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**Immersive Experience: Evoking the Elements of Contemplative Space in  
Japanese Architecture**

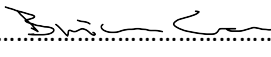
EXEGESIS SUBMITTED FOR

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Declaration of Originality I, Brian Corr  hereby declare that the thesis here presented is the outcome of the research project undertaken during my candidacy, that I am the sole author unless otherwise indicated, and that I have fully documented the source of ideas, references, quotations and paraphrases attributable to other authors.

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# IMMERSIVE EXPERIENCE: EVOKING THE ELEMENTS OF JAPANESE CONTEMPLATIVE SPACE

## **Abstract**

This research project investigates the creation of immersive contemplative viewing experiences within my visual arts practice by identifying and adapting the fundamental elements of Japanese contemplative space into my aesthetic and conceptual lexicon. Contemplative experience is an intrinsic aspect of the human experience which has become increasingly scarce in this age of perpetual overstimulation and increasing secularisation. The primary goal of the research project is to provide a significant opportunity for new audiences to engage in meaningful contemplative experience informed by the centuries-old principles of *yūgen* 幽玄, *ma* 間, and *hikari to kage* 光と影 within Japanese architecture. The studio-based research first explores the creation of contemplative objects constructed with glass, followed by a series of maquettes of potential immersive contemplative environments. The research culminates with the immersive installation, *Lux Mandala*, which utilises the material characteristics of glass microspheres to synthesise the ephemeral optical phenomenon of the “glory” into a meditative encounter with light, shadow, space, transience and profundity. By aesthetically locating the viewer at the centre of this phenomenon, the viewer’s presence and perceptual mechanisms complete a participatory loop, allowing the phenomenon to enter into existence while enabling the viewer to reflect upon its nature, notions of perception and transience, and the significance of their own presence within this evanescent tableau. The outcomes of this research project represent a significant new nexus between visual arts practice, immersive experience, and the essence of Japanese contemplative space.

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# Introduction

The objective of my research project has been to produce new work within my studio practice which evokes immersive contemplative experience by integrating the defining aesthetic and philosophical elements of contemplative space within Japanese architecture. The project was conceived under the premise that contemplative experience is a significant and increasingly overlooked dimension of the human experience, and that a powerful and enduring tradition of constructing contemplative space exists within the field of Japanese architecture. The research has been directed by two primary goals. The first has been to identify the specific fundamental elements of Japanese contemplative space which most directly relate to the aesthetic and conceptual intentions of my studio practice, which has long sought to generate opportunities for contemplative experience through the use of light, shadow, volume and void within the medium of glass. The second goal of the research has been to translate elements of Japanese architecture and thought into the field of visual arts through the outcomes of my sculptural and installation-based studio research, thereby providing audiences with the opportunity for contemplative experience in a significant new context while growing my practice into the realm of immersive installation.

Chapter One outlines the rationale of the research project and provides a brief historical context of Japanese contemplative space. It also defines the terms of contemplative experience and contemplative space, identifies the primary questions of the research project, and outlines the research methodologies employed throughout the project. Chapters Two and Three present the findings of the primary research questions by first establishing the theoretical foundation, then analysing the practice-led outcomes of the research project. Chapter Two provides an analysis of *yūgen*, *ma*, and *hikari to kage*, the three primary elements of contemplative space in Japanese architecture. A significant work by Japanese architect Tadao Ando 安藤 忠雄 (b. 1941) is analysed at the closing of Chapter Two. This provides a tangible illustration of the three elements within a single architectural work by recounting my personal experience of Ando's famous *Honpukuji* 本福寺 temple while conducting field research in 2014.

Chapter Three provides an in-depth analysis of the outcomes achieved within the practice-based research. Here, I trace the progression of my making within the studio research from its early explorations of contemplative objects in glass to the realisation of the final immersive installation. This chapter illustrates the process of translating *yūgen*, *ma*, and *hikari to kage* into the context of my visual arts practice. It analyses the studio-based outcomes, the methodologies which I employed throughout including the development of new technical knowledge and highlights significant turning

points which altered the trajectory of the research project. Chapter Three concludes with an analysis of the final immersive installation entitled *Lux Mandala*, demonstrating the new knowledge developed as a result of this research project.

I acknowledge that this format may at first seem unorthodox relative to other practice-led research exegeses. However, the layout of the chapters speaks truly of the progression of research throughout my candidature. A substantial period of literature review took place before any significant making occurred in order to first establish an understanding of Japanese architecture, philosophy and aesthetics. Upon identifying the three fundamental elements of Japanese contemplative space, further literature review and fieldwork excursions became necessary to begin understanding these largely esoteric concepts, so that I could begin making from an informed position. Therefore, the elements of *yūgen*, *ma* and *hikari to kage* are examined deeply within the exegesis before I analyse their translation into the outcomes of my studio-based research. My hope is that this format allows the reader to also establish an understanding of these recondite elements and the manner in which they subsequently informed and guided the studio outcomes.

Please note that within this text, the names of all referenced Japanese individuals are ordered according to the Western convention of given name followed by surname. This usage reflects the name forms which are most commonly employed by contemporary authors and audiences. All Japanese names and terms within the body of the text, excluding commonly known cities and landmarks, are accompanied by their *kanji* 漢字 or *hiragana* 平仮名 characters at their first usage. Subsequent occurrences are written using only their *rōmaji* ローマ字 form in order to maintain the readability of the text. Dates of birth and, if applicable, death are provided for prominent historical and contemporary figures.

# Chapter One: Contemplative Space in Japanese Architecture

## Historical and Cultural Context

In this chapter I will discuss why I chose Japanese contemplative space as the topic of this research project while locating this specific genre of architecture within the proper historical context. I define the central terms of “contemplative experience” and “contemplative space”, state the primary questions of the research project and outline the methodologies employed to answer those questions. This chapter provides the reader with an overview of the subject matter, establishes the central intentions of the project and provides the foundational knowledge needed to fully engage with the subject matter.

The study of contemplative space within the context of Japanese architecture was chosen as the primary area of focus within the research project for several specific reasons. Firstly, the practice of constructing spaces designed and designated for contemplative experience within traditional Japanese architecture is longstanding. Temples, shrines, tea rooms and rock gardens have all played a fundamental role in shaping Japanese culture and thought since the 8<sup>th</sup> and 9<sup>th</sup> centuries CE. During this time, pioneering figures such as tea master Sen no Rikyū 千利休 (1522-1591) and Nō 能 playwright Zeami Motokiyo 世阿弥 元清 (1363-1443) defined many seminal aspects of Japanese aesthetics and contemplative experience. These principles have endured the ensuing centuries of tumultuous history and continue to permeate contemporary Japanese life. While at times strongly juxtaposed by the implications of intense modernisation, these spaces and aesthetic ideals constitute the quintessence of Japanese culture.

Furthermore, Japan’s aesthetics were cultivated under a unique set of cultural and historical conditions. Many significant contemplative spaces were constructed within the isolation of the Tokugawa period 世阿弥 元清 (1639-1868). During this time, Japan adopted the policy of *sakoku* 鎖国, or national seclusion. “The Tokugawa Shōgunate government’s *sakoku* policy... forced the Japanese to live separately from the rest of the world and enabled them to develop a distinct culture and mentality.”<sup>1</sup> According to author Tsunenari Tokugawa 徳川 恒孝, “The Tokugawa peace changed Japan fundamentally. It put an end to the vicious civil war that had ravaged the country for close to two centuries, while absorbing all the political, social, economic, and technological

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<sup>1</sup> Mayumi Itoh, *Globalisation of Japan: Japanese Sakoku Mentality and U.S. Efforts to Open Japan* (New York: St. Martin’s Press, 1998), 36.



innovations that had taken place throughout Japan under the various warlords.”<sup>2</sup> This era of isolation proved to be a historically critical period of consolidation, and national enrichment. The resulting cultural growth is clearly evident in the creative output which took place under Tokugawa rule. “The arts... flowered intensely, at times brilliantly, despite the rigid Confucianism and bureaucratisation- or partly in reaction to them.... The closed capital (Nagasaki) pulsed with creative energy, thanks to its relatively educated population eager to spend its leisure time and money on entertainment. Music, poetry, painting, theatre, ceramics, and couture flourished so vigorously that their production and pursuit sometimes seemed feverish.”<sup>3</sup> Japan’s policy of *sakoku* also led to the development of a unique aesthetic and philosophical approach to the construction of contemplative space within Japanese architecture. Numerous examples, including the *sukiya-zukuri* 数寄屋造り style<sup>4</sup> Katsura Imperial Villa, whose orthogonal lines, material applications and symbiotic relationship with its environment would later inform the thinking of influential Western architects such as Bruno Taut, Walter Gropius, Le Corbusier and Frank Lloyd Wright were constructed during the Tokugawa period. Therefore, the extensive tradition of contemplative space construction, coupled with centuries of cultural refinement in relative isolation, allowed a unique aesthetic and philosophical language to emerge which provides the research project with a highly specific zone of inquiry.

The enduring tradition and continual evolution of Japanese architecture also provide a clear model of knowledge transference and conceptual adaptation. One of the central concerns of the research project questions the means by which aesthetic elements and philosophies native to a specific culture and field of practice can be authentically translated into the new methodological framework of a visual arts practice situated within an extrinsic cultural context. While traditional architecture plays a significant role within the research, greater focus has been placed upon contemporary architecture in order to investigate the evolution and adaptation of aesthetic and philosophical elements over the course of time. My research and experiences of Tadao Ando’s work played an important role in allowing me to observe the consistencies and evolutions within this field of inquiry to facilitate the successful adaptation of the identified elements into the studio-based research and its outcomes.

Lastly, there are aesthetic tendencies within the history of Japanese creative expression which strongly resonate with my own artistic and philosophical perspectives. Developing a formal research

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<sup>2</sup> Tokugawa Tsunenari, *The Edo Inheritance* (Tokyo: International House of Japan, 2009), 6.

<sup>3</sup> George Feifer, *Breaking Open Japan* (New York: HarperCollins, 2006), 48.

<sup>4</sup> Tadao Ando, “From Self-Enclosed Modern Architecture Towards Universality”, *The Japan Architect*, 301, May 1982

project around these elements seemed not only natural, but necessary to enrich my practice. These congruent aspects of the Japanese aesthetic are characterised by high degrees of visual refinement, subtlety and even austerity. Spaces, artworks and objects are often realised through the restrained use of unadorned materials which have been rendered to meticulous levels of resolution, even when the outcome appears organic or incidental. I find that a powerful sense of melancholic and transient beauty arises from the resulting artefact, transcending the specific materials and processes employed in its creation. There are certainly exceptions to this aesthetic framework, as can be observed within specific cultural output such as the often lavish and animated pictorial *emakimono* 絵巻物 scrolls produced during the Fujiwara 藤原 (794-1185) and Kamakura 鎌倉 (1185-1333) periods<sup>5</sup>, or more generally in the visual cacophony often encountered whilst traversing a Japanese cityscape. However, these predominate aesthetic qualities or austerity, restraint and transient beauty have informed the aesthetic and conceptual content of my practice since its beginnings.

It is important to briefly clarify the genesis of this hallmark simplicity and austerity. “Japanese simplicity was not originally due to restraint, but was an expression of unwanted poverty, for there was nothing to be restrained. Though the delayed philosophical interpretation of this simplicity succeeded in making a virtue of necessity by initiating the noted aestheticism of simplicity, it actually was a philosophy that taught resignation to existing conditions and contentment with what little there was.”<sup>6</sup> I entered this project under the misconception that the visual simplicity which had so greatly informed my practice had always represented an aesthetic choice which rejected an available excess. While a climate of prosperity may have surrounded the pivotal aesthetic moment of Rikyū’s reinvention of the tea ceremony, his conditions were not always the norm. It is revealing to view Japanese aesthetics with the knowledge that its experiential generosity was in fact born of genuine poverty.

Scholar and author Donald Keene defined Japanese aesthetics as embodying the four primary characteristics of: “suggestion, irregularity, simplicity and perishability.”<sup>7</sup> Although I have previously found perishability difficult to engage due to the material nature of my practice, and irregularity poses a direct challenge to my symmetrically-oriented design sensibility, one of my hopes in engaging with the research has been to eventually incorporate aspects of these characteristics into my aesthetic vocabulary. Keene’s notion of visual simplicity has been a predominate concern within my own practice and is the primary quality which initially drew me to Japanese aesthetics. However,

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<sup>5</sup> Dietrich Seckel, *Emakimono: The Art of the Japanese Painted Hand-Scroll* (New York: Pantheon Books, 1959), 26.

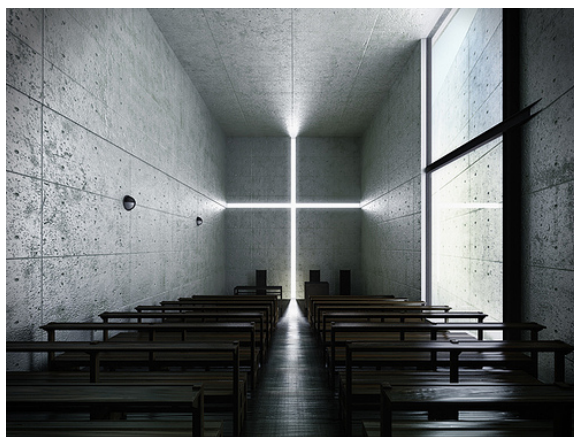
<sup>6</sup> Heinrich Engel, *The Japanese House: A Tradition for Contemporary Architecture* (Tokyo: Rutland, Charles E. Tuttle Company, 1964), 250.

<sup>7</sup> Donald Richie, *A Tractate on Japanese Aesthetics* (Berkeley: Stone Bridge Press, 2007), 18.

it is the characteristic of suggestion in Japanese aesthetics that I believe holds the greatest creative potential, with implicit expression often yielding a far more engaging and enduring viewing experience than explicit representation. Artist Robert Irwin (b. 1928) asserted, “Imagery for me constituted representation, ‘re-presentation’, a second order of reality, whereas I was after a first order of presence. The moment a painting read as an image of something... it no longer presented itself as an energy field in its own right.”<sup>8</sup> Irwin’s intention of creating “energy fields” within his works echoes the central concern of my own practice while reiterating the power of suggestion as a means of creative expression.



**Fig. 1. Crucifix in *Cathedral of the Immaculate Conception*, Albany, 1852**



**Fig. 2. Tadao Ando, *Church of Light*, Osaka, 1989**

Academic and author Makoto Ueda 上田 真 alluded to the role of suggestion in Japanese aesthetics, stating, “A distinctive feature of traditional aesthetic thought in Japan was a tendency to value symbolic representation over realistic delineation.”<sup>9</sup> The contrasting experiential impact of realistic versus symbolic representation can be illustrated by the two images above. The first shows a detail from the Cathedral of the Immaculate Conception in Albany, New York. Tadao Ando’s Church of Light in Ibaraki, Japan is shown in the second. With the more realistic depiction crucifix employed in the first image, reminiscent of many church interiors which I encountered during my youth, I struggle to move beyond the consideration of physical suffering and despair. In Ando’s Church of Light, I found the cruciform renewed into a dynamic expression of energy, defining a physical and psychological space for hope and contemplation. One form of expression starkly limits the scope my thinking. The other encourages a more expansive sense of contemplation and connection. Kenneth Frampton captures the impact of Ando’s aesthetic decision, saying, “One single gesture, namely an

<sup>8</sup> Lawrence Weschler, *Seeing is Forgetting the Name of the Thing One Sees* (Berkeley: University of California Press, 2008), 65.

<sup>9</sup> Donald Richie, *A Tractate on Japanese Aesthetics* (Berkeley: Stone Bridge Press, 2007), 23.

incision in the shape of a cross... converted the... cruciform into an abstract icon of unparalleled intensity by virtue of the fact that the aperture introduced a constantly changing play of light into the interior.”<sup>10</sup> The contrast between these two images provides an illustration of the potential expansiveness of abstracted suggestion as well as the possible limitations imposed by strictly realistic expression.

As can be observed clearly in Chapter Three, the outcomes of my studio-based research rely on the principle of visual suggestion in order to offer a similar expansiveness of experience. In conjunction with the elements of material austerity, visual simplicity and transient beauty, these aesthetic characteristics greatly impact the provision of the contemplative viewing experience so abundantly offered within Japanese architecture. I have sought to facilitate a parallel contemplative experience through my own work since the inception of my practice. The extended investigation of this research project into the mechanisms employed in the creation of contemplative space within Japanese architecture is intended to further elevate the ability of my work to provide a significant contemplative viewing experience in a visual arts context.

## Defining Contemplative Experience and Space

It was imperative to define the terms “contemplative experience” and “contemplative space” at the outset of the project. This process allowed me to establish the parameters of the research and eventually allowed me to successfully identify the principal elements which most reflected the spirit of these terms. The following definitions have resulted from a combination of insight gained through the initial literature review, and my own perspective of the concepts.

“Contemplative experience” is defined here as the physical, psychological or spiritual experience of an individual which transcends modes of routine behaviour, thought and perception, prompting a state of reflection upon and recognition of the profound, the liminal or the sublime aspects of our existence. Renowned Trappist monk and author Thomas Merton (1915-1968) referred to contemplation as, “the highest expression of man’s intellectual and spiritual life. It is that life itself, fully awake, fully active, fully aware that it is alive.”<sup>11</sup> Mythologist and author Joseph Campbell (1904-1987) wrote, “People say that what we’re all seeking is a meaning for life... I think that what we’re seeking is an experience of being alive, so that our life experiences on the purely physical

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<sup>10</sup> Kenneth Frampton, *Thoughts on Tadao Ando*, The Pritzker Prize 1995 Laureate Essay, [http://www.pritzkerprize.com/sites/default/files/file\\_fields/field\\_files\\_inline/1995\\_essay.pdf](http://www.pritzkerprize.com/sites/default/files/file_fields/field_files_inline/1995_essay.pdf), accessed 4/05/17

<sup>11</sup> Thomas Merton, *New Seeds of Contemplation* (Boston: Shambhala Publications, 1961), 1.

plane will have resonances within our innermost being and reality, so that we actually feel the rapture of being alive.”<sup>12</sup> Both passages place emphasis on the process of awakening more fully to the nature and reality of one’s own existence, and in doing so, engaging more fully with it. I believe this “awakening” lies at the heart of contemplative experience throughout its many iterations. I also believe this represents a state of consciousness or awareness which has become increasingly difficult for many to occupy during the course of daily life both here in Australia and throughout the modern world.<sup>13</sup>

I found Japanese contemplative experience differed subtly from the more individualistic Western perspective. Although there is still a strong aspect of solitude at play, Japanese contemplative experience places greater emphasis on social connectedness and harmony, rather than the trajectory of self-realisation which is more predominate in the West. “In Japanese society, people... give more priority to group harmony than to individuals... Group consciousness has become the foundation of Japanese society.”<sup>14</sup> In the opening of *The Book of Tea*, Kakuzo Okakura 岡倉 覚三 (1863-1913) reflects upon the impact of the tea ceremony, which represents a fundamental point of genesis for contemplative experience and its aesthetic expression, upon the Japanese psyche. “Teaism is... founded on the adoration of the beautiful among the sordid facts of everyday existence. It inculcates purity and harmony... It is moral geometry, inasmuch as it defines our sense of proportion to the universe.”<sup>15</sup> This passage locates the emphasis of Japanese contemplative experience on the attainment of a greater sense of harmony with and connectedness to the defining spheres of one’s existence. These values directly inform both the contemplative practices of Japan, and the spaces which have been designed to house them.

Acknowledging these shared and unique aspects of contemplative experience illustrates the significance of contemplative experience across cultures. While the specific intentions and mechanisms of contemplative experience may be influenced by native values and traditions, the prevalent cross-culturalism of contemplative experience frames it as a basic human inclination. As illustrated above, contemplative experience can provide a means of locating place and meaning within social systems or within one’s own life against the greater backdrop of this frequently tumultuous human experience. And while there have long been a breadth of institutions,

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<sup>12</sup> Joseph Campbell and Bill Moyers, *The Power of Myth* (New York: Anchor Books, 1991), 5.

<sup>13</sup> “The Australian Psychological Society’s *Stress and Wellbeing Survey* found that one quarter of Australians experienced moderate to severe levels of distress during 2014. 72% of Australians reported that stress was having an impact on their physical health during the same period, with financial concerns, family and health issues identified as the leading causes of stress.” [Stress and Wellbeing in Australia Survey 2014: Key Findings,” Australian Psychological Society, accessed October 26, 2015, <https://www.psychology.org.au/Assets/Files/2014-NPW-Key-findings-survey.pdf>]

<sup>14</sup> Roger Davies, ed., Osamu Ikeno, ed., *The Japanese Mind* (Tokyo: Tuttle Publishing, 2002), 195.

<sup>15</sup> Kakuzo Okakura, *The Book of Tea* (London: Penguin Classics, 2010), 9.

communities and personal practices designed to foster some form of contemplative experience, architecture and the arts have continually provided the backdrop against which these pursuits take place.

Therefore, if contemplative experience positively impacts both the individual and the society within which the individual participates, then certainly the environments which purposefully facilitate contemplative experience are of significant value. “Contemplative space” is defined here as a constructed spatial environment which, through its structure, material composition and aesthetic expression, provides the opportunity for transformative psychological, emotional, perceptual or spiritual experience. Contemplative space, in its manifold manifestations, ultimately aids in facilitating the kind of “awakening” to oneself and one’s place in the world to which Merton, Campbell and Kakuzo have alluded. Consequently, the role of these spaces and an understanding of how they function cannot be underestimated when discussing contemplative experience.

In his book *Meditative Spaces*, Michael Freeman asserts that, “One of the prime functions of a meditative space is to seal off the huge amount of sensory input from the outside world... The direct way to this end is simplicity.”<sup>16</sup> Although Freeman employs the term “meditative” rather than “contemplative” and significant differences in application are acknowledged between the two terms depending on the tradition in question, I believe his statement highlights three critical components of contemplative space. It suggests that contemplative space is a necessary response to the barrage of sensory input which many individuals encounter throughout the course of daily life. It frames the role of space as that of a threshold or sanctuary which can and perhaps must be entered in order to stand fully in contemplative silence. Freeman also defines the notion of simplicity as an aesthetic imperative of contemplative space, perhaps in direct response to the torrent of sensory input ingested throughout daily life. While there are naturally exceptions, I have encountered the aesthetic ideal of simplicity within contemplative space continually throughout the course of my investigation of Japanese architecture. As stated previously, visual simplicity or refinement represents one of the most defining aesthetic and philosophical attributes within my own practice, and it is here that my practice is well positioned to absorb the findings of the research project.

I propose that by developing an understanding of the underlying principles and specific mechanisms employed within Japanese architecture to create spaces which facilitate contemplative experience, their benefit can be made available to new audiences who may be more prone to seeking contemplative experience in the art gallery rather than the church, temple, or tea room. Swiss architect Mario Botta states that, “Every so often there is a compelling need for sacred space even

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<sup>16</sup> Michael Freeman, *Meditative Spaces* (New York: Universe Publishing, 2005), 9.

within everyday life, an incontrovertible necessity that has been confirmed over the centuries by sublime examples, and that has now re-emerged decisively, perhaps in an extreme attempt to respond to the incompleteness of the contemporary dimension.”<sup>17</sup> Although Botta refers to space as “sacred” rather than “contemplative”, both terms describe spaces whose innate qualities are largely shared. His statement identifies a void in contemporary life which architecture, whether “contemplative” or “sacred”, can help to address.

Whereas the church, mosque, temple and synagogue provided sacred or contemplative space almost exclusively in many historical societies, secular architecture has come to fill a growing void in the modern period as societies have become increasingly secular. British architect and author Kenneth Frampton has referred to the museum as the “surrogate religious institution of our age.”<sup>18</sup> This observation reinforces the notion that contemporary life is largely devoid of rituals and spaces which foster contemplative experience in accordance with the changing perspectives of our societies. Frampton’s statement also alludes to the premise that this void may not only be addressed by the architecture of the museum, but also by the artworks populating their galleries. I propose that if this is true, then works of art founded upon the principles which inform the constructed contemplative environment can potentially offer the viewer a parallel opportunity for contemplative experience.

The research project addresses contemplative space constructed within both traditional and contemporary Japanese architectural practice. It includes works located within the religious, secular, public and private realms. It also encompasses monumental and intimately scaled environments, as well as permanent and ephemeral architecture. The research examines the breadth and depth of Japanese contemplative space and architectural practice in its manifold forms, from Buddhist temples to Christian churches, and from gallery and retail spaces to ephemeral contemporary interpretations of the traditional Japanese tea room. The research was designed to span this breadth of contemplative space because each realm of architecture contributes to a closely interrelated whole, and boundaries between these zones and their intentions often overlap or blur entirely. This broad scope of environments was also designated to generate a comprehensive understanding of contemplative space in Japanese architecture, facilitating the identification of the fundamental

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<sup>17</sup> Mario Botta, *Sacred Space in Architettura del Sacro: Prayers in Stone* (Bologna: Editrice Compositori, 2005), 12.

<sup>18</sup> Kenneth Frampton, “The Secular Spirituality of Tadao Ando” in Karla Cavarra Britton (ed), *Constructing the Ineffable: Contemporary Sacred Architecture*, (New Haven: Yale University Press, 2010), 106.

elements which are shared across the breadth of spaces, practices and time periods constituting this zone of Japanese architecture.

My research topic proposes that spaces which can be classified as “contemplative” under the preceding definitions are constituted of reoccurring aesthetic and philosophical elements. I have established that the aesthetic and philosophical lineage of Japanese architecture has arisen from a distinct set of shared historical and cultural conditions. Contemporary Japanese architecture has also produced autonomous, ground-breaking works, which clearly demonstrate aesthetic, philosophical and experiential links to traditional architecture, thereby signalling fundamental commonalities.

Finally, I assert the notion of shared fundamental elements based upon my own experience of Japanese contemplative spaces while traveling through Japan in 2004. I encountered a range of spaces, including traditional temples, rock gardens and contemporary museums, which were clearly constructed to serve independent purposes, yet shared fundamentally similar aesthetic attributes and yielded parallel experiential outcomes which I consider to be most accurately classified as contemplative. The deeply enduring impact of these spaces ultimately led to the development of the research project and its hypothesis that a broad range of spaces existed within Japanese architecture which would likely be constituted of shared aesthetic and philosophical elements that could be identified, analysed, and adapted into the vocabulary of my arts practice, thereby making a form of fundamental human experience available.

Therefore, the primary questions that I have addressed throughout the course of the research project are as follows.

- What are the primary recurring elements of Japanese contemplative space?
- Which of these elements resonate with the existing intentions of my arts practice?
- How may these principal elements be adapted and assimilated into a studio-based visual arts practice?
- Can these elements retain their capacity to provide meaningful contemplative experience once removed from their native context?

## Research Methodology

Having defined the central terms, parameters and research questions, I established my research methodology. I identified and translated the principle elements into my practice via three streams of inquiry. The first stream of inquiry was a comprehensive literature review. This allowed me to establish a foundation of general knowledge relevant to Japanese aesthetics, traditional and



contemporary Japanese architectural practice, the surrounding historical context, and ultimately, the identification of *yūgen*, *ma* and *hikari to kage* as the three primary elements of Japanese contemplative space. Subsequent literature review provided the necessary understanding of the philosophical background and aesthetic manifestation of each element, allowing the identified elements to be translated and tested within the studio practice from an informed position.

Analysis of contemplative space in the field formed the second stream of inquiry. Research trips to Japan in 2014 and 2015, each lasting approximately three weeks, provided the opportunity to experience and analyse many of the contemplative environments which I had previously encountered theoretically through the literature review. First-hand analysis of the composition and aesthetics of the spaces as well as observation of my own psychological, emotional and perceptual reactions elicited by the spaces contributed significantly to my understanding of the fundamental elements function within a contemplative space. These experiences in the field facilitated the formation of important new directions and content within the studio-based research. My experiences in the field proved to be a highly influential avenue of inquiry. One of the highlights of my fieldwork, a visit of Tadao Ando's Water Temple, will be recounted in the following chapter to illuminate the role played by the three elements the transformative experience I encountered there.

I have also lived and worked full-time in Japan throughout the past nine months of my candidature. This period of time, although much has been dedicated to unrelated professional and personal activity, has served as a third, extended period of fieldwork. This opportunity has come with the tremendous advantage of being immersed in Japanese aesthetics continually. I am exposed on a daily basis to the types of environments and mechanisms which the research has investigated. This amazing experience has also been accompanied by the challenge of becoming overwhelmed at times by the sheer volume of visual and experiential information it is necessary to digest as a researcher, of the recurrent realisation that there will always be volumes more learn about the aesthetics, philosophies and culture of Japan far after the completion of my candidature, and the inevitable question: what can I possibly contribute to this incredibly rich centuries-old dialogue? However, I believe the outcomes of the research, most significantly within the studio-based research, occupy a space which is uniquely my own, and contribute a new, albeit modest dimension, to this on-going dialogue of immersive contemplative experience.

Studio-based research comprised the third and final stream of inquiry. Here, the extensive research conducted within the literature review and fieldwork coalesced and were translated into tangible, experiential form within my visual arts practice. Through the processes of idea generation, modelling, production and analysis of finished works in both the studio and gallery settings, the studio outcomes successfully confirmed that the elements of contemplative space in Japanese

architecture could be translated into the visual and conceptual vocabulary of my arts practice. And through the integration of the elements of into successful new bodies of work, the studio research confirmed that *yūgen*, *ma* and *hikari to kage* can be adapted into a new visual and cultural context while retaining their ability to facilitate contemplative experience. Therefore, this final stream of inquiry tested and affirmed the primary research questions, transformed theory into practice, and ultimately served as the confluence of the three research streams.

# Chapter Two: The Fundamental Elements of Japanese Contemplative Space

In the following chapter, the three principal elements which inform contemplative space in Japanese architecture and directly relate to the aesthetic and conceptual intentions of my studio practice will be defined. These are the elements of *yūgen*, *ma*, and *hikari to kage*. I assert that these three elements, active independently and cooperatively, contribute greatly to the experiential foundation of contemplative space in Japan. The nature and role of each element within contemplative space will be elucidated as thoroughly as possible illuminating the nature and role of each element within contemplative space.

In the following section, each of the three elements will be presented according to a hierarchy of significance which I established throughout the course of the project. This will provide a structure for the presentation of these concepts and will help to demonstrate relationships within the elements. Within this structure, each of the terms will be illuminated as clearly as possible. However, as the research project progressed, a significant degree of inherent ambiguity surrounding each of the elements revealed itself. Author Itoh Teiji 伊藤ていじ acknowledged the difficulty encountered when discussing Japanese aesthetic and philosophical concepts. “The dilemma we face is that our grasp is intuitive and perceptual rather than rational and logical.”<sup>19</sup> While this reality may present a recurring source of frustration for the Western researcher accustomed to concrete definitions and clear demonstrations of ideas, the nebulous nature of many aspects of Japanese thought informs an inherent dimension of Japanese culture and communication. My report will attempt to explain and demonstrate these topics as clearly as possible. However, some degree of opacity must necessarily remain. It is here that the outcomes of the studio practice may best serve to both illuminate and embody the essentially enigmatic nature of these fundamental elements. And it is here, in the intuitive, perceptual nature of the fundamental elements, that they are found to be most applicable and appropriate to the conceptual intentions of my practice and to expression within a visual arts context.

