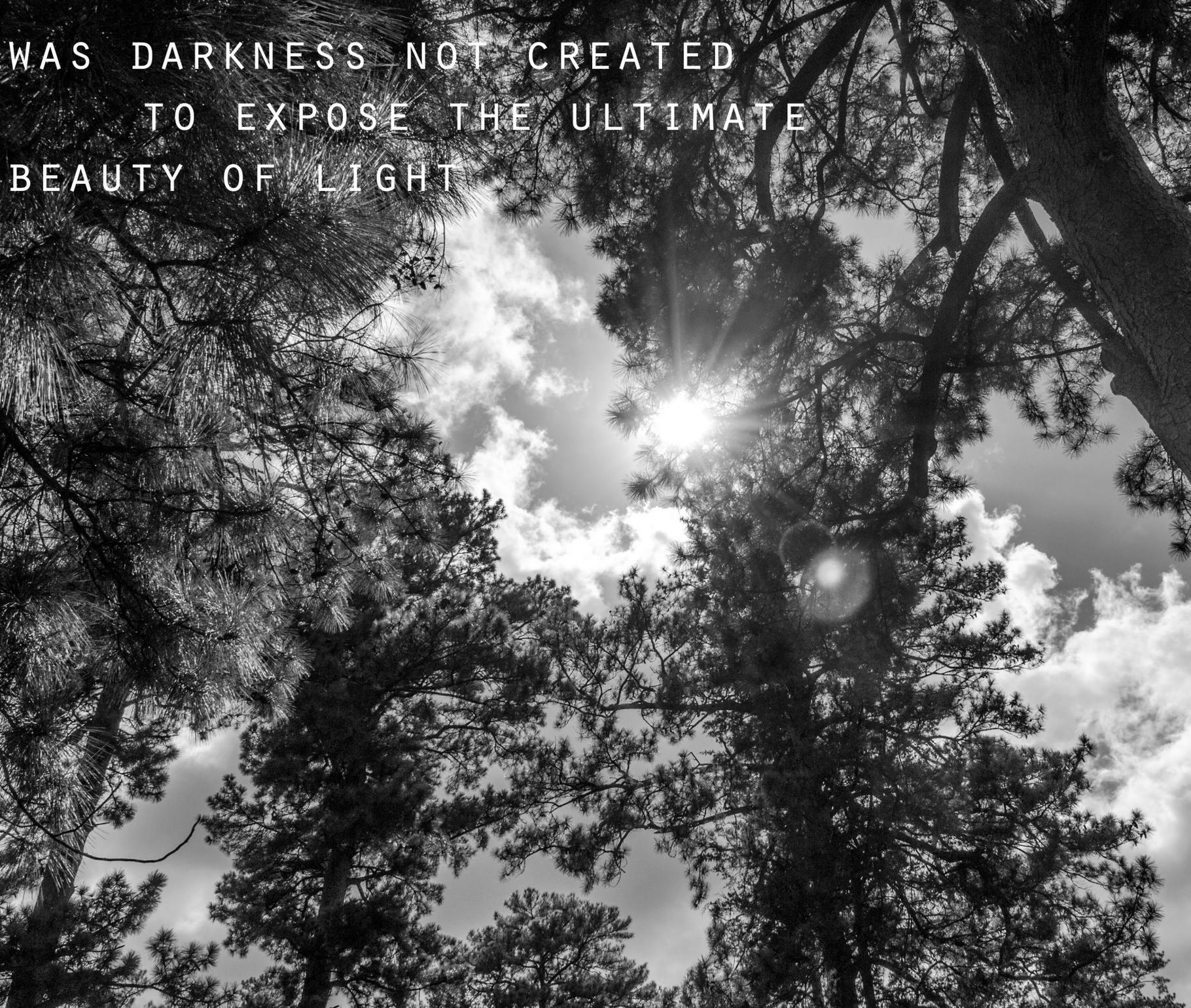




en**LIGHT**ening the landscape

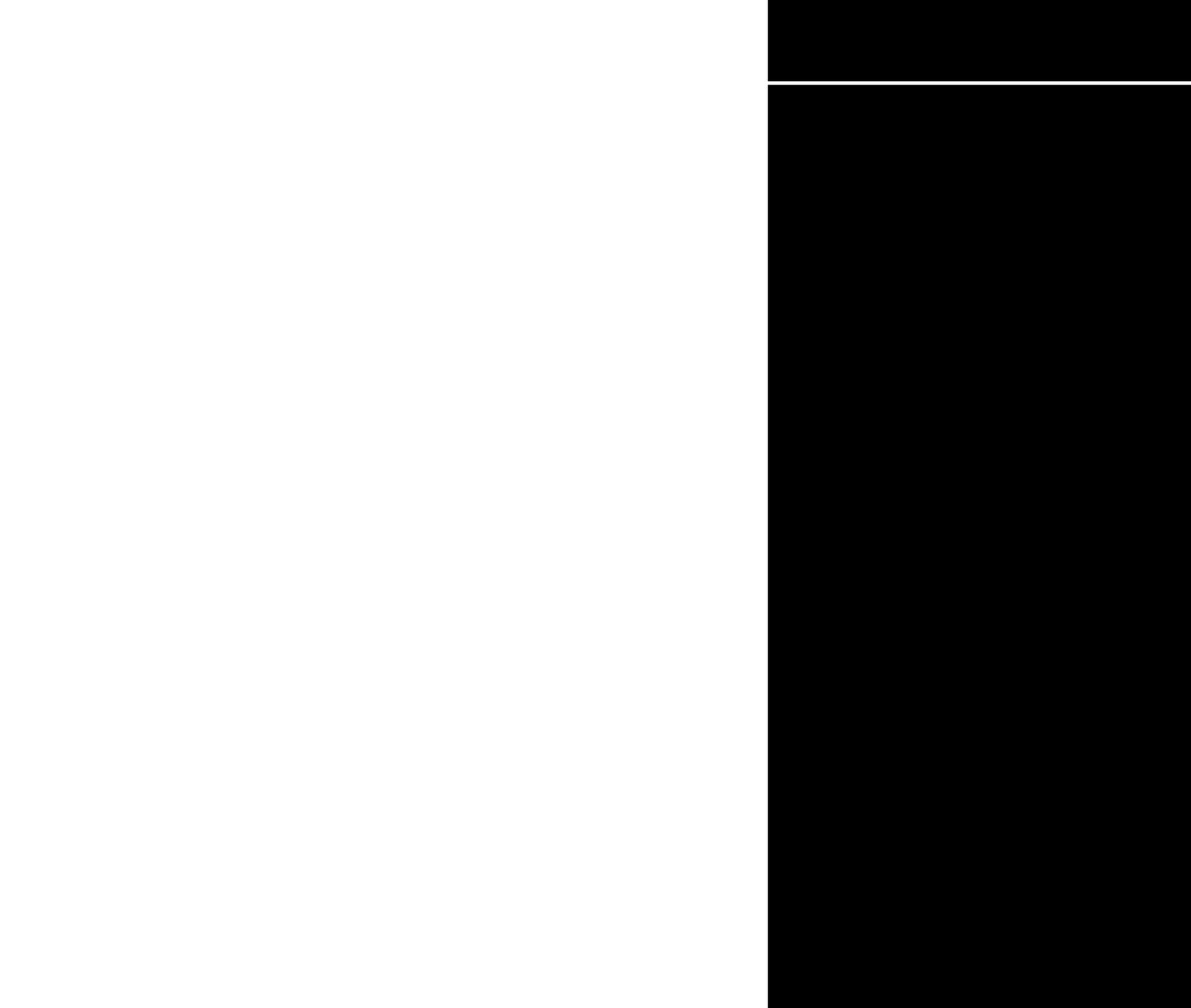
WAS DARKNESS NOT CREATED
TO EXPOSE THE ULTIMATE
BEAUTY OF LIGHT





Evan Boecking

Masters of Landscape Architecture
Auburn University_2016



ACKNOWLEDGEMENTS

I would like to thank my parents for continuously supporting and pushing me through my undergraduate and graduate career. The patience, love, and support yall have showed me has been a driving force in who I am today.

Secondly, Professors David Hill & Kelly Homan for constantly guiding and pushing us past our limits of not only understanding and defending our thesis explorations but challenging our design philosophies and instilling confidence in our abilities as designers.

I would also like to thank my woman, Anamarie Jackson, for sticking by me through all the busy nights and long weekends to pursue and chase my passions.

Last, I would like to thank and give a big shout out to my Ultimate Frisbee team Auburn Aetos for unintentionally pushing me to pursue a graduate degree and explore the fascinating and captivating realm of Landscape Architecture. Its been a hell of a ride!



THESIS QUESTION

How can we redirect perception towards light as a medium with the ability to define spatial perception, enhance our nocturnal experience, and be implemented throughout the design process?

“The pavement is where I left it this morning. The trees are in place. The building is still standing. Yet I have entered into an entirely different kingdom.”

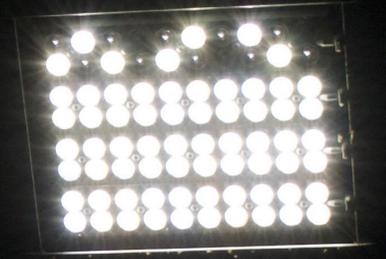
SAME PLACE + DIFFERENT TIME OF THE DAY

=

DIFFERENT WORLD

“It’s after dark. I see my world differently. I act differently. Now a new set of rules governs my behavior and that of everyone around me. My brain is on high alert and in a nervous dialogue with itself.”

