

THEORY STUDIES: ARCHETYPICAL ARTIFICIAL LIGHTING PRACTICES  
IN CONTEMPORARY INTERIOR DESIGN

A Thesis

Presented to the Faculty of the Graduate School  
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Master of Arts

by

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## ABSTRACT

This thesis focuses on identifying, classifying and naming unnamed artificial lighting archetypes in contemporary, professionally designed interiors that are derived from reiterative historical designs. The study is a component of the Intypes (Interior Archetypes) Research and Teaching Project established in 1997 at Cornell University. An Intype is an ideal example of a historical determined practice of design from which similar models are derived, emulated or reiterated.

In the 20<sup>th</sup> century lighting design became a field and an area of specialization in interior design, architecture and engineering. Lighting is a subject of many books and design literature often alludes to its importance. Many of the studies focus on the phenomenon of light itself, including issues related to perception and technical requirements. Although there are some case studies of individual projects, there is little scholarship about lighting for contract interior design. Accounts of the history of interior spaces primarily focus on lighting fixtures or light sources.

This study is one of the few of its kind; it creates a typology of the professional design and architectural practices of artificial lighting in interior spaces. The study identifies and documents lighting solutions that have been reiterated through time and contributes to a vocabulary for teaching and comparative analysis. This research offers practice-based research which may encourage design criticism and discourse in both academia and professional practice.

Eight artificial lighting Intypes—Color Flood, Follow Me, Float, Halo, Hot Spot, Light Body, Light Seam, Patches—were identified and classified based on a comprehensive survey of contemporary design trade magazines, scholarly articles, secondary sources and site visits of significant recently completed interiors. Each typology was developed by describing a practice's characteristic qualities and tracing its reiterations back historically. Only one of the lighting Intypes, Float, began appearing in articles in the 1920 era; Light Seam followed, but twenty years later in the 1940 decade. Follow Me, Patches and Halo began in the 1950 decade. The remainder of types, however, began in the 1960 and 1970 decades and experienced expanded growth in the 1990 era that accelerated in the 2000 to 2010 decade.

The lighting Intypes developed in this thesis were distributed in several practice types. All of the Intypes were used in residential settings, hospitality, retail design and public spaces/institutional. Overall, creative lighting expressions were found more often in hospitality, entertainment and retail venues where lighting contributes significantly to atmosphere and spectacle.

In addition to this research thesis, the Artificial Lighting Intypes developed in this study will be disseminated through the free and open website—[www.Intypes.Cornell.edu](http://www.Intypes.Cornell.edu)—a web-based research and teaching site that makes design history and contemporary practice accessible to academics, professionals and students.

## BIOGRAPHICAL SKETCH



Joanne Kwan grew up in the small city of Hong Kong, where the superiority of efficiency and economics in the fast paced city has left in her a longing for reawakening the different kinds of human emotions. Inspired by the sense of place she found in architecture and theatre design, Kwan studied interior design and received her Bachelor of Science in human environmental relations from Cornell University. She considers light as one of the most evocative elements of spatial design, thus leaped at this opportunity to further her studies about lighting practices in the immediate interior environment soon after under the guidance of professor Jan Jennings, Edward Intemann and Sabine Haenni.

To those who have given me light.

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CHAPTER 1  
**INTRODUCTION**

## **1.0 The Study**

This thesis focuses on identifying, classifying and naming unnamed artificial lighting archetypes in contemporary, professionally designed interiors that are derived from reiterative historical designs. The study is a component of the Intypes (Interior Archetypes) Research and Teaching Project established in 1997 at Cornell University. An Intype is an ideal example of a historical determined practice of design from which similar models are derived, emulated or reiterated.

### Chapter 1 Organization

This chapter includes (1.1) an introduction and premise of the study; (1.2) an overview of electric lighting design in architectural interiors; (1.3) a description of the Intypes Research and Teaching Project; (1.4) research protocol; (1.5) a general literature review; (1.6) analysis and summary of findings; (1.7) assessment of research.

### Thesis Organization

The first chapter (1.0) is followed by 8 chapters of newly named Intypes. Each Intypes chapter constitutes an argument for a particular archetypical practice, with a description of each type, its development traced through time summarized by a photographic sequence of examples of its application, and finally, with an analysis of the lighting practice's use and effect. Each Intypes chapter includes a literature review specific to chronological development of the Intype.

An Appendix includes: a glossary of terms; biographies of professional lighting designers; a brief account about Light Art that had a hand in introducing lighting for beyond basic illumination; and a short account of luminous architecture around the 1920 and 1930 decades

## **1.1 Introduction and Premise of the Study**

### Significance of the Study

According to a study conducted in 1948, eighty-seven percent of a person's perception comes through the eye; light is what enables us to see.<sup>1</sup> Lighting is one of the most important factors in environmental design. The spread of commercialized artificial lighting significantly changed the way buildings were designed in that architects are no longer limited by natural light. This allowed deeper buildings and windowless interiors. Artificial lighting dictates what we see and how we see objects. In addition to making our surroundings visible, lighting also has the capacity to direct and provide an "indefinable sense of mood and atmosphere" if used consciously and artistically. Because it is almost always there, many people rarely pay attention to the kind of lighting in an interior. Nonetheless, most of us have, at one time or another, encountered spaces in which the lighting is inappropriate in brightness, color or even direction, resulting in spaces that are too bright, too dim or "just not right." Artificial lighting, while not as tangible many other design elements, is an essential element to interior design. Some characterize lighting as the "x-factor" of successful interiors.<sup>2</sup>

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<sup>1</sup> Richard Kelly, "Light as Integral Part of Architecture," *College Art Journal* 12, no. 1 (Autumn, 1952), 26.

<sup>2</sup> Elizabeth Wilhide, *Lighting* (New York: Stewart, Tabori & Chang, 1998), 10.

Lighting design has become a field and an area of specialization in interior design, architecture and engineering. Lighting is a subject of many book-length studies, and design literature often alludes to its importance. Many of the studies focus on the phenomenon of light itself, including issues related to perception and technical requirements. Although there are some case studies of individual projects, there is little writing about lighting design or comparisons about how light has been used. Natural light, however, has received more attention, garnering more critical attention because of its much longer history. Accounts of lighting design in the history of interior spaces emphasis lighting fixtures or light sources, but rarely evaluate how these elements contribute to the design of the space. Early in his career the renowned lighting designer Richard Kelly pointed out that lighting design is both a science and an art.<sup>3</sup> Until recently lighting design has focused more on science rather than art.

### Implications of the Study

How does one begin to talk about or teach lighting as an integrated part of interior design, if there are few examples or references from which to draw? The frequently assumed existence of light, its intangible quality has made it a relatively difficult subject for many designers, students and professionals alike. This study is one of the few of its kind; it documents the professional practices of artificial lighting in interior spaces. The study identifies and documents lighting solutions that have been reiterated through time and contributes to a vocabulary for teaching and talking about lighting in interior design. This study also offers an alternate way to approach lighting design besides sketching, planned rendering or reflected ceiling plans. In offering practice-based

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<sup>3</sup> Kelly, "Light as Integral Part of Architecture," 30.

research about artificial lighting, this study may encourage criticism and dialogues in both academia and professional practice.

The thesis focuses on light as a design element; therefore, it includes all practice types, such as hospitality, retail, health care, workplace and residential design. Accordingly, the study acknowledges and offers insight into the fundamental qualities of light and the lighting practice.

### Parameters of the Study

This study was restricted to the examination of artificial lighting in professionally designed interiors that have been published in primary trade magazines and secondary sources. In particular, the research focused on the creative and expressive aspects of lighting in which lighting adds to the character or statement of interior space and design. In other words, the research topic extended beyond mere illumination and an understanding of lighting design solely through lighting fixtures and lamps.

## **1.2 An Overview of Electric Lighting Design in Architectural Interiors**

Electrical lighting was first commercialized for illuminating entire interiors in the early 1880s. Electric light brought safer, more controlled light into the interior and was symbolized as people's triumph over nature, as human intelligence tamed the light of fire and banished darkness from the interior.<sup>4</sup> Economically, safer electric lighting encouraged the extension of working hours after

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<sup>4</sup> Peter Weibel, "The Development of Light Art," *Light Art from Artificial Light: Light as a Medium in 20th and 21st Century Art*, Peter Weibel and Gregor Jansen, eds. (Ostfildern, Deutschland: Hatje Cantz, 2006), 97-98.

sundown. Initially, interior artificial lighting was promoted to increase productivity.<sup>5</sup> The technical expertise required for controlling and designing artificial light initially fell to illuminating engineers, and the Illuminating Engineering Society was founded in 1906. The Society, comprised primarily of employees of public utilities and lamp manufacturers, helped to write illumination guidelines and codes.<sup>6</sup> Much of the early 20<sup>th</sup> century lighting resulted from strictly functional agendas, but some architects, such as Louis Sullivan, made efforts to incorporate artificial lighting artfully into architecture. Sullivan's Auditorium Building (1886) in Chicago, Illinois was a good example of the artful mode. Some time had to pass before designers began to gain familiarity with this new medium.

#### Architectural Lighting in 1920 and 1930 Decades

Major early developments in architectural lighting primarily took place in the United States, major European cities and in large expositions. Large events such as Worlds Fairs were sites of some of the early creative explorations of lighting technology and techniques, especially the artificial lighting of buildings that became main spectacles at night.<sup>7</sup> Many of the artistic lighting attempts occurred on exteriors. Lighting also became an effective form of advertising. Outline lighting, colored floodlighting, and 'search-light techniques initially used for lighting exposition and fair buildings were later extended to being used for

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<sup>5</sup> Leslie Larson, *Lighting and its Design* (New York: Whitney Library of Design, 1964), 24.

<sup>6</sup> William Lam", *Architectural Lighting Magazine* (1 Mar. 2001) <http://www.archlighting.com/industry-news.asp?articleID=452234&sectionID=1315>. (accessed 31 July 2009)

<sup>7</sup> Dietrich Neumann, *Architecture of the Night: the Illuminated Building* (Munich, Germany: Prestel, 2002), 10-14, 20-21. Neumann's book also offers a detailed discussion of these expositions.



city buildings in the United States, peaking in the 1920 and 1930 decades. Efforts of integrating urban lighting elements with architecture in Europe in the same period resulted in lit architecture that was often comprised of blocks of glowing glass. The developments in architectural floodlighting in the United States and luminous architecture in Europe are well discussed in Dietrich Neumann's *Architecture of the Night*.

On the other hand, tubular light sources became commercialized in the 1930 decade, bringing in new forms of lighting. Concealed lighting practices also emerged as a method to highlight architectural shapes. The outbreak of the Second World War in 1939 in Europe, however, slowed most design activities and extinguished many installations of exterior architectural lighting in Europe and the United States.

By the end of the 1930 decade trade magazines, such as *Progressive Architecture*, *Architectural Record*, *Interior Design* and *Interiors* began publishing articles specifically addressing interior lighting. Beginning in 1937, *Architectural Record* devoted a section to showcasing lighting projects. *Interiors* also published a number of lighting articles beginning in 1940s. Articles about artificial lighting in *Interior Design*, on the other hand, did not appear until the 1970 decade.

### 1950 to 1980 Decades

When design activities resumed after the Second World War in 1945, economical fluorescent sources commercialized in the late 1930s became the standard for commercial and institution interior lighting. Interior lighting also gained more attention as windows previously acting as the primary source of

light and air gave way to mechanical air-conditioning and artificial lighting installed in the ceilings of many commercial buildings.<sup>8</sup> Luminaries incorporated different accessories such as lenses, filters and reflectors that perfected the control over the different kinds of light.<sup>9</sup> Metal halide lamps appeared in the 1960 decade and were used primarily for large public spaces.<sup>10</sup> In the meantime, concealed lighting practices continued to develop as architects manipulated architectural planes to incorporate lighting. Articles were also published in architectural magazines giving suggestions to interior lighting.

In the 1950 to 1970 period, a number of lighting professionals, often with a theatre design background, began to offer their services to the architecture industry.<sup>11</sup> Among these individuals, Abe Feder was the first to establish an independent architectural lighting practice.<sup>12</sup> Richard Kelly collaborated with many high profile architects of the time including Philip Johnson, Mies van der Rohe and later, Louis Kahn. Kelly's lighting for Mies' Van der Rohe's Seagram Building (1958) in New York City and Feder's design for the Fisher Building (1958), also in New York City. These famous examples helped lighting designers gain recognition throughout the 1960 decade. This group of lighting designers wrote and lectured on the artful design of lighting for effect and

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<sup>8</sup> John Pile, *A History of Interior Design*, 3<sup>rd</sup> ed. (London: Laurence King Publishing, 2009), 395.

<sup>9</sup> Mark Major, Jonathan Speirs and Anthony Tischhauser, *Made of Light: The Art of Light and Architecture* (Basel; Boston: Birkhäuser, 2004), 2-9.

<sup>10</sup> Metal halides produce a whiter light of higher luminance efficacy and good color rendition. See glossary at page 203.

<sup>11</sup> *International Lighting Design*, ed. Jeremy Myerson (London: Laurence King Publishing), 8.

<sup>12</sup> Neumann, *Architecture of the Night*, 229.

expression. Richard Kelly's *Lighting as an Integral Part of Architecture* (1952) outlined three categories of light, introducing a vocabulary for lighting design.<sup>13</sup> Lighting designer William Lam in *Perception and Light as Formgivers for Architecture* (1977) suggested that Kelly's three categories of lighting should be placed in the context of human activity and biological needs.<sup>14</sup> Kelly's and Lam's publications drew attention to the quality of illumination, rather than the more technical emphasis on foot candles. From the 1950 to 1970 era, these designers helped to establish architectural lighting design as a professional field. A new organization, the International Association of Lighting Designers (IALD), was founded in 1969.

In the latter part of the 1960s, Light Art and the growing number of discotheques demonstrated less conventional uses of light, notably colored light.<sup>15</sup> They encouraged seeing light as not only a design medium, but also its potential as a central attraction. For the most part, more conscious manipulation of interior lighting began in the late 1960 to early 1970 periods. Restaurants presented some of the early examples of lighting manipulation to create an "atmosphere" or to introduce a thematic environment.

The energy crises from 1973 to the mid-1980s revealed artificial lighting as an energy expenditure. New fluorescent lamps with improved color rendering encouraged the use of fluorescent lamps as economical light sources that were

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<sup>13</sup> Kelly, "Light as an Integral Part of Architecture," 25-26.

<sup>14</sup> William Lam, *Perception and Lighting as Formgivers for Architecture* (New York: Van Nostrand Reinhold, 1977), 14-30; Rudiger Ganslandt and Harald Hofmann, *Handbook of Lighting Design* (Ludenscheid, Germany: Erco, Leuchten GmbH, 1992), 117-118.

<sup>15</sup> see *Appendix B: A Brief Overview of Artificial Light in Art*.

comparable to incandescent lamps. Theatrical lighting effects significantly decreased during this period. The emphasis began to shift towards achieving better control over light and more refined solutions, and in the 1980 period the development of better electric ballasts for commercial dimming.<sup>16</sup> In the late 1980s, compact fluorescent lamps emerged and “revolutionized the lighting industry.”<sup>17</sup>

As the impact of the energy crisis subsided towards the mid-1980s, experimentations with lighting slowly resumed. Compared to the previous interest in light itself, designers moved toward using light more subtly and architecturally to enhance spatial composition and to accentuate form. Colored light also received more selective use. Lighting frequently helped break up large, potentially monotonous planes in modernist interiors.

#### 1990 to 2009

Interior lighting was given an extraordinary amount of attention through the 1990 decade. Designers found light to be an especially suitable medium for enhancing dynamic architectural forms in minimalist interiors. Efforts focused on practices that revealed light alone without showing the light sources, thereby better integrating light with architectural space. The rise of themed interiors and the concept of entertainment retail led to renewed attempts towards creating theatrical environments that relied on lighting.

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<sup>16</sup> Major, *Made of Light*, 9. In 1985, Phillips’ newly developed electric ballast became a commercial standard for dimming.

<sup>17</sup> Bill Williams, “A History of Light and Lighting,” Ed: 2.3 (2005).  
<http://www.mts.net/~william5/history/hol.htm>. Accessed Sept. 14, 2008.

Growing environmental concerns continued to shift lighting practices towards more sustainable options. A number of countries adopted standards and guidelines to systematically encourage environmentally sound building practices.<sup>18</sup> Energy-saving lighting solutions, including the artful employment of energy efficient light sources (mainly fluorescent lights) were increasingly explored across the various practice types. One of the most significant developments facilitating this movement was the introduction of the highly energy-efficient LED (light emitting diodes) into architectural use.<sup>19</sup>

The color properties of LED renewed interest in using colored lighting, sometimes of many different hues in designs. Its integrated color-changing potential gradually became more affordable, encouraging color-changing

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<sup>18</sup> In 1992, the Earth Summit was held in Rio de Janeiro marking the beginning of more concentrated discourses about more sustainable designs. In the United States' building industry, this new interest manifested in the establishment of the USGBC in 1993 and the first versions of the LEED (Leadership in Energy and Environmental Design) system in 1998 that began to set a standard for measuring sustainability in architecture projects. The 1992 Earth Summit also served as a catalyst for the HQE (Haute Qualité Environnementale) system in France and later the Green Star system in Australia (2003). The BREEAM (BRE Environmental Assessment Method) system was started in United Kingdom in 1990 and has extended to projects across Europe, and more recently to projects in the Gulf. Several other countries such as Japan, Spain and Australia also formed Green Building Councils that have in various ways promoted sustainable building practices.

<sup>19</sup> Light Emitting Diode (LED) is a semiconductor device which converts electricity into light. LED lighting has existed since the 1960s, but is just now beginning to appear in the residential market. At first white LEDs were only possible by "rainbow" groups of three LEDs—red, green, and blue—by controlling the current to each to yield an overall white light. This changed in 1993 when Nichia created a blue indium gallium chip with a phosphor coating that is used to create the wave shift necessary to emit white light from a single diode. This process is much less expensive for the amount of light generated.

effects. Early in the 21<sup>st</sup> century breakthroughs in control technology and developments of ultra-bright LED in terms of range of colors, luminaries and brightness presented a new energy-efficient light source that also had the advantage of small size and flexible configuration.<sup>20</sup> In addition to LED developments, constant improvements in fiber optics led to experimentations in its architectural applications, exploiting its properties of even distribution, flexible shape, lower cost and reduced heat sources.<sup>21</sup> Fiber optics, however, were overshadowed by LED that were becoming brighter.

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<sup>20</sup> Major, Speirs, Tischhaser, *Made of Light*, 9. Some important developments in LED, fiber optics and lighting control systems: 1) ultra bright LED (1985) the development of the LED is not just about color, but brightness, becoming twice as bright roughly every eighteen months. The first ultra-bright LED was red, then yellow and green developed. By 1990 the LED was available orange-red, orange and by 1995 blue and white. In 2002 exotic colours are available; 2) digital control (1999) Dynamic lighting replaces the on-off switching of individual lights and was based on digital control. Scenes and moods could be activated on demand or programmed. The Digital Addressable Lighting Interface (DALI) system was introduced and quickly followed by Internet Protocol (fibre optic) in 2004; 3) LED (2005) Lamps were whiter and varied in intensity, colours were more sustainable, efficient and affordable.

<sup>21</sup> Major, Speirs, Tischhaser, *Made of Light*, 9. Developments in fiber optics include: 1) fiber optics (1954) Narinder Kapany developed unclad fiber bundles for message and image transmission. Early glass fibers experience excessive transmission losses, limiting distances. Kapany coined the term “fiber optics” in 1956. The principal of “total internal reflectance” was known since John Tyndall demonstrated it in 1854 by shining a light at a jet of water flowing from a tank, which guides light down its fall; 2) fiber-optic wire (1970) Robert Maurer, Donald Keck and Peter Schultz developed single-mode pure fiber with a low loss of image that transmit light about a third of a mile. By 1990, fiber-optic technology was transmitting light more than 20 miles without a repeater. The light pipe is based on the same principle as fiber optics of total internal reflection. A single point source directs light into a hollow linear light guide to produce, lines of brilliant white or colored light. Made of extruded clear acrylic, a 250-watt metal halide lamp, has a life of approximately 10,000 hours. The entire length of a “pipe” emits light and one luminaire is required for every 44-foot run.

Despite LED developments, many examples of color light were executed through conventional fixtures, because designers had not gained extensive experience with the new LED technology. The more complex optics for many fixture types were still being refined and the quality of LED products were mixed.

The excitement about LED technology continued through the 2000 decade, by the end of which lighting employing LED appeared in all kinds of uses and often as substitutes for conventional lamps. Lighting is gaining an extraordinary amount of study and exploration, but the use of LED, especially for multi-colored and color-changing lighting, appear almost more of a trend resulting from novelty rather than the result of careful selection.

As with many new forms of technology, some time passes until new lighting technologies become more refined and integrated into mainstream use. Since its invention artificial lighting has shifted from functional uses to include theatrical applications in interior design applications.

### **1.3 The Intypes Research and Teaching Project**

The Intypes (Interior Archetypes) Research and Teaching Project at Cornell University creates a typology of contemporary interior design practices that are derived from reiterative historical designs that span time and style and cross cultural boundaries. The argument for the significance of a typology of historic and contemporary interior design practices is based on twelve years of experiments that has already produced approximately sixty archetypes developed by the principal investigators and graduate students. Intypes

identify contemporary design practices that have not been named, thereby providing designers with an interior-specific, history and contemporary design vocabulary. The project also offers an innovative approach to further design criticism and design sustainability. The Intypes Project produces a new knowledge base for the creative dimension of design. It is the first project of its kind to assemble contemporary design theory in a searchable database using primary source imagery. The key deliverable is its free and open web site—[www.intypes.cornell.edu](http://www.intypes.cornell.edu).<sup>22</sup>

Intypes represent ideal examples of a historical and culturally determined practice of design internationally; identify contemporary design practices that have not been named; provide designers with an interior-specific, history-specific, contemporary design-specific vocabulary; provide a new knowledge base for the creative dimension of design; and offer an innovative approach to further design criticism and sustainability studies.<sup>23</sup>

Contemporary design should be examined in ways other than style. The premise is that contemporary interior design practices have historical underpinnings that can be examined as a series of traits, suggesting continuities and sequences within the practice of restaurant design. This research is an original theoretical study for interior design. It is systematic and comprehensive and explores primary source material from trade magazines.<sup>24</sup>

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<sup>22</sup> Jan Jennings, "A Case for a Typology of Design: The Interior Archetypes Project," *Journal of Interior Design* 32, no. 3 (2007): 48-68; [www.intypes.cornell.edu](http://www.intypes.cornell.edu), accessed on Oct. 10, 2009.

<sup>23</sup> Jennings, "A Case for a Typology of Design," 48.

<sup>24</sup> Jennings, "A Case for a Typology of Design," 48-50.



#### **1.4 Research Protocol**

The research model includes three approaches. The project's methodological approach is the development of a typology of published professional designs of luxury apartment interiors. The theoretical approach draws from George Kubler's *The Shape of Time* that makes an argument for reiterative historic design traits that span time and cross cultural boundaries. The critical approach makes contemporary interior design practices of professional designers a subject of study.

##### Methodological Approach

Typology is concerned with aspects of human production, which can be grouped because of some inherent characteristics that make them similar. The theory of typology is thus that of conceptualizing those categories. An Interior Archetype is an organized body of knowledge about the typology of contemporary interior space that has been designed in recent decades. This research of contemporary apartments as one of practice types in Interior Archetype examines and identifies characteristic and continuous usages in by tracing a series of traits as a continuum back through several historic periods and across cultures.

The Intypes Project's methodological structure produces the first typology of interior design—a grouping of design productions in which some inherent characteristics make them similar. Initially, the project derives types from the published work of designers.

### Theoretical Approach

The methodological approach of the thesis is historical, theoretical, and critical. Thinking about design precedents as a continuum, or a series of replications, owes much to George Kubler's *The Shape of Time*. Kubler believes that every important work can be regarded both as historical event and as a hard-won solution to some problem. To him, every solution links to a problem to which there have been other solutions. As the solutions accumulate, a conception of a sequence forms. The boundaries of a sequence are marked out by the linked solutions describing early and late stages of effort upon a problem. In the long run, a sequence may serve as scaffolding for new design.<sup>25</sup> Other theorists, such as Robert Maxwell approach design history similarly. According to Maxwell, the dialectic of the new and old is a complex one, "for within the new there is something of the old, which precisely renders the new recognizable; and within the old the new is already pregnant."<sup>26</sup>

The structure of Kubler and Maxwell's methodological approach proves useful for modeling interior design precedents. Some sequences of historical or theoretical solutions may come and go over time but many become so powerful that they represent continuity. The Archetypes become the basis for understanding the relationship between contemporary design and historic precedents in interior design.<sup>27</sup>

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<sup>25</sup> George Kubler, *The Shape of Time: Remarks on the History of Things* (New Heaven, Conn.: Yale University Press, 1962), 31-82 in Jennings, "A Case for a Typology of Design," 49.

<sup>26</sup> Robert Maxwell, *Polemics. The Two Way Stretch: Modernism: Tradition and Innovation* (London: Academy Editions, 1996), 12 in Jennings, "A Case for a Typology of Design," 48-68.

<sup>27</sup> Jan Jennings, "Dialectic of New and Old: Theory Investigations in Studio Design," *Interiors and Sources* (March 2003): 74-77.

### Research Protocol

To discover that body of knowledge the principal investigator and graduate student researchers undertake seven different approaches:

- 1) A content review and analysis of approximately 1,100 issues of trade magazines (primary sources) and secondary source materials. Research begins with tracing a series of design practices by conducting content surveys in primary sources, such as *Interior Design*, *Architectural Record* and *Hospitality Design*.
- 2) Identifying composites of traits that typify (through time) a dominant characteristic that has been used repeatedly by designers as interior architecture or design;
- 3) Isolating these traits by naming and defining them and illustrating examples chronologically;
- 4) Preliminary development and proposal (draft stage) of specific Intypes;
- 5) On-site field studies to various cities to test the Intypes developed from photographs in trade magazines against built projects;
- 6) Revising the Intypes based on observational evidence.<sup>28</sup>

Although an Intypes researcher may begin looking for design traits historically, moving to present, or examining traits from the present backwards, I used the latter approach, beginning with artificial lighting in contemporary interiors and tracing them back in time. Initial image groupings went through many transformations throughout the process. The images collected either

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<sup>28</sup> Jennings, "A Case for a Typology of Design," 53-55.

reinforced earlier hypotheses or led to the shifting, combining, and discarding of others. Visual analysis interprets the characters by descriptive writing and explicit icons and is solidified by giving the archetype a distinct name. Evidence to establish an Intype includes a visual and chronological summary.

In stages 3 and 4 of the protocol, the assembled traits are defined and given preliminary names. Naming an archetypical practice is one of the most significant responsibilities of the research group. A thumbnail-sized icon, a representative and visual symbol of an Intype, is paired with an Intype word as a mnemonic device (a visual and auditory memory aid). Mnemonics rely on associations between easy-to-remember constructs that can be related back to the data that is to be remembered. This is based on the principle that the human mind much more easily remembers spatial, personal, surprising, sexual or humorous or otherwise meaningful information than arbitrary sequences.

Although the research group may come to an agreement that an effective argument has been made for a typological name, the naming process extends until a term becomes unforgettable, an irrevocable link between word and image in one's mind. Like a term in a dictionary, when an Intype word is used

by students or professionals without explanation or translation or gloss, it is considered an accepted part of design language.<sup>30</sup>

Naming some of the artificial lighting Intypes proved difficult, because there was little agreement among the Intypes Research Group and my thesis committee members. Light Body was the most difficult; although everyone agreed that the research proved an interior archetypical practice, there was little agreement about the name. At my thesis defense we agreed to call it Illuminating Body, but the name did not trip off one's tongue. It was difficult to remember, so the name was changed to Light Body. The Intype Float also went through several versions of names; Float is a weight-bearing floor plane comprised of a translucent material that is lit from below, giving an unnatural effect. The group settled on Float to express the effect of the practice on humans. Previous Intypes research also identified and named lighting Intypes, but the only one I used for this study was Light Seam which initially came from the retail practice type.<sup>31</sup>

In stage 5 of the research protocol, a researcher makes observational field studies in various locations to test and compare typologies derived from print-based photographs with built (real) projects. I chose to visit Las Vegas, Nevada in the United States and Macau Island, China (sometimes referred to

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<sup>30</sup> Jan Jennings, "Naming Design Practices: Producing a Body of Knowledge of the Creative Dimension of Interior Design," *Communicating (by) Design* (Brussels, Belgium: Sint Lucas School of Architecture in Brussels, Belgium and Department of Architecture at the Chalmers University of Technology in Göteborg, Sweden, 2009), 145-50.

<sup>31</sup> Leah Scolere, "Theory Studies: Contemporary Retail Design" (M.A. Thesis, Cornell University, 2004), 28-30.

as the “Asian Las Vegas”), because lighting in hospitality venues in both locations have been at the leading edge of lighting design developments.

In the final stage of the research protocol, the proposed Intypes were revised by collaboration with my thesis committee, the Intypes Research Group and other graduate student researchers.

### **1.5 General Literature Review**

The literature review describes and characterizes seminal, primary and secondary source research and offers critical observations about the sources’ usefulness to this thesis. The essay is divided into two sections—primary and secondary sources. This summary of literature is general, because each Intypes chapter has a specific chronological literature.

Historians use a wide variety of sources to answer questions about the past. In their research, design history scholars use both primary sources and secondary sources. A primary source is a document or physical object which was written or created during the time under study. These sources were present during an experience or time period and offer an inside view of a particular event.

Primary sources may include letters, manuscripts, diaries, journals, magazines, newspapers, speeches, interviews, memoirs, documents produced by government agencies, photographs, audio recordings, moving pictures or video recordings, research data, and objects or artifacts such as

works of art or ancient roads, buildings and tools. These sources serve as the raw material to interpret the past, and when they are used along with previous interpretations by historians, they provide the resources necessary for historical research.

### Primary Sources for the Intypes Project

Interior design is temporally limited. In contract design an installation remains approximately seven years, less for hospitality design in a good economy. Therefore, design and architectural trade magazines, and the photographs that were published there, provide a evidence as a longitudinal record of contract work and is considered a primary source.

*Interior Design* is one of the most important trade-magazines within the interior design industry, having published more than 1,000 issues since 1932. The magazine's longevity makes it an excellent resource in tracing and evaluating the chronological direction of design traits over time. Positioned at the leading edge of the industry soon after its inception, the magazine has a long history of illustrating significant professional design work. With its large audience base, the magazine can be said to have helped shape the definition of interior design. Being published in the magazine garners attention to a project and its designers. *Interior Design* is also the most comprehensive among publications focused on the interior, covering projects from a wide range of practice areas. The broad view it offers is also crucial to drawing connections across a variety of practice types in the investigation of light practices.

One of the most valuable aspects of *Interior Design* is the richness of its photographic images. In the Intypes protocol, these photographs constitute one of the most important pieces of evidence for the identification of archetypical artificial lighting practices.

For this study, it should be noted that lighting effects rarely stood as centers of attention in the published work; therefore, lighting effects received little written description. Another difficulty in identifying lighting archetypes from design trade magazines is the practice of architectural photographers to light the space under extraordinary conditions, for example, when people are not present, or when additional photographic lighting is added to the space. In the latter issue, photographic lighting sometimes obscured archetypical lighting design practices, or at the least, made them difficult to identify. From time to time, *Interior Design* ran a series of articles titled “Lighting Design”, but these were not entirely useful for the parameters of this study, because they focused on technical aspects, such as sources and techniques. They rarely showed examples to illustrate the use. By the end of the twentieth century, *Interior Design* observed that it favored a number of prominent firms; in 2008 the magazine announced that it would redirect its efforts to be more inclusive. With the publication of projects from less prominent firms, identification and classification of typological practices becomes more viable.

*Architectural Record*, like *Interior Design*, is one of the most recognized trade magazines within the architectural industry, with over 110 years of publication. Projects are usually more architectural in nature and larger in scope than *Interior Design*. The language is more formal and a greater emphasis is placed



on technical and theoretical analysis. There is also a greater interest in construction details in comparison to *Interior Design*.

Apart from featured projects, each issue of *Architectural Record* since 1937 also contains a building types study, offering an opportunity for comparing similar projects in size or practice area. Recently *Record* expanded its building types section to include interior design projects that, in comparison to those in *Interior Design*, are often more architecturally expressive. Perhaps due to its emphasis on architectural form, lighting in project photographs are frequently more integrated into the architecture in terms of its form and effect than lighting practices in projects published in *Interior Design*. In four issues a year, *Architectural Record* devotes a special section to lighting, showcasing outstanding or innovative architectural lighting projects. The detailed description of how lighting is executed in these projects proved helpful for gaining a better understanding of developments in lighting techniques. Finally, it is my impression that *Architectural Record* may include more international coverage compared to *Interior Design*.

*Architectural Lighting* is one of the most recognized trade magazines of the architectural lighting design industry. First issued in 1986, it is published bi-monthly and also publishes a web edition. The magazine focuses primarily on technical details for lighting professionals, such as lighting designers and engineers. The “Technique and Technology” section in *Architectural Lighting* identifies issues and technological developments which formed the basis of design solutions. About half of each *Architectural Lighting* issue is dedicated to industry news and discussions, while the other half features three to four

projects. Both interior and exterior lighting projects are published with an emphasis on lighting's integration into the design concept and technical detailing of these solutions. Architectural forms and some design solutions are less obvious to the eye, creating another difficulty in the identification of archetypical lighting practices.

*Lichtbericht* is a quarterly publication by the German lighting manufacturer Erco. In publication since 1977, *Lichtbericht* was previously available in German only, but since 1993, English translations have been included. Apart from short descriptions of individual projects, the publication is more technology-oriented in comparison to *Interior Design* and *Architectural Record*. In writing, approach and content, *Lichtbericht* is similar to *Architectural Lighting* with projects selected more for their lighting solutions than interior or architectural design. Nevertheless, *Lichtbericht* was a valuable resource for this study, because of its international scope.

*Interiors*, another long-standing interior design magazine, was published bi-monthly. It ceased publication as a trade magazine in 2006, and is now published as a popular shelter or lifestyle magazine. It started as a magazine for industrial and interior design. Issues in the early decades had a greater focus on architectural analysis, but the magazine became less comprehensive over time. In recent decades, *Interiors* concentrated on projects from high-end hospitality, retail and residential design, overlooking corporate and institutional projects. *Interiors* was a viable source for this research, particularly in hospitality, retail and residential design, but no issues were reviewed after 2006.

## Secondary Sources

A range of topics, from practical handbooks to architectural theory, from cultural analyses to literature and film, were considered in secondary source materials. The approach could roughly be divided into three kinds: 1) commentaries on lighting qualities in individual cases to reveal potentials of light, 2) reference oriented writings that have a more technical emphasis and aim to give advice to how to design with light, and 3) compilations that introduce a historical perspective to lighting.

