

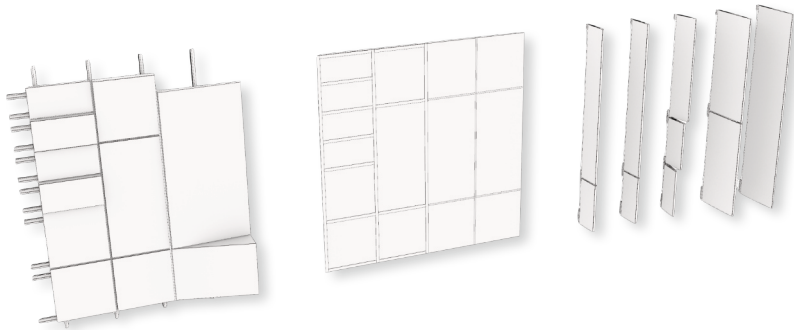
Beauty, Quality
and Sustainability
Customized Solar Facades



Fanshawe College, ON, Canada

Fully customized and complete solar facade systems

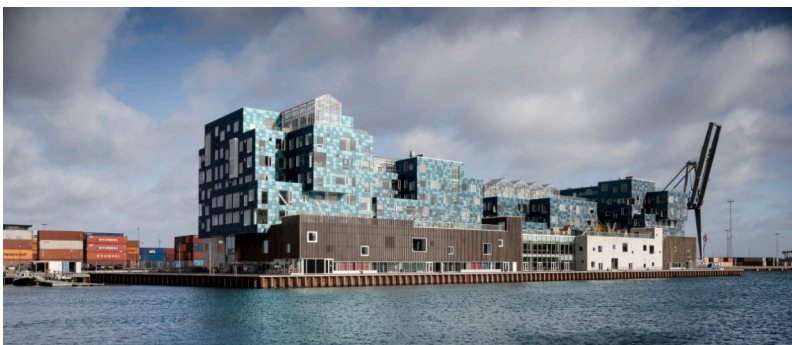
Rain-screen, Curtain-wall spandrel & Louvered systems



Red River College, MA, Canada

We design and produce customized solar energy producing facades with mostly recycled materials and sustainable energy that invisibly integrate high-efficiency PV technology in the building skin, for new buildings, transformations and as retrofit.

Solar facades are transformative claddings, and the only building material that will recover both financial and environmental investment over its multi-generational life, and lower operational costs without architectural compromise.