-Linnaea Tilet-



"It's after dark. I see my world differently. I act differently. Now a new set of rules governs my behavior and that of everyone around me. My brain is on high alert and in a nervous dialogue with itself."

-Linnaea Tilet-



[1].....	INTRODUCTION + FRAMEWORK
[2].....	METHODOLOGY OF LIGHT
[3].....	REPRESENTATION
[4].....	LIGHTING THE SITE
[5].....	REFLECTIONS + FUTURE GOALS



"At night we step into an environment where, in an evolutionary sense, we're not supposed to be."

-Linnaea Tilet-

ABSTRACT

The simple idea of nighttime design became a catalyst for what would be a year long investigation into how our perception, both spatially and experientially, is shaped by the effects and implementation of lighting. The dark, moody, transformation that happens when the sun goes down, completely changes how we perceive and experience these nocturnal landscapes.

While the idea of lighting our landscapes serves a very functional and necessary role, this exploration aims to extract the qualities, depth, and representational methods used in the past and currently, to guide a narrative on how lighting needs to be adapted in all stages of the design process rather than just as an afterthought.

While looking at a range of scopes that lighting falls under with respect to landscape architecture, a majority of past and current influences and conversations are based around artistic installations and interpretations of the use of light. With a goal of finding a balance of the evocative nature and emotional connection an artistic approach to lighting can have while still addressing the outdated more functional side that lighting speaks to.

Finding a balance of these two approaches has been one of the biggest challenges faced due to the different natures and intentions behind each avenue of lighting. Tasked with the challenge of representing the richness and depth of light from a new perspective, the success or failure of this thesis study will be dependent on defining and invigorating a graphic representation of the emotional connection that lighting can serve.





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It is no surprise that lighting has served a simple and straight-forward approach in the past of lighting up our streets, and lighting for safety and necessity. While this approach attends to a necessary and functional approach, the exploration and argument that can be extracted through this study, is born out of a missed opportunity to take advantage of the qualities of light that can begin to shape and form a new and vibrant experience and understanding of our spatial perception through these nocturnal landscapes that often go unnoticed.

As a society, the shift from the standard hours of night to five to a more recent trend that often runs long into the night, are employing business and social engagement into these nocturnal spaces. This calls and demands for a new approach to how we not only light such urban spaces that interactions are taking place, but using light as a tool and medium throughout the design process, rather than just an afterthought.

The culture of nighttime is something that Linnaea Tilet and several other lighting designers, have addressed countless through their career. Simply put, this adaptation of a “new culture,” a “nighttime culture,” will not only open up opportunities to approach landscape design from the various “shades of night”, but can also shape and articulate a sense of social engagement and enrich these nocturnal experiences.

Light has begun to almost explode out of the growing urban core and has completely taken over the night sky in a lot of places. This overtaking is one often ignored example of how light pollution is becoming just as dangerous as other forms of pollution. Just because the impact can't be seen directly, doesn't mean it's something we can continue to ignore. Through reevaluation of the past and current design trends, a more sustainable and experiential design philosophy needs to be engaged in conversations with the designers that our shaping our cities.

Seeing the potential to not only try and define and enhance these nocturnal experience through the implementation of better lighting practices, paired with discovering past and current representational methods that articulate the depth and power that light has on our environment and personal relationship with the landscape, serves as the foundation on why this exploration will prove successful or not. Using strategies and frameworks developed from the people that are currently changing the lens that light has been seen through, outlines the hope to reinvigorate the perception of light to be more than just an afterthought, but rather a medium and tool that can shape and direct how we think and approach design.

[2]

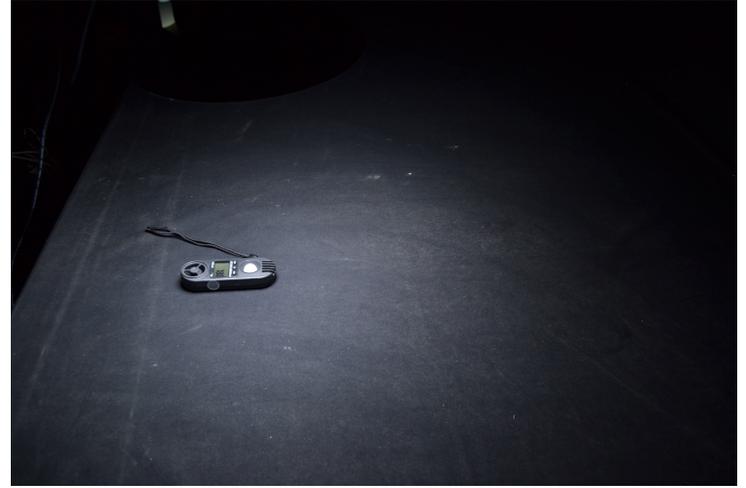


METHODOLOGY OF UNDERSTANDING LIGHT

PHOTOMETRIC STUDY



To start to understand the effects that light may have on our environment and our personal connection to it, we have to look at how to quantify and measure the characteristics of light itself. This attempt at quantifying and studying light was implemented through a design study across campus and downtown auburn with a photometer in hand to measure a series of different lighting fixtures.



The fixtures themselves ranged not only in bulb type, height, and intensity, but also looking at secondary properties that are created around the fixtures. Some of these properties included, proximity of light spillage on adjacent facades, shadows produced by projecting through natural filters, and also the qualitative experience that was felt from light to light.



LED Recessed

15 WATTS | 1,500 LUMENS

Photometric Reading
1' (from source)



METHODOLOGY OF UNDERSTANDING LIGHT QUANTIFICATION STUDY

LED Recessed

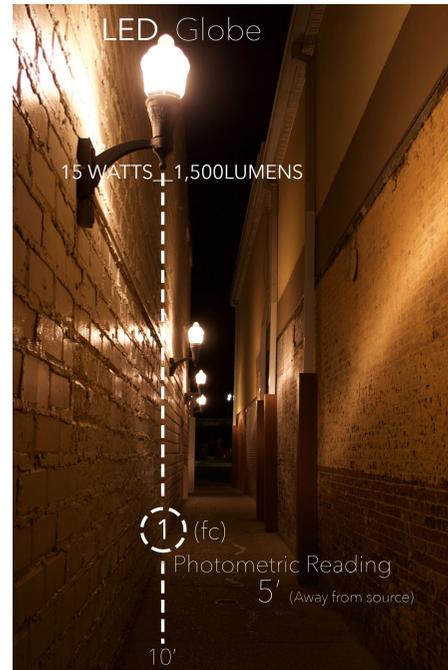
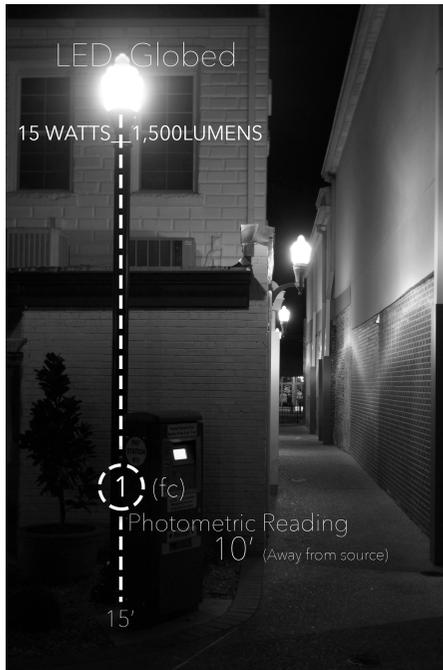
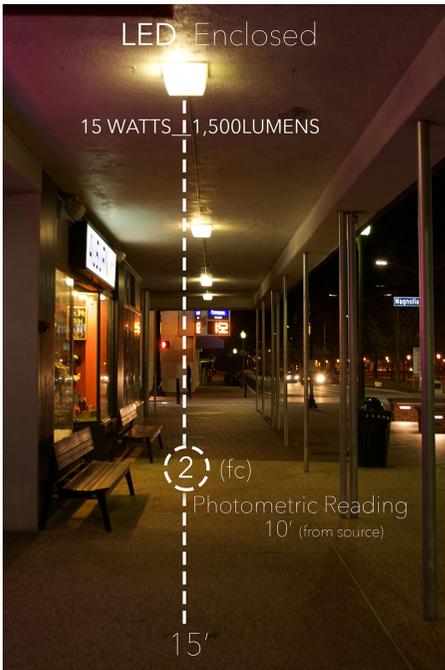
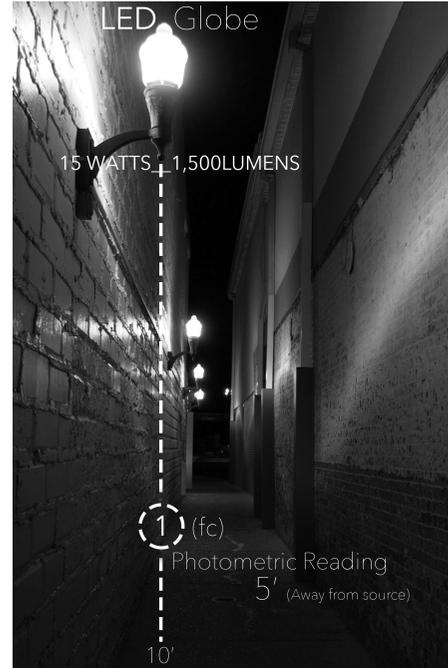
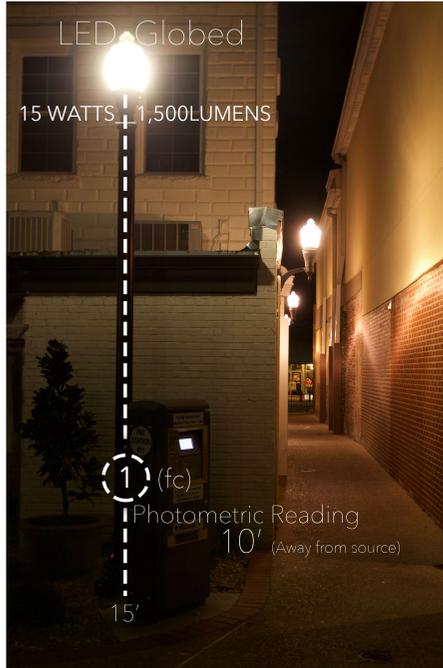
15 WATTS 1,500 LUMENS

