



September 8, 2008

Pocantico Hills Central School District
Mr. Jay Scotto-Friedman, Assistant Superintendent
599 Bedford Road
Sleepy Hollow, NY 10591

RE: Swimming Pool Reconstruction Recommendation
SEI Project No. 06-2110

Dear Mr. Scotto-Friedman:

After several inspections, interviews with the pool staff, and an evaluation of the existing conditions of the swimming pool and mechanical room at the Pocantico Hills Central School District, it is our recommendation to demolish the entire pool and replace it with a new structure verses partial replacement and patching.

Aquatic Development Group, Inc. performed the inspection and evaluation of the pool and documented their findings in a detailed report. A copy of their report is attached.

Our recommendation is based on the following items that define the pools current state of disrepair:

- I. The pool is losing up to an inch of water per day or approximately 5700 gallons per day.
- II. The current diving well depth does not meet the accepted requirements for three meter springboard diving.
- III. The depth of the pool at the beginning of the 50-meter course is 8 to 10 inches too shallow for starting platforms.
- IV. The joints between the concrete structure and the stainless steel gutter are failing around the perimeter of the pool.
- V. Return water lines appear to have leaks.
- VI. There is only a single main drain in the pool which is a code violation.
- VII. Many of the pool deck slabs are misaligned and can cause tripping and/or toe stubbing.
- VIII. The pool filter tank overflows and floods the mechanical room when the recirculation pump is shut down.
- IX. The D.E. filters are out of date and powdered D.E. is hazardous when inhaled.
- X. The useful life of the original steel pipe is nearing its end.

224 Mill Street
Rochester, NY 14614
p 585.442.7010
f 585.442.7019

187 Wolf Rd., Suite 205
Albany, NY 12205
p 518.435.2467
f 518.435.2469

The cost difference between a total replacement versus a major repair would be in the range of \$400,000 to \$600,000 dollars. A repair would not result in a regulation competitive pool and does not allow for reprogramming opportunities. A repair would result in a new version of a 1970's pool facility and not address the current and future needs of a community swimming facility.

We recommend that the district form a pool committee that will conduct a focused work session with SEI Design Group and Aquatic Development Group to develop a program for a new pool that will meet the necessities of the Pocantico Hills Central School District for the years to come.

Sincerely,



Zachary T. Kasky
Architect
SEI design group

Copy: Pocantico Hills Board of Education
David Keim – Aquatic Development Group
File

1100 University Ave. • Suite 204
Rochester, NY 14607
p 585.442.7010
f 585.442.7019

187 Wolf Rd. • Suite 205
Albany, NY 12205
p 518.435.2467
f 518.435.2469



AQUATIC
DEVELOPMENT
GROUP, INC.



July 23, 2008

Mr. Brian Cieslinski
SEI Design Group
244 Mill Street
Rochester, New York 14614

RE: Pocantico Hills Central School Swimming Pool Inspection & Evaluation

Dear Brian:

At your request, on July 8, 2008 we visited the referenced facility for the purpose of performing a visual inspection and evaluation of the swimming pool, wading pool, and their allied equipment and systems. The purpose of this inspection is to provide a basis for the preparation of the following report of findings and schedule of suggested corrective action. Please bear in mind that this inspection and report are based upon clearly visible and observable conditions present on the day of the inspection and the following comments are not the result of an exhaustive analysis of and/or testing of the pool or its support systems.

Swimming Pool Generally:

The outdoor swimming pool and adjacent wading pool are situated on a hillside site in close proximity to the Pocantico Hills school facility. These pools were reported to have been originally constructed in the in the early 1970's and were subsequently renovated in the early to mid 1990's. The swimming pool is of cast-in-place concrete construction and consists of a six-lane, 50-meter competition swim course in the main-body of the pool with a diving "Tee" that provides for a five-lane short-course situated perpendicular to the main 50-meter long course. The main pool water depth varies from approximately three-feet/four-inches to five-feet/zero-inches. The diving-well is reported to be twelve-feet/four-inches in depth, however, it is unknown whether this maximum depth is actually at the plummet of the diving boards or at some other location in the diving-well. The pool is fitted with a Whitten® Uniflow PRS stainless steel gutter system that was specified an installed as a part of the original 1970's pool construction. Construction documents from the 1990's renovation indicate that certain areas of the stainless steel gutter were to have been removed and replaced or repaired and evidence of this work is apparent on this gutter.

