Pamir Posi
Training Notes

Table of contents

1. Understanding the product.......5
   1. What are Posi-Joists – power point overview.......5
   2. Floor considerations.......5
2. Determine the project settings (F4).......6
   1. Use "Create job" in MBA with the job reference Floor1 and Launch Pamir.......6
   2. Posi specific F4 settings.......6
   3. Set section 1.1 – Project overview.......6
   4. Set section F4 1.2.1 – Project / Design code / General.......7
   5. Set section F4 1.2.2 – Project / Design code / SLS.......7
   6. Review Section F4 2.1.5 Fabricator / Material / Member defaults (Floor/ Posi frame).......8
   7. Review section F4 2.1.8 Bracing defaults.......8
   8. Review section F4 2.4.4 Posi build preferences.......8
   9. Review section F4 2.4.6 Auto web options (Posi/Frame).......8
   10. Review section 2.4.7.8 Design options for floor and Posi frames.......8
3. Surface and opening entry.......9
   1. Create the building.......9
   2. Add Floor surface.......9
   3. Add openings.......9
4. Floor framing.......10
   1. Use the "Floor" tab and "Auto frame" icon.......10
   2. Apply interactive automatic framing linked to the surface via RM.......10
   3. Modify framing runs.......10
   4. Add manual framing zones via the "Floor" tab and "Manual framing zone" icon.......12
   5. Manual single layout frame framing option – Not recommended.......12
5. Modify floor framing.......13
   1. Modify zone framing.......13
   2. Modify opening supports.......13
   3. Modify end and interior details.......14
   4. Create sacrificial framing (Crash deck / future lift shafts).......14
   5. Create corner-landing framing.......15
   6. Add Edge truss floor frame.......15
   7. Create edge framing filler zones (Timber frame).......16
   8. Change the whole floor depth.......17
   9. Review and fix hidden frame clashes.......17

   Workshop 1 including design – Page 31 and 32.......17
6. Posi engineering.......18
   1. Align verticals.......18
   2. Match webbing across joists.......18
   3. Automatic and manual webbing noting symmetry webbing.......18
   4. Edit webbing.......19

7. Posi design 20
1. Design multiple joists from the layout view or project panel. 20
2. Design multiple joists directly from the frame selector 20
3. Use the “load and results” tab and “Show loads” to review cases and scroll via Alt + Roll. 20
4. Reset the design status. 20
5. Review the design results 20
6. Fix failures (FD.9A.05 Tips and tricks) 20
7. Deflection analysis 21
8. Vibration analysis 22
8. Posi Loading and load application 23
1. Loading considerations 23
2. Review automatic load transfer arrows. F4 2.4.4.3 23
3. Modify selected joist loads. 23
4. Add manual frame view loads 23
5. Review applied frame view loads 24
6. Add manual layout view loads 24
7. Review and exclude joists affected by applied layout view loads. 25
8. Modify selected layout view loads 25
9. Sound test results Part E (Timber frame robust detail – FD.5.01) 25
10. Fire test results (See knowledge base) 25
Workshop 2 page 35 and 36 25
9. Add ancillary items 26
1. Add strongback bracing using manual and automatic tools based on web pattern 26
2. Add metalwork 26
3. Add partition noggin zones 26
4. Add wall restraint noggins 26
5. Add drawing objects 26
10. Posi manufacture output and installation 27
1. Manufacture 27
2. Output 27
3. Installation considerations 27
11. Posi flat roof entry (time permitting) 28
1. Key principles. 28
2. Posi Flat roof bottom supported (Flatwise timbers) 28
3. Modify the edge loading for orangery roof light openings 29
12. Posi sloping roof entry with steel (time permitting) 30
1. Posi sloping roof (Flatwise timbers). 30
2. Posi sloping roof (Edgewise timbers). 32
Workshops 34
Workshop 1 34
Workshop 2 36

1. Using workshop 2 - Change whole floor depth to PS10 36
2. Rebuild PS5 and PS6 with bottom supported trimmable end details 36
3. PS8 - Move duct opening apply manual webbing zones 36
4. PS2 – Manually adjust webbing 36
5. PS1 - Determine maximum hoist applicable with 97mm wide timbers. 37
6. Apply addition 0.5Kn/m2 live load to all joists in the bay area of the floor 37
Appendix 1 – Shortcut Keys 38
Notes 40

Module 1 - Understanding the product.

1. What are Posi-Joists – power point overview

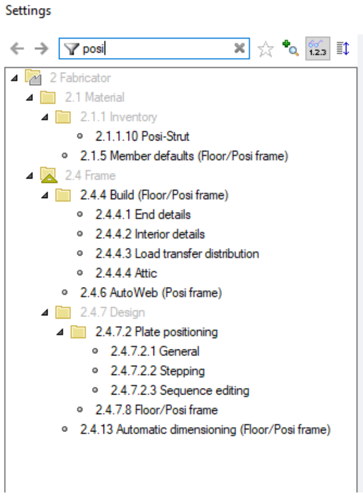
2. Floor considerations.

1. See Knowledge base – Floor design section FD.2.01
2. Floor depth available (confirm structural element or total surface to surface)
3. Span options and direction (max approx.7m for design or 15m for manufacture on multi span)
4. Use Standard details for support, restraint, and fixing options
    1. Min bearing requirements relative to design and acceptability on site (NHBC 6.4 Table 3).
    2. Review hanger support noting no restraint to walls relative to wind forces.
5. Opening requirements – Stairs, soil pipes and ducts to suit MVHR / HVAC requirements to meet approved docs Part F and L, future lift shafts and knockout panels. FD.9C.01.01
6. Floor coverings ceiling materials relative to spacing loading and EC5 design.
7. Double joists may be required when directly supporting partitions.
8. Noggins under and over general partition connections.
9. Full depth blocking between joists at ends and over internal bearings where there is a load bearing wall above
10. Restraint requirements between top chords when in hangers.
11. Loading by area based on usage see NA to BS EN 1991-1-1:2002 residential / commercial / hotel bedroom / hallway.
12. Ground floor issues - See World of Posi Technology (web site / downloads)
    1. Perceived restraint stiffness due to no ceiling.
    2. Vibrations due to appliances,
    3. Environment and ground preparation.
13. Cassette floors / roof
14. MiTek span calculator.
15. Posi rafters – review the case study on the MiTek web site.

Module 2 - Determine the project settings (F4)

1. Use "Create job" in MBA with the job reference Floor1 and Launch Pamir.
2. Posi specific F4 settings.

1. Activate the node numbers  in the top left of the settings window to aid referencing.
2. Use the Search option to display Posi ***specific settings*** in standard and extended mode**.**



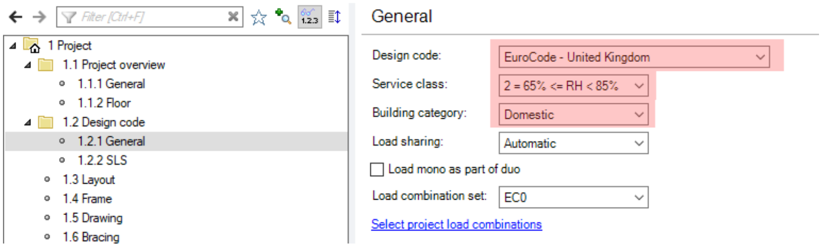
3. Deactivate the search when complete to access all settings again.

3. Set section 1.1 – Project overview.

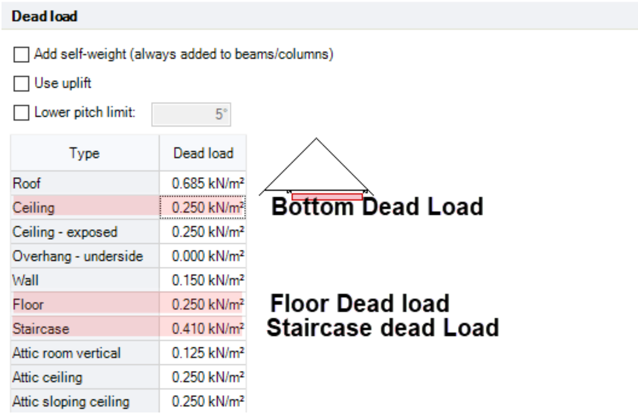
1. Section **F4 1.1.1 General** - Collapse all non-floor related sections for speed.
2. Section **F4 1.1.2 Floor** - Review the basic floor setup
    1. Review the material, geometry, and support properties.
    2. Support type will set the surface height above wall plate.

4. Set section F4 1.2.1 – Project / Design code / General

1. Review the design code, service class, and building category relative to region and design.



2. Review the default dead loads.
    1. Calculate accurate floor dead loads using the floor sheet values from the vibration area. (Sheet weight in Kg/M^{2}x 9.80665 = N/M^2) + (Top chord material weight say 47 x 97x x450 @ 600crs * 9.80665 = 0.034 Kn/M^2)
    2. Note: NHBC and TRA min requirements in the absence of accurate information.

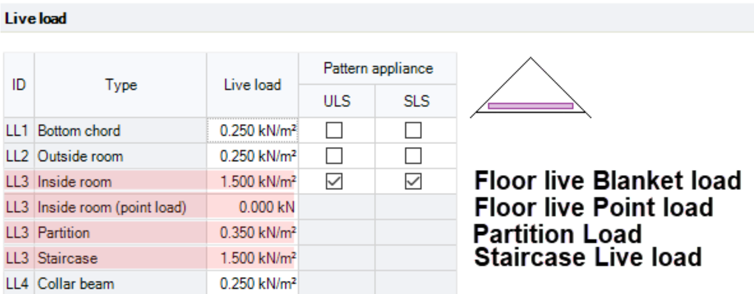


Dead load

- [ ] Add self-weight (always added to beams/columns)
- [ ] Use uplift
- [ ] Lower pitch limit: 5°

Type	Dead load
Roof	0.685 kN/m²
Ceiling	0.250 kN/m²
Ceiling - exposed	0.250 kN/m²
Overhang - underside	0.000 kN/m²
Wall	0.150 kN/m²
Floor	0.250 kN/m²
Staircase	0.410 kN/m²
Attic room vertical	0.125 kN/m²
Attic ceiling	0.250 kN/m²
Attic sloping ceiling	0.250 kN/m²

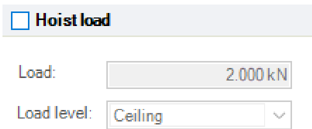
3. Review the default live loads.



Live load

ID	Type	Live load	Pattern appliance ULS	Pattern appliance SLS
LL1	Bottom chord	0.250 kN/m²	☐	☐
LL2	Outside room	0.250 kN/m²	☐	☐
LL3	Inside room	1.500 kN/m²	☑	☑
LL3	Inside room (point load)	0.000 kN		
LL3	Partition	0.350 kN/m²		
LL3	Staircase	1.500 kN/m²		
LL4	Collar beam	0.250 kN/m²		

4. Review hoist load options relative to building use.

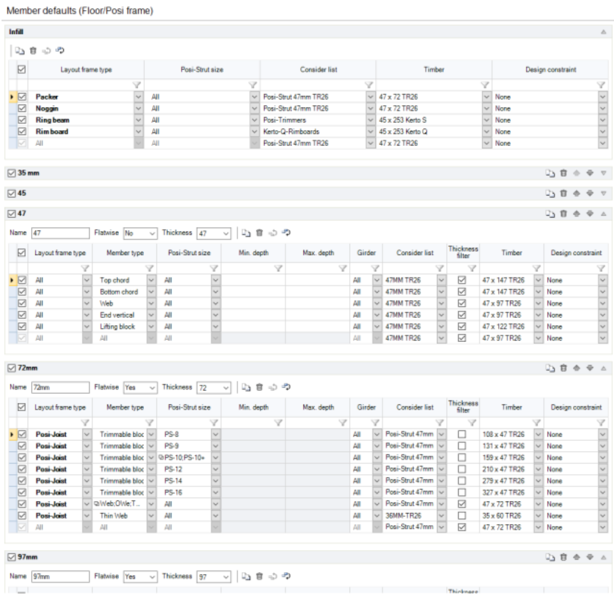


5. Set section F4 1.2.2 – Project / Design code / SLS

1. Review project deflection and vibration limits – covered in detail later.

6. Review Section F4 2.1.5 Fabricator / Material / Member defaults (Floor/ Posi frame).

1. Review the material settings relative to group, joist type, member type and strut size.
2. Review the design constraint (lock settings) options.



3. Understand that these settings are activated from the top down as soon as the joist type matches the criteria specified.

7. Review section F4 2.1.8 Bracing defaults

1. Review strongback design sizes relative to Posi-Strut size and the link to the vibration check.

8. Review section F4 2.4.4 Posi build preferences

1. End details
2. Interior
3. Load transfer

9. Review section F4 2.4.6 Auto web options (Posi/Frame)

1. Note these are customer specific and linked to manufacturing methods and equipment.

10. Review section 2.4.7.8 Design options for floor and Posi frames

1. Note these are customer specific and linked to manufacturing methods and equipment.

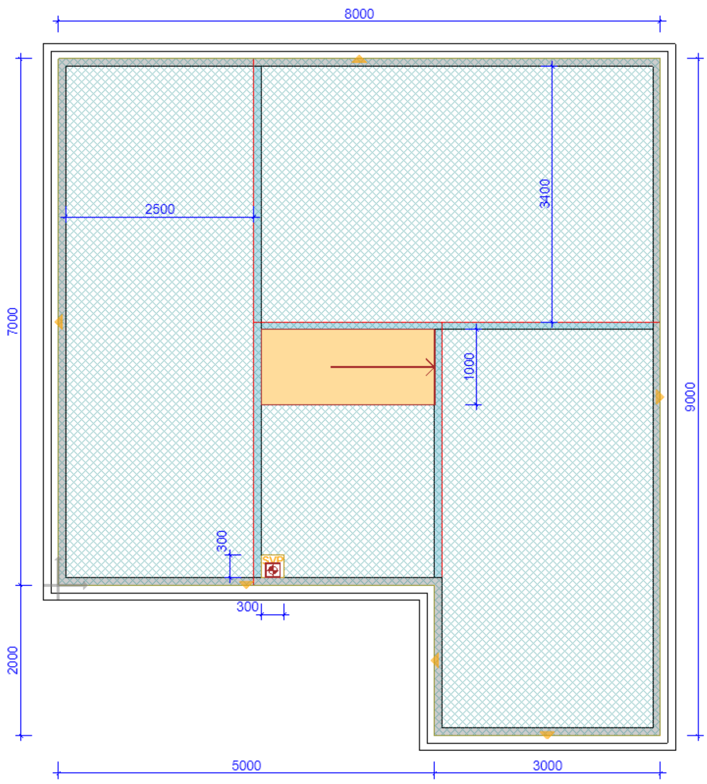
Module 3 - Surface and opening entry

1. Create the building

1. Use the "**Floor**" tab with "**Building rectangle**" icon tools.
2. Use "**Building line**" with "**Extend**" active via the tool options when the internal walls to assist entry.

2. Add Floor surface

1. Review settings **F4 1.1.2** & **F4 2.3.8**. automatic positioning relative to the wall structure.
2. Use automatic and manual surface entry via RM (Note: The Posi stops where the surface stops).