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<sup>19</sup> Donald Richie, *A Tractate on Japanese Aesthetics* (Berkeley: Stone Bridge Press, 2007), 11.

# Yūgen



Fig. 3. Torii gate, Naoshima, 2014

*The limitless vista created in imagination far surpasses anything one can see clearly.*<sup>20</sup>

-Kamo no Chōmei 鴨 長明 (1155-1216)

The concept of *yūgen* emerged as the overarching element which I believe most significantly defines the nature of experience offered by Japanese contemplative space. It will therefore be discussed in the greatest detail of the three primary elements. *Yūgen* is also situated as perhaps the most elusive and esoteric of the principal elements, an impressive feat given the nebulous nature of many Japanese aesthetic principles. The Stanford Encyclopaedia of Philosophy asserts that, “*Yūgen* may be, among generally recondite Japanese aesthetic ideas, the most ineffable.”<sup>21</sup> The genesis of the word immediately suggest why this is so. *Yūgen* originated from the, “Chinese term *you xuan* 幽玄, which meant something too deep either to comprehend or even to see.”<sup>22</sup> Philosopher and author Daisetsu Teitaro Suzuki 鈴木 大拙 貞太郎 (1870-1966) reinforced this sense of ineffability while illuminating its inherently experiential nature when he wrote, “*Yūgen* is a compound word... the combination meaning obscurity, unknowability, mystery, intellectual incalculability... It is not

<sup>20</sup> Kamo no Chōmei, *Mumyōshō*, in Hisamatsu Shin’ichi and Nishio Minoru, eds., *Karonshu, Nogakuronshu...* from Nancy G. Hume, ed., *Japanese Aesthetics and Culture A Reader* (Albany: SUNY Press 1995), 254.

<sup>21</sup> “Japanese Aesthetics”, *Stanford Encyclopaedia of Philosophy*, last modified October 10, 2011, <http://plato.stanford.edu/entries/japanese-aesthetics/>

<sup>22</sup> Donald Richie, *A Tractate on Japanese Aesthetics* (Berkeley: Stone Bridge Press, 2007), 54.

presentable to our sense-intellect as this or that, but it does not mean that the object is altogether beyond the reach of human experience... It is an object of mutual communication only among those who have the feeling of it. It is hidden behind the clouds, but not entirely out of sight, for we feel its presence, its secret message being transmitted through the darkness however impenetrable to the intellect. The feeling is all in all.”<sup>23</sup>

Suzuki’s interpretation frames *yūgen* as an experientially-based concept which can only be encountered through transient moments of lived experience and which engages, but largely transcends the intellect. Situated just beyond the reach of our analytical faculties, the experience of *yūgen* registers itself in a psychological realm where it can be sensed and experienced more than examined and understood. This essential nature of *yūgen* is what makes it both enigmatic when confronted by the intellect and profound when apprehended through lived experience. Therefore, it can most likely be demonstrated most clearly within the outcomes of the studio practice rather than here with the written word.

I identified *yūgen* as the most significant element informing Japanese contemplative space for several reasons. Firstly, as I understand *yūgen* based upon the literature review and through my own lived experience, I can identify no other element which best describes the range of feelings and perceptions I have encountered within the contemplative spaces I have visited. The academic understanding that I have gained from extensive reading on the subject has supported the indescribable nature of my experience within these spaces and has helped to help me more clearly understand what I experienced and why. And while these answers will never be fully resolved or articulated in my mind or within this text, I now understand their illusiveness is not only an innate part of the experience, but an expression of the quality which lends *yūgen* its greatest power and beauty.

Secondly, the sheer volume of texts, and even people’s lives, dedicated to the study and conveyance of *yūgen*, whether it is through a philosophical treatise, a haiku, or a *Nō* performance, points to the enormity of its influence on Japanese aesthetics. And while there are elements of Japanese aesthetics such as *shibui* 渋い and particularly *wabi-sabi* 侘寂 that have entered more significantly into the capricious spotlight of Western popular culture, I haven’t encountered another element during my research which has elicited such a prolific intellectual and creative response. Throughout the research, academic, English-language discussions of *ma*, *hikari to kage* and other potential principal elements proved difficult to source. Yet discussions of *yūgen*, although many echoed one another because of its ultimately un-knowable nature, abounded. There is evidence of entire

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<sup>23</sup> Daisetz T. Suzuki, *Zen and Japanese Culture* (New York: Pantheon Books, 1959), 220-221.

intellectual and creative careers which have been dedicated to the pursuit of its demonstration and elucidation. The academic significance lent to *yūgen* by this breadth of consideration, coupled with the clear impression that it lay at the foundation of every powerful experience I have had within Japanese architecture, contributed to its identification as the element which most significantly informs Japanese contemplative space.

Several English words arose regularly within the literature discussing *yūgen*. These were profundity, sublime, overtones, and symbolism. Among these, profundity was the most frequently recurring word which I encountered, and for the purpose of shedding light on the enigmatic and multi-dimensional concept of *yūgen*, will be discussed briefly. The Oxford English Dictionary defines profundity as:

1.a. The quality of being deep; great or vast depth. 1.b. A very deep place, an abyss; the deepest part or parts of something. 1.c. Downward or inward measurement. 2.a. Great wisdom or knowledge. 2.b. ...the essential truths, mysteries or problems of a particular field of knowledge. 3. Great depth or extent of a state, or emotion.<sup>24</sup>

The depth and breadth revealed within this definition help to demonstrate why profundity is perhaps the most closely equivalent word offered by the English language.

Adam Wojcinski, an Australian-born tea master of Ueda Sōko Ryū 上田宗箇流 tradition, directly referenced profundity when attempting to explain *yūgen* to me in 2015. He then went on to offer one of the most simple and profound definitions of *yūgen* which I have encountered throughout the course of my research. He explained it as, “The feeling you get when you encounter the divine and there is nothing that can be articulated.”<sup>25</sup> This perspective, to me, illuminates the essence of *yūgen* as thoroughly as far more esoteric explanations which I have encountered. It also illustrates the depth of its implications as well as the experiential impact it may offer when applied to architectural and visual arts contexts.

It is essential to clearly distinguish the concept of *yūgen* from the realm of metaphysics to which it could easily be relegated upon first encounter. “*Yūgen* does not... have to do with some other world beyond this one, but rather with the depth of the world we live in, as experienced through cultivated imagination.”<sup>26</sup> This affirms that *yūgen* is very much rooted in perceptual and psychological encounters with the physical world. This notion allows space for mystery within earthly experience.

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<sup>24</sup> “Profundity”, *Oxford English Dictionary*, accessed November 5, 2015, <http://www.oed.com>

<sup>25</sup> Adam Wojcinski, conversation with Brian Corr, February 8, 015

<sup>26</sup> “Japanese Aesthetics”, *Stanford Encyclopaedia of Philosophy*, last modified October 10, 2011, <http://plato.stanford.edu/entries/japanese-aesthetics/>

And it allows an aesthetic object or space to make available a profound experience which extends beyond its concrete bounds.

The profundity of *yūgen* seems inextricably linked to the recognition of transience in all things, and the resulting experience of a kind of wistful, contemplative melancholy. In his *Essays in Idleness*, fourteenth century author and monk Yoshida Kenkō 吉田兼好 (1284-1350) wrote, “If man were never to fade away like the dews... never to vanish like the smoke... but lingered on forever in this world, how things would lose their power to move us. The most precious thing in life is its uncertainty.”<sup>27</sup> Apprehending this uncertainty is perhaps one of the most confronting and transformative encounters available in the human experience. Few other artistic goals hold the potential to move a viewer at such a fundamental level. The following discussion will briefly address the role of transience within the experience *yūgen*, and touch upon several supplementary terms which refer to aspects of transience I believe also impact the experience of Japanese contemplative space.

Zeami Motokiyo, the great playwright who situated *yūgen* as the central aesthetic and conceptual aspect of *Nō* theatre performance in the Muromachi period 吉田兼好 (1336-1573), and who is often identified as the figure most singularly responsible for the development of *yūgen*'s position within Japanese culture, offered the following reflections upon *yūgen* as it is experienced within the transience of the natural world.

To watch the sun sink behind a flower clad hill. To wander on in a huge forest with no thought of return. To stand upon the shore and gaze after a boat that disappears behind distant islands. To contemplate the flight of geese seen and lost among the clouds... Subtle shadows of bamboo upon bamboo.”<sup>28</sup>

Zeami initially encounters *yūgen* through the innate beauty embedded within nature. However, the deeper impact of his experience rises from the recognition of each scene's inherent transience, the underlying sense that each moment's beauty shall fade all too quickly. Acceptance of this ephemerality allows each moment to be perceived and appreciated in its fullest gravity, and its flawed perfection. There is also a prevailing sense of solitude within each vignette, as Zeami seems to stand as a lone witness to time's passage. Solitude permeates every moment; the sun traverses the sky, eternally alone, a lone fisherman drifts towards an unreachable horizon, his witness standing equally remote. Here, in the sense of transience and solitude conveyed in Zeami's

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<sup>27</sup> Kenkō Yoshida, *Essays in Idleness, The Tsurezuregusa of Kenkō*, trans. Donald Keene (New York: Columbia University Press, 1998), 7.

<sup>28</sup> Arthur Waley, *The Nō Plays of Japan*. (Mineola: Dover Publications, 1998), 2.

expression of *yūgen*, strong undertones of several other significant elements of Japanese thought become apparent: *mono no aware* もののあはれ, *utsuroi* 移ろい and *wabi sabi*. Each will be briefly defined to further illuminate the role of transience within *yūgen* and the experience of Japanese contemplative space.

The concept of *mono no aware* is expressed as, “A deep, empathetic appreciation of the ephemeral beauty manifest in nature and human life... a purified and exalted feeling... it tends to focus on the beauty of impermanence and on the sensitive heart capable of appreciating that beauty.”<sup>29</sup> The Greek notion of *pathos* is perhaps the most closely related term in traditional Western thought. *Utsuroi* also relates to the recognition of impermanence and a resulting melancholy. Renowned *washi* 和紙 artist Eriko Horiki 堀木エリ子 (b. 1962) describes *utsuroi* as, “the ability to feel time changing.”<sup>30</sup> Furthermore, its expression “describes moments of delicate transition and is related to various time scales from seasons to ages.”<sup>31</sup> The waning moon, autumn leaves falling, the worn hands of an old woman, weathered timber and stone, all are infused with overtones of *utsuroi* as they stand poised between being and their inevitable absence. Finally, author and gallerist Andrew Juniper interprets *wabi-sabi* as, “an intuitive appreciation of the transient beauty in the physical world that reflects the irreversible flow of life in the spiritual world... an aesthetic sensibility that finds a melancholic beauty in the impermanence of all things.”<sup>32</sup> Although each term represents its own unique dimension of Japanese thought, they share inherent commonalities, which converge by allowing the viewer to become both witness and willing participant in life’s intrinsic transience and the solitude which it ultimately ensures.

Zeami also pioneered means by which the profundity and transience of *yūgen* could be encountered not only in nature, but purposefully conveyed to an audience within the context of *Nō* theatre performance. “When a *Nō* actor slowly raises his hand in a play, it... suggests something behind the mere representation, something eternal... The gesture of an actor... is the gateway to something else, the hand points to a region as profound and remote as the viewer’s powers of reception will permit. It is a symbol, not of any one thing, but of an eternal region, of an eternal silence.”<sup>33</sup>

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<sup>29</sup> Allan A. Andrews et al., *Keys to the Japanese Heart and Soul* (Tokyo: Kodansha International Ltd., 1996), 29-31.

<sup>30</sup> Blaine Brownell, *Matter in the Floating World: Conversations with Leading Japanese Architects and Designers* (New York: Princeton Architectural Press, 2011), 124.

<sup>31</sup> Brownell, *Matter*, 124.

<sup>32</sup> Andrew Juniper, *Wabi Sabi: The Japanese Art of Impermanence* (Tokyo: Tuttle Publishing, 2003), 51.

<sup>33</sup> WM. Theodore de Bary, Donald Keene, *Sources of Japanese Tradition Volume One: From Earliest Times to 1600* (New York: Columbia University Press, 2001), 365.



Observing Zeami's two depictions of *yūgen*: one embedded in nature, the other emanating through the cultivated performance of the stage actor, illustrates several additional attributes of *yūgen*. First, it seems that some form of beauty serves as the gateway, the initial point of entry through which an observer may gain access to an experience of *yūgen*. Second, this beauty quickly yields to something far greater than a purely aesthetic value. It opens a path for encountering the eternal, the divine, the timelessness that lies beyond the streaming flow of time. While I cannot profess to understand the means or mechanisms which cause this encounter to occur, I hope that works created within the studio practice begin to approach this same capacity, while potentially shedding more light on this question of beauty, profundity and timelessness.

Finally, Zeami's deliberate manifestation of *yūgen* through the medium of performative art supports the research proposition that *yūgen* can be consciously made available in the realm of creative expression. It proves that the primary element of Japanese aesthetics can be translated from the natural world into the realm of visual arts. In Zeami's case, this was accomplished through the performative arts. And although performative expression may offer a highly direct means of embodying and conveying the experience of an element such as *yūgen* to a broad audience, it stands to reason that it may also be made available in the expressive realms of architecture and visual arts.

These manifestations of *yūgen*, whether expressed through nature or human intention, provide evidence that encountering *yūgen* through an initial avenue of aesthetic beauty is perhaps imperative. As I now understand *yūgen*, it becomes difficult to imagine its experience initiated through an encounter with desolation or destruction, or through any coarse gesture. Rather, it is the sense of pleasure, or even awe, initially elicited by the experience of the innate beauty or grace within a simple moment or movement, which allows the ensuing recognition of the moment's profundity, whether it is apprehended through the recognition of the beauty's transience, or some recognition of the eternal lying behind the transient gesture. The role of aesthetic beauty as a point of entry is frequently contradicted within the context of contemporary art. However, it is here that the research has supported and validated a longstanding tenant of my studio practice, which consciously utilises expressions of beauty, grace and simplicity as the gateway for an experience of profundity. The principle of *yūgen* will undoubtedly further strengthen the role of these aesthetic qualities within my work. More importantly, my understanding of it will insist that powerful experience be present behind a work's aesthetic façade.

While there may be aspects of *yūgen* which invoke notions of transcendence as the senses perceive the sublime through encounters with the potentially ordinary or mundane, the concept doesn't intrinsically indicate spiritual or otherworldly activity. Rather, it is founded upon one's experience, however transcendent or ephemeral, of the corporeal environments which we inhabit: the forest,

the sky, and the sea. Perhaps it is here that architecture and works of art can be of the greatest service to the expression of concepts such as *yūgen* which otherwise pass from the grasp of our senses too quickly to be fully absorbed and understood. Within the constructed environment or the rendered sculpture, the essence of these moments is crystalized, given form so that a visitor may return again and again to be immersed in an experience of what otherwise remains transient and elusive, perpetually beyond reach. In doing so, perhaps the opportunity to develop a greater understanding or more complete experience of *yūgen* is offered. And if not, and the essence of the concept remains obscured, perhaps architecture and works of art imbued with *yūgen* provide a space in which to encounter the unknowable and celebrate the innate limitations of our human capacities as they encounter the paradoxical transience and timelessness of the world in which we exist.

Another significant notion to consider is the earlier assertion that *yūgen* is “experienced through cultivated imagination”<sup>34</sup>. This suggests that one’s ability to fully recognise and internalise the experience of *yūgen* is potentially dependent upon a degree of purposeful cultivation and cultural literacy. This notion, if true, challenges the research question which asks if the fundamental elements, removed from their native cultural context, can still provide meaningful contemplative experience for a viewer who does not possess the same cultural vocabulary.

I agree that one’s ability to fully engage with *yūgen* may be cultivated through continual and deliberate engagement with the corporeal world through a lens attuned to the subtle grace and aching beauty of the fleeting moments of lived experience. The capacity to experience *yūgen* may also arise through purposeful cultivation, as in the case of a *Nō* viewer in the Muromachi period, who was tutored in the recognition and appreciation of *yūgen*. Without such a foundation, the depth of experience available within these works may remain unplumbed by the viewer. However, I posit that if *yūgen* is truly one of the principal elements which inform Japanese contemplative space, and that if these spaces do possess the ability to significantly impact the culturally naive viewer as they did during my initial visit to Japan, then *yūgen* can in fact be recognised and experienced in a meaningful way by the uninitiated. Although the specific vocabulary and almost certainly the analytical understanding of the encounter may remain absent, I believe that *yūgen* is a perceptible quality embodied by Japanese contemplative space which can still powerfully resonate with a viewer lacking formal understanding of the concept. *Yūgen*’s ability to reflect or elicit some innate human experience ensures that its experience can be made available to the average Western viewer who possesses no academic or cultural understanding of *yūgen*.

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<sup>34</sup> “Japanese Aesthetics”, *Stanford Encyclopaedia of Philosophy*, last modified October 10, 2011, <http://plato.stanford.edu/entries/japanese-aesthetics/>

I do believe that the extent to which a viewer is able to experience *yūgen* in either the natural or aesthetic world is contingent upon the sensitivity to engage with an abstracted and potentially confronting human emotion. “*Yūgen* extends... into the realm of eternal verities; not only beauty but all life fades, happiness always dissolves, the soul passes alone and desolate. In an art form that transmits *yūgen*, none of this is stated; one is forced to feel these truths through suggestion, the degree of feeling depending, of course, upon the sensitivity of the individual.”<sup>35</sup> I believe that the capacity to wholly surrender to these dimensions of *yūgen* can be present in an individual possessing the willingness to encounter its implications unflinchingly, knowing this recognition holds a mirror up to one’s certain fate.

Perhaps it is here in its ability to gently remind us of our shared destiny through a lens of appreciation and bare recognition of beauty and grace that *yūgen* is most powerful. This may also suggest why its expression in visual culture is so moving and perhaps, even vital. To be reminded of our own mortality by the performance a *No* actor is to recall the value of life’s fleeting beauty. To enter an architectural space which embodies *yūgen* is to reflect upon the enduring timelessness which wraps around our own mortality while we stand safely immersed in a space which has been designed to honour and even elevate the solitude which underlies our existence. My own experience within Tadao Ando’s Water Temple, which will be detailed later in the report, will illuminate these aspects of *yūgen* within the built environment.

The nearly ubiquitous presence of *yūgen* within Japanese creative expression, as well as the innate capacity of *yūgen* to promote intense self-reflection and to permeate the experience of natural and constructed environments drove me to identify it as the element which most significantly defines and empowers the breadth of contemplative spaces studied throughout the research project. The value it contributes to the human experience motivated my decision to situate *yūgen* as the primary principle which I hope to make available within the outcomes of my studio practice. Japanese architecture, theatre performance, visual arts and poetry have been composed to manifest *yūgen* and offer its experience to broad audiences. This rich and enduring tradition of eliciting *yūgen* through purposeful creative expression provided the point of entry for the studio research. It has led me to examine the means by which my arts practice can embody *yūgen* and offer a genuine experience of it to a Western audience. The mechanisms I have employed to facilitate an experience of *yūgen* will be analysed in detail within Chapter Three.

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<sup>35</sup> Thomas Hoover, *Zen Culture* (London: Routledge and Kegan Paul, 1978), 155.

# Ma



Fig. 4 Ryoan-ji, Kyoto, 2015

*Shiki soku ze kū.*

色即是空.

*Matter is emptiness... Emptiness is matter.*<sup>36</sup>

-Heart Sutra 般若波羅蜜多心經

If *yūgen* drives the experiential tone of Japanese contemplative space, I believe that the concept of *ma* serves as its primary organising element. Like *yūgen*, *ma* is difficult to define or grasp in a concrete manner, with its definitions, applications, and cultural role having evolved continually throughout Japanese history. *Ma* can be broadly defined as, “The space in between things that exist next to each other... an interstice between things- chasm... in a temporal context, the time of rest or pause in phenomenon occurring one after another.”<sup>37</sup> Applications of *ma* are demonstrably prevalent, not only within the structure and ultimately the experience of Japanese architecture, but across the breadth of Japanese creative mediums, including theatre, painting, music and poetry. Architect Tadao Ando, whose work employs *ma* to great effect, defined the role of *ma* within Japanese architecture and aesthetics, saying, “The *shoji* 障子 panels and the fences stand for an interval, separating and connecting at the same time. Intervals of this kind, which demarcate and interrelate elements and scenes, are a characteristic feature, not only of Japanese architecture, but

<sup>36</sup> Chieko Irie Mulhern, “*Kōda Rohan*” (London: Ardent Media, 1977), 63.

<sup>37</sup> Susumu Ōno, “*Iwanami Kogo Jiten*” (Tokyo: Iwanami Shoten, 1990), quoted in Arata Isozaki, *Japan-ness in Architecture* (MIT Press: Cambridge, 2006), 94-95.

also of all Japanese art, and might be called a symbol of Japanese aesthetics. Their major role is to stimulate anticipation.”<sup>38</sup>

I assert that *ma* contributes far more than anticipation to the experience of Japanese contemplative space and is expressed through means which transcend the notion of *ma* as a physical interstice. I believe that *ma* lies at the heart of author and academic Henry Plummer’s experience of Japanese architectural space as “...remote, fading away, leaving behind a world of silence.”<sup>39</sup> I attribute these specific aspects of Plummer’s experience to the underlying role of *ma* within Japanese architecture. *Ma* is manifested not only within the perceptible interstices of structured space, but as a kind of inexplicable, active void residing at the very core of Japanese space, emanating outward to finally resonate within the heart of the viewer. “*Ma*, which is emptiness, is at the very centre of everything. This *ma* is not merely the absence of something but the actual core of things. Where we see two points in opposition to one another, the underlying essence is in the invisible *ma* that makes these points appear as such.”<sup>40</sup> This powerful statement demonstrates the deeper implications of *ma*, appearing to echo notions of the duality of form and emptiness within Buddhist philosophy.

The following passage written by academic and author Günter Nitschke (b. 1934) may help further illuminate the experiential aspect of *ma* as active void within Japanese architecture. “This Japanese sense of *ma* is not something that is created by compositional elements; it is the thing that takes place in the imagination of the human who experiences these elements. Therefore, one could define *ma* as ‘experiential’ place, being nearer to mysterious atmosphere caused by the external distribution of symbols.”<sup>41</sup> Here, Günter observes that deeper readings and experiences of *ma* transcend the specific compositional elements of architectural space. He suggests that, like *yūgen*, encounters with *ma* largely surpass the intellect and engage more directly with sensory and imaginative experience. Finally, Nitschke suggests that experiences of *ma* are made available through an enigmatic, atmospheric overtone, rather than simply through the specific organisation of volume and void.

Subtle aspects of *ma* extend beyond the creative realm, informing critical aspects of Japanese interpersonal and social norms. “One of the most crucial areas of judgment for the Japanese, whether performing art, writing literature, or simply functioning in society and in smaller groups, is

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<sup>38</sup> Tadao Ando, “From Self-Enclosed Modern Architecture Towards Universality”, *The Japan Architect*, 301, May 1982

<sup>39</sup> Henry Plummer, *Light in Japanese Architecture* (Tokyo: a+u Publishing Co, 1995), 12.

<sup>40</sup> Isao Kumakura, “The Culture of *Ma*” *Japan Echo* 34, 1, (2007). 59.

<sup>41</sup> Günter Nitschke, “*MA*” - The Japanese Sense of Place in Old and New Architecture and Planning, in *ARCHITECTURAL DESIGN*, London, March 1966, p. 117

the timing and spacing of ma.”<sup>42</sup> Ma can be recognised within the intentional silences punctuating everyday conversation, and in the pause of one’s bow. It is even said to reside within the individual members of Japanese society. “Human relations are characterized by emptiness at the centre. When forces confront one another on either side of this empty centre, the emptiness serves as a buffer zone that prevents the confrontation from growing too intense.”<sup>43</sup> Here, ma provides not only the fabric around which a space is organised, but the framework around which Japanese society itself is structured.

Ma is a ubiquitous aspect of Japanese life, silently informing its architecture, art and personal conduct. This observation, coupled with my own experiences of ma within Japanese architecture and to a more limited degree within Japanese culture, led to its identification as one of the three fundamental elements of Japanese contemplative space. Much like *yūgen*, deeper understandings of ma are cultivated through observation, experience and intuition rather than explicit instruction and intellectual encounter. I have been told by Japanese friends that I may begin to truly understand ma if I spent twenty years living in Japan. Therefore, like *yūgen*, I cannot claim to have gained a complete comprehension of ma, or of its mechanisms and implications, over the course of the research project. However, I have observed concrete examples of ma across a breadth of Japan’s architecture, and I believe that my own profound experiences within a handful of its contemplative spaces have been greatly influenced by the presence of ma. I will further illustrate the role of ma in my own experience of Japanese contemplative space in the description of Ando’s Water Temple. My hope though, is that the studio research better exemplifies and makes available an experience of ma than the written word, for, as an aesthetic mechanism, ma has been demonstrated to hold endless potential to facilitate profound contemplative experience through the visual arts.

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<sup>42</sup> Kumakura, “The Culture of Ma”, 59

<sup>43</sup> Kumakura, “The Culture of Ma”, 59

## Hikari to Kage

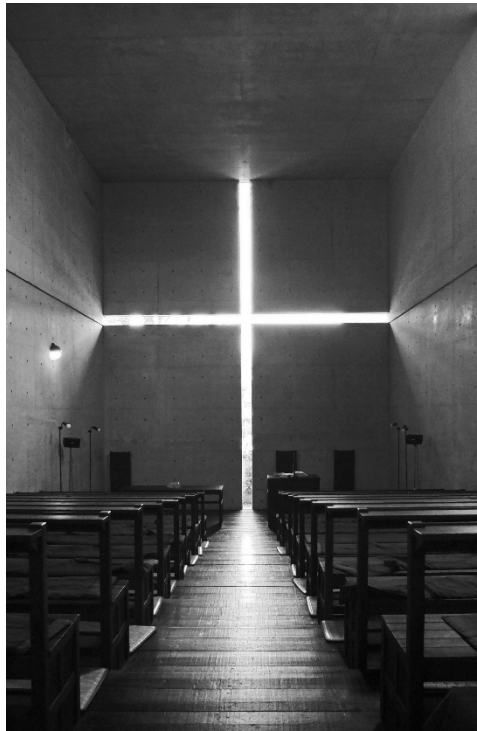


Fig. 5. Tadao Ando, *Church of Light*, 1989, Osaka

*Light, whose beauty within darkness is as of jewels that one might cup in one's hands; light that, hollowing out darkness and piercing our bodies, blows life into 'place'.*<sup>44</sup>

-Tadao Ando

If *yūgen* establishes the overarching experience provided by Japanese contemplative space, and mandates its physical structure while also contributing deeper experiential overtones, I believe that both elements are principally articulated within these spaces through the essential role of *hikari to kage*, the third and final fundamental element of Japanese contemplative space. *Hikari to kage* translates literally as “light and shadow”, and both the Japanese and English forms will be used throughout the remainder of the exegesis. Light and shadow have played a significant role in the aesthetics and experiential tone of much Japanese creative output, and perhaps nowhere more so than within its contemplative spaces.

In his seminal book *In Praise of Shadows*, Junichiro Tanizaki 谷崎潤一郎 (1886-1965) wrote of the critical role, specifically of shadow, in cultivating the experiential atmosphere of these spaces. “I marvel at our comprehension of the secrets of shadows, our sensitive use of shadow and light... The

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<sup>44</sup> Tadao Ando in Francesco Del Co, *Tadao Ando: Complete Works* ( London: Phaidon Press Limited, 1995), 471.

‘mysterious Orient’ of which Westerners speak probably refers to the uncanny silence of these dark places... Where lies the key to this mystery? Ultimately it is the magic of shadows.<sup>45</sup> I have been continually stuck by the degree to which Japan’s interior spaces are flooded with shadow rather than light. Although there is a jarring abundance of intense artificial light encountered during the course of daily life in Japan, one of the most ubiquitous and powerful aesthetic qualities of Japan’s contemplative spaces is the intentional profusion of darkness and its close companion, silence.

Light has been the central concern within my practice since its inception. I have utilised glass as my primary medium because of its ability to serve as a vehicle for light, lending it dimension and duration. It wasn’t until I found myself immersed in the study of Japanese aesthetics that I began to understand and address the critical role of darkness in the perception and experience of light. Tadao Ando, a master of the use of hikari to kage in forming space and experience stated, “You are able to see the light because of the darkness... Shadows and darkness contribute to serenity and calmness. In my opinion, the darkness creates the opportunity to think and contemplate... Areas of darkness are critical, and I think they relate to deep metaphorical levels of creation.”<sup>46</sup>

Ando acknowledges the symbiotic relationship between light and shadow, while emphasising the indispensable role of shadow within contemplative experience in Japanese architecture. Much of contemporary Western architecture appears to be preoccupied with the intense saturation of light within its spaces, and now, considering Ando’s words, I believe this practice may compromise the ability of these spaces to cultivate the sense of quietude and introspection necessary to facilitate deeper levels of contemplative experience. Japanese architecture has long cultivated an antithetical approach, with its spaces permeated by an atmosphere of nearly tactual shadow punctuated intermittently by the restrained allowance of its lucent counterpart. This aesthetic philosophy alone greatly enriches the depth of experience made available within its contemplative spaces.

However, it is not only the abundance of shadow resonating within these spaces which lends Japanese interiors their silence and mystery, but also the distinct character of the light which is admitted. Henry Plummer asserts that the native, muted sunlight of Japan served as the point of genesis for the Japanese architects’ unique handling of light and shadow, ultimately informing the austere qualities and experiences of its contemplative spaces and embodying the distinct philosophies housed there. “The grey light created in these buildings was empty of colour, purified of sensuality, austere in character, humble in simplicity, and thus in many ways a perfect atmosphere for the deep solitude of Zen... The overall effect was for empty space to be made

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<sup>45</sup> Junichirō Tanizaki, *In Praise of Shadows* (London: Vintage Books, 2001), 32-33.

<sup>46</sup> Michael Auping, *Seven Interviews with Tadao Ando* (Fort Worth: Modern Art Museum of Fort Worth, 2002), 53.



palpable, and in its negation, for the ego, the I, to not only be ignored, but momentarily paralysed.”<sup>47</sup>

Plummer’s words acutely illustrate the profound psychological experience purposefully elicited by Japanese contemplative space, and thereby, the transformative potential of architecture when it is actuated by the simple but powerful elements of light and shadow. I also recognise in Plummer’s description of light and shadow within Japanese contemplative space the profundity and solitary transience of *yūgen*, and the active, transcendent void of *ma*. Plummer’s words support the assertion that these fundamental elements are made manifest through the activation of light and the mystery of shadows.



