Transparency in theory, discourse, and practice of Landscape Architecture

THESIS

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Abstract

Transparency within the discipline of landscape architecture surprisingly garners much less attention than transparency in the architecture field. Transparency as a design element has occasional use in landscape architecture, but is often obscured by other design intentions; while transparency as a theoretical instrument has a noticeable absence within landscape discourse. This absence is more pronounced as landscape architecture designs have traditionally engaged seasonality, climatic fluctuations, and plant materials to evoke the more qualitative interpretations of transparency such as ephemerality and ethereality (e.g. Michael Van Valkenburgh’s *Radcliff Ice Wall*).

Responding to this absence, the research methodology employed by this thesis included both a theoretical and an empirical approach that questioned these meanings of ‘transparency’. The research first synthesized existing architectural theory on transparency and mapped its use as a material condition in the modernist movement to contemporary design. This activated a language that was transferred to landscape architecture dialogue and that was used to first demonstrate and, secondly, question the absence of transparency within landscape architecture discourse. The thesis utilized a series of case studies as a means to develop and illustrate an understanding of the theoretical and technical use of transparency within landscape architecture. Further, the thesis questioned whether or not that transparency in landscape architecture co-evolved
with its architectural use operating on the hypothesis that transparency in landscape architecture acts on its accord.

Integrating the architectural discourse on transparency and the landscape architecture case studies indicated several results. First, it confirmed that transparency is latently present as a design instrument in landscape architecture. Secondly, it challenged this hypothesis demonstrating that the use of transparency in certain landscape architecture projects, such as Dan Kiley’s *Miller Garden*, actually aligns with transparency’s corresponding use in architecture. However, in other projects, such as *Front Garden* by Paul and André Vera and Jean-Charles Moreux, that transparency in landscape architecture diverges. The research concludes by arguing for a more intentional use of a design device that is intrinsic to landscape architecture – suggesting that the unique potentials of transparency in the profession is its ability to evoke new spatial territories that heighten our sensory experiences and respond to the temporal qualities of the landscape.
Dedication

This document is dedicated to my family for their enduring love, support, and encouragement.
Acknowledgments

I would like to thank my committee members – Katherine Bennett and Jason Kentner – for their commitment, advice, and unwavering support throughout this process.
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Table of Contents

Abstract ............................................................................................................................... ii

Dedication ......................................................................................................................... iv

Acknowledgments ........................................................................................................... v

Vita ..................................................................................................................................... vi

Fields of Study ................................................................................................................ vi

Table of Contents ........................................................................................................... vii

List of Figures ................................................................................................................... x

Chapter 1: Introduction .................................................................................................... 1

    Literature Review ....................................................................................................... 2

    Case Study Analysis ................................................................................................. 4

    Relevancy/Justification/Outcomes ........................................................................... 5

    Methodology ............................................................................................................ 7

Chapter 2: Defining Transparency .................................................................................. 9

    Material Transparency ............................................................................................ 11

    Social Transparency ............................................................................................... 12

    Phenomenal Transparency ..................................................................................... 14
Spatial Transparency ..................................................................................................... 14

Chapter 3: Transparency in Architectural Discourse......................................................... 17
Modernism: Material and Social Transparency in Glass Architecture .............................. 17
Post-Modernism: Literal and Phenomenal Transparency .................................................... 21
Contemporary: Towards Translucency in Architecture .................................................... 23
The Evolution of Transparency in Architecture ............................................................... 25

Chapter 4: Translating Transparency to Landscape Architecture........................................ 26
Case Study Analysis ........................................................................................................... 26
Front Garden .................................................................................................................... 26
Miller Garden ................................................................................................................... 29
Ice Wall ............................................................................................................................ 34
Swamp Garden ............................................................................................................... 38
Dilworth Plaza ................................................................................................................. 41

Chapter 5: Historical Context of Transparency in Landscape Architecture ..................... 43
Beaux-Art Garden ............................................................................................................ 43
Picturesque ...................................................................................................................... 45
Spatial Transparency in the Ha-ha Wall ........................................................................... 47

Chapter 6: Operations of Transparency in Landscape Architecture ............................... 49

Chapter 7: Conclusions .................................................................................................... 53
Annotated Bibliography ........................................................................................................ 56

Foundational ...................................................................................................................... 56

Modernism .......................................................................................................................... 56

Post-Modernism ................................................................................................................ 58

Contemporary .................................................................................................................... 59

Materiality .......................................................................................................................... 62

Sources Reviewed .............................................................................................................. 65

Landscape Architecture .................................................................................................... 65

Architecture ......................................................................................................................... 65

Art ....................................................................................................................................... 66
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Transparency Lineage Diagram</td>
<td>21</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Transparency Hierarchy Diagram</td>
<td>22</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Material Transparency</td>
<td>23</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Social Transparency. Image Credit: Heneghan and Guedes, 2006</td>
<td>24</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Phenomenal Transparency. Image Credit: Rowe and Slutzky, 1963</td>
<td>14</td>
</tr>
<tr>
<td>Figure 7</td>
<td><em>Front Garden</em>. Image Credit: May Ray as cited in Dodds, 2002</td>
<td>27</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Mirror Enclosure. Image Credit: Man Ray as cited in Dodds, 2002</td>
<td>28</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Transparency in the <em>Miller Garden</em>. Image Credit: By author</td>
<td>29</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Operations of Transparency. Image Credit: Brett Kordenbrock, photo manipulation by author</td>
<td>30</td>
</tr>
<tr>
<td>Figure 12</td>
<td>Spectrum of Transparencies. Image Credit: Alan Ward (Hilderbrand, 1999)</td>
<td>32</td>
</tr>
<tr>
<td>Figure 13</td>
<td>Arborvitae Hedge. Image Credit: Alan Ward (see Hilderbrand, 1999)</td>
<td>33</td>
</tr>
<tr>
<td>Figure 15</td>
<td><em>Ice Wall</em>. Image Credit: Michael Van Valkenburgh Associates, photo manipulation by author</td>
<td>35</td>
</tr>
<tr>
<td>Figure 16</td>
<td>Shadows and Thawing. Image Credit: Michael Van Valkenburgh Associates, photo manipulation by author</td>
<td>37</td>
</tr>
<tr>
<td>Figure 17</td>
<td>Transparency in the <em>Swamp Garden</em>. Image Credit: By author</td>
<td>38</td>
</tr>
<tr>
<td>Figure 18</td>
<td>Spanish Moss Veil. Image Credit: West 8</td>
<td>39</td>
</tr>
</tbody>
</table>
Figure 19. Reflection. Image Credit: West 8, photo manipulation by author................. 41
Figure 20. Dilworth Plaza. Image Credit: Janet Echelman Studio.............................. 42
Figure 21. Building & Site Symmetry. Image Credit: CHICUREL retrieved from:
http://www.deco.fr/jardin-jardinage/ ........................................................................... 44
Figure 22. Framing, Veiling, & Revealing. Left Image: Strayman from:
http://www.panoramio.com/photo/3376466 Right Image: Pam G from:
http://www.panoramio.com/photo/62111912 ................................................................ 46
Figure 24. Blue Sticks. Image Credit: Claude Cormier + Associates ....................... 50
Figure 25. Fiber Wave installation. Image Credit: Makoto Sei Watanabe Architects ... 502
Figure 26. Seasonality................................................................................................. 51
Figure 27. Plant Characteristics. Left Image: By author. Middle Image: Bald Punk from:
http://www.modulism.com/content/fk-you-versailles ..................................................... 52
Chapter 1: Introduction

The focus of this thesis is to explore the presence and absence of the term transparency within landscape architecture. I will demonstrate that ideas and conditions of transparency are latently present within landscape architecture practice, despite a lack of theoretical writing and discourse on transparency. This insufficient attention towards transparency in landscape architecture misses a significant opportunity for the discipline to engage phenomena that are integral to its context and practice.

My thesis positions itself amid significant advances in technology that have generated a period of material innovation unparalleled in human history (Brownell, 2006). Architecture has responded with a renewed interest in conditions of transparency expressed through the architectural skin and the performative, functional, and aesthetic potentials of emergent materials (Riley, 1995; Heneghan & Guedes, 2006; & Brownell, 2011). Ideas and conditions of transparency are, conversely, beginning to be explored more intentionally in landscape architecture projects that blur the distinction between landscape, art, and architecture. Yet, unlike architecture, landscape architecture does not have as rich of a theoretical foundation by which to engage transparency.

I will use architecture as a frame to compare transparency’s occasional use in landscape architecture to its relative prevalence in architecture. I will start by first defining transparency and demonstrating the evolution of the term in architectural discourse and will then examine alignments in the application of transparency as a design
device in modern and post-modern buildings and landscape. My hypothesis is that transparency in landscape architecture at some moments aligns with its corresponding use in architecture and, in other instances, diverges to offer new interpretations of transparency. By exploring emerging contemporary applications of transparency, I will be able to point to new conditions and directions for disciplinary theory, discourse, and practice.

I will conclude by arguing for a more intentional use of transparency as a design instrument in landscape architecture. The social, cultural, and economic flux that contemporary society is subjected to necessitates designs that are dynamic and responsive instead of static and unchanging. Transparency as a design instrument intrinsically possesses these qualities – existing in a state of flux on a spectrum between transparent and opaque and permanence and impermanence. I will argue that the operative potentials of transparency lie in its ability to provoke new spatial territories and to stimulate new spatial experiences that are responsive to these ongoing changes.

