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Memorandum – Budlong Park Pool, Cranston RI – Historical Review

Please find this memorandum as a continuation of the discussions from the meeting on December 20, 2023, attended by Saccoccio & Associates, Weston & Sampson, City of Cranston representatives, and members of the Historical Society.

During that meeting, we discussed the historical significance of the current property and potential rehabilitation that would be occurring in order to restore the facility.

Based on discussion from this meeting, please see this document summarizing and memorializing the direction of the project and the analysis that was performed.

Brief History of the Facility:

- Pool Facility was built in the 1930s as a WPA project.
- Pool as built in the 1930s is roughly 22,000 SF, containing approximately 850,000 gallons of water.
- Another pool was installed in the 1930s pool shell in the 1960s where the center diving board and the pool depth was reduced.
- In the 1990s another renovation was performed on the pool for compliance and filtration equipment upgrades.
- Pool masonry building from the 1930 has remained relatively unchanged.
- In the 1960s a filter building was added where it is found today.

Compliance Issues:

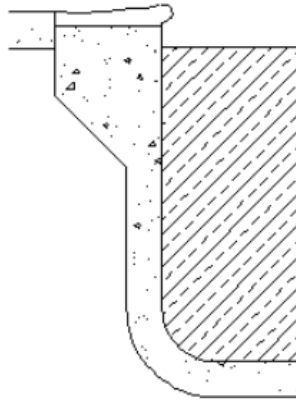
In July 2023, Weston & Sampson was tasked to review the current conditions of the facility to understand the viability rehabilitation or replacement. Below are our findings from that site visit.

1. The current pool lacks the ability to be a watertight structure. Even with the liner system, the use of approximately 15 – 20 GPM of domestic water throughout the day. To keep the pool filled the City annually uses approximately 2 million to 2.5 Million gallons a year to keep the pool filled. This shows a failure in the water tightness of the system.
 - a. The inability to hold water in the pool creates a conditions where it prohibits the ability to maintain a disinfectant residual. The dilution of required sanitizers will create an unhealth and unsafe environment. Also 2-2.5 Mil gallons of chlorinated water is leaking into the surrounding environment. Residual concentration is required per MAHC – 5.7.3

2. The current pool piping, pumps, and filtration system is under size. A minimum of a 6-hour turnover is required. The current piping cannot take the flow based on the velocity limits set by the MAHC. The filter does not have the proper square footage to properly filter the water a rate of less than 15 GPM / SF.
 - a. Turnover require is a health department code requirement (MAHC – [4.7.1.10](#) – Flow Rates / turnover Times).
3. Pool filtration backwash discharges to the neighboring stream. Pool backwash shall discharge to sanitary sewer per MAHC 4.11.6.1.1 – Pool Wastewater.
4. The Perimeter of the pool lacks depth markers and no diving symbols. These items need to be provided around the perimeter of the pool, per (4.5.19.4 – Depth Markers).
5. The pool main drains covers would need to be changed. This is a federal requirement called the Virginia Grahame Baker Act. (VGBA). The regulations require the drains to have a certain type of cover to allow for safe suction and avoid entrapment. To be compliant, the drain covers and sump bodies would need to be replaced. This requires removal of floor sections and replacement of piping back to the equipment room.
6. Pool skimming is supplied by a gutter. The gutter was unable to verify levelness. If the pool is out of level, the entire perimeter of the pool would need to be replaced.
7. The gutter and deck interface with the pool has vertical deviations exceeding ¼” which is a violation of American Disability Accessibility Act (ADA), and is a trip / toe abrasion hazard.
8. Pool needs to have ADA Accessible points at every 300 LF of pool perimeter. This is a federal mandate. A secondary lift, transfer wall, entry stairs, or ramp entry would be needed to become compliant.
9. The surrounding fencing has fence opening that exceed 1-3/4”. The fencing around the perimeter needs to be non-climbable. The fencing would need to be replaced.
10. The pool filters have not had a media change in an extended period of time. The tanks are old and show signs of corrosion. If opened it will be difficult to seal. The media change is necessary for water quality to be able to provide proper filtration through course, angular sand rather than smooth sand.
11. Surge tank is undersized for the pool. The surge tank is required to hold a minimum of 1 Gallon / SF of the pool, minus the gutter volume, which is approximately 16,000 gallons, per the requirements set in MAHC, 4.7.1.4.4.
12. The absence of an autofill system results in manual filling of the pool. The introduction of domestic water shall be through an air gap or another protected device. The current methods of filling do not provide a dedicated cross connection device. The inability to have an auto fill on the pool also results in the operator having to manually fill the pool. Cross Connection, backflow prevention, and autofill requirements are as required in MAHC 4.7.1.4.6.
13. Working flow meters, pressure gauges, and valves were not present or functioning which are essential components of the filtration system as detailed in 4.1.7.9-11.
14. On the deep end pool wall there is a wall obstruction. It appears to be part of the pool as the pool was liner-ed over it. This a violation of MAHC [4.5.12.4](#) – No Protrusions, Extensions, Means of Entanglement, or Obstruction. This requires walls to be within +/- 3 Degrees in vertical tolerance. There are areas of the shallow that seem to be more than 3 % of tolerance.

