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Building Envelope Evaluation Report

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ALLANA BUICK & BERS

Making Buildings Perform Better

Veterans Affairs / Superior Court Building

483 Conger Street
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ABBAE #21-6640.01

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Executive Summary

Allana Buick & Bers, Inc. (ABB) is pleased to present Humboldt County Public Works with this building envelope evaluation report for the Veterans Affairs / Superior Court building located at 483 Conger Street, Garberville CA. It is the location for the Veterans Office and Superior Court. The structure has been experiencing a long history of water intrusion. Leak areas include exterior wall / windows, and roof. ABBAE has been asked to review the mold report performed by Brunelle & Clark Consultants, LLC and perform a visual assessment of the leaking building envelope and provide repair recommendations. During our evaluation, ABBAE documented several deficiencies and failures associated with the building envelope. Summarized below are the deficiencies associated with the applicable building components. The order of the deficiencies is listed from most severe to the least severe. The severity is based on water intrusion and affects to the building occupants. For additional information regarding the deficiencies, please refer to each category within the findings section of this report. ABB's repair recommendations are listed on page 25 of this report.

Photo #1: *Veterans Office and Superior Court*

Building Construction and Investigation Background

The Veterans Affairs / Superior Court building was built approximately in 1960. ABBAE reviewed architectural drawings dated December 9, 1959. The building is a single level wood framed structure placed on a perimeter cast in place concrete foundation and poured concrete piers with 4"x6" redwood columns that support the floor assembly. The exterior walls are 2"x4" stick framed with painted 1"x12" tongue and grooved lapped siding installed in a vertical fashion. The wall cavities are filled with fiberglass insulation with wood panel boards as the interior finish. The windows are aluminum framed with single panes of glass and have wood trim around the perimeters of the window openings. The roof consists of an asphalt built up roof membrane, with a granulated cap sheet. The roof is applied to an insulating tongue and groove particle board substrate. On December 28th,2020 ABB performed limited visual assessment of the structure. Access to the interior and the roof was provided by county employees. During the site survey, ABB reviewed the interior and exteriors of the perimeter walls, windows, and roof.

Additionally, ABB surveyed the grounds around the structure. The deficiencies ABB documented are solely based on limited visual observations, no invasive testing was performed. Our findings are based only on visual assessments.

Roof Assessment:

The roof consists of an asphalt built up roof membrane, with a granulated cap sheet. The roof is applied to a particle board substrate. It appears that in the distant past, the roof has been re-roofed and has also had multiple repairs and roof coatings applied since the re-roof. During the site inspection ABB documented several deficiencies, but are not limited to:

- **Roofs lack proper drain assemblies:** ABB documented a lack of through wall drain openings and overflow drains. Additionally, the through wall drain openings are too small. These conditions can allow debris to clog the drains and water to overwhelm the roof system.
- **Roof lacks proper slope to drain:** During our assessment, ABB documented lack of slope to drain. This condition allows for standing water, build up of dirt and debris, and growth of weeds and other growth. These conditions have degraded of the roofing membrane.
- **Roof base flashings are improper and or are missing:** At abandoned mechanical ducts that extended through the roof assembly, base flashings were not installed. The roof membrane at these locations were not properly terminated, some location had roofing mastic applied to prevent water intrusion. This condition requires continues maintenance as mastic is an unsustainable material for long term service. Additionally, where the roof membrane was terminated at the exterior wall, the membrane was not flashed up under the exterior wall siding. Like the abandoned mechanical ducts, the membrane was terminated with mastic rather than a membrane base flashing. This condition required continues maintenance as mastic is an unsustainable material for long term service. These terminations have opened and are allowing water to leak and spread under the roof membrane.
- **Roof coping caps have unsealed joints:** When the most recent re-roof was installed, the roof coping caps were not removed. The roof installer did not extend the membrane up under the coping cap. A skirt flashing was installed to bridge the gap between the newer roof membrane and the coping cap. This condition allows for water that leaks through the coping cap joints to migrate under the re-roof membrane.
- **Roofing laps are not sealed:** The parapet roof membrane laps were not bonded, had open voids “fish mouths” at the transition between roof deck and wall transition. This condition allows for water to migrate under the wall sheets and is susceptible to leaks when the drains back up.
- **Roof lacks proper integration to adjacent components:** Where the roof transitions to exterior wall siding and or parapet wall saddles, there is improper integrations which lack proper flashing laps.
- **Roof has open voids and gaps:** The eyebrow roof over the front entrance appears to have not been re-roofed. There are tears and voids in the membrane. Additionally, there is an access hole through one of the demising parapet walls between the dance hall and the courtroom. This opening is improperly flashed and has open voids.