Copenhagen International School, Denmark



To learn more & download design guides, BIM objects, verified EPD & brochure

www.solarlab.global



**Solar Rain-Screen
Design guidelines**

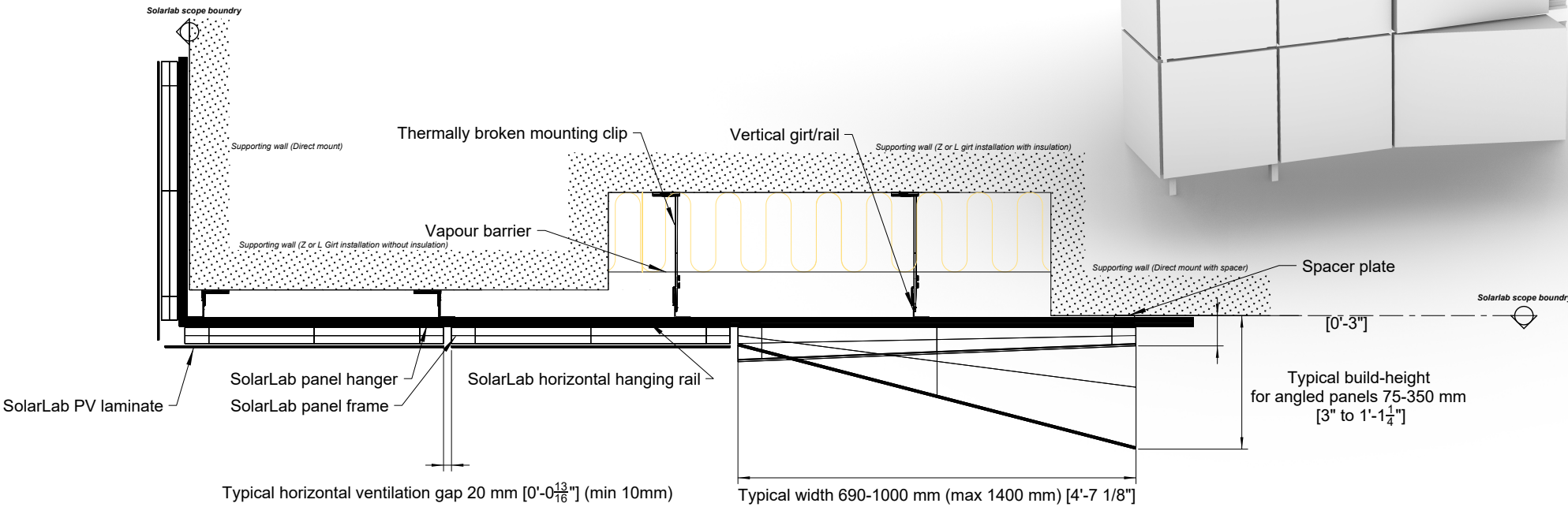
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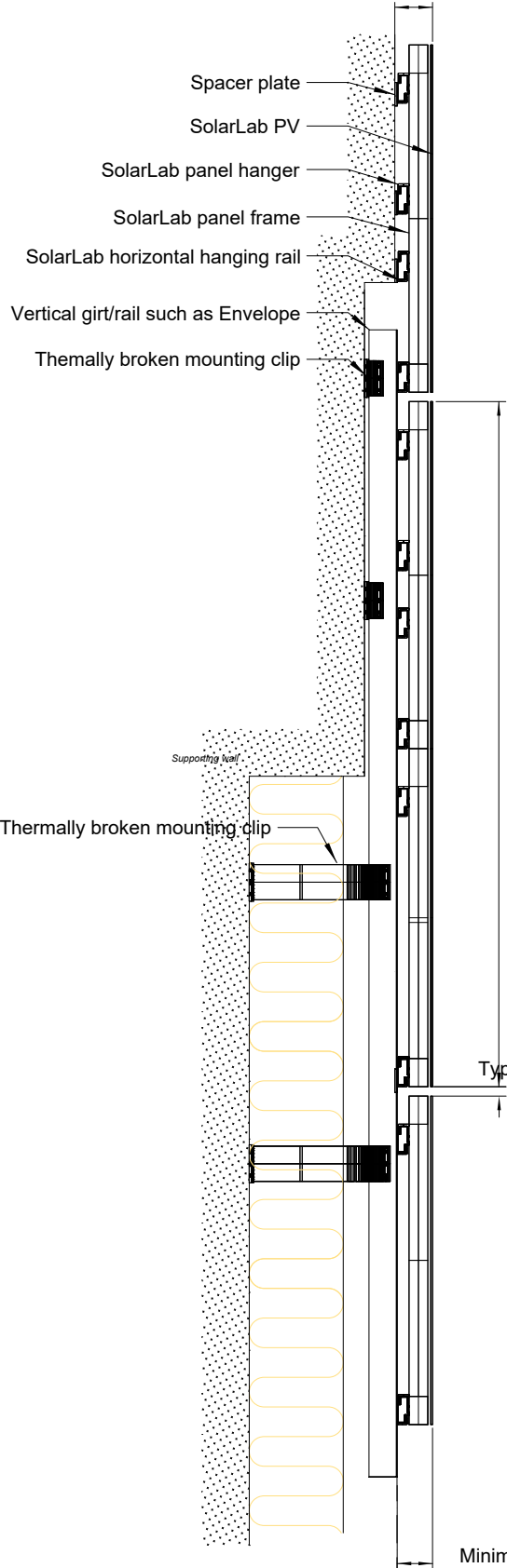
Not for construction



