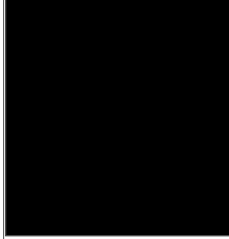


INTER-PLAY



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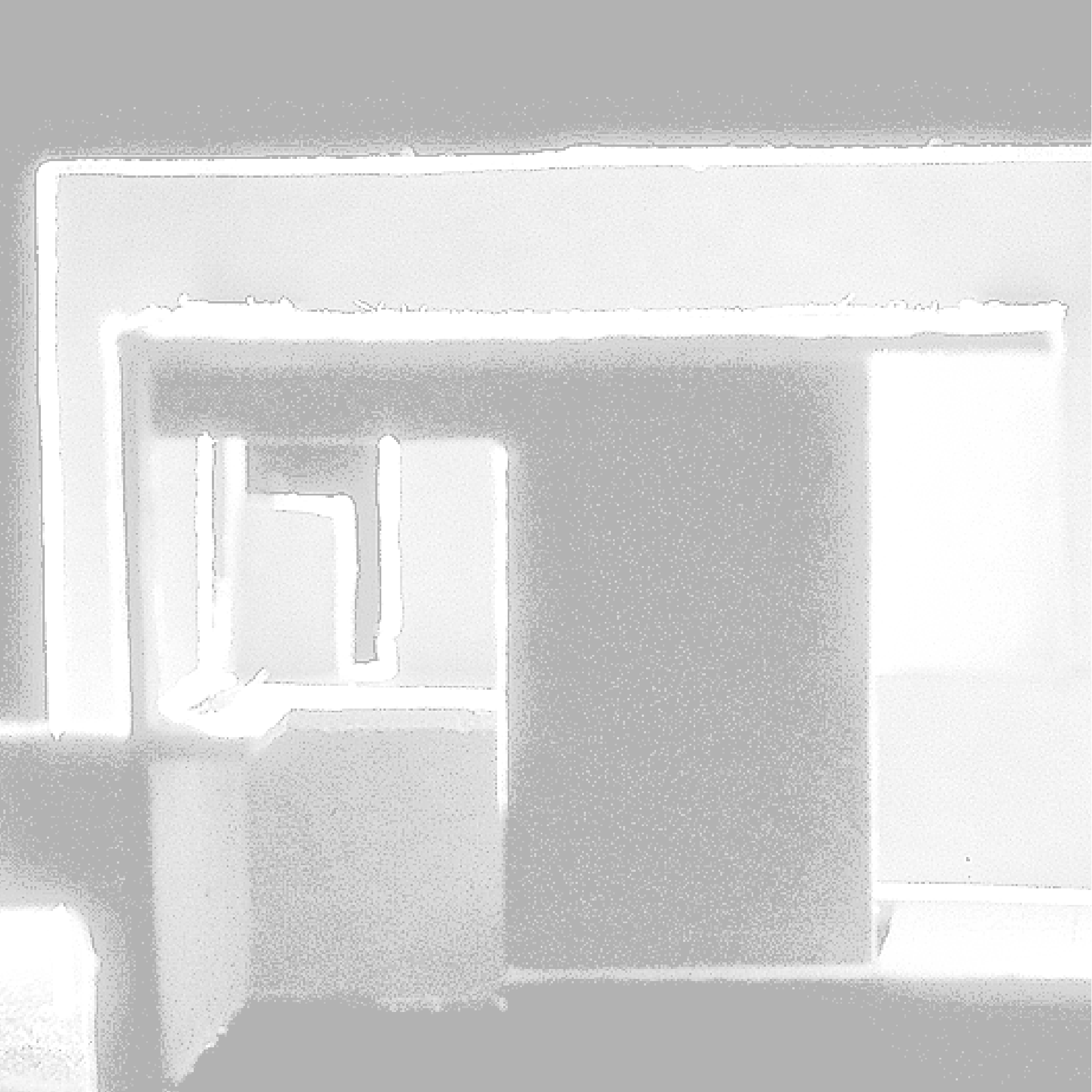
Hunter Pittman