3. Add openings

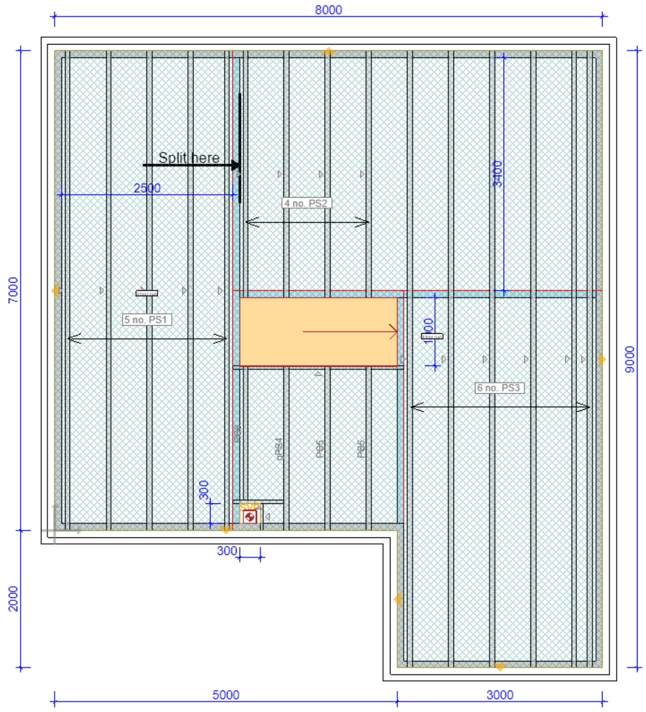
1. Use the "**Floor**" tab with "**Opening**" icon drop down options for **drawn and sized openings**.
2. Add **Stairwell** and **SVP** openings
    1. Use **Shift** during entry to separate the horizontal and vertical rectangle values.
    2. Review the **staircase** options relative to type, direction, and position options.
    3. Reverse the **cut order (floors only)** to change the way trimmers are applied.
    4. Review staircase head loading linked to F4 1.2.1 and the type, direction, and position.
3. Set the **automatic girders** preferences for openings.
    1. Automatic = Next modular frame / Yes = Added Posi Joist.
    2. Use the offset angle to change the girder direction.
4. Set the **trimmers** – Use **binders** with options to override materials **or Posi** for trimmers.
5. Review opening load reductions in the 3D via F3.

Module 4 - Floor framing

1. Use the "Floor" tab and "Auto frame" icon

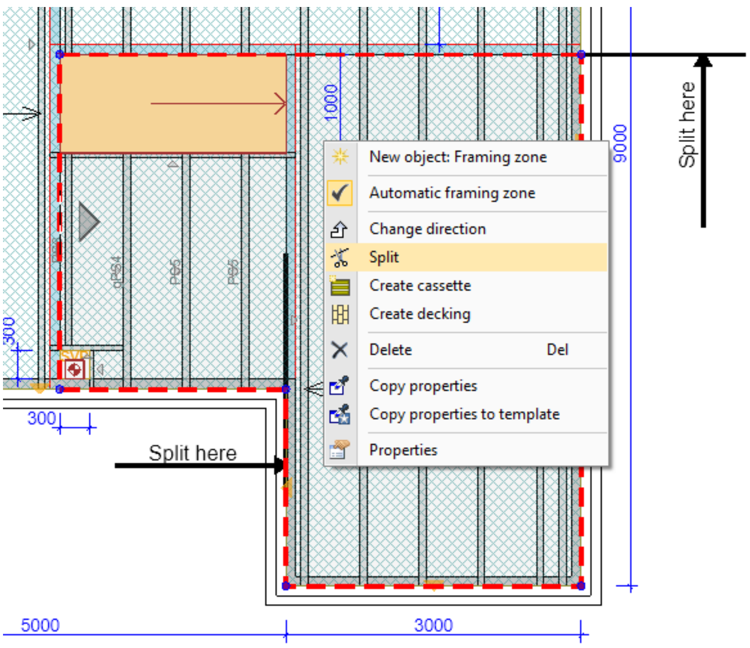
2. Apply interactive automatic framing linked to the surface via RM

1. Auto Frame (Interactive) via surface and RM
    1. Use "Skip" from the input bar to ignore girder placement
    2. Add a single split on the right face of the long vertical internal wall (click outside the building for no split)

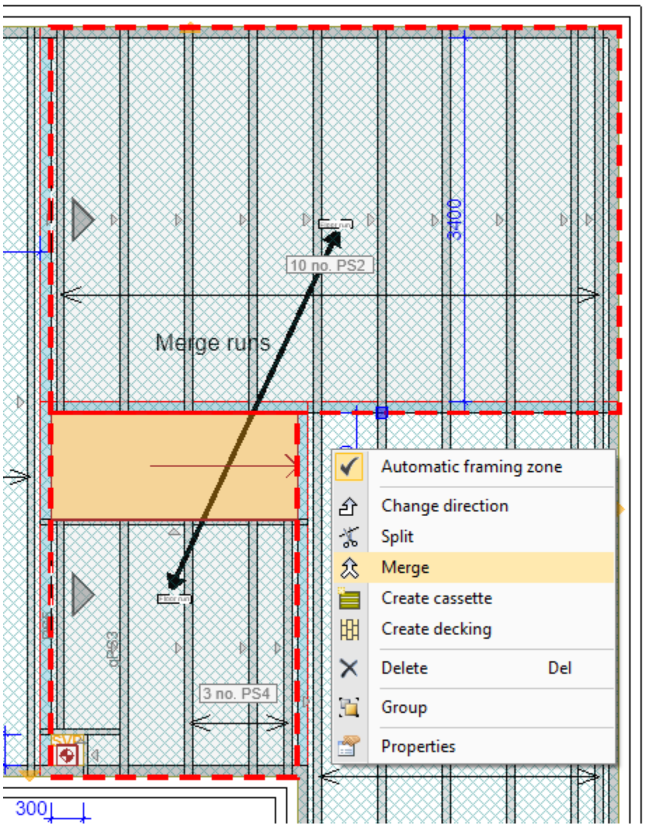


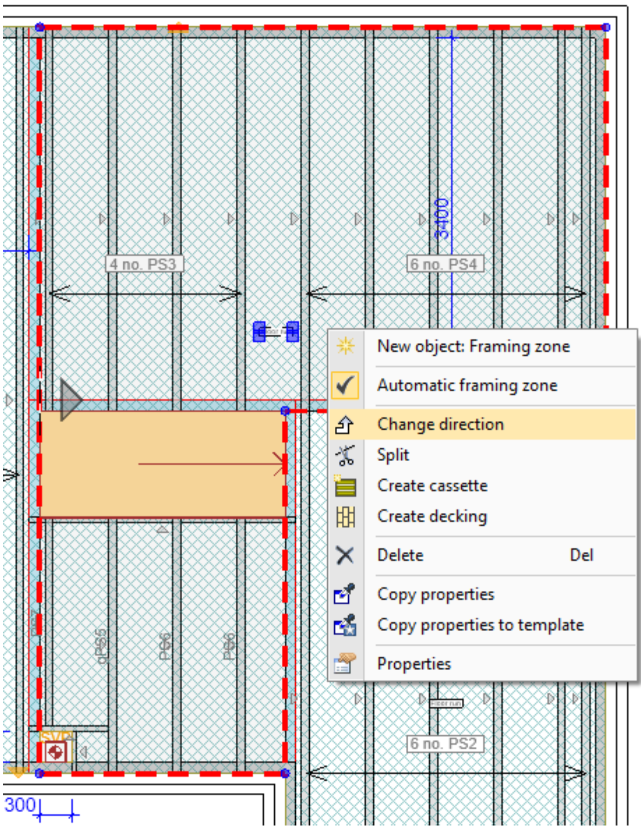
3. Modify framing runs

1. Split run using girders, walls and construction lines via the RM option with Split (To line / To ray) (Multiple) Select edge to split on._ active.
    1. Select the run and split on left face of the wall to the right of the stairwell.
    2. Select a joist in a run and split via the RM option

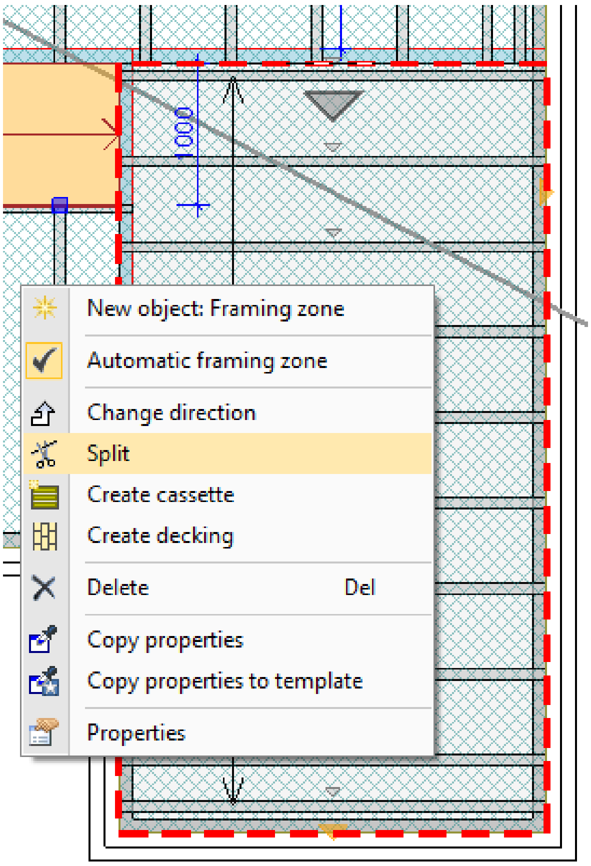


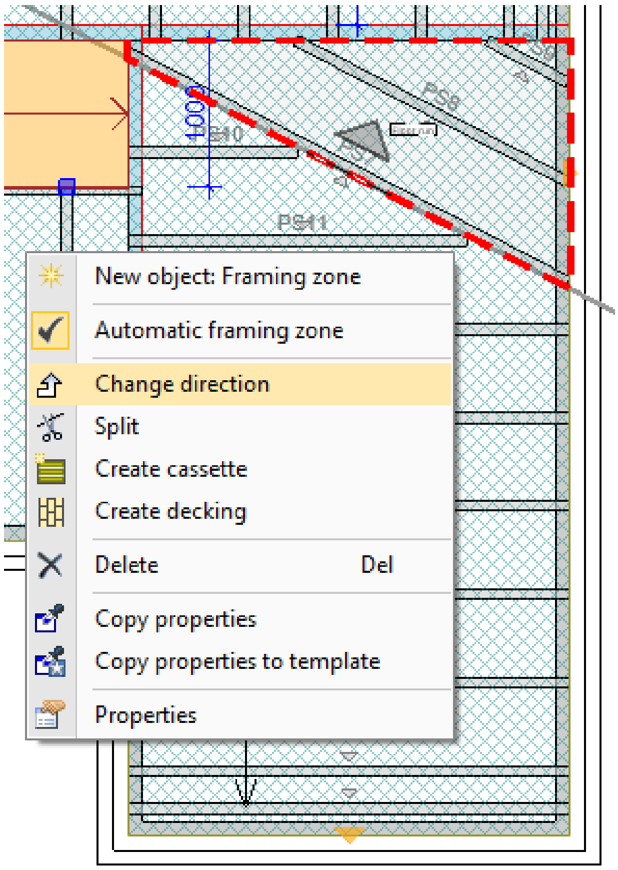
2. Merge runs then change run directions via the RM options





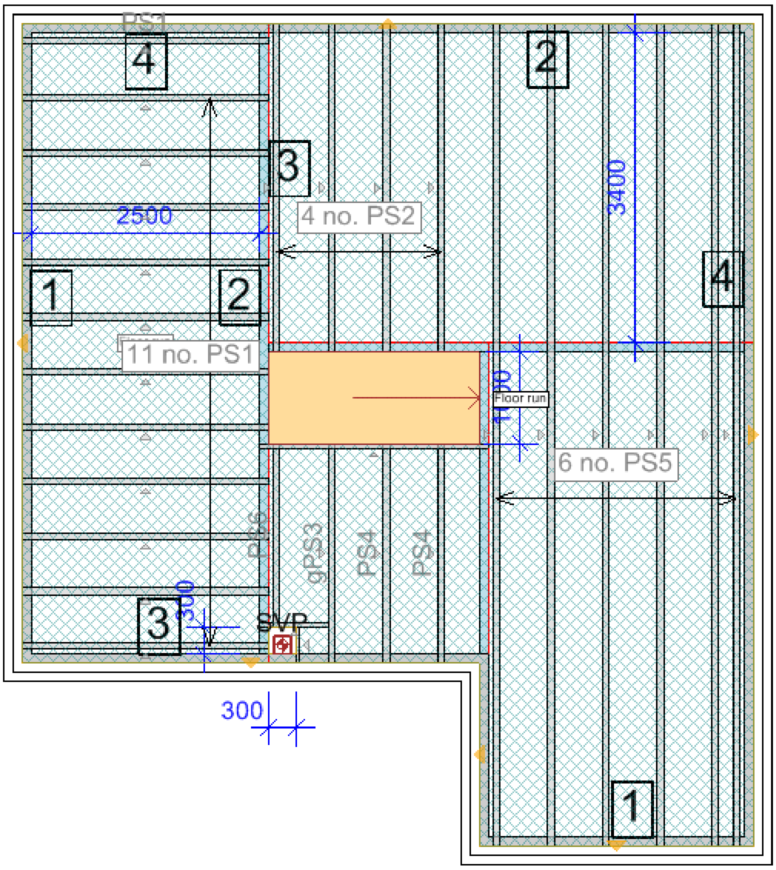
3. Use Construction lines to split the floor run the change direction.



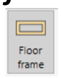


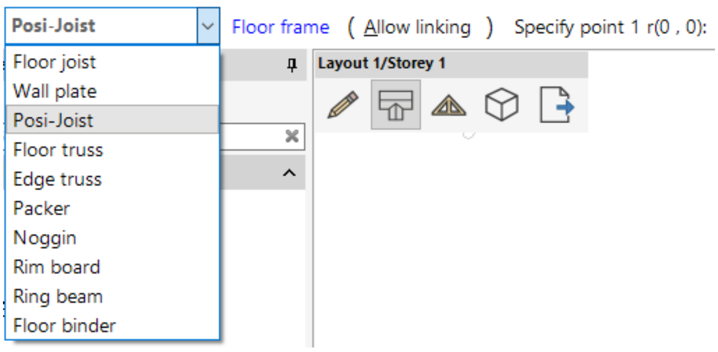
4. Add manual framing zones via the “Floor” tab and “Manual framing zone” icon

1. Create manual floor framing zones **with side delimiters**.
    1. Remove existing framing
    2. Use added construction lines to assist entry.
    3. Select the surface first.
    4. Select the **specific perimeter lines** as required (sequence - from, to, run start and run end).
    5. Change zone direction as required.



5. Manual single layout frame framing option – Not recommended

1. Use the floor frame icon  tool option.
2. Add a single Posi and then add a stairwell over it. Note: No auto update on adding openings.



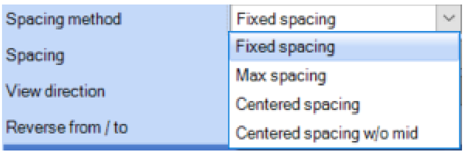
3. Delete the added stairwell and Posi.