**Literature Review**

The thesis begins with theory research synthesizing varying architecture and landscape architecture literature on the topic of transparency. I will briefly introduce the early explicit references of transparency in the abstractionist movements in art – particularly the influence of constructivist László Moholy-Nagy – as constituent to the more ubiquitous use of the term in modern architecture. To limit the scope of my work, the core of my research will delve into a more critical review of transparency within architectural discourse from the modernist movement to contemporary design.
The foundational sources used in this review of transparency in architectural discourse include the 1963 article “Transparency: Literal and Phenomenal” by Colin Rowe and Robert Slutzky and their follow-up article “Transparency: Literal and Phenomenal Part II,” which was published in 1967. These articles by Rowe and Slutzky were influential in shifting the interpretation of transparency away from the glass architecture of the 30’s, 40’s, and 50’s to a post-modern interest in the architectural façade and themes of opaqueness.

Several other literary sources were helpful in translating the discussion of transparency to landscape architecture. Terrence Riley’s Light Construction, published in 1995, provides a concise summary of the evolution of transparency and offers a contemporary direction. György Kepés’ Language of Vision; László Moholy-Nagy’s Vision in Motion; and Siegfried Giedion’s Space, Time, and Architecture are prominent foundational sources that helped to structure the discourse on transparency. Further, Anthony Vidler’s The Architectural Uncanny and Detlef Mertins’ assemblage of essays in Modernity Unbound offer a critique of Rowe and Slutzky’s article and provide a basis of understanding the political and social potential and mythology of transparency.

The intent of researching architectural discourse on transparency is first to establish a language and structure of transparency by which to translate to landscape architecture. Secondly, the intent is to map how transparency in architectural discourse and practice is transformed by evolving external socio-economic forces and ongoing technological advances in modern, post-modern, and contemporary movements. This will provide a frame by which to question whether or not transparency in landscape
architecture has co-evolved with transparency in architecture and will additionally allow the production of a contemporary definition of transparency.

The literature review section will conclude with a review of transparency in landscape architecture literature. While the discussion of transparency eludes the rigorous attention that it is given in architectural literature, it does none-the-less appear sporadically in landscape architecture discourse. To counterbalance this insufficient attention to ideas and conditions of transparency in landscape architecture discussion, I will profile sources that indirectly engage themes of transparency. Secondly, I will use references that situate the case study projects within its historical context such as George Dodds’ *Freedom from the Garden* and Elizabeth Meyer’s “The Post-Earth Day Conundrum.”

**Case Study Analysis**

I will use a series of case studies to first demonstrate that the application of transparency is present within landscape architecture. The case studies will then analyze and question how transparency is used as a design device in landscape architecture projects. Furthermore, the case studies will document the moments when the use of transparency in landscape architecture is both analogous to, and divergent from, its corresponding architectural use. In this sense, the case studies – integrated with the architectural literature review – will trace the evolution of transparency in landscape architecture with its corresponding use in architecture.

The case studies that are used to demonstrate the use of transparency in landscape architecture include:
1. *Front Garden – Hôtel de Noailles*, Paul and Andre Verra and Jean-Charles Moreux (1927; Paris, France)

2. *Miller Garden*, Dan Kiley (1954; Columbus, IN)


4. *Swamp Garden*, West 8 (1997; Charleston, SC)


The landscape architecture projects that were selected include projects from the modernist movement in landscape architecture to contemporary design to allow for a comparative analysis between transparency in landscape architecture and architecture. They include a variety of project types and scales – from residential to installation to urban – to demonstrate that transparency is not relegated to a specific niche within the profession.

**Relevancy/Justification/Outcomes**

The relevancy of this thesis hinges upon two primary factors. First, transparency within landscape architectural discourse has limited occurrence. While transparency is not sufficiently recognized within landscape architecture discourse, I argue that it is actually conceptually present as a design instrument within built work. The architecture literature review will provide a structure by which to first demonstrate and, secondly, to critique the application of transparency within built work. Initiating this discussion of transparency from a landscape architecture perspective will enable a dialog and platform by which academics and professionals can begin to more rigorously pursue a language of transparency that is unique to the profession.
Secondly, the thesis further positions itself in relation to the recent fascination with material innovation in the architecture profession. Technological advances have produced emerging materials that are different from traditional materials such as wood, iron, and stone, while also enabling new construction techniques (Brownell, 12). Architecture critic Thomas Schröpfer relates in *Material Design: Informing Architecture*, that material studies are important because they can be generative of form, elicit a multitude of phenomenological effects, and create pragmatic solutions. Schröpfer writes, “Material studies not only push the boundaries of what and how an idea can be built, but they move the discourse as a whole into fresh territories. The division between materials and theory is no longer valid, if in fact it ever was” (p. 10).

This material innovation has begun, in the past decade, to transcend into landscape architecture. This is particularly evident in the conceptual garden movement as documented in Tim Richardson’s *Avant Gardeners* and the increasing prominence of the Canadian and European garden festival movement. Richardson notes that, “Recent garden plans have embraced the latest thinking in science and materials, and have appropriated ideas from related disciplines such as architecture and product design. One indication of the rise in popularity of these designs has been the growing number of conceptual garden festivals, which have become a premier showcase for new concepts” (Front cover). Consequently, these movements are consciously deploying the tactics of transparency within their designs through experimentation with alternative and emerging materials.
Methodology

The methodology that I intend to engage will produce a structure by which I can first demonstrate evidence of transparency in landscape architecture and, ultimately, argue for the more explicit use of transparency within landscape architecture discourse and design practice. The initial task of my research is to legitimize my thesis by exposing the discipline’s failure to engage issues and conditions of transparency. Problematizing this absence creates the need to use the prevalence of transparency within art and architecture discourse.

Through the literature review, I will demonstrate that transparency’s use in modernist architecture is rooted in the expressionist, cubist, and futurist art movements in the early 20th century and, in particular, out of the Bauhaus School in Germany (Moholy-Nagy, 1947 & Muir, 2011). To limit the scope of my work, I will particularly focus on the evolution of transparency in architecture from the modernist movement to contemporary design. This will allow me to first establish how architecture uses transparency in each of these periods and then through a timeline explore how this use has evolved. The thesis will probe the social, economic, technological, and political forces behind the evolution of transparency – providing an analysis of how the term has evolved and influenced its contemporary definition.

From the review of architecture theory, I will then transition to landscape architecture by first demonstrating the absence of transparency within the discipline’s literature. While its absence with landscape theory is poignant, I want to demonstrate that
it is conceptually present within built work. To do this I will integrate the theory review with several case studies of projects that exhibit degrees of transparency.

The intent of the case study is twofold. First, it will document how transparency is being used in each project (i.e. purely from a material standpoint or perhaps more from a conceptual one). Secondly, it will discuss how the definition of transparency has evolved through each of these different design periods in relation to its corresponding architectural use.
Chapter 2: Defining Transparency

Initial inquiries into ideas and conditions of transparency in landscape architecture were thwarted by a lack of substantial discourse engaging transparency. The infrequent references to transparency in discourse were indirect and were often obscured behind traditional landscape architecture language that do not justify or express the potentials of transparency in landscape architecture. Turning to architectural literature, the first source that was uncovered happened to be one of the seminal pieces on transparency (See Figure 1). The piece, titled “Transparency: Literal and Phenomenal” was published in 1963 by architectural theorist Colin Rowe and art critic Robert Slutzky.

This article by Rowe and Slutzky uncovered a genealogy of transparency that traced back to practitioners and critics such as Walter Gropius, Sigfried Giedion, György Kepes, and László Moholy-Nagy in the modernist art and architecture movement (Kepes, 1944; Giedion, 1954; & Moholy-Nagy, 1947). Reviewing these sources, the lineage of transparency was traced to the early stages of the modern movement with the likes of Adolf Behne, Bruno Taut, and Paul Scheerbart (Scheerbart, Taut, and Sharp, 1972) and it evolved into more contemporary architectural discourse with the works of Terrence Riley, Tom Heneghan and Pedro Guedes, and Scott Murray (Riley, 1995; Heneghan, T. & Guedes, P., 2006; and Murray, 2012).
Researching these sources, revealed clear distinctions in how transparency was being used in modern and post-modern, and is being used in contemporary, discourse (see Figure 2). Transparency as a core topic remains consistent during these different movements; however, its verbiage is codified differently. Modernist designers and critics placed emphasis on words like clarity, openness, rational, and transparent in discussing their fascination with the material potential of glass. Post-modern discourse shifted the discussion of transparency away from glass to conditions of translucency, opaqueness, and eventually obscurity. Contemporary practice and discourse, on the other hand, assigns words like blur, vagueness, and ambiguity in describing the current interest in the condition of translucency.
Researching the evolution of transparency during these different movements revealed that there are four primary ways in which transparency is being discussed including material, social, phenomenal, and spatial transparency. Modern, post-modern, and contemporary discourse assigns different meanings to each of these definitions of transparency, but the core topics remains consistent. These definitions will first be discussed before demonstrating how these different conditions of transparency are used in modern, post-modern, and contemporary architecture.

**Material Transparency**

The first definition, material transparency, is the definition that is easiest to elucidate (see Figure 3). Material transparency is the inherent, physical properties of a material that render the material visually permeable or impermeable (Rowe & Slutzky, 1963). Materials can be transparent, translucent, or opaque depending on their innate properties.
though they will often times defy these strict categorizations and instead occupy a range of degrees on this spectrum.

Materials like glass that allow the direct transmission of light are considered transparent and are associated with being more visually open (Hilberseimer, 1929 as cited in Vidler, 1994 & Giedion, 1954). Materials, like concrete, do not allow the transmission of light and can be classified as being opaque. Materials falling within this spectrum, such as scrim or plastic, diffuse light and are considered translucent. Finally, the reflectivity phenomenon of mirrors and glass presents an interesting conundrum. While mirrors block light transmission and inhibit visual penetration through a material, they reflect visual reality exposing the viewer to itself. This offers an alternate visual experience and creates a spatial illusion (Dodds, 2002).

