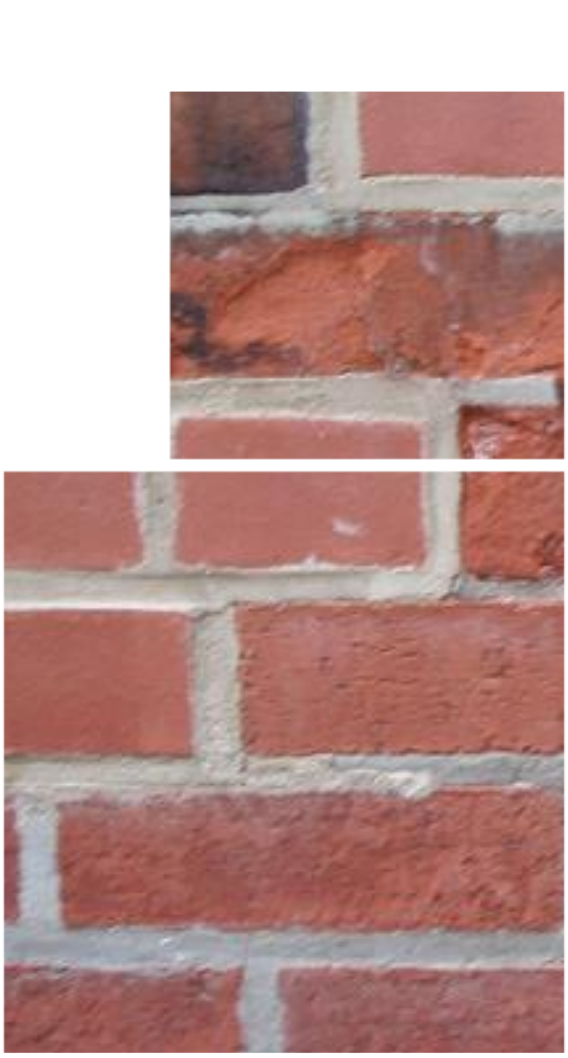


BUILDING ENVELOPE

CONSULTING

FORENSIC RESTORATION

PARKING DESIGN

PLANNING

CONDITION ASSESSMENT REPORT

IVY SUBSTATION

9070 Venice Boulevard, Culver City, California

December 21, 2017

Client: City of Culver City

Walker Project Number: 37-8636.01

WALKER CONSULTANTS

FACILITY DESCRIPTION

FACILITY DESCRIPTION

Ivy Substation is a 5,197 square foot theater and multi-purpose building located at 9070 Venice Boulevard in Culver City, California. The brick masonry building is a standalone Mission Revival structure that was built in 1907 as a train substation. Ivy Substation is approximately forty feet in height at its tallest point and is built on a concrete slab on grade foundation. Previous building remediation projects were performed in 1991 for structural repairs, in 1994 for plaster and coating repairs, and 2002 for tenant improvements. The structure has been used primarily as a theater space since 2003. Ivy Substation is a historic building listed on the National Register of Historic Places (#81000155 designated in 1981) and is important to the transportation history of Los Angeles.

Walker conducted a visual condition assessment of the building on October 2, 2017. Review of the roof was conducted on October 26, 2017 via an articulated boom lift. Team members from The Actors' Gang were present for both site visits. The following components were reviewed:

- Exterior walls, including windows and doors.
- Exterior wall coating and sealants.
- Main roof and raised shed roof assemblies, including clerestory windows.
- Site landscaping and concrete walls.

The exterior walls of Ivy Substation are finished with a textured cement plaster system. There are existing multi-lite wood windows on all four (4) façades of the building, and large entry and exit wood doors are configured at the West and East Façades. Behind the wooden doors is a glazed aluminum storefront system with a secondary entrance door.

The roof of the building is supported by a series of wood trusses and is a gable configuration that is sloped to the north and south ends. The roofing membrane consists of a multi-ply built-up system with a granulated cap sheet. Parapet walls finished with cement plaster are located along the west and east end, and they contribute to the Mission Revival style architecture of the building. There is a raised monitor roof along the center section with a row of clerestory windows on each side that faces north and south. The windows are currently boarded up on the exterior with a layer of plywood.

Power poles and decommissioned power cables are located along the building's south side along Culver Boulevard. Most of the building's utility connections are located along the South Façade, and the wall penetrations are not sealed. The existing site landscaping around the building consists of concrete walls, a large planter at the west entrance of the building, and a water fountain along the south that does not appear to be in serviceable condition.

BACKGROUND INFORMATION

According to the drawings provided to us by the City of Culver City dated October 9, 1991 and June 28, 1994, Walker understands that major repairs were completed at the building in the early 1990s.

The 1991 scope of work by Milford Wayne Donaldson Architects included the following:

- Structural repairs to the roof and walls.
- Roofing membrane replacement.
- Replacement of wall base cement plaster along the exterior building perimeter.
- Installation of waterproofing at foundation footings.
- Improvements to the open hall and front lobby.
- Installation of security gates at the east end exterior area adjacent to the building.
- New concrete rail wall extending from the northwest corner of the building.
- Addition of the elevator.
- Addition of restrooms.
- Addition of a food preparation area, which is not currently used.

Remediation repairs in 1994 by Englekirk & Sabol Consulting Structural Engineers, Inc. consisted of the following scope of work:

- Crack repairs to masonry, mortar, and plaster.
- Application of paint coating over repaired plaster.
- Replacement of missing and damaged sections of wood on the roof and windows.
- Installation of new windows and storefront doors.

According to the drawings, only existing brick units were reused in the 1991 and 1994 repairs. The use of new bricks and impact equipment was prohibited in the restoration of the building. For both remediation projects, in-place shear testing was performed on randomly selected brick units, and some data is included on the as-built drawings.

In 2003, the building began its use as a theater. The following improvements were made to the building:

- Installation of plywood sheeting over the raised roof shed clerestory windows in order to prevent any light exposure into the building.
- Installation of a stage and stadium-style seating inside the building.
- Installation of stairs on east and west ends inside the building.
- Conversion of the interior mezzanine level into offices.
- Conversion of the food preparation area into storage within the building.

Team members from the Actors' Gang reported water intrusion in one area along the interior side of the East Façade. It appears that the existing cracks and separation in the brick masonry units in the wall allow water intrusion below the interface of the roof level parapet wall.

RECOMMENDATIONS

This section of the report outlines our repair recommendations based on our findings from our condition assessment. The following recommendations are intended to be implemented to address the existing issues with the building components that were reviewed by Walker. More detailed descriptions of the observed conditions are presented under the "Discussion" section of the report.

EXTERIOR WALLS

- Remove all delaminated cement plaster at exterior walls, and replace with new cement plaster. Based on previous repair locations and Walker's limited sounding of the plaster, we approximate that the majority of the plaster at the South and West Facades are delaminated and that there are localized areas that will need repairs at the North and East Facades. The texture of the new cement plaster shall match the existing texture of the cement plaster at the historic façades.
- Repoint brick masonry mortar joints and repair cracks in the existing walls.
- Repair existing wood louvers at the West and East Facades. Install new paint coating.
- Seal all exterior wall penetrations, including roof rafters and strut connections under the roof eaves.
- Seal gaps at wall-to-roof interface, including large gaps at corners adjacent to the parapet walls.
- Install new elastomeric coating over the cement plaster walls after the delamination repairs are complete.
- Monitor and record any signs of settlement towards the southwest corner of the building. Cracks in the floor and walls shall be documented, including width, length, direction, and frequency, as well as any soil or ground separation from the building perimeter.