Module 5 - Modify floor framing

1. Modify zone framing

1. Control framing duplication at openings.
    1. Review opening interaction with floor run framing.
    2. Move the openings 1mm perpendicular away from the zone to avoid framing duplication.

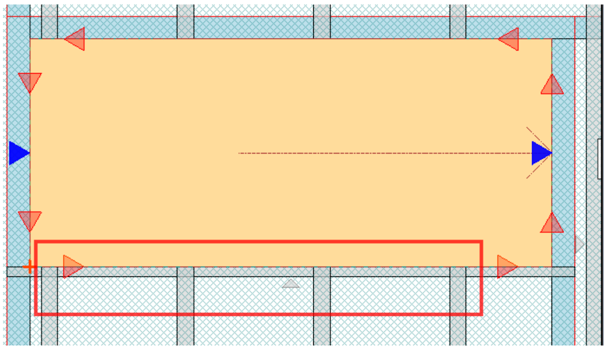
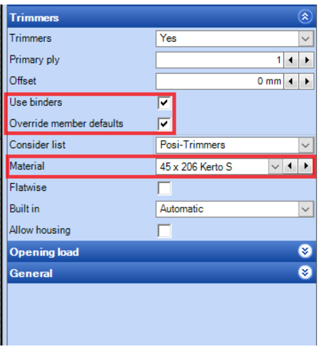
2. Review joist run spacing and adjust for decking placement.
    1. Note – automatic positioning will **NOT** place overlapping joists resulting in a single joist at the end of a run with greater spacing.

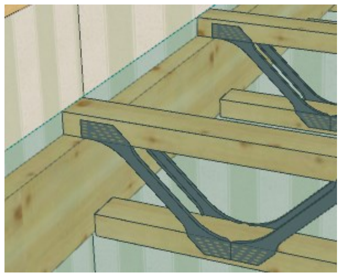


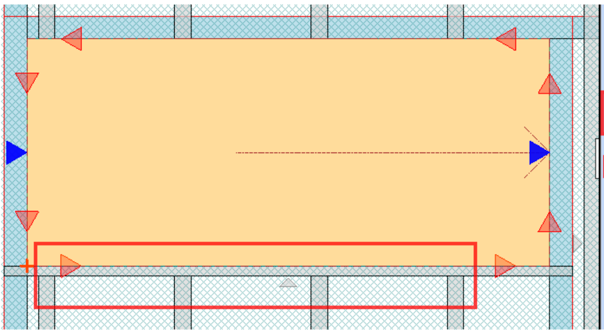
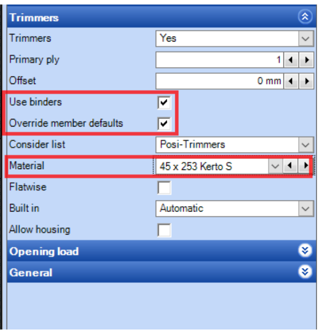
    2. Use zone the spacing method to adjust placement.
    3. Use fixed spacing via the properties and set the second joist setback at 524 to allow a decking 10mm expansion gap and position a joist at the 2400 board end.

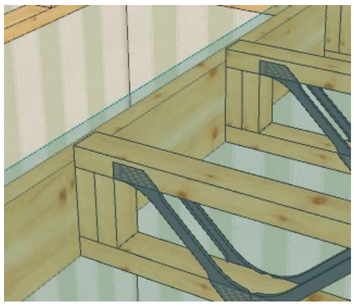
2. Modify opening supports.

1. Use stairwell trimmer override to modify end support details – NOTE: The framing zone must be set as automatic.
2. Deactivate "Use binder" option in the properties to change the trimmer to a Posi.

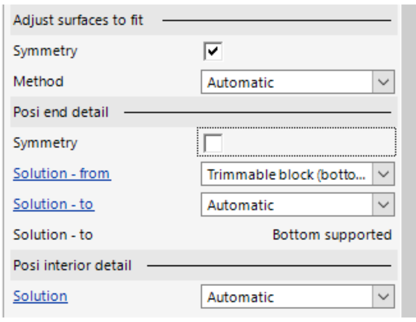


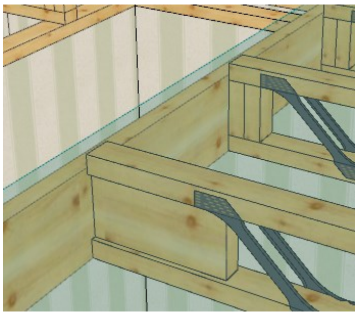





3. Modify end and interior details

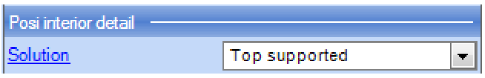
1. Change end and interior build option for selected joists F4 2.4.4.1 / 2 / 3.



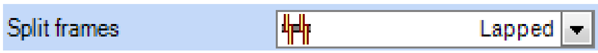


2. Set the end and interior details using the properties for the selected wall.

3. Create beam pockets
   1. Split internal walls to restrict affected frames.
   2. Raise the horizontal internal wall by 150 and set the inter detail property.

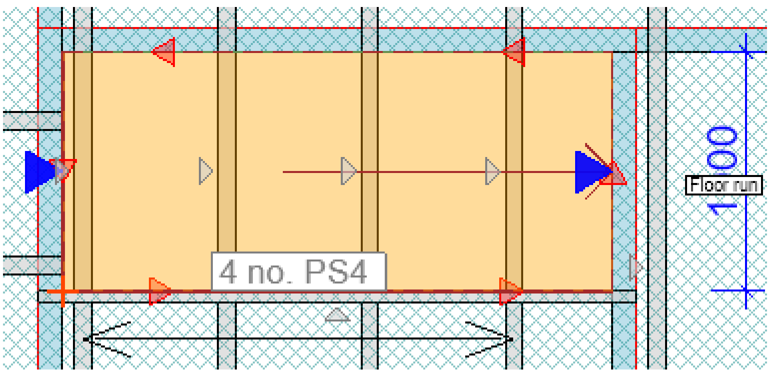


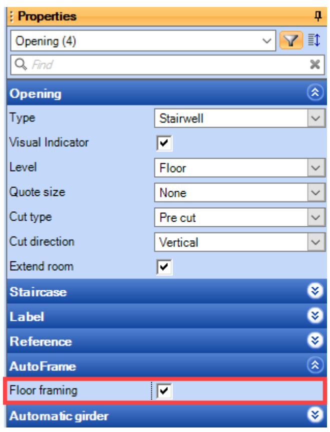
   3. Change the solution setting to site cut and rebuild the joists for continuous bottom chord.

4. Split joists on internal walls
   1. Remove the built status from all joists.
   2. Reset the wall height.
   3. Set the property on internal wall .
   4. Select the unbuilt joists and split on the wall via the RM option
   5. Review the split joist spacing and adjust as required

4. Create sacrificial framing (Crash deck / future lift shafts)

1. Ensure the **existing** related **framing zone** is set to **automatic**.
2. Select the opening and activate the "Floor framing" in the properties then modify supports.

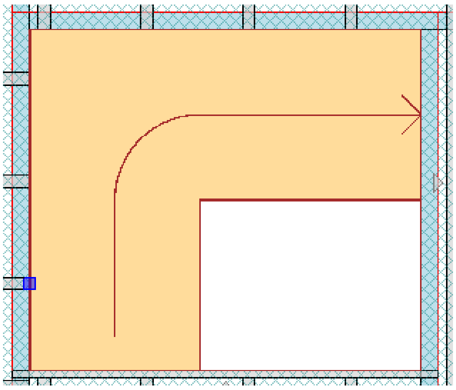


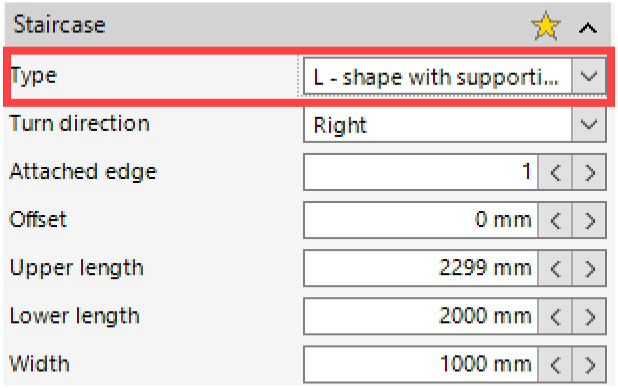


3. **Add** a **manual zone** for full framing options

5. Create corner-landing framing.

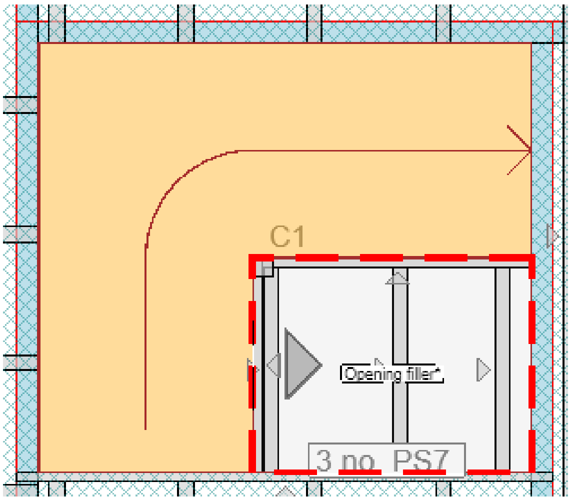
1. Remove the crash deck by deselecting “Floor framing”.
2. Select the **stairwell lower edge** and increase the **stairwell to 2m** deep and set the staircase to an **L- shape with supporting post**

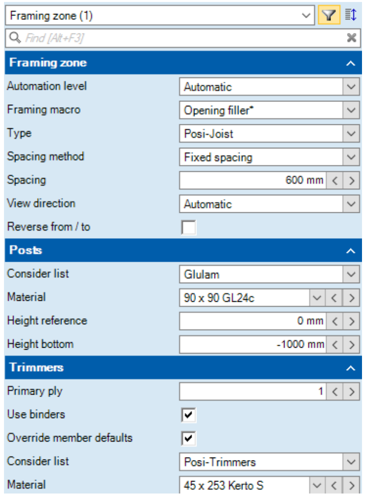




3. Select the whole stairwell and activate 

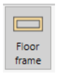
via the RM.





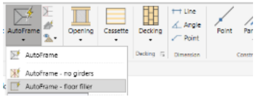
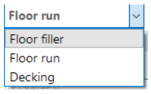
4. Modify the framing zone as required noting the frames only go to the opening edge.

6. Add Edge truss floor frame.

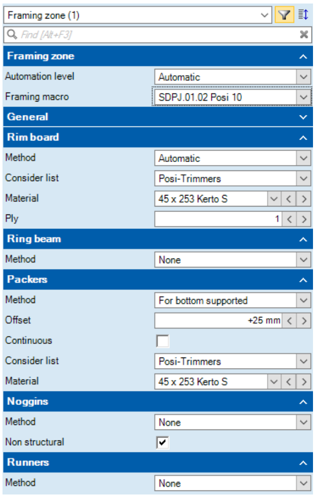
1. Use the floor frame icon 

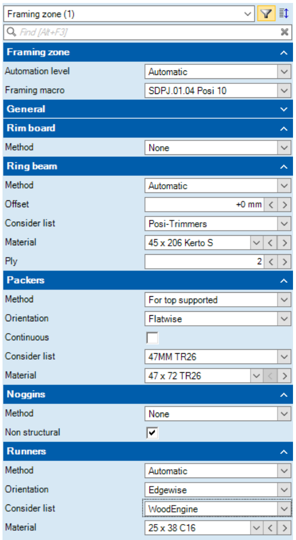
tools options to add an edge truss
2. Set the auto webbing style settings in the properties to obtain “Verticals only”.

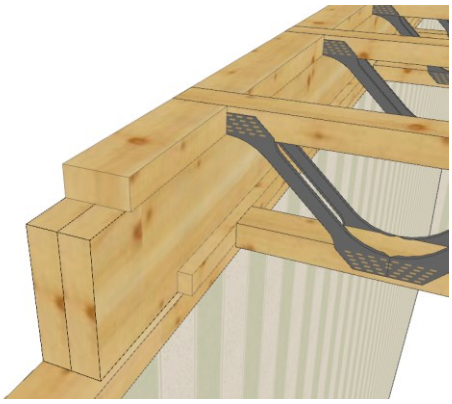
7. Create edge framing filler zones (Timber frame)

1. Review terminology using help F1 – search for “Floor Filler” and understand terminology - Rim board, Ring beam, Packers, Noggins and Runners also FD.2.01 on the knowledge base.
2. Review filler materials F4 2.1.5
3. Review filler settings F4 2.3.1.13
    1. Set all zones to automatic – Note links to end details – refer to SDPJ.01.02 and SDPJ.01.04
4. Apply filler zones
    1. Use automatic  and manual 

framing options.
    2. Select the floor filler framing based on wall type and build options.
    3. Note end detail must match filler zone for correct application.



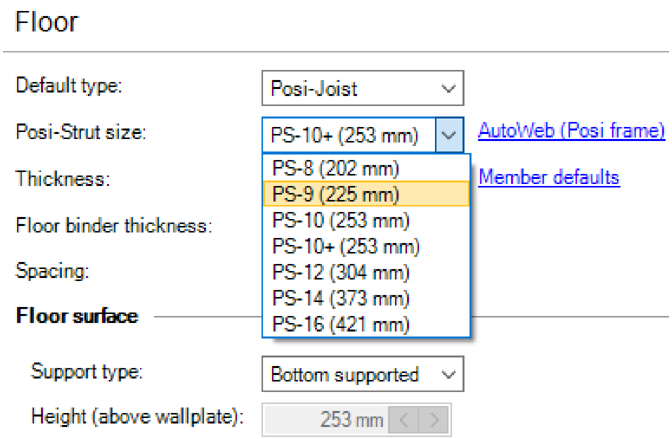




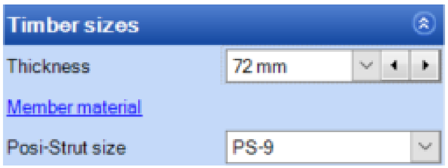
5. Split and merge filler zones via the RM option same method as floor runs.

8. Change the whole floor depth

1. Remove built status from all frames.
2. Set the framing zones back to automatic.
3. Confirm the accurate floor depth and update default web size using F4 1.1.2



4. Select the live floor surface via the project panel and change the properties to match.
5. Review the Posi size for all joists and update the trimmer sizes in properties then rebuild all.



9. Review and fix hidden frame clashes.

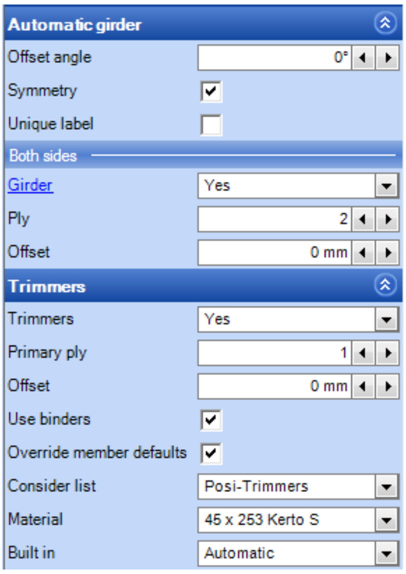
1. Activate the **3D view** and “**Check 3D Interference**” via the icon.
2. Set the required detection parameters and “**Ok**”.
3. Note **min 2mm** Tolerance required to allow Posi joist to Girder connections to pass.
4. **Select issues** in the modified notifications panel and use **Shift + Home** to zoom in.
5. Deactivate the notifications via the “**Show 3D Interference results**” icon.
6. Note - Checking **can be repeated** following framing updates.