The pool is coated with an epoxy paint that appears to have been applied over a scratch coat of plaster, which was designed into the project as a part of the 1990's renovation work. Access to the pool is provided through two-sets of offset concrete entry steps located at opposing ends of the 50-meter course as well as through recessed in-wall steps with handrails located at various points around the pool. There is no apparent provision for accessibility to the pool proper or to



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the pool deck. There are, however, notations on the 1990 renovation drawings that specify the installation of a handicap lift-socket, but we did not confirm whether the specified lifting device was ever installed.

We were advised by facility staff that diving is an important part of the programming for this facility. Additionally we were advised that the three-meter diving tower is a very popular and heavily used amenity. In addition to the three-meter tower, there are also two Duraform short stand one-meter dive stands outfitted with Duraflex diving boards. The three-meter tower is also fitted with a Duraflex board. At present, the pool water depth is indicated to be twelve-feet/four-inches. While this water depth would generally be considered adequate at the plummet of the diving boards, the "up-slope" of the diving-well floor appears too severe resulting in much shallower water being just a few feet beyond the plummet of the diving boards. FINA (Federation Internationale De Natation, the International Governing Body for Swimming) has established very strict and specific guidelines that diving facilities must meet. In reviewing the current FINA standards, it is apparent the diving-well does not meet with accepted requirements for three-meter springboard diving. Additionally, we were advised by pool operating personnel that there have been reports of diver's scraping their noses on the upward slope of the pool bottom. This is a significant concern and should immediately be addressed.

During our inspection, it was noted that the depth of the pool water at the end of the 50-meter course that is used for starting events from starting platforms is not sufficient to meet current requirements for the use of starting platforms a minimum of 4'-6" is required and the present depth is 3'-10" to 4'-0". It was noted during our inspection that there are starting platforms stored in the pool mechanical equipment room and we were advised that these platforms are used during competitive swimming. With this in mind, it is imperative that the water depth at the starting platforms be increased in order to comply with current regulations and to provide a safe situation for swimmers.

As to the concrete pool structure, as mentioned previously the pool is of cast-and-place construction and it includes a number of expansion joints that are filled with what appears to be a flexible sealant. In general, most of these expansion joints appear to be in reasonably good shape, however, the sealant joint between the bottom of the stainless steel gutter and the top of the concrete pool wall has failed around nearly the entire perimeter of the pool. The failure of the sealant joint will undoubtedly be responsible for loss of water from the pool. Of particular concern is certain areas beneath the gutter where the concrete pool wall and/or non-shrink grout bed under the gutter has deteriorated to the point where it is practically nonexistent. Should there be cracks in the concrete haunch behind the gutter, water could potentially flow freely underneath the gutter and out of the pool.

During our inspection, pool personnel indicated that during the summer of 2007, H2O Pool conducted underwater dye testing of the pool shell, in particular, focusing on the expansion joints. The report provided by H2O Pool indicated that there were multiple leaks in the joint at

the gutter and the top of the pool wall and that leaks were found in the joints between the floor-to-wall seams. Given that another year has passed since the testing conducted by H₂O, we believe it is safe to assume that the leakage reported has only worsened.

In addition, the pool returns were observed to be bubbling air, which is indicative of leakage in the return lines. It is also important to note that there is a single main drain in this system, which is in violation of Code.

With regard to the pool decks, all of the decks appear to be in reasonably good condition given their age. The concrete surface evidences attempts at multiple repairs and would be considered generally rough by today's standards. Additionally, the slabs are misaligned causing ponding and toe stubbing hazards.

Wading Pool Generally:

Regarding the wading pool, it is located adjacent to the main swimming pool but at a lower elevation than the main pool. According to facility personnel, this is a very popular amenity and is one that definitely needs to be included in any renovation or replacement plan. Facility personnel indicated that this pool loses as much as several inches of water daily. The wading pool is of a rectangular shape and appears to have been constructed at some date later than the main swimming pool. The wading pool is of concrete construction and incorporates individual surface skimmers as opposed to a full perimeter gutter system. During the inspection, the surface skimming system did not appear to be functional which would result in no removal of surface debris from the pool water.

Furthermore, we were advised that the existing floor inlet system had been abandoned and that the filtered and treated water was being returned to pool through a pipe running from the mechanical room across the pool deck and into the end of the pool. Clearly, this is a temporary solution to a significant piping problem and is a situation, which should be addressed immediately.

