Appendix D

Belle Isle Boathouse Renovations
Detroit, Michigan
Cost Model Estimates
November 29, 2019
**** Updated September 27, 2022 (Red Italic)***

APPENDIX "D"

Description		Total Cost	Cost/SF
Building Enclosure Summary	Area	44,095 GSF	
B10 Superstructure		*$1,856,616*	*$42.10*
B20 Exterior Closure		$2,806,215	$63.64
B30 Roofing		$734,970	$16.67
D20 Plumbing		$336,500.00	$7.63
D40 Fire Protection		$31,000	$0.70
D50 Electrical		$45,989.00	$1.04
Sub-Total Trades Building Enclosure		*$5,811,290*	*$131.79*
Design Contingency	10%	*$581,129*	*$13.18*
Escalation ***10%* per year to midpoint 7/1/2025			
67 months @ ***10%* =	*70.3%*	*$4,493,871.00*	*$101.91*
Sub-Total Contingencies		*$5,075,000*	*$115.09*
Sub-Total Building + Contingencies		*$10,886,290.00*	*$246.88*
General Conditions 24 Months	3%	*$326,589*	*$7.41*
GC Personnel	*1.77%*	*$198,468*	*$4.50*
GC Fee	4%	*$456,454*	*$10.35*
Bond	1%	*$118,678*	*$2.69*
Total Construction Cost Building Enclosure		*$11,986,479*	*$271.83*
Owner Project Costs	35%	*$4,195,268*	*$95.14*
Total Project Costs		*$16,181,747*	*$366.97*
Total Project Cost Percentage Increase	***65%***		

Note:
**Red, Italic information has been updated from the original information indicated in the November 29, 2019 Smithgroup Report. (See Appendix "E")*

***Adjusted yearly escalation average of 10% is based of off the U.S. Bureau of Labor Statistics of Wages which saw a 6% increase, and the latest Producer Price Index (PPI) report that stated a 33% increase in materials since March 2022.*

Belle Isle Boathouse
Renovations/Restorations
Detroit, Michigan
Cost Model Estimates
November 29, 2019
**** Updated September 27, 2022 (Red Italic)***

APPENDIX "D"

Description		Unit	Unit Cost	Total Cost	Cost/SF
Building Enclosure				44,095 GSF	
Superstructure					
B1010 Floor/Terrace Construction					
New third floor terrace at west side	1,366	SQFT	$150.00	$204,900	$4.65
Shore existing roof structure at west side where existing wall is removed/replaced	68	LNFT	$5,000.00	$340,000	$7.71
Remove/replace *damaged terrace concrete floors throughout*	*1*	*LPSM*	*$645,160.00*	*$645,160*	*$14.63*
Remove/replace struture for terrace 217, *also repair exterior stairs*	564	SQFT	*$419.00*	*$236,316*	*$5.36*
Repair north & south exterior stairs	*1*	*LPSM*	*$177,500.00*	*$177,500*	*$4.03*
Sub-Total Floor Construction				*$1,603,876*	*$36.37*
B1020 Roof Construction					
New green house roof over terrace 217	564	SQFT	$200.00	$112,800	$2.56
Remove/replace wood decking at 10% of the area of low slope roofs 4311 sf x 10% =	341	SQFT	$25.00	$8,525	$0.19
Remove/replace wood decking at 20% of the area of high slope roofs 7638 sf x 20% =	1,537	SQFT	$25.00	$38,415	$0.87
Temporary roof protection	1	LPSM	$25,000.00	$25,000	$0.57
Damaged roof framing repairs	*1*	*LPSM*	*$68,000.00*	*$68,000*	*$1.54*
Sub-Total Roof Construction				*$252,740*	*$5.73*
Sub-Total B10 Superstructure				*$1,856,616*	*$42.10*

Note:
**Red, Italic information has been updated from the original information indicated in the November 29, 2019 Smithgroup Report. (See Appendix "E")*

Appendix E

Belle Isle Boathouse
Building and Site Assessment

E Picnic Way, Belle Isle, Detroit, MI 48207

SMITHGROUP

500 Griswold, Suite 1700, Detroit, MI. 48226

SG 11774.000

December 2019

Contents

1.0 INTRODUCTION

The Belle Isle Boathouse opened August 6, 1902 as the home of the Detroit Boat Club. It is prominently located on Belle Isle Park, the country's largest city island park. It occupies a prime location near the entry to the park adjacent the MacArthur Bridge and is clearly visible from the city. The view from the boathouse offers a spectacular panorama of the City of Detroit.

The boathouse sits on a man-made island that is supported by cedar wood pilings driven to bedrock. It is connected to the main island by two bridges over a small canal. Marina structures currently exists on the north and east sides while the west side of the site has docks for launching rowing skulls.

The original boathouse was constructed on pilings, surrounded entirely by water, and was destroyed by fire in 1890. A second boathouse was constructed in 1893. It also was destroyed by fire in 1901. The present building was constructed in 1902 with a subsequent addition in 1922. It was designed as a replica of a Gaztelii (Basque for a large, elegant country house). The 1902 building included a main lobby area, ballroom, boat storage and related spaces. The addition added a commercial kitchen, large dining room and meeting rooms. Landfill was added to expand the grounds, which included an Olympic-sized pool and children's wading pool. Dock expansions were added up through the 1970s.

The boathouse is one of the country's earliest reinforced concrete buildings. Its exterior materials are white stucco and red terracotta roofing tiles. The interior incorporates a maritime theme through intricately carved seahorse balustrades and other woodwork detail.

While the Boat House is not listed on the National Register of Historic Places it does exist within a District that is listed.

The Belle Isle Boat house is owned by the City of Detroit Recreation Department. The Detroit Boat Club occupied the building until 1995. The Friends of Detroit Rowing (FODR), a descendant of the original Detroit Boat Club, continues to occupy the building under a lease agreement with the Michigan Department of Natural Resources. Detroit city's fiscal problems over the last few decades necessitated cutbacks at the park, which resulted in much of the park to fall into disrepair. In 2013, the State of Michigan signed a 30-year lease to care for the park. Michigan's Department of Natural Resources now operates the park and has committed to make significant expenditures to restore it to its former beauty, aided by the Belle Isle Conservancy, a non-profit, volunteer organization dedicated to promoting the preservation and restoration of the island as a beautiful and unique urban resource.

The FODR sponsors the Detroit Boat Club Crew (DBCC), a nationally ranked crew and one of the oldest (est. 1839) rowing programs in North America. FODR is a 501(c)(3) non-profit, with a mission dedicated to the education and promotion of rowing in the Detroit metropolitan community.

FODR hosts competitive and recreational programs to men and women of all ages. The Detroit Boat Club Crew Juniors compete as a united crew, drawing participants from multiple schools in the Detroit metropolitan area. The men and women's master's program successfully compete regionally, nationally and internationally. Other programming includes Learn to Row / Learn to Race Youth Summer Clinics, Adult Learn to Row, Indoor Rowing (all ages and ability), Recreational Rowing, and a Detroit Youth Rowing Program (administered in partnership with the Detroit Recreation Department).

In August of 2019, the Friends of Detroit Rowing contracted SmithGroup / HR&A to prepare a physical assessment of the Belle Isle Boathouse building and site and to develop a Master Plan to address the sustainability of the facility and Detroit Rowing.

The objective of this assessment is to determine the physical condition of the interior, exterior, structure and systems of the building as well as the condition of the surrounding land and marina, identify reasonable order of magnitude cost estimates for remediation and develop an idealized implementation schedule for the project scope. This vital information will be used later in the Master Planning process.

1.1 EXECUTIVE SUMMARY

Assessment Study Process

SmithGroup through multiple site visits over a three - month period, personal observation, interviews with key personnel, still photography and drone video documentation recorded and assessed existing conditions of the Belle Isle Boathouse and site. The objective was to develop detailed knowledge of the facility in order to recommend appropriate remediation procedures, determine order of magnitude costs and define an idealized schedule of implementation of the recommended scope.

It is important to note that prior to initiating the study, the Boathouse experienced significant flooding from the Detroit River. While this was an unfortunate occurrence it helped to underscore some of the unique challenges the FODR and Boathouse are confronting.

As a framework for recommendations, it was determined that the study should assume, at a minimum, a 30-year future life span for the facilities. All recommendations incorporate this approach.

Site Assessment Summary

SmithGroup conducted a site analysis of the Boathouse property, adjacent land and parking lot on Belle Isle utilizing a historical data, topographic survey and on-site visual inspection. The existing site conditions were examined for sea wall integrity and height, marina layout and docking system integrity, pedestrian, vehicular and marine circulation, parking, site lighting, security, building access, vegetation and material integrity.

The most notable observations were the condition of the sea walls and structure of the swimming pools. The sea wall is failing in numerous areas and is need of significant repair or replacement. It is also too low with reference to the FEMA flood plain designations. Resolution of this deficiency is of high priority and a key step in protecting the future of the boathouse. The swimming pools have failed beyond repair and require removal to eliminate the current life safety hazards. Given the structural design of the pool and their proximity to the boathouse removal is a prerequisite to renovation/remediation of the boathouse.

Building Assessment Summary

The existing building conditions were surveyed utilizing on-site visual inspection, historical data and interviews with personnel familiar with building and operations. The building's roof and exterior walls were reviewed for structural integrity, water infiltration and finish material integrity using a drone capable of video photography. Interior walls, ceilings and floors were observed for structural integrity,

water damage and finish appearance and integrity. Building mechanical and electrical systems were evaluated for their working condition and expected life span. The building was also reviewed for deficiencies and/or non-compliance to current building and barrier free codes.

SmithGroup recommended as key importance to the preservation of the building is the remediation of the failing exterior envelope (roof, walls, windows and doors). If left unattended the building structure and key interior spaces will be compromised beyond repair. The major building systems are all beyond their useful life span and require complete replacement.

The remediation will be comprehensive, time consuming and expensive given that every attempt should be made to have an historically appropriate finished project.

Order of Magnitude Estimate of Probable Costs Summary

SmithGroup's findings and recommendations were documented and provided to our cost estimating consultant for use in determining an Order of Magnitude Cost estimate. The cost consultant visited the site to observe the current conditions. SmithGroup provided area take-off information from existing drawings provided by FODR.

Cost assumptions were coordinated with the recommended phasing implementation and a 5% per year escalation factor applied where applicable.

Basic assumptions assumed that the project would involve a construction manager; it would be built in five phases running continuously end to end with the only overlap being the design phases; each phase estimate total includes a reservation for Owner's Costs at 35% of construction cost.

The total order of magnitude estimate for the recommended remediation was $43,900,000. Costs related to temporary facilities for FODR are not included in this estimate.

Idealized Implementation Schedule Summary

After careful consideration of the total scope of the remediation required a phased approach to implementation has been recommended. The key benefits of this approach are that It addresses the most critical components first, allows for phased fundraising and for continued investigation and development of future programming and revenue generating uses.

1. Site Stabilization and Remediation ($12,053,300)
2. Exterior Envelope Remediation & Restoration ($10,535,300)
3. Interior Building Systems Upgrade (MEP/FP/ELEC) ($13,276,100)
4. Interior Restoration/Rehabilitation/Renovation ($6,853,600)
5. Final Site and Landscape Improvements ($1,182,000)

An unfortunate aspect of this project is that it is clear that occupying the building during construction is not advisable and a such will require that FODR provide temporary facilities for the duration of the remediation.

2.0 SITE ASSESSMENT

Overall, the condition of the boathouse property on the island is **POOR** due largely to infrastructure failures and deferred maintenance. The boathouse property on the Belle Isle mainland (access, parking lots) is in **FAIR** condition.

SmithGroup (SG) observed the general condition of the following components:

2.1.1 Component
Shoreline

System Description
The majority of shoreline on the site is stabilized with a sheet pile wall system. There was no visible evidence of a tie-back system although one is reportedly present. Loss of soil material from behind the wall was noted in numerous locations. This loss of material has led to the development of sinkholes and areas of pavement subsidence. The height of the wall is currently too low as it relates to the 100-year flood level. To preserve the future of the boathouse, it is imperative that the deficiencies of the river wall be resolved.

Additional areas of shoreline contain masonry remnants and rubble that helps to stabilize and prevent erosion, though not aesthetically pleasing or consistent with design of the site. Lastly, the smallest amount of shoreline towards the east and west ends of the property is naturalized condition with no technical reinforcement in place.

The sheet pile walls are in **FAIR** condition. The areas immediately behind the sheet pile wall are in **POOR** condition. The additional shoreline is in **FAIR** condition.

Findings
- Typical condition behind sheet pile wall **[Photo #1, #2, #3].**
- Non-structured shoreline, rubble present **[Photo #4, #5].**

2.1.2 Component
Pools and Pool Decking

System Description
The swimming pools have failed beyond repair and require removal to eliminate the current life safety hazards. Given the structural design of the pool and their proximity to the boathouse removal is a prerequisite to renovation/remediation of the boathouse. Additionally, the pools are currently serving as a makeshift pumping system for the building and an alternative method for pumping will be required.

The pools and surrounding decking are in **POOR** condition overall.

Findings
- Representative condition of pool decking **[Photo #6, #7].**
- View of pool condition **[Photo #8].**
- Close up of pool wall deterioration **[Photo #9].**
- Spalling, tile breakage in smaller pool **[Photo #10].**

2.1.3 Component
Bridges

System Description
The cast concrete and wood components of the bridges are failing, and safety issues are evident. The bridges are being further compromised during high water event.

The main entry bridge is in **POOR** condition overall. The secondary access bridge is in **FAIR** condition.

Findings
- Main bridge, makeshift access during high water **[Photo #11].**
- Main Bridge structure compromised by water levels **[Photo #12].**
- Secondary access bridge **[Photo #13].**

2.1.4 Component
Docks

System Description
The existing docks are a mixture of floating and pile-supported fixed docks. Several of the outer dock piles appear to have been affected by ice-jacking. Timber decking is in poor condition on several sections of the main piers and on finger piers. It appears deck replacement and other upgrades are currently underway on the fixed docks. Floating docks appear to be in a serviceable condition. Ramps to floating piers need attention.

The 'T' shaped dock on the north side is unsafe for use, and presently inaccessible. The floating docks closest to the shore on the east side provides habitat for wildlife but is not safe or useable for people.

The docks range from **FAIR to POOR** condition overall.

Findings
- Dock system on east side, some decking recently replaced **[Photo #14].**
- Representative condition of docks on north side of island. These docks are not safe for use **[Photo #15].**
- West side docks are a combination of formats. Newer metal portions may be salvageable **[Photo #16].**

2.1.5 Component
Ancillary Site Structures

System Description
There are several structures on site ranging in condition. Depending on programming needs, some have potential to be renovated while for others, removal is the only cost-effective option. It is assumed that none of the structures listed in this section have historic importance.

The structures are in **POOR to FAIR** condition overall.

Findings
- Lifeguard Structure and Stand have surface rust and deterioration. Removal of both is recommended, though the main structure could be repurposed depending on future programming needs **[Photos #17].**
- Band Shelter Structure. Overall the structure is in fair shape and appears to have been maintained. However, its removal is necessary to facilitate stabilization of island. It is

recommended that the shelter be saved for potential reuse, pending programming **[Photo #18].**

- Storage Building on west end of property is in poor condition, likely further impacted by standing water present this season **[Photo #19].**
- Entry / Gate House is in fair condition. Removal is recommended to facilitate island stabilization.
- Concrete and Tile Raised Planters are found in several locations on site – near pools and entry being most visible. All are showing wear with cracked and falling tilework, deteriorating concrete. Overall, they are in poor condition. Removal is recommended **[Photo #20].**
- Concrete block wall near the SE corner of the main structure is in fair condition. Removal is recommended to facilitate island stabilization

2.1.6 Component

Pedestrian and Vehicular Hardscape

System Description

Sidewalks and pedestrian pavements in all areas are in **POOR** condition. Spalling, cracking, and heaving are observed in many areas. Pavement along sheet pile wall is in particularly bad shape due to issues discussed in item 2.1.1, above. The vehicular pavement is in **FAIR to GOOD** condition. The asphalt parking lot was recently resurfaced and is in good shape.

