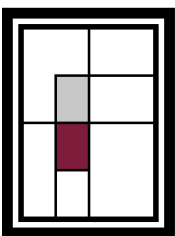


HANCE PAVILION ASSESSMENT FOR CITY OF PIQUA

May 19, 2023



FREYTAG & ASSOCIATES INC.
ARCHITECTS ENGINEERS

Executive Summary

The City of Piqua is considering roof replacement on the Hance Pavilion in Fountain Park and has requested an assessment of the existing facility and in particular, the building structure. In the Fall of 2020, Darren Cook, structural engineer with Jezerinac Geers, Mark Meek, electrical engineer with Nauman and Zelinski and Dan Freytag, architect with Freytag and Associates conducted a site visit of the facility.

The pavilion is approximately 100 years old and was built as an open-air performing arts/concert venue with stage, dressing rooms and sloped audience seating area. Construction is cast in place concrete perimeter walls and columns with wood and steel interior columns supporting wood roof trusses with sloped top chord and large cupola structure over audience seating area. An attached structure behind the stage includes dressing and back stage support rooms. Construction of this space is masonry bearing wall with sloping wood roof joist and masonry parapet walls.

The following report is organized by Immediate Priority, Priority and Other Needs/Considerations. Immediate Priority needs are items of work that are necessary or recommended for roof replacement. Priority needs are items of work, although not necessary for roofing work, are conditions that should be addressed in near future. Other Needs/Considerations are enhancements to make pavilion usage more viable and can be completed at a later date. The opinion of cost for work is a 'range of magnitude cost' for use in preparing an immediate and/or long-term budget to repair/rehabilitate the Hance Pavilion.



Facility Assessment

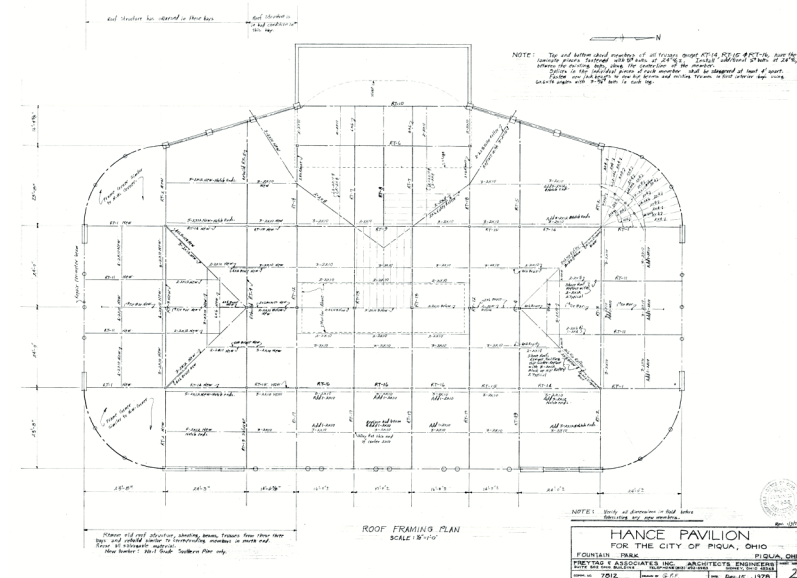
Immediate Priority Work:

Structure:

From Jezerinac Geers report.

The purpose of our visit was to evaluate the current condition of the framing of the building. It is our understanding that consideration is being given to reroofing the facility with potential renovation in the near future and questions have arisen to the underlying framing. To assist us in our examination, we were provided with access to view both the interior and exterior of the structure and given a copy of prior plans used for repairs completed in 1978. Repairs to the facility post 1978 enhancements have been completed as needed and as the budget has allowed. In 1999, one-third of the roof was replaced as well as stage enhancement that included re-enforcing the main stage from the back wall by doubling the support beams by park staff. The remainder of the roof was replaced in 2005. Also, at that time, gutters and soffit were replaced and the exterior of the building was painted and sealed. In 2010, trees and stumps were removed around the building and the back room was given an update. Major structural repairs to the northwest wall and raccoon damage repairs were done in 2017. Lastly, in 2019, Buckeye Insurance Employees spend a day painting all 246 benches. Outdoor critters create continuous needs for repairs annually. Original construction drawings were not available for review. Our review at this time is limited to the readily observable portions of the framing. We have not conducted any review of the load capacity nor building code compliance with the framing. It is felt that the structure would be considered to comply through “grandfathering” provisions provided that the occupancy and use does not change from past history.