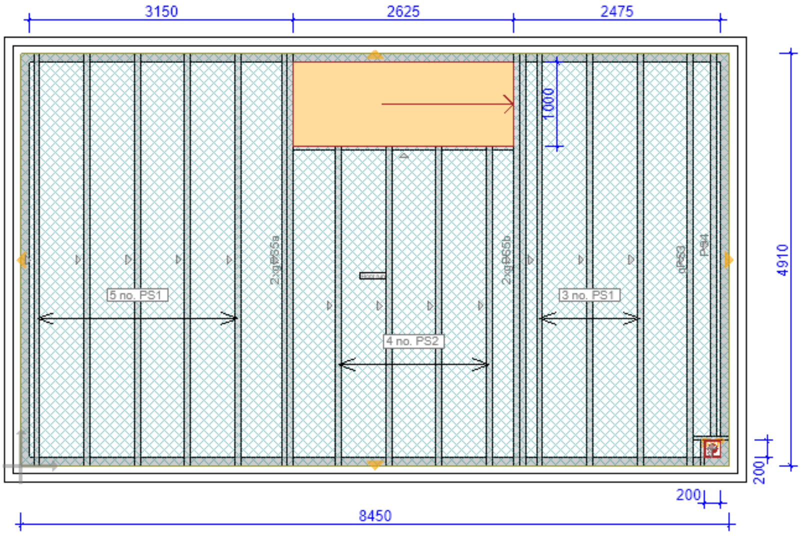
Workshop 1 including design – Page 31 and 32

Module 6 - Posi engineering

1. Align verticals

1. Create job "**Floor2**" in MBA then create a PS10+ floor with the stairwell properties as shown.
2. Modify the stairwell settings to resolve trimming if needed, build **F9** and add split 3D view.





3. Design the girder to get the modified web pattern.
4. Select the layout view and activate "**web joints on top chords**" via the drawing options then **select multiple joints** as **sub objects** and use **"Line up"** via RM to align the vertical webs
5. Use "Lock Posi Vs" via RM too fix webs for design – Note: The design may fail due to the lock.

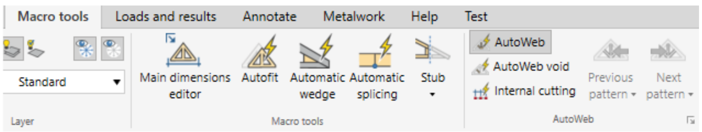
2. Match webbing across joists

1. Select all joist and create a match group via the RM option setting the girder as the master.

2. Design the master joist to generate a final webbing pattern.
3. Select all via the project panel and rebuild variants from the master via the RM and view in 3D.
4. **Lock the Posi webs** in the layout and frame views to stop updates required by design.

3. Automatic and manual webbing noting symmetry webbing

1. Maximise the layout view, open PS1, **line select** all **struts** KB delete.
2. Use "**Macro tools**" tab and **Auto web** or **Auto web void** icons (full / selective) note chase via auto web settings **F4 2.4.6**



4. Delete all Posi webs and internal verticals.
5. Add verticals via "**General**" tab and **Primary** members to create zones then auto web each zone.
6. Use the "**General**" tab and "**Posi strut"** icon to add manual Posi webbing zones.

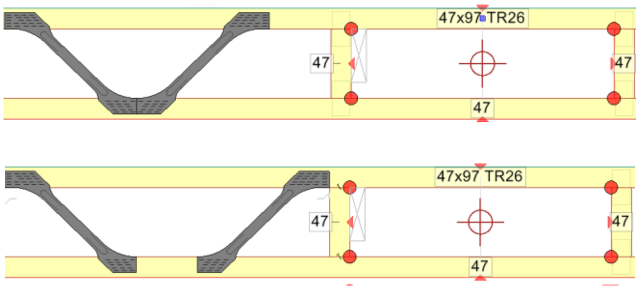
Posi-Strut (Symmetry) (Zone / Frame) (End member , Offset) (Thick / Thin / Outside) Specify point 1 r(0 , 0): _

   1. Review tool options for manual webbing symmetry by "Zone" or overall "Frame".
   2. Use "End member" from the options as "Thick" to add chase verticals
   3. Draw webs
   4. Use CTRL to add double webs.

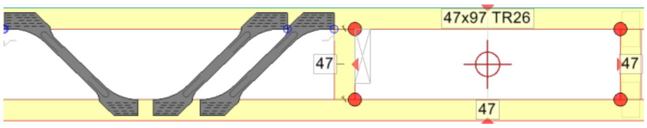
7. Review Snap to auto web setting F4 2.4.6 (This will be company specific)

4. Edit webbing

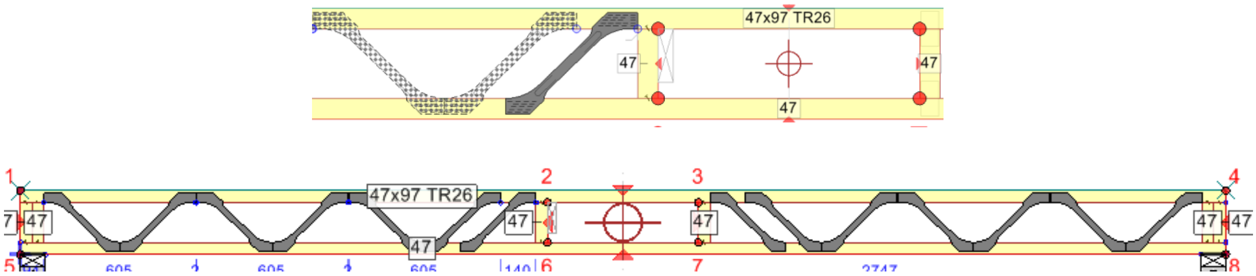
1. Reset webs and change timbers
    1. Reset webbing “**Macro tools**” tab and **Auto web** tool and RM timber option. Review web design options F4 2.4.7.8 – Note automatic doubling is only available with automatic webbing.
    2. Reset timbers to starting sizes and change timbers using the properties.
2. **Split** Vs – RM detach - note symbol
    1. Deactivate symmetry then delete all Posi webs in the right zone and the Half V attached to the chase vertical in the left zone.
    2. Detach and move the nearest half V to the vertical via the RM options



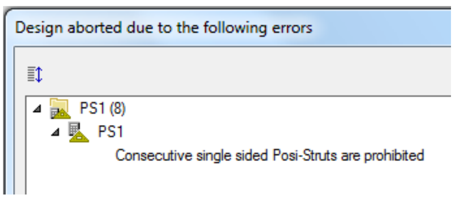
3. **Double** half Vs via mouse position and the RM option



4. **Move** the single web to auto join then **mirror** the zone to complete the full joist webbing.



5. **Flip** and reverse directions on a selected V via the RM option
6. **Stagger** webs via the properties (Both / back/ front) – note limitations and design message.



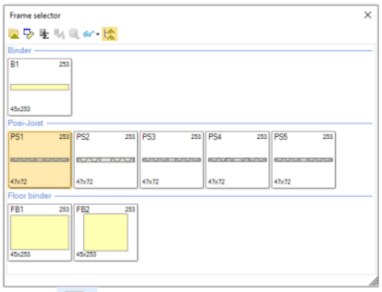
7. **Lock** web pattern via RM
8. **Review gaps** based on the Posi ETA limits (Knowledge base / Posi joist)

Module 7 - Posi design

1. Design multiple joists from the layout view or project panel.

2. Design multiple joists directly from the frame selector

1. Select single or multiple joists (with Shift or Ctrl) via the LM.



2. Design the selected joists using or F10 or Ctrl+D

3. Use the "load and results" tab and "Show loads" to review cases and scroll via Alt + Roll.

4. Reset the design status.

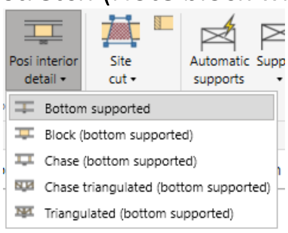
1. Use the project panel to select the joist in the layout view or the Layout frame in the frame view.
2. Use "**Rebuild**" Ctrl + F9 to reset the joist status via the RM.
    1. Understand that this will set all properties back to the template defaults.
3. Use the reset timber size option Reset to starting sizes via the RM in the background of the frame view area. NOTE: will rebuild timbers only and reset to default sizes.

5. Review the design results

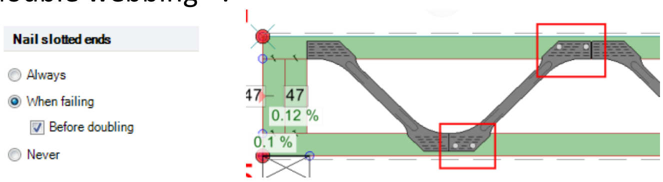
1. Use the "load and results" tab "Design result inspectors" "Deflection" icon
2. Design combinations based on supports and loading.

6. Fix failures (FD.9A.05 Tips and tricks)

1. Change jointing options from nailed to plated vertical webs to reduce deflection F4 2.4.7.8
2. Reduce the load by adjusting the spacing.
3. Reinforce the Posi see KB FD.4.05
    1. Add internal blocking then stretch (Note block will obstruct services).



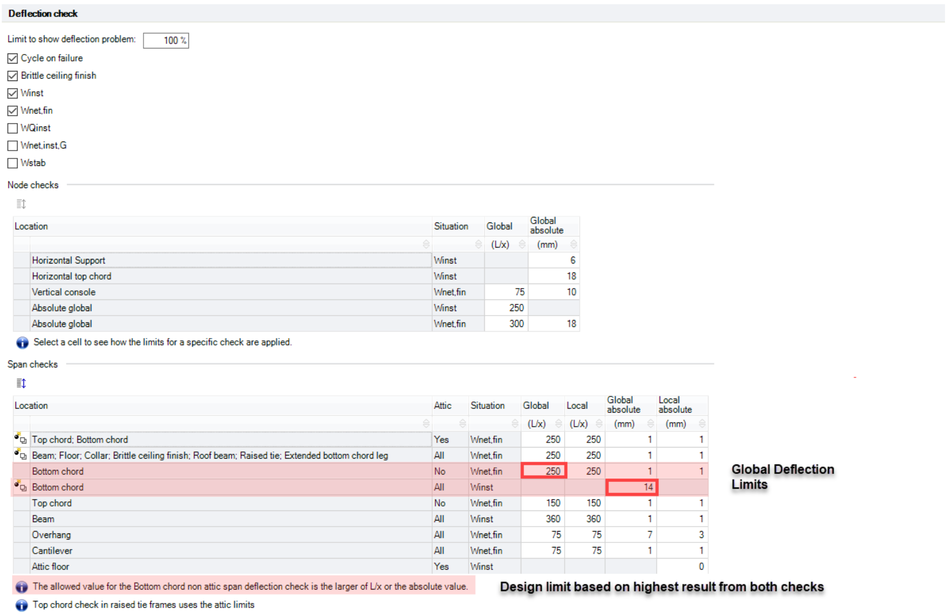
    2. Apply Posi reinforcement to the face similar to a scab (Note sheet will obstruct services).
4. Enhance Posi web anchorage F4 2.4.7.8
    1. Use "Nail slotted ends" option to achieve improved grip.
    2. Use to stop double webbing –.



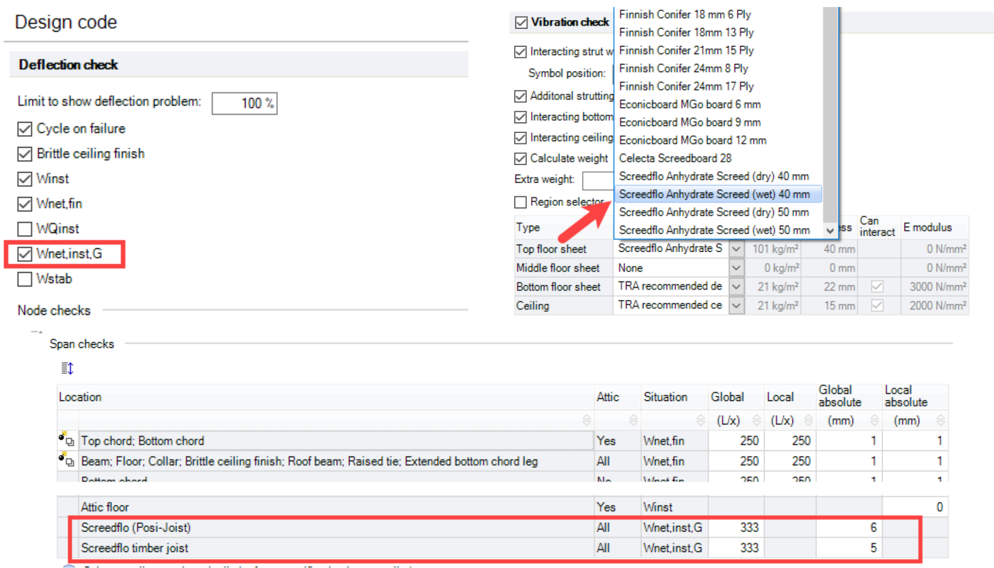
    3. Note – Major time implications for factory also use symmetrically for site to avoid errors.

7. Deflection analysis

1. Understand that deflection limits are based on both instantaneous and final values (EC5 NA.2.7.1) and the final design will be based on the critical combination.
2. Use the "**View**" tab and "**Show deflection heat map**" to review deflections by load compilation.
    1. Add a short internal wall near the end of a standard Posi then rebuild and design.
    2. Use **Alt +Wheel** to scroll through the deflection summaries.
    3. **Hover the mouse** over Posi to review localised deflection value by combination.
3. Review deflection allowances (will fail at the lowest allowance shown)
    1. Instantaneous allowance 14mm required by NHBC all projects after 1st July 2023.
    2. Final allowance based on clear span / 250 (for plasterboard ceiling) - e.g 4800 clear / 250 = 19.2mm final allowance.
4. Reduce the allowed deflection value. See **RD.12.07.05** and **FD.4.03.04**
    1. Set the global deflection limit for PS1 to 10mm to show a failure.



