HALF-LIT
Georgetown University Center for the Study of Light

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It is the intention of this thesis to explore the idea of half-light, as put forward by Luis Barragán:

"Architects are forgetting the need of human beings for half-light, the sort of light that imposes a tranquility, in their living rooms as well as in their bedrooms." 1

The exploration will occur through photography, writing, and architectural design. But most of all, the emphasis will be on developing a rich internal vocabulary and set of intuitions, and then see what architecture emerges from these intuitions.

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**Abstract**

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1 Frampton, Labour, Work, and Architecture, 29.

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To my family. Thank you for your love, and patience in everything that I do. It means the world to me.

To my Mum. Thank you for your support, love, and patience in everything that I do. It means the world to me.
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Every artist has an internal vocabulary, words forced into being by the desire to express. I believe the articulation of subliminal thought is one of the most authentic forces within the creative process. This internal vocabulary follows the artist like a shadow; it is an instrument or tool of the creative process. How the artist formulates his or her expressions is singular, since they are a reflection of the individual’s personality; but common to all is the manipulation of intuition. These subjective translations of thoughts are part of the internal vocabulary, and it is this vocabulary that the artist leaves behind in his or her creation.1

Per Olaf Fjeld

1Fjeld, A Pattern of Thoughts, 107.
Introduction

In his essay, “The Status of Man and the Status of his Objects”, Kenneth Frampton speaks of the loss of privacy and private space. To this end, he quotes Mexican architect Luis Barragan (at left). Barragan continues further:

“We should try to recover mental and spiritual ease and to alleviate anxiety – the pleasure of thinking, working, conversing are heightened by the absence of glaring, distracting light.”

While Barragan and Frampton’s thoughts about the loss of privacy are themselves worth exploration, that is not the purpose of this thesis. The purpose of this thesis is to explore this notion of half-light that Barragan offers. It is the intention of this thesis and this book to develop a series of intuitions and reactions that revolve around his idea. They will be developed through constant pondering of the question, “What is half-light?” – however no answer is expected or required. Rather, the personal world and vocabulary developed through this questioning is of the utmost importance. As Per Olaf Fjeld states:

“Exploration Through Architecture

The means of the study will be through photography, drawing, and personal observation. But most of all, the study will occur through the design and development of a piece of architecture.”

This internal vocabulary follows the artist like a shadow; it is an instrument or tool of the creative process. How the artist formulates his or her expressions is singular, since they are a reflection of the individual’s personality; but common to all is the manipulation of intuition.

It is this thesis’ position, as it is Fjeld’s, that the internal world an architect formulates through their own vocabulary and intuitions is the most powerful creative tool they have. It is this thesis’ intention to develop an internal vocabulary and a rich personal world in the mind of its author, and then to allow a piece of architecture to emerge from that world.

Exploration Through Architecture

The means of the study will be through photography, drawing, and personal observation. But most of all, the study will occur through the design and development of a piece of architecture.
Initially, the exploration into half light came through daily observations and personal ruminations. Barragan often worked intimately tied to his own living and work places. As such, it was imperative to focus more on personal day-to-day experiences — to observe mundane things and moments, and to get a sense for the indefinable qualities of light during these moments.

What follows is a series of photos taken throughout the thesis. The photos depict normal, daily moments, and while they were not explicitly taken for the study, are included because there is something about each of them that resonates with half light.
1. Morning light through the blinds.
2. WAAC lobby.
3. Peter walks through Georgetown.
5. Kimie in the evening.
6. Studio desk, 1:00 AM.
7. 207 S. Patrick St., early morning stairwell.
8. Bicycle in the afternoon.
9. Kimie takes a nap.
11. Old Town Alexandria in the evening.
12. Studio desk.
13. Work desk at 3:00 AM.
15. Work desk in the evening.
16. 207 S. Patrick St., late morning stairwell.
17. Studio desk in the afternoon.
18. Studio desk in the afternoon.
20. Baltimore, view from Fell’s Point.
22. Seattle Art Museum.
23. Studio desk, 3:00 AM.
24. Yoshi plays Street Fighter.
A Small Home in Old Town Alexandria
The first architectural investigation into half light was through the design of a small home in Old Town Alexandria. The house would be home to a small family of three — there would be two bedrooms, a bathroom, a living room, and kitchen. It was to be a very modest home, a quiet and peaceful place for a small family.

The home itself was to be sited in an alleyway in Old Town Alexandria. Being off of the main road, a site of this type was thought to offer opportunities to explore themes of privacy and light.

This idea never moved beyond conceptual sketches, however; many of the early ideas and methods of inquiry regarding half light find their root in this incomplete project.
Much of the work at this stage was put into developing various ways to bring light into the home. The focus was on particular moments, e.g. how to bring light through the railing and into the living room, or how to bring light onto a stair landing. The ability for light to help define moments, or to even be the moment itself, is an idea that becomes important throughout the rest of this thesis.