Typical horizontal section

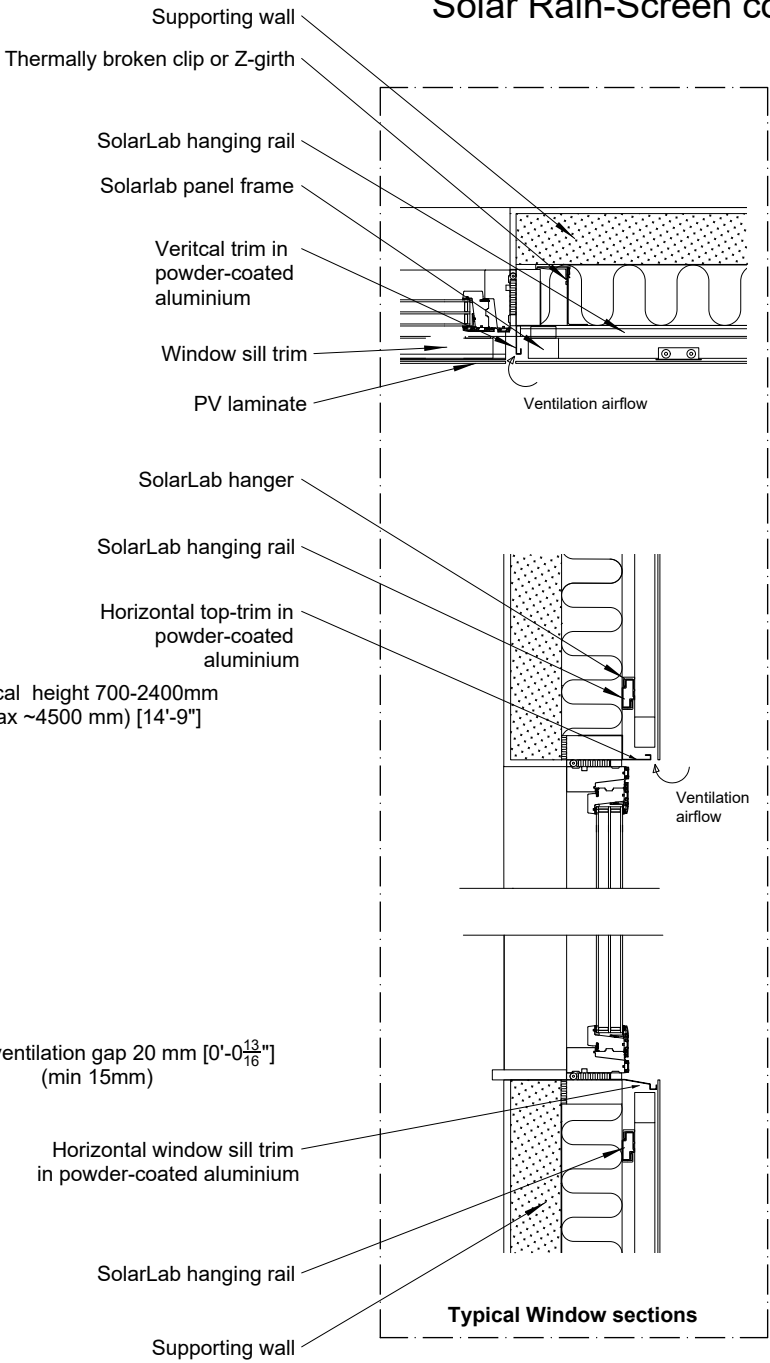


Typical build-height incl adjustment spacer 80 mm [0'-3 3/16"]



Typical vertical section

Solar Rain-Screen construction guide with typical details



The SolarLab.dk solar cladding systems allow unparalleled customization to fit the individual project, from the geometry and mounting to finish and colors.

This sheet provides a simplified design guide to aid in the architectural facade design, but feel free to involve us early in the concept phase so we can support you with more detailed design support as well as power and cost estimationates.

All information presented here is the property of SolarLab.global and is provided without warranty and obligations, as creative support and general information. Any implementation will require validation by project or SolarLab.global engineering ressources.

The basic structure is identical to most light-weight ventilated facade claddings and consists of 3 functional layers, from the fixation to wall or vertical girts, the horizontal hanging rails and the customized BiPV panels. Typical scope boundaries for a SolarLab BiPV facade are the verical girts or the supporting facade and the AC side of the 3-phase inverters, but does not include installation. Installation 1 hour/sqm depending on architectural complexity and scale.

The solar facade cladding is based on 4 mm tempered low-iron glass that is optionally color coated on thebreasr surface and textured or finished on the fron surface. The supporting and mounting systems is based on seaworthy aluminium and the completed facade weighs 15 to 20kg/sqm. The ventilated solar facade can integrate both active and passive firebreak solutions to comply with local code and project requirements.

Depending on panelization and color the solar facade provides 130Wp/sqm to 195Wp/sqm capacity and comes with integrated optimizers and panel-level monitoring as well as panel-level rapid-shutdown

SolarLab.global solar facades are designed around the most efficient PV technologies in the market and are constantly improving. Currently the optimal cells are Monocrytalline c-Si PERC G1 cells that measure 158,75 x 158,75 mm and this provides a handy modulus for optimal panel sizes. Please refer to our separate design and layout guide thair can also be used as a guide for curtain-wall and store-front solutions.