### Secondary Sources—Artificial Light

Richard Kelly's *Light as an Integrated Part of Architecture* (1952) grew from a 1948 article in which he first proposed designing with three categories of light—focal glow, ambient luminance and play of brilliants. Kelly's proposal was significant in creating a language and suggesting a methodology for architectural lighting design, thus formalizing its professional practice.

*Lighting and Its Design* (1964) by lighting designer Leslie Larson reviewed the role of lighting people, reliability of lighting guidelines and effectiveness of popular practices, such as the luminous ceiling. To illustrate his point, the last section includes brief reviews and in-depth evaluations of both problematic and effective lighting projects, including Frank Lloyd Wright's Guggenheim Museum in New York City.

The *Handbook of Lighting Design* by Rudiger Ganslandt and Harald Hofmann, published in 1992 by the German companies Erco (a leading German architecture lighting manufacturer) and Viewleg & Sohn Verlagsgesellschaft,

provides a comprehensive introduction to the architectural lighting industry that remains relevant today.<sup>32</sup> Taking a more scientific approach, the book is divided into four sections: history; basic tools and concepts; theoretical approaches and processes; and examples in various spaces. *Handbook of Lighting Design* provides an overview of Richard Kelly's and William Lam's theories in lighting design, including suggestions to approaching the topic and ways to analyze different lighting practices. The context-free analysis of qualities of light provides an important inventory of basic visual effects and interactions of lighting with its surroundings. The book also addresses visual perception as both a physiological and psychological process. The examples of lighting concepts provide excellent explanations to the functional criteria for lighting in different spaces. The book is also useful for analyzing many lighting practices that first emerged from practical requirements.

For specific practice-type lighting examples, I read Elizabeth Wilhide's *Lighting: A Design Source Book* (1998); Janet Turner's two books, *Designing with Light: Retail Spaces—Lighting Solutions for Shops* (1998) and *Designing with Light: Public Spaces—Lighting Solutions for Exhibitions, Museums and Historic Spaces* (1998); and Jill Entwistle's *Designing with Light: Hotels* (2000). Issues unique to different practice areas and their sub-categories were identified as case-studies, and while not analyzed in great depths, nevertheless, provided some examples. Wilhide's source book also gave brief descriptions of the different forms of light and their effects.

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<sup>32</sup> This handbook is available for view on [http://www.erco.com/news/en/en\\_frameset\\_news.htm](http://www.erco.com/news/en/en_frameset_news.htm) (accessed on Dec 10<sup>th</sup>, 2009)

*Made of Light: the Art of Light and Architecture* (2004) by practicing lighting designers Mark Major, Jonathan Speirs and Anthony Tishhauser was especially informative in providing a timeline of developments in lighting and control technology, as well as their uses in architecture. The focus, however, of *Made of Light*, is more about architecture rather than interior design. The book discusses lighting more broadly than Turner's practice based approach. Instead of the functional and technical aspects of lighting, the authors also enumerated various qualities that contribute to artificial lighting effects, including contrast, surface, color, boundary, scale, and movement, and each is illustrated with examples.

The idea of light being as a visual art is addressed in *Light Art from Artificial Light*, edited by Peter Weibel and Gregory Jansen. It is also a exhibition catalog accompanying the 2005-2006 exhibition in ZKM Museum of Contemporary Art, Karlsruhe, Germany. The book contains a detailed introduction to the origins and development of light art as an independent field. The selected essays by light artists and art critics introduce the various approaches groups of artists take towards the subject, for instance using fluorescent sources, neon, the ZERO group's works in 1966, light spaces and light kinetics. The book addresses more than the individual pieces and their significance, but explores the science, philosophy and cultural history behind light art. It is also a good resource for documentation of different art pieces through time. The information is most relevant to the intype Color Flood but also serves as an important resource for the alternate approaches to lighting as experiential element.

Refer to [http://hosting.zkm.de/lightart/stories/storyReader\\$7](http://hosting.zkm.de/lightart/stories/storyReader$7) for more information on the exhibition.

### Secondary Sources—Poetic and Natural Light

*Concepts and Practice of Architectural Daylighting* (1985) by Fuller Moore is a technical guidebook that addresses all aspects of planning solutions. The illustrations are especially effective for explaining technical concepts. Concise analyses of pre-modern adaptations to natural light, suggestions about fenestration strategies and finely detailed technical analyses of some of Alvar Aalto's projects promote an understanding of how daylighting solutions are manifested in architectural form.

*Light Revealing Architecture* (1996) by Marietta S. Millet offers a comprehensive examination of the poetic and the visual potentials of light as a spatial element. Millet investigates the phenomenon of light and its relation to human experience, manipulative effects in its interaction with form, as well as spatial instances of potentially universal meaning. The way Millet organized the book offers a variety of ways to group the analysis of lighting practices. The book is also useful for specialized lighting terminology, such as *sfumato* (one of the four canonical painting modes of the Renaissance) and specific lighting practices, such as Le Corbusier's *pans-de-verre* and *brise-soleil*. The book begins with a caution about characterizing lighting experiences and defining meanings as highly variable from person to person. The final section about "divine light" acknowledges the still not fully-understood universal potentials of lighting, suggesting that lighting frequently does not have a one-to-one practice-effect relationship.

*Chambers for a Memory Palace* by Charles Moore and Donlyn Lyndon (1996) is another poetic exploration about how elements of architecture create experiences that define a place—a space that is memorable. The analysis is introductory in nature, and while insightful, it is intended only to induce an appreciation of natural lighting and space. The study of qualities of natural light can be directly traced to Richard Kelly's description of three uses of light derived from their qualities.

Henry Plummer's publications about lighting largely focus on daylight and a broad phenomenology of light in culturally based architecture. *Poetics of Light* (1987) and *Light in Japanese Architecture* (1995) describe lighting effects in historic western architecture and Japanese architecture respectively. Some examples examined in *Poetics of Light* describe examples of light chambers and effects of *chiaroscuro* (an art term for a contrast between light and dark). While the concepts explored in all three books focus on natural lighting, it is foreseeable that these concepts may become relevant in artificial lighting conditions as well. Each chapter in *Light in Japanese Architecture* illustrates an individual concept and provides both historic and contemporary examples, although not enough examples are provided to form a continuum through time. A limitation is that contemporary examples are mostly works of a handful of recognized architects. Concentrating on the more poetic qualities of lighting also makes the study more susceptible to subjective interpretation, an important concern when identifying archetypical practices. Plummer also suggests the possibility of seeing light as a sequence, instead of isolated moments, adding the dimension of time to the analysis of design practices. He

also discusses the possibility of connecting geography and culture to the interpretation of light, an approach relevant to natural lighting traits. Plummer's notions about shadows are largely derived from Junichiro Tanizaki's *In Praise of Shadows*. Plummer believes that studying shadow is just as important as the lighting source.

Henry Plummer's latest book, *Masters of Light: First Volume, Twentieth-Century Pioneers* (2003), proposes a list of concepts that are examined in individual case studies of famous architectural projects, such as Frank Lloyd Wright's Johnson Wax Building and Louis Khan's Kimball Art Museum. These provide insight into common issues that make the buildings extraordinary.

*In Praise of Shadows* by Japanese writer Junichiro Tanizaki is a non-design-oriented essay offering criticism about the contemporary obsession with light. Tanizaki points out the merits of shadows as the counterpart to light and suggests that there is a cultural bias in contemporary lighting practices that begs to be scrutinized. Tanizaki also promotes the effects of lighting in conjunction with materials in a predominantly dark environment.

#### Secondary Sources—History and Theory of Lighting

*A History of Interior Design* (2000) by John Pile gives a summary of the light sources used in various periods. It also is information about the larger social and technological contexts of architectural development at the time.

A couple of general design theory books were helpful in analyzing the different lighting effects, including Thomas Thiis-Evenson's *Archetypes in Architecture*



(1987), Francis D.K. Ching's *Interior Design Illustrated* (2005) and *Architecture, Form, Space & Order. Archetypes in Architecture* (2007) describes the dynamic properties of wall, roof and floor and provides insight into the directional effects of different lighting practices. Thiis-Evensen's examination of the motion qualities of color adds to the understanding of colored lighting effects. Ching's two books are good introductions to the basic design elements and principles.

*Color in Interior Design and Architecture* (1989) by Robert F. Ladau, Brent K. Smith, Jennifer Place gives a good explanation of color as a quality derived from light. It also provides good examples illustrating the effects of color and light. I am nonetheless doubtful about a few sections of the book which address the more technical aspects of colored lighting; for example, the the effects of light in different wavelengths on people.

#### Secondary Sources—Intypes Theses

Previous theses by Intypes graduate student researchers at Cornell University were very helpful to this study. Each thesis title and author are credited in separate Intypes chapters.

### **1.6 Analysis and Summary of Findings**

This thesis research resulted in the identification, naming and development of a preponderance of evidence about eight archetypical artificial lighting practices: Color Flood, Float, Follow Me, Halo, Hotspot, Light Body, Light Seam and Patches .

Overall, a more conscious lighting design in professionally published interiors began in the 1960 and 1970 decades, experiencing expanded growth in the 1990 era that accelerated in the 2000 to 2010 decade. (Figure 1.1) The growing interest, accumulated experience and constantly improving technology led to an unprecedented variety of lighting practices and more refined designs that often exhibited a balance among lighting for illumination, direction and spectacle.

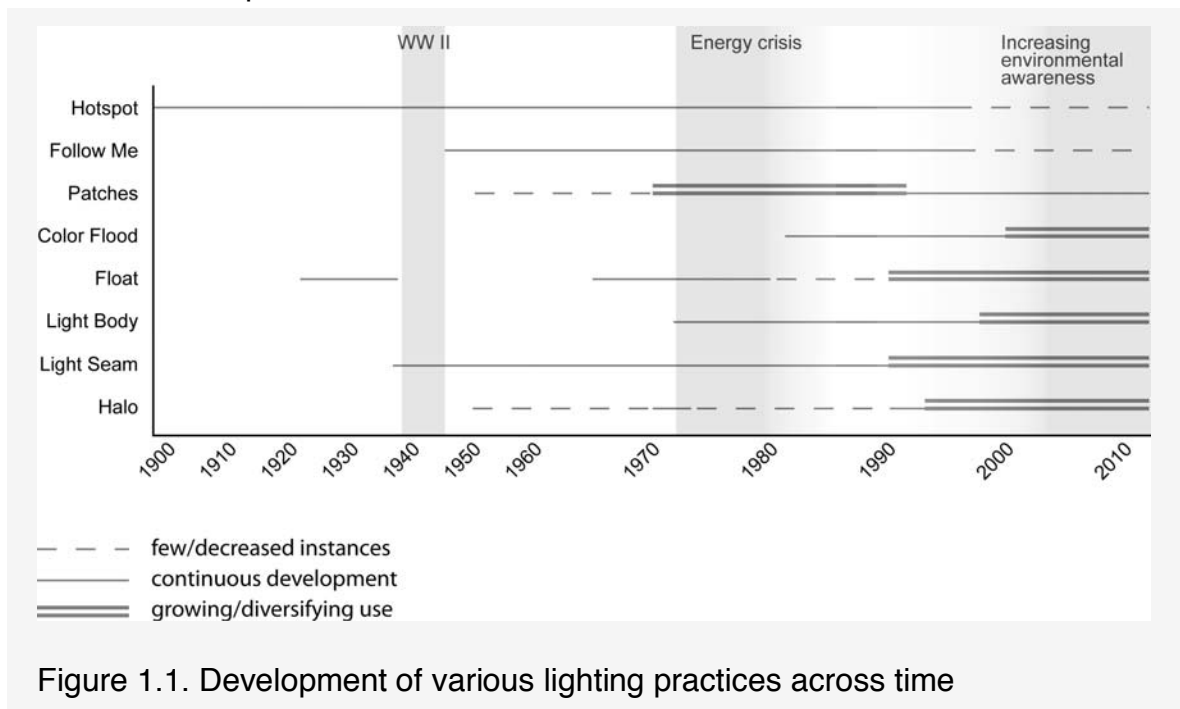


Figure 1 indicates that energy concerns and technical developments (often resulting from energy-related concerns) significantly influenced the use of light sources. Further, all the lighting Intypes for this study primarily developed during periods of energy awareness or crises. For example, the invention of more economical fluorescent sources promoted practices using tubular lamps, as found in Light Seam and Halo. The introduction of new kinds of energy efficient sources, such as LED and fiber optics, popularized or reinterpreted

practices that were previously less common, such as Color Flood and Light Body. The shifting emphasis to energy-efficient sources also affects other long-standing practices, such as Hotspot and Follow Me.

Comparing the uses and effects of different lighting practices suggests two directions in design: architectural lighting and theatrical lighting. (Table 1.1) The former accentuates architectural forms and appears most frequently as even, white light applications (Light Seam, Halo, Light Body). The second category often intends to elicit a human response; these are sometimes described as theatrical, impressionistic, expressive or evocative lighting practices that may become attractions on their own because of unusual colors, directionality, or unique distributions. Examples of this genre include Color Flood, Hotspot and Follow Me. In the case of Color Flood, the emotive impact results from the unusual condition of flooding a room with a monochromatic color. While architectural lighting emphasizes interior forms and shapes, theatrical lighting practices draw attention away from architecture. The architectural and theatrical qualities are not mutually exclusive. For example, Float (a large lit floor), the emphasis is directed to the floor plane, but the effect is highly dramatic resulting from the light's unique direction. Similarly, the Light Seams in Tadao Ando's Armarni headquarters created an effect that goes beyond just highlighting architecture.

Table 1.1. Spatial Character of Artificial Lighting Practices

	Hotspot	Follow Me	Patches	Color Flood	Float	Light Body	Light Seam	Halo
Architectural (emphasizes interior architectural forms)					•	•	•	•
Non-Architectural (Does not emphasize architecture)	•	•	•	•				
Spectacle (the focus)			•	•	•	•		
Directs Movement	•	•						

As lighting plays a large role in guiding attention, the choice of the kind of lighting practice directly relates to how much emphasis is placed on the architectural form of the space. The emphasis of many architects in formal expression has led to their choosing lighting practices that accentuate physical architecture; while the other more theatrical lighting effects, especially when employing colored light, have at times been perceived as being less sophisticated or related to theming.

The lighting Intypes developed in this thesis are distributed in several practice types. (Table 1.2) Although the different conditions of each practice area presents a unique set of allowances and restrictions, practice areas with similar design goals tend to share more lighting techniques (e.g. compare hospitality area with bar and lounge establishments). Overall, creative lighting expressions are found more often in hospitality, entertainment and retail

venues where lighting contributes significantly to atmosphere and spectacle that occupy a high design priority.

Table 1.2. *Lighting practices distributed by practice types*

	Hotspot	Follow Me	Patches	Color Flood	Float	Luminous Body	Light Seam	Halo
Residential	...	..	.	.	.	.	.	.
Hospitality	..	..	..	...	..	.	..	.
Bar, lounge & nightclubs	..		..	...	..	..	.	.
Restaurants	..	.	...	..		.	..	.
Retail	.	.	..	.	.	..	...	..
Showrooms	.	.	..			..	.	
Corporate	.	..	.		.	..	...	..
Public spaces/ Institutional	.	..	.	.		...	...	.

- has been found
- .. quite common
- ... most frequently found

## 1.7 Assessment of Research

A main challenge encountered during the research process was the reliability of architectural photographs to effectively convey artificial lighting effects. The number of such photographs diminishes to significantly smaller examples in earlier decades when the design trade magazines were published in black and

white . In this period, it appears likely that photographic lighting was added, identifiable by unusual shadows or ambient light that come from unseen sources.

Overall, professional architectural photographs are also sometimes taken from unusual vantage points, and often without people in them so as to emphasize the architectural setting. It therefore becomes less informative about how the lighting affects people's appearances and how people relate to the designs. When the photograph lacked the necessary information to determine a lighting practice, an accompanying project description provided assistance. This researcher also made some determinations based on personal experience and/or observation of real projects. In this sense, actively comparing previous observations with magazine photographs is sometimes crucial for the Intype scholar to identify practices.

Examining photographs addresses lighting shown in a static position, leaving out effects of lighting experienced in a connected and choreographed sequence. In other words, artificial lighting conditions interact with natural light and/or with movement between one space and another. I recommend the inclusion of video clips for the Intypes web site to capture sequences of movement and changes through time.

I also recommend follow-up research about the use of luminous faces and elements that will continue to increase as the more energy efficient discharge lamps and LED continue to develop. In this thesis I have introduced the Light

Body practice, but the use of different combinations of luminous planes is worth much more inspection.

### An Unproved Intype—Multicolored Lighting Applications

In *Architecture of the Night*, architectural historian Dietrich Neumann notes “...the art of architectural illumination has suffered more than other historical phenomena from an astonishingly thorough, collective amnesia.”<sup>33</sup> Perhaps this could be said of colored light applications which seem to go through the cycle of being largely abandoned and then rediscovered as a “new” trend every now and then.

Like fashion, the combinations of multi-colored lights during each period of interest are different, and so are the forms in which they manifested. Multicolored light applications in the 1990 to 2010 period appear much more architectural than that in the 1960 to 1970 era. The color combinations are also different. The 1960 to 1970 group was dominated by the use of a few saturated primary colors together, but by the mid-1980 to 1990 period, there were occasional combinations of blue and red. Since the late 1990 decade, the coming together of multiple colors from a wide array of various hues and saturations were brought about by developments in LED technology. From the early excitement about colored light itself, painterly colored light applications have been left behind in favor of more architectural appearances. Although colored light was in general connected to fantasy or themed entertainments, its diverse appearances were not consistent enough to be identified as an Intype. The most recent interest in colored light also seem to be driven by the

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<sup>33</sup> Neumann, *Architecture of the Night*, 6.

novelty of LED technology which may not last over time. On the other hand, the diverse appearances may also indicate that color as a property of light has not been much explored in architectural lighting practices, a topic that would perhaps mature in time.

### Conclusion

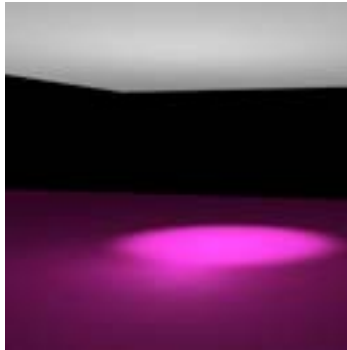
In taking a typological approach towards naming unnamed artificial lighting practices, this study applies a conventional methodology to the study of lighting practices in interior design. Together with the other Intypes research, a new vocabulary and a new knowledge base are now open for use and criticism. For students especially, this project presents an alternative way to conceptualize and to understand lighting design. The artificial lighting Intypes also give concrete examples as to how light can be used to support designs in addition to basic illumination. Some of the lighting Intypes identified and named in this study can also be evaluated in terms of energy consumption. The history of an Intype offers evidence about its longevity, and therefore, provides some measure about how entrenched a practice is in the culture. This knowledge might imply how easily or how difficult it would be to quit using a practice judged to be environmentally unsustainable.

As a field with relatively short history, lighting design does not yet have a well-established, comprehensive vocabulary. This research adds to the lighting design vocabulary and encourages a better connection between lighting design and interior design.



On a personal level, writing about lighting has instilled in me the habit of paying conscious attention to lighting in my everyday encounters. Besides distinct lighting traits, a large proportion of lighting decisions often remain unnoticed as we have become so accustomed to artificially lit environments. The habit of actively taking note, evaluating and comparing lighting in different spaces during my research process has improved my understanding and appreciation for interior lighting design.

Beyond lighting, this research project also provided me with a context to study interior design history. Although this study focused on lighting practices, the wide range of research that I read, reviewed and analyzed has deepened my understanding about the interrelations among history, culture and design.



## CHAPTER 2

### **HOTSPOT**

## Hotspot

### Definition

Hotspot is an isolated pool of bright downlight that operates in contrast to its surroundings. Hotspot encourages a pause in movement and collection around or within it. It is achieved with a single spot light or a single fixture on a light track.

### Effect

Lighting artist Richard Kelly noted that a major apparent light area below eye-level induces “a feeling of individual human importance.”<sup>34</sup> A Hotspot can delineate a separate volume in the space; it can define place by creating a “private and intimate realm” without interior walls. In *Light Revealing Space*, author Marietta Millet argues that a single pool of light in a dark space can be regarded as a maker of a room, the most basic definition of “inside.”<sup>35</sup> In the words of theorist Thomas Thiis-Evensen a single pool of light in a dark space embodies the qualities of a “centrum,” the place holding the essence of the space; Thiis-Evensen believes that this lighting practice offers the greatest sense of security and control. A centrum distinguishes inside from outside, denotes arrival at “here” from “there” and invokes the ultimate secure interior

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<sup>34</sup> Richard Kelly, “Lighting as an Integral Part of Architecture,” *College Art Journal* 12, no. 1 (Autumn 1952), 30.

<sup>35</sup> Marietta Millet, *Light Revealing Architecture* (New York: Van Nostrand Reinhold, 1996), 94-95, 102; quoting from Per Olaf Fjeld, *Sverre Fehn, The Thought of Construction* (New York: Rizzoli, 1983), 50.

from the attacking exterior.<sup>36</sup> There are two aspects to experiencing the isolated place created by Hotspot lighting: from inside the light and from the outside. This can be explored in the sequence of movement from outside the light to inside, and then outside again.

Hotspot is used to define a spatial volume and serves as an anchor to surrounding compositions. It does not reveal the shape of an architectural envelope. The contrast between Hotspot and its surrounding light level determines the power of Hotspot to attract attention, to define a space or place, and also it affects a person's awareness about movement.

### Movement

The relatively bright area attracts one's attention from afar, so that as one moves toward the circular shape of the light; (Figure 2.1a) the effect is of a self-centering quality. The idea of arrival is also affected by the clarity (crispness) of the edges of the light pool, whether it has a fuzzy or stark transition from light to dark. In most cases, the clearer the edges of the light pool, the greater awareness one has of perceiving Hotspot as a space. .

Once one arrives and stands or sits in the center of the pool of light, there is a sense of (Figure 2.1b) security and control that encourages pausing. People tend to collect in, or around, a pool of light. Spatially, a point created by light organizes surrounding elements around it and dominates its field.<sup>37</sup>

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<sup>36</sup> Thomas Thiis-Evensen, *Archetypes in Architecture*, (Oslo: Norwegian University Press, 1987), 120-21.

<sup>37</sup> Francis D.K. Ching, *Architecture, Form, Space and Order*, 2<sup>nd</sup> ed. (New York: Van Nostrand Reinhold, 1996), 4.

Having achieved the original goal of inward movement, (Figure 2.1c), efforts of movement are now directed outwards. The light transforms into a starting point of a new journey; consequently, Hotspot frequently marks junction points.

The perception of Hotspot also relates to the scale of the space that surrounds it. . A light in close proximity occupies much more of one's field of vision and dominates a spatial experience.

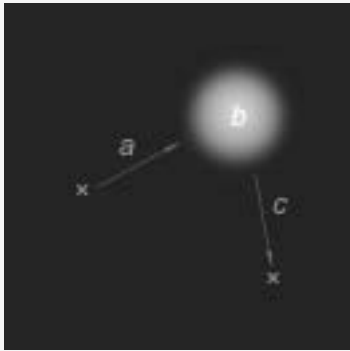


Figure. 2.1. Tendency of movement in relation to Hotspot.

*In the beginning, the light of Hotspot first serves as the goal of ones' movement (a). Arriving inside the light, it offers the security and sense of control of a centrum, encouraging dwelling in it (b). Having acquired the secure position, attention and movement can now be turned outwards (c).*

### **Chronological Sequence**

Hotspot has a long history as a practice that illuminates an area where people gather around and in a pool of light that makes a space; marks and dramatizes entry; delineates space in an open plan interior; and symbolizes sacred space.

The earliest and most dramatic manipulations of light in interior architecture are found in institutions concerned with the spiritual aspects of life.<sup>38</sup> In these interiors, light is used to “lead us beyond the finite and temporal, beyond our known experience in space and time.”<sup>39</sup> Although most of these institutions benefit from natural lighting, the arrival of electric illumination extended the possibilities of architectural expression. A Hotspot delineates the altar at Eglise le Sacré Coeur in France; the light is directed from a high angle.<sup>40</sup> (Figure 2.2) The interior of Christ Church in Oyster Bay (1995) relies on more artificial light than the Eglise le Sacré Coeur.<sup>41</sup> (Figure 2.3) Remodeled for the second time since 1878, a pool of light gives definition to the narthex as a gathering space on its own. The pool of light forms a line with the light from the stained glass in the apse, and marked the beginning of the procession down the congregation. This line was intersected by light along the crossing, recalling the traditional cruciform churches.

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<sup>38</sup> Mark Major, Jonathan Speirs, Anthony Tischhauser, *Made of Light: the Art of Light and Architecture* (Basel: Birkhäuser, 2004), 25.

<sup>39</sup> Millet, *Light Revealing Architecture*, 149.

<sup>40</sup> Eglise le Sacré Coeur [1959] A. Le Donne and M. Patout; Mulhouse, France in Peter Hammond, “Churches, Modern Churches in Postwar France, French Churches: Sacre Coeur, Mulhouse.,” *Architectural Record* 127, no. 7 (Jun. 1960): 204; PhotoCrd: Guillemaut

<sup>41</sup> Entry view, Christ Church [1995] Gerald Allen and Jeffrey Harbinson Architects and Lighting Designers, architect; Hillmann DiBernardo & Associates, Inc., lighting designer; Oyster Bay, NY in Charles Linn, “Quiet Revival,” in *Architectural Record* 183, no. 5, Record Lighting (May 1995): 34; PhotoCrd: Adrian Vilicescu.



Figure 2.2. *A Hotspot accentuates the altar and provides a strong contrast between it and the darkness surrounding it..*

Altar, Eglise le Sacré Coeur [1959] A. Le Donne and M. Patout; Mulhouse, France in Peter Hammond, "Churches, Modern Churches in Postwar France, French Churches: Sacre Coeur, Mulhouse.," *Architectural Record* 127, no. 7 (Jun. 1960): 204; PhotoCrd: Guillemaut

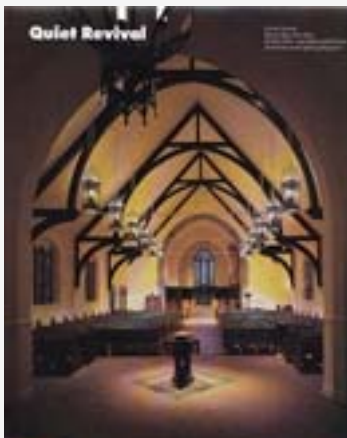


Figure 2.3. *Gerald Allen and Jeffrey Harbinson used Hotspot to define the darker narthex as a formal space at the Christ Church.*

Entry view, Christ Church [1995] Gerald Allen and Jeffrey Harbinson Architects and Lighting Designers, architect; Hillmann DiBernardo & Associates, Inc., lighting designer; Oyster Bay, NY in Charles Linn, "Quiet Revival," in *Architectural Record* 183, no. 5, *Record Lighting* (May 1995): 34; PhotoCrd: Adrian Vilicescu.

The focused Hotspot at the center of an entry encourages the visitor to pause before consciously moving out of the light, and towards the destination. A

Hotspot marks the entry of the corporate apartment designed by Arthur Furber. (Figure 2.4) The pool of light carves a dramatic room from an entry sequence comprised of various spaces. The focused Hotspot at the center of an entry encourages the visitor to pause before consciously moving out of the light, and towards the destination.



Figure 2.4. *An entry in a Manhattan apartment is made more dramatic by a large stark and defined Hotspot.*

Entry Foyer, Apartment in East Side Manhattan Cooperative [1980] Arthur Furber; New York City in Edie Lee Cohen, "Subtle Spaces," *Interior Design* 50, no. 5 (May 1980): 243; PhotoCrd: Jaime Ardiles-Arce.

In the 1990s the application of Hotspot in entries became more dramatic, because the spaces became so tall and materials so luxurious. Like their 19<sup>th</sup> century counterparts, designers exploited the space that would form one's first impression. For example, one large pool of light framed between the dark walls marked the entry to the lounge in the Stardust-Sangu Restaurant in Japan.<sup>42</sup> (Figure2.5) The light reflected off a mirrored ceiling to provide some

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<sup>42</sup> Entry, Stardust Lounge, Stardust-Sangu Restaurant [1994] Architect: Hiroshi Hara + Atelier, Interior/Lighting Designer; Interspace Time; Osaka, Japan in



ambient illumination. The dramatic contrast between light and dark spaces in the entry suggests that the remainder of the space would be a unique spatial experience.



Figure 2.5. *The one spotlight at the Stardust Lounge entrance is reflected by the mirror walls to give multiple pools of light, with the original being the brightest.*

Entry, Stardust Lounge, Stardust-Sangu Restaurant [1994] Architect: Hiroshi Hara + Atelier, Interior/Lighting Designer; Interspace Time; Osaka, Japan in Clifford A. Pearson, "High-Wire Act," Record Lighting, *Architectural Record* 182, no. 2, (Feb. 1994): 38; PhotoCrd: Nacasa and Partners.

In a corporate space, a Hotspot also was used to signify a meeting area. In f/X Networks Corporate Headquarters, Hotspot delineated an informal area created by beech chairs placed around a low table. (Figure2.6)

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Clifford A. Pearson, "High-Wire Act," Record Lighting, *Architectural Record* 182, no. 2, (Feb. 1994): 38; PhotoCrd: Nacasa and Partners.



Figure 2.6 . *The Hotspot lighting practice contributed to separating out a conversational grouping from the open space*

'Lifeguard Station' Conference Room, f/X Networks Corporate Headquarters [1996] Fernau Hartman Architects; Los Angeles, CA in Aaron Betsky, "Baywatch or Workplace?," *Architectural Record* 184, no. 9 (Sep. 1996):76; PhotoCrd: Richard Barnes.

Hotspot also marked entry and junctions in domestically scaled interiors, such as the dental office of Dr. Maryam Mohammadi.<sup>43</sup> (Figure 2.7) A circle of light at the junction of the reception, the beverage bar and the door to a work room signals a transition from public to more private areas of the office. Despite ambient lighting, the light on the floor identifies the junction as a crucial stopping point on a circulation path.

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<sup>43</sup> Beverage Bar and Reception Area, Dr. Maryam Mohammadi's Dental Office [2003] Forma Design; McLean, VA in Monica Geran, "In Toothsome Color," *Interior Design* 74, no. 14 (Nov. 2003): 92; PhotoCrd: Jeffrey Hodgdon.



Figure 2.7. *Hotspot marks a crucial junction at Dr. Maryam Mohammadi's dental office.*

Beverage bar and reception area , Dr. Maryam Mohammadi's dental office [2003] Forma Design; McLean, VA in Monica Geran, "In Toothsome Color," *Interior Design* 74, no. 14 (Nov. 2003): 92; PhotoCrd: Geoffrey Hodgdon.

Hotspot has the capacity to gather people together in what may feel like a singular space. Many upscale restaurants introduce a glowing hotspot on a table that brings light to below one's eye-level and sets an intimate atmosphere. Hotspot is also found in lounges, and less frequently, in nightclubs.

In the restaurant Ropponji J, tables are tightly packed in a finite space. (Figure 2.8) Nevertheless, circles of light centered on individual tables provide separate spheres for gathering. Despite its open plan, the low ambient light levels urged a quiet atmosphere. Privacy and intimacy were retained within each circle of light. Using lighting, the open plan became a field of small rooms.



Figure 2.8. *The Roppongi J restaurant featured two aspects of Hotspot lighting, the first a focused light for each table. Taken altogether, a field of Hotspot table lighting became a field of small rooms.*

Roppongi J [2003] Rockwell Group; Tokyo, Japan in Leanne B. French, "A Trio of Nightspots within Tokyo's Roppongi J," *Architectural Record* 191, no. 11 (Nov. 2003): 239; PhotoCrd: Shin'ichi Sato.

In *Micro* (2005), the dining and dance area of the Cocoon Club in Frankfurt, focal glow at the table defines individual dining spaces that as the night progresses, becomes pockets for gathering and observing dancers and the brilliant lighting effects on the dance floor. (Figure 2.9) Focal glow attracts people by identifying a place, a center around which space is organized.

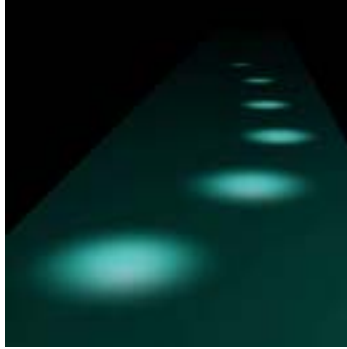


Figure 2.9. *Lighting and interior designer 3deluxe's project for the Cocoon Club in Frankfurt, Germany used Hotspot for lighting tables.*

Micro, Cocoon Club [2005] 3deluxe, Lighting and Interior Design; Deitz Joppien Architekten, architect; Frankfurt, Germany in John Peter Radulski, "Interlocking Spaces Threaded with Light Animate Frankfurt's Cocoon Club," *Architectural Record* 193, no. 8 (Aug. 2005): 160; PhotoCrd: Emanuel Raab.

The effect of Hotspot is as much about its darker surroundings as it is about the light. In his book *In Praise of Darkness*, Jun'ichiro Tanizaki condemned the excessive amount of light in many modern designs that "[serve] no function but to eradicate every trace of shadow." He called for the maintenance of darkness and the abandonment of light for light's sake.<sup>44</sup> In some practice types, like workplace, Hotspot was largely abandoned in the 2000s, although the practice continues to be found primarily in hospitality and restaurant spaces where darkness is still valued for its ability to heighten drama and create intimate environments.

<sup>44</sup> Jun'ichiro Tanizaki, *In Praise of Shadows* (New Haven, Conn.: Leete's Island Books, 1977), 37.



CHAPTER 3  
**FOLLOW ME**

## **Follow Me**

### **Definition**

Follow Me describes sequenced pools of light on the floor that are in contrast with the surrounding space, defining a circulation path.

### **Description**

Follow Me directs attention away from the wall altogether and onto the path.

Follow me is accomplished by a carefully spaced arrangement of light fixtures with narrow and defined beam spreads, projecting a linear sequence of lights onto the floor. Spotlights and recessed downlights are the most common fixtures used to achieve Follow Me. Reflectors and lenses are used in these lights to help control direction and beam spread, and in some cases, may also be controlled by lamps that have built-in reflectors (e.g. PAR, MR).

A recessed downlight, developed in the 1940s, is a small light fixture installed above the ceiling; only the opening or aperture shows. The trim is flush with the ceiling plane. The light is concentrated in a downward direction as a broad floodlight or narrow spotlight. Narrow beam spreads and sufficient spacing between downlights create a dot, dot, dot pattern while broad beam spreads are used more for washes. Spotlights are light fixtures whose light distribution can be directed at any desired point by turning and swiveling; these are used primarily with track lighting.

