

# JOSEPH S. ZAJCHOWSKI

## A R C H I T E C T

1240 airport parkway

south burlington, vermont 05403

(802) 863-6863

September 19, 1991

Mr. Steven Goodkind, City Engineer  
City of Burlington  
P.O. Box 849  
Burlington, VT 05402-0849

RE: Memorial Auditorium Weathering Analysis

Dear Mr. Goodkind:

On September 9, 1991, Mr. Brown and myself went to the site, the roof of Memorial Auditorium to direct and observe the exploratory investigation of the parapet wall around the roof perimeter.

Contractor, was directed to remove six (6) sections of cast stone coping to allow observation of construction details and the condition of materials.

The same basic condition was found where all 6 cast stone coping caps were removed. The conditions and details are as follows:

- Parapet wall is constructed of solid brick and is a nominal 12" thick wall. (Photo 1 and 2, and Sketch A ).
- Wall is capped with a continuous through wall lead cap flashing turned down approximately 1 1/4" at each face of wall, creating a drip edge. (Sketch A and B ).
- The through wall flashing is continuous over entire parapet, that is over both horizontal and vertical planes of parapet. It is jointed by interlocking U joints forming a continuous piece.
- In 2 or 3 instances the through wall flashing was torn, pretty much at right angles to its length. Where this had occurred, it was apparent that the cast stone coping had moved, lengthwise., pulling the lead flashing and tearing it. (Photo 1 ).
- In all instances the mortar course between the lead flashing and coping cap was completely decomposed and could be brushed off like loose sand. From observation of coping caps that were not removed, the condition of mortar beneath them appears to be the same as for those which were removed. (Photo 3, 4, and 5 ).

- In nearly all instances the joints between sections of coping were in very poor condition, with deteriorated mortar, and those that had been caulked, with split caulking and poor improper caulking. (Photo 5 and 6 ).
- At the coping removed at the south wall, the aluminum counter flashing installed during the single ply roofing installation had been placed over the lead through wall flashing. This would allow water seeping through the coping and coping joints to run down behind the single ply roofing where it has pulled away from the building wall. (Sketch B and Photo 7 ).

In addition to the observations made above, as a result of the exploratory work performed, there were other points of deterioration observed through visual examination, such as:

- The obvious cast stone deterioration of some of the coping caps, and of the decorative cast stone band around the building perimeter and the second band at main pilasters. (Photo 8 through 15 ).
- Cracked brick, mortar joints, and many open joints in cast stone band around building. (Photo 16 and 17 ).
- A badly deteriorated chimney at the northwest corner of roof. (Photo 18, 19, and 20 ).
- Open joints in cast stone and brickwork, and deteriorated steel lintel at lower level windows on south side. (Photo 21 ).
- Deteriorating steel lintels and windows at various areas around building. Photo 22 and 23 ).

As a result of the exploratory work, we feel that though there has been water percolation through the coping and coping joints, this was only a minor cause of the upper wall deterioration of the building. Though there definitely had been leaking through the coping cap and cap joints, causing the decomposition of the mortar beneath the coping cap, we feel that from all appearances, the lead through wall flashing protected the parapet and upper wall from water damage through this avenue. We strongly feel that the damage to coping, cast stone bands and substantial efflorescence on both interior and exterior faces of walls had been caused through years of weathering of the exterior face of wall causing very porous mortar joints, open joints in cast stone bands, and from a very substantial water infiltration problem from a previous leaky roof.

Our main observation was of the upper portion of wall in the vicinity of the roof, however, as a general observation of the building there are many other areas of deterioration noted, such as open joints in the cast stone band over the lower level windows, very rusted and corroded steel lintels, rusted steel windows, brick joints requiring pointing etc.

If we were to consider the entire building for restoration, some general thoughts for corrective work at this point would be:

- Re-set all cast stone coping and repair pieces that are damaged.
- Repair all portions of cast stone bands that are decomposed.
- Re-mortar all joints in cast stone coping and bands and seal with a long life sealant.
- Re-point any masonry mortar joints that require pointing.
- Replace steel lintels whose condition dictates replacement.
- Replace or repair steel windows as necessary - many are rusted, many are leaking.
- After cleaning all masonry by a non abrasive cleaning method, seal all masonry and cast stone with a water repellent coating.
- Perform corrective work to single ply roofing, especially at wall flashing where material is pulling away from wall attachment.