WINDOWS AND DOORS

- Repair existing wood window joints and splices at the frames and sashes. Repair existing mullions and muntins at the multi-lite glazing panels.
- Repair or replace existing wood window sills as necessary. Repair cracks in concrete ledger directly below each wood sill.
- Remove existing graffiti from glazing.
- New paint coating at all window frames, sashes, mullions, and sill components.
- New continuous sealant joint shall be installed at the perimeter of all windows and doors.
- Seal window security bar anchor penetrations.
- Repaint existing wood doors at the West and East Façades of the building. New caulking at joints and interfaces that are susceptible to water entry.
- Install new metal flashing cap along the top of the wood doors.
- Realign and rebalance existing doors at glazed aluminum storefront system.

ROOFING

- Replace existing built-up roofing membrane system at the main roof and raised monitor roof.
- Install new sheet metal counterflashing at the parapet walls and at the base of the monitor roof. Replace existing sheet metal edge flashing along the edges of the roofs, including wood fascia boards.
- Remove and replace cement plaster system at the interior face of the parapet walls, as well as the cement plaster that wraps over top of the parapet walls. Provide slope at the top of the walls and install new elastomeric coating system over the plaster.
- Remove existing plywood at raised monitor roof in order to review condition of clerestory windows.
- Reattach diagonal wood struts at roof eaves along the north and south ends of the building.
- Replace existing wood truss members if they are split along more than half the length of the member.

SITE LANDSCAPING AND CONCRETE WALLS

- Consider application of clear water repellent or elastomeric coating over existing concrete walls for waterproofing protection, which will mitigate future cracking, spalling of the concrete, and staining.
- Remediate existing concrete landing at the west entry door of the building, which appears to slope towards the threshold of the door and may result in water intrusion.
- Install new perimeter sealant along sidewalk-to-building interface.
- Replace existing sealant joints in concrete site walls and patch the few spalled locations.
- Monitor and assess the stability of the wood power poles at the south end of the building.

OPINION OF PROBABLE REPAIR COSTS

Based on our visual condition assessment, Walker is providing the enclosed opinion of probable costs for priority items that we recommend be repaired over the next ten (10) years. Please refer to Appendix A of the report.

DISCUSSION

EXTERIOR WALLS

The exterior cement plaster over the brick masonry walls is in poor condition and is cracked and delaminated in some areas. Based on our sounding of the cement plaster, which consisted of light tapping with a metal hammer, Walker anticipates that the majority of plaster may be delaminated around the rough openings and at previous repair locations along the West and South Façades. There is a general concern that the cement plaster is not bonded to the brick masonry behind it. Previous cement plaster patches and crack repairs are visible at the exterior façades, and there are localized wall areas that will need to be repaired at the East and North Façades. Large areas at the West Façade appear to have been patched and coated over; however, these areas are soft and damaged, and serve as entry points for water into the wall system. We recommend that all of the delaminated plaster be removed and replaced with new plaster to match the existing texture of the historic façades.

The existing cement plaster has spalled off and the brick masonry was exposed at one (1) east end location of the South Façade. The plaster measured to be approximately 3/16” thick. The mortar joints of the brick wall did not appear to be in good condition. We recommend that the joints be repointed at the locations where existing plaster is removed for replacement. New cracks have also formed in the cement plaster that require repair and sealing if the plaster is to remain in some locations. A previously patched horizontal crack approximately 12’-0” above grade runs the length of the building along the South Façade. This continuous crack is aligned with the Second Floor mezzanine level on the interior of the building. The concrete slab of the mezzanine level is visible through the window glazing. We recommend that this crack be further reviewed at the brick masonry wall level after the delaminated plaster is removed from the exterior.

Existing crack patterns along the West, South, and East Façades are diagonal and oriented toward the southwest corner of the building. This may suggest that the building is settling to the southwest corner. Walker recommends further study and review of the foundation and underlying soils, which may require the preparation of a report by a Geotechnical Engineer. We recommend that cracks in the walls and floors be monitored and documented, as well as any soil or ground separation from the building perimeter.

Walker observed that the exterior wall penetrations are generally not sealed and are likely contributing to water intrusion and the delamination of the plaster. This includes the interfaces where the utility lines connect to the building, at the diagonal wood struts that support the roof eaves, where the window security bars are anchored to the walls, and at other miscellaneous penetrations. In addition to this, a continuous gap was visible at the wall-to-roof interface along the North and South Façades. We recommend that this be sealed, especially at the large gaps located at the ends of the walls where they meet the West and East Façade parapet walls.

In order to mitigate future water intrusion at the exterior walls, Walker recommends that an elastomeric coating be applied over the cement plaster after the repairs are complete. Since the facades have generally picked up a considerable amount of dirt and dust from the surrounding street traffic, especially the North Façade, an acrylic coating with enhanced hydrophobic or “self-cleaning” properties is recommended over a silicone based formula. This type of coating would also ease the cleaning and removal of any graffiti on the walls, which was observed in some locations.

The wooden louvers near the top of the West and East Facades appear to need new paint coating for protection of the wood. Walker was not able to review these locations up close; however, it is likely that some of the louvers may need to be replaced if they are damaged.

The presence of water intrusion through the exterior walls is further evidenced by the efflorescence that was observed at the interior side of the walls. Cracks in the brick masonry units and mortar joints were observed. We recommend that the cracks and joints be repaired. The brick units appear to be in fair condition and were spot checked throughout the interior of the building where they were visible and not concealed by interior finishes or stored equipment. At some of the previous brick masonry repair locations, mortar patching material or grout appears to have seeped in through the vertical joints and into the building interior. It is possible that the material was installed from the exterior side of the wall and was too viscous at the time of installation. The most notable example of this is located at the upper level of the West Façade interior, where extensive cracking was noted in the cement plaster according to the previous remediation drawings.

In the electrical utility room on the south side of the building, the interior walls are constructed of concrete masonry units (CMU) that appear to be in good condition. The top of the walls exhibit water staining and efflorescence at the ceiling, which is the underside of the mezzanine level concrete slab. This slab is connected to the brick masonry wall and is supported by steel I-beams encased in concrete; however, the concrete that covers the bottom of the beams has spalled away, exposing the steel I-beams. We are of the opinion that water intrusion through the brick masonry wall has been tracking along the mezzanine level slab, affecting the integrity of the concrete and staining the CMU walls. We recommend that this floor level interface be further reviewed once the brick masonry is exposed after the exterior cement plaster is removed.

WINDOWS AND DOORS

The existing wood windows are in fair condition. The units along the North and East Façades are generally in better condition compared to the West and South Façade units. An in-situ restoration program shall be implemented to repair wood splits, warping, and open joints and splice seams. Common to most of the windows is a crack in the arched section of the window frame. The existing paint is worn and new paint coating is recommended to protect all of the wood window frame and sash components, including the mullions and muntins at the multi-lite glazing configurations. Graffiti was observed on some of the glazing panels and shall be removed as part of the window restoration work.

