

PRELIMINARY PRESENTATION

CASE STUDY ASSIGNMENT

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OPAQUE MATERIAL

MATERIAL CHOSEN: H CLAD

COMPANY: HENDRICK CORPORATE



OPAQUE MATERIAL - H- METAL CLADDING

H- CLADDING IS A METAL CLADDING SYSTEM THAT CAN BE ADOPTED TO THE EXTERIOR CLADDING AND AS WELL OF INTERIOR WALL CLADDING.

THE ADVANTAGES OF H CLADDING ARE THE ALUMINUM PANELS THAT IT COMES WITH VARIETY OF OPTIONS. Wide range of design options, with different choices available for open area, perforation patterns, panel thickness, length and width, and multiple painting and finish options

H-CLAD wall cladding systems are offered in numerous standard perforation configurations for maximum efficiency, with custom configurations and hole shapes also available.

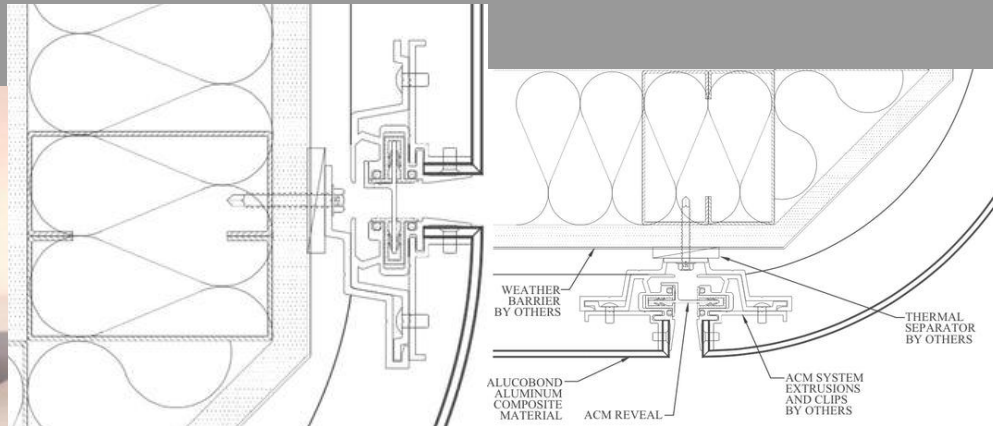
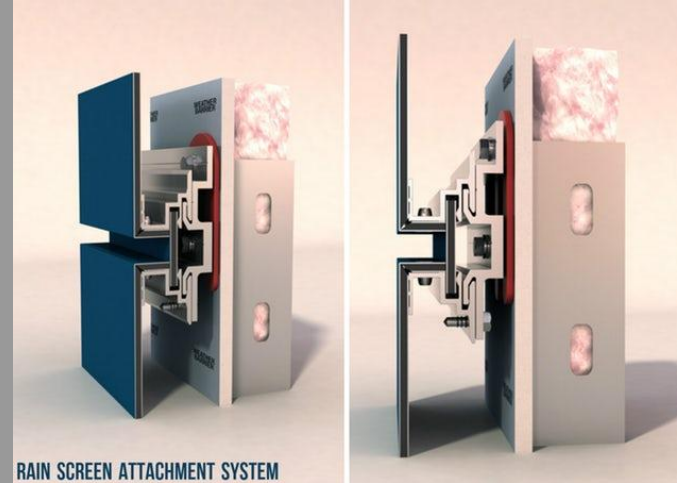
H-CLAD is suited for serving as the metal cladding system for all types of architectural structures: office buildings, parking garage facades, multi-family residential buildings, retail locations and more.

ASSEMBLY FOR METAL CLADDING & WAYS

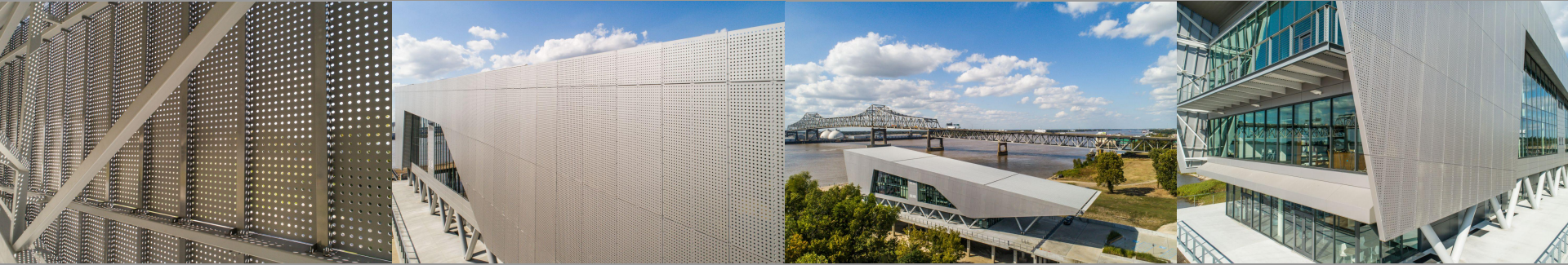
The most-requested kind of installation is the Rainscreen attachment method. Architects can get a rain screen with inboard or outboard insulation, but outboard is becoming increasingly popular. By definition, a board installed outside of the building wall means that the walls are free from the normal penetrations required by typical inboard insulation construction.