ABB documented many roof leak stains throughout the building. Please see leak stain map below:

Roof Leak Map:

= Leak stains

Photo #2: Damage from roof leaks.

Photo #3: Damage from roof leaks.

Photo #4: Damage from roof leaks.

Photo #5: Damage from roof leaks.

Photo #6: Damage from roof leaks.

Photo #7: Damage from roof leaks.

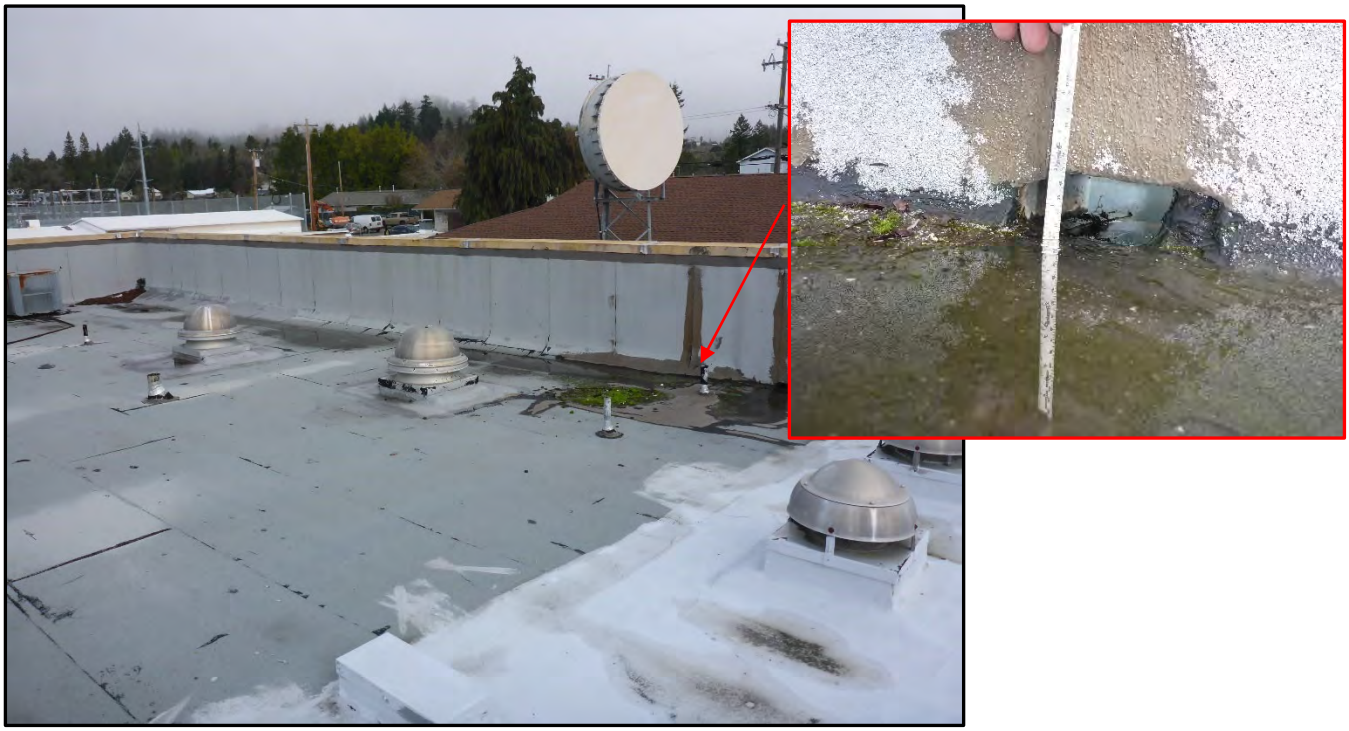


Photo #8: Roofs lack proper drain assemblies. Too small of an opening and no overflow drains.

Photo #9: Roof lacks proper slope to drain. Standing water.

Photo #10: Roof base flashings are improper and or are missing. Roof is not flashed up under wall siding.

Photo #11: Roof base flashings are improper and or are missing. Roofing should also run down the curb and lap over membrane on the deck. Open voids are present.