![Figure 3. Material Transparency](image)

**Social Transparency**

As Anthony Vidler notes in *The Architectural Uncanny*, social transparency embodies themes of openness, honesty, and accountability “of the self, of the self to others, and of
the self to society” (Vidler, 1992) and has become a metaphor of social and political openness (ArchNet, 2001 & Gadanho, P. & Weller, 2012 and see Figure 4). Modernist architecture used the agency of transparent glass to erode the distinction between interior and exterior space (Kepes, 1944; Giedion, 1954 & 1995; & Riley, 1995). It achieved a symbolic social transparency by allowing an uninhibited view into the inner sanctums of the house, thus virtually placing the private and public realms on the same plane (D’Hooghe, 2007).

Post-modernist architecture, on the other hand, attempted to distance itself from the moral exhibitionism of glass architecture by instead seeking a social transparency that reverted to a more traditional role of the house as a place of domestic security (Vidler, 1992). Lastly, social transparency in contemporary discourse and design uses the apparatus and tendencies of translucency to blur or veil visual access inwards to buildings. Anthony Vidler notes that this creates a moment of tension as “the subject is suspended…between blockage and knowledge” (Vidler, 1992).

Figure 4. Social Transparency. Image Credit: Heneghan and Guedes, 2006.
Phenomenal Transparency

Rowe and Slutzky in their article, *Transparency: Literal and Phenomenal*, position transparency into two categories – literal and phenomenal (Rowe & Slutzky, 1963). They distinguish literal as a material transparency that engages the viewer’s eye and associate it with glass architecture (Lo, 2011). On the other hand, phenomenal transparency, Rowe and Slutzky argue, deals with spatial or volumetric organization and engages the viewer’s mind through the abstraction of space (see Figure 4). Phenomenal transparency is curated through the operations of overlapping, layering, and interpenetrating. Rowe and Slutzky argue that this building up of successive spaces, planes, and figures produces spatial ambiguity enabling multiple interpretations and thus visual complexity (Rowe & Slutzky, 1967).

Spatial Transparency

Designs that seek to blur the distinction between site and architecture are described in terms of spatial transparency (see Figure 6). Modernist architecture, for example, attained spatial transparency by eliminating the old dichotomy of *interior* vs. *exterior* through the
application of transparent glass curtain walls that allowed the free movement of light and air through a building. Spatial transparency can also be used to describe the spatial experience. The intent of the likes of André Le Nôtre in his design for Vaux-le-Vicomte or Thomas Church in the Donnell Garden, for example, is to shorten the perceived distance between the immediate or foreground and the distant ground.

These various means to express the core topic of transparency – particularly material and social transparency – are connected by a relative degree of openness. Material transparency refers to the relative physical openness of a material where materials like glass allow both light penetration and visual access, while social
transparency alludes to social and political openness, accountability, and access. Often times these varying distinctions will be used to support another. Modern architecture, for example, uses the material transparency of glass to promote its social agenda.

Furthermore, it is important to note that our perception of these different uses of transparency is predicated on a number of external influences that this thesis will explore – namely the angle and intensity of light, the viewer’s distance and position relative to what is being viewed, and the thickness and roughness of a material (Murray, 2012). Lastly, there are a number of intrinsic qualities like ephemerality and ethereality that are associated with transparency and that can alter spatial territories and experiences that will also be discussed. I will now show how these different uses of transparency appear in modern, post-modern, and contemporary architecture.
Chapter 3: Transparency in Architectural Discourse

Modernism: Material and Social Transparency in Glass Architecture

To introduce the term transparency, I want to contextualize it within its initial explicit articulation as a concept. Transparency, as an architectural condition, can be traced as far back as the early Gothic Cathedrals and the importance of religious symbolism in their stained glass windows. However, it was innovations in the commercial production of glass around the turn of the 20th century that captured the fascination of modern architects and cultivated transparency as one of the most used architectural metaphors (D’Hooghe, 2007).

Transparency’s ascendance can be traced to the significant social and economic changes and advances in technology in the late 19th and early 20th centuries (Giedion, 1995; Kepes, 1944; & Moholy-Nagy, 1947). Inventions such as the radio, television, and airplane contributed to the interconnectedness of the human population on a global scale (Kepes, 1965). Simultaneously, advances in flat glass technology contributed to the ubiquity of glass, and its transparent tendencies, in modern architecture.

Transparency in modernism is used in two distinct ways: to remove societal barriers and to encourage connectivity with nature. First, transparency was integral to promoting the modernist’s social agenda. As noted by theorist Gyorgy Kepes, transparency was a means to re-organize the physical, psychological, and technological into an integrated whole on a biological and social plane (Kepes, 1944). Early modern
architects and critics like Paul Scheerbart and Bruno Taut were drawn to the potentials of glass to create a new utopian society (Mertins, 2011). Later on, the glass curtain wall that was prominently displayed in the architecture of the 30’s, 40’s, and 50’s exposed the private lives of interior occupants to the watchful gaze of the public. Glass architecture created a universal subject by inverting the traditional notions of private and public. This notion of social transparency was difficult to achieve in practice, but none-the-less remained an important symbol of transparency in modern architecture.

Adolf Loos’ writing in *Ornament and Crime* in 1908 was critical in contributing to the dissemination of modernist social ideals through curtain wall architecture (Loos, 1998). Loosian principles argued for façades stripped of ornamentation and replaced with transparent glass (Brownell, 2012). What resulted from this application of transparency was the exposure of the private lives of a building’s inner occupants in a state of constant exhibition (D’Hooghe, 2007 & Vidler, 1992). Similar themes are evoked in the work of modernist artist Marcel Duchamp and his fascination with the objet trouvés. Duchamp contributed to the erosion of the private sphere by taking private and everyday objects like the urinal and making them publicly visible (D’Hooghe, 2007).

Art, particularly the abstractionist movement, also played an integral role, along with architecture, in the development of transparency. Expressionist and constructivist artists in the 20’s and 30’s strove to capture distorted perspectives of reality through expressions of emotion (Moholy-Nagy, 1947). Themes of transparency emerged in the atmospheric photographs of artist Lyonel Feininger that attempted to capture both the ephemerality and otherworldliness of urban spaces at night (Muir, 2011). The
constructivist Laszlo Moholy-Nagy, teaching with Feininger at the Bauhaus School, was interested in the integration of art and technology and the ability of the photograph to capture and project movement or, what he called “space-time problems” (Moholy-Nagy, 1947). In Vision in Motion Moholy-Nagy wrote, “Superimpositions overcome space and time fixations…They transpose insignificant singularities into meaningful complexities; banalities into vivid illumination. The transparent quality of the superimpositions often suggest transparency of content as well, revealing unnoticed structural qualities in the object” (p. 210).

The advent of glass also had a second use for the modernist architect – to create a more symbiotic relationship between interior and exterior space. Glass’s functional potential to illuminate interior spaces and to allow an unimpeded view inwards and outwards helped to erode the interior/exterior dichotomy. Epitomizing these themes, Walter Gropius’ Bauhaus School, Le Corbusier’s Villa Savoye, and Philip Johnson’s Glass House sought to embody themes of openness and clarity via the fresh air and hygiene cult (Giedion, 1954 and Vidler, 1992). Spatial continuity between interior and exterior spaces not only allowed visual penetration and a re-connection to nature, but also the free movement of light and air through the house. Seminal works by early modernist designers and critics sought to contextualize modern transparency as absolute transparency, which could obtain a shadowless, open architecture via the glass curtain wall (Hilberseimer, 1929 as cited in Vidler, 1994 and Giedion, 1995).

The proliferation of transparency as a design sensibility created a need to establish a formal structure by which to critique its use. The foundational critique was initiated by
gestalt psychologist and architectural critic Wilhelm Fuchs in the article “On Transparency.” Fuchs formed a test to establish a more definitive definition of transparency with the intent of questioning whether we can simultaneously perceive two objects – one behind the other (Fuchs, 1938). Several years later, György Kepes wrote an important passage on transparency in *Language of Vision* that is often cited:

“If one sees two or more figures partly overlapping one another, and each of them claims for itself the common overlapped part, then one is confronted with a contradiction of spatial dimensions. To resolve this contradiction, one must assume the presence of a new optical quality. The figures are endowed with transparency; that is, they are able to interpenetrate without optical destruction of each other” (p. 77).

Kepes viewed transparency not only as an optical characteristic, but also as functioning to produce a simultaneous perception of different spatial locations or organization. In discussing how space recedes and fluctuates, the author further suggested that transparency is an active phenomenon dependent upon the viewer’s perception. Later on, architecture theorist Colin Rowe and art critic Robert Slutzky attempted to provide a more thorough definition of transparency in their seminal article “Transparency: Literal and Phenomenal” that helped to usher in a post-modern view of transparency.
Post-Modernism: Literal and Phenomenal Transparency

Transparency in post-modern architecture can be traced to the dissatisfaction with the pure functionalism, utility, and perceived lack of form of the modernist movement. Post-modernism was determined to distance itself from the machine aesthetic of modernism with both a renewed interest in the architectural façade and the house as a place of refuge. In *The Architectural Uncanny*, Anthony Vidler states “In its place, opacity, both literal and phenomenal, became the watchword of the postmodern appeal to roots, to tradition, to local and regional specificity, and to a renewed search for domestic security” (p. 219).