The cells are invisible and the panels can therefore be active or passive as well as have partially inactive areas that are indistinguishable in the final facade to provide complete design freedom and afford any shape.

Due to manufacturing constraints only one side of the panel can be more than 1400mm and the length to width ratio has to be less than 1:8

Remember to specify the desired solutions as "SolarLab.global or similar" and require project references

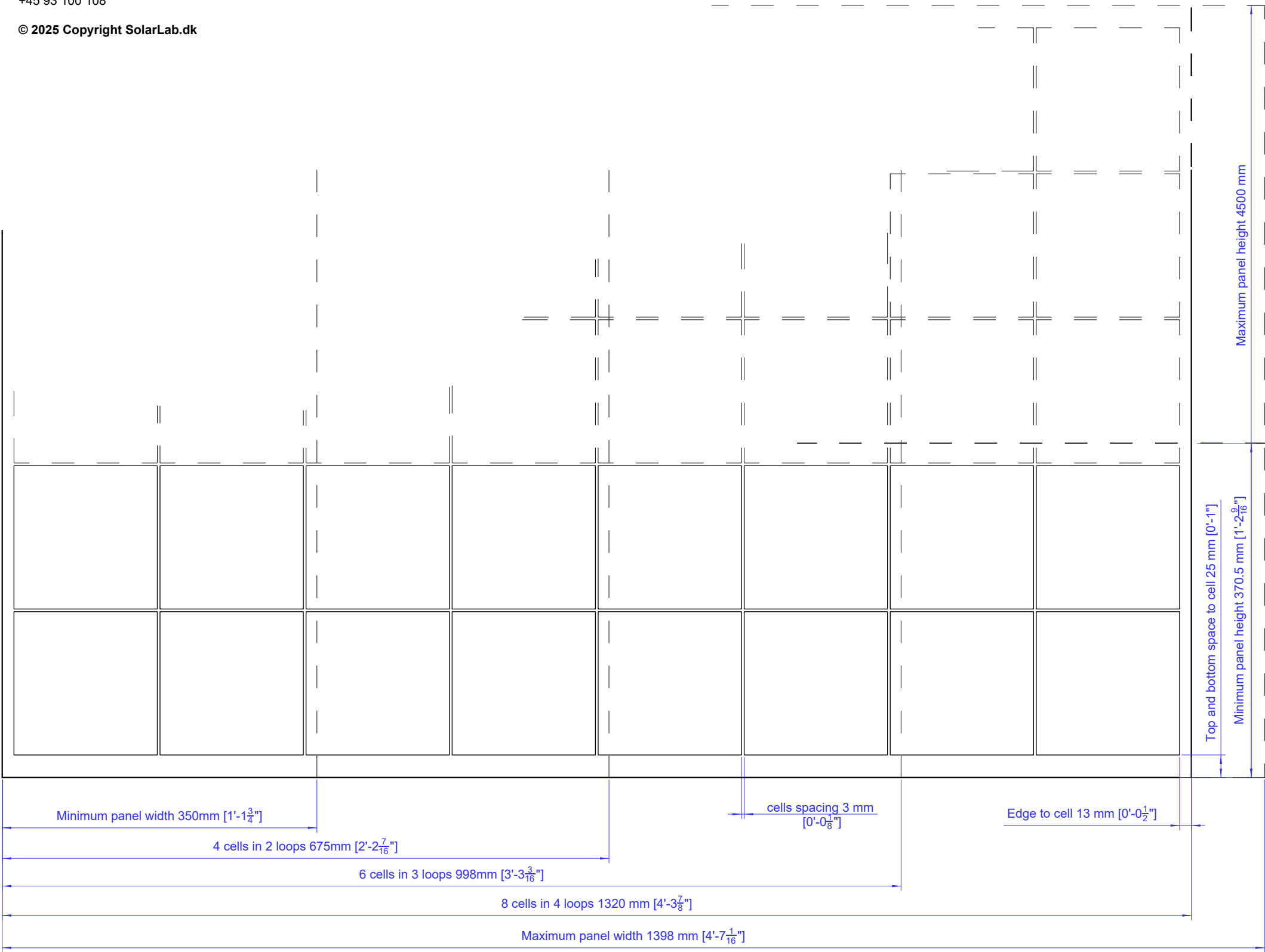


PV laminate layout guide
Design guidelines

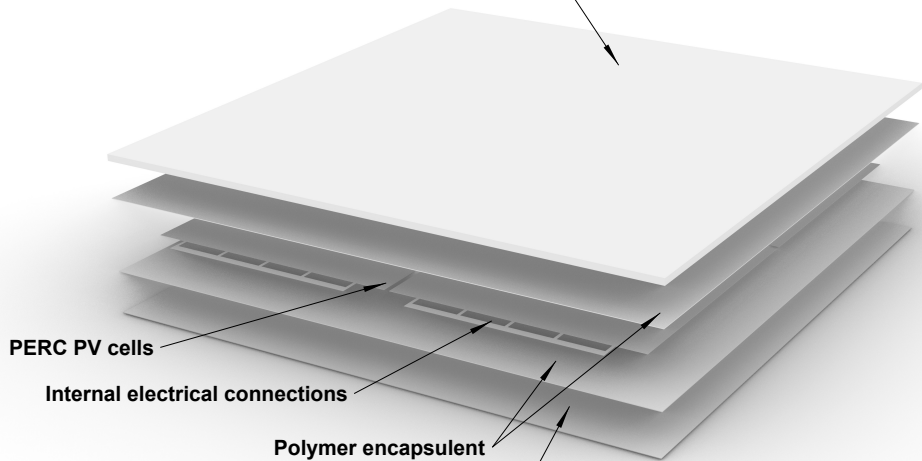
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Not for construction



4 mm tempered low iron glass
Typically textured on front surface and colored on the rear surface with non-fading structural coatings



Components in a PV laminate

Panelization guide for PV cell spacing and optimal panel dimensions

The SolarLab.global BiPV cladding systems allow complete customizations to fit the individual project, from the geometry and mounting to finish and colors.

This sheet provides a simplified design guide to aid in the BiPV panel design, but feel free to involve us early in the concept phase, so we can support you with more detailed design support as well as power and cost estimations.