To my mother and father

INTER-PLAY

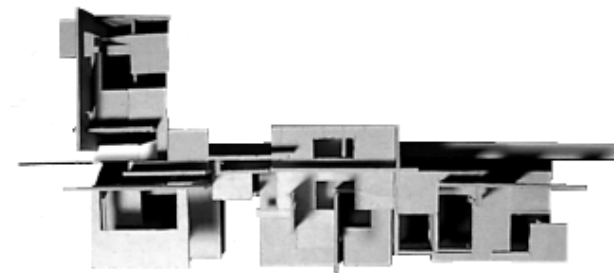
An Architecture School for Duke University

Don Kranbuehl



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Sunset through Site, West Campus, Duke University

“Architecture, as with all art, is fundamentally confronted with questions of human existence in space and time, expressing and relating man’s being in the world.”¹

Juhani Pallasmaa



Conceptual Model

ABSTRACT

Architecture is explored as an interplay between nature and a composition of forms. This thesis involves a project, an architecture school for Duke University, and examines the idea of composition as a type of “structured play.” Structured play is used as a method to study reciprocal relationships in architecture. This exploration focuses on the relationship between inside and outside in order to create a place for education which unites nature with the man-made.



Wooden Bridge Entrance to Gardens, Duke University

INTRODUCTION

*interplay - reciprocal action and reaction; interaction.*²

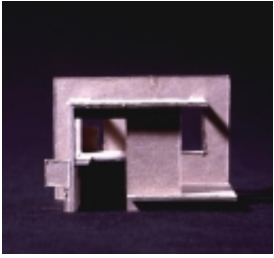
*reciprocal - experienced, felt or done by both sides; mutual.*³

Architecture involves the interplay between nature and the man-made. Because architecture must be built upon the land, a relationship is established between the architecture and the surrounding nature. While there are several types of relationships that can be established, this thesis project deals with one in which a dialogue is created between the two. The architecture acts in response to nature.

The dialogue between architecture and nature is of great importance because it reveals an architect's attitude about the natural surroundings, and possibly can reflect a culture's understanding of nature. As W.G. Clark writes in his essay, *On Rigour*, "The most important quality of architecture is the way it relates to, signifies and dignifies a place on earth."⁴ In this thesis, the site for the proposed architecture school is

in the forest surrounding the West Campus of Duke University. It is understood that the forest is beautiful in its pure state and that this beauty could never be recreated. This thesis, however, is about creating an architectural space which reveals the beauty of the forest in a new way.

My concept for linking the idea of nature to a school is rooted, in part, in writings about the power of nature. Ralph Waldo Emerson believed that Nature offered a moral as well as a creative dimension, writing that the poet uses nature as "the exponent" of his imagination.⁵ Emerson believed that Nature should be a place to discover oneself because every individual is a manifestation of Nature, one of its many miracles. In creating a school of architecture, I wanted to create a space which was a "house of inspiration." Nature was an ideal beginning. The idea for the school became a space which engages individuals with themselves and others and where nature would serve as a common source of inspiration.



Study Models

A school of architecture should not only be a place of inspiration but it should also take a form which embodies a meaningful understanding of architecture. In thinking of what characteristics an architectural school should embody, I considered the writings of architect, Aldo Van Eyck. Van Eyck felt the essential qualities of architecture were in the relationships of architecture, what he called “twin phenomenon.” He describes twin phenomenon as a reciprocal relationship between two obverse qualities, such as light and dark, which depend on each other for meaning. Aldo Van Eyck believes twin phenomena are the essential aspects of architecture.

“Complementary or opposing aspects, qualities, or notions (twin phenomenon I have called them, two by two) such as open-closed, inside-outside, . . . often brought up here with others like light-dark, unity-diversity, single-plural, part-whole, . . . form a vast network of meaning from which nothing can be lifted - no twin phenomenon (or twin phenomenon-split-in-two) are extracted without impoverishment or become altogether meaningless - mind-splitting.”