The Hance Pavilion is a rather complex shape being generally oval with the side behind the stage extended outward slightly to incorporate the dressing rooms spaces. The roof slopes outward to the perimeter on all sides with the pitch lightly changing over the run. There is a clerestory element at the center of the oval extending above the primary roof by four to six feet. At the present time, the sides of the clerestory are solidly sided but understand, through historic photographs, that the original construction might have had open sides to allow for natural ventilation during the summer months. The roof structure is constructed primarily of milled lumber pieces typically referred to as rough-hewn framing members. Due to previous repairs, there are nominal dimensional lumber members within the framing. The major framing members consist of site assembled, relatively deep trusses. There are several different shapes of truss depending upon their location within the structure. The trusses support wood beams and purlins that in turn carry the roof sheathing. The trusses are supported by solid wood or steel interior columns. The concrete walls/columns on the perimeter do not necessarily align with the truss locations indicating that the trusses frame to beams that are then spanning to the perimeter columns/walls. The dressing room spaces appear to be standard bearing wall construction using wood stud or masonry bearing walls. The roof framing over these spaces is standard rough-cut wood roof joists. In reviewing the 1978 renovation, it is clear that a significant amount of framing repair was completed. The repairs included corrections to the trusses, rafter/purlin replacement, sheathing replacement, and other modifications.





We observed that the building framing is generally in satisfactory condition overall considering age, use, and exposure. We noted that the roof slopes are no longer entirely without localized sagging and there are several of the ridgelines that seem to be “saddling”. There is generally isolated damage to the roof sheathing where roof leaks have led to water infiltration that has over time resulted in decay. In conjunction with these leaks, individual rafters/purlins have also been damaged to decay in some locations. At the time of our visit, there was limited evidence of active leakage. It is estimated that about five to ten percent of the roof sheathing will be found to be damaged to the point requiring replacement. It is estimated about five percent of the roof rafters/purlins/beams are likely in a state that replacement in kind would be seen as necessary.

The trusses generally seem to be sound, but several were seen to have loose or otherwise shifted joints indicating that movement or long-term shrinkage has led to changes in the way in which the truss functions to distribute and support loads. We noted some members of trusses being split or otherwise damaged. This mostly occurs on the south side of the pavilion. Interestingly, the trusses were strapped together using steel cables and bars and the repair drawings from 1978 show that some of the steel was reinforced as a part of that project indicating that the steel existed prior to 1978. It is unclear why the members were reinforced but it is likely a result of variations in design criteria as opposed to clear deficiencies in the framing. Nevertheless, the steel elements were also seen to be in need of remedial attention in the tightening of the connections and assemblies. It is believed that replacement of individual members of trusses can be accomplished as needed to correct the conditions. Where joints or steel elements need adjustment, that should be able to be completed with the truss left in place so long as the roof loading is shored at that time.



We found several of the interior wood columns to be bowed or otherwise out of plumb. Minor bowing or irregularity is not unusual in older wood framed structures but the extent in this case appears to warrant restoration. We suspect that those columns will require replacement to correct the outward appearance or structural capacity concerns.

Note that it is quite possible that these conditions have existed for a long period of time and therefore are mostly stable. They should however be addressed to prevent potential problems.