Repair and possible replacement of some of the wood window sills will be needed. Multiple cracks or splits in the wood was observed since the paint coating is deteriorated and is no longer providing adequate coverage or protection in some locations. New paint coating is also recommended at the wood sills. There are smooth concrete ledgers directly below the wood sills. Walker observed some cracks in the ledgers that will need to be repaired. New elastomeric coating is recommended over the concrete ledgers.

A new continuous sealant joint is recommended at the perimeter of each window rough opening as it meets the cement plaster wall. This will ensure a watertight seal and enable some movement between the wood window and plaster wall as the materials expand and contract at different rates.

Metal security bars have been installed over the bottom portion of the existing windows. The bars are anchored and fastened through the cement plaster walls. Walker recommends that sealant be applied at each of these connection points in order to prevent water intrusion.

According to the Actors' Gang, the existing windows are never opened or operated. It is unknown whether there are any issues with the existing hardware or operability of the window sashes. This may not be a concern based on the current use of the building.

The large wooden doors or gates at the West and East Façade are exhibiting signs of minor wood decay. Wood splits and were observed at the top and bottom of the doors, as well as at the base of the wood door frame. The existing paint coating is deteriorated at some locations, and previously installed sealant is visible at some of the joints. Walker recommends that new paint coating be applied over the doors and frames, and that the joints that are susceptible to water entry be caulked. Sheet metal flashing is recommended over the top of the doors in order to protect the leading edge of the wood from further splitting or accelerated decay.

Glazed aluminum storefront systems were installed at the West and East Façade entries as part of the previous remediation project. The perimeter of the storefront is sealed. Both sets of double doors are vertically misaligned by approximately 3/8", which has resulted in operability issues in the past. Realignment and rebalancing of these doors are recommended.

There is one (1) single emergency egress door on the North Façade of the building. The door appears to be in fair condition and no issues were visible at the time of our site visit.

ROOFING

The existing roofing is a built-up system with a granulated cap sheet. According to the previous remediation drawings, the membrane was replaced in the early 1990s. The age of the roof is now approximately twenty-five (25) years old. The membrane at the southern half of the roof is in poor condition and loss of granules in the cap sheet was observed, exposing the asphalt in the membrane sheets. A pattern of small cracks throughout the membrane sheets is visible, indicating the membrane is deteriorating from the ultra-violet (UV) exposure. The membrane at the northern half of the roof appeared to be in better condition, though a ring of vegetation staining from a nearby palm tree was visible. Based on our review and the age of the roof, Walker recommends that the existing membrane be replaced with a new multi-ply system.

The sheet metal counterflashing at the west and east parapet walls shall be replaced as part of the roofing remediation, as well as the base flashing at the perimeter of the raised monitor roof. The existing cement plaster on the interior face of the West and East Façade parapet walls wraps around the top of the walls and is significantly cracked. Approximately four square feet (4 sq. ft.) of plaster has spalled off at one (1) location, revealing cracks in the substrate. We recommend that new cement plaster be installed, and that the top of the parapets be sloped for positive drainage. Sheet metal coping is typically installed over roof parapet walls to provide protection from the elements. The contours of the Ivy Substation parapet walls would require a complicated sheet metal profile and configuration, therefore we recommend that the top of the parapets be sloped and coated with an elastomeric coating as waterproofing protection.

Vent penetrations and vent stacks through the roof assembly were observed on the south side of the roof. The flashing appears to be in fair condition, and may or may not need to be replaced as part of the reroofing.

At the north and south ends of the roof, the membrane terminates at the edge of the structure and there is existing sheet metal flashing that is configured over a wood fascia board. Both the edge flashing and the fascia boards are in poor condition and shall be replaced as part of the reroofing.

The raised monitor roof at the center of the main gable roof was visually reviewed from the boom lift. A layer of plywood has been installed over the rows of clerestory windows that are located along the North South side of the roof. In order for the condition of the windows to be assessed, the plywood would need to be removed. Currently, the plywood is extremely weathered and is splitting, and the paint coating is deteriorated. The plywood is bowing at the base where it meets the main gable roof. Walker was able to see the sheet metal edge flashing at the perimeter of the monitor roof above the windows. Similar to the main gable roof, we recommend that this edge flashing be replaced.

Walker reviewed the wood rafters and decking boards that are exposed at the underside of the roof eaves along the North and South Façades. They appear to be in fair condition and the paint coating is intact with the exception of the end rafters and diagonal wood struts. Some of the diagonal struts that are attached to the wall and extend to the underside of the eave appear to be separating from the wall and need to be reattached or possibly resized and replaced.

A visual review of the interior wood roof trusses was performed from the ground level. The trusses appeared to be in fair condition, with about twenty percent (20%) of the members exhibiting some sign of distress. Observed distresses include splits, including some locations that occurred along more than half the length of the member. Checks in the wood, knothole voids, and minor cracks were also observed. We recommend that the truss members be replaced in kind where they are split along more than half the length of the member.

Water staining was observed at the interior side of structural members that support the raised monitor roof. The drawings indicate that the longitudinal support beams, blocking, and clerestory window sills were replaced in the early 1990s; however, no new waterproofing was indicated in the drawings. It is unknown what the extent of repairs may be at the monitor roof since there is a layer of plywood on the exterior.

The Second Floor mezzanine level at the south end of the building is used as offices and dressing rooms. The dropped ceiling is finished with painted sheetrock. Walker observed two (2) large water stains in the sheetrock adjacent to utility lines near the elevator. It is possible that water has entered through the roofing or vent stacks and has migrated down to the level of the dropped ceiling assembly.

SITE LANDSCAPING AND CONCRETE WALLS

The concrete landscaping walls appear to be in good condition with minimal cracking and some existing graffiti. The walls at the east end of the site act as retaining walls and separate different levels of grade. Water from the higher elevation is leaching through the wall, resulting in staining on the opposite side. The existing sealant joints need to be replaced, and a clear water repellent or elastomeric coating shall be considered to mitigate future

cracking or spalling of the concrete. A few spalled locations were observed near the southwest corner of the building and were probably a result of impact damage. These locations shall be patched.

Where the sidewalk or concrete hardscape interfaces with the building, we recommend that a new sealant joint be installed.

At the West Façade entrance, the thickness of the concrete landing has been ground down approximately 1/4" over a distance of 6'-0" in order to accommodate the threshold elevation of the aluminum storefront doors. The concrete appears to be sloping towards the doors and may result in water intrusion. We recommend that this landing be remediated so that the hardscape is sloped two percent (2%) away from the building.

There is an existing fountain located to the south of the building. The fountain does not appear to be in serviceable condition. There are no recommendations for the fountain at this time since it does not appear to be used.

The existing wood power poles at the south side of the building have splits at the base of the poles, and the concrete foundation is cracked. The top cross-arms, electrical conductors, and insulators appear to be in fair condition. We recommend that the stability of each power pole be monitored and assessed.