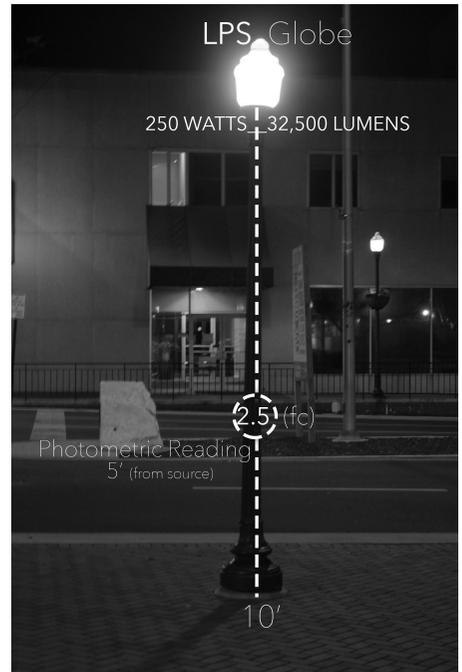
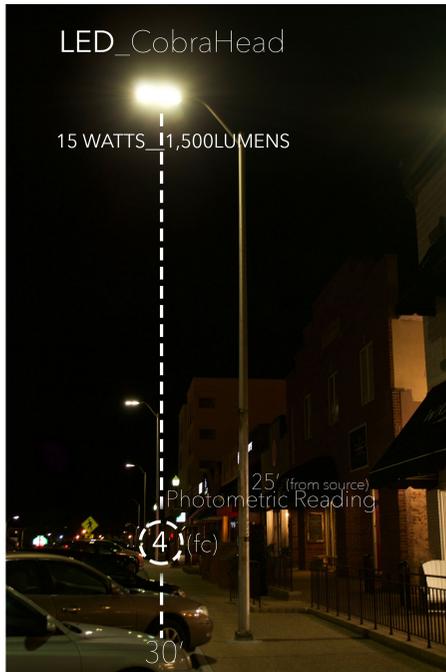
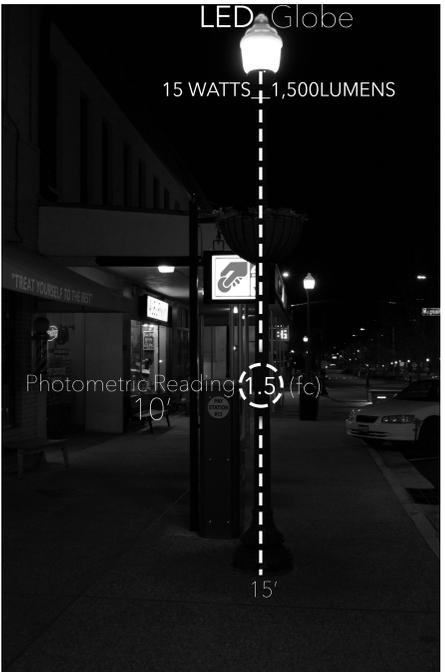
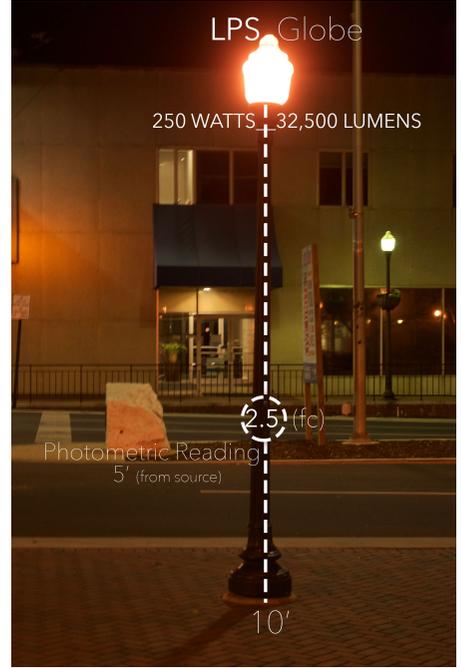
Photometric Reading

1' (from source)

70 (fc)

1'







THE POWER OF PERMENANT INSTALLATION

JAMES TURRELL + RODEN CRATER PROJECT



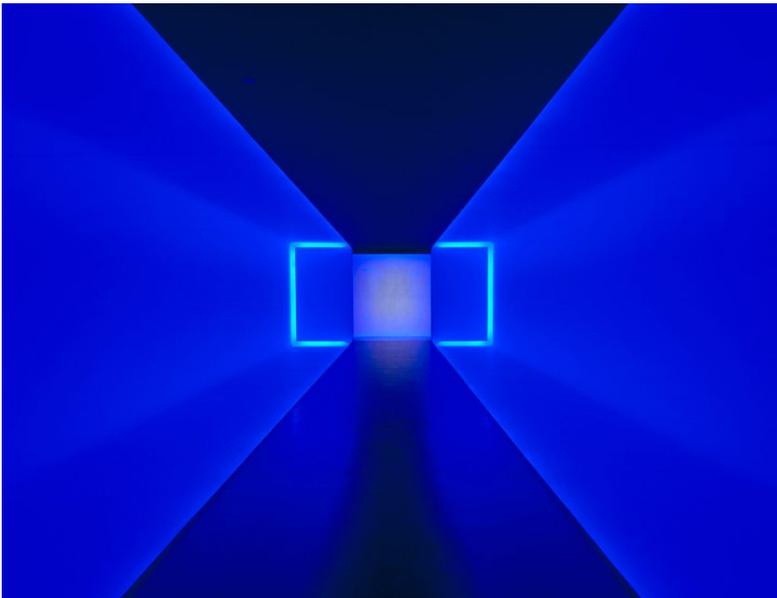




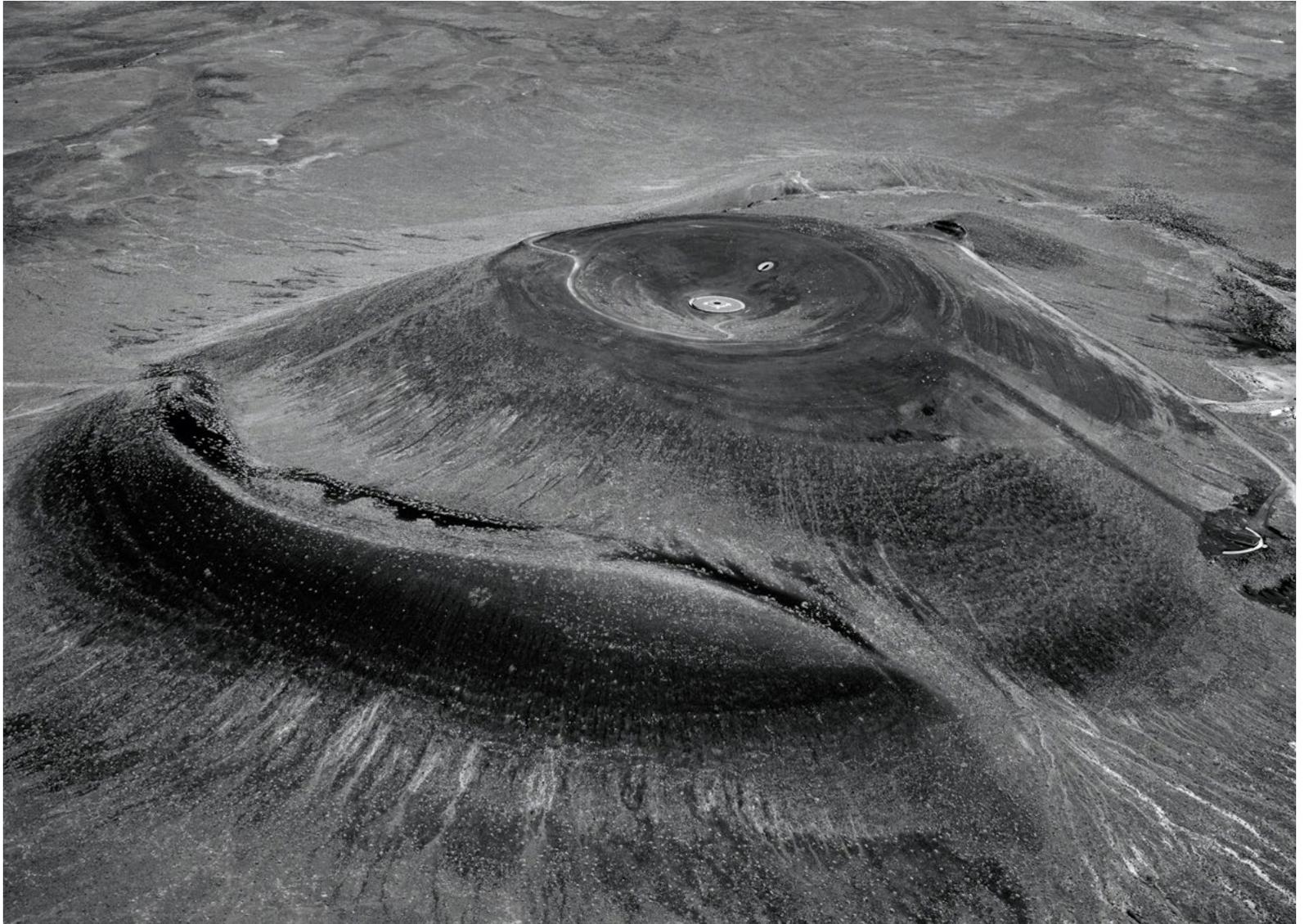
James Turrell is well known and respected for his approaches in not only the art community but how he has chosen to perceive and articulate the exploration of light as a medium. This exploration has taken form in an awe inspiring project of the development of an old volcanic crater in the painted desert region of Northern Arizona. Classified as a “light and space” artist, Turrell has made it his mission to create this celestial installation that uses the power and contemplation of light to create a one of a kind, thought and visually provoking experience.