Findings

- Concrete spalling, cracking and damage is evident throughout the site **[Photo #21].**
- Heaving concrete walk at connection to north docks **[Photo #22].**

2.1.7 Component

Site Utility Infrastructure

System Description

Several utility castings require adjustment and surrounding pavement requires repair. An in-depth analysis of existing site utility infrastructure was not undertaken as a part of this site assessment. A utility line video assessment is recommended to evaluate the condition of existing sewer.

Findings

- Structure in need of adjustment, adjacent repairs **[Photo #23].**

2.1.8 Component

Landscape

System Description

The ornamental landscape on the site has suffered from deferred maintenance and environmental impacts (i.e. flooding). Lawn areas are in poor shape due to standing water. Dead and dying trees and shrubs are present and should be removed for safety reasons. It is not recommended that any landscape planting be re-installed until all site and structure stability issues have been resolved.

The landscape is in **FAIR** condition overall.

Findings

- Representative landscape **[Photo #24].**

2.1.9 Conclusion

It is critical that life safety issues be addressed on the site. Additionally, in order to stabilize the site for a 30-year time frame, repair, replacement and modification is required for most site elements. The most notable observations were the condition of the sheet pile river walls and the structure of the swimming pools and surrounding decking. Consideration for site resiliency should be considered for any/all proposed site solutions. Recommendations for site stabilization are represented in **Section 2.2.**

2.1 SITE ASSESSMENT PHOTOS

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Photo 12

Photo 13

Photo 14

Photo 15

Photo 16

Photo 17

Photo 18

Photo 19

Photo 20

Photo 21

Photo 22

Photo 23

Photo 24

2.2 SITE RECOMMENDATIONS DIAGRAMS

Diagram 1

SITE STABILIZATION PLAN

RECOMMENDATIONS

1. Shoreline stabilization
2. Modify landform to protect building elevation raised 3'
3. Pool / decking
4. Island becomes peninsula with closure of canal
5. Docks are replaced, refurbished, or salvaged and replaced as needed.
6. Pedestrian circulation to accommodate public and private uses
7. Open and flexible landscape
8. Parking and access layout remains as-is.

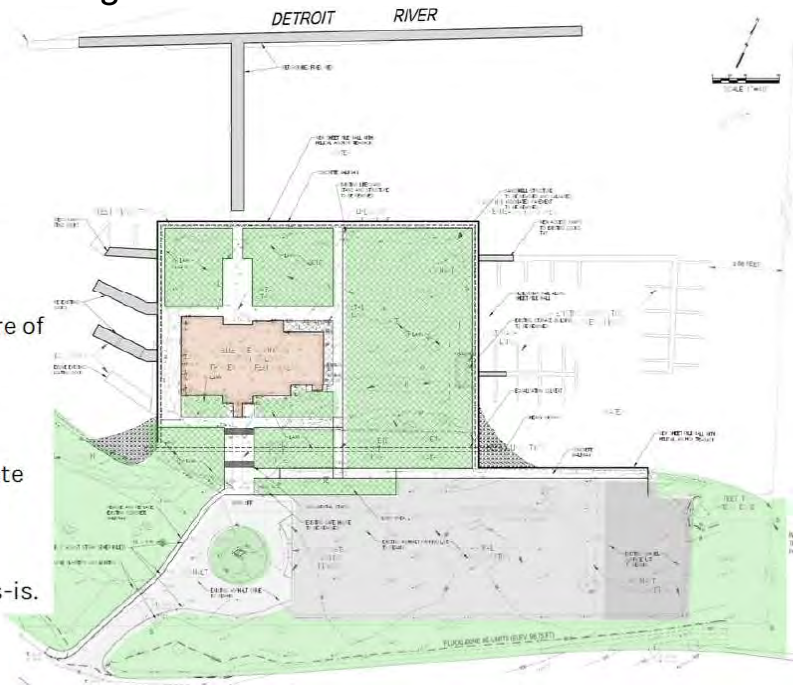


Diagram 2

SITE STABILIZATION PLAN

GRADING CONCEPT

+ Elevate perimeter around building above 100-year flood level

Provide ADA access to site via sloped sidewalks at less than 5%

Area to the west requires small retaining wall to preserve access to lower level storage. Area needs further study based on program considerations

Slope site away from wall and away from drainage. Provide storm drainage system (catch basins, not shown) where needed

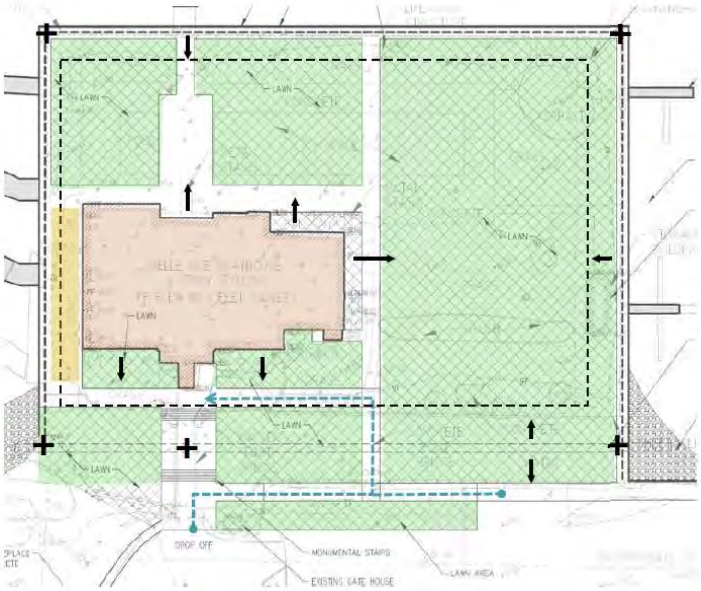


Diagram 3

PROPOSED RIVER EDGE PLAN

- Leave existing sheet pile in place
- Install a **new sheet pile** wall outside of it and secure the system with **helical anchors**
- Raise existing grade around perimeter +/- 3'
- Slope grade away from boathouse
- Fill in the canal and provide equalization culvert – the island becomes a peninsula

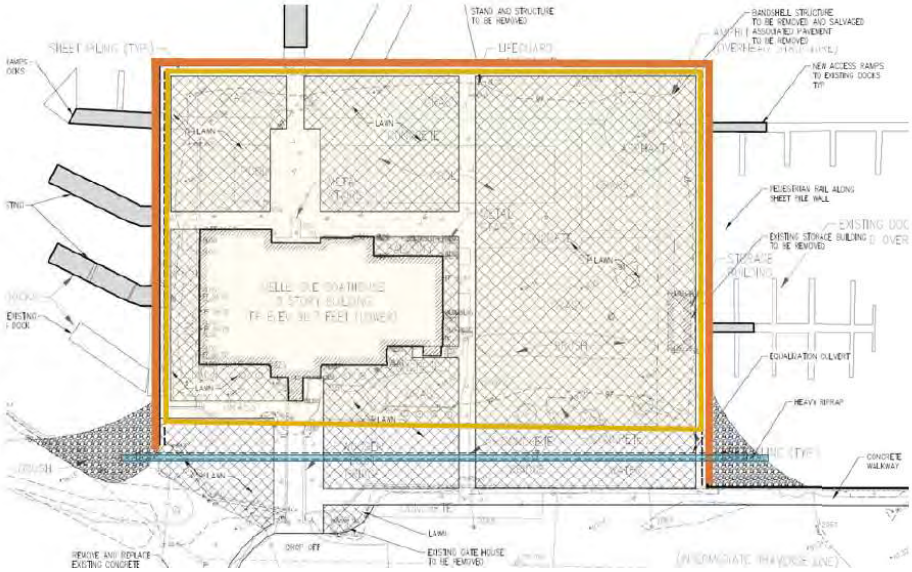
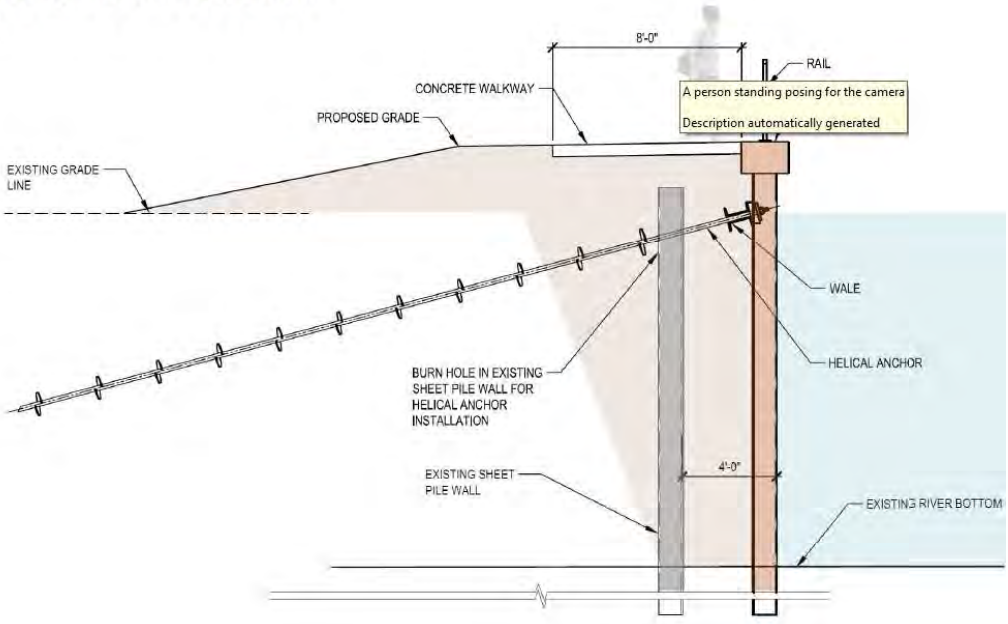


Diagram 4

PROPOSED RIVER EDGE SECTION

WITH WALKWAY AND RAILING

- Leave existing sheet pile in place
- Install a new **sheet pile wall** outside of it and secure the system with **helical anchors**



3.0 ARCHITECTURAL ENCLOSURE ASSESSMENT

The Boat House [Photo 1-2], constructed in 1902, is a stucco finished brick mass masonry building over a concrete and steel frame. The building is constructed on a concrete supported slab with grade beams supported on wood piles driven into the riverbed, **[Photo 3-4].** The Boat House had a significant addition to the east side of the structure. This addition may have occurred in 1922, but actual documentation of this has not yet been verified. The original Boat House sat in the water with a single bridge access. Subsequent improvements constructed an island around the Boat House featuring swimming pools, a pavilion and a series of docks. A second bridge was also added.

The structure is the seventh (some sources indicate sixth) boat house constructed by the Detroit Boat Club Crew. The Detroit Boat Club Crew was founded in 1839 and several of the previous seven structures were destroyed by fire (including this building's predecessor), which is said to be the impetus of the current structure's concrete and steel frame. The structure was designed by Detroit architect Alpheus Chittenden. The structures Venetian Style features Spanish clay tile roofs with Stucco walls and wood divided lite windows. There are several arcaded terraces that offer shading to the interior spaces and dramatic vistas of the Detroit River.

While the Boat House is not listed on the National Register of Historic Places it does exist within a District that is listed. Belle Isle has been a public park for the City of Detroit since 1884. Acclaimed urban park designer Fredrick Law Olmsted provided designs for the park during the 1880's that were partially realized. The island has a number of significant structures from prominent architects of the time. In 1974 Belle Isle was listed on the National Park Services Register of Historic Places (#74000999). The listing defines the resource as a District, qualifying as historic under the criteria for Event (the significant activities that occurred during its history), Architecture and Engineering. The periods of significance are listed as 1900-1924, 1875-1899 and 1850-1874, with 1860 being listed as a significant year.

It is worth noting that the Boat House was not included in the exhaustive list of structures in the application for listing on the historic record. This should not be seen as its exclusion, as the application states, "The real historic value of the park is not so much in the speculative value of the isolated value of the buildings, structures, or assorted objects, but in its collective entirety." As the Boat House was constructed during one of the listed periods of significance, the building's historic value needs to be taken into consideration.

The Secretary of the Interior has four Standards for the Treatment of Historic Properties and they are as follows: preservation, rehabilitation, restoration and reconstruction. Of these strategies, reconstruction does not apply. Preservation is focused on repair and maintaining historic fabric. Rehabilitation is focused on maintaining historic appearance while potentially implementing modern improvements. Restoration would involve removal of non-historic elements to return the structure to its appearance during the period of significance. For the purpose of this assessment Rehabilitation will be the approach proposed. This will need to be vetted through the State Historic Preservation Officer. The rationale for pursing Rehabilitation in lieu of Preservation will be articulated throughout this assessment.

Overall, the condition of the exterior enclosure of the boat house is **POOR**. Its poor condition is largely due to uncontrolled water infiltration which has resulted in widespread deterioration of the stucco finish, underlying mass masonry walls, roof, windows and doors. The building, as constructed lacks fundamental water management features such as flashing. Examples of the severity of deterioration are that one section of the building was dismantled recently, and currently a terrace is not being used due to apparent structural deficiency.

Detroit River – High Water Level 2019

In the time between the commissioning of this study and its execution, the Detroit River has experienced a historic high-water level. Lake St. Clair, which feeds the Detroit River, experienced water levels 32 inches above the average according to U.S. Army Corps of Engineers data published in the Detroit Free Press. Given that many climate models are forecasting a trend of higher water levels over the next 50 years, it would be prudent to take this into consideration in planning the future of this structure. At its high point in the late spring, water had covered almost the entire island surrounding the Boat House and was inside the building. The review for this study was conducted months after the water had receded from its high point, but at that time it was still visually evident that the river water level was above the lower floor level of the Boat House.

It cannot be overstated, the importance of the diligent efforts of the current care takers of the building who set up pumps in the existing pools and were able to draw down the water level in the building to below the lower floor line. If a pump system exists, it is no known and we did not observe one. Finishes that were in the water were removed from the building and fans were used to dry it out. This flooding caused extensive damage. Moving forward it is recommended a permanent pumping solution be implemented to help maintain the integrity of this structure.

Condition of Components

As the different components of the existing building are discussed the terms **"GOOD, FAIR** and **POOR"** will be used as a general descriptor of condition,

In this study **"GOOD"** will be used to describe a component that is functioning with better than half of its anticipated service life remaining. Minimal maintenance may be required either immediately or in the near future to maintain proper function.

The term **"FAIR"** is used to describe components that function and are either past half of their service life or requiring immediate and substantial maintenance to maintain proper function.

Lastly, the term **"POOR"** describes components that may or may not function, are past the end of their anticipated service life and require replacement either in the immediate or near future.

SmithGroup (SG) observed the general condition of the following components:

3.0.1 Component
Facade

System Description
The exterior walls are painted stucco on infilled and/or load bearing brick mass masonry on which interior finishes were applied. Interior finishes (e.g. wood millwork, painted gypsum plaster) were assumed to have been applied over a scratch coat of cement stucco applied to the brick mass masonry wall. The exterior stucco uses the irregularity of the common brick back-up wall to key into instead of lath. Given the deterioration of the exposed masonry we could not determine if the original masonry joints had been raked to aid with keying.

The facade is in **(POOR)** condition overall.