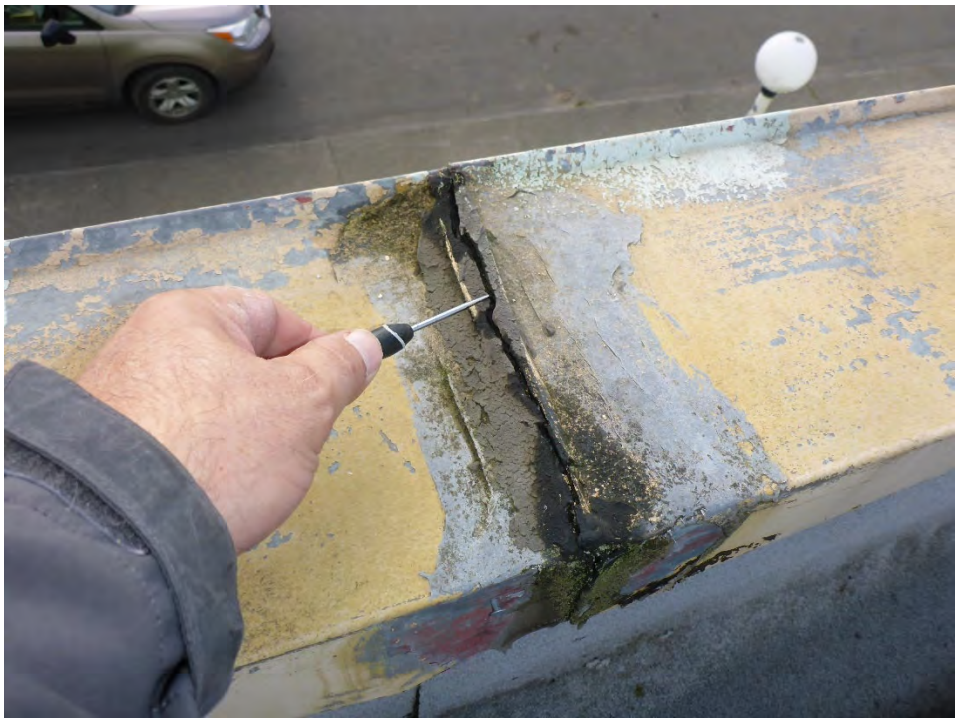


Photo #12: Roof coping caps have unsealed joints.

Photo #13: Roof coping caps have unsealed joints. Sheetmetal extension tucked up under coping cap in efforts to terminate re-roof. The termination is improper. It doesn't seal water infiltration through coping cap joints.

Photo #14: Roofing laps are not sealed. Open voids.

Photo #15: Roofing laps are not sealed.

Photo #16: Roof lacks proper integration to adjacent components. Open voids.