The Route and Return Dry Seal method is an easy way to go. It requires gaskets to be inserted into the joints between the panels instead of the silicone sealant. This allows the façade to stay much cleaner over time. The system also features continuous extrusions around each panel to enhance structural integrity and act as a secondary gutter system. But this method often causes concern over the durability of the gaskets.

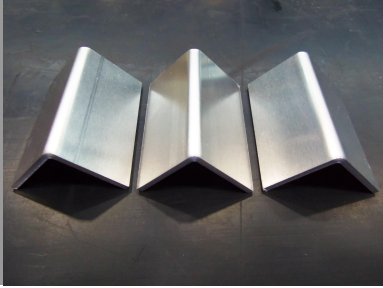
<https://architizer.com/blog/practice/details/behind-the-design-metal-cladding/>

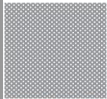
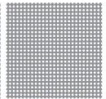

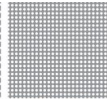
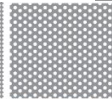
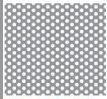











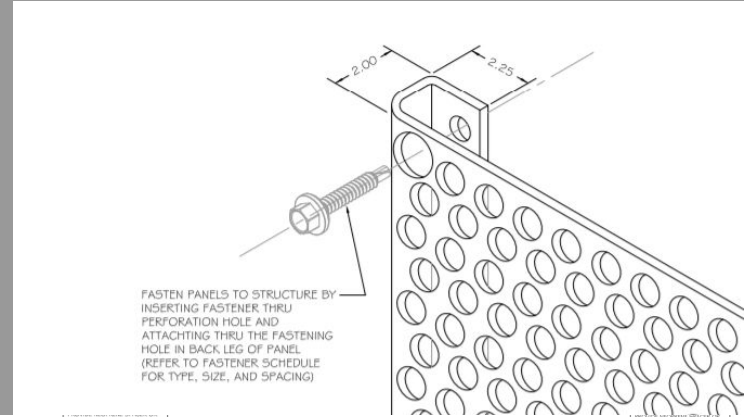
CASE STUDY - WATER INSTITUTE OF GOLF



ASSEMBLY FOR H CLADDING

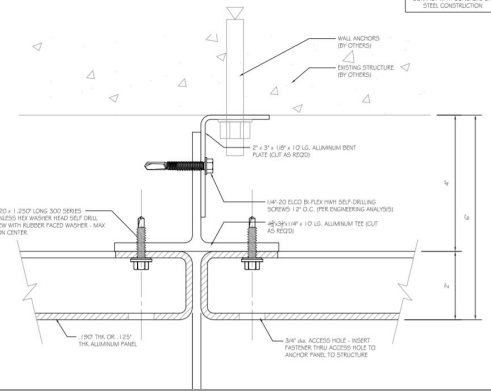
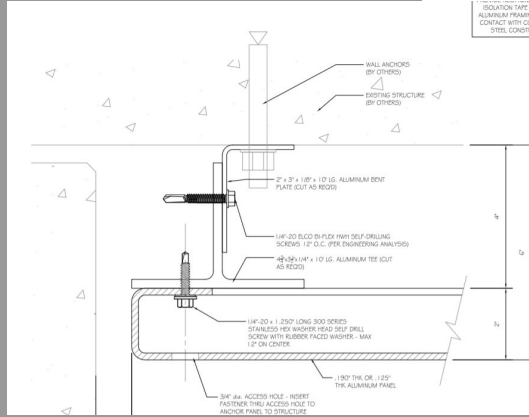


 .020" DIA. .043" CTRS 20% OPEN AREA	 .027" DIA. .050" CTRS 25% OPEN AREA	 .132" DIA. .110" CTRS 23% OPEN AREA	 .033" DIA. .050" CTRS 33% OPEN AREA	 .047" DIA. .064" CTRS 30% OPEN AREA
 3/64" DIA. 3/32" CTRS 23% OPEN AREA	 1/16" DIA. 3/32" CTRS 40% OPEN AREA	 1/16" DIA. 7/64" CTRS 30% OPEN AREA	 1/16" DIA. 1/8" CTRS 23% OPEN AREA	 5/64" DIA. 1/8" CTRS 35% OPEN AREA
 3/32" DIA. 5/32" CTRS 33% OPEN AREA	 3/32" DIA. 3/16" CTRS 23% OPEN AREA	 .117" DIA. 5/32" CTRS 51% OPEN AREA	 1/8" DIA. 3/16" CTRS 40% OPEN AREA	 1/8" DIA. 7/32" CTRS 30% OPEN AREA

