2025 ACSA Distinguished Professor Award Supporting Material

This supporting material illustrates my focus on teaching and related research from 1983 to the present, starting at Carleton University, where I began teaching. Throughout my career, I have tried to challenge and expand traditional design methodology to incorporate the intertwining of technological media and design-build strategies in teaching. I have enjoyed the experience of teaching at all levels of the BArch program, from first-year design studio to fifth-year thesis, as well as Master of Science design studio and design studios for our professional Master's program. My research interests originated from a teaching design studio and expanded to the philosophy of technology, contemporary cultural theory, and the history/theory of representation of various artistic practices.

Since 2003, I have taught a lecture course entitled Theory of Modern Japanese Architecture. Initially developed to meet the NAAB requirement for non-Western architecture, this course has become a cornerstone of the Bachelor of Architecture program. It is now a required course for all architecture students. I attempt to broaden students' perspectives and understanding of architecture beyond the Western canon by introducing the concept of 'Alternative Modernity' via the history of Japanese architecture. It does not introduce Japan as an exotic or esoteric example compared with Western architecture but as a foil. This course has been very instructive for teaching design studios and research since it allows me to examine my interests in a much larger historical and philosophical framework.

My studio teaching, research, and scholarly work are centered around the phenomenological position that tools for design, be they traditional or modern technology, are not neutral. Guiding observations for this endeavor are various Japanese philosophers, including Kitaro Nishida, Tatsuro Watsuji, and Shuzo Kuki; the French philosophers Maurice Merleau-Ponty and Paul Ricoeur; and German philosophers such as Edmund Husserl and Martin Heidegger.

One interest that originated from this philosophical background is self-build, which is how directly engaging materials in constructing architecture creates unexpected errors that reveal the true nature of materiality. I elaborate on the concept of 'making as performance,' that is, using the human body as an instrument for realizing architectural work. Another area that spanned from this position is emergent digital technology. I was engaged in content-based and applied research in network-based immersive collaborative/creation technologies in architectural design and education. My collaborator, Michael Jemtrud, and I developed the interface as a stand-alone web-based environment to explore online workspaces' pedagogical implications. Later, I experimented with augmented reality as a sustainability architectural education tool. My main interest in this area of research is how digital technology mediates between us and the world and changes our perception. These cutting-edge technological tools must be engaged critically with the solid ground in philosophy since they are never neutral in revealing the authentic experience.

I also introduce the importance of sustainability in design studios, not from an engineering point of view but from the concept of co-existence with nature. As Bruno Taut described, "Japanese architecture was an architecture, not of form, but of relationships," I try to stress the importance of the relationship between sustainability and the expression of aesthetic values in architecture by referencing both traditional and modern Japanese architecture.

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Directed Study Abroad: Japan

YEAR: Fall Semester 1986 ROLE: Design studio instructor STUDENT COMPENSATION: 6 Design Studio Credits

INTRODUCTION:

APPROPRIATE MISINTERPRETATION OF CULTURE

Katsuhiko Muramoto

> I understand (a different culture) without repeating, portray (it) without reliving, make myself different while remaining myself. To be a man is to be capable of this projection into another centre of perspective.
>
> —Paul Ricoeur, *History and Truth*

Modern technology has provided us with an efficient network of mass transportation which has drastically reduced the distance between countries, while providing mass-produced products which are then distributed widely. This "universalization in culture of consumption"[1] has progressed to the point at which it threatens the individual cultures of different countries. Even though this universalization has been spreading throughout industrialized countries, some cultures have managed to renew themselves without losing their own identities.

Cultural difference is obvious when one lives in a foreign country. One is presented with an entirely different way of perceiving reality, and is constantly faced with situations which question how one relates to the environment. Under this new light, even a common and ordinary object appears differently. In one's own country, the environment is present on an anaesthetized and almost unconscious level, and one's field of awareness is narrowed to immediate situations determined by need.

Understanding a foreign culture is a dangerous venture which risks being caught in a vague syncretism. This kind of misunderstanding is common, especially when approaching Eastern cultures, such as that of Japan, which have radically different layers of images and symbols. Regarding a foreign culture as a remote and exotic curiosity makes it seem to be just another culture among others. This approach, by its nature, causes the culture to remain a mere collection of objectifiable facts to be stored away with other information. Instead, to genuinely understand a foreign culture does not require entry into a foreign universe, stepping outside one's time and history. Understanding is not a free-floating consciousness nor an imposition of one's bias on the culture as if one is the master or manipulator of the situation. One needs to understand it "by means of sympathy and imagination, just as one understands a character in a novel or at the theatre, or a real friend who is different."[2]

It can be argued that when one lives in a foreign country, one's own world vanishes and that of the foreign culture takes over. On the contrary, one becomes fully present in that situation, bringing to it everything one has previously experienced. Thus one can "understand (it) without repeating, portray (it) without living, make (oneself) different while remaining (oneself),"[3] through a "fusion of horizons,"[4] a blending of another horizon and one's own. In order to confront a self other than one's own self, one must first have a self.[5]

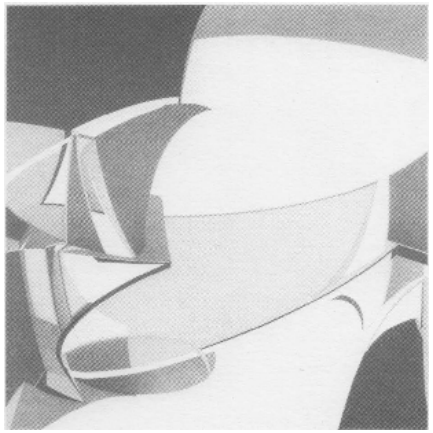
If one stops taking the "objective universe" as reality, then the notion of "one right interpretation" becomes a thoughtless impossibility. The student projects presented here appear to have little to do with an interpretation of Japanese culture, so far as objective reality is concerned, because they are not simply copies of that reality. An (appropriate) interpretation must, of course, begin by addressing the facts and taking account of them. This process of literal reconstruction, however, cannot be taken as a final operation. The process then needs to be placed in a broader field of meaning, the outside of which one at least dimly understands and seems to share in common. To understand and to fuse different cultures is to place one's self-understanding in the balance. Neither one's horizon nor the other horizon which is encountered remains absolute. It is partially true that one can understand only within and through one's own horizon. If this were completely true, no significant alteration in one's horizon could occur. Instead, in experience there is a partial negation of one's horizon, and through this a more encompassing understanding emerges. In the end, the projects seem to present radically different understandings of Japanese culture, and in fact some of them do not retain the original meanings with which they started. They appear to be a misinterpretation of culture. However, on the contrary, these projects simply recognize that "meaning" is not a changeless property. As far as understanding is a dialectical process in which the person (and his "horizon" or "world") interacts with what is encountered, this work constitutes an *appropriate* (mis)interpretation of culture.

> Some are returning, going back to the places they had left. . .living in order to return. They go out to obtain walling material for their houses. . .thicker, stronger than ever to return to.
>
> —Kobo Abe, *The Ruined Map*

NOTES

1. Paul Ricoeur, *History and Truth* (Evanston, Ill.: Northwestern University Press, 1965), p. 274.
2. Ibid., p. 282.
3. Ibid., p. 282.
4. Hans-Georg Gadamer, *Truth and Method* (New York: Crossroad, 1985), p. 273.
5. Ricoeur, *History*, p. 283.

All illustrations for this project were from the Directed Studies Abroad: Japan (Ottawa: Carleton University)



Development of *natsume*

FOREIGN INFORMATION

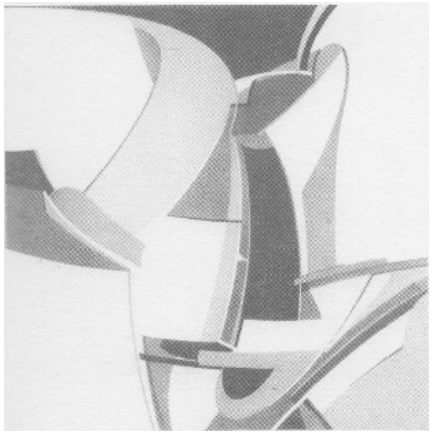
Alan Unruh

The tea ceremony is a ritual for mutual understanding through self-understanding. One transforms oneself to be able to understand. When something is understood, one is changed and so is the object. This results in a strange interplay between the known and the unknown.

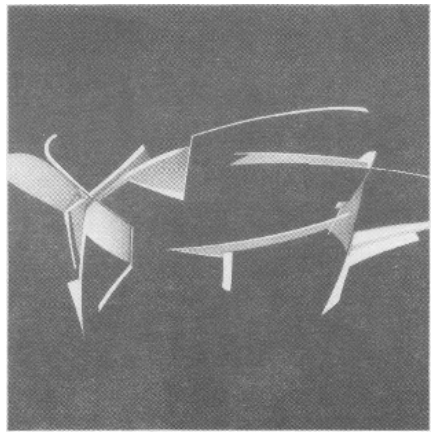
Curious aspects of Japan are to be shown to tourists in this Foreign Information Centre. It consists of three areas: first, the entrance hall where one's belongings are left; second, the exhibition hall where Japanese folklore arts are displayed; third, the auditorium where simulations of places in Japan are shown. All the necessary tourist information is provided.