Photo #17: Roof has open voids and gaps. Open voids

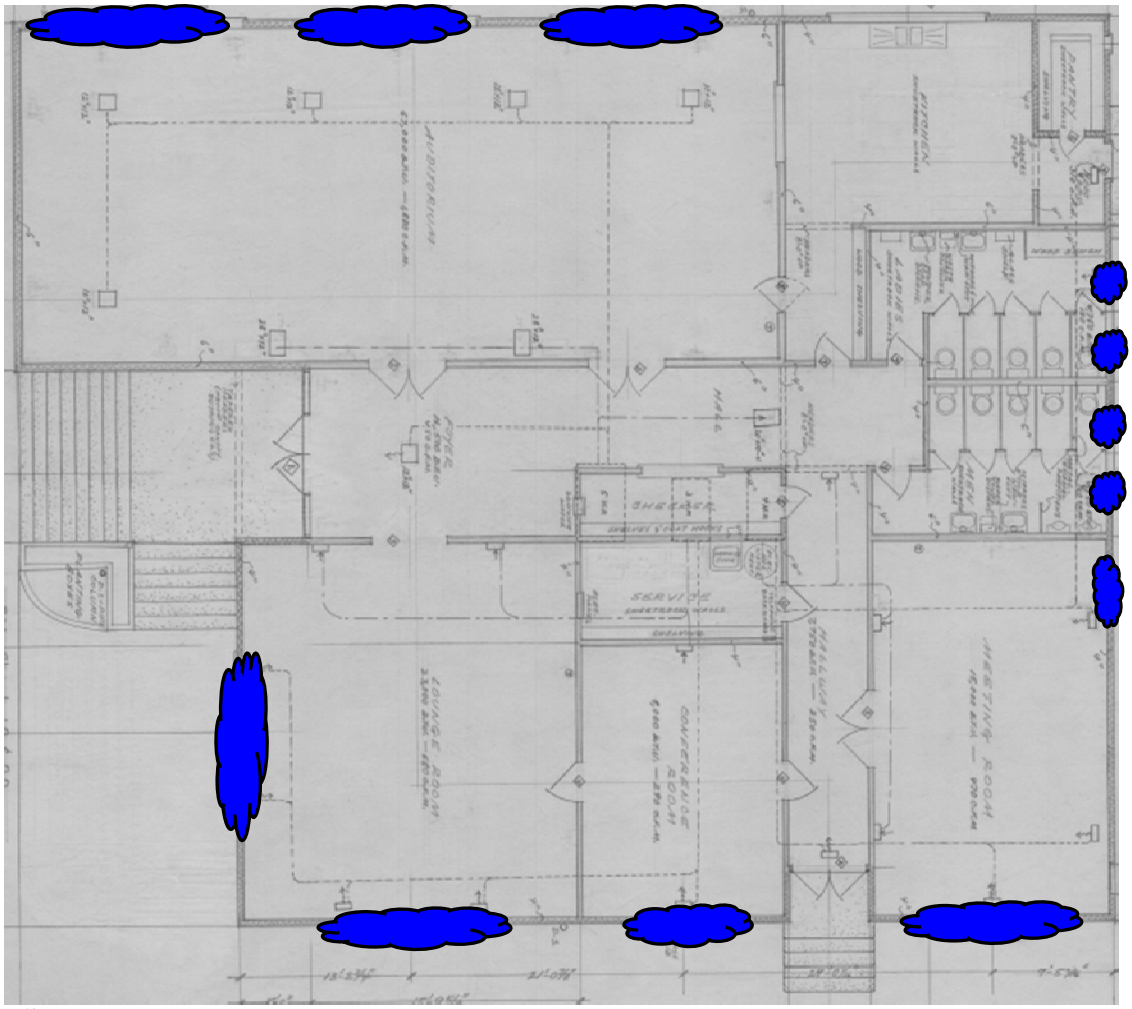
Photo #18: Roof has open voids and gaps. Holes in roof.

Window Assessment:

The windows appear to be original. There are two different window types on the building. Sliding operable windows and fixed windows. Both are aluminum framed with single pane glazing. During the building evaluation, ABB documented several deficiencies, but are not limited to:

- **Fixed window leaks:** During our visual observations, ABB documented leak stains at several fixed window openings. These leaks appear to be associated with failed glazing pocket seals. Additionally, damage was documented at the window flashings.
- **Operable window leaks:** During our visual observations, ABB documented leak stains at several operable window openings. These leaks appear to be associated with failed glazing pocket seals. Additionally, damage was documented at the window flashings.
- **Window sealants have failed:** While performing exterior wall inspections, ABB observed failed perimeter window seals. This condition allows for water to migrate past the exterior siding and exterior trim. Water that leaks behind the exterior wall cladding allows for degradation of the weather resistive barriers and cause damage to the wood framing.

ABB documented many window leak stains throughout the building. Please see leak stain map below:



= Window leak stain map

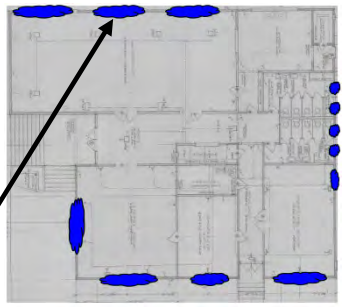


Photo #19: Damage from window leaks.

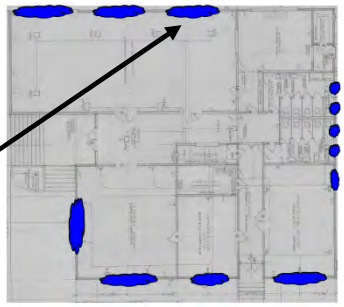


Photo #20: Damage from window leaks.

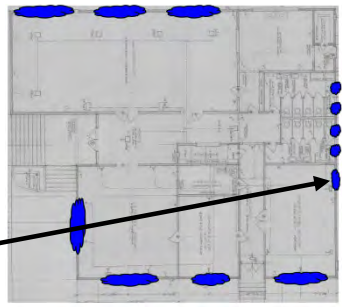


Photo #21: Damage from window leaks.