## Effect

In Follow Me, the linearly arranged luminous points on the floor are read as a group and suggest a line.<sup>45</sup> Designers use this perception to direct movement, as if the pools beckon one to follow down a path. Alternating light and dark patterns are used frequently to break up a long, linear space. Humans are inherently attracted to the brighter areas in the surrounding environment.<sup>46</sup> In Follow Me the brighter points of light occur in segments; each bright point becomes an attainable goal that marks the beginning, the middle and the end of a passage.<sup>47</sup>

The alternation of light and dark along the path creates a rhythm and sets a pace for movement. Denser patterns form a tighter and stronger line and encourage slower movement, while our phototropic instinct encourages quicker progress between larger gaps of darkness. When ambient illumination is sufficient, sparsely distributed pools begin to affect the reading of the line, and allow more wandering between the points, resulting in motion that is informal.<sup>48</sup>

By encouraging movement down a linear path, Follow Me reveals the length of the circulation space. Follow Me has the capacity to build expectations about

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<sup>45</sup> Rudiger Ganslandt and Harald Hofmann, *Handbook of Lighting Design* (Ludenscheid, Germany: Erco, Leuchten GmbH, 1992), 32. In the section, Ganslandt and Hofmann give a brief explanation of Gestalt theories and how they relate to visual perception.

<sup>46</sup> Ganslandt and Hofmann, *Handbook of Lighting Design*, 37.

<sup>47</sup> Thomas Thiis-Evensen, *Archetypes in Architecture* (Oslo: Norwegian University Press, 1987), 121.

<sup>48</sup> Marietta Millet, *Light Revealing Architecture* (New York: Van Nostrand Reinhold, 1996), 119.



what lies at the end of the path, elevating the status of an end point. Beginning and ending points become crucial to informing the viewer of the expected direction of approach.

The width of the circulation path is also important in determining movement. Contrasting the path of light with more surrounding free space brings stronger focus to the path. Conversely, walls that intrude upon the integrity of the light in narrower corridors will appear as bands that draw attention along both the length and the width of the corridor, thus detracting from the singular directionality.

### **Chronological Sequence**

One of the early means of lighting long spaces, often circulation paths, is a line of equally spaced pendant lights. This practice forms the predecessor to the chronological development of Follow Me that describes a linear arrangement of pools of light on the floor. After the Second World War, traditional dependence on windows as a source of light and fresh air in commercial spaces of developed western countries began to give way to mechanical air conditioning systems and recessed lights that could be hidden behind a suspended ceiling system.<sup>49</sup> These installations removed luminaires from view, but a rhythm of pure light remained.

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<sup>49</sup> John Pile, *A History of Interior Design*, 3<sup>rd</sup> ed. (London: Laurence King Publishing, 2009), 395.

### 1950 to 1980 Development

Linearly arranged pools of light become indications of paths, with the center of each point of light a designated landing point. In an art collector's townhouse (1950) architect Phillip Johnson used hidden light sources to distribute a pool of light around each stepping stone. (Figure 3.1) To step between the pools of light into the dark space would have resulted in falling into the reflecting pool.

<sup>50</sup> . Johnson intended that his clients not deviate from the path or to alter the rhythm of their motion that the pools of light suggest



Figure 3.1. Hiding the light sources allows attention to be focused on the path across the pool.

Art Collector's Townhouse [1950] Phillip Johnson, Architect; New York City in Anonymous, "Townhouse," *Interiors* CX, no. 5 (Dec 1950): 85; PhotoCrd: Gottscho-Schleisner.

In the lobby of the Wedgwood Club (1967) in an apartment complex in Dallas, understated recessed lights in the entrance hall . allowed a chandelier at the entrance to become a showcase feature.<sup>51</sup> (Figure 3.2)

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<sup>50</sup> Art Collector's Townhouse [1950] Phillip Johnson, Architect; New York City in Anonymous, "Townhouse," *Interiors* 110, no. 5 (Dec 1950): 85; PhotoCrd: Gottscho-Schleisner.

<sup>51</sup> Foyer, Wedgwood Club, Wedgwood Apartments [1967] Taylor Robinson, Darnel Murray and Titcher's Commercial Interiors; Dallas, TX in Anonymous,



Figure 3.2. *Recessed fixtures in a Follow Me design produced an understated corridor in relationship to the large chandelier in the foyer.*

Foyer, Wedgwood Club, Wedwood Apartments [1967] Taylor Robinson, Darnel Murray and Titcher's Commercial Interiors; Dallas, TX in Anonymous, "Community Center Club," *Interior Design* 38, no. 10 (Oct. 1967): 213; PhotoCrd: Anonymous.

Although there were a few early examples of Follow Me in residential and hospitality design, most cases were found in corridors of offices. (Figure 3.3)

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"Community Center Club," *Interior Design* 38, no. 10 (Oct. 1967): 213; PhotoCrd: Anonymous.



Figure 3.3. *In the Avon Products office, a line of recessed fixtures produce the Follow Me lighting practice where pools of light produced a subtle rhythm of movement down the corridor.*

Executive Floor Corridor, Avon Products Headquarters [1973] JFN Associates; New York City in Anonymous, "Avon Products New Corporate Headquarters," *Interior Design* 44, no. 3 (Mar. 1973): 108; PhotoCrd: Alexandre Georges.

Lighting developments in the 1960s, especially the growing recognition for architectural lighting designers, facilitated interior lighting that expand beyond basic illumination.<sup>52</sup> In the 1970s, *Interior Design* increasingly published articles about lighting, and workshops conducted by lighting professionals also increased.<sup>53</sup> In 1977 lighting designer William Lam drew attention to designing lighting that fulfills our biological needs for information and orientation.<sup>54</sup> Interior lighting received attention again with the 1970 era energy crisis that demanded more conscious use of light as an energy expenditure.

<sup>52</sup> See chapter 1, section 1.2 of this thesis for an overview of electric lighting design in architecture.

<sup>53</sup> Anonymous, "Two Days in the White Box: The Abe Feder Lighting Design Workshop for Interior Designers," *Interior Design* 50, no. 6 (Jul. 1979): 84-88. Some of the most well known lighting professionals such as Feder came from a theater design background. See Section 1.6 of this thesis for more information about Feder.

<sup>54</sup> William M. C. Lam, *Perception and Lighting as Form Givers for Architecture*, Christopher Hugh Ripman, ed. (New York: McGraw-Hill, 1977), 17-30. See *Appendix A: Notable Lighting Designers* for more information about Lam.

Reducing ambient illumination led to many dramatic examples of lighting in the 1970s, such as high contrast environments resulting from the selective use of spotlights.

### Developments in the 1980 Decade

In response to high contrast schemes in the 1970 period, designs in the 1980s shifted to toned down, organized lighting expressions. Design trade magazines increasingly published articles that introduced tools and concepts in lighting with emphasis towards control of light, such as adjusting contrast levels and using dimmers. In the same period, design sectors that previously relied primarily on pendant lighting also began to experiment with replacing them with track lights and recessed fixtures. These changes led to more examples of Follow Me found across various practice types.

By the 1980 decade , corporate designs began to break away from relatively plain modernist interiors; new forms, materials, patterns and lighting were introduced into the workplace to relieve monotony. Circulation spaces were some of the most pedestrian, particularly in large offices with long circulation paths. In 1985 William A. Robinson hired Murphy/Jahn to design its public circulation spaces. (Figure 3.4) The architects created luminous pools from track lights that were deliberately spaced equal distant.<sup>55</sup> Each pool of light became a reference point for movement, and the light was intended to break up the journey into smaller intervals.<sup>56</sup> Directing attention away from the walls

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<sup>55</sup> Advertising and Market Offices of William A. Robinson, Inc. [1985] Murphy/Jahn; Chicago, IL in Edie Lee Cohen, "Standard Upgrade," *Interior Design* 56, no. 3 (Mar. 1985): 290; PhotoCrd: James Steinkamp/ Keith Palmer.

<sup>56</sup> Millet, *Light Revealing Architecture*, 119. (

and towards the next pool of light falling in the center of the path helped to deemphasize the narrowness of the corridor. Placing a sculpture at the end of the path gave one a goal and a focal point. The project was published in an issue of *Interior Design* which also had an article about designing for circulation.<sup>57</sup>



Figure 3.4. *Track lighting with fixtures placed at equal distances provided a context for movement and time of the journey.*

Advertising and Market Offices of William A. Robinson, Inc. [1985]  
Murphy/Jahn; Chicago, IL in Edie Lee Cohen, "Standard Upgrade," *Interior Design* 56, no. 3 (Mar. 1985): 290; PhotoCrd: James Steinkamp/ Keith Palmer.

Beginning in the mid-1980 decade, the growing use of Follow Me in large open exhibition spaces can be traced in showrooms and museums where way-finding became crucial to the spatial experience. Visitors who were unfamiliar with the layout of such large spaces found Follow Me a guide to navigate the space. By revealing circulation paths, visitors sometimes gained a glimpse of the organization within the space.

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<sup>57</sup> Stanley Abercrombie, "Design for Circulation: Lobby and Corridor Spaces," *Interior Design* 56, no.3 (March 1985): 276-91.

### The 1990 to 2010 Period

In the 1990s the light of Follow Me is increasingly used as a highlight feature instead of the only source of lighting in the circulation path. Follow Me as an architectural circulation element became *de rigueur*. An excellent case in point is the Thompson Ventulett Stainback & Associates' Atlanta office.<sup>58</sup> (Figure 3.5) Follow Me is comprised of small pools of bright light spaced along the floor between two double-height stair openings. The bold yellow cantilevered ceiling plane with ambient light brought a sense of liveliness to the office's entrance. A similar application is seen in a private house in which large circles of light introduced a soft, but formal progression for guests moving towards the social space on the other side of the interior.<sup>59</sup> (Figure 3.6) In both examples, , the light of the Follow Me practice for guiding visitors was balanced by ambient lighting from cove details to soften the shadows that downlights create on people's faces.

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<sup>58</sup> Entrance, Thompson Ventulett Stainback & Associates Offices [1994] Thompson Ventulett Stainback and Associates; Atlanta, GA in "Thompson Ventulett Stainback," *Interior Design* 65, no. 5 (Apr. 1994): 103; PhotoCrd: Brian Gassel/ TVS&A.

<sup>59</sup> Private House [1997] Helen C. Reuter, Details, Inc., Design; Pam Morris, Light Source Design Group, Lighting; Indiana Wells, CA in Gareth N. Fenley, "Light Guides Visitors to a Room with a View," *Architectural Record* 185 no. 4 (Apr. 1997): 157; PhotoCrd: Doug Salin.



Figure 3.5. (left) *The strong directionality of Follow Me, echoed by the suspended ceiling, and the sculpture at the end of the path suggests a formal axis.*

Entrance, Thompson Ventulett Stainback & Associates Offices [1994]  
Thompson Ventulett Stainback and Associates; Atlanta, GA in Monica Geran, "Thompson Ventulett Stainback," *Interior Design* 65, no. 5 (Apr. 1994): 103; PhotoCrd: Brian Gassel/ TVS&A.

Figure 3.6. (right) *The architectural lighting project of lighting designer Pam Morris and interior designer Helen C. Reuter included the use of architectural lighting in guiding visitors to a room.*

Private House [1997] Helen C. Reuter, Details, Inc., Design; Pam Morris, Light Source Design Group, Lighting; Indiana Wells, CA in Gareth N. Fenley, "Light Guides Visitors to a Room with a View," *Architectural Record* 185 no. 4 (Apr. 1997): 157; PhotoCrd: Doug Salin.

Towards the 2000s, the gradual experimentation of LED for architectural applications gave rise to new lighting techniques, most prominently techniques that produce even distributions of light.

Compared to the corridors and passages of earlier examples, in the first decade of the 21<sup>st</sup> century Follow Me appeared frequently in large open plan, volumetric spaces, such as those in art museums and galleries. Such is the



case in Mary Boone's high-profile art gallery in Chelsea.<sup>60</sup> (Figure 3.7) Unless an exhibition indicates a method for viewing work (as a chronology would), in most galleries one wanders randomly around the room. Or, put another way, each viewer chooses where one begins, how one proceeds and where one ends. In several instances, however, the Boone gallery designates a path with Follow Me, and in so doing, also establishes vantage points for viewing the large pieces. This lends a new way to view the artwork. For example, one can stand in a pool of light, the pool suggesting an appropriate distance from which to view a work.



Figure 3.7. *Many museums and galleries are organized with a pass-through space from one gallery to another. In the Mary Boone Gallery, Follow Me pulled the path to one side of the gallery, creating a pass-by circulation path.*

Mary Boone Gallery [2001] Gluckman Mayner Architects; New York City in Jeff Hill, "The Sky's the Limit," *Interior Design* 72, no. 10 (Aug. 2001):192; PhotoCrd: Lydia Gould

In the Lyric Theatre (2008) in Oklahoma City, flat, crisp-edged circles of light delineate a rigid path down the center of the entrance lobby. (Figure 3.8) The

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<sup>60</sup> Mary Boone Gallery [2001] Gluckman Mayner Architects; New York City in Jeff Hill, "The Sky's the Limit," *Interior Design* 72, no. 10 (Aug. 2001):192; PhotoCrd: Lydia Gould.

pools of light suggest a carefully staged procession into the building. The crisp edges of pools of light also respond to their context in that they resemble the appearance of spot lights more commonly associated with theatre lighting practices.



Figure 3.8. *The flat light distribution suggests rigid landing points and produces a deliberate path in the middle of the wider entrance.*

Entrance, Lyric Theatre [2008] Elliot + Associates Architects; Oklahoma City, OK in “Best of Year Merit—Institutional,” *Interior Design* 79, no. 15 (Dec. 2008): 84; PhotoCrd: Scott McDonald / Hedrich Blessing.

### Effect of Sustainability Issues for the Follow Me Intype

The Follow Me practice is dependent on incandescent light sources to make pools of lights. By 2009, environmental sustainability practices increasingly turned away from incandescent lamps to fluorescents which had improved color-rendition, as well as energy and cost efficiency. Light from fluorescent sources have much more diffused distribution, often showing little, if any, effect on the floor level, and are therefore, not always adequate to implementing the Follow Me practice.

Two examples from 2003 and 2006 demonstrate that fluorescent lamps used in a manner similar to incandescent sources do not produce a Follow Me effect. The first case is an adaptive use project in Washington, D.C. The landmark Tariff Building (1842) was converted into Hotel Monaco.<sup>61</sup> (Figure 3.9) A series of pendants using compact fluorescent lamps were placed in a corridor within a Neoclassical backdrop. Although lamp shades in the pendant fixtures helped control the projected pools of light, the appearance of a dotted path of light no longer appears on the floor in dot, dot, dot pattern. The second example is a corporate executive space occurring in the Board Room Corridor of the TV Land Office.<sup>62</sup> (Figure 3.10) The shape and linear arrangement of the fluorescent fixtures produce a linear pattern on the ceiling, but the result is that there were no visible pools of light on the floor.

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<sup>61</sup> Corridor, Hotel Monaco [2003]; Adaptive Use, Tariff Building [1842] Oehrlein & Associates Architects; Cheryl Rowley Design; Robert Truax Lighting; Washington D.C. in “Interiors—Hotels,” *Architectural Record* 194, no. 6 (Jun. 2006): 200; PhotoCrd: David Phelps.

<sup>62</sup> Board Room Corridor, TV Land Office [2003] HLW International; New York City in Monica Geran, “Those Were the Days,” *Interior Design* 74, no. 6 (May 2003): 250; PhotoCrd: Elizabeth Felicella.



Figure 3.9. (left) *The diffuse light from fluorescent sources in the pendant lights is characteristic of more recent design solutions, but they do not produce Follow Me's pools of light on the floor.*

Corridor, Hotel Monaco [2003]; Adaptive Use, Tariff Building [1842] Oehrlein & Associates Architects; Cheryl Rowley Design; Robert Truax Lighting; Washington D.C. in "Interiors—Hotels," *Architectural Record* 194, no. 6 (Jun. 2006): 200; PhotoCrd: David Phelps.

Figure 3.10. (right) *The dot, dot, dot pattern on ceilings are much less forceful than that on the floor, since we directly walk into light on the floor but not that on the ceiling.*

Board Room Corridor, TV Land Office [2003] HLW International; New York City in Monica Geran, "Those Were the Days," *Interior Design* 74, no. 6 (May 2003): 250; PhotoCrd: Elizabeth Felicella.

In George Kubler's theory the archetypal lighting practice Follow Me has a long history, particularly in western civilization. The practice represents a solution to the problem of guiding human movement in interior environments. Follow Me can also contribute to enhanced spatial experiences in circulation spaces. This study presents evidence that Follow Me has a sequence of successive solutions for directing movement that are described in their early and late stages. If Follow Me is abandoned by designers, because the use of fluorescent lighting provides better energy efficiency, then the practice will be

discarded, because of a reversal of values. In the long run, Follow Me may serve as scaffolding for a new lighting practice.<sup>63</sup>

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<sup>63</sup> George Kubler, *The Shape of Time: Remarks on the History of Things* (New Haven, Conn.: Yale University Press, 1962), 31-82.



## CHAPTER 4

### **PATCHES**

## Patches

### Definition

Patches describes concentrated and randomly distributed light that textures or obfuscates interior architecture and furnishings.

### Description

Light in the Patches typology may come from different numbers and kinds of luminaries. Alternatively, the textures of light and shadow may be created by light shining past sculptural forms or through layers. They are concentrated at a height within our visual field, mainly on the floor, walls and surfaces around or below our eye-level that demand visual engagement.<sup>64</sup>

Patches may be shaped by light from a variety of luminaries as well as shadows. Light and shadow from various sources and directions overlap to provide organic shapes and more complex shades. Light and dark compete in the figure-ground relationship. They are sometimes used with low contrast to

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<sup>64</sup> Kenneth C. Welch, A.I.A., I.E.S., "New Concepts in Store Lighting," *Architectural Record* 133, no. 8 (Aug 1946): 117. Welch's article suggests the extent of our field of vision: Calling the line of horizontal fixed gaze the central axis, the total field of vision can extend almost 80° to 90° to each side and below this central axis, and about 35° to 40° above it. The restricted upward angle is of course due to the eyebrow obstruction. One is only subconsciously aware of general areas and objects in the outer parts of this zone, but can be conscious of and distracted by lesser areas of comparatively greater brightness anywhere within the zone. It is also easy and natural to lower one's gaze when attention is attracted in that direction but it is less natural, particularly in a store, to concentrate one's gaze much over 12° to 15° above the horizontal.

general illumination such that the coverage of the effects become further obscured.

In several examples, the lit surface has a consistent, undulating texture, sometimes made up of tightly packed objects such as books and merchandise. The shape or edge of the light is obscured by light and shadow of the surface details. The contrast of highlighted areas and its surroundings is further mediated by the play of light and shade from surface details of the surroundings under ambient illumination. In these cases, the texture of Patches becomes combined with that of surface.

### **Effect**

Patches produces unpredictable, intriguing and sometimes distracting visual texture. The varying light levels move the eye from place to place across an interior, creating a dynamic visual experience. Frequently, the objects or the architecture the light exposes are only partially revealed, evoking a sense of mystery that invites exploration. As with most lighting effects, the scale of the affected area and the level of light and dark contrast directly affect the impact. High lighting contrasts tend to dominate one's attention and create drama. The layer of unpredictable light and dark patterns sometimes overwhelms or obscures clear views of interior elements. Sometimes these patterns can be interpreted as disturbing shapes, and at least one architectural lighting handbook suggested the effects of Patches as an undesirable lighting quality. If Patches is executed without restraint and careful orchestration, it can over-



activate the interior, especially in large spaces.<sup>65</sup> Conversely, using Patches purposely as a lighting design creates effects that seemingly dematerialize architectural forms.<sup>66</sup>

### **Chronological Sequence**

Until the end of the 1960 decade, the most notable instances of Patches were found primarily in residential and exhibition spaces, specifically showrooms where incandescent spotlights were used to accent objects or certain features. Incandescent lights were chosen in these spaces for their color-rendering properties. In exhibition contexts, objects displayed under incandescent point sources revealed more shade and shadow, which gave them a three dimensional quality. Manipulating the shapes and contrast between light and dark patches further heightened the drama. The light and the shadow of the object that spill onto the surrounding surfaces add to patches of light and dark; the effect becomes multiplied in showrooms that use numerous spotlights to illuminate groups of objects and larger exhibit pieces. Some instances of contrasting light and dark patches were also the result of insufficient overlapping between the circular distributions of incandescent lights that frequently have a hot spot in its center. Although having a similar exhibition character, retail spaces, on the other hand, traditionally used a higher level of

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<sup>65</sup> "Rudiger Ganslandt and Harald Hofmann, *Handbook of Lighting Design* (Ludenscheid, Germany: Erco, Leuchten GmbH, 1992), 32. "Irregular or uneven luminances can lead to confusing lighting situations. This is evident, for example, when luminous patterns bear no relation to the architecture. The observer's attention is drawn to a luminance pattern that cannot be explained through the properties of the wall, nor as an important feature of the lighting."

<sup>66</sup> Marietta Millet, *Light Revealing Architecture* (New York: Van Nostrand Reinhold, 1996), 56.

ambient lighting and employed display strategies that showcase merchandise, such as a lit niche.

In a residential model in the 1951 National Association of Summer Furniture Manufacturers, light and shadow formed numerous irregularly shaped patches across the vertical and horizontal surfaces, creating amorphous Patches. Light coming at an angle on the credenza revealed the texture of the rattan weave. (Figure 4.1) The dominant use of spotlights with a circular distribution led to high contrasts of amorphous light and dark patterns. Unlike the exhibition spaces of art museums, showrooms rarely had access to daylight to serve as ambient illumination. Perhaps the organic Patches of light in front of, and on, the rattan credenza simulated dappled sunlight. The contrast between the light and dark patches created a tension between viewing the credenza and seeing the light.<sup>67</sup>

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<sup>67</sup> Anonymous, "The Summer Furniture Story," *Interiors* 111, no. 4 (Nov. 1951): 121.



Figure 4.1. *On the vertical surfaces, patches of light appeared above and below the lamp shades; on the horizontal surfaces, organic light and dark patterns were found on the floor and table surface.*

Showroom, National Association of Summer Furniture Manufacturers Market [1951] National Association of Summer Furniture Manufacturers; Location Unidentified, USA in Anonymous, "The Summer Furniture Story," *Interiors CXI*, no. 4 (Nov. 1951): 121; PhotoCrd: Anonymous

Evident manipulation of light and dark Patches primarily appeared during the 1970 decade. Restaurateurs, following in the footsteps of nightclub owners, began to see their establishments as atmospheric and theatrical. This line of thinking led to the "restaurant experience," a term used to describe dining out as entertainment. Interior designers and lighting designers experimented with colors, patterns and lighting effects in order to increase the restaurant experience. One of the most exciting examples was the interior of Warren Platner's American Restaurant (1974) in Kansas City. (Figure 4.2a & 4.2b) The deliberate use of theatrical lighting is most evident on the top level dining area that featured colorful patterns of light dappled on the dining tables, the

place settings, the floor, the shuttered windows and the diners.<sup>68</sup> The patterns and colors dominated to the point of camouflaging the interior architecture. Platner's famous Windows on the World restaurant in New York (1976) subsequently showed a similar use of light pattern in its Cellars in the Sky section.



Figures 4.2a & 4.2b. Architect Warren Platner intended the American Restaurant to be a work of art itself instead of a gallery for other art. The restaurant was “a fantasy of light and shadow.”

American Restaurant [1974] Warren Platner Associates Architects; Kansas City, KS in Anonymous, “Warren Platner's Valentine to Kansas City,” *Interior Design* 45, no. 6 (June. 1974): 88; PhotoCrd: Alexandre Georges.

Lighting decisions were quickly overshadowed by an energy crisis that began in 1973 and lasted until the mid-1980 period. Designers lowered energy expenses by reducing ambient light levels. Patches appeared in higher contrast and partially compensated dimmer light levels with dramatic effects.<sup>69</sup>

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<sup>68</sup> American Restaurant [1974] Warren Platner Associates Architects; Kansas City, MO in Anonymous, “Warren Platner's Valentine to Kansas City,” *Interior Design* 45, no. 6 (June. 1974): 88; PhotoCrd: Alexandre Georges.

<sup>69</sup> Ganslandt and Hofmann, *Handbook*, 138.

### The 1980 Decade

As designers continued to experiment with techniques for creating Patches, they began to pay more attention to composing light patterns to create a more coherent picture. The 1980 decade witnessed new manipulations regarding a hierarchy of brightness, the direction of light, rhythm created by the light, and the area Patches covered. These experiments resulted in examples of Patches that showed more order than instances in the periods prior to the 1980s. Patches on vertical surfaces were often characterized by diffuse, and sometimes tampered, diagonal light patterns. This could be found in many practice types, especially in showrooms and restaurants. In Joszi Merskan's Rose Compass Lounge in the St. Francis Hotel in San Francisco (1981), diagonal beams revealed on a screen was reminiscent of sunlight entering a room from a window.<sup>70</sup> (Figure 4.3) Around the space, various brighter patches occurred at parts of the screen, a sofa and across the floor. During this time, designers also began using texture as a means to create interest at various viewing distances. In the comparatively plain anteroom to the corporate dining facilities for Manufacturers Hanover Trust, a few spontaneous spots of light stood out to reveal the rich patterns of the wood paneling and created a lively backdrop from the plain walls around the formal seating area.<sup>71</sup> (Figure 4.4.)

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<sup>70</sup> Compass Rose Lounge [1981] Joszi Meskan Associates, designer; David Winfield Wilson, lighting consultant; St. Francis Hotel, San Francisco, CA in Lois Wagner Green, "The Sexiest Room in San Francisco," *Interior Design* 52, no. 8 (Aug. 1981): 208; PhotoCrd: Charles S. White.

<sup>71</sup> Edie Cohen, "Dining Diversions," *Interior Design* 55, no. 5 (May 1984): 249.

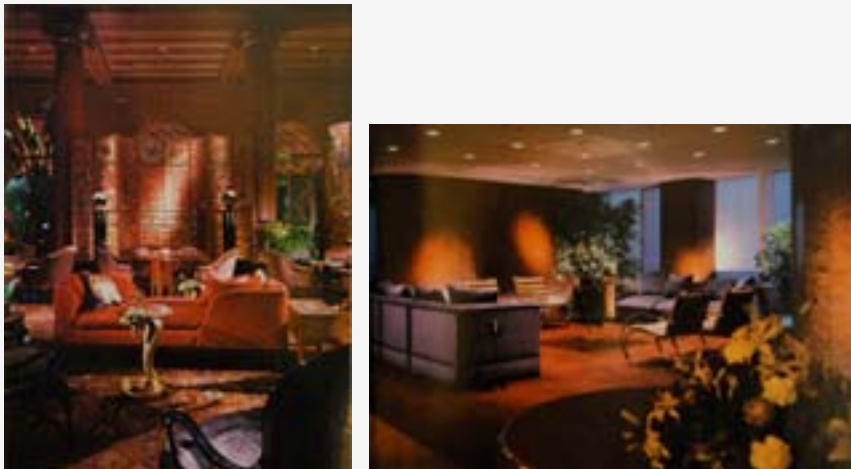


Figure 4.3. (left) *The Compass Rose Lounge was composed of various vignettes, simultaneously offering intimacy and conviviality. Different feature elements in the room also created a setting where “no two group in the vast room [were] alike.”*<sup>72</sup>

Compass Rose Lounge [1981] Joszi Meskan Associates, designer; David Winfield Wilson, lighting consultant; St. Francis Hotel, San Francisco, CA in Lois Wagner Green, “The Sexiest Room in San Francisco,” *Interior Design* 52, no. 8 (Aug. 1981): 208; PhotoCrd: Charles S. White

Figure 4.4. (right) *Spontaneous spots of light loosen the formality in the dining anteroom of Manufacturer Hanover Trust’s corporate dining space.*

Waiting Area, Corporate Dining Facility, Headquarters of Manufacturers Hanover Trust [1984] Swanke Hayden Connell; New York City in Edie Cohen, “Dining Diversions,” *Interior Design* 55, no. 5 (May 1984): 249; PhotoCrd: Jaime Ardiles-Arce

Patches provided interest to more formal compositions, and also mediated busy scenes. In the Ronald Phillips Beverly store (1985), stacks of shirts became a texture along the walls.<sup>73</sup> (Figure 4.5) Patches of light enabled

<sup>72</sup> Lois Wagner Green, “The Sexiest Room in San Francisco,” *Interior Design* 52, no. 8 (Aug. 1981): 204.

<sup>73</sup> Edie Lee Cohen, “Irregular Boundaries,” *Interior Design* 56, no. 4 (Apr. 1985): 241.

customers to see the store and its merchandise in smaller parts so that they would not be overwhelmed by the size of the store or the amount of goods to view. Patches of light bounced from wall to wall in order to lead customers from the narrow hallway into other parts of the store. In a residential setting, the apartment of designer George Brian, Patches focused attention on only a section of the bookcases, suppressing a busy appearance.<sup>74</sup> (Figure 4.6)



Figure 4.5. (left) *Patches on the stacks of shirts overlaid a texture of light and dark to the existing texture created by the stacked shirts.*

Men's dress shirt at custom cabinets, Ronald Phillips Beverley [1985] Patrick Maddux & Company; Beverly Center Shopping Mall, Los Angeles, CA in Edie Lee Cohen, "Irregular Boundaries," *Interior Design* 56, no. 4 (Apr. 1985): 241; PhotoCrd: Paul Bielenberg

Figure 4.6. (right) *Symmetrical patches of light on the two bookcases in the living room frames the diagonal light on the bookshelf beyond, directing the eye to go beyond the enclosure and to relieve the sense of clutter in the room.*

Living Room, George O'Brien Residence [1986] George O'Brien; New York City in Monica Geran, "Revised Edition," *Interior Design* 57, no. 7 (Jul. 1986):219; PhotoCrd: Peter Vitale.

<sup>74</sup> Monica Geran, "Revised Edition," *Interior Design* 57, no. 7 (Jul. 1986): 219.

Like the restaurateurs who explored theatrical and atmospheric interiors in their establishments, towards the end of the 1980s, more retailers that previously preferred light dominated environments began to see the potential of Patches to bring a poetic touch to the shopping experience. This was perhaps a result of the developing concept of entertainment retail that rapidly expanded in the 1990s. Designer Edward Suzuki used patches of light to add to the complexity of the composition in the China-China ceramics shop. (Figure 4.7) Light distributed around the store complemented the “dragon like-steel shelves,” by taking a viewer on a journey around the landscape of the Marble River and sand hills, invoking a story based on Chinese legends and images.<sup>75</sup>



Figure 4.7. *Patches are scattered throughout the China-China ceramic store to highlight different parts of the store.*

China-China Store [1988] Edward Suzuki; Aoyama, Tokyo, Japan in Jerry Cooper, “China-China,” *Interior Design* 59, no. 6 (Apr. 1988):218; PhotoCrd: Katsuaki Furudate.

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<sup>75</sup> Jerry Cooper, “China-China,” *Interior Design* 59, no. 6 (Apr. 1988): 216-18.



### The 1990 Era

As the impact of the energy crisis subsided once again, ambient light levels in many designs began to gradually increase in the 1990s. The explorations in the 1980s nonetheless created examples and brought into focus the expressive potentials of Patches. They also liberated designers from their inhibitions towards uneven lighting patterns or even patches of shadow. Balancing Patches with ambient light became a means to add animation and visual stimulation to an interior.

In restaurants and retail shops in the 1990 decade, texture by light and shade became a prominent element for setting a mood, a concept and an experience of the interior.

In the Eldorado Petit restaurant in Manhattan, Robert Palli and Jaime Tressera, interpreted Patches with soft shapes of light. (Figure 4.8) This treatment revealed the rich colors of wood panels and plaster walls, imbuing the restaurant with a “quality of voluptuous serenity [that] offer[ed] a respite from mid-town bustle.”<sup>76</sup> Some examples further projected more defined light patterns to animate the interior environment. For example, in Chopstix & Rice’s circular entry, Yabu Pushelberg designed a stainless-steel globe with rice-shaped cutouts and projected the patterns with specks of light to reference a Chinese cuisine.<sup>77</sup> (Figure 4.9)

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<sup>76</sup> Eddie Lee Cohen, “Eldorado Petit,” *Interior Design* 62, no.9 (Jun. 1991):145.

<sup>77</sup> Monica Geran, “Yabu Pushelberg,” *Interior Design* 65, no. 3 (Feb. 1994): 124-25.



Figure 4.8. (left) *Patches softened the geometric lines in Eldorado Petit to give a more soothing dining environment.*

Second Floor Anteroom, Eldorado Petit [1991] Robert Palli, architect; Jaime Tressera, interior design; New York City in Eddie Lee Cohen, "Eldorado Petit," *Interior Design* 62, no. 9 (Jun. 1991):145; PhotoCrd: Peter Paige

Figure 4.9. (right) *Yabu Pushelberg's design broke away from the conventions steeped in "authentic" or hoked-up Orientalia, replacing it with more light-hearted references to Chinese culture and cuisine, such as the light projecting rice-shaped light patterns in the entry.*<sup>78</sup>

Entry, Chopstix & Rice Restaurant [1994] Yabu Pushelberg; Toronto, Canada in Monica Geran, "Yabu Pushelberg," *Interior Design* 65, no. 3 (Feb. 1994): 124; PhotoCrd: Evan Dion.

In public spaces, Patches, balanced with ambient lighting needs, relieved a sense of formality brought about by a large interior. The patterns generated by the Patches practice also rendered a plain volumetric box into one of visual interest and stimulation. In the Great Hall of the Arizona Art Museum expansion (1996), a "celestial spray of lights" gave rise to soft patterns of light and dark contrasts. (Figure 4.10) This example of soft lighting was meant to relieve visitors (visually and symbolically) from the glaring light and hot

<sup>78</sup> Geran, "Yabu Pushelberg," 122.

temperatures of Phoenix. The lighting also allowed people's eyes to adjust before they viewed artworks in a low museum light.<sup>79</sup>



Figure 4.10. *Patches of dappled light in Phoenix Art Museum's Great Hall provided relief from the blazing light outdoors.*

Great Hall, Phoenix Art Museum [1996] Tod Williams/Billie Tsien & Associates; Phoenix, AZ in Michael Sorkin, "Can Williams and Tsien's Phoenix Art Museum Help This Sprawling Desert City Find its Edge?," *Architectural Records* 185, no. 1 (Jan. 1997):95; PhotoCrd: Bill Timmerman.

