Chapel of St. Ignatius

Steven Holl

Case Study | Diagramming the Building

Formal Strategies of Architecture

EVDA 621

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Chapel of St. Ignatius, designed by American architect Steven Holl in the late 20th century, provides an example of architecture that is “the fusion of a spiritual and an architectural notion” (Olson, 1997, p.41); a sanctuary for not only the 6000 students of the Jesuit College, but every visitor seeking a quiet zone for his spirit to rest; the architecture with meaning. In this essay, I would like to examine the building from four aspects: form, body, technique, and space, and analyze not only the architect’s point of view, but also the social and cultural context of the time, as well as my own perspective.

Part 1 | Form

Phenomenology & Post-Postmodern Time

In his architecture, Steven Holl is interested in developing the sensory, perceptual and emotional intentions of a project - which he calls “phenomenology” (Olson, 1997). It is a new paradigm shifts from the on-going cycles of “isms” and their replacement at the time, and moves towards a more open-ended position (Holl, 2007). Such design focuses on the interactions between the body and the physical world, the experience of a place. Holl’s ambition is to “build the perceptual bridge between different worlds” (Woods, 2007, p.9), which through imagination, everyone is able to cross; in other words, be inspired by the insights and revelations (2007).

In this so-called post-Postmodern period, Holl’s designs intend to incorporate modernism’s forms and its critical spirit into new and more complex modes of architecture; it is a mix of “modernist formalism and existential philosophy”, as Lebbeus Woods stated in forward in Holl’s Architecture Spoken (Woods, 2007, p.7). At a lecture in Toronto, Holl clearly stated his view on Post-Modernism: “(it is) the worst thing to have happened to architecture in the century” (Lasker, 1999, p.6).

The form of St. Ignatius keeps the simplicity quality from modernism, and extends the vocabulary of modernism by embodying meaning, philosophy and science of perceptions. Its extraordinary sculptural roof forms, together with “pared down iconography of cross and bell tower (Cuyer, 1997, p.26)” clearly provide the building with object status.
Type & Function

What is it about this building that draws people? In this case, maybe it is the building type. A chapel, has certain power that “enables visitors to grasp architecture in its fullness (Iry, 1998, p.15).” A chapel functions as “a spiritual home, a shelter for our secret selves, and a place apart. (1998)” It is where senses engage and thoughts and feelings interplay.

Compression

One concept Steven Holl tries to explore in his design is the idea of compression (Holl, 2007). It is, as Holl defined himself, the “condensation of a multiplicity of things into something confined” (2007, p. 45). It is to seek a single concept that resolves a variety of requirements, including program, site, space, details, etc., and within such condensation, an exciting and experiential phenomena will be achieved (Holl, 2007).

For the Chapel of St. Ignatius, the architect arrived at the idea of compression almost accidentally. Due to short of budget, the initial program reduced from 10,000 sq ft to 6,100 sq ft (Olson, 1997), and therefore resulted in reduction in form – tightening up the ‘bottles of light’. Because of this reduction, the roofline intensified into a staccato rhythm which “alternates between swooping and scaring” (Olson, 1997, p.43).

Light – the Invisible Form

Light as a phenomenon becomes Holl’s major preoccupation in design (Woods, 2007). His architecture shapes light, providing it with comprehensible quality by giving it structure and form (2007). Then, it is through imagination that one could begin to appreciate the mystery behind. In the case of Chapel of St. Ignatius, the metaphor of light, which is shaped into different volumes, refers to as “seven bottles of light in a stone box”, becomes the driving force of the design of the form (Holl,
The vessels are represented by six distinct roof volumes with light penetrating through. The metaphor reflects St Ignatius’ vision of the many interior lights and darkness comprising spiritual life (Cuyer, 1997). As one moves from the entrance into the chapel, with the effects played by light, the experience shifts from exterior to interior, from activity to meditation, from physical world to spiritual realm.