SUMMARY OF OBSERVATIONS

SUMMARY OF OBSERVATIONS

A summary of our observations and photographs are included in Appendix B of this report.

1. View of building – East Façade at left and North Façade at right (Photo 1).
2. West Façade and concrete landscaping walls (Photo 2).
3. East Façade (Photo 3).
4. South Façade (Photo 4).
5. Exterior cement plaster wall – Note previously patched crack aligned with the mezzanine floor level (Photo 5).
6. Vertical crack in existing cement plaster wall (Photo 6).
7. Vertical crack leading to exposed brick masonry (Photo 7).
8. Width of vertical crack measures 1/8 inch in width (Photo 8).
9. Exposed brick masonry and mortar joints behind cement plaster (Photo 9).
10. Previously patched cement plaster wall area (Photo 10).
11. Efflorescence at interior brick masonry wall (Photo 11).
12. Separation in brick masonry units and patching material or grout that has seeped into the interior of the building (Photo 12).
13. Cracks in cement plaster along window jamb. Note that window security bar anchors are not sealed (Photo 13).
14. Wall penetration is not sealed (Photo 14).
15. Wood window muntin needs repair (Photo 15).
16. Wood window sill and concrete ledger with crack in paint coating. Note that the joint between the wood sill and ledger is not sealed (Photo 16).
17. Wood entry doors and aluminum storefront system at West Façade (Photo 17).
18. Wood decay at the base of the wood door frames (Photo 18).
19. Existing roofing membrane and view of raised monitor roof from the west (Photo 19).
20. Existing roofing membrane and view of raised monitor roof from the east (Photo 20).
21. Existing roofing membrane and vent penetrations (Photo 21).
22. Cracks at top of parapet wall (Photo 22).
23. Deteriorated wood fascia board at roof eave (Photo 23).
24. Deteriorated wood fascia board and corroded edge flashing at roof eave (Photo 24).
25. Paint coating is worn at the edge rafters and diagonal struts that support the roof eave (Photo 25).
26. Diagonal wood strut needs to be reattached to the wall. Gap between the wall and roof interface needs to be sealed (Photo 26).
27. Existing wood truss at the interior of the building (Photo 27).
28. Split is wood truss member (Photo 28).
29. Underside of concrete mezzanine slab located at the south end of the building. Note significant water staining and missing concrete at the bottom of the steel I-beams (Photo 29).
30. Existing concrete landscaping walls with staining (Photo 30).
31. Spall at concrete landscape wall probably caused by impact damage (Photo 31).
32. Existing wood power pole at south end of building. Note cracks in concrete foundation (Photo 32).

LIMITATIONS

LIMITATIONS

This report contains the professional opinions of Walker Consultants based on the conditions observed as of the date of our site visit and documents available to us. This report is believed to be accurate within the limitations of the stated methods for obtaining information.

We have provided our opinion of probable costs from visual observations and field survey work. The opinion of probable repair costs is based on available information at the time of our evaluation and from our experience with similar projects. There is no warranty to the accuracy of such cost opinions as compared to bids or actual costs. This condition assessment and the recommendations therein are to be used with additional fiscal and technical judgment.

It should be noted that our repair recommendations are conceptual in nature and do not represent changes to the original design intent of the structure. As a result, this report does not provide specific repair details or methods, construction contract documents, material specifications, or details to develop the construction cost from a contractor.

Based on the proposed scope of services, the evaluation was based on certain assumptions made on the existing conditions. Some of these assumptions cannot be verified without expanding the scope of services or performing more invasive procedures on the structure.

The recommended repair concepts outlined represent current available technology for buildings. This report does not provide any kind of guarantee or warranty on our findings and recommendations. Our evaluation was based on and limited to the proposed scope of work. We do not intend to suggest or imply that our appraisal has discovered or disclosed all latent conditions or has considered all possible improvement or repair concepts.

A review of the facility for compliance with the Americans with Disabilities Act (ADA) requirements was not part of the scope of this project. However, it should be noted that whenever significant repair, rehabilitation or restoration is undertaken in an existing structure, ADA design requirements may become applicable if there are currently unmet ADA requirements.

Similarly, we have not reviewed or evaluated the presence of, or the subsequent mitigation of, hazardous materials including, but not limited to, asbestos and PCB.

This report was created for the use of the Client and use of this report by others is at their own risk.

MECHANICAL ASSESSMENT REPORT

EXECUTIVE SUMMARY

The existing HVAC system has been assessed based on the existing HVAC site conditions and dated 1992 mechanical as-built drawings. Currently, the ground level is served by a packaged gas/electric air conditioning unit AC-1. The upper 2nd floor area is served by two (2) heat pump split systems AH-1 & AH-2.

ASSESSMENT OVERVIEW

Building Interior Ground Floor

- The main air conditioning unit AC-1, packaged gas/electric air conditioning unit serves the overall buildings ground floor area.
- AC-1: 40 Ton nominal gas/electric packaged unit. Located outside on grade. Refer to Photo M-1.
- Refer to existing equipment cut-sheets AC-1 for performance data.
- The space cooling / heating of the ground floor area is served by floor mounted linear supply air diffusers. Refer to Photo M-2.
- The existing supply air and return air ductwork is located below the floor level.
- The AC-1 unit is 25 years old and has exceeded its life expectancy of 15 years recommended per ASHRAE.
- Majority of the floor mounted linear supply air diffuser have been covered up and or have objects covering them which is restricting the supply air flow.
- Men's and Women's restrooms located on the ground floor do not have any means of exhaust make-up air. Recommend providing door louvers at restroom doors and main vestibule door to the restrooms. Refer to Photos M-4, M-5 & M-6.
- The storage room on the ground floor (originally was a kitchen) is served by AH-2/HP-2 with overhead supply air diffusers.
- Restroom exhaust fan EF-1 and Elevator Machine Room exhaust fan EF-2 are in good condition.

Building Interior Second Floor

- The upper 2nd floor area is served by (1) heat pump split systems (AH-1/HP-1), with overhead supply air diffusers. Refer to Photo M-3.
- The indoor heat pump units AH-1 and AH-2 are 25 years old and have exceeded their life expectancy of 15 years recommended per ASHRAE.
- Refer to existing equipment cut-sheets AH-1/HP-1 & AH-2/HP-2 for performance data.
- The restroom located on the 2nd level has a ceiling mounted exhaust fan (EF-3) which is not properly secured. The exhaust fan is in good working condition. However, this exhaust fan needs to be properly secured. Refer to Photo M-10.

Building Exterior

- AC-1, serves the main ground floor of the building.
- HP-1 & HP-2, condensing units associated to the indoor units AH-1 & AH-2, serve the second-floor level areas.
- HP-1 & HP-2 refrigerant suction piping is missing insulation. Refer to Photo M-7.

IDENTIFIED NEEDS

PRIORITY 1 – IMMEDIATE NEEDS (1-2 YEARS)

a. Uncover, unblock the floor mounted linear supply air diffusers associated to AC-1. Refer to Photo M-8 & M-9.
b. Provide Armaflex pipe insulation on the refrigerant suction lines for HP-1 & HP-2.
c. Provide door louvers to the men's and women's restroom doors to achieve make-up air serving the restroom exhaust fan EF-1.
d. Properly secure EF-3 to ceiling.