Reacting against glass architecture’s universal subject, post-modern transparency sought to reverse the openness found in modernism through experimentation with more translucent and opaque materials that denied visual access. Within this reversal of clarity, Rosalind Krauss explored themes of spatial organization, Detlef Mertins investigated the experience of doubt, and Anthony Vidler searched for the transparency provocation of the uncanny (Krauss, 1987; Mertins, 1996; and Vidler, 1992).

The piece of literature that helped to prompt this shift from a modernist to a post-modernist thinking on transparency was the article by Colin Rowe and Robert Slutzky. In this article, Rowe and Slutzky borrowed ideas from Cubist painters like Pablo Picasso and George Barque who were interested in the three-dimensional representation of abstracted form through multiple viewpoints. Through these Cubist painters, Rowe and Slutzky argued for a re-positioning of the term transparency by distinguishing between two kinds: literal and phenomenal.
Rowe and Slutzky classified literal transparency as the inherent physical properties of a material and associated it with glass architecture. They lamented the simplicity of literal transparency, felt that it left little to the viewer’s imagination, and instead appealed for shift to a more complex phenomenal transparency. In “Transparency II: Layering of Planes/Layering of Spaces,” author Adrian Lo supported Rowe and Slutzky’s article writing that phenomenal transparency engages the mind of the viewer “in order to interpret successive layered spaces as modes of transparent phenomena” (Perceptual vs. Conceptual Transparency section, para. 3). It does this through a similar abstraction of space as the Cubist paintings via the layering, interpenetrating, and overlapping of more opaque figures and planes. Phenomenal transparency thus becomes a more conceptual, more implied transparency of reading spatial organization.

Rowe and Slutzky’s article was instrumental in shifting the discussion and thinking of transparency away from its preeminence in the glass architecture of the 30’s, 40’s, and 50’s. However, their argument was somewhat problematic. First, they categorized liter transparency as a perceptual or looking transparency and phenomenal as a conceptual or reading transparency. Structuring their argument in this fashion is troublesome as it fails to recognize that these are reciprocal operations – seeing prompts reading and reading requires seeing.

Along these lines, one of the issues that Detlef Mertins pointed out in *Modernity Unbound* is that transparency in modernist architecture was “anything but literal” (Mertins, 2011). Mertins wrote that transparency was rather an expression of a “new optics” and, he continued, “a turn from the determinate representation of self-positing
consciousness [toward] indeterminate biotechnic constructions hovering contingently without ground” (Mertins, 2011). Scott Murray, Terence Riley, and others support this notion in discussing how certain modernist buildings, such as Pierre Chareau’s *Maison de Verre*, actually exhibited qualities of translucency.

Lastly, Rowe and Slutzky borrow ideas from the cubist painters in establishing their argument for phenomenal transparency. They translate these ideas to architecture by demonstrating that the phenomenal transparency found in the cubist paintings is present in the formal arrangement of certain architectural facades. However, their interpretation is contingent upon a two-dimensional, frontal reading that is similar to that of the picture frame of cubist art. This is inherently problematic for architecture, and even more so for landscape architecture, because both design professions are intrinsically tied to three-dimensional space. From a landscape architecture perspective, it is difficult to read a landscape through the frame of a cubist painting. Rather, it would be more like stepping through the picture frame of a cubist painter to engage the shapes and figures in the third dimension.

*Contemporary: Towards Translucency in Architecture*

Two parallel movements in contemporary architecture, both of which are intrinsically tied to advances in technology, are transforming post-modern notions of transparency. First, recent technological advances have initiated a significant change in material culture (Brownell, 2012). Material innovation along with the mandate for sustainably-derived and climatically-responsive materials has prompted a shift from once dominant materials such as wood, brick, and iron to more performance-based materials (Manzini & Cau,
Secondly, electronic devices, the Internet, and social media have cultivated a culture of immediacy that has inverted our traditional distinctions of private and public spheres.

Operating within these contingencies, architecture has responded with a renewed interest in the performative, functional, and aesthetic potentials of the architectural skin. Tom Heneghan and Pedro Guedes note in their article, “Translucency,” that contemporary transparency is reactionary against the immediacy, restlessness, and transience of our culture. They write that the current trend in design, “seeks to blur what is seen with exquisite precision deployed in a search for vagueness” (see Abstract) and advocates for a movement away from transparent and opaque materials to ones that are more translucent. Translucency is also credited with distancing the viewer from the interior – ultimately moving away from a façade treatment of transparency to an interior transparency (Riley, 1995).

Scott Murray discusses in Translucent Building Skins that the operative potential of translucency in contemporary design is that it exists in a perpetual state of flux. Our relative perception of translucency is predicated upon factors like material density and roughness, angle and intensity of light, and one’s distance and position relative to a material or object (Murray, 2012). Murray notes that translucent objects and materials are identified as being ambiguous as they neither fully conceal, nor fully reveal, space beyond their surfaces. Translucency has the potential to further blur the relationship between interior and exterior space to establish a symbiosis between landscape and architecture (Corbellini, 2009). Further, Blaine Brownell discusses in Matter in the
Floating World that the past decade has seen a re-emergence of terms like dematerialization, ephemerality, and instability (Brownell, 2011).

The Evolution of Transparency in Architecture

In summary, it becomes readily apparent that socio-economic changes and technological advances (intrinsically tied to one another) prompted the evolution of transparency in architecture. This is particularly evident in the modernist movement where the advancement in the commercial production of flat glass by Belgian Emile Fourcault in 1914 produced an interest in material transparency (D’Hooghe, 2007). The rise of glass architecture, and the concurrent social and political turmoil in the first half of the 20th century, further served to compel modern architecture’s social agenda. Similarly, the contemporary material innovation coupled with the inversion of traditional distinctions of private and public spheres (via social media, electronic devices, etc.) have also influenced the path of transparency. Today, contemporary transparency has shifted from the inexorable openness sought by modern architecture to a translucency that seeks to blur and veil our spatial experiences.
Chapter 4: Translating Transparency to Landscape Architecture

Case Study Analysis

The inquiry into the architectural discourse on transparency procured a language, structure, and historical frame that I could translate for use of tools in recognizing and identifying transparency use in landscape architecture, enabling me to begin to recognize and identify transparency in landscape architecture. When starting this process, I anticipated that the latent and relatively undocumented use of transparency in landscape architecture would differ greatly from its established discourse and application in architecture. I noticed, however, from the projects I selected that transparency use in landscape architecture actually often reflected transparency discussion and application in architecture, with the occasional exception. I will use a series of case studies to highlight the presence of transparency in landscape projects and, secondly, to demonstrate this tandem use of transparency between the two professions. The first case study is Front Garden, Hôtel de Noailles – an early modern garden whose use of transparency actually deviated from the use of transparency in modernist architecture.

Front Garden

Front Garden, Hôtel de Noailles, was constructed in Paris, France, in 1927 by Paul and Andre Verra and Jean-Charles Moreux (Dodds, 2002). It is considered, along with Gabriel Guévrekian’s Villa Noailles and The Garden of Water and Light, to be an early example of a modern garden. Similar to the small gardens by Guévrekian, Front Garden
displays a triangle motif found in its triangular layout and in the patterns formed by pebbles, paved walkways, and low-growing plants on its ground plane (see Figure 7). The importance of the garden to the discussion of transparency is in its use of mirrors.

The triangular garden is enclosed on two sides – on one side by, a wrought iron fence and, on the other side, by a wall with a series of embedded mirrors (see Figure 8). George Dodds notes in *Freedom from the Garden* that “The long horizontal band of mirrors served a dual role in the garden; it reflected the interior surfaces of the garden and its surroundings while, at the same time, it deflected the vision of onlookers and the residents of the tall buildings directly across the street” (p. 189). The spatial illusion provoked by the mirrors altered the visitor’s experience of the garden prompting Fletcher

Figure 7. *Front Garden*. Image Credit: May Ray as cited in Dodds, 2002
Steele to write in *New Pioneering in Garden Design* that, “One quite loses consciousness of the definite boundaries of the place (as cited in Dodds, 2002).

![Figure 8. Mirror Enclosure. Image Credit: Man Ray as cited in Dodds, 2002](image)

In this sense, the mirrors, the decorative aesthetic, and the sense of privacy achieved by the enclosed garden all challenged the universalism sought by modernist architecture and were anathema to its lust for clarity, honesty, and openness. In an interesting twist, garden designers like Gabriel Guévrekian would eventually distance themselves from the decorative aesthetic of these early modern gardens in favor of stripped down and functional gardens (Dodds, 2002).
**Miller Garden**

The *Miller Garden* was constructed in 1954 in Columbus, Indiana, by landscape architect Dan Kiley and is considered one of the icons of Modernist gardens (Kiley & Amidon, 1999). It is important to note upfront that Dan Kiley worked closely with the architect of the *Miller House* Eero Saarinen on the project (Hilderbrand, 1999). This realization led to the recognition that transparency in the landscape often acts in concert with the transparency found in the architecture. It does this through several ways (see Figure 9).

![Figure 9. Transparency in the Miller Garden. Image Credit: By author](image)

First, material transparency in both the architecture and landscape is used to create a seamless transition between interior and exterior spaces. Gary Hilderbrand notes in *The Miller Garden: Icon of Modernism* that transparency is found in the garden through spatial continuity between site and architecture where the exterior garden spaces play off of the spatial logic of the architecture to create outdoor rooms (p. 27-28). The
architecture achieved this through the application of glass walls, while the landscape used a carefully selected plant pallet, positioning of trees, and a maintenance regiment that allowed an unimpeded view from the interior spaces out into the landscape. These tandem operations of transparency between the two professions helped to establish the social agenda of the architecture, which sought to expose and subject the interior occupants of the house to the gaze of the public.

