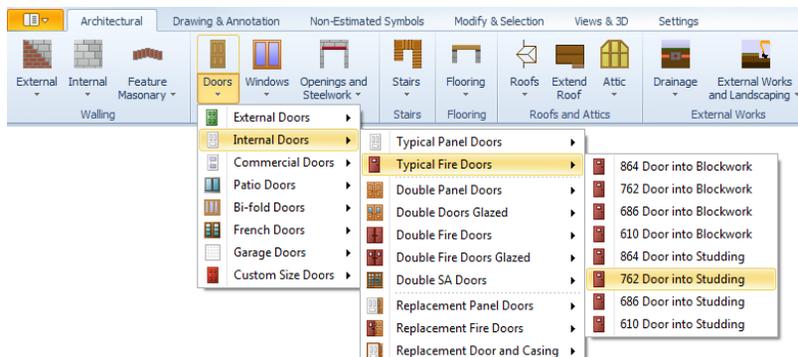
- place doors.

You will need to refer to Diagram I, on page 215, during this exercise.

By the end of this exercise, your plans will look like this:

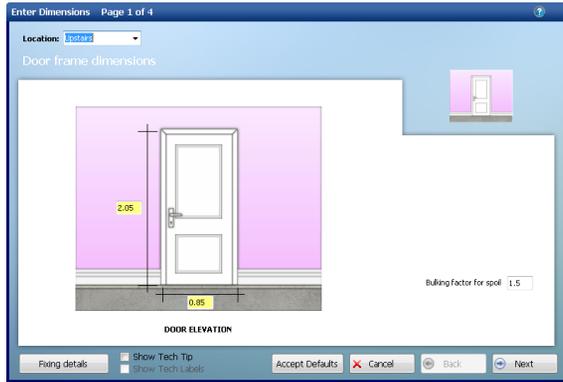


Now the stud walls are placed, we can place the internal fire doors. We'll install 762 wide fire doors into the bathroom and bedroom.



1. Press the Doors dropdown button on the Architectural tab.
2. Click on the type called Typical Fire Doors.
3. Click on the dimensional template called 762 Door into Studding.

The Dimensions Wizard pops up.

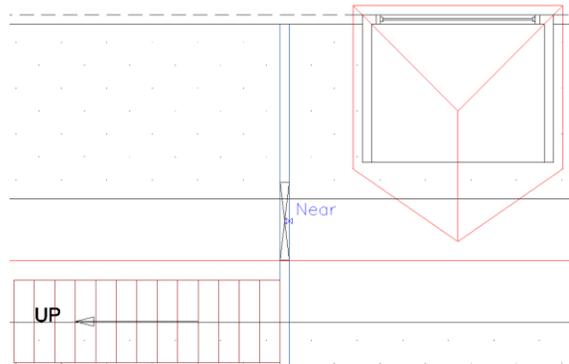


4. Review each page of the Dimensions Wizard, and once you're happy with the details entered on the final page, click Finish.

The Command Window prompts: Give Insertion point on wall

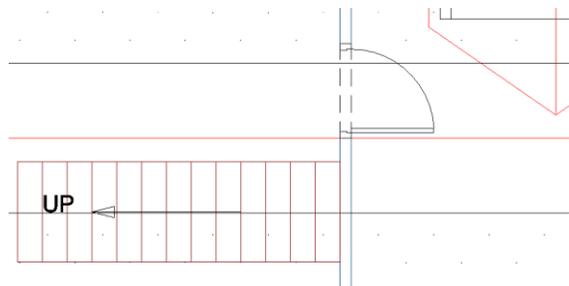
5. Place your cursor over the stud wall just above the stairs.

6.  Click the left mouse button to place the door.



7. Move your cursor to the bedroom side of the wall and down the screen, so that the door is shown opening to the right.

8.  Click the left mouse button to register the direction the door opens in.



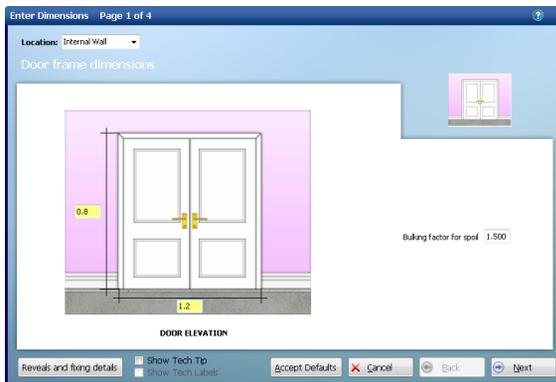
9. Repeat this process to place the door to the bathroom, which opens outwards.

- Finally, let's place the double doors into the storage area. Because these doors fit under the slope of the roof, we'll need to use the Custom Size Double Internal Doors.

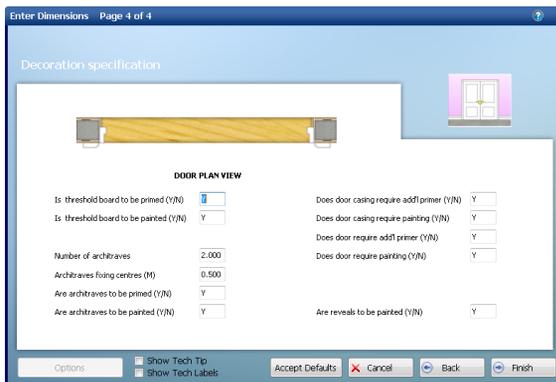


- Press the dropdown arrow next to the Doors button.
- Click on the item called Custom Size Doors.
- Click on the type called Custom Side Double Internal Doors.
- Click on the dimensional template called Internal Double Doors.

The Dimensions Wizard pops up.

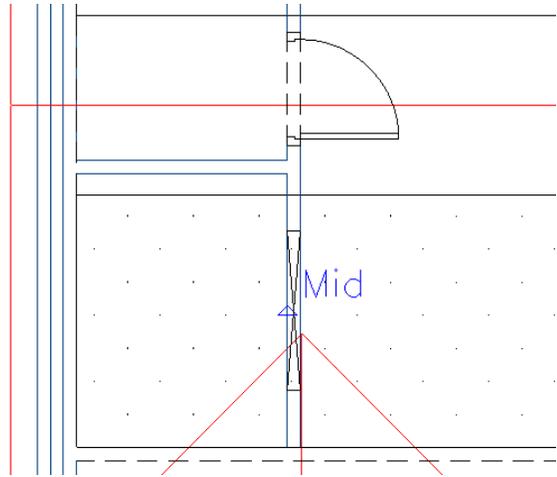


- Set the door height to 0.8
- Set the door width to 1.2.
- Click Next.

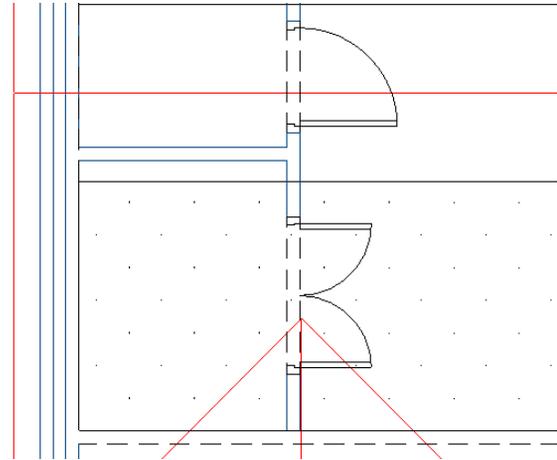


- Review the remaining pages of the Dimensions Wizard, and once you're happy with the details entered, click Finish.

- 19. The Command Window prompts: Give Insertion point on wall
- 20. Hold your cursor over the stud wall between the landing and storage area until you locate the 'Mid'  snap point.
- 21.  Move your cursor to the right of the stud wall and click the left mouse button to place the door.



- 22.  Click the right mouse button to finish placing doors.



- 23.  Press the Save button.



IMPORTANT! You must remember to open up the Custom Size Double Internal Doors Workbook once you've imported the job into **EstimatorXpress®** and specify the door and associated details, as these items are not specified in a Custom Size Door Workbook.



Note: You can replace the standard doors in the rest of the house with fire doors by clicking Internal Doors on the Door menu and selecting the Replacement Fire Doors option.

PLACING THE ROOF WINDOWS



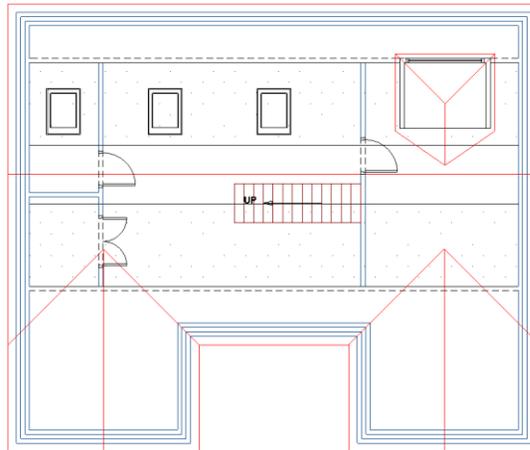
This section of the Tutorial talks you through adding roof windows to the loft plan.

During this exercise, you will learn how to:

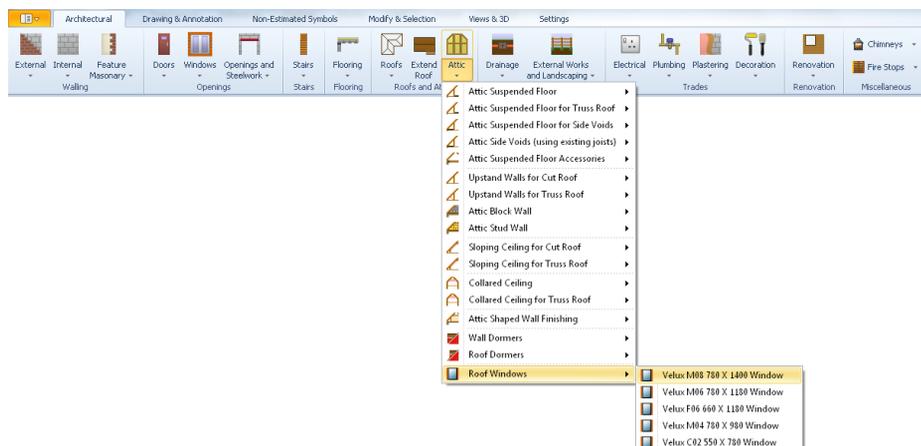
- insert roof windows using snap points and 'by eye'.

You will need to refer to Diagram I, on page 215, during this exercise.

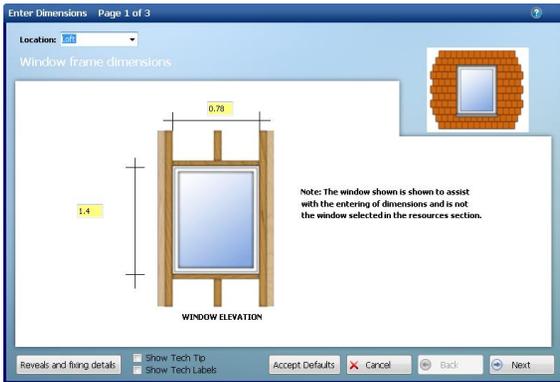
By the end of this exercise, your plans will look like this:



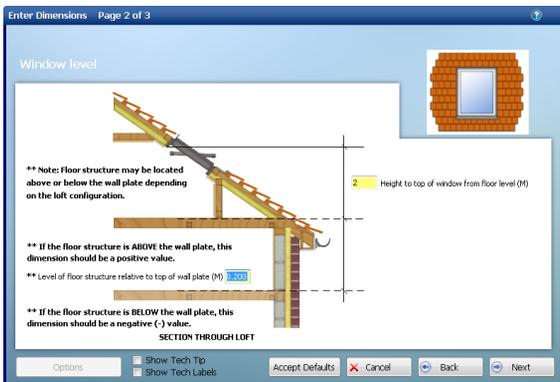
When inserting roof windows, you are prompted to enter the height of the top of the windows from the attic floor. **PlansXpress®** uses this information to place the window vertically, so all you have to do is place the window horizontally along the roof.



1. Press the Attic dropdown button on the Architectural tab.
2. Click on the item called Roof Windows.
3. Click on the dimensional template called Velux M08 780 x 1400 Window.



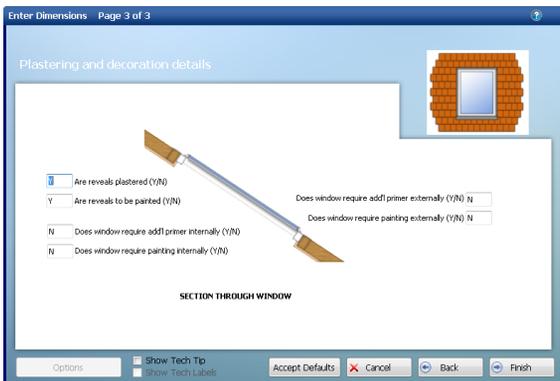
4. The Window frame dimensions are fine, so click Next.



5. Set the Height to top of window to 2. This means the top of the window is 2m from the floor, measured vertically.

6. Ensure the Attic floor level relative to top of wall plate is set to 0.2.

7. Click Next.

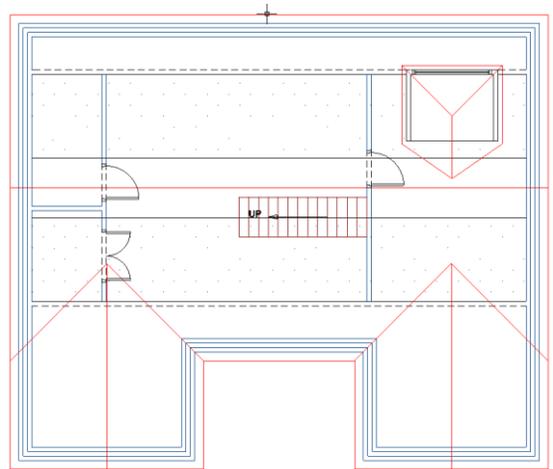


8. Review the Plastering and cill details and once you're happy with the options, click Finish.

The Command Window prompts: Select roof eaves line

9.  Click on the eaves line to the rear of the roof.

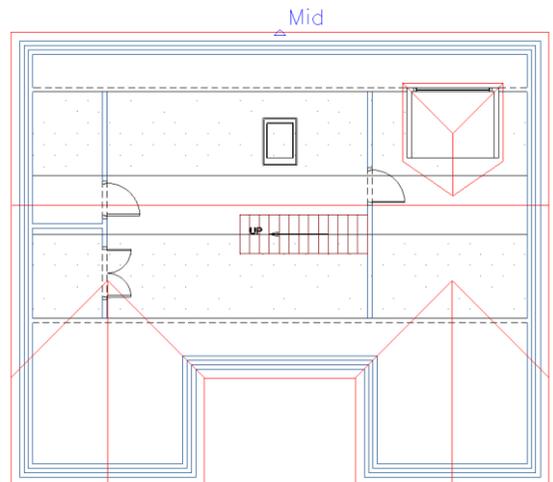
This indicates that the window is to be placed on this slope of roof.



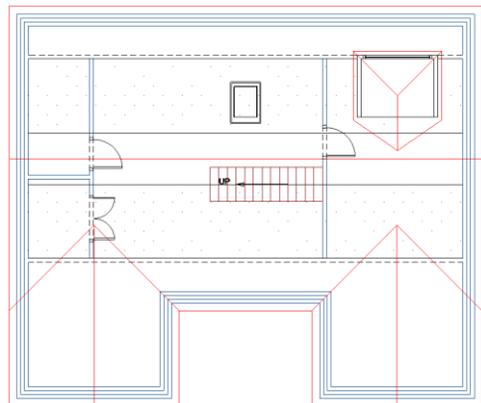
The Command Window prompts: Select Window Position

First let's place the roof window in the centre of the roof.

10. Hover your mouse over the middle of the rear external wall until the 'Mid'  snap point appears.
11.  Click the left mouse to place the roof window.



PlansXpress® has automatically placed the window halfway between the two ends of the roof.

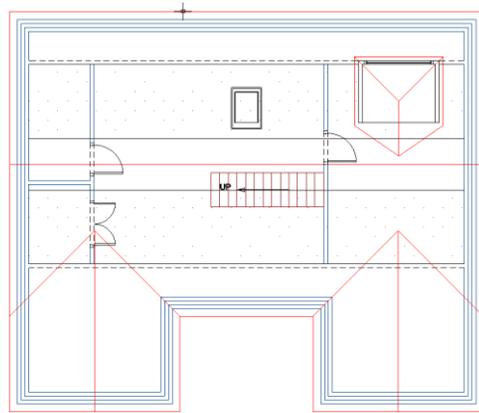


12.  Click the right mouse button to place another roof window of the same size and specification.

This time we will place the window by eye.

The Command Window prompts: Select roof eaves line

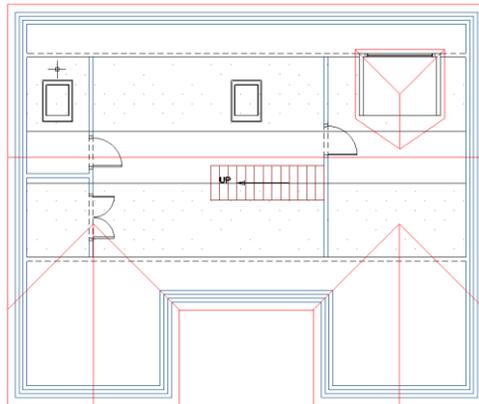
13.  Click on the eaves line to the rear of the roof once again.



The Command Window prompts: Select Window Position

14. Hover your cursor just to the left of the bathroom wall, so the window is positioned in the bathroom.

15.  Once you're happy with the position of the second window, click the left mouse button to place it.

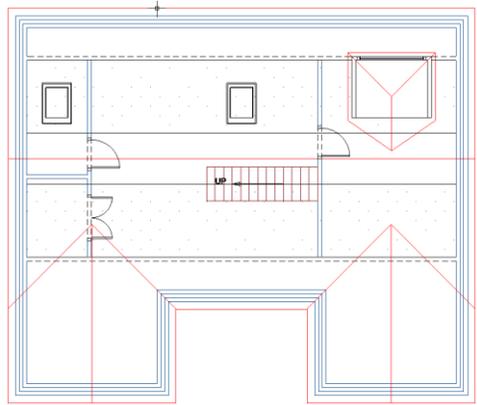


16.  Click the right mouse button to place another roof window of the same size.

We'll place the final window in the middle of the two windows we've already placed. You could measure the distance between the two windows and place the roof window at the point midway between them using the arrow keys, but again, we'll place the window by eye.