During the 1990 era workplace designers departed from the conventions of uniform general lighting. For instance, Patches provoked a fun and relaxing atmosphere at the showroom- lounge in the Black Entertainment Television Studio, setting the tone for a relaxed approach towards business. (Figure 4.11) The youth-oriented space was in touch with its urban context, popular culture and technology.<sup>80</sup>

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<sup>79</sup> Michael Sorkin, "Can Williams and Tsien's Phoenix Art Museum Help This Sprawling Desert City Find its Edge?," *Architectural Record* 185, no. 1 (Jan. 1997): 95.

<sup>80</sup> Edie Cohen, "The Sloane Ranger," *Interior Design* 69, no. 11 (Sep. 1998): 242.



Figure 4.11. *Amorphous patches of light add to the informal atmosphere at a lounge area in the office.*

Showroom Lounge, Black Entertainment Television Studio [1998] *Alternative Design*; New York City in Edie Cohen, "The Sloane Ranger," *Interior Design* 69, no. 11 (Sep. 1998): 242; PhotoCrd: Dub Rogers.

#### The 2000 to 2010 Period

The development of LEDs triggered experiments in new lighting effects and in all practice types in the 2000 decade. The small size and flexible arrangement of LEDs revived interest in an even illumination across edges and large surfaces. Environments of elegance and sophistication were no longer dominated by designs characterized by low ambient illumination punctuated by accent lighting; nonetheless shades and shadows from Patches continued to be valued for their ability to create a rich scene and invoke a sense of sophistication and intimacy.

In the conference facility of Latham and Watkins, subtle amorphous patches softened the hard edges in the office. (Figures 4.12a & 4.12b) The added

gradations accentuated the warm wood and carpets imparted a sense of luxury and corporate sophistication.<sup>81</sup>



Figure 4.12a. (Left) *At the entrance, Patches softened the grandness of the large reception desk to suggest a more comfortable atmosphere.*

Figure 4.12b. (Right) *Inside the conference lounge area, the diffuse patches of light occurred at approximately at the same level on the walls and had an ordered appearance despite the many individual light gradients resulting from each patch.*

Conference facility, Latham & Watkins [2001] Gary Lee Partners, designers; Cline Bettridge Bernstein, lighting consultants; Chicago, IL in Henry Urbach, "Upstairs, Downstairs," *Interior Design* 72, no. 7 (May 2001): 336, 339; PhotoCrd: Steve Hall/ Hedrich-Blessing

Overall, examples of Patches were found primarily in retail, hospitality and entertainment sectors. Patches created by cutout patterns reemerged in the 2000 to 2010 period, primarily in hotels and restaurants. They broke up large spaces, bringing them into a more intimate scale and often contributed to a visual narrative in the interior. Patches was used in Takashimaya's cosmetics

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<sup>81</sup> Henry Urbach, "Upstairs, Downstairs," *Interior Design* 72, no. 7 (May 2001): 339.

section to suggest comfort, and consequently luxury, in New York City. At its prestigious location in the Fifth Avenue shopping district, the Takashiyama department store deliberately removed its cosmetics section from the conventional street level location and moved it to the secluded sixth floor. The prominent organic patches of light evoked a poetic setting among trees in the room surrounded by natural motifs. (Figure 4.13) The lower ambient illumination suggested discreetness and a quiet environment desired for private consultations with sales associates; luxury and comfort in this instance was in a quiet, natural setting with personal service.



Figure 4.13. *Takashiyama's tucked away salon setting offered a more sophisticated and "civilized," if not soothing experience in shopping for cosmetics.<sup>82</sup> The store banked on devoted customers taking the elevator up to the sixth floor for their favorite products.*

Cosmetics section, Takashimiyaya store [2000] MR Architecture + Décor, designer; Cooley Monato Studio, lighting consultants; New York City in Julia Lewis, "Natural Beauty," *Interior Design* 71, no. 11 (Sep. 2009): 275; PhotoCrd: Formula Z/S

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<sup>82</sup> Julia Lewis, "Natural Beauty," *Interior Design* 71, no. 11 (Sep. 2009): 275; PhotoCrd: Formula Z/S.

In other retail establishments, Patches broke up sharp geometric lines and added subtle shades to white boxes or other monochromatic interiors of subdued colors. The gradations of light added to a sense of refined sophistication, especially in comparison with the kind of openness and high-technology elegance suggested by Light Body or luminous faces. In contrast, Patches in lounges were more obvious, because of their lower ambient light levels. In the mezzanine lounge of Karim Rashid's Morimoto, PA, (Figure 4.14) diffuse spots of light introduced a rich layer of light and shade on the organic furniture forms, creating a quiet retreat.<sup>83</sup> The concentrated spots responded to the energy and action below, but the gradual gradients around the edges suggested a more relaxed environment.



Figure 4.14. *The mezzanine lounge's soft shapes and colors (left) offered a relief from the strong contrast to crisp forms and saturated colored lights in the main dining area. (Right)*

Mezzanine Lounge and Dining Area, Morimoto Restaurant [2002] Karim Rashid; Focus Lighting, lighting; Philadelphia, PA in Clifford A. Pearson, "Morimoto, Philadelphia," *Architectural Record* 190, no. 11 (Nov. 2002): 165; PhotoCrd: Karim Rashid.

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<sup>83</sup> Clifford A. Pearson, "Morimoto, Philadelphia," *Architectural Record* 190, no. 11 (Nov. 2002): 165-66.

More so than other practice types, hospitality and restaurant spaces have become showcases for reiterations of Patches.<sup>84</sup> (Figure 4.15)



Figure 4.15. In the Tribeca Grand Hotel, theatre fixtures that cast colored patterns on the lobby floor served as one of the “vignettes” throughout the vast eight-storey atrium space.

Lobby Lounge, Grand Tribeca Hotel [2001] Bogdanow Partners Architects; Focus Lighting; New York City in William Weathersby Jr., “Varied Lamp Sources Create Layers of Light to Enhance the Public Spaces of a New Hotel,” *Architectural Record* 189, no. 2 (Feb. 2001):189; PhotoCrd: Michael Kleinberg.

With a great variety of patterns, the Buddahkan Restaurant in New York was a remarkable celebration of lighting in two spatial areas—the lounge and the main dining room.<sup>85</sup> In the lounge, Patches of artificial light cut diagonally across the grills on the interior windows that were reminiscent of sunlight

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<sup>84</sup> William Weathersby Jr., “Varied Lamp Sources Create Layers of Light,” *Architectural Record* 189, no. 2 (Feb. 2001):189-91; Benjamin Budde, “Hall of Fame: Takashi Sugimoto,” *Interior Design* 79, no. 15 (Dec. 2008): S26.

<sup>85</sup> Craig Kellog, “Chow Fun,” *Interior Design* 77, no. 4 (Apr. 2006): 238, 240-41.



despite the dim surroundings. (Figure 4.16) The effect invigorated a space with relatively plain materials. Furthermore, narrow beams from spotlights lights cast long rays that criss-crossed on the walls and added another layer of light patterns.



Figure 4.16. *Numerous patches of light and low general illumination in the lounge area created an intimate gathering place.*

Lounge and Dining Room, Buddakan Restaurant [2006] Gilles et Boissier, design; Goto Design Group, architect; New York City in Craig Kellogg, "Chow Fun," *Interior Design* 77, no. 4 (Apr. 2006): 238, 239; PhotoCrd: David Joseph (left), Eric Laignel (right).

Patches of light and shadow are no longer linked to poor lighting design to be avoided. Rather, in the period from 1950 to 2010, interior and lighting designers embraced the Patches effects, sometimes combined with ambient lighting and sometimes not. As new lighting technologies and techniques develop, existing lighting techniques will be evaluated for their strengths. It is foreseeable that Patches will continue to be used as more new technologies emerge and change the way lighting is designed.



CHAPTER 5

**COLOR FLOOD**

## **Color Flood**

### **Definition**

Color Flood describes the practice of filling a volume of space with highly saturated colored light. The space, planes, furnishings and occupants become imbued with the hue of light.

Blue Moon is a subset of Color Flood, and Color Flood could also be a Red Room if it is achieved with red light.

### **Effect**

Color Flood affects and defines a volume of space. It colorizes everything in a space, including the occupants; Color Flood appears as one color per space, homogenizing the space.

Applications of Color Flood could be seen as an interpretation of several archetypical practices identified in a number of practice types – Blue Moon (resort and spa); Monochromatic Room (boutique hotel) and Red Room (art museum, restaurant).<sup>86</sup> Color Flood transforms a White Box (art museum, retail) or a White Out (resort and spa, restaurant) space into a monochromatic

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<sup>86</sup> Rachel Joy Goldfarb, "Theory Studies: Archetypical Practices of Contemporary Resort and Spa Design" (MA Thesis, Cornell University, 2008), 54-55; Mijin Juliet Yang, "Theory Studies: Contemporary Boutique Hotel Design" (MA Thesis, Cornell University, 2005), 92-93; Joori Suh, "Theory Briefs: Contemporary Interior Design in Museums and Exhibition Spaces" (MA Thesis, Cornell University, 2004), 96; Soomin Jasmin Cho, "Restaurant Intypes: Contemporary Interior Design and Theory Study" (MA Thesis, Cornell University, 2009), 34.

one, such as Blue Moon and Red Room.<sup>87</sup> The relationship between these Intypes gives rise to shared attributes among them.

The effect of Color Flood is achieved with color light rather than surface paint. Color Flood creates a glowing monochromatic space. In most instances, the colored light is diffused and even, eliminating shadows and flattening the visual scene. The colored light imposed upon the whole space further reduces color and tonal contrasts, and thus, obscures formal definition.

The overwhelming amount of color in a Color Flood renders everything in space, including the occupants, in the same hue, giving them an unusual, possibly surreal appearance. The more saturated the color, the greater the impact, as saturated colors have more density and strength, and thus are more stimulating.<sup>88</sup> Color Flood can imbue the space with vibrancy not achievable by paint, because the brightness and saturation of colors is dependent on light.

Color cannot exist if it is not in the light source.<sup>89</sup> Color that we see is determined by the color of reflected light, which in turn is affected by the color of the surface, the color of the light, and the quantity of light the surface receives. A surface of a certain color reflects only a portion of the waves in a light spectrum that adds up to give the color we see.<sup>90</sup> Alternately, the range of

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<sup>87</sup> Leah Maureen Scolere, "Theory Studies: Contemporary Retail Design" (MA Thesis, Cornell University, 2004), 32; Goldfarb, "Theory Studies: Archetypical Practices of Contemporary Resort and Spa Design," 54-55, 61-64.

<sup>88</sup> Thomas Thiis-Evensen, *Archetypes in Architecture* (Oslo: Norwegian University Press, 1987), 245.

<sup>89</sup> Robert F Ladau, Brent K. Smith and Jennifer Place, *Color in Interior Design and Architecture* (New York: Van Nostrand Reinhold, 1989), 58.

<sup>90</sup> Ladau, Smith, Place, *Color in Interior Design*, 54.

light waves present in the incident light limits the reflectable light in the first place.

For instance, a red wall appears red under full spectrum white sunlight, because it reflects the red portion of the light spectrum and absorbs the rest. If light without the red portion of the spectrum hits the same red surface, since little or no light will be reflected, the surface will appear dark and devoid of color. This is most evidently seen in light artist Olafur Eliasson's "Room for One Color" (2007).<sup>91</sup> (Figures 5.1a&b)



Figures 5.1a&b. *Space and people become monochromatic under the narrow spectrum of the yellow lights.*

Room for One Color [1997] Olafur Eliasson, visual artist; *Take Your Time* Exhibition, Museum of Modern Art, San Francisco (2007), New York City (2008); PhotoCrd: Teri Duerr.

MoMA. <http://www.moma.org/interactives/exhibitions/2008/olafureliasson/#/works/2/> (accessed Aug. 8<sup>th</sup>, 2009) (a)

Teri Duerr, NY Art Beat. <http://www.nyartbeat.com/nyablog/2008/06/thanks-for-taking-the-time/> (accessed Aug. 8<sup>th</sup>, 2009) (b)

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<sup>91</sup> "Room for One Color" [1997] Olafur Eliasson; *Take Your Time* Exhibition, Museum of Modern Art, New York City; PhotoCrd: Teri Duerr, NY Art Beat. <http://www.nyartbeat.com/nyablog/2008/06/thanks-for-taking-the-time/> (accessed Aug. 8, 2009)

On the other hand, red light hitting a red surface of the room not only is reflected to reveal the color red, but the lack of other parts of the light spectrum purifies the reflected color and renders the surfaces more vibrant. Moreover, the quantity of light determines the quantity of reflected color, and =hence the brightness of the color.<sup>92</sup> A lack of light darkens color, while an addition of light intensifies color.<sup>93</sup> Color Flood inherently adds light to a space, and therefore, can instill the space with vibrancy not achievable by paint alone. To achieve a strong impact in Color Flood, maximum color reflection can be facilitated by spatial elements that are colors of high value or have similar hues to the colored light.

The impact of Color Flood also varies by the color and context. Architectural theorist Thomas Thiis-Evensen posits that colors alter perceptions of weight, size and temperature. Furthermore, individual personal and cultural color associations, vary widely. Nonetheless the scope and intensity created by Color Flood magnifies a spatial experience.<sup>94</sup>

### **Chronological Sequence**

Colored light was previously produced by filtering white light. therefore also reducing the brightness. Artificial colored light has rarely been used as permanent interior lighting since having sufficient light itself is a relatively

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<sup>92</sup> Ladau, Smith, Place, *Color in Interior Design*, 59.

<sup>93</sup> Ladau, Smith, Place, *Color in Interior Design*, 59.

<sup>94</sup> Thomas Thiis-Evensen, 248 from Faber Birren, *Color Psychology and Color Therapy: A Factual Study of the Influence of Color on Human Life* (New York: McGraw-Hill, 1950), 109; Ladau, Smith, Place, *Color in Interior Design*, 69-71.

recent development. Some of the early instances of artificial colored light occurred in the theatre and similar entertainment venues, where colored light contributed to heighten dramatic spatial impacts.

### Light Art in the 1960 Decade

Several developments in the 1960 decade contributed to the increased interest and experimentation with light and color in interiors. These included 1) the growing influence of theatre lighting professionals who gradually introduced the concept of qualitative lighting design and the use of colored light to the industry; 2) the expansion of light art in the 1960s; and 3) the popularity of discotheques that became an experimental ground for multi-media experiences that made wide use of colored light. To some art critics, the multi-media experiments at the discos are extensions of the 1920s explorations in colored light performances.<sup>95</sup>

The visual art development called Light Art increased the awareness of light as a new modern material for expression. Several major exhibitions in the 1960s, most notably the *Kunst Licht Kunst* exhibition (1966) held in the Stedelijk Van Abbemuseum in the Netherlands, helped establish Light Art as a field in the fine arts. Many artists explored colored light in their works. The larger works led to installations that affected their surroundings while others consciously included such interactions as part of the work. Some of the most

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<sup>95</sup> Weibel, "The Development of Light Art," *Light Art*, 206-224. In Peter Weibel's essay on the development of light art, he discussed the multi-media experiments in the 1960s to be derived from the aims to unite music and visual arts through light. The development of electronic music and video led to the growth of synthetic sounds and images, combined in multi-media experiments.

notable light artists during the subsequent decades made their start in the 1960s including Dan Flavin, James Turrell and Bruce Numann. Of the three, James Turrell produced several works composed of carefully defined Color Flood volumes. (Figures 5.2&5.3) These environments served as inspiration to at least one, and perhaps more of the Color Flood applications later.<sup>96</sup>



Figure 5.2&5.3. *James Turrell's work, such as Wedgework III (1969) used carefully defined colored light to challenge people's perceptions of three dimensional space. Artistic intentions aside, many of his works, such as the Blue Walk (1982) produce Color Flood interiors..*

"Wedgework III" [1969] James Turrell in James Turrell, Giuseppe Panza and Guia Sambonet, *James Turrell: Dipinto con la Luce* (Milano: Motta, 1998), 34; PhotoCrd: Gerald Zugman.

"Blue Walk" (night) [1982] James Turrell in Turrell, Turrell, Adcock, *Occluded Front: James Turrell* (Los Angeles: Larkspur Landing, Cal.: Lapis Press, 1985), 19; PhotoCrd: Nance Calderwood.

### Interior Design Applications in the 1960 and 1970 Decades

Experience-oriented spaces such as 1960-era discotheques and nightclubs in the United States became prime experimental grounds for multi-media experiences. Colored light enhanced the dancing experience at clubs such as

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<sup>96</sup> Sara Hart, "Lighting and Building Technology Combine to Make a Perfect Match," *Architectural Record* 189, no. 1 (Jan. 2001), 64-65.



Whisky A Go-Go (1966) on Sunset Strip in Los Angeles, California. The Electric Circus nightclub in New York City (1968) may be the first example of Color Flood. (Figure 5.4) Artist Andy Warhol and an interdisciplinary group of designers installed theatrical lights in vibrant shades of amber. Dancers and the audience became imbued with the color. The Electric Circus' interior was also shaped by stretched fabric that became projection screens; color light bounced off this surface to color the entire space.



Figure 5.4. *Multi-media art experiments in discotheques broadened artistic explorations outside of formal exhibition spaces.*

Electric Circus [1967] Charles Forberg Associates, design; Chermayeff and Geismar, graphics; Tony Martin, lighting design; New York City in "What a Long, Strange Trip It's Been," *Interior Design* 78, no. 3 (Mar. 2007): 358; PhotoCrd: Anne Simpkin.

In addition to discotheques, entertainment interiors such as cabarets, clubs, bars and restaurants became experimental playgrounds for more theatrical lighting. These places did not require high ambient light levels, and dramatic colored lighting improved the overall experience. The Caesar Palace (1973) in

Tokyo, Japan offered a restaurant and dance setting entirely lit in red.<sup>97</sup>

(Figures 5.5a&b) In the 1970 decade, colored light was used both in single and multiple colors. At the end of the 1970 decade, counter forces attacking the disco culture and its associated drug use brought this type to a relatively abrupt end. This change brought about a very cautious attitude towards colored lighting.



Figure 5a&b Red light washes everything including the patrons in a glowing red in first basement (left) and bar (right) of the Caesar's Palace in Tokyo. A hint of blue from a patron's dress is revealed at the band of white light on the balcony.

Caesar's Palace [1973] Paolo Riani, architect; Junko Enomoto, interior design; Tokyo, Japan in Anonymous, "Caesar's Palace," *Architectural Record* 104, no. 2 (Aug. 1973): 104.; PhotoCrd: Eizaburo Hara.

### The 1980 Decade

From 1979 to the mid-1980s, occasional applications of colored light were primarily restricted to one color. . Neon and colored fluorescents, cost-effective ways to colorize a space, were utilized in the Wings Restaurant (1982).

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<sup>97</sup> Anonymous, "Caesar's Palace," *Architectural Record* 104, no. 2 (Aug. 1973): 104; PhotoCrd: Eizaburo Hara.

(Figure 5.6) An 85-foot-long curved pink neon tube served as the primary form of illumination in the restaurant. Like the Caesar Palace, in which amber-toned colored lights flattered people's skin tones, Wings' use of pink was believed to "soothe the soul".<sup>98</sup> Certainly the pink light created a different spatial experience, and the economical lighting solution responded to the concerns about energy conservation.



Figure 5.6. *The pink neon strip is a statement in both form and lighting in Wings.*

Wings Restaurant [1982] Geoffrey Hassman; New York City in Monica Geran, "In the Pink," *Interior Design* 53, no. 7 (Jul. 1982):169; PhotoCrd: Mark Ross.

### The 1990 to 2010 Decades

In the 1990 decade lighting as creative expression expanded beyond restaurants to become popular in retail, showrooms and some workplaces. Examples of Color Flood from 1987 through the 2010 period called on light artists as significant collaborators with interior designers and architects.

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<sup>98</sup> Monica Geran, "In the Pink," *Interior Design* 53, no. 7 (Jul. 1982):169.

Color Flood was used in large quasi-public spaces, such as the Forest Fair Mall in Cincinnati (1991). The addition of exceptionally large colored light installations in malls not only created greater visual impact, but also colorized both the architecture and the people in it, making monotonous interiors into a spectacle that marketers believed would attract more customers. (Figure 5.7) Without any outside references, Color Flood suspended people in a timeless environment. be suspended in a timeless space.



Figure 5.7. *Blue light dominates the atrium space in the Forest Fair Mall, acting as a spectacle and also obscures the passage of time.*

Forest Fair Mall [1991] HOK, architects; Theo Kondos Associates, lighting consultants; Cincinnati, OH in Gareth Fenley, "The Hows and Whys of Shopping-Center Lighting," *Architectural Record* 179, no. 2 (Feb. 1991), *Record Lighting*: 65; PhotoCrd: Robert Pettus.

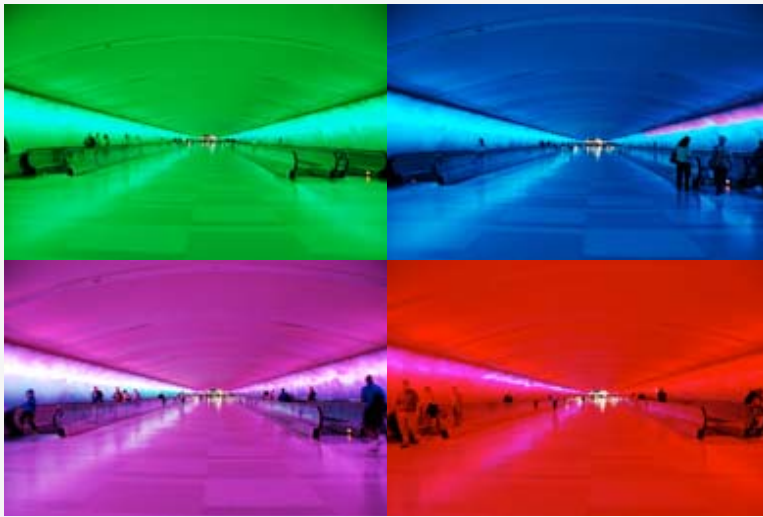
Some of the most stunning examples of Color Flood during this period occurred in long pedestrian corridors, such as concourses between airline terminals and city underground passages. These long passageways offered new occasions for color light and light art installations. In airports, colored light installations combined with acoustical accompaniments; the installations were

thought to diminish perceived travel time, often in underground facilities without any natural lighting.

Although the 1987 installation of changing multi-colored lights on the ceiling and walls in the Chicago O'Hare Airport, United Concourse B & C, is credited to Murphy/Jahn, but ground-breaking as it was, the design was not yet a Color Flood. Color Flood was first achieved in the McNamara Terminal in the Detroit Metropolitan Airport (2002). The SmithGroup created a colored light spectacle using an installation of LED fixtures, synchronized with music played in the tunnel.<sup>99</sup> (Figure 5.8a-e) A Color Flood is achieved when the tunnel becomes imbued with one color at a time. (Figures 5.8a-d) The music-synchronized color changes (blue, green, purple, red). actively introduced different color environments to the pedestrian and generated a varied rhythm along the corridor. In addition to monochromatic schemes, polychromatic effects corresponding with music provided less coloration on pedestrians. The monochromatic Color Flood only occurred as moments of a larger performance.

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<sup>99</sup> Nayana Currimbhoy, "Light Waves: Tropical Colors, the Sounds of the Everglades, and Intense Light Enliven an Airport Concourse," *Architectural Record* 183, no.11 (Nov. 1995), Lighting Supplement: 22.



Figures 5.8a-d. *Color-changing monochromatic environments in the underground pedestrian tunnel at the McNamara Terminal in Detroit Metropolitan Airport bathed walkers in saturated colors.*



Figure 5.8e. *An polychromatic instance in the tunnel.*

Underground pedestrian tunnel, McNamara Terminal , Detroit Metropolitan Airport [2002] SmithGroup; Detroit, MI; PhotoCrd: Joanne Kwan (2009).

In Oklahoma City, Elliot + Associates used museum-like white walls flooded with color-gelled fluorescent lights to replace the raw concrete walls and 1970's-style painted supergraphics.<sup>100</sup> The colors served as a navigational tool. For example, green passages connected banks, and magenta led to

<sup>100</sup> Edie Cohen, "The Way Forward," *Interior Design* 78, no. 10 (Aug. 2007): 196.

hotels.<sup>101</sup> (Figures 5.9a&b) These were further punctuated by white spaces that displayed historic black and white photos of the city.



Figures 5.9a & b. *The use of fluorescent tubes in the tunnels was compared to Dan Flavin's installations. Black and grey flooring clearly delineates from the lighter walls, adding different tones to the monochromatic palette.*

The Underground [2007]; renovation, 1931, 1972 -1984 Underground Tunnel System; Elliot + Associates; Oklahoma City, OK in Edie Cohen, "The Way Forward," *Interior Design* 78, no. 10 (Aug. 2007): 203; PhotoCrd: Bob Shimer/Hedrich-Blessing.

From 1990 to 2010, the gradual entry of ultra-bright LEDs in interior architectural use renewed awareness about the potential of color light. Growth in color light applications also brought about breakthroughs in lighting and control systems technology that allowed more control over light in terms of color, the evenness of distribution, the shape and size of installation and the adjacent space needed for accessories. Richer colors, and a wider range of colors from ultra-bright LEDs were achieved by mixing red, green and the newer blue lights at various levels. In addition to amber tones favored in food and beverage interiors, aquariums tapped into blue light sources resulting from a combination of natural light filtered through depths of water, reflected blue

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<sup>101</sup> Cohen, "The Way Forward," 198.

light from blue walls and artificial blue light used as an enhancement. (Figure 5.10)



Figure 5.10. *TVS Interiors* balanced light filtering from the tanks with an appropriate blue from LED fixtures to create a harmonious blue environment in the Georgia Aquarium.

Georgia Aquarium [2006] *TVS Interiors*; Atlanta, GA in Edie Cohen, "Best of Year Institutional: Merit," *Interior Design* 77, no. 15 (Dec. 2006):112; PhotoCrd: Brian Gassel/ *TVS Interiors*.

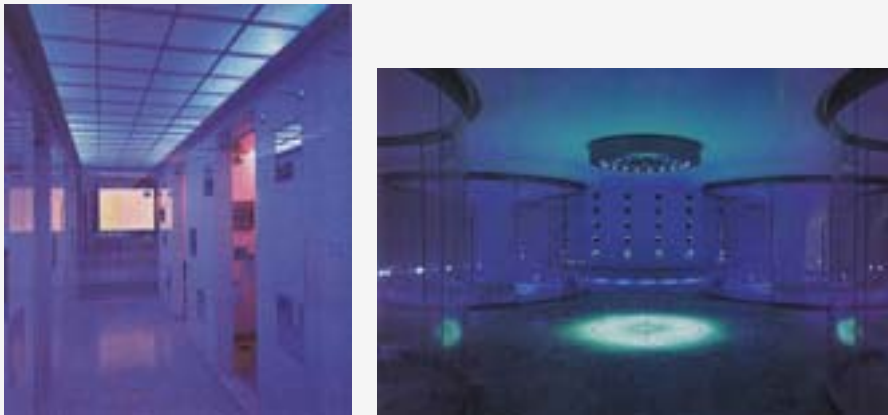
Spas and health related recreational facilities also use blue light, because of the color's association with water, contributing to an archetypical practice called Blue Moon.<sup>102</sup> In the Barton Gym (1995) in Chicago, the passage to the men's shower room was flooded in blue light to symbolize water and to distinguish the space from others. (Figure 5.11) In comparison, the steam room in Bath Spa (2004) revealed denser and richer shades of aqua and deep blues.<sup>103</sup> (Figure 5.12)

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<sup>102</sup> Rachel Goldfarb, "Theory Studies: Archetypical Practices of Contemporary Resort and Spa Design," M.A. Thesis, Cornell University, 2008), 54-55.

<sup>103</sup> Henry Urbach, "Aero Studios," *Interior Design* 67, no. 1 (Jan. 1996): 88; Hugh Pearman, "Bath Spa, Bath, England," *Architectural Record* 192, no. 2 (Feb. 2004): 119.





*Blue light was chosen for their relation to water but also to create a relaxing environment in both the Barton Gym's men's shower area and Bath Spa's steam room.*

Figure 5.11. (left) Men's Shower Area, Barton Gym [1995] Aero Studios, design; Handeye for Clark Johnson, lighting; Chicago, IL in Henry Urbach, "Aero Studios," *Interior Design* 67, no. 1 (Jan. 1996): 88; PhotoCrd: Peter Aaron /Esto.

Figure 5.12 (right). Steam Room, Bath Spa [2004] Adaptive use, Hot Bath [1775] and Cross Bath [1790]; Grimshaw, architects; Speirs & Major Associates, lighting; Donald Insall Associates, conservation architect; Bath, UK in Hugh Pearman, "Bath Spa, Bath, England," *Architectural Record* 192, no. 2 (Feb. 2004): 119; PhotoCrd: Edmund Sumner/ View Pictures.

Other examples associated blue light with the the sky and with technology. Drawing inspiration from the numerous forms of blue light, including the "ubiquitous glow of the monitor in the information age", the blue of water and sky, as well as light artist James Turrell's blue light spaces, MJP Architects flooded large sections of the Wellcome Center of Science with blue light from the peripheral walls.<sup>104</sup> (Figure 5.13)

<sup>104</sup> Anonymous, "Art and Lighting Mesh in Lobbies of High-Tech Bank Facility," *Architectural Record* 182, no.11 (Nov. 1994), Record Lighting: 8; Sara Hart, "Lighting and Building Technology Combine to Make a Perfect Match," *Architectural Record* 189, no. 1 (Jan. 2001): 64.



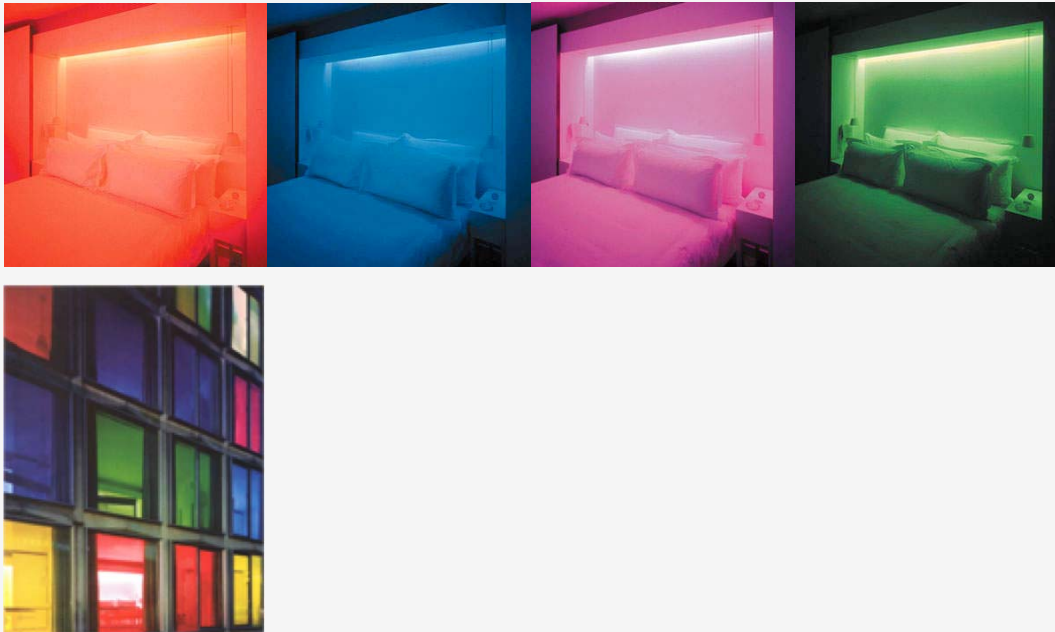
*Applications of blue light demonstrate that color associations can be highly personal and often depended on the context.*

Figure 5.13. Wellcome Center of Science, London Science Museum [2001] MacCormac Jamieson Prichard (MJP), architect; Hollands Licht - Rogier van der Heide, Amsterdam, lighting consultant; London, UK in Sara Hart, "Lighting & Building Technology combine to make a perfect match," *Architectural Record* 189, no. 1 (Jan. 2001): 63; PhotoCrd: Roos Aldershoff.

Until the late 1990 decade the prominent colors used for Color Flood were reds or blues. Green light was rarely found in fixed installations, because it was not a flattering color on skin. Philippe Starck, however, broke with this notion when he designed St. Martins Lane Hotel (2000) as an interactive space. Green was among a choice of colors that guests could choose to Color Flood their rooms. (Figures 5.14a-e) Personalizing one's hotel room became a feature of a number of boutique hotels during this period, like St. Martin's Lane; color and light soon became one of the options allowing guests to "paint [their] mood[s]." <sup>105</sup> A similar lighting option was provided for the private dining room in Philadelphia restaurant POD. (2001) (Figure 5.15) This new capability was initially made possible by specially developed digital control systems.

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<sup>105</sup> Melissa Barrett Rhodes, "Room with a Hue," *Interior Design* 71, no. 1 (Jan. 2000): 130.



*Besides being a spectacle of monochromatic colors that tinted space, people, furnishings and food, the colored light flooding the space also represented individual choices.*

Figure 5.14a to d. (top) *One of the most distinctive features of the St. Martins Lane Hotel is the customizable bed lighting that paints the white room. (a-d)*

Figure 5.14e (bottom) *The color of the lights become visible on the street. (e) (*

St. Martin's Place Hotel [2000] Philippe Starck, designer; Isometrix, lighting consultants; London, UK

in Nathen Silver, "The Suspension of Disbelief," *Metropolis* 20, no. 10, (May 2001); [http://www.metropolismag.com/thml/content\\_0501/chn/](http://www.metropolismag.com/thml/content_0501/chn/) (retrieved Dec 7<sup>th</sup>, 2009); PhotoCrd: Courtesy of Arnold Chan (a-d)

in Melissa Barrett Rhodes, "Room with a Hue," *Interior Design* 71, no. 1 (Jan. 2000): 122; PhotoCrd: Todd Eberle (e)



Figure 5.15. (right) Individual Dining Pod [2001] Rockwell Group; Philadelphia, PA in Monica Geran, "Mod Pod," *Interior Design* 72, no. 3 (Mar. 2001): 179; PhotoCrd: Paul Warchol.

LEDs offered color variety previously unconsidered. Hospitality designers for Las Vegas clubs, hotels, restaurants and retail store designers embraced the vibrant exotic colors of light. In the Fornarina Store (2005), a white interior became a Color Flood by a deep fuchsia "sunset" emanating from LED-lit structures—a demonstration that appeared only ten minutes each day.<sup>106</sup>

(Figure 5.16) The short time period in which the store's signature fuchsia lasted was a branding strategy that did not interfere with shopping. Various pre-programmed colors, such as those used in the MacNamara terminal, were also produced by mixing lights from variously colored LEDs. This technique was used for the lobby of Fornari Headquarters in Milan (2008).<sup>107</sup> (Figure 5.17)

<sup>106</sup> Suzanne Stephens, "Fornarina, Las Vegas, Nevada," *Architectural Record* 193, no. 2 (Feb. 2005): 140.