In the below, left image, it is both the positioning and the dense, opaque leaf structure of the willow trees that frame the immediate views out into the landscape (see Figure 10). Beyond the willows, the more translucent leaf structure and limbing of the honey locust trees allow for an uninhibited view down into the meadow. The image on the right shows similar landscape operations that reflect the agenda of the architecture to create a seamless transition between interior and exterior space.

Figure 10. Operations of Transparency. Image Credit: Brett Kordenbrock, photo manipulation by author
Transparency in both the architecture and landscape act in concert with one another in, one could say, an unintentional fashion. First, because the landscape is living, the inevitability of the growth and decay cycle of trees has the potential to disrupt and confront the clarity of transparency found in the *Miller House*. We can see in the below, left image that the mature willow trees have actually begun to infringe and obscure one’s inward view to the interior spaces (see Figure 11). In this sense, the growth and decay that the landscape is subjected to is very similar to the tendencies of transparent glass to display reflection. As we see by looking closer in the right image, the absolute transparency of the glass is denied by reflection. Anthony Vidler notes in *The Architectural Uncanny* that because of glass’s reflectivity paradox “the subject cannot lose itself in infinite reason and it instead finds itself in the narcissism of its own gaze” (Vidler, 1992).

Figure 11. Disrupting Architectural Transparency. Image Credit: Yu Shi, photo manipulation by author
The application of transparency in the landscape diverges from its intended use in architecture in two ways. First, the architecture primarily concerns itself with the transparent qualities of glass. However, as seen in the below image, transparency in the landscape architecture possesses a variety of degrees of clarity (see Figure 12). The opaque arborvitae hedge in the background decontextualizes the viewer from the surrounding landscape and produces a sense of privacy and intimacy. The trees in the middle ground have a leaf structure that is almost opaque, but translucent enough to allow light to filter through. Further, the gaps in the trees allow even more light to pass through illuminating the lawn area with a soft light.

Figure 12. Spectrum of Transparencies. Image Credit: Alan Ward (Hilderbrand, 1999) photo manipulation by author
Secondly, I believe that the relatively opaque nature of the arborvitae perimeter hedge confronts the social agenda of modernist architecture. When these hedges were first planted, the interior, more private spaces of the house were exposed to the inquisitive gaze of the public. However, as the hedges grew, they began to obstruct the public’s gaze inward, thereby, confounding the universalism sought by the architecture. Because of this, the social transparency of the architecture is never fully realized, instead, a symbolic social transparency is constructed (see Figure 13).

![Arborvitae Hedge](image)

Figure 13. Arborvitae Hedge. Image Credit: Alan Ward (see Hilderbrand, 1999)


**Ice Wall**

Transitioning to the post-modern period, the third case study I profiled was the *Ice Wall* by Michael Van Valkenburgh. The *Ice Wall* was a temporary installation constructed during the winter of 1988 in a public courtyard at Harvard University. It consisted of three curved segments of fine metal mesh screening and an irrigation system that periodically misted the fence. Variables in temperature, wind velocity and direction, and the angle and intensity of the sun caused the installation to vacillate between states of permanence and impermanence. Transparency in the *Ice Wall* aligns with a post-modern application of transparency in architecture. It rejects the openness and clarity found in the modernist use of transparency, by instead, appealing to conditions of translucency and opaqueness as it attempts to obscure visual and physical experiences of the *Ice Wall* (see Figure 14).

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Figure 14. Transparency in the *Ice Wall*. Image Credit: By author
The use of ice as a nearly opaque material demonstrates the post-modern movement away from the clarity and openness of glass. Ice confronts the universalism sought by modernist architecture by visually obstructing the viewer from the landscape. The viewer’s decontextualization from the landscape is further augmented by the curvature of the installation. No longer are we able to see through or look down an object as was in the case of modernism. Rather, our inward and outward gazes are obstructed by the curvature and materiality of the fence. Architectural critic Terrence Riley noted in *Light Construction* that the subject is also physically severed from the landscape as the “walls interpose between the viewer and the landscape an image (the fence) signifying protection or obstacle” (p. 10 and see Figure 15).

Figure 15. *Ice Wall*. Image Credit: Michael Van Valkenburgh Associates, photo manipulation by author
Ice, as a material, also confuses the relationship between the subject and object in the project. While the *Ice Wall* inhibits both inward and outward views, the ice also actually allows natural and artificial light to pass through and to illuminate and cast shadows onto its walls (see Figure 16). Moving through the project, the visitor is incessantly confronted by the projection of its own shadow and the shadows of other visitors on either side of the fence. Likewise, those on the outside of the fence can trace the movement of those on the inside through the position of their shadow. This has the effect of obscuring the relationship between the subject and object as it questions who is viewing, and who is actually being viewed.

Lastly, as seen in the below right image (see Figure 16), the use of ice as a material in the project offers a unique twist to the use of transparency in post-modern architecture. We find this twist in the irregularity of ice accumulation. This irregularity occurs through seasonal temperature shifts and variants in wind velocity that cause ice to freeze at different densities. Thinner layers of ice thaw first as temperatures increase thus providing times when the viewer’s gaze out into the landscape is unimpeded. This serves to offer a moment of clarity and openness in the wall where the subject is visually re-connected to the surrounding landscape.
Though exhibited during the colder New England months, the uniqueness and suggestive potentials of transparency in the *Ice Wall* are in its ability to capture and display temporal qualities in the landscape. The shifting light conditions and seasonal temperature changes curated a transparency that is very much active. Our perception of transparency in the *Ice Wall* is intrinsically tied to these shifting conditions and the movement of water between its liquid and solid states.
Swamp Garden

The Swamp Garden by West 8 was constructed in 1997 in the cypress swamps of Charleston, South Carolina. It consists of vertical steel posts and horizontally strung tensile wire that support a curtain wall of Spanish moss. The Swamp Garden constructs an architectural space of enclosure that offers a place of respite in the shadows of its curtain wall.

Moving into the contemporary alignment between the Swamp Garden project and architectural discourse on transparency, there is a shift of interest away from themes of phenomenal transparency and interest in the architectural façade to a focus on the architectural skin. There is a mutual shift in landscape from a more opaque, post-modern use of transparency to a contemporary interest in translucency (see Figure 17).

Figure 17. Transparency in the Swamp Garden. Image Credit: By author
The thin and string-like leaf structure of the Spanish moss composes a curtain wall that is more translucent in nature than the *Ice Wall*. Thus, the viewer’s visual penetration outwards from the interior of the space does not fully reveal the space beyond the wall, nor does it completely conceal it (see Figure 18). Instead, as Terence Riley notes in *Light Construction*, it suspends the viewer in a difficult moment of blockage and knowledge. In this sense, the Spanish moss curtain-wall acts as a veil as it isolates the viewer from within from the surrounding landscape.

![Figure 18. Spanish Moss Veil. Image Credit: West 8](image)

The relative translucency of the Spanish moss veil is contingent upon the duality of the time of day and the diurnal cycle. For example, the interior space of the *Swamp Garden* becomes increasingly filled with light as the sun climbs higher in the sky. When the sun is sitting lower in the sky, in the early morning and evening hours, the sun’s perpendicular interface with the Spanish moss illuminates the wall, rendering the façade nearly visually opaque. In a sense, the play of light in the *Swamp Garden* transcends
visual perception and actually heightens the atmospheric and sensory experiences of the Swamp Garden.

Translucency is deployed in the Swamp Garden in an intentional search for vagueness and ambiguity. The translucent nature of the Spanish moss blurs the viewer’s visual perception of context and focuses the attention of the viewer inwards. Furthermore, reflection plays an integral in the search for spatial ambiguity. The image of the viewer and the Spanish moss curtain wall are both projected onto the surface of the water, provoking a spatial illusion (see Figure 19). These experiences align with the following quote that appeared in The Eyes of the Skin by architectural theorist Juhani Pallasma in which he stated,

Mist and twilight awaken the imagination by making visual images unclear and ambiguous: a Chinese painting of a foggy mountain landscape or the raked sand garden of Ryoan-ji Zen Garden give rise to an unfocused way of looking, evoking a trance-like, meditative state. The absent minded gaze penetrates the surface of the physical image and focuses in infinity. (as cited in Murray, 2012).
Dilworth Plaza

Dilworth Plaza is a collaborative project by landscape architecture studio Olin and artist Janet Echelman that recently broke ground for construction. It is a re-design of a prominent Philadelphia urban space adjacent to City Hall. The design incorporates numerous public programmatic elements including public green space, a transit concourse, and flexible space for wintertime ice skating. Transparency is displayed in Dilworth Plaza both conceptually and through materiality.

Conceptually, transparency is used to reveal latent, underground infrastructural systems. This implied or conceptual transparency is made visual through the material of dry mist. The dry mist traces the passage of three underground subway lines on the surface of the plaza in real time (Jenny, 2011). As a subway train moves below the surface of the plaza, the dry mist marks its position leaving a trail of mist as the subway train moves from one side of the plaza to the other (see Figure 20).
The project is interesting in that it uses transparency to integrate infrastructural, environmental, and social movement. The mist that traces the concealed subway lines is activated by the interaction and movement of wind and people on the surface of the plaza. Illuminated by underground lights, the mist glows at night activating the plaza. As Janet Echelman notes in her webpage for the project title, *Philadelphia Project*, “The artwork aims to physically and psychologically transform the way people view the city's central square and enter its public transit system” (Echelman, 2013).

Figure 20. *Dilworth Plaza*. Image Credit: Janet Echelman Studio
Chapter 5: Historical Context of Transparency in Landscape Architecture

The preceding case studies sought to expose the latent presence of transparency in landscape architecture and, also, to conduct a comparative analysis between the use of transparency in landscape architecture and architecture. In demonstrating the use of transparency in landscape architecture projects, the question becomes is this use of transparency unique to these projects or can transparency be traced to deeper roots within the profession? Further, if transparency is evident in the annals of landscape architecture, is it influencing a more contemporary use of transparency? To limit the scope of the work, I focused on the Western garden movements and, in particular, the Beaux-Art and picturesque movements.