“All twin phenomenon together form the changing fabric of this network - and the constituent ingredients of architecture. Though different, each of them, they are at the same time - this is the point - also reciprocally open to each other. Far from being mutually exclusive or independent, they merge, lean on each other. Equality is their cardinal common denominator.”⁶

In order to begin to explore the idea of twin phenomenon, I created conceptual study

models, or “objects.” The objects possessed opposing yet complementary qualities, such as being both ordered and playful, and became the beginning for creating a space for the architecture school. They embodied the characteristics of the “rational playground” that I wanted to create. The objects were explorations of structure and twin phenomenon. I used structural qualities such as geometry, order, and hierarchy to create a unified man-made whole. The objects also embodied the idea of the twin phenomenon, such as the layering between inside and outside.

This thesis is about creating a place for architectural education. It contains two major parts. The first part uses study models to explore the desired qualities for a school of architecture. The objects used a geometric order to compose forms which express twin phenomenon. The second part is the final design of the school. The final design is a composition of forms which uses the relationship of the inside and outside in order to reveal the qualities of the forest and unite the school with nature.

An important concept underlying both phases of the project is “interplay.” Interplay will be explained as a way of working. In that sense, it refers to a structured playing which involves the composition of twin phenomenon. “Interplay” also refers to the idea of twin phenomenon itself, in this case, the relationship between the inside and outside and the connection of nature to the man-made.

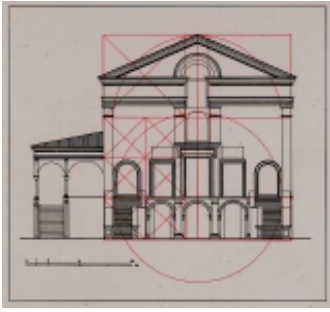
CONCEPTS

Inter-play

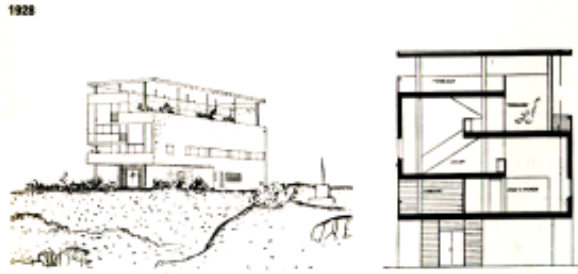
Henry Sheppard Plummer writes about the notion of “play” in the creative process in his article “Liberative Space.” Playing is not considered a child-like activity but rather a serious and essential component to a creative environment. “Play is innovative, a setting into motion of spatial and material events that are a priori undetermined, where experience is formless yet evoked, so that the individual is self-empowered to give form to the experience and thereby recreate it, each time in a different way.”⁷⁷ The wonder of play was a central theme of existential philosophy, he writes, citing Jean-Paul Sartre who said that play “releases subjectivity.”⁷⁸ If playing is in some sense

an “a priori undetermined” experience, discoveries made in playing will inherently teach one about oneself. Playing, however, does not involve the removal of one’s self from the world, but rather it does the opposite. As Plummer writes, “Like freedom and action, real play is inherently dialectical, and should be thought of rather as an ‘interplay’ between person and world.”⁷⁹ Playing in architecture sparks an interaction between a person and his spatial world. The individual experiments with a set of spatial and material opportunities. The activity of play is not arbitrary or a form of relaxation, but provides a feeling of freedom and a sense of discovery. The interaction between a person and this spatial world is the stimulation and the catalyst for creativity.

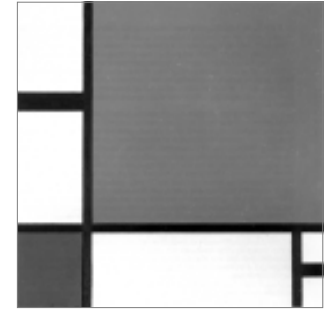




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- 1 San Sebastiano 1475, Leon Battista Alberti
 2 Villa a Carthage 1928, Le Corbusier
 3 Composition in Red, Blue, and Yellow 1930, Piet Mondrian

Structured Play

While “play” provides a feeling of freedom, real freedom is found only where structure and rules exist. Jean Piaget, the philosopher and child psychologist, helped develop a fundamental definition of structure. Piaget defines a structure as a composition comprised of a series of limits or transformational laws. His definition is useful in understanding ways to structure play and compose in a spatial world.

