

Authenticity and an Original Designer at Louis Kahn's Trenton Bath House

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The Trenton Jewish Community Center hired Louis Kahn to design a new suburban campus for them in neighboring Ewing Township in 1954. The campus was intended to include a community center with a synagogue, and a recreation and day camp complex. The Bath House and pool opened in July of 1955, without the roofs on the Bath House. The roofs were added before the opening of the 1956 season. The Day Camp Pavilions were constructed shortly after the Bath House. None of the landscaping or the community center were completed to Kahn's design, despite designs and sketches extending into 1958. The architect-client relationship was uneven, likely due in part to a lack of consensus on the part of the client. While some of the JCC leaders were eager to have Kahn's visionary design, it was by no means unanimous. They also suffered from a lack of funding, which made them cautious of committing to Kahn's comprehensive schemes for the property. Nick Gianopulos, Kahn's structural engineer from Keast and Hood, has said that "...the JCC treated Lou dreadfully."

The design work was productive for Louis Kahn, despite the lack of commitment from his client. He attributed the germination of his philosophy of servant and served spaces to the Trenton Bath House. This nine-square plan is based on a tartan grid, with the narrow zones providing the square corner piers and rectangular servant zones. The corner piers are the primary structure of the buildings, and also serve for entrance, storage, access to vaults, and shelter for toilet facilities. The rectangular zones provide for circulation around the inner square focal point of each structure, and at the locker rooms provide natural light.



Figure 1: Model of the Trenton Bath House on display at the University of Pennsylvania.

The Bath House designs also foreshadow other of Kahn's work, such as the Salk Institute and the Kimbell Museum in the treatment of landscape. The Trenton site designs focus on the creation of rooms, largely through closely placed tree bosques. The landscaping creates a progression of spaces leading to the structures. Even the Day Camp pavilions are shown in vignettes as in a clearing in dense trees, an enclosed outdoor room; in reality, the pavilions are in an open field, and no planting was ever done.