**Beaux-Art Garden**

The French Beaux-Art gardens of the mid-17th century are noted for their formal geometries, strong axial ordering of space, and for imposing their designs on nature. The chief artist and designer of these gardens was André Le Nôtre who designed a number of historically significant works including the gardens at *Vaux-le-Vicomte* and *Versailles* (Brix, M., Lindberg, S., & Fachhochschule München, 2004). At *Versailles*, Le Nôtre used the material transparency of plants to create a variety of spatial experiences, however, it is the masterly use of spatial transparency in his design of *Vaux-le-Vicomte* that is more analogous to the use of transparency found in the modernist *Miller Garden.*
Transparency in Vaux-le-Vicomte is articulated in the agenda of the architect, Louis Le Vau, and the garden designer, André Le Nôtre, which was to create harmony between building and site (see Figure 21). The chateau and the accompanying garden were designed and constructed concurrently and shared similar formal aspirations. F. William Hazlehurst wrote in Gardens of Illusion that “Le Nôtre never lost sight of the fact that the building was to be chief actor on the stage. The yellow limestone chateau…is laid bare to the view, its immediate surroundings uncluttered by trees and high shrubs” (p. 17). The designers achieved symmetry – and a degree of spatial transparency – between building and site as the formal, geometric patterns of the chateau’s stone façade were reflected onto the ground plane of the gardens.

Figure 21. Building & Site Symmetry. Image Credit: CHICUREL retrieved from: http://www.deco.fr/jardin-jardinage/
This idea of spatial transparency or blurring of building and site is evident in the *Miller House and Garden* by Dan Kiley and Eero Saarinen. Visiting Europe in the 1940’s, Kiley was influenced by Vaux-le-Vicomte and other such French gardens (Kiley and Amidon, 1999). Kiley and Saarinen used a similar spatial transparency to that of Le Nôtre and Le Vau in order to dissolve the distinction between building and site. However, Kiley and Saarinen’s design pushed this idea of spatial transparency a step further as it attempted to erode the barrier between interior and exterior space. Kiley sought to accomplish this by, first, replicating the spatial and, second, formal elements of the architecture in the landscape and through the careful positioning and spacing of vegetation to allow an uninhibited view between the architecture and garden (Hilderbrand, 1999).

*Picturesque*

The picturesque garden movement emerged in the 18th century in the English countryside estate gardens. It was characterized by gently undulating, fresh, youthful, and intricate landscapes marked by the framing and veiling of architectural follies. Gardens from the picturesque era were typically juxtaposed to the surrounding sublime landscape, which features with drastic and sudden topographical changes; decay and age; and an infinite boundlessness (Price, 1975).

Transparency is subtly present within the repertoire of picturesque landscape designers like William Kent, Capability Brown, and Humphrey Repton and, further, is evident in the gardens at *Stourhead*, designed by Henry Hoare in 1741. Hoare used an intricate veiling, framing, and revealing of architectural follies to create a sequencing of
stories. Transparency, deployed through the use of a variety of plant material at Stourhead, occupies a spectrum of different degrees in order to curate these varying sequences (see Figure 22). In some instances, more opaque plants frame views to the architectural follies, while, in others, plants that are inherently more translucent are used to veil certain views.

Uvedale Price writes of the picturesque in “An Essay on the Picturesque” that “[By] its variety, its intricacy, its partial concealments, it excites that active curiosity which gives play to the mind” (p. 106). This quote is suggestive of the ideas of phenomenal transparency expressed by Colin Rowe and Robert Slutzky. Phenomenal transparency is evident at Stourhead in the intricate layering, overlapping, and interpenetration of spaces (lake, meadow, and forest) and plant materials. Similar to Rowe and Slutzky, Price suggests that these operations provoke multiple emotions and, thus, visual complexity.

Spatial Transparency in the Ha-ha Wall

The Ha-ha wall is another instance of how contemporary transparency in landscape architecture can be placed in historical context. The Ha-ha walls (see Figure 23) were a product of the agrarian lifestyle of 17th and 18th century. They were vertical walls made of brick or stone with a ditch at their base and were constructed in such a fashion as to be invisible to the viewer looking out from the house and estate. They were primarily used to keep grazing livestock from entering the lawn and gardens of the estates. Beyond this functional use, however, the Ha-ha walls helped to preserve an uninterrupted view to the countryside and to establish the strict societal distinctions of the 18th century (BBC, 2003).

Figure 23. Ha-ha Wall. Image Credit: Andrew Curtis, retrieved from: http://commons.wikimedia.org/wiki/File:Ha-ha_wall_south_of_Close_House_-_geograph.org.uk_-_1134519.jpg
The Ha-ha wall attempted to visually erode the distinction and distance between house, garden and countryside. Similarly, Dan Kiley’s modernist *Miller Garden* attempted to erode the distinction between interior and exterior. But while Kiley’s *Miller Garden* propagated a social transparency of openness and honesty, the Ha-ha wall, on the other hand, served to metaphorically distance the wealthy estate society from the ever-increasing middle class of the 18th century by drawing a harsh boundary line in the landscape. Thus, while modernism used spatial transparency to attain social transparency, spatial transparency in the Ha-ha walls created social distance between the public and private spheres and between the middle- and the upper-classes.

This historical lens of Beaux-Art, picturesque, and Ha-ha wall reveals that the presence of transparency in landscape projects is not confined solely to a more contemporary use. Rather, it suggests that the use of transparency in certain contemporary projects – such as the *Miller Garden* – may actually be influenced by earlier echoes of transparency. Further, this historical lens augments the position that operations of transparency are often masked by more traditional and utilitarian landscape architecture devices such as hiding unwanted views, concealing, revealing, and framing views; and establishing boundaries and edges.
Chapter 6: Operations of Transparency in Landscape Architecture

Shifting the focus away from the case studies, I want to end by highlighting several of the constituent factors that influence transparency in landscape architecture. These factors are not necessarily exclusive to landscape, but they serve to emphasize the point that transparency in the landscape is dynamic. In this sense, transparency is thought of as not being static and unchanging (or trying to force itself to be), but rather as shifting in rhythm with the changes that the landscape undergoes.

1. **Perspective.** Our perception of transparency is perpetually shifting depending on our position and distance relative to what is being viewed. It is not the wooden sticks of Claude Cormier’s *Blue Sticks* project that give it the appearance of a wall from one perspective (see Figure 24). Rather, it is the successive layering of hundreds of sticks that make it appear visually opaque from certain angles. It also becomes apparent in the sequence of images that our perception of transparency in *Blue Sticks* is contingent upon the viewer’s position relative to the project, appearing from one position to be completely opaque, from another position to be translucent, and from a third position almost transparent.
2. *Light.* Likewise, it is the angle and intensity of the sun and interaction of the wind that constantly shifts and distorts our perception of transparency when it is used in landscape architecture. The *Fiber Wave* project (see Figure 25) is a great example of the dynamic nature of transparency. The below, right image depicts the immaterial quality of the fiber sticks as they lie dormant. However, in the images on the left we can see how the interaction of light and wind activate the installation and shift our perception of transparency.

3. *Seasonality.* Shifting seasonal changes have a similar effect. In Michael Desvigne’s rooftop project, the visitor is exposed to the elements when the vegetation drops its leaves (see Figure 26). In the fall, however, the foliage of the
columnar beech trees (see the middle image) creates a veil between the courtyard and the apartment complex. The fall foliage does not fully conceal or reveal its inner occupants, instead, seeing just the silhouettes of the inner occupants suspends the viewer in a moment of ambiguity.

Figure 26. Seasonality. Left Image: http://ohlalandscape.tumblr.com/. Middle Image: Klahn + Singer + Partner. Right Image: Peter Walker Partners

4. **Plant Materiality.** Further, our relative perception of transparency in the landscape is predicated on the unique plant characteristics of a given plant (see Figure 27). The light leaf structure of the honey locust trees (in the below, left image) allow a lot of light to filter through the leaves and to create a sense of openness in Paley Park. In the middle image you can see that the transparency of the denser tree layout in Bryant Park straddles the middle scale, thus, creating more diffused light and a more enclosed space. While, on the opposite spectrum, the stark line of the opaque hedge in the Versailles garden delineates a clear visual and physical boundary.
In concluding, my research revealed several findings. First, it supported the thesis that transparency in landscape architecture projects is present despite a lack of theoretical writing and a formal discourse on transparency. The case studies demonstrated that transparency has both a latent or implied presence (e.g. Fiber Wave and Miller Garden) and, at other times, its use is more intentional or overt as seen in the Ice Wall and Swamp Garden projects. Whether or not the particular designer was consciously aware of the term transparency is not apparent; however, it is evident that the designers were none-the-less cognizant of its potentials as a design device.

Secondly, I started my research with the following question: how does transparency in landscape architecture situate itself relative to the architectural application of transparency? I anticipated, and my hypothesis was, that transparency in landscape architecture acts on its own accord. My research challenged this early inclination demonstrating that at certain moments, like in Dan Kiley’s Miller Garden, transparency in landscape architecture works with, and even mimics, the architectural use of transparency. However, in other moments, such as Front Garden by Paul and André Vera and Jean-Charles Moreux, transparency in landscape architecture counteracts transparency’s corresponding application in architecture, provoking new spatial experiences.
The inherent qualities that are attached to the term, condition, and idea of transparency are intrinsically tied to the design profession of landscape architecture. As Elizabeth Meyer notes in her article “The Post-Earth Day Conundrum: Translating Environmental Values into Landscape Design,”

One thread in the tapestry of the postmodern, postenvironmental movement landscape involves the search for significant forms and spaces that might embody, reveal, and express ecological principles while embodying and inculcating environmental values. [One] that makes the natural world – its ecological and geological processes, its rapid phenomena, and its invisible substructure – more evident [and] visibly legible.