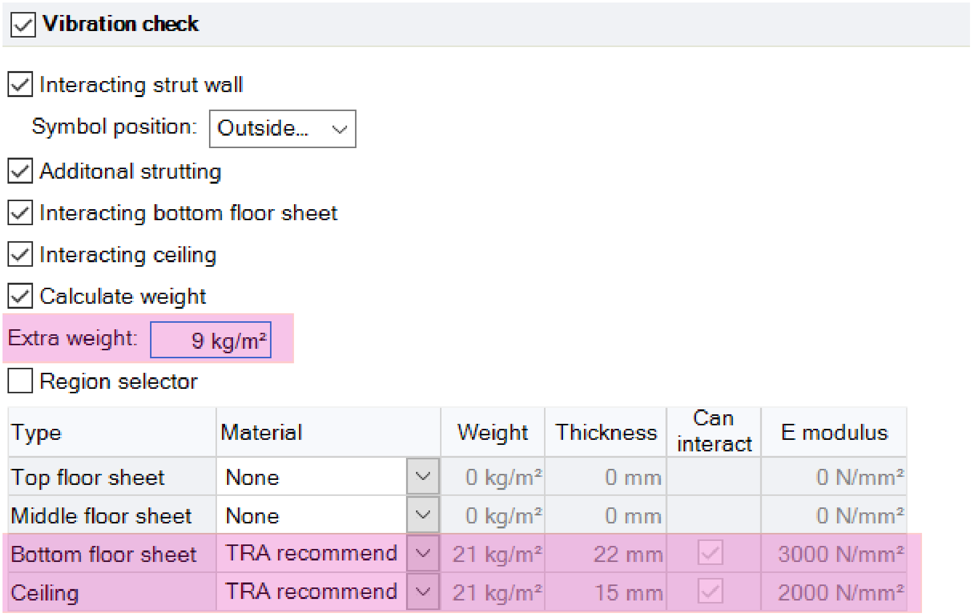
5. Review reduced short duration limits for screed floors "Screedflo".



6. Review screed flow loading **FD.4.03.03**
7. Note – Remember to consider compound deflection where appropriate.

8. Vibration analysis

1. Understand the EC5 vibration method and allowance **FD.4.04.** See N.A. 2.7.1 linked to deflection with values modified down relative to span.
2. Note: Vibration check loading is not linked to default floor dead load.
3. Set the loading for the vibration check.
    1. Calculate weight **off** allows you to manually set the total dead load for the check.
    2. Calculate weight **on** uses the dead load based on the weight shown on vibration materials.
    3. Use **Extra weight** to match those vibration loads to dead loads e.g. vibration check Bottom floor sheet + Ceiling = **42Kg/m² compared** to Dead load Ceiling 0.25kN/m² + Dead load Floor 0.25kN/m² = 0.5 or 500N/m² /9.81 = **51Kg/m²**. Extra = 51Kg/m² – 42Kg/m² = **9Kg/m²**.



4. Review the associated checks
    1. Deflection checks based on 1 Kn point load at mid span and above 8Hz
    2. Deflection Limit value for span < 4m = 1.8mm, over 4m (16500/design span$^{1.1}$)
    3. Design span is taken as the clear span in the MiTek software.

5. Show how materials affect vibration.
    1. Review the vibration results to see is KDist is greater than min 0.3
    2. Change strongback material F4 2.1.8
    3. **Note** – untick "Interacting bottom floor sheet" for battened floors and "Interacting ceiling" for ground floor applications.

Module 8 - Posi Loading and load application

1. Loading considerations

1. Dead / imposed load.
2. Partitions 0.35Kn/m2 / stair loads.
3. Additional loads by area.

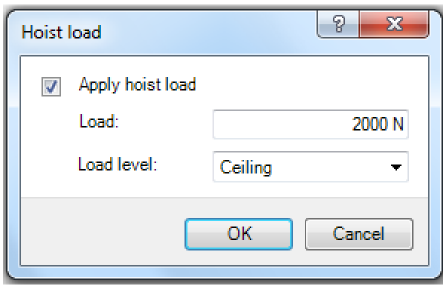
2. Review automatic load transfer arrows. F4 2.4.4.3

1. Posi to girder 2 arrows
2. Binder to girder 1 arrow

3. Modify selected joist loads.

1. Use the properties panel to update the default loading based on the Layout frame label.
    1. **Note:** May require unique joist labelling.
2. Add **LOCAL** hoist loads to the PS1.
    1. Review **GLOBAL** hoist load setting via the properties panel or settings F4 1.1.2
    2. Review the **LOCAL** setting by activating the 

tick box in the frame via the properties panel.
    3. Change the local setting then review load cases.

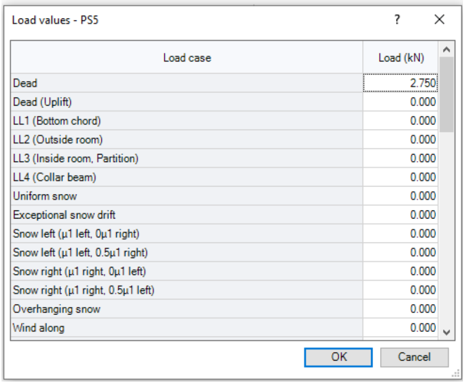


4. Add manual frame view loads.

1. Understand load application.
    1. Activate "**Loads and results**" tab and "**Point load"** icon noting the properties panel options.
    2. Select the desired frame range ***THIS*** frame only / all instances of this ***Design Case***/ or ***All*** frames with this label from the input bar.

    3. Set the chord member "Free" top and bottom chords or "Floor"/ "Ceiling" only.
    4. Define the location via the LM.
    5. Define the values relative to load type as listed in the settings (F4)1.2.
    6. Review the loading units (F4) 3.6

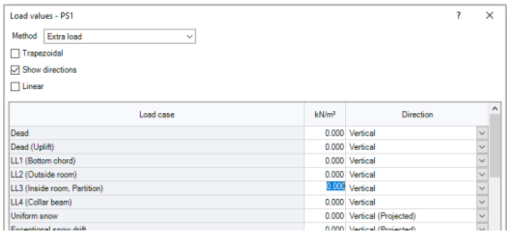
2. Add a frame view "Point load"   of 2.75 Kn on to a top chord on PS1.


Load values - PS5

Load case	Load (kN)
Dead	2.750
Dead (Uplift)	0.000
LL1 (Bottom chord)	0.000
LL2 (Outside room)	0.000
LL3 (Inside room, Partition)	0.000
LL4 (Collar beam)	0.000
Uniform snow	0.000
Exceptional snow drift	0.000
Snow left (µ1 left, 0µ1 right)	0.000
Snow left (µ1 left, 0.5µ1 right)	0.000
Snow right (µ1 right, 0µ1 left)	0.000
Snow right (µ1 right, 0.5µ1 left)	0.000
Overhanging snow	0.000
Wind along	0.000

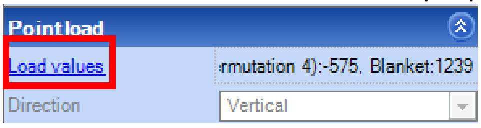
OK Cancel

3. Add a frame view uniformly "Distributed load" to a top (e.g. increased floor live).
    1. Activate "Loads and results" tab and Distributed Load icon
    2. Add a new 0.300 to LL3 as an extra load noting the units KN/m2

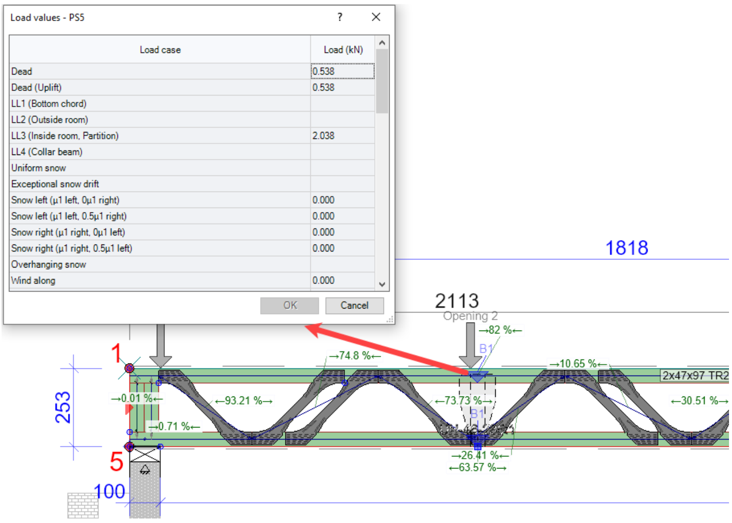


5. Review applied frame view loads

1. Select the load arrow and review the load values via the properties.

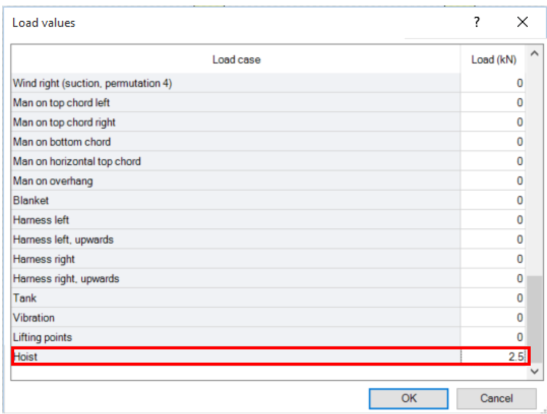


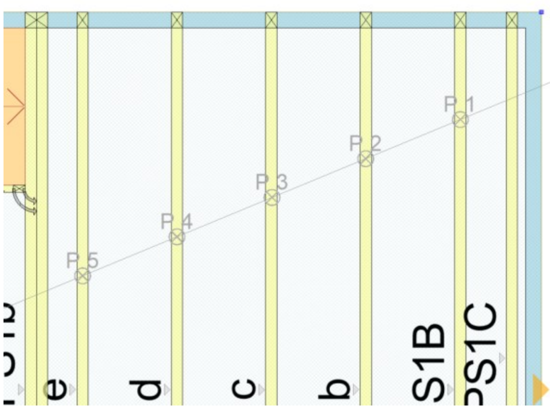
2. Use Alt + Double LM on a visible loads to display the load values.



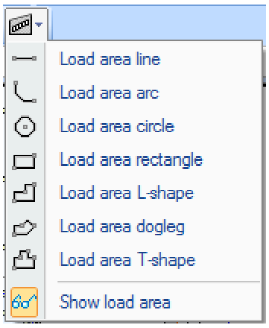
6. Add manual layout view loads

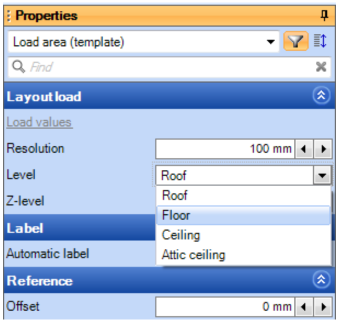
1. Use the "**Loads"** tab and **"Load point. Line and area** icons with "**Floor or ceiling**" active in the tool options.
2. Understand Point and line loads must be on the frame to be applied
3. Understand Area loads must cross the centre line of the joist to be applied to it.
4. Add a hoist track as series of layout view, point loads along a diagonal construction line.



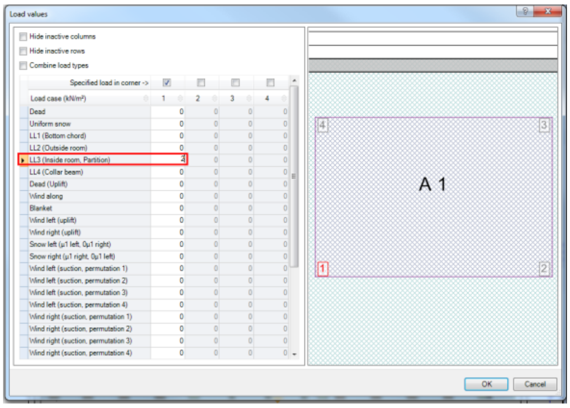


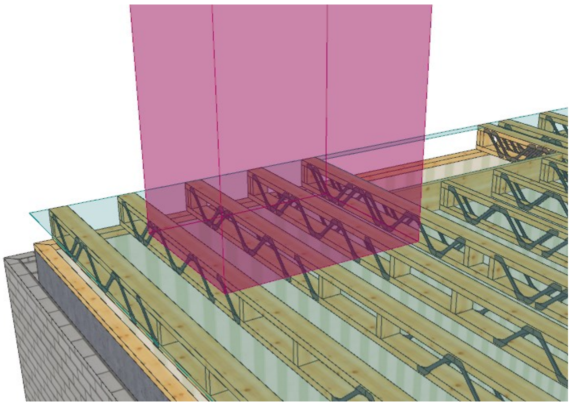
5. Add a layout view area load to the top chord at **Floor Level** (e.g. a corridor load).
    1. Add a new load rectangle noting the loading corners.





    2. Add a load to column 1 only to create a flat load.

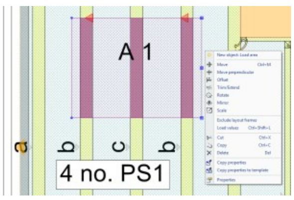




    3. Modify load as required via the RM option in the layout and 3D views.

7. Review and exclude joists affected by applied layout view loads.

1. Display by highlighting the load area. NOTE surrounding frames **<u>DO NOT</u>** carry load.
2. Add a noggin (deactivate self-weight only in the loads category) to show load accurate load distribution.
3. Exclude frames via the RM option.



8. Modify selected layout view loads.

1. Use the RM option  .
2. Use Alt + Double LM on the loads area to display the load values.
3. Review load definitions (***See knowledge base***)

9. Sound test results Part E (Timber frame robust detail – FD.5.01)

1. Explain the robust detail EFT3 / 6

10. Fire test results (See knowledge base)

1. Refer to new EN test summary document – Note: 30 mins =>PS9 / 60/90 Mins =>PS10

Workshop 2 page 35 and 36

Module 9 - Add ancillary items

1. Add strongback bracing using manual and automatic tools based on web pattern

1. Review F4 1.6 and F4 2.1.8 Strongback bracing defaults
    1. Strongback material will affect the vibration check – larger section = higher resistance
2. Add strong back carrier status to webs in the frame view via the RM option
3. Use auto brace
4. Add a strongback using manual bracing options.

2. Add metalwork

1. Activate “**Metalwork**” tab and confirm “**Placement mode - Automatic**” icon is active.
2. Review hanger properties for Posi and girder-to-girder connections.
3. Review hangers with full fixing description active.
4. Assess working and failing hanger options.

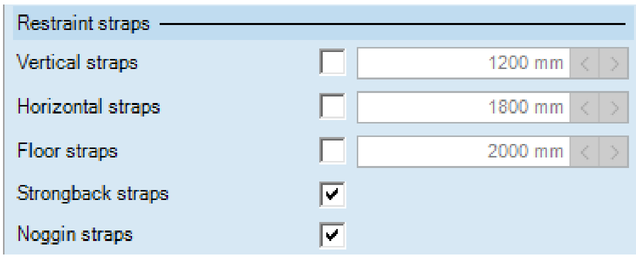
3. Add partition noggin zones

1. Add a Non load bearing wall.
2. Select the section of wall and apply noggins via the RM option 

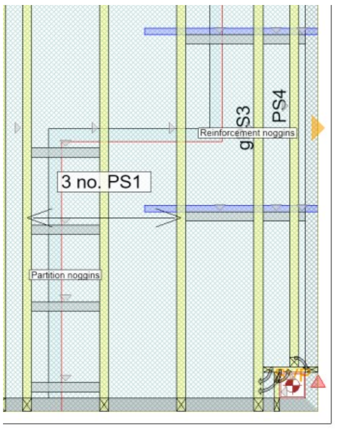
3. Select the perimeter items (use joists, walls and construction lines) then apply noggins via the RM option.
4. Ensure noggins are set as structural to allow take off of clips.