Each of the seven bottles of light corresponds to certain function of the space it projects into. For example, the light is bright and uncolored in the narthex, where people gather (Olson, 1997). The processional route is defined by an overhead high arch and a shallow ramp (1997). The color of light is carefully measured by the combination of the color of lens as well as the color of painted baffle. Not only the color of the lights, but also the orientation: North-, east-, south-, and west-facing light, all gather together for “one united ceremony” (Holl, 2007).
Part 2 | Body

Between the Body and the Divine

“For we are the temple of the living God.” In 2 Corinthians (6:16, NIV) Paul has defined the idealized relationship between one’s body and the Divine. Church, as the physical temple of God, represents the existence of God and evokes the Divine within the bodies of worshipers. Traditional Catholic churches were designed to achieve such goal through its volume, high ceiling, sculptures and paintings of divine stories. The worshipers appear rather small in such space and therefore experience a distance rather than proximity with God.

In Holl’s design of the Chapel of St. Ignatius, through the seven vessels of light, the worshiper was invited into an ever deeper engagement with the divine. “Each vessel of light illumines a place that has a particular moment in a ritual continuity” (Cobb, 1999, p.7). Thus, the objective relation begins from inside of the body to the outside, through the light to the Divine. Before one realizes, the structure of the chapel disappears, leaving only a space in his imagination where contemplation takes place.

Diagram 1 | the light, brings out the Divine from inside the body

Between Light and Darkness

In The Spiritual Exercises, the guidebook Ignatius wrote for spiritual directors, he advises one in “discerning among various interior lights and darkness (consolations and desolations) to achieve the inner freedom that will allow him to make authentic and just decisions.” (Cobb, 1999, p9). The contrast of light and dark is emphasized by the different shapes and locations of the “light spots” and the shadow they cast. However, the proportion of the brightest, the grey and the dark makes none of the
experience overwhelming for the human body to bear. The lights and darkness are like the extensions of one’s own spiritual thoughts that reflect on different surfaces of his life and links one’s inside with outside.

![Diagram 2](image1)

**Diagram 2** | A person in relation with large area of light, large area of dark, and proportion of light, dark and grey.

![Diagram 3](image2)

**Diagram 3** | The contrast of darkness and light reflects one’s inner thoughts, and acts as extensions of the mind inside.

The metaphor of this gathering of lights also reflects the relationship of greater bodies of the society: the community of students and professors, believers and non-believers all gather as different bodies examining issues in different lights (Cobb, 1999).

**In the Twist and Turn of the Body**

As Holl once wrote, “Our faculty of judgment is incomplete without this experience of crossing through spaces.” (Holl, 2000, p26). The turn and twist of the body engages different perspective, movement and rhythm of geometries. The body gives measurements to space and experience, which could never be obtained from photos or magazine images. It is through the body’s movement, ups and downs, moving
through closed and open spaces, experience of darkness and light for one to gain perspectives of a place and complete the senses. The chapel’s continuous ceiling acts as one giant canopy with different parts dropped at different heights and angles to cover different bodies and souls. “To be a body, is to be tied to a certain world, ... our body is not primarily in space, it is of it.” (Merleau-Ponty, 1962, p.148). The bodies housed under different ceiling heights and within different volumes of the chapel become part of the spiritual world; thus, the cheerful, the painful, the bodies seeking truth could all find places in the chapel to rest their souls.

Diagram 4 | Twist and Turn of the Body within Different Volumes
Part 3 | Technique

As an architect, Steven Holl is known for the sculptural qualities he gives to structures, and his genuine use of light. These two qualities are in tune with his unique use of watercolor techniques. In this section of the essay, three different techniques will be examined according to these three aspects of the design: watercolor, light, and tectonics, and how they work coherently in the design of the Chapel of St. Ignatius.

Watercolor: from Mind to Paper | Design Technique

Started as early as 1979, Holl uses watercolor to document and express his intentions and thoughts of his projects. As he described, watercolor is a “method of catching intuition and first thoughts,” it is “a technique which sets the imagination free.” (Holl, 2002, Introduction). For Holl, these small paintings capture ideas that will drive the design of the entire project. As discussed in Form section, the initial concept and the driving force of the form of the Chapel of St. Ignatius is described as “seven bottles of light in a stone box”. As depicted in the early sketch of the chapel, not only the forms of “bottles” and “box”, but also a sense of space, directions of light and choices of colors are all expressed through his brush strokes. Not only does Holl sketch the exterior of the building, but also the experiential quality of moving through a building. Watercolor sketching, as a personal technique of working is a “direct mind-eye-hand interaction” (Holl, 2002), which allows Holl to capture his early intuitions on projects, and put what is in his mind onto paper.
Diagram 2 | As to be included into the Word document, the first set of diagrams had to be scanned and adjusted to be able to fit. This brought up the making of the second set of diagrams which were done by computer software, trying to mimic the watercolor effect as seen in the first set. This comparison of different techniques shows an interesting relationship between the two, as the sketch needs the computer to be seen and realized, and the computer is, a lot of times trying to mimic what is done better (or not) by hand.