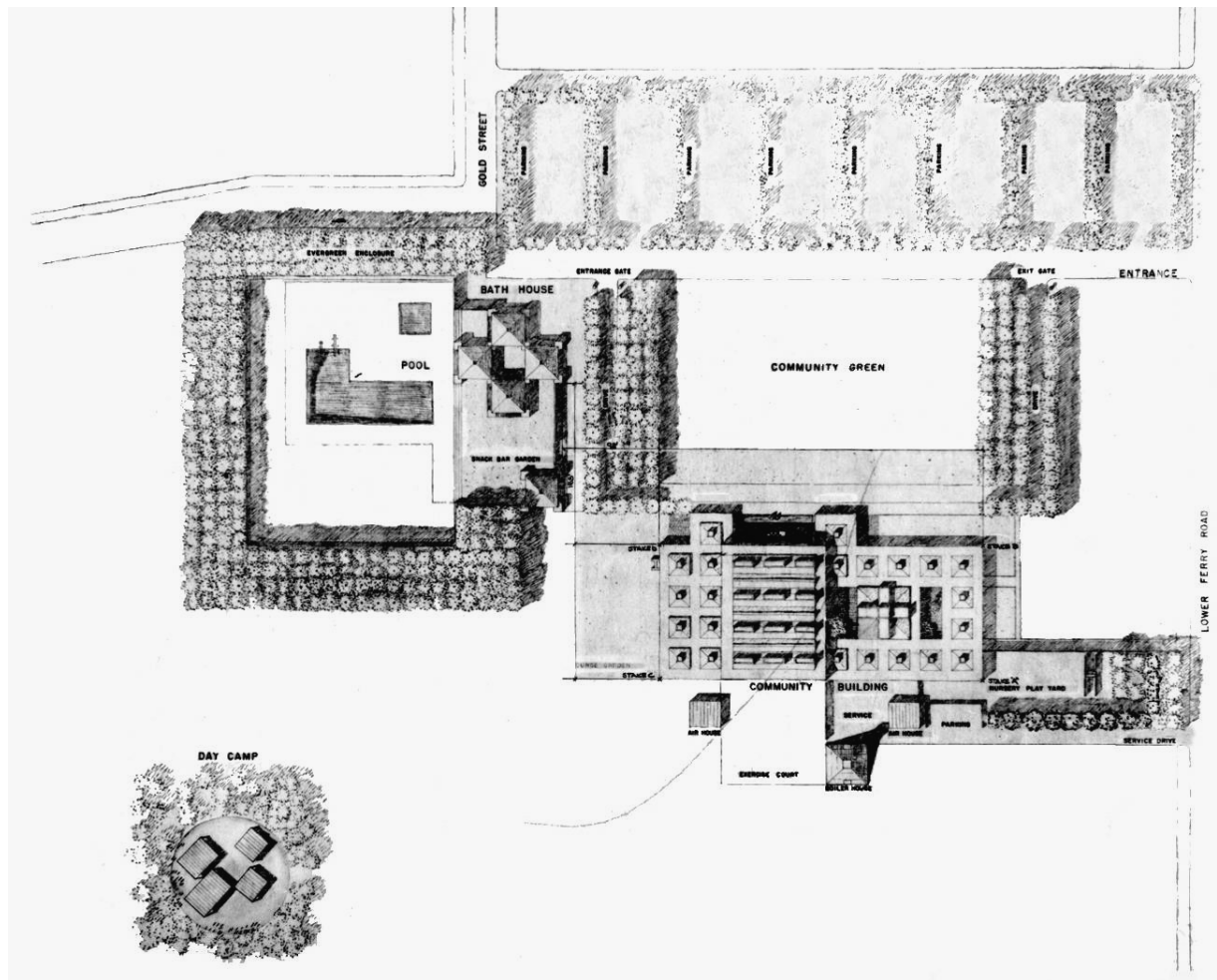


Figure 2: Kahn's 1956 site plan for the JCC. The current Community Center sits much closer to the Pool complex than in this design.

By 2001, the Trenton Bath House and the Day Camp Pavilions were in a state of considerable disrepair. The ambivalent attitude of the JCC towards these buildings led them to do little or no maintenance, with the result that they were even less hospitable to the majority of users than ever. The Bath House opened in the same year as the Fountainbleu in Miami Beach, and in popular culture, the Bath House suffered by comparison. As years passed, the contrast between the Bath House and its competitors, the suburban country clubs, grew even greater. The JCC took pride in their ownership of an internationally known piece of architecture, and marveled at the busloads of European and Japanese architects who came to visit, but most of them did not in fact like the buildings.

At the Bath House, the concrete block was covered with mold and moss; the concrete slabs were heaved and patched; and the toilet and shower facilities were dingy and worn. Two walls were near disintegration from water damage caused by roof drainage.



Figure 3: Walls are covered with organic matter where roof run-off occurs.

At the Day Camp Pavilions, Kahn's inventive system for these elemental buildings had proved to be inadequate within seven or eight years of their construction. The clay flue liners had succumbed to freeze-thaw damage, and the JCC removed what had not fallen off, and stuccoed the remaining concrete columns. By 2002, the concrete plank roofs at the two large open pavilions were in poor enough condition that they were barricaded to prevent people from entering them. The roofs looked dangerous because of the water staining that developed along the joints, and the obvious corrosion of the reinforcing. After further investigation and analysis by Keast and Hood, the structural engineers, it turned out that because of their initial construction, the planks would not fail in a plastic manner, i.e. gradually; instead, they would be subject to brittle failure, which could happen without warning. They continue today to be barricaded and out of service.

Because of all these issues, and because the buildings were not much loved by the Community Center members, the JCC attempted to tear them down, but were stopped by the outcry of local, regional, and national preservationists. The JCC then changed course, and in 2001 commissioned a preservation plan for the complex, funded by a grant from the NJ Historic Trust. The JCC sold the complex to Mercer County in 2006, and the County transferred it to Ewing Township in 2007 with preservation covenants. Since then, the County has procured professional services for the restoration, and secured another grant from the NJ Historic Trust for partial funding of the construction.

Several issues facing our team as we approached the restoration of the Bath House and Day Camp Pavilions called for input from the original designers. While Louis Kahn has been dead for more than 25 years, Anne Tyng, his protégé and mistress, is living in California after teaching for many years at the University of Pennsylvania in Philadelphia. She was known for her intricate geometries, some of which comes through in the Bath House designs. The design team also recruited the original engineer for the project, Nick Gianopulos of the Keast and Hood Company, to design the structural repairs. With

assistance from the archivist at the architectural archives of the University of Pennsylvania, we were able to set up a meeting with Anne Tyng, Nick Gianopulos, and Michael Mills.