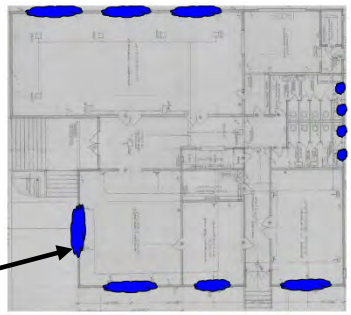
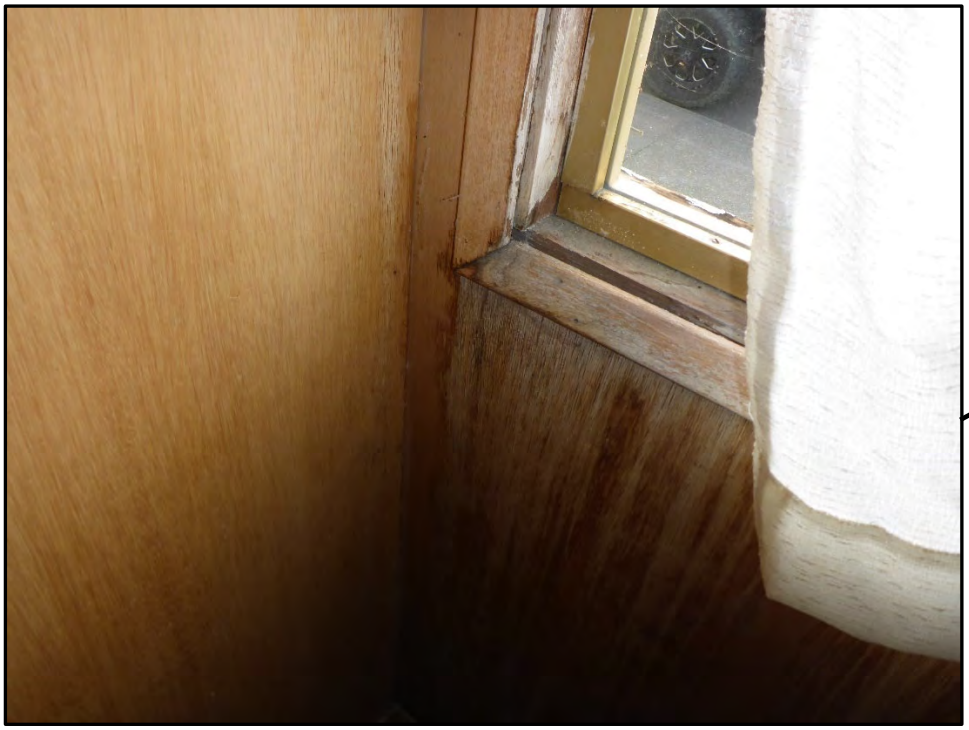


Photo #22: Damage from window leaks.



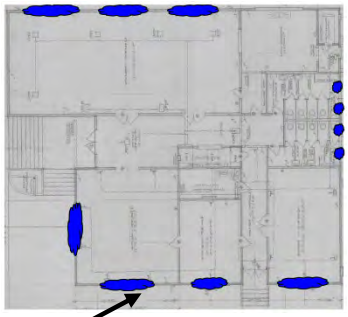


Photo #23: Damage from window leaks.

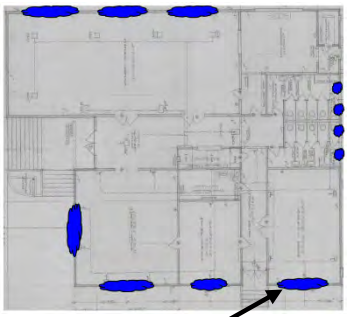


Photo #24: Damage from window leaks.