Fig. 6. Tadao Ando, *Water Temple*, Awaji Island

## Encountering the Elements in Tadao Ando’s Water Temple

In the following section, I will provide an analysis of the Water Temple by renowned Japanese architect Tadao Ando. Ando’s oeuvre represents a tangible nexus between traditional and contemporary Japanese thought and architectural philosophy and illustrates the assimilation and evolution of traditional values into a contemporary context. The Water Temple, situated on the island of Awaji, is a purposefully constructed contemplative environment which clearly articulates the fundamental concepts of *yūgen*, *ma*, and *hikari to kage*. I will explore the architectural and aesthetic elements which yielded the profound psychological and sensory experience I encountered

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<sup>47</sup> Henry Plummer, *Light in Japanese Architecture* (Tokyo: a+u Publishing Co, 1995), 20.

while visiting the site in 2014 and will investigate how these elements shaped and facilitated my experience. This analysis will provide tangible examples of *yūgen*, *ma*, light and shadow through the lens of my subjective experience, highlighting the specific architectural mechanisms employed to manifest these elements, and recounting the profound impact which these elements ultimately had upon me throughout the experience.

The physical journey dictated by Ando's design directly informs one's experience of the Water Temple as the site is traversed. Through the ordering of formal architectural elements and aesthetic mechanisms, Ando orchestrates the viewer's participation in a symbolic, archetypal journey which is physical, psychological and spiritual in nature. Any discussion of the Temple which took as its starting point the analysis of specific structural or aesthetic elements in isolation and removed from the greater context to which they contribute, would serve to alienate each element from the greater whole, compromising their impact and narrowing their function. Therefore, structural and aesthetic elements, and the specific contributions they make to contemplative experience, will be addressed as they arise sequentially.

Upon arrival at the Temple, I found myself at the bottom of a hill covered with a skin of granite gravel. Sunlight reflected off of the gravel, and the hill seemed to gently glow. Looking up the hill, my gaze met a sweeping wall of concrete punctuated on its left by the narrow aperture of the temple entrance. The wall is at once totally dominating in its sheer physicality, and nearly buoyant, a sweeping gesture of light in the mid-day sun. This initial visual encounter with the Temple grounds set the stage for the physical and psychological experience ahead. The elevated aspect of the temple site, surrounded by the monumental concrete wall, seeming to float across a field of light and colour, signalled that should I continue climbing the path and step through the temple entrance, I was abandoning the profane and entering the realm of the sacred.

This kind of liminal space is recurrent in architectural discourse. "The characteristics that define liminal space include layering, dissolution, blurring, and ambiguity and have the ability to transform the occupant of that space as they move through it."<sup>48</sup> In Japanese architecture, the concept of *kekai* 結界 refers to a range of boundary markers utilised in temple and tea ceremony space and is frequently employed as a physical boundary which delineates sacred (*hare-no-kukan* ハレの空間) from profane (*ke-no-kukan* ケの空間)<sup>49</sup> space. Within traditional Japanese rock garden design, *kekai* refers to the physical and visual boundary of stone surrounding the garden which establishes the context for the psychological and spiritual functions of the space. In his Water Temple, Ando

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<sup>48</sup> Patrick Troy Zimmerman, "Liminal Space in Architecture: Threshold and Transition" (Master's Thesis, University of Tennessee, 2008), iv.

<sup>49</sup> Arata Isozaki, *Japan-ness in Architecture* (Cambridge: The MIT Press, 2006), 155.

employs monumental architectural elements and site characteristics as *kekai* in order to create an experience of liminality. I assert that these mechanisms of *kekai* are in fact concrete manifestations of *ma*, and that Ando has very intentionally utilised these demarcating intervals to facilitate a sense of anticipation, setting the stage for the experience of *yūgen* which awaits the visitor within the temple grounds.



Fig. 7. Tadao Ando, *Water Temple*, Awaji Island, 2014

After ascending the hill and passing through the doorway to enter the temple grounds, I immediately encountered a second sweeping wall of concrete. Following its length and rounding the corner, I was confronted by the powerful tableau of an elevated, elliptical lotus pond bisected by a descending staircase. With no other structure in sight, it became immediately apparent that I must follow the staircase, seemingly descending into the depths of the lotus pond. This act of metaphorically submerging oneself in the pond's waters, of descending into the earth, conjured a series of strong associations: the underworld and the tomb, the biblical journey of Jonas into the belly of the whale, Joseph Campbell's journey inward. It is as if, by descending into the pond's waters, I was metaphorically entering the psyche, abandoning the known realm of the ego and entering the unknown internal world of the unconscious. Although these are ultimately symbols of transformation, they potentially carried the weight of trepidation. However, Ando managed to make the immanent descent feel welcoming. The symbols of water and lotus suggest something gentle and feminine, strongly contrasting the masculinity of the surrounding concrete. There was a sense of returning to the womb upon this flight of stairs penetrating the soft ellipse of the pond.

These impressions were further heightened as I descended the stairs. The length and pitch of the stairway facilitate a slow process of detachment from the external world. Light and sound were progressively lost, the ambient temperature dropped noticeably, and for a moment, it truly felt like entering a deep underground tomb. Thus began a critical process of sensory deprivation and recalibration. By deliberately diminishing the visitor's sensory intake, thereby altering the mind's most fundamental means of obtaining information, all remaining stimulus is amplified and recontextualised, allowing the transformative experience.



Reaching the bottom of the stairs and turning left into the temple, I was met by an unexpected burst of light and colour, significantly amplified by the previous deprivation. The colour, borne by the wooden central structure of the temple, was the familiar burnt orange found in many Buddhist temples throughout Japan. However, within this context the space seemed to illicit the recollection of light and colour perceived through transparent eyelids which once occupied the waters of the womb. Light poured through a centralised floor-to-ceiling window covered by gridded wooden screen covering, activating the space, and strongly contrasting the darkness of the descending stairway and temple entrance. This single window provided the sole source of illumination for the temple's interior via an external concrete lightbox which captured, amplified, and redirected sunlight, illuminating the inner sanctum. By employing a form of ma with the wooden screen, Ando was able to maintain the autonomy of the sacred space. In doing so, Ando allowed the subterranean temple to serve as a canvas upon which to witness the transience of natural light, and to contemplate the implications of its continual passage, thereby invoking the perception of yūgen.

Beyond reach of the window's light, the curving path ahead appeared once again fully engulfed by starkly contrasting darkness. Ando's use of darkness in the Temple embodies the philosophy of Tanizaki's "magic of shadows" perfectly. Following the concentrated illumination of the window, the ensuing darkness was so profound that it could nearly be perceived as a structural rather than perceptual element. The intensity of the darkness was disembodied and disorienting, heightening the sense of actively experiencing the unknown, and furthering the experience of turning inward on this solitary journey.



Fig. 9. Tadao Ando, *Water Temple, Awaji Island, 2014*

Following the darkened path for what I perceived as a disproportionately protracted amount of time, the wall of the central wooden structure finally opened, revealing the temple proper. With pupils and mind having acclimated to intense darkness, this abrupt encounter with light and colour was even more breathtaking than at the temple's main entrance. The temple space was richly furnished with statuary, relics and stations for formal prayer and meditation. Light from the single window provided intense backlighting, scattering throughout the space upon the profusion of complex gilded surfaces. Following the previous state of deprivation, the resulting riot of sensorial input greatly intensified the psychological impact of the interior.

The experience of light, silence and stillness within this space became profound. I eventually closed my eyes and found myself filled by an unmistakable sense of peace that had been facilitated by an encounter with a purposefully constructed space. It was in this moment that the purpose of the Temple and the intention of Ando's design became clear to me, and I understood it, no longer in a theoretical or academic sense, but experientially, and with my whole being. There was a sense of

arrival at the epicentre of an experience, at the very core of something profound, something that I would now best describe as a sense of *yūgen*.

After a long time alone in the space, I began my journey out of the temple. As I climbed the stairs, sounds, sunlight, even the taste of fresh air was greatly intensified after the silence, darkness and stillness of the space below. I stopped, sitting at the top of the stairway, looking out onto hills of rippling bamboo, listening to the sound of cars passing on the nearby highway. There was a heightened degree of clarity in my thinking, and an acute richness in the consumption of my senses. I couldn't help but feel that I had reached the end of an experience which had impacted something inside of me very quietly but fundamentally. I had undergone a twofold journey. One was a physical journey from the profane to the sacred, which had been directed by the specific architectural elements, the *ma*, of Ando's design. The second was a transformative psychological journey inward, into water and earth, into darkness and light, into myself. This journey was informed by the sensory and perceptual experience provided within the constructed space, and ultimately, by the three fundamental elements of Japanese contemplative space. Ando's Water Temple, informed by *ma* and activated by *hikari to kage*, facilitated a transformative experience of *yūgen*.

I believe that my experience of the Water Temple clearly demonstrates that architectural space is capable of offering transformative contemplative experience. I identified the concepts of *yūgen*, *ma*, and *hikari to kage* are the fundamentally essential elements which most significantly defined this experience, as well as the nature of contemplative experience made widely available within Japanese architecture. The prevalence and impact of these elements across myriad forms of Japanese creative expression affirms their significance, as well as their ability to be translated into the sphere of visual arts practice.

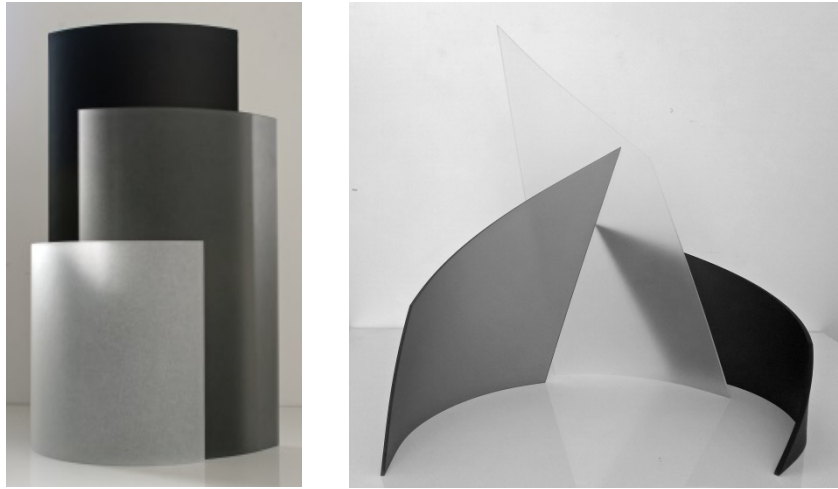
Over the course of the research project, I have sought means by which to translate the essence of these powerful elements into the conceptual and aesthetic vocabulary my own studio practice. I have done so with the intention of making analogous contemplative experience available to new viewing audiences within the realm of a Western visual arts practice. The outcomes of this journey, spanning from early contemplative objects to a large-scale immersive installation will be examined in the following chapter.

## Chapter Three: Studio Research

This chapter analyses the evolution of the studio-based research over the course of my candidature. First, I examine the earliest stages of the studio research in which I addressed the concepts of form and void. I then discuss the translation of the three principle elements within a series of wall-mounted and free standing contemplative objects rendered in glass. Finally, I examine constructed space and a range of aesthetic mechanisms developed as a means of facilitating immersive contemplative experience. I will explore the conceptual and aesthetic intentions of individual works and series while highlighting the aspects of Japanese contemplative space which influenced their development. I will also discuss the key architects and artists who have informed and shaped these new directions in my studio practice.

For the sake of clarity and continuity, the evolution of the studio research will be examined chronologically. Works will be discussed in greater depth as the research timeline progresses and the findings become more significant and substantial. The purpose of this chapter is to illuminate the findings of the research project and connect its multifarious threads of investigation as it addresses the primary questions posed by the research project. The works discussed throughout the following chapter lend the research findings physical form which can be experienced in a tangible way. The impact they have upon the viewer will ultimately determine if I have been successful in my efforts to translate the essential elements of Japanese contemplative space into the vocabulary of my visual arts practice.

## Form and Void



**Fig. 10, 11. Curvilinear glass compositions**

During the first several months of the candidature, I produced compositions of multiple curvilinear planes made of steel and glass. These sought to define space with form, light and shadow to create a dynamic contemplative environment. These series of studies were intended to lead to monumental-scale works in glass or perhaps glass and steel. They investigated the use of multiple formal elements to describe motion and to embody a flow of energy in the resulting positive and negative spaces. They also explored the potential of elements within a composition to resonate with one another, combining, as would the independent tones which form the structure of a musical chord. I viewed these works as a learning exercise designed to develop a stronger understanding of the principles of three-dimensional sculpture and spatially-directed viewing experience. These works came as a response to earlier works produced within my arts practice which were unintentionally conceived to be viewed from a single point of perspective and were generally symmetrical along their axes.





Fig. 12. Richard Serra, *Band*, LACMA, 2006.

A brief examination of Richard Serra's (b. 1938) work helped to develop my thinking about the definition of space through form. According to Serra, "I consider space to be a material. The articulation of space has come to take precedence over other concerns. I attempt to use sculptural form to make space distinct."<sup>50</sup> Serra's almost architectural approach to space within his sculptures came to life for me when I was able to view *Band*, his monumental 2006 work, at LACMA. As I navigated the forcefully dynamic internal spaces formed by the voluptuous patinaed COR-TEN steel walls within what is considered to be the pinnacle of his "torqued" works, I realised that in the past, I had overlooked considerations of the space surrounding a work in favour of developing the space within a work. Serra's practice also helped me to begin considering the physical journey of the viewer as they navigate the space around a monumental work as an integral aspect of its design and function. In this sense, Serra's work served as an excellent prelude to my examination of the architectural environment. This nexus between monumental sculpture and architecture represents a zone of creative expression I am working to steer my practice towards through the undertaking of this research project.

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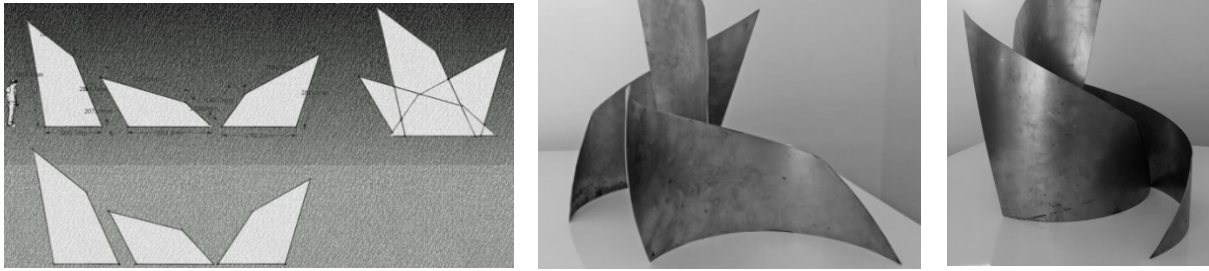
<sup>50</sup> Benjamin Buchloh et al., *Richard Serra Sculpture: Forty Years* (New York: The Museum of Modern Art, 2007), 77.



**Fig. 13. Curvilinear steel study, dimensions variable, 2013**

The resulting steel and glass studies represented my first intentional exploration of three-dimensional form and space as they relate to the viewing experience. The majority of my previous work was designed to be viewed from a primary point of perspective, therefore offering a largely two-dimensional viewing experience and potentially limiting the scope of experience available within my work. These new studies offered the opportunity to investigate more complex, integrated viewing experiences in which the experience of the work unfolded as the viewer navigated around and eventually through the spaces of the curvilinear planes, and the atmospheres of light and shadow they were intended to produce.

The most significant challenge with these tests was to create elements which were aesthetically resolved independently yet were able to form a cohesive composition and yield a powerful viewing experience when combined within a composition. The initial designs were monolithic and retained a static quality by promoting a primary vantage point. After numerous iterations of the composition in the 3d modelling program SketchUp, I produced paper models to examine how the forms behaved in space when they became three dimensional. The paper templates were subsequently translated into curved steel which I rolled in the Sculpture department. The steel allowed me to explore the relationship between positive form and negative space more directly and began manifesting the concept more fully. However, aspects of the steel compositions felt static due to formal issues.



**Fig. 14,15,16. Sketchup form sketch (left) of curvilinear steel compositions (centre and right), dimensions variable, 2013**

In an attempt to create more dynamic compositions, I produced three steel elements whose lines and angles were more exaggerated. I also began assembling the compositions on a revolving surface, forcing each new configuration to be considered from many potential perspectives. This proved to be an informative exercise which emphasised the relationship between independent elements and revealed how negative spaces were formed and behaved within each composition.



**Fig. 17,18. Curvilinear glass compositions of light and shadow, dimensions variable, 2013**

The three steel forms were subsequently translated into glass in order to activate the elements of translucency, light and shadow within the compositional equation. The process of translating identical forms through a progression of materials proved to be a valuable study in material characteristics and the impact of specific materials on perception. The steel and the glass

compositions felt entirely different from one another although they were nearly identical in form. The steel was much more architectural and possessed a far greater sense of physicality. The individual forms and separating voids were perceived as more weighty and substantial. The glass compositions were ethereal, seemingly composed of light and shadow than rather than silica, soda and lime. Where the steel compositions were very physically present, the glass compositions inferred something beyond their immediate form and configuration. The sheer physicality of steel seemed to carry inherent limitations; it occupied space in the most literal, concrete sense. The glass, however, spoke more of the intangible, and lent the compositions a sense of ethereal buoyancy. Steel embodied the manifest, the constructed and the present. Glass spoke of the ephemeral and the unseen, of energy and potential. While these observations weren't directly actioned within the research project, I hope to eventually explore how these disparate material qualities can be conceptually and aesthetically amalgamated.

Upon reviewing these studies, I acknowledged that they had been a useful learning tool. However, they didn't engage with the new subject matter of Japanese contemplative space or my conceptual intentions strongly enough to pursue in earnest. Something akin to formalism had become the dominant concern over conceptual content and the compositions bordered on the decorative. This stood in clear contradiction to both the reductionist aesthetic of my own practice and the austere, refined spaces of contemplative Japanese architecture which I was researching. I also believed that there were more direct and meaningful avenues of engagement with the elements of contemplative space being identified within the research. However, the spatial and formal considerations within these nascent studies laid the foundation for much of the later directions of the studio research.

## Experiencing the Object



Fig. 19. *Between All Things*, 80 cm x 80 cm x 11 cm, 2014 (Photo: RLDI)

Upon concluding these nascent explorations, I executed several wall-mounted works made primarily of glass. These new works sought to directly address and incorporate the findings of the literature review regarding Japanese aesthetics and the three fundamental elements of contemplative space. The first work, entitled *Between All Things* began investigating the role of light and shadow in contemplative experience. I was directly influenced by Tanizaki's discussion of shadow as it related to traditional lacquerware. He believed that gilded lacquerware could never be appreciated in full light, but rather, had been originally intended to be viewed in an atmosphere of shadow. "Their extravagant use of gold... I should imagine, came of understanding how it gleams forth from out of the darkness and reflects the lamplight."<sup>51</sup> I agree with Tanizaki's assertion, and have witnessed both scenarios in temple settings, observing that environments in which gold is allowed to faintly glimmer ember-like from within a shadowed atmosphere lend its character far greater impact than those in

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<sup>51</sup> Junichirō Tanizaki, *In Praise of Shadows* (London: Vintage Books, 2001), 23.

which it stands starkly illuminated. Darkness lends metal leaf a sense of energy and otherworldliness, while full illumination can cause its application to appear garish and ostentatious.

I sought to embody Tanizaki's sentiment within this new wall-mounted work. Suspended in a charcoal-coloured anodised aluminium frame, a sheet of dark grey translucent architectural glass served as a diffusing screen, obscuring the internal form. The curving volume of the internal form was gilded with dark grey palladium leaf. The diffusing screen allowed only a shimmer of light reflected by the palladium to reach the viewer. To heighten the contrast of reflected light and atmospheric shadow, as well as to create shifting zones of clarity and obscurity, the external panel of glass was slumped in a kiln to make it concave, curving away from the viewer. The internal form, created with a substrate of clear glass, was slumped in a kiln to be convex, bringing its centre line closest to the viewer. This forced the vertical interstice into greatest focus and the central zone of the palladium field to the highest degree of illumination from reflected ambient light. The increasing distance between the concave external diffusing screen and convex internal form cast the palladium volume further into shadow as it neared the vertical edges of the work.

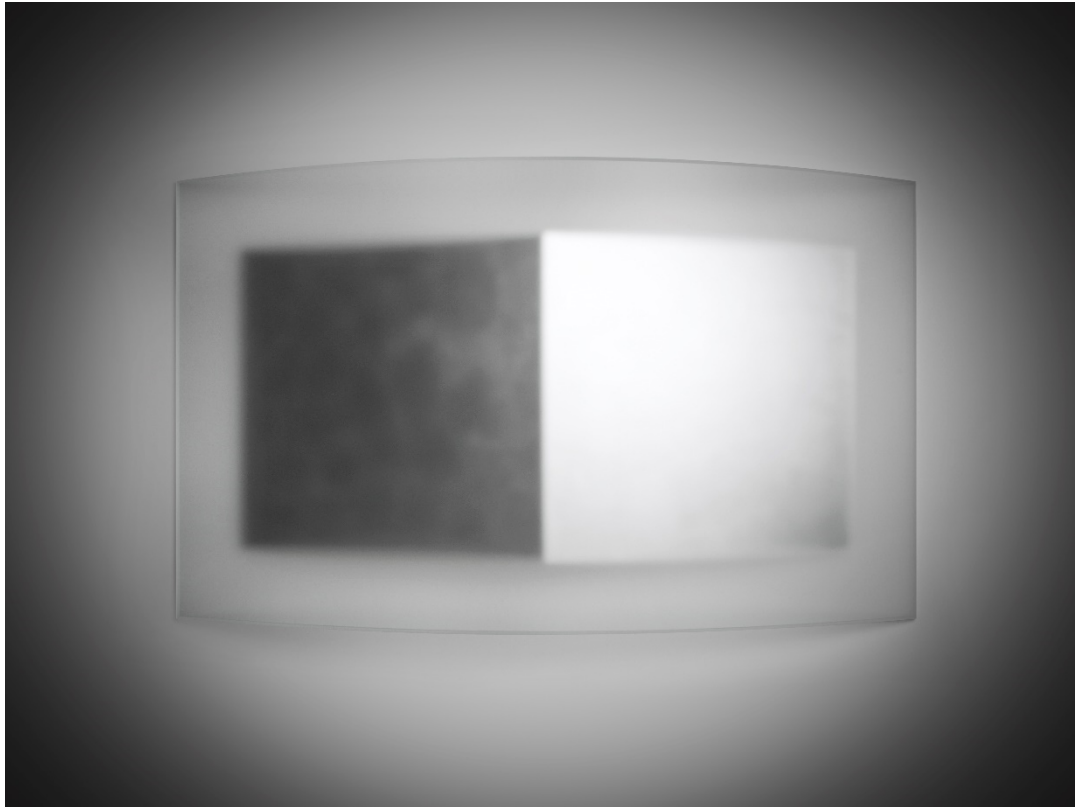
*Between All Things*, as its title infers, also represented my first attempts to directly adapt and embody the concept of ma. Japanese architect, artist and author Arata Isozaki 磯崎新 (b. 1931) stated that ma, "originally means the space between things that exist next to each other; then comes to mean an interstice between things- chasm."<sup>52</sup> The interstice dividing the two internal panels, which were originally joined as a single monolithic volume then cut apart, explored the inherent energy of ma as a focused negative space. Measuring only 5mm across, the fissure punctuated the luminous volume, and in doing so, dominated the perceptual field. The work and the title also alluded to the spaces, the infinite interstices which surround and define the physical world on a quantum level. *Between All Things* was exhibited at the *Revere* exhibition at Sabbia Gallery where it acquired by a notable curator. This work demonstrated that ma could stand as the primary focal point of a multidimensional image, and that through the orchestration of form and material application, the spirit of Tanizaki's philosophy of shadow and light could be translated into my studio practice.

I believe the work was also able to successfully embody the spirit of yūgen. The role of the diffusing screen was important in achieving this. The translucent grey glass not only diffused the light reflected by the palladium, but in gently obscuring the internal form, it lent its lucent volume a sense of intangibility and transience. It became an entity which was not fully concrete, perpetually remaining beyond the full grasp of the senses and the intellect. Even the surface of the grey glass

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<sup>52</sup> Arata Isozaki, *Japan-ness in Architecture* (Cambridge: The MIT Press, 2006), 94.

was difficult to perceive clearly, so that the entire work seemed to lie beyond the grasp of the senses. These qualities not only drew parallels to the characteristics of *yūgen*, they allowed the work to provide a tangible experience of it.



**Fig. 20. *Shift*, 62.5 cm x 105.5 cm x 13 cm, 2014 (Photo: RLDI)**

A subsequent wall-mounted work entitled *Shift* explored the role of light and shadow from a more oblique perspective. By changing the design and construction method of this new work, I eliminated the aluminium framing system used in the preceding work, allowing *Shift* to be more atmospheric and ephemeral in appearance. A single, convex sheet of translucent clear glass was adhered to a backing panel of translucent acrylic and capped on the top and bottom with curving sheets of translucent clear glass. This external shell encased a simple geometric form composed of two abutting acrylic sheets. The centre spine of the geometric form extended outwards 90mm from the backing panel, causing the two planes to rise from the backing panel at an 11.5° angle.

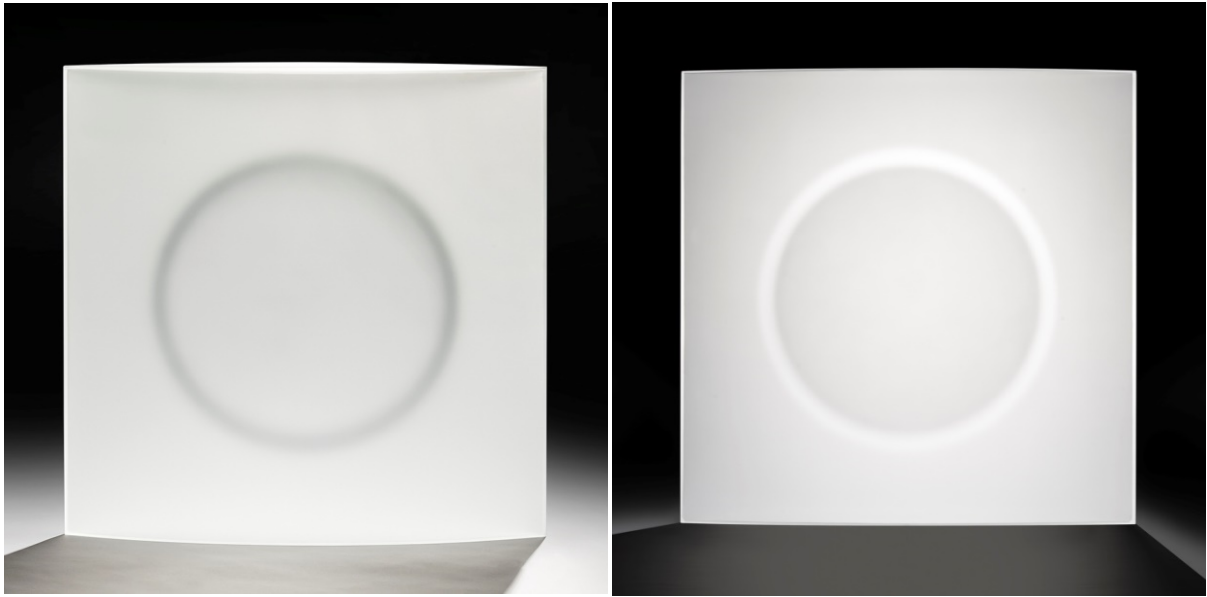
The design of the internal structure was intended to serve two purposes. The first and most significant was to create a bilateral surface to engage with light and shadow. Depending on the light's angle of encounter with the internal form and the lateral movement of the viewer, the illuminated and shadowed faces would flip axially. Therefore, a plane which had been cast in shadow

when the viewer stood on the left would become illuminated by ambient light as the viewer walked to the right. The opposing internal face would behave in a converse manner. This internal composition yielded a perceptually evocative exploration of light and shadow which was highly informed by the motion and perspective of the viewer.

The angled structure of the internal form was also intended to elicit a sense of movement, of a wedge driving forward in space. The centre spine of the form measured 10mm wider than the form's peripheral edges, subtly amplifying the perspective and the intended sense of motion. The form was gilded with highly reflective silver leaf. In the gilding process, I abandoned the strict grid of traditional architectural gilding and applied the leaf in a random, non-geometric manner. This application not only offset the strict geometry of the composition, it allowed light to reflect off the internal surfaces in a more natural, variegated manner. This effect, coupled with the ever-shifting internal play of light and shadow lent the work a sense of ethereality and transience, echoing the spirit of *yūgen* and *hikari to kage*.

*Shift* was shown in an exhibition at the Canberra Glassworks entitled *Absorb*, which was curated by Dr Olivia Meehan. *Shift* went on to be selected for inclusion in *New Glass Review*, an annual publication of the Corning Museum of Glass which juries works from international artists and designers, ultimately selecting 100 which are judged as being the most innovative works in glass created within the previous year. I believe that successfully testing the work in an exhibition context and having it selected for its aesthetic and conceptual innovation into an exclusive publication, these research outcomes further confirmed that not only were the aesthetic and perceptual experiences provided by the work effectively reaching critical audiences, but that elements of Japanese contemplative space could be successfully translated into the vocabulary of my arts practice.





**Fig. 21. *The Fullness of Empty*, 80 cm x 80 cm x 14 cm, 2014 (Photo: RLDI)**

**Fig. 22. *Pneuma*, 80 cm x 80 cm x 14 cm, 2014 (Photo: RLDI)**

I also produced two free-standing constructed works during this period of the research project. They were informed by new directions spawned from the research, specifically Tanizaki's *In Praise of Shadows*, images of the traditional Japanese circular windows called *maru-mado* 丸窓<sup>53</sup>, and the work of American light artist James Turrell (b. 1943), whose work, philosophy, and significant influence on my thinking will be acknowledged at several points throughout this chapter. Within these constructions, I sought to further examine the potential impact of compositions of light and shadow through the structuring of internal volume and void. I was also investigating the impact of various surface finishes applied to the glass substrate in order to alter its ability to transmit or inhibit the passage of light.