The Bath House is composed of four pyramidal roofs supported from the corner piers. The roofs have no gutters. Below the roofs, the concrete block walls are located either at the interior or exterior face of the corner piers, and in two instances centered on them. Where the walls are beneath the roofs, they are in nearly perfect condition. Where they are outside of the roofs, they are in poor condition at the upper courses where the water has penetrated through the exposed top surface of the block. Mortar has eroded from the joints, and cracks have opened up due to corrosion of the horizontal joint reinforcement. Where the roofs drain directly onto the roofs, the walls are seriously deteriorated, to the point where they require reconstruction. How to treat these walls, and improve conditions to prevent future deterioration, is one of the key issues of the restoration, and one for which the input of the original designer could be very helpful.

Looking at the original drawings, we saw no indication of roof-edge gutters, and no capping on the block walls. Nick Gianopulos suggested that the Bath House was considered by Kahn to be a temporary seasonal building because he did not include roof drainage, as he would have done for a permanent structure. The construction drawings do show gravel-filled circular drainage basins at the centers of the Bath House sides, but the roofs do not reflect this design. Our search of the archives at the University of Pennsylvania turned up a drawing that solved this riddle; the initial design for the roofs were intersecting gables resembling origami, which had valleys centered on the sides of the squares. When our team discussed this drawing and the design intentions for the roof drainage with Anne Tyng, she did not really remember this elaborate roof form, although Nick Gianopulos pointed out to her that it had her lettering on it. She said that she and Kahn had envisioned the water running over the roofs and structure like a ruin, and this vision has nearly been achieved. She said that gutters were never considered, that they would destroy the purity of the forms. So we are faced with solving the problems of water entering the walls and diverting water in an invisible fashion.

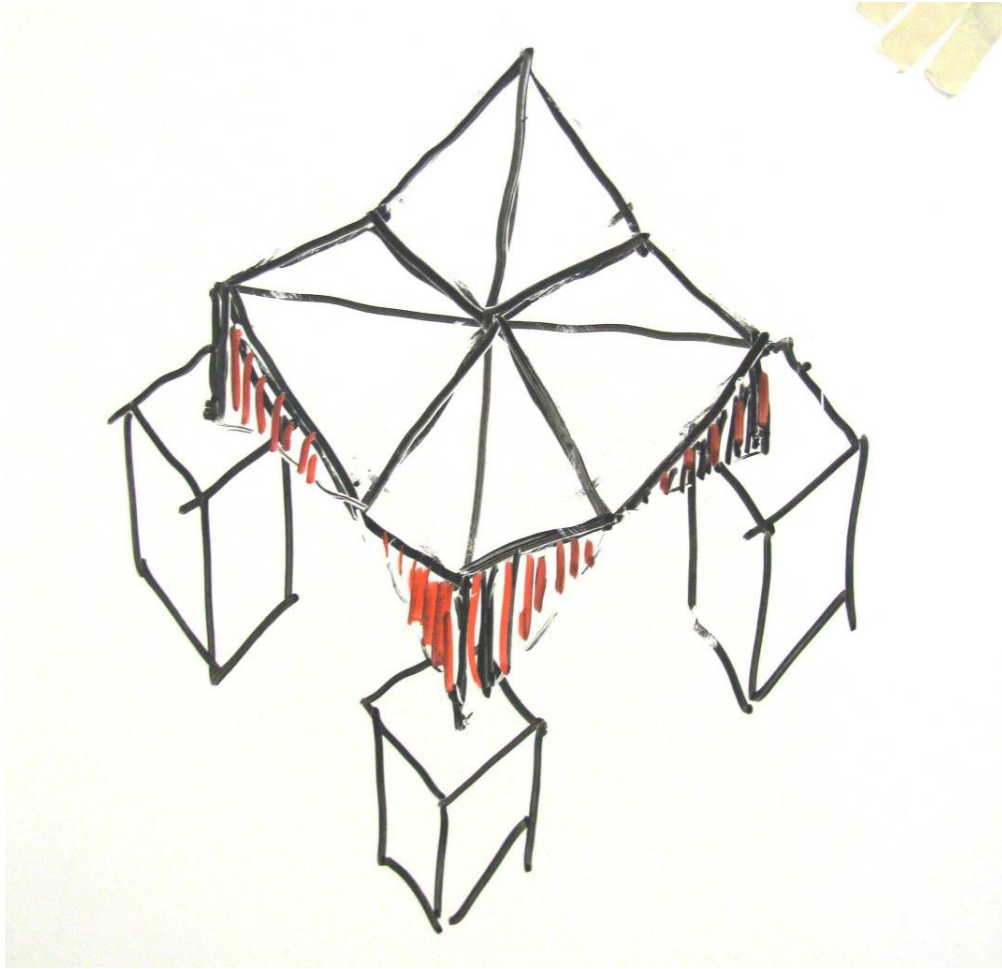


Figure 4: The intersecting gable roofs would have drained water right into the gravel pits.