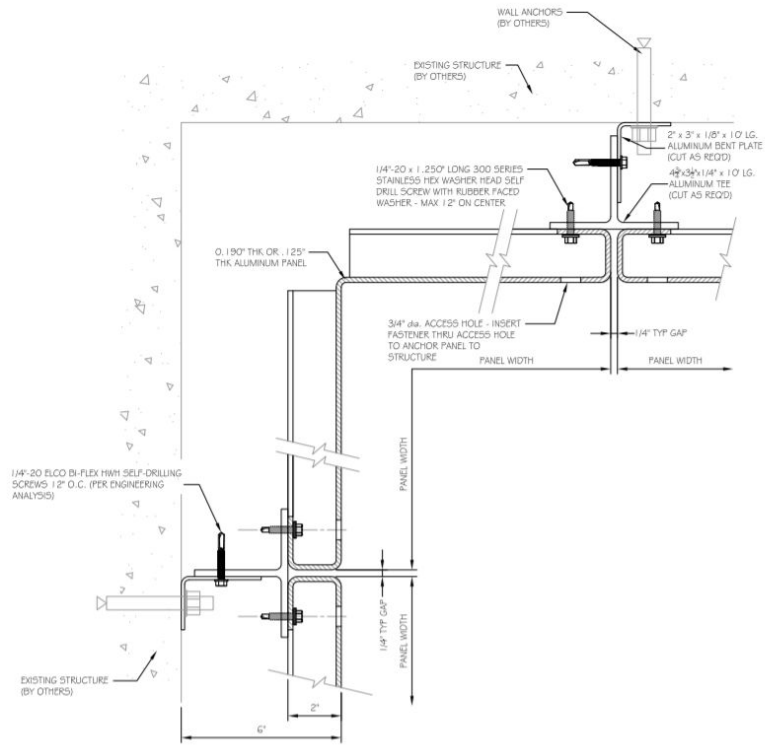


ISOLATION TAPE WHERE ALL ALUMINUM FINISHING COMES IN CONTACT WITH CONCRETE OR STEEL CONSTRUCTION.

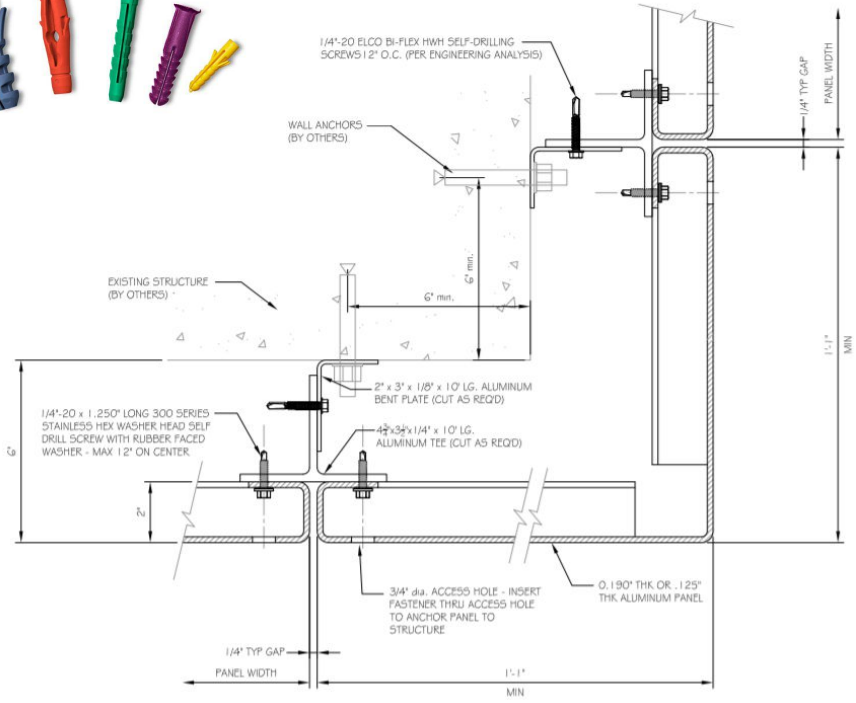
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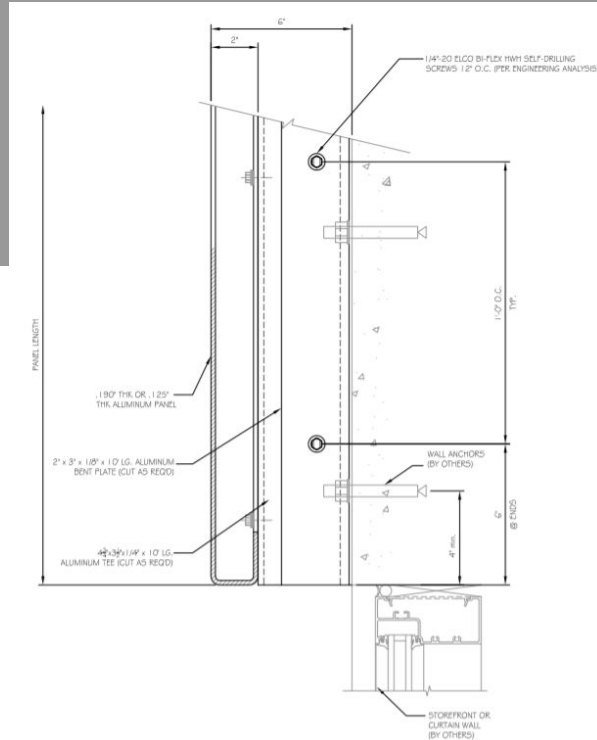
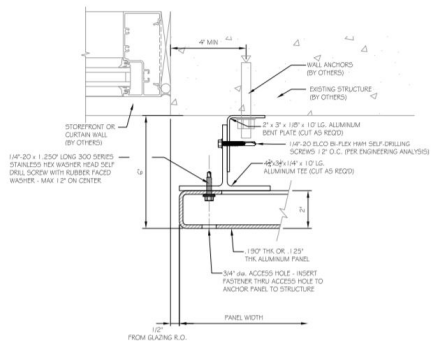
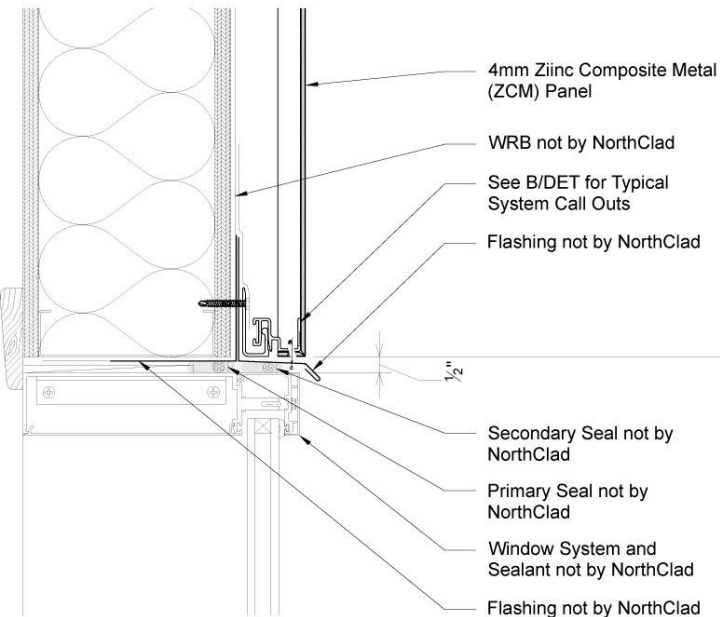
https://www.hendrickcorp.com/sites/default/files/h-clad_md_detail_package.pdf