What makes Turrell’s exploration and fascination with light so engaging is how he illustrates and paints a picture of how light serves as a powerful medium that can be used in many ways to create a psychological and sensorial connection to light and art as one. According to his website the Roden Crater project “links the physical and the ephemeral, the objective with the subjective, in a transformative sensory experience.” (Turrell, 2014)

Turrell is one of the first artist that truly embraces and engages the idea and power that light can have not only on our environment, but our perception, interaction and understanding of spaces. The relationships and connections created through the alteration of natural and curated light installations starts to illustrate the depth and emotion that can be intertwined within these immersive experiences.



"My desire is to set up a situation to which I take you and let you see.
It becomes your experience."
James Turrell







THE ART OF TEMPORARY INSTALLATION

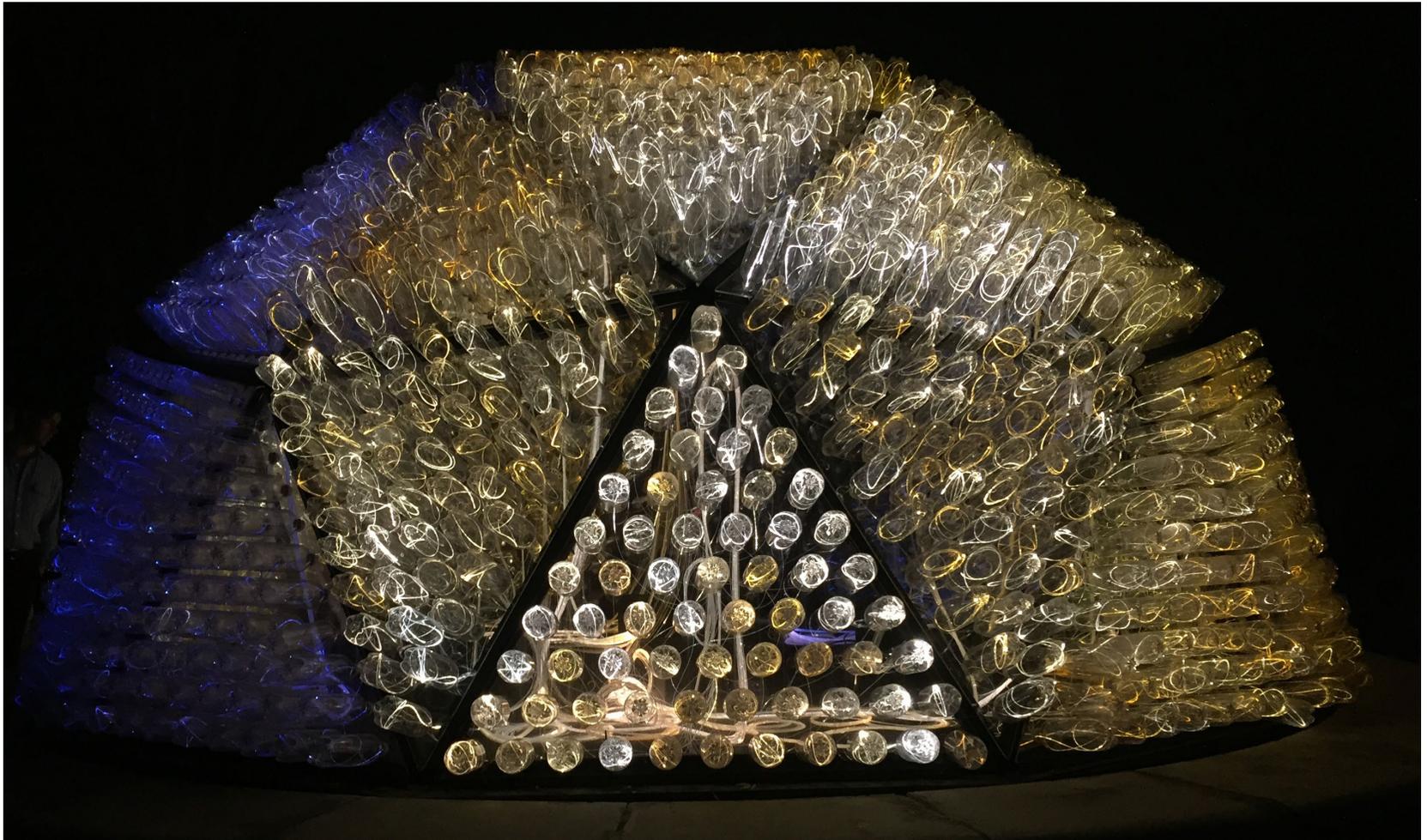
BRUCE MUNRO





Exploring the works of light artist Bruce Munro, you can start to see some of the shared attributes and philosophies that also exists in James Turrell and Linnaea Tillett. However, Munro operates on a more temporary and singular level. At the same time, he has also mastered an interpretation of light with respect to art and uses different ways to transform how light is viewed in installations. Having gotten to visit first hand Bruce Munro's wide variety of exhibits in the Atlanta Botanical Gardens, it is truly one of the cliché "had to be there moments." Being swept away and completely engulfed in a field of light proved to be one of the deepest and furthest reaching experiences curated through an installation or art exhibit. The interpretation and idea of this endless field of bulbs and lights completely transforms the landscape in a very unique way.

Thousands upon thousands of lights engulf the rolling hills of the botanical garden in Munro's masterpiece, Field of Light. This installation provides a unique perception for light to push back the landscape and become the central focus, the foreground, and the literal landscape itself. This change of perspective can be seen and starts the conversation on the powerful relationship of light and darkness. This relationship serves as a very powerful metaphor in that without the other, they do not exist. Such a simple concept that really begins to change the viewpoint on lights ability to paint our perception of the landscapes and why the shades of nighttime need to be articulated and designed to bring out the rich and powerful phenomena that exist as we experience landscapes of the nighttime.





THE EMOTIONAL CONNECTION TO LIGHTING

LINNAEA TILETT

Looking at undoubtedly the most iconic and influential lighting designer, Linnaea Tilett, you can start to see that she has not only painted a picture of the emotional connection and relationship that lighting can have on our experiential perception, but she also illustrates a depth and response to traditional design practices that needs to be reevaluated and adopted into future designs. With the intention of classifying the importance of site lighting as part of the design process through her projects, she has become a curator of emotional and experiential designs, with a focus of painting with light.

Tilett has been at the forefront of advocating for better lighting practices through the manipulation of the emotional persuasion that lighting plays on our nightly encounters. She often divides her focus between the ability to “animate the dark” (Tilett, 2013) and also a natural response to what she deems, “Landscapes of fear.” (Tilett, 2013) Both of these strategies require an ability to see the impact of light at a depth that most people never even think about. Through these avenues of perception, she provides validation on how these approaches can be implemented through a successful site design and has reimagined how to use lighting in a meaningful and evocative nature that tugs at the strings of our deepest emotions. It is within these emotions that deploy a need for not just more lighting, but better lighting.



More often than not, Tilette articulates the “co-conscious” as a driver of the emotional affect we feel as we walk through our nighttime landscapes that evoke a response mechanism that is directly correlated to the amount and placement of lighting within a site. The “landscapes of fear” stance encompasses more often than not, an imbalance between excessive lighting and minimal lighting that has been implemented at a fundamentally basic level. Tilette illustrates the emotions perceived through a lens of “alarm and anxiety.” While alarm is illustrated in having the ability to trigger our animalistic fight or flight response, anxiety serves more of an imaginative role and becomes a deeply personal matter.

