

ABSTRACT

Title of Thesis: Light in the Landscape: Designing for
Darkness

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This design-research thesis proposes the redesign of Tide Lock Park in Alexandria, Virginia as an exploration of light. By researching the cultural history of artificial lighting as well as the sculptural use of light as art, this thesis seeks to distinguish lighting design that goes beyond functional and safety concerns to include design that honors the human relationship to darkness, as well as the artistic and emotive qualities of lighting. To accomplish these goals, this thesis proposes a landscape design for Tide Lock Park which meets the City of Alexandria's objectives as described in the Waterfront Small Area Plan. The design includes three distinctive areas of light, providing visitors the opportunity to engage the night in multiple ways.

LIGHT IN THE LANDSCAPE: DESIGNING FOR DARKNESS

By

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Chapter 1: Introduction

Typically people do not think about the role that light plays in their day-to-day lives. It is only when light is extraordinarily good, bad, or unusual that it gets noticed. Many public spaces have implemented lighting designs that lack interest, excitement, and emotion. The current mainstream cultural attitude towards street and outdoor lighting is that more is better. This is because lighting is associated with safety. The tendency is to over-light public spaces when too much lighting can make it just as difficult to see as too little.¹ Lighting design as it relates to function only addresses half of the design goals.

¹ Project for Public Spaces. Lighting Use & Design. [cited March 28 2013]. Available from <http://www.pps.org/reference/streetlights/>.

Lighting design as it relates to emotion is something that is better understood by artists. Painters, photographers, and sculptors employ light in their work for emotive and experiential qualities. The first thing one learns in a drawing class is shading, as light is what gives depth of form and character to what would otherwise be thin lines on a page. The same is true in how we perceive built space. The characteristics of light shape the way the forms within a space are revealed and internalized. As designers of these spaces we are responsible for not only addressing safety or other practical concerns, but also for creating a world that enhances the quality of life of the people who encounter it. Lighting design in landscape architecture plays a key role in shaping that experience. While many designers would find it ideal to approach lighting design in an inclusive manner, rather than an afterthought, it can sometimes be given less importance in the large scheme of things. While there are no hard facts on how designers approach their designs, it is my general observation that most designs seem to be crafted while thinking of daylight conditions primarily with darkness serving a secondary role.

This thesis is a search for an understanding of the cultural values that have evolved alongside the history of artificial lighting, an understanding of the use of light in sculpture as it relates to emotion, as well as a practical attempt at designing for night. The proposed design for Tide Lock Park follows the objectives of the City of Alexandria, as outlined in the Waterfront Small Area Plan, to create a park with illumination as its theme. The design uses lighting and

the condition of darkness as its greatest impetus for design decisions. As with a painting or a photograph, the lighting of a landscape could serve to heighten, alter, and shape the emotions of the viewer. The goal is that in approaching design from this new angle, valuable but generally overlooked qualities will be revealed and the overall design will be more sensory, impactful, and most of all emotional.

Chapter 2: The Role of Darkness in People's Lives

We live in a world that values productivity, work, global connections, growth, and expansion. Too often, we get sucked into this active frame of mind and we lose sight of the other side of life that helps keeps us mentally and physically in balance, that being the qualities of rest, relaxation, solitude, meditation, etc. While many factors have led us to this lifestyle, artificial lighting has allowed us to expand our time of work and productivity into the night hours. With the development of artificial lighting, we have pushed out darkness without questioning what that loss means for our lives. Our relationship with night has become less about understanding night and its particular qualities, and more about extending daytime-like activities into the darkness. How does appreciating darkness and night better serve our lives? What are we losing by flooding the darkness in artificial light?

Often, night is treated as though it is only the absence of day. It is not valued for its own individual qualities. It is treated as inferior. While we often think of night or darkness as limiting what we can see and do, we fail to realize that it is because of these particular qualities that darkness makes us grow introspective. Night is a time for meditation, reflection, and spirituality. We forget how important this time is. Night and darkness give us the opportunity to boil down all the things that the light allowed us to see and do during the day and turn them into ideas, goals, questions, etc.

Anymore, we rarely interact with objects in darkness. Because darkness inherently makes it so that we cannot get all of the information about each object we see, our thought patterns and reactions to those objects changes drastically.² Things become more mysterious. By limiting the details you can see in objects and reducing them to silhouettes, night allows for a different understanding of things.

For example, when you see trees in daylight you can observe all the characteristics that allow you to name them and classify them, but at night all trees are one of the same community rather than being distinct from one another.³ Author John Daniel describes trees in the dark as having, “announced their membership in a wilderness vaster than daylight eyes can apprehend, a

² Bogard, Paul,. 2008. *Let There Be Night : Testimony on Behalf of the Dark*. Reno: University of Nevada Press. 23.

³ Ibid.

wilderness to which I too belong.”⁴ He later says, “When I see little clear, I seem to see farther, deeper. Night saves me from the tyranny of appearances. In darkness I remember that it is not knowledge to which we most deeply belong but mystery, and I sense in the mystery of night a beauty that exceeds even the great and notable beauties of the day-lit world.”⁵

Daniel describes the night as having a mysterious quality that is of value to us in the way in which it allows us to let go of the need for appearances or knowledge and instead appreciate the fact that there is meaning beyond appearances. When we let go of the details of nature and appreciate elements of nature as beings, we feel ourselves more connected to, and part of, that system of beings. In darkness it is easier for us to feel connected to each other, as well as to nature.

Night causes us to question our relationship to the universe. This questioning can lead to the bond between humans and their environment that is also known as biophilia. Night helps foster that bond. One of the most important reasons for developing an appreciation of night is to instill within the next generation that sense of biophilia that will foster a generation of people committed to preserving nature.

⁴ Ibid.

⁵ Ibid., 30.

The Science and Technology Institute in Thienes, Italy published a study which reported that 99 percent of people living in the U.S “never see a truly dark starry sky.” The study continues, “More than two thirds of the U.S. population, about half of the EU population and one fifth of the whole world’s population live where they no longer have the possibility of seeing the Milky Way with the naked eye.”⁶ What does this mean for our world? How does this disconnect us from our universe?

Artificial light at night creates a boundary to what we can see. It limits our vision to a restricted space. Imagine walking down a dark path at night with a flashlight. The light from the flashlight allows you only to see what is within its limited lit-up area and everything outside of that becomes harder to see because your eyes are adjusted to the brightness of the flashlight rather than your surroundings. Now imagine a child who has only ever lived within these boundaries of artificial light. They move from one boundary to another at night, never understanding what it means to get far away from the artificial light and have their eyes adjust to true darkness. It is not until the child may get an opportunity to go camping that they can see the starry sky and contemplate their place in the universe. But not all children get to leave the city to go camping. Eighty percent of children will never see a sky dark enough to view the Milky Way.⁷ The sense of wonder that comes from questioning the universe helps foster a connection with the natural

⁶ Falchi, Fabio, Pierantonio Cinzano, Christopher D. Elvidge, David M. Keith, and Abraham Haim. 2011. *Limiting the Impact of Light Pollution on Human Health, Environment and Stellar Visibility*. *YJEMA Journal of Environmental Management* 92 (10): 2714-22.

⁷ Bogard, Paul. 2013. *The End of Night: Searching for Natural Darkness in an Age of Artificial Light*. New York, NY: Little, Brown and Company. 268.

world is invaluable. Because artificial light limits our vision to a small area we add an ever-increasing amount of artificial lighting to the world in hopes of expanding our visual grasp on the dark world of night. But as we do this we push darkness and all it has to offer farther and farther away.

Darkness, and the lack of it, has been understood to play key roles in the manner in which many animals and insects orient themselves, how they compete with each other, how they reproduce, their circadian rhythms, and the manner in which they prey on each other.⁸ Thirty percent of all vertebrates and more than sixty percent of all invertebrates are nocturnal, with others being crepuscular, meaning their primary activities take place at dawn and dusk.⁹ Almost everyone has seen how moths get entrapped in bright light at night, but what most people don't understand is that moths pollinate eighty percent of the world's plants,¹⁰ as well as play an important role in the food chain, feeding bats for instance.

Bats are another case of undervalued animals of the night. Science Magazine reports in their article "Economic Importance of Bats in Agriculture" that bats benefit our agricultural systems to the count of about \$54 billion.¹¹ Bats eat the pests that we would otherwise have to control with pesticides.

⁸ Ibid., 132.

⁹ Ibid.

¹⁰ Ibid., 142.

¹¹ Boyles, J. G., P. M. Cryan, G. F. McCracken, and T. H. Kunz. 2011. *Economic Importance of Bats in Agriculture*. Science Magazine. 332 (6025): 41-2.

Birds often get thrown off of their night migration courses, getting confused by bright lights. Birds will fly into an area of bright light and not be able to leave it. They will stay there flying until they die of exhaustion, die from colliding with other birds or buildings, or until the lights are shut off and they are released.¹² As most people know, birds collide with windows on a frequent basis but what people may not know is that birds deaths as a result of human-made structures is to the tune of one billion birds each year and birds collide with buildings during the day as well as at night.¹³ The U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) program has put the "bird collision issue" into its rating system. "Pilot Credit 55: Bird Collision Prevention" requires making a building visible as a physical barrier to birds during the day and eliminating light trespass at night.¹⁴

If light tames darkness and all of its mystery, if it disconnects us from our universe, if it makes us less biophilic, if it harms animals, insects, and ecologies then why do we keep making the night world brighter and brighter?

¹² Bogard, Paul. 2013. *The End of Night: Searching for Natural Darkness in an Age of Artificial Light*. New York, NY: Little, Brown and Company. 151 – 154.

¹³ *Ibid.*, 151 and 300.

¹⁴ *Ibid.*, 300.

2.1: The History and Culture of Artificial Lighting

As lighting has changed through time, so has the human perception of it. Many human beings have historically feared the night. In Western society, people have tended to see day and night in very black and white terms, as in good versus evil. In Christianity, God's first act was the gift of light. While various cultures have always equated darkness with evil spirits, some have had more complex relationships with light. Some Native American cultures see areas of gray. They see value in the balance that exists between the two opposites. In Paul Bogard's book *The End of Night* Bogard interviews an Abenaki storyteller and author named Joseph Bruchac who explains that Native American culture sees night as a time of healing and that the culture is much less likely to say that night is evil.¹⁵

Asian culture has had a very different relationship with darkness as well, as evidenced by the writings of Jun'ichiro Tanizaki in his book *In Praise of Shadows*. He writes beautifully about the manner in which Japanese culture adapted to darkness due to the architecture of the past, which required that people lived in dark interiors where glimpses of light came in small amounts. Tanizaki says that Western cultures have always built in a manner that is meant to "create as few shadows as possible and to expose the interior to as much light as possible."¹⁶ Japan, on the other hand, had temples, farmhouses, palaces of nobility, and

¹⁵Ibid., 164.

¹⁶ Tanizaki, Jun'ichiro,. 1977. *In Praise of Shadows*. New Haven, Conn.: Leete's Island Books. 17.

common homes which had roofs “of heavy tiles.”¹⁷ During construction the roof was laid out first, with the rest of the structure being placed within the eaves in the very dark interior. He says, “If the roof of a Japanese house is a parasol, the roof of a Western house is no more than a cap, with as small a visor as possible so as to allow the sunlight to penetrate directly beneath the eaves.”¹⁸

His book makes the point that Japanese culture of older times adapted to what they had to work with and learned to appreciate the beauty of shadow, rather than feeling the need to bathe everything in light or strive to make better everything as Western culture attempts to do. He tells a beautiful story in which he describes this phenomenon very effectively. The story takes place at a dark candle-lit restaurant where he realizes the true beauty of dark Japanese lacquerware. He says, “Sometimes a superb piece of black lacquerware, decorated perhaps with flecks of silver and gold - a box or a desk or a set of shelves - will seem to me unsettlingly garish and altogether vulgar. But render pitch black the void in which they stand, and light them not with the rays of the sun or electricity but rather a single lantern or candle: suddenly those garish objects turn somber, refined, dignified.”¹⁹ He claims that artisans of lacquerware must have had dark rooms in mind when designing the works and applied the decoration in gold and silver in order to catch the little bit of light that was

¹⁷ Ibid.

¹⁸ Ibid., 17 - 18.

¹⁹ Ibid., 13 - 14.

available. He argues that contemporary Japanese culture is losing this appreciation for shadow in its quest to be more like the West.

Author Murray Melbin cleverly but accurately describes our relationship with darkness as though we have been colonizing the night in the same manner in which one would colonize a new land in his book *Night as Frontier: Colonizing the World after Dark*.²⁰ What makes his comparison so accurate is that it takes into account the cultural changes that take place when colonization happens, and recognizes that with benefits there also come costs. Because the history of lighting has not only been about inventions, but primarily has been about the cultural changes. What is seen as a benefit and what is seen as a cost can be subjective.

It is not always clear whether new inventions in artificial lighting brought on the extension of life's happenings into dark hours, or if a shift in how life was lived at night required those inventions to be developed. What is clear is that the history of lighting is a history that starts with small discoveries that get improved upon and eventually lead to an ever increasing brightness within the environment.

The history of light begins with the discovery of fire. Human's ability to domesticate fire has set us apart from all other creature on earth. The earliest evidence of the controlled use of fire has arguably been found at the Lower

²⁰ Melbin, Murray. 1987. *Night as Frontier : Colonizing the World after Dark*. New York; London: Free Press ; Collier Macmillan.

Paleolithic site of Gesher Benot Ya'agov in Israel where excavations revealed burned wood, seeds, grain, and flint from some 790,000 years ago.²¹

However, scientists Wil Roebroeks and Paola Villa argue that although evidence of the controlled use of fire has been found earlier than ~300,000 - 400,000 years ago, it is not until then that signs of fire domestication take place. They argue that controlled fire before that time was evidence of early humans taking advantage of chances, such as forest fires from lightning, but that humans did not know how to produce fires at times earlier than ~300,000 - 400,000 years ago.²²

Jane Brox writes about the early inventions of light in her book *Brilliant: The Evolution of Artificial Light*. She explains that torches made of pine have existed for half a million years, but the first known lamps, no more than 40,000 years old, were made of stone by Ice Age humans during Pleistocene times.²³ These lamps were slabs of limestone with pools of tallow and wicks of lichen, moss, or juniper. Such lamps were found in La Mouthe, Lascaux, one of the locations of the famous cave paintings.

²¹ Alperson-Afil, Nira, and Goren-Inbar, N. *The Acheulian Site of Gesher Benot Ya'aqov*. Volume 2, Ancient Flames and Controlled Use of Fire. Springer [database online]. Dordrecht; London, 2010.

²² Roebroeks, Wil, and Paola Villa. 2011. *On the Earliest Evidence for Habitual Use of Fire in Europe*. Proceedings of the National Academy of Science of the United States of America.

²³ Brox, Jane,. 2010. *Brilliant : The Evolution of Artificial Light*. Boston: Houghton Mifflin Harcourt. 7 - 8.

Brox informs us that the Romans were believed to have made the first beeswax candles. Beeswax was only for the wealthy and most people relied on animal fat or vegetation: manatees, alligators, whales, sheep, oxen, bison, deer, bears, coconuts, cottonseed, rapeseed, and olives.²⁴ Fireflies were used for light in the West Indies, Caribbean, Japan, and South Sea Islands.²⁵ They were captured and kept in small cages. The first American colonists didn't have animals so they used pine knots for their lights.²⁶ Before matches existed people had to strike flint against iron pyrites or make friction between hard wood and soft wood. It was common to keep tinder boxes with flint, fire steel, and tinder (usually charred linen).²⁷

Street lights were not in existence in the Middle Ages. Cities were guarded by large gates, which were closed at night. If you did not make it back into the city gates at night you could either be locked out for the night, or in some places you could pay a fine in order to enter.²⁸ People were legally required to be in their homes with the doors locked after dark, having turned in their keys to the magistrate.²⁹ There were night watchmen always on duty, and the young men of

²⁴ Ibid., 11.

²⁵ Ibid., 12.

²⁶ Ibid.

²⁷ Ibid., 16.

²⁸ Ekirch, A. Roger,. 2005. *At Day's Close : Night in Times Past*. New York: Norton. 62.

²⁹ Brox, Jane,. 2010. *Brilliant : The Evolution of Artificial Light*. Boston: Houghton Mifflin Harcourt. 22

the households had to take turns serving shifts on night watch.³⁰ People were only allowed to go out if they had a very good excuse and it was required that they carry a lantern, not to see so much as to be seen. Being caught without a lantern at night meant you could be assumed as making trouble and you could be punished.³¹

Generally, night was a time to be feared in the Middle Ages. There were many perceived dangers which included witches, goblins, tripping, falling, running into things, or most of all being the victim of a criminal.³² But over time as cities and commerce grew, people extended their activities into the night.³³ Wealthy people who went out in order to attend performances and plays could hire “linkboys” or “linkmen” who would carry lanterns and escort them from one place to another.³⁴

Street lighting began during the 1600’s in Europe and America when governments ordered their citizens to place oil or candle lanterns in the windowsill of their homes for a few hours during the beginning of the night.³⁵ The maintenance costs and labor fell on the shoulders of each individual household. In New York people complained of the costs and so the laws were changed so

³⁰ Ibid., 23.

³¹ Ibid., 23 – 24

³² Ekirch, A. Roger., 2005. *At Day's Close : Night in Times Past*. New York: Norton. Chapter 1.

³³ Brox, Jane., 2010. *Brilliant : The Evolution of Artificial Light..* Boston: Houghton Mifflin Harcourt. 26.

³⁴ Ibid., 30 - 31.

³⁵ Ibid., 27.

that only every seventh house had to put out a light and the other houses six that did not have lights would help pay to maintain the one that did.³⁶ However the labor for the light was still up to the individual household which it was hung from. Eventually city governments had streetlights put up to replace the responsibilities of the individual households and they raised taxes for the maintenance of these lights, which were lit more frequently.³⁷ In Paris the streetlights were made of candles and in most other places the streetlights were originally oil lamps.³⁸

The street lighting had actually been made necessary by the cultural changes of people staying out later to go to taverns, dinners, theater performances, or social gatherings rather than the cultural changes happening *because* of the lighting. But originally the increase in lighting had its opponents who argued that it would aid criminals, more people would get drunk, the streets would be rowdier, and the splendor of the festival lights would no longer be as special.³⁹

By the 17th century gate closings and curfews had been given up.⁴⁰ In the book *Evenings Empire: A History of the Night in Early Modern Europe* author Craig Koslofsky says, "... in 1660, no European city had permanently illuminated its

³⁶ Ibid.

³⁷ Ibid., 28.

³⁸ Koslofsky, Craig. 2011. *Evening's Empire : A History of the Night in Early Modern Europe*. Cambridge; New York: Cambridge University Press. 130.

³⁹ Brox, Jane.,. 2010. *Brilliant : The Evolution of Artificial Light*. Boston: Houghton Mifflin Harcourt. 29 - 30.

⁴⁰ Koslofsky, Craig. 2011. *Evening's Empire : A History of the Night in Early Modern Europe*. Cambridge; New York: Cambridge University Press. 130.

streets, but by 1700 street lighting had been established in Amsterdam, Paris, Turin, London, and Copenhagen, in French provincial cities, and across the Holy Roman Empire from Hamburg to Vienna.”⁴¹ Lighting had taken a shift from being completely about security at night to also being about the social needs of the community.

By the time the Argand oil lamp was invented in 1780 it was already common for people to stay up until 3 or 4 a.m. and then sleep the next day until noon. When considering whether the Argand oil lamp might possibly reduce lighting costs by burning oil more efficiently, Ben Franklin realized that the truly effective way to save costs was to not stay up so late and to make the most of daylight instead, later coming up with the idea for daylight savings time.⁴² However, the Argand oil lamp was revolutionary for its time, due to its brightness and its ability to burn clean and require less snuffing.⁴³

The argument for increased street lighting in 1700 was the same argument that people make for increased lighting now, that being security issues. While street lighting gave people a sense of security at night there are, however, numerous historical accounts of the violence that continued to take place in the streets of

⁴¹ Ibid., 130 - 131.

⁴² Ibid., 128.