PRIORITY 2 – INTERMEDIATE NEEDS (3-6 YEARS)

a. Replace the existing AC-1 gas/electrical unit with new.
b. Replace the existing heat pump split systems AH-1/HP-1 and AH-2/HP-2.

PRIORITY 3 – DEFERRED NEEDS (7-10 YEARS)

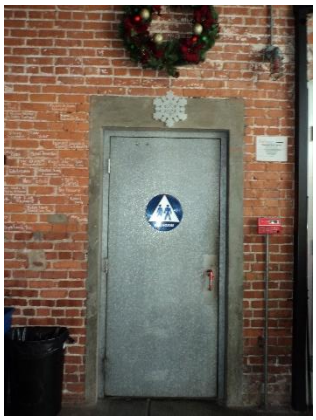
a. No Mechanical HVAC items.

PHOTOS

M-1

M-2

M-3

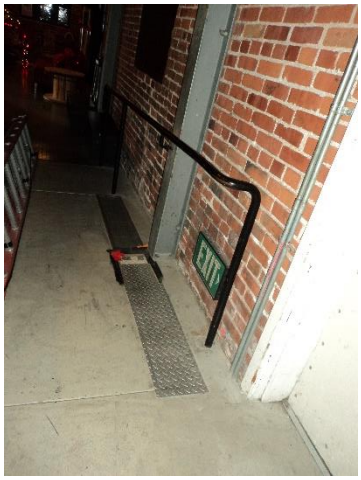


M-4

M-5

M-6

M-7



M-8

M-9

M-10

ELECTRICAL ASSESSMENT REPORT

EXECUTIVE SUMMARY

Electrical Main Service Switchgear for the Campus has been installed in 1992 at the back of the building in outdoor yard and not in well maintained condition. Majority of the interior lighting are fluorescent/Socket type LED vapor tight fixtures. Exterior lighting are small shoe box type old wall packs. The building has a mixture of surface and recessed power outlets and majority of them are old but in good working condition. As a preference outlets and lighting switches have been painted red. No occupancy sensor controls available. There is no Emergency Generator in the building area. Battery packs are utilized as “EM” fixtures.

Building wide LED lighting, Upgrade of old switchgear and Solar PV alternate power sources are prime recommendations.

ASSESSMENT OVERVIEW

Building Interior

- Fire Alarm System is in good condition
- One more strobe may be needed in the open office/corridor area in the 2nd floor. But otherwise fire alarm devices are in good condition and strobes have good coverage.
- Panelboards and disconnect switches are old but in good working condition.
- Majority of receptacles are old but in good working condition.
- Majority of light fixtures are old but in good working condition.
- Lobby:
  - Switches near entrance are old but in good condition. (See E-1)
  - One switch controls the ceiling outlets of the lobby area with pendant lights plugged in. (See E-2)
  - Second switch controls the interior perimeter vapor tight light fixtures both in the first and second floor. (See E-3)
  - There is a pull station and strobe in good condition. (See E-4)
  - Fire alarm annunciator is easily accessible near the entrance and is in good working condition. (See E-5)
  - There is an old fire alarm sprinkler bell that seems to be in good condition but is old. (See E-6)
- Restrooms (1st Floor):
  - Vapor tight light fixtures in both first-floor restrooms are in good condition. (See E-7)
  - Downlights above sinks are also in good working condition.
  - Hand dryer and GFCI outlets in both restrooms are old but in good condition. (See E-8)
- Utility/Elevator/Machine Room:
  - Panelboard “B” located in 1st floor utility room is old but in good condition. (See E-9)
  - There are 2 inverters in the utility room. The one inverter near the doorway is not being used. The other one seems to be in good working condition. (See E-10 and E-11)
  - Fire Alarm Control Panel is in good condition. (See E-12)
  - Fluorescent strip lights with wire guard in utility room are also in good condition and provides plenty of light. (See E-13)
  - There is an open junction box with exposed wiring beneath the fire alarm control panel. (See E-14)
  - The electric water heater in the corner is dated from 11/2007 and in good working condition. (See E-15)
  - Elevator control panel and disconnect switch are in good condition.

- Costume Room:
  - Some outlets in the costume room are very old. (See E-16)
  - Other outlets seem to be in good working condition (See E-17)
  - Troffer lights in costume room are in good condition. (See E-18)
- Restroom (2nd Floor):
  - Downlights in the restroom are in good condition. (See E-19)
  - There is a fire alarm strobe that is in good condition.
  - There is a combination switch/surface outlet near the sink that is in good condition. (See E-20)
- Office Room:
  - Panelboard "A" located in 2nd floor office is old but in good condition. (See E-21)
  - There is an open junction box with exposed wiring near the desk. (See E-22)
  - Switches here control the ceiling fixtures in the open office area/hallway. (See E-23)
  - Recessed downlights seem to be in good working condition.
  - Surface receptacles are in good working condition.
- Open Office Area/Hallway (2nd Floor):
  - The vapor tight ceiling sconces on the 2nd floor are in good condition, they are controlled by switches in the office room.
  - Ceiling receptacles are old but seem to be in good working condition.
  - Surface wall receptacles also old but in good condition.
  - Emergency bug-eye light is old. (E-24)
- Storage Room/"Dungeon":
  - Panelboard "LCH1" is in the control room and is in good condition.
  - Only one downlight seems to be working in the room. (See E-25)
  - Sensor dimmer rack and disconnect switch are also in good condition.
- Dressing Room:
  - Downlight fixtures are old but operational.
  - There are two duplex outlets in the ceiling that seem to be in good working condition.
  - Surface receptacles on the wall are old but in good working condition.
- Control Room:
  - Quad receptacle seems to be new and in good working condition. (See E-26)
  - Pendant light is old but in good condition.
- Performance Hall:
  - Dimmer switch on the northern wall near the stage controls (5) 2x4 lights above the stage and seating area. (See E-27 and E-28)
  - (5) 2x4 lights above the stage and seating area are in good working condition but are very old.
  - Emergency bug-eye lights have good coverage but are old. (See E-29)

Exterior Condition

- Two flood lights each in the rear and front entrance are not in good working condition.
- Outlets located near the front entrance are not working. (See E-30 and E-31)
- Exterior AC Unit with disconnect seems to be fairly new.

Utility:

- LADWP power is coming to the building underground from the utility pole at the back of the building via 150KVA transformer.
- Existing main switchgear and associated panels are rusted and full of dust.
- Existing irrigation controller seems to be in good working condition.
- Existing WP general receptacles seem to be in good working condition.

Mechanical Yard:

- Main service switchgear in the outdoor yard is not in well maintained condition but is operational.
- Existing Trane AHU unit disconnect seems to be in good working condition.