A Snack Bar was part of the original program for the Bath House, and Kahn's design drawings show it in three different locations. The Snack Bar was never constructed to Kahn's design, but since it is a vital part of a summer pool club, the JCC constructed one against the wall of one of the pavilions, completely in conflict with the original design. How to place the Snack Bar was another issue with which we looked to Anne Tyng to address.



Figure 5: The snack bar shortly after construction of the Bath House. It was enlarged in later years.

The Snack Bar is shown in three locations – within the Bath House structure at the base of the stair to the pool; outside the pool enclosure near the Day Camp and recreation fields; and at the corner of the pool and Bath House development. This corner location is the most developed in both site plans and renderings, and could be constructed in accordance with Kahn's thoughts quite accurately. This approach raises issues of integrity, and conflict with the Secretary of the Interior's Standards, which state that designs that were never built should not be constructed. Several approaches under consideration by our team included a building of the mass and location shown in the Kahn drawings, but abstracted; a building in a similar location that helps to define the corner of the pool enclosure area; and a bar-type building that defines the edge between the pool complex and the Day Camp area. We discussed the Snack Bar at length with Anne Tyng, and she did not feel that we should be constrained by Kahn's sketches and thoughts, but she agreed that the existing Snack Bar should be removed. More than 50 years later, the building should be of its own time. We have since selected the approach of defining the corner of the pool enclosure, but with a frame structure that does not resemble the Bath House structures.



Figure 6: The Snack Bar in the form of one of the Bath House structures is to the right of the community center.

Adjacent to the entrance to the Bath House, Kahn and staff from his office painted a mural on the concrete block wall. It became severely deteriorated, and was painted over. It does not appear to have been of much importance to her, because she did not remember the color palette, or much about it at all. Fortunately, very clear black and white photos exist of the artwork, and a few color photos. If the paint is removed, it may also be possible to trace the pattern so that it can be re-painted with great accuracy. Paint analysis will also be able to confirm the color scheme found in the photographs.



Figure 7: The original mural was adjacent to the entrance. The foundation plantings were not of Kahn's design. (Photo by Jeremiah Ford III, AIA.)

The Kahn drawings contain many drawings of landscaping for the complex, including dense bosques of trees around the Bath House and pool, and geometrical arrangements of hardscape and vegetation throughout the complex. None of these schemes were executed, and so this was another issue to delve into with one of the original designers. The first thing we confirmed with Anne Tyng was that the existing landscaping around the Bath House, which was installed in the 1950s, was not initiated or approved by Kahn or his landscape architect. In fact, it was conceived and installed by a ladies' committee, over the objections of Lou Kahn. Their approach to the landscape was very different, using bold geometric arrangements of trees to create outdoor rooms. Another landscape device was varying ground plane treatment. The Day Camp pavilions and the recreation courts were placed in large circles of crushed stone to differentiate them from the surrounding lawn, and the ground surface under the tree bosques was also treated differently from the lawns and walks.

The final issue we wanted to cover with Anne Tyng in our brief meeting was the intention for the circular element in the center of the central courtyard at the Bath House. It is shown with a plumbing connection at the center in the construction documents. In the professional photos, it is shown first as a bed of stone with what appears to be a drain pipe stub extending out of the center. In later photos it is worn down grass with two rows of pavers around the edge. We wanted to know which was the intention. It turns out that Kahn intended it to be a wading pool. We had considered a central spray element as a wonderful addition to this space, but discarded it for liability reasons. After hearing that it had been designed to be a water feature, we pushed it once more, but the Township turned it down again.

We were fortunate to have the input of Anne Tyng and Nick Gianopulos, two members of the original design team, to develop the design for the rehabilitation of the Trenton Bath House, the Day Camp pavilions, and the site. While we had found much from the Kahn archives, the intent behind the drawings, and the significance of the drawings, was explained by these professionals, enriching our understanding of them.

We have used this input to design a new Snack Bar that is harmonious and respectful of the Bath House, and accomplishes Kahn's goals without being an implementation of the Kahn concept. We have also pushed ourselves to develop technical solutions to the roof drainage issues that will perpetuate the vision of the water running over the buildings like ruins without actually ruining them.

We have also used this input to push for a comprehensive site plan incorporating the principles of Kahn's designs, despite a lack of support from the Township. We sometimes feel we share some of Kahn's experience, as the township administrator responds to our plans including the Community Green by saying, "Kahn couldn't convince the JCC, and you are not going to convince me."