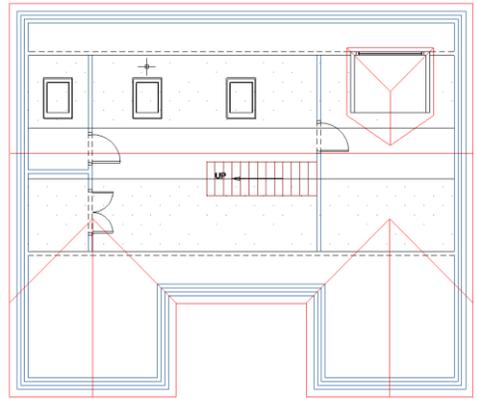
The Command Window prompts: Select roof eaves line

17.  Click on the eaves line to the rear of the roof once again.

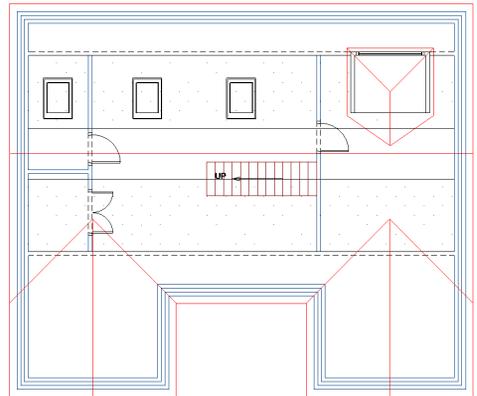


The Command Window prompts: Select Window Position

18. Hover your cursor midway between the two roof windows you've already placed.
19.  Once you're happy with the position of the window, click the left mouse button to place it.



Once complete, your loft should look like this:



20.  Press the Save button.

MARKING OUT THE LOFT FLOOR



This section of the Tutorial talks you through marking out the different sections of the attic floor. The sections of floor which make up the main attic floor require additional strengthening whereas the side void areas, which will be used for storage, can be constructed to a lower specification.

During this exercise, you will learn how to:

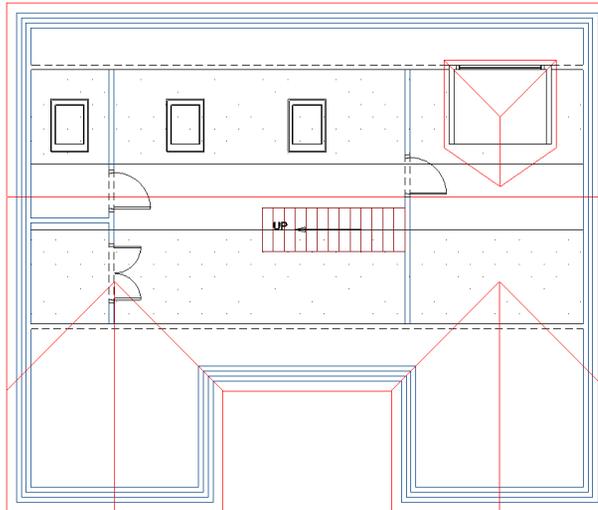
- mark out areas of attic floor.

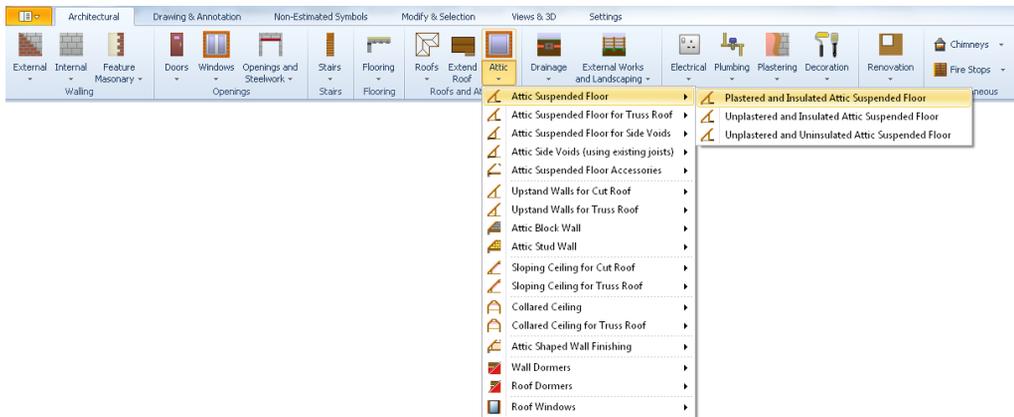
Plus you will revise how to:

- apply perimeter sealant to an area of floor.

You will need to refer to Diagram L, on page 218, during this exercise.

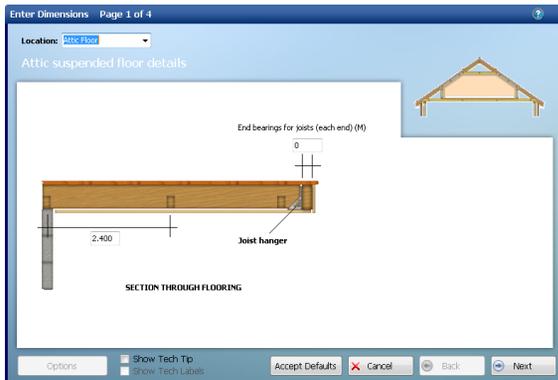
By the end of this exercise, your plans will look like this:



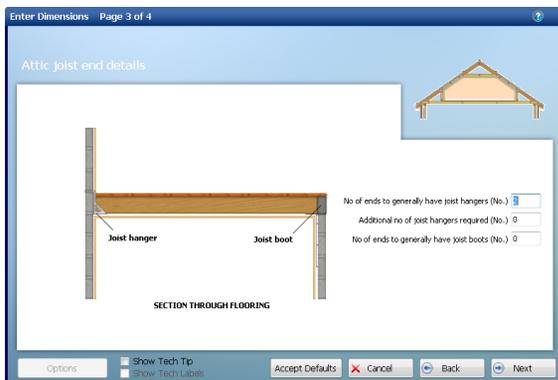


1. Press the Attic dropdown button on the Architectural tab.
2. Click on the Attic Suspended Floor option.
3. Click on the dimensional template called Plastered and Insulated Attic Suspended Floor.

The Suspended floor typical house floor Dimensions Wizard pops up. We will start by drawing the main section of floor at the top of the stairs, labelled Section 1. This area of floor is hung from the upstand at either end, so requires joist hangers at either end.



4. Review the Attic suspended floor details and then click Next.
5. Review the next page of Attic suspended floor details and then click Next.



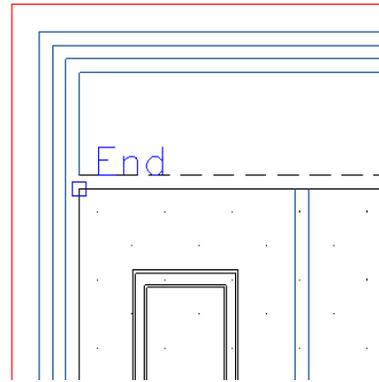
6. Set the No of ends to generally have joist hangers to 2.
7. Set the Additional no of joist hangers required to 0.
8. Set the No of ends to generally have joist boots to 0 and click Next.
9. Once you're happy with the Attic floor plastering and decoration details, click Finish.

The Command Window prompts: Give First Corner of Floor (on Supporting Wall 1).

We'll use the rear upstand as Supporting Wall 1.

10. Hold your cursor over the interior corner where the rear upstand meets the external wall on the left of the loft until the 'End'  snap point appears.

11.  Click the left mouse button to register the first corner of the floor.

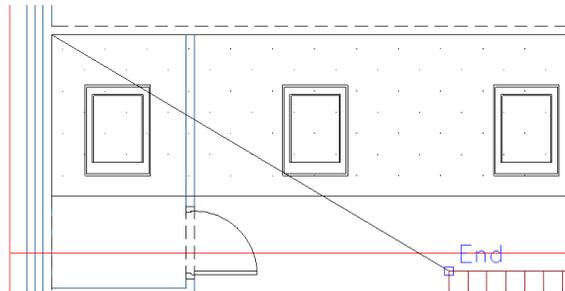


The Command Window prompts: Give Second Corner of Floor (on Supporting Wall 1 to indicate Floor Width at Right Angles to the Joists).

This section of floor ends at the top of the stairs, so we'll use the X coordinate of the top of the stairs to place the second corner of the floor.

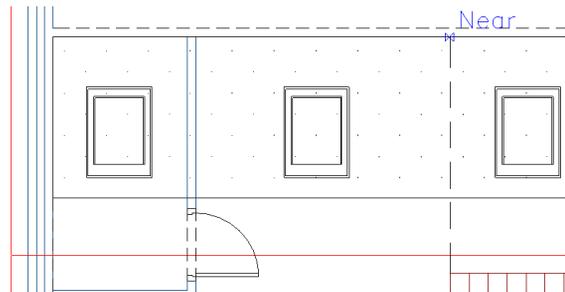
12. Hold your cursor over the top left corner of the staircase (as you look at it on screen) until the 'End'  snap point appears.

13.  Press the X key on your keyboard.



14. Hold your cursor over the internal side of the rear upstand until a 'Near'  snap point appears.

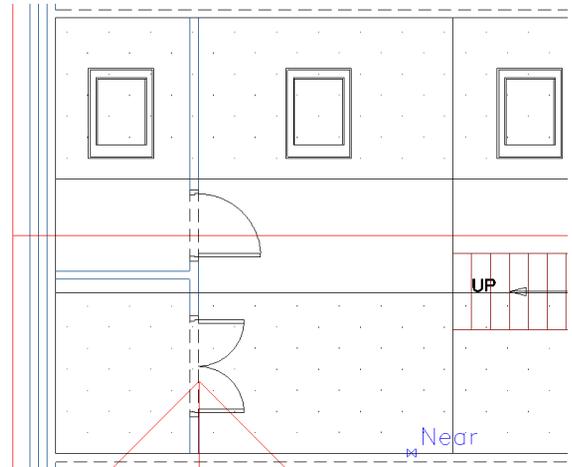
15.  Click the left mouse button to register the position of the second corner of the floor.



The Command Window prompts: Indicate the length of the floor (to give Clear Span of Joists).

16. Hold your cursor over the internal side of the front upstand until a 'Near'  snap point appears.

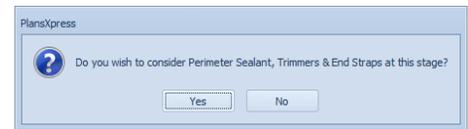
17.  Click the left mouse button to register the clear span of the floor.



You've finished marking out first floor section.

A dialog box pops up asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps. If you click Yes, you'll be able to mark out Perimeter Sealant, Trimmers and End Straps for this section of flooring.

We'll click No for now, and place the Perimeter Sealant after we've finished marking out the entire suspended floor.



18. Click No.

Section 1 of the attic floor is complete, so let's now draw Section 4, to the right of the staircase, which has the same specification as Section 1.

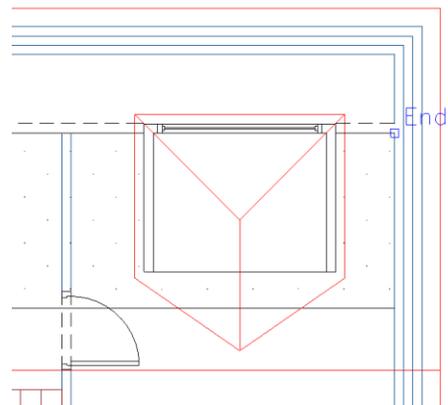
19.  Click the right mouse button to tell **PlansXpress**[®] you want to draw another section of floor with the same specification.

The Command Window prompts: Give First Corner of Floor (on Supporting Wall 1).

Again, we'll use the rear upstand as Supporting Wall 1.

20. Hold your cursor over the interior corner of where the rear upstand meets the external wall on the right of the loft until the 'End'  snap point appears.

21.  Click the left mouse button to register the first corner of the floor.

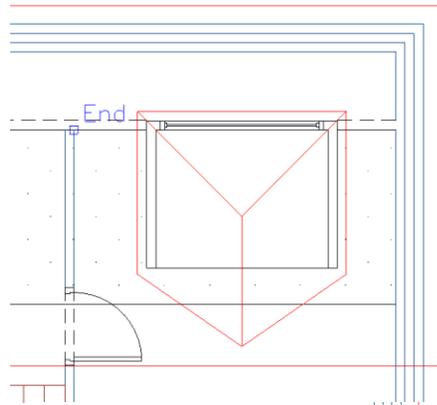


The Command Window prompts: Give Second Corner of Floor (on Supporting Wall 1 to indicate Floor Width at Right Angles to the Joists).

This section of floor also ends on the landing side of the stud wall partition.

- 22. Hold your cursor over the point where the landing side of the stud wall meets the internal side of the rear upstand and an 'End' or 'Int' snap point appears.

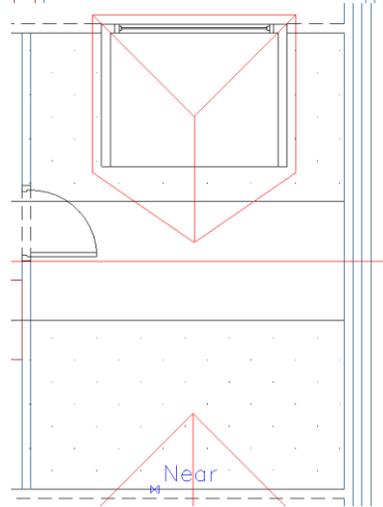
- 23.  Click the left mouse button to register the position of the second corner of the floor.



The Command Window prompts: Indicate the length of the floor (to give Clear Span of Joists).

- 24. Hold your cursor over the internal side of the front upstand until a 'Near' snap point appears.

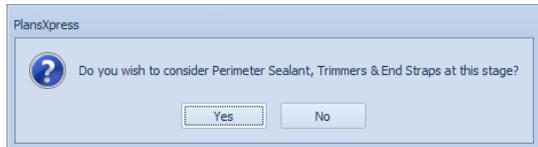
- 25.  Click the left mouse button to register the clear span of the floor.



You've finished marking out second section of attic floor.

The dialog box pops up again asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps at this point.

- 26. Click No again.



Now we need to fill in the gaps in the attic floor by drawing Sections 2 and 3.

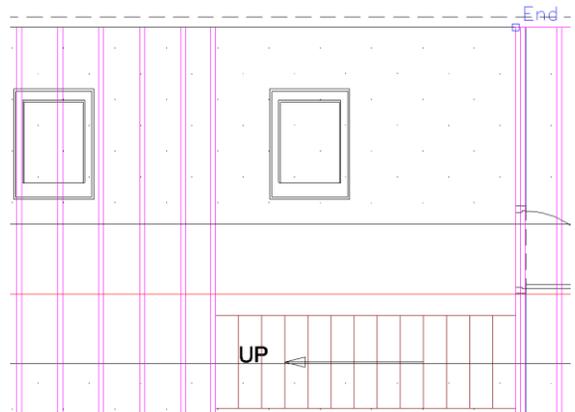
- 27.  Click the right mouse button to draw another section of floor.

The Command Window prompts: Give First Corner of Floor (on Supporting Wall 1).

Again, we'll use the rear upstand as Supporting Wall 1.

28. Hold your mouse over the top right corner of Section 1 of the attic floor and the 'End'  snap point should appear.

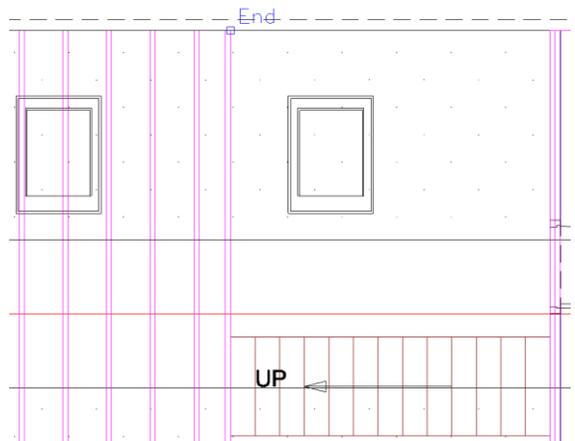
29.  Click the left mouse button to register the first corner of the floor.



The Command Window prompts: Give Second Corner of Floor (on Supporting Wall 1 to indicate Floor Width at Right Angles to the Joists).

30. Hold your cursor over the top left corner of Section 4 of the attic floor and either the 'End'  or the 'Int'  snap point should appear. You can use either of these snap points.

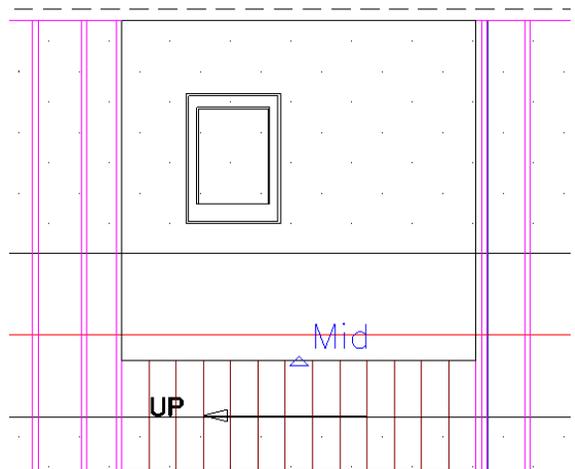
31.  Click the left mouse button to register the position of the second corner of the floor.



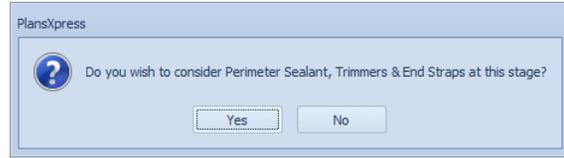
The Command Window prompts: Indicate the length of the floor (to give Clear Span of Joists).

32. Hold your cursor over the top edge of the staircase (as you view it on screen) until an appropriate snap point pops up.

33.  Click the left mouse button to register the clear span of the floor.



The dialog box pops up again asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps at this point.

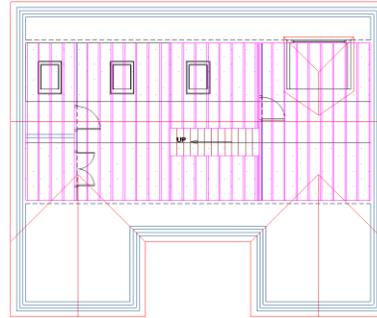


34. Click No again.

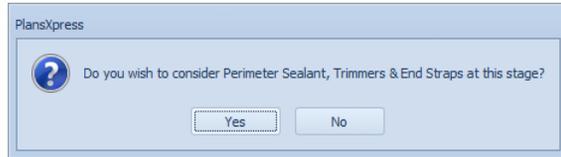
35.  Click the right mouse button to draw the final section of floor to the main area of attic. This section of floor also requires joist hangers to one end.

36. Repeat the same process to place Section 4 of the attic floor.

Once complete, your floor will look like this:



The dialog box asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps pops up once more.



37. Click No again. We'll place these items after we've drawn the floor to the side voids.

The floors to the side voids will be constructed to a different specification, so we'll use the Architectural tool specifically designed for floors to side voids.