Both constructions were composed of two convex sheets of translucent clear glass which met on their vertical edges, sandwiching a third flat panel of translucent glass and suspending it within the central void of the work. These three sheets of glass were then capped with base and top panels of translucent glass, forming an enclosed monolith. The seams of the monolith were then sculpted and sanded to create a highly refined form. Similar to the wall-mounted works, the convex external panels of these constructions were sandblasted and hand-finished to diffuse the light passing through the work, and to obscure the internal image. The specific surface I applied to each work

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<sup>53</sup> Heinrich Engel, *The Japanese House: A Tradition for Contemporary Architecture* (Tokyo: Rutland, Charles E. Tuttle Company, 1964), 155.

allowed me to “tune” the degree of obscurity and play of light within the work. These constructions served as contemplative devices which explored the boundaries of perceptual liminality.

The first work, entitled *The Fullness of Empty*, addressed the concept of ma along with its investigation of hikari to kage. A thin 20 mm ring of inlaid grey glass defined the circumference of a 51 cm internal void which has been waterjet cut from the internal panel’s volume. This penumbral element and the emptiness it encompassed were intended to emphasise the “voidness” or absence inherent to ma. Perceived as a shadowed halo which arose and dropped out of view as the viewer circumnavigated the work’s elliptical form, the grey ring could also be interpreted as representative of the numeric zero, further emphasising the notion of the void.

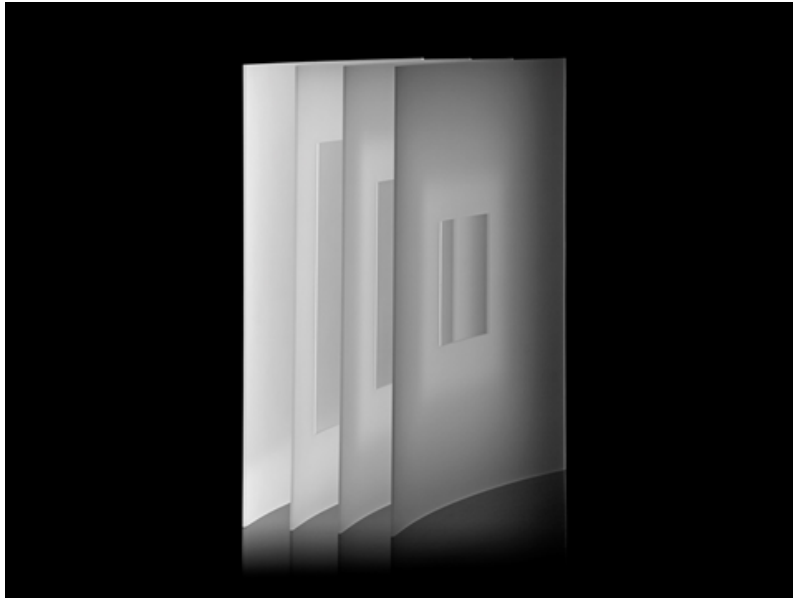
The second free-standing construction, entitled *Pneuma*, focused on the appearance of light through the creation of subtle shadow, and sought to investigate boundaries of visual perception. The internal panel of clear architectural glass bore no physical void but was diamond-engraved front and back with the exception of a fully transparent ring of the natural glass surface. The engraved surfaces inhibited the transmission of light to varying degrees, lending them a sense of shadowed volume. The greatest density of engraving was rendered upon the central circular volume. The transparent ring allowed light’s free passage, and therefore appeared to glow with much greater intensity than the rest of the light field when backlit. Conversely, when lit from the front, the ring would darken and be perceived as a penumbra.

*Pneuma*, the title of this new construction, referred to the term the ancient Stoics assigned to the life-force of the individual. “Compounded of air and creative fire, the Stoic *pneuma* was related to the “breath of life” that was thought to escape from the body at the time of death.”<sup>54</sup> The shifting, pulsing play of light and shadow attempted to embody an expression of this innate energy. The subtle variances between zones of light and shadow challenged the perceptual mechanisms of the viewer, while referring also to the ephemerality and intangibility of our own “pneuma”. And finally, the exclusive use of transparency and translucency to sculpt light and facilitate a nuanced perceptual experience represented a significant refinement within the material vocabulary of my practice. However, upon completing these two works, I realised that the constructive process would be problematic in relation to scale because of the sheer weight and fragility of large sheet glass compositions. I had reached the maximum scale that could be reasonably achieved using the constructive process and felt that a further increase in scale would be necessary to provide a truly immersive viewing experience and to relocate my work into the realm of sculpture and architectural installation. Furthermore, the necessary structural format of the constructions only allowed a single

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<sup>54</sup> Margaret J. Osler, ed., *Atoms, Pneuma, and Tranquillity: Epicurean and Stoic Themes in European Thought* (Cambridge: Cambridge University Press, 2005), 224.

internal panel and spatial layer, which posed significant compositional restrictions. I was forced to acknowledge that these inherent aesthetic and experiential limitations would negatively impact the development of my studio research if I continued to pursue the constructive process.



**Fig. 23. Layers of deconstruction (Photo: Hcreations)**

In response to this realisation, I began investigating how these works could be “de-constructed” into a series of physically independent layers. Not only would this allow a significant increase in scale, it provided me the opportunity to enrich the perceptual and experiential aspects of new compositions by adding additional layers of glass and therefore void, light and shadow. I believed this approach would yield an image of far greater physical depth and tonal nuance than the monolithic constructions, and one which I felt could ultimately have a greater experiential impact on the viewer.

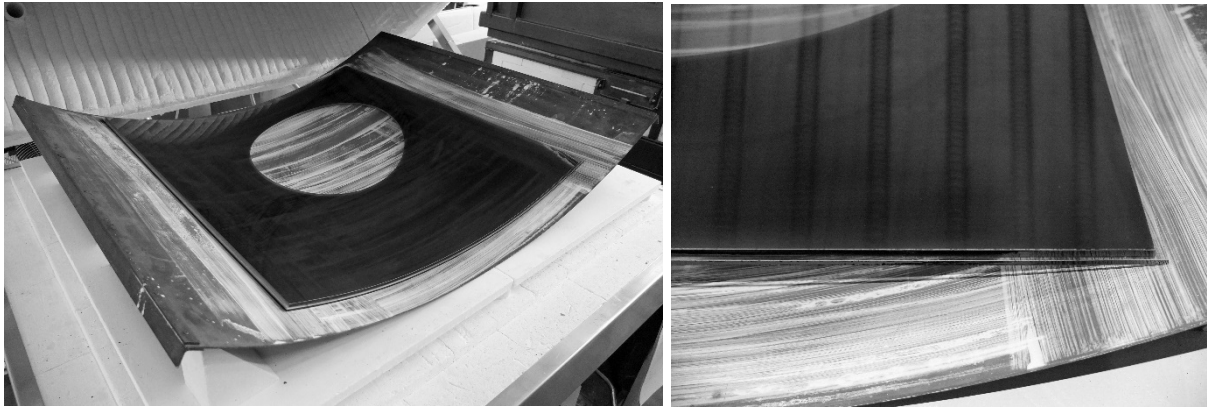
The initial deconstructions were composed of four independent, curved panels. The curvature of each plane allowed the panels to be freestanding and provided a sense of dynamic energy and spatial progression of the image. The front panel of each work served as a diffusing screen, which obscured and abstracted the composition, yielding an ephemeral play of light and shadow. The three subsequent panels each had a void cut from their centre, with the scale of each void decreasing from the front to the rear of each composition. The diminishing scale of the voids created a progressive gradation of shadow to light as layers of void and surface overlapped. Even in the initial tests, the multiple spatial planes provided a far greater degree of compositional and perceptual activity than

the single spatial plane of the constructed series. This new approach allowed the visual vocabulary and the experiential potential offered by my practice to evolve significantly.



**Fig. 24. *Square Void Sequence*, 50 cm x 50 cm x 15 cm, 2013 (Photo: Hcreations)**

The internal voids of the new layered-light works diminished progressively but retained an identical geometric form. By sequencing layers of voids, the compositions suggest a movement outwards towards a distant point or source, creating a sense of visual gravity intended to draw the viewer deeper into the work and into a contemplative state. They were reminiscent of the Hindu and Buddhist mandala and other physical contemplative objects utilised in meditative practice. Through the layered works, I attempted to create an abstracted visual expression of contemplative or even transcendent experience, with the intention that, through its recognition and engagement, a momentary parallel experience could be offered in a gallery setting.



**Fig. 25, 26. Slumping panel on a carrier sheet**

This series of work necessitated the development of new technical knowledge in my studio practice. The void within each panel was created using a waterjet cutter, which operates by navigating a series of two-dimensional vectors. This system dictates that voids can only be created while a sheet of glass is flat. However, once a void is created, the structural stability of the glass sheet is significantly compromised. Therefore, the panels had to be curved in the kiln once they were in their greatest state of fragility due to the voids. I was concerned that the structural integrity of the panel would be in jeopardy throughout the slow process of curving and that the sheet of glass would fracture under its own weight, or that its form would potentially distort due to the absence of a significant portion of its central mass. In order to alleviate these issues, I developed a method of utilising a “carrier” sheet of 4 mm float glass to support the primary sheet from beneath throughout the curving process. This allowed nearly every attempted kiln formation within this series to be executed successfully.

The void forms within each composition were chosen for their specific aesthetic and visual impact. The square void of the first work created a degree of visual “turbulence” or vibration when repeated at specifically scaled intervals within the composition. Coupled with the varying focal lengths and tonal gradations of the planes and voids, the diminishing geometric format contributed a significant element of perceptual activity and tension to the viewing experience. After delivering a presentation at the 2015 Ausglass conference in Adelaide, several colleagues approached me saying that the square composition, which had been projected at a monumental scale onto the auditorium screen, had affected them perceptually exactly as I had hoped. Their observation confirmed that the layered works were capable of delivering their intended experiential impact.

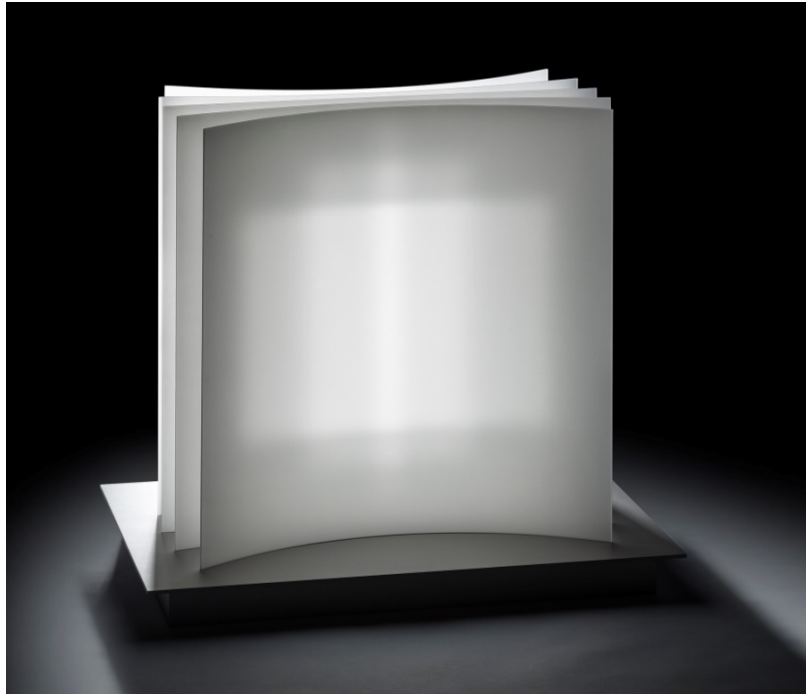


Fig. 27. *Permeation*, 60.5 cm x 65 cm x 50 cm, 2014 (Photo: RLDI)

The above work, entitled *Permeation*, was the most compositionally complex of the series. Five glass panels passed through a graduated sequence of concave through convex curvature. A sequence of three rectangular voids occupied the internal planes, receding from widest at the front to narrowest at the back. A rear diffusing panel was incorporated into the new composition to subdue the intensity of the light passing through the work, which I felt had made the image within the initial tests too vivid. The rear diffusing panel also alleviated the problem of light casting a sharp secondary image of the composition's open centre onto the front diffusing panel when backlit, thus disrupting the primary image. The internal composition of *Permeation* was a pastiche of impressions from traditional *shoji* screens observed in situ across a wide range of Japanese interiors.

This work also served as an exploration *ma*. Here, *ma* was expressed by the flowing intervals separating each panel and the rectangular voids punctuating the composition. I intended that *ma* would be clearly embodied within the ephemeral, lucent interstice at the composition's centre. The curvature of the panels was designed to subtly articulate the centralised shaft of light employing a mechanism similar to that which had been utilised in the earlier wall-mounted work, *Between All Things*. By diminishing the distance between the diffusing panels and the focal point, the shaft of light is drawn into greater focus than the rest of the compositional field. *Permeation* represented a significant advancement in the compositional enrichment of my practice and represents a theme which I hope to revisit at an architectural scale in the future.

An aluminium base supported each of the panels within the composition. Whereas the curving panels of the initial test were able to remain precariously free-standing, the flat central panel of *Permeation* and the general integrity of the work in an exhibition setting dictated the addition of a base. I have sought to avoid the use of bases or stands within my practice for some years now, as they are very common within the realm of “sculptural glass”, and I have observed that they often diminish the overall impact of artworks. Therefore, I attempted to design a support system which was as unobtrusive and sympathetic to the composition as possible. Fabricated by Canberra artist Sean Boothe, the base was composed of a single horizontal plate of aluminium bearing a series of curving channels which were cut to match each individual panel. The horizontal plate was elevated by an aluminium box which stood 50 mm tall and was recessed 50 mm on all sides from the dimensions of the horizontal plate. This cast the box in shadow, giving the base the appearance of a floating plane. This was designed to minimise the visual impact of the base while further employing the elements of shadow and ma to the overall composition.

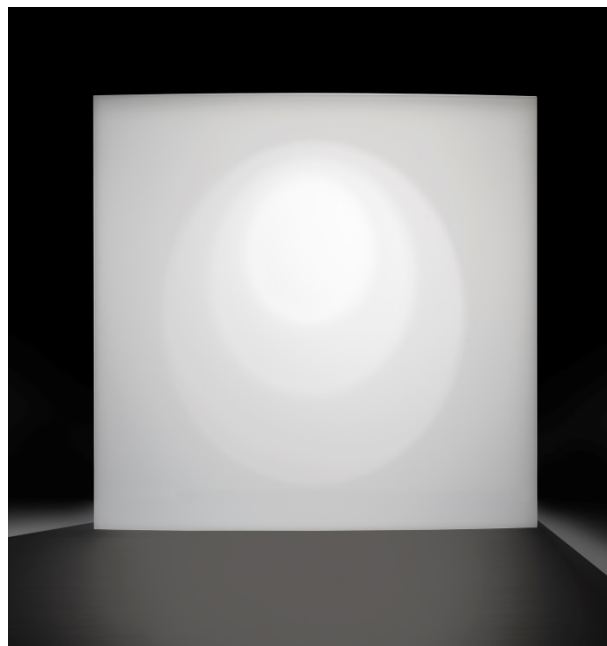


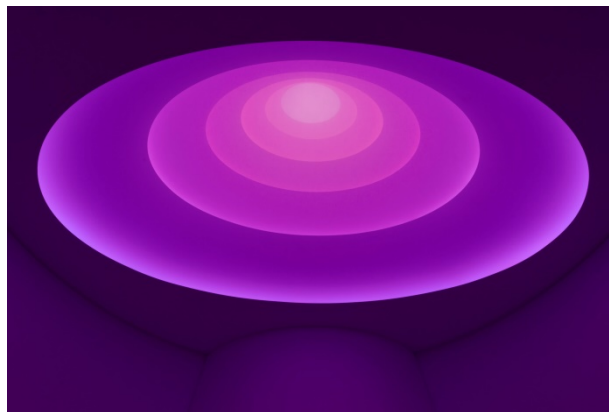
Fig. 28. *Breathe*, 80 cm x 80 cm x 30 cm, 2014 (Photo: RLDI)

I subsequently produced a work entitled *Breathe* which revisited concepts I have explored independently throughout my professional practice: the aesthetic representation of the breath, sound and energy. *Breathe* sought to consolidate these concepts into a single composition while working with the new elements of *yūgen*, *ma*, and *hikari to kage*. The work was constructed of five panels, which by this point, I had identified as the most effective composition. This allowed for front

and rear diffusing panels and three internal spatial layers while still standing as a well-proportioned object.

Following the relative complexity of *Permeation*, the overall composition of this new work was greatly simplified, with each convex panel formed and spaced identically, and the internal layers bearing three staggered elliptical voids. The voids retained the same form but were amplified in scale from the rear towards the front of the work. The position of the voids was designed to rise away from the centre of the work and the viewer's eye line. This was intended to lend a sense of elevation or even transcendence to the viewing experience, invoking a sense of *yūgen*. However, the composition could also be read as expanding downward from the most narrow, lucent point like a beam of light, a great exhalation, or a mantric utterance.

*Breathe* was exhibited on a customised plinth. While not pictured in the above image, the plinth was designed to support the five panels in a manner identical to the base of *Permeation*. Composed of MDF and painted the white of standard gallery plinths, it was intended to simultaneously display and secure the work throughout an exhibition at the Canberra Glassworks while negating the visual impact of an autonomous base. Towards this end, this method of display was successful, although I hope in the future to eliminate the need of bases or plinths through an increase of scale and change of context which allows works in this series to be incorporated into the architectural fabric of a space.



**Fig. 29. James Turrell, *Aten Reign*, 2013**

*Breathe* aesthetically referenced the ellipses of James Turrell's 2013 Guggenheim installation *Aten Reign*, a massive installation which occupied the iconic central void of the New York Guggenheim. Turrell's work has been formative since I first encountered his installation *Trace Elements: Light into Space* at the Denver Art Museum in 1995. It was this work in which I first encountered the potential of art, and specifically light, as mediums of transformation and even revelation. According to



Guggenheim Associate Curator Nat Trotman, *Aten Reign* “was intended to create a contemplative or meditative atmosphere.”<sup>55</sup> Turrell was clearly successful in this intention as visitors lay upon the floor and lined the atrium’s spiralling ramp, bathing in chromatic washes of light.

The scale of *Aten Reign*, and the impact which Turrell’s use of monumental scale consistently lends to experiences of his work is undeniable. Familiarity with Turrell’s artistic output over the past half-century clearly underpins the significance of scale in the creation of immersive viewing experience. Revisiting Turrell’s work after a deep engagement with Japanese aesthetics forced me to consider the potential significance of scale within the immersive experience I sought to provide for the viewer. Comparing the impact of viewing *Aten Reign* and *Breathe* forced me to consider that fact that my primary medium of glass, and the technical processes I have chosen to work with carry inherent scale limitations at this point in my career. My reengagement with the work of Turrell at this point of the research project emphasised the need to seek creative solutions to address the significance of scale in the provision of immersive experience.

Reflecting further on Turrell’s work in relation to my own, I also realised that the architectural glasses which I utilised in my practice offered expressive and experiential opportunities which Turrell’s often artificially illuminated spaces could not. Glass can exhibit the subtle and often unexpected interactions of light and shadow within translucent layers. The application of natural light to vitreous, translucent strata can powerfully convey the intangibility, transience and even profundity of a theme such as *yūgen* with great success. Although Turrell’s application of chromatic light is intended to implicate the viewer’s awareness of perception itself, I believe the visually stimulating effects he produces through advanced lighting technology often compromise the purity of experience on offer. In my opinion, if *Reign* was executed using only shifting intensities of white light, or ideally with natural ambient lighting, Turrell could have orchestrated a profound play of light and shadow capable of delivering an even more transformative contemplative experience than he was able to with bold washes of magenta, violet and cyan. I believe that the use of pure light and shadow, as evidenced within both the powerful Japanese spaces I have experienced and within the findings of my own studio research, offers a powerful depth of experience and a kind of elemental truth which has become perhaps frequently overlooked in much contemporary art and architecture.

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<sup>55</sup> “James Turrell”, Guggenheim.org, 3:29, 21/6/13, <https://www.guggenheim.org/video/james-turrell>

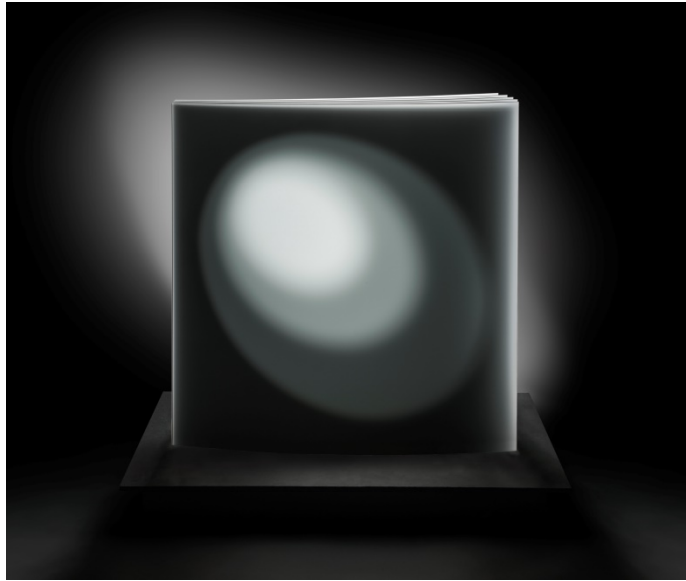


Fig. 30. *Sombra*, 85 cm x 88 cm x 51.5 cm, 2015 (Photo: RLDI)

The final work of the layered light series, entitled *Sombra*, evolved directly from my analysis of *Breathe*. In my estimation, *Sombra* clearly exceeded other works in this series aesthetically and in experiential outcome. Translucent grey glass was employed, evoking a far greater experience of shadow, and therefore, light. This change was owed directly to the writings of Tanizaki and my observations during fieldwork in Japan. I have strayed from the exclusive use of clear glass few times in the history of my practice, believing that purity and quantity of light was of paramount importance. Tanizaki's espousal of shadow as the primary enabler of light's true perception was pivotal in prompting the exploration of this new aesthetic direction.

Conceived as a beam of light unfolding through darkness, the cascading ellipses of *Breathe* were retained but rotated forty-five degrees to cut diagonally across the composition like a crepuscular ray cast from a tempestuous sky. *Sombra's* identically curving panels unfolded asymmetrically like an opening book, with spacing between the panels on their right vertical edge greater than on the left. This compositional structure contributed a dynamic quality to both the internal negative spaces and external form. However, the primary intention behind the panels' configuration was to intensify the light transmitted through the primary aperture at the upper left of the composition and to visually sharpen this area by diminishing the distance between the aperture and the diffusing panels. Conversely, the increased spacing between panels at the right of the composition allowed the light and the image to gently diffuse back into darkness as the voids grew in size. With its off-centre focal point and asymmetric structure, *Sombra* represented a significant step forward for the aesthetic vocabulary of my practice. These innovations directly resulted from new comprehension of the

Japanese philosophy of shadows, and of asymmetry as perhaps a truer and more natural means of expression than strict symmetry.

*Sombra* was exhibited on a black, anodised aluminium base. Its structure was a simple, five centimetre tall monolithic box. I returned to the use of an independent base rather than the previous customised plinth due to the impracticality of shipping a sizeable plinth to multiple exhibition venues. I also opted to simplify the base design to achieve a more aesthetically neutral in relationship to the work than the base designed for *Permeation*. This solution achieved a good balance of functionality, transportability and minimal aesthetic impact.

The critical reception received by *Sombra* supported my belief that it was indeed the most aesthetically and experientially successful of the layered-light series. It was selected as a finalist for both the 2016 *Tom Malone Prize* hosted by the Art Gallery of Western Australia, and the inaugural *Hindmarsh Prize* hosted by the Canberra Glassworks. Perhaps more significantly, *Sombra* was also selected for inclusion in *New Glass Review*. Each of the three judging panels was populated by multiple curators representing a range of arts institutions and areas of curatorial focus. Their professional acknowledgement of *Sombra* indicated that within this zone of the studio investigation, the findings of the research and the resulting creative output have achieved the intended goals of the research project. I believe that within this series of work, these outcomes affirmatively answer the primary research questions which asked if the elements of Japanese contemplative space could be assimilated into the outcomes of my studio practice, and if they could continue to provide meaningful contemplative experience within a new context.

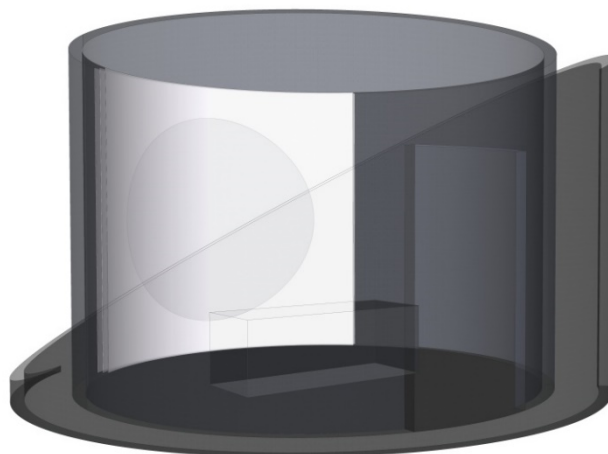
## Immersive Environments

*What takes place in viewing a space is wordless thought. It's not as though it's unthinking and without intelligence; it's that it has a different return than words.*<sup>56</sup>

-James Turrell

In the following section, I discuss my decision to move the focus of studio research beyond the realm of object-based outcomes and towards a more direct engagement with contemplative experience through the examination of immersive environments. Several key factors led to my pursuit of constructed immersive environments within the scope of the research project. The primary motivators were my desire to facilitate truly immersive contemplative experience through encounters with my work, and my belief in the critical role of scale in successfully providing this immersive experience. The previous series of works in glass successfully embodied the elements of *yūgen*, *ma* and *hikari to kage*, and were providing contemplative viewing opportunities. However, I believed that their scale was diminutive relative to both the architecture I was encountering and large-scale installations and sculpture that I am generally drawn to, and the scale of “object” was inhibiting the provision of truly immersive contemplative experience.

I had also begun considering the possibility of constructing optimal viewing environments during the development of the previous layered-light series. There, I found my work continually compromised by the artificial lighting of the gallery context. My desire to expose the work to the transformative possibilities of natural lighting scenarios grew. During this period, I began to actively seek out solutions to the challenge of optimally lighting my work.



**Fig. 31. Sketchup rendering of immersive space, 2014**

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<sup>56</sup> Markus Brüderlin, “The Innerworld of the Outerworld of the Innerworld,” in *James Turrell: The Wolfsburg Project*, (Berlin: Hatje Cantz 2010), 141.

The early attempts of designing immersive space were comprised of environments conceived to house large-scale versions of the layered-light compositions and were designed using Sketchup. These spaces were clearly influenced by my experience of Ando's monolithic, curving volumes. They were also directed by the viewing scenarios commonly offered within Turrell's work, wherein a space is designed around a single focal point. Like Turrell's *Skyspaces*, these concepts were also driven by the illuminating role of natural light. This necessitated that the spaces be constructed outdoors, and I envisioned that, like the work of Ando, they would be realised in concrete with large-scale glass panels glazed into the circular form of the structure.

However, working with concrete at a large scale posed obvious financial and logistical challenges. In response, I began exploring the possibility of installing the compositions into existing structures as a kind of architectural intervention. I envisioned repurposing water tanks or grain silos, whose round form and unexpected context could perhaps address construction and light issues while adding experiential and contextual layers to the experience of the work and the space.

In considering these spaces, I became concerned that the average viewing time of a mere seventeen seconds<sup>57</sup> which is generally dedicated to engaging with an artwork wouldn't allow the viewer to witness the compositional transformation occurring as the sun traversed the sky. I too have sped by countless works of art but have also spent hours with others. The rise of Slow Art Day, which was founded in 2009 by Phil Terry and encourages visitors at participating art venues to spend ten minutes with each of the five selected works of art before a group discussion<sup>58</sup>, signals the growing desire of art viewers to spend more time engaging with artwork. It is also said that this movement, "involves heightened attention to the experience of time unfolding."<sup>59</sup> I found this intention directly reflected the notions of transience which have been discussed in relation to *yūgen*. I therefore began considering the idea of creating a slowly rotating viewing space which could allow the shifting solar perspective to actively transform the composition in a perceivable way over the course of approximately ten minutes.

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<sup>57</sup> Jeffery K. Smith and Lisa F. Smith, "Spending Time with Art", *Empirical Studies of the Arts* 19 (2001) p. 231.

<sup>58</sup> "Slow Down, You Look Too Fast," Trent Morse, ARTNews, 01/04/2011, <http://www.artnews.com/2011/04/01/slow-down-you-look-too-fast/>

<sup>59</sup> "Is 'Slow Art' the Next Big Art Movement?", Ben Davis, artnet news, 25/08/2017, <https://news.artnet.com/art-world/is-slow-art-the-next-big-art-movement-1061195>



Fig. 32. Tearoom detail



Fig. 31. Tearoom detail, Kyoto, 2015

During this same period of research, I visited a number of traditional Japanese tearooms while conducting fieldwork. I was struck by the ability of these intimately-scaled spaces to facilitate profound contemplative experience. Many tearooms are entered by bowing to crawl through a low door, or *nijiriguchi* 躡り口, designed to necessitate “humbling postures intended to induce humility and openness.”<sup>60</sup> This mechanism inherently recontextualises one’s perception of the self relative to the environment and the unfolding experience of the tea ceremony. I was also moved by the exquisite and restrained use of primarily natural materials within the tearooms and the way in which the aesthetics of the space directly informed one’s experience. “The materials used in its construction are intended to give the suggestion of refined poverty. Yet we must remember that all this is the result of profound artistic forethought... The simplicity and purity of the tea-room resulted from emulation of the Zen monastery.”<sup>61</sup> This emulation of the Zen monastery moved far beyond aesthetic likeness, ultimately facilitating a nearly-religious experience of contemplation.

My own experience of these spaces and resultant avenues of research significantly recalibrated my conceptions of contemplative space and impacted my aesthetic predispositions. I began understanding that a space didn’t need to be monumental in order to have tremendous impact on the viewer. I found new value in natural materials and their inherent surfaces and textures which I had previously neglected to appreciate. I also began to consider the atmosphere of a space as being

<sup>60</sup> Thomas Barrie and Julio Bermudez, *Architecture, Culture and Spirituality* (Ashgate: Surrey, 2015), 207.

<sup>61</sup> Okakura, *The Book of Tea*, 48-50.

capable of providing contemplative experience, rather than relying on the orchestrated focal point of an artwork to provide consequential experience. These revelations which were inspired by the Japanese tearoom led directly to the development of a new creative direction.