A balance needs to be found to engage “the interplay between psychological states.” (Tilette 2013) This interplay perfectly sums up why Tilette has truly mastered the ability to design with light. The “balancing act between what is actually happening at night and the feelings that float through human awareness.” (Tilette 2013) To be able to not only evoke a series of curated emotions, but direct and enhance our spatial perception that light defines as a core assumption in the empowerment of a site design.

Whether we realize it or not, our emotional state and perception of nocturnal landscapes, are shaped and molded by the presence or absence of light. We often perceive danger before it even exists which has been adapted through our evolution and response to poorly implemented lighting which has often been an afterthought to design. This afterthought has not only limited our ability to perceive and define our nighttime landscapes, but comes with the loss of the ability to paint our perception using light as a medium.

It is embedded in the reimagining of site lighting to deploy an understanding that the design of our nighttime landscapes is just as important, if not more, than our daytime experience. This is where the true power lies in the exploration of the power of lighting, providing a framework of why new philosophies of lighting are illustrated as not only a necessity but attempts to reimagine how we use and design with light.









LIGHT AS ILLUSION

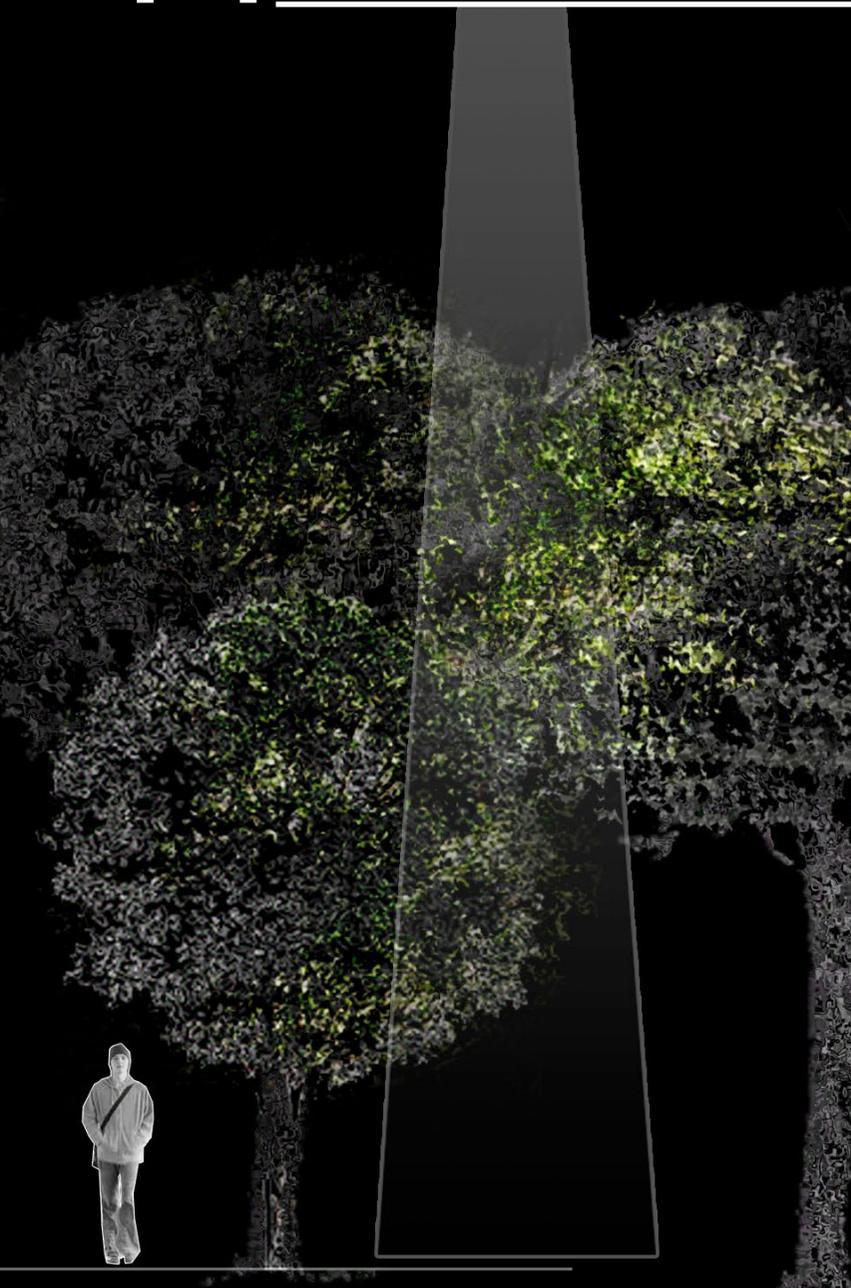
GRAVES AMPITHEATRE

An early approach that was influenced greatly by Munro and Turrell's ability to capture and evoke emotions through art, the proposed series of installations were designed to evoke a set of intended results and emotions. The curated emotions ranged from, weightlessness, depth, and immersion, and would prove successful or not based on the representation and implementation of these intentional experiences within the landscape. The design test was first seen in regards to not only spark and create an emotional connection to the landscape but actually getting an installation fully embedded within the landscape.

This test became a fundamental philosophy through the rest of this thesis on how to engage the landscape with these installations. With the intention of evoking a series of emotions and crafting a narrative that would show and represent the experiential qualities that lighting can deploy, the Graves Amphitheatre would later serve as a guide in how to use lighting to move people through a site and start to employ a richer understanding of the qualities of light that shape and define our landscapes of night.





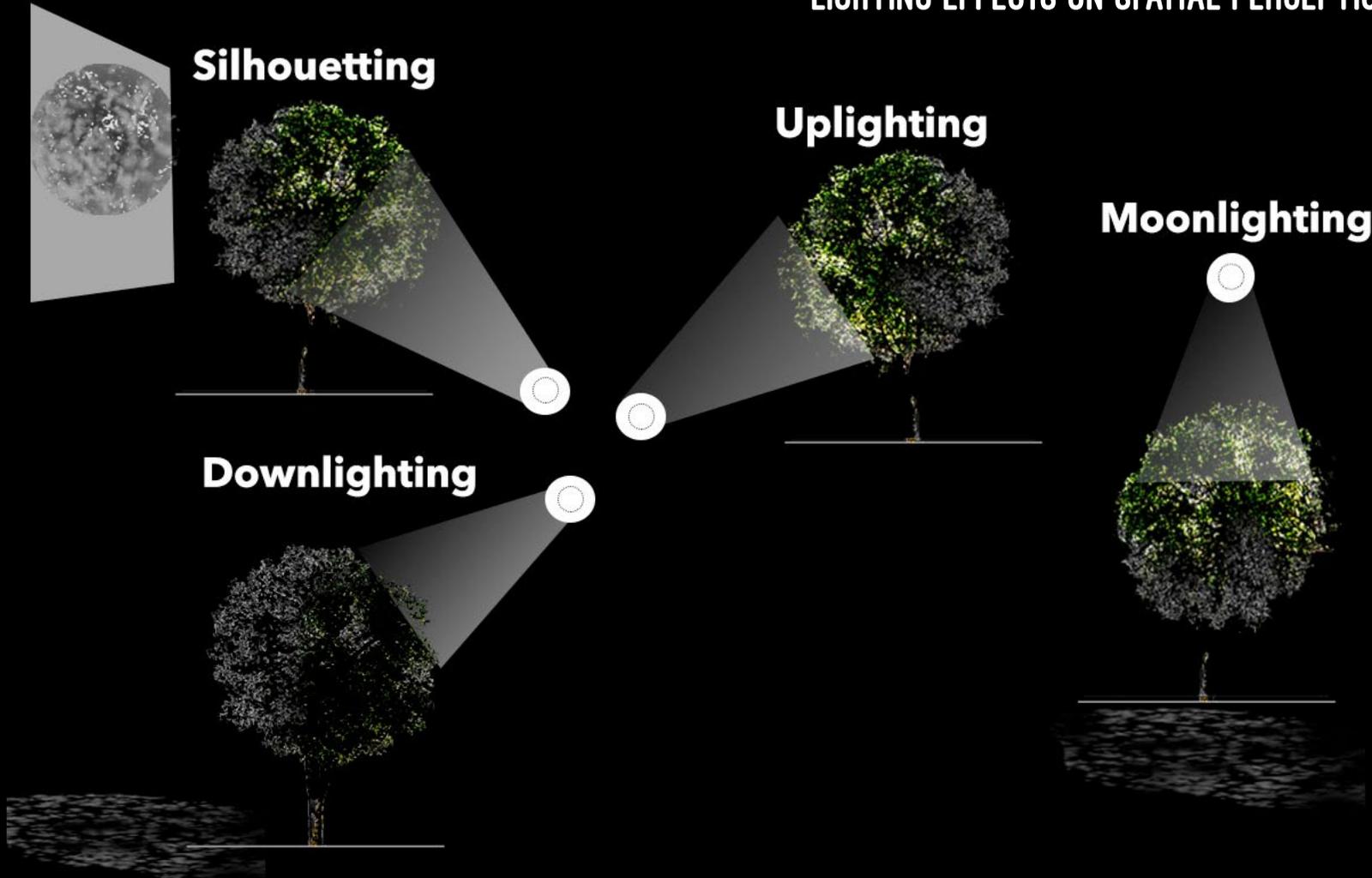


Illustrated on the left is the ability of light to paint our perception. This has been a fundamental philosophy that has been explored throughout this thesis study. Trying to envision and also represent the ability of light to highlight form, structure, and the many layers and shades of night, is one of the most important parts in determining the success or failure of this study.

