

Facade Materials Case Study

Roman Rod

Professor Sherman
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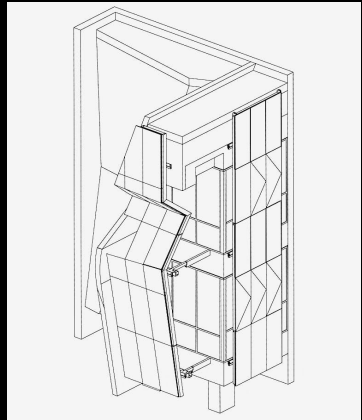
Manufacturer 1

Zahner - Stainless Steel Panels and Glass

Structure



Cooper Union, NY



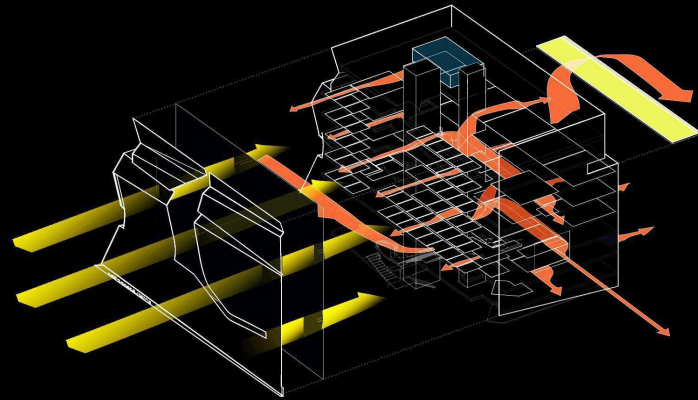
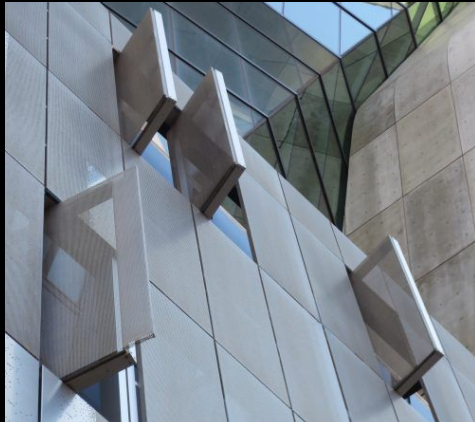
The facade is made up of perforated stainless steel. The skin system in place protects the inner window panels, which controls the sunlight penetration during warming weather and acts as an insulating barrier in cold weather, promising a 50% reduction in heat load. The panels were all pre-assembled for quick installation. The panels are offset by steel connections to accommodate for the futuristic inspired design.



Thermal



The building skin is offset from glass and aluminum walls. The panels ensure that it reduces the impact of heat radiation during the summer and insulates during the winter. The facade helps the building reach LEED standards. It is also covered in a an Angel Hair, a custom metal polish for ambient reflectivity, to soften reflectivity. It helps to scatter the light, provided a diffused surface while still maintaining the desired appearance.