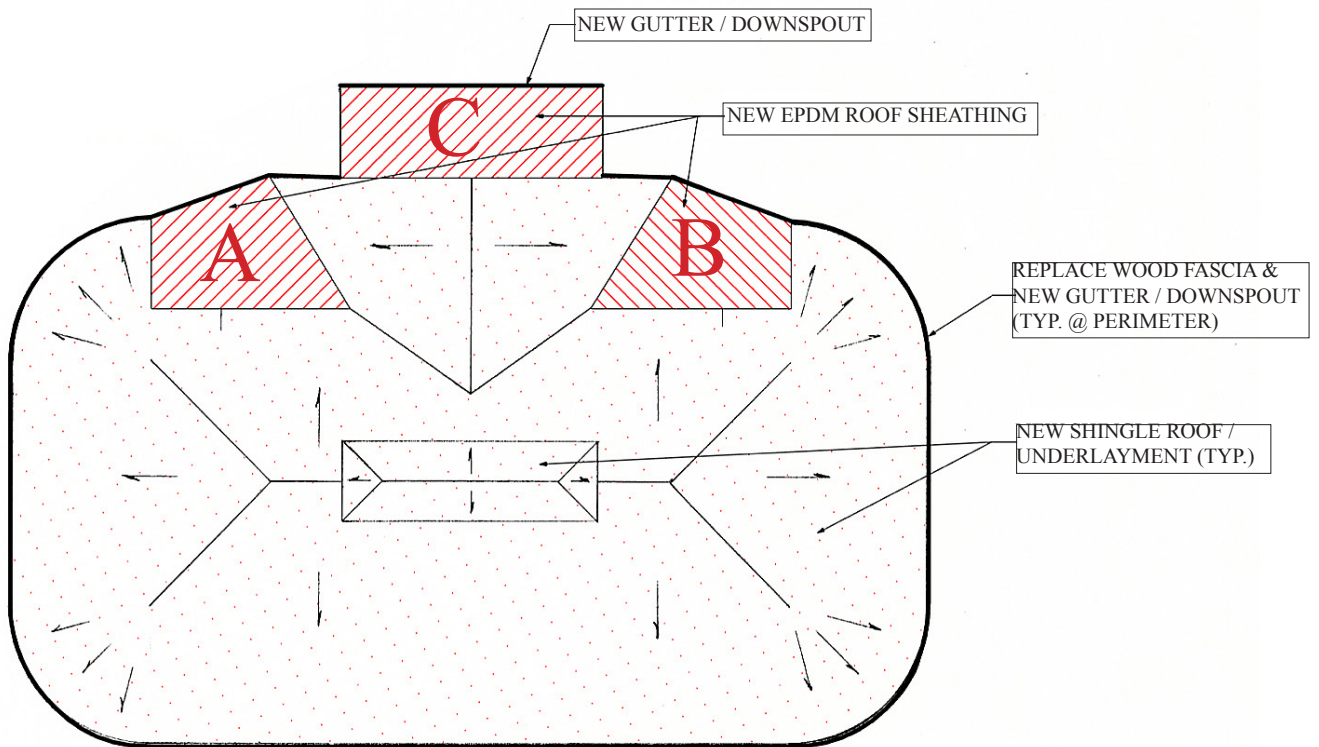
The exterior soffit around the perimeter showed indications of animal damage and long-term deterioration due to water infiltration. It is unclear if the damage extends to structure or is more isolated to the ancillary architectural elements. We did observe some waviness in the soffit line around parts of the building and it is felt that this is mostly a cosmetic issue though there might be some underlying issues with the structure that is leading to the concern. As noted previously, the ridgelines show some change in shape indicating that the overall framing is settling or deflecting. It is unclear how affected the framing might be as a result. Ridgeline changes often occur due to long-term deflection of wood due to fiber elongation or connection stretching. These issues can sometimes be addressed by correcting the connections. If the movement is due to fiber elongation, overall correction is not as readily possible as it requires removal and replacement of large sections of roof framing. It is plausible that the appearance has been this way for some time and provided that the connections are sound, and there are no aesthetic issues, they could remain unaddressed.

Recommendation:

We find that the Hance Pavilion exhibits damage that might be expected for an exposed structure in which maintenance has been deferred over time. Fortunately, there are no indications at this time that the damage is severe enough that repairs would be impossible or overtly cumbersome to complete. It is accurate to state however that the structural repairs will be invasive and technically challenging in certain instances. For purposes of this report a range of magnitude cost for structure repair is included in Priority Work Opinion of Cost.

Roof Work:

Existing roof over the main structure consists of asphalt shingles over wood sheathing/wood structure over audience seating/stage and EPDM roofing over wood sheathing/wood structure above dressing rooms. The original roof covering over dressing rooms appears to have been a built up roof as evidenced on parapet walls. Both roof coverings are in poor condition and in need of replacement. Major deterioration has occurred at shingle roof over the low slope roof, areas A and B, on Roof Plan diagram. The wood sheathing in several areas appears to be deteriorated and for purposes of this report it is assumed 10% of the sheathing will be replaced. Existing gutter and downspouts are in poor condition and need to be removed and replaced. Masonry parapet wall has clay coping tile and is in fair condition.