Table 1: Overall Exterior Building Face Areas

Overall Conditions:	Square Footage:	Percentage of Entire Building	Reference
Exposed & Deteriorated Mass Masonry	443 sqft	3%	**[Photo 5]**
Spalled Stucco	1322 sqft	6%	**[Photo 6]**
Debonded Stucco (Exterior Façade)	6741 sqft	32%	**[Photo 7]**
Debonded Stucco (Back-side of Covered Terraces)	1507 sqft	7%	**[Photo 8]**
Damaged Stucco – Surface Scaled Finish	6263 sqft	30%	**[Photo 9]**
Previously Repaired Stucco	360 sqft	2%	**[Photo 10]**
Other Finishes (CMU, Wood, Brick, etc.)	2983 sqft	14%	**[Photo #]**
Stucco in Good Condition	1364 sqft	6%	**[Photo #]**
TOTAL	**20983 sqft**	**100%**	

Findings

- **Stucco Finish:** Approximately 16,276 sqft, or 78% percent of the exterior stucco finish is affected by one of the following conditions:
    a. Exposed & Deteriorated Mass Masonry Walls may comprise only a small portion of the total exterior wall area, but the severity of damage represents a structural concern and fall hazard **[Photo 5**].
    b. Missing Stucco (i.e. stucco that has spalled or was removed) represents approximately 6 percent of the façade. With the stucco removed, the underlying brick mass masonry is subject to deterioration from exposure to the elements, **[Photo 6]**.
    c. Damaged and/or Debonded Stucco affects almost 70 percent of the façade area. Conditions include cracks, scaled stucco and pealed paint. These conditions may not be as unsightly as stucco that has spalled off the building, they allow water to infiltrate the exterior walls effecting the mass masonry, window lintels and eventually interior finishes **[Photos 7-8]** The National Parks Service Department of the Interior Preservation Brief #22 supports the replacement of the stucco citing 40-50% disbondment as an appropriate threshold.
    d. Repaired Stucco exists in one area along the west elevation **[Photo 9].**
- **Brick Mass Masonry Walls**: The exterior walls are comprised of multi-wythe load or non-load bearing brick.
    a. Approximately 1,765 sqft or 9% percent of the brick comprising the mass masonry walls are exposed due to missing/spalled stucco finish **[Photos 5-6].**
    a. Deterioration of the mass masonry due to exposure has resulted in scaling, spalled and displacement of the brick comprising the effected exterior wall **[Photos 10].** These conditions may only affect a small percentage of the exterior walls, but they represent a potential structural concern.
    b. **Window Lintels:** From observations of the window openings, it appears that a steel angle was anchored to the concrete frame as a lintel to carry the load of the brick above the window. Most of the lintels are corroded to the point that pack rust has displaced the brick and spalled the stucco finish. In severe instances, the lintel has bowed which and now represents a structural concern **[Photo 11].**

3.0.2 Component
Exterior Terraces

System Description
The terraces are mostly arcaded and feature tile floors. A couple terraces have no enclosure and utilize an elastomeric coating to waterproof the floor. The tile on the other floors appears to be a quarry tile. In most cases the tile floors are covered with an adhered EPDM black roof membrane. One section has some form of cover board between the EPDM and the tile to eliminate a low spot in the floor that had collected water. The terraces have a variety of guardrails and parapet walls. Most of these conditions do not meet the code required 42" height. The addition of the EPDM membrane suggests that the tile floors were not waterproof. They likely never were. The current repair is temporary and not appropriate (lack of durability) for general foot traffic.

The terraces are in **POOR** condition overall.

Findings
- Deteriorated stucco takes the form of cracked, debonded and spalled stucco **[Photos 12].**
- Tile wear surface where exposed is in fair condition **[Photo 13].**
- Tile wear surface was covered by an adhered EPDM membrane on most terraces **[Photo 14].**
- The concrete ceiling contains areas of scaled and spalled concrete and exposed reinforcing steel **[Photo 15-16].**
- Guard rails have been upgraded on the second level terraces to meet proper Code height, the terraces on the third level have not been upgraded. The third level terraces should be restricted to prevent occupancy.

3.0.3 Component
Exterior Stairs

System Description
There are three exterior stairs:
- The main or south entrance stair **[Photo 17-18]**
- The north entrance stair **[Photo 19]**
- The northeast secondary egress stair **[Photo 20]**

Findings
Main Entrance Stair is original to the building, constructed of mass masonry and concrete and in **POOR** condition. Observed conditions include:
- Mass masonry walls that form the side enclosures of the stairs are deteriorated **[Photo 21].**
- Concrete stair steps are deteriorated **[Photo 22].**
- Stair and balcony guard rail concrete copings are cracked and spalled **[Photo 23].**

North Entrance Stair is relatively new to the building, and at a location that previously had only a balcony is in **POOR** condition overall. Observed conditions include:
- Terrazzo threads are mostly intact but are affected by deterioration in the form of cracks, a scaled surface and minor spalled terrazzo. **[Photo 24**].
- Terrazzo landings are severely cracked and spalled **[Photo 25]**.
- Steel frame and guard rails are in fair condition with only minor surface corrosion **[Photo 26**].

Northwest stair which is assumed to have been constructed with the west addition is in **POOR** condition. Observed conditions include:
- Concrete infilled threads with tile wear surface are severely deteriorated **[Photo 27]**.
- Steel frame and risers are severely corroded **[Photo 28].**

The stair from the second-floor terrace to the third-floor terrace is in **POOR** condition. Its handrail is not properly attached and is unsafe. Access to the stair should be restricted to prevent use.

3.0.4 Component
Chimneys

System Description
Four chimneys exist on the building; Two are clad in stucco, one in brick and one plywood.

The chimneys are in **POOR** condition overall.

Findings
The tallest of the chimneys (west of the tower) is in fair condition with debonded stucco confined to the upper region **[Photo 29].**
The second stucco chimney (south of the tower is in poor condition with scaled stucco throughout its exterior **[Photo 30].**
The brick chimney is in fair condition with deteriorated mortar confined to the upper regions **[Photo 31]**.
The plywood clad chimney was either constructed of wood or was repaired using wood. Either way, this chimney is in poor condition **[Photo 32**].

3.0.5 Component
Windows

System Description
The windows are a variety of different shapes, sizes, styles and functions. Windows are both original and replacement with some openings boarded up and some infilled with bricked and CMU masonry.

- Original windows are painted and stained wood, Sash are single glazed type, double hung, fixed, casement and pivot sash varieties. Windows with muntins are true divided lite type. Aluminum storm windows are installed at some locations, especially the combination single and double hung units that infill the arched openings of the formal dining room space. **[Photo 33-34]**
- Replacement windows are painted wood, aluminum, and vinyl, both single glazed, and insulated, glazed types. Sash are double hung, single hung, fixed, casement and sliding varieties. Windows with muntins are simulated divided lites. **[Photo 35-36]**
- Infill windows are painted wood, composite, single glazed and glass block type. **[Photo 37-38]**

Original windows are in **(FAIR to POOR)** condition overall.
Replacement Windows are in (**GOOD to POOR)** condition overall.
Infill Windows are in (**FAIR)** condition overall.

Findings
Original Windows General

- Windows are heavily painted, with "alligatored" finish surfaces and are experiencing significant peeling and paint loss. **[Photo39]**
- Glazing putty is cracked, loose, and missing.
- Exposed wood on sash and frames is significantly weathered and checking, Lower portions of sash and sills decaying. **[Photo 39 – 40]**
- Hardware is broken, missing or non-functional, and in some cases, has been supplemented to provide additional security.

- Sash for the most part is inoperable, due to advanced weathering, and extensive paint coatings. **[Photo 41]**
- Windows lack weather-stripping or are deficiently weather-stripped **[Photo 39-41]**
- Advanced deterioration of surrounding stucco and brick masonry is contributing to moisture penetration and advancing window deterioration at many locations. **[Photo 42]**

.Replacement Windows General

- Most if not all replacement windows are installed within original wood window frames which are weathered and lack long term integrity. Original frames concealed behind aluminum trim, while of unknown integrity, are likely similarly worn and deteriorating from previous years of exposure. **[Photo 43]**
- Older replacement windows are single glazed and thermally inefficient. **[Photo 44]**
- Older replacement windows with insulated glass units have exceeded life expectancies.
- Exposed wood sash and frames are significantly weathered and deteriorating. Deterioration in general is most advanced at sills and lower portions of sash and frames
- Hardware is broken, missing or non-functional. and many, once operable
- Aluminum sliding replacement windows lack thermally broken frames and are inferior in thermal quality
- Newer vinyl replacement windows while conditionally best in appearance, are installed within existing wood frames of unknown condition and in masonry opening which are likely improperly flashed. **[Photo 35]**

Infill Windows General

- Aluminum cladding is corroding due to contact with decay retardant treated wood substrate.
- Single glazed infill window units lack thermal thermally efficiency.
- Units are poorly secured in part due to condition of surrounding material not properly flashed to resist water infiltration.
- CMU and Glass bock infill construction, while functional from a security and durability perspective, are aesthetically insensitive to the original structure.

3.0.6 Component

Roof

System Description

The Boat House has two main types of roofs, steep slope and low slope/flat. The roofs are wood framed with wood decks. The steep slope roofs feature Spanish tile shingles and are either hip or mansard configurations. The mansard roofs have a low slope/flat roof just above the headwall of the Spanish tile. The low slope/flat roofs have several different types of built-up and/or modified bitumen roofing. A small shed roof on the east side of the building has asphalt shingles. One window bay, where the arcade was removed on the west end of the building, has an EPDM membrane roof. None of the roofs appear to be insulated.

The roof surfaces are in **FAIR to GOOD** condition while the entire roof assembly is in **POOR** condition overall.

Findings

Steep slope – Spanish Tile

- Spanish tiles appear to be mostly intact. The tile is assumed to be original, but this is not documented. Localized repair efforts have damaged tile with roofing cement or other mastics. Localized edge deterioration was also observed. **[Photo 45-46]**

- The flashing appears to be original copper. It has had numerous repairs with mastic overcoats. The rake wall flashings tend to be most problematic. In about half the existing condition the rake wall flashing is over coated with an unknown roofing material. The overall condition of the flashing is in **POOR** condition. **[Photo 47-48]**
- The roof underlayment was not exposed to view, so its condition is not known. If the roof is original, the underlayment would be past its service life.

Steep slope – Asphalt Shingle

- The age of the asphalt shingle is not known. Their condition appears to be **FAIR**. **[Photo 49]**

Low Slope/Flat – Built up/Modified Bitumen

- At the highest level there are three low slope/flat roofs. Above the central rectangular form of the Boat House is a roof surrounded by a parapet and stone balustrade it is flanked to the east and west with roofs forming the mansard roof to either side. **[Photo 50]**
    - The center roof has numerous patches. It shows evidence of alligatoring, cracking and scouring. It is topped with a rough slag aggregate. In some areas the bitumen has worn off to expose the fiberglass reinforcing fabric. **[Photos 51-54]**
    - The roof to the east is similar to the center roof, with similar deficiencies. **[Photo 55-56]**
    - The roof to the west does not have an aggregate topping, it has a thin aluminumized topcoat. It is experiencing similar condition issues. **[Photo57-58]**
    - All of these flat roofs are not properly flashed in the adjacent walls. There are two common conditions: one the roofing is carried up and over the parapet and is feathered out to terminate or there is an exposed termination bar on the side of the parapet wall. Neither is an appropriate long-term solution. In one location of the roof running up and over the parapet, a hollow exists behind the roofing at the base of the wall and a section of the roofing has been torn off. **[Photo 58-61]**

Low Slope/Flat – EPDM

- At the third floor terrace the floor and parapets have been covered over with EPDM rubber roofing. The condition is generally **FAIR**, although the installation is **POOR** with improper detailing and terminations for the installation to be able to achieve its full-service life. The third-floor terrace has a non-Code compliant parapet, that is unsafe as a guardrail. Occupancy should be restricted. **[Photo 62-64]**
- The guard surrounding the stair from the third-floor terrace roof is unsafe and access to the stair should be restricted. **[Photo 65]**
- The second-floor terrace at the demolished arcade, along the west side of the Ballroom, functions as a roof. The roof membrane is EPDM. The condition is generally **FAIR**, although the installation is **POOR** with improper detailing and terminations for the installation to be able to achieve its full-service life. A hole was observed in the membrane and a large area exhibited ponding water. **[Photo 66-68]**
- End section at the terrace adjacent to the demolished arcade is braced off the supplemental steel structure with cables. This is not safe, and occupancy should be restricted from this area. **[Photo 69-70]**

Underside of exposed wood roof deck and roof edge.

- The underside of exposed wood roof deck is generally in **FAIR** to **POOR** condition. The paint finish has largely failed and splitting, and rot is common. This suggests that there may be issues with the water tightness of the roofing above. Several repairs were observed. **[Photo 71-72]**
- The roof brackets are in **POOR** condition. **[Photo 72-73]**

- The gutters are in **POOR** condition. **[Photo 72-73]**

3.0.7 Component
Entrance Canopies

System Description
There are three canopies, two at the entry and one at the northeast terrace. They have a tube metal frame with a vinyl coated canvas cover.

The entry canopies are in **FAIR** condition overall. The northeast terrace Canopy id in **POOR** condition.

Findings
Canopy Types
- The entry canopies have issues that require maintenance.
- The northeast terrace canopy is mostly gone, with some framing members remaining.

3.0.8 Component
Exterior Doors

System Description
Exterior Doors are a variety of types and functions. Doors are both original, replacement and overhead types, some added to protect previously exposed portions of the building or added to secure portions of the building exposed due to vandalism or advanced deterioration of earlier materials. Some openings are simply boarded up to achieve similar results or secure and protect doors beyond.
- Original Exterior Doors are stile and rail wood doors with integral and borrowed glass lites. Doors and associated borrowed lite frames and sash are painted and single glazed with true divided lites .
- Replacement doors are solid core wood doors with or without glass lites installed in original or replacement wood frames, aluminum and glass anodized storefront type single glazed in aluminum frame with borrowed lites, Primed or galvanized steel doors in steel frames, and simulated 6 panel residential grade steel and wood doors in wood frame.
- Overhead doors are coiling steel and insulate steel panel (garage) doors.

The doors are in **(POOR to FAIR)** condition overall.

Findings
Original Doors General
- Doors are heavily painted, exhibit "alligatored" surfaces and are exhibiting peeling and paint loss. **[Photo 74-76]**
- Door leaves exhibit significant signs of wear from use and abuse including dents, abrasions, and holes and damage from past and present hardware attachments, **[Photo 77]**
- Glazing is mostly intact but not thermally efficient, **[Photo 74-77]**
- Doors lack weather-stripping and threshold seals. **[Photo 74-77]**

Replacement Doors General
- Steel Doors and frames are mostly unpainted except for factory prime and galvanized finishes. And are fit in to both existing masonry and infill plywood and wood framed walls.

3.0.9 Component
Pool Deck

System Description
The pool deck was initially not going to be included in the architectural portion of the report. During our observations it was determined that this section needed to be included. The pool deck is a cast in place concrete deck supported from below by concrete beams that are supported by wood piles driven into the riverbed. This is similar construction to the first-floor construction of the Boathouse. This system lacks water proofing or a serviceable wear layer.

The pool deck is in **POOR** condition overall. It is unsafe and should be restricted to prevent occupancy.

Findings
Pool Deck

- A hole in the deck observed in 2016 has dramatically enlarged by 2019. **[Photo 78-79]**
- Deterioration of the underside of the deck was observed at the access hatches. **[Photo 80]**
- Spalling concrete was lifted up to reveal another hole in the pool deck. **[Photo 81-82]**

3.0.10 Conclusion

Façade
The overall condition of the stucco façade is **POOR**. Large areas of stucco have either fallen or are debonded and water infiltration/weather exposure has damaged the masonry back-up wall. The stucco should be stripped off, masonry back-up wall repaired and a new drainable stucco system with proper flashings be installed.

The cast stone balustrade, copings and sills are in **POOR** condition. They have been overcoated with stucco and roofing materials and are severely deteriorated. These elements should be replicated and replaced with limestone.

Exterior Terraces
The overall condition of the exterior terraces is **POOR**. Most of the terraces have been over coated with EPDM rubber roofing which is not an appropriate lasting solution for their function. The northeast terrace is in a state of collapse and access to this area has been restricted to prevent occupancy. The terrace by the Ballroom has a section which has been determined to be unsafe and should be restricted from occupancy.

The terraces should have all flooring removed and a new waterproofing layer installed below new exterior grade Quarry tile to match the existing. The floor deck of all terraces needs to be repaired where reinforcing steel has been exposed, support steel is corroded and at cracks. New Code compliant guardrails are to be installed.

Exterior Stairs
The exterior stairs are generally in **POOR** condition. The main front stair needs to be repaired similar to the exterior terraces. The remaining stairs should be removed and replaced with code compliant stairs that replicate the aesthetics of the original historic stairs.

Chimneys
The chimneys are generally in **POOR** condition. The repair of the chimneys will be similar to the repair of the façade. Inactive chimneys are to be capped.

Windows
The condition of the windows ranges from **GOOD** to **POOR** with the older historic windows generally in **POOR** condition. A number of replacement windows have been installed that are not necessarily sensitive to the building's historic character. Many lintels need repair and the windows in general lack flashing.

The lintels should be repaired, and new flashing installed. The windows should all be replaced with historically accurate aluminum clad wood windows with insulated glass units.

Roofs
The overall condition of the roofs is **POOR**. The roof coverings might be in FAIR condition but the lack of proper flashings and failing underlayment have led to the deterioration of the roof deck in many locations.

