Case Study

Lantern Building, Pittsburgh, PA

Virage Rainscreen System

BUNTING

Case Study *The Lantern Building, Pittsburgh, PA*
Virage Rainscreen System, Vertical Application

Company Profile

The Bunting Group of Companies can trace its beginnings back to 1869 in Pittsburgh, PA where the original W. A. Bunting founded Bunting Stamp Company. The subsequent generations of entrepreneurial family members experienced success and developed new opportunities in several businesses related to construction.

Today, Bunting is emerging as a leader in the fabrication and installation of metal panels used in rainscreen cladding. Bunting maintains its leadership and growth orientation by reinvesting in technology and incorporating a disciplined approach to process driven work flow. The company employs a proactive approach to training and education with the goal of providing world class project management and engineering services to all clients.

Case Study *The Lantern Building, Pittsburgh, PA*
Virage Rainscreen System, Vertical Application

Project Profile

The former Liberty Travel building located at 600 Liberty Avenue in Pittsburgh was an underutilized masonry building which had fallen into disrepair and was being used primarily as advertising space with two billboards affixed to the façade and roof. PNC Financial Services purchased the building and retained Edge Studios to transform the eyesore into a landmark building in the vibrant downtown district. The entire façade was refreshed with translucent glass and rich naturally oxidized zinc panels.   Bunting was subcontracted by Turner Construction engineer, manufacture and install the Virage Rainscreen System using zinc panels in a vertical orientation.
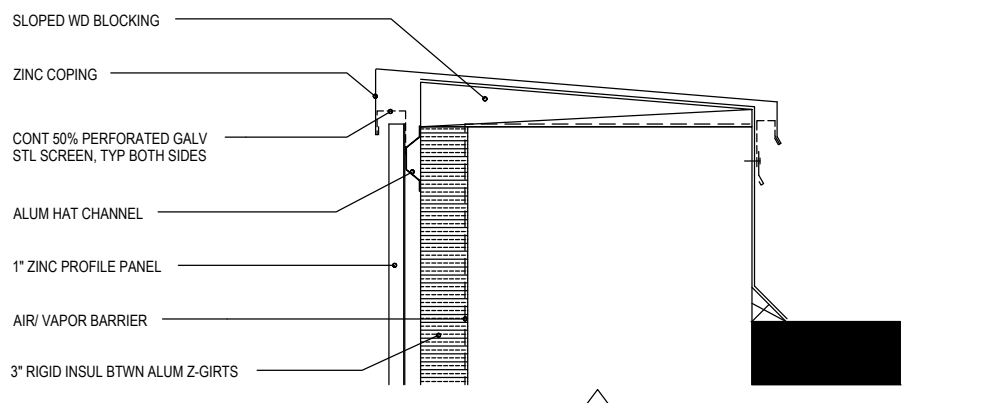
Before   *After*

Case Study *The Lantern Building*, *Pittsburgh, PA*
Virage Rainscreen System, Vertical Application

Technical Situation

The existing brick façade was more than 100 years old and had undergone several applications of pargeting which created an uneven surface with much of it in ill repair. Other challenge areas involved the transition details inherent with the complicated architecture and diverse materials as well as developing final CAD fabrication drawings from client supplied bridging documents.
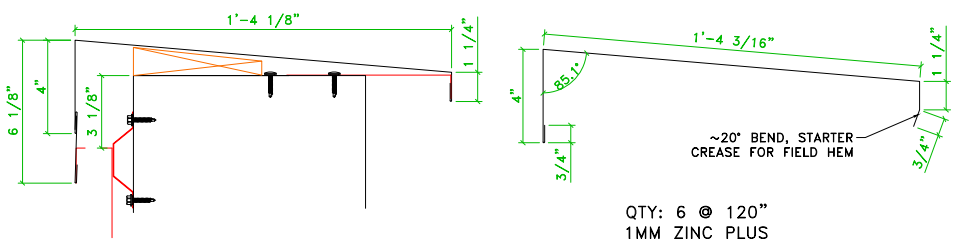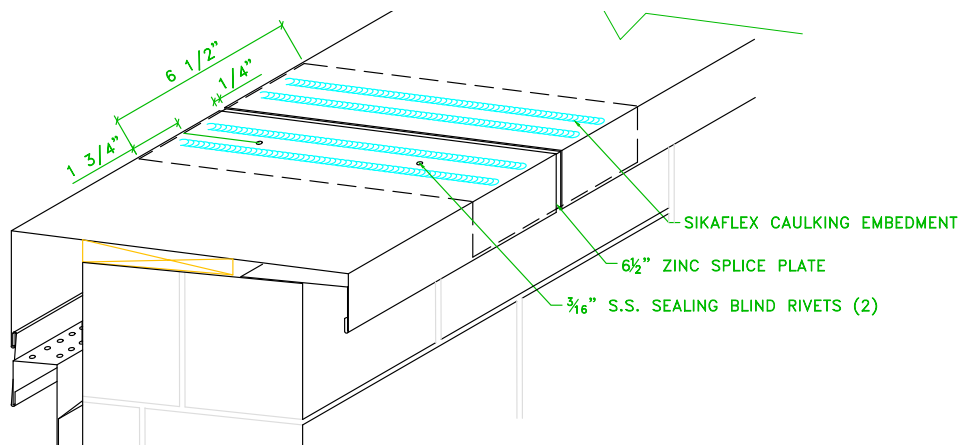
Basis of Design

