



STUDY OF REPAIR AND RENOVATION OPTIONS

405 River Street
Alpena, MI 49707



Logo
Name

R.S. Scott Associates, Inc. (RSSA) was contracted by the Jesse Besser Museum of Alpena to prepare a study focusing on improvements along with structural repairs to the museum, both interior and exterior.

The goal is to provide an outline of work that needs to be performed to either enhance the function of the museum and better preserve and protect the collections along with repairs that go along with an aging structure.

While the study is divided into 2 main parts: Basement Interior and Building Exterior, the two divisions do overlap as one impacts the other.

Some of the proposed modifications would be optional, or elective, others are of higher importance on the list as they are essential to maintain the building integrity.

EXTERIOR FAÇADE

RSSA and their Mechanical Consultant, Apollo Engineering, have studied the various generations of existing drawings as well as performing walk-thru of the facility. (Interior and exterior)

In a walk thru around the building exterior deficiencies were noted and areas of potential work on the façade were observed. Additionally a walk thru of the roof was done to assess its current conditions.

AREAS OF CONCERN/POTENTIAL REMEDIATION

This section will bullet point areas in need of correction as well as renovations to meet the goals of better preserving the building and collections. Further detail will follow.

- Exterior columns. A survey was done of all of the exterior columns and notes were taken highlighting columns with exposed, rebar, popping/spalling concrete and/or cracks.

- It was noted that the undersides of all the overhangs and porch roofs should be cleaned, patched and refinished
- Locations were noted where planters will be removed and ground graded away from building. This will be to provide for better drainage away from the building. It is anticipated that during this demolition and regrading, new perimeter foundations will be installed and outlet to an existing drainage ditch.
- The area ways (or pits) will also be filled in to eliminate a hazard as well as better protect the collections in the lower level. This work will entail removing masonry walls. Infilling with masonry, all below grade windows and installing a new waterproofing system. Once above grade there are various options for covering the above grade windows which are all closed up from the interior exhibit space. Some exterior window will remain in non-exhibit spaces. Part of the necessity of coving the above grade portions is to permit proper flashing to prevent water intrusion behind the below grade walls.. The ground will then slope away from the building to meet existing grade.
- Areas of sidewalk (ramp) at entry need repair/replacement. potential trip hazards.
- Ramp does not meet current barrier free standards. May want to consider redoing. At minimum the railing need replacement as it is corroding at the connection to the concrete ramp and is not completely structurally sound.
- Notice was taken of the window wells that may be filled in. (this also relates to the interior study.

INTERIOR FIRST FLOOR (BELOW GRADE)

- The Lower Level drawings are being reviewed by Architect for code compliance and egress
- The current space usage is not optimal and in coordination with the Museum Director, alternate usages of the lower level space have been reviewed both for improved space use and better preservation of the collections
- Current lower level does not have adequate temperature controls and humidity controls. Options will be looked at to improve the environmental controls for the collections.
- The space currently housing the animals exhibit has had 2 noticeable instruction of water. One episode seemed to have come from the exterior and entered above the ceiling. Possible cause is water coming from the planters. This will be addressed with

removal and/or rebuilding of the planters.



- The second episode seemed to indicate water coming up through the floor. It is suspected that this may be a result of a broken or cracked drain tile that runs under the floor from the drain at the base of the exterior stair



WATER ON FLOOR BUT WALL IS DRY

- An isolation room and a freezer are being considered in the intake area to better control pests and mold, etc. Intake area will experience some physical remodeling.
- The workshop is open to the museum space and is located across from major utility and infrastructure connection points. This area creates dust and uses some potentially hazardous chemicals and fumes. It should be isolated and provided better ventilation. This area will be expanded into the former furniture storage and a wall will enclose the space.
- Egress: signage should be added to provide clearer directions to emergency egress
- Sprinklers: Concern to get collections protected from the wet sprinkler system. Option was to consider eliminating the sprinklers in the lower level except for open public spaces. Such a move would be a code violation, although storage areas could be fire rated and not sprinklered if they did not exceed a certain area. Options will be discussed to address this.
- Recommendations to eliminate the area way pits and planters that tend to hold moisture and invite insects and other pests into the lower level. Additionally, the areas for storage of collections do not benefit from natural light. This will be addressed in the exterior renovations.

EXTERIOR CORRECTIONS

GENERAL:

The entire exterior should be power washed and then sealed with a transparent penetrating sealer or painted with an elastomeric paint where previously painted. Soffits shall also be cleaned and re-painted. All caulk shall be removed and replaced at windows, doors, penetrating and abutment of dissimilar materials.