<sup>107</sup> Craig Kellogg, "Leaving Las Vegas," *Interior Design* 80, no. 7 (May. 2009): 156.

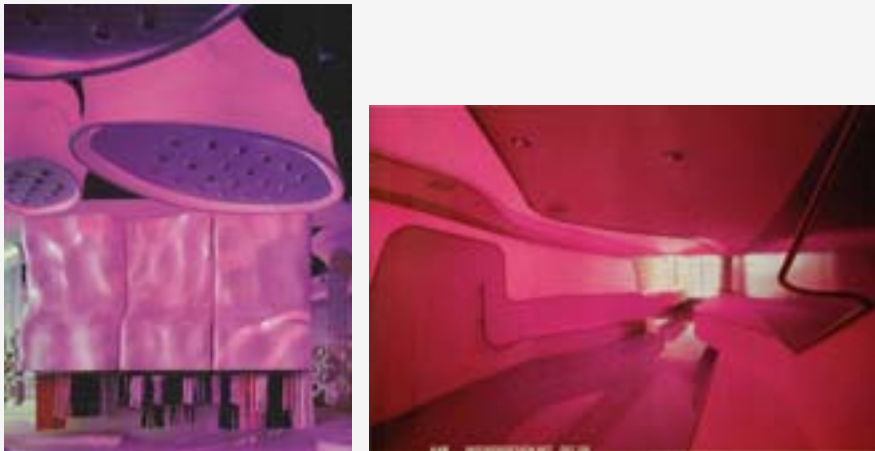


Figure 5.16. (left) *The short period of Color Flood became an event on its own, gaining more attention than the store's white box. space .*

Fornarina Store [2005] Giorgio Borruso designer; Northshore Consulting, lighting consultant; Las Vegas, NV in Suzanne Stephens, "Fornarina, Las Vegas, Nevada," *Architectural Record* 193, no. 2 (Feb. 2005): 140; PhotoCrd: Benny Chan/ Fotoworks

Figure 5.17 (right) *Fornari uses fuchsia colored light to create an event at its lobby area. The colored light was a branding strategy and the similar feature connected the office to the store*

Lobby circulation, Fornari Headquarters [2008] Giorgio Borruso Design; Milan, Italy in Nicholas Tamarin, "Best of Year: Midsize Office - Giorgio Borruso Design," *Interior Design* 79, no. 15 (Dec. 2008): 110; PhotoCrd: Alberto Ferrero

Exhibiting a similar concept of versatility on a much larger scale, the 120-foot-high lantern wall in the atrium space of Creative Artists Agency (2008) was backlit by metal halides with software-controlled dichroic filters.<sup>108</sup> (Figure 5.18a-c) In this example, white or colored lights of softer tones offer a comparison with the saturated colors of entertainment environments. The

<sup>108</sup> Edie Cohen, "Stairways to the Stars," *Interior Design* 78, no. 7 (May 2007): 256, 257; PhotoCrd: Benny Chan/ Fotoworks

Creative Artists Agency chose a subdued palette without sacrificing professionalism desired in the large corporate office.



Figures 5.18 a, b, c. *The Creative Artists Agency is an example where a White Box interior is transformed by light into a Color Flooded Light Box.*

Atrium, Creative Artists Agency [2007] Gensler, architects; Horton Lees Brogden Lighting Design, lighting consultants; Los Angeles, CA in Edie Cohen, "Stairways to the stars," *Interior Design* 78, no. 7 (May 2007): 256, 257; PhotoCrd: Benny Chan/ Fotoworks.

Historic preservation projects, such as the ten-year renovation of the 1905 Musée des Arts Decoratifs in Paris (2007) embraced new technology to heighten spatial experience. (Figure 5.19) The new chandeliers constructed of bands of hand-frosted PVC and lit by LEDs "can be programmed for 10,000 individual colors and color combinations." They are set to flood the hall with colored light relating to the time of the day, addressing the dimension of the passage of time in the interior.<sup>109</sup> Color Flood gave the space a vibrant light that was impossible when the building was new. Furthermore, the indirect

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<sup>109</sup> Judy Fayard, "Belle Epoque Goes High-Tech," *Interior Design* 78, no. 14 (Nov. 2007): 332.

monochromatic light diminishes the contrasts created by shadows and color differences, flattens and de-emphasizes the appearance of ornate architectural elements and brings it closer to the simplicity of modernist architecture. Without the need to make large permanent alterations to the original building, Color Flood bridged the past to the present without sacrificing the interior's architectural integrity. The project may prove to be a model of other preservation efforts.



Figures 5.19 a&b. *Color-changing chandeliers placed under the oculi extended the use of light as the indicator for time.*

Belle Époque great hall, Musée des Arts Décoratifs [2007] Dubuisson Architects, architects; L'Observatoire International, lighting consultants; Paris, France in Judy Fayard, "Belle époque goes high-tech," *Interior Design* 78, no. 14 (Nov. 2007): 330, 332; PhotoCrédit: Eric Laignel.

### Summary

Through the 2000 to 2010 decade, , LEDs prompted a new interest in evenly lit surfaces, giving rise to more examples of Color Flood. Color-changing became a convenient option for LED applications where colors were created by mixing different intensities of various colored LEDs; Color Flood is an effect

derived from these installations. As illustrated in the Fornari Headquarters in Milan, the saturation and brightness of the colored light affect its ability to colorize objects within the environment. With less saturated colors or low brightness, the color lights can easily be washed out by other forms of ambient light. Although the convenient color-changing option allowed environments in various practice types to use Color Flood, it also reduced the commitment to permanent Color Flood to solve practical activity needs. All in all, Color Flood is growing in popularity, and more and more, it is becoming a temporal effect.





## CHAPTER 6

### **FLOAT**

# **Float**

## **Definition**

Float is a weight-bearing floor plane comprised of a translucent material that is lit from below, giving an unnatural effect.

## **Description**

Float was first identified as an archetypical practice in boutique hotels.<sup>110</sup>

Float may be a result of a floor slab inset with structural glass which becomes a lit floor through illumination of the level below. In recent examples, Float is constructed of translucent platforms that are deliberately built for this purpose with lamps hidden underneath the translucent planes. A few early examples of Float using constructed platforms employed incandescent light bulbs as its light source. Fluorescent tubes are used in the majority of more recent installations, because of the lower cost, non-directional light and long shape that facilitates a more even light distribution. From 2000 to 2010, LEDs were been used in a few installations. Their small size and flexible arrangement facilitated uniform light distribution even in less regular shaped platforms. More importantly, LED installations offered color-changing effects. In all types of construction, tiles of translucent glass are held in place by a structural frame. The size of the tiles, the detailing of the edge of the tiles and the way they are

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<sup>110</sup> Mijin Juliet Yang, "Theory Studies: Contemporary Boutique Hotel Design," (MA Thesis, Cornell University, 2005), 87-89.

framed will determine how much of the frame is revealed. This affects the continuity of the appearance of the lit floor.

### **Effect**

Most Float installations impart a diffused, even illumination from below. Large areas of up-light evoke a sense of floating. Float often becomes the center of attention. As with most lighting effects, large contrasts with general light levels create more dramatic effects, although issues of glare limit their brightness. Therefore, Float is often complemented by other sources of ambient illumination.

Part of the dramatic effect of a lit floor arises from light coming from below. This departs from our everyday experiences of the directionality of light and how shadow defines form. In the natural environment, sunlight comes from above, and it is the strongest light we encounter everyday. Light from the moon acts similarly. The most common value pattern in nature goes from dark to light as one moves from the ground below to the sky above.<sup>111</sup> In this context, soil and stone belonging to the earth are associated with darker colors. These darker values communicate weight and stability, while lighter values communicate lightness in weight.

In this archetypical practice, these properties are reversed. Light comes from below and creates a value gradient in opposition to the norm. A brightly lit floor casts unfamiliar shadow patterns on those standing on it. Large smooth blocks

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<sup>111</sup> Francis D. K. Ching, *Interior Design Illustrated*, 2<sup>nd</sup> ed. (Hoboken, N.J.: John Wiley & Sons, Inc., 2005), 119.

of light deny substance. Standing on a lit floor is like standing on nothing; this experience evokes a sense of floating. The effect is enhanced by minimal appearance of structural frame. Architectural theorist Thomas Thiis-Evensen describes glass floors as imparting a sense of insecurity.<sup>112</sup> Altogether, these qualities of the Float archetype create highly dramatic spaces, although numerous sources suggest that up-lights create unflattering shadows on people.<sup>113</sup>

### **Chronological Sequence**

From the middle of the 19<sup>th</sup> century forward, developments in cast iron and glass construction introduced glass ceilings that brought natural light deep into the interior. Among the earliest of these developments were Jean-Pierre Cluysennar's arcade, the Galleries Royal Saint Hubert (1847) in Brussels and Joseph Paxton's Crystal Palace (1851) in London.

Although these examples are well known, there has been little historical research about cast iron and glass flooring, but sometime in the late 19<sup>th</sup> or early 20<sup>th</sup> centuries, cast iron grids with glass inserts were widely used for the sidewalks of New York City's SoHo area in order to bring daylight into the basement vaults. At night, light from the basements created a lit pavement on the ground level. Some of these early installations can still be seen as retailers, such as Prada (2001), bring new uses to basements.

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<sup>112</sup> Thomas Thiis-Evensen, *Archetypes in Architecture* (Oxford: Oxford University Press, 1987), 63.

<sup>113</sup> Andreas Bluhm and Louise Lippincott, *Light! The Industrial Age, 1750-1900* (New York: Thames and Hudson, 2000), 34.

In 1904, Otto Wagner used large amounts of glass to create a light-filled interior for the Austrian Postal Savings Bank in Vienna. Moreover, he used structural glass for the floor of the main room in order to bring natural light into the basement.<sup>114</sup> (Figure 6.1) Compared to the earlier steel grids with glass inserts, structural glass made larger expanses of a continuous glass floor possible and greatly improved the illumination in floors below. In the evening the glass floors became a lighted surface, creating a connection between the floors and expanding the perception of vertical space.



Figure 6.1. Architect Otto Wagner used Float for the main banking room of the Postal Savings Bank, a noteworthy Jugendstil building in Vienna. A grid of steel divided the glass into blocks.

Main Banking Room, Postal Savings Bank [1904-1912] Otto Wagner, Architect; Vienna, Austria in John Pile, *A History of Interior Design*, 3<sup>rd</sup> ed. (London: Laurence King Publishing Ltd. 2009), 297.

By the late 1920s, glass blocks were becoming increasingly popular materials for ceilings, walls and floors. When the luxurious Baker Hotel in St. Charles, Illinois, opened in 1928, it boasted that its ballroom floor was one of only three

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<sup>114</sup> John Pile, *A History of Interior Design*, 3<sup>rd</sup> ed. (London: Laurence King Publishing Ltd. 2009), 297.

lighted glass floors in the world. The Rainbow Room's floor incorporated 2,620 red, green, yellow and blue lights beneath its floor of 300 glass blocks.<sup>115</sup>

In the 1930s the commercialization of tubular lighting sources, such as fluorescents, resulted in the design community shifting its attention away from color artificial lighting practices. The practice of Float almost disappeared and was not revived until the 1960 decade.<sup>116</sup>

Inspired by the first human space flight, Evelyn Jablow, a noted decorator and furniture designer, fabricated a futuristic Astrotel trade-booth for the Upholstery Leather Group in the annual Design and Decoration trade show in 1962.<sup>117</sup>

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<sup>115</sup> St. Charles Heritage Center, "Historic St. Charles: The Rise of Tourism and Philanthropy – Hotel Baker," St. Charles Heritage Center, <http://www.stcmuseum.org/historic18.html>. Accessed on 9 July 2009.

<sup>116</sup> Pile, *A History of Interior Design*, 368.

<sup>117</sup> Evelyn Jablow (1919-1997) was best known for use stainless steel frames in furniture designs, which she produced for furniture companies. Her first such collection, designed in 1962, combined steel frames with silk, velvet and fur. Among her furniture designs were a melon-shaped stainless steel serving cart and a roll-around chopping board. She was president of her own business, American Vernacular, from 1973 until her death. Its work included furniture, apparel and interior design, advertising and product development. Jablow was director of visual merchandising for Bloomingdale's from 1974 to 1976, design director of *House Beautiful* magazine from 1977 to 1978 and art director of *L'Officiel* magazine from 1982 to 1984. In 1963, she toured factories and workshops in Ireland as a consultant to the Irish Government on exports. In 1970, she was a consultant to the Wool Bureau Inc., the United States branch of the International Wool Secretariat, designing room settings using wool carpeting. She also consulted on projects in Italy, India, Japan, Portugal, Greece and France. A native of Philadelphia, she graduated from New York University in 1940. Obituary, Enid May, "Evelyn Jablow, 78, Decorator and Designer of Furniture," *The New York Times* (Oct. 1, 1997) <http://www.nytimes.com/1997/10/01/nyregion/evelyn-jablow-78-decorator-and-a-designer-of-furniture.html>; (Accessed Dec. 6, 2009).

(Figure 6.2) The booth was an imagined room in a space port; it was constructed entirely of glass and featured a lit translucent floor. Compared to the Austrian Post Savings Bank, the less prominent structural support created a continuous lighted plane rather than individual grids of light. Light coming from below the frosted glass suggested a sense of weightlessness in space, an illusion enhanced by furniture that was suspended from thin wire.



Figure 6.2. *At the Astrotel booth, Float enhanced the sensation of floating.*

"Astrotel," Upholstery Leather Group Trade-Booth [1962] Evelyn Jablow, A.I.D; Chicago, IL in "Decoration and Design 1962," *Interior Design* 32, no. 11 (Nov. 1961): 109; PhotoCrd: Anonymous.

In the 1960 and 1970 decades in the United States, discothèques became an experimental ground for lighting and color installations. At this juncture, the archetypical practice of Float was revived once more for dance floors. The movie poster of the classic 1977 film "Saturday Night Fever" depicted actor John Travolta standing in an iconic posture on a colorful lit floor. (Figure 6.3)

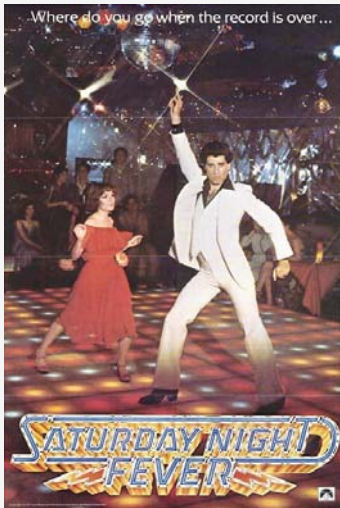


Figure 6.3. *The film Saturday Night Fever established many of the stereotypes associated with the disco era, among them a colorful Float.*<sup>118</sup>

Movie Poster, *Saturday Night Fever*" [1977] Diener-Hauser in Internet Movie Posters Awards Gallery, [http://www.impawards.com/1977/saturday\\_night\\_fever.html](http://www.impawards.com/1977/saturday_night_fever.html) (accessed 9 July 2009).

In 1978, following the release of the movie "Saturday Night Fever the previous year," the Playboy Club in Dallas added a glass lit floor to its premises. (Figure 6.4) The Float installation stretched from edge-to-edge between two adjacent walls and integrated light with the architecture. The floor tiles referenced the grid pattern on the walls, and color was further integrated into each tile using lights of four different colors. The goal was to handle more architecturally the "effects appropriate to a discotheque" and to "integrate them more fully into the overall interplay of colors, shapes, and textures maintained throughout the space."<sup>119</sup> The amorphous colored lights of the dance floor formed the center of

<sup>118</sup> Peter Braunstein, "Disco," *American Heritage Magazine* 50, no.7 (Nov. 1999), [http://www.americanheritage.com/articles/magazine/ah/1999/7/1999\\_7\\_43.shtml](http://www.americanheritage.com/articles/magazine/ah/1999/7/1999_7_43.shtml). Accessed on July 5<sup>th</sup>, 2009

<sup>119</sup> Anonymous, "Playboy Club/Dallas," *Interior Design* 49, no. 6 (Jun. 1978): 124.



the disco experience, comprising constant stimulation from light, music and dancing. The lit floor drew attention to the feet. The intention of Float was to remove patrons from ordinary space and time. The dramatic effects produced from up-lighting made Float apt for entertainment venues, and Float remains a feature in night clubs and bars.



Figure 6.4. *The Float effect became a dominant lighting practice in the darkened interiors of nightclubs and bars.*

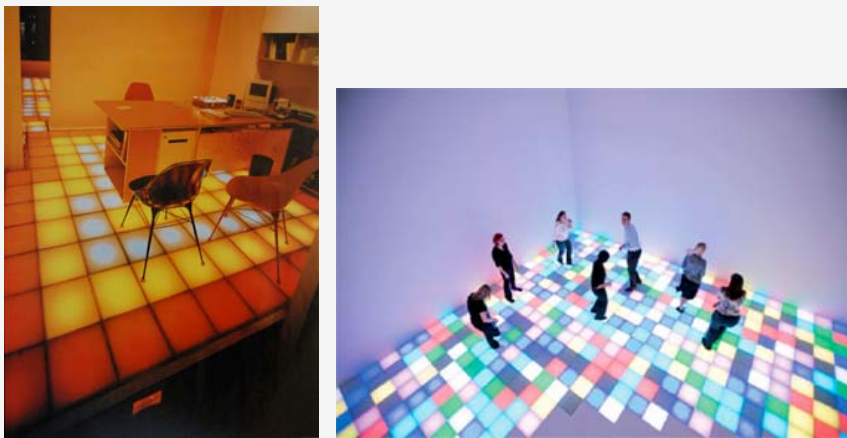
Dance Floor, Playboy Club [1978] Gerard R. Cugini Associates; Dallas, TX in Anonymous, "Playboy Club/Dallas," *Interior Design* 49, no. 6 (Jun. 1978): cover; PhotoCrd: Louis Reens.

In the mid-1990 decade, visual artist Piotr Uklanski emerged on the New York City art scene with his signature piece—Untitled (Dance Floor). (Figure 6.5)

"The sound-interactive, light-pulsating Dance Floor (1996) conjoined the formality of the modernist grid and the aesthetics of a Saturday night disco."

The sculpture was activated by people's steps and their movements; in turn, people interacted with one another on the floor. "By night the floor throngs with

DJs and dancers; by day, shoe scuffed and cigarette littered, it dissipates in to a wan and slightly sordid surface. Endlessly flexible, the floor has functioned in many different social contexts, including in the Museum of Modern Art in New York's Sculpture Garden, in numerous gallery spaces, in an office workers' canteen. As Uklanski observed in the MOMA exhibition catalogue, he aimed to create an object that would give and give and give but that would, at the end of the night, be unknowable, as its true nature resides in our own pleasure.”<sup>120</sup>



Figures. 6.5a & b. *The “Dance Floor” installation by artist Piotr Uklanski for the Guggenheim Museum was constructed of glass with an aluminum raised floor structure and computer-controlled LED and sound system.*

(left) Untilted (Dance Floor), Gavin Brown Enterprises [1996] Piotr Uklanski, Visual Artist; New York City in David Rimaneli, “If you lived here...” *Interior Design* 70, no.10 (Aug. 1999):177; PhotoCrd: courtesy of Gavin Brown Enterprises.

(right) Untilted (Dance Floor), “The Shape of Space” Exhibition [2007] Piotr Uklanski, Visual Artist; Solomon R. Guggenheim Museum, New York City in <http://www.h-e-r-m-a-n.com/Guggenheim%2013.html> (accessed 27 July 2009); PhotoCrd: Kristopher McKay.

<sup>120</sup> Kate Bush, “Once Upon a Time in the East: The Art of Piotr Uklanski,” *Art Forum* (Nov. 2002): 173.

After the decline of discothèques in the early 1980s, the use of large lit floors that created Float diminished once more until it remerged in the 1990 decade. In this era Float expanded beyond nightclubs and into the practice areas of boutique hotels, restaurants and retail stores. In 1995, Philippe Starck's design for the Felix restaurant in the Peninsula Hotel featured a large edge-to-edge Float installed in its "bucket-shaped" oyster bar, complemented by an internally lit onyx bar (Light Body). (Figure 6.6) While visually dramatic, Float maintained the low ambient light level suitable for a bar. Starck's experiments with both lighting and translucent glass resulted in an increased brightness to achieve a uniform appearance. Consequently the floor was perceived as a single illuminated plane.



Figure 6.6. *Different from the colorful examples of Float in earlier decades, the lit floor at Felix's Oyster Bar was characterized by uniform lighting across the tiles.*

Oyster Bar, Felix Restaurant, The Peninsula Hotel [1995] Philippe Starck, Designer; Hong Kong, China in "The Peninsula Hotel," *Interior Design* 66, no. 12 (Oct. 1995): 107; PhotoCrd: Donna Day.

Philippe Starck applied a similar strategy for the bar of the Hudson Hotel (2001) in New York City. This time, Float encompassed a much larger area,

resulting in a carpet-like floor that unified the space. (Figure 6.7) This reiteration resulted in another grid in which lighted areas were crossed by darker strips to define smaller zones of light. This relatively featureless Float had a modern minimalist appeal on the floor plane that was mix-matched with a fresco-like ceiling and eclectic furniture. In this example ceiling and floor planes were topsy-turvy; the ceiling was heavy, the floor light. The floor floated; so that walking over the plane was as if walking over nothing.<sup>121</sup>



Figure 6.7. *Yellow fluorescent lights were used to give uniform lighting across the large Float at the Hudson Bar.*

Bar, Hudson Hotel [2001] Philippe Starck, Architect; New York City in Cynthia Davidson, “Hudson,” *Architectural Record* 189, no. 5 (May 2001): 251; PhotoCrd: Michael Mundy.

In addition to the glowing translucency seen in Starck’s hospitality designs, retail examples of Float also became prevalent. In retail design lit floor experiments employed various patterns of materials and light distributions to bring texture to the floor plane. Differing light qualities were used to differentiate among various spatial zones. Float contributed to the spatial experience of moving through a store. In New York City’s Final Home store

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<sup>121</sup> Thiis-Evensen, *Archetypes in Architecture*, 63.

(2000), a threshold formed by Float visually isolated and emphasized a core display section at the rear of the interior. (Figure 6.8)



Figure 6.8. The Float platform drew patrons to the core collection of merchandize at the rear of the Final Home Store.

Final Home Store [2000] Choi-Campagna Design; New York City in Abby Bussel, "Second Skin," *Interior Design* 71, no. 5 (Apr. 2000): 232; PhotoCrd: David Joseph.

From the late 1990 to early 2000 decades, examples of Float increased in quantity and in a range of sizes and uses. Increased attention to lighting, and the improvement of lighting equipment, encouraged larger installations. Float also occasionally appeared outdoors. One of the notable examples was installed in the exterior alleyway of the Avalon nightclub (2003) designed by Desgrippes Gobe Group. (Figure 6.9) Large edge-to-edge installations merged light with architecture and challenged our need for stability from the floor.



Figure 6.9. *Float* extended the club experience from the interior to the exterior and formed a strong contrast with the club's original Neo-Gothic church architecture by Richard Upjohn (1840).

Exterior Alleyway, Avalon Nightclub [2003] Desgrippes Gobe Group; New York City in Stephen F Milioti, "Back in the Limelight," *Interior Design* 74, no. 11 (Sep. 2003): 255; PhotoCrd: John Horner.

In the mid-2000s, new interactive capabilities in technology, increasingly sophisticated control systems, and a gradual adaptation of the LED technology encouraged the development of design applications of *Float* that changed with time or interacted with people. For example, Louis Vuitton's store in Hong Kong (2006) featured a Showcase Stair with built-in LED treads that displayed video images on walking surfaces, engaging shoppers in their visual, as well as their physical movement. (Figure 6.10)



Figure 6.10. The staircase of the Louis Vuitton store (2006) in Hong featured treads made of *LED panels covered by sandblasted glass*. *Changing graphics accompanies shoppers walking up and down the stairs.*

Stairs, Louis Vuitton store [2006] Peter Marino Architects; Central, Hong Kong in Anonymous, "100 Giants," *Interior Design* 78, no. 1 (Jan. 2007): 100; PhotoCrd: Stephane Muratet.

The increased use of light as a design material led to lighting installations of Float in increasing sizes through the 2000 to 2010 decade. Bape in the Shibuya district of Tokyo (2008) constructed a multi-leveled Float with LED tiles extending from the floor up onto the walls on both sides of the entry.

(Figure 6.11a) This application created a camouflage effect that effectively blurred the transition between horizontal and vertical planes. Like the nightclubs before it, however, the floor of giant pixels provided constant color changes and each color theme created a new appearance of the interior.

(Figures 6.11b- d) Sometimes the changing patterns mimicked the video game Tetris in its moving shapes; at other times it displayed the store's name.





Figure 6.11a. The Float effect *extended up the walls and blurred the transition between horizontal and vertical planes.*

Entry, Bape [2008] Wanderwall; Shibuya; Tokyo, Japan in Naomi R. Pollock, "Bape, Shibuya", *Architectural Record* 196, no. 9 (Sep. 2008): 113; PhotoCrd: Kozo Takayama.



Figures 6.11b-d. *Bape's Float installation represented the complete immersion in changing light similar to those in nightclubs.*

Entry, Bape [2008] Wanderwall; Shibuya, Tokyo, Japan in Aric Chen, "The Last Days of Disco," *Interior Design* 79, no. 4 (Apr. 2008): 265. PhotoCrd: Jimmy Cohrsen.

By employing the latest lighting technology, retail brands positioned themselves at the cutting-edge of interior design. Retailers integrated Float in their designs to captivate customers and to prolong their time in the stores.. Float is expanding to different practice types, including all hospitality venues, as well as residences.





## CHAPTER 7

### **LIGHT BODY**

## Light Body

### Definition

A Light Body is a large translucent three-dimensional architectural object, or element, such as a column, that is lit fully from within to produce a glowing light. A Light Body is not planar.

### Effect

A Light Body reveals light as a physically defined mass, thus emphasizing both mass and form of the object. A strong contrast with ambient light levels heightens its impact.<sup>122</sup> The light of a Light Body is often low or balanced with other kinds of ambient illumination. The effect of light is often localized and attention is focused on the glowing object itself. Light Bodies are thus inefficient for task-oriented illumination and are seldom found in work areas.

When the contrast with surrounding light levels is high, light appears to emanate into space and activates the interior. A strong lighting contrast may

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<sup>122</sup> Rudiger Ganslandt and Harald Hofmann, *Handbook of Lighting Design* (Ludenscheid, Germany: Erco, Leuchten GmbH, 1992), 39,79. Large and relatively bright featureless luminous surfaces may cause a discomforting glare. "Discomfort glare occurs when an individual is involuntarily or unconsciously distracted by high luminance levels within the field of vision. The person's gaze is constantly being drawn away from the visual task to the glare source, although this area of increased brightness fails to provide the expected information". Discomfort glare is a problem that concerns the processing of information. An attraction of high luminance (brilliance) but offers no information content or obscures more important information becomes an unpleasant distraction. The handbook suggests an overcast sky and luminous ceilings to be conditions that may give rise to discomfort glare.

begin to obscure form, but when the contrast is low, light appears contained and reserved. Most examples of Light Bodies are geometric forms with little ornamentation.

The diffuse light of fluorescent lamps was found to be an ideal medium for unobtrusively accentuating form. The solid Light Body presented light in an unconventional manner. Both fluorescent and neon lamps were commonly used for these new lighting applications.<sup>123</sup>

The arrangement of light sources may be revealed as light patterns on the surface of the Luminous Body, introducing a directional quality to the form. Uniform light levels across the entire surface results in an object or element being perceived as a single glowing entity; this technique effectively draws attention to the architectural form. (Figure 7.1a). In practice, the concealed light sources are often seen on the translucent surfaces as brighter areas. Their shapes and arrangements affect the dynamic qualities of the planes; long shapes act like lines and direct energy along their length (Figure 7.1b) or the gradient created by light (Figure 7.1c); while point forms have a more static quality.<sup>124</sup> (Figure 7.1d) When multiple spots of appear on the plane, the luminous body is broken up into smaller sections, which, depending on the

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<sup>123</sup> Intypes researcher Leah Scolere identified a Light Body in her 2004 retail study. She called it a Light Box, because of its use as a counter or display surface in retail design. She noted that the primary light source was artificial and usually fluorescent. Leah Maureen Scolere, "Theory Studies: Contemporary Retail Design" (M.A. Thesis, Cornell University, 2004), 32.

<sup>124</sup> Francis D.K. Ching, *Architecture, Form, Space & Order*, 2<sup>nd</sup> ed. (New York: Van Nostrand Reinhold, 1996), 4, 8-9.

prominence of these brighter shapes, can compromise the appearance of the form as a whole.

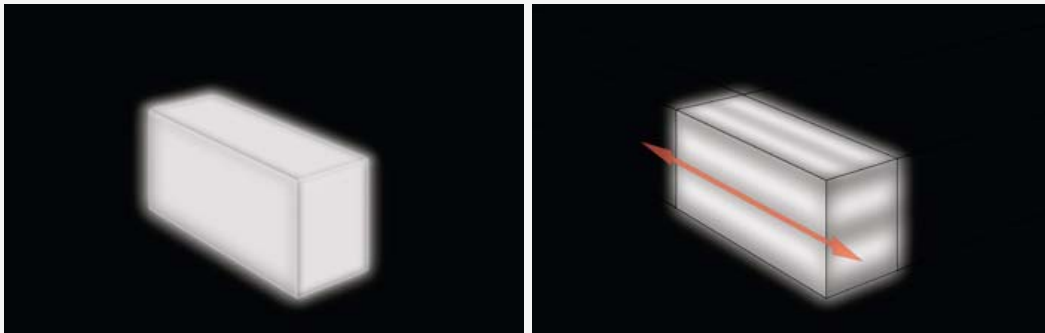


Fig 1a. (left) *A Light Body in which light is evenly distributed across all surfaces may give the impression of immateriality.*

Figure 7.1b (right) *A Light Body with a brighter shape along the length suggests horizontal movement.*

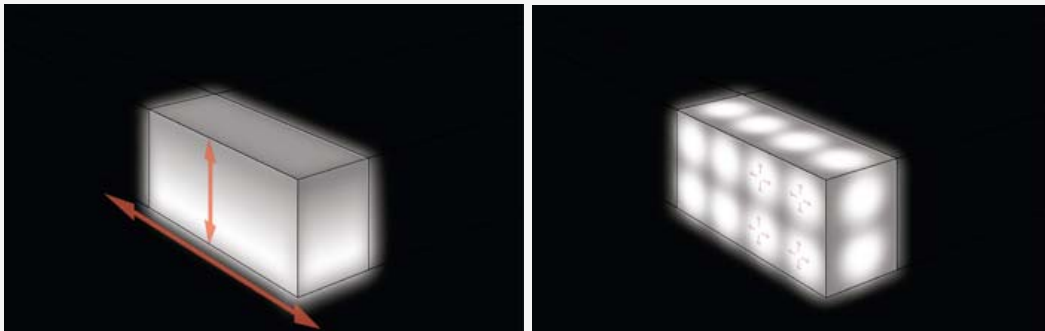


Figure 1c (left) *A Light Body with a bright line produces light gradients suggesting two directions.*

Figure 7.1d (right) *A Light Body comprised of light spots evenly distributed have a static quality.*

Throughout the development of the practice, examples of evenly illuminated Light Bodies were matched by the same amount of those that were not.

## Chronological Sequence

The Light Body practice may have its roots in the luminous architecture of the 1920 to 1930 eras in which buildings essentially became lanterns.<sup>125</sup> Poet Paul Scheerbart's vision of luminous architecture in 1914 alluded to “many artificial lighting devices, including glowing columns that not only supported the building but also illuminated them”.<sup>126</sup> General Electric commissioned a report on the possibilities of luminous architectural elements in 1931, suggesting that luminous elements could replace any architectural element, such as “pylons, columns, pilasters, panels, parapets, spandrels; as beams, coves, coffers, moldings, niches, and decorative patterns...”<sup>127</sup>

Historically a Light Body as an interior lighting type can be documented in the 1970 decade, but its primary development occurred in the 1990 decade. Light Bodies are primarily found in the hospitality sector, as Dressed Columns, reception tables and bar counters in restaurants and hotel settings. The emergence of the new architectural lighting design profession in the 1960 period and a growing awareness about lighting as feature in itself gradually began to liberate designers from the quantitative mindset often held about interior lighting.

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<sup>125</sup> See Appendix C for more on Luminous Architecture of the 1920s and 1930s.

<sup>126</sup> Mark Major, Jonathan Speirs, Anthony Tischhauser, *Made of Light: the Art of Light and Architecture* (Basel: Birkhäuser, 2004), 39.

<sup>127</sup> Dietrich Neumann, *Architecture of the Night: the Illuminated Building* (Munich, Germany: Prestel, 2002), 61, referencing Wentworth M. Potter and Phelps Meaker. “Luminous Architectural Elements.” *Transactions of the Illuminating Engineering Society* 26, no. 10 (1931): 1025-1026.

An early precedent of a Light Body was the floor-to-ceiling chandelier installed in the Patio restaurant (1972) in the Hess Department Store in Lancaster, Pennsylvania. (Figure 7.2) The Venetian crystal emitted a local, non-directional glow and became the focal point of the space. Limiting the brightness of the structure to reduce glare simultaneously reduced the amount of light falling on surrounding surfaces.



Figure 7.2. *The floor-to-ceiling chandelier in the center formed a light column that served as a focal point to define the middle dining section.*

Patio Restaurant [1972] Copeland, Novak & Israel; Hess Department Store; Lancaster, PA in Anonymous, "Luxury in Lancaster," *Interior Design* 43, no. 1 (Jan. 1972): 73; PhotoCrd: Henry S. Fullerton.

A Light Body was often used as a focal object, or an element organizing space, such as the luminous column in the entertainment room of the Norfolk Airport Hilton Hotel (1988) and the bar at Odeum Karaoke Club in Tokyo (1992). (Figs. 3 & 4) In the dimmed environments of the lounge and the bar, a Light Body's soft glow emanates from a low light level to create an intimate atmosphere. Translucent panels were used to construct a solid form; the internal illumination relieved associations of weight in these large masses without compromising solidity. Thinly cut onyx and similar translucent stones were also used as an alternative to translucent glass or the various kinds of

plastics. The integral color and texture or grain of natural materials proved more desirable in hospitality settings than the unflattering light of the more economical fluorescent sources.



Figure 7.3. *Building a luminous structure around a structural column in the Norfolk Airport Hilton Hotel's entertainment room transformed an ordinary column from an obstruction to a feature. The glowing columns were also used in the bar area and established a lighting vocabulary in the room.*

Entertainment Room, Norfolk Airport Hilton Hotel [1988] Ahearn-Schopfer and Associates; Norfolk, VA in John D. Coville, "Norfolk Airport Hilton," *Interior Design* 59, no.3 (Feb. 1988): 299; PhotoCrd: Peter Vanderwarker.