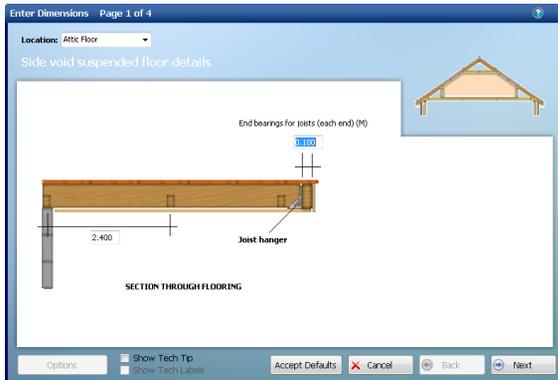


38. Press the Attic dropdown button again.

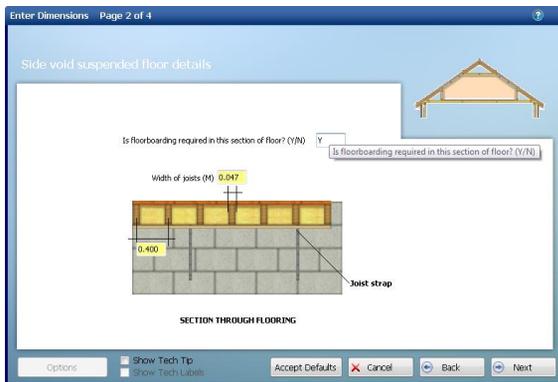
39. Click on the item called Attic Suspended Floor for Side Voids.

40. Click on the dimensional template called Plastered and Insulated Side Voids with Flooring and New Joists

The Attic Suspended Floor for Side Voids Dimensions Wizard pops up.

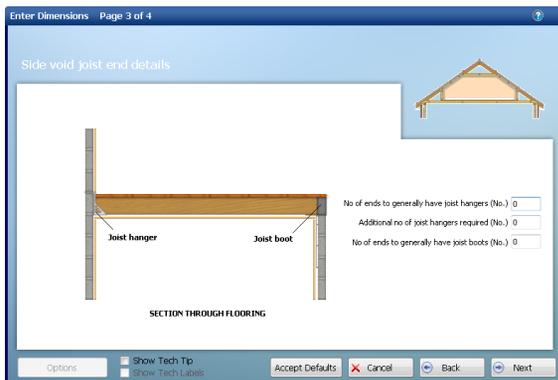


41. Review the Side void suspended floor details and then click Next.



42. Ensure that Is floorboarding required in this section of floor? is set to Y.

43. Click Next.



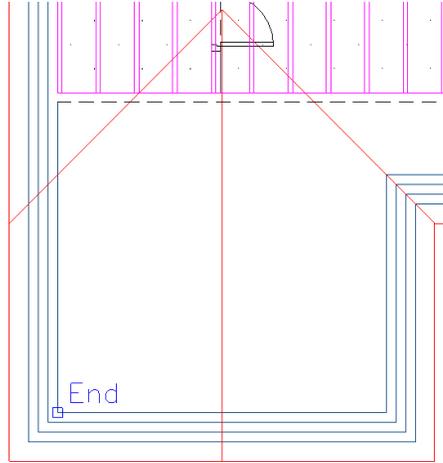
44. Set the No of ends to generally have joist hangers to 0.
45. Set the Additional no of joist hangers required to 0.
46. Set the No of ends to generally have joist boots to 0 and click Next.
47. Once you're happy with the Attic floor plastering and decoration details, click Finish.

The Command Window prompts: Give First Corner of Floor (on Supporting Wall 1).

Let's draw Section 5 of floor in the left gable, using the gable wall as the Supporting Wall.

48. Hold your cursor over the interior corner of where the gable end meets the left wall of the house until the 'End'  snap point appears.

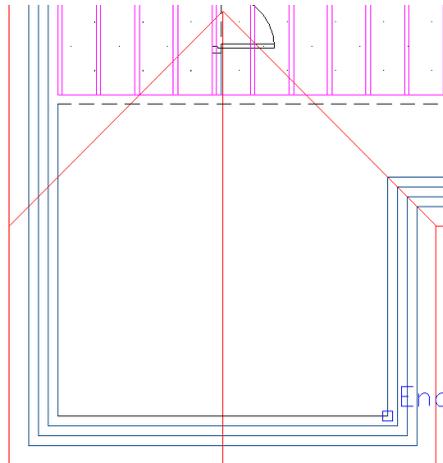
49.  Click the left mouse button to register the first corner of the floor.



The Command Window prompts: Give Second Corner of Floor (on Supporting Wall 1 to indicate Floor Width at Right Angles to the Joists).

50. Hold your cursor over the corresponding point on the right hand side of the gable until either the 'End'  or 'Int'  snap point appears. You can use either of these snap points.

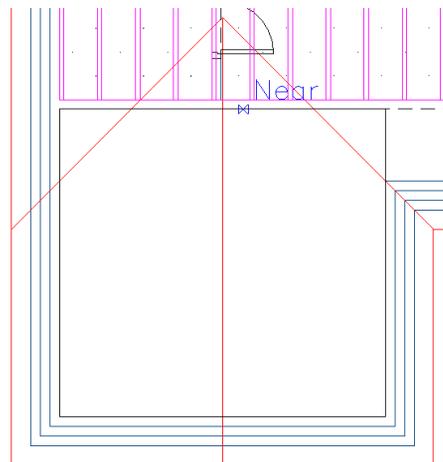
51.  Click the left mouse button to register the position of the second corner of the floor.



The Command Window prompts: Indicate the length of the floor (to give Clear Span of Joists).

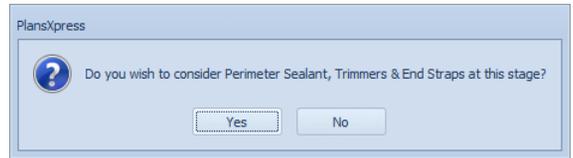
52. Hold your cursor over the outside of the upstand until the 'Near'  snap point appears.

53.  Click the left mouse button to register the clear span of the floor.



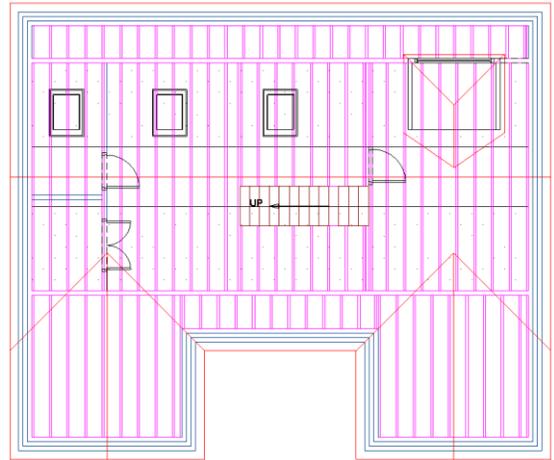
The dialog box asking whether you wish to consider Perimeter Sealant, Trimmers and End Straps pops up once more.

54. Click No.

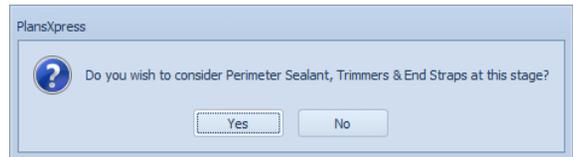


55.  Click the right mouse button to draw another section of side void flooring.

56. Repeat steps 48 to 54 to complete the remaining sections of floor to the side voids, using the front walls of the house as the supporting wall.



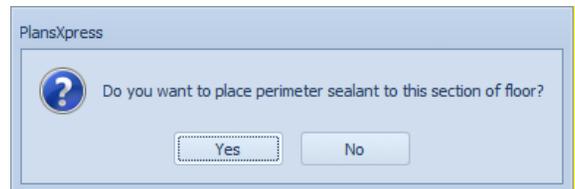
57. After you've marked out the final section of floor, click Yes to the dialog box which pops up asking if you wish to consider Perimeter Sealant, Trimmers and End Straps.



Let's now place the perimeter sealant and trimmers.

A dialog box pops up asking if you want to place perimeter sealant on this section of floor.

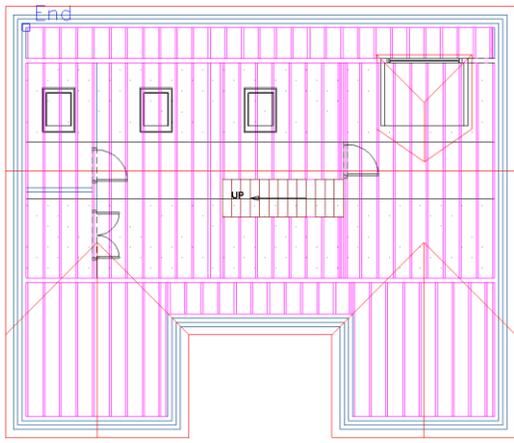
58. Click Yes.



We want to place sealant around the perimeter of the attic floor including the side voids.

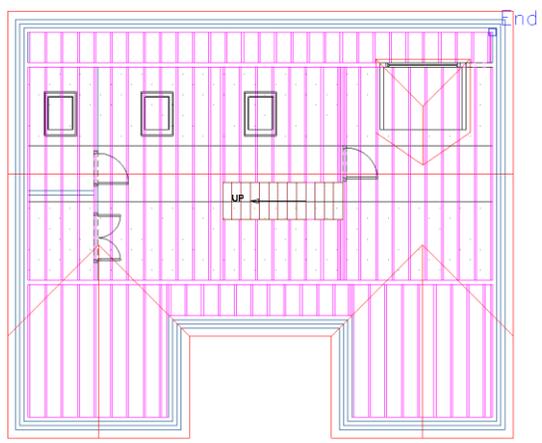
The Command Window prompts: Give Start Point.

- 59.  Click on one corner of the suspended floor.

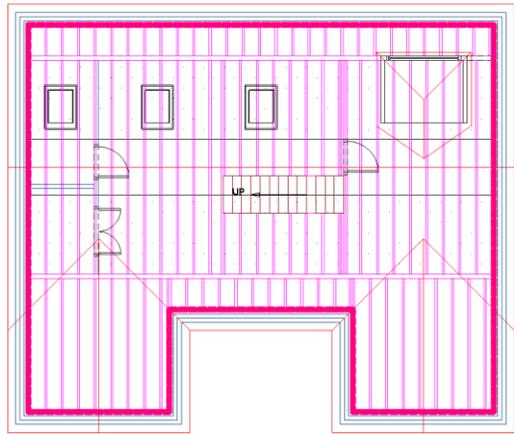


The Command Window prompts: Give Next Point.

- 60.  Tracing the perimeter of the floor, click round each corner until you've clicked on all 8 corners of the floor.

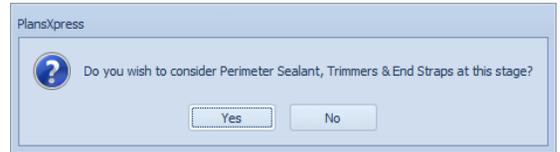


- 61.  Once you've clicked on the final corner of the floor, click the C key to complete the sealant.



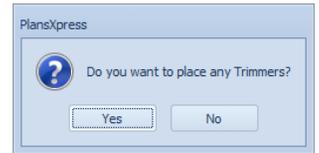
The dialog box pops up asking if you want to place any more perimeter sealant on this section of floor.

62. Click No.



A dialog box pops up asking if you want to place any trimmers. We placed the trimmers when we marked out the opening in the loft so don't need to place any now.

63. Click No.



A dialog box pops up asking if you wish to place any end straps.

64. We don't require any end straps for the attic floor, so click No.

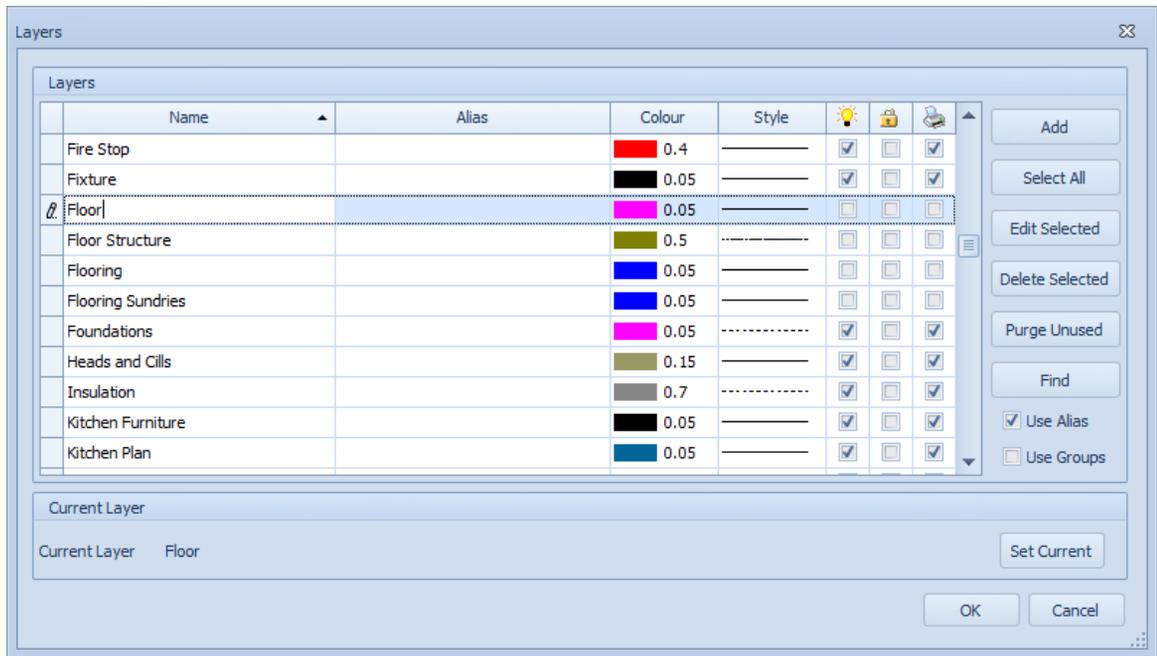


The attic floor is now complete. Now we've drawn the floor, we can switch off floor layers to keep the page uncluttered.



65. Press the Layers button (Views & 3D tab).

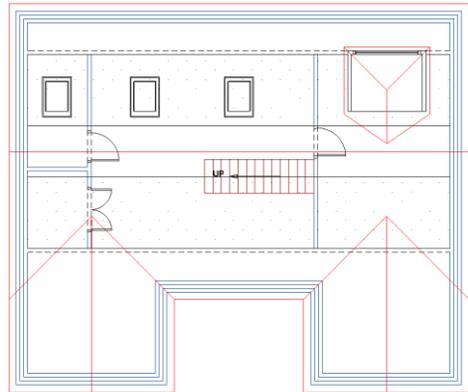
The Layers dialog box pops up.



66. Untick the Light bulb and Printer tick boxes associated with the Floor and Sealant Layers.

67. Click OK.

Your plans should now look like this:



68.  Press the Save button.

ADDING THE BATHROOM SUITE



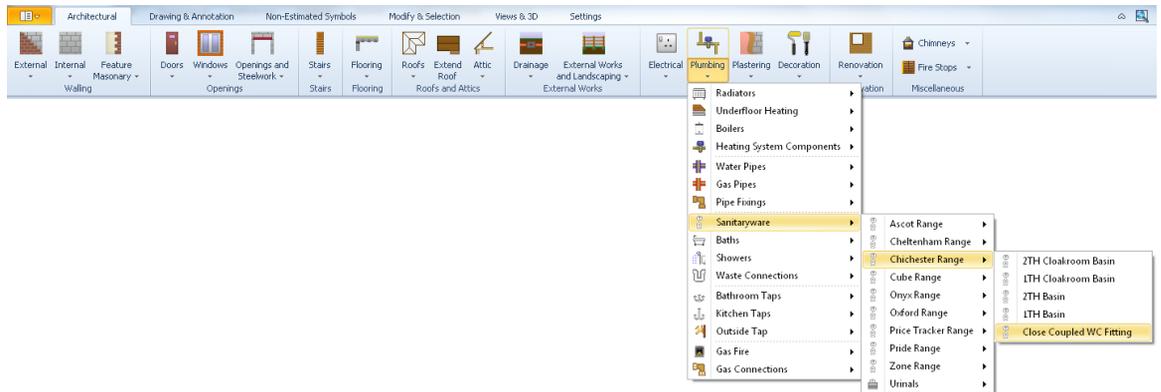
This section of the Tutorial talks you through adding a bathroom to your plans.

During this exercise you will revise how to:

- add estimated Baths and Sanitaryware to your plans.

You will need to refer to Diagram I, on page 215, during this exercise.

We'll start by adding the WC.

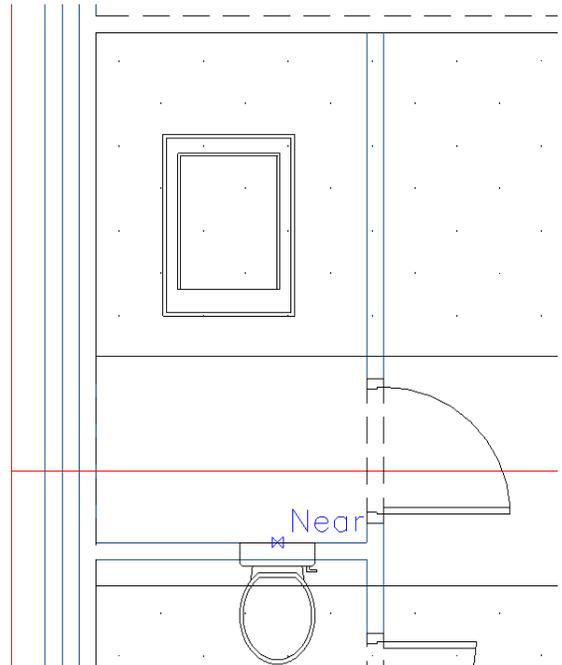


1. Press the Plumbing dropdown button on the Architectural tab.
2. Click on the Sanitaryware type.
3. Click on the Chichester Range option.
4. Click on the item called Close Coupled WC Fitting.

The Command Window prompts: Give Insertion Point

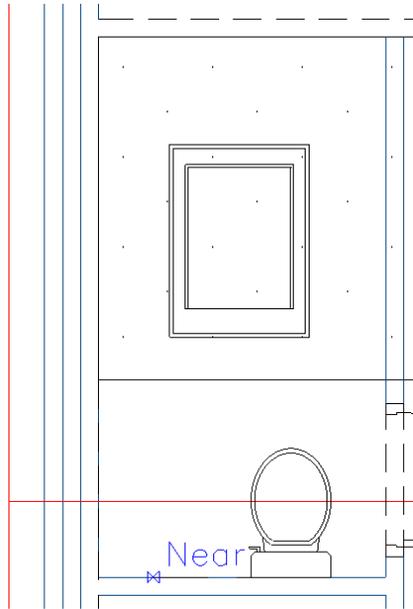
5. Place your cursor over the inside of the horizontal bathroom wall, towards the door, and locate a 'Near' snap point. 

6.  Click the left mouse button to place the WC.



The Command Window prompts: Give Point to Rotate To

7.  Hold down the Shift key on your keyboard.
8. Move your cursor to the left until the WC sits flush against the wall.
9.  Click the left mouse button to register the orientation of the WC.

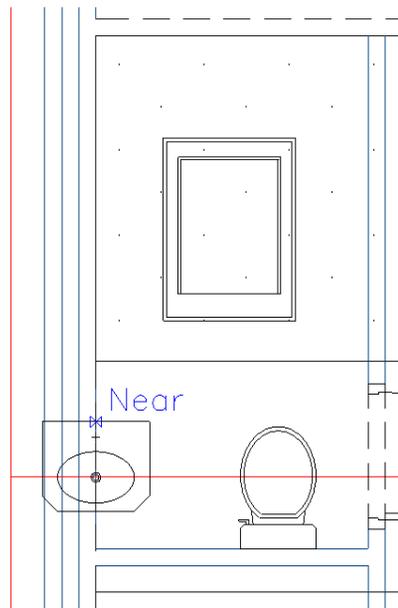


Now let's add the basin.