In this sense, the suggestive potentials of transparency resound in their ability to capture and display the temporal qualities in the landscape. Shifting seasons and weather patterns; changing atmospheric conditions such as light, wind, and rain; and the incessant growth and decay cycles of plants curate a transparency that is very much active, expressive, and evocative.

Blaine Brownell writes in Matter in the Floating World that “[The] dynamic changes in today’s society demand that materials become more changeable, reactive, and elastic” (Brownell, 2011). The inherent characteristics of transparency align with Brownell’s assertion that these changes produce a re-emergence of terms like dematerialization, ephemerality, and instability. Transparency has the potential, as a
design device for landscape architects, to evoke new spatial territories and experiences that heighten our atmospheric and sensory perception. I argue for a more intentional engagement with these operative potentials of transparency in landscape architecture practice and discourse.
Annotated Bibliography

**Foundational**


The article subcategorizes transparency into two qualities: literal and phenomenal. The authors define literal as the quality inherent in a substance and associate it with the glass architecture of the 30’s, 40’s, and 50’s. The authors lament the simplicity of literal transparency stating that it leaves little to the viewer’s imagination. An interesting point in their discussion is the ability of literal transparency to reveal pieces (structural detail) that can be read as a whole or extraneously. They can also reveal spatial/temporal fixations/tensions as “insignificant singularities into meaningful complexities.” (160)

The other definition, phenomenal transparency, deals with spatial or volumetric organization and engages the viewer’s mind through the abstraction of space. According to the authors, phenomenal transparency is curated through overlapping, layering, and interpenetrating spaces, figures, and planes that produce spatial ambiguity enabling multiple interpretations and thus visual complexity. The layering creates tensions that help to form a complete picture. The phenomenal uses flat planes (fields) and is concerned with the structure of form. In the phenomenal reading of transparency one can read one’s personality as having degrees of transparency.

**Modernism**


Sigfried Giedion’s seminal book is an attempt to establish a manifesto on modernism and to legitimize it as an architectural category. This book discusses the topic of transparency in relation to architecture. Giedion discusses how modernism aims to erode the distinction between interior and exterior through increased connectivity and interpenetration of spaces stating, “Corbusier’s houses are neither spatial nor plastic: air flows through them! Air becomes a constituent factor! Neither space nor plastic form counts, only relation and interpenetration! There is only a single, indivisible space. The shells fall away between interior and exterior.” (169) Transparency for Giedion is functional and serves to symbolically reconnect building to site.
The intent of the book is to demonstrate the interconnectedness of architecture emerging out of the 1930’s and 1940’s with the cultural movements of the time. Much of the indirect discussion of transparency occurs in the section about German architect Walter Gropius and his design of the Bauhaus School. Giedion explores a more literal or material condition of transparency. He describes the Bauhaus as achieving simultaneity between interior and exterior space through the use of glass in an immaterial state. Giedion elaborates that the intent of the glass curtain wall is to further expose the structural support of the building, or the lack thereof, at the corners where the viewer anticipates them to be. Transparency is also discussed in connection with Le Corbusier’s residential buildings where Giedion says that it is used to renew connections to nature.

This book presents both a written and visual timeline that discusses how the optical revolution of the early 1910’s molded the concept of space-time in the mid-1940s. Re-situating our visual tendencies so that we do not see isolated objects/things, but rather “structure, order, and the relatedness of events in space-time” (10). Of particular interest is the section titled: *Transparency, Interpretation* that discusses how overlapping figures (defined as: “the figure that intercedes the visible surface of another figure is perceived as nearer” p.67) generate spatial characteristics and depth. The author discusses transparency not only as an optical characteristic, but also functioning to produce simultaneous perceptions of different spatial locations or organization. Further, the author discusses how space recedes and fluctuates, thus, suggesting transparency is an active phenomenon dependent upon the viewer’s perception. The author presents a superficial reading of transparency in architecture saying that it is used to establish visual vistas.

Discussion of the ideals held by the Institution of Design, Chicago – a branch of the Bauhaus School – which focus on the concept of space-time. Space-time is articulated by motion and it is viewed frontally, from the sides, and from above and is perceptible through our senses. Space-time is concerned with science, technology, and aesthetics and the social means by which it operates. The futurists that Moholy-Nagy discussed seem to focus purely upon the literal understanding of transparency (as evident with their obsession with the x-ray). They explore concepts of transparency through the use of superimpositions, reflections, and photomontage as symbols to represent space-time and, further, mirroring as a means to change viewpoint. Lastly, this book is important because it introduces the psychology of space-time, one that Rowe and Slutzky reference in their essays.

Art Museums.

Much of Feininger’s photographic work documented in Muir’s book consists of clandestine nocturnal excursions through the environs surrounding the Bauhaus school. These outings produced a series of atmospheric photographs that transformed the ordinary to the extraordinary – a dreamlike mood in an industrial setting. Laura Muir writes, “Working alone at night, he created expressive, introspective, and otherworldly images.” (p.18) Of importance in Feininger’s work is his unintended experimentation with the ideas of transparency through the use of light, shadow, and reflection all of which serve to blur the lines between subject and object. Further implying a sense of transparency, Feininger’s subjects were often mirrors and windows and he also began experimenting with techniques of overlapping and superimposing images. Feininger’s most appropriate studies on transparency are his photographs taken in Berlin parks at night. The images titled Night View of Trees and Streetlamp are examples in which Feininger explores the city’s urban context at night depicting stark tree silhouettes interrupted by the exaggerated bright lights of nearby streetlamps, which create both an uncanny and enigmatic atmosphere.

Wilhelm, F. (1938). On transparency. In D. Willis (Ed.), *A Source Book of Gestalt Psychology* (pp. 89-94). London, England: Kegan Paul, Trench, Trubner & Company. Wilhelm Fuchs poses the following question: can a viewer simultaneously perceive one object behind another? The article takes a similar vein of thought to Rowe and Slutsky’s articles on transparency in discussing overlapping, layering, interpenetrating and superimposing planes, objects, and materials. Fuchs describes transparency either as a phenomenal act or a visual experience. Rowe and Slutsky describe phenomenal transparency as conceptual or implied reading or organization. As a gestalt psychologist, Fuchs believes that the human eye sees objects as wholes before it sees them as parts. He explores this belief through a series of technical exercises to arrive at his definition of transparency: the simultaneous perception of two objects, one behind another.

*Post-Modernism*


This article provides a more in-depth definition of phenomena. This article looks predominately at the visual manifestation of transparency (void of contextual references such as social, economic, political, etc.). What the authors are ultimately getting at is a reading similar to Moholy-Nagy in that we can use transparency to reveal different facets of design and it is a compiling of these pieces that allow us to read architecture as a whole. The authors are interested in framing phenomenal transparency as something that can be perceived (influence from Gestalt psychology) – a simultaneous perception of different spatial dimensions. The discussion on simultaneity incurs phrases like overlap,
interpenetration, awareness, uncertainty, doubt, mis-representation, etc. all of
which act as additive/subversive agents that activate different perceptions. It’s the
agglomeration of these activation process that help us read/interpret the
completeness that Moholy discusses.

In discussing the word transparency, inevitably such words as uncanny and
enigmatic attach themselves to the phenomenal property of the term. Vidler’s
exploration in the book is exactly this other-worldliness in architecture. In his
chapter on transparency, Vidler discusses the intent of early modernism
architecture to use completely transparent materials as a means for openness
“transparency opened up machine architecture to inspection, its functions
displayed like anatomical models, its walls hiding no secrets; the very epitome of
social morality.” Progressing into the mid-20th century, this lucidity of the house
paralleled that of the glass house of the body and eventually was taken over by a
more post-modernism appeal to opaqueness (as in Rowe and Slutzky’s work)
which is depicted in Rem Koolhass’s entry for the French National Library
competition by which transparency is represented by a space (not a void) in which
overlapping 3-D spaces on the interior transform transparency to translucency, to
darkness, and eventually to obscurity (p. 221). An example of paranoia in
architecture.

Contemporary

Hudson.
Amidon’s book explores use of light, color, and texture in landscape design, of
which, light is of particularly appropriateness. Amidon discusses how light in the
landscape can be used to simultaneously meld site, sight, and insight where light
is used as a sensory stimulation that is optically obtained through sensory data.
While Amidon does not specifically discuss transparency in regards to light, she
does delve into the luminosity effects of light and the different products of light
namely reflection and shadow. She also indirectly discusses another key corollary
between light and its property of transparency which is the fact that light is
fleeting – intangible – always changing. Radical Landscapes also has numerous
precedent projects – two of which are landscape architecture installations. Topiary
Gardens by Ken Smith used 16’ conical structures constructed out of a vinyl
fabric and illuminated from within by existing light fixtures which created a
otherworldly, highly enigmatic, and curiously pleasurable experience for users.
Swamp Garden by Adriaan Geuze in Charleston, SC, uses hanging Spanish moss
on a wire tensile to create an open square courtyard in the middle of a swamp.
The installation captures atmospheric undulations from the shifting breezes, tides,
and temperatures.