We trust that this report will give you a good insight on the existing problems and an overview on corrective suggestions.

Enclosed also are two groups of photos. One group marked with numbers which are referenced in this report, and a second group of additional photos for your use.

Hopefully we may be able to serve you in the future in executing construction documents for the renovation of this project, or for other work that the City of Burlington may need.

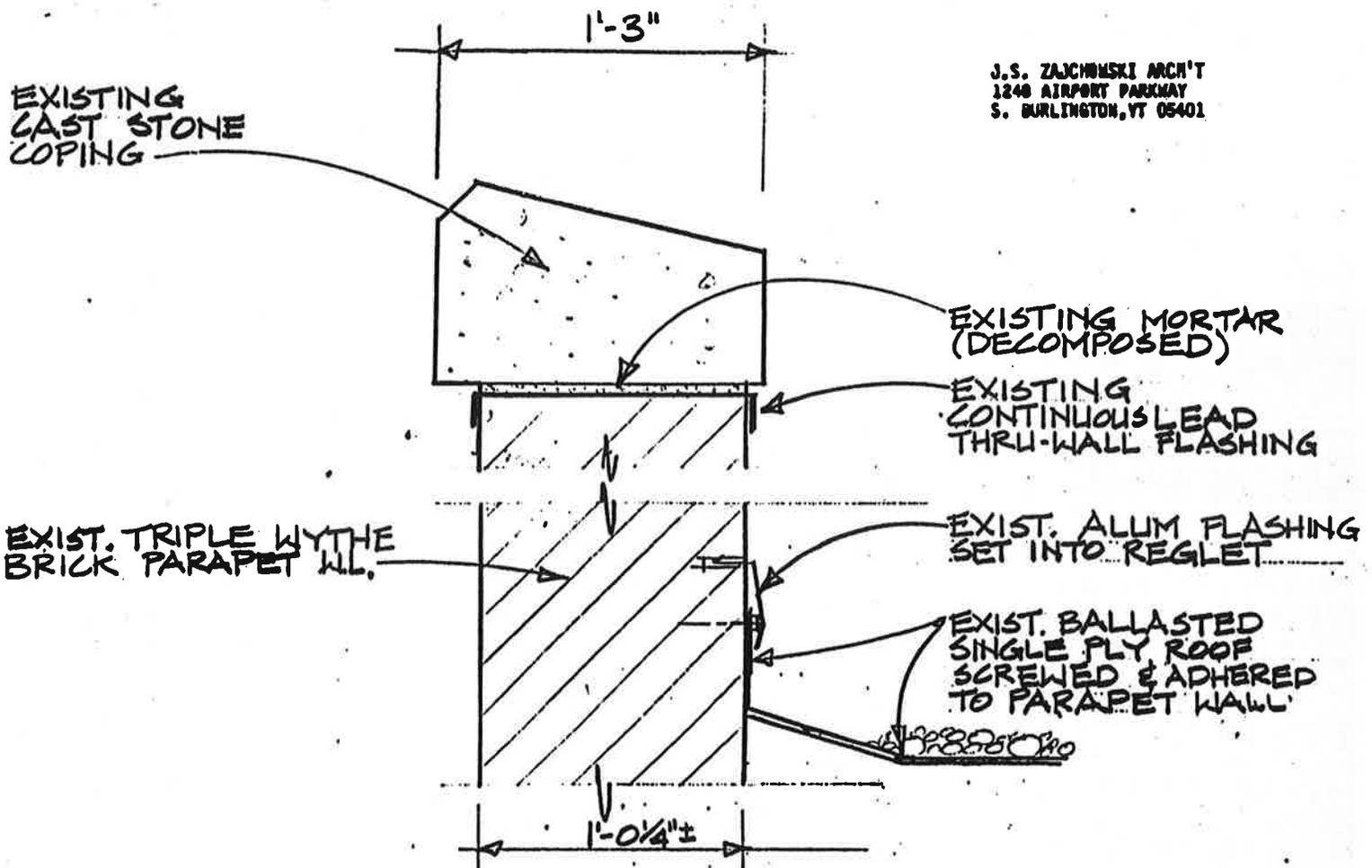
Yours truly,



Joseph S. Zajchowski  
Architect

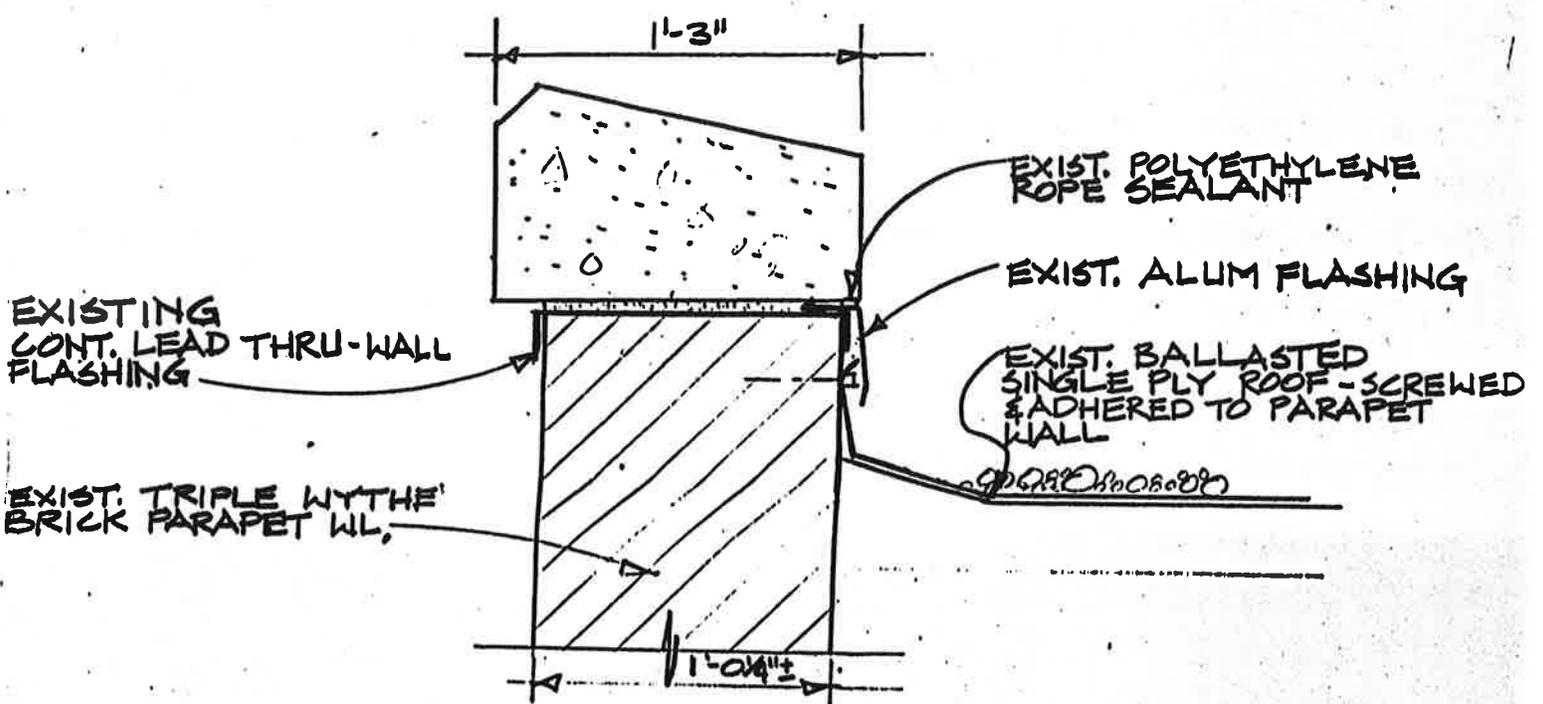
JSZ/tlc

J.S. ZAJCZYNSKI ARCH'T  
1248 AIRPORT PARKWAY  
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**(A) TYPICAL PARAPET WALL**  
SCALE: 1/2" = 1'-0"

SKETCH NO. 1



**(B) TYPICAL LOW PARAPET WL. - SOUTH SIDE**  
SCALE: 1/2" = 1'-0"

SEPT. 19, 1991