The bridging documents showed a "Z" girt framing on the west elevation. Since the building was more than 100 years old and out of square, this design would not work.

SLOPED WD BLOCKING
ZINC COPING
CONT 50% PERFORATED GALV STL SCREEN, TYP BOTH SIDES
ALUM HAT CHANNEL
1" ZINC PROFILE PANEL
AIR/ VAPOR BARRIER
3" RIGID INSUL BTWN ALUM Z-GIRTS

10 PARAPET DETAIL @ EXG FIRST FLOOR ROOF
1 1/2" = 1'-0"

Approved Construction Detail

Bunting designed and engineered a self-leveling girt assembly to account for the uneven mounting conditions.

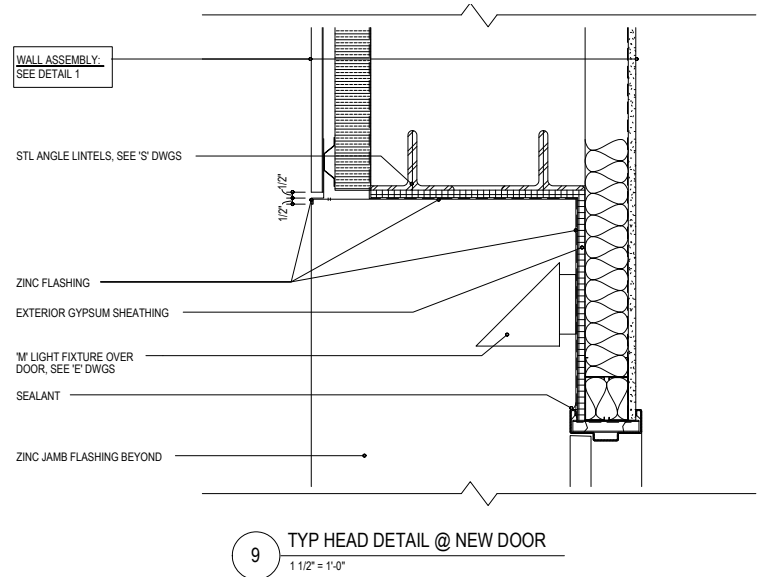SIKAFLEX CAULKING EMBEDMENT
6½" ZINC SPLICE PLATE
³⁄₁₆" S.S. SEALING BLIND RIVETS (2)