ROOF PLAN

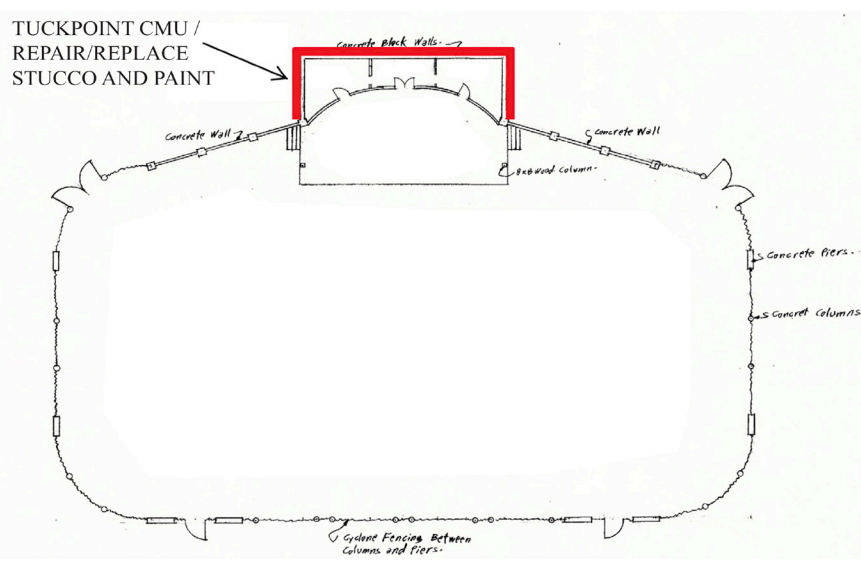
Recommendation:

Remove all existing roof coverings and deteriorated sheathing. Provide new sheathing, underlayment and new asphalt shingle roof over the main structure and clerestory. In low slope portion of the roof, areas A and B, provide adhered EPDM roof covering. Above dressing rooms, area C, provide new sheathing and adhered EPDM roof covering including flashing on parapet walls and new metal coping. Provide new metal gutter and downspout around perimeter of the structure. with downspouts to outlet directly in grass area.



Exterior Wall:

Perimeter of audience seating area is cast in place concrete walls/columns and are in generally good shape. Perimeter soffit/knee wall shows some movement as noted in the structural narrative. Interior/exterior wood siding is deteriorated in many areas and should be replaced. In addition, the top of the knee wall is open and provides nesting place for animals. Perimeter masonry walls at dressing rooms show damage from poor roof drainage, standing water at base of wall and water infiltration at locations of windows infilled with masonry.



FLOOR PLAN

Recommendation:

Provide repairs per structural analysis including repair of wood siding on knee wall, new wood cap to close top of wall from animals and paint.

Tuckpoint masonry wall at infilled openings, remove loose paint, clean walls, provide stucco coat over existing masonry and paint. Regrade soil at base of wall to direct water away from foundation. If storm line exists near the pavilion, it is recommended to provide new perimeter roof drain line tied to existing storm line.

Priority Work:

Electrical:

Facility is served by a 200 amp 120/240 volt single phase aerial service which enters overhead at the rear of the building. Service enters building and terminates in a 200 amp fused service disconnect. From the service disconnect a 200 amp feeder runs to a nearby 30 circuit panelboard. This panelboard serves all building lighting, receptacle and miscellaneous branch circuits. Note that all existing interior lighting circuits are manually controlled by switching the panel breakers. There is an outdoor lighting timeclock adjacent to the panelboard which controls limited building exterior security lighting.

Recommendations:

Replacement of existing service equipment due to deteriorated condition and age. The existing overhead 120/240 volt single phase service is appropriate for reuse however a new 200 amp service disconnect fused switch and new 42 circuit branch circuit panel are proposed to replace existing. Depending on overall scope of renovation the new panelboard would refeed existing circuits or feed new building branch circuits.

Although the existing 200 amp 120/240 volt single phase service is fully adequate in size to serve all functions of the existing facility; mainly lighting at stage and seating area lighting. If as part of planned future redevelopment of the facility any added loads may be incurred including items such as concession or food preparation or enhanced performance lighting the new service size would need to be increased to accommodate such significant added electrical loads.

Emergency and Exit Lighting:

There is no emergency lighting or exit lights in the existing facility.

Recommendation:

Provide battery emergency lighting fixtures along egress paths, and battery exit light fixtures with outdoor remote heads at designated means of egress locations.