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Depending on finish and color the solar facade provides 130Wp to 195Wp capacity, but panel design can have an equally large impact on the effect achievable. This guide will help you design panels that can be completely filled with cells, but remember that almost any shape and size can be made so feel free to design the solution that perfectly fits your architectural vision.

SolarLab.global solar facades are designed around the most efficient PV technologies in the market and are constantly improving. Currently the optimal cells are Monocrystalline c-Si PERC G1 cells (158.75x158.75mm) as the only cells that can be made invisible and therefore the preferred basis for panel designs. Larger cells are available, but will require sub-division and the resulting cladding will not be able to hide the electrical connections

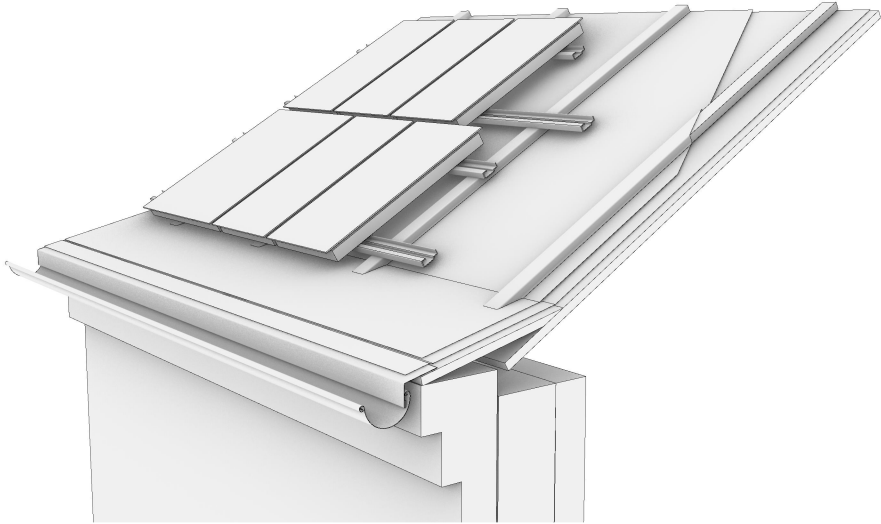
However these are by no means a constraining factor, as the cells are invisible and the panels therefore can have active and inactive areas that are indistinguishable in the final facade and providing complete design freedom to achieve almost any shape.