1 ZINC+ PARAPET CAP, WEST
NTS

~20° BEND, STARTER CREASE FOR FIELD HEM

QTY: 6 @ 120"
1MM ZINC PLUS
SHEAR TO 23" X 120"
PLUS FINISH ON UNDERSIDE
SLIP HEM @ 4" SIDE

Case Study *The Lantern Building, Pittsburgh, PA*
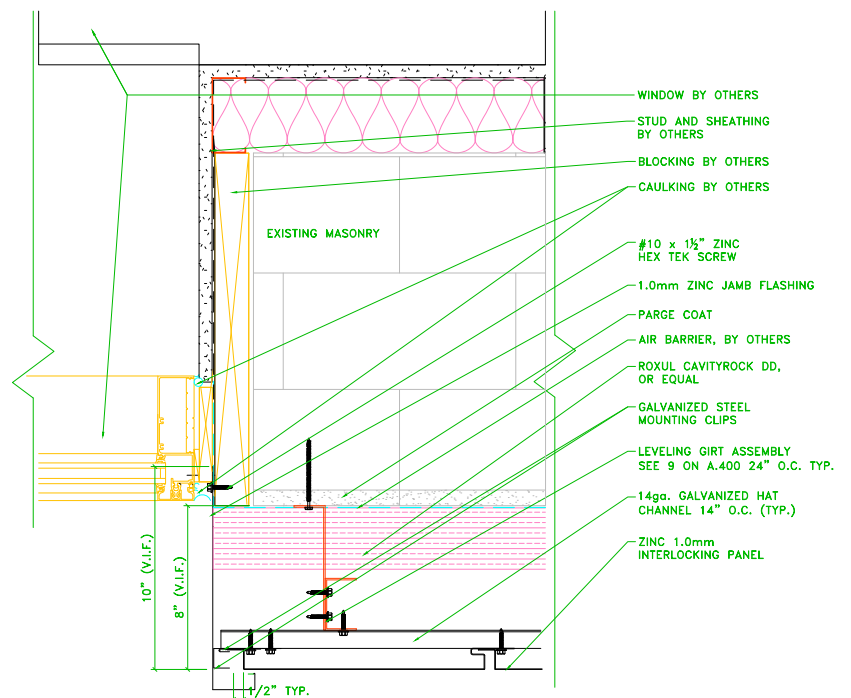*Virage Rainscreen System, Vertical Application*

Basis of Design

Bridging documents showed flashing details at the headers for the west elevation doors, but no details for the jambs.

WALL ASSEMBLY:
SEE DETAIL 1

STL ANGLE LINTELS, SEE 'S' DWGS

1/2" 1/2"

ZINC FLASHING

EXTERIOR GYPSUM SHEATHING

'M' LIGHT FIXTURE OVER
DOOR, SEE 'E' DWGS

SEALANT

ZINC JAMB FLASHING BEYOND

(9) TYP HEAD DETAIL @ NEW DOOR
1 1/2" = 1'-0"

Approved Construction Detail

Bunting designed and engineered 30" deep side door flashing components.

WINDOW BY OTHERS

STUD AND SHEATHING
BY OTHERS

BLOCKING BY OTHERS

CAULKING BY OTHERS

EXISTING MASONRY

#10 x 1½" ZINC
HEX TEK SCREW

1.0mm ZINC JAMB FLASHING

PARGE COAT

AIR BARRIER, BY OTHERS

ROXUL CAVITYROCK DD,
OR EQUAL

GALVANIZED STEEL
MOUNTING CLIPS

LEVELING GIRT ASSEMBLY
SEE 9 ON A.400 24" O.C. TYP.

14ga. GALVANIZED HAT
CHANNEL 14" O.C. (TYP.)

ZINC 1.0mm
INTERLOCKING PANEL

10" (V.I.F.)

8" (V.I.F.)

½" TYP.

³⁄₁₆" x 2¾" POWERS
TAPPER (2)

TSN STIFFCLIP LB 14ga.
GALV. STEEL 24" O.C. TYP.

#12 x 1" ZINC PANCAKE TEK

#10 X ⅝" ZINC HEX TEK

250T150−68 14ga. CHANNEL

14ga. GALV. HAT CHANNEL

6"

1 1/2"   5/8" MIN.

3"

(9/400) LEVELING GIRT ASMB, TYP.
3" = 1'-0"

Case Study *The Lantern Building, Pittsburgh, PA*
Virage Rainscreen System, Vertical Application

