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Perceptive Architecture: Reviving the perception of space in a digital era

Minho Jang
Kennesaw State University

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PERCEPTIVE ARCHITECTURE
Minho Jang

‘Perceptive Architecture’ : a visual understanding

The problem implied is that excessive users of smartphones have become deprived of their ability to be aware of their surrounding environment due to the constraints that it brings to our senses. Research has shown that excessive technology usage can impair attention, productivity, and memory, decreasing the ability to think creatively. But, we as architects, creative thinking is a crucial principle that must be exercised constantly and not be suppressed.

Student Signature: Date:

Approved by:

Primary Internal Advisor: Date:  Secondary Internal Advisor: Date:

Thesis Coordinator: Professor Li Man: Date:  Department Chair: Dr. Tony Rizzuto: Date:

"The thing always happens that you really believe in; and the belief in a thing makes it happen" - Frank Lloyd Wright -
The main aim of this thesis is to understand and study how technology has changed the experience of space. Today, we live in a generation where technology has become a fundamental necessity to our everyday life. According to a research by Pew Research Center, more than two-thirds of American adults currently own a smartphone, representing a rapid change since 2011. It has reached to the point where without it, we become incapable of our daily life.

The problem implied is that excessive users of smartphones have become deprived from their ability to be aware of their surrounding environment due to the constraints that it brings to our senses. Research has shown that excessive technology usage can impair attention, productivity, and memory, decreasing the ability to think creatively. But, as architects, creative thinking is a crucial principle that must be exercised constantly and not be suppressed.

We perceive what we see. Therefore, we conceive the information of an experience we have. According to Henri Lefebvre, “Nothing disappears completely, however, nor can what subsists be defined solely in terms of traces, memories or relics. In space, what comes earlier continues to underpin what follows.” (The Production of Space_Henri Lefebvre 229). It can be said that Lefebvre is implying the importance of spatial experience in context to the transition of space.

Previous experiences will affect the way the occupant perceives future experiences of space. Taking this into consideration and referring back to the problem implied, excessive users of smartphones can only be exposed to a digital space which has no defined dimension. Therefore, users become lost in this undefined space making it impossible to experience and sense the notion of real space.

How can architecture change the experience of today’s digital generation to a more intimate relationship with its users?

An experience is very important to an individual, because the impact of an experience is embedded into one’s memory and affects the way they understand space. We experience space through not only our visual sense, but through all five. Architecture can stimulate these senses to allow the user to experience the architecture with more intimacy.

“All material in nature, the mountains and the streams and the air and we, are made of Light which has been spent, and this crumpled mass called material casts a shadow, and the shadow belongs to Light.”

- Louis Kahn -
We have been living in a world where everything has become digitalized. Starting from music, photos, magazines, news, books, even conversations with friends and family, everything these days have become packed into one smart phone. The reason the smart phone is mentioned, is because I noticed a transition in the way people behave these days. Most of all or even maybe everyone nowadays just seems to be staring down towards that ground. According to an article posted in the Huffingtonpost.com 66% of people are actually afraid to lose or be separated from their cell phones. Not only, but three-quarters of iPhone-using students surveyed at Stanford University in 2010 said they sleep with a phone in bed. Of course, the smartphone has brought us some ease to life, but the impact it has on our society is leading to a fracture in communication and inactivity.

So how does this relate to an architectural issue? It is ironic to me that the providers of these smartphones, have a sense of architecture in the stores they build around the world. For example, the apple stores in New York, Boston, Beijing, London, Tokyo, Chicago, etc. It seems that not only are they interested in people buying the product but also where they purchase it. The ‘welcoming’ environment of the Apple Store, does have an impact of the people who come in to buy or even look around. But once you’re out the door with a brand-new iPhone, all you ever do is stare towards the ground. Not only are people more interested in looking at their smartphones, but also conversations between two people have dramatically decreased. With the introduction of smartphones, it became easy to communicate with anyone around the world, but it can barely remember the last time I actually had a conversation with family or friend over the phone or even in person. Applications such as, Facebook, Snapchat, Instagram, messengers, and all sorts of social networking programs allow its users to communicate and leave posts and review profiles of others, but how close do they come into actually knowing someone?

