


CASE STUDY:

Private Office Building; Farmington Hills MI

Arisco Contracting Group Inc. was chosen by this private owner to investigate, report its findings, and propose corrective action measures to control water mitigation into the interior of the building. Due to the scope required, Arisco Contracting Group Inc. worked with the owner to break up the work over two (2) years to assist in budgeting. In the summer of 2011, we began the project, working steady until late fall, resuming and completing the project in spring 2012. Arisco Contracting Group Inc. self-performed several work scopes, including, but not limited to: demolition, site restoration, new complete flashing assembly secured to existing substrate, new masonry back-up, stone (granite) masonry installation, masonry cleaning, joint sealants, and painting. This work was completed with due care around the various tenant's operations with early morning and late night work on an as-needed basis:

FACADE REPORT:



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E sales@arisco.co

MEMORANDUM

Date: March 15, 2011

To: [Redacted]

Re: WATER INFILTRATION
[Redacted] - Farmington Hills, MI


Subject:

As per our discussion this afternoon, attached, please find documentation with regards to the exploratory work currently underway at [Redacted]. We removed a glazed CMU from the head of the third story windows on the east elevation (suite 300).

Upon removal of the existing glazed CMU course, it was immediately evident that there is some water infiltration. We took note of tar paper in the wall cavity; this paper is of concern as the characteristics of this material allow it to retain moisture. This is troubling considering its location at the "base" of the wall where water is designed to exit the cavity.

The existing flashing is a semi-rigid polyethylene, not typical in modern construction. Current construction practice utilizes a self-adhering, self-sealing product (similar to Air Shield Thru-Wall Flashing by W.R. Meadows). These flashing products are typically 40 mils thick, with cross-laminated polyethylene film. This film has excellent tensile strength and tear-resistance which is beneficial in this application (around the existing bolted connections).

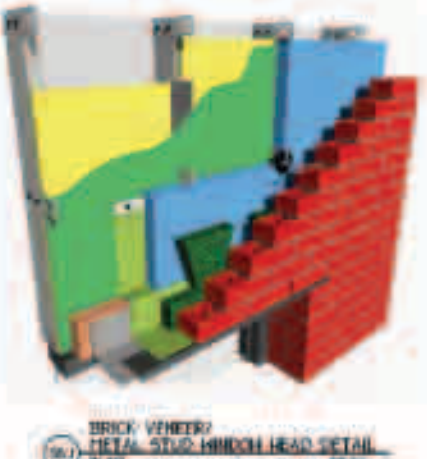
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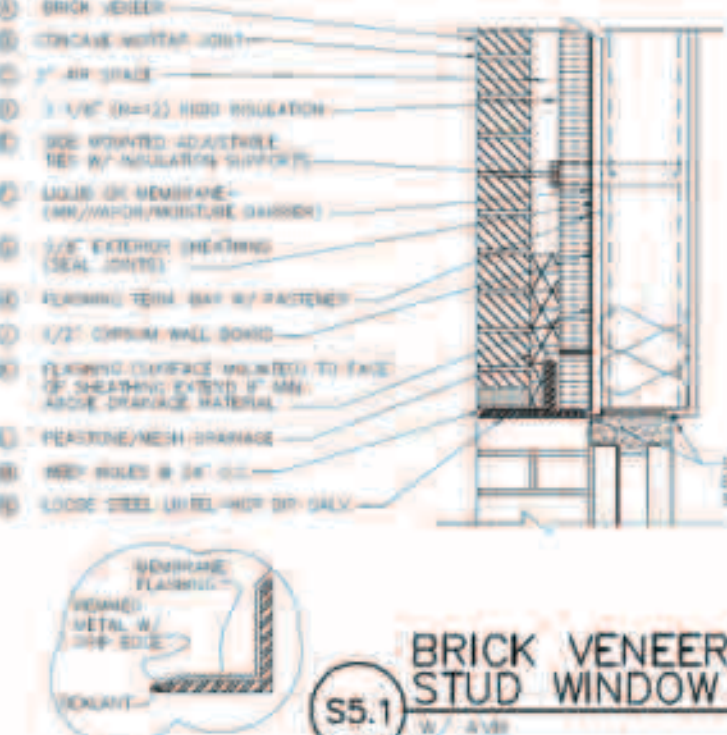
As suspected, upon removal of the existing semi-rigid flashing, oxidation has accumulated on the existing steel lintel. Oxidation, or the presence of rust, is a clear indicator of the presence of unwanted water in the cavity (and behind the flashing).