Figure 7.4. *The bar formed the focal point inside the main room of the Odeum Karaoke Club. Onyx was used to construct a continuous exterior on the counter top and front elevation of the bar, creating the illusion of a solid block of stone that emitted a soft glow. Light, juxtaposed with the solid stone, became tangible.*

Bar, Odeum Karaoke Club [1992] Totah Design; Tokyo, Japan in Mayer Rus, "Totah Design," *Interior Design* 63, no.16 (Dec. 1992): 105; PhotoCrd: Nacasa & Partners.

Morphosis' office design for Friedland Jacobs Communication incorporated a thin long luminous block that penetrated through various rooms in the office. (Figure 7.5) This Light Body provided both ambient lighting and task illumination for the work surfaces underneath it. It also became a large dramatic architectural feature.





Figure 7.5. In Morphosis' design for Friedland Jacobs Communication, the relatively small luminous block became architectural as it penetrated into adjacent spaces.

Art Department, Friedland Jacobs Communications [1997] Morphosis, architects; X-Tec, lighting consultant; Santa Monica, CA in Edie Cohen, "Vision Quest," *Interior Design* 68, no. 4, (Mar. 1997): 130; PhotoCrd: Grant Mudford.

The most striking examples of early Light Bodies were large, but reiterations at various scales began to appear through the 1990 decade as Light Body was embraced by new practice types, including residential and workplace design. Light Bodies frequently served as featured objects in large public spaces and helped way finding.

White LED was developed in 1995.<sup>128</sup> Traditionally, a majority of lighting applications, including previous examples of Light Body were dominated by white light sources. It is therefore understandable that while ultra-bright LEDs were used in applications, such as electronic displays, its actual integration into architecture only developed toward the late 1990 decade. In addition to

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<sup>128</sup> See footnote 20 for dates of LED development.

energy efficiency and color properties, the small size of LED gave them an advantage over fluorescent lamps in achieving even light distribution in more flexible configurations and smaller installations.

Some large Light Bodies occurred in public spaces, such as lobbies where they served as attractions, as well as organizing elements. In Tate Modern's (2000) west atrium entrance, luminous blocks emphasized the horizontal movement parallel to the skylights. (Fig.6) The irregular-shaped luminous Wombi Rock in Mohegan Sun Casino's Casino of the Sky (2003) served as an anchor point that was simultaneously an entertainment facility on its own. (Figure 7.7) Light added another level to the interior's compositional hierarchy and in examples such as the Tate Modern museum Light Body emphasized clean masses and lines over dashing colors, Light Body added subtle variations to the existing palette and differentiated the structure from its surroundings. The contained form of light injected an active, but controlled energy into the interior.



Figure 7.6. (left) *Two long glowing boxes in the west entrance of the Tate Modern Museum reiterate the form of the skylight and direct attention down the length of the space. The white luminous volumes have a subtle expansive quality which added to the sense of airiness in the atrium space.*

Tate Modern Museum [2000]; Adaptive Use, Bankside Power Station [1947]; Herzog & de Meuron, architect; Herzog & de Meuron with Office for Design, interior design; London, UK in William J.R. Curtis, "Herzog and de Meuron's Architecture of Luminosity and Transparency," *Architectural Record* 71, no. 6 (Jun. 2000): 102; PhotoCrd: Richard Bryant/Arcaid.

Figure 7.7. (right) *The Wombi Rock is a focal point in the themed Mohegan Sun casino. The building houses a three-level bar, lounge and dance floor that takes the shape of a massive rock- outcropping created by onyx clad on a steel frame.*<sup>129</sup>

'Wombi Rock' and slot area, Mohegan Sun Casino [2002] KPF, architects; Rockwell Group, interior design; Fisher Marantz Stone, lighting consultant; Uncasville, CT in William Weathersby, Jr., "Rockwell Group guides Native American narratives into abstract territory at the Mohegan Sun casino," *Architectural Record* 190, no. 3 (Mar. 2002):187; PhotoCrd: Frederick Charles

Several examples of Light Body appeared as doorframes and thresholds. For example, a glowing doorway at the W Hotel in New Orleans acted as a beacon

<sup>129</sup> William Weathersby, Jr., "Rockwell Group Guides Native American Narratives into Abstract Territory at the Mohegan Sun Casino," *Architectural Record* 190, no. 3 (Mar. 2002):186-90.

for the entrance of the car park. (Fig.8) The glowing Light Body also marked the transition between inside and outside.



Figure 7.8. Carpark Entrance, W Hotel [2001]; Adaptive Use, Glass-and-Brick Hotel [1982]; Eskew+ and Powerstrip; New Orleans, LA in Abbey Bussel, "The Big W," *Interior Design* 72, no. 3 (Mar. 2001): S44; PhotoCrd: Neil Alexander.

Luminous reception desks constitute some of the boldest statements of Light Body found across various practices. A clean, luminous reception desk created an excepting entrance without compromising a sense of professionalism desired by many firms. It was a part of Telenor's headquarters in Oslo, an "office-of-the-future" created by an international group of designers. (Figure 7.9) The design firm II by IV used a Light Body for both the reception and the bar at Rain (2002). The elegant solid blocks of light appeared in striking contrast to the rings of small, round, sparkling "raindrops" of the chandeliers. (Figures 7.10a & 10b)



Figure 7.9. *The Light Body reception desk illuminated one of the eight entrances of Telenor Headquarters.*

Telenor Headquarters [2003] Joint Venture between NBBJ-HUS-PKA; Oslo, Norway in Peter MacKeith, "In a Joint Venture, NBBJ, HUS, and PKA Capture Precious Nordic Sunlight in a Dramatic Office Environment for Telenor's World Headquarters," *Architectural Record* 191, no. 5 (May 2003): 224; PhotoCrd: Tim Griffith.



Figures 7.10a & b. *The minimal framing of the Light Body desk and counter in the Rain nightclub's reception area (left) and the bar (right) contributed to an elegant airy appearance.*

Rain [2002] II by IV Design Associates; Toronto, Canada in Nayana Currimbhoy, "Dappled with Light, the Glossy Planes of Rain Frame an Evocative Setting for Toronto Nightlife," *Interior Design* 73, no. 5 (May 2002): 308, 306; PhotoCrd: David Whittaker.

SANAA Architects' Dior Store in Tokyo appeared as a tower of light standing in the busy city. Likewise, its interior glowed from various luminous surfaces. The character in Dior was dependent on contrasting the even glow with other kinds of light. Light created a luminous white for the Black White interiors, amplifying the play of black and white that obscured depth and dematerialized the structures.<sup>130</sup> (Figure 7.11a &b) In the perfume and cosmetics department, suspended white Light Bodies supported rotating polished steel makeup fixtures that juxtaposed sharp and darker reflections with diffuse white light from translucent panels. The Light Bodies guided the eye to a plain soft light, relieving the busyness created by the reflective finishes.



Figure 7.11a. (left) *Display Light Body fixtures in the perfume and cosmetics section extended from the ceiling.*

Figure 7.11b. (right) *The Dior Homme section employed a vocabulary of luminous strips set against black lacquered ones in a wall display of black and light stripes.*

Dior Boutique [2004] SANAA, architect; Architecture & Associates, interior design; Tokyo, Japan in Ian Phillips, "Cities of Light," *Interior Design* 75, no. 4 (Apr. 2004): 162, 163, 164; PhotoCrd: Jimmy Cohrsen.

<sup>130</sup> Ian Phillips, "Cities of Light," *Interior Design* 75, no. 4 (Apr. 2004): 168.

In the 2000 decade, various experimentations with the Light Body practice included: 1) textures revealed on luminous surfaces; 2) color components; 3) architectural integration using multiple modules. The soft vertical ellipse patterns on the vertical face of the bar at Rain, produced a relatively stationary appearance. (Figs. 10a & 10b) On the other hand, the more even glow across the nightclub's reception desk, and also Dior's luminous blocks seemed to emanate energy and expand in all directions. (Figs. 11a & 11b)

In the 2000 to 2010 era, designers used larger continuous surfaces for Light Body reiterations. Reducing the structural frame lightened the visual weight of these the luminous bodies. In the most successful examples, the Light Body effect shifted from luminous objects towards pure solid light. In Vladimir Kagan's showroom in New York City, Light Body consisted of a frameless luminous plinth. (Figure 7.12)



Figure 7.12. *Competition for attention occurred between a luminous plinth and the furniture piece it displayed in the Vladimir Kagan Showroom.*

Vladimir Kagan Showroom, New York Design Center [2008] Guigi Gentile; New York City, NY in Mark McMenamin, "Designwire: The Comeback Kid," *Interior Design* 79, no. 8 (Jun. 2008): 54; PhotoCrd: (Courtesy of Vladimir Kagan courtour collection).

While many examples of the Light Body continued to use white light sources, the growing range of colors offered by LEDs renewed interest in experimenting with colored light; ; Light Bodies employing color-changing technology were most frequently found in restaurants, bars and nightclubs where changing colors could vary the experience of the space.. Colored lights were appreciated for their dramatic qualities appropriate for such venues, but the vibrant colors and color-changing effects also competed with a Light Body's form.. The result was that color often became the dominating feature of the space. An article in *Architectural Record* characterized the color-changing-light feature as a gimmick, suggesting that designers use the technology with caution.<sup>131</sup>

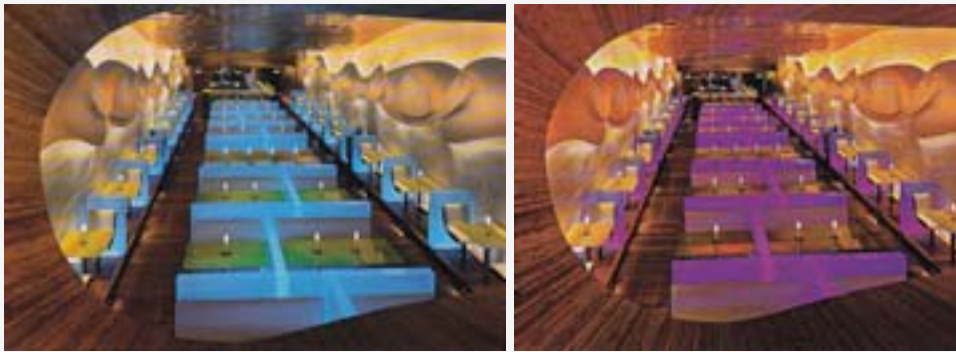
At Morimoto in Philadelphia, PA, designer Karim Rashid distributed LED-lit glass half-partitions throughout the long space to create more intimate enclosure around tables. The LED lights continuously changed colors and intensified the luminous partitions, varying the restaurant's color palette throughout the night. (Figures 7.13a&b) The regularity and crisp forms of the colored partitions and the slow color-changes nonetheless resulted in "a more calming experience than you might expect."<sup>132</sup>

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<sup>131</sup> Clifford A. Pearson, "Morimoto, Philadelphia," *Architectural Record* 190, no. 11 (Nov. 2002): 166.

<sup>132</sup> Pearson, "Morimoto," 166.





Figures 7.13a & 13b. *The changing colors and intensities of the luminous blocks formed varying contrasts with the other elements in the Morimoto Restaurant, obscuring and revealing the their arrangement through time.*

Morimoto [2002] Karim Rashid, designer; Focus Lighting, lighting consultants; Philadelphia, PA in Clifford A. Pearson, "Morimoto, Philadelphia," *Architectural Record* 190, no. 11 (Nov. 2002): 166; PhotoCrd: David Joseph/Snaps.

In response to the use of increasingly large luminous elements in the interior, luminaire designers also began to work more closely with architects, as well as produce fixtures that have become architectural in scale and shape, a gradual blurring of what is fixture and what is architecture. A good example is the Interface Flooring Showroom in Atlanta, Georgia. A massive drum-like Light Body pushes down from the ceiling plane to define a seating arrangement. This is an example where the design of lighting is so closely tied with an architectural element that it cannot be determined if the design began with architectural or lighting considerations. (Figure 7.14)



Figure 7.14. Interface Flooring Showroom [2005] TVS Interiors, designer; CDAI, lighting consultant; Fabmaster Inc., pendent fixture; Atlanta, GA in Stephen F. Milioti, "It Is Written," *Interior Design* 76, no. 8 (Jun. 2005): 114; PhotoCrd: Brian Gassel/ TVS&A.

The Light Body practice was used increasingly in the 2000 decade. With more energy efficient technology, such as LED, the practice of Light Body promises to continue unabated.



CHAPTER 8  
**LIGHT SEAM**

## Light Seam

### Definition

Light Seam describes a gradient of light that defines a continuous edge of illumination between perpendicular architectural planes.

### Description

A Light Seam is created by placing light sources in a narrow recess built at the edges of two architectural planes.

Leah Scolere, the graduate student researcher who named Light Seam in her 2004 retail study, defined it as “the continuous edge of illumination created on the vertical wall planes through the use of Infinite Wall. An infinite wall is sometimes created by using concealed lighting to wash an architectural element from its edges, creating an illusion of infinite extension. Light Seam is about the washing of the vertical plane with light and the outlining of the unlit ceiling plane above. The spatial experience is the perception of the ceiling plane as pulling away from the wall, a sensation of floating. There is an ethereal quality to the lighting and a strong awareness about floor and ceiling planes. The Light Seam becomes an element in spatial experience, because it makes one question how the ceiling plane is supported.”<sup>133</sup> In Light Revealing Architecture, Marietta S. Millet refers to this latter effect as a concealing of structure in which the pattern or rhythm of the light contradicts the structure or

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<sup>133</sup> Leah Scolere, “Theory Studies: Contemporary Retail Design” (MA Thesis, Cornell University, 2004), 109-12.

is unfamiliar to us.<sup>134</sup> Scolere articulated the effects of placing light at these recesses.<sup>135</sup>

This Intype study inspects the Light Seam more closely, addressing the difference between Light Seams with a long light gradient and that with a short, concentrated distribution and providing diagrammatic examples of spatial effects.

### **Effect**

By drawing attention to the edges of planes, a Light Seam emphasizes the shapes of architecture. The effect of the Light Seam is dependent on the length of the gradient transitioning from light to dark, as well as the plane and direction in which the gradient appears. If the gradient of light is short, Light Seam will appear as a fuzzy line of light, emphasizing the junction between the architectural elements. Occurring at the periphery walls, this effect of Light Seam accentuates the shape of the space. As the gradient of light extends along the plane, it introduces direction and movement to the space. Additionally, the plane will appear to lighten in weight towards the light, suggesting openness.

When the light at the edge creates a very strong contrast with the darker surroundings, the edges of the forms become obscured towards the light.

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<sup>134</sup> Marietta S Millet, Light Revealing Architecture (New York: Van Nostrand Reinhold, 1996), 65.

<sup>135</sup> Scolere, *Theory Studies*, 138-39.

Millet describes the effect as light dematerializing form as form appears to dissolve into nothing.<sup>136</sup>

The gradient light will have different effects on different planes since the ceiling, the wall and the floor have inherently different existential properties.<sup>137</sup> The most frequent applications of the Light Seam appear along the wall at the ceiling level, where the ceiling plane is slightly pulled back from the walls or columns, allowing light to travel down the walls from above. This introduces the effect of a rising motif, described by theorist Thomas Thiis-Evensen in his discussion of weight and movement implications introduced by a wall's horizontal divisions.<sup>138</sup> (Figure 8.1)

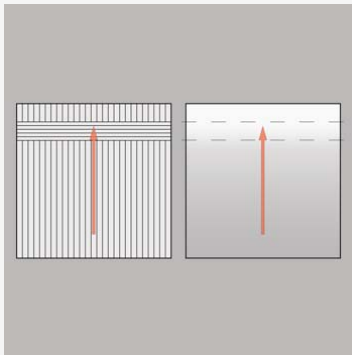


Figure 8.1 *Light introduces effects similar to the rising motif and attention is drawn upwards.*

<sup>136</sup> Millet, *Light Revealing Architecture*, 56.

<sup>137</sup> Thomas Thiis-Evensen, *Archetypes in Architecture*, (Oslo: Norwegian University Press, 1987), 133. In the sections “The Floor,” “The Wall” and “The Roof,” Thiis-Evensen argues that planar elements possess expressions of motion, weight and substance, and he describes how they communicate with our perceptions of their ability to support, delimit and shelter respectively.

<sup>138</sup> Thiis-Evensen, *Archetypes in Architecture*, 133.

Light at the top of the wall will cause the seam to appear less dense, more penetrable, and it will appear to rise, giving an impression of the space opening outward. On the other hand, the bottom part of the wall will appear denser, less penetrable and have a sinking motion, giving an impression of secure solidity. The tonal effect created by light on the wall aligns with, and reinforces, our recognition of down as the direction of gravity, belonging to ground and earth, and up as the direction of openness and freedom from gravity, belonging to the realm of sky and air. The overall appearance of the walls is that of secure solidity and proud stature.<sup>139</sup>

In practice, a recessed cove detail is mostly used to create a light seam. They may sometimes produce the effect of an Infinite Wall. The gap allows for concealment of light fixtures, as well as the scallops or additional gradients that may occur near the light source. (Figure 8.2) The elimination of luminaries on the surface allows one to focus on the effects of light alone. The light seems to enter from an extended space. This may lead to creating an Infinite Wall.

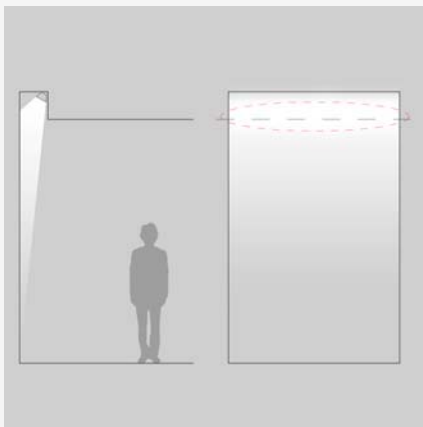


Figure 8.2. A recess serves as space for adjusting light angle and distribution.

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<sup>139</sup> Thiis-Evensen, *Archetypes in Architecture*, 131, 133.

The Infinite Wall effect becomes stronger as the cove widens. Curved elements and corner views of the recess draws attention to the width of the gap; as the gap widens, attention is shifted from Light Seam to Infinite Wall. (Figure 8.3) Furthermore, although most cove details have a similar appearance, variations in construction, fixture choice and placement, as well as the color and finish of the light-washed surface will affect the appearance of the light gradient.



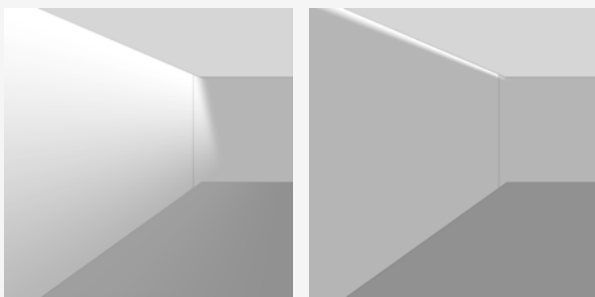
Figure 8.3. *Contrast created by strong light washing on a light colored wall can obscure details and formal definition, giving the appearance of the wall disappearing into light.*

The Infinite Wall created by the cove detail adds to the effect of opening the space by inviting in or hinting at a continuous larger space, beyond the ceiling that extends the limits of the space. The width of the recess of the ceiling from the walls mediates the sense of enclosure created by the surrounding planes. A larger pull-back allows the outside in, reducing the sense of enclosure.



However as the gap widens, attention is shifted from the Light Seam to the Infinite Wall.

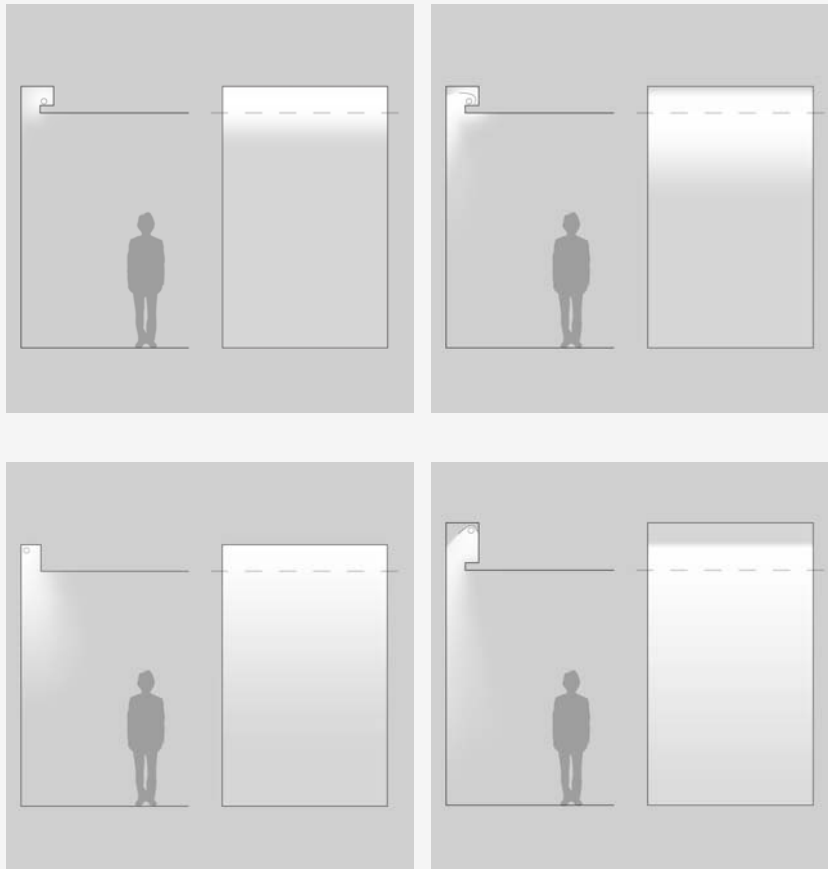
Although a Light Seam is frequently accompanied by an Infinite Wall cove detail, it does not always appear to extend infinitely. A longer gradient from light to dark often indicates a smoother transition, and strengthens the perception of continuity beyond sightlines. (Figures 8.4a & b) Elements such as curved walls, corners or end walls that show the width of the gap also help convey continuity.



Figures 8.4a & b *Longer, smoother light gradients emphasize continuity of wall upwards, while shorter gradients appear as a fuzzy line of light.*

The length of the gradient is affected by the specific cove detail, the light distribution of fixtures and their placement, as well as the color and the finish of the wall surface. (Figures 8.5a-d) Light colors reflect more light and show the gradient of light better. (Figures 8.6a & b) Matte or textured finishes reflect light in a diffused way that leads to smoother light gradients. Walls of lighter colors reflect more light and show the gradient of light better. In natural lighting conditions, there is an effect in which the wall seems to disappear into white light, into nothingness. This effect is caused in two ways: 1) natural light is

often associated with the color white; 2) strong light can eliminate tonal contrast that allows us to distinguish form on light colored walls. (Figure 8.3)



Figures 8.5a-d. (clockwise from top left) *Different combinations of cove details, fixtures and their placement will produce light gradients of different appearances.*

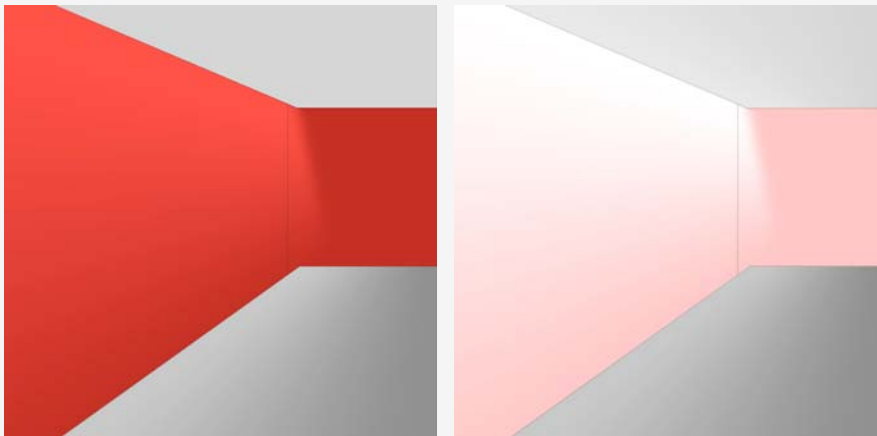
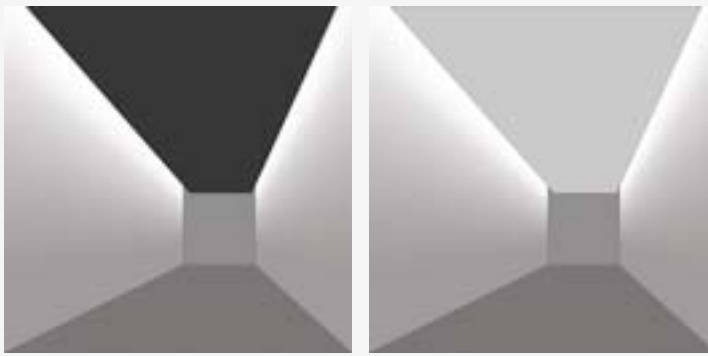


Figure 8.6a & 6b. *Lighter colors reflect more light and reveal the light gradient more than darker colors.*

The gradient of light on the wall is accompanied by a sharp backlit edge that defines the ceiling plane. As Light Seam seemingly dissolves the solid mass of wall, it obscures wall elements or the solidity of the wall itself that might support the architecture, and the ceiling appears to float.<sup>140</sup> A dark colored ceiling will form a stronger contrast with the illuminated walls. The visual weight of a darker color will also create a stronger the effect of the ceiling pressing down. (Figures 8.7a & b)

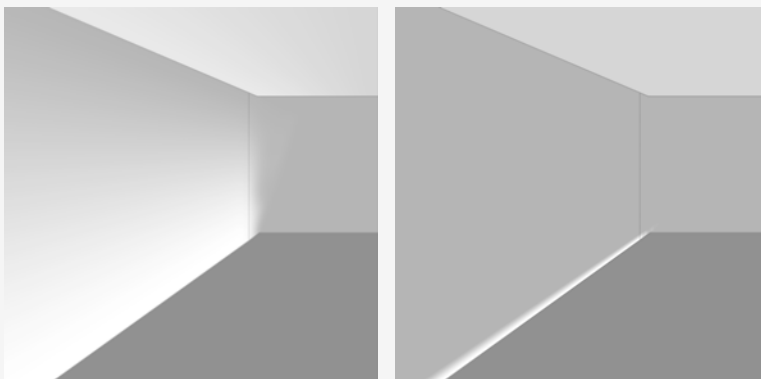
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<sup>140</sup> Millet, *Light Revealing Architecture*, 65.



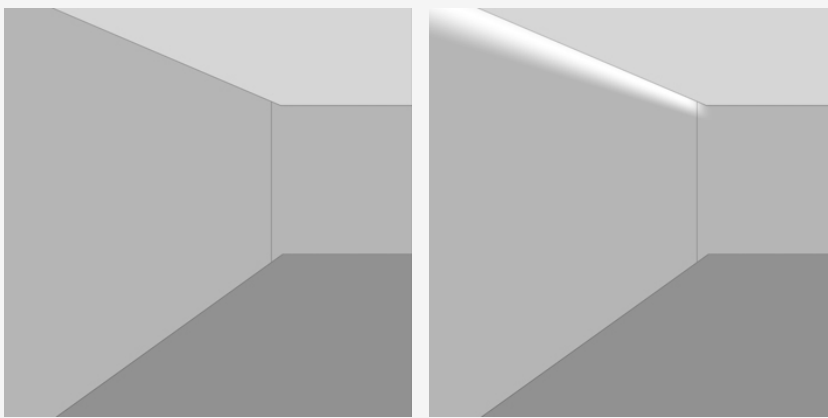
Figs. 7a & 7b. *A darker ceiling has more visual weight and introduces greater drama by appearing to press down more.*

Alternatively, if a Light Seam is placed on the floor, light travels up the wall. The contradiction between the tonal implications of the walls with our perception of gravity creates a tension in which weight presses down on a floating floor. The experience is that of instability. Darker, heavier looking tones appear on the top of the wall, weighting on the lighter tones that push up from the floor. (Figs. 8a&b)



Figures 8.8a&b. *Light emanating from below appears to push the floor upwards, suggesting a floating floor. The length of the light gradient affects the strength of directionality.*

Occasionally there are applications where the gradient of light travels across a vertical side of the wall. Perception in this case is not affected by our concepts of gravity. The focus is on the directionality, and the contrast between the perceived densities, of the material on different sides. While Infinite Wall merely suggests a connected extended space, light from a Light Seam adds directionality to the wall and creates a dynamic space. Light also introduces or accentuates openness and airiness in an Infinite Wall installation. The more powerful examples of Light Seam often come with the effect of Infinite Walls. (Figs. 9a & 9b)



Figures 8.9 a & b. *The diagrams compare an Infinite Wall detail without (left) and with (right) light. Light creates a rising motif and introduces directionality and motion..*

### **Chronological Sequence**

Concealed lighting practices expanded with the commercialization of tubular, especially fluorescent light sources, in the late 1930s.<sup>141</sup> The practice of concealing light sources directly impacted its representation through contours

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<sup>141</sup> Pile, *A History of Interior Design*, 368.

of light that revealed the shape of architectural forms. By highlighting shapes, concealed lighting also drew attention to the relationship between the forms and their surroundings. The comparatively low cost of concealed fluorescent lighting initially attracted the most interest for large public space interiors, where the unobtrusive glow of hidden fluorescents emphasized interior architectural forms.

Architects took advantage of concealed lighting for auditoriums as a method to create interest in large, relatively empty spaces. In the small assembly hall of the Norman High School (1954), a Light Seam was formed as the ceiling receded from the walls.<sup>142</sup> (Figure 8.10) Light washed down the brick wall through the seam, highlighting the wall's texture and pattern. Attention was drawn to a ceiling that appeared to hover above the wall. The perception was of light coming from the exterior. It also provided a relief to the windowless enclosure. The lighting scheme was functional; the side aisles were lit enough to allow circulation, while the main seating area was kept dark enough for presentations.

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<sup>142</sup> Small Assembly Hall, Norman High School [1954] Caudill-Rowelett-Scott and Associates; Perkins & Will, Associated Architects-Engineers; Norman, Oklahoma in Anonymous, "Norman High School, Norman, Oklahoma," *Architectural Record* 116, no. 2 (Jul. 1954): 147; PhotoCrd: Hedrich-Blessing Studio.



Figure 8.10. *A Light Seam relieved the windowless space, because light seemed to emanate from the outside.*

Small Assembly Hall, Norman High School [1954] Caudill-Rowelett-Scott and Associates; Perkins & Will, Associated Architects-Engineers; Norman, OK in Anonymous, "Norman High School, Norman, Oklahoma," *Architectural Record* 116, no. 2 (Jul. 1954): 147; PhotoCrd: Hedrich-Blessing Studio.

From the 1940s to the 1960s, architects and designers conducted many experiments using concealed lighting and the manipulation of ceiling planes. By the 1970s, designers moved Light Seams from the perimeters into the main space.

In Rore Bertrand Dupont's reception space (1974), a dropped drum form created a lowered ceiling that effectively defined the waiting area. (Figure 8.11) The sensation of enclosure was partially created with light washing down the side of the walls from a Light Seam.. Viewed from the outside, the structure supporting the drum is hidden, and the element that is lightened by the wash of light seems to be floating within the ceiling opening.<sup>143</sup> Similarly,

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<sup>143</sup> Reception Area, Rore Bertrand Dupont 1974] Kahn and Jacobs; Teaneck, N.J. in Anonymous, "Rore Bertrand Dupont, Inc." *Interior Design* 45, no. 4 (Apr. 1974): 123; PhotoCrd: Norman McGrath.

examples of Light Seam surrounding large elements were often found in elevator lobbies.



Figure 8.11. *Light Seam and the white color of the large drum element lightened the large suspended drum over the reception waiting area, relieving the sense of oppression within the enclosed area.*

Reception Area, Roure Bertrand Dupont [1974] Kahn and Jacobs; Teaneck, NJ in Anonymous, "Roure Bertrand Dupont, Inc." *Interior Design* 45, no. 4 (Apr. 1974): 123; PhotoCrd: Norman McGrath.

Also in the 1970 period, fluorescent sources attracted greater use, because of improved energy efficiency and color-rendition.<sup>144</sup> Designers began to use Light Seam to mediate a sense of enclosure in narrow or small spaces. Most noticeably, Light Seams were widely employed in interior halls that consisted of plain walls. For example, in the elevator lobby of the Blue Cross and Blue Shield Administrative Center in Chicago, Light Seam was used with a light-colored ceiling which opened up the passage between the massive concrete elevator banks.<sup>145</sup> (Figure 8.12) In the Katz Insurance Agency, Light Seam

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<sup>144</sup> Mark Major, Jonathan Speirs and Anthony Tischhauser, *Made of Light: the Art of Light and Architecture* (Basel: Birkhäuser, 2004), 9.

<sup>145</sup> Elevator Lobby, Blue Cross and Blue Shield Administrative Center [1970] C.F. Murphy Associates; Chicago, IL in Anonymous, "Strength and Cohesiveness for a Crowded Block in Chicago," *Architectural Record* 147, no. 1 (Jul. 1970): 124; PhotoCrd: Hedrich-Blessing



accentuated the shape of the dark ceiling over the elevator lobby. (Figure 8.13) This treatment helped to communicate the solidity of the company's image. Light Seam introduced directionality to the walls and relieved the monotony of these hallways.



*In both elevator lobbies, Light Seam opened up the interior of massive solid blocks and isolated the ceiling from the walls. In the Katz Agency (right), the dark color of the ceiling resulted in it appearing to press down more.*

Figure 8.12. (left) Elevator Lobby, Blue Cross and Blue Shield Administrative Center [1970] C.F. Murphy Associates; Chicago, IL in Anonymous, "Strength and Cohesiveness for a Crowded Block in Chicago," *Architectural Record* 147, no. 1 (Jul. 1970): 124; PhotoCrd: Hedrich-Blessing

Figure 8.13. (right) Elevator lobby, The Katz Agency, Inc [1978] Space Organization, Ltd, designers; Peter Reyes & Valari Belonyianis, interior designers; Robert Hogrefe, architect; New York City in Anonymous, "The Katz Agency, Inc," *Interior Design* 49, no. 3 (Mar. 1978): 162; PhotoCrd: Mark Ross

By the middle of the 1980 decade, many experiments with fluorescent lighting and cove fixtures had been conducted. More instances of Infinite Walls were created with gradual light gradients washing the walls. Some examples began to explore textures and materials as means to manipulate directionality conveyed by light.