In architecture, we spend a great deal of time studying the details. The details give us the information about the architecture that we are unable to recognize at a glimpse. Which gives us a better understanding of the architectural design behind it. We get to understand the artist's intent and the statement that the architect is trying to make. The point I am trying to make with this statement is that people are the same. Understanding the details of human behavior allow us to understand and recognize personal personality which then becomes an experience with that person. This experience is remembered by the mind and body which then creates a memory. But how can one experience this moment when you’re too occupied with your smartphone or tablet?

James Turrell, an American artist primarily concerned with light and space, compared one of his works, Monumental Stoppages, to Plato’s cave allegory. And as I was reading through Plato’s Republic, I came upon an influential quote, “They can see only what is in front of them, because the chains are fastened in a way that keeps them from turning their heads” (Republic 257). Turrell might have interpreted this quote in a different meaning, but I have compared those ‘chains’ to the smartphone. Before this thesis project I was not much of a smartphone user. Even though I possess one, I seldom use it. For me it’s a tool that I prefer to use when needed. For the people I keep in contact with, it is more than a tool. Not being able to reply as soon as I receive a text on my smartphone meant that I did not care for them. Not posting a wall on Facebook, or accepting a friend request meant I did not have interest in them. Not having the desire to answer a text message application meant I did not care for them. Not posting a wall, or accepting a friend request meant I did not have interest in them. Not having the desire to answer a text message application meant I did not care for them.
A research that has been taken at the Elon University in North Carolina, states that 62% of people in a face to face conversation, still focus more on their smartphones. That is nearly two out of three people who stare at their smartphones while in a conversation. So, the question is, how do smartphone applications really connect people?

The proposal that I have with this topic is to create public space inside the city where you take a ‘break’ from smartphones. A place of rest, a place of freedom, a place of recovery, similar to an oasis in the desert where you can come and satisfy your thirst of something else rather than posting a wall on Facebook of how bad of a day you’re having. I do believe, as a starting point, this topic of my personal interest can lead to an architectural solution to the changing generation of the digital age.

The next pages will include a framework of my proposition and case studies that have been investigated to elaborate on the direction my thesis is aiming towards.

“It is evident that ‘life-enhancing’ architecture has to address all the senses simultaneously, and help fuse our image of self with the experience of the world. The essential mental task of building is accommodation and integration.”

- Juhani Pallasmaa -
The consideration of natural and artificial light. The architectural proposition will consist of light fixtures designed to illuminate the building at night. The building luminance will give light to the walkway as well as allowing users to feel more secure and guided at night. By studying six visual principles of light: illuminance, luminance, color and temperature, height, density and direction and distribution.

PROPOSED SITE SELECTION

The site is located behind the Kennesaw State University Architecture Building. It is an extension to the gallery which is located on the south-east side of the Marietta Campus. It is surrounded by a collection of trees which will also be considered in the design phase of the project. Currently the sidewalk is mainly used by the architecture student who study in the N Building. Very few, first and second year students, use the walkway to the N Building. But having a site to create a certain type of program at this site will encourage more traffic and create more density.
The architectural aim of my thesis is to create an extension of the Kennesaw State University Architecture building gallery. The intent is to have more students exposed to the works of students and also share their ideas and experiences with others. Currently, the architecture gallery does not have sufficient space for exhibiting the works of students and faculty. Not only are the works of students important, but the works of faculty are important to the students. Throughout my personal experience, it was really important to see and study the works of the faculty and also hear about the experiences that they have encountered during their years of studying Architecture. But how do we as architects design in response to a generation where digital space has superseded physical space?

Creating space that is exposed to the students and faculty and also the public to stimulate their sense to perceive real space.

The architectural approach to this project is to stimulate the human sense through the elements of light, material, and sound, mostly focusing on light as the "buffer" of all the elements. The program will consist of collaborative studios for students and faculty to work in and also exhibition halls, art galleries, gathering spaces, and be open to the public as well.

- "With the loss of tactility and the scale and details crafted for the human body and hand, our structures become repulsively flat, sharp-edged, immaterial and unreal" - Juhani Pallasmaa -
The Modern Art Museum of Fort Worth exemplifies the work of Japanese architect Tadao Ando through its simple geometry, incorporation of the natural environment, and very mixed material selections. Five long, flat-roofed pavilions appear to float atop the 1.5-acre reflecting pond, which is reminiscent of other Ando projects.