The roofing should be removed and roof decks repaired. New Spanish tile roofing with modern underlayment and flashing should be installed on the sloped roofs. Sloped roofs should have new gutters and downspouts. At the low-slope roofs new drainage should be installed with an insulated membrane roof system (modified bitumen, EPDM or thermoplastic).

Entrance Canopies
The overall condition of the entrance canopies is **FAIR**. The main entry canopy needs maintenance. The canopy at the northeast terrace needs to be replaced.

Exterior Doors
The overall condition of the exterior doors is **POOR**. The exterior doors need to be removed and replaced with historically accurate doors. Where appropriate hollow metal doors can be used. Otherwise aluminum clad wood doors that replicate the historic character of the originals should be used. Repair lintels and provide new flashing at all doors.

Pool Deck
The pool deck is in **POOR** condition. Repair of the pool deck is not feasible. In its current state it is a safety hazard. The pool deck should be removed and filled in.

Historic Considerations - Exterior
The boat house has not been designated a historic structure, but it does exist within a historic district. Accordingly, repairs should be performed in accordance with the historic district guidelines. However, in our opinion due to the severity of deterioration of the façade, (exterior stucco finish, terraces, roofs and windows) it is reasonable to assume that repairs would take a rehabilitation approach rather than one where components are restored.

3.1 ARCHITECTURAL ENCLOSURE PHOTOS

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5 Damaged/Deteriorated Brick

Photo 6 Spalled Stucco

Photo 7 Debonded Stucco (Back-side of covered terraces)

Photo 8 Damaged Stucco – Surface Scaled Finish

Photo 9 Previously Repaired Stucco

Photo 10 Deteriorated Masonry

Photo 11 Damaged Lintels

Photo 12 Debonded Stucco (Exterior Façade)

Photo 13 Exposed Terrace Tile

Photo 14 EPDM covered tile terraces

Photo 15 Damaged Stucco – Surface Scaled Finish

Photo 16 Damaged Stucco – Surface Scaled Finish

Photo 17 South Staircase

Photo 18 South Staircase

Photo 19 North Staircase

Photo 20 Northeast Secondary Staircase

Photo 21 South Staircase Deteriorated Masonry

Photo 22 South Staircase Deteriorated Concrete Steps

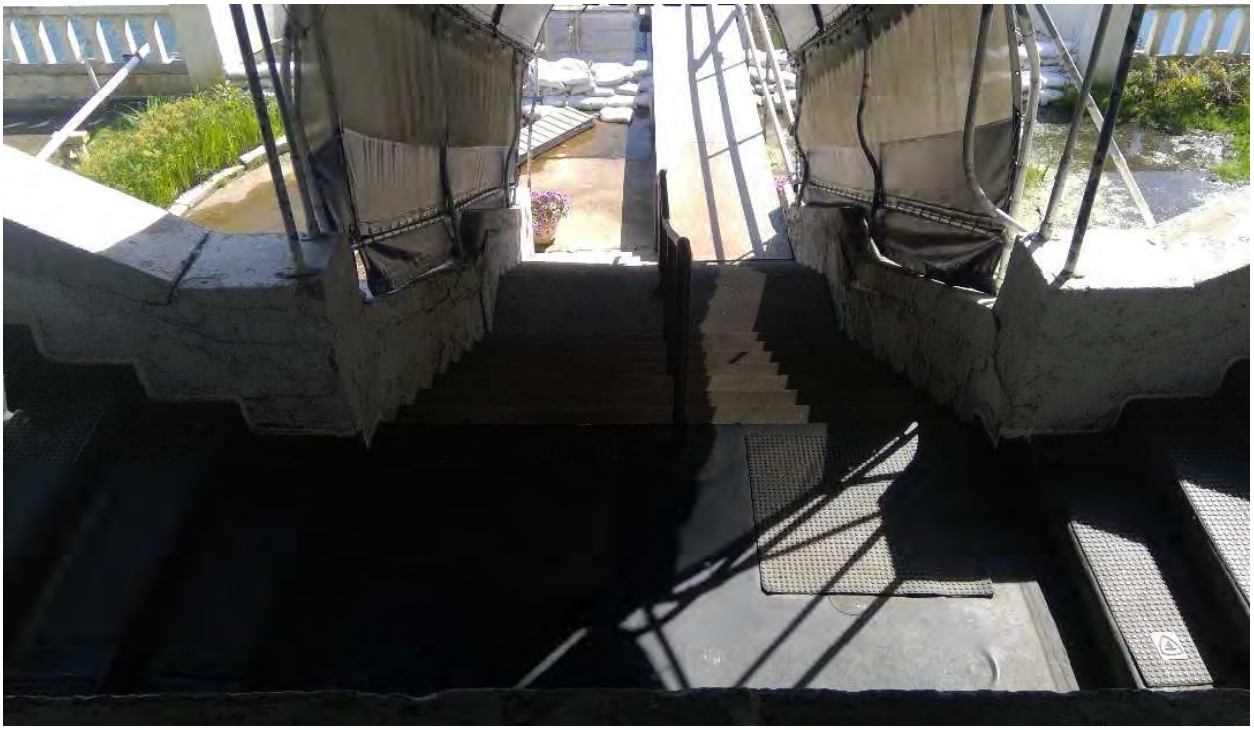


Photo 23 South Staircase Deteriorating Copings

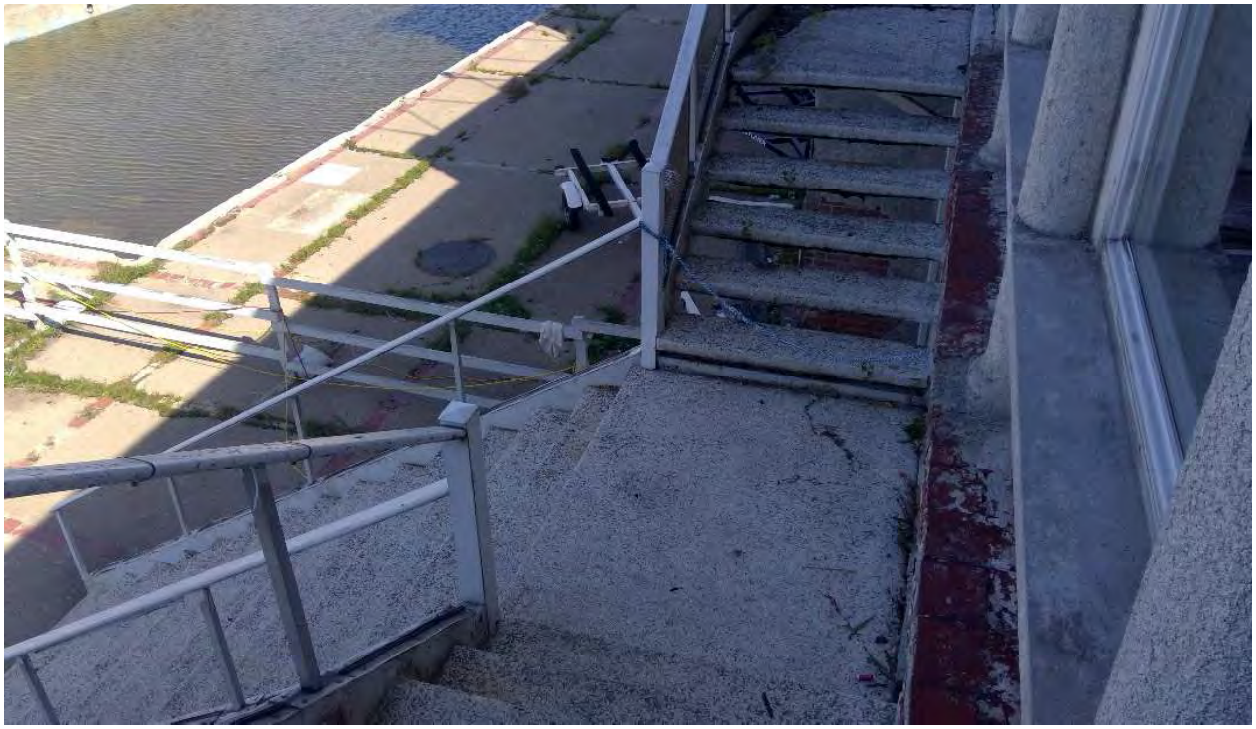


Photo 24 North Staircase Deteriorated Treads

Photo 25 North Staircase Deteriorated Landing

Photo 26 North Staircase Corrosion

Photo 27 Northeast Staircase Deteriorated Treads

Photo 28 Northeast Staircase Corroded Steel

Photo 29 Debonding Stucco on Chimney

Photo 30 Scaled Stucco on Chimney

Photo 31 Brick Chimney

Photo 32 Plywood Clad Chimney

Photo 33 Historic Ballroom Windows

Photo 34 Historic Dining Room Windows

Photo 35 Modern Replacement Window

Photo 36 Modern Replacement Windows

Photo 37 Various Infill Strategies

Photo 38 Glass Block Infill

Photo 39 Deteriorated Paint and Wood

Photo 40 Splitting Wood Sill

Photo 41 Weathered Condition Impeding Operation

Photo 42 Water Damage

Photo 43 Modern Window in Original Frame

Photo 44 Single Pane Windows

Photo 45 Damaged Spanish Tiles

Photo 46 Roof Mastic Repair

Photo 47 Rake Wall Flashing Buried Under Mastic

Photo 48 Mastic Over Valley Flashing

Photo 49 Shingle Roof

Photo 50 Upper Low Slope Roofs

Photo 51 Multiple Roof Patches

Photo 52 Scoured Roof Surface

Photo 53 Exposed Reinforcing Fabric

Photo 54 Alligatoring and Disbonded Roofing

Photo 55 Roof Penetrations

Photo 56 Damaged Flashing

Photo 57 Aluminized Topcoat

Photo 58 Poorly Flashed Parapet

Photo 59 Hole in Flashing

Photo 60 Improperly Installed Flashing

Photo 61 Improper Flashing

Photo 62 Third Floor Terrace with EPDM

Photo 63 Loose Membrane

Photo 64 Loose Membrane on Low parapet

Photo 65 Damaged Railing, unattached at Bottom

Photo 66 Ponding Water

Photo 67 Detailing is More Akin to a Temporary Roof

Photo 68 Hole in Membrane

Photo 69 Shoring at End of Demolition

Photo 70 Masonry Column Loosely Bound to Shoring

Photo 71 Roof Deck Repair

Photo 72 Roof Deck Repair with Staining

Photo 73 Typical Holes in Gutter

Photo 74 Wood Doors at Ballroom (North)

Photo 75 Wood Doors at Ballroom (South)

Photo 76 Boarded Up Doors at Entry Hall

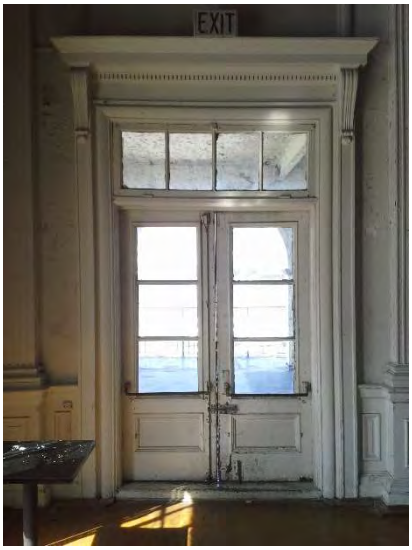


Photo 77 Door from Ballroom

Photo 78 Hole in Pool Deck Below Northeast Terrace 2016

Photo 79 Hole in Pool Deck Below Northeast Terrace 2019

Photo 80 Deterioration Below Hatch

Photo 81 Hole Below Spalled Concrete

Photo 82 Badly Deteriorated Reinforcing Steel

4.0 ARCHITECTURAL INTERIOR SPACE ASSESSMENT

This following is an assessment of the existing interior spaces within the boathouse. The matrix attempts to classify each space so that order of magnitude pricing can be developed for the anticipated level of remediation required.

INTERIOR ASSESSMENT APPROACH
Interior areas are defined by the type of treatment that is recommended. The recommendations are based on assessments of Historic Character, Integrity, and the Condition of spaces.

PRESERVATION: Spaces that exhibit a high level of intact and well-preserved significant historic architectural character or examples of design from the site's period of significance, and/or have a high level of association with important aspects of Detroit Rowing activities. These areas are considered critical to communicating the story of Detroit Rowing and the Boathouse and should be preserved.

RESTORATION: Spaces that exhibit some surviving significant historic architectural character or examples of design from the site's period of significance, and/or have a high level of association with important aspects of the Detroit Rowing activities but have been altered in a manner that diminishes the historic character. These spaces are considered important to communicating the story of Detroit Rowing and the Boathouse and should be restored to their appearance during the site's period of significance.

REHABILITATION: Secondary spaces that possess limited historic architectural character or association with important aspects of Detroit Rowing and Boathouse activities. This zone may also include spaces that have been irreversibly altered to remove historic character-defining features. These spaces offer flexibility in reuse and can be readily adapted to new uses with minimal impact on significant architectural character or features. These spaces may be altered to suit current support needs while retaining their secondary historic character.

SERVICE: Secondary spaces that were primarily utilitarian in function and appearance. These spaces offer the most flexibility in permitting alteration to accommodate modern needs.

HISTORIC CHARACTER
Historic Character is a measure of the quality and significance of spaces. It considers the level of unique design, craftsmanship, or spatial character in spaces, as well as their association with significant Detroit Rowing and the Boathouse.

HIGH: Spaces that exhibit a high level of architectural design, spatial character, decoration, materials, features or craftsmanship, or are associated with significant Boathouse activities.

MEDIUM: Spaces that contain some examples of architectural design, spatial character, decoration, materials, features or craftsmanship, or are associated with significant Ford Family activities, but to a lesser extent than spaces with High historic character.

LOW: Spaces that possess little or no significant examples of architectural design, spatial character, decoration, materials, features or craftsmanship, or are not associated with significant Detroit Rowing and Boathouse activities

HISTORIC INTEGRITY
Historic integrity is a measure of the amount and condition of historic fabric from the period of significance that remains in spaces. Integrity does not consider the significance of spaces or quality/uniqueness of architectural character.

HIGH: Spaces where historic fabric from the period of significance is present, intact and in good repair.

MEDIUM: Spaces historic fabric from the period of significance are present, but have been altered, or have deteriorated, in a manner that is readily reversible.

LOW: Spaces where historic fabric from the period of significance has been altered, is deteriorated, or has been removed in a manner that is not readily reversible.

CONDITION
Condition measures the state of repair of a space, regardless of its level of historic significance or character, or level of alteration.

GOOD: Spaces that are well maintained, with components that are sound and in satisfactory visual condition. Only minimal repairs such as cleaning and painting are necessary.

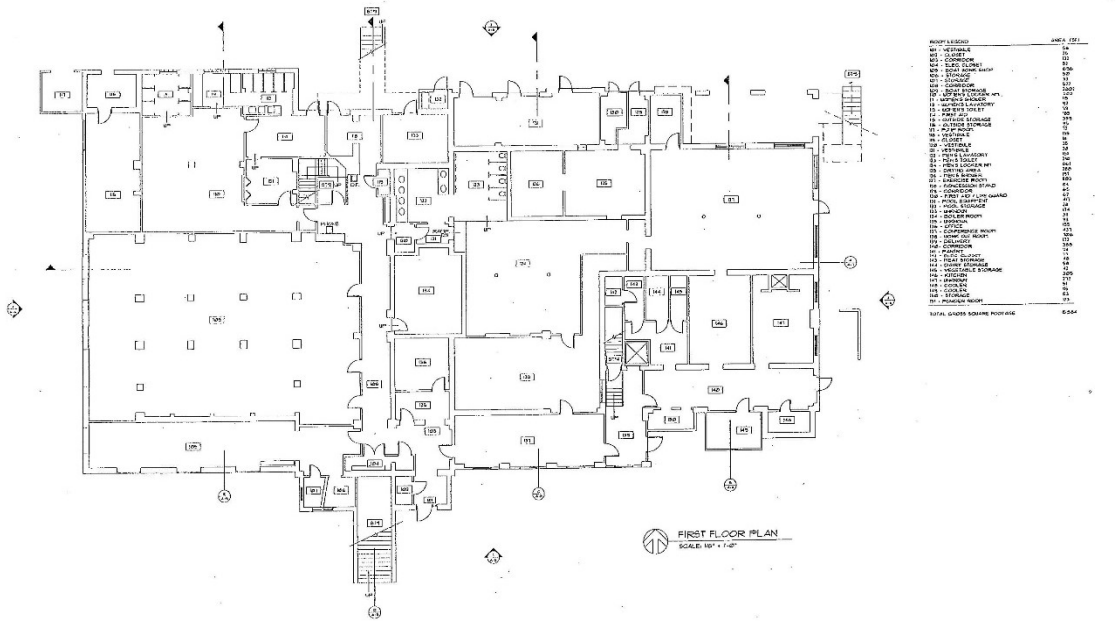
FAIR: Spaces that are largely intact, but where components, surfaces or finishes are damaged, deteriorated, insensitively repaired or replaced, or partially missing. Some repairs such as selective replacement, patching, reinforcement, or other selective treatments are necessary.

