Salk Institute

Form & Body

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Design Theories
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In 1962 Louis Kahn began construction on one of the most iconic buildings of the twentieth century. The Salk Institute for Biological Studies was founded by polio vaccine creator Jonas Salk, and was designed to be a haven for scientific researchers to free themselves from administrative distractions in a contemplative environment that was designed to nurture creative thought.

Both Kahn and Salk saw the institute as a modern monastery, essentially serving the same functions as its ancient Roman precedents, which, it could be argued, are some of the earliest planned communities and place of retreat for a select few (Leslie, 2008). Of course the Salk institute was designed to harbor a different kind of intellectual pursuit: the collaborative search for scientific knowledge.

Kahn’s layout of the building was a direct response to the site on which it is located. The cliffs overlooking the Pacific Ocean in La Jolla, California provided a challenging location for the architect. Kahn’s previous scientific building (the Richards Building), was situated on a much smaller tract of land, requiring the vertical exploration of space. This approach was initially used by Kahn in relation to the Salk Institute, however Salk felt that it was not an appropriate reaction to the site (Leslie, 2008).

Form

The Salk Institute can be directly related to Paul Rudolph’s six determinants of architectural form. As previously mentioned, the structure responds beautifully to the site, using materiality and composition to create a facade to the sky (Treib, 2006). The use of dull materials throughout the central courtyard helps to emphasize the natural beauty of the ocean and sky. The plaza that separates the two structures is arguably one of the most photographed modern architectural compositions in the last half century. This is because of the framing that Kahn has masterfully created by directing the flow from the land to the ocean between the two structures. This flow is meant to symbolize the collective thought and creativity stemming from the institution and back out into the world. This notion is pushed further through the utilization of a small channel of water flowing from in between the buildings to a small fountain, which is several meters below in a quite gathering area overlooking the Pacific. This psychological aspect is yet another integration of one of the six determinants of architectural form. Kahn also successfully integrated the notions of function and materiality into his building. The functional aspect of his form works on several scales, from that of the site down to symbolical scale within the mind.

On a larger scale, Kahn has manipulated a basic rectilinear form to respond to the views offered by the immediate environment. Not only did this move provide individual views to the Pacific form the private study portico’s that flank the central plaza, it simultaneously created a dynamic textured surface to a perspective looking out to the ocean from the plaza (Wiseman, 2007). It is interesting to note that the plaza, albeit the most photographed and discussed
space throughout the entire building, is largely the least functional, formally speaking (Wiseman, 2007). The true functional spaces of the institution reside on the outskirts of the plaza. The private study towers and the three floors of laboratories on either side of the main artery are where scientists contemplate and create, respectively. The laboratory spaces were purposefully designed to be largely homogeneous (as well as the respective mechanical support spaces that separate each floor) to allow for the easy manipulation of the space depending on the users’ needs (Leslie, 2008). Kahn was sure to employ this kind of careful thought throughout all scales of the building.

He paid special attention to the materiality of the structure, making sure that the true properties of the materials were not ‘hidden’. For example, Kahn had the handrails specially manufactured out of steel. Upon installation, workers noticed scratches from the manufacturing process covered the railings. When they began to polish them out, Kahn ordered they stop as to leave evidence of the process of making, staying true to the life of the material (Wiseman, 2007). This thoughtfulness was also applied to the concrete forms around the exterior of the building. Instead of patching up joint lines in between concrete forms, Kahn had the edges of the plywood beveled, which created a slight protrusion on the final surface when the forms were removed. This seemingly minuscule detail created a shallow ridge along the surface of the concrete, which allowed for the disruption of light along the surface, creating a dynamic texture that changed throughout the day (Wiseman, 2007).

The level of care and thought that was integrated in a hierarchy throughout the building works simultaneously to achieve a form that produces subliminal spaces for contemplation and reflection.

By slightly manipulating the rectilinear form, Kahn was able to provide each private study portico with a view to the Pacific.
By slightly manipulating the rectilinear form, Kahn was able to create a dynamic perspective that served multiple functions.

Dynamic Texture
By applying the same logic on a much smaller scale, Kahn was able to create interest across an otherwise mundane surface.
The Salk Institute embodies many analogies between the human body and architectural thought and design. This is not a trait that is specific to this building, of course. As Anthony Vidler points out in his article “The Building in Pain”, there are several types of bodily projections that have existed throughout history. The Salk Institute successfully captures differing states of bodily projections. Kahn certainly projected literal meanings of the body onto the building, such as the laboratories acting as the lungs of the institute, and the meeting place like the brain (Steele, 1993). This literal projection of the body was very common in classical architecture, which is not surprising, as Kahn took precedent from classically designed Roman monasteries (Leslie, 2008). However, the real driver for the subliminal experiences within the spaces arguably lies within the amplification of bodily experiences, rather than the simple replication of them.

At an experiential level, the building works, like form, on a multitude of scales. As previously discussed, the program of the building is separated into three distinct spaces: the plaza, the study towers, and the laboratories with their supporting mechanical spaces. The idea behind this division was predominantly driven by an experiential logic. The study towers, containing the private study portico’s, were a place for isolation, meant to foster creative thought, or the conception of an idea. To facilitate this particular state of mind, the rooms were given special attention. Warm teak made up the bookshelves, flooring, and window lattices, successfully juxtaposing the cooler (but still relatively warm) concrete which made up the building itself (Leslie, 2008). The laboratories work on a different scale, however.

Instead of being separated by dividing walls, corridors, and the like, the laboratory spaces of the building were approached with bodily experience in mind. The vast open space was intentionally laid out so as to encourage collaboration among scientists. These spaces were where the creative thoughts from the study portico’s underwent testing. The interesting aspect of this particular programmatic layout lies in the flow to the next main space.

The central plaza was intended to not only be a place for reflection, but also a gathering space which symbolized the provision of gathered knowledge to the rest of the world (Merrill, 2010). Instead of creating a linear program, Kahn made sure to establish an interconnected flow of movement. This would ensure a constant dialogue between all aspects of the creative process, from inception, to analysis, and finally contribution (Leslie, 2008). This design works harmoniously on a human scale to create feedback loops which establish a network of movement. The areas that provide movement between the central plaza and the rest of the building are themselves functioning as manifestations of human experience.

These ‘lightwells’, as they have commonly been referred to, not only work to bring natural light into the front lower levels of the building, they also subtly act as spaces of reflection, embodying the notion of focus. Similar to the perspective offered by the plaza, the light wells create a vertical tunnel to the sky. Using the same system of dull materials, the vivid blue is emphasized as one gazes upward through the lens that is the building itself. This interstitial space is indeed functional (providing light and facilitating movement between spaces), however it was treated in the same vein as the private study portico’s, laboratories, and plaza: an embodiment of human emotion.

It should be noted that not only do individual spaces project the mind and spirit of the institute, but the underlying logic behind its creation as a whole, and throughout its conception, successfully encompass both Kahn and Salk’s attitude toward contribution to society.
Focus
From the bottom of a lightwell, Kahn once again uses the building as a frame to project the bodily experience of focus.

Movement
Instead of creating a linear flow, Kahn made sure that the program was laid out in such a way as to create a constant dialogue among scientists.
Knowledge
The Institute can be regarded as a pair of lungs, circulated knowledge back into the world through the vastness of the Pacific.