10.  Press the dropdown arrow on the Plumbing menu.
11. Click on the Sanitaryware type.
12. Click on the Chichester Range option.
13. Click on the item called 2TH Cloakroom Basin.

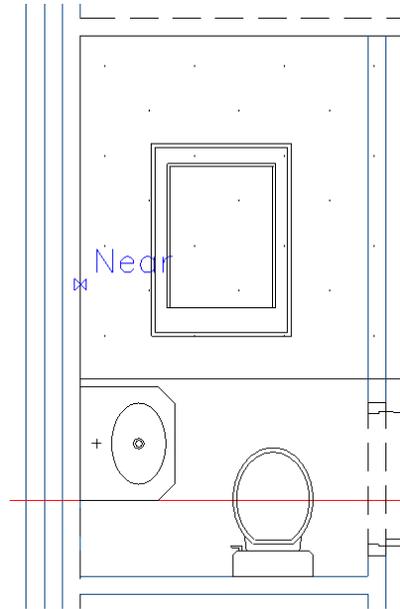
The Command Window prompts: Give Insertion Point

14. Place your cursor over the inside of the external wall, towards the partition wall, on a 'Near'  snap point.
15.  Click the left mouse button to place the basin.



The Command Window prompts: Give Point to Rotate To

16.  Hold down the Shift key on your keyboard.
17. Move your cursor up the screen until the basin sits flush against the external wall.
18.  Click the left mouse button to register the orientation of the basin.

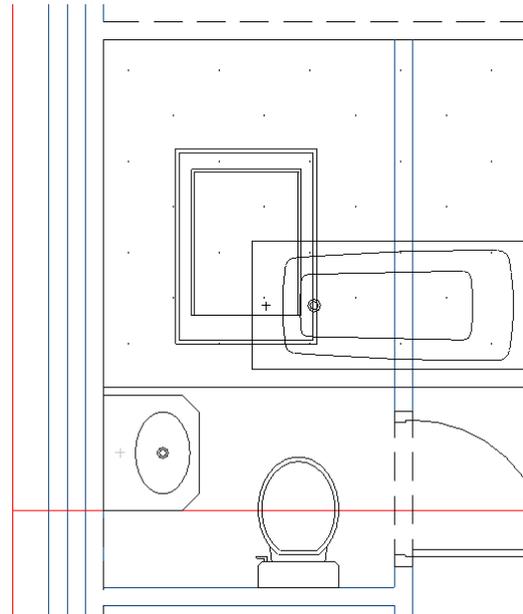


Finally, let's place the bath.

19.  Press the dropdown button on the Architectural tab.
20. Click on the item called Baths.
21. Click on the Standard Bath option.
22. Click on the dimensional template called Bath 2TH no grip 1500 x 700.

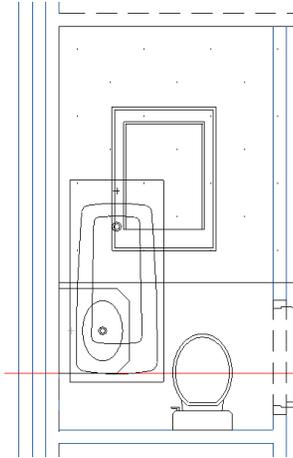
The Command Window prompts: Give Insertion Point

23. Place your cursor in the middle of the bathroom. Because of the position of the insertion point on the bath symbol, we're going to have to insert the bath, and then move it into place.
24.  Click the left mouse button to place the bath.

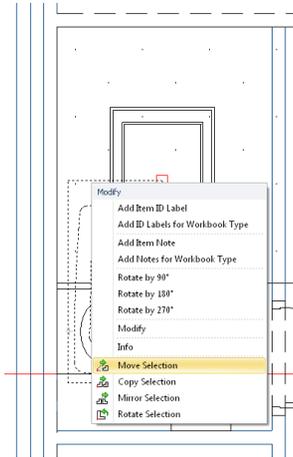


The Command Window prompts: Give Point to Rotate To

- 25.  Hold down the Shift key on your keyboard.
- 26. Move your cursor down the screen until the bath is pointing down the screen.
- 27.  Click the left mouse button to register the orientation of the bath.

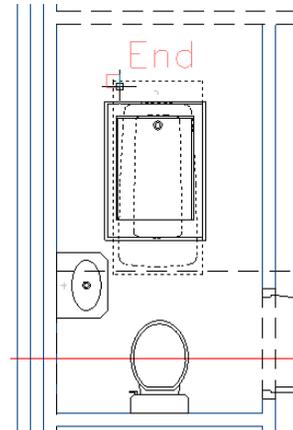


- 28.  Click anywhere on the bath to select it.
- 29.  Click the middle mouse button.
- 30. Click Move Selection on the menu which pops up.



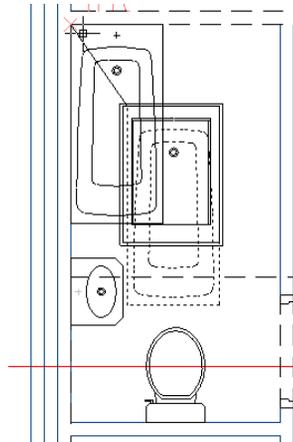
The Command Window prompts: Give Reference Point

- 31. Place your cursor over the top left corner of the bath on the 'End'  snap point.
- 32.  Click the left mouse button to select the reference point.

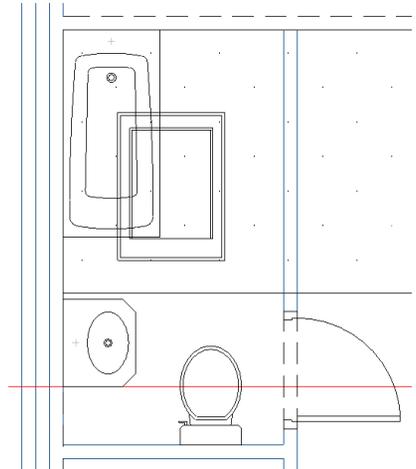


The Command Window prompts: Give Point To Move To

33. Place your cursor over the inside of the external wall where it meets the upstand wall.
34.  Once you're happy with the position of the bath, click the left mouse button to place it.



Your bathroom should now look like this:



35.  Press the Save button.

FINISHING OFF THE LOFT PLAN



This section of the Tutorial talks you through adding some extra details to your plans, such as room labels and dimension lines.

During this exercise, you will revise how to:

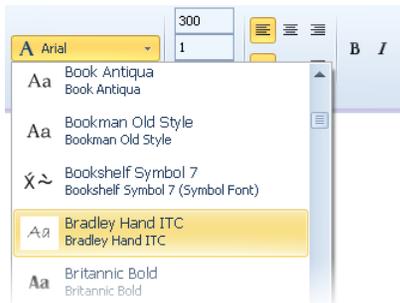
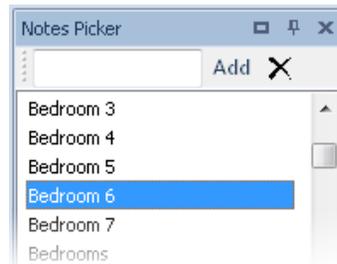
- add room labels to your plans using the Notes Picker;
- change the font of a text label;
- change the font size of a text label;
- add dimension lines.

You will need to refer to Diagram I, on page 215, during this exercise.

1. You should see the Notes Picker on the right side of the plan. If you cannot see the Notes Picker make sure Notes Picker is ticked on the Show/Hide panel on the Views & 3D tab.

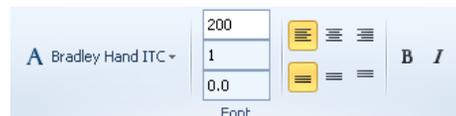


2.  Double click on the Bedroom 6 label in the Notes Picker window to select it.



3. Select an alternative font from the Font drop down box.

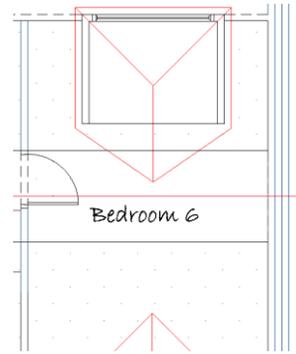
4. Set the Height to 200



5.  Press the Enter key on your keyboard so **PlansXpress®** can register the change.

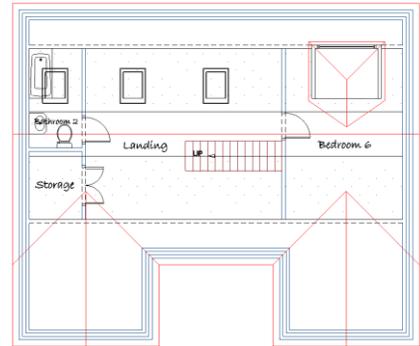
The Command Window prompts: Give Text Point

6.  Position the text using your cursor and click the left mouse button to place the room label.



7. Using the Notes Picker, add labels for the Landing, Bathroom and Storage, as per Diagram I on page 215. **PlansXpress®** will remember the Font and Height you selected previously for any labels you subsequently add.

You might find you need to make the Bathroom label a bit smaller so that it fits neatly.



8. You can add a Storage label by typing Storage into the input box at the top of the Notes Picker and pressing the Add button.



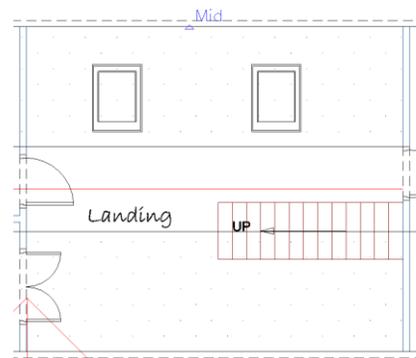
We can now add some dimensions for the loft itself. Let's start by adding a dimension line for showing the width of the loft.

9.  **Linear Dimension** Press the Linear Dimensions button (Drawing & Annotation tab)

The Command Window prompts: Give First Point.

10. Place your cursor over the inside of the rear upstand until you locate a 'Near'  snap point.

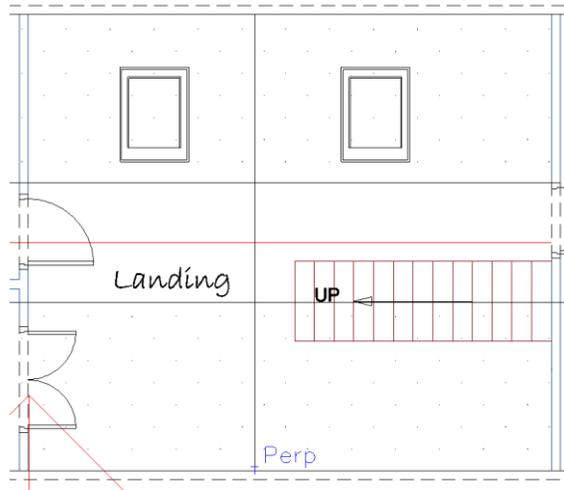
11.  Click the left mouse button to register the first point of the dimension line.



12. The Command Window prompts: Give Second Point.

Place your cursor over the inside of the front upstand until you locate the 'Perp' T snap point.

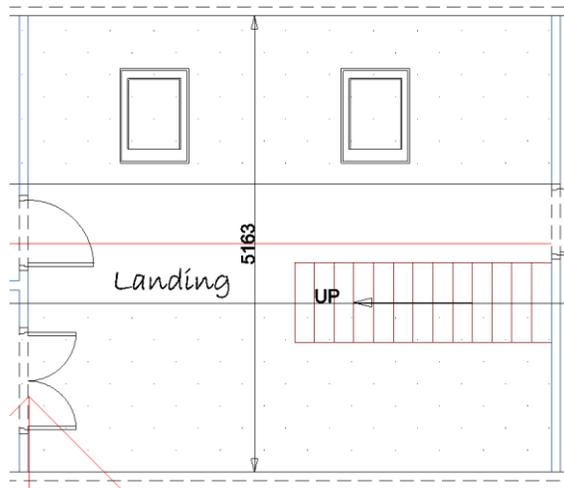
13.  Click the left mouse button to register the second point of the dimension line.



The Command Window prompts: Give Dimension point.

14. Move your cursor to the place where you want to position the dimension line.

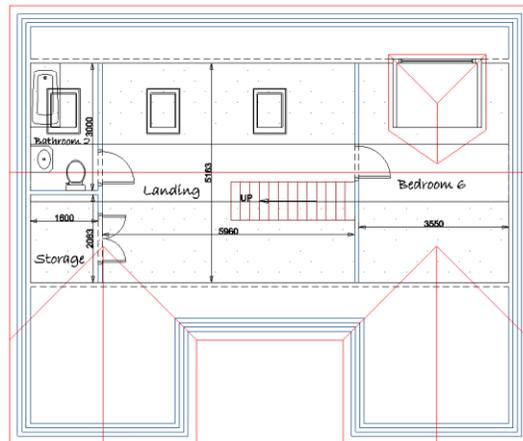
15.  Click the left mouse button to register the position of the dimension line.



16.  Click the right mouse button to place another dimension line.

17. Continue adding dimension lines as shown on Diagram I on page 215.

18.  Press the Save button.



DEVELOPING THE LOFT SECTION



This section of the Tutorial guides you through drawing a section of the loft to show upstand and ceiling heights.

During this exercise, you will learn how to:

- develop a loft section using construction lines;
- draw parallel lines using the Offset button;
- insert angular construction lines.

Plus you will revise how to:

- draw a side elevation;
- trim/extend lines.

You will need to refer to Diagrams H and K, on pages 214 and 7, during this exercise.

Now your loft plan is complete, you can create a section of the loft.

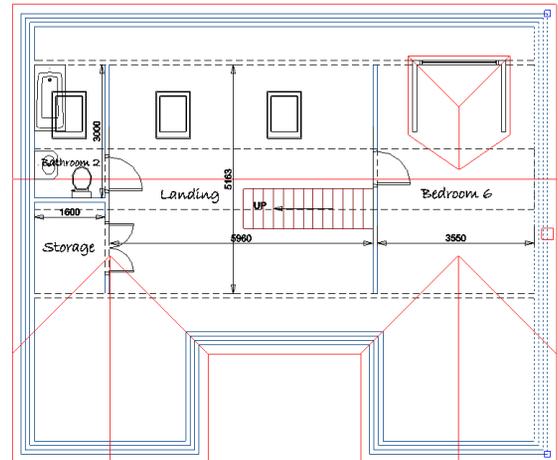
We need to start by drawing a side elevation of the loft. This side elevation will form the basis of our section. We want to create a right elevation of the loft.



1. Press the Draw Elevation button (Views & 3D tab).

The Command Window prompts: Select wall on which elevation will be based.

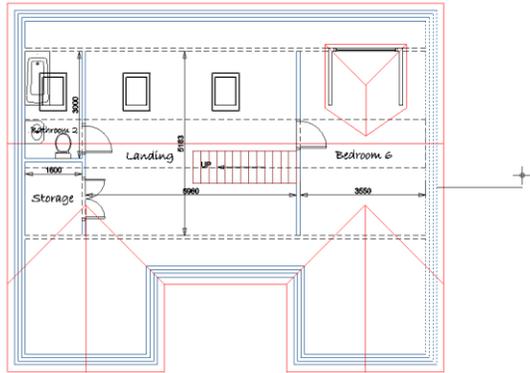
2.  Click on the right external wall of the house.



The Command Window prompts: Give observation point for elevation.

3. Move your cursor to the right of the wall.

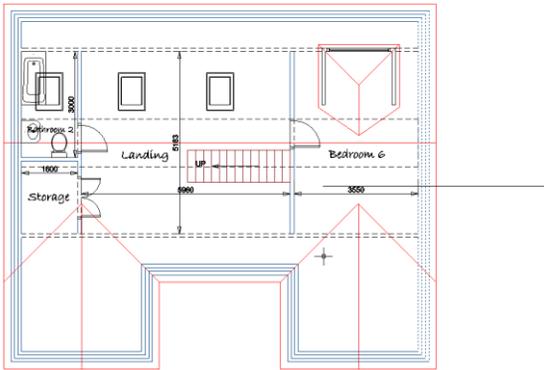
4.  Click the left mouse button to register the viewpoint.



The Command Window prompts: Give depth of view point for elevation.

5. Move your cursor beyond the ridge of the dormer to ensure the dormer roof and valley roof are included in the elevation.

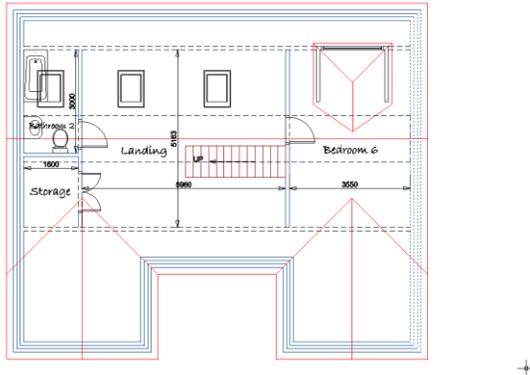
6.  Click the left mouse button to register the depth of the elevation.



The Command Window prompts: Give left extent point for elevation.

7. Move your cursor down the screen beyond the end of the wall.

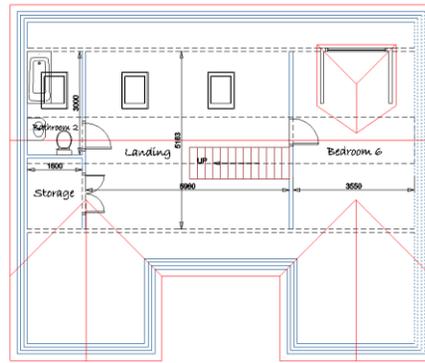
8.  Click your left mouse button to register the left extent of the elevation.



The Command Window prompts: Give right extent point for elevation.

9. Move your cursor up the screen beyond the other end of the wall.

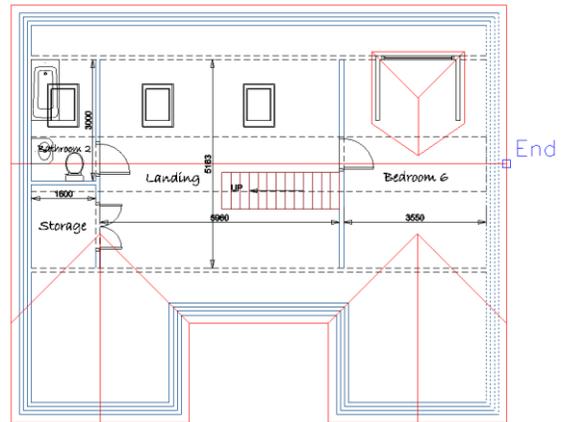
10.  Click your left mouse button to register the right extent of the elevation



The Command Window prompts: Give reference point for elevation.