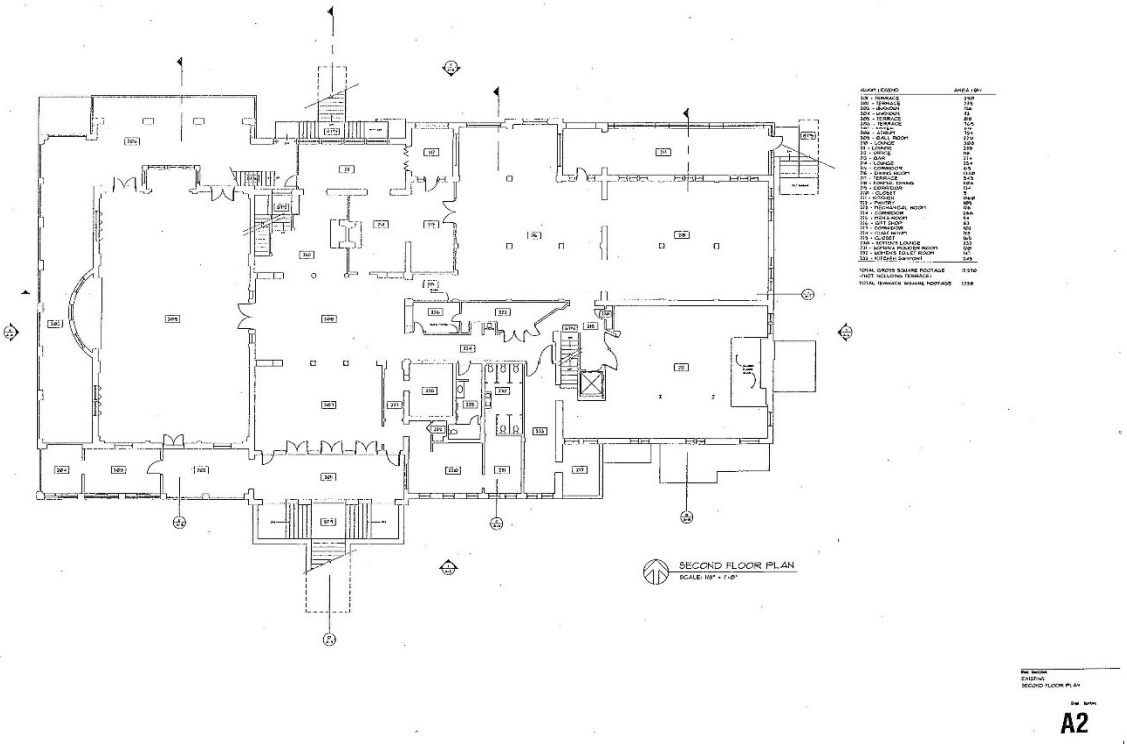
POOR: Spaces where there is significant damage, deterioration or losses of material. Spaces in poor condition may exhibit structural deterioration or damage. These spaces require extensive repairs, replacement, reinforcement or other remedial work.

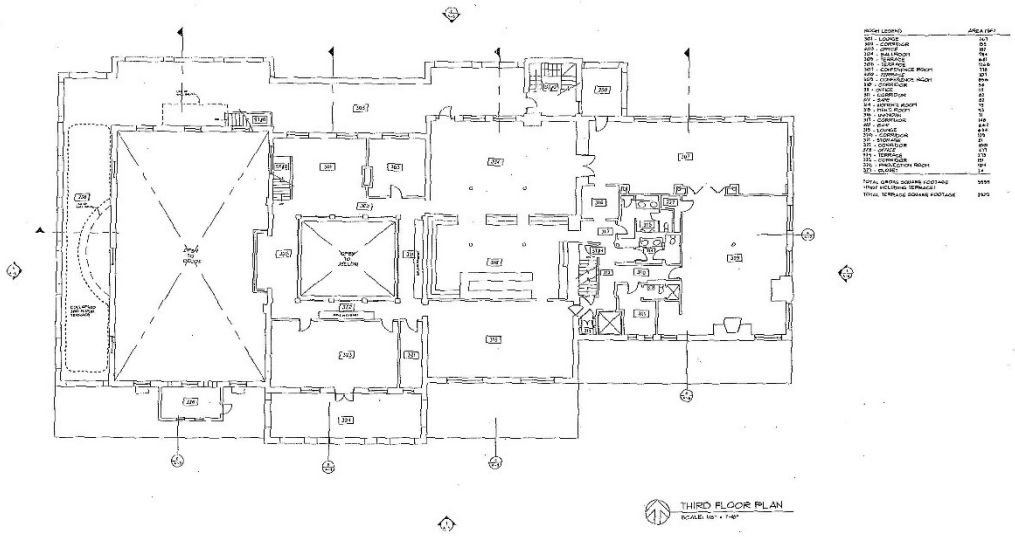
			HISTORICAL ASSESSMENT				HISTORICAL CHARACTER			HISTORICAL INTEGRITY			CONDITION		
			PRESERVATON	RESTORATION	REHABILITATION	SERVICE	HIGH	MEDIUM	LOW	HIGH	MEDIUM	LOW	GOOD	FAIR	POOR
FIRST FLOOR		NSF													
101	Vestibule	56		●				●			●			●	
102	Closet	25				●			●			●			●
103	Corridor	132				●			●			●			●
104	Electrical Closet	52				●			●			●			●
105	Boat Work Shop	696				●			●			●			●
106	Storage	50				●			●			●			●
107	Storage	33				●			●			●			●
108	Corridor	522		●				●				●			●
109	Boat Storage	2,802				●			●			●			●
110	Women's Locker Rm.	905				●			●			●			●
111	Women's Shower	115				●			●			●			●
112	Women's Lavatory	92				●			●			●			●
113	Women's Toilet	119				●			●			●			●
114	First Aid	185				●			●			●			●
115	Outside Storage	359				●			●			●			●
116	Outside Storage	95				●			●			●			●
117	Pump Room	72				●			●			●			●
118	Vestibule	135				●			●			●			●
119	Closet	18				●			●			●			●
120	Vestibule	35				●			●			●			●
121	Vestibule	38				●			●			●			●
122	Men's Lavatory	161				●			●			●			●
123	Men's Toilet	210				●			●			●			●
124	Men's Locker Rm	861				●			●			●			●
125	Drying Area	288				●			●			●			●
126	Men's Shower	197				●			●			●			●
127	Exercise Room	1,103				●			●			●			●
128	Concession Stand	84				●			●			●			●
129	Corridor	65				●			●			●			●
130	First Aid/Life Guard	62				●			●			●			●
131	Pool Equipment	417				●			●			●			●
132	Pool Storage	28				●			●			●			●
133	Storage	174				●			●			●			●
134	Boiler/Mechanical Rm	311				●			●			●			●
135	Vestibule	93				●			●			●			●
136	Office	155				●			●			●			●
137	Conference Room	437				●			●			●			●
138	Workout Room	706				●			●			●			●
139	Delivery	172				●			●			●			●
140	Cooridor	388				●			●			●			●
141	Pantry	114				●			●			●			●
142	Electrical Closet	27				●			●			●			●
143	Meat Storage	48				●			●			●			●
144	Dairy Storage	58				●			●			●			●
145	Vegatable Storage	42				●			●			●			●
146	Kitchen	305				●			●			●			●
147	Unknown	273				●			●			●			●
148	Cooler	51				●			●			●			●
149	Cooler	115				●			●			●			●
150	Storage	53				●			●			●			●
	Net SF	13,534													
	First Floor GSF	15,584													

			HISTORICAL ASSESSMENT				HISTORICAL CHARACTER			HISTORICAL INTEGRITY			CONDITION		
			PRESERVATON	RESTORATION	REHABILITATION	SERVICE	HIGH	MEDIUM	LOW	HIGH	MEDIUM	LOW	GOOD	FAIR	POOR
SECOND FLOOR															
207	Foyer	615	●				●			●			●		
208	Atrium	754	●				●			●			●		
209	Ball Room	2,291	●				●			●					●
210	Lounge	308	●				●			●			●		
211	Lounge	285			●				●			●			●
212	Office	118			●				●			●			●
213	Bar	224			●				●		●			●	
214	Lounge	254		●				●			●			●	
215	Corridor	69		●				●			●			●	
216	Dining Room	1,330	●				●			●					●
218	Formal Dining	1,106	●				●			●				●	
219	Corridor	134		●				●			●			●	
220	Closet	9				●			●			●		●	
221	Kitchen	1,260				●			●			●			●
222	Pantry	109				●			●			●		●	
223	Mechanical Room	126				●			●			●		●	
224	Corridor	266	●				●			●			●		
225	Men's Toilet	114			●				●			●		●	
226	Gift Shop	83			●			●				●		●	
227	Corridor	102	●				●			●			●		
228	Coat Room	128		●				●			●			●	
229	Closet	165				●			●			●			●
230	Women's Lounge	233			●				●			●		●	
231	Women's Powder Rm.	120			●				●			●		●	
232	Women's Toilet.	147			●				●			●		●	
233	Kitchen Support	245				●			●			●		●	
	Total NSF	10,595													
SECOND FLOOR OUTDOOR SPACES															
201	Terrace	390		●				●				●			●
202	Terrace	239		●				●				●			●
203	Unknown	196		●				●				●			●
204	Unknown	113		●				●				●			●
205	Terrace	818		●				●				●			●
206	Terrace	769		●				●				●			●
217	Terrace	549													
	Total Outdoor NSF	3,074													
	TOTAL GSF	14,728													

EXISTING DRAWINGS







A3

5.0 MECHANICAL SYSTEMS ASSESSMENT

Overall the condition of the Belle Isle Boat Club's mechanical system is **Poor**.

SmithGroup observed the general condition of the following components:

5.0.1 Component

Air distribution

System Description

The existing air distribution system, were installed, is either inoperable or in need of service.
The first floor has no air distribution or ventilation. There are unit heaters are installed in maintenance areas and appear to be in good working condition.
A portion of the second floor has a ducted air distribution from an existing AHU. This unit is located in a closet on the second floor. It serves the dining areas and other various rooms on the second floor. This unit does not have ventilation air and is not in operation.
The ball room on the second floor has two exhaust fans in working condition that are used for ventilation. However, due to the noise of the fans they are not used when the room is occupied. Recommend replacing the fans.
There are 3 sets of dual fan AHUs located in the attic space. These units serve various rooms on the third floor. These units do not have ventilation air and are not in operation.
It is recommended to remove all existing Air Handling systems and replace with new central Air Handling Units for all spaces. The new units would be variable volume, chilled water cooling and hot water heating. Zoning and quantity of units to be determined. These units would bring ventilation air into each space in accordance with code/occupancy requirements.
In addition, a Building Management System would be provided to control the space.
The men's and women's toilet rooms on the second floor of the facility are connected to a window mounted exhaust fan that is currently not in operation. Recommend the exhaust fan be replaced and all toilet rooms and locker rooms are to be exhausted in accordance with current code.
The existing kitchen is currently not in operation. This space does not have an operating kitchen hood exhaust or air distribution. Recommend a kitchen hood and makeup air system be installed based on the kitchen equipment in use.

Findings

- Air Handling Unit serving second floor [Photo 1].
- Air Handling Units in attic space [Photos 2,3].
- Exhaust Fans in Ballroom [Photo 4]

5.0.2 Component

Heating Hot Water

System Description

There is an existing gas fired steam boiler locating in the first-floor mechanical room. This unit is approximately 20 years old and various repairs have been made over recent years. This boiler is nearing its life expectancy and replacing the unit is recommended.
The boiler feeds finned tube around the perimeter of the building as well as any unit heaters and the AHU heating coils.
It is recommended to replace the boiler with a hot water boiler system. Complete with pumps and new perimeter finned tube.

Findings

- Gas fired steam boiler [Photo 5].

5.0.3 Component

Chilled Water

System Description

There is currently no chilled water entering the building. It is recommended to have an air-cooled chiller and associated pumps installed to provide chilled water to air handling units for cooling needs.

5.0.4 Component

Miscellaneous

Baseboard/Finned Tube Radiation

System Description

Finned tube radiators are located throughout the facility on the second and third floors. These appear to be in working condition. Units have been maintained and some thermostats have been replaced. It is recommended to replace the perimeter heat and size for perimeter heat loss.

Findings

- Perimeter heat in ball room [Photos 6]

5.0.5 Component

Plumbing

System Description

Toilet rooms throughout the building appear to be in good working condition.
Some horizontal runs of sanitary lines have been replaced with PVC. The original/existing piping that has not been replaced appears in poor condition.
Kitchen plumbing in poor, non-working condition.
Recommend replacing plumbing and fixtures where required for ADA compliance.
There is a domestic water main entering the building on the first floor. Valves have been replaced recently. It is recommended to replace all associated piping.

Findings

- Water main into the building [Photos 7,8]

5.0.6 Component

Fire Protection

System Description

The building has no fire protection. Recommend supplying Fire Protection to the entire building per NFPA 13 and NFPA codes. Hazard determined by occupancy and code requirements.

5.0.7 Conclusion

The mechanical system in the entire building is in poor condition and should be replaced to ensure a comfortable environment and code compliance.

5.0. Recommendations

The mechanical system in the entire building is in poor condition and should be replaced to ensure a comfortable environment and code compliance.

System Equipment required:

Air cooled chiller

- 75-ton air cooled chiller
- Two Chilled water pumps at 90 hp each

Hot water boilers

- Two at 975 MBH each

Air handling units

- 1@20,000 cfm
- 1@13,000 cfm
- 1@7,000 cfm

Chilled water cooling
Heating hot water heating
Duct distribution, VAV boxes with reheat coil

Fire protection for entire facility

Exhaust fans

- 2 @ 1000 cfm
- 1 @ 2000 cfm

5.1 MECHANICAL SYSTEMS PHOTOS

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

6.0 ELECTRICAL SYSTEMS ASSESSMENT

Overall the condition of the Belle Isle Boat Club electrical system is **Poor**.

SmithGroup observed the general condition of the following components:

6.0.1 Component

Service Equipment

System Description

Previous to a fire in the transformer vault, the existing service was rated 120/240-volt, three phase, four wire; 800 amps at 240-volt, three phase, three wire for large equipment loads and 1200 amps, 120/240-volt single phase, three wire for lighting, receptacles, etc.

Subsequent to the fire, two "temporary" overhead service lines were brought to the building, via a pole-mounted transformer. One service is rated 120/240 single phase (for lights and receptacles); the other 240-volt three-phase (mainly for the elevator). Both services are rated for approximately 200 Amps, which is probably well below what is needed for a building as a whole, but sufficient for its current reduced use.

Findings

- Incoming overhead service and outdoor meters **[Photos 1, 2].**
- Sections of abandoned service equipment **[Photos 3, 4].**

6.0.2 Component

Power Distribution Equipment and Wiring

System Description

The existing main switchboard lineup consists of five separate sections, each with its own voltage and amperage rating as follows:

- Section A: 240-volt, 3-phase, 600 Amp
- Section B: 240-volt, 3-phase, 1,000 Amp
- Section C: 120/240-volt, single-phase, 1,200 Amp
- Section D: 240-volt, single-phase, 800 Amp
- Section E: 240-volt, single-phase, 800 Amp

Only Section E is in operation to serve the lights and receptacle, but in a location that is not Code compliant; the others have been abandoned in place. However, all the main switchboard sections are extremely old, in great disrepair and not fit for continued use. All other panelboards in the building are also in poor condition and need replacement. Most have been de-energized, although some are operational such as on the third floor near the Presidential Room.