⁴³ Brox, Jane.,. 2010. *Brilliant : The Evolution of Artificial Light*. Boston: Houghton Mifflin Harcourt. 54 - 55.

these brightly lit cities in Koslofsky's book.⁴⁴ And he notes that not only were the traditional crimes still happening but there was a new crime of smashing lanterns which took place as well. A study of crime in Cologne in the late sixteenth and early seventeenth centuries by Gerd Schwerhoff shows a connection between the time of day and violent crimes, saying that one quarter of them took place before 5 p.m., half occurred between 5 p.m. and 10 p.m., and the remaining twenty percent happened in the night hours after 10 p.m.⁴⁵

In the seventeenth century living hours were not only extending into the night in cities but also in rural areas, for the sake or working later, not so much for socializing. People were fishing, sowing, harvesting, spinning, weaving, sewing, and knitting by the light of either lamps or candles.⁴⁶ In fact, when gas light first came into use in the early 1800's, it was primarily used in British machine shops and factories, to extend the work hours into the night.⁴⁷

It was in 1801 that Philippe Lebon, of France, gave the first demonstration of what he called the "thermolampe."⁴⁸ At the same time William Murdoch was experimenting with coal gas. In 1807 Pall Mall in London was the first place to

⁴⁴ Koslofsky, Craig. 2011. *Evening's Empire : A History of the Night in Early Modern Europe.* Cambridge; New York: Cambridge University Press. 164 - 173.

⁴⁵ Schwerhoff, Gerd. 1991. *Köln im Kreuzverhor: Kriminalität, Herrschaft und Gesellschaft in einer frühneuzeitlichen Stadt.* Bonn and Berlin; Bouvier. 300 - 301.

⁴⁶ Koslofsky, Craig. 2011. *Evening's Empire : A History of the Night in Early Modern Europe.* Cambridge; New York: Cambridge University Press. 201.

⁴⁷ Brox, Jane,. 2010. *Brilliant : The Evolution of Artificial Light.* Boston: Houghton Mifflin Harcourt. 60.

⁴⁸ Ibid.

install a section of gas street lights, in celebration of the king's birthday.⁴⁹ But what really caused a shift in the thinking about how to approach street lighting was Frederick Albert Winsor's opening of the first gas lighting company in London, called the Chartered Gas Light and Coke Company, in 1812.⁵⁰ What was revolutionary about this was that Winsor was the first to imagine a city-wide system which would shift lighting responsibility to a city-wide metered system, rather than having individual lamps tended to by individual homeowners.

By mid-century most towns had gas companies. Baltimore was the first U.S. city to adopt gas lighting in 1817.⁵¹ The shift to gaslight marked a larger cultural shift in the way people lived life in the night.⁵² Gas light extended beyond individual homes to better illuminate shop windows at night, theaters, signs, taverns, etc. This time was also marked by a rising middle class who could spend more time and money on leisure during the evening hours.⁵³

In the second half of the nineteenth century kerosene, refined from petroleum, became commonly used in households for lighting as well as other uses around the house.⁵⁴ Although gas was making its way into many homes, it was primarily

⁴⁹ Ibid., 66.

⁵⁰ Ibid., 67.

⁵¹ Ibid., 71

⁵² Ibid.

⁵³ Ibid., 73.

⁵⁴ Ibid., 82.

used in the common rooms and kerosene lamps were used in the private rooms. Also the families who could not afford to have gas installed in their home were reliant on kerosene lamps for lighting at night. Kerosene is what established John D. Rockefeller's fortune, in his company Standard Oil.⁵⁵

Meanwhile, experiments in electricity had been happening since the seventeenth century. We are all familiar with the story of Ben Franklin and his test with the kite, string, and key which proved there to be electricity in lightning. It wasn't until around 1800 that the first battery was invented, in order to store the discovered electricity, by Alessandro Volta in Italy.⁵⁶ It was arc lamps that first displayed electric lighting in the form of street lamps in London and Paris in 1878.⁵⁷ These new arc lamps were considerably brighter than the old gas lamps and they were overwhelming for people. Gas lamps had allowed people's eyes to still rely on their retinal rods to see at night. But arc lamps made the night seem like day. With arc lamps being too bright and not being able to be used in people's homes, the quest for an incandescent light began.

In 1878, Thomas Edison began his search to find the perfect filament for the incandescent light bulb and by 1879 Edison's associate, Charles Batchelor discovered that a horseshoe-shaped filament made of carbonized thread in a

⁵⁵ Ibid., 83.

⁵⁶ Ibid., 101.

⁵⁷ Ibid., 102.

glass bulb will burn for many hours (until the bulb cracked from heat).⁵⁸ Edison and Batchelor worked out the small problems that remained with their discovery and shifted their focus to a new goal of bringing a new electrical grid to the city. Edison put his belief in isolated direct current (DC), claiming that alternative current (AC) is too dangerous. This eventually caused him to lose against George Westinghouse and Westinghouse's associate Nikola Tesla when they competed with Edison for the contract to light the 1893 World's Columbian Exposition in Chicago.⁵⁹

Still by 1912 only sixteen percent of American households were connected to a central electrical station.⁶⁰ Although many new appliances were being invented, that in themselves worked very well, most of them had problems with the electrical connections. Electricity did not make its way to rural areas until after FDR established the Rural Electrification Administration (REA) in 1935.⁶¹ By this time many rural families have been viewing the electrical conveniences that existed for people living in the city through appliance catalogs and other means, and they finally felt on par with people who had long had electric before them. In the country, electric lighting meant people could extend their work hours into the night and electric appliances meant their chores could be more easily managed.

⁵⁸ Ibid., 116 - 117.

⁵⁹ Ibid., 124 - 125.

⁶⁰ Ibid., 164.

⁶¹ Ibid., 195.

Today we continue spreading light and brightness into the reaches of the suburbs that spread their way into what used to be the rural countryside. A night drive through the country these days reveals numerous security lights dotting the properties from city to city, all in the name of protection. But what are we protecting ourselves from? Many would say from trespassers. However, light trespass has become an acknowledged form of disrupting an individual's rights as well.

2.2: The Functional Role of Light

The primary concern of people faced with the idea of dimming public lighting is safety and security. People think that because lighting makes us feel safe then we should have more light. Most of the light in our world comes from parking lots and streetlights and in the U.S. there are around 60 million cobrahead streetlights in use.⁶² What people do not realize is that when lighting gets brighter, it can produce glare which actually makes it harder for us to see in the night. Contrast is the key to seeing better at night and most of our lights have way too much glare to allow for the needed amount of contrast to see well. Streetlights actually work to reduce contrast.⁶³

Another key factor in seeing well at night lies in the ability of our eyes to adjust to their surroundings. With the way that streetlights are bright and placed at a

⁶² Bogard, Paul. 2013. *The End of Night: Searching for Natural Darkness in an Age of Artificial Light*. New York, NY: Little, Brown and Company. 19.

⁶³ *Ibid.*, 68.

distance from one another our eyes are in a constant state of readjusting, making it harder to see. Many places, such as gas stations, shopping malls, car dealers, etc. are brightly lit for marketing purposes and if they were truly concerned about lighting for safety they would be more dimly lit and more evenly lit.⁶⁴ But when one building brightens up the competition has to do it as well in order to stay competitive.

Contrary to what most people believe, more lights do not actually necessarily equate more security. Paul Bogard's book *The End of Night: Searching for Natural Darkness in an Age of Artificial Light* points out that a U.S. Department of Justice study done in 1977 found no statistical evidence that street lighting impacts crime level.⁶⁵ It also says that in Bristol England crime actually fell twenty percent when they started shutting down the lights after midnight, and the same went for other towns throughout England where crime dropped up to fifty percent.⁶⁶ The book goes on to make note of other studies that have all said the same thing, that being that crime does not go down with more lighting and in fact it may increase.

We are simply pushing darkness out of our lives due to fear and due to continuation of what we are accustomed to. Fear of trespassers. Fear of

⁶⁴ Ibid., 70.

⁶⁵ Ibid., 73.

⁶⁶ Ibid., 72.

criminals. We hear about one case of something happening on the news and we assume it will happen to us, even though the reality is that the cases are rare. We attempt to do away with our fears by lighting up the world. In Bogard's book he has a conversation with David Saetre, a professor of religion, who points out that fear is valuable, explaining that it is what allows us to experience the thrills of life.⁶⁷ When we try to completely erase fear from our lives we risk imprisoning ourselves in safety.⁶⁸

Our dependence on the crutch of lighting for a false security meanwhile is costing us in the cultural and environmental ways that were mentioned earlier, but also it affects us physically. Our bodies cannot produce melatonin when they are exposed to bright artificial light at night. Night shift workers tend to suffer a higher rate of hormone related cancers (breast and prostate) and it is believed that it is because of their body's inability to produce the amount of melatonin that it needs.⁶⁹ Our body's circadian rhythms get messed up as well. The National Sleep Foundation found that 75 percent of adults in the U.S. have some sleep problem symptoms at least a few nights a week.⁷⁰

⁶⁷ Ibid., 180.

⁶⁸ Ibid., 92.

⁶⁹ Ibid., 94.

⁷⁰ Ibid., 118.

Lighting costs us money as well. The U.S. spends about 2.2 billion a year on wasted lighting and the European Union spends around 1.7 billion euros a year.⁷¹ Money is not the worst of the problems. The biggest costs of all come to our environment, as we waste energy and emit unnecessary carbon into the atmosphere in order to light the world in the name of security.

2.3: Moving Forward

Lighting should no longer be designed for fear, but should be designed for beauty. It is possible to meet the functional needs of lighting while also appealing to people's emotions. It is possible to design lighting in a way that fosters an appreciation of darkness.

Because LEDs can be dimmed and can be paired with smart grids and computer controls, new possibilities for the way we light streets are emerging.⁷² Sensors could allow lights to brighten or dim based on the amount of activity in the area. What most people don't know is that in reality we use so much lighting energy at night, not to protect ourselves from danger, but so that energy companies can even out their peak load and keep the minimum spin going on their generators at night.⁷³ Nancy Clanton, Principal of Clanton and Associates, a lighting design firm in Boulder Colorado predicts that once electric cars are widely used they will

⁷¹ Ibid., 228.

⁷² Ibid., 234.

⁷³ Ibid., 234 - 235.

need to be charged at night, therefore making so much wasted lighting at night not necessary.⁷⁴ With all of these advances in technology combined together, the future looks hopeful for lighting that is more responsive to people's needs, desires, and emotions.

2.4: The Emotional Power of Light

Most people do not think about the power of light to alter their emotions. But anyone who has spent time making art has therefore spent time studying and understanding lighting. When it comes to art, light and color tone set the mood of the piece. This is best realized in photography and painting.

The art of photography is the art of capturing light on film. While this art requires someone who is skilled at framing life events in a provoking manner, its success relies on a very thorough understanding of how to capture light not only to expose the frame correctly, but to convey emotion within the lighting. A simple photo of construction workers that I took while studying photojournalism serves as an example of the power of light to create emotion within a photograph (see Figure 1).

⁷⁴ Ibid., 235.



Figure 1: Rehabilitating the Ballroom. Photo by Erica Thum.

An everyday scene of men rehabilitating an old ballroom evokes a certain sense of timelessness when the workers are seen in silhouette. Imagine if this photo were taken with an even spread of harsh light over the entire image. It would lose its poetry and beauty. While the action in the photo normally would provoke a certain feeling of labor or construction, the lighting naturally has a calming effect, which ultimately slows the event taking place and adds to the stillness and beauty of the photo. Upon viewing the photo one might react to its beauty due to the lighting, rather than to the action taking place in the happenings in the photo.

Artists have been using light to transform their subject matter in this way for as long as they have been drawing, painting, and photographing, but most people do not recognize that it is the lighting in their works that is so transformative. However, everyone can remember the transformative power of a simple flashlight placed under a friend's face while telling scary stories at night. What most people don't remember is the lesson in lighting that we took away from that simple moment, which is that up-lighting makes for deep shadows in an upward direction in which every last detail in the face is highlighted. Often in life and in art, while lighting plays a key role in determining the overall feeling and quality of what we are seeing, we fail to recognize this role that light is playing. Lighting direction, lighting intensity, the source of light, the surfaces interacting with the light, the translucency or transparency of the light all work in combination with each other to alter the human perception of what is being seen.

Painters took great notice of the qualities of natural light versus artificial light in the 18th and 19th century because artificial lighting was becoming more commonplace in America and Europe.⁷⁵ As artificial light encroached more on people's lives natural light became perceived as being healthy, pure, and truthful.⁷⁶ Painters took their work outdoors in the 1800's and it became the century for painting natural light.⁷⁷

⁷⁵ Bluhm, Andreas, and Louise Lippincott. 2001. *Light! the industrial age 1750-1900: Art & science, technology & society*. 19. New York, NY: Thames & Hudson. 19-23.

⁷⁶ Ibid.

⁷⁷ Ibid.

Certain artists and movements attempted to capture a variety of natural lighting conditions in their works: bright daylight (Turner, impressionists); cloudy to overcast skies (realists from Constable to Courbet); sunrises and sunsets (Romantics, symbolists, sometimes even impressionists, Van Gogh); night (Romantics, symbolists again).⁷⁸

While Impressionism typically displays evenly distributed light, painters such as Courbet, Corot, and Hopper have used hard monochromatic light. Comparing the two types of lighting side by side allows us to feel the change in emotional impact that the even versus directed lighting has.

If one were to compare the lighting in the works *Red Poppies at Argenteuil* by Claude Monet and *The Lighthouse at Two Lights* by Edward Hopper they might notice the times of day that the lighting qualities signify. Monet's painting represents mid-day, while Hopper's displays the late afternoon. But viewing longer while paying attention to how this makes you respond emotionally can reveal other thoughts. For me, the harshness of the mid-day even lighting in Monet's painting has a certain vibrancy and life to it that can almost become overbearing in its openness and inability to escape to shadows. It makes me feel alive but also slightly overwhelmed. The Hopper painting, on the other hand, reveals the calm of early evening quiet and the intensity and warmth of the direct beam of sun. This painting makes me feel relaxed and at peace.

⁷⁸ Ibid.

Of course these emotional responses are highly subjective. But understanding the potential of lighting to shape an emotional outcome is what I have learned from viewing and making two-dimensional art such as drawings, paintings, and photographs. More recently I realized the same was true for the practical and sculptural use of lighting in our everyday environments. Certain kinds of lighting could, just like in images, have the potential to provoke emotions from the viewer. It was then that I asked myself, if it is the case that lighting shapes our emotions, why do we not give it more time, energy, and contemplation when placing it in the landscape?

Chapter 3: Precedent Studies

3.1: The Sculptural Use of Light

This thesis began with an understanding that light is commonly used in art as a means of evoking emotion within the viewer. Light can dramatically alter the way a person perceives an image, an object, or a place. During my study of sculptural precedent, and while participating in a sculpture studio myself, I discovered that light could be manipulated and designed in a way that fosters certain reactions. Of course I recognize that emotional reactions are subjective and vary from person to person, but many people also have common reactions to certain types of lighting. If we are aware of the impact lighting can have on people's emotions, we can make use of it in the landscape. In surveying light sculptures I have found that most works can be categorized into at least one of four emotional categories. I discuss these categories and some of their corresponding sculptural pieces below. Many of the sculptural works discussed below could fall into more than one category, but I will limit them to one.

3.1.1: Light for Play / Interactivity / Curiosity

The first category consists of sculptures that have playful, interactive elements or that spark the viewer's curiosity. While these kinds of sculptures vary greatly, there are many that fall into this category. These types of light sculptures create surrounding atmospheres that are communal, active, public, and playful.

Antonin Fourneau - Water Light Graffiti

Water Light Graffiti by Antonin Fourneau is made up of exactly what its name suggests. It is a large wall of LED lights which brighten when sprayed with water. This means that people can "paint" with water, either by brushing it on, splashing it on, or spraying it on, just as they would do with paint. It allows people to create water light paintings on the street which are not permanent. It allows for a form of creative expression and playful interaction. It was installed in Poitiers, France in July 2012 and has since been met with great enthusiasm of people of all ages.⁷⁹

LAB[au] - Touch

When LAB[au] created *Touch* for the exterior of the Dexia Tower in Brussels, Belgium they hoped to use lighting on a building facade in way that was artful rather than being a marketing tool, as is the case with many building facade lights in large cities.⁸⁰ LAB[au] aimed to create an urban landmark by having the

⁷⁹ Bozzi, Nicola. *Water Light Installation by Antonin Fourneau: Sustainably Leaving a Mark on the City*. Frame Publishers [database online]. 2012 [cited March 10 2013]. Available from <http://www.frameweb.com/news/water-light-graffiti-installation-by-antonin-fourneau>.

⁸⁰ *Touch: An Interactive Urban Installation*. *Databank of Virtual Art* [database online]. 2006 [cited March 10 2013]. Available from <http://www.virtualart.at/database/general/work/touch-an-interactive-urban-installation.html>.

lighting be interactive. The Dexia Tower building facade is linked to an interactive screen at a small station on the street level where people passing by can stop and select a color for the building and then create shapes and patterns. The input screen takes in both static and dynamic inputs and takes into account size, duration, and direction.⁸¹ The user input on the touch screen at the street level creates real time graphic elements on the building. The result is a piece of architecture that creates an interactive and playful environment for people and also stands as an icon or landmark within the community.

3.1.2: Light for Altered Perception / Awareness of Space

In the 1960's a number of artists were interested in working with light and space. They often did so in a way that altered people's perception of these elements. While these installations also evoke intrigue and curiosity on the part of the viewer, they have completely different goals than the art mentioned above which focuses on playfulness or interactivity. They are works that are often in highly controlled, built space and they are more likely to be seen by individuals in a gallery than by people passing by in a public space. They are purely focused on altering the human perception of space, which sets them quite drastically apart from the rest of the works mentioned here. However, they are worth mentioning because they constitute another entire, but very different, form of light art.

⁸¹ Ibid.

James Turrell - Afrum Proto

James Turrell's interest in working with light and space came from experimental psychology, rather than the traditional ways light was used in painting, sculpting, and architecture.⁸² The way in which Turrell works with light makes light itself seem tangible. He wants people to feel as if they are physically feeling light when seeing it.⁸³ A piece that Turrell did in 1966 called *Afrum Proto* displays this tactile quality of light effectively.⁸⁴ It is a light projection in the shape of a cube projected onto the corner of a blank white room. It is made up of light but it appears to be a box and it seems to be three dimensional but is not. It seems to be floating between the floor and the ceiling, as if attached to the corner. The cube appears more solid when seen from farther away, and flattens as it is approached. Also the cube appears to shift in space as the viewer moves back and forth in front of it. The image is created by a high-intensity projection.

Robert Irwin - Untitled

Robert Irwin's primary focus was on the perception of space, and he altered that perception sometimes with light, other times with framing things in thin black lines, or by using scrims, or altering the room or surroundings, etc. Irwin started as an Abstract Expressionist painter who desired to move beyond the canvas. It took many years of painting lines and dots on canvas before he started moving to painted acrylic disks. In multiple untitled pieces from 1966-69, Irwin painted

⁸² Adcock, Craig E. 1990. *James Turrell: The Art of Light and Space*. Berkeley: University of California. 1-15.

⁸³ Ibid.

⁸⁴ Ibid.

acrylic lacquer first on shaped aluminum and later on formed acrylic plastic in a way that achieved an interplay between painting and space, or painted light and real light.⁸⁵ The shadows from the painted disk were as important as the disk itself. He went on to do many different works of art which altered perception in one way or another. He even began designing landscapes later in his career.

3.1.3: Light for Peace / Joy / Tranquility

The third category consists of sculptures that are also observed and not interacted with. These sculptures may be seen in gallery settings, gardens, or public spaces. Observation of these objects results in quiet, peaceful reflection and possibly a reaction of joyful feelings and tranquility, or a sense of awe. These types of light sculpture allow their surrounding environment to be less active, more individual, private, and contemplative.

Bruce Munro - Forest of Light

June through September of 2012, light artist Bruce Munro exhibited nine works at Longwood Gardens in Pennsylvania, all of which seemed to produce a similar feeling of peacefulness, tranquility, and joy. Munro places his work in non-gallery settings, often in outdoor gardens. The works reveal characteristics of their settings which otherwise could not be appreciated. One example of this is his piece titled *Forest of Light* in which thin lines of fiber optic lights spread from their source among the forest floor and make their way up glass rods which have

⁸⁵ Irwin, Robert, Russell Ferguson, and Museum of Contemporary Art (Los Angeles, Calif.). 1993. *Robert Irwin*. Los Angeles, Calif.; New York: Museum of Contemporary Art, Los Angeles ; Rizzoli. 115.

round glass balls at the top (see Figure 2). These illuminated wands of glass reveal the forest floor topography even from a distance at night and allow the viewer to understand their surroundings in a peaceful, dimly lit, tranquil, and enchanting manner. In an interview I conducted with Munro he said that the influence of the piece on the perception of the landscape was not one that he set out to create. Rather, he has an idea and pursues it and each piece interacts with its surroundings in different ways. In some cases the piece may be inspired by the landscape for Munro, but it can also be inspired by observations, memories, music, and other everyday events that he describes as being unconscious subliminal inspirations (see Appendix).