INSIDE CORNER



OUTSIDE CORNER

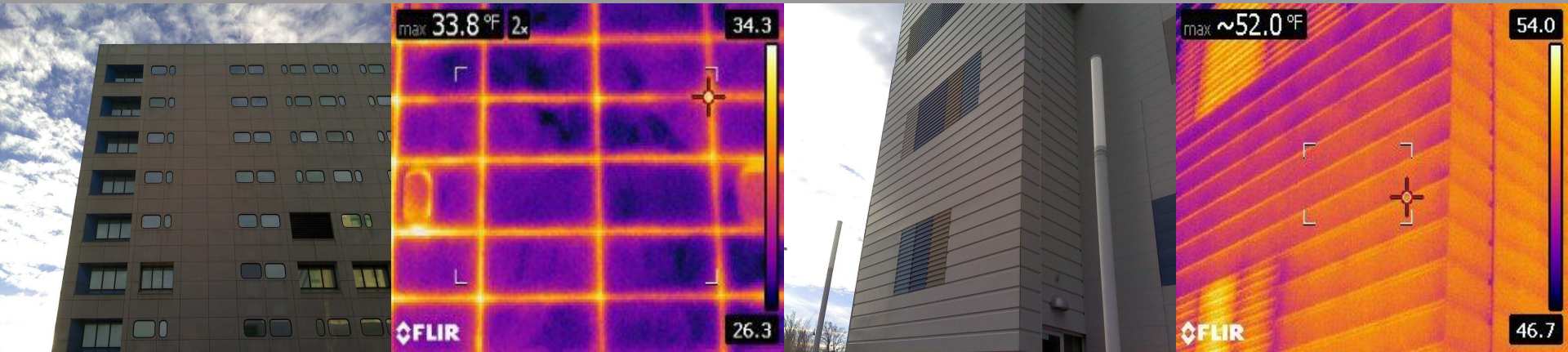


https://www.google.com/search?q=METAL+cladding+window+detail&tbm=isch&ved=2ahUKewjV59P19MfoAhU4QDABHax-B9gQ2-cCegQIABAA&eq=METAL+cladding+window+detail&gs_lcp=CgNpbWcQAZIECCMQJzoGCAAQBxAcUPIYWL51YN5jaABWAHgAgAGDAYgBxwSSAQM0LjKYAQCGAqGqAQtdn3Mtd2I6LWtZw&scIent=img&ei=9uSEtWUKbjAwbkPrP2dwAO&bih=1002&biw=2048#imgrc=hoIj3gCJHicQ9M

https://www.hendrickcorp.com/sites/default/files/h-clad_md_detail_package.pdf

Continuous insulation is almost always compromised by metallic structural connections such as clips and girts which create thermal bridging when connected to steel stud framing. These connections in conjunction with the steel studs have a significant impact on the U value of wall assemblies. Insulation effectiveness can be reduced by as much as 50% due to these heat flow paths. Armatherm™ Z GIRTs improve the U value of cladding and wall panel assemblies by eliminating the use of highly conductive metal girts and aluminum brackets creating wall assemblies that are up to 98% efficient.