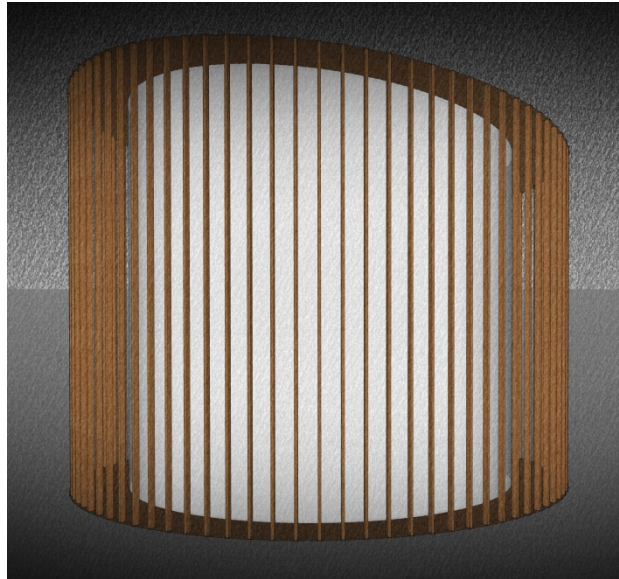


Fig. 32. Sketchup rendering of *Hikare to Kage space*, 2015

Inspired by a breadth of traditional and contemporary tea room design, I conceived of a cylindrical structure composed of timber and washi paper which was designed to house light and shadow. The work was intended to provide immersive contemplative experience through an engagement with the abstraction of light and shadow in order to recontextualise physical space, while concurrently reflecting upon the transient nature of existence through the observation of time's passage via continually shifting light conditions. The structure was designed to stand four metres in diameter, three metres tall at its peak, and featured an eleven-degree mono-pitch roof. With the entry of the space located beneath the roof's nadir, the pitch was designed to lend a sense of perceptual and experiential elevation upon entrance. The internal space measured three metres in diameter, representing the four-and-a-half *tatami* 畳 mat footprint of the traditional tea room expressed in the round. The façade of the structure was comprised of seventy-two vertical timber beams, rendered with either a dark stain or blackened using the *shou sugi ban* 焼杉板 technique, referencing the traditional "charred cedar used for siding to make it fire-resistant,"<sup>62</sup> frequently encountered in Japanese architecture.

The timber members were angled, their orientation radiating from the centre of the space. I envisioned that the beams would create a rhythmic façade which would shift from solid to

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<sup>62</sup> James Steele, *Contemporary Japanese Architecture* (Routledge: New York, 2017), 269.

permeable, opaque to translucent, as the beams along the structure's perimeter visually converged to form a solid skin, while the midsection of the façade opened, offering visual access to the lantern-like washi cladding of the internal space. As visitors circumnavigated the structure, the perpetual "unfolding" of the beams would visually activate the façade. This effect would cause the space to appear as though it was slowly revolving, while alternately revealing and concealing the lucent, cylindrical internal space. This would allow a significant and dynamic aesthetic encounter with the external structure as well as the internal space.

I envisioned that the internal space wouldn't feature a primary focal point as my first spatial designs had, but rather, would provide a continually evolving ambient experience. A void of forty centimetres separated the timber beams from the washi membrane. Sunlight filtering through the permeable timber façade would cast an abstracted, rhythmic composition of light and shadow onto the translucent layer of washi. This adumbration would offer the only observable trace of the external structure from the inside. To further heighten and abstract the immersive atmosphere of light and shadow, I envisioned using a double membrane of translucent washi with a ten-centimetre internal gap to form the internal skin of the viewing space. This would cause subtle, offset duplications of the shadows' patternation as they wrapped and distorted along the curving membrane, yielding complex gradations of light and shadow. The virtual matrix of shadow and light would transform throughout the day as the sun traversed the sky, offering visitors a heightened experience of the passage of time, and affording them an opportunity to reflect upon their own place within this temporal continuum.

Furthermore, I envisioned that the space would slowly and continually rotate in order to allow the play of light and shadow to evolve perceptibly, completing one revolution every ten minutes. This rate would allow the interior environment to remain in a state of continual visual flux while hopefully not disrupting the well-being of the visitor. I have experienced discomfort while dining in a revolving restaurant and was aware that if the project was to proceed to construction, the rate of revolution would have to be fine-tuned to allow the perception of transformation while maintaining a serene viewing environment. The slow revolution of the structure would also allow a static external observer to perceive the façade's visual activation, rounding out the aesthetic autonomy of the concept.





Fig. 33. *Kinkaku-ji*, Kyoto, rebuilt 1955



Fig. 34. Yoshio Taniguchi, *DT Suzuki Museum*, Kanazawa, 2014



Fig. 35. *Toro nagashi*, Matsue

Allowing myself to develop the concept unencumbered by the constraints of feasibility, I envisioned the structure floating on a body of still water. Several powerful examples of Japanese architecture exist which were purposefully erected in close proximity to bodies of water, and the visual and psychological impact is undeniable. Kinkaku-ji 金閣寺 in Kyoto and the D.T. Suzuki Museum in Kanazawa, designed by Yoshio Taniguchi 谷口 吉生 (b. 1937), are two such sites which powerfully utilise the reflective properties of water to amplify their presence and enrich their offered experience. The image of the *tōrō nagashi* 灯籠流し, or floating lantern ceremony, was also referenced in this aesthetic decision. I envisioned a lantern of timber and washi, gently lit, slowly rotating on water at night. In daytime, a meditation of shadow, light and time awaited the viewer.

The structure could be experienced as both an immersive contemplative environment when experienced internally and a monumental contemplative object when apprehended externally.

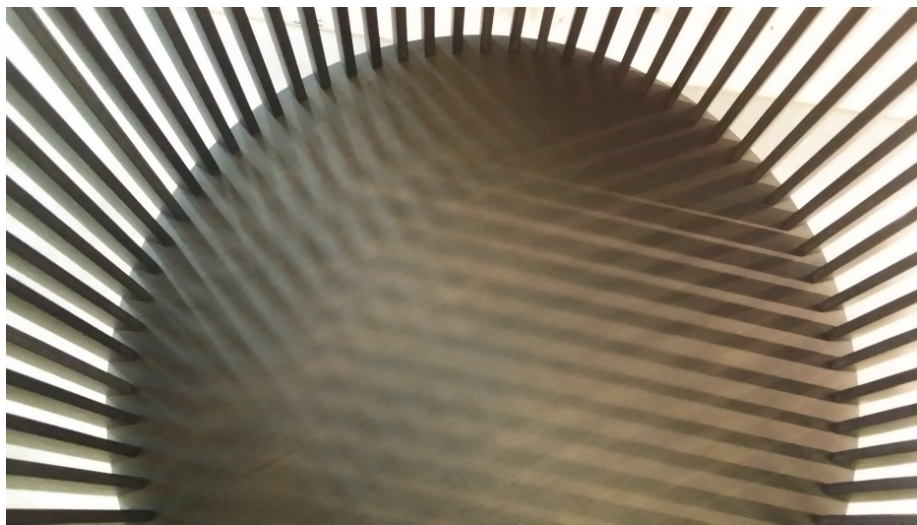
I believe this design, both internally and externally, reflected the spirit of the identified fundamental elements more directly and completely than any previous work of the studio research. The driving experiential element of *yūgen* would be manifest through the experience of profundity, transience, and even a wistful melancholy within in this evanescent immersive environment. The element of *ma* served as the spatial organiser determining relationships between void and volume in the rhythmic spacing between the façade's timber beams, in the void separating the façade and the internal viewing space, in the interstice between *washi* membranes, and the resulting wash of shadows upon shadows and light upon light. The more liminal aspects of *ma* were reflected in the experiential atmosphere of the space itself. As viewers entered this floating world, they would temporarily occupy a space distinctly outside of the world which they inhabit, yet one which directly echoes its substance and transitory nature. And finally, engagement with these elements within the field of experience would be primarily enabled through the fugacious and diaphanous atmosphere of *hikari to kage*.



**Fig. 36. *Hikare to Kage* maquette, 50 cm x 63 cm x 63 cm, 2015 (Photo: RLDI)**

After working through a series of design iterations in SketchUp to determine the ideal dimensions, number of timber members and roof pitch, I constructed a 1:6 scale model using stained plywood. This allowed me to test the play of light and shadow and begin developing an understanding of the challenges posed by full-scale construction. I employed the assistance of two local businesses to fabricate elements for the model. The foundation and roof were LaserJet cut by Plastic Creations,

who also routed the roof recess designed to capture the translucent acrylic ceiling. ACT Board Cutting Services cut identical strips of timbre which eventually became the vertical façade beams. The greatest constructional challenge lay in the interface between the vertical beams and the pitched roof. Each beam needed to be cut to unique dimensions because the roof was an angled ellipse. Using the SketchUp model, I measured, plotted and hand-cut each angle. The virtual model also allowed me to calculate and plot the exact placement of the beams. All of the components were darkened with a hand-rubbed Black Japan stain prior to assemblage. The model was then carefully constructed with glue and nails. The washi membrane of the internal space was simulated using a single layer of translucent polypropylene.



**Fig. 37. Interior patternation of light and shadow, 2015**

The anticipated play of light and shadow became apparent as soon as I began affixing the vertical beams to the floor section, and immediately exceeded my expectations. During the construction, my workspace was illuminated by numerous light sources, both natural and artificial. The multiple points of illumination created a palpable and variegated atmosphere of shadow and light. Placing the work-in-progress on a lazy susan and slowly rotating the structure, the rhythmic, continually transforming patternation of light and shadow was mesmerising. Although I had envisioned that the space be illuminated exclusively by solar light, I quickly began to imagine the effects which could be achieved of more complex lighting scenarios. However, if visually manifesting the passage of time was my primary intention, multiple sources of illumination could impose conceptual contradictions. However, the degree to which the atmosphere of shadow and light was activated and abstracted prior to installing the internal membrane strongly reinforced my belief that the patternation viewed upon the washi surface and emanating into the internal space could be truly spectacular.

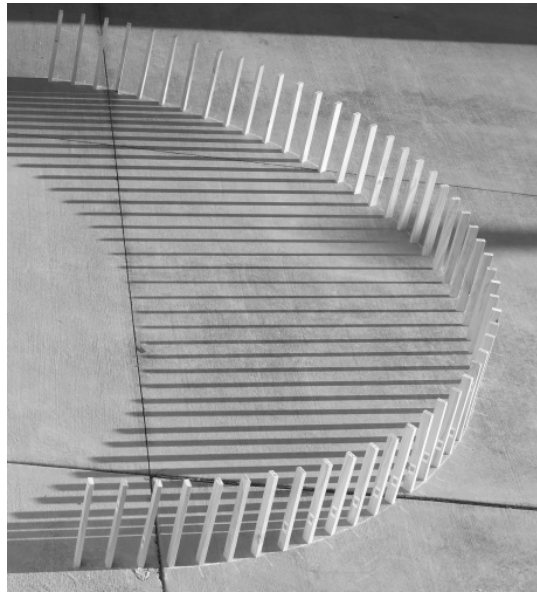
Upon completion of the model, I began field testing specific aspects of the concept. I installed the model outside at sunset when light encountered the façade at the most direct angle. Placing a video camera at the centre of the internal space and rotating the model on a lazy susan, I recorded a series of videos to simulate and study the experience I ultimately hoped to offer. The video was visually engaging, and confirmed the patterning of shadow and light that I had envisioned to a significant degree. However, I realised that the viewer, traveling in conjunction with the rotating space, would face away from the light source and area of greatest patterning for the majority of each revolution. Therefore, the floor of the internal space would need to remain static while the façade rotated to allow continual observation of the dynamic shift of light and shadow, thus adding a further layer of complexity to the realisation of the project at full scale.



**Fig. 38. Maquette in situ, 2015**

Concurrently, I had developed a simple flotation mechanism of 50 mm closed-cell polyethylene in order to test and document the model on water. Placing the work within the ideal, water-borne setting allowed me to study the behavior of the structure on water and observe the aesthetic impact lent by a natural, reflective environment. This exercise allowed me to begin determining if the benefit of the setting would outweigh the inherent and substantial technical challenges presented by constructing a floating structure. It also allowed me to begin troubleshooting basic issues that

would arise if a full-scale space was to be built on water, but to a limited degree as the construction and logistics would be entirely different at full-scale. I received permission to document this process on the property of the late Stephen Proctor (1946-2001), former head of the Glass Workshop at the ANU. This idealic and personally meaningful setting emphasised the aesthetic and experiential richness that a water-based setting would contribute to the work.



**Fig. 39. Timber façade test, 35 cm x 300 cm x 300 cm, 2015**

Having developed a greater understanding of how aspects of construction could be approached, the challenges it would clearly pose, and the type of setting I believed the space needed to inhabit, I began testing aspects of the work at full scale. I investigated the ideal timber profile for the façade beams and subsequently determining the ideal number of beams and spacing between them. Subsequently, I modeled a truncated, semicircular section of the façade to confirm that the ratio between timber and void yielded the intended visual effects. Again, this process revealed aspects of the work and new possibilities I hadn't foreseen. Having erected the façade section outdoors, the effect of the shadows immediately drew correlations to sundials and early methods of timekeeping. This connection, in conjunction with the aesthetically beautiful, minimal work which resulted, suggested possibilities for future time-based works. As seen above, the shadows also demonstrated that the timber beams would create zones of opacity and transparency as I had intended.



**Fig. 40. Interior space model, 3000 cm x 3100 cm x 3100 cm, 2015**

I also roughly modeled the internal space at full scale to test whether the intimacy of the established dimensions would allow an optimal viewing experience, or cause visitors to feel claustrophobic. A length of steel strap was rolled on edge to the approximate three metre diameter dimension the internal space and reinforced with eight steel “spokes” to rigidise the structure enough to safely suspend it overhead. Three D shackles were welded onto the frame, allowing it to be suspended inside the hotshop of the Canberra Glassworks. The circular form was then hoisted by pulley to the correct height and pitch of the envisioned structure. A translucent textile was suspended in sheets from the frame to simulate the washi membrane of the internal space. While the resulting space was clearly a rough approximation of the space I planned, I felt that the designated width, height and pitch would create an effective viewing environment.

At this point, I had determined that a full-scale version of the circular space would be constructed for my final exhibition. I began seeking the advice of specialists external to the ANU in order to assess the construction methods, materials, and ultimately, the cost of building the space. I first met with Zeljko Markov, a highly respected fabricator and local artist who is regularly engaged by many of the major arts organisations in Canberra to construct and install exhibitions. We discussed potential construction methods, materials, and the challenges posed by the timber structure. Zeljko advised me that it would be difficult to maintain the necessary clean lines of the structure while working with such long spans of timber in a load bearing capacity. However, he believed that other aspects of the project, including producing the 72 unique angles of the timber members, were achievable. Zeljko advised that I consult a structural engineer before proceeding further with the

project to procure specific advice regarding the load-bearing ability of certain profiles of timber, and the overall feasibility of the project.

I met with John of John Skurr Consulting Engineers, who was recommended because of work he had done on large-scale projects for numerous Canberra artists. He advised that rectangular steel tubing, rather than timber, would be the most viable material choice from both structural and financial perspectives. He then determined the material composition and construction method of the roof to establish the load bearing values of the vertical members. We discussed potential installation sites in order to determine the appropriate “vandal load”<sup>63</sup> value. This term refers to the likelihood of a “intentional dynamic human loads” being applied to the structure based on the envisioned public access to and security of the installation. Vandal load essentially estimates the likelihood of a given structure in a specific location to encounter unforeseen and potentially damaging human forces. This value, coupled with structural load bearing demands, allows an engineer to determine which building materials offer the minimum acceptable structural strength in order to keep construction costs as low as possible. A series of mathematical formulas subsequently allowed John to calculate that materials and fabrication of the external structure alone would cost approximately \$20,000.

I left the meeting with two distinct impressions. First, the significant cost of construction would be prohibitive due to the self-funded and short-lived nature of the project. I would be more willing to accept the financial risk if I knew that the space would have a life beyond the few days of the final examination and exhibition and could be potentially be purchased and permanently installed in an appropriate location. However, the scale and exploratory nature of the project moved well beyond the gallery and collector resources I have established through my previous studio practice. I therefore determined that taking such a significant financial risk with my first constructed space would be irresponsible on both a professional and personal level.

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<sup>63</sup> Elsa Caetano, Alvaro Cunha and Carlos Moutino. *Journal of Bridge Engineering*. Volume 16, Issue 3, May 2011. [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)BE.1943-5592.0000154](http://ascelibrary.org/doi/abs/10.1061/(ASCE)BE.1943-5592.0000154)



Fig. 41. Tadao Ando, *Chichu Art Museum*, Naoshima, 2014



Fig. 42. Tadao Ando, *Komyo-ji*, Saijō, 2015

The second impression emerged from the structural engineer's emphatic advice that steel rather than timber would be the most appropriate building material. This forced me to begin assessing the impact of specific materials on the aesthetics and experience of a space much more acutely. I returned in my mind to the spaces I had visited in Japan during the course of my research trips and imagined them composed of alternative materials. A centuries-old temple or tearoom, hypothetically constructed in steel rather than timber, even with identical floorplan and aesthetic features, would result in an entirely different visceral experience for the visitor. As I imagined these spaces, rendered with the unyielding rigidity and density of steel, they lost their warmth and simple austerity, and becoming oppressive and foreboding rather than contemplative. I recalled the immense contrast between my experience of Ando's concrete Church of Light and his timber temple, Komyo-ji 光明寺. His concrete space approached the otherworldly, stark, nearly perfect and overwhelming, echoing with the strength and dominance of its primary material. It seemed to embody absence and spoke most powerfully through its sheer asceticism, housing only light and shadow. On the other hand, Ando's timber temple was warm and light, benevolent, with the smell of cedar infusing the space, and the sound of even one's breath dampened by the beams and rafters. Two types of architectural space, conceived by the same mind and serving sympathetic purposes, could not have been more contrasting in experience, primarily because of the materials employed in their execution.

I applied these observations to a thought experiment visualising of the circular space constructed of steel tubing rather than solid timber beams. I found that while the primary activity of light and shadow which I envisaged would remain largely unchanged, one's experience of the overall structure would be greatly altered by the use of steel. It would lose the haptic and visual tactility of



the timber, becoming rigid and unyielding. The sonic footprint of the space would change, and I believed its visual and experiential resonance would be adversely impacted. Although steel offered significant economic and structural advantages, the aesthetic and experiential compromises it entailed negated it as a viable alternative to the timber.

These realities meant that within the scope of my PhD project, the circular space lay outside the realm of possibility. With this realisation, I experienced a sense of significant disappointment in the days following the meeting. I had invested so much time with the concept in my mind that it had become a tangible space to me, and one which I was certain would come into existence. However, I soon acknowledged that the process of forced re-evaluation would allow me the freedom to begin exploring new materials which could offer alternative structural and creative solutions.

I began by re-examining the aesthetic and conceptual qualities of translucent clear glass which have driven me to continually utilise it in my practice for two decades, and analysed the ways in which I have found these characteristics correlate with the aesthetics of Japanese contemplative space. I also questioned why I had intended to work with translucent washi paper as the internal membrane of the circular space, and recalled the effects I had seen achieved with washi on my research trips in Japan. I realised that I was drawn to both materials by three shared characteristics. The first was the ability of both materials to serve as a vehicle for light, a means of rendering light tangible and lending it physicality, providing a medium through which to observe its continual transformation. The second characteristic was the material's capacity to serve as the skin of a form or space while perceptually dematerialising its structure, instantly rendering solid form lucent and ephemeral. Finally, I was drawn to the ability of both materials, when serving as a skin, to veil and abstract concrete visual information situated behind or within the skin, thereby elevating the internal imagery from the realm of the concrete and literal to the realm of the intangible and the implicit.

This investigative process of defining the aesthetic and conceptual characteristics of glass and washi, while simultaneously recalling the projected experiential outcomes facilitated by the vertical beams of the circular space helped me to further define the emerging intentions of my work. This process also clarified the aesthetic and experiential outcomes I was seeking to achieve within the research project and final works for examination. I sought to provide a contemplative encounter with *yūgen*, *ma* and *hikari to kage* through an engagement with the intangible and the transient utilising the inherent qualities of select materials within an environment activated by light and shadow.

Equipped with this understanding, I began to explore the application of new materials with which to construct an experiential space. These materials would either clad a structure or serve as the focal point of an immersive space. Selected materials would need to offer comparable or even more

effective experiential outcomes than glass or washi. They would also have to be financially viable when employed at an immersive scale. Identifying materials which met these criteria and integrating them into a space which embodied the findings of the research and offered the greatest potential for contemplative experience, became paramount to the realisation of a successful final project.

The intentions and understanding which this period of self-investigation yielded subsequently led the research to three new areas of exploration which would have a significant impact on the studio-based research outcomes. In the final three sections of this exegesis, I discuss the application of new materials and techniques employed to create perceptually activating spaces. I then explore environments designed for light immersion. Finally, I investigate the synthesis of a naturally occurring phenomenon of light and shadow to provide immersive contemplative experience. These three areas of research set the stage for the conclusion of the research project and the presentation of a final immersive installation which powerfully embodies the intentions of the research project.

## Material Exploration

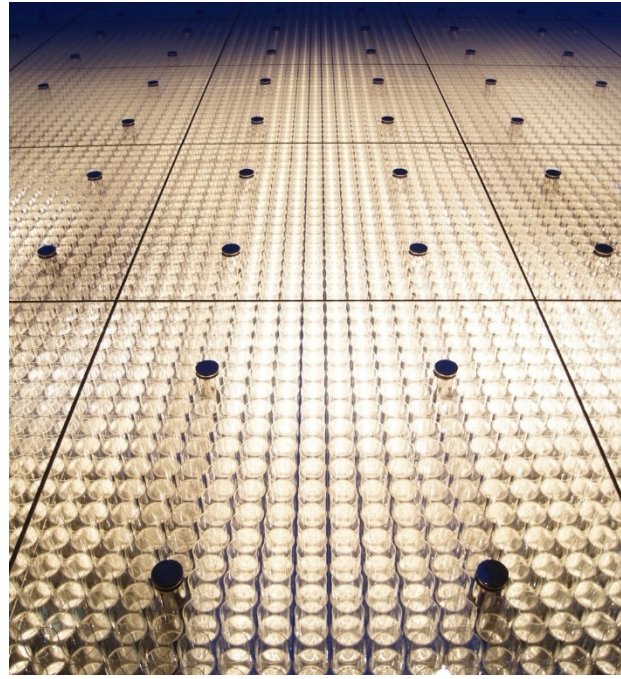
The first phase of the new material exploration was inspired by façade design within the commercial sector of contemporary Japanese architecture. Within this realm, my exploration was most significantly informed by the work of architect Jun Aoki 光明寺 (b. 1956). Aoki has designed notable museums, chapels and houses, but he is perhaps most widely recognised for the façades he has designed for Louis Vuitton retail stores. “Aoki demonstrates the phenomenological power of delicately wrought, multivalent surfaces to reshape conventional material assumptions and ultimately affect space itself. These surfaces should be considered experiential fields, acting as visually oscillating membranes that effect a perceptual recoding of physical substance.”<sup>64</sup> Multiple encounters with Aoki’s work during field research developed my understanding of the impact façade design can have on the perception of a structure’s physicality. His work allowed me to understand that the skin of a building, as much as its internal structure, could facilitate powerful aesthetic, perceptual and contemplative experience. I learned that I could potentially create a work in which the skin or façade of the structure formed an “experiential field” which defined both external form and internal space while concurrently facilitating the immersive contemplative experience I sought to provide within.

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<sup>64</sup> Blaine Brownell, *Matter in the Floating World: Conversations with Leading Japanese Architects and Designers* (New York: Princeton Architectural Press, 2011), 149.

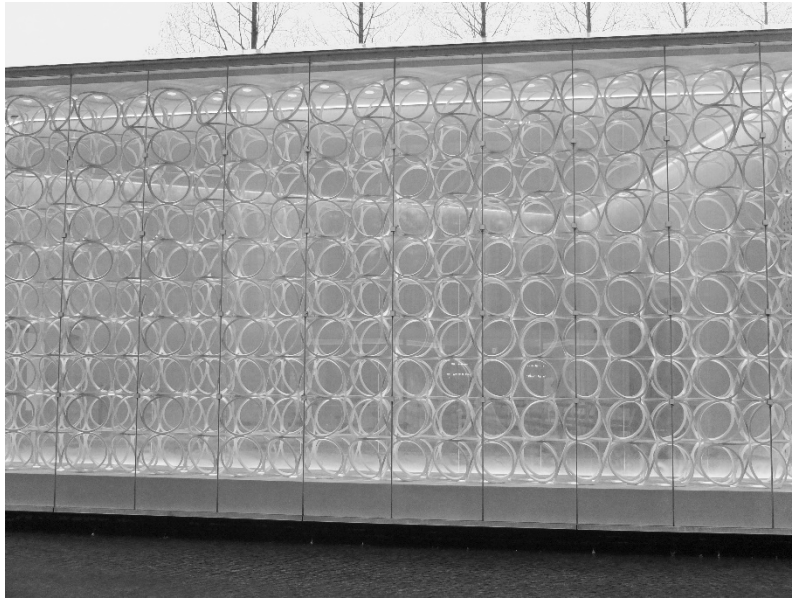


**Fig. 43.** Jun Aoki, *Louis Vuitton* façade, detail of Pyrex tubing, Tokyo, 2013



**Fig. 44** Jun Aoki, *Louis Vuitton* façade, Tokyo, 2013

The façade of Aoki's Louis Vuitton site in Roppongi, Tokyo is externally clad with clear architectural glass. Immediately behind this conventional vitreous skin however, thousands of sections of clear Pyrex tubing are vertically stacked, and oriented so that the viewer looks down the hollow length of the tubing towards the store's interior space. The resulting all-over patterning was reminiscent of a honeycomb or cellular membrane. The repetitive, modular motif effectively created a veiling field of void, volume and reflection wrapping the entire store front, causing the structure to visually shimmer and oscillate, especially when internally illuminated in the darkness. Observing the façade in situ was more akin to watching a cloud growing and falling away, rather than engaging in the prosaic reading of a corporeal assemblage of glass, steel and concrete to which we have become accustomed. Aoki's innovative material application facilitated a dynamic, thought-provoking encounter with architecture and perception rather than merely serving the functional purpose of housing a retail space.

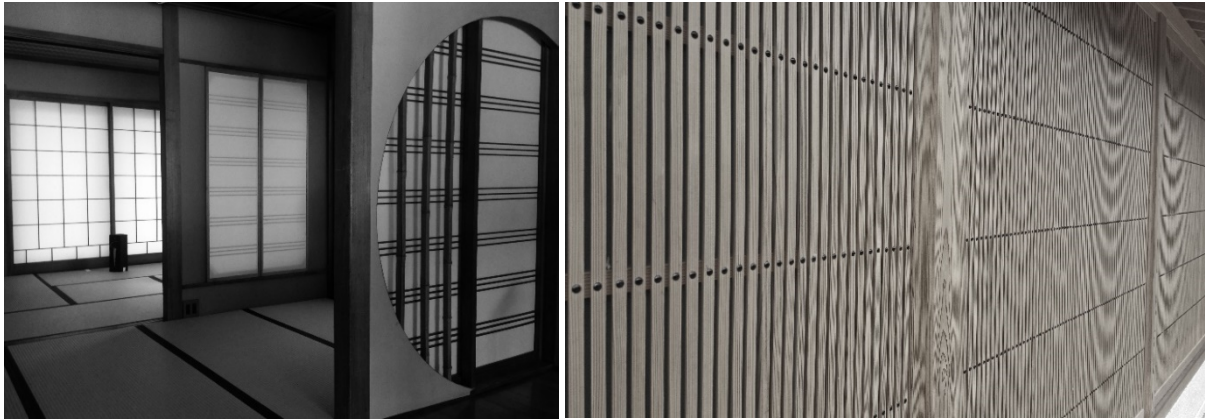


**Fig. 45. Jun Aoki, *White Chapel*, Osaka, 2015**

Aoki's White Chapel, a small wedding chapel situated on the grounds of a large hotel, employed a similar treatment of all-over patternation. The chapel's façade was composed of a repeating module contained behind glass cladding. Rather than employing a ready-made element such as Pyrex tubing, Aoki utilised a fabricated module composed of four white steel rings joined to describe a tetrahedron. Three angled, upright circles connected to one another on edge as well as to the fourth horizontal ring which served as either a base or cap depending on the orientation of the assemblage. The orientation of each module is consistent within a horizontal course, and alternately flipped axially within each vertical course. The resulting pattern field simultaneously appeared both random and structured, like waves upon the sea, or the internal matrix of coral and bone. Paralleling the Roppongi work, there was again an inherent experience of dynamic lightness in the structure, rendering it more cloudlike than concrete.

Aoki's façade treatments illustrated several significant lessons regarding the approach to material application and the design of experiential space. First, the structured repetition of a common material and form across a large visual field elevated the material or form beyond its customary use and perception, reframing it as an expressive material applied within a cohesive aesthetic experience. Secondly, the application of modular or material repetition created a visually oscillating compositional field, which activated a structure or space in a way that conventionally applied concrete, glass or brick generally do not. Structures clad with traditional means are generally perceived as stable, even static, while structures clad with these activated visual fields seem to pulse with a life of their own. Application of this construction method allows not only the formal qualities

of a structure to have expressive potential but enables the surface and skin of the structure to directly contribute to the formation of meaningful experience.



**Fig. 46. Shoji screens, Toyama, 2017**

**Fig. 47 Kimusuko lattice work facades, Kanazawa, 2018**

Aoki's façades also created a visual and psychological membrane delineating external and internal, public and private space, while allowing an alluring glimpse of the contents and function of the enclosed space. A design approach often overlooked in Western architecture, this subtle veiling mechanism has a long-standing history within traditional domestic Japanese architecture in the form of mechanisms such as *shōji* screens and the ubiquitous *kimusuko* 木虫籠 lattice-work screens found in Kanazawa's famous Higashi Chaya district. While these linear and geometric configurations of timber and paper don't generally provide a formidable physical barrier, I believe that these mechanisms do serve as a form of *ma*, aesthetically and psychologically separating public and private life. Similar devices could be highly effective within an arts context, delineating contemplative space from public space and indicating an experience of liminality.

I observed that Aoki's façades echoed the role played by the translucent surfaces I utilised when working with glass. Both facilitated perceptual distancing by obscuring interiority, thereby alluding to an image or idea rather than stating or revealing it concretely. However, the purposeful homogeneity of my glass surfaces formed an enveloping translucent atmosphere rather than a discernible visual field. This restrained uniformity stood in clear contrast to the more activated façades summoned by Aoki. His aesthetic and material approach helped me to realise that exploring construction solutions which utilised material repetition and modular application could provide me with a new working methodology which retained the primary functions of translucent glass, while opening the possibility of working affordably at a larger scale and creating more perceptually active viewing experiences.