Figure 2: Bruce Munro's piece titled *Forest of Light* reveals the topography of the forest floor. Photo by Erica Thum.

Charles Matson Lume - Desis in my Pursuit (Canto XXX (for Beatrice))

Charles Matson Lume has sculpted with light in various ways, but primarily he has worked with reflective materials such as proofing paper, glitter paper, and acetate. He uses the materials very minimally and explores their relationship with lights, controlling the way the light falls on the material by shaping Cinefoil around the lighting fixture. Lume's piece titled *Desist in My Pursuit (Canto XXX (for Beatrice))* consists of proofing paper on the floor with only a thin path of the wood floor revealed. The proofing paper on the floor looks similar to a pool of water and it reflects in the same brilliant, sinuous manner, covering the walls and ceiling in a golden, watery, sunlit-looking pattern which feels as though it came straight out of nature. In this installation, there are red bands on the ceiling which reflect on the "pool" of reflective material on the floor, adding to the watery feeling. The piece, because of its seemly natural qualities, feels very peaceful, tranquil, and joyous. During an interview with Lume I asked if he sets out to create a feeling of awe in his work. He said that in the true sense of the word awe he tries to provide a space where that might happen. He adds that in such a busy and noisy world that feeling is hard to come by. He said it excites him when his work can do that for the time that it is up, as if it were mirroring the kinds of brief moments in life when you notice a certain unusual type of light due to the weather or some kind of light that may only happen for two minutes but you hold on to the memory of it after it goes away (see Appendix).

3.1.4: Light for Sadness / Reflection / Memorializing

The fourth category primarily consists of memorials. Memorials are works of sculpture which use many different elements to provoke feelings of reflection, sadness, and memories of a certain event or type of event. Some memorials have creatively used the way light enters them in order to produce the above-mentioned feelings. This type of lighting creates a public space in which individuals observe quietly, sadly, and independently.

Brian Tolle - Irish Hunger Memorial

The Irish Hunger Memorial is located in the Battery Park City area of Manhattan, New York. It consists of a quarter-acre piece of cultivated land planted with Irish flora and an actual house from the Irish countryside (see Figure 3). The sloping Irish landscape above is supported by an underneath layer that consists of a dark tunnel hallway with lines of etched glass between lines of stone. An interview with the memorial's artist, Brian Tolle, in BOMB magazine describes the piece as a landscape supported by language, referring to the fact that the etchings in the glass lines within the tunnel are made up of writings about hunger.⁸⁶ When entering the memorial from the Hudson River side, you first move through the dark tunnel and the darkness allows you to feel sadness and reflection as you read the inscriptions in the glass panels and make your way through the darkness and out into the light of the memorialized Irish countryside. When I first visited the memorial, the darkness struck me as being extremely effective in

⁸⁶ Kaizen, William R. *Brian Tolle*. in BOMB Magazine [database online]. New Art Publications, 2001 [cited March 11 2013]. Available from <http://bombsite.com/issues/76/articles/2400>.

creating a journey, or passage which separates you from the outside world and requires you to be contemplative, reflective, and even sad.

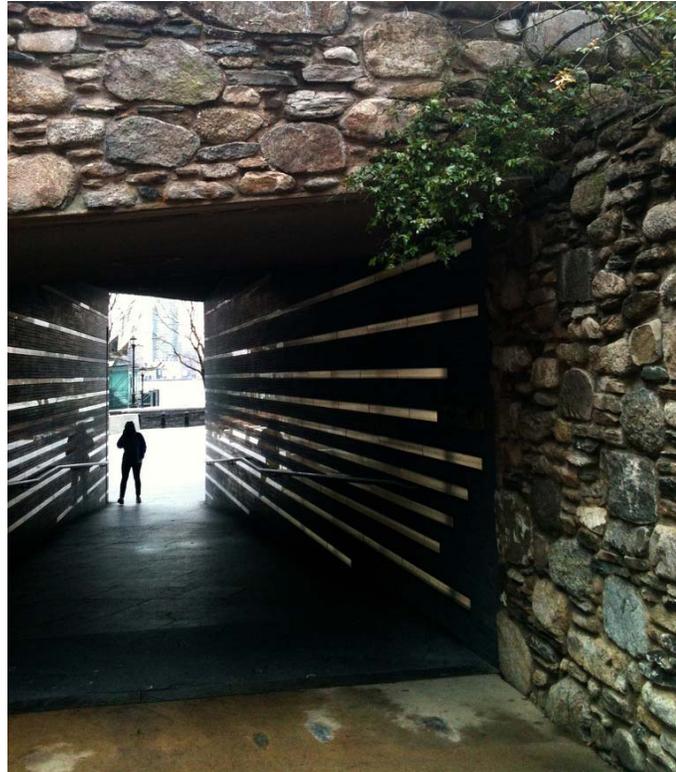


Figure 3: Irish Hunger Memorial. Brian Tolle. Photo by Erica Thum.

Peter Eisenman - Memorial to the Murdered Jews of Europe

The Memorial to the Murdered Jews of Europe in Berlin, Germany consists of 2,711 concrete pillars, in similar shapes as graves, which seem to sink into the ground. As noted in a New York Times architecture review of the memorial, what gives the piece emotional power is the way that it represents the ambiguity that lies between good and evil and how the line between the two is not easily

found.⁸⁷ As you move into the mass of pillars you descend into the site, and this descent pulls you away from the surrounding city life as you enter into dark passageways where the pillars begin to tower overhead. The descent into the shadowed spaces between the growing pillars creates for an awareness of separation from the commotion of the world above and creates an eerie solitude where you are left alone in thought.

3.2: Light in Landscape Architecture

Landscape architects have the choice of designing lighting in ways that are very sculptural and emotional or in ways that are very regular, common, easy, cheap, etc. When landscape architects are faced with a design, they have the option of considering lighting from the very beginning, which allows the entire design to be formed around its lighting needs, or they can leave the lighting design as an afterthought, or even hand it off to a lighting designer. While it is easy to find examples of designs that have clearly gone the cheap, common, easy lighting design route, it is harder to find examples of light in the landscape that has been designed sculpturally, artistically, and with great intent. The following precedents are examples which I feel have done a good job of putting in the time, effort, and money needed to address lighting in such an artful and creative manner.

⁸⁷ Ouroussoff, Nicolai. *A Forest of Pillars, Recalling the Unimaginable*. in The New York Times [database online]. 2005 [cited March 11 2013]. Available from http://www.nytimes.com/2005/05/09/arts/design/09holo.html?pagewanted=all&_r=0.

Frederiksberg Town Center - Stig L. Andersson

Landscape Architect Stig L. Andersson, of the practice SLA, is magnificent at designing in a manner that incorporates elements of nature in a non-naturalistic way. His designs are creative and sensory. SLA makes it a goal to incorporate the qualities of nature that people respond to and need into their designs, including change, surprise, heightened awareness of transition and movement, weather, season, use and maturing.⁸⁸ SLA uses these qualities in order to bring nature back to urban areas in very urban, non-naturalistic, and creative ways. In an email from SLA's Head of Communications, Kristoffer Holm Pedersen, he comments that lighting is an integrated part of all of SLA's projects. He said that at SLA they see lighting as a natural component in the urban space on par with trees, pavement, planting, etc.

SLA's design for the five urban spaces in the Frederiksberg City Center, just outside of Copenhagen in Denmark, is particularly wonderful for its lighting design. The design was done in cooperation with consultant engineers Hansen & Henneberg in 2001.⁸⁹ In what was once leftover space between buildings, Andersson incorporated various lighting techniques to join disparate spaces together artfully. Andersson borrowed the idea of airport runway lighting to create a string of green lights in the pavement of the city center, which demarcates the

⁸⁸ Andersson, Stig L. *Frederiksberg New Urban Spaces*. in SLA [database online]. [cited March 11 2013]. Available from <http://www.sla.dk/byrum/fredegb.htm>.

⁸⁹ Diedrich, Lisa. 2006. *New Central Open Spaces of Frederiksberg*. Topos Magazine Issue 54. 27 - 33.

bike path.⁹⁰ The totality of the city center space was divided by box-like rooms of space, illuminated at night to differentiate one from another. One area consists of light that shines down through the trees, creating a silhouette effect that is exaggerated by the fact that the lights are theatrical gobos, with an amoeba-shaped pattern spilling out onto the plaza. Corten steel is used throughout the site as a linking element and the red color of the rust on the steel is reinforced by the tree species that were chosen for the site.⁹¹ In the “Square of 100 Puddles” round depressions within the plaza pavement hold water after a rain shower in order to catch light reflections from the sky. Nearby, clouds of mist are illuminated at night by a field of tiny white fiber optic lights in the plaza pavement. On the wall of Falkoner Square there is a waterfall illuminated by a constellation of fiber optics lights in blue and white, which reveals the designer’s ability to magnify the effect of the element of light and water when brought together.⁹² Overall, the design incorporates lighting in a non-standard way that not only meets functional needs but also addresses people’s need for beauty, nature, exploration, and discovery. It is a prime example of lighting done well in urban landscape design.

Kreielsheimer Promenade and South Terrace - Kathryn Gustafson

Kathryn Gustafson, of the firm Gustafson Guthrie Nicol in Seattle, Washington, is another landscape architect who has creatively and artfully used lighting which

⁹⁰ Ibid.

⁹¹ Ibid.

⁹² Ibid.

goes beyond functional use. Similar to SLA, Gustafson often combines lighting techniques with an awareness of the reflective qualities of water. The Kreielsheimer Promenade and South Terrace at Marion Oliver McCaw Hall in Seattle, Washington is a good example of a GGN design which combines light and water in a sensory, tranquil, and playful manner. The rectilinear space is composed of an arc-shaped passageway between two buildings in which three thin sheets of water flow over sloped quartzite in the center of the space.⁹³ During the day the water darkens the stone below and at night it reflects illumination from a series of overhead metal scrims that glow in shades of red, white, yellow, blue and hues between.⁹⁴ The lighting at night connects the interior spaces within the neighboring opera hall with the exterior space of the promenade by having dramatic colors of light which spill from inside onto the scrims in the promenade and reflect on the water below.⁹⁵

The project reflects a strong collaboration between the architects, landscape architects, lighting designers, and theater designers. The Light Scrims were developed by Leni Schwendinger Light Projects, Ltd.⁹⁶ Both SLA and GGN work with a network of professional designers of varying fields and the collaboration makes for stronger outcomes, as can be seen in both the Frederiksberg Town Center and the Kreielsheimer Promenade. While this may be fairly normal for

⁹³ Amidon, Jane. 2005. *Moving Horizons : The Landscape Architecture of Kathryn Gustafson and Partners*. Basel; Boston: Birkhäuser-Publishers for Architecture. 106.

⁹⁴ Ibid.

⁹⁵ Ibid., 108.

⁹⁶ Ibid., 109.

such large and successful firms, the general sense that I have gotten from discussing the matter with employees at smaller firms is that while such planning, effort, and collaborative design may be ideal, they often do not have the money or time to commit such resources to every project. How much more experiential, sensory, and emotional would our designed spaces be if more firms had the commitment and resources to put such effort into lighting design on a regular basis? If every plaza had lighting that was designed to the degree that Frederiksberg Town Center is, or the Kreielsheimer Promenade, we wouldn't have to struggle to think of such wonderful examples of great landscape lighting design, as lighting design such as this appears to be somewhat rare rather than the norm.

Chapter 4: Tide Lock Park Site Selection and Analysis

4.1: Park Selection

When working with natural and artificial light, water presents itself as a naturally occurring and beautiful form of reflection. While many of the waterfronts in Washington, D.C. and Baltimore, MD already have redevelopment projects well under way, Alexandria, Virginia is only now in the early phases of conceptual design for the redesign of its waterfront. The central portion of the Alexandria waterfront, located at the eastern edge of King Street, the main commercial corridor, is well developed for recreational and festive activities. The northern end of the waterfront, which has not been fully developed, provides an opportunity to design a contrasting environment with other emotional values, such as mystery, anticipation, peace, solitude, or reflection. The City of Alexandria's ideas for the waterfront, as outlined in the Waterfront Small Area Plan, focus the majority of

redevelopment plans on three main areas near the foot of King Street. However the outlying area to the north presents itself as serving as a powerful gateway which can transition from a quieter, residential and office feeling to an active cultural amenity.

I was excited to learn that the city had arranged for an Arts and History Commission to develop reports containing ideas on ways in which the waterfront redevelopment plans can incorporate historical information and artistic representation into the waterfront parks and trail system. It was in the report from the Art Commission that I came across their idea to have a Waterfront Arts Trail which is to be illuminated at night. The beginning and end of this trail was described in the plan to take place at Tide Lock Park (north) and Pomander Park.⁹⁷ The Art Commission's plan described Tide Lock Park as celebrating the history of illumination in the city as it relates to the technological changes which the city has gone through. It mentions that Alexandria once employed a lamplighter who tended to the public oil lamps, later moving over to gas lamps with the introduction of the 1851 Alexandria Gas Light Company.⁹⁸ Later Alexandria as a city moved from gas lighting to electrical lighting and electricity was supplied from the Mirant/GenOn coal power plant which is located just north of the site. The coal plant was only recently closed in October of 2012. The plan

⁹⁷ City of Alexandria. 2012. *Alexandria Waterfront Small Area Plan*. City of Alexandria Department of Planning and Zoning. Appendix 5.

⁹⁸ Ibid.

mentions the need to celebrate the future of lighting, which the drafters of the plan perceived as being supplied by alternative energy sources.⁹⁹

The Art Commission plan discusses the site as serving as an established cultural anchor for the area and it mentions the importance of tying into the neighborhood cultural facilities, such as the MetroStage Theater, located less than one block from the park.¹⁰⁰ The desires of the Art Commission were then reflected by the City in their adoption of the Arts and History Commission's ideas into their Small Area Waterfront Plan.

The Small Area Waterfront Plan reiterates that the northern gateway design (which extends from Third Street and Bashford Lane southward to Montgomery Street) should have a theme of illumination and that the area should denote light in recognition of its location near the electrical company.¹⁰¹ The City's plan reinforces the Art Commission's idea of commissioning and installing public art in the area. It discusses the possibility of working with the owners of the property, the Transpotomac Canal Center Association, as well as with the owners of the energy plant, in order to build a public/private collaboration as part of a public art/alternative energy project.¹⁰² The city also reiterates the importance of

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Ibid., Chapter 3. 36 – 37.

¹⁰² Ibid.

establishing a cultural anchor at the northern end of the new “Art Walk” by tying park activities into surrounding cultural facilities.¹⁰³

The goals of the Arts Commission as well as the City of Alexandria presented themselves as the perfect match for proposing a design which incorporated darkness as well as the varying emotional qualities of light that I had researched. I attended a Waterfront Commission meeting, as well as a Waterfront Arts and History Commission meeting, in order to understand where the process currently stands. From these meetings I learned that while smaller decisions on ways to move small improvements forward were taking place, no large-scale moves on the waterfront have been made (as of winter 2013). Although landscape architects have submitted requests for proposals, a firm has not yet been selected to take on the project. I learned that the slowing of the plan has largely been due to law-suits that had been filed by community members concerned with the development’s overall plan to increase density on the waterfront. The city is currently moving forward from these law suits.

Currently no design proposal has been made for Tide Lock Park (the northern section). I decided that I would develop a proposal in keeping with the City’s goals as outlined in the Waterfront Small Area Plan, as well as in keeping with the finding of my historical and sculptural research.

¹⁰³ Ibid.

4.2: Park Analysis

Alexandria, Virginia is located just south of Washington, D.C. in the northeast of the United States of America. Tide Lock Park is located on the eastern edge of Alexandria, just north of Old Town on the Potomac River waterfront (see Fig. 4).



Figure 4: D.C. National Mall in orange, Alexandria in yellow, Tide Lock Park in red. Graphic by Erica Thum with Google Maps underlay.

The area surrounding Tide Lock Park is comprised of a mix of residential, office and commercial uses (see Figure 5). Tide Lock Park is separated from the residential and commercial properties by a “wall” of office buildings. Entrances to the site are limited to only four locations due to access barriers at the

Mirant/GenOn power plant to the north, the Potomac River to the east, the Canal Center office complex to the south, and the currently active freight rail tracks to the west (see Figure 6). The five-acre park, designed by M. Paul Friedberg in 1988, is situated on privately owned and maintained property, owned by the Transpotomac Canal Center Owner's Association, in which the City of Alexandria has a public access easement (see Figure 7).



Figure 5: Orange is commercial, yellow is residential, purple is office, brown is industrial, and the site is outlined in red. Graphic by Erica Thum. GIS data courtesy of the City of Alexandria.

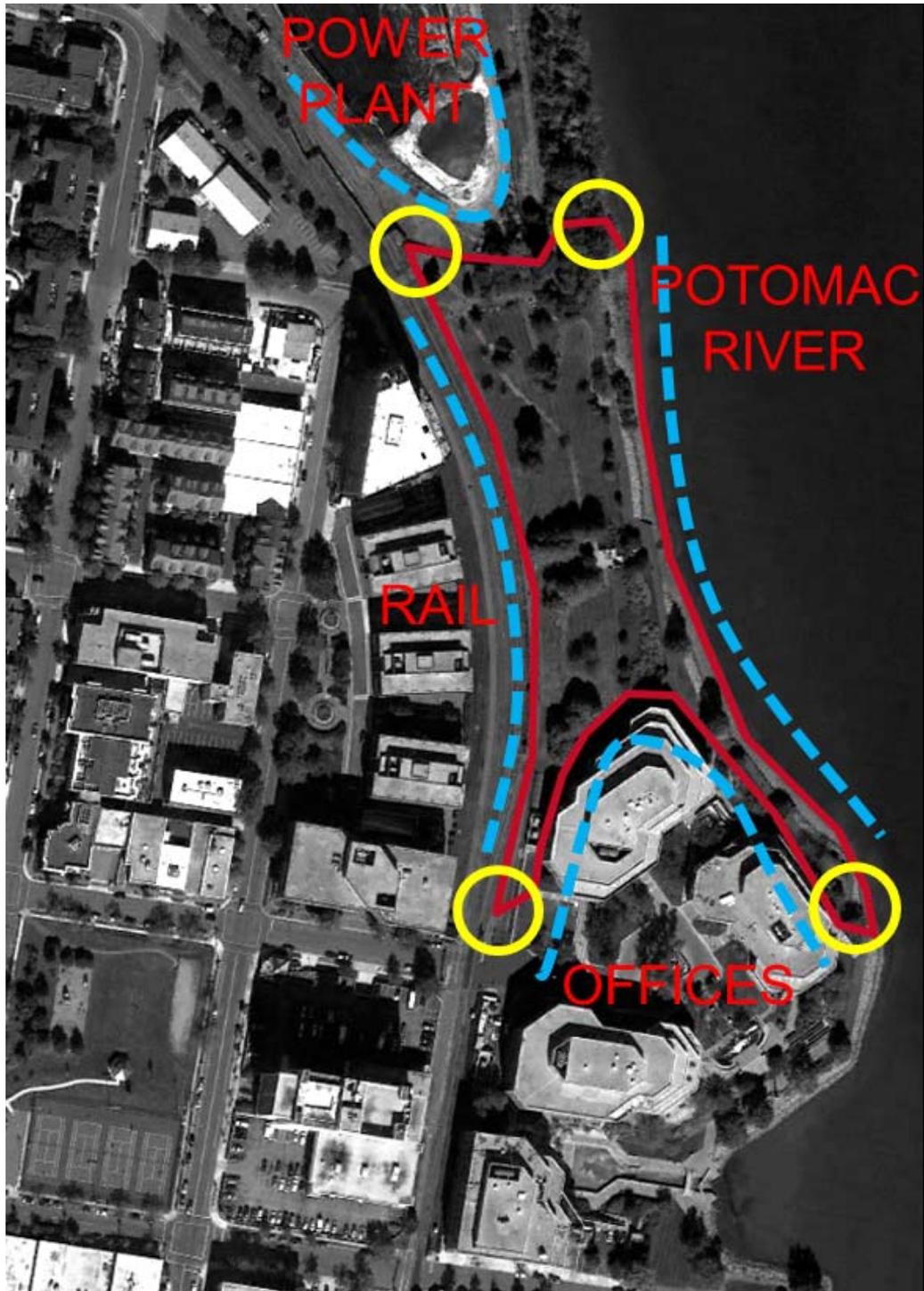


Figure 6: Barriers to entry exist on all four sides of the Tide Lock Park site. Graphic by Erica Thum. GIS data courtesy of the City of Alexandria.