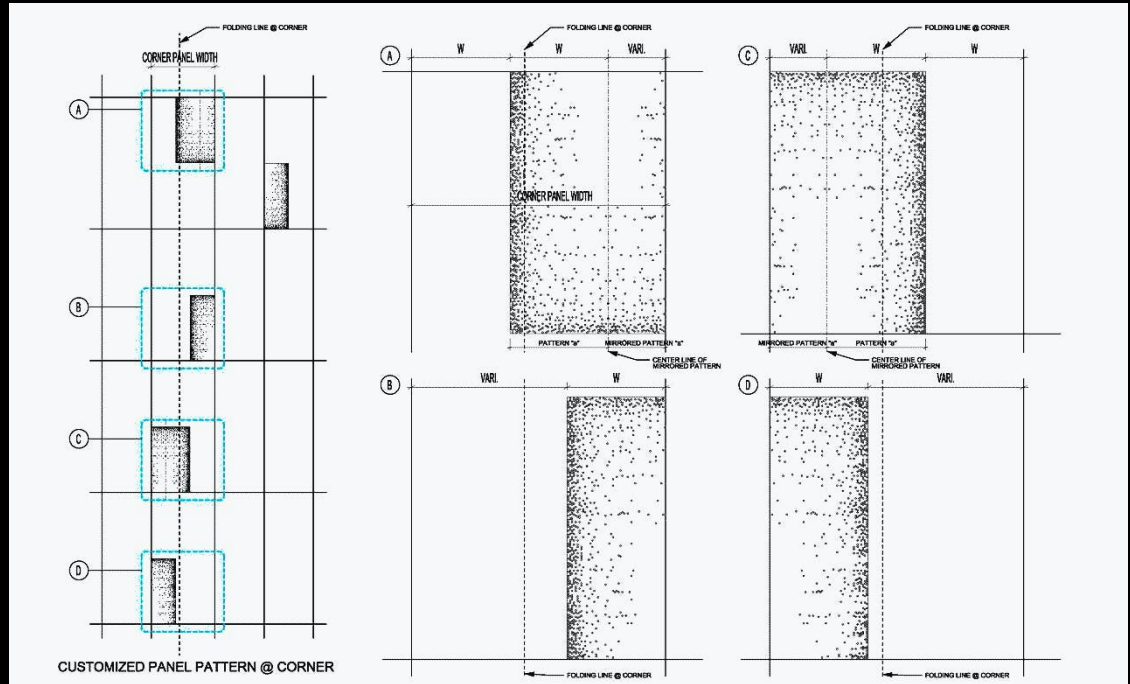
SUSTAINABILITY

41 COOPER SQUARE

Waterproof



The panels are meant to be exposed to the outside forces. In some instances the panels are more solid to provide for more enclosure and pattern. The inner glass panels provide with the waterproofing.



Video

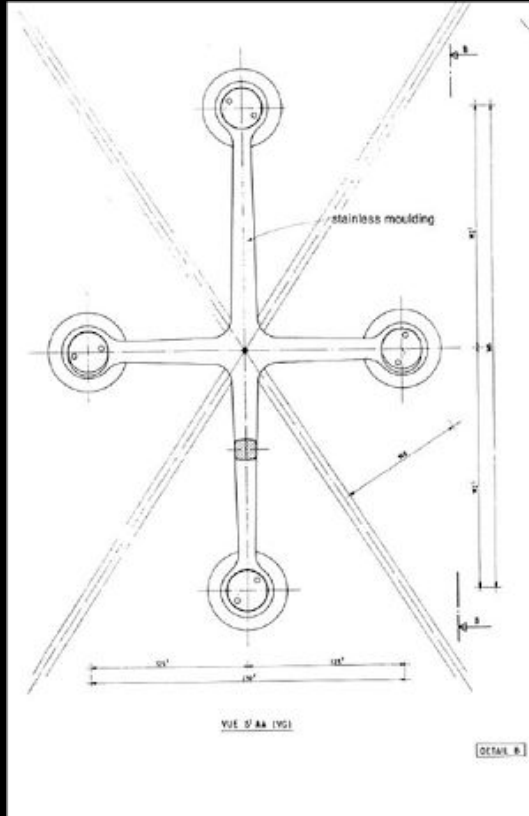
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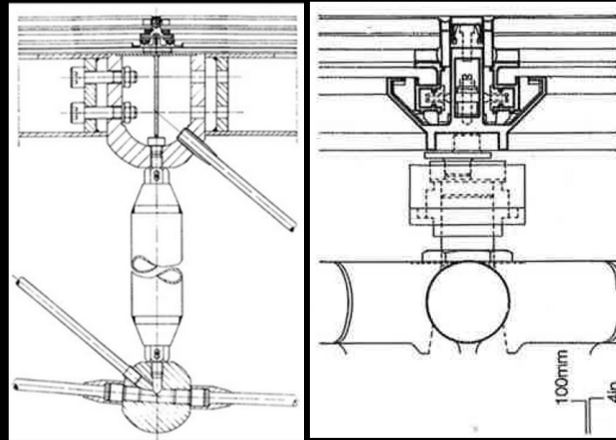
Manufacturer 2

GLASSCON - Spider Glazing Cable Net

Structure



This curtain wall facade is made up of a spider cable net system. They allow for minimalistic structural appearance to create utmost transparency. With cable net systems, precise engineering is required for tensioning purposes to prevent deflection during strong wind loads. Cables are locked together with stainless steel clamps, which hold the glass panes. The horizontal cables are tensioned against the existing adjacent building structure and the vertical ones against the floor and roof structure.