Also visible here are ideas about the nature of the apertures themselves. There is an effort to “funnel” light into the home using the negative space between masses. The masses themselves are anonymous—they are not particular materials, nor do they bear any architectural qualities at this point, beyond representing the positive space. Again, this theme of “funneling” light would persist throughout the thesis.
Behind Chipboard model light study. This particular photograph looks at a moment where a ceiling parts from a wall to allow light into the space.

Light Studies

The most enduring effect of the Old Town project were the light studies produced – both the method of study and the studies themselves. The aim here was to get a grasp of the various qualities of light that could be brought into the space. By constructing a model out of chipboard and using a desk lamp from various angles, a wide variety of light qualities were observed.

The studies in this section on building or design in particular, and they are not architecture. But they are architectural in the sense that, by observing and listening to these studies, a piece of architecture may begin to emerge.
Light study series 1.

Light study series 2.

Light study series 3.

Light study series 4.
Light study series 2.

Light enters where walls meet.
Light study series 3.

Light terminates a stairwell.
Hall lit directly does not hit you
Hall lit needs to be broad
Hall lit comes from above
Hall lit strikes a surface
Hall lit has to be massive
Hall lit needs height exposure

Opening walls

The opening is not as important as the quality of light
They are one in the same

Transportation Hub
Gallery
Half-light

The sense of half-light developed throughout the studies to find light throughout the rest of the thesis, and they would be the driving force behind most of the creative decisions.

The idea of half-light itself is incredibly intangible, and, as such, it is hard to put ideas and notions concerning it into words. However, if there is anything to be said about half-light, it would be the following:

Half-light refers not only to a physical phenomenon, but also to a particular mode of thought. From the beginning, Barragan had ideas concerning tranquility and privacy, and these things indeed are crucial to a sense of half-light. But even more so, half-light is the kind of light one looks when first waking up in the morning, or the kind of light one sees when looking out of a window and into the sky on a cloudy day. Moreover, it is the state of mind one has during these moments. It can be called daydreaming, but it is essentially the ability to fall into one’s own mind and to allow oneself to meander.

Half-light does not hit you
Half-light needs to be found
Half-light comes from above
Half-light strikes a surface
Half-light has mass
Half-light needs height (space)

Excerpts from sketchbook...
Original writing on previous page.
The building that eventually resulted from these studies at Georgetown University Center for the Study of Light (henceforth referred to as “the Center”) was the result of the Center being designed in response to half-light architectural experiences.

The building is fictional and the program made up. The center is a research body, rooted in the deep philosophical roots of European theory. It is a place where scholars meet, a place where ideas are exchanged, and a place where the common good of exchanging ideas flourishes. The building is organized by a series of courtyards, with both private and shared spaces. The courtyards are large and well-located, allowing for dynamic movement. Classrooms and labs are needed for research and experimentation. A large auditorium space is also needed—a place for the center to offer guests lectures and present research. A large auditorium space is also needed—a place for the center to offer guests lectures and present research. A large auditorium space is also needed—a place for the center to offer guests lectures and present research. The building is, in essence, a place where the philosopher meets with the investigator.
Relation to the Sun

As both the thesis and the program are concerned with light, the location of the sun relative to the site is of importance. The site lies at 38° 54’ 20.87” N, -77° 4’ 37.23” W. During the summer solstice, the sun strikes the site from its maximum altitude angle of 74.40°, 8° West of South. During the winter solstice, the sun strikes from a maximum angle of 27.65°, 1.63° West of South.

In general, as there is no tree cover, the site receives direct sunlight during all hours of the day, except when the sun is at its lowest angles (in the morning and evening).

The summer solstice and the position of the sun during this particular time, will be taken to be of great importance to the Center. It is during this time that the maximum amount of light will be brought into the building.

Siting

The proposed building is located on the Southwestern corner of the Georgetown University campus in Washington, D.C. It occupies a previously open expanse of green space next to Washington Hall, the Jesuit residence of Georgetown University.

The site is almost completely flat, with a total elevation change of about 1 ft. However, the site begins to gently slope off to the south towards the Rock Creek posture and towards the Chesapeake & Ohio Canal. To the south of the Center, the Potomac River forms a total elevation change of about 100 ft over about 500 feet, an average grade of 20%.

During the winter months, the site has a clear view of the Potomac River South. During the summer months, the Washington Mall can be seen easily from the Virginia side of the Potomac, and so can plays a role in the skyline of Georgetown.
Early on in the development of the design, an extensive set of light studies were performed. The following light studies were performed in a manner similar to the Old Town project. A model was built, mostly out of chipboard, to simulate the interior space. A desk lamp was then shone into the model, and the resulting lighting situations were photographed. With each new exploration and observation, slight adjustments were made.

The models here were built to study a certain kind of space—a large atrium, with large apertures protruding into the space, so as to bring in light. The atrium was envisioned as having offices on one side, with a series of bridges to take people to the other side, which was home to various laboratories. The bridges would cast shadows in the space.
Ambient light from offices reflects off of opposite wall.