In the Financial Guaranty Insurance Company in New York City (1985) architects Emilio Ambasz & Associates designed partitions between work modules with double-layers of white silk fringes. The repetition of this scrim effect created a Marching Order without losing “an aura of veiled mystery.”<sup>146</sup> The gap between the two layers of silk allowed light to come from within the partition, eliminating the recess often found around Infinite Walls; the effect evoked a misty shower of light coming from openings in the ceiling. (Figure 8.14) Lit from the top, the white strands appeared almost opaque. The density of the silk seemed to decrease, however, as the light dissipated down the partition. The translucent partitions provided some sense of visual privacy without becoming obstructive. The rising wall height motif here formed an interesting contradiction to previous examples where the brighter tops of elements reduced solidity. Still, the white light provided form and solidity to the top parts of the partitions while the darker lower areas dissolved and became more penetrable.<sup>147</sup>

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<sup>146</sup> Deborah Work Modules, Financial Guaranty Insurance Company [1985] Emilio Ambasz & Associates; New York City in Deborah Dietsh, “Fringe Benefits,” *Architectural Record* 173, no. 13 (Nov. 1985): 127, 128.

<sup>147</sup> Scolere, “Theory Studies, 102-105. A similar effect was identified as an archetypical practice in retail interiors by Scolere as *Thin Membrane*, which she defined as an open façade comprised of a glass layer that allows for temporal manipulation between interior and urban environment.



Figure 8.14. *Light appeared contained in the silk partitions of the office and gave the space a refined appearance.*

Work Modules, Financial Guaranty Insurance Company [1985] Emilio Ambasz & Associates; New York City in Deborah Dietsh, "Fringe Benefits," *Architectural Record* 173, no. 13 (Nov. 1985): 128; PhotoCrd: Paul Warchol.

Prior to the 1990 decade, Light Seam was most often found in corporate and institutional settings. By bringing order to the ceiling plane, the minimalist revival in the 1990s initiated wide interest for concealed lighting in hospitality and retail design sectors. Light Seams in this period moved away from generalized light and became more directional across the ceiling plane. In 1993 restaurant designer Jeffrey Beers used a Light Seam along a single wall of the Zoe restaurant to feature one side of the interior and to accent a mural wall left of the entrance. (Figure 8.15) The Light Seam perceptually extended the height of the space.<sup>148</sup>

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<sup>148</sup> Zoe Restaurant [1993] Jeffrey G. Beers; New York City in Monica Geran, "Jeffrey G. Beers," *Interior Design* 65, no. 6 (Jun. 1993): 137; PhotoCrd: Paul Warchol.



Figs. 15. In *Zoe* Light Seam drew attention to the vertical wall to mitigate the narrowness of the of the dining space..

Zoe Restaurant [1993] Jeffrey G. Beers; New York City in Monica Geran, "Jeffrey G. Beers," *Interior Design* 65, no. 6 (Jun. 1993): 137; PhotoCrd: Paul Warchol.

The impact of the new minimalism was most evident in retail design. Scolere's research provided evidence of an influx of White Box retail environments that were enhanced by lighting, such as Light Seam. Light Seam was compatible with a pristine space, and at the same time, created an unexpected feature.<sup>149</sup> Infinite walls emphasized by Light Seams were also widely popular for orchestrating retail display. In the Jigsaw Boutique in London (1997), a series of light-washed sandblasted acrylic screens obscured the structural columns and constructed an organized, uniform appearance across the different sections of the store.<sup>150</sup> (Figure 8.16) Light Seams showered white light down the screens and gave the space an ethereal quality.

<sup>149</sup> Scolere, *Theory Studies*, 31.

<sup>150</sup> Jigsaw Boutique [1997] John Pawson, Architect; Bond Street, London in Judith Nasatir, "Spare Parts," *Interior Design* 68, no. 5, (Apr. 1997): 168; PhotoCrd: John Edward Linden/ Arcaid.



Figure 8.16. *Free-standing translucent panels created walls of light that retain the sense of openness in the store despite the array of partitions in the center.*

Jigsaw Boutique [1997] John Pawson, Architect; Bond Street, London in Judith Nasatir, "Spare Parts," *Interior Design* 68, no. 5, (Apr. 1997): 168; PhotoCrd: John Edward Linden/ Arcaid.

White surfaces reflected the most light, often bringing out the most drama from concealed lighting, and corporate interiors also clustered Light Seams with White Box environments. In the Johnson & Johnson Consumer Franchise Worldwide Headquarters (1998), a Light Seam isolated and highlighted a colossal structure en route to the cafeteria. (Figure 8.17) Close to the ceiling, light obscured the edges of the form and the massive block seemed to disappear into white light. Concealed lighting activated forms in the large White Box which would otherwise have resulted in "just one big featureless box".<sup>151</sup>

<sup>151</sup> Johnson and Johnson Consumer Franchise Worldwide Headquarters [1998] Ballinger; Skillman; New Brunswick, NJ in Nayana, Currimbhoy, "Skylights Let Sun into Dark Heart of Johnson and Johnson Building," *Architectural Record* 186, no. 2 (Feb, 1998): 193; PhotoCrd: Paul Warchol.



Figure 8.17. *White light in Light Seams brought different shades of white to the White Box, introducing a dynamic, refined quality to the potentially monotonous interior.*

Johnson and Johnson Consumer Franchise Worldwide Headquarters [1998] Ballinger; Skillman, NJ in Nayana, Currimbhoy, "Skylights Let Sun into Dark Heart of Johnson and Johnson Building," *Architectural Record* 186, no. 2 (Feb, 1998): 193; PhotoCrd: Paul Warchol.

Light Seam was the dominant form of concealed lighting in the 1990 decade , with installations executed in various scales. Light Seams were most often used to accentuate large shapes, to bring both movement and order to minimalist spaces, and to enliven monotonous spaces. Light Seam became such a common archetypical practice that by the end of the decade it was overused.

In the 2000 to 2010 decade, the most effective Light Seams appeared in minimalist designs where geometric forms dominated the spatial experience.

The Jil Sander Headquarters in Milan [2001] designed by Gabellini Associates continued the legacy of the White Box retail environments popularized during the 1990s, but the later versions showed more restraint. The whole space was opaque white. The main showroom had an expansive volume similar to that of museums and was dominated by horizontal cove lights. Countering the horizontality in the airy main space were layers of vertical structures in the side showroom. The Light Seam surrounding the single Infinite Wall in the center of the showroom.. (Figure 8.18) The gradient of light was concentrated at the top of the wall, accentuating the wall's extension past an opening in the ceiling; the Light Seam became a feature dedicated to highlighting the effect of the Infinite Wall. The connection between the contrasting planes was further established by the similarity of the rectangular glow with that of the rectangular coves in the main space.



Figure 8.18. *Light Seams and Infinites Wall in a White Box further “whitened” the interior of the Jil Sander Headquarters in Milan.*

Jil Sander Headquarters [2001] Gabellini Associates, Design; Ross Muir, Lighting Consultant; Castello Sforzesco; Milan, Italy in Jeff Hill, “In a Theatrical Fashion,” *Interior Design* 72, no. 14 (Nov. 2001): 196; PhotoCrd: Paul Warchol.

Tadao Ando's Armani headquarters,(2001) also in Milan.demonstrated careful manipulation of the distribution of light in Light Seams. (Figure 8.19) In contrast to the Light Seams in the 1990 era, , careful control of directionality of light and minimal recesses around the vertical elements created a soft, but bright line of light just at the edges, giving the somber space a kind of quiet elegance.

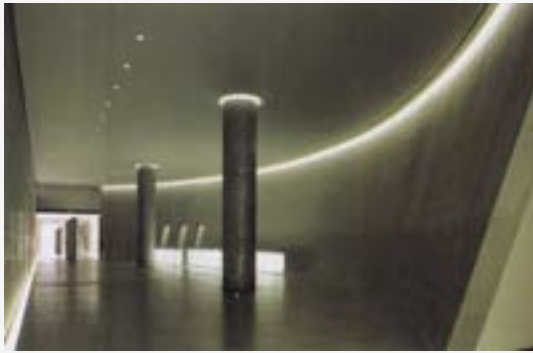


Figure 8.19. *Dark concrete walls reflected less light and helped sustain a contained fuzzy line of light at the junction between the walls, the ceiling and the floor plane.*

Armarni [2002] Tadao Ando, Designer; Teatro, Milan, Italy in Robert Ivy, "Tadao Ando's Constancy of Form," *Architectural Record* 190, no. 5 (May, 2002): 180; PhotoCrd: Courtesy of Japan Architect.

Contrasting Ando's Armani store was the 2004 Luggage Lounge at Louis Vuitton in Tokyo. The bright expansiveness of the light gradient dominated the store, and also produced a strong "rising effect" that seemed to pull the dark suitcases up the wall with it.





Figure 8.20. *White light traveled down the white wall at Tokyo Louis Vuitton's luggage lounge. The long gradient created a stronger vertical dynamic than the restrained rings of light at Armarni.*

Luggage Lounge, Louis Vuitton [2004] Jun Aoki & Associates; Luis Vuitton Architecture Department; Studio Aurelio Clementi; Roppongi Hills, Tokyo in Clifford A. Pearson, "An International Trio of Architects Collaborates to Give Louis Vuitton a New High-Tech Face in Tokyo," *Architectural Record* 192, no. 2 (Feb. 2004): 148; PhotoCrd: Jimmy Cohrssen

One of the major developments resulting from the small size of LEDs was the exploration of concealed lighting in less conventional locations. Parallel to the growth of Halo as a means to float interior elements, there was also a growth in Light Seams placed in floor recesses. Such was the case at the top two levels of the scissor stairs in the Ginza Onsen Fujiya (2007) designed by Kengo Kuma. The light gradient emanating from the floor recesses created a "sinking height motif" of the walls, pressing down on the floor that, conversely, seemed to float up in the light.



Figure 8.21. *The concentrated light at the floor produced a quiet vibration that was in line with the Ryokan's atmosphere of refinement. (Ryokan is a type of traditional Japanese inn.)*

Stairs, Ginzan Onsen Fujiya [2007] Kengo Kuma & Associates; Yamagata, Japan in Clifford A. Pearson, "Ginzan Onsen Fujiya, Yamagata, Japan," *Architectural Record* 195, no. 9 (Sep 2007): 124; Daici Ano.

As more recent examples, such as Tadao Ando's Armani Teatro and Kengo Kuma's Ginzan Onsen Fujiya demonstrate, Light Seam need not always produce the impression of infinity.

By the 2000s, the gradual entry of LEDs into the architectural lighting practices introduced new lighting possibilities because of LED's small fixture size, color options and energy efficiency. More even washes of light could be achieved in smaller installations using LEDs, encouraging lighting effects employing this quality.. Although early Light Seam installations were achieved using fluorescent lamps, the potentials offered by LEDs prompted refinement of existing practices as well as more conscious lighting decisions.



## CHAPTER 9

### **HALO**

# Halo

## Definition

Halo exists when an object is visually separated from a background plane through a concealed light. Illumination occurs on the background plane behind the majority of the perimeter of the object, thus throwing the object into relief.

## Description

The archetypical practice Halo is more specific a definition of Light Contour proposed by researcher Leah Scolere in 2004. She defined Light Contour as a cove detail that illuminated a form on the ceiling plane. By creating a highly illuminated area on the ceiling plane, Light Contour organizes and draws attention to the space beneath it.<sup>152</sup> In this study I argue that while Light Contour defines a line that produces an identifiable light gradient to one side, it does not necessarily suggesting shape and form, including both positive forms (mass) and negative shapes (void). Both Halo & Light Contour are concealed lighting and use some kind of cove detail, but Halo highlights an advancing form by creating an outer glow around it, while Scolere's examples mostly accentuate the shape of a recessed ceiling plane, creating an inner glow to the overall ceiling. (Figures 9.1a&b) The practices give different indications of motion. A third kind of motion is introduced by parallel light contours with gradients running in the same direction, most frequently seen in the stepped ceilings of auditoriums, suggest two axes—along the lines and perpendicular

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<sup>152</sup> Leah Scolere, "Theory Studies: Contemporary Retail Design" (MA Thesis, Cornell University, 2004), 133.

to the lines. (Figure 9.1c) While they highlight the edge, they do not always enclose an area. This discussion of Halo examines the more distinct instances of outer glow surrounding shapes on the foreground (both graphically and physically).



Figure 9.1a (left) *Outer glow of Halo.*

Figure 9.1b (center) *Inner glow in Scolere's examples of Light Contours.*

Figure 9.1c (right) *Gradients created in stepped ceilings point to 2 directions.*

## Effect

Halo highlights the shape of an overlaying form and pushes it out from the background, immediately giving it priority in the visual hierarchy. Halo is often used to facilitate spatial organization.

Halo is created by placing lights on the back of the shape close to the perimeter. This involves leaving a gap between the edges of the top plane and supporting structure. Light installed at the gap emanates a glow that obscures the supporting structure and emphasizes the separation between the planes. In *Light Revealing Architecture* Marietta Millet describes this phenomenon as light concealing structure, because the plane appears to contradict the rules of

structural support and float over the light.<sup>153</sup> White or warm-colored lights appear to expand and strengthen floating effect.<sup>154</sup>

Halo accentuates the movement introduced by the pushed-out masses, adding to the dynamic quality of the space. It has been employed on both horizontal and vertical surfaces but appears the most dramatic when positioned at the floor plane where gravity has dominating presence. Materials and dimensions of planes affect the perceived weight of the mass and influence the level of drama. Halo is most often used to accent the form of raised platforms or lowered ceilings, enhancing their space-defining qualities. The light draws attention to the area enclosed by the shape, transforming actions within into a staged scene.

### **Chronological Sequence**

In the 1930s, the concept of indirect lighting was widely embraced for its “sight-saving” qualities.<sup>155</sup> Concealed lighting practices expanded further with the commercialization of tubular lights, especially the more economical fluorescent lamps in late 1930s that soon became standard for commercial, institution interiors. While the architecture was designed to hide the tube lights, light in turn directly impacted its representation through contours of light that reveal the shape of architectural forms. By highlighting their shape, concealed lighting also drew attention to the relationship between the forms and their

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<sup>153</sup> Marietta Millet, *Light Revealing Architecture* (New York: Van Nostrand Reinhold, 1996), 65-66.

<sup>154</sup> Thomas Thiis-Evensen, *Archetypes in Architecture* (Oslo: Norwegian University Press, 1987), 249.

<sup>155</sup> John Pile, *A History of Interior Design*, 3<sup>rd</sup> ed. (London: Laurence King Publishing: 2009), 368.

surroundings. The comparatively low-cost of concealed lighting employing fluorescent lamps first attracted use in large spaces, where an unobtrusive glow highlighted architectural forms and brought additional interest to the interior.

It was in the retail interior where designers began experimenting with light quality (as long as it maximized spatial areas and did not distract from the merchandise). In the Ansonia Shoe Store in New York City (1945), designer Morris Lapidus projected backlit Baroque-like frames from the surface of the wall to display merchandise and to keep consistent light gradients throughout the space.<sup>156</sup> (Figure 9.2) Compared with a traditional niche that recessed the merchandise from the customers, Lapidus' lit frames pushed merchandise toward customers, creating a museum-like vitrine. Goods framed by a Halo captured and held people's attention momentarily, before they moved on to the next successive frame. Many shops at the time used backlighting on the top edges of display cabinets along the walls to draw customers towards the displays at the periphery. In the Mangel store (1946) in Birmingham, Alabama, Lapidus used a Halo to highlight a curved ceiling. (Figure 9.3) This feature defined a spatial area towards the back of the store, conveying the store organization, and breaking up a large space.<sup>157</sup>

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<sup>156</sup> Anonymous, "Shop for Popular Shoes," *Interiors* CV, no. 3 (Oct. 1945): 60.

<sup>157</sup> Ansonia Shoe Store [1945] Morris Lapidus; New York City, NY in Anonymous, "Shop for Popular Shoes," *Interiors* CV, no. 3 (Oct. 1945): 60; PhotoCrd: Gottscho-Schleisner; Mangel Store [1946] Ross Frankel Inc.; Birmingham, AL in Anonymous, "Ross Frankel Designs; Ross Frankel Builds," *Interiors* CVI, no. 5 (Dec. 1946): 93; PhotoCrd: Ben Schnall..



Figure 9.2. (left) *Although Morris Lapidus is best known for 1950s resort hotels, his early work included retail stores. His design of the Ansonia Shoe Store (1945) featured projecting framed display cases lit by a Halo.*

Ansonia Shoe Store [1945] Morris Lapidus; New York City, NY in Anonymous, "Shop for Popular Shoes," *Interiors* CV, no. 3 (Oct. 1945): 60; PhotoCrd: Gottscho-Schleisner.

Figure 9.3. (right) *In 1928 Lapidus joined Ross-Frankel, a firm specializing in store design and construction. For the Mangel store (1945), Lapidus designed a dropped (curved) ceiling plane, and he lit it with a Halo.*

Mangel Store [1946] Ross Frankel Inc.; Birmingham, AL in Anonymous, "Ross Frankel Designs; Ross Frankel Builds," *Interiors* CVI, no. 5 (Dec. 1946): 93; PhotoCrd: Ben Schnall.

From the 1940s to late 1950s, artificial lighting design, especially indirect lighting design, was still in its infancy. The quantity of light sources, rather than the quality of light, remained the primary concern of designers. The concept of qualitative lighting design barely existed, and both socially and functionally, more non-distracting, uniform illumination was considered to be the best lighting. For commercial interiors, this meant lighting from the ceiling plane. Therefore, most of the early examples of concealed lighting were found at the ceiling plane, equally distributed around the perimeter walls where soffits for



up-lighting could be easily built. They otherwise appeared as suspended grid structures for up-lights, spanning across a gridded ceiling that corresponded to column locations. Using fluorescent tubes, these structures provided general illumination at an economical cost for an entire space.

Lighting designer and consultant Richard Kelly dedicated his professional life to the advancement of lighting design, championing an integral relationship between lighting and architecture. Kelly opened one of the first lighting consultancies in 1935 in New York City. By the early 1950s, Kelly introduced the idea of different purposes of light, encouraging designers to break away from uniform luminance as the paramount criterion of lighting design. His vocabulary for modern architectural lighting design included three light energy impacts: focal glow (highlight), ambient luminescence (graded washes), and play of brilliants (sharp detail).<sup>158</sup>

By the late 1950s, designers realized the expressive potential of an up-lit ceiling, and by the 1960s, they began to suspend ceiling forms in large spaces to differentiate spatial areas (as Lapidus had done in the 1940s). A good example of this thinking occurred in the First Methodist Church of Wichita. (Figure 9.4) A halo of light provided a delicate floating quality to the fish shape ceiling slab.<sup>159</sup>

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<sup>158</sup> Rudiger Ganslandt and Harald Hofmann, *Handbook of Lighting Design* (Ludenscheid: ERCO Leuchten GmbH, 1992), 24.

<sup>159</sup> Sanctuary, First Methodist Church of Wichita [1960] Glenn E. Benedick; Wichita, KS in (Advertisement) "How G-E remote control wiring can help you do dramatic things with mood lighting," *Architectural Record* 134, no. 6 (Dec. 1963): 156; PhotoCrd: Anonymous



Figure 9.4. When viewed from the side, and with the help of Halo lighting, the forms were intended to symbolize a dove or butterfly in flight.

Sanctuary, First Methodist Church of Wichita [1960] Glenn E. Benedick; Wichita, KS in (Advertisement) "How G-E remote control wiring can help you do dramatic things with mood lighting," *Architectural Record* 134, no. 6 (Dec. 1963): 156; PhotoCrd: Anonymous

From the 1960s to 1970s, several developments in lighting gradually changed the quantitative mindset that designers held towards lighting. Building on Richard Kelly's legacy, by the early 1960s the work of theatre lighting designers who ventured into the architecture industry gave rise to the new profession of architectural lighting designers, and in turn, this group created a general awareness towards the expressive potentials of lighting. Light Art also established itself as an independent field of fine arts through exhibitions that show numerous artists' different experiments with light. These encouraged exploring the expressive potentials of light. Outside the museum walls, the expanding nightclub culture which used light as one of its main devices also captured interest in lighting. Practices such as Float inspired positioning lights at less conventional places such as on the floor. At its opening in 1978 the Gerald Bollei Salon billed itself as New York City's first super (full-service)

beauty salon. (Figure 9.5) The sofa in the waiting area was recess-lit from underneath to transform it into a floating element.<sup>160</sup>



Figure 9.5. *In 1978 the designers for a full-service hair and skin salon in New York City incorporated Halo at the floor level to achieve a floating sofa.*

Gerald Bollei Salon [1978] Allan Hagelthorn, Architectural Design; Larry Barcher; Interior Design; New York City in Anonymous, "Space Age Salon," *Interior Design* 49, no. 13 (Dec. 1978): 126; PhotoCrd: Mark Ross.

With the abrupt end of the disco culture in late 1979, however, practices of placing lighting on the floor were suspended. Concealed lighting in the 1980s appeared primarily as Light Seams, or series of parallel light contours that divided up the plane and also served as part of the general illumination.

In the 1990s and 2000s, Minimalism increased opportunities for the use of Halo as designers experimented with using different light sources in the same space. Two excellent examples illustrate the application of Halo at the ceiling

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<sup>160</sup> Gerald Bollei Salon [1978] Allan Hagelthorn, Architectural Design; Larry Barcher; Interior Design; New York City in Anonymous, "Space Age Salon," *Interior Design* 49, no. 13 (Dec. 1978): 126; PhotoCrd: Mark Ross.

plane; one with a warm light, the other with cool light. Totah Design, an architectural and interior design firm in Tokyo, relied on Halo for the lighting and architectural effects in the Odeum Karaoke Club. (Figure 9.6) The firm utilized an amber Halo for an organically shaped ceiling form projecting from the ceiling of a Red Room.<sup>161</sup> For an office interior, Vienna based architects Baumschlager, Eberle, Grassman, “suspended an elliptical cloud, backlit it in white cold cathode and dotted it with cone-shaped down light” in the Dornbirn office of the lighting firm, Zumtobel.<sup>162</sup> (Figure 9.7)



Figure 9.6. An amber Halo heightened the redness of the Red Room in the Odeum Karaoke Club in Tokyo.

Lounge, Odeum Karaoke Club [1992] Totah Design; Tokyo, Japan in Mayer Rus, “Totah Design,” *Interior Design* 63, no. 16 (Dec. 1992): 105; PhotoCrd: Nacasa and Partners.

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<sup>161</sup> Odeum Karaoke Club [1992] Totah Design; Tokyo, Japan in Mayer Rus, “Totah Design,” *Interior Design* 63, no. 16 (Dec. 1992): 105; PhotoCrd: Nacasa and Partners.

<sup>162</sup> Foyer, Zumtobel Offices [1994] Baumschlager, Eberle, Grassman; Lighting Consultants: Zumtobel Licht; Dornbirn, Austria in Charles D. Linn, “No Glass Ceilings,” *Architectural Record* 182, no. 8 (Aug. 1994): 31.



Figure 9.7. A Halo-surrounded “cloud” created an airy space for relaxed conversations around café seating area in the foyer of the Zumtobel Offices.

Foyer, Zumtobel Offices [1994] Baumschlager, Eberle, Grassman, designer; Zumtobel Licht, Lighting Consultants; Dornbirn, Austria in Charles D. Linn, “No Glass Ceilings,” *Architectural Record* 182, no. 8 (Aug. 1994): 31; PhotoCrd: Eduard Hueber /Arch photo

With the introduction of LEDs towards the 2000s, designers from all fields leaped at the new possibilities. The small flexible point sources were especially suited for achieving even lighting across lines and planes. Having developed so far, there was a need to for a new way of using concealed lighting. As architectural expression asserts its position as an equal with general illumination, Halo exploited the compactness of the newer light sources and emerged as a new way of emphasizing the smaller architectural forms introduced in the mid-1990s to breakup the Minimalist spaces.

In the Costume National in Los Angeles (2001), garments along the wall were framed by backlit white rectangular panels in a White Box. (Figure 9.8) The Halo of white light accented the whiteness of the interior, while floating display panels enhanced the airy quality of the space.<sup>163</sup>

<sup>163</sup> Costume National [2001] Marmol Radziner + Associates, Architect; John Brubaker, Architectural Lighting Consultants; Los Angeles, CA in David Hay,



Figure 9.8. *The design of the retail store Costume National in Los Angeles featured the use of cantilevered divider wall and display areas lit with a Halo.*

Costume National [2001] Marmol Radziner + Associates, Architect; John Brubaker, Architectural Lighting Consultants; Los Angeles, CA in David Hay, "Costume National," *Architectural Record* 189, no. 1 (Jan. 2001): 114; PhotoCrd: Benny Chan/ Fotoworks.

The small size of LEDs ushered in renewed interest in the Halo effect near the floor level. In the Australian Center for the Moving Image at Melbourne's Federation Square, a round conversational area seems to hover above the floor plane. (Figure 9.9) The Halo effect was heightened by the low general illumination in the gallery.<sup>164</sup>

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"Costume National," *Architectural Record* 189, no. 1 (Jan. 2001): 114; PhotoCrd: Benny Chan/ Fotoworks.

<sup>164</sup> Australian Center for Moving the Image, Federation Square [2003] Lab Architecture Studio; Melbourne, Australia in Charles Jencks, "The Undulating Federation Square," *Architectural Record* 191, no. 6 (Jun. 2003): 199; PhotoCrd: Gollins Photography.



Figure 9.9. *Federation Square in Melbourne, Victoria was said to be an exemplar of cultural pluralism and a new architecture, but the Center for Moving the Image relied on an archetypical practice, Halo.*

Australian Center for Moving the Image, Federation Square [2003] Lab Architecture Studio; Melbourne, Australia in Charles Jencks, "The Undulating Federation Square," *Architectural Record* 191, no. 6 (Jun. 2003): 199; PhotoCrd: Gollings Photography.

Concealed lighting has also been embraced by the residential sector following the availability of various kinds of white light from fluorescent sources, and their advantage in energy efficiency over incandescent lights. An interesting example from Shamir Shah is the application of a Halo of warm fluorescent light that highlighted a screen. (Figure 9.10) The screen, in turn, anchored a seating group in the lobby of the apartment building at 150 Nassau Street (2004).



Figure 9.10. *A master of residential interiors, Shamir Shah restored original plasterwork above the backlit onyx reception desk at 150 Nassau Street, a New York City apartment.*

Lobby, 150 Nassau Street Apartment [2004] Shamir Shah; New York City in “Crosslines: Conversion Experience,” *Interior Design* 75, no. 1 (Jan. 2004): 154; PhotoCrd: Antoine Bootz.

Halo is seen frequently in the 2000s as a means to give form and movement to a ceiling. At the lobby atrium at Top of the Rock, Halo brings an air of restraint around the oval ceiling that builds up inwards and upwards to provide a shower of brilliant crystals raining down from the center of the atrium.<sup>165</sup>

(Figure 9.11)

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<sup>165</sup> Atrium, Top of the Rock [2005] Gabellini Sheppard Associates; New York City in Lily Kalmar, “Rock On,” *Interior Design* 79, no. 12 (Jan. 2006): 212; PhotoCrd: Paul Warchol.





Figure 9.11. *The three-level atrium of the Top of the Rock, a New York City tourist attraction by Gabellini Sheppard Associates, relies on Halo effects.*

Atrium, Top of the Rock [2005] Gabellini Sheppard Associates; New York City in Lily Kalmar, "Rock On," *Interior Design* 79, no. 12 (Jan. 2006): 212; PhotoCrd: Paul Warchol.

Halo produces dramatic spaces when heavy objects are lit to levitate them from the floor plan. Two examples demonstrate this juxtaposition between visual weight and floatation. In the first example, Halo added a whimsical touch to the "hot tub" seating area of a lunchroom in the Toronto office of Grip Limited Creatives. (Figure 9.12) The large mass appeared to be suspended above floor level, making it the center of attention, a stage for socializing with colleagues.<sup>166</sup> In the second example, Halo enhanced a White Out interior in a spa. In the Hammam of Panticosa Resort's spa, a similar white Halo visually lifts the large stone slab off the floor and, at the same time, it accentuates the rich shades of white. (Figure 9.13) The subtle colors and the delicate balance

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<sup>166</sup> Hot Tub, Lunchroom, Grip Limited Creatives [2006] Johnson Chou; Toronto, Canada in "Inspiration on Tap," *Interior Design* 77, no.12 (Oct. 2006): 258; PhotoCrd: Tom Arban.

between the heavy white stone and its floating appearance created a sophisticated and contemplative space.<sup>167</sup>



Figure 9.12. The “hot tub” is part of the lunchroom, a vinyl-upholstered banquette sunk in a rounded enclosure up-lit by Halo lighting.

Hot Tub, Lunchroom, Grip Limited Creatives [2006] Johnson Chou; Toronto, Canada in “Inspiration on Tap,” *Interior Design* 77, no.12 (Oct. 2006): 258; PhotoCrd: Tom Arban.

Figure 9.13. Large marble pavers and glass mosaic tiles cover the floor and walls in the Hammam (the Turkish bath). A Halo distinguishes the space between floor and platform.

Hammam, Spa, Panticosa Resort [2008] Moneo Brock Studio; Panticosa, Spain in Anonymous, “Pyrenees Perfection,” *Interior Design* 79, no. 12 (Oct. 2008): 168; PhotoCrd: Roland Halbe.

Recently designers have begun to fine-tune the degree of movement introduced by Halo through experiments with material, edge detail, choice of light source and its placement relative to the planes. Color coordination also became a point of interest as a variety of colors introduced different kinds of energy to the space.

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<sup>167</sup> Hammam, Spa, Panticosa Resort [2008] Moneo Brock Studio; Panticosa, Spain in Anonymous, “Pyrenees Perfection,” *Interior Design* 79, no. 12 (Oct. 2008): 168; PhotoCrd: Roland Halbe.

The development of Halo shows an example where new lighting use is encouraged by the coming of new technology, inviting new ideas for use, but also reinterpreting previous or exiting uses. It demonstrates that the development of more recent lighting design practices may be as much about finding a use rather than purely driven by need. In this sense, if Halo continues to find use, it might in time present itself as a basis for new practice types.

## APPENDIX A

### Notable Lighting Designers

Analysis of interior design and architecture trade magazines revealed the importance of internationally recognized lighting designers and firms to establish a vocabulary for lighting and educate about its use. A few notable designers influential in the development of architectural lighting include Richard Kelly, Abe Feder and William Lam.

Information is taken from Dietrich Neumann's *Architecture of the Night: the Illuminated Building* page 229, Rudiger Ganslandt and Harald Hofmann's *Handbook of Lighting Design* pages 116 to 118 and articles of the individual designers from the website of *Architectural Lighting*.

#### Richard Kelly (1910 - 1977)

Richard Kelly was one of the most influential lighting designers for mid-century modern architecture lighting in the United States. In 1935, he opened his own office, 'for designing and selling architectural lighting ideas and the equipment to make them work.' But he found that trying to sell architectural lighting ideas to architects was hard going. When World War II created restrictions on sales, he went back to school to get a degree in architecture. He graduated with a B. Arch. from Yale School of Architecture in 1944, where he studied with Stanley McCandless, the master who had formalized the methods of theatrical illumination. It was during these years that Kelly first evolved his principles about the relationship between perception and the understanding of light and space based on his belief that the way the brain processes visual information is filtered by our past experiences and intuition and connected immediately to our emotions.

Trained as both an engineer (at Columbia University) and an architect (Yale University), his lighting designs significantly shaped our understanding of buildings such as Louis Kahn's Yale Art Museum as well as his Kimbell Museum, Richard Neutra's Kaufman House, Philip Johnson's Glass House and Mies van der Rohe's Seagram Building. With his definition of different types of artificial light in architecture ('focal glow', 'ambient luminescence' and 'play of brilliance') he helped to formulate an emerging language and theory of architectural lighting. Kelly was an active and energetic educator lecturing at architecture schools all over the country, including Yale, Harvard, Columbia and many more, as well as speaking at many professional gatherings of the AIA, IES and other organizations. He received several awards from the lighting

industry for his work and was honored posthumously with the Gold Medal of the Illuminating Engineering Society in 1979.<sup>168</sup>

#### Abe Feder (1909 – 1997)

Abe Feder began his career in the theatre, working on more than 300 Broadway shows and being the first stage lighting designer to be credited in the playbill. In the 1940s, he branched out into the large-scale public spectacle of the urban night. In the 1960s Feder turned to illuminating architecture and became the first independent theatrical and architectural lighting designer, redefining the professional profile. Feder is one of the few early designers that significantly contributed to reinventing architectural lighting for the new forms of modern architecture. Among his most important lighting commissions were the United Nations Headquarters (1949), the Philharmonic Hall at Lincoln Center and Rockefeller Center (1984), all in New York. In addition, he designed installations in such varied places as Montreal, Washington D.C., and Jerusalem. When he died in 1997, the Illuminations of Rockefeller Center and the Empire State Building were turned off for an hour in his honor.<sup>169</sup>

#### William Lam

Lam founded the firm of William Lam Associates, Consultants-Coordination of Lighting with Architecture and Urban Design in 1959 and for the next 40 years, won acclaim for projects including the Tennessee Valley Authority Headquarters complex, government centers in Quebec and Vancouver, Union Station restoration in Washington, D.C. and the San Diego Convention Center. Lam considers his nearly single-handed battle with the light and power industry against their unjustified promotion of ever-increasing light levels and energy use as one of his career highlights.<sup>170</sup>

After Richard Kelly first put forward the different kinds of lighting, Lam compiles the missing catalogue of criteria: systematic, context-related vocabulary for describing the requirements a lighting installation has to meet. Lam, one of the most dedicated advocates of qualitative lighting design,

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<sup>168</sup> For Kelly's biography, see "Richard Kelly," Architectural Lighting Magazine (2 March, 2002),

<http://www.archlighting.com/industrynews.asp?sectionID=0&articleID=452938>

<sup>169</sup> For Feder's biography, see "Abe Feder," Architectural Lighting Magazine (1 March 2001). <http://www.archlighting.com/industry-news.asp?sectionID=0&articleID=452230>

(accessed 31 July 2009)

<sup>170</sup> For William Lam's biography, see "William Lam", Architectural Lighting Magazine (1 Mar. 2001) <http://www.archlighting.com/industry-news.asp?articleID=452234&sectionID=1315> (accessed 31 July 2009)

distinguishes between two groups of criteria: activity needs and biological needs. Activity needs are the needs for information related to specific information related to specific conscious activities. Biological needs cover the psychological need for information, the more fundamental aspects of human relation to the visual environment. This includes needing environmental information for orientation, sufficient comprehension of surrounding structures for a feeling of security, and thirdly the balance between man's need for communication and his right to clearly defined private space. Biological needs allow us to evaluate a situation from an emotional point of view, concerning our feeling of wellbeing in a visual environment.<sup>171</sup>

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<sup>171</sup> Ganslandt, Hofmann, *Handbook of Lighting Design*, 117-118.