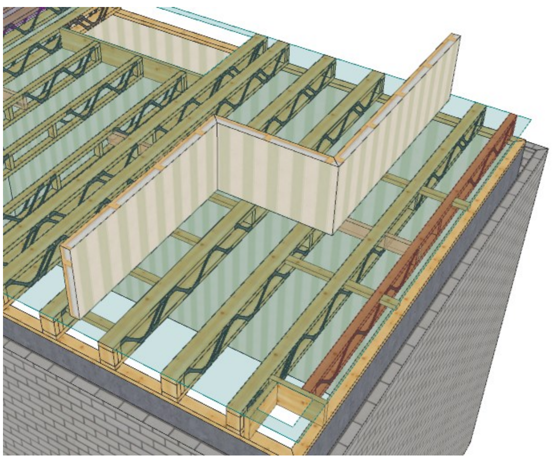
4. Add wall restraint noggins

1. Set the wall properties to attach straps to noggins



2. Select the noggin zone perimeter items including the wall (use joists, walls and construction lines) then apply noggins via the RM option





5. Add drawing objects

1. Add module lines to illustrate 2D positions in the frame view
2. Add 3D drawing objects to show pipes and ducts in the floor on the 3D view.

Module 10 - Posi manufacture output and installation

1. Manufacture

1. Review the Posi Joist fact sheets (***See KB FD.12.01/02/03/06)***

2. Output

1. Create Pamir based output using templates
    1. Selecting templates in the output view.
    2. Add Posi viewports
2. Review Sapphire based reports.
    1. Create reports using PDF format

3. Installation considerations

1. Refer to installation guide (***See knowledge base***)
    1. Note incorrect decking storage can cause hanger failures during the build process.
    2. Do’s and Don’ts

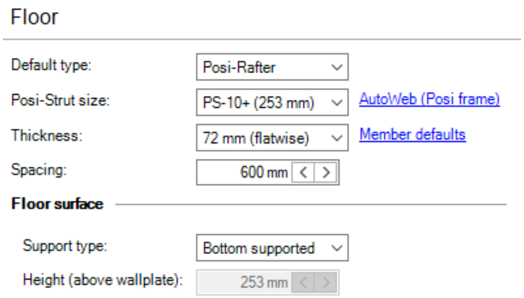
Module 11 - Posi flat roof entry (time permitting)

1. Key principles.

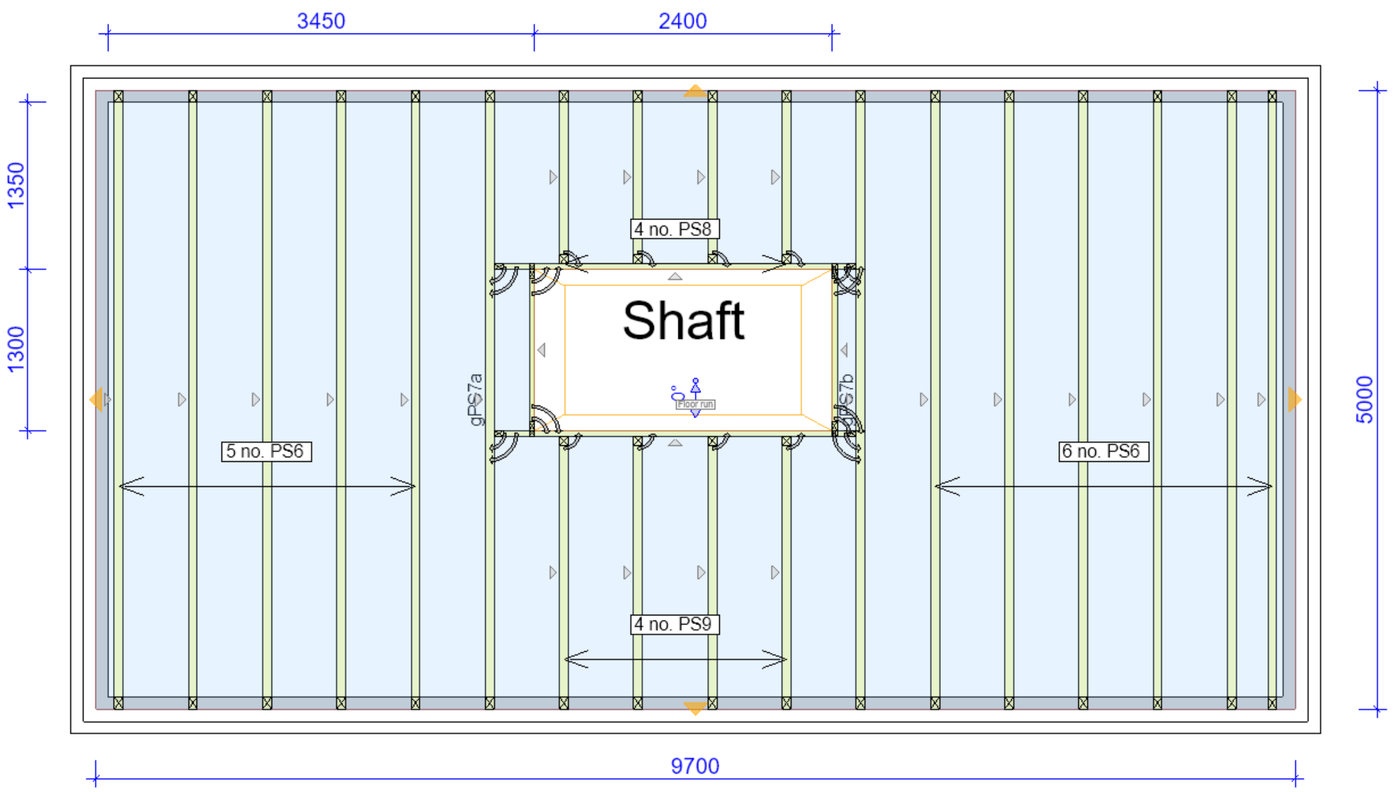
1. Separate roof and floor projects for easier pricing.
2. Posi rafters can have timbers on edge or flat.

2. Posi Flat roof bottom supported (Flatwise timbers)

1. Create “Roof 1” with the surface and frames entered as a roof.
2. For Posi rafters with timbers on flat deactivate set the “Default type” to Posi rafter (F4 1.1.2).



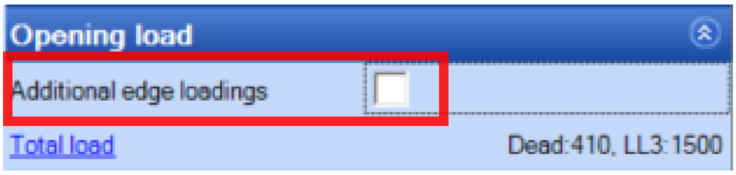
3. Create the building with a 0° pitch roof at 253 vertically above the wall plate.
4. Add shaft openings for roof lights as required with trimmers set to full depth.



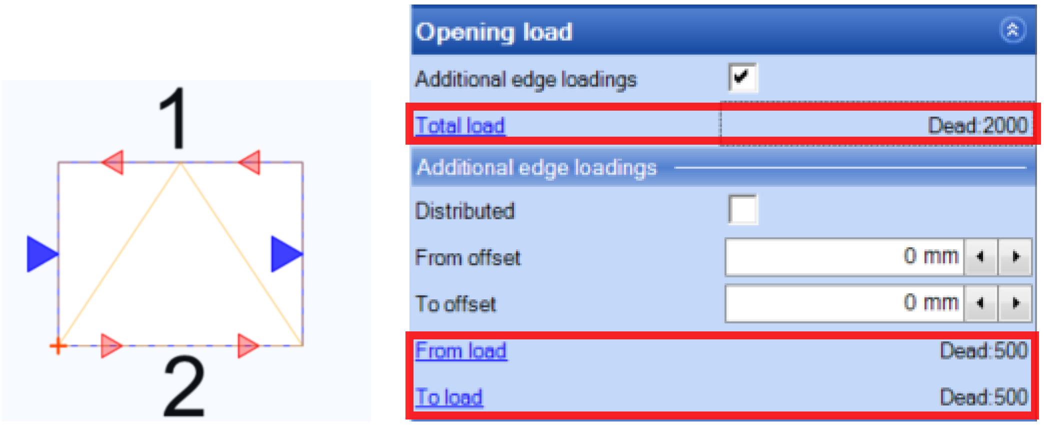
5. Add the framing as floor run framing as automatically or as a manual zone with side delimiters.
6. Remove the binder trimmers if added via the project panel to show correct load transfers.
7. Change the Posi Joists in to Posi Rafters via the properties option.

3. Modify the edge loading for orangery roof light openings

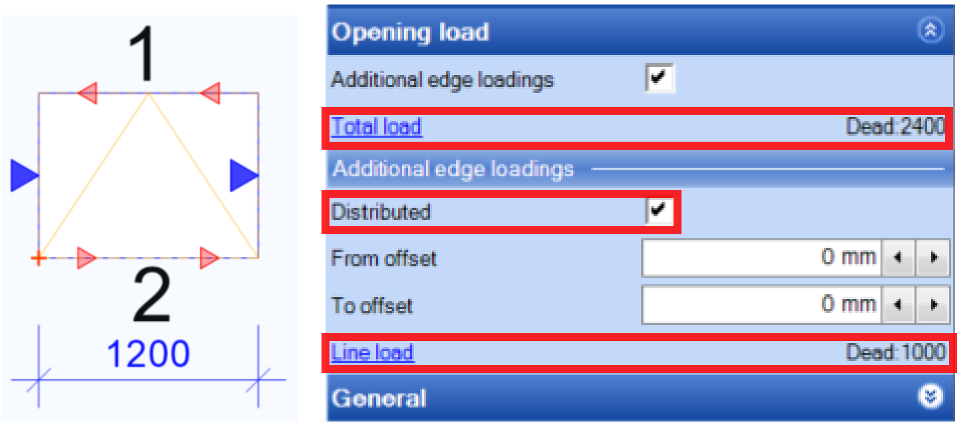
1. Understand that the Pamir software automatically generates opening loading for STAIRWELLS ONLY relative to the values set the design code settings F4 1.2. All other openings require additional edge loading to be calculated and added relative to type.



2. Apply additional opening edge loads
    1. Activate "Additional edge loading
    2. Apply corner point loads as "From (start) and To (end) values to the selected loaded edges e.g. 2Kn total load / 2 sides = 1Kn per side / 2 ends (say a purlin) = 0.5 Kn per end.



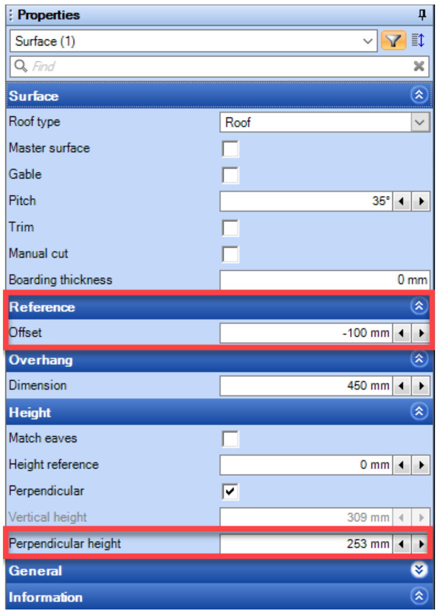
    3. Apply a total load "Distributed" as a value per metre of the loaded edge e.g. 2.4Kn total load / 2 sides @1.2m each 2.4 / (1.2*2) = 1Kn/M as a line load.



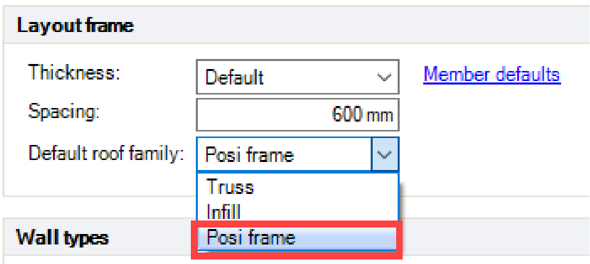
Module 12 - Posi sloping roof entry with steel (time permitting)

1. Posi sloping roof (Flatwise timbers).

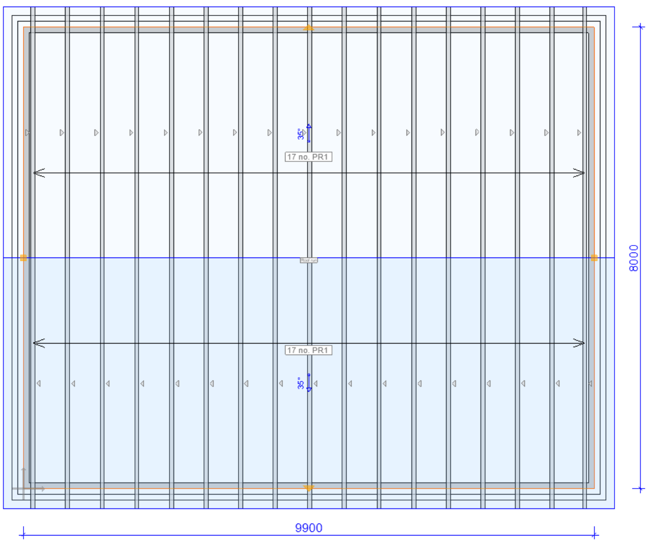
1. Create a 9.9m x 8 building with a standard 35° roof and raise the gable walls to the surfaces set as shown then raise the gable walls to the surface with a 72mm perpendicular setdown.

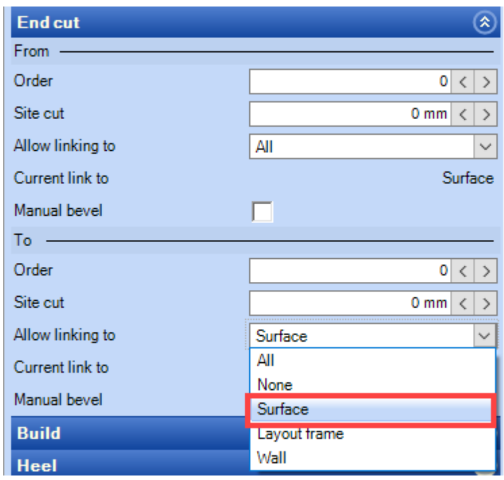


2. Set the roof family default **F4 1.1** to Posi frame and the floor settings as shown **F4 1.1.2**.

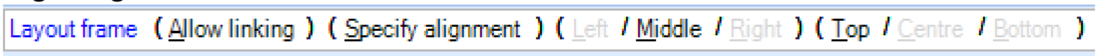


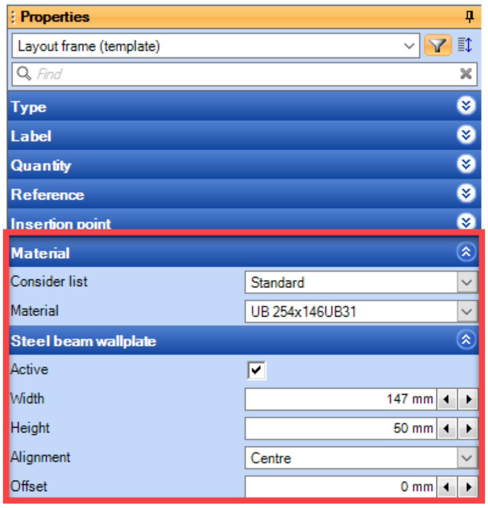
3. Autoframe the roof then select all Posi rafters via the project panel and set their End Cut linking for the "To" end to "Surface " +-in the properties panel.