Basis of Design

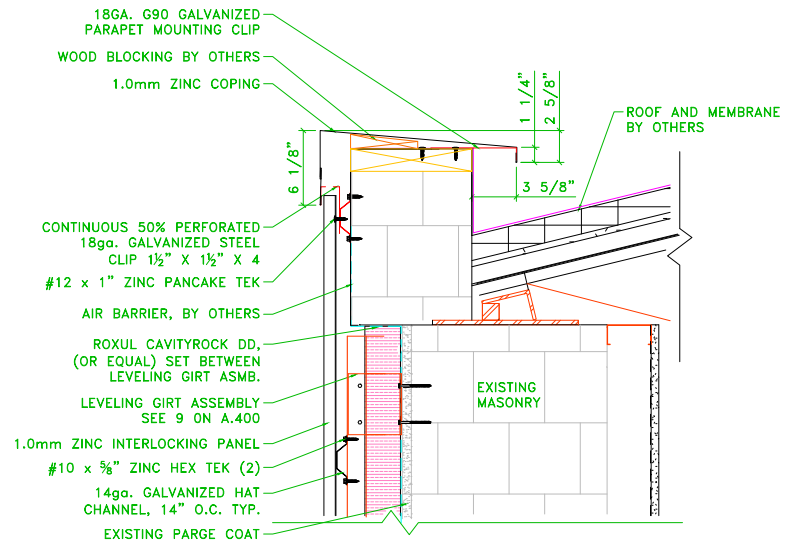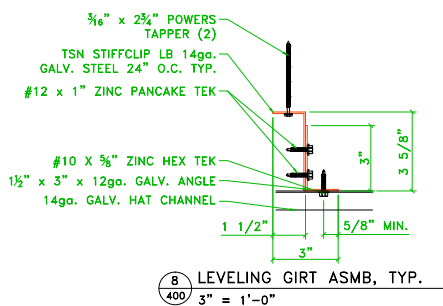Unforeseen changes occurred during construction requiring the general contractor to rebuild the top sixteen feet of exterior wall out of CMU block which changed the slope of the building.

ROOF ASSEMBLY:
-ROOFING MEMBRANE
-6" RIGID INSULATION
-1/2" COVER BOARD
-1-1/2" COMPOSITE MTL DECKING

ZINC COPING

CONTINUOUS 50% PERFORATED
GALV. STL SCREEN

WALL ASSEMBLY:
-1" ZINC PROFILE PANEL
-1" ALUM HAT CHANNEL
-VAPOR PERMEABLE AIR BARRIER
-5/8" EXT GYPSUM SHEATHING
-6" MTL STUDS W/ BATT INSUL
-5/8" EXT GYPSUM SHEATHING

NEW POURED CONCRETE WALL CAP TO
MATCH ROOF ANGLE, SEE 'S' DWGS

WALL ASSEMBLY:
SEE DETAIL 1

2' - 0"

6 PARAPET DETAIL @ ZINC WALL
1 1/2" = 1'-0"

Approved Construction Detail

Bunting designed and engineered an alternate parapet cap.

18GA. G90 GALVANIZED
PARAPET MOUNTING CLIP

WOOD BLOCKING BY OTHERS

1.0mm ZINC COPING

CONTINUOUS 50% PERFORATED
18ga. GALVANIZED STEEL
CLIP 1½" X 1½" X 4

#12 x 1" ZINC PANCAKE TEK

AIR BARRIER, BY OTHERS

ROXUL CAVITYROCK DD,
(OR EQUAL) SET BETWEEN
LEVELING GIRT ASMB.

LEVELING GIRT ASSEMBLY
SEE 9 ON A.400

1.0mm ZINC INTERLOCKING PANEL

#10 x ⅝" ZINC HEX TEK (2)

14ga. GALVANIZED HAT
CHANNEL, 14" O.C. TYP.

EXISTING PARGE COAT

ROOF AND MEMBRANE
BY OTHERS

1 1/4"
2 5/8"
6 1/8"
3 5/8"

EXISTING
MASONRY

³⁄₁₆" x 2¾" POWERS
TAPPER (2)

TSN STIFFCLIP LB 14ga.
GALV. STEEL 24" O.C. TYP.

#12 x 1" ZINC PANCAKE TEK

#10 X ⅝" ZINC HEX TEK
1½" x 3" x 12ga. GALV. ANGLE
14ga. GALV. HAT CHANNEL

3"
3 5/8"
1 1/2"
5/8" MIN.
3"

8 LEVELING GIRT ASMB, TYP.
400 3" = 1'-0"

Case Study *The Lantern Building*, *Pittsburgh, PA*
Virage Rainscreen System, Vertical Application

Basis of Design

The original engineering calculations were based on a CMU block façade instead of brick. The age of the brick at 100+ years also presented concerns regarding the structural integrity of the façade.

Approved Construction Detail

In order to ensure the integrity of the façade, Bunting performed pull-testing on site to verify the actual pull-out capacity of the screw fasteners.

Results

Bunting was successful in building upon the details in the bridging documents which resulted in engineered and stamped construction drawings. Bunting self-performed all work, fabricating and installing the zinc panel rainscreen.

During the mock-up phase, Bunting modified the design of the panel reveal joint to improve the overall aesthetics of the rainscreen. The overall appearance of the completed building façade is spectacular.

Case Study *The Lantern Building*, Pittsburgh, PA
Virage Rainscreen System, Vertical Application

Photo Gallery