Other Needs/Considerations:

Dressing Rooms:

Existing walls have been finished with gypsum board over furring strips on masonry walls and due to space being unconditioned, the finish material has cut off natural air circulation leaving spaces with a damp/musty odor. The northeast and central rooms have had the gypsum board finish removed while, gypsum board finish remains in south west room. The existing flooring and floor support structure is in need of repair or replacement with areas where joists are deteriorated or missing. All existing doors and hardware are in poor condition and should be replaced including door to exterior from central room.



Recommendation:

Remove existing flooring and floor structure and replace with new wood joists or concrete slab on grade with vapor barrier placed on ground below joists or under concrete slab. If new wood joists are installed, provisions for natural ventilation under floor is recommended. If new wall finishes are planned, it is recommended wood boards or sheathing be used and allow natural air flow in cavity created by furring strips at the perimeter wall. Other option is to remove furring strips, clean/repair masonry and paint masonry walls. It is also recommended to increase existing vent opening on upper portion of wall between the rooms.

Stage:

Existing stage is wood floor and support is assumed to be similar to dressing room floor. Stage is accessed by two sets of steps at either side of stage.

Recommendation:

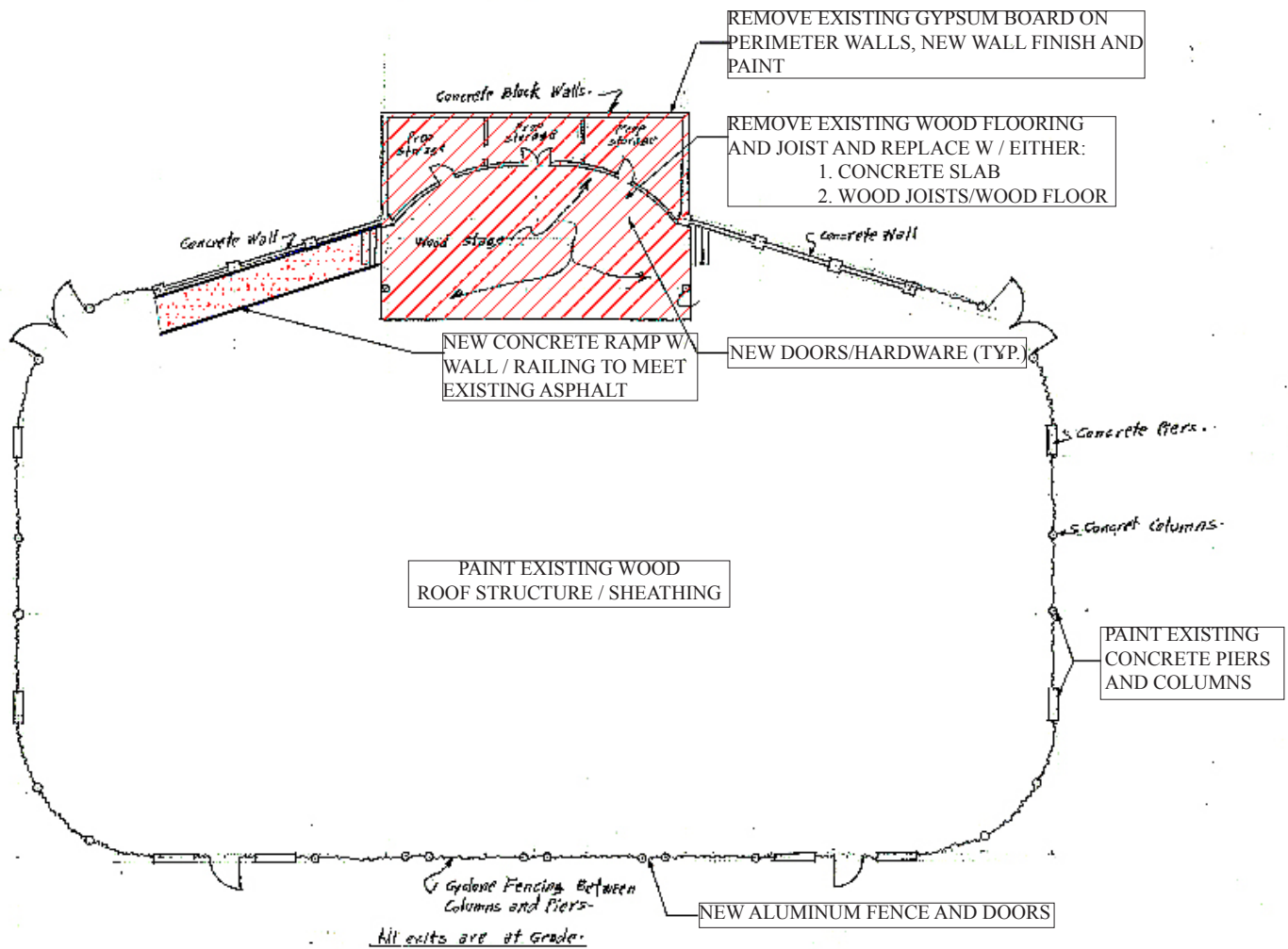
Remove one set of stairs and provide ramp to meet existing floor level for accessibility. Remove existing flooring and floor structure and replace with new wood joists or concrete slab on grade with vapor barrier placed on ground below joists or under concrete slab. If new wood joists are installed, provisions for natural ventilation under floor is recommended.