Most receptacles, except those in renovated spaces are ungrounded, which could pose a risk to personnel safety, and need of replacement. Similarly, most light switches need replacement.

Findings

- Distribution Panelboards **[Photos 5, 6].**
- Branch Circuit Panelboards **[Photos 7, 8].**

6.0.3 Component
Lighting

System Description
There are four suspended fixtures and several wall sconces on the first floor which are original fixtures dating back to when the Boat Club was first opened. These should be restored and refurbished to their original condition.

Most lighting fixtures are incandescent or fluorescent, in poor condition and in need of replacement to energy-efficient LED fixtures. However, the fixtures and switches in the second-floor conference room could be re-used.

Findings
- Historic/Original hanging light fixture **[Photo 9].**
- Historic/Original wall sconce light fixture **[Photo 10].**

6.0.4 Component
Emergency Lighting

System Description
Emergency lighting is provided via wall-mounted battery-pack units in a few areas of the building; some are operational, others are not. Regardless, the emergency lighting is inadequate for the spaces that are in use and it does not meet current code requirements.

Findings
- Wall-mounted emergency lighting battery pack **[Photo 11].**

6.0.5 Component
Fire Alarm

System Description
There is no fire alarm system in the building, and it appears there never was one.

Findings
- None.

6.0.6 Component
Telephone/Telecommunications

System Description
There is no incoming telephone service to the building.

Findings
- None.

6.0.7 Conclusion
The electrical system in the entire building is in poor condition and should be replaced to ensure a reliable and safe installation when the building becomes fully occupied.

6.0.8 Recommended Electrical Improvements

General

- Remove and trash all existing switchboards and panelboards throughout.
- Remove and trash all existing lighting fixtures, except the historic fixtures described above.
- Remove all raceways, wiring and other ancillary electrical work.

Service and Distribution

- Provide a new 2,000 Amp, 208/120 volt, 3-phase, 4-wire switchboard. This would be contingent on DTE replacing the planned 300 KVA 240/120-volt transformer with a new 500 KVA 208/120-volt transformer.
- Provide new feeders and power panels in the Kitchen for food service equipment.
- Provide new feeders and lighting/receptacle panelboards throughout the building. These panels could be located where existing panels are currently located to facilitate running the new feeders, but other design factors and security issues may dictate housing these panels in electrical closets.
- Provide new wiring devices, disconnect switches, etc. throughout.

Lighting

- Provide new LED light fixtures throughout.
- Provide new occupancy sensors for control of offices, conference rooms and similar spaces.
- Provide new lighting control systems for public and entertainment spaces.

Emergency Lighting

- Provide a 10 KVA central battery system for life safety lighting and exit signs throughout.

Fire Alarm System

- Provide a new digital fire alarm system consisting of pull stations, speakers, strobes, smoke detectors, etc. as required by local and national Fire Codes.

Telecommunications

- Provide a new incoming telephone service and subsequent telecom distribution throughout the Boat Club.
- Provide hardwire and wireless connectivity.

6.1 ELECTRICAL SYSTEMS PHOTOS

Photo 1

Photo 2

Photo 3

Photo 4

Photo 5

Photo 6

Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

Belle Isle Boathouse & Site Work Renonovations/Restorations

Cost Model Estimates

Detroit, Michigan

Revised
November 29, 2019

Belle Isle Boat House & Site Work
Detroit, Michigan

Table Of Contents

Belle Isle Boathouse & Site Work
Renovations/Restorations
Detroit , Michigan
Cost Model Estimates
November 29, 2019

Description	Total Cost	Cost/SF
	44,095	GSF
Master Summary		
Site Stabilization	$12,053,324	$273
Building Enclosure Stabilization	$10,535,338	$239
Building Systems	$13,276,074	$301
Interiors	$6,853,622	$155
Final Site work & Landscaping	$1,182,016	$27
Total Project Cost	$43,900,375	$996

Belle Isle Boathouse & Site Work
Renovations/Restorations
Detroit , Michigan
Cost Model Estimates
November 29, 2019

Description			Total Cost	Cost/SF
Site Stabilization		**Area**	44,095 GSF	
Summary				
G10 Site Preparation			$545,631	$12.37
G20 Site Improvements			$4,964,026	$112.58
G30 Site Utilities			$477,800	$10.84
G40 Site Electrical Utilities			$253,275	$5.74
Sub-Total Trades Site Stabilization			$6,240,732	$141.53
Design Contingency	10%		$624,073	$14.15
Escalation 5% per year to midpoint 6/1/2023				
43 months @ 5% =	19.1%		$1,311,178	$29.74
Sub Total Contingencies			$1,935,251	$43.89
Sub Total Building + Contingencies			$8,175,983	$185.42
General Conditions	3%		$245,280	$5.56
GC Personnel 30 months			$161,250	$3.66
GC Fee	3%		$257,475	$5.84
Bond	1%		$88,400	$2.00
Total Construction Cost			$8,928,388	$202.48
Owner Project Costs	35%		$3,124,936	$70.87
Total Project Costs			$12,053,324	$273.35

Belle Isle Boathouse & Site Work
Renovations/Restorations
Detroit , Michigan
Cost Model Estimates
November 29, 2019

Description		Unit	Unit Cost	Total Cost	Cost/SF
				44,095 GSF	
G 19 Site Preparation					
Clear & grub site landscaping	1	ACRE	$7,500.00	$7,500	$0.17
Remove existing concrete paving	26,000	SQFT	$1.50	$39,000	$0.88
Remove existing concrete pool bottom	7,872	SQFT	$2.00	$15,744	$0.36
Remove pool walls	546	LNFT	$50.00	$27,300	$0.62
Backfill pool area	1,604	CUYD	$35.00	$56,124	$1.27
Remove gate house	1	EACH	$500.00	$500	$0.01
Remove life guard tower	1	EACH	$500.00	$500	$0.01
Remove storage building	646	SQFT	$6.00	$3,876	$0.09
Remove planters & lighting	2	EACH	$1,000.00	$2,000	$0.05
Saw cut top of existing seawall	415	LNFT	$30.00	$12,450	$0.28
Asphalt pavement removal	1,871	SQFT	$1.00	$1,871	$0.04
Remove wooden foot bridge	774	SQFT	$10.00	$7,740	$0.18
Remove concrete foot bridge	369	SQFT	$20.00	$7,380	$0.17
Strip and remove topsoil	754	CUYD	$18.00	$13,573	$0.31
Fine grading grass/planting areas	9,279	SQYD	$0.50	$4,639	$0.11
Fine grade paved areas	3,305	SQYD	$1.00	$3,305	$0.07
Remove north dock	11,103	SQFT	$20.00	$222,060	$5.04
Road cleaning/dust control	1	LPSM	$50,000.00	$50,000	$1.13
Truck wash	1	LPSM	$25,000.00	$25,000	$0.57
Construction fence	1,061	LNFT	$20.00	$21,220	$0.48
Construction gates	1	EACH	$5,000.00	$5,000	$0.11
Erosion control	712	LNFT	$4.00	$2,848	$0.06
Dumpsters	20	LOADS	$800.00	$16,000	$0.36
Sub-Total Site Preparation				$545,631	$12.37

Belle Isle Boathouse & Site Work
Renovations/Restorations
Detroit , Michigan
Cost Model Estimates
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Description		Unit	Unit Cost	Total Cost	Cost/SF
G 20 Site Improvements					
Sheet pile wall w/helical anchors 30'	1,210	LNFT	$2,100.00	$2,541,000	$57.63
2' wide x 1'-4" high concrete seawall cap	1,210	LNFT	$200.00	$242,000	$5.49
Steel waler	1,210	LNFT	$100.00	$121,000	$2.74
Guardrail at waters edge	960	LNFT	$150.00	$144,000	$3.27
6" concrete sidewalk	33,453	SQFT	$8.00	$267,624	$6.07
Integral curb at walks	777	LNFT	$26.00	$20,202	$0.46
36' wide monumental stair 6 risers x 5 treads w/ 4 handrails	2	EACH	$35,000.00	$70,000	$1.59
Dry laid stone wall 18" high	136	LNFT	$250.00	$34,000	$0.77
Imported fill	13,760	CUYD	$35.00	$481,600	$10.92
New rip rap	600	TONS	$31.00	$18,600	$0.42
New north dock allowance	10,240	SQFT	$100.00	$1,024,000	$23.22
Sub-Total Site Improvements				$4,964,026	$112.58
G 30 Site Utilities					
4" pipe perforated underdrain	240	LNFT	$15.00	$3,600	$0.08
8" storm pipe	350	LNFT	$40.00	$14,000	$0.32
12" storm pipe	530	LNFT	$50.00	$26,500	$0.60
Adjust rims	3	EACH	$1,000.00	$3,000	$0.07
Storm Catch basins 24"	2	EACH	$3,000.00	$6,000	$0.14
48" yard drains	4	EACH	$4,000.00	$16,000	$0.36
60" RCP equalization culvert	460	LNFT	$325.00	$149,500	$3.39
Headwalls at each end of 60" culvert	2	EACH	$20,000.00	$40,000	$0.91
Utility excavation and backfill	1,580	LNFT	$40.00	$63,200	$1.43
Sump pump - lift station - 4,000 GPM & precast vault/steel	1	EACH	$125,000.00	$125,000	$2.83
Connect to existing fire water	1	EACH	$2,500.00	$2,500	$0.06
Fire hydrant assemblies	1	EACH	$6,000.00	$6,000	$0.14
Fire department connection	1	EACH	$2,500.00	$2,500	$0.06
6" fire water assume	200	LNFT	$100.00	$20,000	$0.45
Sub-Total Site Mechanical Utilities				$477,800	$10.84
G 40 Site Electrical					
New electrical duct bank	421	LNFT	$ 275.00	$115,775	$2.63
New electrical manholes	3	EACH	$ 15,000.00	$45,000	$1.02
north dock power	20	each	$ 4,000.00	$80,000	$1.81
CONNECT 400 GPM PUMP/FEEDER	1	LOT	$12,500.00	$12,500	$0.28
Sub-Total Site Electrical				$253,275	$5.74

Belle Isle Boathouse & Site Work
Renovations/Restorations
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Description			Total Cost	Cost/SF
Building Enclosure		**Area**	44,095 GSF	
Summary				
B10 Superstructure			$882,440	$20.01
B20 Exterior Closure			$2,806,215	$63.64
B30 Roofing			$734,970	$16.67
D20 Plumbing			$336,500	$7.63
D40 Fire Protection			$31,000	$0.70
D50 Electrical			$45,989	$1.04
Sub-Total Trades Building Enclosure			$4,837,114	$109.70
Design Contingency	10%		$483,711	$10.97
Escalation 5% per year to midpoint 7/1/2025 67 months @ 5% =	33.2%		$1,767,046	$40.07
Sub Total Contingencies			$2,250,757	$51.04
Sub Total Building + Contingencies			$7,087,871	$160.74
General Conditions 24 months	3%		$212,636	$4.82
GC Personnel			$129,000	$2.93
GC Fee	4%		$297,180	$6.74
Bond	1%		$77,267	$1.75
Total Construction Cost Building Enclosure			$7,803,954	$176.98
Owner Project Costs	35%		$2,731,384	$61.94
Total Project Costs			$10,535,338	$238.93

Belle Isle Boathouse & Site Work
Renovations/Restorations
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Description		Unit	Unit Cost	Total Cost	Cost/SF
Building Enclosure				44,095 GSF	
Superstructure					
B1010 Floor/Terrace Construction					
New third floor terrace at west side	1,366	SQFT	$150.00	$204,900	$4.65
Shore existing roof structure at west side where existing wall is removed/replaced	68	LNFT	$5,000.00	$340,000	$7.71
Remove/replace part of second floor at west side terrace	200	SQFT	$200.00	$40,000	$0.91
Remove/replace structure for terrace 217	564	SQFT	$200.00	$112,800	$2.56
Sub-Total Floor Construction				$697,700	$15.82
B1020 Roof Construction					
New green house roof over terrace 217	564	SQFT	$200.00	$112,800	$2.56
Remove/replace wood decking at 10% of the area of low slope roofs 4311 sf x 10% =	341	SQFT	$25.00	$8,525	$0.19
Remove/replace wood decking at 20% of the area of high slope roofs 7683 sf x 20%=	1,537	SQFT	$25.00	$38,415	$0.87
Temporary roof protection	1	LPSM	$25,000.00	$25,000	$0.57
Sub-Total Roof Construction				$184,740	$4.19
Sub-Total B10 Superstructure				$882,440	$20.01

Belle Isle Boathouse & Site Work
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Description		Unit	Unit Cost	Total Cost	Cost/SF
Exterior Closure					
B2010 Exterior Walls					
Remove west wall from second floor to underside of roof trusses roughly 68' wide x 28' high	1,904	SQFT	$20.00	$38,080	$0.86
Replace west wall at above work	1,904	SQFT	$150.00	$285,600	$6.48
Temporary weather protection	1,904	SQFT	$10.00	$19,040	$0.43
Remove all existing exterior stucco	18,000	SQFT	$5.00	$90,000	$2.04
Remove other identified exterior wall materials	2,724	SQFT	$6.00	$16,344	$0.37
Replace 50% brick backup in red areas 443 sqft	222	SQFT	$100.00	$22,150	$0.50
Replace 25% brick backup in blue & yellow areas areas 9570 sqft	2,393	SQFT	$100.00	$239,250	$5.43
Replace 5% brick backup in green areas areas 6623 sqft	331	SQFT	$100.00	$33,115	$0.75
Parge coat entire brick surface	20,988	SQFT	$9.00	$188,892	$4.28
New Sto power wall drain screen system	20,988	SQFT	$30.00	$629,640	$14.28
Add for articulation if desired	20,988	SQFT	$15.00	$314,820	$7.14
Replace missing arcade on east elevation	800	SQFT	$150.00	$120,000	$2.72
New decorative guardrail between arches on west elevation	54	LNFT	$250.00	$13,500	$0.31
Remove and replace guardrails at existing second floor terraces	132	LNFT	$265.00	$34,980	$0.79
Extend guardrail height at third floor terraces	306	LNFT	$150.00	$45,900	$1.04
Extend guardrail height at second floor terraces	49	LNFT	$150.00	$7,350	$0.17
Scaffold entire exterior wall	23,446	SQFT	$5.00	$117,230	$2.66
Sub-Total Exterior Walls				$2,215,891	$50.25
B2020 Exterior Windows					
Remove existing windows 84 each	2,458	SQFT	$6.00	$14,748	$0.33
Prep existing window openings	84	EACH	$660.00	$55,440	$1.26
Install new windows	2,458	SQFT	$150.00	$368,700	$8.36
Prep existing window openings	14	EACH	$660.00	$9,240	$0.21
Install new windows	179	SQFT	$150.00	$26,850	$0.61
Sub-Total Exterior Windows				$474,978	$10.77

Belle Isle Boathouse & Site Work
Renovations/Restorations
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Description		Unit	Unit Cost	Total Cost	Cost/SF
B2030 Exterior Doors					
Remove existing doors 18 each	18	EACH	$170.00	$3,060	$0.07
Prep opening	18	EACH	$630.00	$11,340	$0.26
Install new doors	474	SQFT	$150.00	$71,100	$1.61
Remove existing overhead doors	201	SQFT	$6.00	$1,206	$0.03
Prep opening	4	EACH	$660.00	$2,640	$0.06
New overhead doors	4	EACH	$6,500.00	$26,000	$0.59
Sub-Total Exterior Doors				$115,346	$2.62
Sub-Total B20 Exterior Closure				$2,806,215	$63.64
B30 Roofing					
B3010 Roofing Coverings					
Remove epdm + tile at existing terraces 2nd floor	2,256	SQFT	$10.00	$22,560	$0.51
Fabric reinforced waterproofing	2,256	SQFT	$8.00	$18,048	$0.41
New exterior grade mud set quarry tile	2,256	SQFT	$20.00	$45,120	$1.02
Remove epdm + tile at existing terraces 3rd floor	2,256	SQFT	$10.00	$22,560	$0.51
Fabric reinforced waterproofing	3,074	SQFT	$8.00	$24,592	$0.56
New exterior grade mud set quarry tile	3,074	SQFT	$20.00	$61,480	$1.39
Remove clay tile roofing	7,683	SQFT	$4.00	$30,732	$0.70
New battens + insulation	7,683	SQFT	$6.00	$46,098	$1.05
New underlayment	7,683	SQFT	$2.00	$15,366	$0.35
New clay tile roofing	7,683	SQFT	$25.00	$192,075	$4.36
New roof corbels at perimeter	25	EACH	$250.00	$6,250	$0.14
Refinish existing corbels	612	EACH	$100.00	$61,200	$1.39
New gutters	627	LNFT	$20.00	$12,540	$0.28
New downspouts	314	LNFT	$20.00	$6,270	$0.14
Remove existing low slope roofing	4,311	SQFT	$4.00	$17,244	$0.39
New underlayment	4,311	SQFT	$2.00	$8,622	$0.20
New 4" insulation	4,311	SQFT	$3.00	$12,933	$0.29
New modified Bitumen roofing	4,311	SQFT	$20.00	$86,220	$1.96
Remove existing south canopy at stair #1	1	LPSM	$5,000.00	$5,000	$0.11
New canvas entry canopy at south stair #1	1	LPSM	$25,000.00	$25,000	$0.57
Sub-Total Roof Covering				$719,910	$16.33