People meet; they cross. Cultures refuse to meet; they collide. There are disfigured traces and unfinished questions, and then the sudden transparency reveals a strange twisted shell, encasing what was. Nothing really occurs in the Foreign Information Centre; here there are only distant images.

「人々は遭遇すする、互いを横切る。 文化はこの遭遇を拒否する、衝突する。 このインフォメーションセンターでは何も起こらない、ただ現実から遠くかけ離れたイメージが存在するのみである。」



Development of *chasaji*



Integration of *natsume* and *chasaji*

THE CEREMONIAL NOH DANCE: A SERIES OF PAVILIONS FOR TOURISTS IN KYOTO

Douglas Jung

This project studies the ceremonial expression of the Japanese Noh theatre. Consistent with many of the Japanese arts, Noh does not aim at an imitation of nature nor an illusion of actuality, but a symbolic representation governed by a strict set of rules. Its dance masters a grammar of symbolic gestures that embrace no fewer than three hundred forms (*kata*), all of which adopt a subtle use of gesture and action to reveal hints and suggestions of the act.

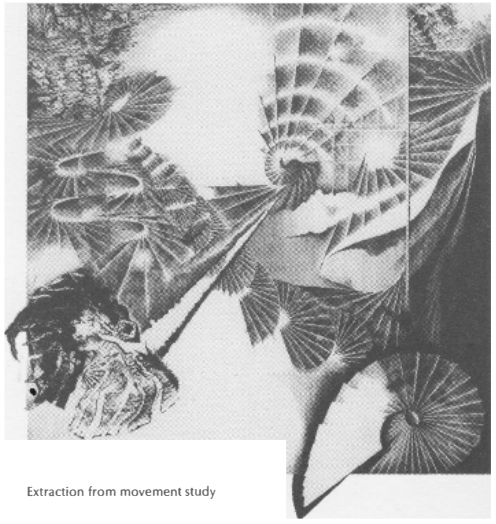
The whole action takes place in a free land of fantasy. The figures move over the stage like shadows, shining in the glory of their magnificent costumes but only fleetingly embodied in human form. The most apparent characteristics of the Noh dancers are the mask and the fan. While the mask is an opaque means of concealment, the fan of the Noh dancer is perhaps something that exposes him in the imagination of the audience.

The stop/action of the Noh revealed through the fan is transformed into plan and section studies. With the theatrical stage imagined as Kyoto, the volumetric study of the Noh is further interpreted into seven pavilions situated on various sites, corresponding to the stop/action of the Noh and responding to the characteristics of the city.

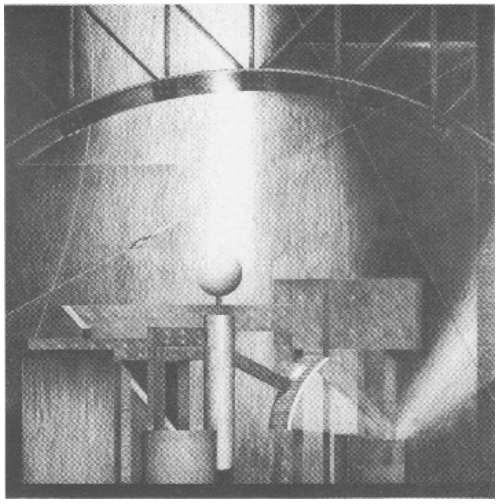
インフォメーションパビリオン
ダクラス　ユング

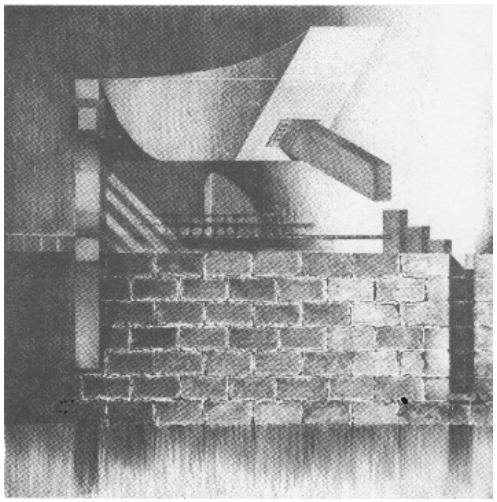
この作品は「能」の儀式的表現を学ぼうとする事に始まった。　他の日本芸術と同様に、「能」は自然を模写または実在の幻影を目的とする物ではなく、厳密な規則に従った象徴的表現を目的とする。　「能」において最も特徴的な物は能面と扇である。　能面が不透明な隠蔽の手段である一方、扇は観客の想像に彼をさらすものであろう。
最初にこの扇によって表現された能はプランに記録され、そしてセクションに変形された。
　さらに京都を能舞台と見なす事により、この能の動き、そして扇の表現は京都市内に点在する七つの地点となった。　これらの地点はそれぞれの地域の持つ特徴を考慮にいれながら一連の七つのパビリオンに発展した。
　これらは京都駅前、四条通り、新京極通り、琵琶湖疎水沿い、東山、二条城内そして鴨川沿いに位置し、それぞれの特徴を旅行者に提供する。　旅行者はこの一連のパビリオン訪れる事により京都を知る事が出来る。

Movement study of fan in Noh play

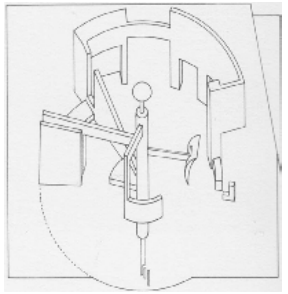


Extraction from movement study

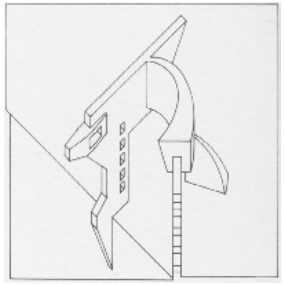




Shopping mall pavilion



Canal pavilion



ROTCH TRAVELING STUDIO: JAPAN

YEAR: Fall Semester 2003 ROLE: Design studio instructor STUDENT COMPENSATION: 6 Design Studio Credits
Funding Source Expenses: the Rotch Traveling Studio Grant $ 20,000. This covered students' airfare from State College to Osaka, transportation, and accommodations.

All illustrations for this project were from the Rotch Traveling Studio Report submitted in 2003

ROTCH TRAVELING STUDIO JAPAN, FALL SEMESTER, 2003

DAY 6: AUGUST 27

The group had to leave Kyoto Station at 6am to travel to Ise Shrine. Our visit began with a tour of the shrine carpenter workshop where the students had the opportunity to observe carpenters working and were shown an exhibition of tools, models etc within the same compound. The day progressed with visits to both the inner and outer shrines, as well as lunch at a traditional seafood restaurant. After the visit to Ise Shrine, they visited the Sea Folk Museum on the coast. In order to make next day's move to Tokyo easier, the group stayed in Nagoya where they were able to experience a little nightlife in downtown Nagoya.

Buildings visited: Ise Shrine Carpenter Workshop - Ise Shrine - Sea Folk Museum (Hiroshi Naito)

DAY 12: SEPTEMBER 2

The remainder of the trip was spent working on the students projects. Visits to Katsura Palace were made in four different groups due to a strict limitation on the number of visitors allowed to enter the palace each day.

Buildings visited: Katsura Imperial Palace

Shoikin (KP)

Nancy, Grace and Alex (NM)

Keith in front of the crowd (MLC)

Stepping stones in front of Koshoin (NM)

Shoiken (NM)

Shoikin (KP)

Gepparo Tea House (KP)

Ko-shoin (NM)

Ko-shoin, Chu-shoin and Shin-goden (NM)

TRAVEL (V. & N.)
go from one place to another; make a journey esp. of some length or abroad. The etymology of travel is from old English word "travail: painful or laborious effort" which in turn comes from "travaillier" (instrument of torture f. L tres three + palus stak).

STUDIO PROJECTS

STUDIO INTRODUCTION: APPRORIATE mis/INTERPRETATION OF CULTURE

The understanding of a foreign culture, especially of the East with its layers of images and symbols so radically different from those of the west, is a dangerous endeavor.

Considering such a culture to be simply remote and exotic, drastically different from one's own, one can easily dismiss it merely as strange. Another and more common approach towards an understanding of the East is to do the exact opposite, to glorify or sanctify it on aesthetic terms.[1] Although those attitudes appear contradictory, they are based on the same attitudes: regarding another culture as something different from oneself, thus it is not a threatening presence to the self. Such attitudes are common when approaching cultures like Japan, a country woven with layers of images and symbols radically different from those of the west on one hand, while so familiar and decipherable.