Audience Area Roof/Walls:

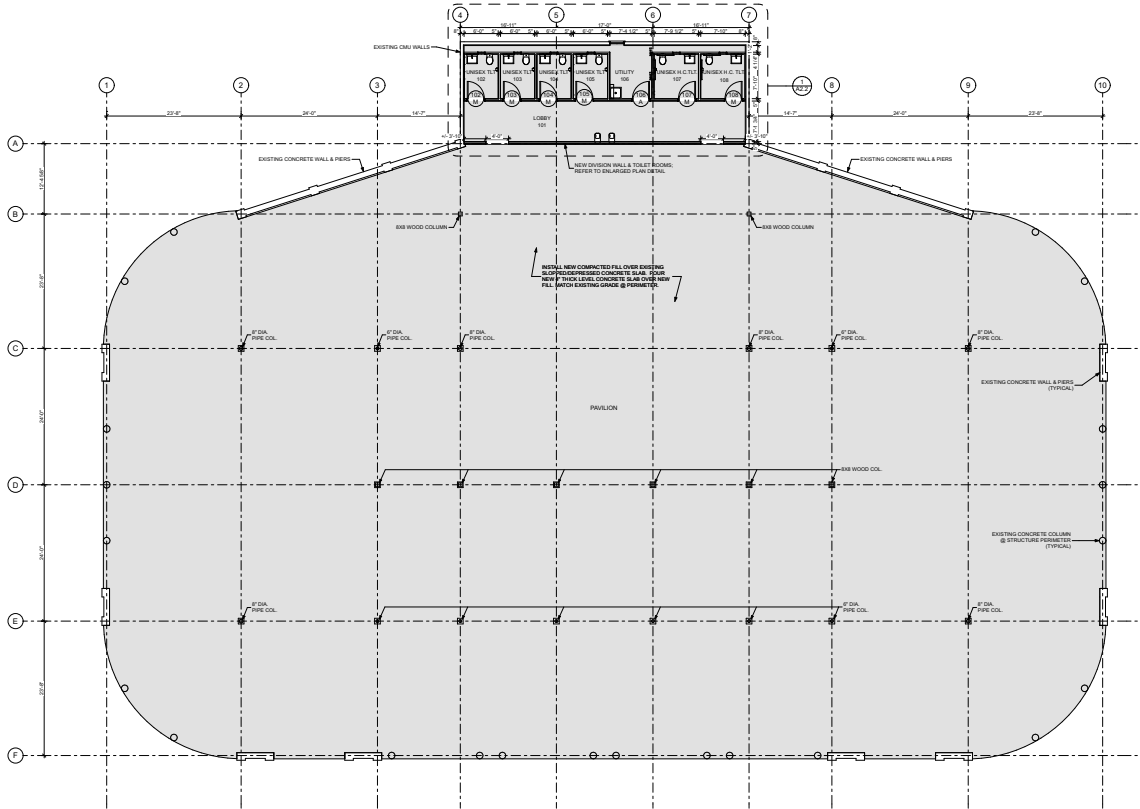
Existing roof structure is not painted making dark audience space.

Recommendation:

Paint roof structure including sheathing, stage apron/repair work, siding at kneewall above column and perimeter concrete walls/columns.