**Light with Color | Lighting Technique**

Holl once wrote that “for architecture’s inspirations every possible world at every scale must be explored. Eternities exist in the smallest detail.” (Holl, 2000, p.144). Through out his projects, Holl is well known for his genuine use of light. Unlike some other masters who also engaged light in their design of sacred space, such as Tadao Ando, Holl’s use of light is closely related to the use of color. He was inspired by Johann Wolfgang von Goethe’s “theory of colors”, and believed that “his work was aimed at perceptual relations and particular phenomena; it bridged a gap between the scientific and the phenomenological.” (Holl, 2000, p.144).

As discussed in Body section, through the use of light, as well as the contrast of light and dark, the body is invited into an ever deeper engagement with the divine. The use of light with color, especially with complementary color, adds a layer of raw and vivid intensity to the overall spatial experience. Small colored lenses are set behind painted color planes, creating a pair of opposites with complementary colors. “For a green filed there is a red lens, for a blue field there is a yellow lens, for a yellow field there is a blue lens, for an orange field, a purple lens.”

Diagram 3 | Computer generated lighting simulation of four pairs of complementary colors used in the design of the Chapel
The process of understanding how something works could be done through simulation or reproduction. Different components are analyzed separated then put back together. And once one layer is completely understood, a multiple of that layer could become the understanding of the whole. In this case of trying to understand the technique of using light with complementary colors in the design of the Chapel, first, different components were modeled and adjusted in the computer program (wall height, light intensity, colors, transparency). If one reproduction is successful, then by adding up different reproductions with changing in certain aspect (color, in this case), it leads to an understanding of the whole.

**Tectonics and Construction | Realization Technique**

“Holl’s architectural imagination is not limited to his penchant for phenomenological combinations but invariably expresses itself in the construction itself, to yield a tectonic that, however muted, arises out of the technology employed and the tactile character of material.” (Frampton, 2003, p18).

The concept of “gathering light” is further expressed through the tilt-up method of construction. The envelope of the structure is constituted of twenty-one interlocking concrete panels – a more direct and economical tectonic than the original stone veneer. (Frampton, 2003). The windows are formed in the interlocking slabs, explains Holl, “it’s a pure tectonic expressions.” Giving the limited area for casting, the panels were carefully laid out on the chapel floor and the reflecting pond slab. (Olson, 1997). Within twelve hours, these panels were picked up, rotated and placed in place by hydraulic crane. (Holl, 1999). At the corners of the building, interlocking concrete slabs expose the load-bearing thickness of the concrete. (1999). Pre-bent steel tubes made up the curved roof spaces that rest on the tilt-up walls. (1999). The merging of the wall and the ceiling of the interiors is done by metal lathe and hand-troweled scratch-coat plaster. (1999).

As Balmond proposed in *New Architecture and the Informal*, “more than the eye sees the body senses.” (Balmond, 1998, p.82). As discussed in the Body section, it is through the body’s movement, ups and downs, moving through closed and open spaces, experience of darkness and light for on to gain perspectives of a place and complete the senses. The coherency in tectonics of the Chapel, including the method of
construction, not only allows the architect’s intention of the design to be fully expressed, but also allows the body’s spatial experience through the exterior to the interior smooth and complete.