1. Karatani Kojin, "Japan is interesting because Japan is not interesting" Http://www.karatanifo-rum.org/lecture.html

What is significant in those attitudes is that travel to a foreign country, traditionally a source of wonder and marvel, is neutralized and can be turned into a series of sight (site)-seeing events. The highlight of such travel becomes simply taking pictures of notable historical or cultural places in a foreign country. Equipped with a digital camera and video camera, one is capable of capturing another culture without having to explicate it. The same can be said for the idea of purchasing souvenirs. Both reduce the mysterious presence of the foreign culture to a convenient and controllable dimension. Hence, turning the cultural artifact into something that takes no 'laborious effort' or special knowledge to understand. In such a case, one can easily dismiss the foreign culture, seeking the familiar within the unfamiliar, and the only surprise is no surprise.

As modern hermeneutics suggests, genuine understanding of a foreign culture does not require entry into a completely foreign universe, stepping outside one's time and history. Nor does it require imposition of one's own bias on the culture as if one is master or manipulator of the situation. One tries to understand a foreign culture "by means of sympathy and imagination, just as one understands a character in a novel or at the theater, or a real friend who is different."[2] One can "understand (it) without repeating, portray (it) without living, make (oneself) different while remaining (oneself)," through a "fusion of horizons, a lending of another horizon and one's own."[3] Travel to foreign counties in this case is to acquire more of the foreign culture, that which is not part of 'me', making myself more than what I was as a result. This will only be successful, however, if one stays in touch with one's fundamental condition while one is attempting to transcend it.

2. Paul Ricoeur, History and Truth (Evanston, Ill: Northwestern University Press, 1965), p.274

3. Hans-Georg Gadamer, Truth and Method (New York: Crossroad, 1985) p.273

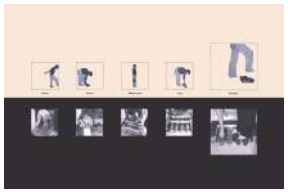
'GRAFITTI' PROJECT: DESCRIPTION

Taking a similar conceptual basis, the 'Graffiti' projects presented here are architectural interventions onto an existing house in Osaka. The projects began by addressing and taking account of an existing condition in sketching and photographic documentation, which was physically engaged and eventually altered. The projects are the students' attempts to cope with the overwhelming presence of the culture of Japan, without forgetting their previous life experiences.

To work on a project in this way is to place one's self-understanding in the balance. It is through the act of making that the fusing of the cultural horizon of Japan with one's own becomes possible. Through the engagement and negotiation of a physical condition, neither one's own horizon nor the horizon of Japanese culture remains absolute. As a result, a partial negation of one's horizon will occur, and through this a more encompassing understanding of the 'other' culture emerges.

'GRAFITTI': GRACE HEICHER/RACHEL OLEINICK

Diagram of taking shoes off



When traveling in a foreign country, one becomes fully aware of how differently each culture relates to its environment. In such situations, travelers are conscious of ordinary actions, which would be taken for granted in their own country. Faced with different customs in Japan, this pair of students was intrigued by and focused on the Japanese custom of removing shoes before entering a house. They sought to bring this action to a conscious level for Japanese by architecturally articulating the idea of 'threshold'. Part of existing office floor was cut out and replaced with plates of glass supported by cantilevered steel. The glass, due to its transparency, makes visitors aware of the fact that they are in a transition zone, and makes an intriguing action which otherwise would remains on an unconscious level.

RESEARCH ON EMERGING TECHNOLOGY IN DIGITALLY MEDIATED DESIGN COLLABORATIVE ENVIRONMENT

YEAR: Fall Semester 2007 ROLE: Design studio instructor and co-PI in collaboration with Michael Jemtrud at Carleton University in Ottawa, Canada
STUDENT COMPENSATION: 6 Design Studio Credits

Research on Emerging Technology in the Digitally Mediated Design Collaborative Environment

During the spring semester of 2007, student teams in two locations participated in a collaborative digital architecture studio, between the Immersive Environment Laboratory (IEL) at Pennsylvania State University and the Carleton Immersive Media Studio (CIMS) at Carleton University, Canada. The experimental design studio investigated the use of a network-enabled platform (NEP) in educational environment involving a combination of technologies that include: high bandwidth network infrastructure; high-performance visualization/rendering and compute cluster solutions; Storage Area Network devices and servers; co-located immersive environments, and a range of modeling and imaging applications. The NEP enabled student teams in multiple locations collaborate via on-demand, synchronous access to project data, visualization, modeling, simulation and multimodal interpersonal communication tools through a web service based dashboard interface. The objective of the tele-collaborative environment was to create an immersive, information and communications rich environment for dialogue, group problem solving and the shared experience of participatory design. The research agenda is to build upon previous research conducted at the IEL and in CIMS on advanced networks, broadband video, visualization technologies, middleware and interface design, and to investigate how digitally mediated design can facilitate the collaborative design process in 'real-world scenarios'.

This "proof-of-concept" and "capacity building" phase of the Digitally Mediated Collaborative Design Environment, was implemented through a series of collaborative design environments, each of which comprised a loose assemblage of geographically distributed platforms (or "scenes"), including traditional architecture studios at both Penn State and Carleton. We approached each collaborative design environment as a "staging" that introduced unique conditions for a dynamic interplay between technological mediation and making.

Penn State and Carleton Architecture Students Collaborate Using High-Speed Network

Using the Immersive Environments Lab in the Stuckeman Family Building, Penn State third-year architecture students present their model for a vertical flight museum to their classmates and to students at Carleton University (as seen in panel on the right).

During the spring 2007 semester, Penn State third-year architecture students designed renovations for the School of Architecture at Carleton University in Ottawa, Canada—without ever visiting the school. They collaborated with students at Carleton using the National LambdaRail network (NLR), a U.S. higher education consortium that maintains fiber-optic-linked networks capable of transmitting data at a rate of 10 gigabytes a second—a rate that would allow an entire DVD movie to be transferred in about four seconds.

Penn State joined the NLR, which is owned and controlled by the U.S. research community, in summer 2006. The collaborative architecture project with Carleton is among the first at Penn State to take advantage of the bandwith capabilities offered by the NLR. Canadian institutions support a similar national infrastructure, and Carleton is the only university in Canada to utilize the high-speed network for the design disciplines. Currently both networks are primarily used in the engineering and physics fields.

Katsu Muramoto, associate professor of architecture at Penn State, and **Michael Jemtrud** ('93 B.Arch.), associate professor of architecture at Carleton University, teach the third-year studios at their respective locations. They began discussing a collaborative project about a year ago because they agreed it "seemed like a natural fit." Both architecture programs have been using immersive environments in their courses for a number of years, through Penn State's Immersive Environments Laboratory and the internationally recognized Carleton Immersive Media Studio.

