



## A BLUEPRINT FOR SUCCESSFUL SCHOOL CONSTRUCTION



**T**he Lawrence Associates, Architects/Planners, P.C., were given the challenge of designing a 58,000 sq.ft. elementary school that would be energy efficient, durable, inexpensive to maintain, aesthetically pleasing, fire safe, acoustically efficient, and most importantly, mold resistant. These requirements all had to be met within a very tight budget. Richard Lawrence, President and Project Architect for the Preston Veterans Memorial School, selected masonry construction for the project. He noted, "Masonry is the only material and type of construction that can provide all the building requirements requested by the owner."

Since the budget was a concern, Lawrence called in IMI for assistance. Richard Filloramo, IMI's Area Director of Market Development, worked with Lawrence

*[continued]*

### PRESTON VETERANS MEMORIAL SCHOOL Preston, CT

**OWNER:** Town of Preston

**ARCHITECT:** The Lawrence Associates, Architects/  
Planners, P.C. - Manchester, Connecticut

**STRUCTURAL ENGINEER:** Girard & Company Engineers  
Rocky Hill, Connecticut

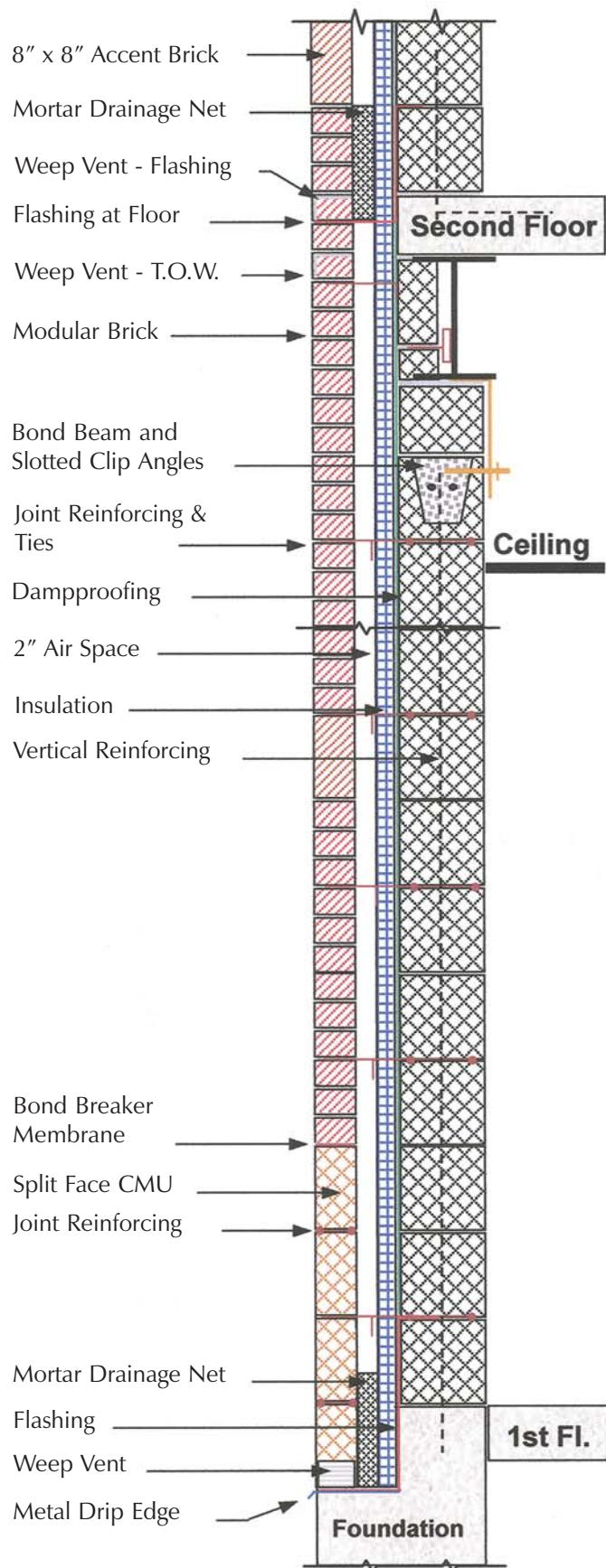
**GENERAL CONTRACTOR:** Pascack Construction  
North Kington, Rhode Island

**MASON CONTRACTOR:** B.W. Dexter II, Inc.  
Danielson, Connecticut

**LOCAL UNION:** International Union of Bricklayers and  
Allied Craftworkers, Local #1, Connecticut

**PROJECT COST:** \$9,585,000

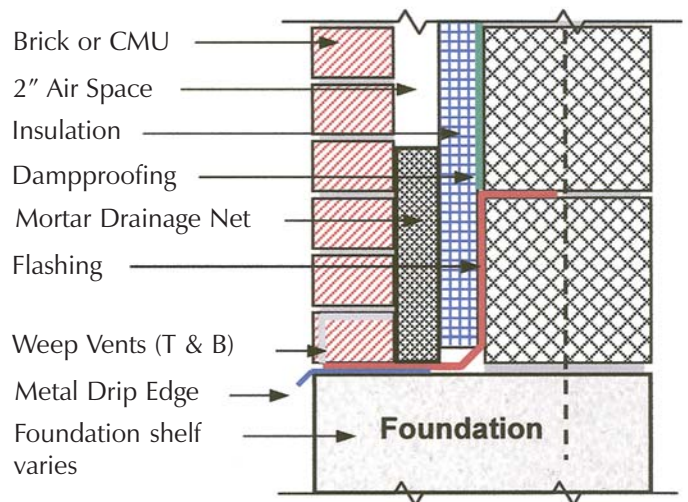
**MASONRY:** 204,000 modular brick, 5,000 decorative blocks, 40,000 CMU back-up, 90,000 interior partition CMU, 156 pieces of precast accent stone, 35,000 sq.ft. of waterproofing



**Figure 1**  
**Exterior Wall Section**

and his partner, Anwar Hossain, on cost-efficient masonry wall systems and details. Mike Girard and Ken Anderson, the project's structural engineers from Girard & Company Engineers, worked closely on the details with IMI and The Lawrence Associates.