Pool Mechanical Generally:

With respect to the pool mechanical systems, the main pool is filtered by a B.I.F. Vacuum Diatomaceous Earth Filter. This filter appears to have been installed during the original pool construction. With the filter room located below the pool water level, the open top-vacuum filter system can present significant problems by flooding the mechanical room in the event that the recirculation pump is shut down. On the day of our inspection, pool operational staff were experiencing difficulty with the filter tank overflowing and flooding the mechanical space. This system incorporates a positive shut-modulating valve, which is intended to close completely when the recirculation pump is shut down. Apparently, this valve is no longer closing or closing tightly which allows the filter overflow.

In the 1970's, Vacuum D.E. filters were quite common and were in use nation wide. Since that time, the powdered D.E. has been determined to be a carcinogen when inhaled and its use has been significantly curtailed. Additionally, D.E. filters are relatively maintenance intensive due to the manual cleaning and recoating operations, which must occur from time-to-time. Typically in a below grade installation, pressure filters would be installed and the filter media would typically be sand.

All of the piping in the main pool's mechanical system appears to be the original steel piping and we would suspect that its useful life is nearing its end. The wading pool filtration system consists of a single, horizontal, Mermaid high-rate sand filter. This fiberglass tank does appear to be properly sized for the application and appears to be properly arranged. Both the swimming pool and the wading pool are treated using a combination of liquid chlorine and liquid muratuc acid.

Conclusion:

In short, our inspection has revealed that the pool at Pocantico Hills is in need of a total replacement or a very significant and costly renovation. At this point, we believe it would be wise to discuss how best to approach this project and to ask your client to provide input with regard to what they anticipate accomplishing with this project. While a large-scale renovation could be completed, such a renovation would result in a pool that is essentially the same as the pool built in the 1970's. We believe it would be a disservice to your client not to discuss the possibility of replacing this pool entirely with a pool or pools that are of a different size and configuration than those existing. We would make certain that in a new construction situation that the pool be designed to support all of the existing programming requirements and we would endeavor to develop a design that would provide many additional programming possibilities. In many cases, we are able to offer programming options that allow a single facility to be used for many different programs simultaneously. Should it be your client's desire, we could design the pool with an eye towards increasing programmability and revenue generation in an attempt to completely or partially offset the cost of the pool operations.

Recommendations:

Regarding the possible replacement of the existing pool facility, given that this pool is primarily used to support an active competitive swimming and diving program it would seem to make the most sense to consider constructing a pool that is heavily weighted towards supporting competition swimming and competitive training.

We have learned that this is one of few true long-course pools available to swim clubs in this area. However, we have also learned that there are certain events in the age group swimming conducted at this facility that are more geared towards short-course or 25-meter facilities. With this in mind, we would suggest that consideration be given to reconfiguring the pool to what is commonly referred to as a "stretch" 50-meter with an integral diving well. The "stretch" 50-

Mr. Brian Cieslinski, SEI Design Group

July 23, 2008

Page 5

meter pool is generally a few feet longer than 50-meters, which would then allow the installation of a moveable bulkhead, or moveable pool wall, which would provide the facility with the ability to host short-course or long-course training and events. By incorporating a moveable bulkhead, the school would have the ability to run the pool as a full 50-meter long-course, a 25-meter short-course, or as a 25-yard course. Additionally, the bulkhead may be used to segregate portions of the pool so that lap swimming could be occurring from one-end of the pool while the opposing end could be being used for water aerobics, learn-to-swim programs, etc.

Should the direction of this project lean towards the complete replacement of the pools, we would also suggest that the wading pool or toddler pool area be completely reconfigured to include slightly deeper water at one end, tapering to a 0-depth beach entry at the opposite end. We would also suggest that interactive spray features, a raindrop, or other water feature be incorporated into a new children's activity pool.

In any event, we appreciate having had this opportunity to offer our observations and we look forward to discussing further how best to proceed with this project. Should you have any questions or require any additional information please do not hesitate to contact me.

Sincerely yours,
AQUATIC DEVELOPMENT GROUP, INC.



David L. Keim
Vice President, Sales & Marketing

DLK:cm

cc: Zach Kasky / SEI Design Group, 187 Wolf Rd, Ste 205, Albany, NY 12205