The way the light paints and bring to the forefront of what we see is a unique ability that can be implemented into a design to curate our experience and add depth to the way we see these landscapes. This is one of the core values in why nighttime design has yet to be taken advantage of and explored. Our ability to design and perceive light as an "object" has limited us from taking advantage and truly using light as a medium that can articulate a richness and depth that not many things can do. Here lies the power and argument that light is more than just a object but a tool in defining and enhancing our nocturnal experience.

REPRESENTATION

LIGHTING EFFECTS ON SPATIAL PERCEPTION



One of the biggest challenges that was discovered through past and present trends of lighting design is the ability to articulate through graphic representation the depth that lighting employs on the landscape. Light is often presented merely as an object and is represented very two-dimensionally due to limitations of standard software. This limitation was often a force dealt with in my renderings that hindered others from seeing the power and depth to which lighting can have on our emotions and perception.

Employing an array of representational strategies, the more successful iterations engaged the landscape by using lighting effects, textures, and shades that could be created using plants & trees as a filtering media. Paired with the ability to highlight the form and structure of the landscape can be seen by the different scales and placement of the source lights. The spread and patterns created not only start to paint an often unnoticed spatial perception but acts as a once invisible medium that now clearly changes the characteristics and focus of a site design.

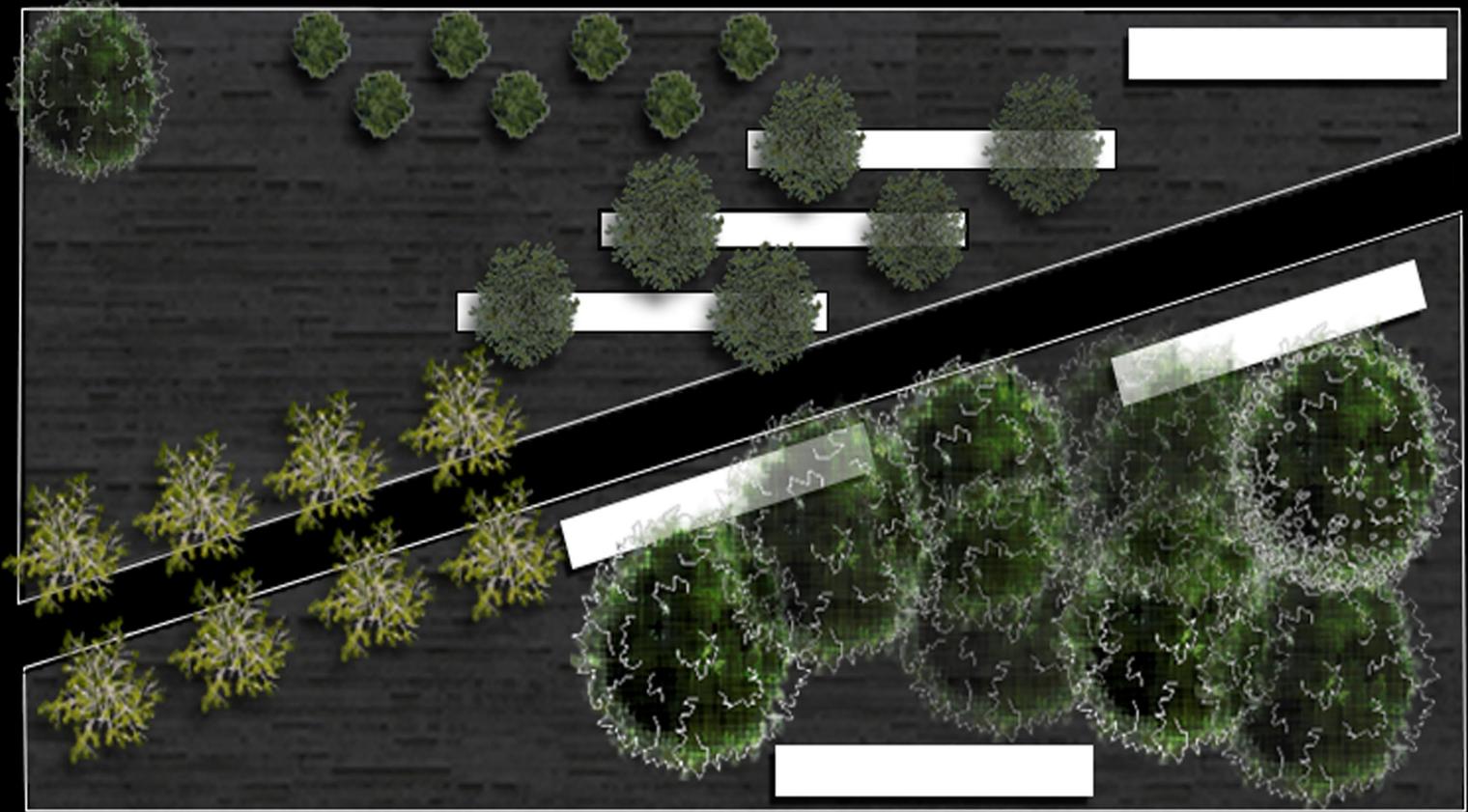


Located in the heart of downtown auburn, the site chosen for a design exploration was crammed between two buildings making it an interesting challenge to successfully implement a landscape design. The site being 50' wide by 100' long provided a smaller than normal space to work with but provided a 25' and 50' wall to enclose and help define this as an urban site. This space provided a unique challenge to see how working with light as a medium could transform, define, and animate a nighttime landscape.