Armatherm cladding attachments significantly reduce thermal bridging and improve wall assembly thermal performance. Armatherm FRR Z Girt, clip and structural thermal break materials provide a combination of low thermal conductivity and high compressive strength transferring load and reducing heat loss. The thermal break material is made of a reinforced, thermoset resin that is fire resistant and exhibits very limited creep under load, making it the ideal material for use in structural and façade thermal break connections.



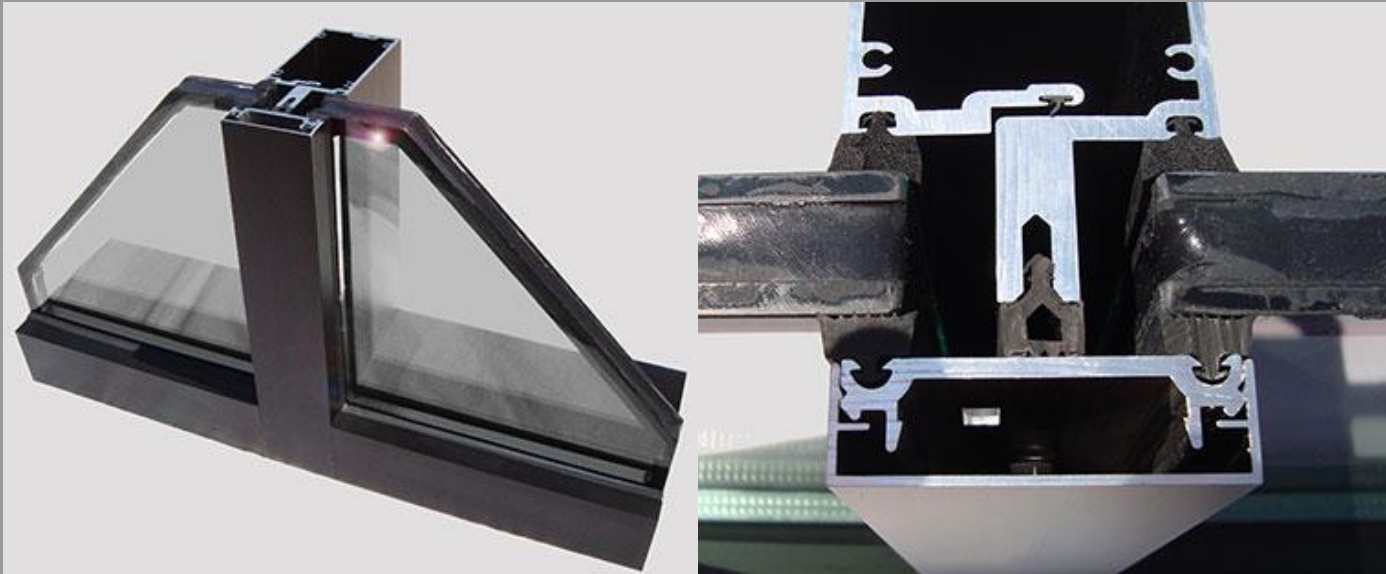
OPAQUE MATERIAL: METAL CLADDING YOUTUBE LINK