IDENTIFIED NEEDS

PRIORITY 1 – IMMEDIATE NEEDS (1-2 YEARS)

a. Replace (2) open junction boxes.
b. Add one more fire alarm strobe in 2nd floor open office/corridor area.
c. Outlet in 2nd floor restroom needs to be replaced with a GFCI.
d. Replace (2) GFCI outlets outside near front entrance.
e. Exterior lights to be replaced with LED lights.
f. Relocate lobby switch controlling restroom hallway to hallway.
g. 2nd floor office switch controlling open offices area shall be relocated to hallway.
h. Performance hall north side old dimmer switch shall be replaced.
i. Clean and paint exterior main switchgear and panels.

PRIORITY 2 – INTERMEDIATE NEEDS (3-6 YEARS)

a. Emergency bug-eye lights to be replaced.
b. Old fire alarm sprinkler bells to be replaced.

PRIORITY 3 – DEFERRED NEEDS (7-10 YEARS)

a. Replace and retrofit light fixtures with LED type building wide.
b. Old hand dryer in both restrooms shall be replaced.

PHOTOS

Lobby

E-1: Light switches near front entrance


E-2: Pendant light plugged into outlet

E-3: Vapor tight wall sconces found in both 1st and 2nd floors

E-4: Fire alarm pull station and strobe

E-5: Fire alarm annunciator near front entrance

E-6: Fire alarm sprinkler bell and receptacle outlet

Restrooms (1st Floor)

E-7: Vapor tight wall sconces found in both men's and women's restroom

E-8: Hand dryer and GFCI in men's restroom

Utility Room (1st Floor)


E-9: Panelboard “B” in utility room


E-10: Inverter not in use


E-11: Inverter in use


E-12: Fire Alarm Control Panel


E-13: Fluorescent strip light wire guard in utility room


E-14: Open junction box in utility room


E-15: Electric water heater

Costume Room


E-16: Old outlet in costume room


E-17: Outlets in use


E-18: Troffer lights in costume room

Restroom (2nd Floor)

E-19: Downlights in 2nd floor restroom

E-20: Outlet in 2nd floor restroom

Office Room

E-21: Panelboard “A” in office room

E-22: Open junction box in 2nd floor office

E-23: Switches in office room

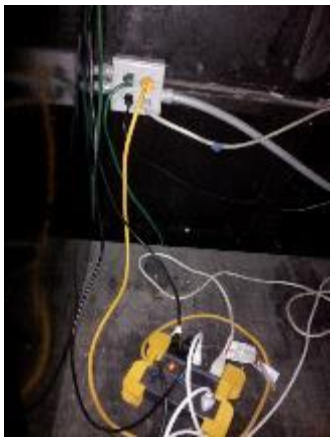
Open Office Area/Hallway (2nd Floor)

E-24: Emergency lights in open office area

Storage Room/"Dungeon"

E-25: Recessed downlight in "dungeon" room

Control Room

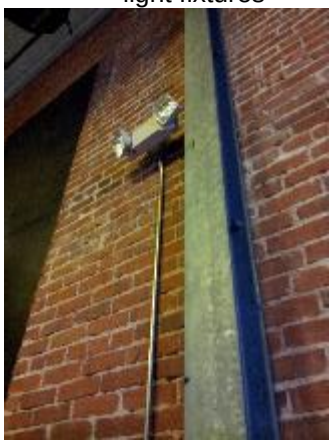


E-26: Quad outlet in control room

Performance Hall

E-27: Dimmer switch controlling (5) 2x4 light fixtures

E-28: (3) 2x4 fixtures above seating area



E – 29: Emergency lighting in performance hall

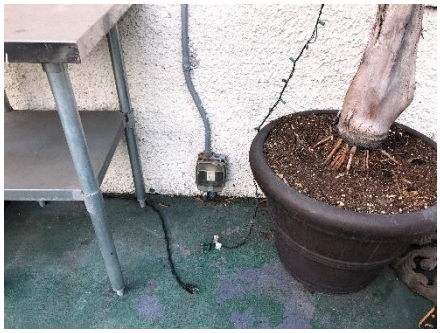
Building Exterior

E-30: GFCI outlet near entrance not working

E-31: GFCI outlet on exterior wall not in good working condition

E-32: Utility Transformer

E-33: Main Switchboard



E-34: Exterior GFI Outlet

E-35: Exterior AC Unit with disconnect

E-36: Exterior irrigation controller

PLUMBING ASSESSMENT REPORT

EXECUTIVE SUMMARY

Plumbing system has been assessed based on existing condition and 1991 as-built plumbing drawings. Existing interior domestic water piping are copper. Toilets throughout the building are flush tank type and there is no flush valve system in the building. The two (2) urinals in the first floor Men's restroom are waterless type. Hot water is provided by an existing electric water heater. Existing lavatories in the first floor Men's and Women's restrooms are counter-top type with deck mounted faucets. The existing drinking fountain is single-bowl type. The building is not equipped with gas-serviced equipment. The gas service is only serving the existing outdoor air handling unit. There are no roof drains due to the steep slope of the roof. There is no existing domestic water system backflow preventer. Existing cloth dryer is electric operated type.

ASSESSMENT OVERVIEW

Building Interior

- There are total nine (9) flush-tank type water closets operating in 1.6 gallons per flush. All water closets are in good condition. All water closets have seats but two water closets do not have bowl cover.
- Urinals are waterless-type and in good condition. One urinal in not installed at ADA compliant height. (See P-1)
- Lavatories in both Men's and Women's restrooms are counter-top mounted, stainless-steel bowl. The bowls are in good condition. Two (2) faucets are not ADA compliant. Lavatory p-trap insulation are old and require replacement. Angle valves are old.
- Floor drains are in good condition. There is no designation of trap primers for the floor drains.
- In general, the overall domestic water piping and associated valves and fittings is copper and old.
- The 50-gallon electric water heater is ten (10) years old (Manufactured: 11/2007) but in good condition. It's not equipped with secondary drain pan and not seismically braced on the wall. There are no leaks present. (See P-2)

- Drinking fountain at the Lobby area is old and not operational. It is being used as drainage for other equipment.
- The stainless steel, 2-compartment sink in Dressing Room area is in good condition. Faucet is old but operational.
- Floor sinks and floor drain in the Dressing Room area are in good condition. No sign of trap primer locations.
- The stainless-steel hand sink is in good condition. The faucet is old but operational.
- The shower in the second floor single occupancy restroom is in good condition.
- The floor mounted flush tank toilet in the second floor restroom cannot flush solid waste. It causes sewage stoppage.
- Fire sprinkler riser and hub drain is in good condition.
- Fire sprinkler piping and fittings are in good condition.
- Fire sprinkler upright heads are in good condition.
- Most recessed sprinkler heads are missing the escutcheons. (See P-3)

Building Exterior

- The existing domestic water meter vault is structurally unstable. (See P-4)
- There is no main domestic water backflow preventer in the system.
- There is no main fire water double detector check valve in the system.
- The gas meter which only serves the outdoor air handling unit along with the seismic valve and pressure regulator is in good condition.
- The air handling unit copper piping condensate drain is old and weathered but in good condition.
- The hub drain serving the condensate drains is old and weathered but in good condition.
- Main 4" sanitary sewer exiting the building from the first floor main restrooms had backed-up several years ago. It was not repaired and may cause future sewage stoppages.