Constructed with only concrete, steel, aluminum, glass and granite, the museum is perfectly reflected in the surrounding pond. Beautiful trees and hills enclose the museum, which is typical of Ando’s architecture. Through its pure design, the museum has a striking presence as a modern work of art.

Light also became key in the design of the museum, with an emphasis on both diffused and reflected natural light. Cantilevered cast-concrete roofs support linear skylights and clerestory windows, which accommodate natural light. Five Y-shaped columns standing 40 feet high support the roof slabs, and have become a symbol of the museum.

The use of concrete indicates Ando’s passion in planes and sharp, clean edges that the material allows. The massive planar walls help tell of the building’s basic structure. Contrasted with the natural environment that typically surrounds his architecture, the two elements become even more dynamic.

“Space will only have a life when people enter it. So the important role architecture can play, and that space plays within that architecture, is to encourage an interaction between people, between people and the ideas being presented in the paintings and sculpture, and most importantly between people themselves.” - Tadao Ando -
There is no doubt in anyone’s mind that Ando’s Modern is the most important modern building in Texas since Renzo Piano’s Menil Collection, and in the world since Frank Gehry’s Guggenheim Museum in Bilbao. Its seriousness of purpose, architectural purity, and ambition are unassailable.

The ends of the gallery spaces were supported by Y-shaped columns placed inside the glass wall, with vertical members of concrete and diagonal members of steel. Between these concrete galleries, Ando proposed 40 foot wide bays given architectural form by non-structural walls, presumably covered in practical painted sheetrock. Most of the drawings made in connection with the competition dealt with the relationship between concrete, glass, and reflecting water on the north and east sides of the L-plan building.
The essentially mullion-less curtain walls of the competition drawings became a standardized wall system with a large cage of aluminum mullions, including two prominent horizontal mullions, supported by coated I-beams, all of which protrude significantly from the plane of the glass - both inside and outside. The glass in the curtain wall system was significantly reduced on the south and west walls facing the Kimbell. A system of aluminum panels replaced the glass. The floating metal sunscreens over the glass roofs in the competition design became virtually solid planes of concrete with small perforated sections and slits virtually invisible to the viewer. The entire system of skylighting was transformed as a result of the decision to jettison the glass roofs of the original design.
Located in Fort Worth, Texas, the Kimbell Art Museum by Louis Kahn has become a mecca for all who are interested in modern architecture. The element of natural light is the main focus of the design, and creates elegant spaces that are perfectly suited for the art that it houses.

The distinct form of the Kimbell Museum’s cycloid barrel vaults are rimmed with narrow plexiglass skylights, providing room for natural light to penetrate into the spaces. To diffuse this light, pierced-aluminum reflectors shaped like wings hang below, illuminating the smooth surfaces of the concrete vault while providing elegant and enchanting light conditions for the works of art.

The auditorium is acoustically impressive and considerably large. Interestingly enough, most enter the building through what he considered the back entrance to the east. With the new proposed deadline, the new building and garage act as a block against entering this way, and it will direct visitors to the intentional entrance. The new project is not attached to the Kahn building, but it respects its scale, plan and materiality while also exploring its more open and transparent character.

“But Einstein travels like a poet. He holds to the unmeasurable for a long, long while because he is a fiddle player. He also reaches nature or Light at its very doorstep, because he only needs a smidgen of knowledge from which he can reconstruct the universe”

- Louis Kahn -
The Kimbell Art Museum by Louis Kahn is also a disciplined, coherent, and visually clear statement, but here the aesthetic derives from the more classically oriented sensibility of its architect. It has an austere yet rich simplicity that comes from the repetition of a vaulted form, gilt by light from its lead-covered surface, and a beautifully articulated concrete structural frame with polished walls of travertine. Its classical sense of timelessness is ennobled by a reverence for material and detail. Its interior form, bathed in a diffused natural light that enters the space via the continuous interior supported screen and reflected down the arch of the vault.
One of the architect’s fundamental tasks is formulating the structure, or arrangement of forms, that the building will assume. Each architect has an individual approach to developing that initial concept. Kahn is often quoted as first asking, “What does this building want to be?” He believed that the essence of the structure started with the room, and thinking about how that space would be used and how it should feel. Kahn regarded the building as a “family of spaces,” with a simple plan based on classical proportion, repetition, and variation.