## APPENDIX B

### A Brief Overview of Artificial Light in Art

Besides architectural illumination, there were also individuals and groups who made innovative uses of light on a smaller scale. Concentrated experimentations also occurred initially during the 1920s to 1930s. Some attempted to use colored light as a means to bridge the visual arts with music, resulting in performances exploring colored light in mainly three forms: color consoles, theatrical projections and avant-garde films; other artists explored real light as a new material for their works, leading to the new genre of light art.

#### *Synesthetic Light*

Beginning at the turn of the century, many artists and some musicians developed light-color consoles and attempted to compose colored light in a manner similar to music, spreading the concept of visual music.<sup>172</sup> A few notable individuals experimenting with color consoles included Alexander Rimington, Alexander Scriabin and later Dane Thomas Wilfred. Scriabin held one of the earlier public performances of color organs in 1915. Wilfred on the other had, developed a light-kinetic instrument, the *Clavilux*, and gave his first public performance in 1922.<sup>173</sup> He named this form of kinetic light art *Lumia* and was financially more successful as through time, “up to 32 such instruments were installed in New York.”<sup>174</sup>

Bauhaus artists Ludwig Hirschfeld-Mack, Josef Hartwig and Kurt Schwertfeger’s light-color experiments in the 1920s were the most notable examples of theatrical projections during the time. Their work explored movement and rhythm with changing compositions of colored light through changing compositions of projections. The projections started as shadow play that were multiplied into different colors using different light sources; later developing into choreographed projections on the back of transparent screens and incorporated as set pieces for dance performances. The results were first presented at the Bauhaus in 1924 as *Reflektorische Farbenlichtspiele*.<sup>175</sup>

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<sup>172</sup> Peter Weibel, “The Development of Light Art,” *Light Art from Artificial Light: Light as a Medium in 20th and 21st Century Art*, Peter Weibel and Gregor Jansen, eds. (Ostfildern, Deutschland: Hatje Cantz, 2006), 140-144

<sup>173</sup> Popper, “Light Kinetics,” *Light Art*, 425-427

<sup>174</sup> Popper, “Light Kinetics,” *Light Art*, 427

<sup>175</sup> Weibel, “The Development of Light Art,” *Light Art*, 161-162

Still other artists found film to be a suitable media for expressing movement of color and visual forms of sound. Some developed scroll paintings as a means of animating art while others directly manipulated film. These efforts created a series of avant-garde films in the 1920s that experimented with the new media that combines light and movement.<sup>176</sup> Examples include Walther Ruttmann's *Absolute Films*, the works of Viking Eggling and Oskar Fischinger.

Placing these attempts of integrating colored light with music in relation to previous uses of colored light at Expositions, art historian and professor Kemit Swiler Champa perceives them as "brilliant, if unsuccessful attempt[s] to seize colored light back from the 'spectacle' and reconnect it with what was understood as 'high art'."<sup>177</sup> In critic Peter Weibel's opinion, these efforts in the 1920s to 1930s were precursors to the multi-media works in the 1960s, in which the synthesis of music and visuals moved to become executed on an electronic platform.<sup>178</sup>

### *Light Art*

The genre of visual arts categorized as Light Art since the 1960s was partly the result of earlier art movements, such as Cubism and Constructivism that shifted art from the representation of material and light using color, to using real material and light; and from the representation of movement to introducing real movement. Their interest in employing real materials led to art that interacted with light, resulting from reflective, transparent materials and eventually real light sources. Laszlo Moholy-Nagy's *Light Space Modulator* (1930) was one of the earliest works that combined kinetic elements with artificial light and expanded an art piece to a spatial scale. From the 1930s to the 1960s, light as a medium of immateriality grew as an artistic material, and also gradually became a theme for exploration itself.<sup>179</sup> The leaders in the ZERO movement including Lucio Fontana, Yves Klein and Piero Manzoni were some of the most notable artists who led this shift in emphasis from materiality to the contrasting idea of immateriality.<sup>180</sup> The ZERO movement made light the central theme and central medium of their art and their reflecting reliefs with their metal elements in images and their light machines.<sup>181</sup> In the 1960s, panel painting, large boxes, columns, walls and entire rooms

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<sup>176</sup> Weibel, "The Development of Light Art," *Light Art*, 162, 168-169

<sup>177</sup> Kemit Swiler Champa, "A Little Night Music: The Play of Color and Light", *Architecture of the Night*, 23

<sup>178</sup> Weibel, "The Development of Light Art," *Light Art*, 139-224.

<sup>179</sup> Weibel, "The Development of Light Art," *Light Art*, 96-118.

<sup>180</sup> Weibel, "The Development of Light Art," *Light Art*, 111.

<sup>181</sup> Weibel, "The Development of Light Art," *Light Art*, 115.



were created with reflecting materials and real, often movable, light sources. Light boxes, light objects and light environments came into existence.<sup>182</sup>

Major exhibitions in the 1960s also established Light Art as a new field of fine arts. The *KunstLichtKunst* exhibition (1966) held in the Stedelijk Van Abbemuseum in the Netherlands was the first to focus exclusively on the theme of artificial light as an immaterial material for art. Light Art was celebrated as one of the numerous discoveries and achievements of the modern era.<sup>183</sup> Two exhibitions focused on light kinetics and light-created environments—*Licht und Bewegung* (1965) in Kunsthalle Bern and *Lumière et Mouvement* (1967) in Paris' Musée Municipal d'Art Moderne.<sup>184</sup> Some of the most notable light artists during subsequent decades made their start in the 1960s included Dan Flavin, James Turrell and Bruce Nauman. Each contributed a different genre within Light Art.<sup>185</sup> More so than architectural lighting of the time, many of their works explored color as a component of light.

Of the three, Dan Flavin gained recognition the earliest, using light as an immaterial compositional element. He saw the fluorescent tube as the “simplest form of artistic expression of line transposed into light” and the ultimate manifestation of minimalism.<sup>186</sup> His works led to the concept of installation art as the composition of pure lines of light expanded in complexity and size. (Figure 10.1). In these works, the context of art became important and the surrounding space, as well as the viewers became part of the artwork; moving the boundaries of an art piece from around its frame to infinitely expanding space.<sup>187</sup> Many of Flavin's works used coloured lights that imbued the viewers in the shade of the light piece. (Figure 10.2)

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<sup>182</sup> Peter Weibel and Gregor Jansen, “Light as a Medium of Art,” *Light Art*, 29.

<sup>183</sup> Stephan von Wiese, “KunstLichtKunst: The Artificial Light Spaces by Gruppo T and ZERO for Eindhoven,” *Light Art*, 448.

<sup>184</sup> Frank Popper, “Light Kinetics,” *Light Art*, 441.

<sup>185</sup> *The Panza Collection: An Experience of Color and Light* (exhibition catalog (Buffalo, NY: Buffalo Fine Arts Academy, 2007), 6.

<sup>186</sup> Gregor Jansen and Andreas F. Beitin, “The Stuff of Which Luminaires Are Made—The Fluorescent Tube as Minimalist Principle in Light Art,” *Light Art*, 526-29 The Nominal Three.

<sup>187</sup> Weibel, “The Development of Light Art,” 116-17, 526-29.



Figure 10.1. (left) *Dan Flavin's larger installations, such as "The Nominal Three", began to take into account the surrounding environment.*

*The Nominal Three* [1963] Dan Flavin in *Light Art from Artificial Light: Light as a Medium in 20th and 21st Century Art*, eds. Peter Weibel and Gregor Jansen (Ostfildern, Deutschland: Hatje Cantz, 2006), 528; PhotoCrd: ONUK, Karlsruhe.

Figure 10.2. (right) *Many of Flavin's pieces explored the interaction of colored light. These large pieces imbued the exhibition space and the people in colored light, giving an early instance of people and space transformed by colored light.*

*o.T.* [1967] Dan Flavin in *Light Art*, 529; PhotoCrd: Christof Hierholzer, Karlsruhe.

James Turrell, on the other hand, could be discussed along with artists who used light to explore daily experiences including the concept of space.<sup>188</sup> His works aimed to "produce sensations that are essentially prelingual, to create a transformative experience of wordless thought."<sup>189</sup> Among his early works are many that used light, often colored light, to create illusions relating to the spatial perceptions of depth, mass and volume or the disappearance of them.

<sup>188</sup> Daniela Zyman, "On 'Making-Room'," *Light Art*, 474-480.

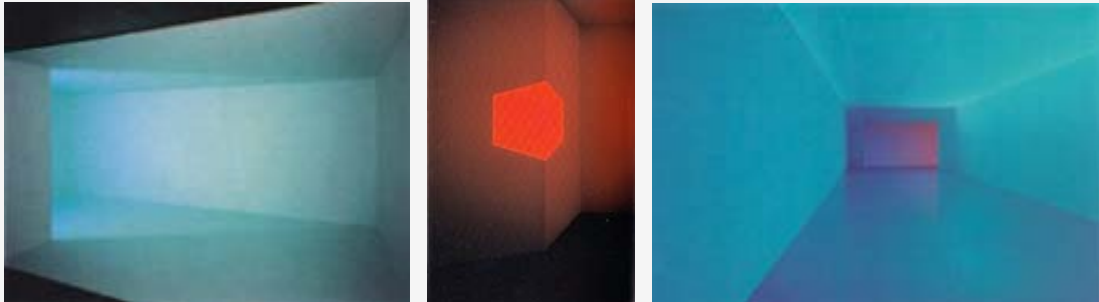
For more explanation of the Turrell's idea of "Light Space," also see James Turrell, interview by Elaine A. King, "Into the Light: A Conversation with James Turrell," *Sculpture* 21, no. 9 (Nov. 2002),

<http://www.sculpture.org/documents/scmag02/nov02/turrell/turrell.shtml>.

Accessed on Aug. 25, 2009.

<sup>189</sup> The Solomon Guggenheim Foundation, "James Turrell," *Guggenheim New York*, <http://www.guggenheim.org/new-york/collections/collection-online/show-full/piece/?search=James%20Turrell&page=1&f=People&cr=3>. Accessed Aug. 25, 2009.

His works were described to “amplify [and] give form to perception”, and “coax the viewer into a state of self-reflexivity in which one can see oneself seeing.”<sup>190</sup> (Figure 10.3, 10.4, 10.5)



*James Turrell's work, such as Wedgework III (1969) and Solid Afrum (1970) used carefully defined colored light to challenge people's perceptions of three dimensional space. Artistic intensions aside, many of his works, such as the Blue Walk (1982) produce Color Flooded environments.*

Figure 10.3 (left) “Wedgework III” [1969] James Turrell in James Turrell, Giuseppe Panza and Guia Sambonet, *James Turrell: Dipinto con la Luce* (Milano: Motta, 1998), 34; PhotoCrd: Gerald Zugman.

Figure 10.4. (center) “Solid Afrum” (Red) [1970] James Turrell in *Light Art*, 478; PhotoCrd: Florian Holzherr.

Figure 10.5. (right) “Blue Walk” (night) [1982] James Turrell in Turrell, Turrell, Adcock, *Occluded Front: James Turrell* (Los Angeles: Larkspur Landing, Cal.: Lapis Press, 1985), 19; PhotoCrd: Nance Calderwood.

Taking a completely different agenda, Bruce Nauman used light as a media for reform. Nauman can be seen as a representative of the younger generation artists of the time who publicly displayed their works and favored materials such as neon that has not been used in art, therefore liberating themselves from the aesthetic traditions.<sup>191</sup> (Figures 10.6 & 10.7) Art critic Dietmar Elger also pointed out neon as a metaphor for conflicts: neon lights might have a long lifetime, but were very sensitive to external influences and extremely breakable. It is also made from glass that is rigid but becomes flexible and formable into almost any shape when heated during the manufacturing process. Furthermore, light imparts the quality of an immaterial appearance to

<sup>190</sup> The Solomon Guggenheim Foundation, “James Turrell,” *Guggenheim*.

<sup>191</sup> Dietmar Elger, “Light as Metaphor – Art with Neon”, *Light Art*, 494-499.

Other ‘younger generation’ artists mentioned include Mario Merz (Italian), Pier Paolo Calzolari, Kieth Sonnier, Richard Serra, Maurizio Nannucci.

glass tubes and thus dissolves the limits of their actual materiality.<sup>192</sup> Neon, which has traditionally been used for signs and advertisements but has become obsolete by the 1960s, was therefore an appropriate material for presenting to the audience a new form of art that questioned their preconceptions. Not surprisingly, the art pieces themselves were often vehicles expressing social revolt. In the US, these included demanding the ending of military intervention in Vietnam or using the highly breakable neon as a reaction against the marketing strategies that saw art as commodity.<sup>193</sup> Nauman's works in the 1970s were characterized by flashing neon signs of play on words, anagrams and palindromes – bright and colourful advertising signs that transported references to existential experiences of sex, violence and death.<sup>194</sup>



Figure 10.6. *It is only upon seeing the title that the audience understand what the neon shapes are. Through this sculpture, Nauman becomes a kind of presence in the gallery room.*<sup>195</sup>

Neon Templates of the Left Half of My Body Taken at Ten Inch Intervals [1966] Bruce Nauman in *Light art from artificial light : light as a medium in 20th and 21st century art*, ed. Peter Weibel and Gregor Jansen (Ostfildern, Deutschland : Hatje Cantz ; New York : D.A.P./Distributed Art Pub., 2006), 500. Installation at Leo Castelli Gallery, New York, Sammlung Philip Johnson, New Canaan, CT, © VG Bild-Kunst, Bonn 2006

<sup>192</sup> Elger, "Light as Metaphor – Art with Neon", *Light Art*, 496

<sup>193</sup> Elger, "Light as Metaphor – Art with Neon", *Light Art*, 494-499

<sup>194</sup> Elger, "Light as Metaphor – Art with Neon", *Light Art*, 502

<sup>195</sup> Elger, "Light as Metaphor – Art with Neon", *Light Art*, 500



Figure 10.7. *Bruce Nauman's neon sculptures often provoke questioning of preconceptions about art. Many of his works used text.*

Run from Fear, Fun from Rear [1972] Bruce Nauman in *Light art from artificial light : light as a medium in 20th and 21st century art*, ed. Peter Weibel and Gregor Jansen (Ostfildern, Deutschland : Hatje Cantz ; New York : D.A.P./Distributed Art Pub., 2006), 510. Sammlung Froehlich, Stuttgart © VG Bild-Kunst, Bonn 2006; PhotoCrd: Uwe H. Seyl, Stuttgart

Although light art has remarkably a smaller audience than many architectural lighting installations, they often presented unconventional views and innovative uses of light as a material, contributing to creativity in lighting applications.

## APPENDIX C

### **Luminous Architecture around the 1920 and 1930s Decades**

Light Bodies in interiors first occurred in the 1970s and developed primarily in the 1990 decade. The practice has roots in the luminous architecture created by buildings covered in expanses of lit translucent glass. They emerged early in the 20<sup>th</sup> century, around the 1920 and 1930 decades.

Bruno Taut's Glass Pavilion (1914) was one of the notable earliest structures employing a large amount of translucent glass. (Figures 11.1a-c) Different from the clear glass in Joseph Paxton's famous Crystal Palace in the Great Exhibition of 1851, the translucent glass and glass blocks in Taut's pavilion allowed light to pass through but not clear views. From the exterior, the Pavilion appeared as a solid block of light. Taut's pavilion demonstrated the kind of utopian architecture proposed by members of the Glass Chain. It was dedicated to poet Paul Scheerbarth, an important member of the Glass Chain who, in 1913, wrote about glass buildings that become light sources at night in his Utopian vision of the future. This immaterial, ephemeral architecture was to be "the ultimate fulfillment of modernity."<sup>196</sup>

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<sup>196</sup> Neumann, *Architecture of the Night*, 37

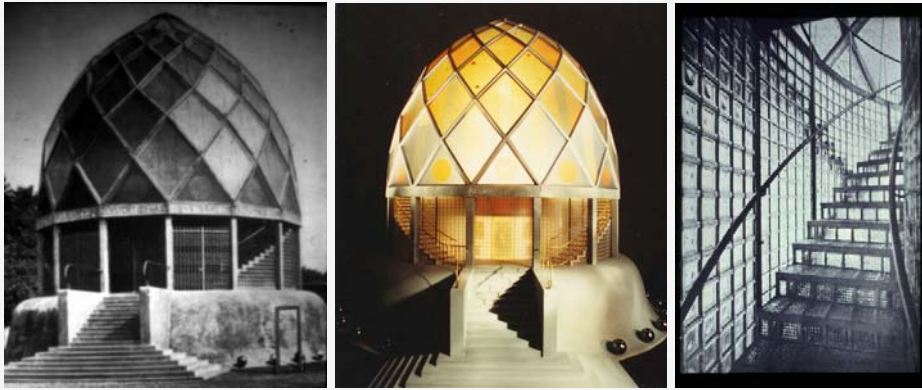


Figure 11.1a. (left) *Bruno Taut's Glass Pavilion (1914), contemporary exterior photo*

Figure 11.1b. (center) *Reconstructed model (1992-1993), MDF, brass, acrylic and other materials, h. 70cm, diam. 74cm;*

Figure 11.1c. (right) *Glass staircase up towards dome surrounded by glass exterior walls.*

*The Glass Pavilion was Taut's demonstration of various ways glass could be used in a building. It was designed to show "how the material might be used to orchestrate human emotions and assist in the construction of a spiritual utopia." The pavilion had glazed walls that were topped by a dome of reinforced concrete ribs and a double skin of glass: reflecting glass on the outside and colored prisms inside. (Victoria & Albert Museum)*

Glass Pavilion [1914] Bruno Taut; Werkbund Exhibition, Cologne, Germany in Dietrich Neumann, *Architecture of the Night: the Illuminated Building* (Munich; New York: Prestel, 2002), 37; PhotoCrd: listed as contemporary photo (a); in Victoria and Albert Museum, "The Glass Pavilion," PhotoCrd: Werkbundarchiv, Museum der Dinge, Berlin; [http://www.vam.ac.uk/vastatic/microsites/1331\\_modernism/objects\\_28.html](http://www.vam.ac.uk/vastatic/microsites/1331_modernism/objects_28.html). Accessed Aug. 1st, 2009. (b); in Untitled; PhotoCrd: <http://web.njit.edu/~kimmelma/taut.html>. Accessed Aug. 1st, 2009. (c)

Besides the efforts of the Glass Chain, combinations of large expanses of translucent glass panels that allowed integrating commercial advertising with architecture in European cities in the 1920 to 1930 decades also resulted in luminous architecture. (Figures 11.2, 11.3a&b) Joachim Teichmüller described these examples of luminous architecture a kind of *Lichtarchitektur*, in which "particular architectural effects are achieved exclusively with the help of

light, and come and go with light.”<sup>197</sup> The continuous explorations with large expanses of translucent glass walls for building exteriors diminished with the coming of WW II by 1939.



Figure. 11.2 In Berlin's 1928 light festival, the luminous "Berlin Im Licht" Tower was an example of luminous glass structure that explored the use of light as a building material outside of commercial purposes. Architectural history professor Dietrich Neumann considers the Berlin light festival to be most important among the various "light festivals" across Europe in the second half of the 1920s.

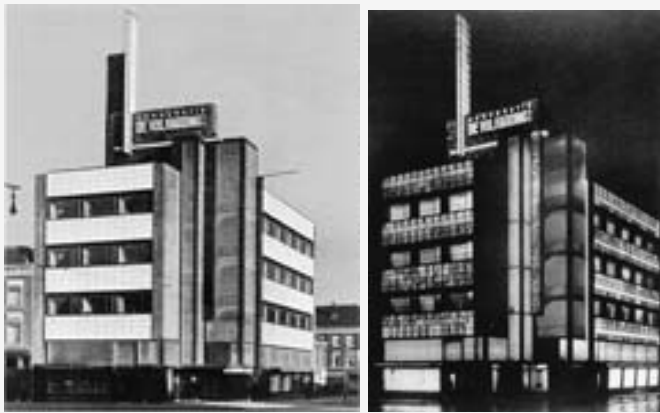
Osam GmbH, "Berlin im Licht" Tower, Berlin Im Licht light festival [1928]  
Berlin, Germany in Neumann, *Architecture of the Night*, 41; PhotoCrd: Canesi, Giovanni and Antonio Ramelli, *Architetture Luminose e Apparecchi per Illuminazione* (Milan: Ulrico Hoepli, 1934)

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<sup>197</sup> Neumann, *Architecture of the Night*, 38. Referencing Joachim Teichmüller. "Gestaltung durch Schatten-wirkung in der Lichtarchitektur," *Licht* (1930/31): 168-170.

*Lichtarchitektur* applied to interior illumination, in which Teichmüller was especially interested, as well as the "painting" with projected light, to the "luminous ornaments" of outline lighting and to *Lichtreklame* (Light advertising).





Figures 11.3a&b. Housing offices for the Dutch socialists cooperative, the De Volharding building's clean white opal glass façade was backlit at night. The white bands became dominated by text spelling out the benefits the cooperative bestowed on its members.

De Volharding Building [1928] Jan Willem Eduard Buijs and Joan B. Lursen, architects; Jan Buijs in collaboration with the Osram Lichthaus Berlin, lighting consultants; The Hague, The Netherlands in Neumann, *Architecture of the Night*, 132, 133. PhotoCrd: listed as contemporary photo/illustration by Neumann

Luminous planes continued to be used and even experienced increasing interior applications in luminous walls and ceilings after the war, but these designs did not develop into creating objects/ masses of light. In 1955, Gordon Bunshaft created a striking glass box for the Manufacturers Hanover Trust Building in New York Bunshaft, Syska & Hennessy and Fishcbach & Moore lit the interiors with expansive luminous ceilings. The building became one of the most widely discussed buildings in the architectural press in the fall of 1954.<sup>198</sup> Critic Lewis Mumford famously called it “a crystal lantern... a paradoxical combination of transparency and solidity... and like a lantern, it is even more striking by dark than by daylight.”<sup>199</sup> (Figure 11.4) Following its success, renowned lighting designer Richard Kelly developed a similar strategy for Mies van der Rohe’s Seagram Building (1958). (Figure 11.5) Kelly’s lighting design dramatically transformed the dark monolithic building into a striking “tower of light” at night.<sup>200</sup> These two buildings played an important role in re-igniting a

<sup>198</sup> Neumann, *Architecture of the Night*, 184

<sup>199</sup> Neumann, *Architecture of the Night*, 184; quoting Lewis Mumford, “Crystal Lantern,” *New Yorker* (Nov. 13<sup>th</sup>, 1954): 197-204.

<sup>200</sup> Neumann, *Architecture of the Night*, 188

debate about architecture lighting. The continuous expanses of luminous ceilings ran up to the edge of the clear glass façade and gave the buildings the appearance of a blocks of light when seen from below; thus reviving the idea of architecture as luminous entities.



Figure. 11.4. (left) *Night time exterior view of the Manufacturers Hanover Trust Building, the large glass curtain walls revealing building as a glowing lantern.*

Manufacturers Hanover Trust [1955] Skidmore, Owings and Merrill, Gordon Bunshaft, designer; Eleanor Le Maire, interior design consultant; Gordon Bunshaft with Syska & Hennessy, Fishbach & Moore, lighting designers; New York City, NY in John Anderson, "The Manufacturers Trust Company," *Interiors* 114, no. 6 (Jan. 1955): 55; PhotoCrd: Alexandre Georges

Figure 11.5 (right) *Evening view of the Seagram Building as 'tower of light' with original lighting installation.*

Seagram Building [1958] Mies van der Rohe, Phillip Johnson, Ely Jacques Kahn, architect; Richard Kelly, lighting designer; New York City, NY in Dietrich Neumann, *Architecture of the Night* (Munich ; New York : Prestel, 2002), 189; PhotoCrd: Samuel H. Gotscho (1958)

## WORKS CITED

Bluhm, Andreas and Louise Lippincott, *Light! The Industrial Age, 1750-1900*. New York: Thames and Hudson, 2000.

Braunstein, Peter. "Disco," *American Heritage Magazine* 50, no.7 (Nov. 1999), [http://www.americanheritage.com/articles/magazine/ah/1999/7/1999\\_7\\_43.shtml](http://www.americanheritage.com/articles/magazine/ah/1999/7/1999_7_43.shtml). Accessed on July 5<sup>th</sup>, 2009

Bush, Kate. "Once Upon a Time in the East: The Art of Piotr Uklanski," *Art Forum* (Nov. 2002): 173.

Ching, Francis D.K..*Architecture, Form, Space and Order*, 2<sup>nd</sup> ed.. New York: Van Nostrand Reinhold, 1996.

Ching, Francis D. K.. *Inteiror Design Illustrated*, 2<sup>nd</sup> ed.. Hoboken, N.J.: John Wiley & Sons, Inc., 2005.

Cho, Soomin Jasmin. "Restaurant Intypes: Contempraory Interior Design and Theory Study." MA Thesis, Cornell University, 2009

Goldfarb, Rachel Joy. "Theory Studies: Archetypical Practices of Contemporary Resort and Spa Design." MA Thesis, Cornell University, 2008.

Jennings, Jan. "A Case for a Typology of Design: The Interior Archetypes Project," *Journal of Interior Design* 32, no. 3 (2007): 48-68;

Jennings, Jan. "Dialectic of New and Old: Theory Investigations in Studio Design," *Interiors and Sources* (March 2003): 74-77.

Jennings, Jan. "Naming Design Practices: Producing a Body of Knowledge of the Creative Dimension of Interior Design," *Communicating (by) Design* (Brussels, Belgium: Sint Lucas School of Architecture in Brussels, Belgium and Department of Architecture at the Chalmers University of Technology in Göteborg, Sweden, 2009), 145-50.

Jansen, Gregor, and Peter Weibel, eds. *Light Art from Artificial Light: Light as a Medium in 20th and 21st Century Art*, Ostfildern, Deutschland: Hatje Cantz, 2006.

Kelly, Richard. "Light as Integral Part of Architecture," *College Art Journal* 12, no. 1 (Autumn, 1952).

Kubler, George. *The Shape of Time: Remarks on the History of Things* (New Heaven, Conn.: Yale University Press, 1962), 31-82 in Jennings, "A Case for a Typology of Design," 49.

Ladau, Robert F, Brent K. Smith and Jennifer Place, *Color in Interior Design and Architecture*. New York: Van Nostrand Reinhold, 1989.

Lam, William. *Perception and Lighting as Formgivers for Architecture*. New York: Van Nostrand Reinhold, 1977.

Larson, Leslie. *Lighting and its Design* (New York: Whitney Library of Design, 1964), 24.

Major, Mark, Jonathan Speirs and Anthony Tischhauser, *Made of Light: The Art of Light and Architecture*. Basel; Boston: Birkhäuser, 2004.

Maxwell, Robert. *Polemics. The Two Way Stretch: Modernism: Tradition and Innovation* (London: Academy Editions, 1996), 12 in Jennings, "A Case for a Typology of Design," 48-68.

Millet, Marietta. *Light Revealing Architecture*. New York: Van Nostrand Reinhold, 1996.

Myerson, Jeremy, ed. *International Lighting Design*, London: Laurence King Publishing.

Neumann, Dietrich. *Architecture of the Night: the Illuminated Building* (Munich, Germany: Prestel, 2002)

Pile, John. *A History of Interior Design*, 3<sup>rd</sup> ed. (London: Laurence King Publishing, 2009),

Scolere, Leah. "Theory Studies: Contemporary Retail Design." In M.A. Thesis, Cornell University, 2004.

St. Charles Heritage Center. "Historic St. Charles: The Rise of Tourism and Philanthropy – Hotel Baker." St. Charles Heritage Center, <http://www.stcmuseum.org/historic18.html>. Accessed on 9 July 2009.

Suh, Joori. "Theory Briefs: Contemporary Interior Design in Museums and Exhibition Spaces." MA Thesis, Cornell University, 2004.

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

Thiis-Evensen, Thomas. *Archetypes in Architecture*. Oslo: Norwegian University Press, 1987.

Welch, Kenneth C.. "New Concepts in Store Lighting," *Architectural Record* 133, no. 8 (Aug 1946): 117.

Wilhide, Elizabeth. *Lighting* (New York: Stewart, Tabori & Chang, 1998), 10.

Williams, Bill. "A History of Light and Lighting," Ed: 2.3 (2005).  
<http://www.mts.net/~william5/history/hol.htm>. Accessed Sept. 14, 2008.

"William Lam", *Architectural Lighting Magazine* (1 Mar. 2001)  
<http://www.archlighting.com/industrynews.asp?articleID=452234&sectionID=1315>. (accessed 31 July 2009)

Yang, Mijin Juliet. "Theory Studies: Contemporary Boutique Hotel Design." MA Thesis, Cornell University, 2005.

## GLOSSARY

A glossary of specialized terms and their definitions pertinent to this thesis project is provided below. (Referencing Neumann's *Architecture of the Night* pp. 232-235 and German lighting manufacturer Erco's lighting guide on website <http://www.erco.com/>, accessed November 17, 2009)

- ❑ *ambient luminescence* – ambient luminescence provides general lighting of the visual environment. Architecture, objects and people in the environment are made visible to allow for orientation, work and communication.
- ❑ *beam spread* - The angle between the limits at which the →light intensity of a light intensity distribution curve is reduced to 50% of the value measured at the centre of the main beam direction. The beam angle is used to determine the light beam diameter.
- ❑ *color rendition* - Quality of color appearance under a specific light source. The degree of color deviation against a reference light source is indicated using the color rendition index Ra and/or the color rendition grading system. The index for perfect color rendition Ra is 100.
- ❑ *daylight* – daylight includes both direct, incite sunlight, with the surrounding light of the sky, as well as the diffuse light of a cloudy sky. The illuminance levels of daylight are far higher than artificial light.
- ❑ *dichroic filter and reflector* – reflector with a multi-layered selective reflective coating, which reflects a part of the spectrum while transmitting others. This principle also allows “cold light reflection,” when a glass reflector is coated with a dichroic film allowing the heat to escape sideways, whereas the light is reflected towards the main direction of the projector. Developed in the years following World War II, their fragility and high cost meant that they did not come into general use until the 1980s, when they were used in automated fixtures.
- ❑ *diffuse light* - diffuse light is given off from large luminescent surfaces, whereby it produces a soft, even illumination with low modeling ability and brilliance.
- ❑ *directional luminaire* – in general a recessed luminaire with a projection angle that may be selected within defined limits (pan and tilt).

- ❑ *discharge lamps* – one of the three major types of device for electric illumination. Light is produced by passing electricity between two electrodes in a gas-filled tube, thereby causing the gas to glow. Different colors are obtained by varying the type of gas in the tube. There are high- and low-pressure discharge lamps. Discharge lamps still in use include the low-pressure mercury vapor lamp (1901) that initially produced a blue-green color demonstrating a common disadvantage of early discharge lamps – their limited ability to render accurate color; neon lamp (1910), high-pressure mercury lamp (1932), low-pressure sodium lamp (1932), fluorescent lamp (1938), metal halide lamp (1960), high-pressure sodium lamp (1962).
- ❑ *downlight* - A luminaire, normally of small dimensions and with a round aperture. They can be designed for recessed or surface installation in or on ceilings or for suspended mounting. Their light is predominantly, but not exclusively, directed downwards onto horizontal surfaces.
- ❑ *fiber optics* – optical instrument for conducting light along any course, even curved. Light is transported by total reflection in cylindrical solid or tubular conductors made of transparent material (glass or acrylic fibers, pipes or rods).
- ❑ *filter* - Optically effective elements with selective transmission. Only a particular spectrum of the incident light is transmitted and either colored light is created or invisible elements (ultraviolet, infrared) can be filtered out. Filter effects can be achieved through absorption (absorption filter) or reflection (reflection filter). Interference filters with vaporized special dichroic coatings are effective reflection filters.
- ❑ *fixture* – see *luminaire*.
- ❑ *fluorescent lamp* - A tubular coated, low-pressure discharge lamp filled with mercury vapor. The ultraviolet radiation emitted by the mercury discharge is transformed into visible light by the fluorescent material coating the inner walls of the discharge tube. Different fluorescent materials give a wide range of colors and quality of color rendition. Fluorescent lamps generally have heated electrodes which means that they can be switched on using relatively low voltage. Fluorescent lamps require starters and ballasts or electronic ballasts.
- ❑ *focal glow* – focal glow refers to accent lighting. Light is used deliberately to convey information by visually accentuating significant areas and allowing the insignificant areas to remain in the background.

- ❑ *incandescent lamp* - A thermal radiator where light is created by heating a tungsten filament. The filament is contained in a glass bulb filled with an inert gas (nitrogen or rare gas) which prevents it from oxidizing, and delays the vaporization of the filament material. Incandescent lamps are available in many forms; the most common are general service lamps with pear shaped, clear or matt bulbs, R lamps with a variety of inner reflective coatings, and PAR lamps made of molded glass with integral parabolic reflector.
- ❑ *indirect light* - illumination cast indirectly from lamps over reflecting surfaces onto the working plane, e.g. by uplights.
- ❑ *lamp* – Electric light source, the lamp produces light which can be directed by the reflector onto objects.
- ❑ *luminaire* – object which contains a light source used for artificial illumination.
- ❑ *LED*—a Light Emitting Diode (LED) is a semiconductor device which converts electricity into light. LED lighting has been around since the 1960s, but is just now beginning to appear in the residential market for space lighting. At first white LEDs were only possible by "rainbow" groups of three LEDs—red, green, and blue—by controlling the current to each to yield an overall white light. This changed in 1993 when Nichia created a blue indium gallium chip with a phosphor coating that is used to create the wave shift necessary to emit white light from a single diode. This process is much less expensive for the amount of light generated.
- ❑ *Metal halide lamp* – A high-pressure discharge lamp filled with metal halides (compounds of a metal and a halogen). The large amount of raw materials available allow metallic vapor mixtures to be created whose discharge generates a whiter light that has a high luminance efficacy and good color rendition. The process was first patented in 1912 by Charles Steinmetz at GE, but a practical lamp was not available until the 1950s. Gilbert Reiling of GE developed the modern metal halide lamp, which GE publicly announced in 1962.
- ❑ *play of brilliants* – play of brilliants is the decorative application of light. Specular effects produced by the light source and illuminated materials – from the candle flame and chandelier to the light sculpture – contribute towards creating a prestigious, festive or exciting atmosphere.



- *reflector* - Light-directing system based on reflecting surfaces. The characteristics of a reflector lie in the degree of its reflection and spread, and also, in mirror-finish reflectors, specifically in its contour. Parabolic reflectors align the light of a point source parallel, spherical reflectors reflect it back into the point of focus, elliptical reflectors concentrate it to a second point of focus.
- *spot* - common term used for narrow beam reflectors or reflector lamps.
- *spotlight* - luminaires whose light distribution can be directed at any desired point by turning and swivelling; used mainly with track.