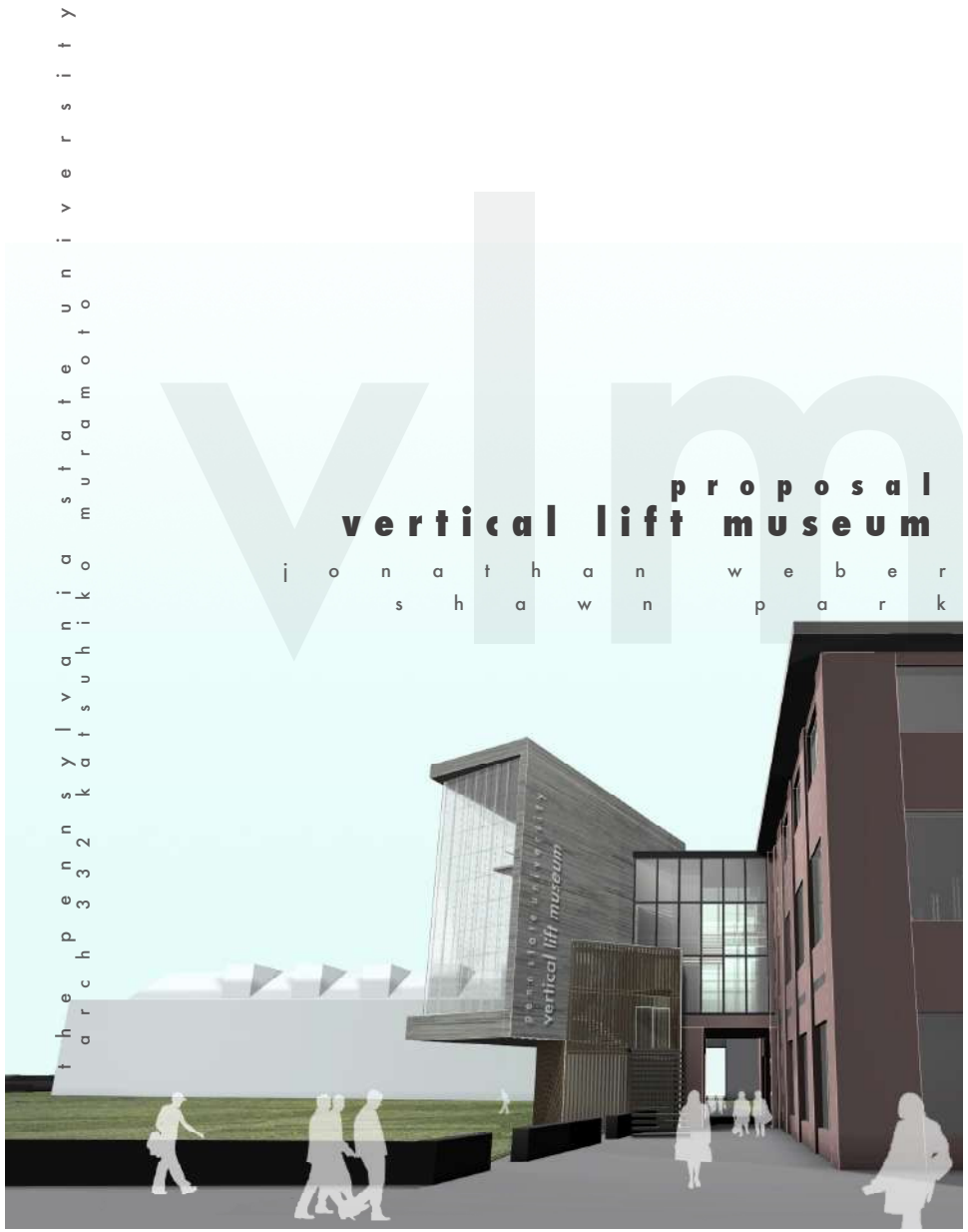
The semester-long project was not just about using the NLR. During the first part of the semester, the Penn State and Carleton students collaborated on designing a vertical flight museum in Engineering Unit C on the University Park campus. However, they utilized low-bandwith technologies that did not allow them to work together in "real time"—Penn State students would work on the model and then send it electronically to the Carleton students so they could work on it. When they used the NLR during the second part of the semester, they were able to collaborate like they would if they were in the same location, working on the same model at the same time. For example, a student at Penn State could see a line electronically drawn by a student at Carleton while that student was drawing it.

Collaboration has always been a hallmark of the architecture profession, but architects and other design professionals are increasingly collaborating with colleagues at widely dispersed locations. Therefore, the Penn State/Carleton project introduced students to an important characteristic of the professional world in addition to serving as an academic exercise. For Muramoto and Jemtrud, it was a mutually beneficial research project that will aid them in implementing more efficient and effective uses of new technologies in their immersive environment labs. They intend to continue the collaboration using the NLR in future semesters.

Although the NLR is relatively new to the arts and design disciplines, Muramoto and Jemtrud agree the possibilities are endless. The NLR greatly enhances the concept of e-learning, allowing, for example, instructors of music and dance to clearly illustrate concepts in real time to students at remote locations. In addition, with the high-definition technologies that are part of the NLR, visuals are clearer and "finally meet designers' standards," according to Jemtrud.

The Penn State/Carleton project, which received a College of Arts and Architecture Faculty Research Grant, is a joint effort involving the universities' architecture departments and Penn State's Information Technology Services. Other Penn State faculty members involved include **Loukas Kalisperis** and **George Otto** (architecture) and **Tim Murtha** (landscape architecture). For more information on Penn State's use of the NLR, visit http://its.psu.edu/nlr/. *–AMM*

Design Studio Project Example: Jonathan Weber and Shawn Park

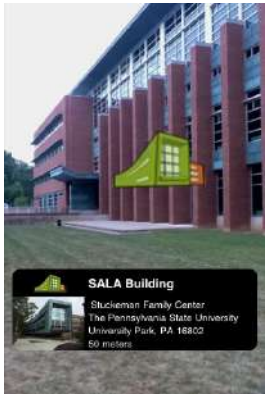


MOBILE AUGMENTED REALITY: BRIDGING THE GAP BETWEEN REAL AND VIRTUAL IN SUSTAINABLE EDUCATION FOR BEGINNING DESIGNERS

YEAR: 2012 ROLE: Graduate thesis advisor for Vui Huynh and principal investigator STUDENT COMPENSATION: 6 graduate thesis credits

CATEGORY
DREAM: Sustainable Imagination and Creativity

TITLE:
Mobile Augmented Reality: Bridging the Gap between Real and Virtual in the Sustainable Education for Beginning Designers



The domination of paper-based design (sketch and drafting) and physical models has now been taken over by digital technologies in the education of Architects. With the latest digital technologies, students produce high-quality designs they could not have imagined. They can even 'realize' their complex "blobby" forms using the latest digital fabrication machines. Some theorists claim that digital technology increasingly blurs the difference between real and fiction. Indeed, by believing in the computer-simulated environment as a faithful representation of how the material looks, feels, and functions in the real world, students have removed themselves from the process of traditional 'making' and lost touch with the materials out of which their designs are built. Paradoxically, one can argue such distance in design (real vs. virtual or buildable vs. unbuildable) is getting bigger, and our students quite often fail to recognize the close relationship between design and construction by confusing the virtual realities with their seductive detail with the real thing.

Compared to this purely synthetic, computer-generated world, Augmented Reality (AR), according to Wikipedia, is "a term for a live direct or indirect view of a physical, real-world environment whose elements are *augmented* by virtual computer-generated imagery." Being partly virtual and natural, AR technology can display relevant information at the appropriate time and location, thus demonstrating spatial relationships and the interactions of elements within a 3D space. This also provides the potential for seamless interaction between the real and virtual worlds, creating learning environments that are richly populated with a blend of hardware and software applications.

Steadily improving smartphones like iPhone and Android, with sophisticated GPS systems, accelerometers, and video cameras, now offer us the possibility of greatly enhanced ways to apply AR technology, allowing real-time interactivity and rich media experiences with quality and reliability. This paper reports how such transformative technologies in AR may play out in educating our students who are engaged in designing and building our built environment by bringing back a sense of materiality to an immaterial realm. It specifically focuses on how this technology can enhance sustainability education for beginning design students. We will report how to render different combinations of text, icons, images, or 3D objects so that students can physically explore areas of interest by moving through a projected knowledge set and picking out images, movies, sounds, or text to make them aware of the world's spatial and material depths. It also speculates how such a paradigm shift brought on by recent technology opens up different modes of education in academic settings.

FRAMING TEA CEREMONY

YEAR: Fall Semester 2016 ROLE: Design studio instructor STUDENT COMPENSATION: 6 Design Studio Credits

Pennsylvania State University Department of Architecture
ARCH 531 ARCHITECTURAL DESIGN 1
Fall Semester 2016

Design Studio Members: Shannon Capone, Adam Cassel, Rong Chen, Sohail Sadroleslami and Siavash Varasteh Vala

Framing Tea Ceremony

Project Description

This is an intense group project to design and construct a small structure suitable for accommodating a Japanese Tea Ceremony in the Stuckeman Family Building.

Tea House (Sukiya Style Architecture)

Originating from Zen Buddhism, the tea ceremony symbolizes the aesthetic simplicity of Zen and represents its philosophy of harmony, respect, purity, and tranquility. As you will experience at The Penn State Tea Institute, the tea ceremony is highly prescribed, and every detail of the ceremony is carefully choreographed: from entering and leaving the room, making and serving the tea, and appreciating the host's choices of flowers, scroll, and tea vessel appropriate to the season. On the contrary, its architecture, known as Sukiya Style, has no prescribed rules.