COLUMN PATCHING/REPAIR

There are xx columns that need repair (see drawing)

Many of the exterior columns are showing signs of deterioration marked by spalling and popping of the concrete, exposing re-rod. This needs to be corrected to prevent water from continuing to penetrate the column and rust out the re-rod which would eventually lead to failure.

To correct this, the areas around the deterioration need to be saw-cut. The re-rod needs to be cleaned and then a protective anti-corrosion coating such as and then patched. The concrete covering the rebar needs to be chipped away to expose as much of the corroded surface as possible, loose rust should be brushed off, and a coating applied. Chip away all loose material, exposing clean, sound concrete



Figure 1 : columns spalled concrete exposing re-bar

Clean the re-bar and coat with an anti-corrosion compound. The surface should be rough when the chipping process is finished. Next, mix a repair batch of Portland type 2 cement with fine, sharp masonry sand in a one to two ratio. Add latex bonding additive to bring the repair material to a stiff, plastic consistency. Dampen the exposed concrete of the column with water, a whitewash brush works well for this, then use a rubber float to pack the patch material into the spalled area. Pack the material tightly so that there are no voids in it, shaping it with the rubber float to a smooth surface matching the column's shape. Allow it to begin to set (harden), at normal temps and humidity, about 2 hours. After the patch has taken its initial set, dampen your rubber float and "rub" the patch in light, circular motions until the patch matches the texture of the rest of the column

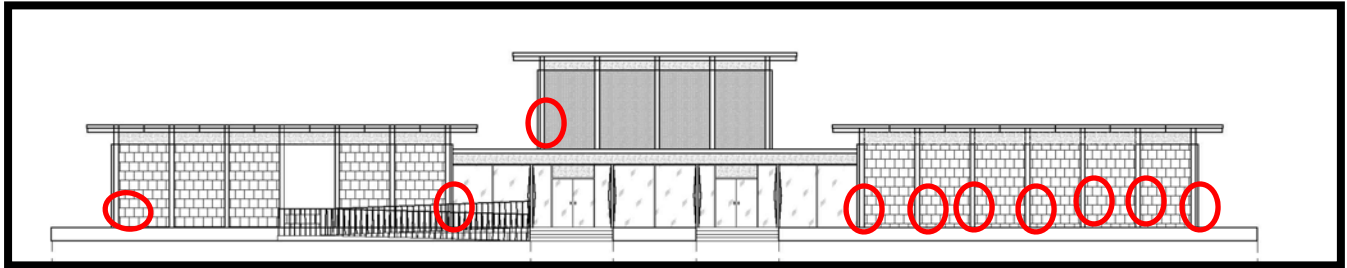


Figure 3 SOUTH ELEVATION COLUMNS REQUIRING REPAIR

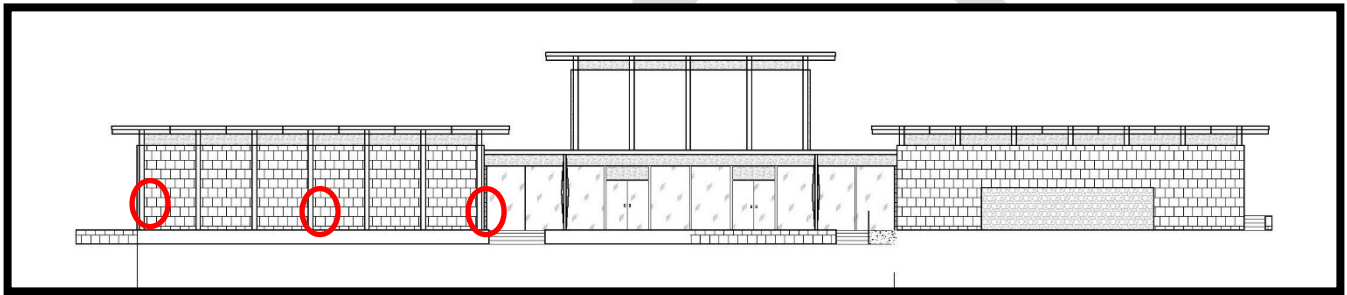
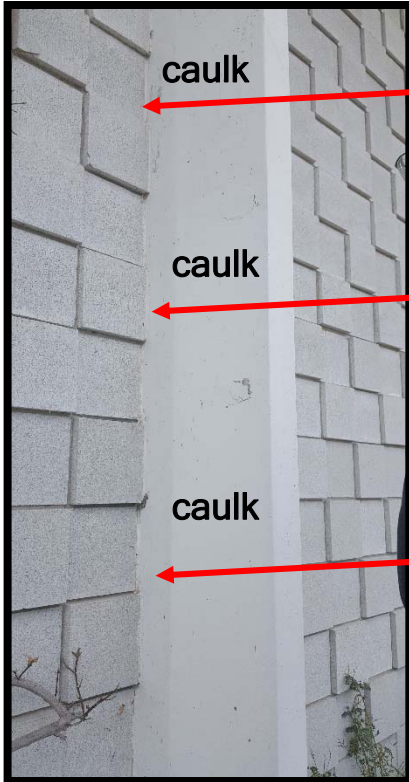