11. Hold your cursor over the roof ridge at the right gable end until you find the 'End'  snap point.

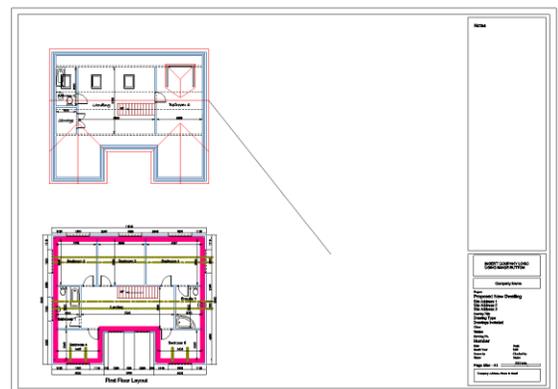
12.  Click the left mouse button to register the reference point.



We need to place the elevation in the bottom right corner of the drawing page.

The Command Window prompts: Give relative position for elevation. Note that the 'reference point' will be placed on the given 'relative position'.

13. Move your cursor to the middle of the space in the bottom right of the page.
14.  Click the left mouse button to place the elevation.
15. Click No when the dialog box pops up asking if you want to create elevation for all levels.

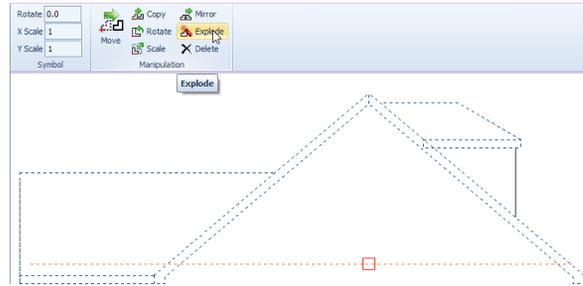


After a few moments the elevation appears on screen.

You'll see that **PlansXpress**® has automatically drawn in a line showing the level of the top of the walls/roof wall plate. This line can be used to draw the loft floor level.

Before we start editing the elevation we'll need to explode it in order to edit the individual lines.

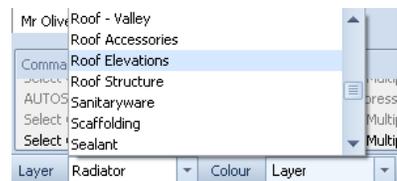
16.  **Explode** Select the elevation by left clicking on any of the lines then click the Explode button.



We'll draw the floor level by using the Offset tool to place a line 200mm above the wall plate level.

We want the lines we add to the section to be on the same Layer as the existing lines in the loft section, so first we need to set the Layer to Roof Elevations.

17. Select Roof Elevations from the Layers drop down box just below the Command Window at the bottom of the plan.

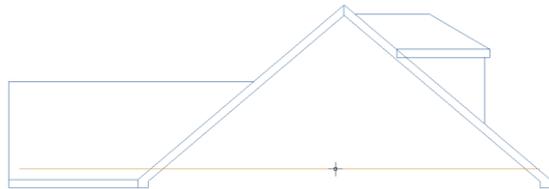


All lines you subsequently draw will be placed on this Layer.

18.  **Offset** Press the Offset button (Drawing and Annotation tab)

The Command Window prompts: Select Line/Arc/Circle/Ellipse/Polyline to Offset

19.  Click on the line representing the wall plate level.



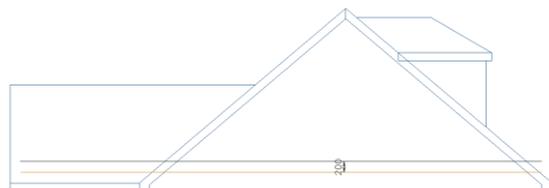
The Command Window prompts: Give Point to Offset To

-  If you move your cursor up the screen, you'll notice a dimension appears to show the distance between the original line and the new offset line. If it doesn't, you may need to switch on X-Y Coordinate mode by pressing F8.

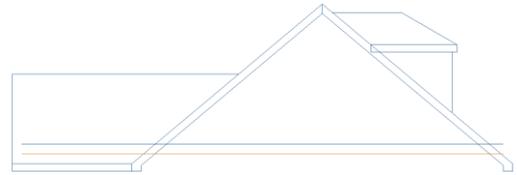
20. Find the point 200mm above the wall plate level.

21.  Click the left mouse button to register the offset point.

Alternatively you can enter 200 into the offset input box which appears in the Properties toolbar at the bottom of your screen.

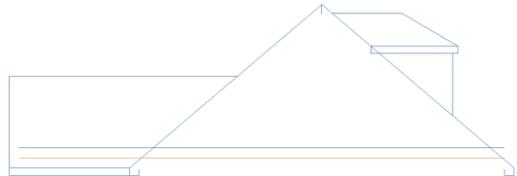


22. **PlansXpress®** draws a parallel line 200mm above the original wall plate level. This new line represents the finished floor level of the loft.



We want to convert this elevation into a structural section of the loft, showing timber widths. The elevation shows the main roof with 150mm bargeboards. We need to show 100mm rafters instead.

23.   Delete the internal roof lines showing the bargeboard width by clicking on them with your left mouse button and pressing the Delete key on your keyboard.

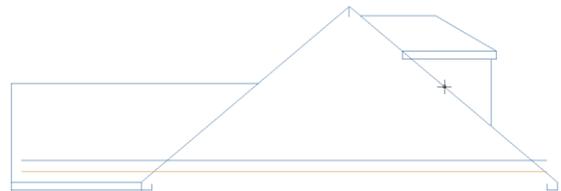


We can now offset the apex lines by 100mm to show the rafter width.

24.  **Offset** Press the Offset button again.

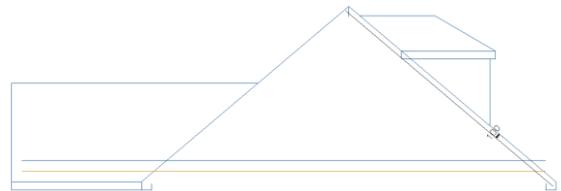
The Command Window prompts: Select Line/Arc/Circle/Ellipse/Polyline to Offset

25.  Click on right-hand apex roof line.

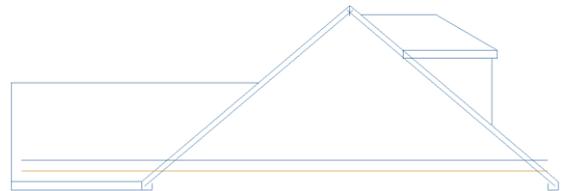


The Command Window prompts: Give Point to Offset To

26. Move your mouse to the left until you find the 100mm offset point.



27.  Click the left mouse button to register the offset position.



28. Repeat these steps to offset the left apex roof line by 100mm.

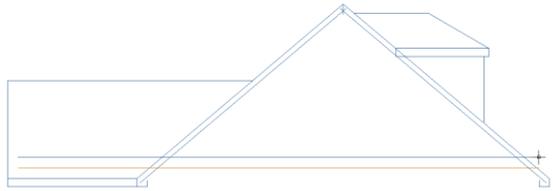
Let's now neaten up the offset lines showing the floor level and rafters using the Trim/Extend button we used earlier in the Tutorial when placing the upstands.

29.  **Trim/Extend** Press the Trim/Extend button (Modify & Selection tab).

The Command Window prompts: Give Arc/Line to Trim/Extend.

Let's start by trimming the floor level line.

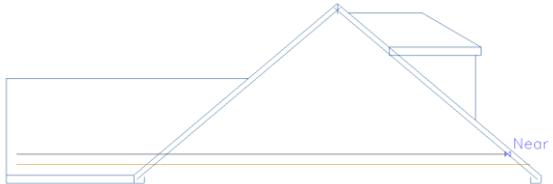
30.  Click on the right end of the floor level line.



The Command Window prompts: Give Point to Trim/Extend to

31.  Press the F7 key to switch on Snap mode.

32. Move your cursor over the inside of the right roof rafter until the 'Near'  snap point appears.



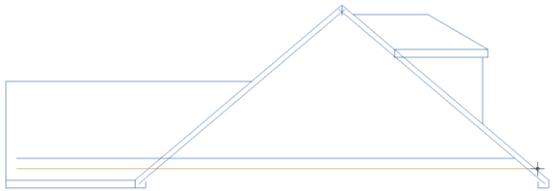
33.  Click your left mouse button to register the new end point of the floor level.

Let's now trim the wall plate level on the right-hand side of the roof.

34.  Click the right mouse button to trim/extend another line.

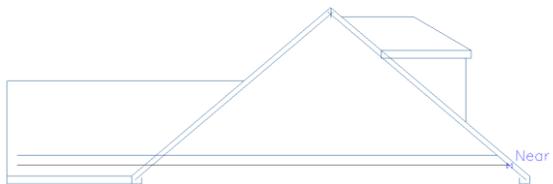
The Command Window prompts: Give Arc/Line to Trim/Extend.

35.  Click on the right end of the wall plate level line.



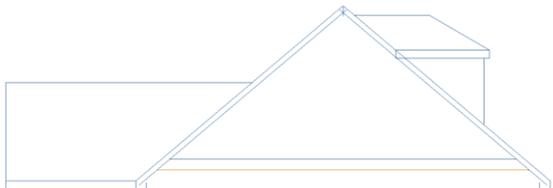
The Command Window prompts: Give Point to Trim/Extend to

36. Move your cursor over the inside of the right roof rafter until the 'Near'  snap point appears.

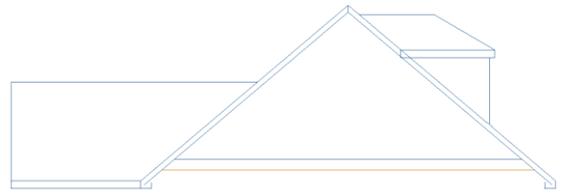


37.  Click your left mouse button to register the new end point of the wall plate level.

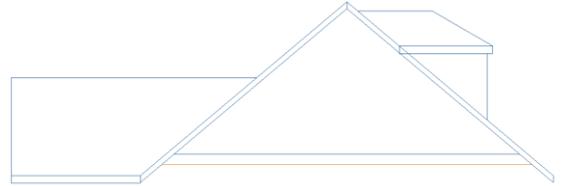
38. Repeat this process to trim the floor level and wall plate level lines on the left-hand side of the roof.



We also need to neaten up the lines on the apex of the roof. Use the Trim/Extend button to shorten each of the rafter lines at the apex, and to shorten the vertical line between the rafters. You'll find there are actually two lines showing the vertical line between rafters, so you'll need to shorten one and delete the other. Use the Trim/Extend button to extend the rafters to the fascia board on either side and to trim the fascia boards.



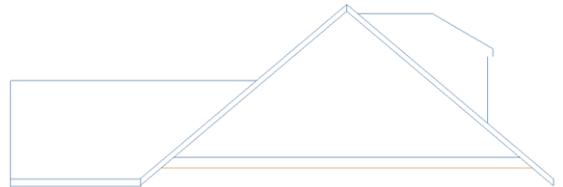
39.   Delete the soffit lines, as they're no longer required, by clicking on them with your left mouse button and pressing the Delete key on your keyboard.



The dormer needs a bit of neatening. First of all we need to delete the dormer valley line and the lines which make up the fascia board, which are surplus to requirements in this instance.

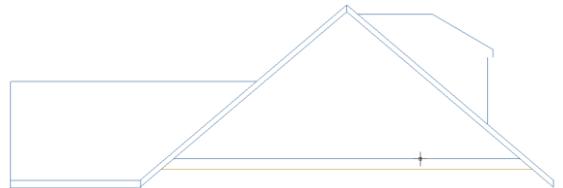
40.   Hold down the Ctrl key and click on each of the lines to select them.

41.  Press the Delete key on your keyboard to remove the lines.



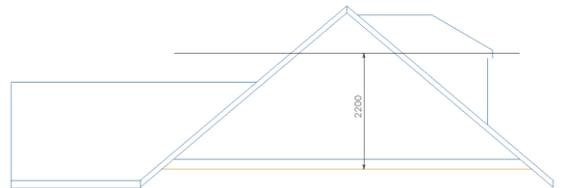
Having deleted the fascia lines, we now need to draw the ceiling height of the dormer.

42. Press the Offset key and select the line representing the floor level.



43. Find the point 2200mm above the wall plate level.

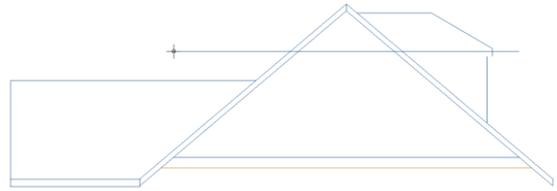
44.  Click the left mouse button to register the offset point.



We now need to trim the roof line to the dormer roof.

45.  Trim/Extend Press the Trim/Extend button.

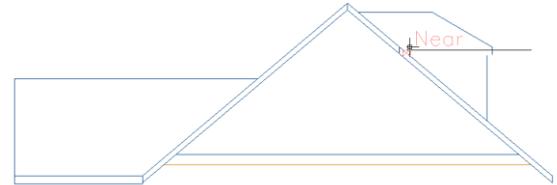
The Command Window prompts: Give Arc/Line to Trim/Extend.



46.  Click the left end of the ceiling line.

The Command Window prompts: Give Point to Trim/Extend to

47. Place your cursor over the point where the dormer ceiling line meets the main roof.



48.  Click the left mouse button to register the new end point of the line.

49. Repeat this process to trim the right side of the ceiling, extend the wall to the ceiling and trim the dormer bargeboard line. You may find that there are more than one line for the bargeboard so trim the first and delete any others that you do not need.

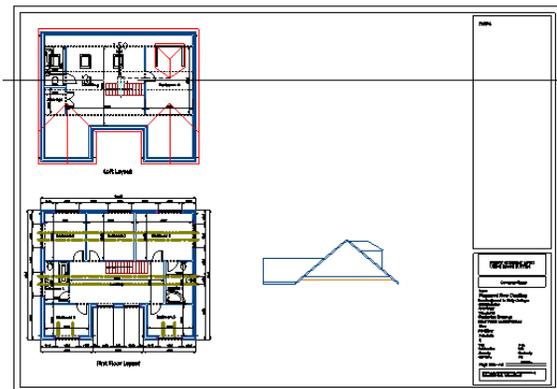


Now we've drawn the elevation, we can develop the section – adding the structure of the loft including upstands and collared ceilings - using construction lines to transpose the upstand and ceiling details from the plan to the elevation. Because everything is drawn to scale, the section through the loft will be 100% accurate.

50.  Horizontal Press the Horizontal Construction Line button (Drawing & Annotation tab).

51. Hold your cursor over the ridge line on the loft plan until you find a 'Near'  snap point.

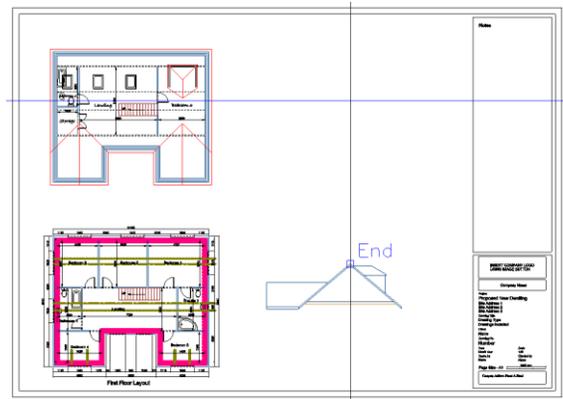
52.  Click your left mouse button to place the Construction Line.



53.  Vertical Press the Vertical Construction Line button.

54. Hold your cursor over the apex ridge line on the side elevation/section until you find an 'End'  snap point.

55.  Click your left mouse button to place the Construction Line.



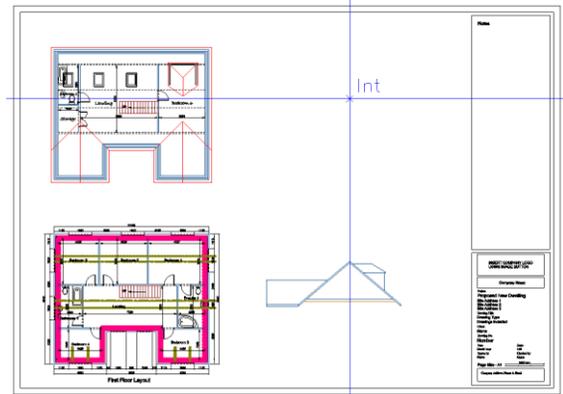
These two Construction Lines allow us to match up the position of ridge in plan with the position of the ridge in elevation.

56.  Press the Angular Construction Line button.

The Command Window prompts: Give Point.

57. Place your cursor over the point where the Horizontal and Vertical Construction Lines intersect until you locate the 'Int'  snap point.

58.  Click your left mouse button to register the one point on the Angular Construction Line.



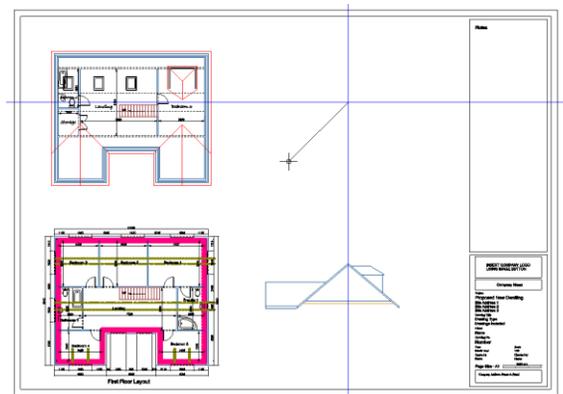
The Command Window prompts: Give Second Point.

59.  Hold down the Shift key on your keyboard.

This locks the Construction Line into 45 degree increments.

60. Move your mouse down and to the left until the Construction Line crosses your screen from bottom left to top right at a 45 degree angle.

61.  Click the left mouse button to register the angle of the line.

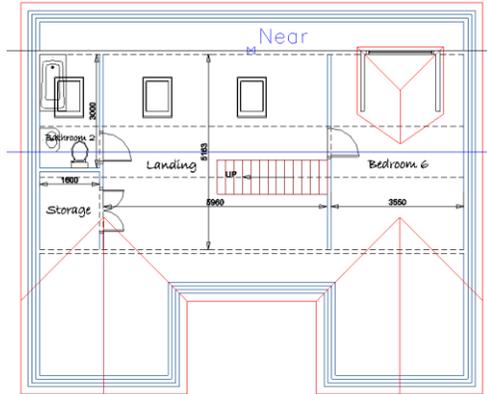


This 45 degree line will allow us to rotate the horizontal lines in the loft plan – the collared ceiling and upstands – round 90 degrees, so that they are transposed into vertical lines on our section. If that sounds confusing now, it will all become clear in a few moments!

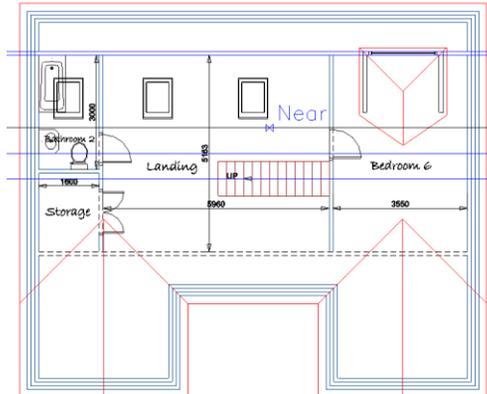
62. We now need to place horizontal Construction Lines through the collared ceiling and upstands in the loft plan. We'll work our way from the top of the plan to make sure we don't miss any of the lines we need.