Exterior Wall Assessment:

The exterior walls are 2”x4” stick framed with painted 1”x12” tongue and grooved lapped siding installed in a vertical fashion. The wall cavities are filled with fiberglass insulation with wood panel boards as the interior finish. During the building evaluation, ABB documented several deficiencies associated with the exterior walls, but are not limited to:

- **Exterior paint has reached the end of its useful life:** The exterior paint has greatly expired. Much of the exterior wall paint is cracked and delamination from the substrate. The exterior wall paint has surpassed its useful life. This condition has allowed for long term water absorption into the lapped siding.
- **Exterior siding is warped:** Due to long term water absorption the wood siding is warping. In many locations the exterior siding has surpassed its useful life.
- **Exterior wall panels are decayed:** Due to long term water absorption exterior wood lap siding panels are decayed and have surpassed its useful life.
- **Exterior wall siding fasteners are rusting and are backing out:** During our site walk, ABB documented many locations where siding panel fasteners have backed out. This condition allows for water to migrate through the fastener penetrations, allows for water intrusion.
- **Exterior trim is decayed and is failing:** Due to long term water absorption, the wood trim around the window openings is decayed and have surpassed its useful life.
- **Foundation vents are damaged and are open:** Multiple foundation vents have been damaged and are open. This condition allows for animals to access the crawl space below the floor.

Photo #25: Exterior paint has reached the end of its useful life.

Photo #26: Exterior paint has reached the end of its useful life.

Photo #27: Exterior siding is warped.

Photo #28: Exterior wall panels are decayed

Photo #29: Exterior wall siding fasteners are rusting and are backing out

Photo #30: Exterior trim is decayed and is failing

Photo #31: Exterior trim is decayed and is failing

Photo #32: Foundation vents are damaged and are open

Exterior Door Assessment:

Exterior doors lack weather stripping: The exterior doors are function and thresholds have proper slope away from the door openings. During our site observations ABB documented a lack of weather-stripping gaskets.

Photo #33: Exterior doors lack weather stripping.

Site Grounds:

- **Ivey has grown onto exterior walls:** Along the north and east elevations, excessive Ivy has grown up the side of the building. This condition allows for excessive moisture to remain on the exterior walls and damage the exterior siding.
- **Adjacent tree is growing under foundation and is dispersing debris on to roof:** At the north elevation a tree has grown adjacent to the foundation. The foundation currently is not showing any signs of destress but could be compromised in the future. Additionally, the tree has not been trimmed back from the building. This has caused excessive debris to build up on the roof and clog the drains.
- **Roof downspout does not drain to street:** At the north elevation the roof downspout deposits water adjacent to the foundation. The grade along the north elevation does not slope towards the street. This condition allows for water to stand along the building foundation.
- **Planter Is Cracked and Is Failing:** The planter at the front stairs lacked reinforcement. As a result, the planter has split apart.

Photo #34: Ivey has grown onto exterior walls.

Photo #35: Ivey has grown onto exterior walls.

Photo #36: Adjacent tree is growing under foundation and is dispersing debris on to roof. This condition allows the drains to become clogged.

Photo #37: Adjacent tree is growing under foundation and is dispersing debris on to roof.

Photo #38: Roof downspout does not drain to street.

Photo #39: Planter Is Cracked and Is Failing.

General Summary of Recommendations

Roof:
ABB has reviewed the mold report by Brunelle & Clark Consulting, LLC dated May 11th, 2016. ABB agrees with a complete roof replacement. The roof has leaked for a long period of time. The extent of the water saturation and organic growth in the roof deck is unknown. Per our visual observations the roof has widespread leaks and has manifested at deck penetrations and at the perimeters of the roof. This is most likely due to water spreading between the roof membrane and the particle board deck, resulting in leaks into the occupied space at penetrations and perimeters of the roof deck. The only safe way to ensure all mold is abated is to remove the entire roof deck. This repair will require a new plywood roof deck, tapered insulation, new roof membrane, and flashing assemblies.

Windows: The windows have been leaking for an extended period of time. Like the roof assembly, mold can be present with in the wall cavities around the windows. The windows have exceeded their useful life and lack efficiency. Due to the excessive damage, ABB recommends a complete window replacement. New window should be dual pane and meet current energy code.

Exterior walls: Due to the severity of roof and window leaks and the condition of the exterior siding, ABB recommends complete replacement of the interior paneling and exterior siding. Additionally, all window trim, wall insulation and weather resistive barriers should be replaced. ABB also believes there is a considerable amount of sub-floor and framing damage at the building perimeters. ABB also recommends and allowance to repair damaged framing members and areas associated with the subfloor.

Exterior Doors: The exterior doors should undergo a tune up. Provide new sealants where they are expired and gaskets / sweeps around the door openings.

Site Grounds: Remove all ivy from the perimeter of the building and remove tree from the north side of the project. Additionally, provide drainage to ensure roof downspouts disperse water away from the structure. The front curved portion of the planter, should be demolished and rebuilt.