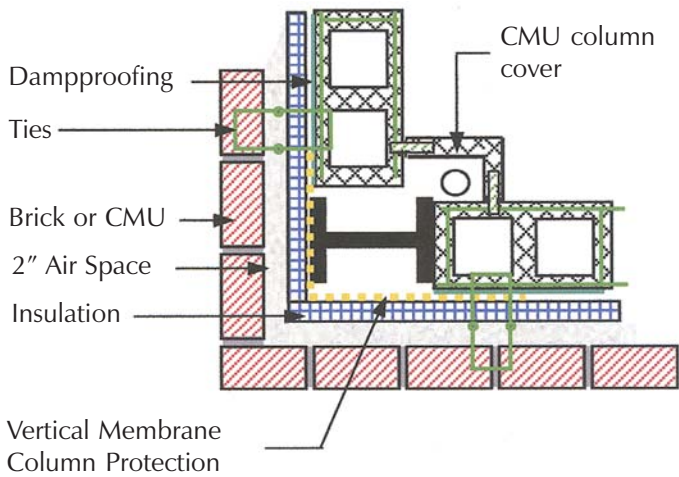
The exterior wall system was designed as a drainage wall, consisting of brick & CMU veneer with concrete masonry unit (CMU-block) back-up. The wall assembly included the latest developments in moisture (and mold) control technology as shown in **Figure 1**. The flashing system in the drainage wall included membrane flashing, metal drip edge, mortar drainage net, and CMU dampproofing as shown in **Figure 2**. All exterior columns and beams that projected into the wall cavity were protected with membrane waterproofing (**Figure 3**). Split-face CMU veneer created the 2'-8" high base accent. These CMU units were high-strength, normal weight block made with a special exterior profile mix and included a high-grade integral water repellent. Joint reinforcing was installed in the CMU veneer and a membrane bond breaker was used between the CMU and brick veneer above to accommodate differential movement.



**Figure 2**  
**Base Flashing**

Exterior veneer accent bands were designed with a complimentary colored brick to maintain consistency in the exterior veneer and minimize cracking that might occur from differential movements. Expansion joints were spaced at 25' o/c and at all vulnerable locations. The exterior wall system provided a continuous, energy efficient thermal barrier with a thermal resistance of R-15.4.

The exterior design was well balanced and used concealed long-span Halfen system brick arches at the entrance. Piers also accented the building facade. Ornamental precast sills and column accents were used to enhance the exterior design.



**Figure 3**  
**Column Detail**

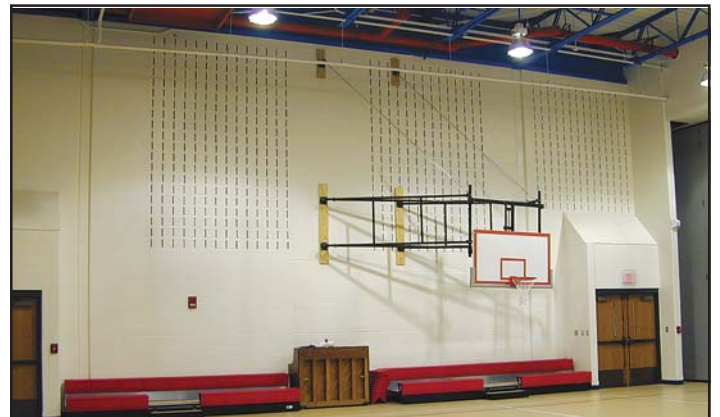
The interior partitions were constructed of concrete masonry block. Lawrence noted, "As a design professional, I felt a lot more comfortable knowing the corridor walls were 8" CMU, resulting in a non-combustible, 2-hour fire rating." The 2-hour full-height fire walls in the gymnasium were constructed of 12" reinforced CMU. Special sound absorbing units were also used in the gymnasium.

The interior CMU walls were strong, durable, fire resistant, and maintenance free. They also provided a level of noise control not possible with other materials. More importantly, they provided security for the students.



Mary Ann Mloganoski, CAD drafter for The Lawrence Associates, did an excellent job detailing the wall system and columns. Filloramo noted that in his 30 years in the masonry industry, he has never seen so many well-detailed masonry column enclosures on the construction documents.

Bruce Dexter, President of B.W. Dexter II, Inc., the mason contractor, stated, "working with Lawrence Associates was a pleasure. They were professional, fair, and easy to work with." B.W. Dexter II, Inc., which is IMI Contractor College certified, contributed additional technical and field assistance to the project on an on-going basis. The masonry was completed ahead of schedule and within budget, which helped keep the overall project within the owner's budget, while still providing superior building design and construction.



For additional information on the project detailed in this IMI Case Study, contact:

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