63.  Press the Horizontal Construction Line button.

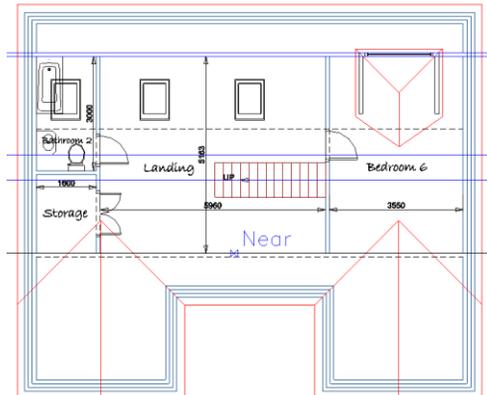
64.  Starting at the top of the loft plan, click on a 'Near'  snap point on each side of the rear upstand to place horizontal Construction Lines.



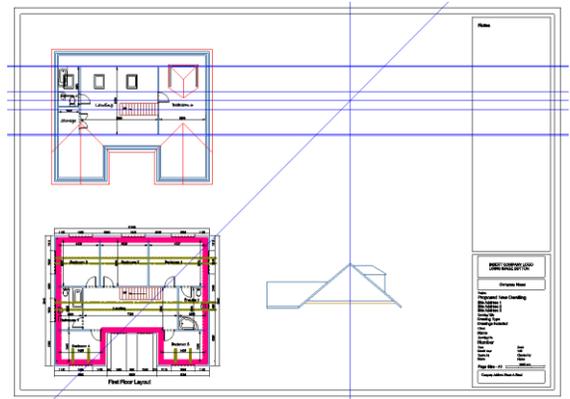
65.  Click on a 'Near'  snap point on each line of the collared ceiling to place horizontal Construction Lines.



66.  Click on a 'Near'  snap point on each line of the each side of the front upstand to place horizontal Construction Lines.

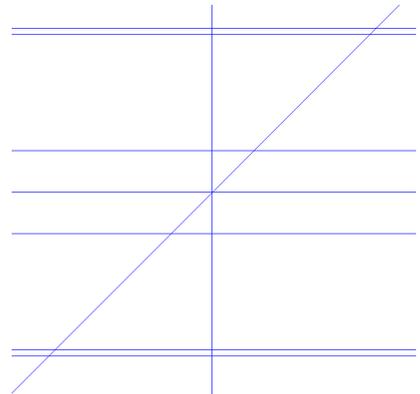


Your screen should now look like this, with a horizontal Construction Line marking out the upstands and ceiling in the loft plan.



All we need to do now is place vertical Construction Lines at the points where the horizontal Construction Lines intersect the diagonal Construction Line to mark out where the upstands and collared ceiling should be in the loft section.

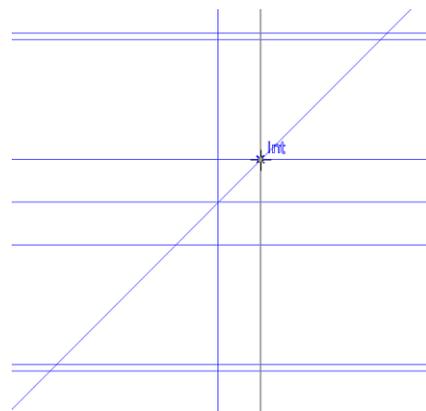
67. Zoom into the area where the construction lines cross so you can clearly see the intersections. It's crucial that the vertical Construction Lines are placed correctly to ensure the loft section is correct.



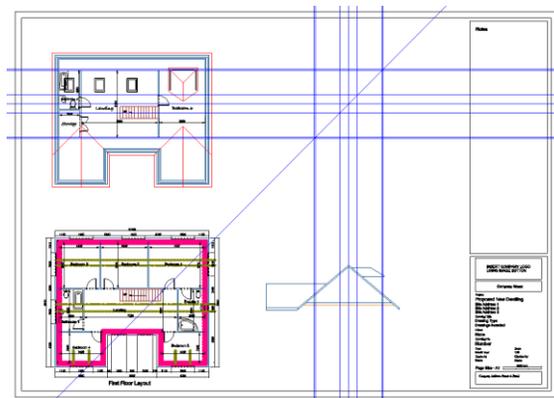
68.  Vertical Press the Vertical Construction Line button.

69.  Click on each point where the diagonal Construction Line crosses a horizontal Construction Line.

70.  Once complete, click the right mouse button to show that you've finished placing the Vertical Construction Lines.



Your page should now look like this:



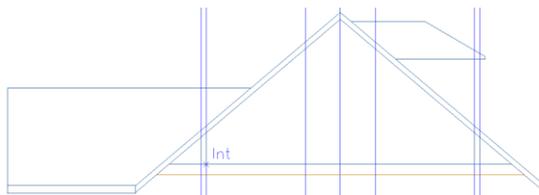
The pairs of lines on either side of the roof show the placement of the upstands. The two lines either side of the ridge show the corners of the collared ceiling. If you trace each Construction Line back, you can see how the loft plan has been transposed to develop the loft section, by turning each line through 90 degrees at the diagonal Construction Line.

You can now use the line tool to draw in the upstands and collared ceiling, using the Construction Lines as guides.

71.  Line Press the Line button.

The Command Window prompts: Give Start Point

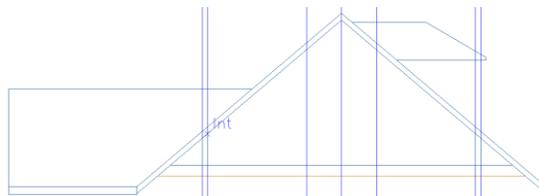
72. Hold your cursor over the 'Int'  snap point where the vertical Construction Line representing the inside of the left upstand meets the floor line.



73.  Click the left mouse button to place the start of the line.

The Command Window prompts: Give Next Point

74. Hold your cursor over the 'Int'  snap point where the vertical Construction Line representing the inside of the left upstand meets the rafter.



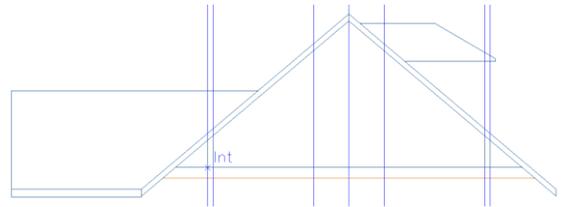
75.  Click the left mouse button to place the next point on the line.

76.  Once complete, click the right mouse button to indicate that you've finished drawing this line.

77.  Click the right mouse button to start a new line.

The Command Window prompts: Give Start Point

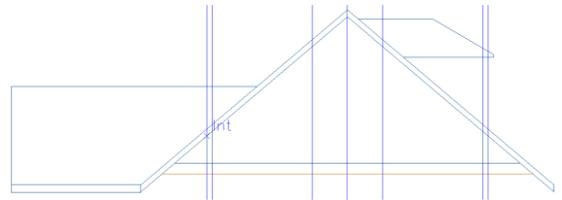
78. Hold your cursor over the 'Int'  snap point where the vertical Construction Line representing the outside of the left upstand meets the floor line.



79.  Click the left mouse button to place the start of the line.

The Command Window prompts: Give Next Point

80. Hold your cursor over the 'Int'  snap point where the vertical Construction Line representing the outside of the left upstand meets the rafter.

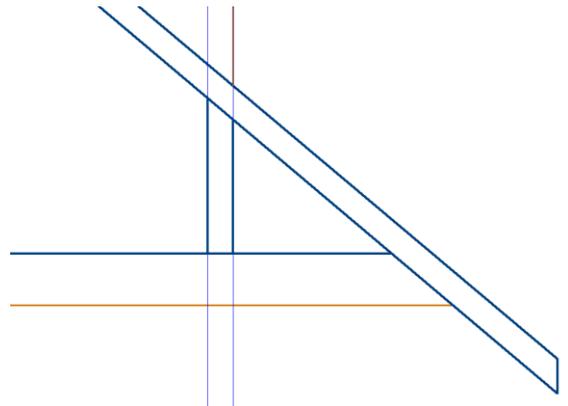


81.  Click the left mouse button to place the next point on the line.

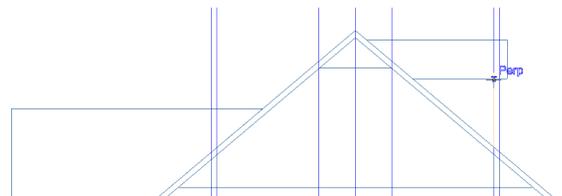
Once complete, click the right mouse button to show that you've finished drawing this line.

82.  Click the right mouse button to start a new line.

83. Repeat steps 72 to 82 to draw in the upstands on the other side of the roof.



84. Draw the internal side of the dormer wall by clicking where the internal side of the right upstand's construction line meets the top of the rafter, then where it meets the roof joist line.

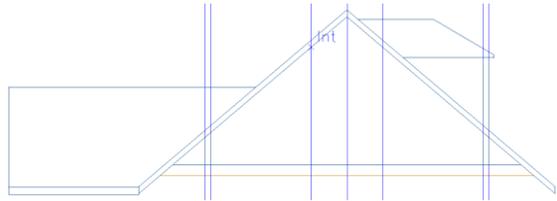


Finally, you can draw the line marking out flat ceiling.

85.  Click the right mouse button to start a new line.

The Command Window prompts: Give Start Point

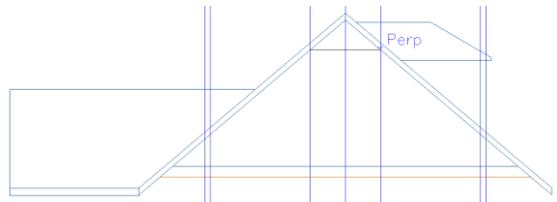
86. Hold your cursor over the 'Int'  snap point where the vertical Construction Line representing one corner of the ceiling meets the rafter.



87.  Click the left mouse button to place the start of the line.

The Command Window prompts: Give Next Point

88. Hold your cursor over the 'Perp'  snap point where the vertical Construction Line representing the other corner of the ceiling meets the rafter.



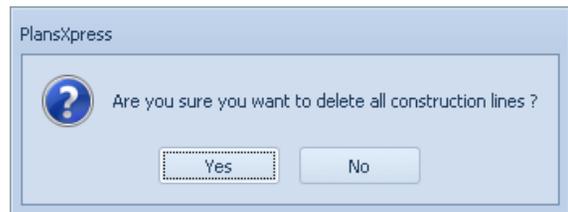
89.  Click the left mouse button to place the next point on the line.

90.  Click the right mouse button to show that you've finished drawing this line.

We've now finished with the Construction Lines so can remove them from the page.

91.  Press the Delete Construction Lines button.

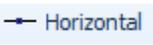
A dialog box pops up asking if you're sure you want to delete all the Construction Lines.



92. Click Yes.

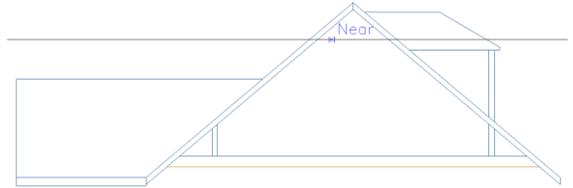
You have now placed the main features of the loft. All you need to do is add some more detail.

Let's draw in the ceiling joist. To do this, we'll place a Construction Line 100mm above the line showing the finished ceiling height, and then trace over it using the line tool.

93.  Press the Horizontal Construction Line button.

The Command Window prompts: Give Point

94. Hold your cursor over the line showing the ceiling height until a 'Near'  snap point appears.



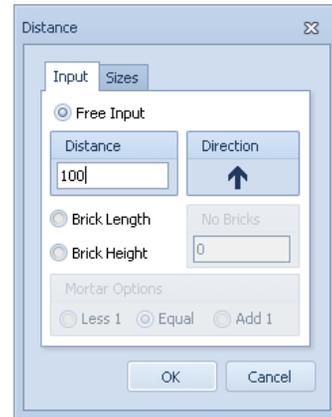
95.  Press the R key on your keyboard.

96.  Press the up arrow key on your keyboard.

The Distance dialog box pops up.

97. Enter 100 into the Distance input box.

98. Click OK.



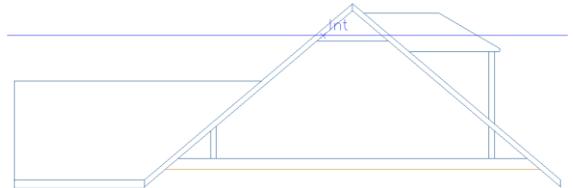
The Construction Line is placed 100mm above the ceiling level.

99.  Now press the Line button.

The Command Window prompts: Give Start Point

100. Hold your cursor over the 'Int'  snap point where the Construction Line intersects the inside of the rafter.

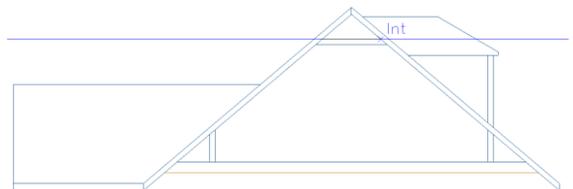
101.  Click the left mouse button to place the start point of the line.



The Command Window prompts: Give Next Point

102. Hold your cursor over the 'Int'  snap point where the Construction Line intersects the inside of the rafter on the other side of the roof.

103.  Click the left mouse button to place the end point of the line.

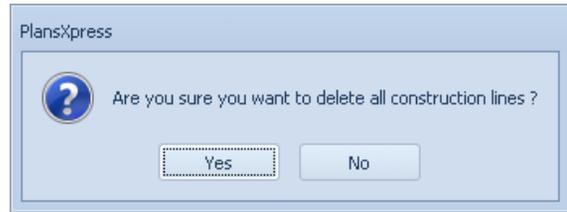


104.  Click the right mouse button to finish drawing the line.

Let's now delete the construction lines.

105.  Press the Delete Construction Lines button.

106. Click Yes to the dialog box which pops up.

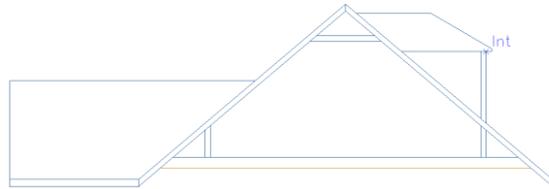


Let's add a line showing the bottom of the dormer window.

107.  Press the Line button.

The Command Window prompts: Give Start Point

108. Hold your cursor over the point where the dormer front meets the ceiling line of the dormer roof.



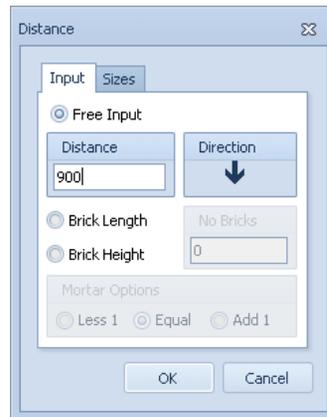
109.  Press the R key on your keyboard.

110.  Press the down arrow key.

The Distance dialog box pops up.

111. Enter 900.

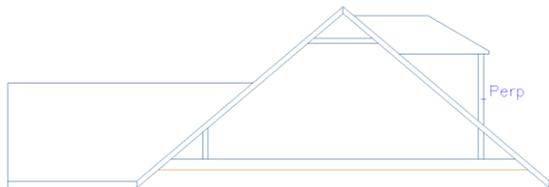
112. Click OK.



The Command Window prompts: Give Next Point

113.  Press the F7 key to switch on Snap mode.

114. Hold your cursor over the inside line of the dormer front until you find the 'Perp' snap point.



115.  Click the left mouse button to place the second point of the bottom line of the window.



Click the right mouse button to finish drawing the line.

Let's now add some dimensions to the sections.

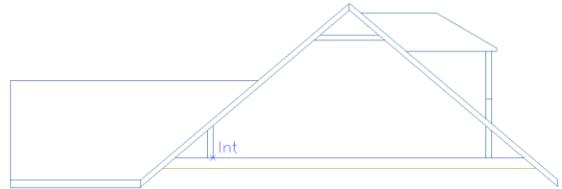


Press the Linear Dimension button (Drawing & Annotation tab)

The Command Windows prompts: Give First Point

Let's start by adding a dimension line showing the height of the left upstand.

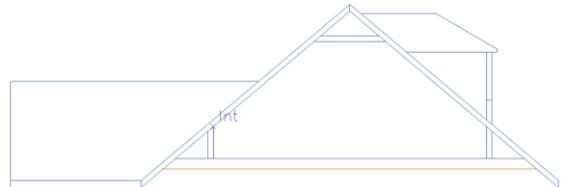
116. Place your cursor at the bottom of the upstand, over the 'Int'  snap point where the internal face of the upstand meets the floor.



117.  Click the left mouse button to register the first point of the dimension line.

The Command Windows prompts: Give Second Point

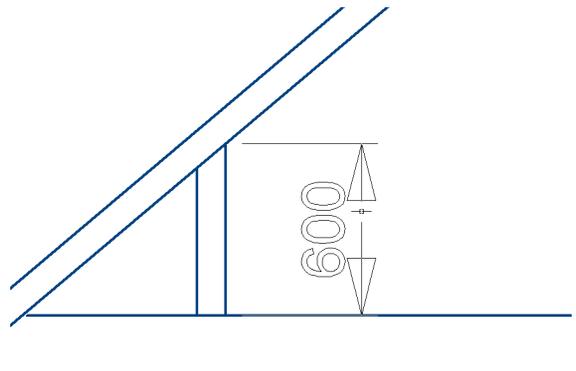
118. Place your cursor at the top of the upstand, over the 'Int'  snap point where the internal face of the upstand meets the rafter.



119.  Click the left mouse button to register the second point of the dimension line.

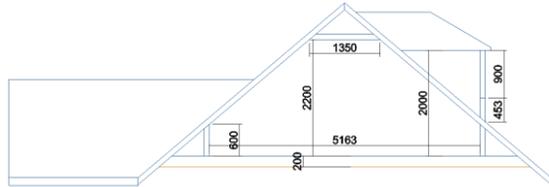
The Command Windows prompts: Give Dimension Point
(H)orizontal, (V)ertical or (A)ligned

120. Move your cursor to the right to place the dimension line to the right of the upstand.



121.  Click the left mouse button to position the dimension line.

122. Repeat this process to add a dimension showing the ceiling height, floor height, width of loft at collared ceiling and width of loft at floor level, dormer ceiling height and window height.



123. If you spend a few moments reviewing the dimensions, you'll see that the upstand height and ceiling height match the details you entered in the Dimensions Wizards, and the loft width matches the dimension on the plan view of the loft.

We will now add a title to the section.



124. Press the Text button (Drawing & Annotation tab).

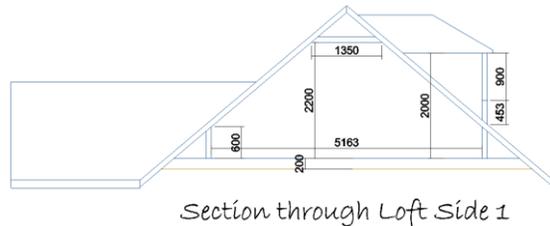
The Edit Text dialog box pops up.