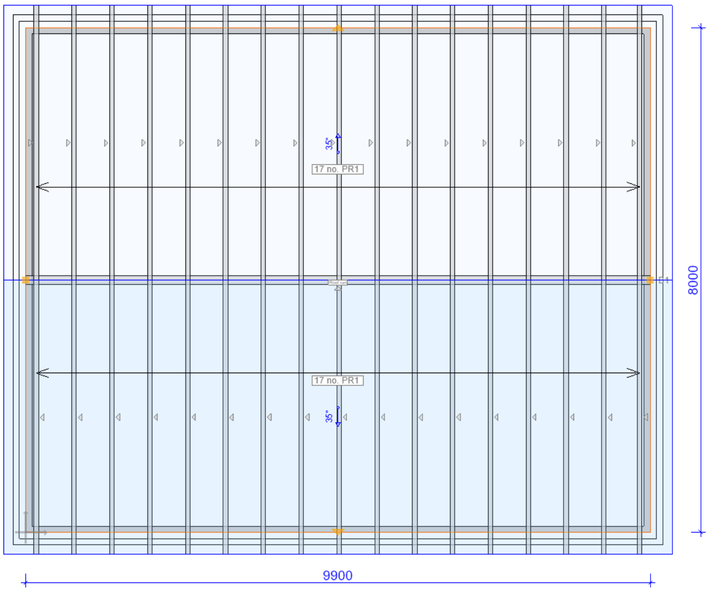




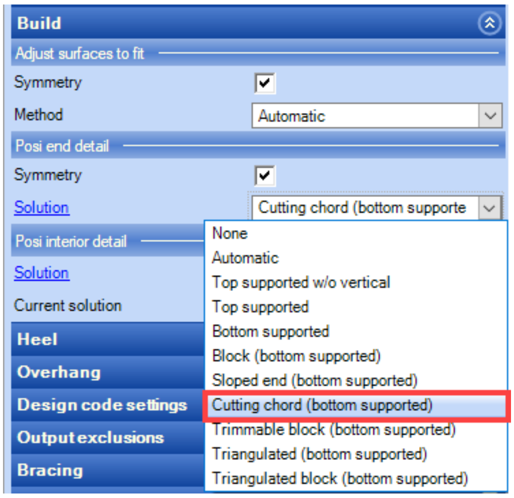
4. Add an UB254x146UB31 steel ridge beam with a 147 wide wall plate attached aligned to the ridge height - 200mm.



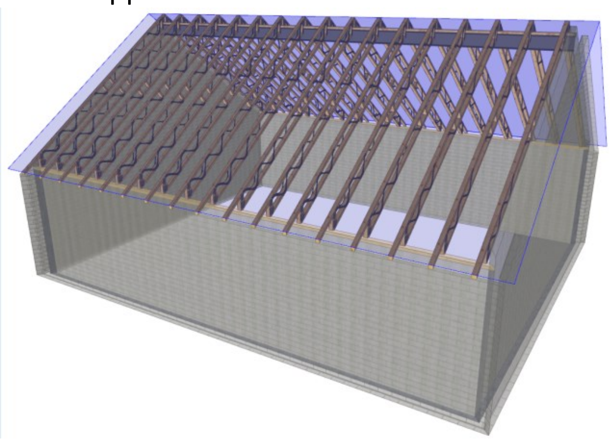


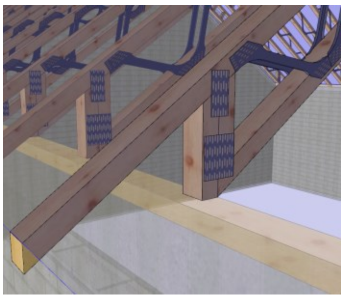


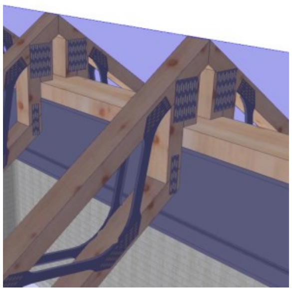
5. Select all Posi rafters via the project panel and set the build option for their end details as shown in the properties panel.



6. Build and design the roof then review adjust the Posi rafter plating as required. Replace the supports on the steel beam with a continuous pinned support then design again.

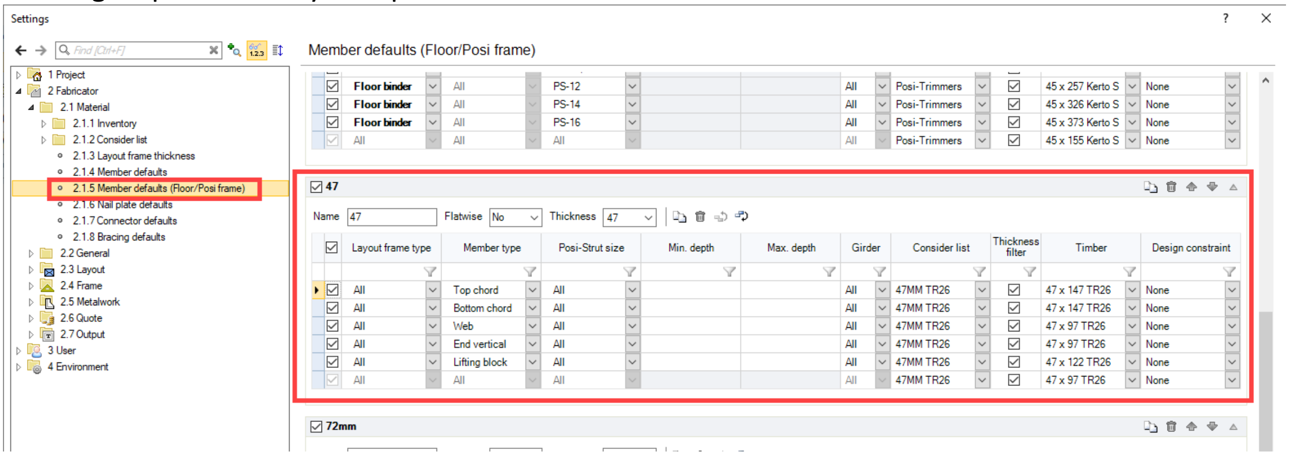




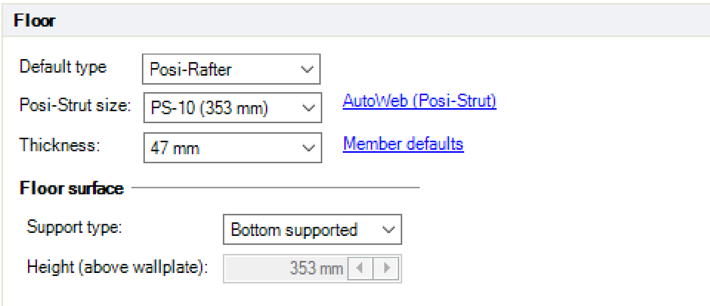


2. Posi sloping roof (Edgewise timbers).

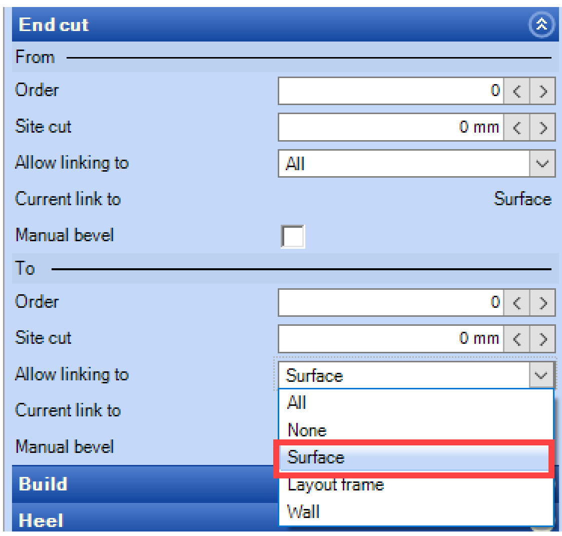
1. Remove the existing Posi rafters from the layout
2. Confirm the 47mm Posi timber member group exists in the settings F4 2.1.5, copy the 35mm group and modify if required.

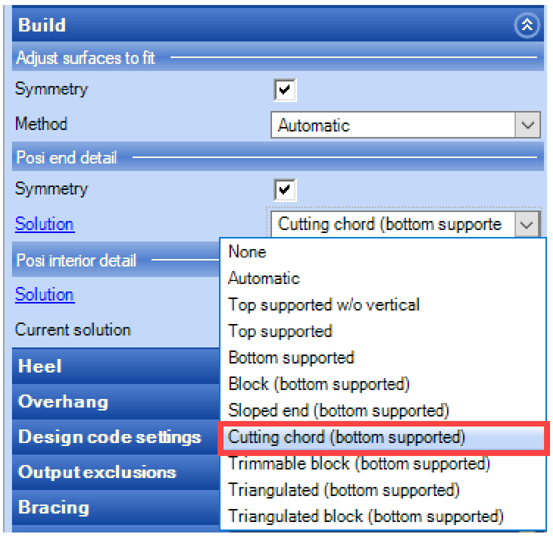


3. Set the default for floors to Posi rafter in the settings F4 1.1 with the thickness set to 47mm material.

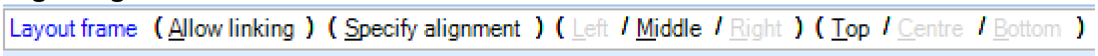


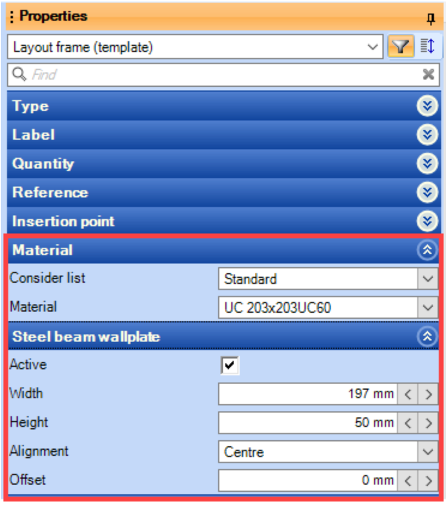
4. Calculate the overall Posi depth based on the default edgewise timber size and set the roof surface to match e.g. PS10 159 clear gap + 2 x 97 timbers = 353
5. Autoframe the roof then select all Posi rafters via the project panel and set their End Cut linking for the "To" end to "Surface " and set the build option for their end details as shown in the properties panel.

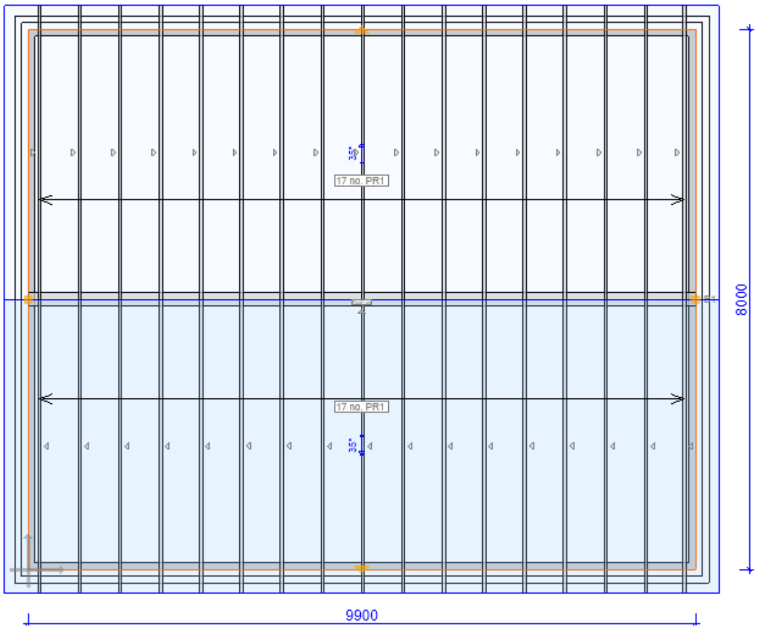




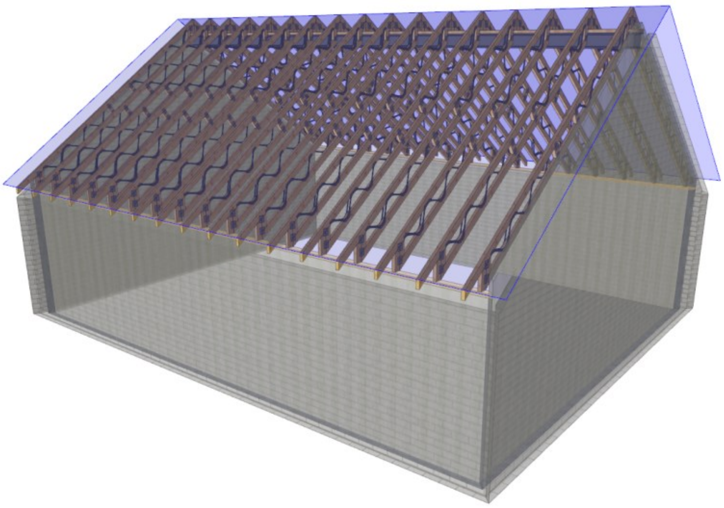
6. Add an UB203x203UC60 steel ridge beam with a 197 wide wall plate attached aligned to the ridge height - 300mm.

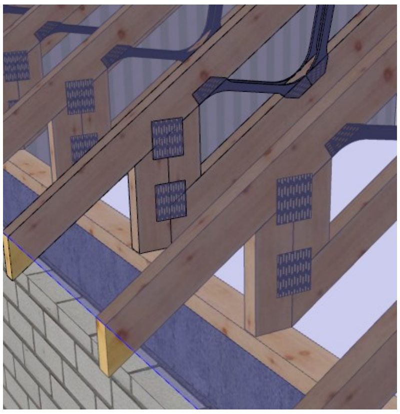


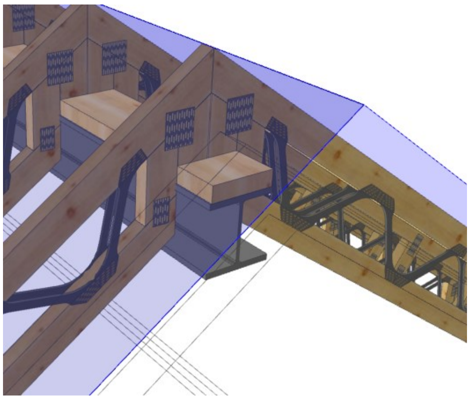




7. Build and design the roof then review adjust the Posi rafter plating as required. Replace the supports on the steel beam with a continuous pinned support then design again.