Figure 7: The Tide Lock Park site is 5 acres of private property with a public access easement. The site was designed by M. Paul Friedberg in the 1988. Graphic by Erica Thum. GIS imagery data courtesy of the City of Alexandria.

4.2.1: Physical Features

The park is connected to the Mount Vernon Trail, which runs 18 miles north/south from Theodore Roosevelt Island to Mount Vernon and currently makes its way along the park's western edge (see Figure 8). The eastern edge of the park contains a connection to the City's current waterfront trail system.



Figure 8: Mount Vernon Trail in green and Waterfront Trail in purple. Graphic by Erica Thum. GIS data courtesy of the City of Alexandria.

Topographically, the site has a broad range of slopes with relatively level areas at the upper and lower levels and steep gradients –up to 40 percent between them. This establishes a total elevation change of 26 feet between the upper area of the park to the waterfront (see Figures 9, 10, and 11). The two distinct flat areas are identified in Figures 12 and 13. This existing topography establishes a distinct separation between the waterfront and the offices above, giving the lower end of the park a desirable sense of privacy and peacefulness. The dramatic grade change also creates an advantageous overlook of the Potomac River with the Washington Monument and the Capitol Building in the view to the north.



Figure 9: Dark green represents higher elevations. Graphic by Erica Thum. GIS data courtesy of the City of Alexandria.

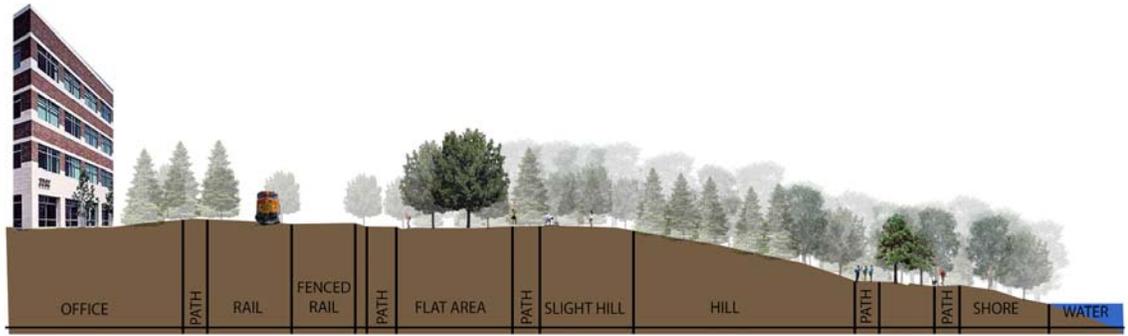


Figure 10: Section through northern end of site, looking north. Graphic by Erica Thum.



Figure. 11: Section through middle of site, looking north. Graphic by Erica Thum



Figure 12: Site photo showing the upper and lower flat areas. Photo by Erica Thum.

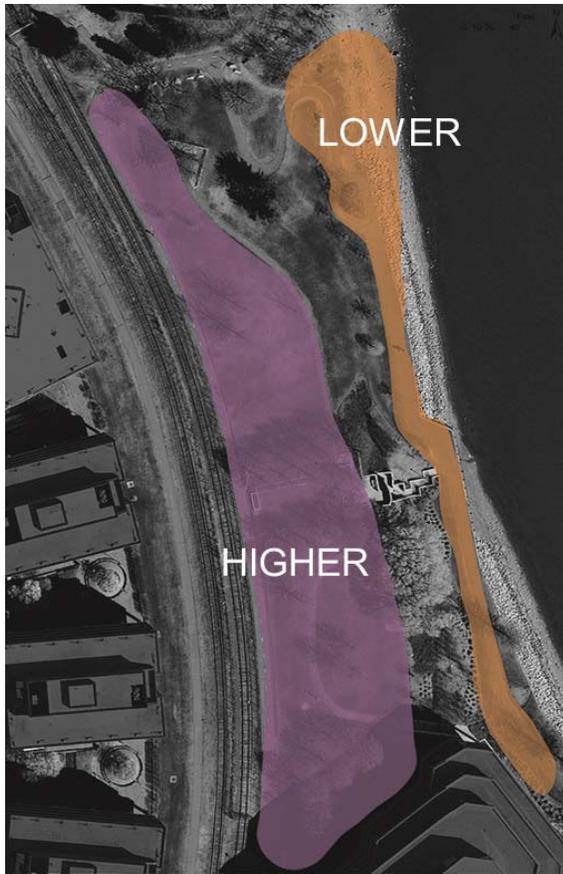


Figure 13: Flat areas of Tide Lock Park. Graphic by Erica Thum . GIS data courtesy of the City of Alexandria.

This steep bluff along the river allows the park to not experience flooding to the same degree as the other parks along the Waterfront Trail. The 100-year floodplain lies around the 12 foot contour line, meaning that the majority of the site does not flood (see Figure 14). The site has one storm water pipe which transports surface water from the west, through the middle of the site to the Potomac River.



Figure 14: Tide Lock Park storm water pipes and floodplain. Graphic by Erica Thum. GIS data courtesy of the City of Alexandria.

A two-level subterranean parking garage in the southern half of the site serves the Canal Center office buildings (see Figures 15, 16, and 17). The garage is currently underutilized and provides opportunities for alternative uses.

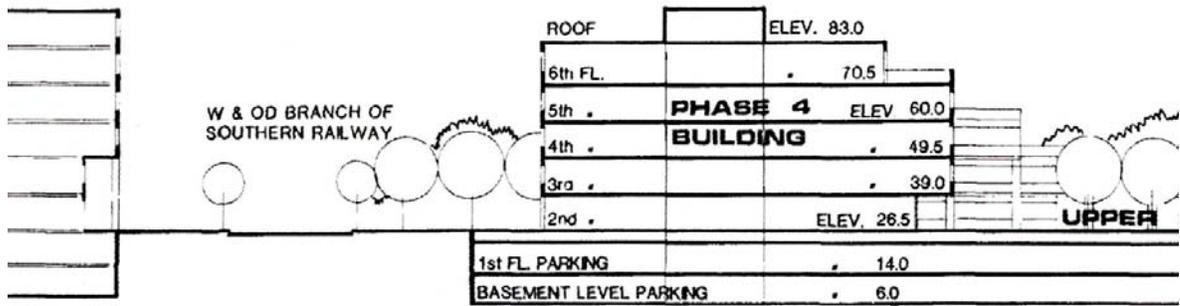


Figure 15: Section through Canal Center building, showing underground parking garage levels and their corresponding elevations. Courtesy of the City of Alexandria.

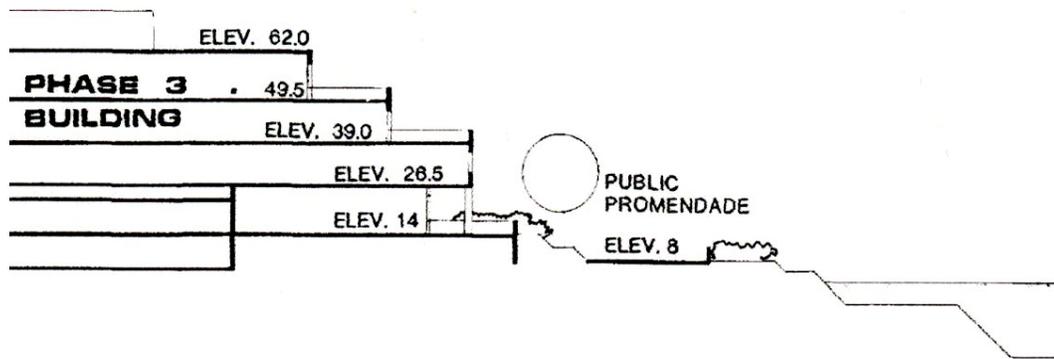


Figure 16: Section through Canal Center building and waterfront promenade. Courtesy of the City of Alexandria.

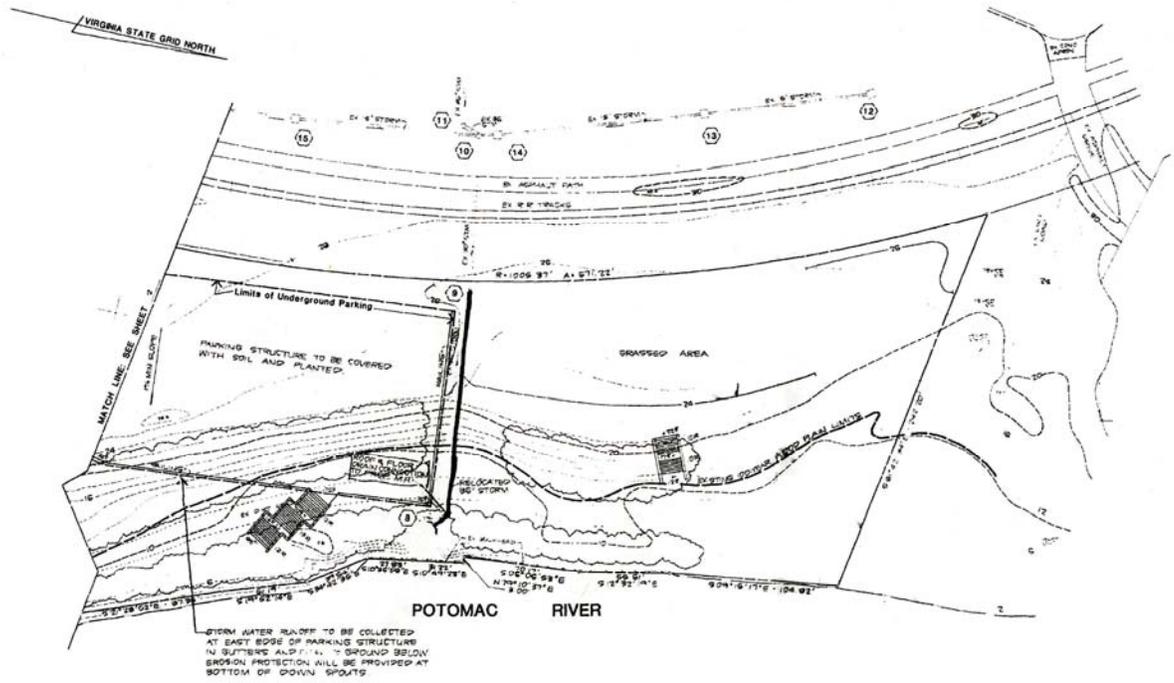


Figure 17: Plan view drawing of the underground garage as it relates to Tide Lock Park north. The plan drawing does not entirely match what exists today on site. Courtesy of the City of Alexandria.

The underground parking on the southern half of the site has not limited large mature Linden trees from growing at ground level. When the site was designed 25 years earlier the trees were given mounded berms of soil in which to grow and the strategy has proved successful (see Figure 18).



Figure 18: Photo of trees growing on mounds of earth on roof of underground parking garage. Photo by Erica Thum.

It is not clear as to what degree the high, sloping topography of the Tide Lock Park site existed before the garage was built. The steep incline does seem consistent with the power plant property just north of the site, which also has a forested bluff-like drop to the water's edge. The Waterfront Small Area Plan mentions how such bluffs historically existed along what was previously a crescent-shaped Alexandria Waterfront, saying that the bluffs were removed and re-graded by individual property owners on the waterfront who "banked out", or filled-in the shore, and built wharves, helping to establish the straight waterfront that we see today.¹⁰⁴

¹⁰⁴ City of Alexandria. 2012. *Alexandria Waterfront Small Area Plan*. City of Alexandria Department of Planning and Zoning. Appendix 6.

4.2.2: Quality of Light and Darkness on Site

Tide Lock Park receives plenty of sun throughout the day in any season. The only places which receive considerable shadows are the very south end of the park, where shadows project northward from the office buildings. At the end of the day when the sun is low and to the west, the hill blocks the sun from illuminating the waterfront path and the office buildings on the western edge cast shadows onto the greenway trails and railway tracks.

At night artificial light pours out of the neighboring office building windows onto the south and western sides of the park site. Very bright security lamp posts exist between the American Physical Therapy Buildings which spill light onto the bike path and rail lines on the western edge of the park (see Figures 19, 20, and 21). The southern end of the park has the majority of its flat space near the glow of the office buildings. The park grounds themselves only contain a single light post on the small seating plaza that currently exists on the roof of the parking garage, allowing the center of the park to be a medium quality of darkness. When occupying the central portion of the existing park you are primarily on the upper flat park ground, meaning you are closer to the office lights. As you continue moving north you transition down the hillside to the water's edge.

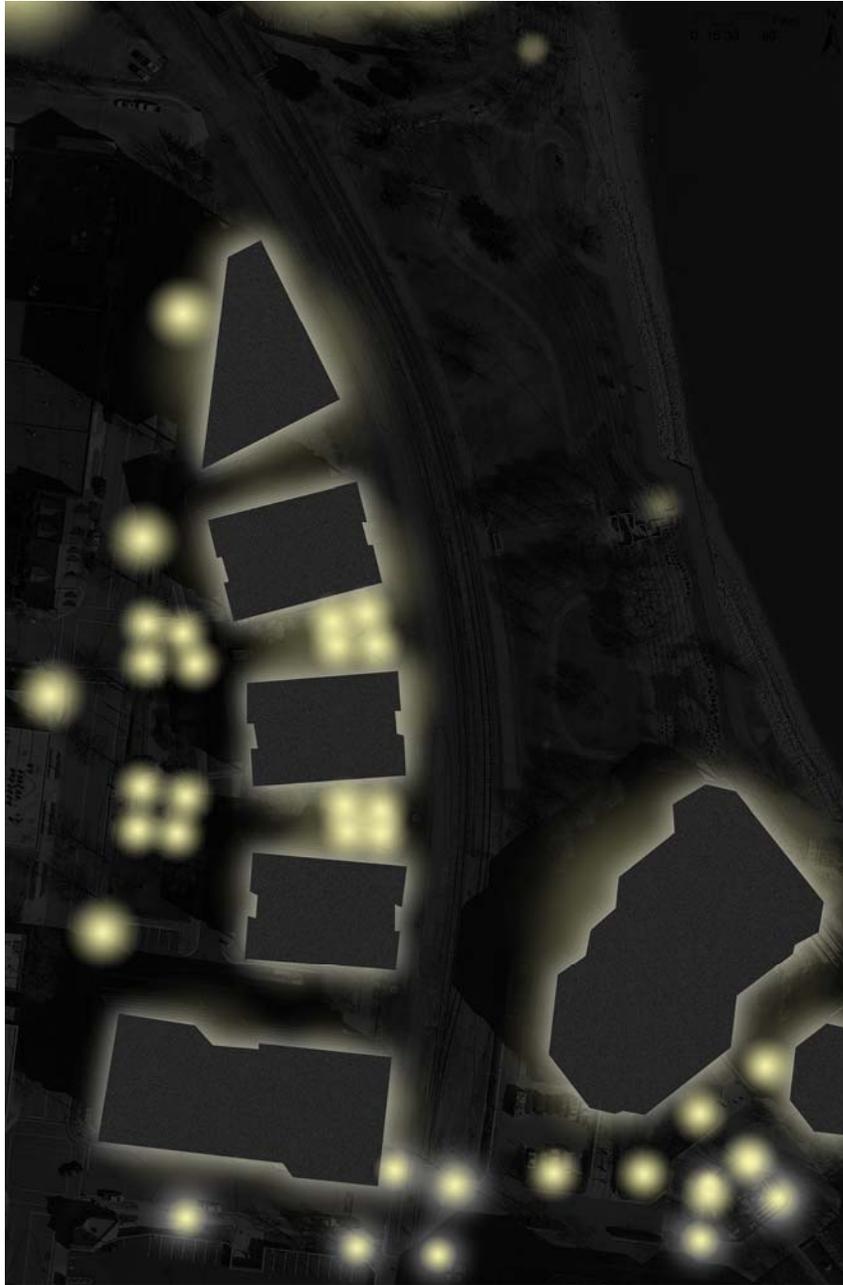


Figure 19: Graphic analysis of night lighting spill-over from surrounding buildings. Graphic by Erica Thum. GIS data courtesy of the City of Alexandria.



Figure 20: Light spills out of the Canal Center office building and onto the park site. Photo by Erica Thum.



Figure 21: The northern end of the site is dark due to its distance from the offices. Photo by Erica Thum.

The northernmost end of the site is the darkest, due to the fact that the flat space, where people are likely to stop and spend time, is at the water's edge. In this area 26 feet of elevation separate the user from the office lights to the west. The northern end of the park is also generally the most distant from the bright office lights, making it the most serene area of the park. Standing at the water's edge on the northern end of the site, the view towards Washington D.C. is magnificent, as you can see both the Washington Monument and the U.S. Capital Building (see Figure 22).



Figure 22: The view to the north of the site shows the illuminated Washington Monument and U.S. Capitol Buildings. Photo by Erica Thum.

From the existing hillside on the northern end of the site there is also a view across the river of the bright lights from the U.S. Naval Research Laboratory and the Washington, D.C. Water Department. While the building lights themselves are not very beautiful, the reflections they create on the surface of the Potomac River add to the pleasant experience of viewing water in darkness (see Figure 22).



Figure 23: The view across the river at night shows the lights of the U.S. Naval Research Laboratory and the Washington, D.C. Water Department and the reflections they create on the Potomac River. Photo by Erica Thum.

Each of these three areas of varying light qualities (dark, medium dark, and illuminated) has corresponding feelings and emotions. These three qualities of light and their corresponding emotions are what help in establishing the grounds for the design proposal in chapter five.

Chapter 5: Design Strategy and Process

5.1: Opportunities and Constraints

Following a thorough analysis of the existing conditions of Tide Lock Park, an inventory of the opportunities and constraints of the site was the first step in the decision-making process (see Figure 24).

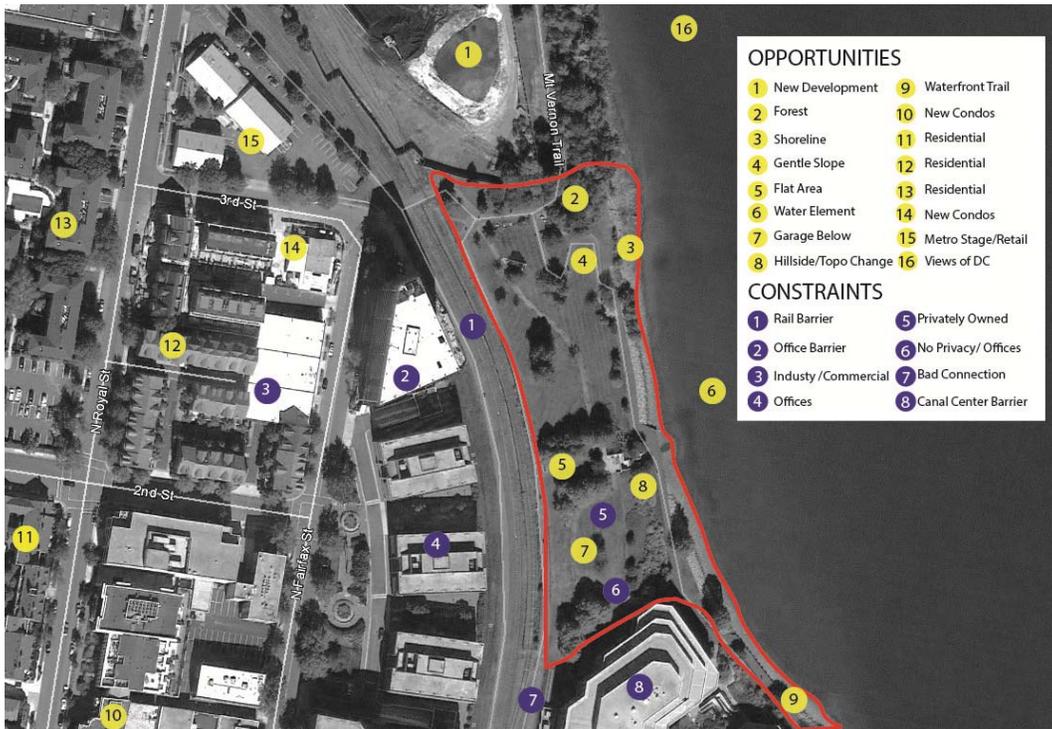


Figure 24: A diagram of the opportunities and constraints of Tide Lock Park and the surrounding area. Graphic by Erica Thum with Google Image.