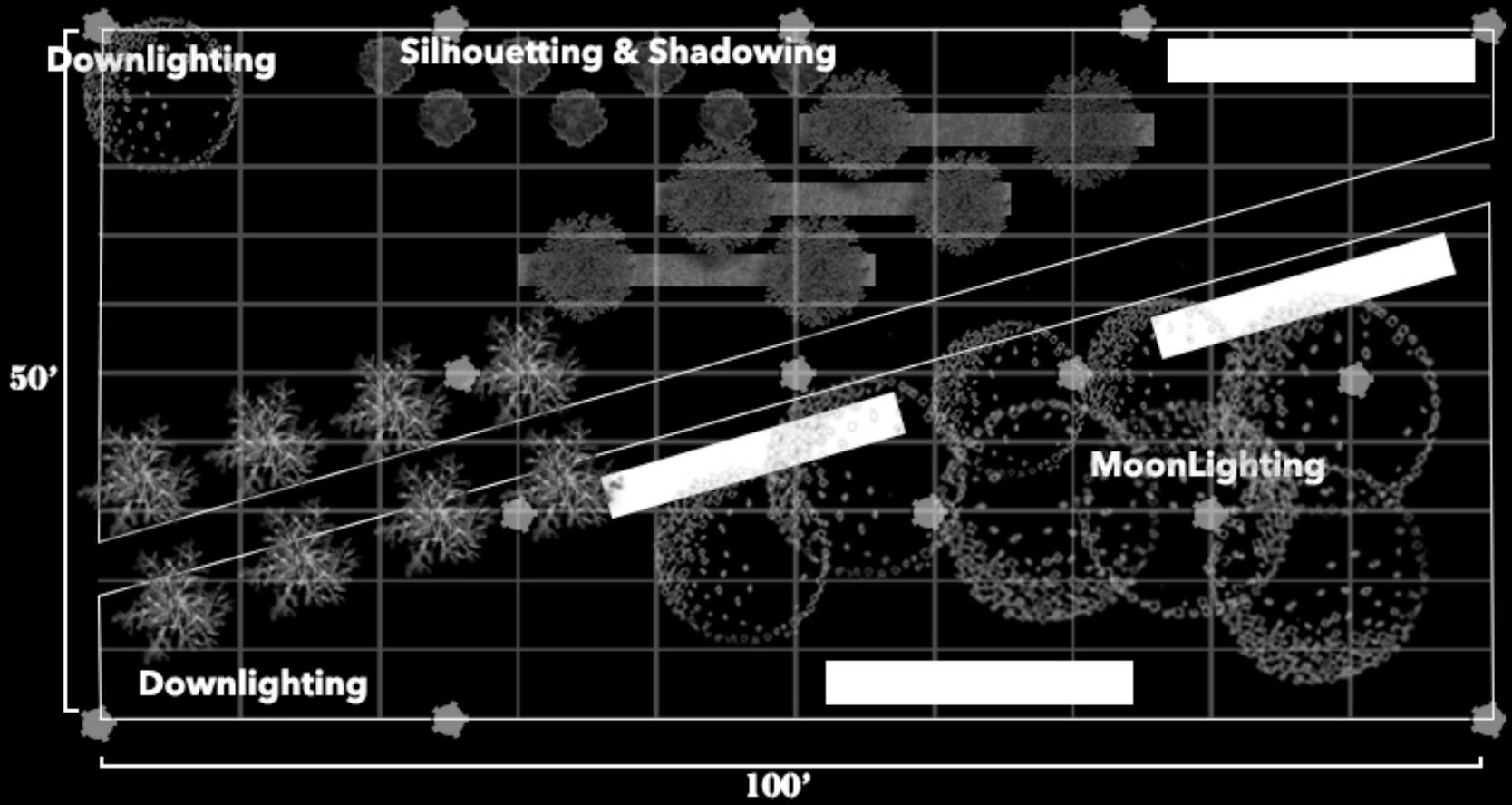


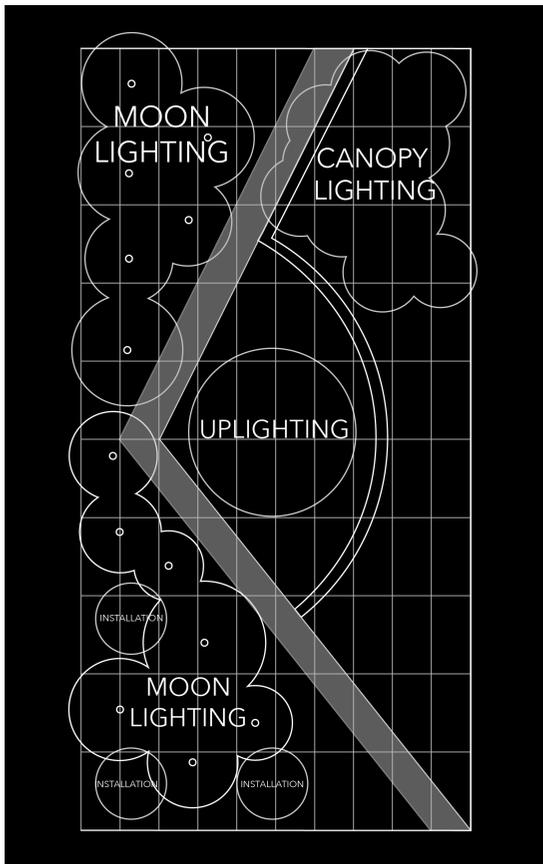
LIGHTING THE SITE

J&M SITE PROPOSAL



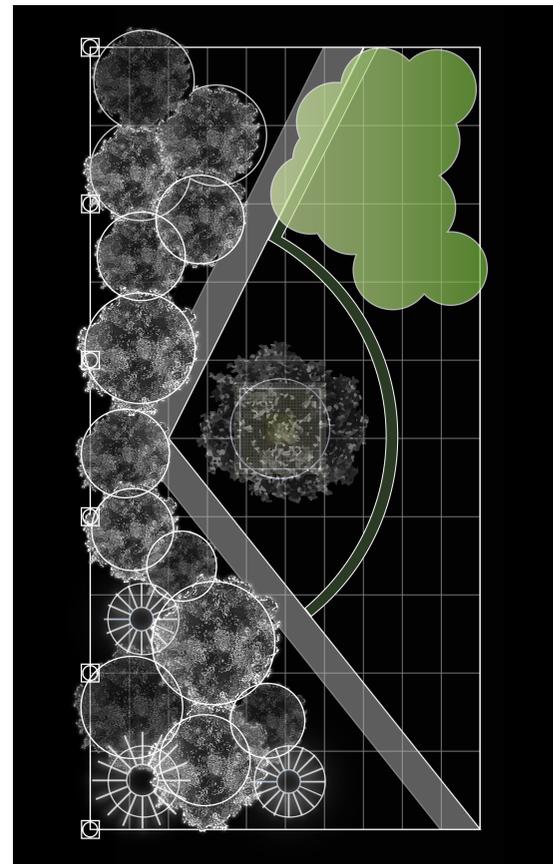






This design abstraction is intended to articulate the arrangement and selection of the effects meant to be produced through curated lighting moments. With various effects chosen to be specifically placed and articulated through such features as intensity, direction, and filtering media being the specific plants used, the site design begins to illustrate how important site lighting can be in our perception of a nighttime culture and design.

With three main focuses of canopy lighting, moon lighting, and uplighting, the site can begin to be explored and built around these effects. This is part of the intention of this study is to not only justify why and how a site should be designed with light as a catalyst for development but take a different approach in regards to how we shape and direct an experience.



The site features and careful design are not only the typical defining features of this site proposal, but are meant to iterate and define the way light is not only perceived but how the specifics of each feature act upon the manipulation and perception of lighting within the site.

These features are meant to serve as defining elements that with careful selection, positioning, and scale, can highlight or dim the boundaries and perception that light has within this specific site design. The main goal proposed through a site design by light, is to articulate the ability and depth that light plays on our emotional, visual, and physical connection to our nighttime culture and identity. To be able to control and manipulate site lighting we can start to control and define a series of intended effects that articulate the importance of site lighting and how it molds our perception and emotion.

LIGHTING THE SITE
FINAL J&M SITE PROPOSAL



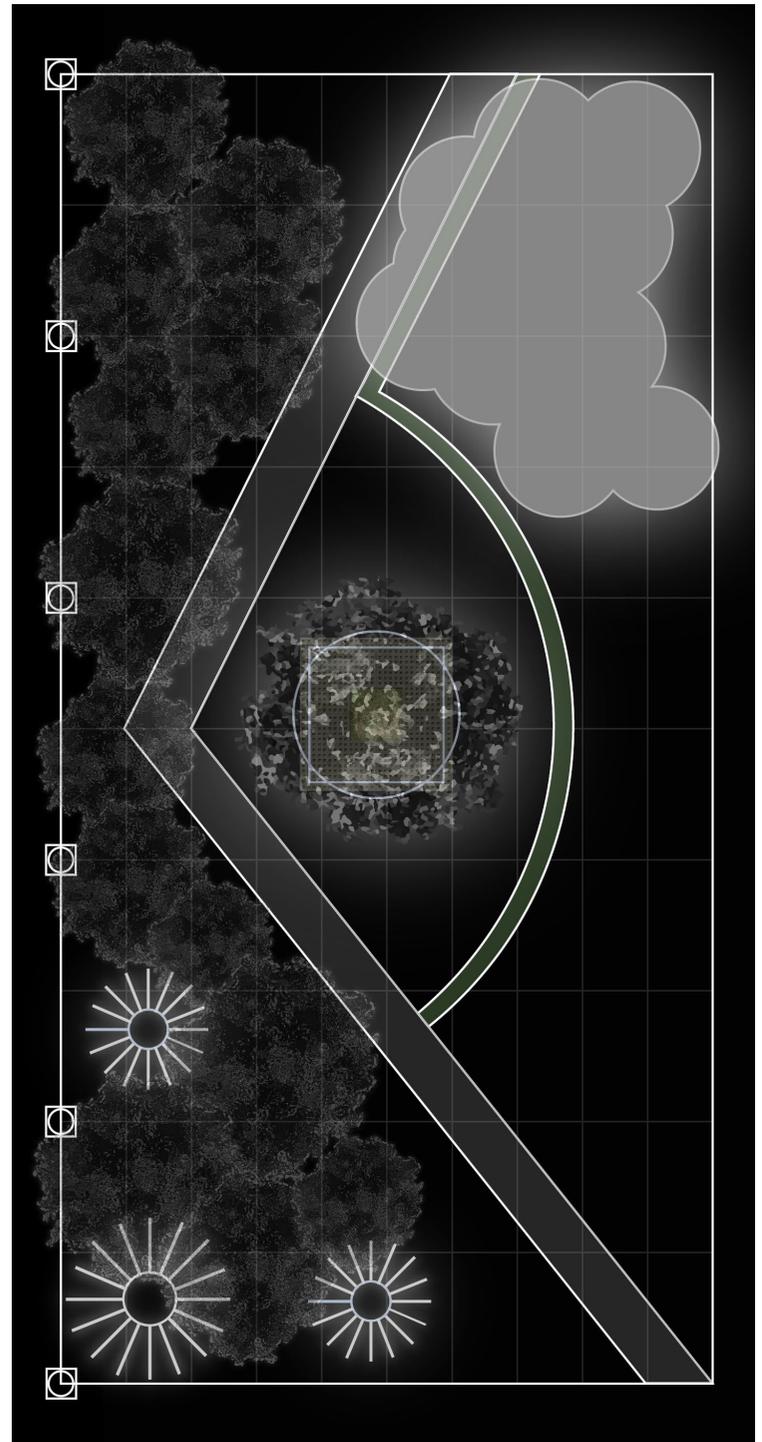




The last portion of the site plan series is meant to highlight and focus on the specific lighting techniques and effects that are either intentionally evoked or happen as a secondary effect. The examination of the boundaries that the light creates is an important part of this specific design study.

The ability to not only see lighting in different forms and intensities is one of the main goals to start the introduction to how powerful and direct lighting can have on our perception and emotional attachment to a particular place or site.