<https://www.youtube.com/watch?v=wk6zT872cSc&feature=youtu.be>

MATERIAL CHOSEN: CURTAIN WALL

COMPANY: WAUSAU

NAME: SuperWall



ASSEMBLY FOR CURTAIN WALL

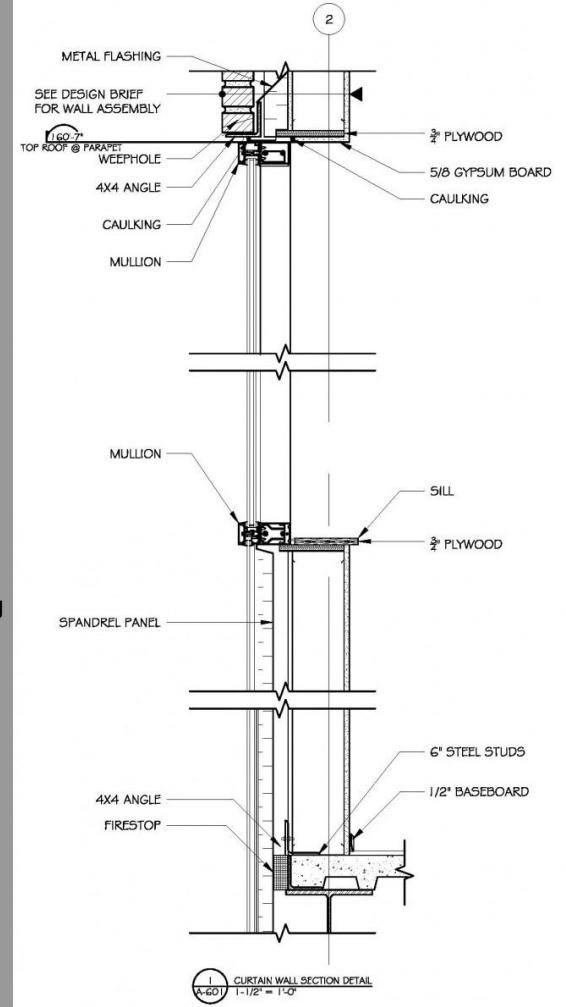
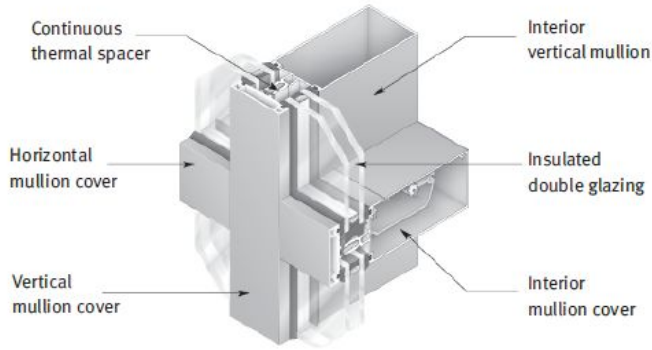
“A curtain wall is defined as thin, usually aluminum-framed wall, containing in-fills of glass, metal panels, or thin stone. The framing is attached to the building structure and does not carry the floor or roof loads of the building.”

Curtain wall systems are designed with aluminum framing members. The aluminum frame is typically infilled with glass.

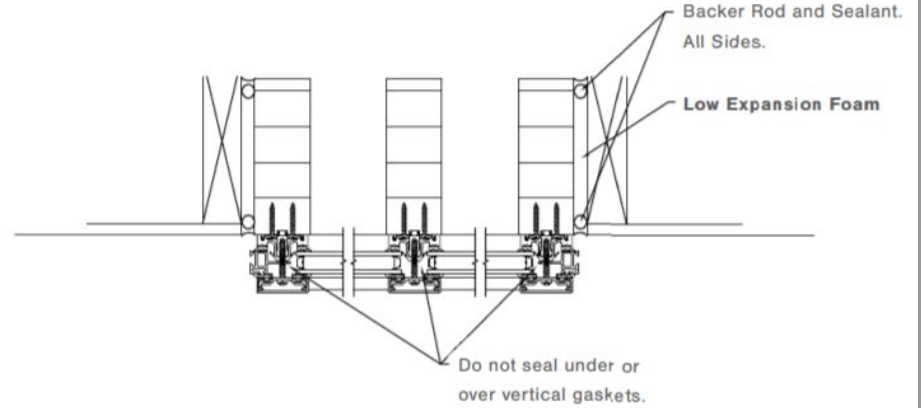
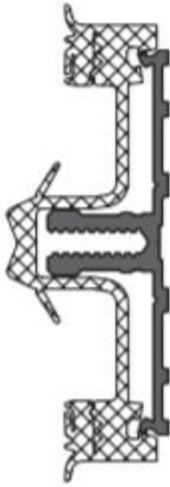
They are joined y bolts and screws

[https://en.wikipedia.org/wiki/Curtain_wall_\(architecture\)](https://en.wikipedia.org/wiki/Curtain_wall_(architecture))

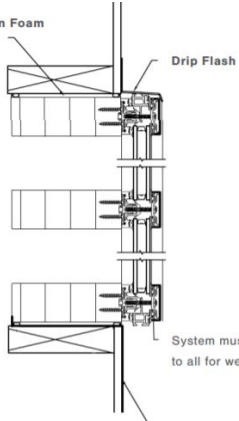
https://openlab.citytech.cuny.edu/skyecolon-btechiii-research/files/2017/04/original_599028_uch4tocktxme5acsb3_ndpws9.jpg



Screw into the
"V-Dent"
through
the center of the
rubber gasket.



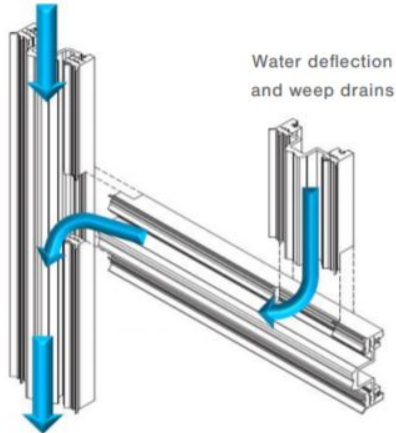
Low Expansion Foam



System must clear fram in to all for weep points.