5.1.1: City Growth and Connections

The opportunities and constraints diagram notes that the northern section of Alexandria is moving toward further growth in the future. The neighborhood surrounding Tide Lock Park currently has two different residential developments under construction at the time of this thesis (winter/spring 2013). Various discussions of the power plant property's future opportunities have included more open space and mixed use office, retail, and residential. Currently the Potomac Yard area of Alexandria, to the northwest of Tide Lock Park, is being developed for mixed use and possible future greenway connections between that area and the future development at the power plant could create for an increased vibrancy in this northern section of the city (see Figure 25).



Figure 25: A possible future pedestrian connection could take place between the Potomac Yard Development and the future use of the power plant just north of Tide Lock Park. Graphic by Erica Thum with Google Image.

5.1.2: From Rail to Road

The City of Alexandria's Waterfront Small Area Plan includes three large-scale developments farther south along the waterfront. The Waterfront Trail will connect these areas as part of a larger system of parks and recreation at the water's edge (see Figure 26). The closure and redevelopment of the Robinson Terminal North area, located to the south of Tide Lock Park, means that the rail line, which currently terminates at that site and is currently used on a regular basis, would no longer be required for heavy rail transport and train operations would cease (see Figure 27).



Figure 26: Robinson Terminal North, City Marina Plaza, and The Strand (all in orange) are where the City will focus most of the waterfront redevelopment growth and attention. Image altered from the City of Alexandria Waterfront Small Area Plan in order to call out Tide Lock Park.



Figure 27: The yellow line indicates the current railway path. Graphic by Erica Thum with Google Image.

The Waterfront Small Area Plan anticipates that the Robinson Terminal North will be redeveloped into a pedestrian friendly plaza, with public access to the riverfront along a newly extended Pendleton Street promenade (where the rail line currently exists). The Plan says that, “The portion of the rail line on Robinson Terminal North property may not be needed when Robinson Terminal North ceases operations.”¹⁰⁵

¹⁰⁵ City of Alexandria. 2012. *Alexandria Waterfront Small Area Plan*. City of Alexandria Department of Planning and Zoning. 42.

With anticipation of the rail line no longer being in use, there was a design opportunity to remove the rail lines in order to open up pedestrian friendly automobile access along the western edge of the park (see Figure 28).



Figure 28: Existing rail and double trail access compared to proposed roadway and bike trail. GIS data from City of Alexandria, rendering by Erica Thum.

This one move effectively takes away the site's largest barrier to entry and makes the park more visible, accessible, and safe. Opening up access in this way makes it possible for residents and employees in the neighborhood to the

west to easily access the site. A larger amount of activity is likely to happen within the park due to this design move as it makes the park more visible, meaning it will draw in more people passing by as well as have increased amount of surveillance and security from the street.

5.1.3: Cultural Institution

The MetroStage Theater is a 4,000 square-foot not-for-profit theater at 1201 North Royale Street that produces contemporary plays and musicals. The theater currently exists in a rehabilitated lumber warehouse with 30-ft high walls that allow for 130 seats on risers that wrap around a “thrust” stage (see Figure 29).



Figure 29: The MetroStage Theater is currently housed in a redesigned lumber warehouse at 1201 North Royale Street, immediately adjacent to the Tide Lock Park site. Photo by Erica Thum.

The MetroStage Theater is located on the northwest adjacent property to Tide Lock Park and this small area of commercial activity currently serves as the northern neighborhood’s cultural hub. The MetroStage Theater and the adjacent

wine bar and retail shop serve as the only places in this northern area that provide a lively atmosphere at night. In keeping with the Art Commission's and the City's plans to create a northern gateway that serves as a cultural anchor for the surrounding area, this thesis proposes that Tide Lock Park should incorporate a new MetroStage Theater building that will celebrate the theatrical use of lighting to alter visitor's emotional state, just as theatrical lighting alters perceptions of space and mood. The new theater would take advantage of its presence amidst a newly designed landscape where the lighting has been designed with the theatrical and artistic sensitivity of stage and performance lighting. With the MetroStage as a strong draw and artistic inspiration, the new park would serve as a cultural anchor, a powerful attraction, and a hub of tourism activity that will instigate new retail investment along the adjacent commercial buildings in 1200 block of North Royale Street.

Because the current Tide Lock Park site is comprised of underground parking from the middle of the site through the southern end, the foundation of the parking lot could serve as the foundation for a new MetroStage theater that would be partially below ground. By placing many of the functions of the theater below ground in the existing infrastructure, the visible architecture above ground could blend with the landscape, creating an expression more like a small pavilion than a dominant, large-scale structure (see Figure 30).

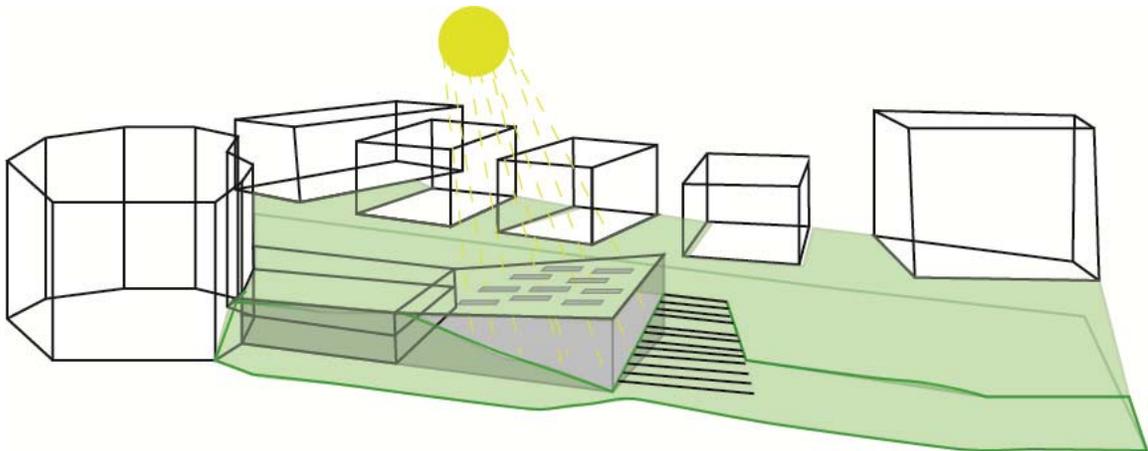
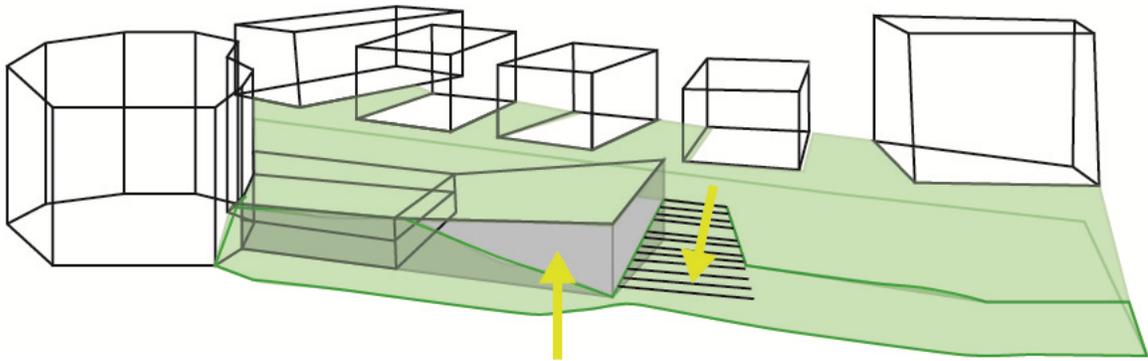
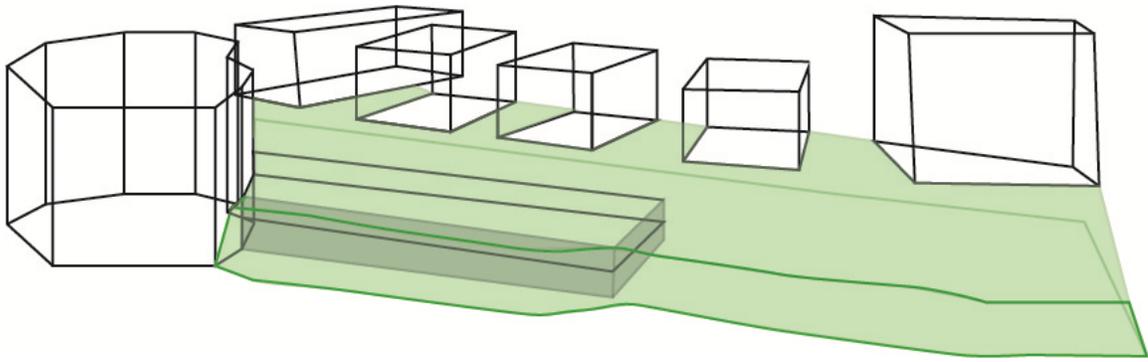


Figure 30: Diagram showing how the theater sits within the existing parking garage and how windows in the roof provide lighting within the building during the day. Graphic by Erica Thum.

At night the lighting within the building could illuminate the plaza grounds above simply by cutting windows in the roof between the two levels. Doing this would also provide skylights for daytime sunlight to make its way into the underground. The north and east-facing glass façade of the building would also serve to illuminate the central stairway which directs people to the waterfront. By designing a metal scrim to be installed on the outside of the glass façade, the amount of light which would spill onto the park grounds at night could be artistically dimmed. Access for theater sets, props, and other large shipments would be made possible with the design of a new freight elevator, accessible from the upper plaza.

5.2: Designing for Qualities of Light

The existing qualities of light at Tide Lock Park consist of darkness to the north, a medium level of darkness in the middle of the site, and bright illumination to the south. During my multiple visits to the site I came to appreciate the unique qualities that each of these types of light offered and I recognized the varying opportunities that the site provided by having all three types of lighting, rather than purely seeking a site of darkness (see Figure 31). I felt that designing the park in a way which did not demand that the office buildings necessarily change their lighting habits not only made the design more likely to be applicable, but allowed me to understand the value in the varying levels of illumination.



Figure 31: A diagram of the opportunities and constraints for the lighting qualities of Tide Lock Park. GIS data from City of Alexandria. Graphic by Erica Thum.

The darkness on the northern end of the site inherently creates feelings of mystery and excitement. The center of the site is more open to the sky and the river reflections and therefore feels more peaceful or tranquil. The brightness at the southern end of the site makes the user feel like it is more appropriate to be social and lively (see Figure 32). These were existing qualities of the site that I valued and wanted to expand upon in my design.

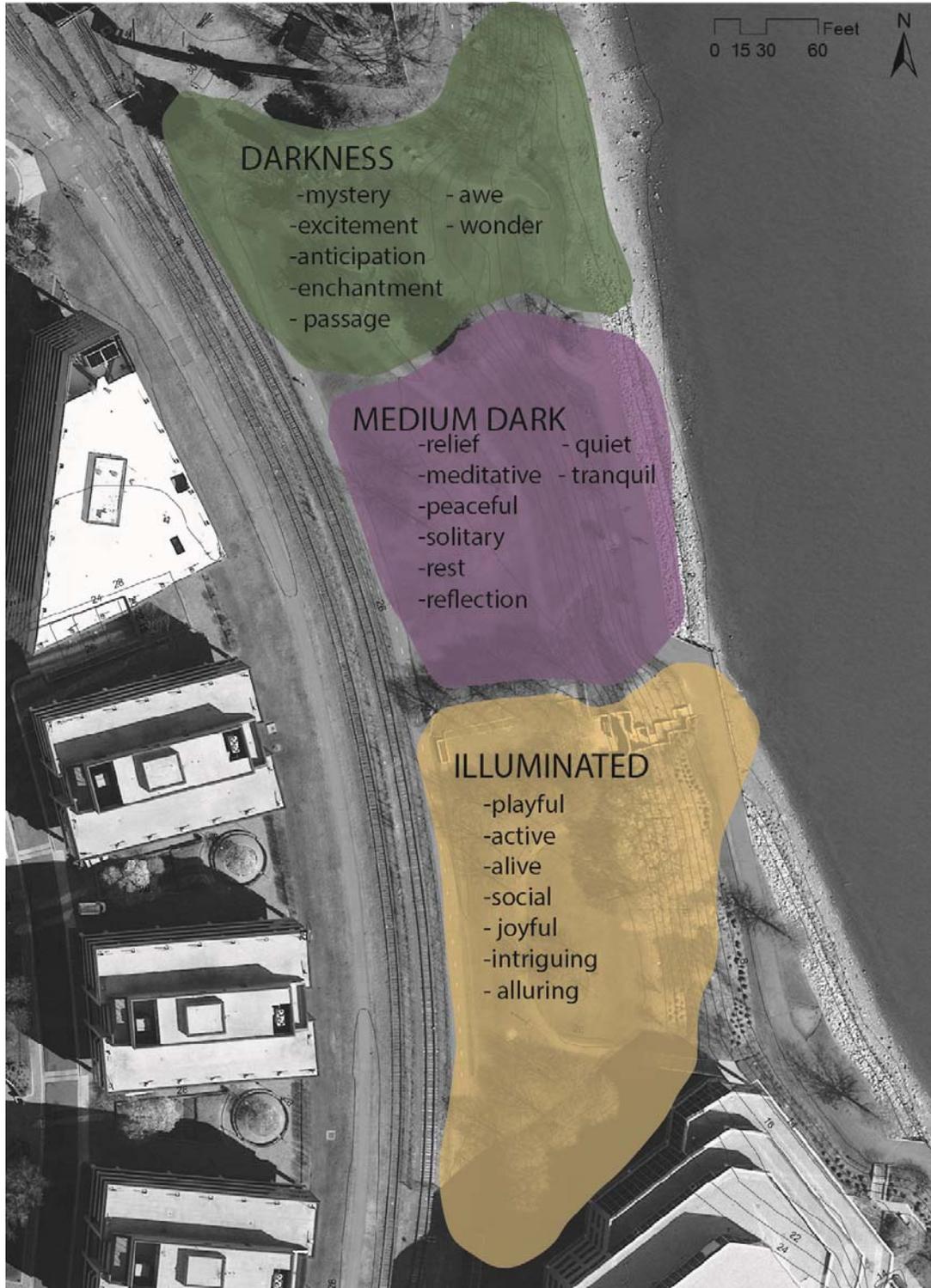


Figure 32: The varying qualities of light on the site contain within them corresponding emotional values which should be considered during the design phase. GIS data from City of Alexandria. Graphic by Erica Thum.

The final site proposal for Tide Lock Park worked to combine the major site opportunities which were mentioned earlier (rail to road, garage to theater, topographical divide, etc.) with the opportunities for emotion due to light conditions, in order to present a new design which provides a visible gateway to the waterfront, creates a cultural hub for the community, utilizes light to provoke emotion, contains spaces for experiencing darkness, and highlights the existing positive qualities of the site (see Figure 33 and 34).



Figure 33: Site model of proposed design. Photo by Erica Thum.



Figure 34: Design proposal for Tide Lock Park. Drawing by Erica Thum.

5.2.1: Dark: Forested North End

Early observation of the site revealed a small area of forest to the north and to the east of the power plant. Expansion of this forest, the addition of understory plantings, and removal of overhead lighting (replaced by dim path lighting) could create a powerful experience of a dark, mysterious, enclosed space filled with anticipation (see Figure 35). Moving through an area of dark forest with lighting farther off in the distance creates for a silhouette effect of the forest trees and understory which allows the user to have a different understanding of plant life at night. It provides an opportunity for the viewer to feel a sense of excitement as they approach the open slope beyond and make the transition from being under tree cover to being under open sky.

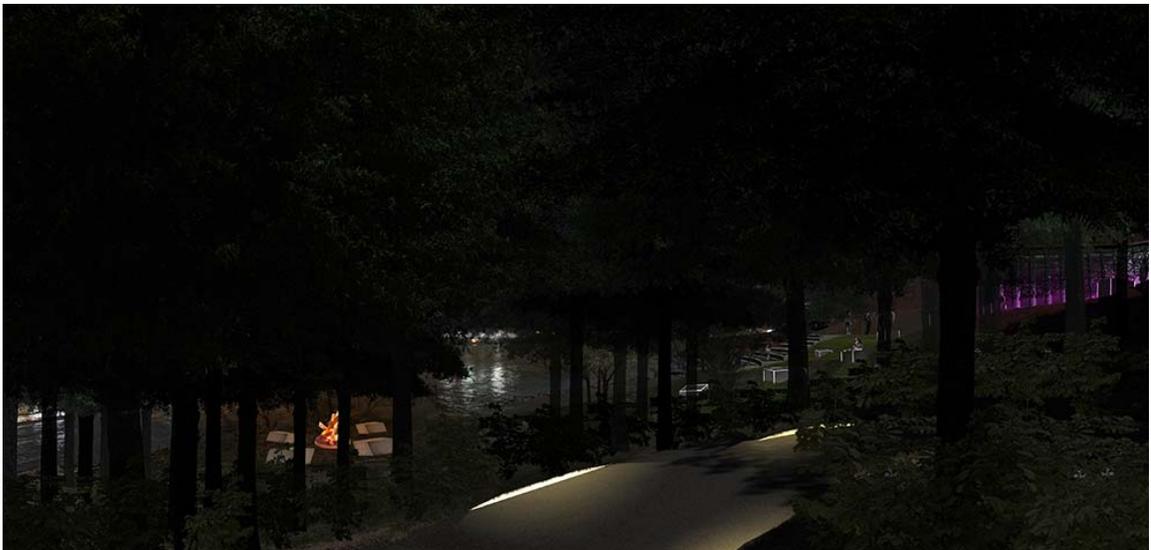


Figure 35: The dark forest trail through the northern end of the site creates a space full of mystery and anticipation. Drawing by Erica Thum.

5.2.2: Medium Dark: Hillside Cube Seating

Exiting the forest and coming to the grassy slope, the user may want to stop and take in the view on a seating cube, which has the feeling a small stage or platform. Here one can lie and take in the sky or just sit and observe the reflections on the Potomac River (see Figure 36). The dimly-lit cubes are sized just large enough for one or two people to use at a time, purposely limiting large groups from gathering in this area of solitude and peace.



Figure 36: Seating cubes on the hillside project viewers out into the night sky scenery where they can lay and view the stars or sit and watch the reflections on the Potomac River. Drawing by Erica Thum.

The glow of the neighboring theater window is dimmed by a patterned scrim so that the emotional quality of the light in this area can be one of contemplation, separation, peacefulness, calm, quiet, and serenity.

This hillside space is fairly-well protected from the artificial lighting coming from the offices as it exists today, but to add to the degree of separation from the existing light trespass, as well as the newly proposed street, additional topography has been designed and a grove of trees has been added to the upper street level. This additional hill and grove work to direct the attention of the park user toward the river and the night sky (see Figures 37 and 38).



Figure 37: Section showing separation from street activity by tree cover and hillside slope. Drawing by Erica Thum.

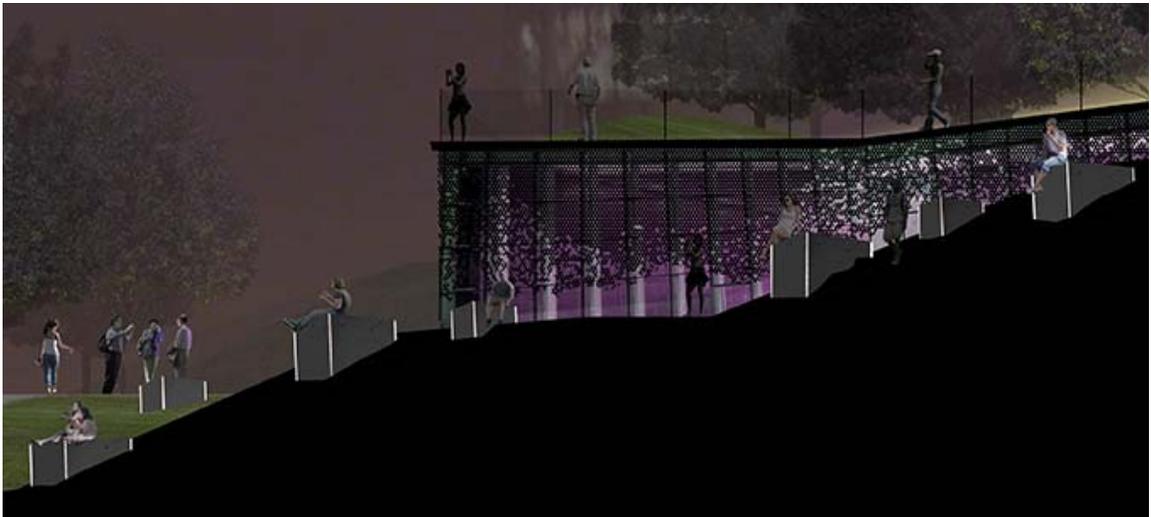


Figure 38: Detail view of section rendering showing cube seating and theater scrim. Drawing by Erica Thum.