Inspired by Aoki's work, I began to investigate the development of perceptually activating construction solutions in earnest. I executed a series of tests and models which utilised filaments of yarn, fishing line or netting cord wound continually around timber frames. ANU lecturer and textiles artist Jennifer Robertson was very helpful at the inception of this process, introducing me to a range of potential materials. My intention with the filament experiments was to create a translucent skin or façade which would both delineate contemplative space and inform contemplative experience. Visually, the wrapped filaments echoed the vertical timber beams of the circular space but did so with a greatly diminished material footprint. I believed this visual lightness would render a structure cloudlike and nearly intangible, hopefully challenging the visitor's perception of materiality, and thereby setting the stage for an immersive contemplative environment.

I also anticipated that through the process of wrapping a frame with a filament and creating foreground and background planes composed of regularly spaced linear elements, therein clearly engaging aspects of *ma*, a subtle interference or *moiré* pattern would emerge. "The most effective and dramatic *moirés*... are usually the result of line patterns... When two sets of lines are superimposed at an angle of less than thirty degrees, a *moiré* is produced."<sup>65</sup> My intention was to utilise this visual phenomenon as an activating but ancillary detail within a greater series of experiences offered to the viewer. I hoped that the interference pattern would not serve as the primary point of perceptual engagement within the work but would subtly activate the structure while and visually challenging or subverting its physicality. Venezuelan artist Jesús Rafael Soto observed that, "a piece of wire against a *moiré* background becomes broken up. Its form is 'dematerialised'. It undergoes a transformation... You cannot say which is wire and which is ground... We are forced to question our perceptions."<sup>66</sup> I believed that by immersing the viewer in an environment which is undergoing continual visual dematerialisation, the questioning of one's perceptual grounding would extend beyond the purely visual into more interesting psychological realms. Perhaps the questioning of physicality would trigger questioning of one's sense of place, and finally, of one's own existential nature.

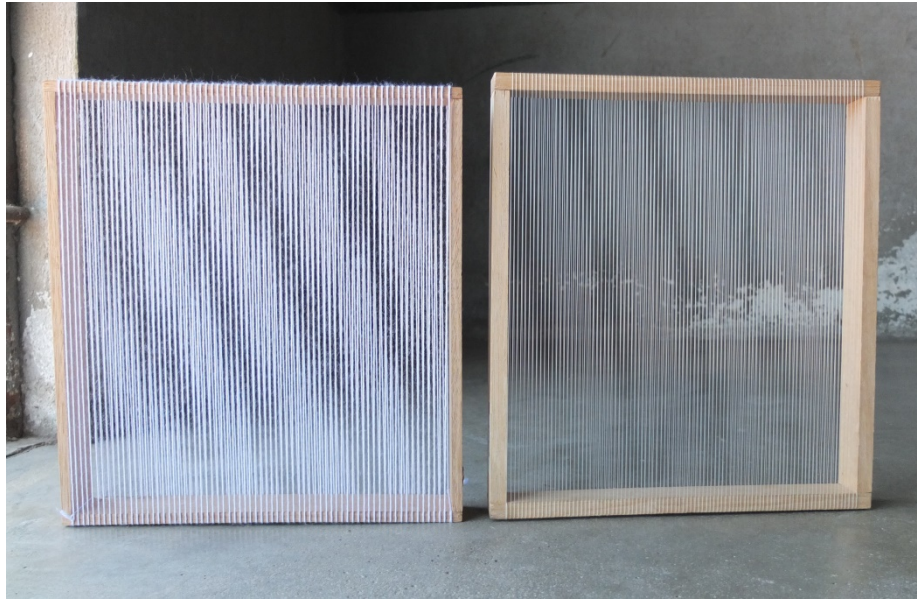
I chose to work with yarn, clear monofilament, braided fishing line, and a braided line used to construct fishing nets. Each was selected for the visual weight of the line, texture, and translucency or chromatic attributes. The spacing between each vertical filament was dictated by the material's thickness and visual weight in order to achieve the patternation and sense of lightness I was seeking. I was also interested in comparing the overall translucency and degree of interference rendered by an opaque versus a translucent filament. Each frame was constructed with significant depth to

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<sup>65</sup> Rene Parola, *Optical Art: Theory and Practice* (New York: Dover Publications, 1996) 55.

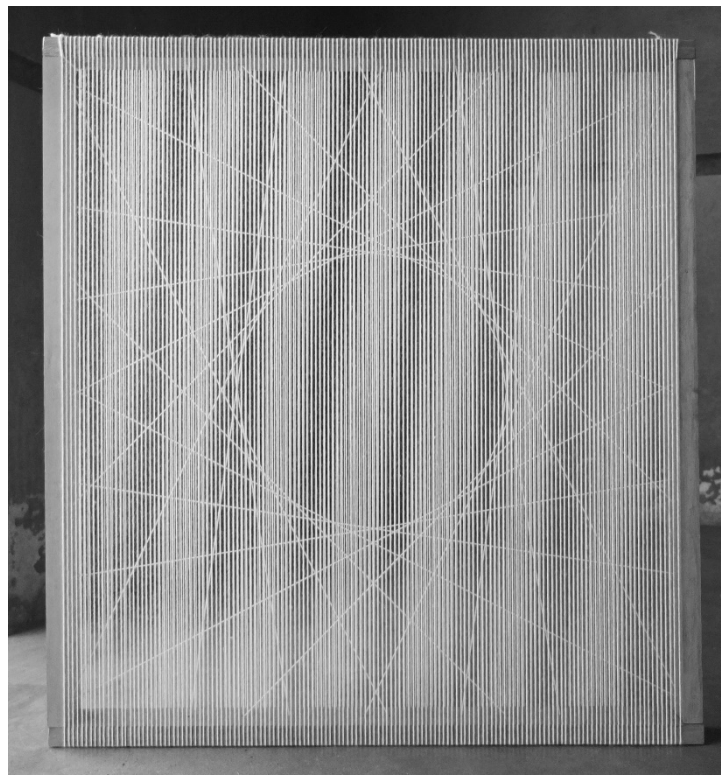
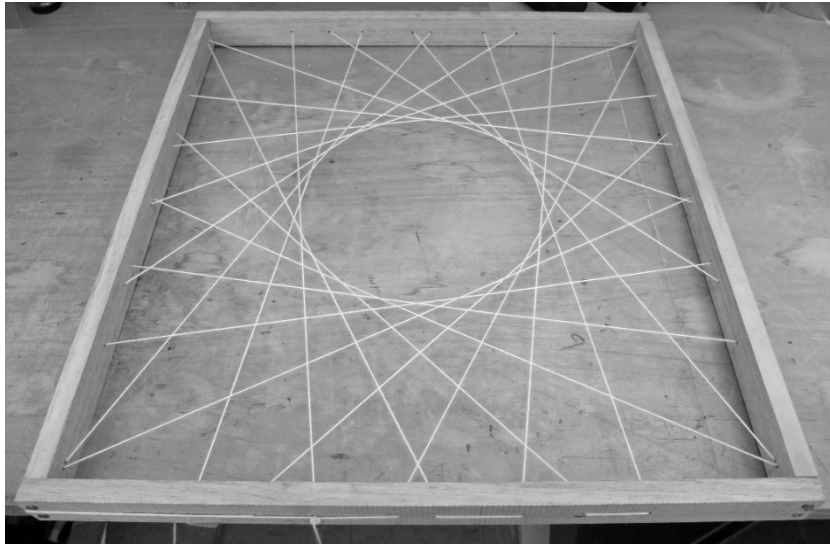
<sup>66</sup> GS Whittet, ed., "Statements by Kinetic Artists", *Studio International*, Vol. 170, no. 866, June 1965, 60.

separate the linear planes, lending the façade visual depth and the distance necessary to make the interference pattern both active and subtle. Notches were cut into every frame in order to secure the filaments. These were laboriously measured and cut by hand.



**Fig. 48. Moiré patterns produced by wound filament tests, 30 cm x 31 cm x 4 cm, 2016**

The first test was executed on a frame measuring 30 cm by 31 cm with a depth of 4 cm. I used a 1mm filament of white yarn, spaced at intervals of 3 mm. The second test was executed on a similar frame with a depth of 3 cm. It used a .45 mm translucent white fishing line spaced at 2 mm intervals. Differences in the depth of the frames and spacing between filaments were dictated by the visual weight of each filament's line. The bold line of yarn necessitated greater spacing between lines and planar faces, while the thinner translucent monofilament could be compressed in both dimensions while retaining visual lightness. The resulting moiré patterns, especially of the white yard, were dominant to the point of becoming the primary aesthetic and experiential focal point. The interference was powerful enough that one test piece produced an unsettling effect nearing disorientation. I was concerned that experientially, the sensation produced by the interference would be the opposite of the contemplative experience I sought to provide.

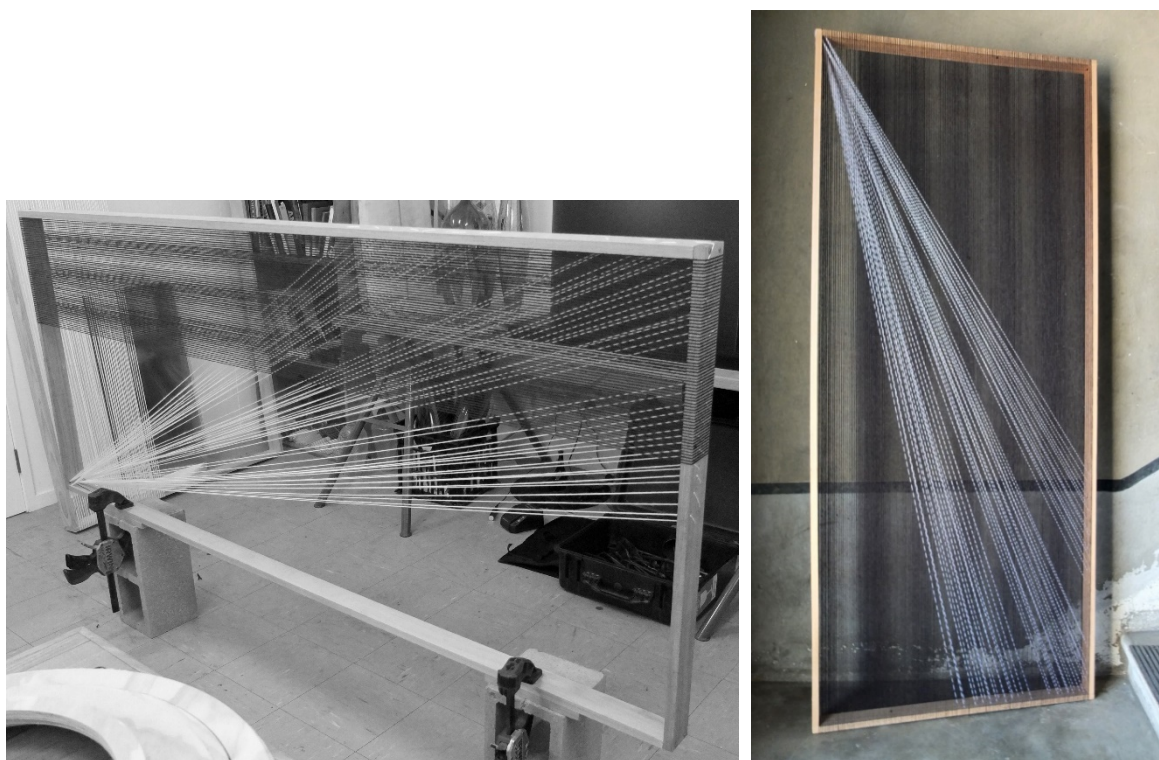


**Fig. 49, 50. Wound filament test with circular void and interference field, 63 cm x 60 cm x 4 cm, 2016**

A larger test followed which incorporated an internal image within the interference field. Based on earlier investigations of the void in my studio practice, I utilised 25 linear elements to describe a circular void at the frame's centre. This was intended to test the potential use of a similar pattern as a feature within the façade as a contemplative mechanism. I also hoped that a static focal point would diminish the perceptual impact of the moiré. The frame for the void test measured 63.5 cm x 60 cm with a frame depth of 4 cm. Coordinates for the internal pattern were developed using Sketchup. After determining the desired dimensions, I was able to rotate and duplicate a specific



number of lines around an axis to create the void. After testing varying quantities of line and the resulting densities of pattern, I found 25 lines was the minimum quantity needed to describe a smooth circle, while keeping the visual weight of the linear elements to a minimum. I then overlaid the dimensions of the frame around the void configuration, thereby plotting the points where each hole would need to be drilled in the timber frame. I then tasked myself with weaving both the internal void and then external interference pattern with a single length of yarn. The highly repetitive nature of this process became meditative, serving as a kind of contemplative experience. Upon completion, I found that the visually stable void helped to minimise the impact of the moiré, allowing it to recede from foreground to background. This dialogue between static and dynamic elements also added an interesting new experiential dimension to the work.



**Fig. 51, 52. Wound filament test with internal ray and contrasting colouration, 218.5 cm x 91 cm x 6.5 cm, 2016**

This led to a fourth test which was executed at a significantly larger scale. This experiment included a new internal image suspended within the interference field, and featured filaments of two contrasting colours. The frame of the fourth test measured 218.5 cm x 91 cm with a depth of 6.5 cm and was intended to determine if the line weight and spacing which had been effective at a smaller scale continued to be successful when used within a full-scale façade section. The frame's depth allowed the internal image to occupy a greater depth of field rather than the single plane of the previous test. More importantly, the frame's depth was intended to further diminish the moiré and

to test its perceptual impact at a scale similar to what would be employed in an immersive environment.

I studied the impact of a more dynamic internal pattern within this test. It was designed to suggest falling crepuscular rays, an atmospheric phenomenon I have hoped to explore in my practice as a visual expression of energy and transcendent experience. Crepuscular rays are formed by “parallel columns of sunlit air separated by darker cloud shadowed regions... Airborne dust, inorganic salts, organic aerosols, small water droplets, and the air molecules themselves scatter the sunlight and make the rays visible.”<sup>67</sup> The textile ray forms were woven with the white yarn employed in previous tests, while the surrounding interference field was rendered in a charcoal-coloured yarn of a similar gauge. I wanted to see if the white line contrasted by the dark interference “atmosphere” could serve as a new means of embodying light. Finally, I hoped to determine if the charcoal interference pattern would perhaps create a more understated experience than that produced by the vivid white lines of the initial tests.

I plotted the rough dimensions of the rays and their placement within the frame using Sketchup, with the implied light source at the top left of frame and the rays falling to the bottom right. After determining the approximate outline of three ray segments, I intuitively plotted the location, spacing and density of lines directly onto the frame. I hoped that this spontaneous assignment of line would yield a more organic expression of a ray than I could achieve with deliberated positioning. I attempted to utilise the entire depth of frame order to render maximum dimensional volume. While the ray image was not explored further within the research project, this proved to be a valuable creative exercise which opened a range of ideas to be explored in the future. This test also allowed me to visualise the impact of the interference at a human scale and confirmed that the darker colouration and increased depth of field successfully diminished the aesthetic dominance of the interference pattern.

However, the effect of the tension wrought by the wrapped filaments upon the frame become undeniable at a large scale. The horizontal beams bowed significantly under the tension of the wrapped filament. The asymmetrical torque of the “rays” also significantly twisted the frame. While this structural effect was apparent at the small scale of the initial tests, it became more pronounced with each increase in scale, and especially with the new application of an asymmetrical force. I became aware that this unforeseen effect of the wrapping technique would dictate the specific construction and material choice if I was to pursue the application at an immersive scale.

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<sup>67</sup> “Sunrays- Crepuscular Rays”, *Atmospheric Optics*, accessed February 21, 2017, <http://www.atoptics.co.uk/atoptics/ray1.htm>

Alternatively, I would have to discover a means of achieving an equivalent visual outcome without applying the same tension load to the framework.

Aesthetically, these initial tests also revealed that the planar frames which I had been using formed a static viewing field. This emphasised the effect of the interference, placing it at the apex of the perceptual hierarchy rather than allowing it to serve as a subtly activating detail. I believed that once I began testing the wrapping technique on a circular frame which simulated the enclosed spaces I hoped to create, the interference patterns would become more dynamically integrated into the overall structure, rather than asserting themselves as the dominant perceptual attribute. Applied in the round, I believed that the interference would activate the structure, beautifully describing its volume and form without overwhelming the senses.

The ensuing circular model closely reflected the conceptual intentions of the circular timber and washi space I had previously investigated. Its form was very similar with the exception of an increased pitch. The design included an internal space suspended within the external skin. It measured 525mm at its peak and 285 at its nadir with a 630mm width. The internal structure followed the same pitch and measured 480mm x 330mm with a width of 390mm. The scale of the model echoed its timber and washi counterpart in order to provide a clear comparison between the two designs.



**Fig. 53. Plotting filament locations on timber rings, 2016**

Timber was laser cut based on dimensions I had established through SketchUp renderings. The renderings were essential because the angled ring was elliptical rather than circular and had its own unique dimensions. Once the rings were fabricated, I affixed the circular base ring to a table and established its centre point by drawing a series of four chords within the internal perimeter of the

circle. By finding the midpoint of each chord and extending these midpoints beyond centre and marking their points of intersection, I was able to locate the centre of the circle. A nail was then embedded at centre point, and a string was extended back towards the circle's perimeter. This radial line allowed me to accurately plot the location of each filament on to both horizontal and angled planes.

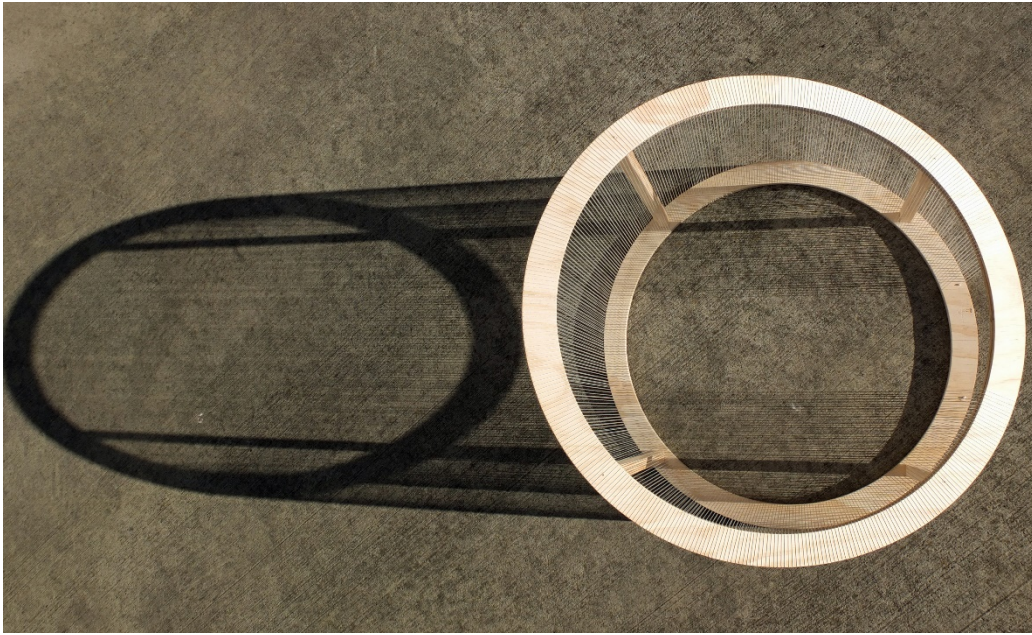
For the external façade, I used a .5 mm white fishing net line, internally spaced at 2.5 mm. For the internal space, a .25 mm charcoal coloured "braid" with an internal spacing of 2 mm was used. I first determined the location of the internal notches for each fibre. The internal notch points were established using the radial line and a ruler. The external notches were marked by eye using only the radial line. I then overlaid the elliptical ring, and marked its internal and external notches, again as accurately as possible using only the radial line and my eye. The location points for each of the four uprights were located as accurately as possible, allowing me to construct the frame. Numerous points of approximation throughout the mapping and construction processes created a subtly organic quality to the linear elements which was quite beautiful and produced some very interesting visual effects. However, if I constructed this work at full scale, a means of mechanically locating each fibre would have to be developed to make the construction process and patternation more precise.

Wrought by the tension of the wrapped filaments, significant structural bowing occurred early in the process of application. The bowing was more pronounced on the external façade, due to both the tension with which I wrapped the external frame, and the longer spans of unsupported timber between each vertical column. The smaller frame was much less distorted due to the shorter spans of unsupported timber, and an intentional decrease in wrapping tension. However, the looser lines were far less stable and easily displaced. Visible slack also disrupted the continuity of the patternation and its accurate definition of form. This led me to understand that a significant degree of tension upon each filament was necessary to retain location and visual integrity. Therefore, the structure of the frame and the materials employed in construction would need to be closely examined, most likely with the assistance of a structural engineer, to arrive at a successful solution for large-scale production.



Fig. 54, 55. *Circular Interference Space* test, 40 cm x 40 cm x 40 cm, 2016

The wrapped filament structure offered form-defining attributes which were analogous to those of the timber beams employed in the timber and washi space. The broad façade section facing the viewer maintained the greatest degree of transparency between the linear elements. The diminished spacing between linear elements and the resulting increase in interference patterning at the peripheral edges of the structure rendered the receding curvature of the façade more opaque. This shift from transparency to near-opacity beautifully described the form and volume of the structure. Compared to the timber beams of the earlier direction, the diminished visual mass of the filament skin allowed the structure to appear more like a vaporous cloud or beam of light rather than a solid, weighty construction. Observing these results, I felt that this mechanism of defining a space could embody the principles and contemplative intentions of the teahouse or temple, while recontextualising traditional notions of contemplative space through new material application and structuring of space. The lightness and visual ephemerality of the fine linear elements, coupled with the activation of the structure's façade through interference patterning, could potentially offer a visual and experiential outcome capable of impacting contemporary viewers in a powerful and perhaps more accessible manner.



**Fig. 56. Shadows produced by *Circular Interference Space* test, 2016**

Within this new design, I maintained the intention of providing immersive contemplative experience. Its physical structure, material composition and intended perceptual experience engaged the elements of *ma*, *hikari to kage* and *yūgen*. The concept relied upon the physical dematerialisation of the external and internal structures through the application of the woven filament. The perceptual activation wrought by the interference patternation was intended to relocate the viewer psychologically from the external environment of the gallery, creating a liminal space of “otherness”. Through this psychological and perceptual relocation, I hoped a heightened awareness of environment and an experience of one’s perceptual interaction with the space could offer a contemplative opportunity. A subtle, but significant play of light and shadow would also take place via the passage of light through the layers of woven filament, further multiplying and abstracting the layers of linear patternation, virtually “weaving” the work’s internal volume with light and shadow. I hoped that through direct engagement with the viewer’s perceptual mechanisms, the design could evoke an experience of sensing oneself sensing and experiencing.

I decided to not pursue the construction of a full-scale environment for examination because of the significant structural issues I had encountered throughout this investigation. However, I believe this period of exploration represented a positive research outcome. It demonstrated that I could indeed create an “experiential field” reminiscent of the façade designs I encountered throughout my fieldwork. Most significantly, this concept represented a successful evolution in my studio practice which reimagined what is necessary to define a space and demonstrated that unorthodox material

application can potentially impact one's perceptual experience of space and of the self within it, thereby facilitating a powerful aesthetic, perceptual and contemplative viewing experience.

## Light Space

Another noteworthy progression in the research occurred unexpectedly in conjunction with the exploration of interference spaces, and ultimately led to a new investigation of spaces designed for experiencing light. While I was preparing to build a rectangular interference model, it was suggested that I test the application of the golden ratio<sup>68</sup> to the model's proportions in order to determine if the mathematical formula produced a more effective outcome than structures based on my own intuited proportions. In response, I produced a series of foam core models based on both my proportions and those of the golden ratio to determine which to proceed with. Upon completion, I realised that although the proportions of the golden ratio did not produce a form I was happy with, the resulting minimal white space of the foam core interiors acted as an amplifier of light.

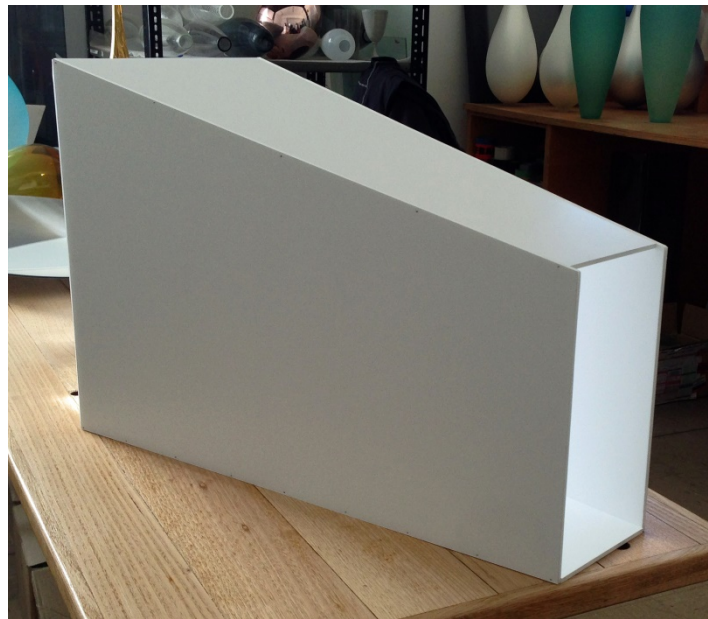
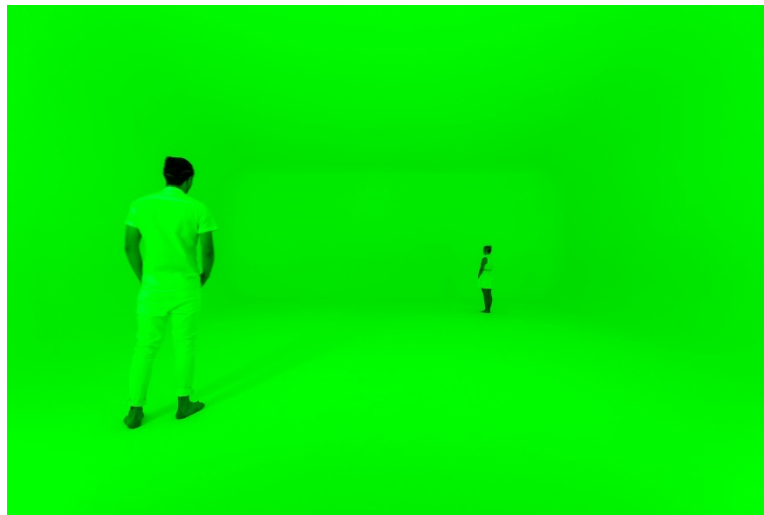


Fig. 57. *Rectangular Interference* model and first *Light Space* model, 40 cm x 24 cm x 57 cm, 2016

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<sup>68</sup> "In the simplest form, the golden ratio refers to the division of a given line segment into a unique ratio that gives us an aesthetically pleasing proportion. This proportion is formed in the following way: The longer segment (L) is to the shorter segment (S) as the entire original segment (L+S) is to the longer segment... There are countless examples of where it is believed that the golden ratio appears in art and architecture." Alfred S. Posamentier and Ingmar Lehmann, *The Glorious Golden Ratio* (Amherst: Prometheus Books, 2011), 1-50.

This effect can be observed in the image above, noting the intensity of the light observed within the doorway is increased significantly relative to that presented on the model's exterior faces. The simple, unbroken geometry of the model's interior also formed a visually pure space. Light reflected and multiplied by the white surfaces caused the strict geometry of the space to soften, and my eye began to struggle to define solid ground. I applied a sheet of translucent polypropylene to the wide, open face opposite the entrance to heighten the effect of dematerialisation of the space. The polypropylene acted as a diffusing screen, causing the entering light to scatter throughout the space more uniformly. This further diminished or flattened the interior geometry, and the space began to read as an atmosphere of light rather than a concrete, planar composition. I imagined that this space of white light could have a powerful meditative effect upon the viewer at a larger scale and began to work to further develop this direction.



**Fig. 58. James Turrell, *Virtuality Squared*, National Gallery of Australia, 2014**

I was highly aware that this new concept occupied a ground contiguous to the work of James Turrell. Turrell has defined and dominated the field of “light art” since the late Sixties and continues to do so today. While many artists have worked with light as a primary medium during the same time period, Turrell has established a powerful paradigm of immersive light-based artwork and installations. As stated previously, his work was seminal in the early stages of my interest in art making and has continued to shape my desire to create immersive viewing experiences and to work with light as the central medium and experiential activator within my practice. It therefore presented a significant challenge for me to define my own voice within this field, and specifically within this new direction of light-centric experience.



In relation to Turrell's work, the new light-space concept most strongly resonated with his *Ganzfeld* series, in which a cycloramic space is flooded with artificial light shifting slowly through a range of chromatic tones. The colours infuse the entire space, creating a nearly tangible atmosphere of coloured light which saturates the viewers' perceptual mechanisms. Here, Turrell is perhaps more successful than any other in providing a visceral experience of not only colour, but light itself. "I've always wanted to accord to light its thingness",<sup>69</sup> says Turrell. Immersed in a *Ganzfeld* experience, it is as though that the light and colour surrounding me can be breathed, touched, smelt. Turrell acknowledges a sensory phenomenon which takes place within in his work wherein, "Here there is a sense of touch, a desire to feel, but there is no object, just as there is no image and no point of focus. There is only perception itself... The eyes do the touching."<sup>70</sup> I believed that an analogous sensorial experience of light could potentially be offered by the direction of the new light space. However, with the removal of the chromatic intervention, I believed the light space would offer less a sense of being immersed in an aqueous solution of lucent colour, but rather, a sense of floating in a lucent cloud. To me, this experience of total immersion in an indefinable atmosphere of colourless or naturally-hued light would connect more closely with the solitary remoteness and the passage of time embedded within *yūgen*.

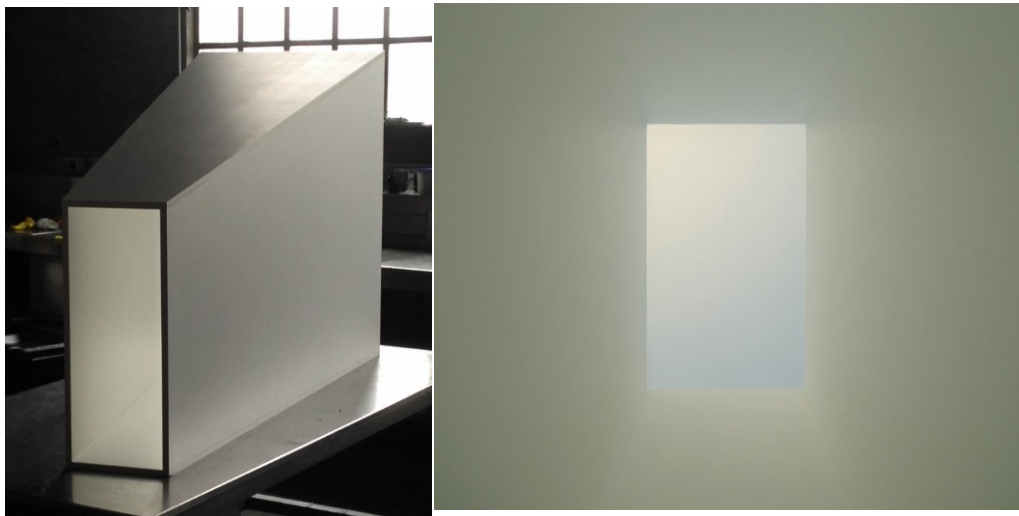


Fig. 59. *Light Space* model, 110 cm x 64.5 cm x 160 cm, 2016

Fig. 62. Still image from timelapse video, 2017

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<sup>69</sup> James Turrell: *A Retrospective*. (Canberra: National Gallery of Australia. 2014) p. 17

<sup>70</sup> Mark Holborn, ed., *Air Masse: James Turrell* (London: South Bank Centre/Hayward Gallery Publications, 1993), 40.