Piaget based his definition of a structure on three properties: wholeness, transformations, and self-regulation. “Wholeness,” he wrote, was the “defining mark of structures.”¹⁰ A whole consists of elements that are “subordinated to laws, and it is in terms of these laws that the structure qua whole or system is defined.”¹¹ The “transformations” are the laws that govern the structure’s composition. The transformations of a structure are “not reducible to a one by one association of its elements” but rather are subject to the overall prop-

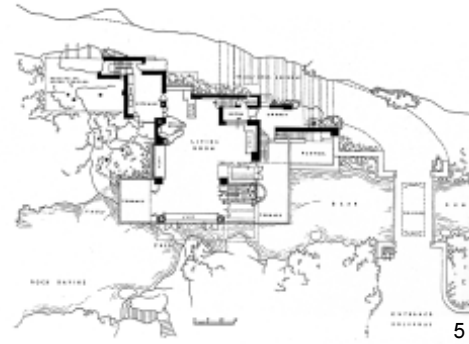
erties of the whole.¹² Another distinctive property is “self-regulation.” It refers to the idea that the transformations always seek to “engender elements that belong to [the structure] and preserve its laws.”¹³ Piaget’s understanding of structure is useful to architecture because it describes a cohesive and self-engendering “whole” as a composition of limits.

Using structured play, an architect can compose a unified whole by using limits from geometry. Architects have used geometrical limits to create architectural composition since antiquity. For example, the *corpo trasparente*, or “transparent body,” is a Renaissance idea that architecture is defined by a three-dimensional transparent grid. This grid was thought of as the basis for composing a structure in three-dimensions. When the *corpo trasparente* is used in play, it establishes a foundation of order for creating harmony in a composition of forms.

I believe the idea of structured play is seen in the compositions of several 20th century architects, including Le Corbusier and Frank Lloyd Wright. Le Corbusier was interested in the idea of composition and the arrangement of forms using an order based in geometry and proportion. He wrote, “The regulating line is a satisfaction of a spiritual order which leads to the pursuit of ingenious and harmonious relations.”¹⁴ Frank Lloyd Wright was interested in creating an “organic whole,” which united the architecture with the site. Using a Tartan grid as the basis for his prairie style homes, Wright composed geometrical motifs into his plans, sections, elevations and details - every aspect of his homes. Compositional unity, based in a geometrical order, has been the pursuit of many architects in their effort to create a harmony within their architecture.



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4 Schroder House 1923, Gerrit Rietveld
5 Floor Plan of Falling Water, Frank Lloyd Wright
6 Falling Water, 1937

Play with Twin Phenomenon

Architectural composition, however, should involve more than geometrical transformations. An architect can use geometric transformations as the basis for composing qualities of light and shadow or solid and void. These types of obverse relationships become an important aspect of composing forms. The relationships are best described by Van Eyck's concept of twin phenomenon. The reciprocal relationship requires the presence of one quality to give meaning to the other. Creating relationships between the inside and outside or finding a powerful balance of light and shadow becomes an important aspect of architectural composition. It is left to the skill of the architect, like the skill of a composer, to create a harmonious whole which expresses an idea.

Interplay of Nature and Man-made

While it is critical to study the composition of forms, it is equally important to understand the images that forms transmit. Juhani Pallasmaa writes that the meaning of a work of art, "lies not in its forms but in the images transmitted by the forms and the emotional forces that they carry."¹⁵

Like a work of art, architecture can use the images of its forms to carry meaning. Norberg Schulz, writes about the idea of image as it relates to architectural forms in his book, *The Concept of Dwelling*. He believes that art, like poetry speaks in images - that it has a figural quality. Interpreting a text by Heidegger, Schulz writes, "The work of art, the building, does not represent anything, rather it presents: it brings something into presence."¹⁶

One example of a composition of forms which "brings something into presence" is Frank Lloyd Wright's *Falling Water*. *Falling Water*, a composition of horizontal planes in space, gives a presence to the qualities of a forest stream and waterfall. The smoothness of its concrete contrasts with the rough texture of the boulders while the glossy finish of its stone floors reflect the qualities of the wet stream bed. It is a composition which both complements and contrasts with nature in order to present the distinctive qualities of the natural setting. Nature and the man-made take on a reciprocal relationship. The nature gives meaning to the architecture and the architecture gives meaning to the natural setting.