FLOOR PLAN



Perimeter Fence:

Existing fencing and gates are chain link and are in marginal condition and do not enhance the aesthetics of the pavilion.

Recommendation:

If funds are available, new steel or aluminum fence and gates would greatly improve appearance of the structure.

Cupola:

Original openings on cupola walls allowing ventilation and light to center of audience seating area have been closed in.

Recommendation:

If funds are available, recreate openings in cupola and insert louvers or glazing in the openings.



Pavilion Lighting Upgrade:

Existing lighting in the pavilion seating area consists of incandescent lighting based on 1978 drawings. This lighting system provides marginal lighting throughout the enclosed areas. In addition there is no emergency lighting or illuminated exit lighting in place at this time. Building exterior lighting is limited to a few incandescent floodlight type open lamp holders mounted to the outside structure above wall openings.

Recommendation:

Replace entire pavilion lighting with new high efficiency LED fixture; including damp location style LED 'low bay' industrial style fixtures throughout the seating and audience areas, battery emergency lighting fixtures along egress paths, and battery exit light fixtures with outdoor remote heads at designated means of egress locations. In addition provide new LED exterior area lighting 'cutoff' style security lighting fixtures around building perimeter; with photocell or timer control. Depending on planned functions, the audience area LED fixtures could be configured to permit dimming for performance purposes.



Stage Lighting Upgrade:

The existing stage lighting consists of several High Intensity Discharge industrial style fixtures directly over the stage, and a few quartz high wattage floodlight style fixtures mounted to the structure in front of the stage and aimed to illuminate stage performers. This lighting system is marginal and provides minimal flexibility in application.

Recommendation:

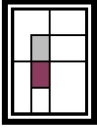
Provide new upgraded LED stage lighting consisting of new LED fixtures directly over the stage which are designed to provide a high level of lighting and also provided with dimming. In addition provide aimable directional lighting mounted to structure in front of stage (in location of existing quartz floodlights) for lighting performers. This lighting would consist of higher intensity LED aimable fixtures; potentially on a track style assembly for performance lighting; with these fixtures arranged to be dimmed.

Pavilion Electrical Upgrade:

The electrical System in the Pavilion is older and portions are deteriorated or in need of repair/replacement. Convenience outlet coverage at the stage and around the building is very limited. The electrical work in the dressing rooms and associated back of house rooms will need replacement to coordinate with potential roof and ceiling replacement work.

Recommendation:

Replace and supplement existing convenience receptacle coverage throughout the Pavilion; with additional receptacles added around building. All exposed and exterior receptacles to be GFCI type. Replace all old and deteriorated electrical work in back of house and dressing rooms.



May 16, 2023

Hance Pavilion Assessment
City of Piqua
Piqua, Ohio 45356

OPINION OF COST OPTION 1

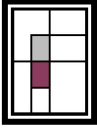
Immediate Priority Work		\$433,603
Roofing	\$270,202	
Roof Structure Repair	\$96,664	
Exterior Walls	\$66,736	
Priority Work		\$57,866
Electric Service / Emergency and Exit Lighting		
Other Considerations		\$764,835
Dressing Room Work / Stage Floor / Ramp to Stage	\$223,353	
Paint	\$106,087	
Cupola	\$23,892	
Fence	\$43,154	
Lighting Upgrades	\$368,350	
Total Construction Hard Cost		<u>\$1,256,304</u>

Please note the following:

Each major work category, in bold, includes a cost for general conditions / contractor overhead and profit / performance and payment bonds, but will need to be increased if projects are broken down beyond the three (3) major categories.

Above costs do not include design professional fees, testing or other Owner soft costs, utility company connection / service charges.

Due to present volatile construction material market, above costs should be re-evaluated when work is planned.



May 16, 2023

Hance Pavilion Assessment
City of Piqua
Piqua, Ohio 45356

OPINION OF COST OPTION 2

Immediate Priority Work		\$433,603
Roofing	\$270,202	
Roof Structure Repair	\$96,664	
Exterior Walls	\$66,736	
Priority Work		\$57,866
Electric Service / Emergency and Exit Lighting		
Other Considerations		\$980,448
Infill Sloped Floor / New Toilet Rooms	\$481,128	
Paint	\$106,087	
Cupola	\$23,892	
Fence	\$43,154	
Lighting Upgrades	\$326,187	
Total Construction Hard Cost		<u>\$1,471,917</u>

Please note the following:

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