At the Kimbell, natural light enters the space through a 2 1/2 foot slit at the apex of Kahn’s distinctive vaulted ceilings. The light strikes a suspended convex, perforated-aluminum “natural light fixture,” in the words of Kahn, that prevents direct light from entering the space. As the light reflects off the cool, curved concrete, it retains what Kahn called the “silver” quality of Texas light, which he so admired.
precedent studies

Kimbell Art Museum of Fort Worth - Louis Kahn
The Kimbell Art Museum's original building was designed by Louis Kahn in 1972. The new building by RPBW was recently inaugurated and establishes a close, respectful and frank dialogue with this powerful yet delicate older building. The new Piano Pavilion accommodates the museum's growing exhibition and education programmes, allowing the original Kahn building to revert to the display of the museum's permanent collection.

The programmes and collection of the Kimbell Art Museum have grown dramatically in recent years, far beyond anything envisioned by the museum in the 1970s. Addressing the severe lack of space for the museum's exhibition and education programmes, the new Piano Pavilion provides gallery space for temporary exhibitions, classrooms and studios for the museum's education department, a large 298-seat auditorium, an expanded library and underground parking. The expansion roughly doubles the Museum's gallery space. Furthermore, the siting of the new building, and the access into it from the car park, will correct the tendency of most visitors to enter the museum's original building by what Kahn considered the back entrance, directing them naturally to the front entrance in the west facade.

The new building consists of two connected structures. The front section – the 'Flying pavilion' facing the west façade of Kahn's building across landscaped grounds – has a three-part facade, referencing the activities inside. At its centre a light-weight, transparent, glazed section serves as the new museum entrance.

"Light has not just intensity, but also a vibration, which is capable of roughening a smooth material, of giving a three-dimensional quality to a flat surface."

- Renzo Piano -
Subtly echoing Kahn’s building in height, scale and general layout, the RPBW building has a more open, transparent character. Light, discreet (half the footprint hidden underground), yet with its own character, setting up a dialogue between old and new.

On either side, behind pale concrete walls are two pavilions for temporary exhibitions. A sequence of square concrete columns wraps around the sides of the building, supporting solid wooden beams and the overhanging eaves of the glass roof, providing shade for the glazed facades facing north and south.

In the galleries, a sophisticated roof system layers stretched fabric, the wooden beams, glass, aluminum louvers (and photovoltaic cells) to create a controlled daylit environment. This can be supplemented by lighting hidden behind the scrim fabric.
At the Kimbell, the new building, referred to as the Piano Pavilion, houses gallery spaces, a 298-seat auditorium, classrooms, the education department offices, an expanded library, art preparatory areas, a storage area, a café, and a gift shop. It faces east and sits exactly 65 yards wall-to-wall from Kahn's building.

The magnitude of the design challenge goes well beyond the architecture. Trying to create a lighting scheme, and particularly a daylighting scheme that matched Kahn's building, was not only a technical challenge but also a lighting scheme that has earned its place as one of the gold standards in lighting design. Piano wanted there to be indirect sunlight in the galleries. Given the Texas climate, however, the designers had to be extremely careful about how much light would be allowed into the space. Piano hadn't figured out how to diffuse this light.
Graffiti

"Do not be afraid of failure. It is the greatest teacher."

- Steve Jobs

In the case where systems, strategies, and considerations are discussed, the general advice is to start with a broad overview of the problem and then narrow it down to specific aspects. This approach helps in understanding the situation from different angles and identifying potential solutions. It is crucial to maintain a balanced perspective throughout the analysis.

For more detailed information, refer to the Executive Summary of the report.
ATTUNEMENT
ARCHITECTURAL MEANING AFTER THE CRISIS OF MODERN SCIENCE
ALBERTO PÉREZ-GÓMEZ
- Building committee was very hungry.
- Building committee was hungry and kept running hot. This about Architecture.
- What they really did not know was the roof.
- The only thing they were interested in was the roof.}

"The building" was the original term given to it. I needed to design something new and exciting. It was about Architecture.