View from a walkway.

View obscured by a bridge.

Protrusions.
What follows is the final set of drawings for the Center, along with a description of the building. These drawings were rendered in graphite on 100 lb Strathmore drawing paper.

The drawings are heavily worked into. This is for two reasons: (1) Many aspects of the building were worked out during the creation of these drawings, and thus much erasing was required. (2) The hope was that these drawings would have a certain kind of weight, so that it would be possible to express through them some quality of half light.
The center is organized into two large rooms - an upper room and a lower room. Both of the rooms are connected through a continuous cut through the building. The cones pierce through the sky above, allowing light into the depths of the building. In particular, the cones are aligned so as to bring light into the heart of the lower room during the summer solstice.

Transverse section
The upper room is organized around a central atrium. Three of the four sides of the atrium are home to the various faculty and doctorate student offices. The fourth (Northern) side of the atrium is reserved for two classrooms. Stairwells, elevators, and restrooms occupy the corners.

Visible in the plan are two sets of four large columns, which serve as the primary supports of the upper cone. Down through the center of these four supports is a circular stairwell, which can circulate traffic throughout the complete vertical extents of the building.

The offices adjacent to these supports enjoy a unique space.
The lower room is home to a large auditorium, which serves both the Center and also Georgetown University at large. The auditorium can hold several hundred people and is reserved mostly for distinguished guest lecturers.

Circulation for the auditorium is provided around the perimeter of the space. From the perimeter, people may descend into the auditorium via any one of four stairs. The main stair into the auditorium is the completion of the circular stairwell through the center of the large columns. The speaker walks up from below the auditorium and lectures from the circular focal point of the auditorium. It is this place that is the destination of the light entering through the cone on the summer solstice.
The cones themselves are beams that are curved near the center and supported at their ends by a total of eight large columns. Secondary beams, radiating out from the cones, support the roof above. The space between the two large beams creates a structural and spatial break down the entirety of the building.

The cone intersection breaks all heavy light into the building. The break is angled at 8° West of South. The cones are at an angle of roughly 75° with respect to each other. This positioning focuses light into the building on the summer solstice.
Georgetown University Center for the Study of Light

Drawing Set
The space below the auditorium serves as a preparation area for the guest lecturer, as well as for any demonstrations that will take place on the auditorium floor. The auditorium itself is supported by a large number of columns. Storage space and laboratories surround the space.
The auditorium, on its South side, has an entrance directly off of the entrance road into Georgetown University. As the ground slopes up heavily here, the North side of the auditorium is below grade. Circulation space is around the perimeter, and restrooms are located at the corners.
The main entry level. The building is situated directly along a sidewalk that leads to the main campus. The sidewalk opens up into a plaza and from the ground floor, there are several entrances into the Center.
Mainly home to laboratories. As this is the highest floor of the building, observation areas are provided on both the North and South sides.
Largely unoccupiable, this plan reveals the structure of the cone. The cone itself is two large beams, curved near the center. Beams radiate upwards to support the roof.
Stairs lead up to the roof from the laboratory floor below. The perimeter space is occupiable while the cone rests in the center. Glass covers the cone.
To reiterate, the point of this thesis was never to “figure out” what half light is. So answering that question here at the end of the thesis is not important. While the idea itself was intriguing, the goal was more to explore a way of working: to take a single idea, develop a world around it, and see how a piece of architecture emerges from it. The thesis was successful in that exploration. More so, it proved to be a very fruitful way of working. As long as one allows their mind to wander and to be attentive to intuitions regarding this idea, a rich world can be developed. Then from that world, a piece of architecture may be formed - something that could not have arose from any other circumstances.

Every artist has an internal vocabulary, words forced into being by the desire to express. I believe the articulation of such a vocabulary is one of the most authentic forces within the creative process. This internal vocabulary follows the artist like a shadow: it is an instrument or tool of the creative process. How the artist translates his or her expressions is singular, since they are a reflection of the individual’s personality, but common to all is the manipulation of intuition. These subjective translations of thought are part of the internal vocabulary, and it is this vocabulary that the artist leaves behind in his or her creation.

The goal of this thesis was to take on a notion: the notion of half light. This was the notion put forward by Luis Barragán: Architects are forgetting the need of human beings for half-light; the sort of light that imposes a tranquility, in their living rooms as well as in their bedrooms.

These notions are the origin and are embedded in the notion of the idea, in that they provide the necessary conditions for the notion. These notions occurred through photography, drawings, and daily observations. Most of all, they occurred through the process of developing a building in a real location.

As the set of notions matured, these notions a became more integral part of the notion of half-light that would later begin to emerge. This gave rise to the Georgetown University Center for the Study of Light.

The thought process throughout the development of the Center for the Study of Light was imbued with this notion of half-light. It affected all aspects of the project: the program, the spaces, the drawings, and the studies.

Per Olaf Fjeld

Fjeld, A Pattern of Thoughts, 107.
Bibliography