Sill Pan

- Rigid
- Flexible Flashing Tape
- Liquid Flash

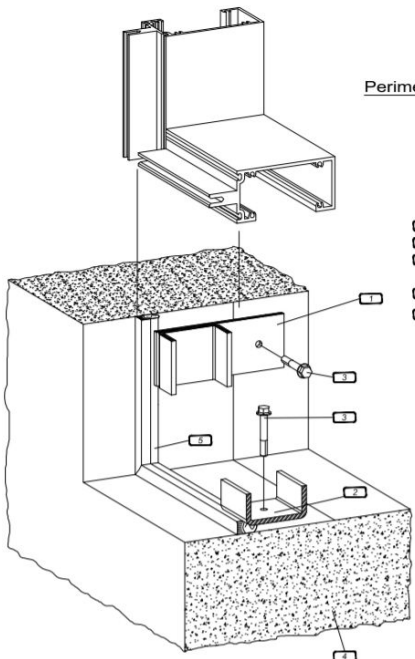


Curtain walls are available in three main systems: face-sealed, water-managed, and pressure-equalized. Face-sealed walls depend on perfect sealing between units of the wall and frame. Water-managed systems include moisture drains to prevent the intrusion of water in the building. However, neither face-sealed or water-managed systems create an air barrier.

Because of the system's ability to resist air and water infiltration, curtain walls are energy efficient. This will reduce your cost of heating, cooling, and lighting the building. So in addition to saving you money on construction, it has long-term savings benefits.

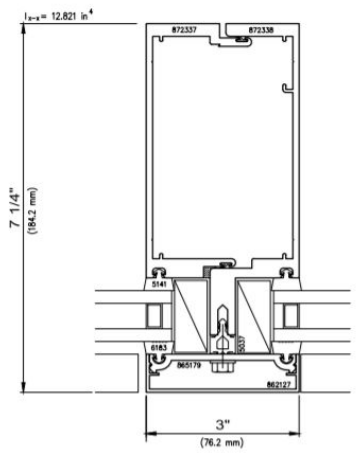


Perimeter Anchor Method

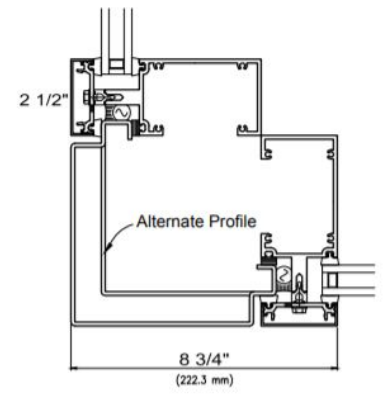


- Anchors***
- 1 Two Piece, Factory Welded Steel Anchor
 - 2 Typical Steel Brake Metal Channel Anchor
 - 3 Expansion Bolt
- Perimeter**
- 4 Concrete Slab, Typ. Perimeter Conditions May Vary
 - 5 Primary Seal

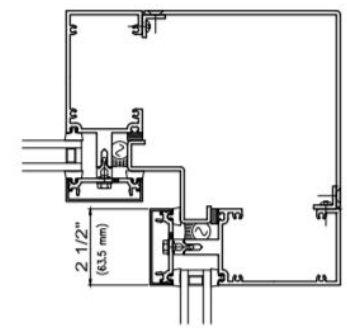
*Note
Anchors vary by job to suit building conditions.



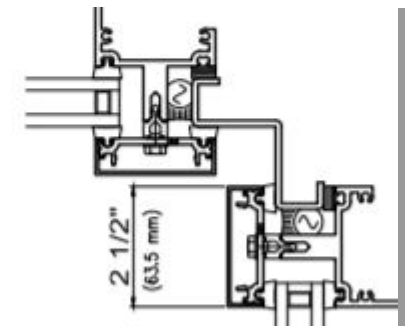
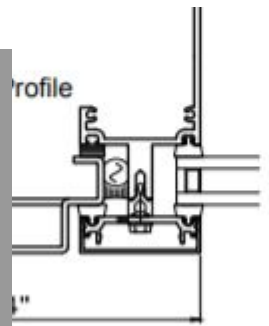
3 Mullion Stack