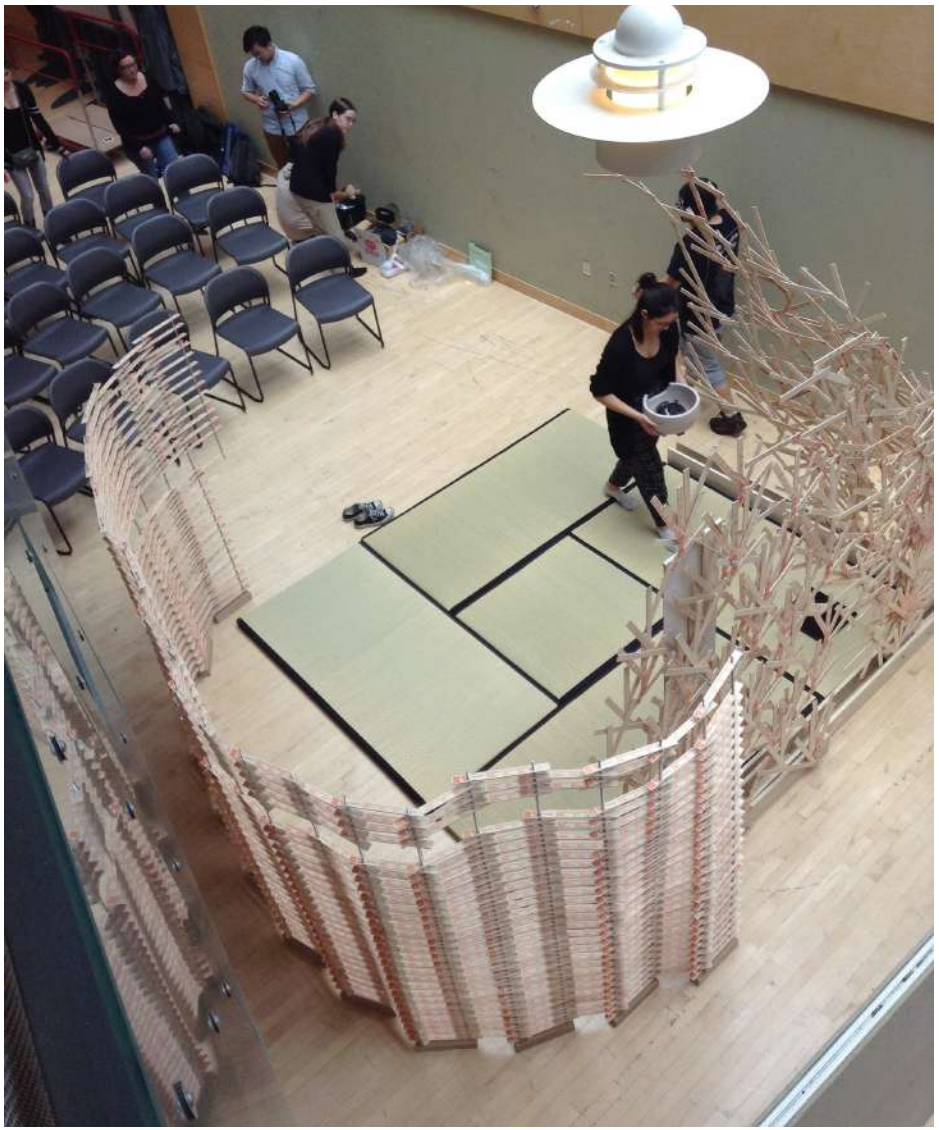
> *That the tea room should be built to suit some individual taste is an enforcement of the principle of vitality in art. Art, to be fully appreciated, must be true to contemporaneous life. It is not that we should ignore the claims of posterity, but that we should seek to enjoy the present more. It is not that we should disregard the creations of the past, but that we should try to assimilate them into our consciousness. Slavish conformity to traditions and formulas fetters the expression of individuality in architecture. ... Would that we loved the ancients more and copied them less!*
>
> - Okakura Kakuzo, *The Book of Tea*

Sukiya Architecture, often translated as 'likable hut,' is understood as a 'devotee of aesthetic taste.' Although it is described as style, Sukiya is more like a genre than style. Its design intends to discover the Zen aesthetic ideal by refining one's unique taste and expressing it in making a teahouse. Because of this, it has been a source of inspiration for many modern and contemporary architects, who have explored its aesthetics, material application, and construction techniques applicable to their own specific time and needs.

We will examine the tea ceremony concept through the lens of modern architecture, explore materiality and construction details, and imagine how they will aid us in designing a space and its unique architectural character conducive to tranquil and meditative activities.

Project Objectives

> Expound diagramming skills
> Collaborative skills
> Learning by making full-scale
> Explore the role of tectonics and details



ARCHITECTURE AND ENERGY, AND ENERGY ACCOUNTS CONFERENCES

YEAR: January 2013 and 2014 ROLE: Conference co-organizer COLLABORATORS & FUNDING SOURCE: Daniel Willis (Penn State), William Braham, and Daniel Barber (Penn Design). Department of Energy $280,000

ARCHITECTURE AND ENERGY

THE INFLUENCE OF CLIMATE AND REGION

JANUARY 25, 2013

UNIVERSITY OF PENNSYLVANIA SCHOOL OF DESIGN

WWW.ARCHITECTUREANDENERGY.COM

The central role of energy in global, industrial civilization is well-established; fuels have largely replaced the laborers and slaves of agricultural civilization and wholly surpassed them in capacity. The portability and energy density of fossil fuels have engendered radically new forms of building and settlement over the last two centuries, dramatically altering the connection of architecture to its climate and region. As the transition from fossil fuels begins, those connections will change again, not back to purely agricultural patterns, but to new kinds of production, new terms of identity, and new types of architecture.

Narratives about regions offer local identities based on climate, geography, and long-standing cultural traditions of settlement. In its simplest form, this can be understood as a longing for the conventions of agricultural civilization even as they are overwritten by the mobile, media-based themes of liberation and globalization. Since the beginning of the modern period the idea of the region has served as a counterweight to the abundant enticements of universal, technological civilization. In different forms, that has been the appeal of critical regionalism, bioregionalism, bioclimatic design, watershed politics—even *Ecotopia*—which offer methods by which social and aesthetic forms of identity can be explained.

Concepts of design rooted in climatic difference are among the most persuasive strategies available to architects, and can yield both substantial gains in energy-efficiency and forms of building whose benefits are more generally intelligible. The connections between climate and region are manifold and intimate, and will be examined by designers and scholars from a variety of backgrounds.

William W. Braham and Daniel Barber
University of Pennsylvania

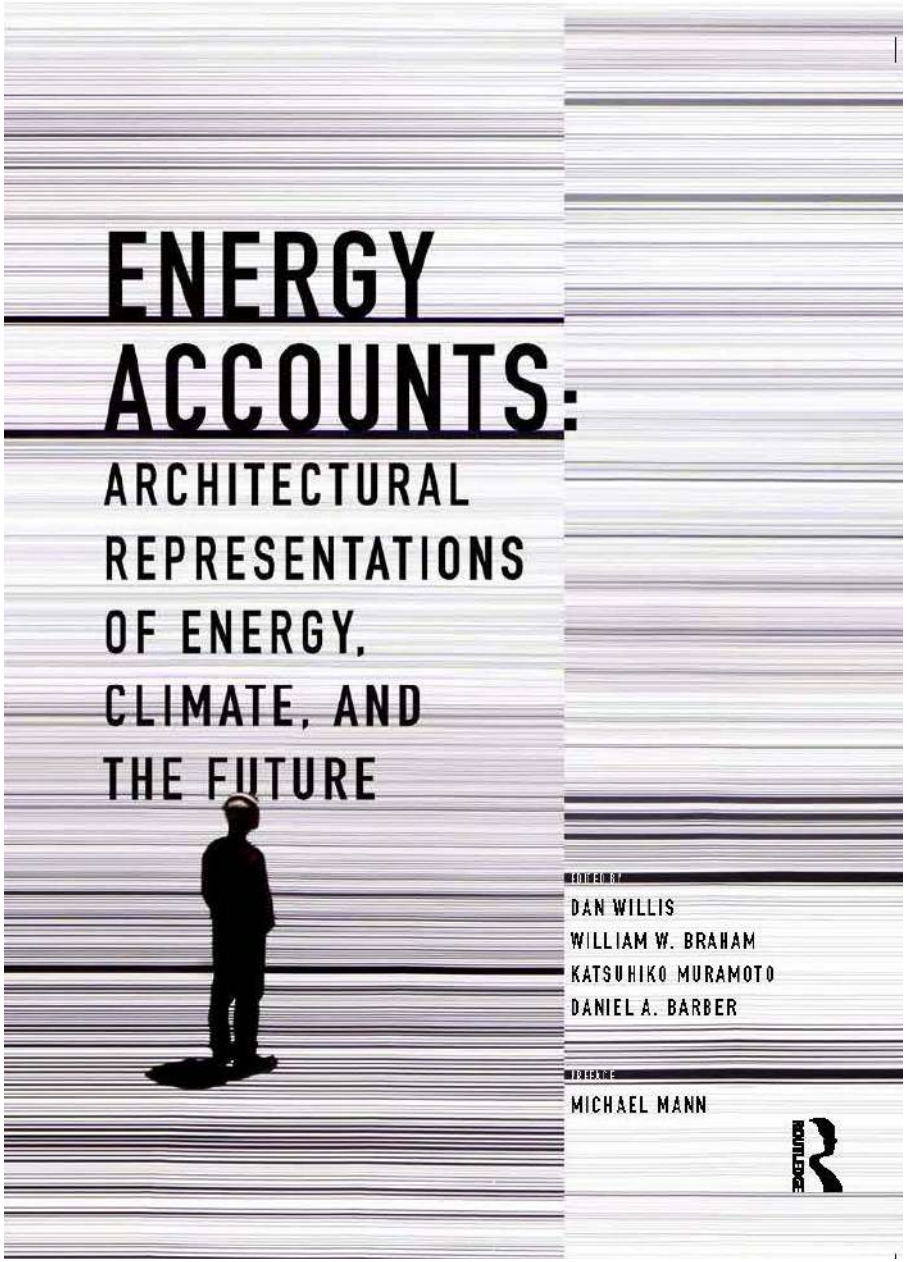
Dan Willis and Katsuhiko Muramoto
Pennsylvania State University

eeb HUB Energy Efficient Buildings Hub

PennDesign

CAPTURING THE WESTERN WIND: MODERNIZATION OF JAPANESE TRADITION IN KOJI FUJII'S ARCHITECTURE

YEAR: 2017 ROLE: Article contributor and co-editor for *Energy Accounts: Architectural Representations of Energy, Climate and the Future* by Rutledge.
COLLABORATORS: Daniel Willis (Penn State), William Braham, and Daniel Barber (Penn Design).