I subsequently built a larger model measuring 1600 mm x 1100 mm x 645 mm. These dimensions were approximately 1:3 scale relative to the largest commercially available sheet of translucent acrylic which would be utilised as the diffusing screen if the work was eventually realised at full-scale. The model was intended to test the ability of a larger space and of standard building materials to amplify light and to examine the effect of scale on the perception of the internal space. It was constructed of MDF and painted a low-sheen white, with a sheet of translucent acrylic affixed to the open face. The stark white walls of the internal architecture served as a system of ambient mirrors, reflecting and amplifying the quality, tone and temperature of light filtering into the space through the diffusing screen. The resulting play of light and subtle shadow within the white chamber diminished the perceived geometry even more so than it did within the foam core model. This test appeared to confirm that at full scale, this concept could potentially allow the viewer to experience of floating within an atmosphere of pure light.

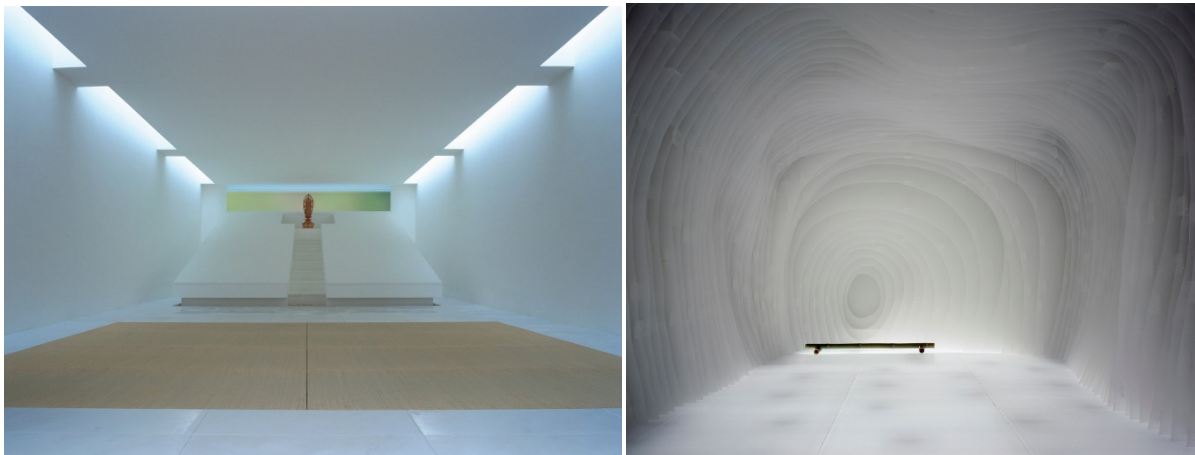


Fig. 63. (left) Takashi Yamaguchi, *White Temple*, Kyoto, 2000

Fig. 604. (right) Kengo Kuma, *Oribe Teahouse*, 2005



Fig. 65. John Pawson, interior modelling of St. Moritz church, Augsburg, 2013

While Turrell frequently makes use of white spaces as a neutral canvas for his chromatic atmospheres, a number of architects have also worked with exclusively white interiors. In an architectural context, whiteness can physically and psychologically relocate occupants into a liminal space distinctly separate from the environments one routinely occupies. In Japanese thought, “White (白) and emptiness (空) are closely intertwined. The concept of empty space (空白) brings these two things together. There is "emptiness" in white and there is also "white" in emptiness.”<sup>71</sup> This philosophy is powerfully illustrated within the following contemplative spaces. Takashi Yamaguchi’s 原研哉 (b. 1953) *White Temple* relies on a pure, geometric white interior to create a timeless space for maternal ancestral worship. Kengo Kuma’s 原研哉 (b. 1954) *Oribe Teahouse*, an ephemeral homage to tea master Furuta Oribe 原研哉 (1544-1615), is constructed of layered, translucent white plastic. Its nebular interior references the liminal space of the traditional tea house, while further removing the viewer from any familiar formal or material grounding.

The white interior is employed to similar effect by Western architect John Pawson (b. 1949). Pawson frequently makes use of pure white, minimal interior spaces, not only in numerous residential projects, but in his powerful ecclesiastical works such as the Church of St. Moritz in Germany and his Abbey of Our Lady of Nový Dvůr in the Czech Republic. Although I haven’t experienced Pawson’s work first-hand, his use of expansive white spaces and volumes imparts a sense of profundity and transcendence in both secular and sacred contexts.

As evidenced by the work of Turrell, Yamaguchi, Kuma and Pawson, the mechanism of the light-saturated white space has provided fertile ground in the arts or architecture. Its prevalence in both realms speaks volumes of its effectiveness in creating a distinct space of elevated “otherness” while serving as a vessel for the celebration of light. And although these spaces of light seem at first to negate the significance of shadow asserted within my research, shadow becomes the presence within these spaces which defines their contours, surfaces, volume and depth. White space without shadow becomes pure void.

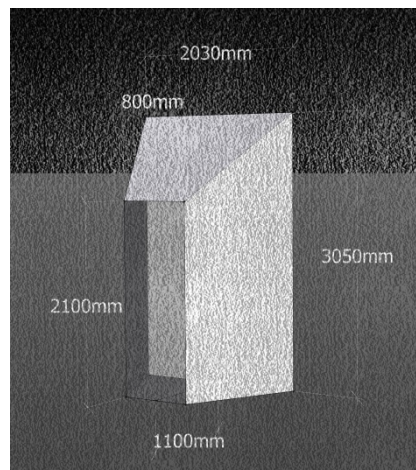
Moving forward from the 1:3 scale model, I constructed a full-scale outline of the space. The dimensions were determined by the largest commercially available sheet of translucent acrylic, which measures 3050 mm x 2030 mm and would serve as the diffusing panel and central point of engagement with the contemplation of light. In order to visually represent the acrylic sheet, I fabricated a mitred timber frame clad with voile, a translucent white fabric. I built a second timber frame which represented the entrance of the space measuring 2000 mm high by 760 mm wide.

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<sup>71</sup> Kenya Hara, *White* (Zurich: Lars Müller Publishers, 2009), 50.

While the most common average doorway dimensions in Australia are 2040 mm x 820 mm<sup>72</sup> these specific dimensions were established to clearly signal that the entrance was meant to accommodate a single person. The dimensions were established to closely frame an average adult standing at the entrance, establishing a sense of separateness and silence from the outset of the encounter. Based on my own experiences of Turrell's work and the fundamental sense of solitude I experienced in church environments as a child, I believed that the encounter with light, perception and ultimately with oneself that I hoped to offer within this space would only be fully realised if it was experienced in solitude.

Upon erecting both frames at the predetermined distance of nearly 5 metres apart and connecting their upper corners with lines of 3 mm white cord to further describe the structure's form, it became clear that the "monumental" scale that I had envisioned the structure achieving was, in fact, quite diminutive relative to even the most modest architectural scale. I had envisioned the exterior form of the space, a pure white elongated geometric shell, engaging in a powerful spatial intervention within a large gallery setting or industrial environment such as The Fitter's Workshop. Located within a space of any real scale, it wouldn't have the presence required to effectively engage with the space. It also became apparent standing within the model, that the proposed scale wouldn't necessarily enhance the intended encounter with light enough to offset the accompanying increase in cost and the complexity of construction. In fact, I suspected that the length of the space could potentially dilute the impact and focus of the viewing experience.



**Fig. 61. Light Space reconfiguration**

During discussion with Gilbert Reidelbauch, I began altering the configuration and scale of the space by moving the doorway and adjusting the outlining cords. We soon discovered that moving the

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<sup>72</sup> Standard Door Sizes, *Build*, accessed 14/03/17, <http://www.build.com.au/standard-door-sizes>

doorway within approximately 1100 mm, or just beyond an arm's reach of the diffusing screen and severely foreshortening the space, achieved a very effective scale for an optimal viewing experience. This recalibration appeared to enhance the overall impact of the work in several key ways. First, it located the viewer at a very intimate distance from the primary focal point. This allowed the diffusing screen to extend into the viewer's peripheral vision upon entering the space, ensuring the viewer would be perceptually immersed within the light field. This new proximity to the light field brought to mind the ideal viewing distance that Mark Rothko (1903-1970) prescribed for the optimal experience of his paintings. "Rothko recommended a viewing distance of as little as eighteen inches (45 cm)." <sup>73</sup> The painter and critic Andrew Forge characterised the psychological effect of such intimate viewing conditions, saying, "A painting sufficiently large so that when you stand close, the edges are greyed off to one's peripheral vision, takes on a presence... A close viewing range is like opening a door into an internal realm." <sup>74</sup> Forge's notion of an artwork opening of an internal realm within the viewer reflects the essence of what I hope to deliver provide with experiences of my work, and the central experience facilitated by contemplative space in Japanese architecture.



Fig. 62. Mark Rothko, *Seagram Murals*, 1958

I have personally experienced the impact of this intimate viewing distance and the consequent opening of some inner realm many times while standing before Rothko's work. I had the fortune to spend several hours with Rothko's Seagram murals at the Tate Modern in 2003. Having previously learned of Rothko's prescribed viewing distance, I moved in close to each of his paintings. At roughly the prescribed distance, the work seemed to shift from a painted canvas with finite borders to a

<sup>73</sup> John Gage and Jeffery Weiss, eds., *Mark Rothko* (New Haven: Yale University Press, 1998), 263.

<sup>74</sup> Gage and Weiss, *Mark Rothko*, 263

virtual atmosphere of rumbling, oscillating colour that saturated the field of vision and began to encroach upon my other senses. I ached deeply with something like joy and sorrow in the same breath, and I was unable to move for minutes at a time. I have had a similar experience with nearly every Rothko I have seen and viewed in this way since.

These experiences with Rothko's work have led me to design many works in my studio practice based on a similar viewing distance, although I have found my ideal distance lies somewhere between 50-60cm. At this distance, I find that I am able to achieve an immersive perceptual experience within an object-scaled work. Within the new foreshortened light space, I was attempting to use the structure and dimensions of the space to ensure that a similar viewing experience would be achieved at a greater scale, fully immersing the viewer in an experience of light. While researching Rothko's viewing distance, I found it was caused by, "an effect of total-field (Ganzfeld) viewing, which had also been studied by Gestalt psychologists, who had found that it gave the surface an apparent increase in brightness of many hundred times over the same tone on a small field."<sup>75</sup> I found this direct correlation between Rothko's intentions and Turrell's preoccupation with the Ganzfeld effect fascinating and not at all surprising given strong similarities I have experienced with viewings of their work. I also believed that the inherent increase of luminosity within total-field viewing scenarios was a very important discovery for my future arts practice. Not only could this finding prove to be significant when lighting an immersive space, but I believed it could potentially correlate to an increase in the ability of an environment to access the internal realms of the viewer. Conversely, a point was reached while reconfiguring the light viewing space where the distance between myself and the screen became too intimate and the screen began to encroach upon some protective psychological threshold. At this proximity, I found the space produced a mild sense of claustrophobic anxiety rather than an experience of expansiveness and light. I found if the diffusing screen was brought within arm's reach from the doorway, a sense of discomfort arose within me, negating the intended contemplative experience. I am aware that this may well be unique to me, or perhaps may be a psychological artefact of the acceptable boundaries of personal space within the culture I was raised. "The average conversational distance or personal space for European Americans is approximately 20 inches."<sup>76</sup> This culturally preferred distance corresponds to an uncanny degree with my experiences described above. This discovery caused me to wonder to what extent ideal viewing distances may vary from viewer to viewer and culture to culture, and how an inherited cultural predisposition could potentially impact the experience of an artwork.

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<sup>75</sup> Gage and Weiss, *Mark Rothko*, 263.

<sup>76</sup> Stella Ting-Toomey, *Communicating Across Cultures* (New York: Guilford Press, 1999), 128.

Upon completion of the full-scale outline of the light space, I met once again with Zeljko to discuss the feasibility of constructing a full-scale light space for the final examination. After carefully reviewing the project and my specifications, he concluded that given the scale of the space and the necessity of a nearly flawless interior, it would be a very costly and demanding project to realise. Although this exploration represented an important evolution in my arts practice by moving progressively further from objects designed to capture light and closer towards working directly with light itself, I was disappointed to hear that another promising direction stood at least temporarily out of reach. The significant expense and complexity of constructing large-scale projects became a recurring reality I encountered throughout this period of the research project. It is a reality which, in all honesty, I am still grappling with as I look to the future of my arts practice. One of the primary aspirations in commencing the research project was to relocate the scale and experience of my work from the realm of object to the realm of immersive environments. In the development of a truly immersive and meditative encounter with light and shadow, I believe that the following and final direction of the research project serves as a critical bridge between these two realms of practice.

## Timelapse

During the investigation of both the *Hikare to Kage* and *Light Space* directions, I began utilising video and timelapse photography as a means of studying and documenting how the works would potentially be experienced by the viewer at full scale. I began by recording short videos in the interior of the *Hikare to Kage* maquette. This allowed me to analyse the evolving play of light and shadow as the interior space shifted in relation to the sun's position. When viewed on-screen, I found these videos also helped to psychologically re-scale the diminutive internal space into an immersive environment. Gaston Bachelard (1884-1962) wrote, "The man with the magnifying glass.... bars the everyday world... The botanist's magnifying glass... gives him back the enlarging gaze of a child."<sup>77</sup> I found the miniature grew immersive when I assumed the camera's perspective, altering my perceived scale. It was during this period of imagining the transient interaction of light and shadow over an extended period of time that I began considering new ways of either documenting the transformation of space over time or using a supplementary or alternative means to experience the work.

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<sup>77</sup> Gaston Bachelard, *The Poetics of Space* (Boston: Beacon Press, 1994), 155.

Having been exposed to the expressive potential of timelapse footage in a seminal encounter with Godfrey Reggio's majestic and troubling *Koyaanisqatsi*<sup>78</sup> and later in the powerful films *Baraka*<sup>79</sup> and *Samsara*<sup>80</sup> by Ron Fricke, the cinematographer of *Koyaanisqatsi*, I have long been intrigued by this method of altering or scaling the perception of time's passage. Casey Kiernan, founder of the Timelapse Film Festival in Santa Monica, California, asserts that "Timelapse films are captivating to watch because the visuals trigger both the left and right sides of the viewer's brain. Your right brain is drawn into an imaginary world, while your left brain is trying to reconcile those images with a world you thought you understood."<sup>81</sup> In my own experience, it is a process of psychologically recontextualising familiar, experientially static environments into dynamic elements existing within a continual state of flux. The visual subject of timelapse video is often the transience of clouds, stars, seas and human populations. I believed that applied to subtle shifts of light, shadow and colouration within an otherwise neutral interior space, I could use timelapse to suggest rather than explicitly depict time's passage, encouraging a new kind of immersive viewing experience.

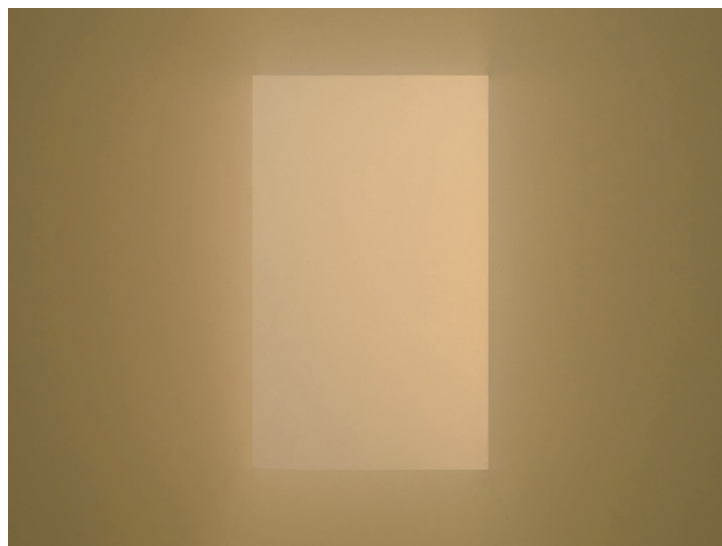


Fig. 68. Still image from timelapse video, 2017

Once I had begun developing the Light Space concept, the use of timelapse video to document the shifting light and chromatic conditions had become an obvious path of investigation. I had hoped to temporarily install the large-scale Light Space model at the edge of Lake Burley Griffin to shoot the timelapse. This location offered unobstructed illumination from sunrise to sunset, and provided a stable, monochromatic backdrop. However, powering the camera for that duration of time solely on

<sup>78</sup> *Koyaanisqatsi*, directed by Godfrey Reggio (Santa Monica: Metro Goldwyn Mayer, 2002), DVD.

<sup>79</sup> *Baraka*, directed by Ron Fricke (Culver City: Magidson Films, 1992), DVD.

<sup>80</sup> *Samsara*, directed by Ron Fricke (Culver City: Magidson Films, 2011), DVD.

<sup>81</sup> "Timelapse: The Emergence of a New Art Form," Timelapse Film Festival, June 14, 2018, <http://timelapsefilmfestival.com/emergence>



battery was impossible with the equipment I had on loan from Photo Media. Instead, I installed the work on the deck of an apartment on the Foreshore, charging the camera continually on mains power. Circumstances dictated that I had time for one attempt. Although the camera unfortunately shifted after a number of hours of shooting, I was able to generate roughly two minutes of good footage.

I recorded the timelapse on a GoPro Hero4 using still photography rather than video in order to document the greatest duration of time relative to available memory. I shot with the Wide field of view (FOV) setting to maximise the horizontal expanse within the model and used an interval period of 60 seconds between photographs. Upon concluding the shoot, all post-production was done using GoPro Studio. Designed specifically to generate timelapse video from GoPro footage, it allowed me to remove the fisheye effect of the Wide FOV. I found that the interval period of 60 seconds produced a strong flickering or strobing effect when viewed as video because the light conditions often changed significantly within the minute duration between images, negating the seamless transitions between light and shadow that we perceive throughout the day. Despite this, the video allowed me to observe that the subtly evolving light and chromatic conditions saturated the space as I had hoped. This outcome affirmed my belief in the function of the space and its immersive and contemplative potential.

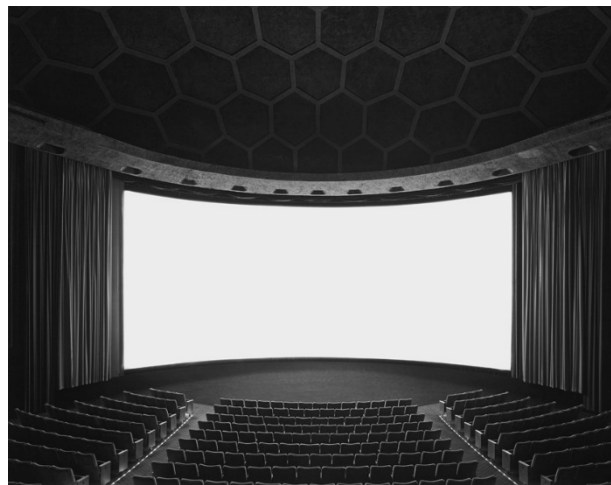


**Fig. 69. Still image from timelapse video, 2018**

After moving to Japan, I began working with timelapse video again. My interest lay in documenting the impact of light and shadow on the perception of contemplative architectural space in its native context. I hoped to record footage from dawn until dusk in a range of spaces and use the resulting videos to provide a new kind of immersive experience unencumbered by the necessity of

constructing the environments myself. Receiving permission to film in many of these spaces proved to be very challenging. I therefore began by recording the first video in the tatami room of our home in Toyama. With its traditional floor covering, shoji screen doors, *tokonoma* 床の間, and ample access to transient natural lighting, it provided an ideal space to begin testing timelapse documentation.

I purchased a GoPro Hero 5 for the project, as well as both a memory card and external battery pack which would allow me to shoot for the duration and interval period I hoped to. I recorded with a linear rather than fisheye FOV due to the orthogonal nature of the architecture and selected a 30 second interval rate for the first test, hoping this would help to eliminate the flickering of the timelapse filmed in Canberra. Situated on the coastline between the Sea of Japan and the Tateyama Mountain range, Toyama is notorious for ever-changing weather conditions. The day of filming, a period of intermittent cloud cover passed overhead, and even with the 30 second interval rate, the flickering effect was still quite pronounced after editing. However, I am documenting the passage of natural time, and these occurrences are true to each passing moment, speaking clearly of transience.



**Fig. 70. Hiroshi Sugimoto, *Cinerama Dome*, 1993**

I found sections of the resulting video to be intriguing as light and shadow projected abstracted traces of the external environment onto the shoji screen. Vestiges of these projections lit and darkened the architecture of the space, continually impacting its perceptual atmosphere. I found the video possessed a quality reminiscent of Japanese photographer and architect Hiroshi Sugimoto's 杉本博司 (b. 1948) luminous *Theaters* series, in which he photographed entire films with single exposures. While his dreamlike amalgamations of lightscape and architectural space depict time's

passage in a different way, both shift the perception of time and space in such a way that assumed perspectives are called into question.

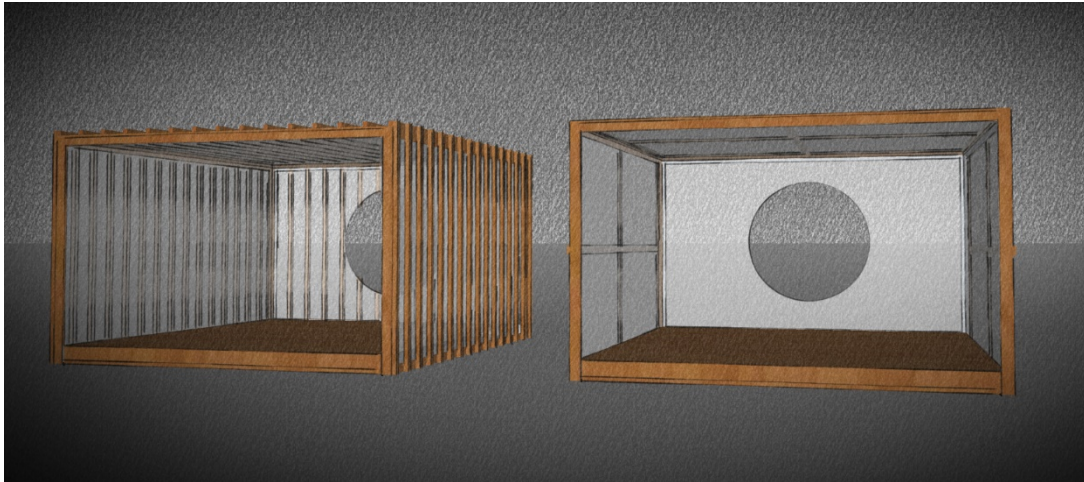


Fig. 71. Still image from timelapse video, 2018

After months of scouting and negotiation, I was able to film another timelapse in the tearoom of Toyama's *Nougakudou* 能楽堂, or Nō theatre. Given the ubiquitous presence of Nō performance in the research concerning the element of ma, I felt the opportunity to film in this beautiful location was serendipitous. I hired two large adjoining tearooms to expose the space to natural light from dawn until dusk. I chose to open several of the room's screens and doors, allowing elements of the surrounding traditional garden to enter the video. I hoped that this second layer of contemplative space would describe the passage of time in a more orthodox sense, contrasting the abstracted depiction of transience unfolding within the architectural space.

Footage was recorded with a 10 second interval rate to further diminish flickering and smooth transitions within the garden space. While there were technical and aesthetic details I will continue to address in future works, there were unexpected and intriguing aspects of this video. The dialogue between architectural and natural elements created a visual and psychological tension, as my eye was frequently drawn to the easily perceived action of the external space, rather than the slowly evolving atmosphere of the architectural space. This tendency drew clear parallels to the experience of meditation in which the attention is often pulled away from the slow, rhythmic breath towards the frenetic activity of the thinking mind. The simultaneous perception of multiple time scales was also intriguing, as the tearoom, and especially the central tokonoma alcove, became a still point amidst time's swirling passage. Viewing the footage, it was easy to imagine that the founders of the

tea ceremony and designers of early tearooms may have envisioned these spaces serving in a very similar capacity.



**Fig. 72. Sketchup rendering of contemplative space designs, 2018**

The most recent iteration in the timelapse investigation resulted from the continual challenge of identifying spaces which were suitable for the project and which I could also receive permission to film in. Thus far, this has excluded many of the genres of contemplative space examined within the research project, such as temples, shrines and churches. In response, I decided to create my own contemplative space. Similar in scale to the maquettes of the previous investigations and in many ways consolidating their intentions, this new approach offered the opportunity to design a space specifically intended to produce a continuously transforming play of light and shadow for timelapse documentation. This transportable space could be installed in an environment which guaranteed day-long exposure to natural light. Having decided to once again allow natural elements into the space through a circular aperture reminiscent of the traditional maru-mado window, this new direction also allowed me to incorporate the kind of natural backdrop that I would ideally choose to engage with in a contemplative setting.

Intent upon creating a clearly perceptible and continually evolving play of light and shadow, I chose to construct the space out of a translucent material. I opted to work with acrylic rather than glass because the space needed to be robust and easily transported for outdoor installation. An acrylic manufacturer in Japan produced the form with 5 mm translucent acrylic and drilled the window aperture which would serve as the primary focal point of the space. I then added the floor and architectural elements which would generate the activity of light and shadow during the filming and help lend the space a sense of architectural scale.



**Fig. 73. James Casebere, *Vaulted Corridor*, 2001**

**Fig. 74. James Casebere, *Cell with Rubble*, 1996**

The work of American artist James Casebere (b. 1953) influenced this new direction. Viewing his large-scale photographs of miniature interiors at the Cleveland Museum of Contemporary Art in 2003 left a lasting impression. Considered to be, “at the forefront of artists working with constructed photography”,<sup>82</sup> Casebere’s empty, whitewashed interior worlds he created for the exhibition, reminiscent of cells and asylums, were haunting, dreamlike and completely riveting. While Casebere’s conceptual interests are divergent from my own, with his concerning subjective realities and the notion that, “Our ideas of life are actually models that we build in our minds”,<sup>83</sup> I found the aesthetics and atmospheres of his imagery to be deeply moving and his working methodology of recontextualising miniature worlds to be highly relevant to this new direction.

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<sup>82</sup> “James Casebere Bio”, James Casebere, accessed June 16, 2018, <https://www.jamescasebere.com/bio/>

<sup>83</sup> Steven Vincent, “James Casebere”, *Art + Auction*, 2003, 42.



Fig. 75. Hiroshi Sugimoto, *Sea of Japan, Oki*, 1987

Having designed the space, conceived of its central aperture and concluded that I would film the interior overlooking the Sea of Japan, the images of Hiroshi Sugimoto once again came to mind. Like the work of Casebere, Sugimoto's *Seascapes* have long occupied a place in my imagination, forming an internal archetype for the feeling which I would later learn to call *yūgen*. In Sugimoto's words, "Every time I view the sea, I feel a calming sense of security, as if visiting my ancestral home; I embark on a voyage of seeing."<sup>84</sup> There is something both primally magnetic and deeply soothing in this space where water meets sky. I felt that no outlook could be more appropriate for a space of contemplation and the documentation of time's passage through light, shadow and the elements of nature than this convergence of two apparent infinities.

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<sup>84</sup> "Hiroshi Sugimoto Seascapes", Hiroshi Sugimoto, accessed June 16, 2018, <https://www.sugimotohiroshi.com/seascapes-1>



**Fig. 76. *Sea Space*, 2018**

Upon constructing the work and installing it in situ for photography, the space came alive, flooding with diffused sunlight as shadows raked across the floor. The convergence of slate grey ocean and diaphanous sky bisected the central aperture. I began seeing that this space represented a consolidation of the many directions explored within the research project. Elements of the works in glass became apparent as the timber beams, alternately cast in light and shadow, visually dissipated as they receded away from the structure's translucent skin. The void was also once again situated as a centralising focal point of the work. The activation of light and shadow which I had sought to generate using the interaction of timber and washi in the *Hikare to Kage* space was echoed with the new application of beams and frosted acrylic. The atmospheric illumination and colouration of the *Light Space* concept was further emphasised in this immersive environment with the application of additional transparencies in the walls and ceiling. And although the rainy season of Toyama has thus far prevented filming a new timelapse video of the space, I am confident that when the opportunity arises, the resulting footage will further demonstrate the confluence of these directions, along with the elements of *yūgen*, *ma* and *hikari to kage* into a dynamic, impactful space of light, shadow, transience and contemplative reflection.

## Lux Mandala



Fig. 77. *Lux Mandala*, 150 cm x 150 cm x 1cm 2017 (Photo: Hcreations)

The final area of investigation in the studio research focused on engaging the behaviour of light and shadow within a rare optical phenomenon to create an immersive contemplative installation.

Referred to as a “Glory”, this phenomenon causes a lucent, chromatic halo to appear around the shadow of the viewer. I hoped to synthesise the phenomenon in a gallery setting as a large-scale wall work, allowing it to function as a contemplative mechanism, like a radiant mandala. According to Jung, “The mandala is an archetypal image whose occurrence is attested throughout the ages. It signifies the wholeness of the self. The circular image represents the wholeness of the psychic ground or, to put it in mythic terms, the divinity incarnate in man.”<sup>85</sup> My intention was that, through the contemplation of one’s own shadow encompassed by this incorporeal, mutable phenomenon and the recognition of the phenomenon’s inherent transience, viewers might experience a cathartic sense of wonder, or perhaps, even a fleeting recognition of the transcendent within themselves and within the world we occupy.

I began by attempting to develop a basic understanding of the mechanisms which cause the manifestation of the phenomenon in nature. Through my research, I learned that, “Glories are caused by backscattering of sunlight from small droplets of water.”<sup>86</sup> They can be observed in nature

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<sup>85</sup> C.G. Jung, Aniela Jaffe ed., *Memories, Dreams, Reflections* (New York, Vintage, 1989) p. 334

<sup>86</sup> Philip Laven, “How Are Glories Formed?”, *Applied Optics* 44, 2005 p. 5675



when the viewer is facing a cloud or bank of fog at the antisolar point<sup>87</sup>, and the individual water droplets backscatter rays of sunlight towards the viewer, causing the appearance of an asomatous prismatic halo. Because of the viewer's position relative to the sun and the glory, their own shadow necessarily occupies the centre of the halo. In my mind, it is difficult to envision a more powerful contemplative experience within a gallery context than that had through prolonged engagement with an image of oneself enveloped within this incredibly unique phenomenon of light and shadow.