Figure 4 NORTH ELEVATION COLUMNS REQUIRING REPAIR

COLUMN TO WALL

Remove the existing caulk and replace with new.



WINDOWS AND DOORS:

Remove existing caulk and replace with new. (note: where windows are being covered with either new masonry or panels this need not be done)

PLANETARIUM CUPOLA

The walls and columns in the cupola are in fairly good condition. Power wash and reseal and/or paint. Re-caulk where columns meet block and any penetrations. The columns with spalling shall be repaired by same methodology as columns at the ground level. Caulk where the columns meet the hard wall panels. As with the at grade level, this portion of the building needs to be power washed, any spalling

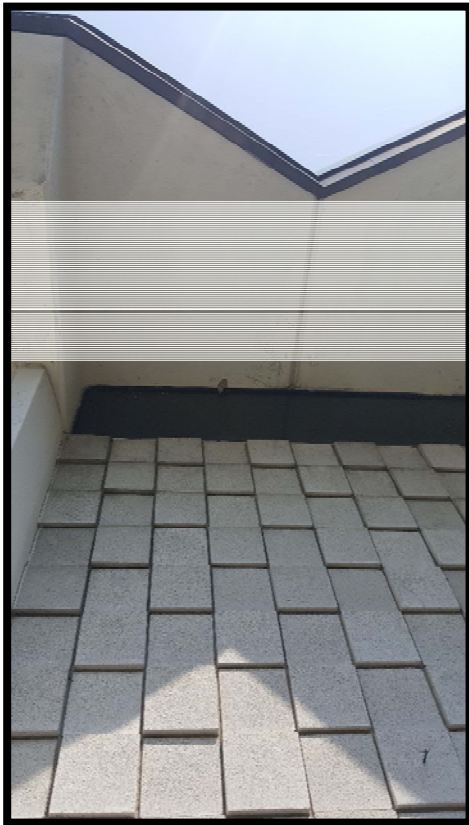


entire exterior surfaces need to be sealed as appropriate.



concrete repaired and joints between hard panels and columns and any penetrations need to be recalled. The and or painted

SOFFITS



Soffits shall be power

washed and re-painted.

HARDWALL PANELS

Where hard wall panels are not being cleaned, and re-covered, they shall be caulked. (old caulk to be removed.)



ROOF:

The roof is currently not experiencing any leaks but it has poor drainage in some areas resulting in ponding. Additionally, the roofing is approximately 20 years old and re-roofing should probably be considered at some time. It is recommended that when re-roofing all roofing and any insulation be removed to the deck. Then a tapered insulation system could be installed creating positive drainage to the roof drains. A thermoplastic TPO roofing

membrane, mechanically fasted (or fully adhered) is recommended (such as Duro-last.)

There is an expansion joint that needs to be repaired under the east wing overhang.





**MAIN ENTRY
STAIRS,
PORCH AND
PLANTERS ON
SOUTH
ELEVATION**

The front entry patio/deck, shall be power washed. Caulk removed from cracks and replaced with new. Caulking where deck meets walls shall be removed and replaced with new. The granite steps shall be removed, and reshaped and re-installed in new full mortar bed. Option would be to remove the steps and replace with new cast concrete steps.

The hand rails are in poor condition and they should be removed and replaced with new railing and handrails meeting current barrier free rules. Code might require an additional railing at the center point of the stairs.

The concrete side walk in front of the entry is in poor conditions and should be replaced.

The planters in front of the museum on the south elevation are being retained. They could just be cleaned the limestone caps replaced with new or with cast concrete or stone. However, due to the presence of some water penetration into the basement in the area of the South east corner of the building and is recommended to remove the planters and excavate to permit new waterproofing on the below grade walls. The planters could then be reinstalled.

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