5.2.3: Illuminated: Upper Theater Plaza

Ascending upward to the roof of the theater, the viewer is presented with an illuminated splash fountain, glowing windows to the below-ground building, roof top grass mounds, and a view of the U.S. Capitol Building and the Washington Monument in the distance (see Figures 39 and 40). This area is brighter than the northern end of the site and has elements of lighting that are more playful. The space is meant for large groups to gather and for socializing to take place. The atmosphere is drastically different from the northern forest and hillside as it is more brightly lit to accommodate a change in mood. The space is meant to be an area for playfulness, joy, curiosity, and excitement.



Figure 39: The Upper Theater Plaza is a place to celebrate illumination, as light emanates from the building below through windows and a splash fountain fills the space with playfulness. Drawing by Erica Thum.



Figure 40: Upper Theater Plaza, including rooftop mounds, splash fountain, thicket of trees, and seating options. Drawing by Erica Thum.



Figure 41: A section cut through the theater building and plaza shows windows in the roof which work as lighting elements both day and night, allowing sun to come in during the day and artificial light to spill out during the night. Drawing by Erica Thum.

At the southernmost end of the Upper Theater Plaza the Canal Center building which is currently home to offices is proposed to also house a few restaurants with patio seating at both the ground level and on the upper balcony (see Figure 42). This change in use feeds the activity of the active illuminated upper plaza space and makes the park design more likely to have continual use and activity in general. It also aids in the parks overall security as it provides bird's eye views of the entire site from the upper restaurant balconies. The proposed use of the park space, as well as these changes in use within the office building could spark a new commercial success for the area and help to increase the vibrancy of the night life in this northern section of Alexandria.

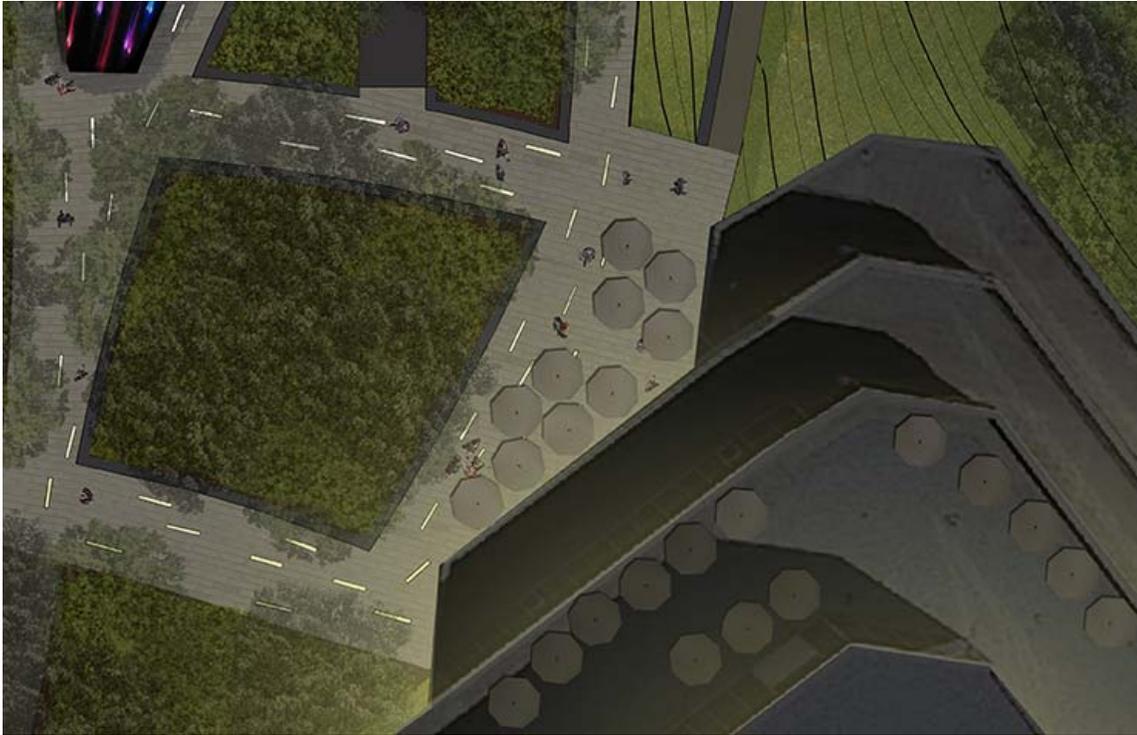


Figure 42: The southern end of the Upper Theater Plaza provides patio seating for a new restaurant on the corresponding Canal Center building level. The top roof deck also has seating for a new restaurant which overlooks the park. Drawing by Erica Thum.

5.2.4: Transitions: Central Staircase

The central axis through the site is made up of staircases and plazas which aid in the transition between the north and south ends of the park as well as provide waterfront seating options (see Figure 43). Not only is the central space meant to transition people between the park's spaces physically, but it also serves as a transition between the lighting qualities as it may, at times, take on the peaceful stillness of the north (see Figures 44 and 45) and other times be used in more lively and festive ways (see Figures 46 and 47).

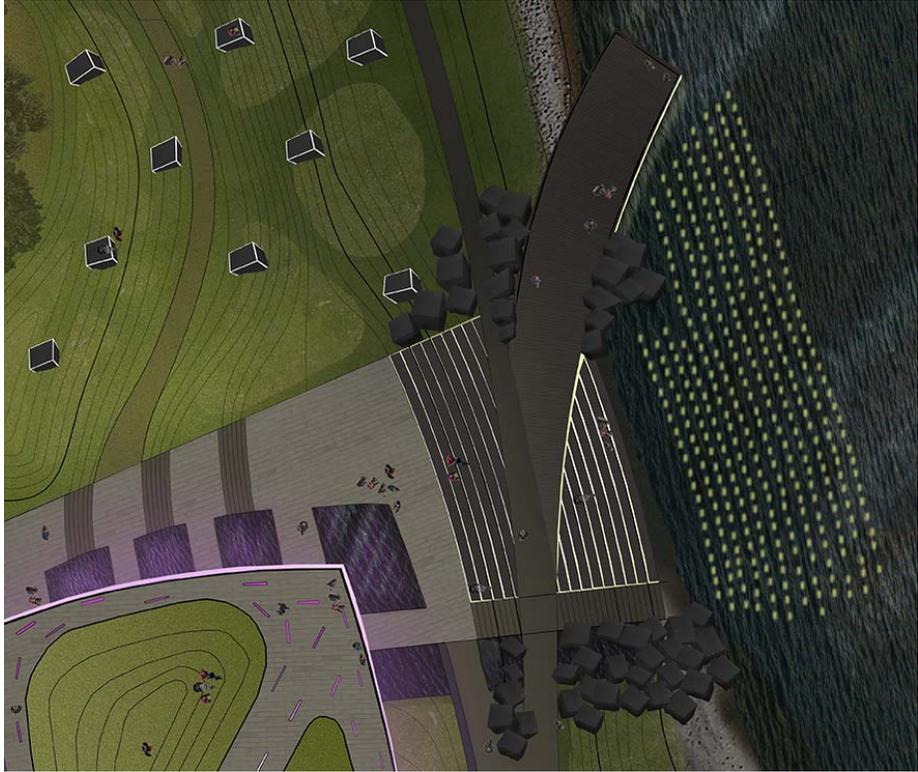


Figure 43: The central axis stairways are for seating as well as transitioning between spaces. Drawing by Erica Thum.

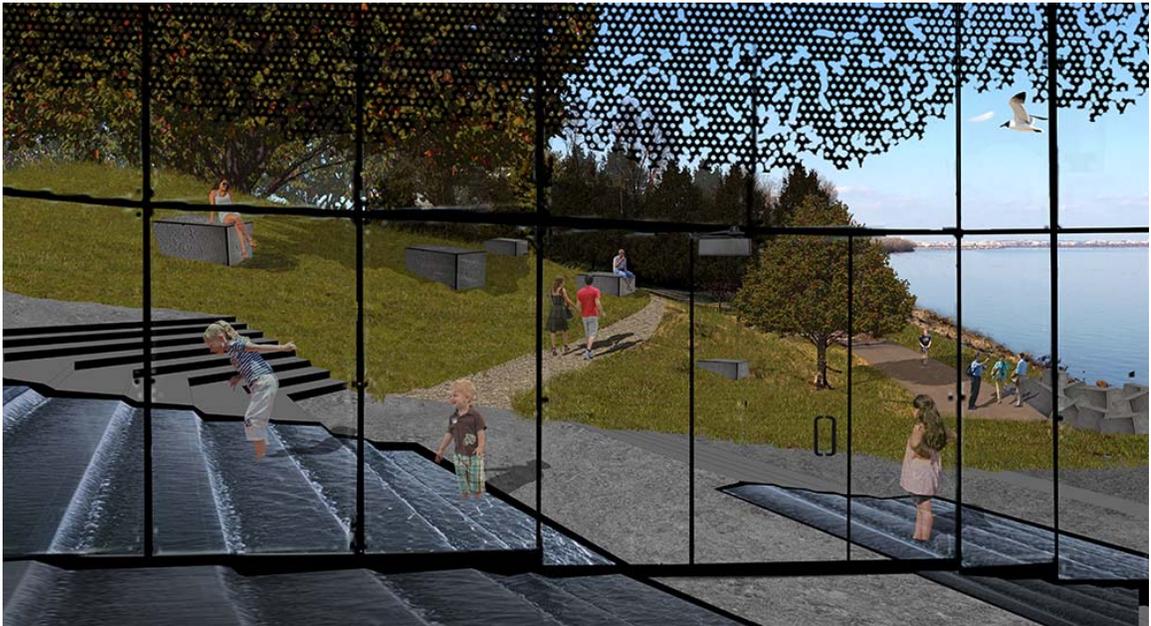


Figure 44: Water spills down the central staircase on both the outside and the inside of the new theater building, adding to the serenity of the northern end of the site. Drawing by Erica Thum.

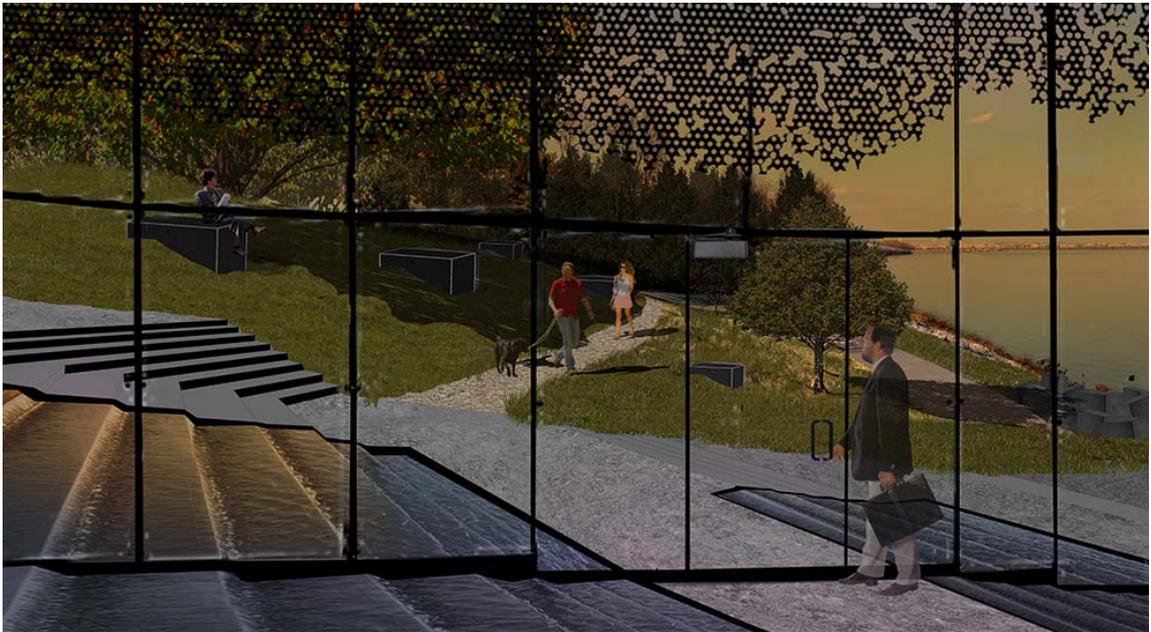


Figure 45: In the evening the stairway waterfall catches the rays of the setting sun and provides a sense of transparency between the inside and outside of the new building. Drawing by Erica Thum.



Figure 46: Occasional festivals, such as the 4th of July, can animate the lower plaza space at times while leaving it to be quiet and peaceful at other times. Drawing by Erica Thum.



Figure 47: Festive light and water shows activate the central lower space on occasion and then leave it to be more serene at other times. Drawing by Erica Thum.

A central stream of water connects the upper level plaza to the Potomac River below and aids in the transition between the interior and exterior of the building. This water is meant to draw people between the inside and outside, as well as the upper and lower while also capturing reflected light from the sky and inviting people to observe the riverfront.

While the entirety of the site has been designed around lighting and emotion, the site design is rich in its variety of functions (see Figure 48). Daytime lighting brings another whole set of uses to the park including nature observation and exploration, running, throwing a Frisbee, playing catch, rollerblading, jogging, etc.

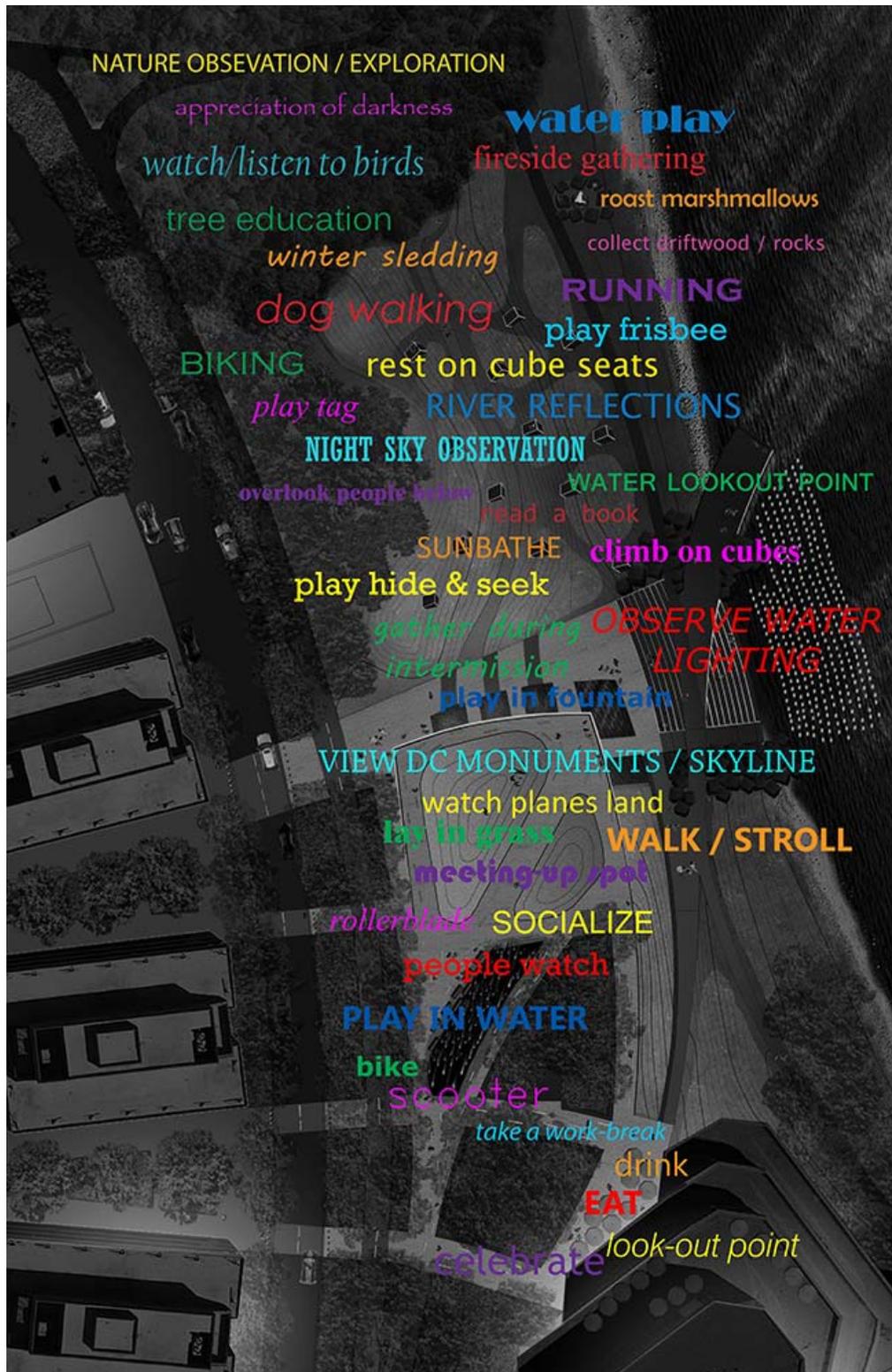


Figure 48: The site is rich in a variety of functions even though it has been designed primarily for its quality of light. Drawing by Erica Thum.

Varying seasons bring varying qualities of lighting to the site and new uses come about as the weather changes (see Figures 49).



Figure 49: A snowstorm brings a whole new quality of light to the site. Drawing by Erica Thum.

The hill which was used for night sky observation in the summer can become the local sledding spot (see Figure 50) and the fire sculpture which sits on the northern end of the site not only celebrates our culture's earliest relationship with light, but it serves as an outdoor gathering place in the winter cold, allowing the park's users enough warmth to sit and enjoy the night sky during the coldest season.

Occasional snowstorms bring with them the excitement of seeing the glow of the theater and cube seats as they reflect off of the soft white ground surface. But mostly, just having a place within the city where the public is allowed to linger at

night to observe the night sky, as well as enjoy the dim glow of artfully designed lighting, provides people the opportunity to be introspective, feel at peace, and feel more connected to the universe.



Figure 50: Varying seasons mean varying uses, such as sledding in winter. Drawing by Erica Thum.

Chapter 6: Summary

The new design for Tide Lock Park not only meets the goals that the City of Alexandria outlined in their Waterfront Small Area plan by creating a park with illumination as its theme, but it brings a new quality of space and emotion to the waterfront through a deeper understanding of what varying levels of illumination mean in terms of the users emotional responses and behaviors. While the design uses illumination and the condition of darkness as its greatest influence on design decisions, it meets varying needs of the northern gateway section of the city and better serves as a transition between the quiet office and residential space to the north as it connects to the tourism and festival activities on the southern end of the waterfront. By approaching design with an understanding of not only daylight conditions but giving increased consideration to the night time qualities my hope is that generally overlooked aspects of the design might have been revealed and that the overall design could be more sensory, meaningful, and emotional to the user.

The exploration of the sculptural potential of artificial lighting as well as the cultural values that have gone hand-in-hand with lighting design through time has distinguished this design's approach from the more common considerations of functional and security uses of light alone. This thesis hopes to reveal a new understanding of the human relationship with light, to better design for both function and emotion, valuing the importance of both.

Appendix: Interviews with Professionals

Bruce Munro – Light Artist

ET: What's really magnificent about your outdoor work is the way that each piece has its own relationship with the landscape that it is placed in. I felt that the "Forest of Light" piece at Longwood Gardens was really amazing in the way that it revealed the topography of the forest from wherever the viewer was standing. Do you strive for this relationship to the landscape when you create your work, or does that relationship just reveal itself as the piece comes together?