IDENTIFIED NEEDS

PRIORITY 1 – IMMEDIATE NEEDS (1-2 YEARS)

a. Excavate and replace/repair existing water meter vault to prevent damage to water line and meter.
b. Excavate and replace the existing 4" sanitary sewer main from the street main up to the building outlet to prevent future sewage stoppages.
c. Remove and replace existing 4" sanitary sewer riser from second floor restroom to allow solid waste to drain from the existing flush tank toilet.
d. Provide seismic bracing to the existing tank-type, 50-gallon electric water heater.
e. Provide 6" concrete curb and drain pan to the existing electric water heater. The drain pan shall discharge into an existing floor sink in the adjacent dressing room, located under the double compartment sink.
f. Adjust one existing waterless urinal to accommodate the ADA required height.

PRIORITY 2 – INTERMEDIATE NEEDS (3-6 YEARS)

a. Provide new domestic water system back flow prevention device required for protection of City water supply.
b. Provide new fire water system double detector check valve device required for protection of City water supply.
c. Replace electric water heater within 5 years.

PRIORITY 3 – DEFERRED NEEDS (7-10 YEARS)

a. Replace missing escutcheons for sprinkler heads.

PHOTOS

P-1: One urinal shall be ADA accessible

P-2: Existing water heater will have seismic bracing

P-3: Existing recessed sprinkler head with no escutcheon

P-4: Structural damage to vault

Appendix A – Opinion of Probable Repair Costs

Ivy Substation - Culver City, California
Opinion of Probable Cost 10 Year Budget Forecast

WALKER CONSULTANTS

Ivy Substation - Culver City - Opinion of Probable Repair Costs												
NO.	WORK DESCRIPTION	10 YEAR TOTAL COST	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
1	**Exterior Walls**	**$ 95,000**	**$ 93,000**	**$ 2,000**	**$ -**	**$ 1,000**	**$ -**	**$ 14,500**	**$ 1,000**	**$ 7,500**	**$ -**	**$ 13,500**
1.1	Remove and repair delaminated cement plaster	$ 25,000	50,000					7,500				5,000
1.2	Repoint brick masonry mortar joints and repair cracks	$ 25,000	15,000					5,000				5,000
1.3	Repair and repaint existing wood louvers	$ 6,000		2,000				2,000				2,000
1.4	Seal exterior wall penetrations	$ 5,500	2,500			1,000			1,000			1,000
1.5	Seal gaps at wall-to-roof interface	$ 1,000	500									500
1.6	New elastomeric coating over cement plaster	$ 32,500	25,000							7,500		
2	**Exterior Windows and Doors**	**$ 38,000**	**$ -**	**$ 2,500**	**$ 21,250**	**$ -**	**$ -**	**$ 2,500**	**$ 2,000**	**$ 6,000**	**$ -**	**$ 3,750**
2.1	Wood window restoration and new paint coating	$ 24,500			18,500					6,000		
2.2	Concrete ledger repairs and new paint coating	$ 4,500			1,500			1,000	1,000			1,000
2.3	Sealant joint at perimeters of windows and doors	$ 2,000			1,000							1,000
2.4	Seal window security bar anchor penetrations	$ 500			250							250
2.5	Repaint existing wood doors; New caulking at joints; Sheet metal cap	$ 4,500		1,500				1,000	1,000			1,000
2.6	Realign existing aluminum storefront doors	$ 2,000		1,000				500				500
3	**Roofing**	**$ 99,000**	**$ 1,000**	**$ 91,500**	**$ -**	**$ 500**	**$ 2,000**	**$ -**	**$ 500**	**$ 1,000**	**$ 2,000**	**$ 500**
3.1	Replace existing roofing membrane	$ 65,000		65,000								
3.2	New sheet metal flashing	$ 15,000		15,000								
3.3	Replace wood fascia boards	$ 3,500		2,000		500			500			500
3.4	Replace cement plaster at parapet walls; New elastomeric coating	$ 5,500		4,500						1,000		
3.5	Reattach diagonal wood struts	$ 1,000	1,000									
3.6	Wood truss repair allowance	$ 9,000		5,000			2,000				2,000	
4	**Site Landscaping and Concrete Walls**	**$ 16,000**	**$ -**	**$ 3,500**	**$ 5,000**	**$ -**	**$ -**	**$ 1,000**	**$ -**	**$ 5,000**	**$ -**	**$ 1,500**
4.1	Concrete landscaping wall repairs and sealant	$ 3,000		1,000				1,000				1,000
4.2	Clear water repellent at concrete landscaping walls	$ 10,000			5,000					5,000		
4.3	West Façade concrete landing remediation	$ 2,000		2,000								
4.4	Perimeter sealant along sidewalk-to-building interface	$ 1,000		500								500
5	**Mechanical**	**$ 183,654**	**$ 225**	**$ 300**	**$ -**	**$ 183,129**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
5.1	Replacement of AC-1 (40-tons, gas/electric package unit)	$ 169,950				169,950						
5.2	Replacement of AC-1 (3-tons, heat pump split system)	$ 5,150				5,150						
5.3	Replacement of AC-1 (1.5-tons, heat pump split system)	$ 4,429				4,429						
5.4	(3) Door louvers Mens/Womens RR & Main Entrance Door to RR	$ 300		300								
5.5	Extend/Relocate Existing Linear Diffusers to Floor Level	$ 3,600				3,600						
5.6	Secure EF-3 to ceiling	$ 75	75									
5.7	Provide Refrigerant Piping Insulation	$ 150	150									
6	**Electrical**	**$ 46,150**	**$ 3,200**	**$ 1,500**	**$ -**	**$ 8,850**	**$ -**	**$ -**	**$ 32,600**	**$ -**	**$ -**	**$ -**
6.1	Replace 4" open junction boxes w new cover	$ 200	200									

Ivy Substation - Culver City, California
Opinion of Probable Cost 10 Year Budget Forecast