R&Sie is an architect firm based out of Paris that attempts to embed its ideas in futurism. The architects celebrate the machine – the building – as a self-organizing apparatus that fluctuates with time, change, and climatic conditions. They seemingly rebuke traditional ideals of transparency as their objective is to move away from “polished translucency and materiality” yet their work takes on similar traditional agencies as it frames views while deteriorating the inside vs. outside dichotomy. However, in its translucency, the materiality of the architecture morphs into a much more fluid and biomorphic form.


Dodds focuses his essay on a series of ‘modern gardens’ in the 20’s and 30’s by architect Gabriel Guévrekian. The likes of *Villa Noailles, Hyères*, and *The Garden of Water and Light* are given little attention in the written history of landscape architecture; however, they are credited with making significant contributions to defining a modern garden. Dodds discusses that Guévrekian along with others ultimately distanced themselves from these gardens because of their perceived decorative qualities and embellished aesthetics and instead favored undecorated gardens of functionality.

*Front Garden, Hôtel Noailles*, by Paul and André Vera and Jean-Charles Moreux is important to the discussion of transparency namely because of transparency’s opposite - reflection. The garden uses mirrors to evoke an illusion of space creating new spatial experiences within the garden. At a point in time when architecture was fascinated by the potentials of transparent glass to prop its universalist ideology, this garden challenges this universalism agenda.


The premise of this article is to discuss the role of transparency in contemporary architecture by propositioning two roles: 1) as a new/emerging architectural sensibility or 2) as a passing stylistic preference. Ultimately it appears as if the article positions itself on the side of the later in which transparency is a product of a contemporary fashion – one that lacks depth, any apparent agenda (other than the fact that its reactive not proactive), and does not have any movement. The conclusion of the authors is to say that transparency is reactionary against the immediacy, restlessness, and transience of our culture and that it is ‘a current tendency in design [that] seeks to blur what is seen with exquisite precision deployed in a search for vagueness.”

The article looks at the binary definitions that associate themselves with respect to the term transparency. The thrust of the article is to divide the term into two categories – literal and phenomenal – that were defined by Rowe and Slutzky’s seminal work, “Transparency: Literal and Phenomenal” and subdivide these two categories into additional binaries. Literal, the authors define as perceptual as it engages the operation of looking with one’s eye and as it deals with overlapping of material and substance and with temporality. The authors situate phenomenal transparency as conceptual as it involves reading and interpreting with one’s mind the spatial and the organization.

The authors make two additional important associations. First is the comparison of transparency to the theory of relativity in that the intersection of interpenetrating lines, figures, and objects produces movement or multiple objects existing in one space concurrently. Secondly, transparency is discussed as a visual journey by which one passes though (penetrates) a layering of spatial planes through openings in walls and transparent materials.


The article questions Rowe and Slutzky’s categorization of literal and phenomenal transparency as a binary between clarity and ambiguity. The author uses the text to explore the cubist influence in German architectural discourse on transparency as both a starting and departure point for modernism. Mertins distinguishes three categories of the cubist movement: Adolf Behne, Walter Gropius and The Bauhaus School, and Sigfried Giedion. Modernity Unbound was helpful in tracing the lineage of the term transparency back to Paul Scheerbart and Bruno Taut. The promise of glass for Scheerbart and Taut was its potential to integrate humanity and nature where the subject became one with the world and, further, its ability to create new environments and spatial experiences.


Elizabeth Meyer’s article helps to situate Michael Van Valkenburgh’s Ice Wall project within what she calls the ecological environmental movement in post-modern and post-environmental design. She expresses post-modernity as a critical extension of modernity that involves what modernity neglected – namely environmentalism. The ecological environmental movement proceeding the 1970’s sought to evoke forms and spaces that act as armatures – revealing and expressing – dynamic ecological and geological processes that are specific to a site. Meyer’s notes that, “some sought to emphasize nature’s forms, others, to make nature’s subtle and transitory processes palpable and visible, and still others to reveal a site’s entire history of cultural and ecological agents.” (192)

Scott Murray discusses the contemporary interest in translucent building skins in this book. Murray starts by illustrating that translucency falls on a spectrum between transparent and opaque and that it never exists in a fixed state as our perception of transparency shifts based on the angle and intensity of light, roughness of a material, and our distance and position relative to the building. Because of this, Murray says translucency evokes a sense of ambiguity – neither fully concealing nor revealing space beyond. In each chapter, Murray pairs a contemporary precedent with a modernist building, to demonstrate how different effects of translucency are achieved. Through this comparative analysis, Murray argues that the historians of modernism (e.g. Sigfried Giedion) and even Rowe and Slutzky overlooked modern buildings that exhibited qualities of translucency such as Pierre Chareau’s *Maison de Verre*. This echoes Terrence Riley’s sentiment in *Light Construction* who states that *Maison de Verre* was anathema to the glass architecture found in modernist architecture.


The purpose of the book is to document the shift in contemporary design to a new architectural sensibility from a narrative driven by form to one driven by a curiosity in the architectural surface or skin. The author constructs his argument by discussing how transparency has evolved from its early roots in modernism. During the modernist period, glass was used for its clarity – highlighting the structural integrity of a building – and in establishing the universalism of modernism. Post-modernism looked to blur the clarity of modernism to create visual complexity transforming a modernist interest in transparent glass to an opaque use. The author concludes by discussing how contemporary design is interested in the operations of translucency, which is used to block and distance the viewer from the object and the interior. Further, he states that the contemporary use of translucency is also in response to environmental considerations.

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**Materiality**


This book situates its content within the vast material transformation currently underway, which is instigated through advances in technologies that allow for new material applications for designers. The book argues not only for materials that arouse both aesthetic and functionalistic qualities but also those that attempt to alter our expectations and perceptions about reality and heighten our consciousness. This elevated consciousness is produced through the integration of both “the physicality and ephemerality conveyed by a work, resulting in a
vacillating condition of permanence and impermanence, emergence and dissolution, reality and illusion.” (11) Brownell’s book has a similar argument to that of Material Design by way of the responsive nature of material, “The dynamic changes in today’s society demand that materials become more changeable, reactive, and elastic. As a result, terms like dematerialization, ephemerality, and instability are frequently employed in the contemporary design process.” The author is also interested in how Japanese culture/designers deal with the idea of transience. This is an idea that Brownell suggests is intrinsically imbued in the culture through the deeply embedded traditions and philosophies, limited resources that produced a heightened craftsmanship, and their awareness of diverse spatial logics that procure multi-experiential levels.


The introduction to Brownell’s book sets its objective – to explore technologically advanced materials that have emerged in contemporary architecture. He briefly explores the social, environmental, and economic forces behind the recent proliferation of new materials and posits that a new direction in architecture is to emerge – that of a second industrial revolution which, through materiality, will rethink the way we conceive the built environment. Brownell does not explicitly elaborate upon the specifics of this new architecture; however, he does say that it will be achieved through pushing the limitations of conventional design. The agents that he proposes to obtain this are categorized under the section Disruptive Innovation.

Brownell starts the chapter on Glass with a history of how modernity forged the connotation of transparency, “[G]lass is synonymous with the concept of transparency and has been directly identified with technological progress, accessibility, democratization, and enfranchisement, as well as exposure and the loss of privacy within modern society.” (106) The chapter also provides a glimpse into the environmental considerations of glass. For example, transparent glass is preferred in recycling while more opaque glass typically ends up in landfills. Similar to plastic (see chapter on Plastics), glass also requires significant energy to produce, which suggest a reason for the contemporary interest in translucent plastics.


This book focuses on more contemporary applications of plastic in architecture and construction. Significant portions of the book focus not on the traditional role of form, but rather how form can be derived from climatic fluctuations, energy harnessing, DIY-ness, or as Jeska describes, “[I]mmateriality and ambiguity – the characteristics of transparent plastics – frequently harmonize well with such design approaches and make plastics the current building material of choice for the architectural avant-garde.” (7) The chapter Material and Form – “Form
Follows Material” documents the tension between pragmatism and utopianism and form and material that has persisted throughout its history and concludes by demonstrating that contemporary architecture’s movement is to a more synthesized approach.

The chapter Transparent Plastics between Intellectualisation and Trash Culture provides Jeska’s vision on the future direction of transparency – that of the bionic. Jeska writes of bionic forms, “Their indifferent properties predispose them for an architecture that regards metaphor as extremely important, relies on sensuality, ambience and irritation, and takes “removal of barriers” as its key theme – specifically, the removal of barriers between inside and outside, matter and space, loadbearing structure and enclosing envelope, two-dimensionality and three-dimensionality, static and dynamic, and between space and time.” (30) Jeska discusses that the mimicry of biological processes and systems fashions the bionic form as malleable, flexible, efficient, and adaptable.


Two important sections in the book were particularly relevant to this thesis study. The introduction titled The Alternative Approach by the book’s curator Thomas Schröpfer discusses the importance of material study in relation to the explosion of new material in the past decade. Schröpfer’s argument is that the observation, speculation, and experimentation of material studies has the ability to challenge preconceived notions of design potential and limitations, form, and aesthetics and; at the same time, it has the potential to elicit certain formal, conceptual, and expressive characteristics in design. His meta-agenda is to absolve the division between theory and material study.

James Carpenter’s Capturing the Ephemeral discusses the role of materiality to go beyond aesthetics and functionalism to what he calls a responsiveness. He argues that materials inherently respond to natural elements like rain, wind, and light. Carpenter writes, “When I talk about light as transformation, I think of how light is invisible until it strikes something, be it water, dust particles, or any material surface, reflective or absorbent – that is when it manifests itself.” (10) Carpenter highlights how material can be responsive to environmental whims, to one’s, vantage point, and to light. Imbued within this discussion is material’s more pragmatic application of thermal, climatic, economic, and environmental roles.
Sources Reviewed

Landscape Architecture


Architecture


*Art*