Capturing the Western Wind: Modernization of Japanese Tradition in Koji Fujii's architecture

Katsuhiko Muramoto

家 宅 室 舎 居 屋

figure 28.1 Sino-Japanese characters that represent various types of buildings

figure 28.2 Conservative mode (after Kodama 2010); Figure 28.3 Selective mode (after Kodama 2010);Figure 28.4 'Japan mode' based on Sladen & Lorimer's description (all by Mohamed Al Lawati)

INTRODUCTION

"It is mainly to the roof that the Japanese house owes its picturesque appearance," wrote American zoologist and orientalist Edward Morse (1961, 22). With its size and weight, often heavy in proportion, the roof is considered to be one of the most distinguishing characteristics of traditional Japanese architecture. In his More Queer Things about Japan, Douglas Sladen writes, "[T]he roof is the most solid part of a Japanese house, and is the first part to be built" (Sladen and Lorimer 1904, 368) His observation captures the very definition of the Japanese word for roof; a combination of two Chinese ideographs; 家 (house) and 根 (root), thus paradoxically symbolizing the very 'foundation' of a house. The prominence of 'roof' can also be found in the Sino-Japanese characters that represent various types of buildings. Four radicals (components of ideographs): 宀 ukanmuri (a roof), 人 hitoyane (a big cover), 广 madare (a tilted roof), and 尸 shikabane (a roof, slumped), each symbolizing a different kind of roof, are used to represent different types of buildings. Numerous character variations pertaining to buildings can be arrived at by combining with other characters (See Figure 28.1). For example, 家(ie, house), the first character below, is composed of a 'pig' under 宀 ukanmuri (a roof). It means a structure where human and domestic animals cohabit, thus a house. The last example, 屋 (ya), is 尸 shikabane (a roof, slumped) combined with a character symbolizing 'destination' under it, denoting a cover or a building, often associated with a profession or business: a shop.

The significance here is that shelter is identified with the covering of a roof, not with permanence and a solidity of stone or brick enclosure shielding an interior from the external environment. Junichiro Tanizaki described this unique feature of Japanese tradition-

figure 28.5 *Nanzen-ji Temple, Kyoto*

figure 28.6 *Traditional Japanese House with an engawa*

al houses, in his book In Praise of Shadows, as follows: "In making for ourselves a place to live, we first spread a parasol to throw a shadow on the earth, and in the pale light of the shadow we put together a house" (1977, 17). Luis Frois, a Jesuit missionary from Portugal who arrived in Japan in 1563, observed the abovementioned difference and stated; "Our [houses are made] of stone and lime; theirs of wood, bamboo, straws and mud" (Gill 2004, 530). Reyner Banham illustrates the former as a 'conservative mode,' massive walls providing "better thermal insulation and—equally important—better heat storage capacity" and "the ingrained norm of European culture" (see Figure 28.2). Conversely, he describes a 'selective mode' as prevalent in humid and tropical climates utilizing outdoor environmental conditions to "expel unwanted conditions from within and to admit desirable conditions from outside, as an open window allows ventilated air to escape and fresh air to enter…" (Banham 1969, 23) (See Figure 28.3).

In this regard, Sladen offers us an additional interesting observation, "[A Japanese house] consists of the aforesaid roof, with wooden shutters all round it, and a platform, raised a little from the ground…" (Sladen and Lorimer 1904, 372) (See Figure 28.4). The roof with deep eaves provides a shelter from heavy rainfall more than double that of London, and the raised platform allows subfloor ventilation, thus preventing dampness from entering the house. The post and beam structure of traditional Japanese buildings carries the weight of the roof by columns rather than walls, and incorporates a series of movable panels and partitions, including the wooden shutters Sladen mentioned above to act as non-load bearing 'walls' (See Figure 28.5). The openness is to promote cross-ventilation, in order to cope with oppressive heat and humidity of a Japanese summer. Kaempfer observes, "because of the windows being generally contrived so, that upon opening of them, and upon removing the screens, which separate the rooms, a free passage is left for the air to strike through the whole house" (Kaempfer 1906, 305).

ENGAWA AS AN ARTIFICIAL MEMBRANE

A 'selective mode' of bioclimatic adaptation of Japanese traditional houses can be found in the engawa. Often translated into English as veranda, it is a narrow wooden walkway covered by the overhanging eaves of the roof that connects the rooms of the house and the garden (See Figure 28.6). The etymology of 縁 En, the first character of engawa, relates to the notion of edge or periphery both physical and social, and in turn, invokes a multitude of relationships. Kisho Kurokawa describes it as "a symbiosis of inside and outside," and "a space of communication" (Kurokawa 1994, 305). Engawa is a gray space; not black or white, as he defines, but an ambiguous space that mediates social, visual and climatic relational conditions with the aid of an array of permeable screens.

For example, when all screens are completely opened, it creates an uninterrupted relation to the outside environment. The house "is like a stage in an open-air theatre, the background of which, visible through the open wall, is nature" (Taut 1958,191). One is fully immersed in nature, although from inside. This openness is not only to nature but also to ones neighbors. This arrangement promotes cross ventilation to cool interior temperatures (See Figure 28.5). Furthermore, the deep eave of the big roof protects the interior from the sun, and a sudare (a screen made of horizontal slats of bamboo or wood) can be added, if necessary, to avoid strong summer sunlight overheating the house, while allowing a breeze to come through to promote air movement. When both outer layer glass screens and inner layer shoji screens are closed (See Figure 28.7), the engawa space functions like a solarium. The heat gained from the sun creates a microclimate within the engawa, keeping it warm even in winter. This microclimate zone of enclosed engawa space also functions as thermal insulation, keeping inner rooms warmer, while allowing light to penetrate them via the translucent shoji screens.

When the outer layer of glass screens are closed, but the shoji screens (inner layer) are left open, one is still engaging nature through the act of viewing, and is not completely cut off from neighbors. Glass screens allow heat gain from sun, thus keeping the indoors warmer. Conversely, when the outer layer glass screens are open, but shoji screens (inner layer) are closed, the engawa space is ventilated, thus cooling the house without breezes entering the more interior space of the house.

When the outermost layer, amado (wooden) screens are drawn and both outer layer glass screens and inner layer shoji screens are closed, this condition creates the greatest protection from outside; the house can cope with adverse conditions such as

figure 28.7 *Engawa (both screens closed)*

figure 28.8 *Tori-niwa in machiya in Kyoto, raised floor and below floor ventilation space (lower left of the picture)*

typhoons or extreme low temperatures on winter nights.

As the above examples indicate, an engawa is a highly permeable "third element," (Fitch 1974,17) which functions as a two-way filter between the body and the external environment. This mediatory function of engawa is modulated by a series of screens, placed on the inner and outer edges of it. It is important to note, however, that an engawa is an embodiment of interconnectedness where we can find our reciprocal relations to 'the other,' including nature. The engawa makes us aware of the reciprocity of touching and being touched (Merleau-Ponty 1968, 162-3) by nature. As Watsuji described, "the determination of the architectural style of a house is an expression of the self-apprehension of man within climate" (Watsuji 1961, 7). An engawa is a bioclimatic response to the prevailing climate, but also our insight into our environment.

MACHIYA AND THE TRANSFORMATION OF THE ENGAWA IN AN URBAN CONTEXT

The most common type of traditional building found in an urban context is the machiya, which combines commercial and residential uses. It is often a long and narrow town house directly abutted to the public street. Much like the traditional house discussed previously, the machiya shares the same concerns of how to cope with hot and humid Japanese summers. The functionality of the engawa can be found in the tori-niwa (passage-garden), a narrow earthen-floored corridor space which runs from the street side of the house to the back, usually with a garden. It is a double-height space with a kitchen containing a skylight and vent. It is often divided into two parts by a middle door or noren (hanging curtain). The front portion is usually used as a shop space, and the private living space at the rear. Thus, a tori-niwa functions as circulation for customers and residents, bringing the public domain of street inside and vice-versa, resulting in ambiguous public/private space. It is also where the outside natural environment meets interior space, allowing an unobstructed path for breezes to pass through. A series of rooms, usually three to four, run parallel to this tori-niwa, and is a few steps higher than the ground for ventilation (See Figure 28.8). Typically, the rooms are separated from the tori-niwa by a series of shoji or fusuma screens.