WALKER CONSULTANTS

Ivy Substation - Culver City - Opinion of Probable Repair Costs												
NO.	WORK DESCRIPTION	10 YEAR TOTAL COST	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
6.2	Replace switch/outlet in 2nd floor restroom with GFCI outlet	$ 50		50								
6.3	Replace GFCI outlets near front entrance	$ 150		150								
6.4	Replace emergency bug-eye lights	$ 2,850				2,850						
6.5	Exterior lights to be replaced with LED lights	$ 4,500				4,500						
6.6	Replace and retrofit light fixtures with LED type building wide	$ 32,600							32,600			
6.7	Performance hall north dimmer switch replacement	$ 300		300								
6.8	Old hand dryer in both restrooms shall be replaced	$ 1,500				1,500						
6.9	Clean and paint exterior switchboard and panels	$ 3,000	3,000									
6.10	Relocate lobby switch to restroom hallway	$ 500		500								
6.11	2nd floor office switch relocated to hallway	$ 500		500								
7	**Plumbing**	**$ 25,870**	**$ 11,845**	**$ -**	**$ -**	**$ 14,025**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
7.1	Water Meter Vault (City to replace damaged UG vault)	$ -										
7.2	4" Sanitary Sewer Pipe Replacement (Up to Manhole)	$ 8,000	8,000									
7.3	4" Sanitary Sewer Pipe Riser Replacement	$ 645	645									
7.4	Electric Water Heater	$ 6,675				6,675						
7.5	2" Domestic Water Backflow Preventer	$ 2,000				2,000						
7.6	4" Double Detector Check Valve	$ 5,350				5,350						
7.7	Seismic bracing to existing water heater	$ 800	800									
7.8	6" curb and drain pan to existing water heater	$ 2,000	2,000									
7.9	Lower existing waterless urinal to comply with ADA	$ 400	400									
8	**Fire Alarm**	**$ 1,700**	**$ -**	**$ 900**	**$ -**	**$ 800**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
8.1	Old Fire alarm sprinkler bell to be replaced	$ 800				800						
8.2	Add fire alarm strobe in 2nd floor office area	$ 900		900								
9	**Fire Protection**	**$ 1,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,000**	**$ -**	**$ -**	**$ -**
9.1	Provide missing escutcheons for sprinkler heads	$ 1,000							1,000			
Sub Total		$ 506,374	$ 109,270	$ 102,200	$ 26,250	$ 208,304	$ 2,000	$ 18,000	$ 37,100	$ 19,500	$ 2,000	$ 19,250
Contingency 10%		$ 50,637	$ 10,927	$ 10,220	$ 2,625	$ 20,830	$ 200	$ 1,800	$ 3,710	$ 1,950	$ 200	$ 1,925
General Conditions 10%		$ 50,637	$ 10,927	$ 10,220	$ 2,625	$ 20,830	$ 200	$ 1,800	$ 3,710	$ 1,950	$ 200	$ 1,925
Consulting & Engineering Fees 10%		$ 50,637	$ 10,927	$ 10,220	$ 2,625	$ 20,830	$ 200	$ 1,800	$ 3,710	$ 1,950	$ 200	$ 1,925
Opinion of Probable Repair Cost - Annual Budget		**$ 658,286**	**$ 142,051**	**$ 132,860**	**$ 34,125**	**$ 270,795**	**$ 2,600**	**$ 23,400**	**$ 48,230**	**$ 25,350**	**$ 2,600**	**$ 25,025**

NOTES:

Note 1: Estimated costs includes overhead and profit based on RMS cost data.
Note 2: Estimated costs do not include contingency and general conditions.
Note 3: Estimated costs do not include design fee.

Appendix B – Photographs

APPENDIX B - PHOTOGRAPHS

Photo 1 – View of building – East Façade at left and North Façade at right.

Photo 2 – West Façade and concrete landscaping walls.

Photo 3 – East Façade.

Photo 4 – South Façade.

Photo 5 – Exterior cement plaster wall – Note previously patched crack aligned with the mezzanine floor level.

Photo 6 – Vertical crack in existing cement plaster wall.

Photo 7 – Vertical crack leading to exposed brick masonry.

Photo 8 – Width of vertical crack measures 1/8 inch in width.

Photo 9 – Exposed brick masonry and mortar joints behind cement plaster.

Photo 10 – Previously patched cement plaster wall area.

Photo 11 – Efflorescence at interior brick masonry wall.

Photo 12 – Separation in brick masonry units and patching material or grout that has seeped into the interior of the building.

Photo 13 – Cracks in cement plaster along window jamb. Note that window security bar anchors are not sealed.

Photo 14 – Wall penetration is not sealed.

Photo 15 – Wood window muntin needs repair.

Photo 16 – Wood window sill and concrete ledger with crack in paint coating. Note that the joint between the wood sill and ledger is not sealed.

Photo 17 – Wood entry doors and aluminum storefront system at West Façade.

Photo 18 – Wood decay at the base of the wood door frames.

Photo 19 – Existing roofing membrane and view of raised monitor roof from the west.

Photo 20 – Existing roofing membrane and view of raised monitor roof from the east.

Photo 21 – Existing roofing membrane and vent penetrations.

Photo 22 – Cracks at top of parapet wall.

Photo 23 – Deteriorated wood fascia board at roof eave.

Photo 24 – Deteriorated wood fascia board and corroded edge flashing at roof eave.

Photo 25 – Paint coating is worn at the edge rafters and diagonal struts that support the roof eave.

Photo 26 – Diagonal wood strut needs to be reattached to the wall. Gap between the wall and roof interface needs to be sealed.

Photo 27 – Existing wood truss at the interior of the building.

Photo 28 – Split is wood truss member.

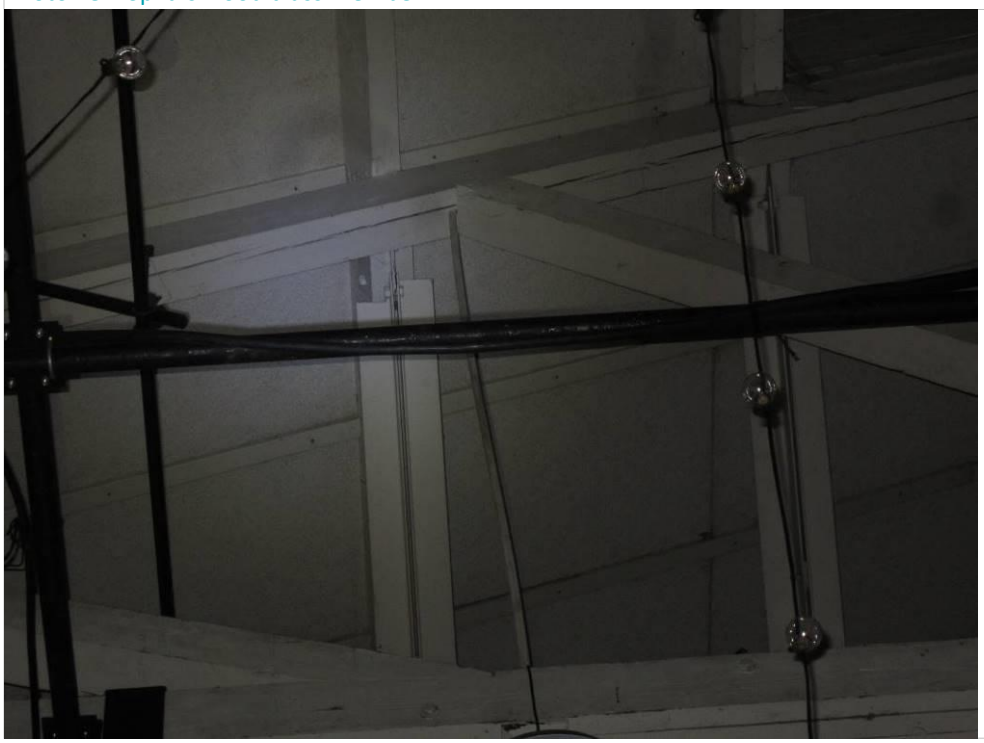


Photo 29 – Underside of concrete mezzanine slab located at the south end of the building. Note significant water staining and missing concrete at the bottom of the steel I-beams.

Photo 30 – Existing concrete landscaping walls with staining.

Photo 31 – Spall at concrete landscape wall probably caused by impact damage.

Photo 32 – Existing wood power pole at south end of building. Note cracks in concrete foundation.