Due to manufacturing constraints in the tempering of glass and some of the essential materials used, only one side of the panel can be more than 1400mm and the length to width ratio has to be less than 1:8.

Currently the maximum height of a panel is 4500mm provided the width is no more than 1000mm and the minimum dimensions are around 360 x 360 mm . It is however our experience that panels that are 1 to 3 squaremeter in area (resulting in a module weight of 15 to 45 kg) is often optimal in both production and during installation.

Remember to specify the desired solutions as "SolarLab.global or similar" and require project references

Not for construction



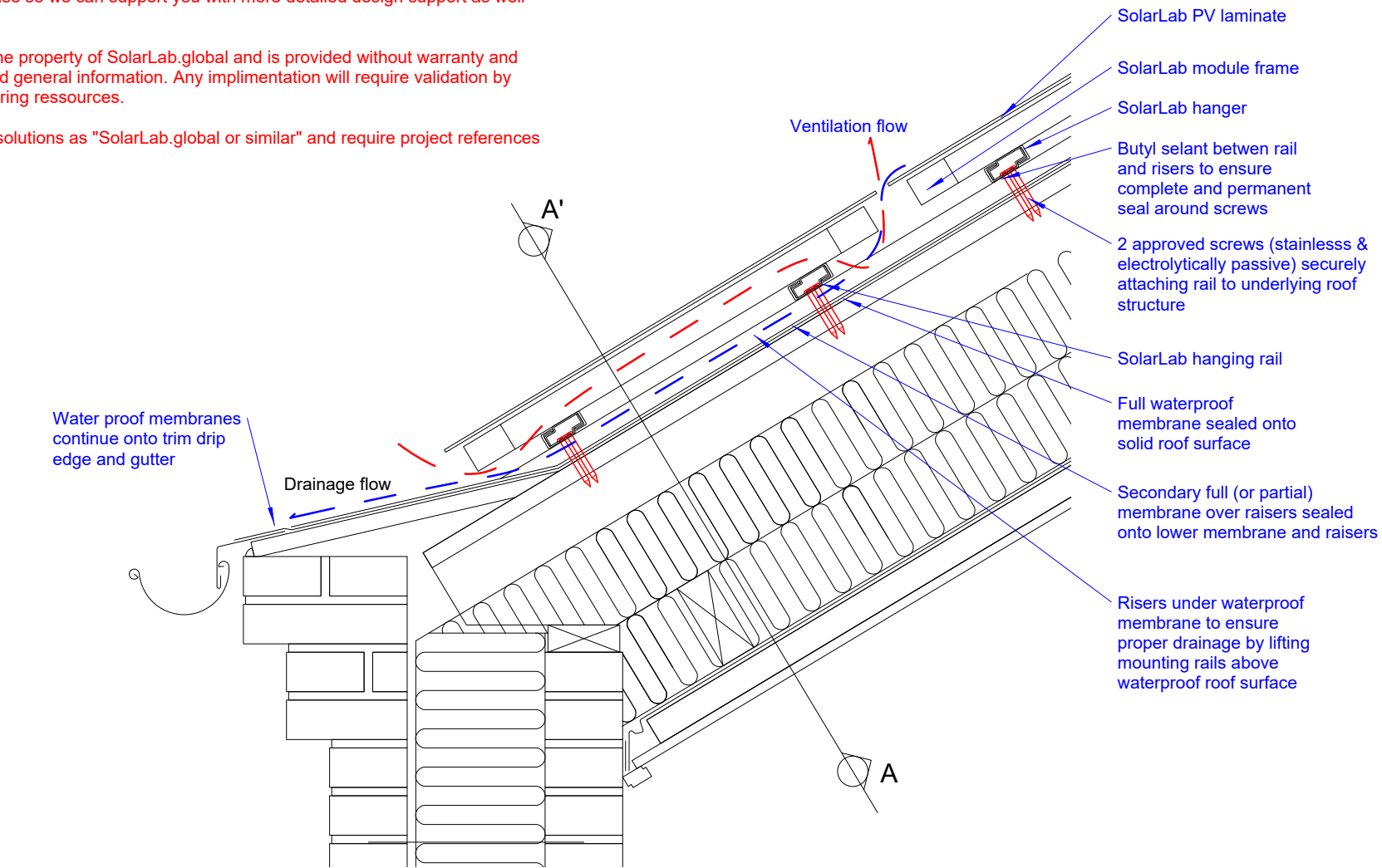
Ventilated Solar Roof construction guide with typical details

The SolarLab.global solar cladding systems allow unparalleled customization to fit the individual project, from the geometry and mounting to finish and colors.