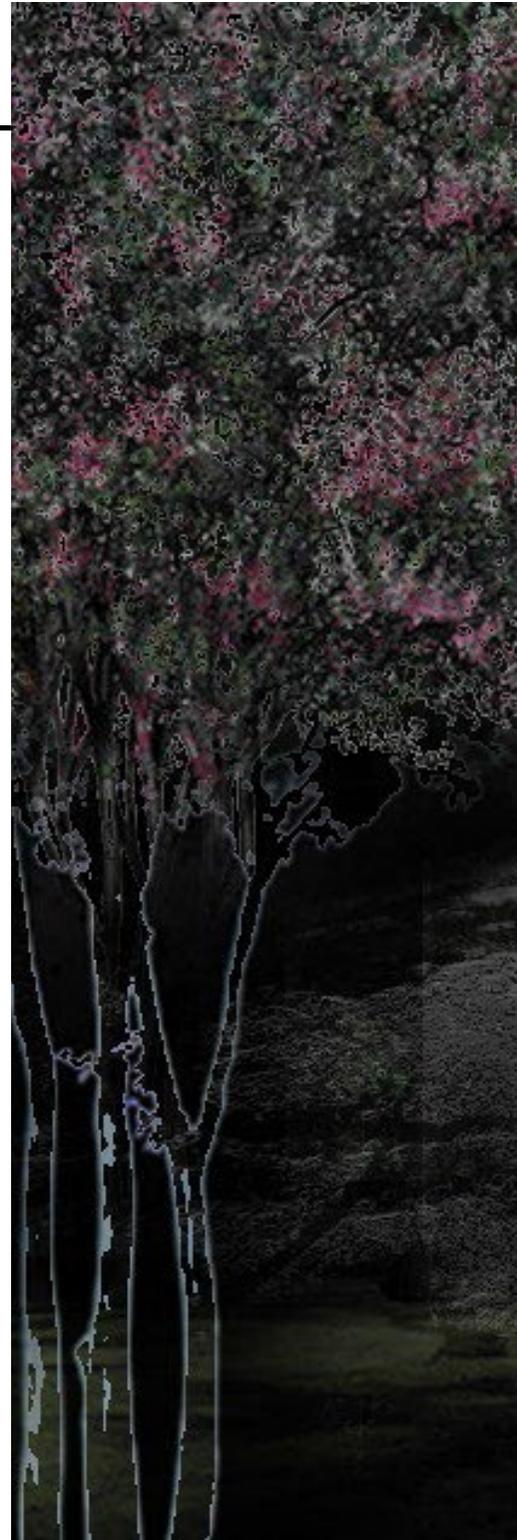
The power to not only evoke emotion through curated lighting and shadow effects through site design and specific strategies is the main goal. This is achieved through either highlighting or dimming certain parameters and areas across a site design. The ability to manipulate and control not only the lighting and shadow that is produced but designing the site features to help shape these effects is what makes designing for the nighttime that much more of a challenge.



REFLECTION + FURTHER STUDY

Designing with light as a fundamental medium and tool has proved a lot harder than imagined. The hardest part is trying to articulate a design that can imagine and interpret the power and different effects that light has on our perception and understanding of space. The intention of a successful design is to create a series of episodic moments while still blurring the line between landscape and light that would cast very specific shadows, textures, and effects on and with the trees as a filtering media.

Using light to define and enhance the spatial perception of landscape would create a design that would not only function at night but would become animated and alive while directing and evoking emotions that are never felt or seen during the day. This ability and power comes from the use of light, guiding and painting our perception. With this ability and power of shaping light as a tool to define and enhance our nocturnal experience exists the iteration that designing for the night should not only be seen as a unique opportunity but one that can engage and enhance social interaction. It is within this interaction that lies the ability to provide a safe and functional space through the facilitation of engagement rather than the traditional approach of washing away our nighttime with an abundance of light









Capitalizing on the spirit and ability of light to bring our landscapes alive and completely change the way we perceive our spatial relationship is the true power and philosophy that this thesis study has led to. Once sites are designed with light in mind and as part of the process, rather than a mere afterthought, designers can not only start to implement the right philosophies of lighting, but create a new era of landscapes that respect and value lighting as much as any other tool in the designer's belt.

Light has an ability to highlight, define, articulate, and lead us without us even realizing it. We are so bombarded by over lit streets and urban cores that we have neglected the fact that light has this amazing power to be a medium which we can paint and design singular and large experiences with. There tends to be this notion that it can either be used for function or artistry but there is so much more depth and rigor to defining how and why we should be using light in all of our designs.

Munro, Tillett, and Turrell have blown the doors off of the psychological understanding and use of light to interact and evoke emotions within people without them realizing it. While light has these very basic characteristics and does still serve a very important and functional role, it has, in the past, always been an afterthought.

Through this exploration, the goal has been to start to bridge that gap of balancing function with artistry while redirecting a rather lost perspective that light needs to be implemented in all stages of design to capitalize on this idea as light as a medium and as a tool than can paint our perception, awaken our experience, and define our ever adapting nighttime culture.



FREE

1. Bain, Lesley, Dramer, Eric, Rodgers, Dave, Watson, Darby. "Lighting/More than Meets the Eye" ASLA Chicago Landscape Architecture Conference. Chicago: November 6. 2015. Print.
2. Berdan, R. "Composition and the Elements of Visual Design." Composition of Photography. N.p., 20 Jan. 2004. Web.
3. Chepesiuk, Ron. "Missing the Dark: Health Effects of Light Pollution." Environmental Health Perspectives 117.1 (2009): A20–A27. Print.
4. Davis, Robert. "Lighting Psychology." Cognitive and Emotional Responses to Lighting. LEDinside, 30 Dec. 2013. Web.
5. Fabio Falchi, Pierantonio Cinzano, Christopher D. Elvidge, David M. Keith, Abraham Haim, Limiting the Limiting the impact of light pollution on human health, environment and stellar visibility, Journal of Environmental Management, Volume 92, Issue 10, October 2011, Pages 2714-2722, ISSN 0301-4797
6. Munro, Bruce. Light. N.d. Light structures. Atlanta Botanical Gardens, Atlanta.
7. Quartier, Katelijjn, and K. Van Cleempoel. "Proceedings of Measuring Behavior 2008." Noldus | Innovative Solutions for Behavioral Research. N.p., 26 Aug. 2008. Web.
8. Rubin, David, Tillett, Linnaea. "Combining Forces: Collaborative Efforts between Landscape Architects and Lighting Designers" ASLA Chicago Landscape Architecture Conference. Chicago: November 9. 2015. Print
9. Sekuler, Allison, and Patrick Bennett. "Shape Perception." MIT Encyclopedia of Cognitive Science. MIT Press, n.d. Web.
10. Tillett, Linnaea. "Light After Dark — Tillett Lighting Design Associates." Tillett Lighting Design Associates. N.p., 8 Mar. 2013. Web.
11. Tillett, Linnaea. "On Imagination and Its Role — Tillett Lighting Design Associates." Tillett Lighting Design Associates. N.p., n.d. Web. 1 Oct. 2015.
12. Tillett, Linnaea. "On the Periphery — Tillett Lighting Design Associates." Tillett Lighting Design Associates. Metropolis Magazine, 15 Jan. 2013. Web.
13. Turrell, James. Roden Crater. n.d. Construction of rooms in crater with natural & artificial lighting implemented into roofs/walls/tunnels. Painted Desert Region. Northern Arizona
14. Arup. Cities Alive: Rethinking the Shades of Night. London: ARUP + Foresight. 2015. March. Print.
15. Bogard, Paul. The End of Night: Searching for Natural Darkness in an Age of Artificial Light. New York: Little, Brown and Company, 2013. Print.
16. Narboni, Roger. Lighting the Landscape: Art Design Technologies. Basel, Switzerland: Birkhauser, 2004. Print
17. Steele, Joëlle. LIGHTING THE LANDSCAPE//Stay Dark and Stay Safe. Washington, USA. Many Hats Publications. 2015

CITATIONS

Image on page 24: Turrell, James. Retrieved from https://curiousaboutdotco.files.wordpress.com/2015/03/jamesturrell_rodencrater_canberra_curiousabout.jpg

Image on page 25: Thereza Pedrosa. 2015
<http://beautifulpeopleliveart.com/the-perception-of-light-james-turrell/#jp-carousel-6488>
Thereza Pedrosa

Image on page 26: Rendering for Aten Reign, 2013 Daylight and LED light Site-specific installation, Solomon R. Guggenheim Museum, New York © James Turrell, Rendering: Andreas Tjeldflaat, 2012 Retrieved from <http://www.clearmag.com/blog/james-turrell-guggenheim>

Image on page 27: MORGANA MATUS 2013. Retrieved from <http://inhabitat.com/genius-artist-james-turrell-plans-to-turn-an-extinct-volcano-into-a-naked-eye-observatory/james-turrell-volcano-rodencrater-observatory-6/>

Image on page 27: Unknown author. Retrieved from <https://www.flickr.com/photos/32656896@N04/3049344124>

Image on page 28: Matthew Louis Qual Retrieved from http://library.ndsu.edu/tools/dspace/load/?file=/repository/bitstream/handle/10365/24944/Qual_FinalBook.pdf?sequence=4

Image on page 29: Geoff Edgers. 2015. Retrieved from <https://www.washingtonpost.com/news/arts-and-entertainment/wp/2015/11/05/want-to-see-one-of-earths-great-artworks-in-five-years-just-show-james-turrell-the-money/>

Image on page 30 - 31: Unknown author. Retrieved from http://www.thisiscolossal.com/wp-content/uploads/2016/03/BruceMunro_04.jpg,

Image on page 32: Unknown author. Retrieved from <http://media.cmgdigital.com/shared/img/photos/2015/04/30/2d/2f/050215-munro-light08.jpg>, <https://www.google.com/>

Image on page 34: Twitter. Retrieved from <https://pbs.twimg.com/media/BrEXKrxlUAAWDxh.png>, <https://www.google.com/>

Image on page 35: Unknown Author. Retrieved from <http://archpaper.com/wp-content/uploads/2016/04/02-Linnaea-Tillett-light-archpaper.jpg>,

Image on page 37: Unknown author. Retrieved from <http://acdn.architizer.com/thumbnails/PRODUCTION/ff/40/ff4084cd3540b07de3a07f991730d765.jpg>