BM: I think it's more of the latter, to be fair. An idea in my head only goes so far. The process of an installation starts with the idea. It's a long journey from start to finish, so the field of light for example was inspired by spaces it goes into but it was an originally idea I had years ago living in Australia. So it's two things... there's a lot of this in your questions... I can't always say it's definitely this because there are a lot of things that come into play. So I would say it's the latter, that things evolve as they go along. I think that also you'll find different area that we've put the same installation will be different each time. For instance if we put

it into a forest, or an open landscape, or a snowscape, it will have a different feel to it.

ET: The moon on the platter piece seemed as if it was really designed for that landscape. It made me wonder if you make the decision beforehand to design for a space. Or if you find the materials beforehand and then work it out afterwards.

BM: The Angel of Light and the Blue Moon were very responsive to the landscape, in fact I have just gone to the gardens and we had made presentations. On the way home I was listening to some music and the music inspired the pieces as well as the landscape. The medium is really irrelevant, it depends more on what the inspiration is.

ET: I am particularly interested in your work because you do not seem to have any restraint about working with lighting outside, which can be much more difficult than inside where you can control the elements. Did your work begin as inside-only pieces?

BM: It did in a sense. I came from a fine art background. In other words I did painting and sculpture as a degree. I never set out to do one particular thing. But from a very young age wanted to be an artist, but I just wanted to use the arts to find out a bit more about life. So going outside was ... I didn't really have any restrictions. I can from an art background, not a technical background therefore

the medium of light to me... I was looking at it in a non-technical way. I was just looking at what it and did what affects it created. And the technical side I would go out and find somebody to help me do that. In a sense I wasn't trying with light, I was just using it as a medium, like a painter might use paint or a film maker might use film. And I felt, really I restricted myself to one medium because when I was about 24 I was working in Sydney... in Australia and this guy was in a course with us and he said that my mind was all over the place. He said, "You've got too many ideas." I took it as a real insult then but he did me a real favor because from that day I started focusing on light and I had a central cause and there was nothing in common with these seemingly disparate ideas.

ET: Why are you so willing to work outside? Is there something about the work being seen outside that means more to you than it being inside?

BM: Not really. If you have an idea in your head and you think, "Let's do that." Then if you need to work outside... I mean, I enjoy working outside. I like the space aspect of it, and the fresh air. All the work we do is pretty ephemeral, it only lasts 6 months or maybe a year at the most. The idea is to create something that is temporary and pleasing. The process is very enjoyable. There are 10 or 12 of us now in the studio and it is very much a shared journey. There are an awful lot of people working together. It's similar to Longwood, where we had all the full-time employees of Longwood and volunteers as well. Without all of these

people it would be impossible to do some of these things and that makes it really exciting. So it's not just about working outside.

ET: So you mention that your work is very temporary and I wonder... because I'm focusing on how to apply work like this in a very permanent way in the landscape...?

I think it can. It's interesting because I noticed a lot of your later questions are all to do with public art and public spaces. One of the things I find interesting is that if the developers or the people in charge of commissioning work look at spaces in a more ephemeral way they can be more fun. You know, I think permanent sculptures can be really.... unless they are incredibly beautiful... a lot of stuff I would find quite disappointing. You know, it's been plopped in the landscape and you're stuck with it forever amen. And the beauty of doing something in the temporary sense is that it allows different artists to explore ideas and gives the public to opportunity to enjoy a variety of artistic interpretations. It comes down to the commissioners. That's the really important job. The people who commission these art pieces need to know their stuff and have their finger on the pulse and be able to work with lots of different types of people... not always going to the well-known, established artists, but being able to go new people and young people. Because we are working on a project in Philadelphia and we've been helping pitch for a... they are redesigning the avenue of the arts and we've been working with a team there and that's been very exciting. If we do get to the final

stage, we are one of two, would be to engage with the different businesses and if you work along that area... see if you can create something that is relevant to them as well.

ET: My thesis argues that landscape architects have overall focused more on the function of light rather than looking to artists such as you to design lighting to be more emotional. What do you think of this argument?

BM: I think that when I started working in this area of light that would be a fair thing to say. It was dominated by technocrats and I think now it has changed a lot and there are some people doing wonderful things in light. Light is a huge field. They are more specialists. It's become less... it's a much broader spectrum of architects and commissioners than it used to be. Back thirty years ago it was more conservative, I think today it is much more open. And you feel it could go further and personally I think you're right. It's the pragmatism and the financial aspect that seems to dominate the reasons why certain people are chosen and also health and safety... there are so many reasons; possibilities to sue somebody and I think people are scared. That stops creativity. You can't walk down the street now. Everything needs to be underlined in red and there is all this paperwork and I find all of that quite depression. The good architects and designers are circumnavigating it. In a sense I think you have to join in with that... you don't have to follow it... but there is no point in becoming a protester and going against the grain. You have to learn to be creative within the bounds. And

that is what artists do. That's what artists are really good at. They get creative given a tiny little opportunity; they will use their ingenuity rather than sit on the sideline and complain. We all want a more perfect world and the perfect commission but it is rare that it happens.

ET: Yes, being a student I don't have a clear understanding of the red tape issues that landscape architects have to deal with....

BM: I would encourage that. I wouldn't get too wrapped up in it. It is early days for you and really you want to create beautiful things that mean a lot to you. I watched one of your films or your first installation piece with the water and that was a really lovely idea. That sort of thing is very relevant.

ET: That was scary for me because I've never been trained as an artist... although I've always been an artist at heart... so for me to jump into a sculpture class and take that on was difficult but I felt pretty pleased with how it turned out for it being the very first one.

BM: The bit about being trained about an artist is a load of rubbish. Being trained doesn't make you an artist. In school there were people who were so incredibly talented but what some of them lacked was passion. You can be technically adept at something but if you don't have the passion or the will... you know you can't learn passion but you can learn skills. It's much more about having the drive

and seeing where it can go. In fact I think it might give you an advantage because you have no expectations and you can break all the rules. In a way it is like me and light. Light wasn't really perceived as an artistic medium. I mean maybe people like Dan Flavin and James Turrell who were more formally known as "light people" but in the early 80's it was still a pretty undiscovered medium. It was a really technical thing and so people probably thought I shouldn't be doing it because I had no training but I didn't care. It never worried me.

ET: Do you think that because you were trained as a painter you have a different awareness of light than the typical person?

BM: When you say trained... that's with a very small "t". In the late 70's early 80's it was a pretty awful education. They sort of locked you in the studio and said, "Get on with it." There was very little teaching. However, I did go to an art school which was more taught than, say, London schools. But if there was a real moment when I woke up and realized that light was a medium that you saw the world by it appealed to me that it was a sort of primordial medium and I thought, "Well that's a nice thing to work with because it is so raw." By looking at a lot of paintings, which I love doing, they are all about light. Even when the subject wasn't about light, it was about light. That's how you see the world. Painting is about atmosphere. They create emotions and atmosphere. So I was always looking at the light aspect... well not always but often in a subliminal way. Funny enough, I wish I could remember the name of an artist... there's a magazine here

we get... and there's an English painter who has just come to the fore. He was unpopular when he was painting because there were people like Picasso and Braque painting and he was painting empty streets in a super realist way so he was before his time. The one painter that I always loved was Edward Hopper. His paintings are all about light, atmosphere, and space. They can evoke a lot of emotions in people. He's a genius.

ET: Other than Edward Hopper are there other artists that I should look into?

BM: The best thing to do is to get an A to Z dictionary on artists and I suggest you do a letter every two weeks. After a year of research you'd be surprised... if it's a good one you will get two or three images per artist and what I do is just quick looking. When you get to image that interests you then you can go onto the internet and research it more. It's an exciting time because there is so much available to you on the internet. If you want to find something it is at your fingertips. It used to take weeks to go the library just to find out that they don't have the book in stock. So many people have more access to being creative and it's a very exciting time.

ET: I think for us it gets a little scary though because all of this connectivity makes things more competitive.

BM: Again, I think the competitive aspect is good in a very small way. But be competitive with yourself and be really excited by the research that you are doing. What's lovely is that when you connect with somebody whether they are next door to you or on the other side of the world, you've done a very important thing. This is one of the fundamental things on making pieces of work. Its about making something that has resonated with me years ago whether from an experience, reading something, or seeing something and then trying to recreate that in a way..., or bring it forward in time and then present it. Now the very fact that its connecting people is very exciting. If somebody is happy or has a good experience then I'm thrilled because it means I've made an important connection. We all try to be different. The rarity of our human condition is our similarities, not our differences.

ET: What do you think the typical reaction to your work is? What do you see people do when they see your work?

BM: I think it's simple. I'm amazed that people aren't more rude and think, "Well it's just a bunch of CDs or just a bunch of lights on sticks." It could be seen like that. What's funny or nice is that my intention is to try to create a feeling that is positive or an experience. Also there are some nice surprises. It is very much a group thing. There are lots of people working on these pieces. The danger in making art is that you can start getting a big head but I think it's a bit of a laugh that people think it is interesting. I think it is funny because I've been doing it all

my life. When you get more wrinkles people seem to pay you more respect. They should've been interested in me when I was 24. I would have been much more fun.

ET: So your firm practices garden lighting design as well as art...

BM: Well we don't anymore. I'm not saying there is something wrong with that. It took me thirty years to do the bits I want to do and now we're getting those opportunities. Lighting design has been really important. When people get a little bit snubby and say, "Oh I only do my own work." they're talking rubbish because you learn a huge amount about materials and the way products operate. There are some really clever designers out there. Everything is much more integrated now. This definition of designer against artist... people are moving between fields now. It is only a label. When people ask, "How can you possibly do gardens and call yourself an artist." Well, why can't you? You wear different hats. It's a totally different set of circumstances for someone to say, "Please come and light my garden." versus "Please come and do a sculpture in my garden."

ET: That's interesting because I think in my thesis I am trying to blend the two, so that when someone wants their garden, or park, or public space lit... that it doesn't have to necessarily be lighting design or sculpture... that is can be somewhere between the two.

BM: Very much so. I think that the question really is... when you're involved in a project you have to listen to... it's about you asking questions to find out what they're after. Sometimes a garden needs... I mean... for example... the Longwood show and all shows we will be doing in the future... they are spaces where the public goes and there has to be an infrastructure which is lighting in a functional way to get people from A to B. The pieces themselves... and that's why I brought up the health and safety because... you know I might put a bunch of lights out in the meadow at Longwood and then somebody breaks their neck getting there. So there were many discussions on how to get people from A to B. That's just a function of the world. You also have to be aware of how one affects the other. You don't want the infrastructure to have a negative effect on your work.

ET: Can you think of any landscapes, public plazas, or parks that are good examples of parks with lighting that goes beyond function?

BM: Well I think the High Line in NY has... taking a dead space and re-imagining it and turning it into a park in the air. It is just amazing the context of it. And bringing all the bits together that you need to make it work. That's sort of an unusual project, but I can't really think of others. There's an amazing place in South America and I can't think of it now. But it links light, landscape, and art all together.

ET: What we haven't talked about yet is day versus night, and whether you really set out to design for both?

BM: I think you do because your day is 24 hours. I mean you can't be... like you said you are now investigating darkness... in a similar way I was thinking of light as always being artificial and well it's not. Sunlight is a major source. You have reflections and shadows and diffused light and light through nature. All of our ideas stem from experience and all that we experience them looking subliminally... what you don't really take into your mind consciously is filling your head sometimes during the night and sometimes during the day. How that comes out of you creatively... you should keep your parameters wide. Try to keep an open mind to everything. The young designers today are doing amazing stuff. But I do feel it is much more specialist. People tend to be much more specialists today. They are either specialists or hybrid designers.

ET: Well thank you for your time. I really appreciate your participation.

BM: Yes, please keep in touch. Send us your thesis when you're done.

ET: Okay, I'll do that. Thanks again. Bye

Charles Matson Lume – Light Artist

EMT: What are some of the most difficult experiences you have had while working with light?

CML: I think working outdoors is extremely difficult, partly because of the light and weather changing so radically. That can be a little daunting and I've done a number of pieces outside that um... there's more of a sense of um... setting up a circumstance in which depending on the weather the piece may not show up. So that's one of the more difficult venues to work.

Another one is trying to have something really subtle in the gallery and it might be so subtle to viewers that are expecting some THING in the gallery, they aren't expecting an experience. Therefore when the THING isn't there they're not sure I think of what they're supposed to see. And the last thing I will say in regards to that is... sometimes when I am doing work.. often times I might not be able to visit the space first and I will just be relying on photographs and those photographs are often very incomplete. For example I had an exhibition at the University of Rochester and the space... the architect was I.M. Pei for that building and the gallery was a kind of triangle and I had no idea about the ceiling. The ceiling was quite different from what they had shown me from the photographs. That's really challenging to manage the light and the space when I haven't really experience the space first hand.

EMT: The piece titled “What you thought you had buried” was outside. What other pieces have you done outside?

CML: I don't know if they are online at all. Some of the ones that I have done were in Minnesota about ten years ago and I can send you some photographs. I made a couple this summer in Iceland so I would be happy to get those images to you.

EMT: Talking about the ephemeral quality of your work and the fact that people come to see and object and it's not an object, do you think that is one of the things that attracted you to working with light?

CML: I don't think initially. I think initially it was more of a slow awareness. I came out of a tradition of painting and realized how much I was paying attention to the light and not just the painting. It was a very slow process. I don't think initially I had... I don't think I wasn't even aware of it. So I think when viewers come into the space they are thinking that an art element is an object and they are going to a THING, I think that they... I think that I had that same experience that I was supposed to be making a painting or a sculpture... so I don't try to give them too much trouble about that. I think what maybe brought me to the idea that light is the THING is that I was in the South of France for a year and I was really surprised by the light there as opposed to the light in the Midwest where I grew

up. I think it was a little shocking to be in that space and have that sort of radical experience and then say “well how can I bring that kind of light back home? and how is that different then when I return and are there ways to experience that?” I stumbled a lot; there was lots of not knowing and not knowing how to translate that. What started to change that was my material choices, getting rid of painting... not that I want to totally get rid of that, but it finally just sort of fell away for a long time and I just started thinking about material choices as they relate to how those things are going to affect light.

EMT: What are some of the material choices that you have come to learn about over time, or some of the technical methods that you have learned through experience?

CML: One thing that has been really great is Cinefoil, which is a theater material that is sort of like a black tinfoil. It can help direct the light around the spot light. I try to use the light that a gallery has or that the outside has. I try not to manage it too much. There are times when I need to manage it. The show that I had in Milwaukee this summer at the Walker’s Point Art Center... I had to build a wall in order to block, they had a gallery space that had almost like a storefront and I had to block the storefront window in order to even begin to think about what I could make in there. It just had so much light coming in. So the Cinefoil... sometime I manage the light through building a wall. Different light bulbs do different things. They have different patterns that they put on the wall and

different intensities. But I do try to stay away from a kind of trickery. I try not to be overly technical. I remember going to a music concert, I think it was [And And And??]. They had lot of lighting features and I thought it was really great but the more I thought about it I was like, “I can’t do that with my work. That not what I’m trying to do, I mean, part of what I make is that I’m trying to take this crummy material that seems to be disposable and trying to breathe life into it. Not bring something fancy and technical and try to transform that. So I’ve really tried to keep the technique and the technology sort of at a minimum just to let the light do what it can do to the materials that I choose.

EMT: What is the technology or what was lying on the floor in the piece “We know that knowing is not our way”?

CML: Its just a piece of acetate. I tend to buy these sort of random things at scrap stores and resale shops. They had this big stack of curled acetate. It’s basically a clear piece of plastic. I didn’t have any idea what it would do. I just bought it thinking, “Well this looks interesting and it might do something.” And to the question about why its lying on the floor... I had a sabbatical in which I wanted to try to change my work habits so, living in Minnesota, I decided during that spring semester, I decided not to heat my studio as a gesture to change my work habits. So what I realized was I needed to work quickly and in a minimal way. So I basically began putting things on the floor and making a spot light with the Cinefoil you know, tight and putting it on the floor and bouncing the light onto

it and seeing what kind of pattern that form would make on an adjacent wall. It was really shocking to see the acetate make these patterns. It still really surprises me. And that they change over time while they sit on the floor because they'll warm up over time and they'll relax a little, so they're form is somewhat malleable. And as viewers come into the space they'll also block the light and change the pattern that's on the wall. So I think those were really surprising things and sort of interacting in many ways.

EML: Can you describe your typical process. Does it start with searching for materials?

CML: Yeah, I'm constantly looking for new materials. That's one thing I kind of love about our culture; we generate so much crap and junk. I had an artist's residency in Ireland about eight or nine years ago and I was surprised at not being able to find the same kind of stuff that we have here. That made me think about how American I am as an artist. But I do look for things and I often sort of think about how, maybe a parallel to that is how Edison was also looking for a filament to the light bulb, and I always feel that I'm looking for something that I don't know what it is or what it can be. But I know that if I try enough things that something will come from something unexpected. So I'm willing to do that and I do that in my studio a lot. And I practice what's there. But when I make a bigger installation there is a lot more planning involved so I take the gestures that I've learned in my studio and try to apply that to the space.

But this new space where I will have the installation has its own kind of logic and I really need to pay attention to that logic because as you know that light and space of each environment really radically alters how one can think about that space as it relates to the material. It just has its own personality and if I don't listen to that the piece is likely to not speak very well. I had a show in Perricone Shannon in Ireland and they gave me a space that had so much light pouring into it that it took me over two days to know what I could make in there. I mean I was really panicked and the curator was very concerned. It was an old judicial space that had these huge windows for the courtroom and they wanted to keep those windows open and I thought that was great to keep them open but they faced south. I brought a "bag of tricks" so to speak to Ireland but I didn't bring everything and so I was really scrambling to sort out what can be made in this space. So there was a lot of experimenting. The curator had sent me some images but they must have been taken early in the morning because I had no idea how much light was going to pour onto the floor and up part of the wall. That was really hard. I mean, it made me very worried for quite a while. I even had that kind of uncertainty... quite like that because the sun was in the room and how am I going to compete with that?

EMT: So it sounds like from that experience as well as working outside, that your work really requires darkness. Would you say that is accurate? And that its difficult to work with natural light?

CML: Yeah, it is difficult to work with natural light and I've tried to find materials that maybe might gather the light and release it in a new way. Like, 3M makes a really great reflective tape and I've used that in the past. Glitter paper I've found can, in the right context or circumstance, can be really powerful. The proofing paper that I've used... it seems like I need a little bit of shadowed space in order to get contrast to happen. If it's totally bright it just washes everything thing out. In that same sense, if everything is cloudy, everything is even, and nothing stands out. There's no contrast. And maybe that's okay for some outdoor pieces. Maybe it's okay to have work that doesn't show up at times. Like the viewer has to come back... because I think that is the way life is too. We anticipate something and it doesn't materialize and we return to something and, "Oh there it is! How did I miss that?" So, I try to, I've been trying to be more patient with that unexpected... or letting the viewer not see it and that's okay, or they have to return to the piece if it's not the right kind of weather or circumstance for it to happen.

EMT: What sort of reaction does your work typically get, because you talked about a sort of confusion that people get when they expect and object? Your pieces for me gave me a feeling of tranquility, or joy, or awe and delight and I wonder if that's the normal reaction?

CML: Yeah, I think for most of my pieces, I think, in the true sense of the work awe I think I am trying to provide a space where that might happen. I think that with our culture being so noisy and busy some of that might be less and less available. So I think a lot of pieces are trying to do that. It's also interesting that viewers want to know the physics of what's happening in the piece. They'll often touch the work, trying to sort out for themselves the physics of what's happening. In that process they can inadvertently destroy things and part of me is like, "Well that's beautiful that they can be that curious." That they've wanted to know what's happening or can feel that compelled to do that. On the other hand it's really disheartening to come back to a piece and see it so disheveled that I'm not sure anything aesthetically, I'm not even sure any sort of aesthetic experience could happen. but I try not to manage pieces once I've made them. I try to let them live, do their own thing, they're their own creature. I try not to reestablish something. For example, a piece that I had made out of fiber optics and the fiber optics wasn't glowing. It was just using the material to cast shadows on the wall. Lots of those had been sort-of tangled up and ripped off of the wall. It was a little shocking to return to the piece and go, "Wow, what's happened?" Part of me was not willing to try to change it, like that's just the life of the piece and it will be up for another month and then it will come down. It's a parameter that I try to adhere to because I'm not convinced that necessarily what I start with is necessarily the end result. I think there's something about it just having its own life and doing its thing and people experiencing it at different stages of it. Somehow that seems true to our lives. but I think that coming back to that question of awe. I'm very

excited about that particular part of my work. I think it's hard to make but there are a few time when my pieces can do that and I'm really excited for my piece to do that for however long the piece is up. To me it mirrors experiencing some kind of weather or some kind of light that might only happen for 2 minutes. It comes and you're startled by it and then it goes away and you have it as a memory. That for me is enough.