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Description		Unit		Unit Cost	Total Cost	Cost/SF
B3020 Roofing Openings						
Miscellaneous openings	1	LPSM		$5,000.00	$5,000	$0.11
Roof vent 2'-6" x 2'-6"	4	EACH		$1,265.00	$5,060	$0.11
Roof hatch 3 x 4'	2	EACH		$2,500.00	$5,000	$0.11
Sub-Total Roof Openings					$15,060	$0.34
Sub-Total B30 Roofing					$734,970	$16.67
D20 Plumbing						
Deck drains & sanitary below grade	500	ALLOW		$75.00	$37,500	$0.85
Deck drains & sanitary above grade	3480	LNFT		$55.00	$191,400	$4.34
Floor/deck drains & floor chipping	42	EACH		$650.00	$27,300	$0.62
Terrace drains & chipping	20	EACH		$650.00	$13,000	$0.29
GC's, staff, & fee	1	LPSM		$67,300.00	$67,300	$1.53
Plumbing Sub-Total					$336,500	$7.63
D40 Fire Protection						
Dry heads	40	EACH		$400.00	$16,000	$0.36
Dry valve assembly	1	LPSM		$15,000.00	$15,000	$0.34
Fire Protection Sub-Total					$31,000	$0.70
D50 Electrical						
Power for Signage	1	LPSM	$	2,500.00	$2,500	$0.06
Deck lighting fixtures	30	EACH	$	1,054.63	$31,639	$0.72
Conduit & wire for fixtures	400	LNFT	$	11.69	$4,675	$0.11
Convenience power outlets	12	EACH	$	208.31	$2,500	$0.06
Conduit & wire for branch outlets	400	LNFT	$	11.69	$4,675	$0.11
Electrical Sub-Total					$45,989	$1.04

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Description			Total Cost	Cost/SF
Building Systems		**Area**	44,095 GSF	
Summary				
D10 Conveying			$240,000	$5.44
D20 Plumbing			$704,430	$15.98
D30 HVAC			$2,832,924	$64.25
D40 Fire Protection			$240,875	$5.46
D50 Electrical			$1,633,421	$37.04
Sub-Total Trades Building Systems			$5,651,650	$128.17
Design Contingency	10%		$565,165	$12.82
Escalation 5% per year to midpoint 7/1/2027				
85 months @ 5%/yr =	43.6%		$2,710,531	$61.47
Sub Total Contingencies			$3,275,696	$74.29
Sub Total Building + Contingencies			$8,927,346	$202.46
General Conditions	3%		$267,820	$6.07
GC Personnel			$258,000	$5.85
GC Fee	3%		$283,595	$6.43
Bond	1%		$97,368	$2.21
Total Construction Cost			$9,834,129	$223.02
Owner Project Costs	35%		$3,441,945	$78.06
Total Project Costs			$13,276,074	$301.08

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Description		Unit	Unit Cost	Total Cost	Cost/SF
Building Systems				44,095 GSF	
D10 Conveying					
Dumbwaiter between kitchens	1	EACH	$25,000.00	$25,000	$0.57
Three stop 3500 lb passenger elevator holeless hydraulic	1	EACH	$200,000.00	$200,000	$4.54
Elevator cab Allowance	1	EACH	$15,000.00	$15,000	$0.34
Sub-Total Conveying Systems				$240,000	$5.44
D20 Plumbing					
Fixtures & carriers	67	EACH	$1,250.00	$83,750	$1.90
Misc connections	20	EACH	$350.00	$7,000	$0.16
Kitchen RI & FC	2536	SQFT	$25.00	$63,400	$1.44
Water meter	1	EACH	$5,000.00	$5,000	$0.11
Backflow preventer - house & fire	2	EACH	$5,000.00	$10,000	$0.23
Backflow preventer - MUW/irrigation	3	EACH	$2,000.00	$6,000	$0.14
Water softener - none	0	NONE	$0.00	$0	$0.00
Booster pump - none	0	NONE	$0.00	$0	$0.00
Water heaters - gas - 3	600	MBHO	$35.00	$21,000	$0.48
DHW expansion tanks	3	EACH	$500.00	$1,500	$0.03
DHW recirc pumps	3	EACH	$1,000.00	$3,000	$0.07
TMX valves	3	EACH	$2,500.00	$7,500	$0.17
Domestic water	3,350	LNFT	$38.00	$127,300	$2.89
Domestic water insulation	3,350	LNFT	$8.00	$26,800	$0.61
Elev sump pump	1	EACH	$2,000.00	$2,000	$0.05
Oil interceptor	1	EACH	$2,000.00	$2,000	$0.05
Grease trap	1	EACH	$15,000.00	$15,000	$0.34
Rework existing storm - allowance	15000	ALLOW	$1.50	$22,500	$0.51
Foundation drainage - none	0	NONE	$0.00	$0	$0.00
Excavation & backfill - includes saw cut & patc	500	LNFT	$150.00	$75,000	$1.70
Submeters - none	0	NONE	$0.00	$0	$0.00
Coring/fire stopping	1	LPSM	$7,500.00	$7,500	$0.17
Seismic - none	0	NONE	$0.00	$0	$0.00
Gas pipe & regulators	480	LNFT	$75.00	$36,000	$0.82
Demo to dumpster	41,294	SQFT	$1.00	$41,294	$0.94
GC's, staff, & fee	1	LPSM	$140,886.00	$140,886	$3.20
Plumbing Sub-Total				$704,430	$15.98

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Description		Unit	Unit Cost	Total Cost	Cost/SF
D30 HVAC					
RTU's - 3 - CHW/HHW	60000	CFM	$5.50	$330,000	$7.48
MUA's - 2 - gas-fired	3000	CFM	$4.00	$12,000	$0.27
Curb lagging	5	EACH	$3,500.00	$17,500	$0.40
Temp filters	1	LPSM	$15,000.00	$15,000	$0.34
Set kitchen CU's - FBO	5	EACH	$1,440.00	$7,200	$0.16
Rigging/crane	1	LPSM	$35,000.00	$35,000	$0.79
Air cooled chiller - 1	150	TONS	$650.00	$97,500	$2.21
Glycol feed skid & glycol charge	1	EACH	$20,000.00	$20,000	$0.45
Condensing boilers - 3	3000	MBHO	$18.00	$54,000	$1.22
IL pumps	6	EACH	$2,500.00	$15,000	$0.34
ES pumps	4	EACH	$7,500.00	$30,000	$0.68
Refrigeration pipe & line charges	700	LNFT	$30.00	$21,000	$0.48
Heating hot water - one loop only - no separate perimeter loop	3480	LNFT	$65.00	$226,200	$5.13
Chilled water	780	LNFT	$125.00	$97,500	$2.21
Pipe boots & rails	25	EACH	$500.00	$12,500	$0.28
Condensate drains	280	LNFT	$35.00	$9,800	$0.22
HVAC pipe insulation	5240	LNFT	$10.00	$52,400	$1.19
Galvanized duct - single wall - ducted return - 1.15 #'S/SQFT	47488	#'S	$10.00	$474,881	$10.77
VAV boxes with HHW - 750 SQFT/Zone	60	EACH	$800.00	$48,000	$1.09
Registers, grilles, & diffusers	200	EACH	$150.00	$30,000	$0.68
Linear diffuser - allowance	200	ALLOW	$75.00	$15,000	$0.34
Fans - 6	5000	CFM	$0.75	$3,750	$0.09
Kitchen fans - 4	4000	CFM	$1.50	$6,000	$0.14
Fire dampers	20	ALLOW	$250.00	$5,000	$0.11
Actuated dampers	10	ALLOW	$800.00	$8,000	$0.18
UH's/CUH's - HHW	8	EACH	$2,000.00	$16,000	$0.36
ACU's/CU's - 2	7.5	TONS	$3,000.00	$22,500	$0.51
Snowmelt/radiant heat - none	0	NONE	$0.00	$0	$0.00
Fin tube radiation - Runtal	500	ALLOW	$150.00	$75,000	$1.70
Duct insulation - wrap - concealed SA/OA	23900	SQFT	$2.50	$59,750	$1.36
BIM model & integrator - none	0	NONE	$0.00	$0	$0.00
Seismic - none	0	NONE	$0.00	$0	$0.00
Coring/fire stopping	1	LPSM	$10,000.00	$10,000	$0.23
Commissioning assist	1	LPSM	$22,800.00	$22,800	$0.52
Balancing	41,294	SQFT	$0.75	$30,971	$0.70
Controls	1	LPSM	$303,500.00	$303,500	$6.88
Demo to dumpster	41294	SQFT	$2.00	$82,588	$1.87
CC's, staff, & fee	1	LPSM	$566,584.88	$566,585	$12.85
HVAC Sub-Total				$2,832,924	$64.25

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Description		Unit		Unit Cost	Total Cost	Cost/SF
D40 Fire Protection						
Wet heads	440	EACH		$350.00	$154,000	$3.49
COT & concealed premiums	352	EACH		$100.00	$35,200	$0.80
FDC	1	EACH		$3,500.00	$3,500	$0.08
Fire pump - none	0	NONE		$0.00	$0	$0.00
Special systems - none	0	NONE		$0.00	$0	$0.00
GC's, staff, & fee	1	LPSM		$48,175.00	$48,175	$1.09
Fire Protection Sub-Total					$240,875	$5.46
D50 Electrical						
D5010 Electrical Service & Distribution						
Power Sources - Existing DEMO	1	LPSM	$	43,240.00	$43,240	$0.98
Power Distribution - Panels, Transformers & Feeders	1	LPSM	$	125,000.00	$125,000	$2.83
Power Distribution - Feeders	1	LPSM	$	75,000.00	$75,000	$1.70
Power for Mechanical Equipment	1	LPSM	$	50,000.00	$50,000	$1.13
Power for Kitchen	1	LPSM	$	30,000.00	$30,000	$0.68
Power for Elevator (N)	1	EACH	$	7,500.00	$7,500	$0.17
Power for Elevator (S)	1	EACH	$	7,500.00	$7,500	$0.17
Sub-Total D5010 Electrical Service & Distribution					$338,240	$7.67
D5020 Lighting & Branch Wiring						
Power for Signage	1	LPSM	$	2,500.00	$2,500	$0.06
LIGHTING FIXTURES	41,294	SQFT	$	9.50	$392,293	$8.90
LIGHTNG CONTROL	41,294	SQFT	$	2.50	$103,235	$2.34
RETROFLIGHTFIXTURES	1	LOT	$	25,000.00	$25,000	$0.57
LIGHTING INVERTER	1	LPSM	$	35,000.00	$35,000	$0.79
Terrace lighting	20	EACH	$	500.00	$10,000	$0.23
Convenience power outlets	41,294	SQFT	$	3.50	$144,529	$3.28
Conduit & wire for branch outlets	41,294	LNFT	$	2.50	$103,235	$2.34
Sub-Total D5020 Lighting & Branch Wiring					$815,792	$18.50

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Description		Unit		Unit Cost	Total Cost	Cost/SF
D5030 Communications & Security Systems						
Communications outlet complete	41,294	SQFT	$	4.00	$165,176	$3.75
Communications Room Prep	1	LPSM	$	15,000.00	$15,000	$0.34
NFPA F/A System	41,294	SQFT	$	3.75	$154,853	$3.51
Card readers - none	-	NONE	$	-	$0	$0.00
CCTV - none	-	NONE	$	-	$0	$0.00
Sub-Total D5030 Communications & Security Systems					$335,029	$7.60
D5040 Special Electrical Systems						
Building & Systems Grounding	1	LPSM	$	25,000.00	$25,000	$0.57
Lightning Protection system - none	-	NONE	$	-	$0	$0.00
Short Circuit & Coordination Study	1	LPSM	$	25,000.00	$25,000	$0.57
Arc Flash Study	1	LPSM	$	10,000.00	$10,000	$0.23
Temp Light & Power for Construction	1	LPSM	$	40,560.00	$40,560	$0.92
Trade GC's incl. Management	1	LPSM	$	43,800.00	$43,800	$0.99
Sub-Total D5040 Special Electrical Systems					$144,360	$3.27
Total D50 Electrical					**$1,633,421**	**$37.04**

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Description			Total Cost	Cost/SF
Interiors		**Area**	44,095 GSF	
Summary				
C10 Interior Construction			$753,205	$17.08
C20 Staircases			$140,288	$3.18
C30 Interior Finishes			$695,696	$15.78
E10 Equipment			$363,950	$8.25
E20 Furnishings			$361,975	$8.21
F20 Selective Demolition			$231,773	$5.26
Sub-Total Trades Building Systems			$2,546,886	$57.76
Design Contingency	10%		$254,689	$5.78
Escalation 5% per year to midpoint 6/1/2028				
102 months @ 5%/yr	54.1%		$1,515,091	$34.36
Sub Total Contingencies			$1,769,780	$40.14
Sub Total Building + Contingencies			$4,316,666	$97.90
General Conditions	3%		$129,500	$2.94
GC Personnel			$387,000	$8.78
GC Fee	4%		$193,327	$4.38
Bond	1%		$50,265	$1.14
Total Construction Cost			$5,076,757	$115.13
Owner Project Costs	35%		$1,776,865	$40.30
Total Project Costs			$6,853,622	$155.43

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Description		Unit	Unit Cost	Total Cost	Cost/SF
Interiors				44,095 GSF	
C10 Interior Construction					
C1010 Partitions					
New interior partitions assume 1lnft/20sf	27,873	SQFT	$10.00	$278,735	$6.32
Repair/restore partitions to remain assume 1 lnft/20 sqft	27,873	SQFT	$5.00	$139,367	$3.16
8" cmu at elevator shaft	1,512	SQFT	$20.00	$30,240	$0.69
Sub Total Partitions				$448,342	$10.17
C1020 Interior Doors					
Remove existing interior doors/frames	62	EACH	$190.00	$11,780	$0.27
Replace interior door/frame & hardware average	62	EACH	$2,400.00	$148,800	$3.37
Assisted door operator	4	EACH	$3,000.00	$12,000	$0.27
Sub-Total Interior Doors				$172,580	$3.91
C1030 Specialties					
Miscellaneous lockers, toilet accessories, fire extinguishers, etc	44,095	SQFT	$3.00	$132,284	$3.00
Sub-Total Specialties				$132,284	$3.00
Sub-Total C10 Interior Construction				$753,205	$17.08