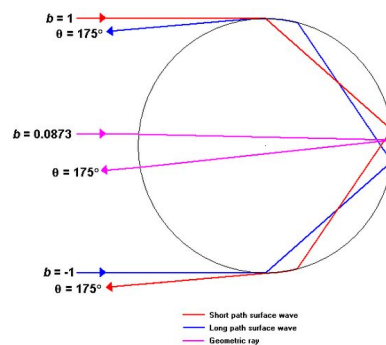


Fig. 78. Diagram illustrating the creation of a glory via the scattering of light rays. (Image: Philip Laven, 2005)

The scientific explanation of a glory is highly complex and remains incomplete. “Unlike the rainbow, the glory is not easy to explain, other than to say that it is a consequence of all of the thousands of terms in the scattering series, a correct but unsatisfying statement.”<sup>88</sup> In brief summary, while multiple rays of light can enter any point of a spherical water droplet, those which enter at the droplet's peripheral edge contribute directly to the formation of the glory's chromatic rings. According to Philip Laven, “The glory is caused by light rays incident at opposite edges of spherical water drops: the two light rays are reflected once within the drop, thus generating surface waves which produce backscattering.”<sup>89</sup> This activity is illustrated in the preceding diagram. As an artist and a researcher, I am still grappling with the serendipitous nature of the specific mechanism at work between these surface waves. “The coloured rings of the glory are caused by two-ray interference between “short” and long” path surface waves, which are generated by waves entering the droplets at diametrically opposite points.”<sup>90</sup> Thus, rays of light, and the resulting surface waves, create interference patterns which in turn yield the chromatic halo. These patterns, similar to their counterparts in timber and filament, create a new perceptual entity. However, rather than two visible, tangible lines meeting to affect a visual phenomenon, the most ephemeral and intangible of

<sup>87</sup> “The antisolar point directly opposite the sun, also named the subanthelic point, is a favoured direction for atmospheric optics. “Atmospheric Optics”, Les Cowley, 20/3/2017, <http://www.atoptics.co.uk/>

<sup>88</sup> C.F. Bohren and D.R. Huffman, *Absorption and Scattering of Light by Small Particles* (New York: Wiley, 1983), 389.

<sup>89</sup> Philip Laven, “Understanding Glories: Mie Theory”, Philip Laven, 4/7/2006, <http://www.philiplaven.com/p2c1.html>

<sup>90</sup> Philip Laven, “How Are Glories Formed?”, *Applied Optics* 44 (2005): 5682.

materials, light, converges with itself, rendering the invisible visible. Here, the mechanisms of light and perception intersect to interrogate the boundaries between the mind, the phenomenological, and the sublime.

My interest in this phenomenon and the possibility of creating a synthetic, lasting experience of it began years ago while I was completing my Masters, and eventually dovetailed into my research of immersive contemplative environments, and the experience of *yūgen* through the mechanism of light and shadow. Years ago, I noticed a spectral, circular rainbow reflected off of a parking lot I regularly traversed. On close inspection, I discovered that a fine layer of glass beads, or microspheres, had been scattered across the ground while creating reflective traffic marking. Because I generally walked over the reflective field while the noon sun was overhead, the sunlight was backscattered by the glass beads, creating the effect of a glory. The primary difference between the behaviour of light within a spherical water droplet and the glass microspheres I had encountered was that the radius of the rainbow, “is only  $\sim 21^\circ$  compared to the  $42^\circ$  of a water rainbow because glass refracts light more strongly than water.”<sup>91</sup> I realised that by using glass microspheres adhered to a stable substrate, I could potentially create a synthetic, enduring version of a glory which could be experienced within a gallery context at any time and for any duration unlike its naturally-occurring counterpart.

I eventually set the concept aside to pursue the development of the object-based works which were central to my practice at the time. However, in early 2017, as I sought feasible solutions for creating immersive environments, I returned to the concept with fresh perspective. Realising how clearly the phenomenon dovetailed with my investigation of the elements of Japanese space and provision of immersive contemplative experience, I began to work towards technical solutions in earnest.

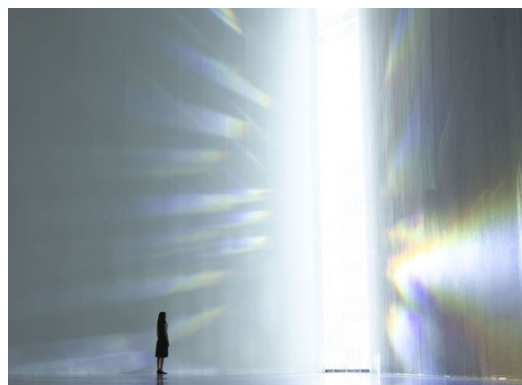


Fig. 79. Yoshioka Tokujin, *Rainbow Church*, Museum of Contemporary Art, Tokyo, 2013.

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<sup>91</sup> Atmospheric Optics, Philip Laven, accessed 22/03/17, <http://www.atoptics.co.uk/fz822.htm>

While numerous artists, including Turrell, have used light phenomena in an immersive context, several key artists influenced my thinking around the development of the glory project. Japanese designer and artist Tokujin Yoshioka's 吉岡徳仁 (b. 1967) *Rainbow Church*, a breathtaking work installed at the Museum of Contemporary Art in Tokyo in 2013, was very influential. Yoshioka installed 500 crystal prisms in front of a 12 metre tall window which pierced the corner of a large white space. The prisms separated light passing through the window into its constituent parts, creating an enveloping atmosphere flooded with shards of chromatic light. "*Rainbow Church* is... an installation that starts out from light... to achieve a blinding environment configuration in which the interceding of visitors is wound around by a rainbow effect... flashes and transparencies, undefined images, and the poetry of the absent develop... always with a desire to lighten the weight of objects."<sup>92</sup> Here, architect and academic Francesca La Rocca poetically captures the impact of Yoshioka's installation across a spectrum of the viewer's perceptions. Her notions of absence and the lightening of physicality resonate directly with the conceptual directions explored throughout my research relating to the expression of *yūgen* and *ma* through the language of light and shadow.

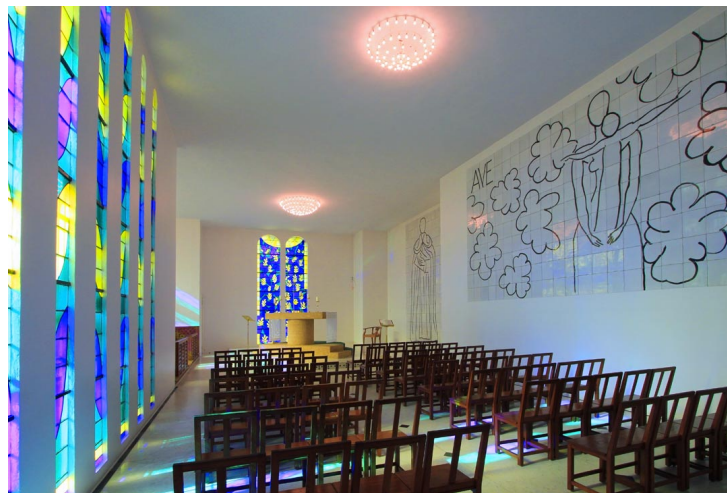


Fig. 80. Henri Matisse, *Chapelle du Rosaire de Vence*, Vence, 1951.

Yoshioka sites Henri Matisse's *Chapelle du Rosaire de Vence* as his primary influence in the conception of the chapel. Although I haven't experienced either space first-hand, I found Yoshioka's combined use of light phenomenology and space more closely embody *yūgen*'s spirit of profundity than Matisse's space. Yoshioka's use of minimal, geometric white space perfectly illustrates the earlier discussion of the capacity of space to function as an ambient mirror or amplifier of light. No

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<sup>92</sup> Francesca La Rocca, *Design on Trial: Critique and Metamorphosis of the Contemporary Object* (Milan: Franco Angeli, 2017), 156.

other configuration of space could have housed and enhanced the experience of pure light as effectively as the space which Yoshioka designed.



Fig. 8163. Olafur Eliasson, *Beauty*, Kiev, 2011

Olafur Eliasson's (b. 1967) *Beauty*, 1993 also came to mind during the development of the glory project. Although a prismatic expression of light is present in the work of both Yoshioka and Eliasson, they occupy quite separate poles in terms of scale, aesthetic experience and science. *Beauty* is much more intimate in its scale. If Yoshioka's work is a shining cathedral, Eliasson's is a rustic chapel. While the success of Yoshioka's work is due, in part, to its monumental scale and pristine environment, Eliasson's brings the viewer into a more intimate relationship with the phenomenon. "A punctured hose sprays a curtain of fine mist from the ceiling of a darkened space through the beam projected by a spotlight,"<sup>93</sup> making the viewer aware of the enabling apparatus occupying the gallery space. The viewer would also have been wrapped in the very humidity which produced the apparition.

While Yoshioka's work would remain relatively stable across the duration of an average viewing experience, Eliasson's would contrastively shift and oscillate like an aurora. The motion and physical engagement with *Beauty* also influences and activates the phenomenon. "From certain perspectives, a rainbow can be seen in the falling water; it shifts in intensity or disappears as the viewer approaches or moves away."<sup>94</sup> The science behind the phenomenon of *Beauty* is also more closely linked to the glory project than the prismatic mechanism of *Rainbow Church*. Light passing through the mist most likely refracted and backscattered in a way similar to that of the glory. Eliasson's *Beauty* is at once lasting and ephemeral, and while it isn't experienced on the same scale as *Rainbow*

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<sup>93</sup> Olafur Eliasson, "Beauty, 1993", 22/03/17, <http://olafureliasson.net/archive/artwork/WEK101824/beauty>

<sup>94</sup> Olafur Eliasson, "Beauty, 1993", 22/03/17, <http://olafureliasson.net/archive/artwork/WEK101824/beauty>

*Church*, it is undoubtedly a moving experience to share space with a living, breathing expression of a natural phenomenon.

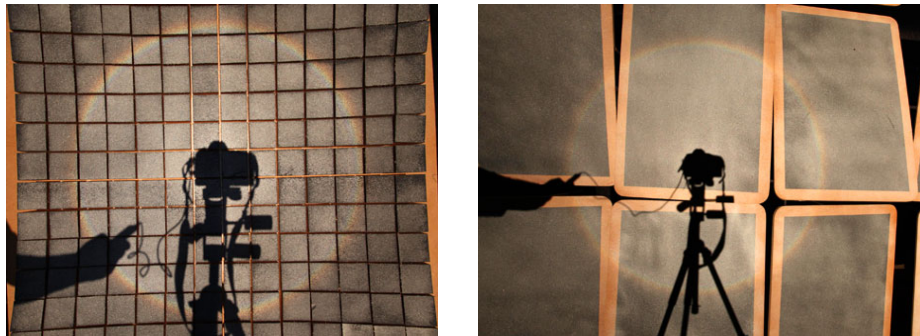


Fig. 82, 83. Charles Monkhouse, glory studies, 2011

The third artist who unexpectedly became relevant to the project was a British sculptor and installation artist named Charles Monkhouse. I discovered his work while researching the technical aspects of the glory. In 2011, Monkhouse constructed a series three wall-mounted “studies” as part of an exhibition in the UK in which he used glass microspheres to create a glory.<sup>95</sup> According to his website, Monkhouse was investigating the phenomenon of Brocken Spectre and Heiligenschein through these studies.<sup>96</sup> Brocken Spectre is the name given to the amplified, spectral shadow of the viewer cast onto distant cloud or fog at the antisolar point and therefore is frequently accompanied by a glory but phenomenologically independent from it. A Heiligenschein refers to the bright glow created by ground-born dewdrops at the antisolar point in which the viewer’s shadow is inexorably present at the phenomenon’s centre. Mechanically, light behaves in a significantly different way within the Heiligenschein than within a glory. However, these points of exploration led Monkhouse to create wall-mounted works using glass microspheres.

I was honestly disheartened when I first came across Monkhouse’s studies, and briefly considered the possibility that he had already covered ground in such close proximity to my own investigation that I had no space to contribute to the creative discourse. However, upon further consideration, I believed that our intentions and anticipated outcomes differed significantly. Monkhouse appeared to be primarily motivated by manifesting the phenomenon, as indicated by his accompanying text and the nature of his photographic documentation. His investigation did not appear to concern itself with creating an experience of deep reflection in which the viewer took on a participatory role.

While I was inspired by the phenomenon and intrigued by the mechanics involved in creating a synthetic iteration, I saw the phenomenon as a means to an end. Conceptually, I was motivated by

<sup>95</sup> <http://www.atoptics.co.uk/fz729.htm>

<sup>96</sup> <http://www.charlesmonkhouse.co.uk/portfolio.pdf>

the notion of the viewer actively engaging with an ephemeral expression of themselves encompassed by an ephemeral chromatic halo within an immersive field of light and shadow. My interest in the glory was conceived specifically to offer an experience of wonder, transience and the sublime, rather than serve as an illustration of an optical phenomenon. The potential perceptual, psychological and even spiritual implications arising from the contemplation of this experience motivated my interest.

The three primary technical challenges associated with the successful realisation of the glory project were sourcing the most effective and pure microspheres, identifying an appropriate adhesive, and identifying the most effective light source. Alex Jordan, a STEM Quality Advisor at Questacon who had been researching the glory for a future display in the museum, helped me to develop a deeper understanding of the phenomenon's mechanics early on, and pointed me towards important technical and material resources. Alex had identified a soda-lime microsphere produced by Ennis-Flint<sup>97</sup> as an effective medium commercially available within Australia. This material was used in all of the initial tests. However, the contamination level of the medium was quite high as it is intended to be applied to pavement for road marking. The contamination compromised the optics of the glory and the aesthetic purity of the experience, especially when the microspheres were applied upon a white background.

After relocating to Japan, I was able to successfully source a range of microspheres produced by Potters-Ballotini Co. which were of much higher optical quality, colourless and were relatively uncontaminated. I tested 1 mm, .75 mm and .5 mm microspheres as well as a powder-grade microsphere in order to establish which would create the phenomenon most effectively. The powder failed to interact with light to any observable degree. The 1 mm microsphere produced a dazzling all-over field of subtle prismatic colouration. The .75 mm and .5mm microspheres successfully produced glories. I found the .5 mm to be the ideal diameter for the experience I sought to provide, producing the most vivid and focused halo. The .5 mm microsphere will be used in the final installation.

I tested a wide range of adhesives in searching for the most appropriate product. My tests included oil and water-based contact adhesives, spray adhesives, gold sizing, and finally, two-sided adhesive films used in the graphics industry. Although all of the tested adhesives offered ample degrees of adhesion to support the nominal weight of the microsphere field, the key challenge became identifying an adhesive medium which could retain a consistent level of adhesion when applied over time across a significant surface area. When contact or spray adhesives were applied to a large field

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<sup>97</sup> Drop-On Beads Type BHR (LHMC) Silicon Coated

of substrate (I worked with MDF, acrylic and aluminium composite panel), the degree of adhesion would differ greatly between the zones where it was first and last applied. This, in turn, caused either a gradation or complete failure of microsphere adhesion. I subsequently tested a gold size which was formulated to stay “open” for many hours. However, it had a yellowish tint and was difficult to apply in a thin, even layer, instead creating visible texture under the microsphere field. I finally began working with optically clear, double-sided adhesive films. In Australia, these films proved to be the most successful, providing effective adhesion for the microspheres on surface areas up to 1.5 metres. However, the ability to saturate the adhesive surface of the film with microspheres in order to maximise the phenomenon and fully obscure the reflective adhesive film and substrate remained a challenge. Arriving in Japan, I had great difficulty sourcing adhesive films, and eventually sourced an adhesive spray from 3M called “55” which has been provided a highly effective solution, although the final microsphere surface remains highly fragile as it did with all other products I have tested.

My investigation of effective light sources for the glory project was greatly assisted by Dr Mark Dyson, a lighting designer and educator who works with light across multiple disciplines including theatre, dance and architecture. In order to successfully produce the glory, I needed to identify a light source which mimicked the sun as closely as possible. The sun produces the glory so successfully because of its intensity, uniformity and most significantly, its distance relative to the illuminated water droplets. The great distance travelled by the sunlight before encountering Earth’s atmosphere allows the rays to essentially run in parallel when they encounter the droplets, causing optimal backscattering. Unfortunately, most commercial light sources lack the intensity necessary to illuminate from any significant distance. Mark and I experimented with a range of light sources, intensities and configurations in trying to identify the most effective method of generating the glory. We tested tungsten, halogen, and numerous intensities, arrays and colours of LED lighting. It became apparent that some light sources are more capable of producing glories than others.

Halogen and tungsten, including an array of theatre profiles, proved to be largely ineffective in recreating the phenomenon. However, LEDs were capable of reproducing a halo which was comparable to the effect created by natural sunlight. We found that light sources had to possess two essential characteristics to recreate the glory. First, the light had to be generated by a single source. This unfortunately ruled out COB LED arrays, larger arrays composed of multiple LED cells which produce more lumens than a single LED. Secondly, effective lights generally emitted a high level of lumens. The two most effective light sources I encountered during the initial months of research were the single LED light of a mobile phone flashlight and a powerful cycling light. However, the phone flashlights’ low level of intensity, while it produced the most spectral glory, was only effective

within a 500mm range and therefore not appropriate for the project. The cycling light emitted 800-1000 lumens and was most effective at three metres. However, it was prone to overheating when remaining stationary for long periods of time.

After months of testing microspheres, adhesives and substrates, I publicly exhibited an outcome from this research in the 2017 Hindmarsh Prize exhibition at the Fitter's Workshop. Entitled *Lux Mandala*, the new work presented me with the opportunity to begin studying viewers' interaction with the phenomenon. It also allowed me to test the generation of a glory in a typical exhibition scenario where light contamination is often a reality. Measuring one-and-a-half metres square, the largest glory attempt to that point, a sheet of rigid aluminium composite panel (ACP) served as the substrate. Double-sided adhesive film was used to mount the Ennis-Flint microspheres to the ACP. The dimensions of the work were designed based on the earlier investigation of ideal viewing distance employed to provide an immersive experience. Standing approximately 50 cm from the work allowed the 1.5 metre expanse of the panel to fully occupy the viewer's field of view.

The adhesive film was applied to the ACP by Leader Graphics using a wet application technique after my own failed attempt at dry application, which resulted in the propagation of numerous air bubbles. Microspheres were sifted onto the adhesive film multiple times in attempts to fully saturate the surface and fully obscuring the substrate. However, I eventually applied several additional layers of glass with an industrial spray adhesive. While this process achieved the desired coverage, I believe either the spray adhesive or resulting surface structure marginally diminished the intensity of the glory produced. The work was illuminated by the Ledlenser H14R.2 model headlamp which features a single-chip LED intensified by a focusing reflector lens.





**Fig. 84. *Lux Mandala*, 150 cm x 150 cm x 1cm, 2017 (Photo: Hcreations)**

The above image of *Lux Mandala* was shot in a fully darkened space prior to the exhibition. I stood one-and-a-half meters away from the work for the photograph, with the light source and camera situated three metres from the work. Except for removing a small artefact of the camera's shadow near my neck, the image was not edited in post-production. The colour and intensity of the glory closely reflect my own perceptions of the glory during the photo-shoot, although I perceived it to be slightly larger and more dimensional. In the darkened environment, the work successfully reproduced the glory with an undeniable and breathtaking impact.

However, when I installed the work in the Fitters Workshop, the ambient light of the exhibition space substantially diminished the appearance of the glory and the ability to deeply experience the artwork. During the day, sunlight flooding the venue rendered the phenomenon entirely imperceptible. At night, the glory became apparent, although its impact was significantly lessened by incidental light. At the opening I stood a short distance away from the work, watching people discover and encounter the phenomenon. Many visitors didn't initially realise there was more to the work than its unusual material composition because the phenomenon is only manifest when the viewer stands directly between the light source and the reflective plane. Some went on to encounter the glory fortuitously, while others sought it out after watching the engagement of other viewers. However, once the viewers engaged with the phenomenon, it appeared to immediately trigger a sense of discovery and wonder. Some grew animated, moving back and forth across the viewing field to better apprehend what they were seeing. Others approached slowly, seeking the sweet spot, then stood quietly with a look of something bordering on wonderment as they beheld this intangible, chromatic halo encompassing the image of their own shadowed-self immersed. Coming away from this exhibition, I clearly understood that the work could only be shown again in a highly controlled

lighting environment, but that even in its compromised state, it successfully facilitated an experience of wonder and contemplation.



Fig. 85. *Lux Mandala*, 180 cm x 180 cm x 5.5 cm, 2018

A new iteration of *Lux Mandala* was constructed for installation in the gallery of the Toyama City Institute of Glass Art. This work afforded me several significant research opportunities. I increased the scale of the light field to 1.8 metres square, which significantly enhanced the immersive nature of the piece. It allowed me to test the ability of the higher-quality microspheres to manifest the phenomenon. Their enhancing impact was amplified by an exhibition space which was free from ambient light. Not only was the resulting glory of far greater clarity and intensity, the surrounding darkness of the gallery heightened a sense of spaciousness and full immersion. The experience of great depth within the work was intensified by the use of matte adhesive spray, rather than the reflective adhesive film used in the Hindmarsh iteration. With no concrete focal point arising to meet the gaze, it became as though the viewer stared out into a void beyond the physical composition to apprehend their shadow and halo floating in groundless space.

Finally, the new work allowed me to closely observe the reactions of faculty and students as they engaged with the phenomenon. In doing so, I was able to discover aspects of the experience I had not anticipated. I found that many Japanese viewers were initially reluctant to let their shadow fall on the work and had to be invited or even instructed to do so. I never received a satisfactory explanation as to why this may be, but I suspect it relates in some way to the notion of taking one's shoes off before entering someone's home. Upon discovering the halo, their initial reaction was

similar to viewers in the Hindmarsh exhibition: wonder, disbelief, excitement. Then, there emerged a preoccupation with the fact that each viewer encountered a distinct halo, unshared by others. This frequently yielded a deep interest in the realisation that the halo did not exist if it was not observed, and that what existed for them did not exist for me.

My efforts had been so concentrated on presenting the viewer with a specific experience of light and shadow and the resulting implications, I had overlooked fascinating characteristics of the work which related directly to the aspect of transience embedded within an experience of *yūgen*. The phenomenon and therefore the artwork is wholly evanescent, existing only when it is perceived by a viewer, and existing only for that viewer. Even then, it is in no way fixed, but rather continually occurring moment by moment as it is created by the interaction of light waves within the work. Discussing his *Rainbow, 1993*, Eliasson spoke of his interest in a parallel aspect of his work saying, “The interesting thing is about a rainbow, as we move around the space, the degree of the rainbow changes accordingly, and the idea that if we don’t look, the degree would not be there and there would be no rainbow... I am quite intrigued by the fact that this is maybe not here when we are not here. The ephemerality is really dependent on our presence. We... project the rainbow onto the water, it is not the sun and the rain which... projects the rainbow onto us.”<sup>98</sup> In *Lux Mandala*, the phenomenon is so intangible, so fleeting that even my right eye and left eye perceive two different halos, and at each possible division of a moment, a new halo comes in and out of existence. When I finally identified this dimension of deep transience engrained in the experience of the work, the last piece fell into place, and I realised that this outcome represented a significant contribution to the ongoing dialogue of immersive contemplative installation and demonstrated the successful incorporation of the elements of *yūgen*, *ma* and *hikari to kage* into my arts practice.

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<sup>98</sup> ArtNow. “Episode 1- Olafur Eliasson” (video), May 16, 2007, accessed June 3, 2018, <https://www.youtube.com/watch?v=YYBHo01CoZQ>

## Conclusion



Fig. 86. Tokonoma at dusk, Kyoto, 2015

*"A chilly greyness lies at the innermost heart of Japanese space. These diluted tones create a calm if strangely remote atmosphere, one which withdraws a little, and all but eludes our senses. Every surface appears to be fading away, leaving behind a world of silence, and a feeling of utter solitude."<sup>99</sup>*

-Henry Plummer

I have had this very experience within Japanese architectural space. I assert that this encounter with solitude is not one of desolation or lonesome despair, but rather, an acute, momentary recognition of one's singular existence within the exquisite, transient play of light, shadow and silence acknowledged to the core of our being before engaging once again in the tumult of daily living. The transformative potential of this encounter with the profundity of one's existence, and the desire to someday provide opportunities for this depth of reflection drove me to undertake this research project. My intention was that this period of immersion in the elements of *yūgen*, *ma* and *hikari to kage* would allow me to begin offering an analogous experience to viewers in a new context.

My research project has investigated the fundamental aesthetic and philosophical elements of contemplative space within the realm of Japanese architecture. I began with the dual premise that

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<sup>99</sup> Henry Plummer, *Light in Japanese Architecture* (Tokyo, a+u Publishing Co, 1995) p. 12

contemplative experience is a vital and frequently neglected dimension of the human experience, and that an enduring tradition of constructing spaces which facilitate contemplative experience exists within the canon of Japanese architecture. I proposed that by identifying the common underlying elements employed to create spaces which facilitate contemplative experience, I could develop means to adapt and assimilate these elements into the context of my contemporary visual arts practice, thereby offering the opportunity for analogous contemplative experience through the significant new context of a Western arts practice.

Throughout the course of the research project, I addressed the following research questions.

- What are the primary recurring elements of Japanese contemplative space?
- Which of these elements resonate with the existing intentions of my arts practice?
- How may these principal elements be adapted and assimilated into a studio-based visual arts practice?
- Can these elements retain their capacity to provide meaningful contemplative experience once removed from their native context?

I ultimately identified three principle elements which I believe most directly inform the nature of contemplative experience within Japanese architecture while directly correlating to the long-standing aesthetic and conceptual intentions of my own arts practice. The element of *yūgen*, which denotes notions of profundity and transience experienced through engagement with the corporeal world, was identified as the overarching element which defines the experiential tone of Japanese contemplative space. *Yūgen* resonates directly with the central experiences of profundity and the transcendent which I have continually sought to provide through my arts practice. Identifying the concept of *yūgen* has allowed me to apply a new framework of creative and philosophical discourse to my thinking around what was previously a largely ambiguous and amorphous central intention of my practice.

*Ma*, with its interstitial architecture of space, time and silence, was identified as the primary organising element of Japanese contemplative space in both construction and perception. New insights ascertained through my encounter with the philosophy of *ma* have contributed to the ways in which I view and address the concepts of void and volume, two longstanding structural and experiential organisers within my practice. The continually unfolding breadth of possibility held within the concept of *ma* will continue to inform the structure and experience of my work for many years upon concluding the research project.

Finally, I believe the lexicon of *hikari to kage*, light and shadow, serves as the primary vehicle through which the elements of *yūgen* and *ma* are made perceptually manifest. Light has been the

central experiential mechanism within my work since its inception but was generally driven by a “more is more” approach. With the discovery of shadow’s elemental resonance within innumerable examples of Japanese contemplative space, I have been able to deepen the aesthetic expression and experiential scope of my work, while achieving greater intrinsic balance between the visual and conceptual elements of light and shadow.

The primary research questions were addressed via three streams of inquiry: literature review, fieldwork and studio-based research. An extensive review of pertinent English language texts enabled me to develop the basis of understanding of Japanese architecture, aesthetics, and culture needed to identify the primary elements of Japanese contemplative space. Two research trips to Japan allowed me to test the findings of the literature review through first-hand experience of Japanese contemplative across a range of contexts, including temples, tearooms, museums, and even commercial space. These experiences in the field resulted in the identification of the three primary elements. Studio-based research, the final and most significant stream of inquiry, allowed me to test methods of adapting the identified elements into the language of my visual arts practice across a range of scales, materials and viewing experiences. Here, I explored whether analogous contemplative experience could be facilitated within an entirely new context.

Significant early outcomes of the studio research were comprised of a series of wall-mounted and free-standing sculptural objects made primarily of glass. This process allowed me to begin subtly testing the development and impact of the new content within a familiar methodology. Works from this first series exploring the three fundamental elements were critically well-received throughout notable exhibitions at Sabbia Gallery, the Canberra Glassworks and SOFA Chicago. A number were purchased by significant collectors and one was included in the highly competitive annual publication *New Glass Review*. These outcomes demonstrated that I had begun to successfully translate these elements into the output of my arts practice, and that audiences were being impacted on some significant level by the resulting works.

The following studio investigation featured compositions of light and shadow suspended within sequences of free-standing glass panels. These compositions directly explored expressions of ma through the structuring of void, and hikari to kage as the animating visual elements. This series also represented a clear evolution within my arts practice by utilising a new structural format which makes possible future works at an architectural scale. I developed new technical knowledge while realising this series which will also impact the breadth of my future practice. A work from this series was also featured in a subsequent publication of *New Glass Review*.

Studio outcomes evolved significantly following this series as I began to investigate the creation of immersive contemplative environments rather than sculptural objects of contemplation. I pursued the design of a free-standing immersive space composed of timber and washi paper for a significant period of time before being hindered by the projected cost of construction. I subsequently explored the application of wound filaments to create perceptually activated environments which facilitated contemplative experience while serving as financially viable construction methods. I produced a series of small and large-scale models of minimalist white spaces conceived to facilitate an immersive experience of light. The cost and complexity of realising these projects at a monumental scale proved to be prohibitive for the time being, encouraging me to research alternative methods of providing immersive experience.

This journey ultimately led me return to the optical phenomenon of the “glory”, an idea I had briefly explored prior to my candidature. Realising that my work with the elements of *yūgen*, *ma*, and *hikari to kage* dovetailed perfectly with an immersive contemplative experience of the phenomenon, I began to strategically investigate materials and substrates which would allow me to generate the phenomenon at an immersive scale. I have now successfully synthesised this elusive natural phenomenon for experience within a gallery setting. By allowing viewers to meditate upon their own silhouette encircled by a lucent halo while encountering the phenomenon’s ephemeral nature, my work can now provide a perceptually and psychologically immersive experience of profundity, transience and *ma*, made manifest through a wondrous encounter with light and shadow.

My research project has concluded that a form of fundamental human experience is made available within Japanese contemplative architecture through the orchestration of *yūgen*, *ma*, and *hikari to kage*. New works produced within my studio-based research have demonstrated that these principles can be successfully translated into the aesthetic and conceptual vocabulary of a Western visual arts practice. Furthermore, the research project has successfully affirmed that these elements preserve their ability to generate meaningful contemplative experience when engaged within this new artistic and cultural context. The outcomes of this extensive period of research possess the ability to impact significant new audiences through the provision of transformative immersive experience.

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