EMT: Whose work inspires you?

CML: I've always been a fan of Robert Irwin. I remember seeing a couple of his disks in the early 1990's and being surprised by them and having an aesthetic experience in front of them, you know, kind of an epiphany. At the Walker Art Center in Minneapolis they have a Turrell sky piece that's always great to go to. It's the best piece in their collection. Oddly enough, though, I really love painters. I love Richard Diebenkorn. I love Matisse. I mean people who deal with color and subtlety of color. I think Rembrandt is remarkable. I think Lucian Freud is remarkable, more for his sort of sensualness. I'm hoping to bring out some sort of sensualness in my work. It probably won't be as, I don't know, scatological, as his work but I think there's something visceral that I love and even thought my work might not have a visceral quality in terms of the material choices, there's a parallel about the body and wanting the body to participate in these experiences as much as our vision and our memory and the light. I think when I have made pieces that viewers can walk into or though part of it is about their body. It's not

just a cognitive, intellectual experience. I want them to feel like they're inside their bodies but also lose themselves and be beyond their bodies simultaneously. I think in Elaine Scarry's book on beauty she talks about this idea of, that there's this simultaneity that happens when you experience something beautiful. She called it decentering... it decenter yourself in a pleasurable way. Usually when we think of decentering it might not be pleasurable, it might feel like you're being repressed but in this case because sort of pushes your ego, if you will, to the side and you allow that other thing to take the center of your person for a little bit. I see that as being true and something that I think... in my best work hopefully that happens.

EMT: What's the name of her book?

CML: It's called "On Beauty and Being Just" and she does I think a really great job of equating beauty to justice.

EMT: When you were talking about the body and having it be a whole experience through your body as well as mentally, I started thinking about how that was what attracted me to landscape architecture because I felt that the power of landscape to really affect you because you are wholly surrounded in it is what was amazing about it. So, I guess we can move on to talking about landscapes and how work like yours could possibly seed ideas on how to approach lighting in a more

emotional way in landscapes. I guess, what did you think of the arguments that I'm making for needing better light in the landscape?

CML: Yeah, I mean I think it's true. I totally believe that there's sort of scientific proof if you think about seasonal affective disorder as a lack of light in one's daily experience, I think that's very powerful. I think in my own work I'm not necessarily trying to evoke a particular emotion but I am trying to get across that I want them to have some sort of particular experience that allows them to be fully present. I think of that as emotive in lots of ways. I totally believe that light changes the mood of any space that you're in. I think like when we are kids, at least for me, I can remember in 3rd grade when there was a thunderstorm outside of the classroom and suddenly the fluorescent lights are the most powerful source in the room and it feels weird. That experience was a kind of radical experience just from the light. The mood in the room felt more oppressive. The mood of outside sort of pushing into that space and the fluorescents having that kind of crazy green to it... yeah that was very strange. So, I mean, we might not be aware of that most of the time but I think that is around us all the time and shaping our sort of mental state. I think all the time and we're just not paying attention to it and we're just trying to carry on but I think it's definitely gently nudging our... how we process that information or how we live our daily lives. I just can't imagine that that's not shaping who we are and how we experience the world, particularly in an emotive way.

EMT: Could you imagine taking the lessons you have learned from making art and applying them to landscape architecture?

CML: I can but I think it's hard for my work because my work is so ephemeral. What I understand of landscape architecture is that it's typically been trying to manage a space outside that's going to have some durability to it. Because of the kind of cultural artifacts that I use in my work that are so disposable, I can theorize that it could work but it's a hard equation for me... thinking about public outdoor sculpture for example, or a space to occupy or transform is a lot harder for me. When I made the piece that was at the University of Toledo, they have an outdoor sculpture area, that's a kind of rare experience because the space is meant to have more, it can afford itself to have more ephemeral experiences because there's not a lot of traffic through it. You know, I've had pieces destroyed because of the traffic patterns have shifted during the event or during the exhibition. People sometimes just aren't looking, again they're looking for objects and not paying attention to something on the floor that's almost completely translucent, and I don't fault them for that but they'll just run right over it. It's almost like the gallery really allows for me to frame the work, whereas outside if its somehow not framed to some regard the chances of it not speaking or being destroyed are pretty great. That's just the line of thought and the experience that I've had so it's really hard for me to think about landscape architecture as it relates to my work. I mean I see connections to it but I guess landscape architecture, and I don't know that field very well, if it had more

experimental spaces that weren't for "okay this needs to be here for another 50 years" then I would be interested in that. From my experience it seems to be that these spaces need to be durable and often need to have low budgets for maintenance and my work just doesn't afford that so there's definitely lines that I'm not willing to cross because my work can't fit into that space.

EMT: Do you know of any particularly appealing plazas or spaces for their lighting?

CML: When you talk about particularly lighting, which means that often that is about evening or dawn, I don't think I know any off hand. I thought about this question once you sent me the questions and part of me thought, "Any city, even the smallest town is beautiful at night, just because it may be lit or not lit." Maybe just seeing the moon casting a shadow as I walk through a space is remarkable, that the moon is that bright at that particular time. I thought about Paris as a space that's beautiful at night but I don't know. For particular managed spaces that I'm conscious of somebody having changed the space so that I can experience it differently... I feel like that is really rare and maybe I don't get out enough or something.

EMT: You're accurate. It's rare and that's the argument I'm trying to make, that maybe it shouldn't be so rare I guess.

CML: Yeah, right. I mean, even just the street lamps in my street, I love that they aren't the sort of big arched ones and that they're lower and they are a fixture that doesn't push light up but pushes it around and they're smaller. That gesture that the city of St. Paul has put makes it feel intimate rather than the light being way up in another worldly sort of space. It feels close to me and it feels more like it's addressing my body, in the same way that I've always loved that in France their stop lights are low and they also have ones that are almost at your height level and they feel less industrial and more personal and I've always been struck by just the placement of those stoplights that they relate to us as people and not as things driving around.

EMT: Yeah I think that is something that I haven't spent a lot of time thinking about, the scale of light, and how important that is.

CML: I think if the light is up high it has a different quality about it that is sort of more like the sun and the moon except that the sun and the moon... there's been a long relationship that humanity has had with it. But you know, if you have lights up high it feels like a stadium, whereas if lights are low or on the ground, particularly at night, there's something about the way we, not just move through it, but the way we might be able to tell a story about how we're moving through it. When I think about the sort of Grimm's Fairy-tales, you know they are always going into forests and they're always dark and they always can't see. So what is that not seeing at night like? How far forward can we see? And what does that do

to our psyche not being able to see very far? Even if a landscape architectural space is winding and we can't see very far, we're going to move very tentatively through that because it's dark and the luminosity is not telling us what's coming around the corner. The darkness and how far we can see into the darkness is a really important and maybe primal kind of thing that we, based on our deep history.

EMT: Yes, I've actually taken quite a turn in my literature review recently to turn to a lot of books about darkness and how our relationship with night has changed so drastically as technology has increased. And how what.. there was a book that was talking about it as if we were settling... like the way we came to America and settled America also resulted in getting rid of Native American culture... when we start occupying the night time with light what are we pushing out? We are we replacing? So its an interesting question to not only think about how to light landscapes at night but also what are we missing by lighting landscapes at night and is there something to be appreciated that could be enhanced by a lack of light as well. So that's something that has been interesting me recently.

CML: Yes, I think that is totally true. What we can subtract from the landscape is equally as powerful as what we add.

EMT: Is there anything about my method of study or thesis question that you see is missing? Or are there any final thoughts you would like to share?

CML: Um... I guess I would ask a question about, in terms of a kind of emotive quality, maybe emotive is big enough that it encompasses many things, but maybe after the thesis is done or as you continue down the path... to think about what are some of those particular emotive spaces? What does night time do to us? What are those experiences? What are those particular emotive things beyond just general fear in particular? Or are there stories, narratives, which have existed throughout history that tell us about some of those experiences. I mean, I don't think necessarily that you have to put it in now but I would just be curious to hear about what particular emotions happen, or are there some that keep coming up, and then thinking about throughout history, are they archetypal or do they just happen in particular cultures. I think that would be exciting to read about.

EMT: Yes, I think that is a great idea. I've been researching more about Asian cultures and how they approach lighting. I read the book called "In Praise of Shadows" which talked about how because of the style of Japanese architecture which was styled due to local climate and local materials, it resulted in buildings that had a lot of darkness in the interior so they were much more willing to learn how to adapt to darkness and see the beauty in it rather than in our culture which is always trying to make things brighter and lighter. So I think I'm just hitting on that idea now and I wish I had all the time in the world to understand every culture. But I think it is something that I'll be pursuing for a long time.

CML: I know Scandanavian culture does the same thing. They have to deal with a lot of darkness. So I wonder how does their architecture shape their experience? And the thing I would say about winter, like when I was in Iceland this summer... I was in a fishing village near the Arctic Circle and one of the things they said about winter was that they always wanted snow because snow, in the darkness, means that they have light, because it creates a more luminous world for them. Without snow it's much darker. I thought that was really beautiful.

EMT: Yes. Well, I really appreciate you giving me your time to answer my questions. I think you gave me a lot to think about, so thank you.

CML: Oh yeah, it's a pleasure and keep me in touch with how the research goes. I would love to read your thesis.

Ron Kagawa and Laura Durham – City of Alexandria Department of
Parks and Recreation

ET: What is each of your focuses within the department? What are you both working on right now?

RK: Our division is part of the Department of Parks and Recreation. Our division is called Park Planning, Design and Capitol Development. We are responsible for all of the planning work, design, and capital projects work that this department produces. That doesn't mean that we only work on our own stuff. We work across the city with other departments and with other agencies. We do with Arlington County for example.

LD: And I guess the focus is on parks, clearly, and as Ron said we are across the board but as far as planning and design, and acquisition of open space. My position is a little different. I'm the City's Open Space Coordinator so that involves land acquisition and working really closely with planning and zoning on small area plans, making sure we have enough open space across the city, both public and private. The case of Tide Lock Park is the kind of case where we want open space that has a public access easement but it is still privately owned and maintained. And we're doing that more and more. But that's one role of what we do, is trying to make sure there are public spaces within the city that are amenities to the public.

RK: And remember we are a land-locked city. It's not like other jurisdictions that continue to go out and buy land. Everything here is privatized or public land already, so Laura has quite a challenge buying private land to make it public land.

LD: Yeah it's often built. So we'll buy buildings and tear them down to make a park, whereas nearby in Fairfax they are buying land, we're actually buying built land and restoring it to some sort of natural integrity.

ET: So if I wanted someone to take my plan seriously I would be going to the private owner to ask them if they wanted to put money into doing something with it?

LD: Yes. But I think in the context of the Waterfront Plan that there would be support for that. Especially since there is a public art plan along the waterfront too, and incorporating those things and historic interpretation as well. We do consider it as part of the Waterfront Park System.

ET: I wanted to know how you see this northern area changing in the future, with the power plant closing? Are there any plans?

LD: There are no plans for what it might turn into but there are a lot of ideas. That site is identified in the Open Space Master Plan to have some amount of open space. The idea is that we would be seeking some additional public open space, and that's the most I could say about it right now.

RK: There is a lot of discussion about it, but what people forget is that it is still private land. It's not really reasonable for us, as the city, to speculate on what's going to happen.

ET: Ron, since you have worked on Potomac Yard, I wanted to ask you about a mention of connecting the Waterfront Trail with the Potomac Yard by using the current railway that I saw in the Waterfront Small Area Plan. What can you tell me about that?

LD: That was at the very early charrette level of discussion, to keep that open as an opportunity. We don't have that right of way right now. That's really... when you look at a plan like the Waterfront Master Plan it is all ideas. It's about getting it on the table now so that if the opportunity ever arises we can pursue it.

ET: What do you think about the rail line that runs along Tide Lock Park, because it goes to Robinson Terminal North currently and it dead ends there? Is that something that you think will be closing in the long term future?

RK and L: It's not ours to say.

LD: Again, in the Waterfront Plan we have a vision for if and when it does close, doing some public art around that, maybe having a boxcar theater type of thing but that's all just ideas for seizing opportunities when they arise.

ET: In my plan I treated the rail line as if it would be closed.

LD: That's the circumstances that the plan treats it to.

ET: I wonder if there is anything about the northern neighborhood that I can't know through research that you can tell me about since you work in this area. I've learned about the MetroStage Theater and it seems to be an important hub to the area.

LD: That end of the waterfront is much less residential. It has much more office and some commercial space.

RK: It has changed over time from being slightly industrial. Now it has become commercial office space and restaurants.

LD: The one thing with Tide Lock Park itself is that from the street you don't know it's there at all. It's very privatized. So it's really an amenity for either the offices

themselves or the people who come to use the trail and happen to go that far up. A lot of the people who come to visit Old Town don't make it that far up. So a draw would be to make the whole trail... pulling people out of right around King Street and the Marina... and also how do you open it up from the street so that you have this public space along the water?

RK: Are you aware of whom the original designer for Canal Center was?

ET: No.

RK: It was designed by M. Paul Friedberg.

ET: I knew he did the center section but not the other spaces. He did the northern section as well?

RK: Yes and he did the lock itself as well.

LD: There was a condition that there would be a space for a museum. And it was a requirement of the development and we just never pursued it. The space wasn't adequate or for some reason it was never pursued. There was a condition in there... there was an intent to have it be a public amenity. If you pull up the case you would see that information. It might be archived, so you might have to do laser fiche or something.

RK: There is some development going on up there, including a grocery store.

LD: Harris Teeter will have some residential above it.

ET: With the park being open from dawn until dusk right now, how would it work to propose a park that stays open after dark to have night-time lighting as its draw?

LD: Because it's private property I think that is an option. Because it's a commercial property people aren't there after dark. Early on I think they did do a few concerts down there and I think the public art plan calls for lighting that area. If it were a City Park and City owned there would be a special process. But because it's private property it could be explored.

ET: Ron, I wanted to ask you as a landscape architect, because my thesis is about exploring how we use lighting in landscape architecture, what has your experience been in the past? How do firms... or how does the city address lighting in design? Is there room for it to be more artistic?

RK: To me it is interesting that you are doing this next to the river. I'm really interested in the fact that when we put bodies of water into the landscape is that what it does it that it brings the sky into the landscape in the daytime. At night is there a way to bring the night sky into the landscape and not have it be treated

as just a dark pool? If you look at things like the Oklahoma City Memorial by Sasaki Associates, that pool is probably 75 - 100 yards long and only about one-and-a-half inches deep. What's interesting about it is that it works in both the day and the night. It's a really powerful moment because, of course, of what happened there but also it has this different kind of meaning of seeing into the earth but seeing the sky at the same time. Think about the Vietnam Memorial. What's powerful about it is that you see yourself in the names, but at night you see yourself as a silhouette, you don't see your face. You're like a ghost in front of the wall instead of a person.

ET: Yes, that is part of what drew me to working with this site in the first place, was that I knew I wanted to work next to water.

RK: I think a lot of times we see projects come through and they are lit for security and less for evocative effect. However, if you look at the Wilson Bridge, that is an amazing lighting design.

LD: What about Van Alstine?

RK: We have a John Van Alstine sculpture in the city, right on King Street that we struggled mightily with how to light. It's an obelisk. It's in a highly trafficked area and if you put ground lights out there you will blind the pedestrians walking by. But also, you couldn't get the light to the top of the sculpture effectively. The

other thing was it made the bottom of the sculpture look like a rocket taking off. So if you go out there today you will see that there are very tall thin scansions that have lights that shine from the side of the sculpture. It was a difficult assignment.

LD: I think the process there, as a planner, was not fun. I mention Tide Lock Park as being a good area because there aren't residents there. A year after we installed the lighting on the sculpture we got calls from people complaining that they could see it from their windows. When you look at lighting you look at all the nice stuff but I'm always the stinker whose like, "Well..." because process wise it is a bigger picture. You have to be sensitive to all different kinds of dynamics.

RK: We did modify the lighting. Laura's talking about the policy side of it. Here we are a team working across the disciplines.

ET: So how does it typically work... do landscape architects typically design the lighting and then approach a lighting designer for more information on the technicalities or do they typically just turn it over to a lighting designer for both design and technicalities?

RK: It depends of the project. For the more practical things like parking lots and athletic fields there are certain standards we have to meet so it is less mood and character specific or aesthetic at all. We have to deal with light standards. But during my days in private practice, often times there was a connection between

the character of the space and ideas about what we wanted to do and a lot of times pictures of precedents and then we worked with true lighting designers, not electrical engineers.

LD: My outside perspective of working with firms tells me that often times there is a certain level of expertise in-house that gets you to a certain point.

ET: Do you think that often the lighting design was approached from the beginning or was it an afterthought?

RK: Ideally it's an integrated process. I can't say that it was either-or. The projects that I worked on typically were integrated and had very large project teams. It's driven a lot by the financial end of it. If you're working on a commercial space you have to be able to deal with it not just in the day time.

LD: From a policy angle, if you are providing something that is an amenity after dark then you have to look at the safety angle. If you're not providing enough lighting... there are all kinds of things that come into play and that's often where the afterthought comes in. People have grand visions but if they don't think about all of the pieces early on then they might have to install some safety lighting later that can ruin your grand vision. When it's open to the public you have to really think about those things. When it's private you can do what you want to do and take the risk.

RK: Candidly, sometimes we run into philosophical conflict with the police because there is a belief that it needs to be of greater intensity than we think practical. Another favorite in a lot of local governments is gas stations, where they want to light their canopy with an understanding that the more you light your pumps the safer people are. But that also means that the light is broadcast across much of the intersection which presents other conflicts with vehicles. It's the same thing with ATM machines. So it's a balance, are you making a safe place or maybe not? Actually the problem is that a lot people think it's the amount of foot-candles you have but really it's the lightness to darkness ratio. And what happens to your eyes when you go from a light space to a dark space... that focal length distortion.

ET: Yes, I've been reading about our ability to see at night depends on contrast and often we have problems with glare that make it harder to see at night. Do you think the types of lighting we have today is still outdated in that sense? Are we moving forward in embracing that research?

LD: It depends on who you talk to.

RK: Certainly in Arlington County the movement is to begin replacing mercury vapor lights with LEDs.

LD: The cheapest and easiest is often what you're going to get from government.

RK: In southern Florida the lights are often all blacked out from the ocean now because of sea turtles, it confuses them.

ET: Yes, it messes up their navigation.

RK: How is this going to make you a better landscape architect?

ET: Well, I think it has made me think deeper about how humans react to designed space and it's made me start getting into the mindset of trying to understand that relationship between material choice and human reaction in order to push it forward or do it in a better way rather than relying on a standard or something that is normally done. It's forced me to think about how people sense and receive certain materials and think about how to push that relationship forward to be better, more meaningful, or more sensory.

RK: I think a thesis is usually a culmination of what you have done to date or a stepping off point for something new but often there is a bit of both.

ET: Can you think of any sites that are wonderful that I need to research?

RK: I've always thought that landscapes should be lit, not lights themselves. The strip in Las Vegas is a light onto itself. The Monumental Core Plan in DC is a lit landscape. On Pennsylvania Avenue there are two sets of lights, the taller ones

and smaller ones that alternate. It's done for the perspective of the Capital. Then if you look at Reston, that's just a landscape that is lit because it needs to be. It doesn't have the same intent or character.

LD: To me, coming from Vermont, the ideal lighting is natural. It's the moon on the lake or on snow, or sun just at a certain time of day. How do you bring that to an urban area? Study that. How can you make that happen? That's an experience we don't get living in Alexandria.

ET: I'm glad you said that because my thesis has taken a shift to be a study of what it means to enjoy darkness, and how we can incorporate space that give people the opportunity to enjoy darkness.

LD: I think people who grew up in cities don't see it. Here you are looking at things, you aren't experiencing the sky.

ET: Yes a lot of the reading I have been doing has addressed that disconnection that people have with the universe due to not being able to see the sky and contemplate it.

LD: What is the view shed from Tide Lock Park?

ET: You can see the Washington Monument and the Capitol.

LD: That has such an impact too. That's always important, to consider the view shed.

The conversation continues by talking about the site design and ends with an invitation for Ron and Laura to come to the public presentation.

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