Diagram 5 | Computer generated model: building envelope - 21 tilt-up concrete panels

Diagram 6 | Folding and unfolding
**Part 4 | Space**

**Formal Logic: Dwelling for the Spirit**

“To dwell, to be set at peace, means to remain at peace within the free, the preserve, the free sphere that safeguards each thing in its essence.” (Heidegger, 1992, p. 345). A place could be called dwelling only if it is related to the feeling of accustomed, and being at home. Church, as the physical temple of God, is not only the space for different bodies to dwell, but more importantly, is for different souls to be set at peace. Robert A. Ivy described the experience of one architect who visited the Chapel: “She found herself forced to sit down on first entering the interior, as she was so completely overcome by emotion and memory. The new building acted like a key for her, unlocking a wealth of internal, unspoken language with unanticipated force.” (Cobb, 1999, p13). Therefore the success of the design of the Chapel comes in its achievement of an innovative architectural interlocution between the individual or community and the transcendent. (1999).

Designing a sacred space in a secular city is relevant to what Deleuze and Guattari refer to as a smooth space within a striated space. Bodies bearing different questions and doubts, with different backgrounds and beliefs all gather at the chapel seeking peace for their spirit and truth of life. When discussing striated space versus smooth space using a musical model, Deleuze and Guattari stated that:

> “Striated space intertwines fixed and variable elements, produces an order and succession of distinct forms, and organizes horizontal melodic lines and vertical harmonic planes. The smooth, on the other hand, is the continuous variation and development of form. It is the fusion of harmony and melody in favor of the production of properly rhythmic values, the pure act of the drawing of a diagonal across the vertical and the horizontal.” (Deleuze & Guattari, 1987, p478).

![Diagram 1 | the Chapel of St. Ignatius as a smooth space in a “striated” city](image-url)
Sensation and Perception: Chromatic Space

Holl describes the space of the Chapel of St. Ignatius a Chromatic space and stated that “Chromatic space is alive, like a breathing fluctuation.” The concept of the design - seven bottles of light in a stone box organized the chromatic space of the architecture. Each “bottle of light” was made analogous to the dialectical of The Spiritual Exercises of Jesuit theory. St. Ignatius continually refers to a particular metaphor of light, “the light to perceive what can best be decided upon must come down [from above].” (Holl, 1999, p14). Toward this sensation of light, fields of a complementary color in back-reflected, painted color plane are set against smaller colored lenses, creating a pulsing pair of opposites that shape the space. The worshipers do not experience direct light coming into the nave but the chromatic light spilling from behind the walls. Being in the chromatic space and surrounded by light patches of different shapes and colors, but without knowing at first glance the sources of the light, makes this chromatic space alive and fluctuating.

Different spaces in the chapel are illumined under different vessels of light and correspond to a particular moment in a ritual continuity. Therefore, light as guidance, completes the connection of the body and mind to the divine. Light, contrasted with the darkness and the shadow, also reflects one’s interior spiritual thoughts, as what Ignatius refers to as consolations and desolations. It is through constant viewing of one’s own thoughts, “authentic and just decisions” could be made.

Diagram 2 | Light, Dark, and the Chromatic
Duration: Time and Space

Many of Holl’s projects have addressed the perception of time and how the architecture expresses time. When explaining the space-time condition of the Chapel of St. Ignatius, Holl quoted the interpretation from Saint Augustine:

“What then is time? If no one asks me, I know; if I want to explain it to a questioner, I do not know... We measure time. But how can we measure what does not exist? The past is no longer, the future is not yet. And what of the present? The present has not duration... when I measure time, I measure impressions, modifications of consciousness.” (Holl, 1999, p94)

The light projected from colored-lenses marks certain time of the day, the season, and the year. “Time, or duration, is a central theme of the interior.” (Holl, 1999, p92). The chapel marks time in different ways. One could find absolute time measured in the projected beam of sunlight that moves across the proved wall surface and turns it into sharp relief, and the others receding into a smooth surface. One could also find fragmented time expressed in a silent way when clouds passing away from the face of the sun and a phenomenal “pulse” of reflected color occurs. (1999). A sense of sacred time, the timeless time, is marked by these details and only made possible by conscious design of time and space.
Conclusion

The Chapel of St. Ignatius, a church built at the end of the 20th century, is still concerning itself with fundamental issues relating form, body, technique and space. The architect designed a sacred architecture that is free, poetic and welcoming. It has given the urban community a new home for worshiping and the Catholic faith a new landmark.
Reference


1 Reference Guide: American Psychological Association (APA)