125. Type Section through Loft Side 1.

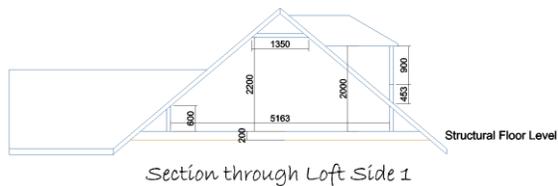
126. Click OK.



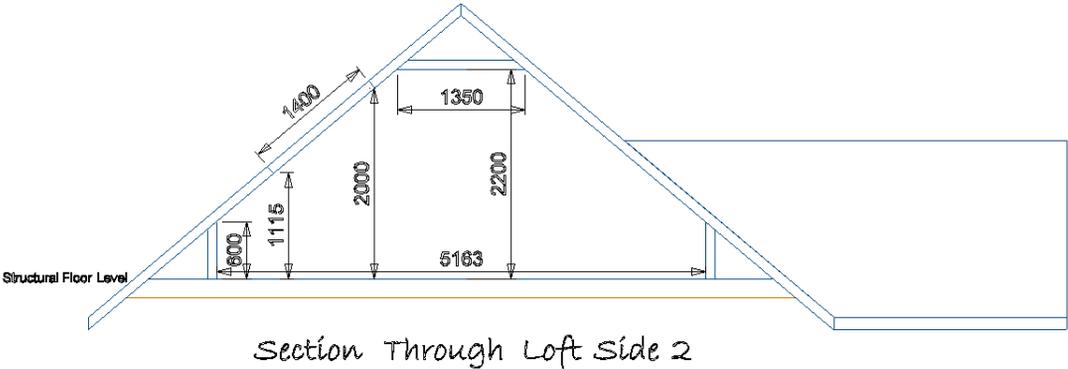
127.  Click the left mouse button to place the title below the section.



128. Add a label saying Structural Floor Level to demonstrate that the section shows the structural level rather than finished floor level of the loft.



129. You can repeat this process to develop a section through from the opposite side of the house, showing the roof windows. To do this use the same methodology as in this chapter except draw the diagonal construction line at 45 degrees from top left to bottom right. This will have the effect of mirroring the details from the plan view so they appear the right way round in the section. Add a title of Section through Loft Side 2.



Section Through Loft Side 2

130.  Press the Save button.

APPLYING PLASTER AND DECORATION TREATMENT TO GABLE WALLS

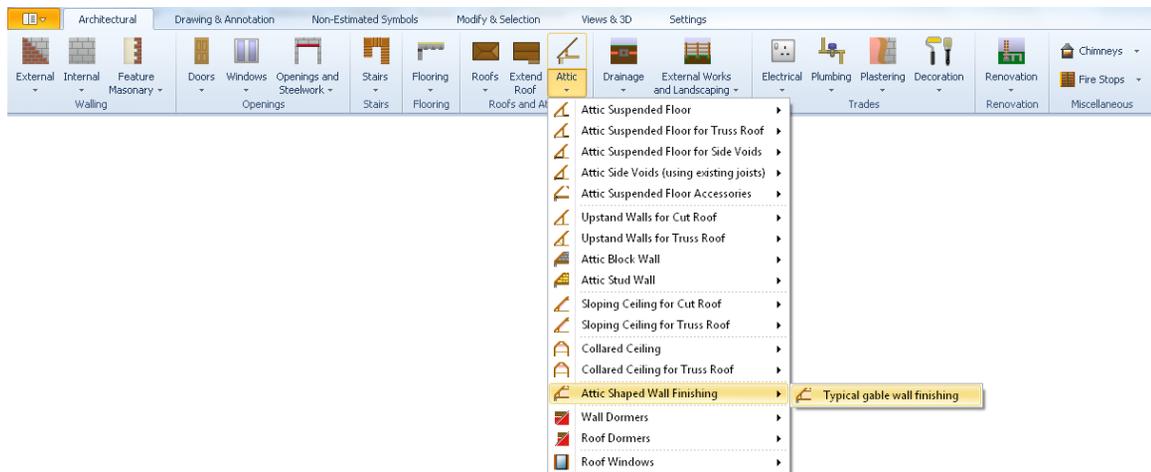


This section of the Tutorial explains how to estimate, and show that you have estimated, plastering and decoration to the existing gable walls on your plans. Plastering and decoration to the upstands, stud walls and ceiling areas are estimated as you draw each element of the fabric of the loft. Plastering and decoration to the gable ends must be done using a separate Workbook designed specifically for the purpose.

During this exercise, you will learn how to:

- apply plastering and decoration 'treatment' to gable shaped walls.

You will need to refer to Diagrams I and K, on pages 215 and 227, during this exercise.



1. Press the dropdown arrow next to the Attic button.
2. Click on the item called Attic Shaped Wall Finishing.
3. Click on the dimensional template called Typical gable wall finishing.

The Attic Shaped Wall Finishing Dimensions Wizard pops up.

Enter Dimensions Page 1 of 3

Location: Gable End Wall

Wall details

IDENTIFY ROOF TYPE AND ENTER CORRESPONDING DIMENSIONS A, B, C & D

SECTION THROUGH TYPICAL APEX ROOF

SECTION THROUGH TYPICAL LEAN TO ROOF

Width of collared ceiling (M) A 1.35

Width of base of plaster (M) B 5.163

Height of upstand (M) C 0.6

Height of ceiling (M) D 2.2

Options Show Tech Tip Show Tech Labels

Accept Defaults Cancel Back Next

4. Enter the Width of collared ceiling, Width of base plaster, Height of upstand and Height of ceiling according to the dimension lines on your loft plan and section.

5. Click Next.

Enter Dimensions Page 2 of 3

Skirting details

SKIRTING DETAILS

Are there any skirting boards? (Y/N) Y

Are skirtings to be primed? (Y/N) Y

Are skirtings to be decorated? (Y/N) Y

Options Show Tech Tip Show Tech Labels

Accept Defaults Cancel Back Next

6. Review the Skirting details and click Next.

Enter Dimensions Page 3 of 3

Plastering and decoration details

PLASTERING DETAILS

Centres of battens (if required) to existing walls (M) 0.400

Plaster and skim walls? (Y/N) Y

Are walls to be insulated? (Y/N) Y

Apply decoration to walls? (Y/N) Y

Options Show Tech Tip Show Tech Labels

Accept Defaults Cancel Back Finish

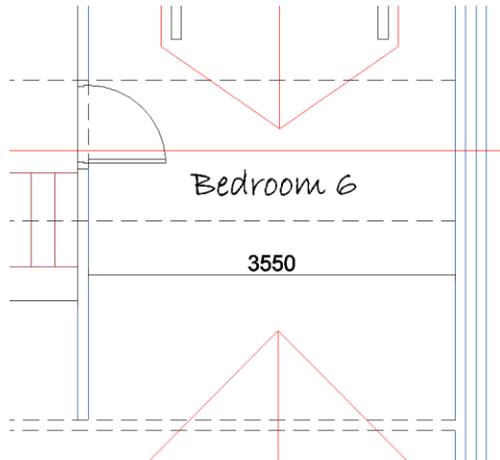
7. Set Plaster and skim walls? to Y.

8. Set Apply decoration to walls? to Y.

9. Click Finish.

The Command Window prompts: Select Entity to add Treatment To

10.  Click anywhere on the right gable end wall of the loft.

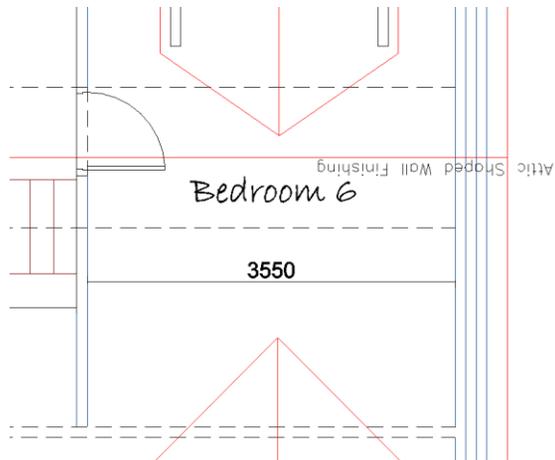


The Command Window prompts: Give Insertion Point

Your cursor now controls the position of the label associated with the wall 'treatment', which shows that you have allowed for plastering and decoration to the gable wall.

Note: The label may appear to be upside down but you set the rotation after placing the label.

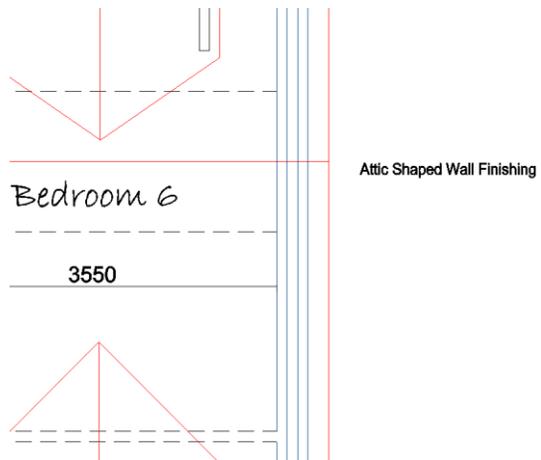
11.  Place the label near the gable wall and click the left mouse button to place it.



The Command Window prompts: Give Point To Rotate To

12.  Hold down the Shift key and move your cursor to the right so the label is horizontal.

13.  Click the left mouse button to register the rotation of the label.



14.  Click the right mouse button to apply plastering and decoration to the other gable wall.
15. Repeat steps 10 to 13 for the opposite gable wall.

You have now estimated, and noted on the plans that you have estimated, the plastering and decoration to the gable end walls.

16.  Press the Save button.

CREATING A REAR ELEVATION



This section of the Tutorial guides you through drawing a rear elevation of the house which will show how the loft conversion has changed the appearance of the exterior of the house.

During this exercise, you will learn how to:

- create an elevation using the ground floor, first floor and loft plan.

You will need to refer to Diagram H, on page 214, during this exercise.

Remember, because we're drawing a rear elevation, the left and right extents are the opposite way round on screen. It doesn't matter which floor plan you use to draw the elevation as you are going to say yes to creating an elevation based on the levels you have already set for your separate floors.



1. Click the Draw Elevation button (Views & 3D tab).

The Command Window prompts: Give wall on which elevation will be based

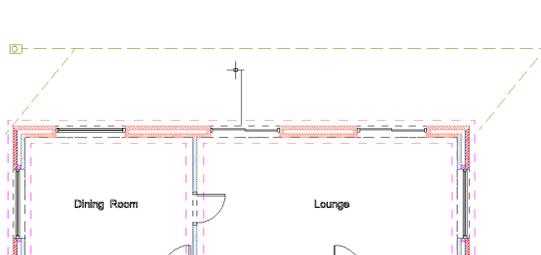
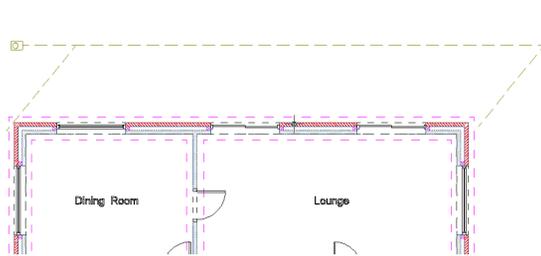
2.  Click on the rear wall of the floor layout.

This tells **PlansXpress**® that the selected wall is to be included in the Elevation.

The Command Window prompts: Give observation point for elevation :

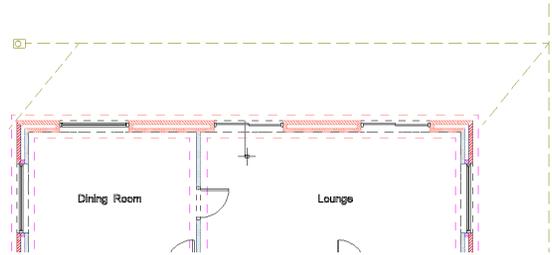
3. Move your mouse up the page to view the elevation as if you're standing out the back of the house viewing the rear wall.

4.  Click the left mouse button to indicate where the elevation is being viewed from.



The Command Window prompts: Give depth view point for elevation :

5. Move the mouse down the page so it's slightly beyond where the roof ridge line is (or equivalent if not using the left floor plan).

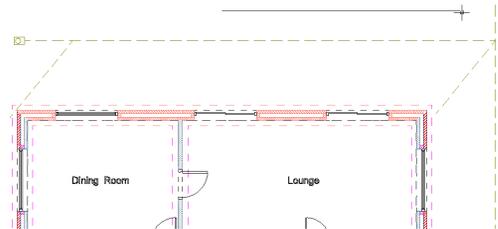


6.  Click the left mouse button to indicate that this is the furthest point to be viewed on the elevation.

The Command Window prompts: Give left extent point for elevation :

7. Move your mouse to the RIGHT until it's beyond the right wall of the house.

If you were stood behind the house, this would be the left extent of the elevation.



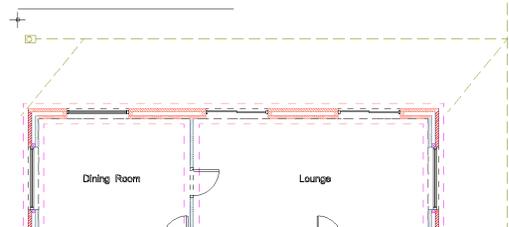
8.  Click the left mouse button to indicate the left extent of the elevation.

The Command Window prompts: Give right extent point for elevation :

9. Move your mouse to the LEFT until it's beyond the left wall of the house.

If you were stood behind the house, this would be the right extent of the elevation.

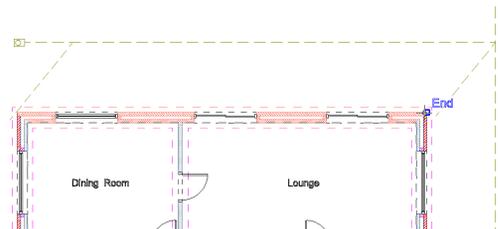
10.  Click the left mouse button to indicate the right extent of the elevation.



The Command Window prompts: Give reference point for elevation :

11. Hold your mouse over the top right corner of the house until the 'End' snap point appears.

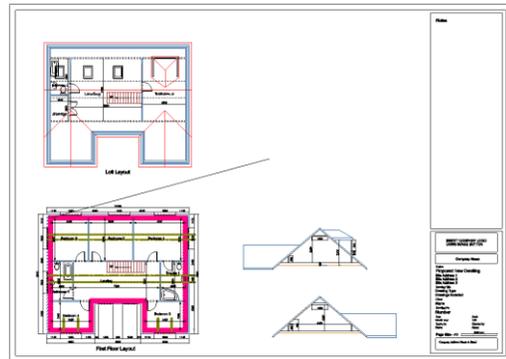
12.  Click the left mouse button to register the Point of Reference.



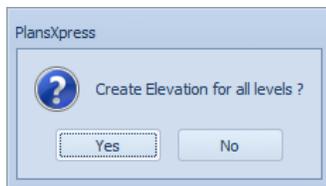
The Command Window prompts: Give Point to Indicate the desired Position of the Elevation.

We want to place the rear elevation to the right of the loft layout. Your cursor will dictate where the left-most point of the elevation will be, because we selected the left corner of the elevation as our Point of Reference.

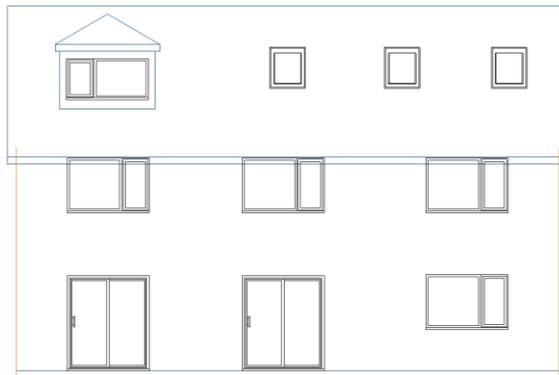
13. Move your mouse down the page, until it's level with the bottom of the loft layout, and across to the right into the space.



14.  Click the left mouse button to register the position of the rear elevation.



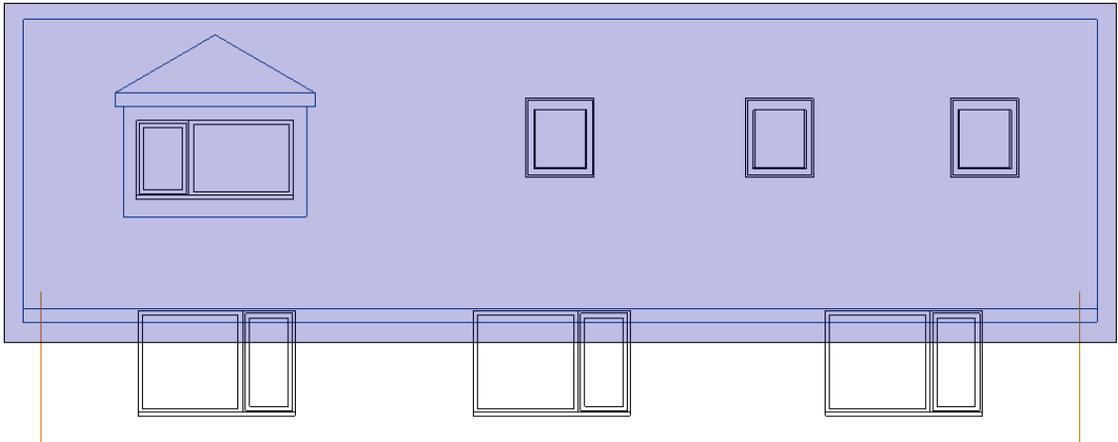
15. Click Yes on the dialog box that pops up asking if you want to create elevation for all levels.



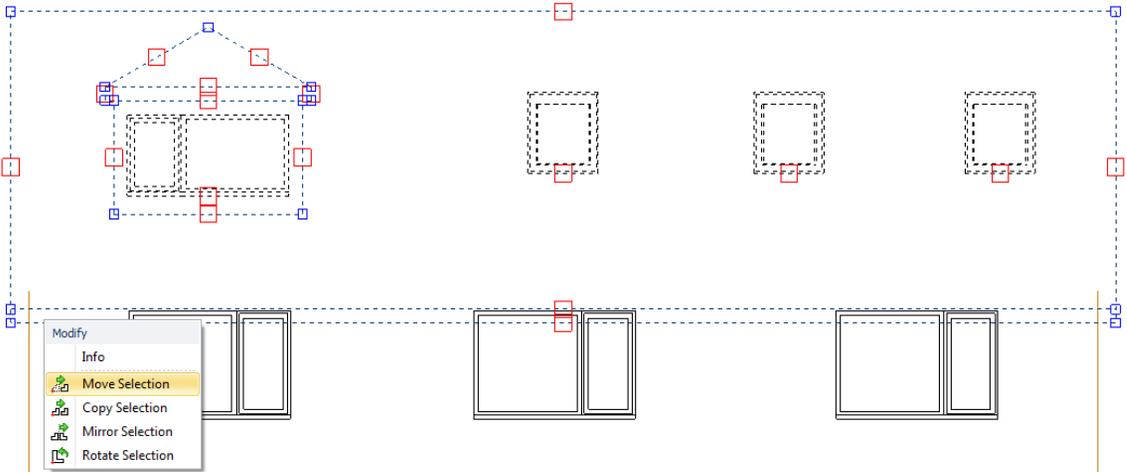
You will notice that the top of the wall extends above the roof line. This is down to the fact that **PlansXpress®** does not take into account the tricks that are used on-site to cut off the bottom of a rafter, add a tilting fillet or adjust how far down the fascia board hangs below the rafter's end.