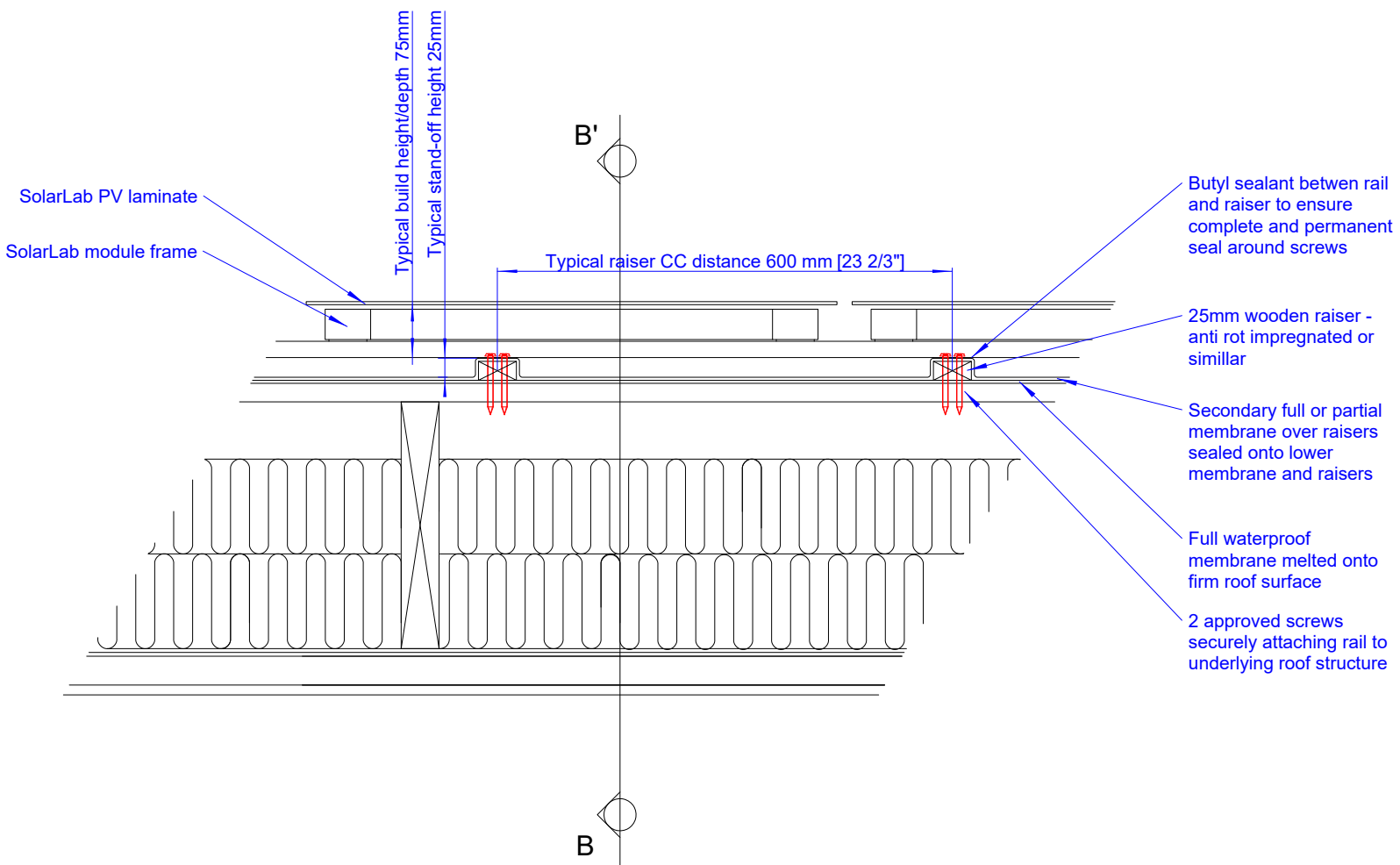
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Vertical Section B-B'



Horizontal Section A-A'