10 Outside 90° Corner Mullion
0.125" Formed Aluminum



11 Inside 90° Corner Mullion
0.125" Formed Aluminum

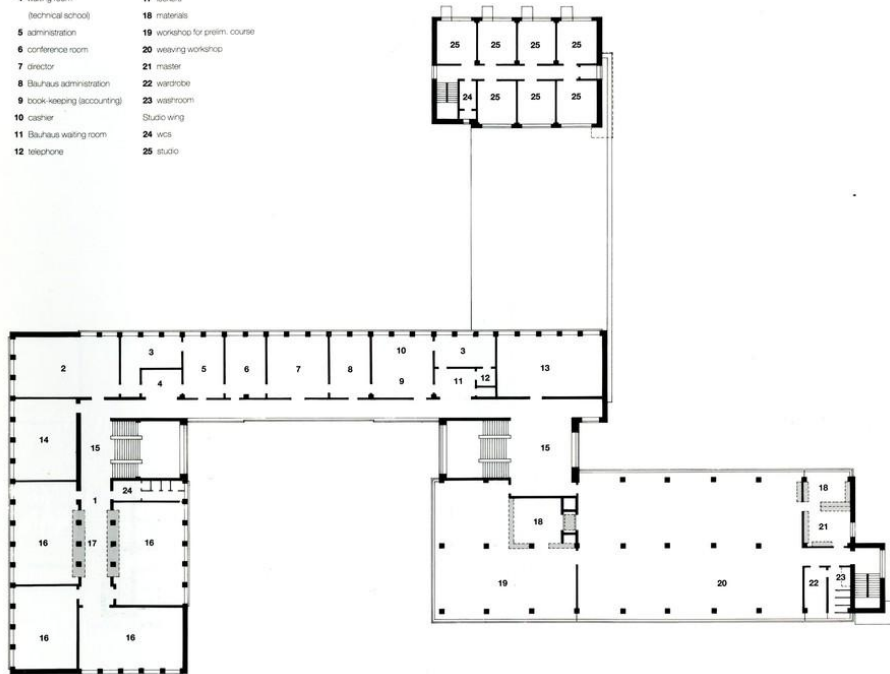




CASE STUDY

DESSAU
BAUHAUS

- First floor plan**
- | | |
|----------------------------------|--------------------------------|
| Bridge (administration building) | 13 lecture room |
| 1 hall | 14 staff room |
| 2 library | 15 vestibule |
| 3 typing | 16 classroom |
| 4 waiting room | 17 lockers |
| (technical school) | 18 materials |
| 5 administration | 19 workshop for prelim. course |
| 6 conference room | 20 weaving workshop |
| 7 director | 21 master |
| 8 Bauhaus administration | 22 wardrobe |
| 9 book-keeping (accounting) | 23 washroom |
| 10 cashier | Studio wing |
| 11 Bauhaus waiting room | 24 ices |
| 12 telephone | 25 studio |



0 10 metres
0 30 feet

DRAWINGS

DESSAU BAUHAUS

Elevation
Technical College



Elevation
main road of the Bauhaus

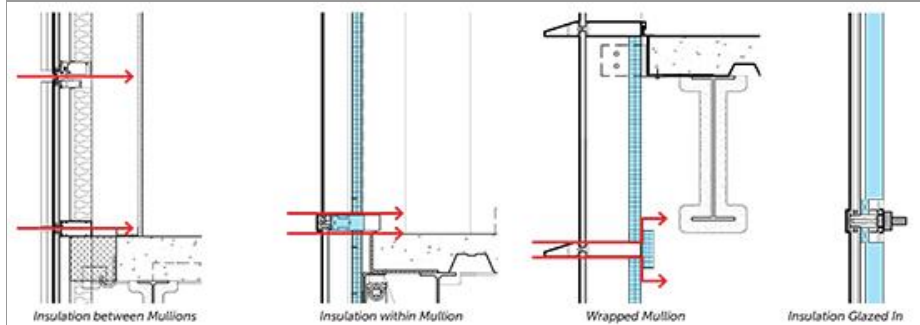
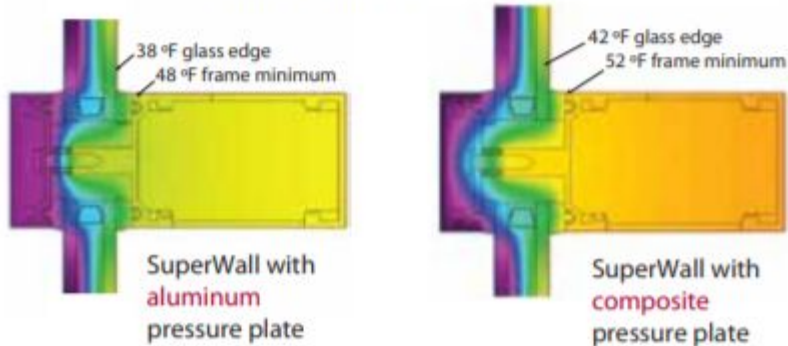


THERMAL, NOISE AND CONDENSATION

Aluminum already has a very high thermal conductivity. "Some curtain wall systems utilize "pressure bars" (also referred to as "pressure plates") that are fastened to the outside of the mullions to retain the glass. These systems frequently include gaskets that are placed between the pressure bar and mullions and function as thermal breaks and help with acoustic isolation." Proper placement of insulation at the curtain wall perimeter reduces energy loss and potential condensation issues

Unlike regular windows, curtain walls cover large expanses of wall without sill flashings at each glazed opening. The sound attenuation capability of curtain walls can be improved by installing sound attenuating infill and by making construction as airtight as possible. Incorporating different thicknesses of glass in an insulated glass unit will also help to mitigate exterior noise.

LBNL THERM Models



CURTAIN WALL

<https://youtu.be/qyY9Fx8pNts>