The lack of drip flashing at the window head(s) is also contributing to the water migration back into the building. The rounded profile of the existing steel lintel introduces the idea of capillary action, which in essence, brings water back into (and not diverted from) the building envelope. The installation of the drip edge will direct the water away from the building.

See below the outdated flashing practices also bring to light other issues that could be contributing to the building's water infiltration issue: (left) open bad joints in steel lintel, (center) staples / small tears in flashing, and (right) large fasteners (as used for the corrugated brick ties) penetrating the semi-rigid flashing without any presence of mastic at the penetration(s).



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BRICK VENEER/METAL STUD WINDOW HEAD DETAIL
SCALE: N.T.S.

MODERN FLASHING DETAIL

Through our investigation, we have been able to determine that the existing flashing system is failing, causing water infiltration into the building envelope. The proper way to mitigate the infiltration is to update the flashing system to modern construction practices / masonry standards.

We would propose to remove the masonry (approximately 2'4" high) at the existing window head(s), remove the existing flashing system complete and install a new system, similar to the detail(s) provided previously in this report. This would include: (1) self-adhering / self-sealing flashing product; (2) installation of a termination bar with screws & mastic at top of flashing termination (to the back-up sheathing); (3) installation of a tyne-coated drip edge (to match window framing) set in mastic, to allow water to flow over the window away from the building; and the (4) installation of a cell vent / wick weep system to transfer the water from behind the wall cavity through it to the exterior. Cavity/Mesh drainage material would not be required due to the existing masonry in place over head and no mortar "dropping" into the flashing cavity. We would then propose to replace the masonry with new, either glazed CMU to match the existing, or a comparable product. We believe a more cost-effective product would be an integrally colored "red" cast stone product to match the color palette of the existing building. Finally, we would propose a new water application (clear) over the finished work as well as the entire exterior masonry system.

We would be happy to discuss these options with you at your convenience, as well as meet on-site to review any of these conditions. Thank you for the opportunity on this work.

Regards,
ARISCO CONTRACTING GROUP INC.

Attachments: (1) Air-Shield Thru-Wall Flashing, (2) Termination Bar, (3) Drip Flashing, and (4) Weep Vents

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PROPOSAL FOR WORK:



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CUSTOMER: [Redacted]

DATE: May 15, 2011

PROPOSAL: 2011-0612

PROJECT: [Redacted] - Flashing Repairs/Restoration; Farmington Hills, MI

Through some exploratory work (see associated report, dated March 15, 2011), we have determined that the existing flashing system is failing, causing water infiltration into the building envelope. We propose to remove the masonry (approximately 2'0" high, or one 8" high course of glazed masonry and one 4" high course of brick) at the existing window head(s), remove the existing flashing system complete and install a new system, to include: (1) self-adhering / self-sealing flashing product (approximately 2'0" up wall), (2) installation of a termination bar (galvanized metal) with screws & mastic at top of flashing termination (to the back-up sheathing); (3) installation of a tyne-coated drip edge (to match window framing) set in mastic, to allow water to flow over the window away from the building; and the (4) installation of a cell vent / wick weep system (at 2'0" on center) to transfer the water from behind the wall cavity through it to the exterior. We will also install a substrate of 2" solid masonry for the granite back-up. Once the new flashing system is properly installed, we will replace the removed masonry with a 1'0" high by 2'0" long (8m thick) granite product to be provided by [Redacted]. The top joint of the granite (between the granite and brick) will be raked and filled with DOW Silicone sealant, as well as all of the head joints between the granite panels (1/4" thickness).



CAVITY WALL WINDOW HEAD DETAIL
SCALE: N.T.S.

As per our meeting at your office yesterday, we have revised the proposal to reflect the increase in lined footage, as well as installing the solid masonry substrate for the granite back-up. Additionally, we have also removed all masonry cleaning that would have been previously required—now we are dry-setting the granite and filling joint(s) with sealant. Please review the following page with regards to the pricing option(s) on the work in question.

PROPOSAL - 2011-0612

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By The Numbers:
Remove Masonry Debris, Over 50 YDS
New Flashing Assembly, Over 3,500 LF
New Granite Installation, Over 800 CF
New Joint Sealants, Over 10,000 LF