Some machiya have a small garden (tsuboniwa) separating the shop space from the living space, providing much needed light for the house. Tsuboniwa is usually dry-landscaped, often with a stone basin and lantern, and functions as an effective way of achieving stack ventilation. It creates a small atmospheric pressure difference between street and back garden, and brings cooler air from the back garden and under the elevated living space. This stack ventilation is made even more effective when the vent in the tori-niwa is opened.

KOJI FUJII AND ENVIRONMENTAL SYSTEMS

Now, we can examine how the abovementioned characteristics of the engawa and tori-niwa spaces were modernized with the aid of environmental engineering, and found their way into Koji Fujii's architecture. Koji Fujii (1888-1938), relatively unknown to Western audiences, taught architectural design, and later architectural environmental systems, at Kyoto Imperial University. He was considered the first person to introduce environmental engineering to Japanese architecture. Taking advantage of his family's wealth, he designed five houses for himself in order to prove the effectiveness of his bioclimatic design theory. His work gained public attention twice: first as a leading modern Japanese residential architect in late the 1920's to early 1930's, and more recently as a pioneer of bioclimatic design.

Fujii published a series of eleven scholarly articles entitled "Research on the improvement of 'house architecture' of our country" in Kokumin Eisei (National Health and Hygiene), a journal published by the Kyoto University Medical School Hygienic Laboratory (Horikoshi and Horikoshi 1988, 38). At that time the relationship between the built environment and humans was considered to be a bioclimatological problem in medicine, rather than in architecture. The built environment is an important contributing factor for one's health, thus topics such as the suitability of a brick structure versus the post and beam construction of traditional houses in Japan, were debated amongst doctors in terms of hygiene and public health. It is largely the research of doctors that gave rise to environmental study, thus one could say that the hygienic discourse in medicine created architectural environmental design. It was Fujii who early on recognized the critical role architects should play in the creation of healthy and comfortable environments. At this time he authored Sanitary System in a series of pamphlets published by the Architectural Institute of Japan (Volume 1, Issue 8) in March 1927. In December of the same year, he published, Japanese Houses (Nihon no Jyuutaku). The contents of the pamphlet were incorporated in his book and became the foundation of his bioclimatic design theory (chapters two and three), and the book presented rules of thumb for the bioclimatic design in Japan. In the following year, in order to further demonstrate the validity of his bioclimatic theory, he published his fifth and last experimental house in a folio illustrating Chochikukyo in photographs and drawings, with a second volume published in 1932. The Japanese Dwelling-House, the English translation of Nihon no Jyuutaku, was published in 1930.

Through his writings, Fujii lamented that architects spend a great amount of time and effort researching structure, design, and history, but not systems, such as mechanical, electrical, lighting and heating, ventilating and air conditioning (HVAC). Those were left to engineers and other specialists. The environmental system was one example. He claimed that many buildings were unhygienic, and thus became a 'nest for sickness' due to the lack of attention paid to climatic conditions both inside and outside of buildings. He stressed that there is an urgent need for architectural environmental research, in order to create healthy and productive environments while providing comfort for occupants. [1]

In order to establish his bioclimatic approach, he first defined that it was the task of the architect to create an indoor environment where the body maintains a metabolic balance despite constant changes in the atmosphere. By doing so, an architect provides an occupant with not only a healthy, but also a pleasurable environment. He then lists two

"ameliorating devices"— clothing and building— that were developed in order to manage a desirable relationship between our body and the environment. These are exactly the same as those in J.M. Fitch's American Building: The Environmental Forces That Shaped it (Fitch 1974, 9). Citing a series of scientific research projects on ventilation conducted by Hermans, Flugge, Hill, Bruner, etc., Fujii stressed the scientific fact that quality of the indoor climate has implications for both comfort and health. By referring to the comfort zone charts (temperature and humidity charts) by Vernon Hill, Shepherd, and Charles Freund, then later to psychometric charts, he noted that the differences proposed by various researchers were negligible from the architectural environmental systems point of view, since it is impossible to mechanically maintain indoor climate precisely. He proposed that they [the comfort zones described in such charts] should be accepted as indices of thermal comfort, although he acknowledged some minor differences between places due to different socio-cultural contexts, and concluded that the primary task of architectural environmental systems is to control heat, cold and humidity to an adequate level, and to provide necessary ventilation, so as to eliminate illness causing factors.

By comparing climatic data between major cities in Japan and cites in Europe and North America, Fujii demonstrated the climatic difference between Japan and Europe in humidity and aridity, and states, "[T]he life styles in the advanced countries such as England, Germany, France and the United State we take our architectural exemplars from, face hardship in harsh winter, thus their environmental system ought to accommodate this need" (Fujii 1927, 16). In Japan on the other hand, he claimed it takes more effort in bringing indoor climate to comfort level during summer than winter. Thus, simply copying the design of a house from Europe or the United States to Japan is to ignore the basic scientific principle of environmental systems, and thus will eventually create a 'nest for sickness.'

His bioclimatic approach and subsequent houses based on his theory were important within the discourse on modern Japanese architecture. Since the initial introduction of Western architecture during the Meiji Restoration (1868), Japan absorbed and appropriated Western architecture at an unprecedented rate. This unconditional acceptance of Western architecture as the preferred model to emulate for Japan's future gave rise to the question of traditional versus Western for Modern Japanese architecture in the early 1900's. He contributed to this debate over the 'traditional Japan' and the 'modern Japan' by a circuitous route through the rational and scientific validity of environmental design, as opposed to many others who argued more from an aesthetic point of view. Fujii insisted that architects must "design a true Japanese house that is well-acclimatized to the climate and the natural features unique to Japan, and suitable for the Japanese people's lifestyle (Fujii 1928, 21)."

KOJI FUJII AND HIS EXPERIMENTAL HOUSES

Since there was no way of simulating or analyzing qualitatively his bioclimatic design effectiveness in laboratory, he ventured to build a total of five experimental houses for himself, trying to verify his theory in successive houses. The first one was built in Kobe

figure 28.9 Chochikukyo south façade, looking at the engawa

figure 28.10 Engawa, interior

for his mother and himself in 1915. When he started teaching at Kyoto University in 1920, the second house was completed in Ohyamazaki, an area famous for producing bamboo shoots, in the Kyoto Prefecture. Upon completion of this second house, he purchased ten acres of land in the foothills of Mount Tenno in Ohyamazaki, and built his third experimental house in 1922. While living there, he collected climatic data throughout an entire year. Based on his own experiences and observations of the previous houses, along with some scientific data he collected from the third one, the fourth house was completed in 1924. This house was never occupied by him or his family, but used strictly for collecting climactic data of his design (Matsukuma 2015, 128). His fifth and last house, later named "Chochikukyo - a combination of three Chinese characters: "listen, bamboo, and dwelling" was completed in 1927, and was considered to be the embodiment of his bioclimatic design philosophy.

His primary focus toward design was to prevent the influence of high temperature and humidity from an outdoor climate; to protect from heat caused by solar radiation on walls and outside air from entering; and to increase cross ventilation between rooms in order to ameliorate heat and humidity. By looking at the house at glance, one can observe the ABC's of basic bioclimatic design solutions; a deciduous tree, maple in this particular case, planted in front of a southern room with deep eaves shading the house from unwanted solar heat gain; plastered exterior walls, as opposed to clapboards of a traditional house, to take advantage of inherent thermal inertia; an inlet hole on the base to draw in cool air under the floor (See Figure 28.9).

Examining the plan, one notices that the southern-most room is curiously enough labeled 'engawa.' We find, however, no immediate evidence of any of the characteristics previously discussed. The south façade is divided into three parts: a top with frosted sliding glass windows, the bottom with combination of plaster walls and frosted sliding glass windows, thus leaving the middle with clear sliding glass windows, as opposed to a complete openness found in the traditional engawa. There are no obvious clues to a social or environmental connectivity that one can identify with. Furthermore, it is noticeable that one enters into a room, rather than into a conventional engawa, which is much narrower, and more like a corridor. This is one of the reasons many researchers name this space as simply a 'sun room,' (Hasui et al. 2002; Kodama 2010; Matsukuma 2005 and 2015; Onishi and Horikoshi 2008) and fail to recognize the uniqueness of Fujii's design, which embraces the ambiguous three-fold relational conditions of social, visual, and climatic.