The Louvre Pyramid Paris, France

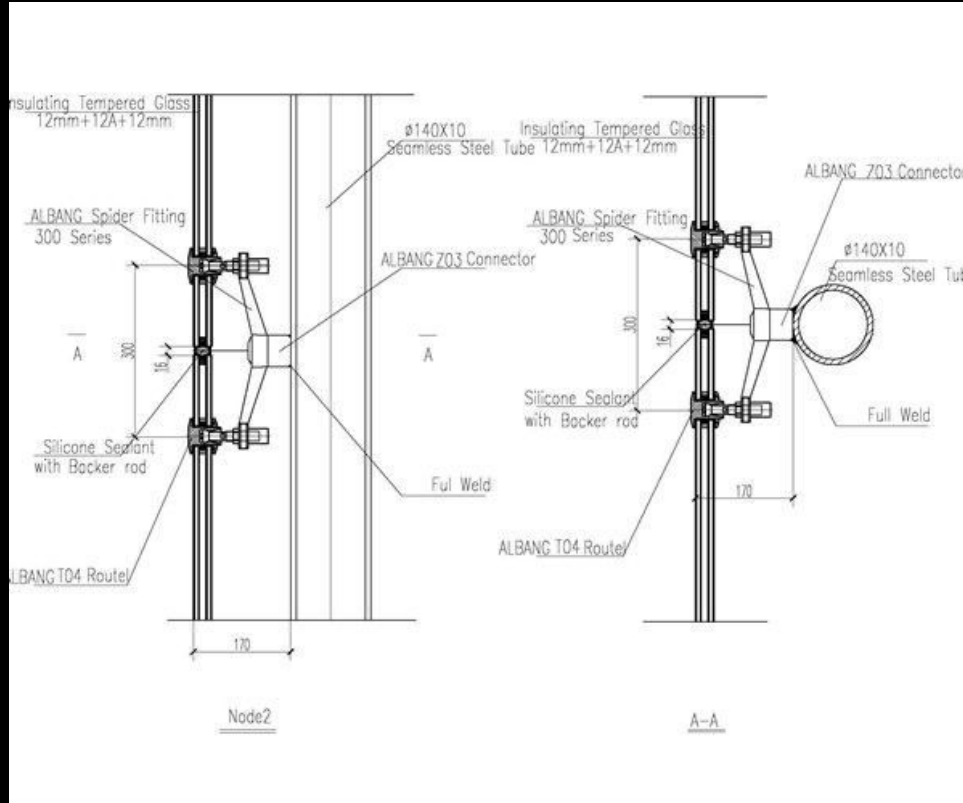
Thermal



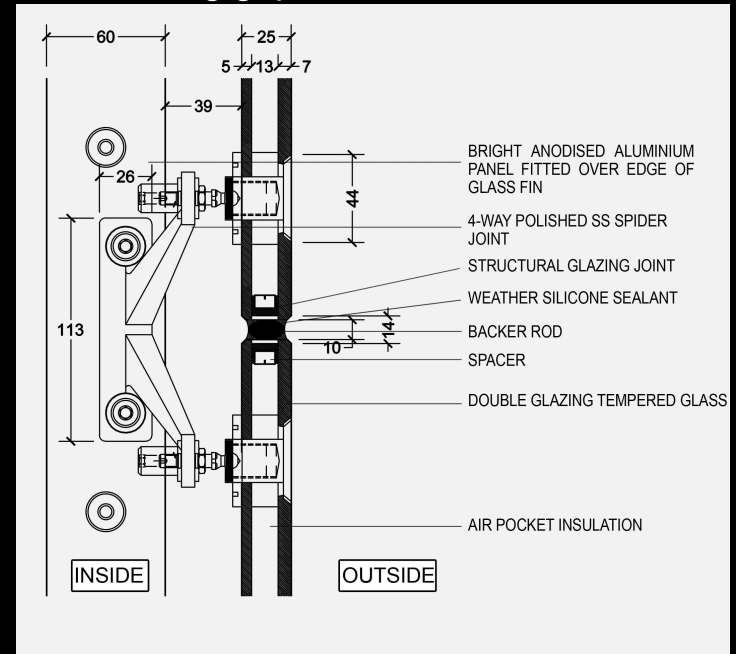
Predictive thermal model analysis is used to accommodate for thermal needs. For additional thermal control, the glass panes are processed with silk printing technology to provide for solar shading. The transparency of much of the facade being glass provides access to natural daylight throughout most of the day.



Waterproof



These type of glass wall systems still use the methods of typical glass facade systems for waterproofing. They use silicone sealants and backer rods to fill the existing gaps.



Video

<https://www.youtube.com/watch?v=jKcZ12kXEx0>

References

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