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Description		Unit	Unit Cost	Total Cost	Cost/SF
C20 Staircases					
C2010 Stair Construction					
Exit Stairs					
Exterior stair No. 1 south grade to level 1					
Remove/replace wall handrails	62	LNFT	$90.00	$5,580	$0.13
Exterior stair No. 2 level 1 to level 3					
No structural work					
Exterior stair No. 3 north Grade to level 2					
Foundations	4	EACH	$1,000.00	$4,000	$0.09
New 4' wide metal pan stair	40	LFR	$95.00	$3,800	$0.09
New 6' wide metal pan stair	84	LFR	$95.00	$7,980	$0.18
Steel pan concrete filled landing	56	SQFT	$20.00	$1,120	$0.03
Painted steel handrail	62	LNFT	$40.00	$2,480	$0.06
Painted steel guardrail	62	LNFT	$150.00	$9,300	$0.21
Interior stair No. 4 level 1 to level 2					
Remove/replace handrails	52	LNFT	$70.00	$3,640	$0.08
Exterior stair No. 5 north Grade to level 2					
Foundations	4	EACH	$1,000.00	$4,000	$0.09
New 4' wide metal pan stair	88	LFR	$95.00	$8,360	$0.19
Steel pan concrete filled landing	36	SQFT	$20.00	$720	$0.02
Painted steel handrail	52	LNFT	$40.00	$2,080	$0.05
Painted steel guardrail	52	LNFT	$150.00	$7,800	$0.18
Exterior stair No. 6 north level 2 to level 3					
New 4' wide metal pan stair	88	LFR	$95.00	$8,360	$0.19
Steel pan concrete filled landing		SQFT	$20.00	$0	$0.00
Painted steel handrail	52	LNFT	$40.00	$2,080	$0.05
Painted steel guardrail	52	LNFT	$150.00	$7,800	$0.18
Interior stair No. 7 level 3 to tower					
Remove/replace guardrail	52	LNFT	$170.00	$8,840	$0.20
Sub-Total Stair Construction				$87,940	$1.99

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Description		Unit	Unit Cost	Total Cost	Cost/SF
C2020 Stair Finishes					
Exit Stairs					
Exterior stair No. 1 south grade to level 1					
New quarry tile treads & risers	224	LFR	$50.00	$11,200	$0.25
New quarry tile landing	64	SQFT	$30.00	$1,920	$0.04
Interior stair No. 2 level 1 to level 3					
New carpet treads and risers	94	LFR	$15.00	$1,403	$0.03
New carpet at landings	32	SQFT	$15.00	$480	$0.01
Refinish guardrails	104	LNFT	$200.00	$20,800	$0.47
Exterior stair No. 3 north grade to level 2					
Stair treads exterior quarry tile	124	LFR	$30.00	$3,720	$0.08
New quarry tile landing	56	SQFT	$30.00	$1,680	$0.04
Interior stair No. 4 level 1 to level 2					
New rubber treads and risers	94	LFR	$30.00	$2,805	$0.06
Exterior stair No. 5 north grade to level 2					
Stair treads exterior quarry tile	88	LFR	$30.00	$2,640	$0.06
New quarry tile landing	36	SQFT	$30.00	$1,080	$0.02
Exterior stair No. 6 north level 2 to level 3					
Stair treads exterior quarry tile	88	LFR	$30.00	$2,640	$0.06
Interior stair No. 7 level 3 to roof					
New rubber treads and risers	66	LFR	$30.00	$1,980	$0.04
Sub-Total Stair Finishes				$52,348	$1.19
Sub-Total C20 Staircases				$140,288	$3.18

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Description		Unit	Unit Cost	Total Cost	Cost/SF
C30 Interior Finishes					
C3010 Wall Finishes					
Paint drywall	54,493	SQFT	$1.00	$54,493	$1.24
Wood paneling refinish	4,091	SQFT	$5.00	$20,455	$0.46
Wood paneling new	4,091	SQFT	$35.00	$143,185	$3.25
Ceramic tile all new	4,867	SQFT	$16.00	$77,872	$1.77
Sub-Total Wall Finishes				$296,005	$6.71
C3020 Floor Finishes					
Preservation good condition	2,224	SQFT	$4.00	$8,896	$0.20
Preservation fair condition	1,373	SQFT	$6.00	$8,238	$0.19
Preservation bad condition	4,621	SQFT	$8.00	$36,968	$0.84
Restoration good condition	0	SQFT	$6.00	$0	$0.00
Restoration fair condition	1,303	SQFT	$8.00	$10,424	$0.24
Restoration bad condition	522	SQFT	$10.00	$5,220	$0.12
Rehabilitation good condition	0	SQFT	$6.00	$0	$0.00
Rehabilitation fair condition	4,595	SQFT	$8.00	$36,760	$0.83
Rehabilitation bad condition	585	SQFT	$10.00	$5,850	$0.13
Service fair condition	2,821	SQFT	$4.00	$11,284	$0.26
Rehabilitation bad condition	14,892	SQFT	$6.00	$89,352	$2.03
Sub-Total Floor Finishes				$212,992	$4.83

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Description		Unit	Unit Cost	Total Cost	Cost/SF
C3030 Ceiling Finishes					
Preservation good condition	2,224	SQFT	$2.00	$4,448	$0.10
Preservation fair condition	1,373	SQFT	$4.00	$5,492	$0.12
Preservation bad condition	4,621	SQFT	$6.00	$27,726	$0.63
Restoration good condition	0	SQFT		$0	$0.00
Restoration fair condition	1,303	SQFT	$8.00	$10,424	$0.24
Restoration bad condition	522	SQFT	$12.00	$6,264	$0.14
Rehabilitation good condition	0	SQFT		$0	$0.00
Rehabilitation fair condition	4,595	SQFT	$8.00	$36,760	$0.83
Rehabilitation bad condition	585	SQFT	$12.00	$7,020	$0.16
Service fair condition	2,821	SQFT	$5.00	$14,105	$0.32
Rehabilitation bad condition	14,892	SQFT	$5.00	$74,460	$1.69
Sub-Total Ceiling Finishes				$186,699	$4.23
Sub-Total C30 Interior Finishes				$695,696	$15.78
E10 Equipment					
First floor kitchen	305	SQFT	$150.00	$45,750	$1.04
First floor coolers	166	SQFT	$150.00	$24,900	$0.56
First floor kitchen support spaces	148	SQFT	$50.00	$7,400	$0.17
Second floor kitchen allowance	1,260	SQFT	$150.00	$189,000	$4.29
Second floor kitchen pantry allowance	166	SQFT	$50.00	$8,300	$0.19
Second floor bar allowance	224	SQFT	$100.00	$22,400	$0.51
Third floor bar allowance	662	SQFT	$100.00	$66,200	$1.50
Sub-Total Equipment				$363,950	$8.25

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Description		Unit	Unit Cost	Total Cost	Cost/SF
F20 Furnishings					
Miscellaneous casework	44,095	SQFT	$1.00	$44,095	$1.00
Window treatments	2,458	SQFT	$10.00	$24,580	$0.56
First floor kitchen support spaces	148	SQFT	$50.00	$7,400	$0.17
Second floor kitchen allowance	1,260	SQFT	$150.00	$189,000	$4.29
Second floor kitchen pantry allowance	166	SQFT	$50.00	$8,300	$0.19
Second floor bar allowance	224	SQFT	$100.00	$22,400	$0.51
Third floor bar allowance	662	SQFT	$100.00	$66,200	$1.50
Sub-Total Equipment				$361,975	$8.21
F20 Selective Demolition					
Interior demolition	44,095	SQFT	$5.00	$220,473	$5.00
Demo north exterior stair	280	SQFT	$20.00	$5,600	$0.13
Demo east exterior stair	185	SQFT	$20.00	$3,700	$0.08
Demo north exterior stair from level 2 to level 3	100	SQFT	$20.00	$2,000	$0.05
Sub-Total Selective Demolition				$231,773	$5.26

Belle Isle Boathouse & Site Work
Renovations/Restorations
Detroit , Michigan
Cost Model Estimates
November 29, 2019

Description			Total Cost	Cost/SF
Final Site		**Area**	44,095 GSF	
Summary				
G20 Site Improvements			$230,834	$5.23
G40 Site Electrical Lighting			$155,763	$3.53
Sub-Total Trades Building & Site			$386,597	$8.77
Design Contingency	10%		$38,660	$0.88
Escalation 5% per year to midpoint 1/7/2029	62.7%		$266,636	$6.05
Sub Total Contingencies			$305,295	$6.92
Sub Total Building + Contingencies			$691,892	$15.69
General Conditions	3%		$20,757	$0.47
GC Personnel			$129,000	$2.93
GC Fee	3%		$25,249	$0.57
Bond	1%		$8,669	$0.20
Total Construction Cost			$875,567	$19.86
Owner Project Costs	35%		$306,449	$6.95
Total Project Costs			$1,182,016	$26.81

Belle Isle Boathouse & Site Work
Renovations/Restorations
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Description		Unit		Unit Cost	Total Cost	Cost/SF
Final Site					44,095 GSF	
G 20 Site Improvements						
Patch asphalt at new walks	3,885	SQFT		$6.00	$23,310	$0.53
Clean, seal and stripe existing asphalt paving	9,017	SQYD		$2.00	$18,034	$0.41
Aggregate maintenance edge	800	SQFT		$5.00	$4,000	$0.09
Dumpster paving		SQFT		$10.00	$0	$0.00
Site Sign Allowance	1	LPSM		$25,000.00	$25,000	$0.57
Grass lawn	9,290	SQYD		$4.50	$41,805	$0.95
4" imported Topsoil	1,025	CUYD		$35.00	$35,875	$0.81
Large deciduous trees		EACH		$500.00	$0	$0.00
Flowering trees		EACH		$350.00	$0	$0.00
Planting beds		SQFT		$15.00	$0	$0.00
Irrigation grass areas + beds	82,810	SQFT		$1.00	$82,810	$1.88
Screen wall at transformer & dumpster		LNFT		$450.00	$0	$0.00
Dumpster gate		EACH		$5,000.00	$0	$0.00
Gates at transformer/dumpster screen		EACH		$3,000.00	$0	$0.00
Site furnishings Tables w/umbrella		EACH		$7,500.00	$0	$0.00
Sub-Total Site Improvements					$230,834	$5.23
G 40 Site Electrical						
New Light Pole w/base	12	EACH	$	5,000.00	$60,000	$1.36
New Flagpole Light	2	EACH	$	1,479.50	$2,959	$0.07
Wiring for site lighting / signage	3,000	LNFT	$	30.93	$92,804	$2.10
Sub-Total Site Electrical					155,763	$3.53

Belle Isle Boathouse & Site Work
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Description

Area Breakdowns

Building	Area		AIA Area GSF	
Belle Isle Boathouse				
Level 1	15,564	SF	15,564	
Level 2	15,719	SF	15,719	
Level 3	10,011	SF	10,011	
Sub Total Belle Isle Boathouse			41,294	GSF
Terraces				
Level 2	3,074	SF	1,537	
Level 3	2,527	SF	1,264	
Sub Total Terraces	5,601	SF	2,801	
Total Building Gross Area			**44,095**	GSF

Belle Isle Boat House & Site
Renovation/Restoration
Detroit, Michigan
Conceptual Estimates
Clarifications

1. **Purpose –** The purpose of this document is to serve as a communication tool for the project team by defining the quality and scope of this project. K J Pesta consulting LLC has evaluated the documents and prepared a reasonable opinion of construction costs for the architectural, structural, mechanical, electrical and civil disciplines, based specifically on these documents. This opinion of costs is not a prediction of future bids, as bids can vary due to fluctuating market conditions, proprietary specifications, lack of, or surplus of bidders. KJ Pesta consulting LLC does not guarantee that the bids received will not vary from this opinion of construction costs. This is a working document that should be reviewed by the project team with necessary revisions duly raised and documented as part of the design process.

2. **Design Documents** - The estimate is based on existing building floor plans and elevations and new conceptual site plan dated 11/25/2019. See attached document list

3. **Building Gross Area -** Includes renovated areas and half areas of terraces

   - Level 1.....15,564 GSF
   - Level 2.....15,710 GSF
   - Level 3.....10,011 GSF
   - Terraces level 2 & 3 at half area 5,601 SQFT x 50%,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,2,801 GSF

   Total Gross Square Footage 44.905 GSF

4. **Bonds** – Subcontractor Performance & Payment Bonds are included.

5. **Contingencies –** Design Contingency is included.

6. **Sales Tax** – The estimate *includes* sales tax.

7. **Allowances** – Allowances shall cover the total cost of materials, labor and equipment, including material delivery, unloading at the site, installation costs, overhead, profit and all other expenses contemplated for stated allowance. Allowances are identified in the estimate backup.

8. **Exclusions** – The following items are *excluded* in the Construction Estimate.

   General
   1. Removal of contaminated and/or hazardous materials such as asbestos, lead, PCB's and other hazardous materials.
   2. Land costs
   3. Loose Furniture & furnishings
   4. Moving Costs
   5. Temporary facilities
   6. LEED requirements

9. **Estimate Baseline** - Unless superseded by one of the following two categories, the conceptual design documents as listed are the basis of the estimate. In cases where the design has not been developed sufficiently to estimate quantities, a stipulated dollar *allowance* shall be the basis of the estimate.

10. **Escalation** – The estimate includes escalation to assumed midpoint of construction for each cost model estimate

11. **Labor** – The estimate is based on local union labor wage rates.

12. **Construction Schedule** – The estimates are based on the following schedules
    - Site Stabilization start construction 3/1/2022 with a 30 month duration
    - Building Enclosure Stabilization start construction 7/1/2014 with a 24 month duration
    - Building Systems start construction 1/1/2026 with a 12 month duration
    - Interiors start construction 7/1/2027 with a 22 month duration
    - Final Site Work and Landscaping start 1/1/2029 with a 12 month duration

13. **Clarifications** – The following clarifications are outlined to coincide with the estimates.

    General
    1. It is assumed the existing building will be unoccupied during construction
    2. Construction work will be performed during normal business hours,
    3. The estimate assumes no single sourcing of materials; three or more manufactures are required.
    4. Assumes construction staging area will be on site at existing parking lot
    5. Assumes seawall work to be installed from land

Belle Isle Boat House & Site
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Document List

1. Drawings/Site Visit/Phone calls
   a. Existing floor plans and elevations
   b. Conceptual Site Plan 100A
   c. Preliminary quantity takeoffs on exterior wall and roofing from Smithgroup dated
   d. Individual floor plan areas
   e. Site Visit dated 10/23/2010
   f. Mechanical and electrical narratives
   g. Miscellaneous phone calls reviewing work scope

2. Emails received from SmithgroupJJRGroup
   a. From Eric Sassak dated 11/12/2019 initial quantity and phasing requirements
   b. From Eric Sassak dated 11/13/2019 construction start dates
   c. From Kevin Shultis dated 11/13/2019 Idealized Implementation Schedule
   d. From Eric Sassak dated 11/15/2019 updated takeoffs
   e. From Allison Marusic dated 11/20/2019 preliminary site plan and quantities
   f. From Allison Marusic dated 11/20/2019 no site bridges required
   g. From Roger Abraham dated 11/20/2019 sheet pile depths and size
   h. From Allison Marusic dated 11/20/2019 dock utility info
   i. From Kevin Shultis dated 11/21/2019 mechanical & electrical narratives
   j. From Allison Marusic dated 11/21/2019 additional dock info
   k. From Roger Abraham dated 11/21/2019 alternative site plan
   l. From Roger Abraham dated 11/22/2018 go to single sheet pile system as preferred option
   m. From Eric Sassak dated 11/25/2019 updated area takeoffs & collapsed terrace area
   n. From Roger Abraham dated 11/25/2019 final version site plan
   o. From Eric Sassak dated 11/26/2019 awning info

4. Estimate review comments from the SmithgroupJJR TBD

8.0 IDEALIZED IMPLEMENTATION SCHEDULE

After careful consideration of the total scope of the remediation required a phased approach to implementation has been recommended. The key benefits of this approach are that It addresses the most critical components first, provides for phased fundraising and allows for continued investigation and development of future programming and revenue generating uses.

Key construction elements addressed in each phase are:

Site Stabilization & Remediation:

- Repair/replacement and increasing the height of the seawall.
- Removal / stabilization of the pool structures
- Installation of a pumping system
- Elimination of all life safety concerning elements
- Removal of docks to aid in future barge-based construction

Exterior Envelope Remediation and Restoration:

- Roof and Exterior wall remediation/restoration
- Installation of new historically appropriate energy efficient windows and doors

Interior Building Systems Upgrades:

- Installation of new mechanical, electrical, fire protection, specialized kitchen exhaust and elevator systems

Interior Restoration/Rehabilitation/Renovation:

- Historical restoration of character defining spaces
- Remediation and reconstruction of all other interior spaces
- Installation of all final finish materials and devices (floors/walls/ceilings)

Final Site and Landscape Improvements:

- Final landscape and hardscape improvements
- Site lighting installation
- Parking lot improvements

It is also important to note that it is clear that occupying the building during construction is not advisable and a such will require that FODR provide temporary facilities for the duration of the remediation. Based on the idealized schedule we estimate the need for temporary facilities to be approximately 7 years.

IDEALIZED IMPLEMENTATION SCHEDULE