Figure 4.5.12.1: Plumb Pool Walls: Cross-Section

Plumb within a +/- 3 degree tolerance.



Structural Concerns:

1. The pool was constructed in 1930's and reconstructed in the 1960s. Due to the failures in maintain water tightness, a liner was installed.
 - a. Concerns. The concrete has seen chlorinated water for a long duration of time, which has likely migrated into the concrete, and resulted in corrosion to the rebar system, and loss of strength in concrete.
 - b. The presence of the liner indicates the leaks, cracks, or structural failures have been significant that it would be difficult to repair.
 - c. Underlining issues in the previous 1930s structure would prohibit the future renovations from being successful due to inaccessibility.
2. Pool Deck. The bituminous pavement surface is uneven, exceeds 2% slope, and is a unfavorable surface to walk on around a pool.
3. Pool depth. The pool is installed into the ground water in that area. Draining and servicing the pool will be difficult without a dewatering system established.
4. Groundwater. The battle of the groundwater on this site has resulted in a depth reduction in a previous renovation. In 2018-2019, a new liner was installed and at that time they were un-successful on the structural repairs.

Additional Burden to the City:

The current pool is approximately 22,000 SF of pool water surface. Based on the current permissible loading rates for pool facilities, established by MAHC, the pool would be able to accommodate a one-time occupant load of almost 1,200 people.

The current size, shape, and allowable program is one dimensional and a burden to the city. The pool does not offer modern conveniences and programmatic spaces that current pools provide.

Based on the current pool, if the pool were to be rehabilitated, the city would be burdened with having to expand the bath house to accommodate the permissible amount of patrons and also staff the building.

A major upgrade would be required on the building to accommodate bathing facilities for larger patron load. The additional requirements to the building would likely expand the building and site, making it visually different from what is found today.

Due to the size of the facility and the requirements needed, the value of repair will exceed the cost of replacement.

Operationally, a pool of 22,000 SF is a significant burden financially and staffing. The likelihood of 1200 one time patron load at this facility is rear. Historically the facility has seen 150 to 200 patrons per day where it can accommodate 1200 patrons per hour.

Lastly, the current pool is one dimensional, not meeting the requirements for today's aquatic programming. The lack of proper ADA accessibility and shallow depth entry hinders all types of patrons with different abilities access to the pool and hinders inclusive play and senior activities.

Financial Hurdles:

Beyond the yearly maintenance burden of a 22,000 SF pool, the pool as mentioned above has reached its service life and will need to be replaced.

The cost to replace the pool in like kind, plus the building upgrades would be approximately 9.2 Million dollars. The city has a budget of 4.75 million, making replacement in like kind not a viable option.

Visioning for the Future:

The city has asked us to review the facility to modernize, infuse modern aquatic programs, and create a safe and inviting atmosphere for patrons of all ages and abilities. What we propose is:

- Provide an 8,000 SF pool with water depths from 0' to 6'
- Create a ramped entry for wheelchair and special needs access.
- Create different areas of the pool that can be enjoyed by many ages at the same time.
- Create a system that will be easily operational and low yearly operational cost.
- Create a facility that will provide another 40-year life cycle.
- Incorporate green concepts through energy saves, water savings, and construction method waste reduction.

Remembering the Past:

We understand the significance of this project and the memories this facility brings to the patrons. Please see the below features we are proposing to memorialize the current pool.

1. The pool building is not scheduled to change. The pool building will still maintain the cobblestone façade. Repairs will be done to the façade to extend the service life of the building.
2. Signage on the front of the building will be updated to reflect lettering, graphics, fonts of the time period of the 1930s.
3. We proposed to provide demarcation granite bounds to mark the former corners of the pool facility, symbolizing the size of the pool that was once found.
4. Provide message and educational boards to relay images of the former pool and stats. Maybe, giving some reference to what average life was for Cranston Patrons in 1930s. The

boards would look similar the messages boards below.



The boards would be stationed in a planting area found near the building and entrance way.

Closing Comments:

We appreciate your review of the proposed rehabilitation of the facility.

If there are any questions on the information provided in this document please feel free to contact me @ marianom@wseinc.com.

Mark Mariano, PE CPO
Team Leader