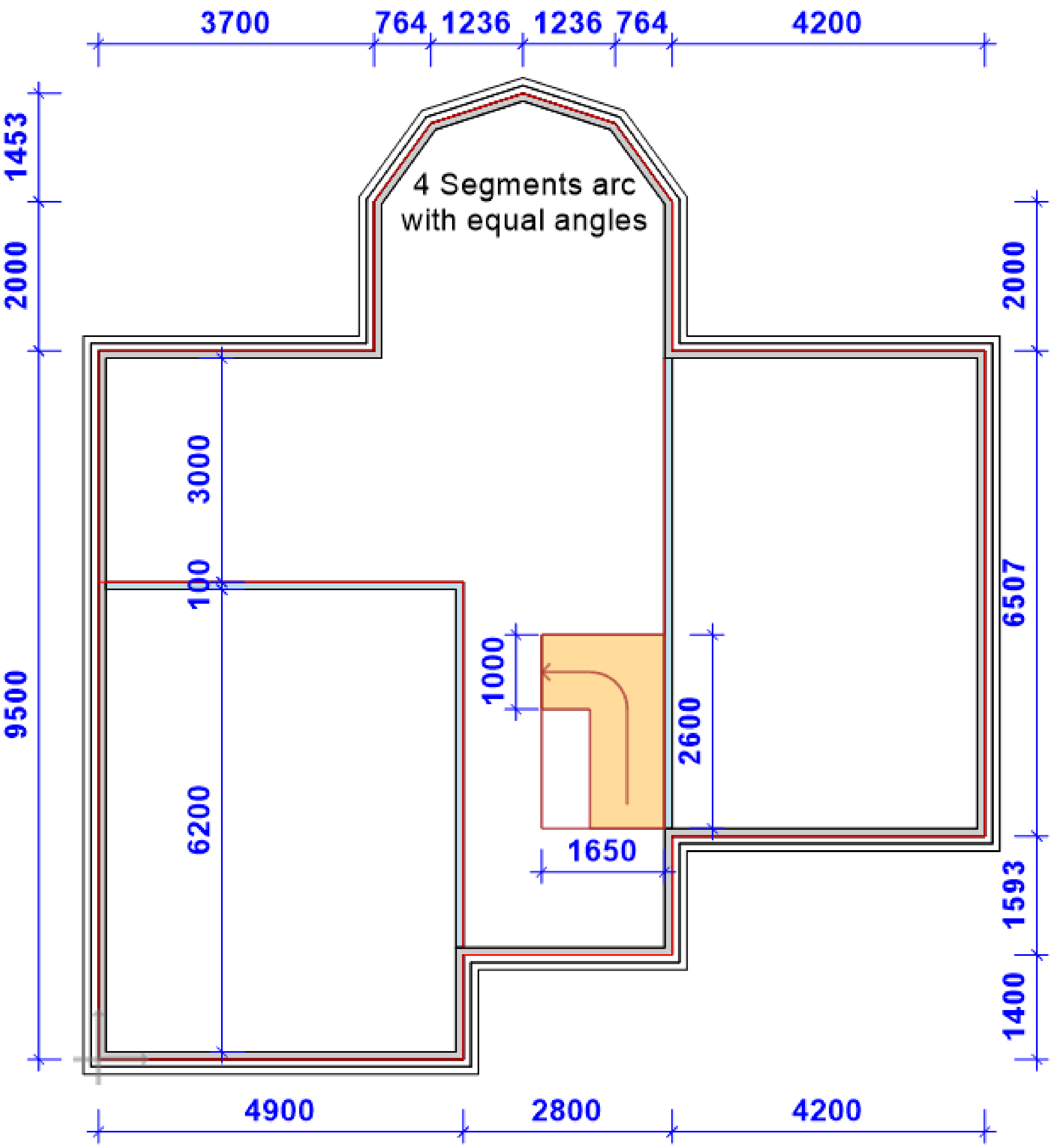






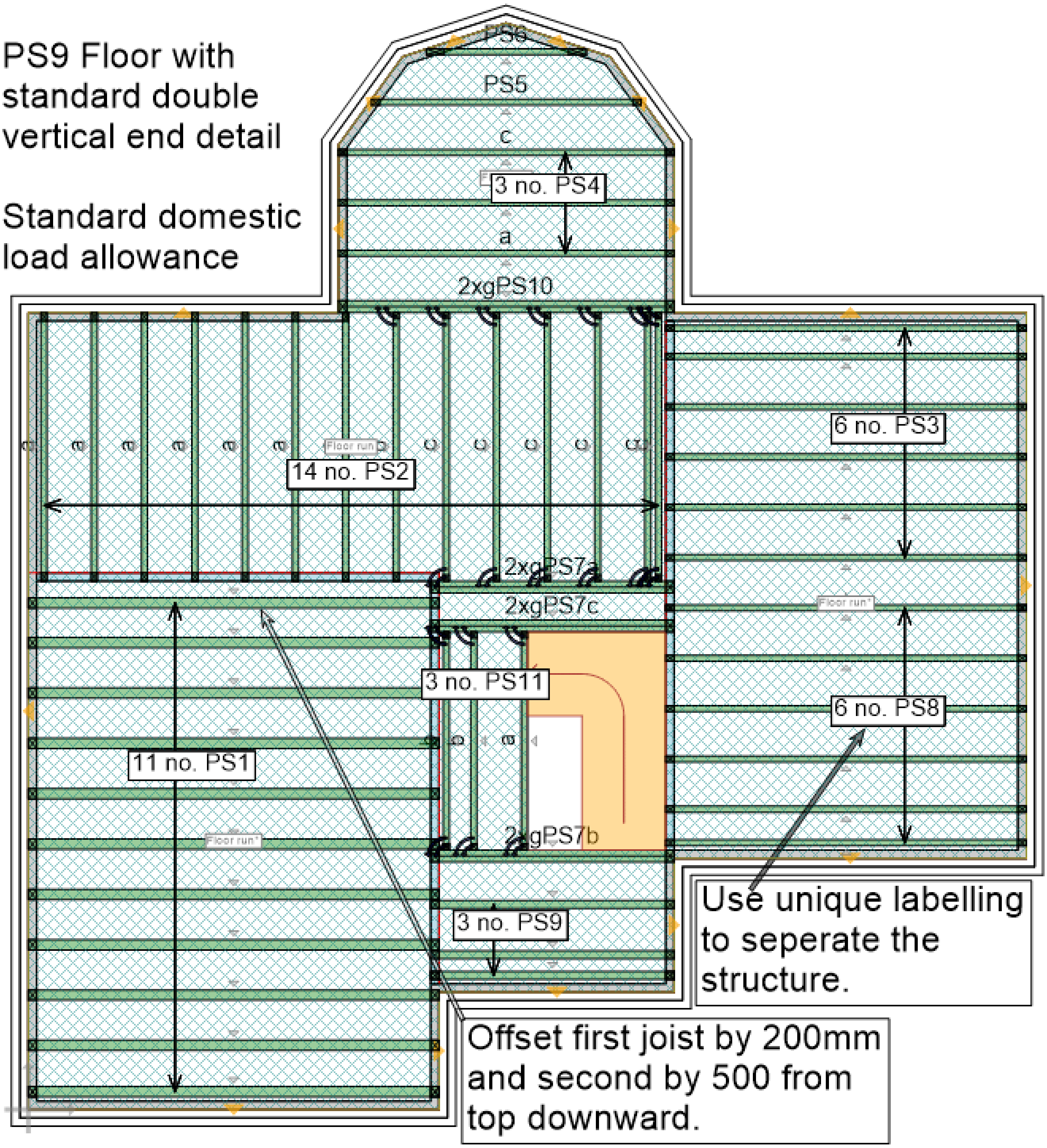
Workshops

Workshop 1



PS9 Floor with standard double vertical end detail

Standard domestic load allowance

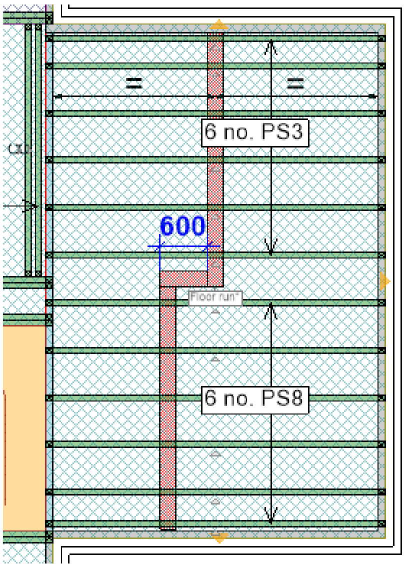


Workshop 2

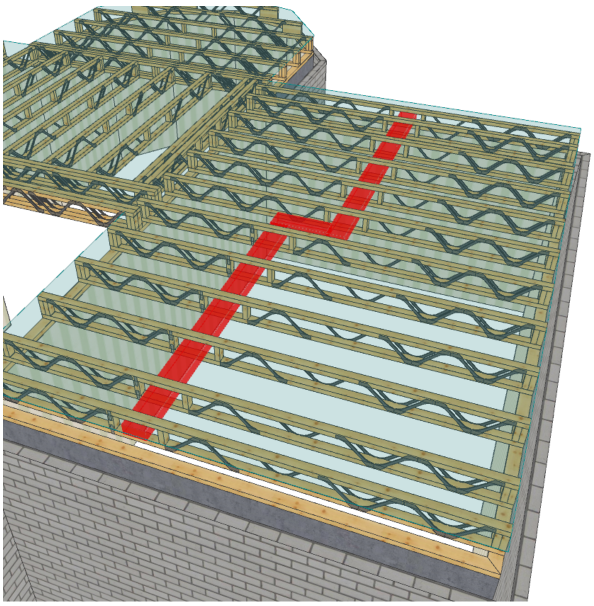
1. Using workshop 2 - Change whole floor depth to PS10

2. Rebuild PS5 and PS6 with bottom supported trimmable end details

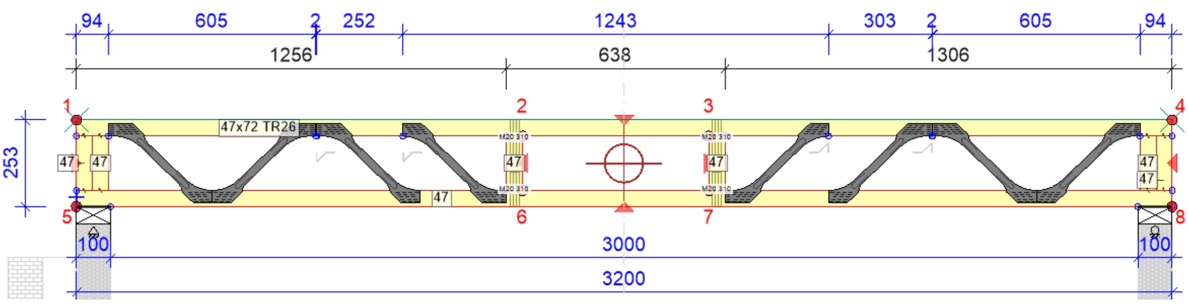
3. PS8 - Move duct opening apply manual webbing zones



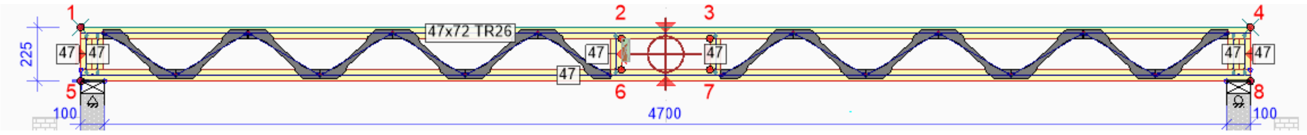
Move duct opening 600 left and apply manual webbing zones on PS8



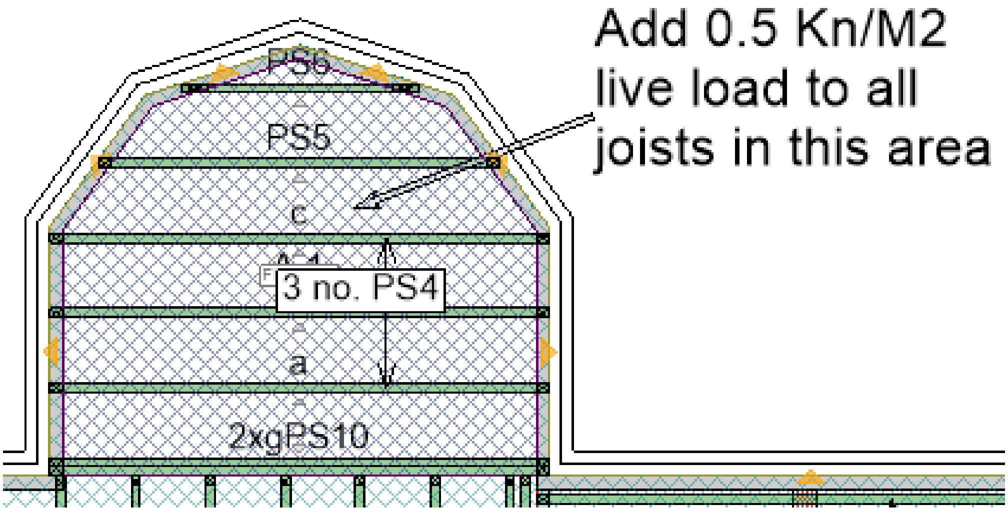
4. PS2 – Manually adjust webbing



5. PS1 - Determine maximum hoist applicable with 97mm wide timbers.



6. Apply addition 0.5Kn/m2 live load to all joists in the bay area of the floor



Appendix 1 – Shortcut Keys

General

Esc	Deactivate active function / reset to Object selection mode
F1	Help
Shift+F1	Help mode
Shift+F3	Activate Project panel search field
Alt+F3	Activate Properties panel search field
F4	Settings dialog
F5	Refresh
F6	Drawing options
F7	Move freehand (use on dimensions and for output items)
F8	Measure distance
F9	Build frame(s)
Ctrl+F9	Rebuild frame(s)
FI0	Design
F11	Edit Plate

Ctrl + Delete	Delete built frame
Ctrl+C	Copy to clipboard
Ctrl+I	Import
Ctrl+P	Output Manager
Ctrl+S	Save
Alt+S	Full Synchronisation
Ctrl+T	Trim / extend
Ctrl+V	Paste from clipboard
Ctrl+X	Cut to clipboard
Ctrl+Shift+Z	Redo
Ctrl+Z	Undo
Ctrl+M	Move selection
Ctrl+RMB and drag	Measure distance
Ctrl+Shift+T	Toggle Snap Paste
Shift	Shortest straight distance
Ctrl	Toggle ortho state
Shift+Wheel	Change reference edge
Ctrl+Wheel	Change ply

Navigation

Home	Zoom all
Shift+Home	Zoom selected
Ctrl+Home	Zoom previous

Views

Ctrl+1	Full layout view
Ctrl+2	Layout + 3D, layout left
Ctrl-4	Layout + 3D + frame, layout left, frame top right Toggle 3D view

Selection Tools

Ctrl+A	Select all
Ctrl+B	Select previous
Ctrl+F	Select all layout frames (layout view)
Double-click	Select the chain of objects or all objects of same type

Frame View

Frame View navigation

Tab	Next design case
Shift+Tab	Previous design case
Ctrl+Alt+F	Frame selector

Autoweb tools

Shift+Right	Next web pattern
Shift+Left	Previous web pattern
Shift+Down	Next pattern group
Shift+Up	Previous pattern group

Engineering tools

Ctrl+D or FI0	Design
Ctrl+E or F11	Edit plate

Miscellaneous frame view tools

Alt+M	Main dimensions editor
Ctrl+Shift+S	Automatic splicing
Shift++	Next load combination
Shift+-	Previous load combination
Alt+Wheel	Scroll Load combinations
Ctrl+Shift+B	Automatic supports tool
Ctrl L	Lock all

3D View

Alt+LMB and drag	Clip Box

Notes