We can easily remedy this by selecting and moving the lines representing the roof, dormer and roof windows.

16.  **Explode** Select the elevation by left clicking it and press the Explode button so that we can edit the individual lines of the elevation.



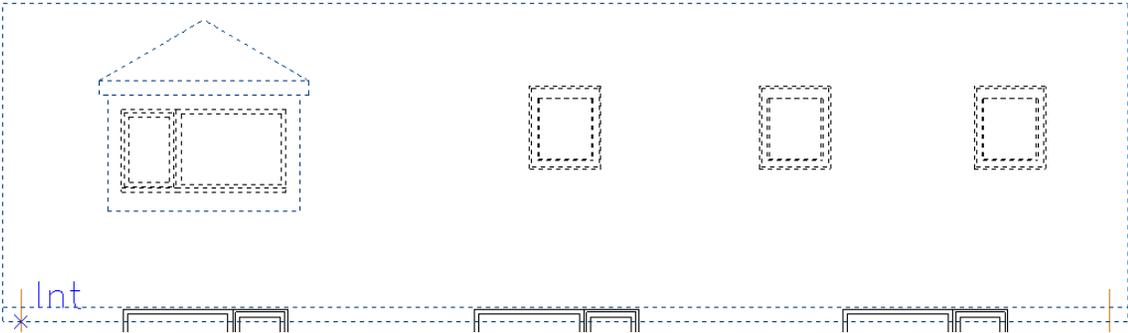
17. Click and drag a box around the roof from left to right.



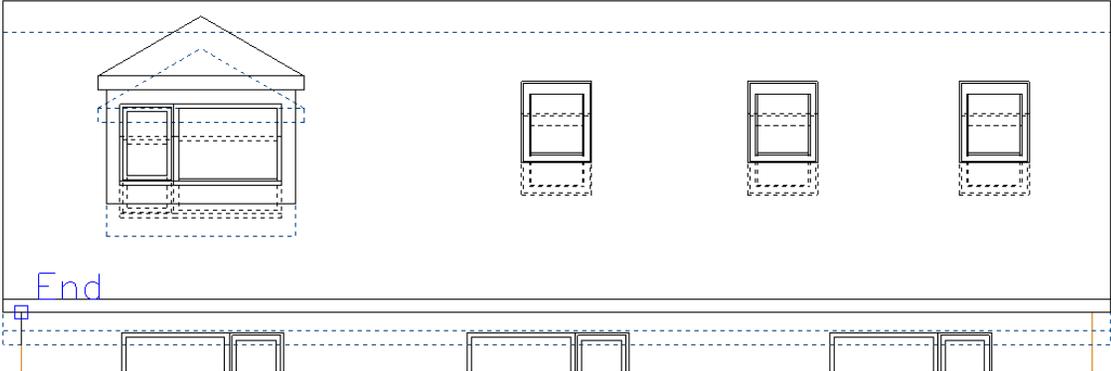
18. Middle click the selection and click Move Selection.

The command window prompts you to Give Reference Point :

19. Move your mouse to where the left wall and bottom roof line intersect and left click.



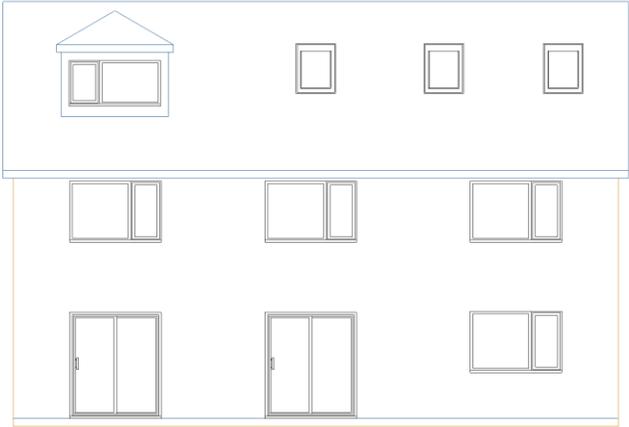
20. Move the mouse to the top of the left wall and click again to place the roof on top of the wall line.



Add a title for the rear elevation using the Notes Picker.

Once complete, your elevation will look like this:

21.  Press the Save button.



Rear Elevation

PRINTING THE PLANS



This section of the Tutorial guides you through preparing the A1 loft drawing to send to the printers, and through printing A4 printouts of smaller sections of the drawing on your PC at home or in the office.

During this exercise, you will learn how to:

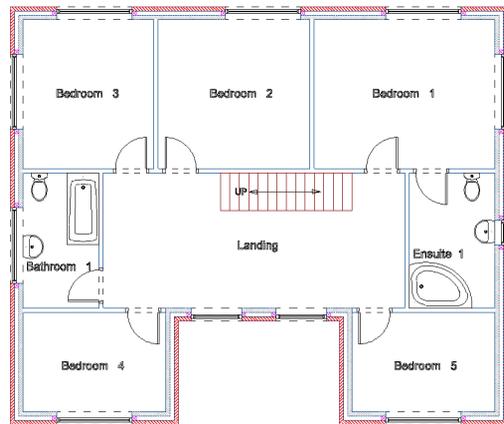
- export your drawings to a PDF.

You will also revise how to:

- create Layouts;
- set up a drawing ready to print.

We'll start by removing any items we don't want to show in the plans we print out.

1.  Delete the dimension lines around the first floor layout by clicking on each of the dimension lines and pressing the Delete key on your keyboard. These dimensions aren't needed for the loft conversion.

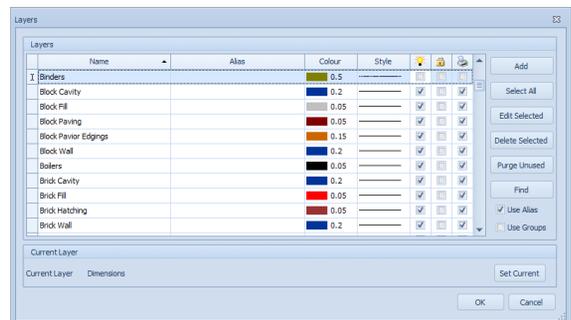


We need to switch off some of the Layers we don't want to show in the printouts.

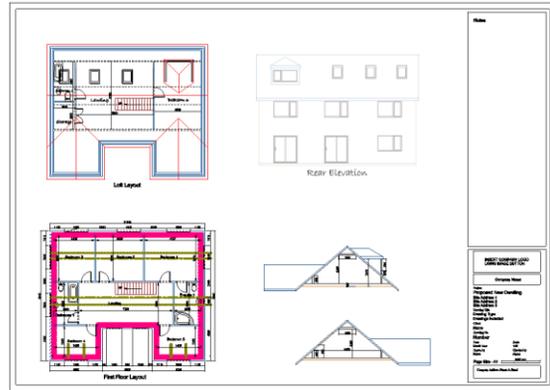
2.  Press the Layers button (Views & 3D tab).

The Layers dialog box pops up.

3. Work your way down the layers called: Binders, Drain Run, Drainage, Estimating Labels and Purlins, unticking the Light bulb and Printer tick boxes so that these Layers won't appear on screen or in any printouts.
4. We want to show the roof on the loft printouts, so work your way down all the Roof Layers drawn with a red pen – Roof, Roof – End, Roof – Hip, Roof – Ridge, Roof – Side, Roof Valley – ticking the Printer tick box so they appear in our printouts.



5. Click OK.
6. Add any Notes to the drawing and fill out the Drawing Details in the Title Block on the right hand side of the page.



7. Make sure that Layouts is ticked in the Show/Hide panel on the Views & 3D tab.



Let's delete out the Drainage Layout which isn't required for the loft plans.

8.  Click on Drainage Layout in the Layout Explorer to select it.



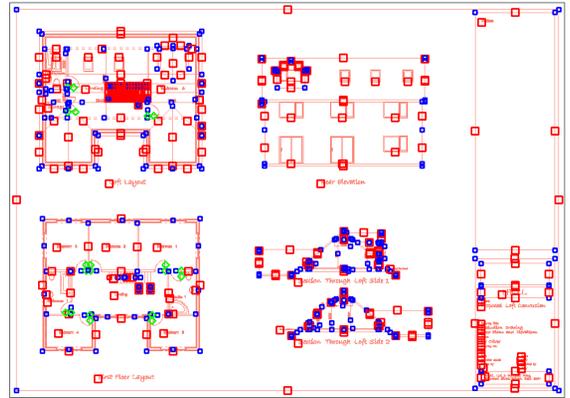
9. Press the Delete Layout button. 

10.  Click on Drawing in the Layout Explorer to return to the main drawing.



Now your plans are ready to print. First we'll create A1 plans which we can convert to PDF ready to send to the printers and then we'll create an A4 printout of a loft layout which can be printed on an A4 printer.

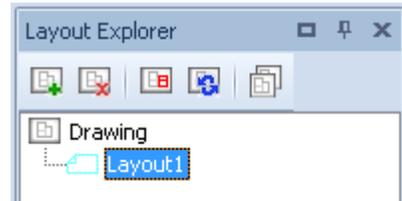
11.  Select everything on the page including the page border and Title and Notes block by dragging your mouse from outside the top left of the page to outside the bottom right of the page.



12.  Press the New Layout button.

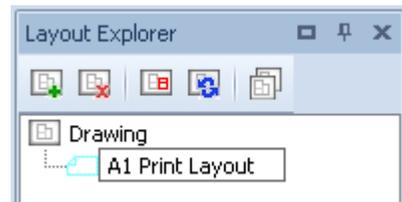


PlansXpress® creates a new Layout of the page which excludes the ground floor plan in the main drawing.



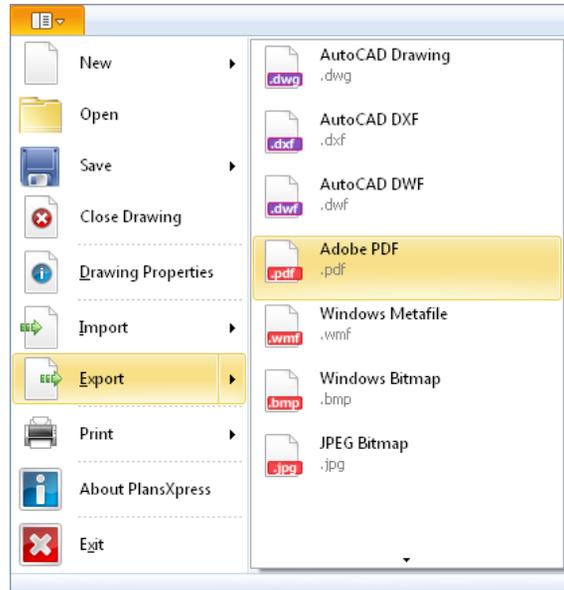
13.  Single click on Layout1 in the Layout Explorer.

14. Rename the Layout 'A1 Print Layout'.



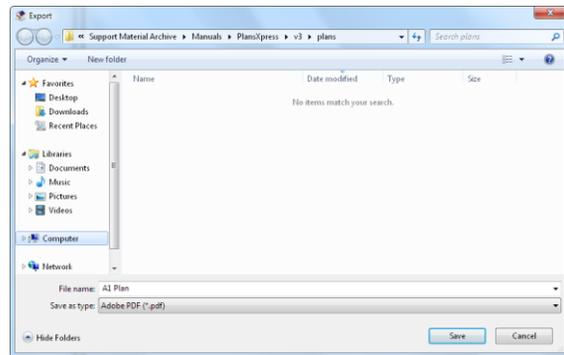
You can now convert the Layout to a PDF file.

- Go to the File menu tab, hold your mouse over Export until it opens up and then click on the Adobe PDF option.



The Export dialog box pops up.

- Select a location to save the PDF to.
- Click Save.
- Click ok to the PDF Security box that pops up.



After a moment, the PDF document appears in the location you saved it. The PDF version of the drawing is A1 size, the same size as your drawing page.

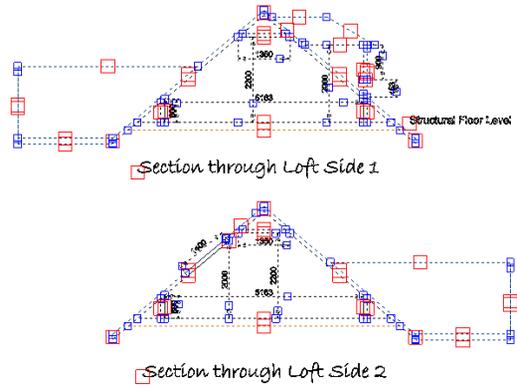
You can now email the document to your printer or save it to a CD or flash disk to take down to your printer.

Let's now create an A4 printout of the loft layout.

-  Click on Drawing in the Layout Explorer to return to the main drawing.



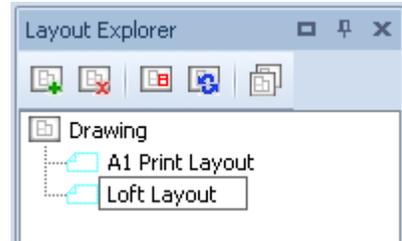
20.  Select the loft plan and title by dragging your mouse from the top left of the plan to the bottom right of the plan and title.



21. Press New Layout button on the Layout Explorer.
PlansXpress® creates a new Layout showing only the loft plan.

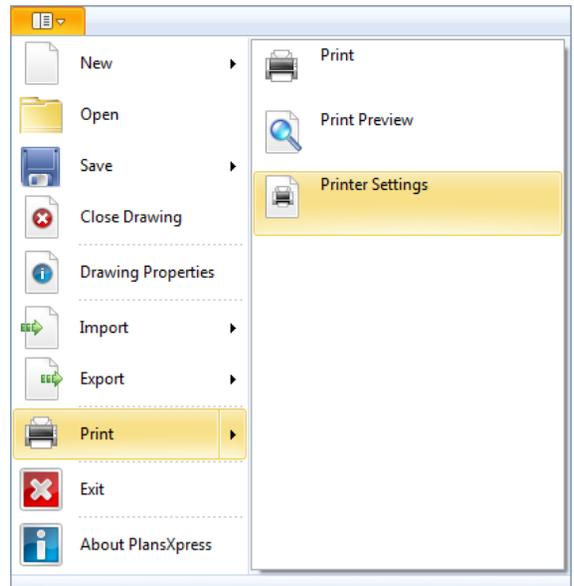
22.  Single click on Layout 2 in the Layout Explorer.

23. Rename the Layout 'Loft Layout'.



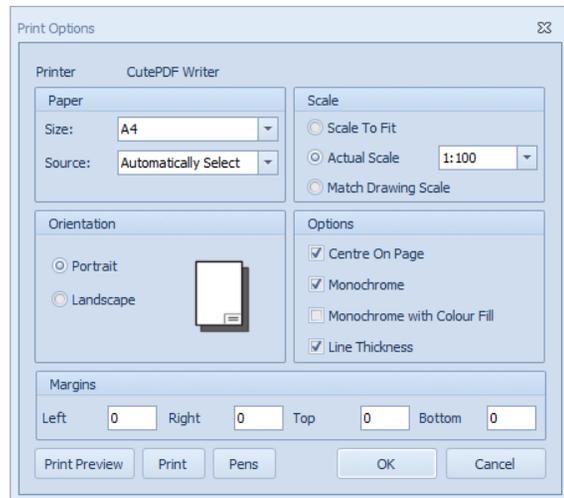
We now need to adjust the print settings to print the loft layout on an A4 page with a 1:100 scale.

24. Go to the File tab and click Print > Printer Settings.



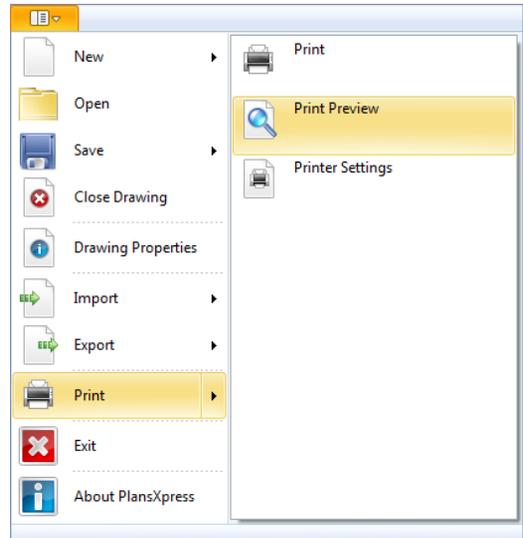
The Print Options dialog box pops up.

- 25. Click Actual Scale.
- 26. Select 1:100 from the adjacent drop down box.
- 27. Tick the Centre on Page and Monochrome tick boxes.
- 28. Click OK.
- 29. Ensure the page size is set to A4.
- 30. Set the margins to 0.
- 31. Click OK.

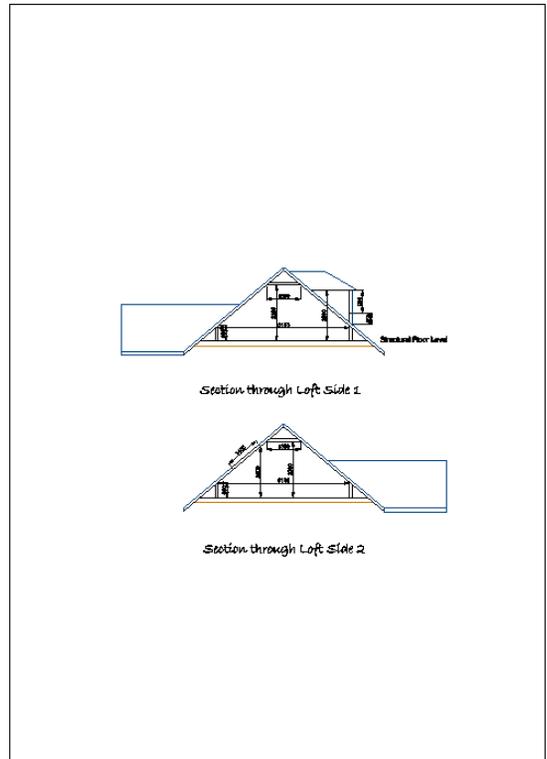


A dialog may pop up informing you that the margins are outside the printable area and giving you the option to increase the margins to an appropriate size. If this dialog box pops up, click Yes.

32. Click Print > Print Preview on the File tab to preview the printout.



33. If you're happy with the appearance of the printout, click the Print button in the top left corner.



34. You can repeat this process to create Layouts for the first floor plan, rear elevation and loft sections, and then print them to an A4 page with a 1:100 scale. Alternatively, if you have an A3 printer, you can print the drawings with a 1:50 scale.

35.  Press the Save button.

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