One would notice the visual connection first; the landscape is framed by a tripartite façade, very similar to the technique called shakkei (borrowed scenery) found in tradi-

figure 28.11 Operable ventilation outlet on the ceiling of the engawa

tional temples. Fujii used the top portion of fixed frosted glasses to conceal the underside of the eaves from view, thus highlighting through the clear middle portion of the window the panoramic view of the surrounding landscape (See Figure 28.10). The roof is cantilevered off from the main house so that there is no column to interrupt the horizontality. The slope of the engawa roof is kept shallower than the main house in order to maintain interior height appropriate for ample daylighting and view. Indoor climate can be modulated by two sets of sliding windows, middle and lower (jimado, earth-window), thus providing multiple ways of controlling natural ventilation. This jimado, which acts as a ventilation device below the windowsill, finds its origin in Sukiya style architecture, the most famous example of which is the Shoin window at the Imperial Katsura Palace. To further promote the effectiveness of cross ventilation, he placed an operable ventilation outlet on the ceiling (See Figure 28.11). This cross ventilation functions much more effectively when the lower sliding door is combined with the exhaust in the ceiling.

The shoji screens, with operable transoms above, separate the engawa and the adjoining living room (See Figure 28.12). When the shoji screens are closed, the air still circulates from the engawa into the living room via operable transoms. When all the sliding doors are open, the entire house becomes one big room similar to traditional houses, and cross-ventilation of the whole house becomes possible. Here one finds that the social aspect of the engawa is reversed, and is directed toward the living room where the family gathers.

Another innovative interpretation of the traditional Japanese house's bioclimatic design can be

figure 28.12 Looking out from guest room into the living room, with engawa (left), study (front) and Tatami room (right) with operable transoms above each opening

found in the living room. Fujii elevated the Japanese tatami room next to living room by 30 cm, and utilized the height difference for the cool-tube outlet which connects to the west side of the house where a prevailing western wind carries cool forest air into the house (See Figure 28.13). The bioclimatic principle of drawing cooler air from under the floor of the living quarters into the tori-niwa, previously discussed in the description of the machiya, is further enhanced by this scientific bioclimatic knowledge. The living room is also where the Japanese traditional life style of sitting on tatami mats encounters the sitting on chairs of Western life style; those seated meet almost at the same eye level, since the tatami room is elevated by 30 cm.

Above are only a few selected examples of tradition inspired bioclimatic design found at Chochikukyo. It is significant to note that Fujii did not merely extract the bioclimatic functions of traditional Japanese architecture, but he modernized and enhanced elements of the traditional house through his scientific knowledge of bioclimatic design.

figure 28.13 Cool-tube outlet under the tatami room

CONCLUSION

What Fujii achieved almost ninety years ago in Chochikukyo is no longer new to our 21st century bioclimatic design theory. Consequently, we wonder if there is anything we can learn from his architecture. As discussed, the Chochikukyo house is, as we might say today, "all about the wind." However, he intentionally did not mention 'wind' in naming his most important house. Instead, he told us it is the dwelling where one enjoys the sound of bamboo leaves rustling. As we know from our experience, the sense of coolness does not come from measurable numbers, but as a full bodily experience where one becomes aware of the connection with the natural environment. Fujii understood that 'thermal comfort' was aimed at providing 'pleasantness' where one can relate to the environment, rather than simply striving to achieve 'abstract numbers' dignified by science. Intrinsically, his architecture makes us aware of the reciprocity of touching and being touched by nature. Tetsuro Watsuji, Japanese cultural climatologist, tells us, "Climate does not exist apart from history, nor history apart from climate" (Watsuji 1961, 8), and "is the agent by which human life is objectivized, and it is here that man comprehends himself; there is self-discovery in climate" (Watsuji 1961, 14).

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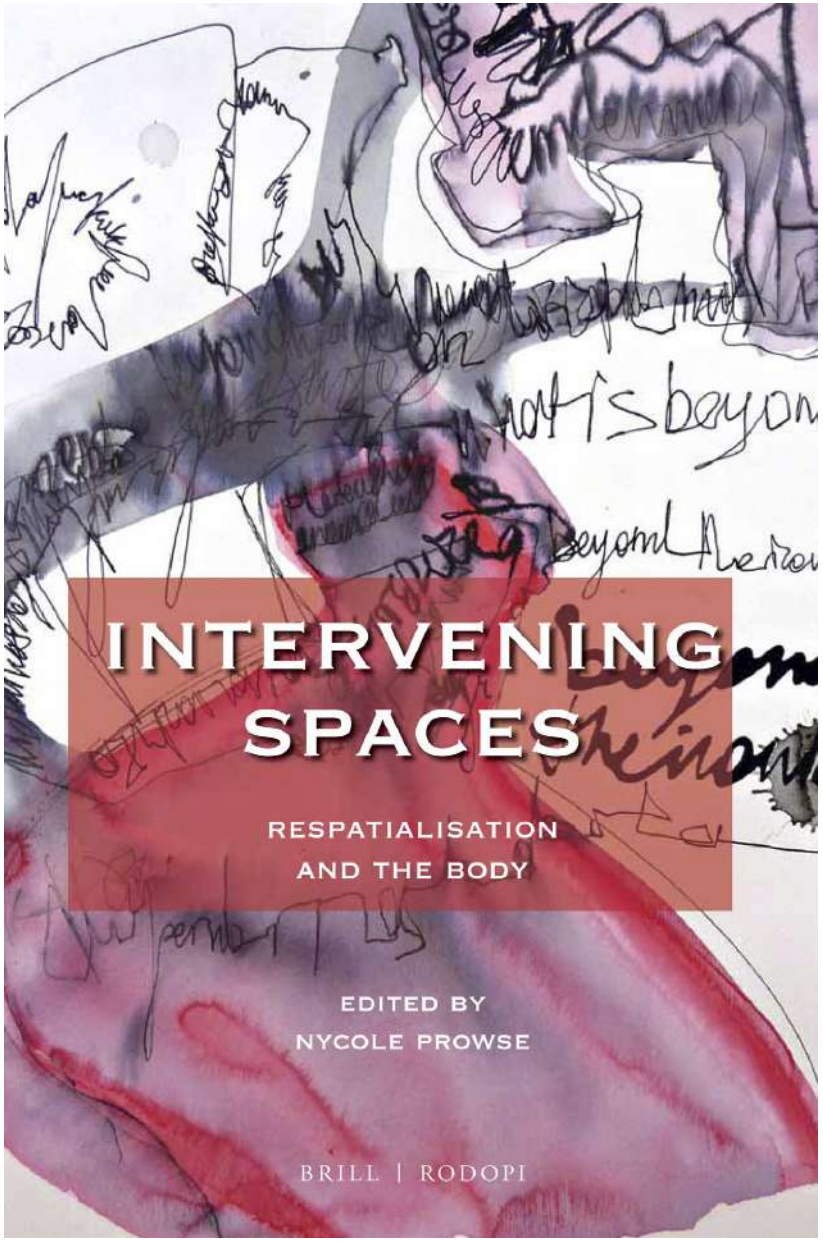
End Notes

[1] This and the following two paragraphs are my paraphrasing from his Eisei Setsubi (Sanitary System) and Nihon-no-Jyutaku (Japanese House), except for one instance where I thought it is important to translate as accurately as possible.



CHAPTER 4

In Search of a Relational Body: Reflections on Sustainable Architecture

Katsuhiko Muramoto

Abstract

Current discourse on sustainable architecture is often too narrowly defined and much of the discourse concentrates on technological questions, especially on energy efficiency. A key assumption unquestioned in this approach is the separation between the natural world and the subject, a one-way mode of causation defining the subject's instrumental relationship with nature. Under this Cartesian paradigm of subject-object duality all things are knowable and controllable and an object (i.e. nature) is considered primarily in terms of its utility to human beings – through technology humans can control the environment and manage resources in a way that meets humanity's needs and desires.[1] The Modernist slogan 'Form follows function' is now replaced by *Form follows energy performance*. Cloaked and obfuscated under the current approach in architectural practice are the relational connections to *the other*. Drawing on the work of Martin Heidegger, Maurice Merleau-Ponty and Tetsuro Watsuji, this chapter elaborates a structure of *reversibility* and attempts to reconceptualise the interconnectedness and 'interdependentness' between body, space and nature in relation to the current sustainability discourse in architecture. It argues that scientific and technological advancements alone are not sufficient for a sustainable future. What is urgently needed is a new paradigm where we become aware of relational bodies.

1 Introduction

Since the World Commission on Environment and Development published its 1987 report *Our Common Future*, more commonly known as the Brundtland Commission Report, on the strategy for sustainable development, architects and engineers have been forced to fundamentally reassess the way we design and construct buildings. The report defines sustainable development very

1 See Martin Heidegger, 'The Question Concerning Technology' in *The Question Concerning Technology and Other Essays*, trans. William Lovitt (New York: Harper & Row, 1977), 5.

GINZA SIX

A Noble Post-Metabolism Concept for Commercial Façade Design

Katsuhiko Muramoto
Stuckeman School of Architecture and Landscape Architecture
Pennsylvania State University

Junko Owada
Design Department
Asahi Building Wall Company, Tokyo, Japan

ABSTRACT

Tokyo's prestigious Ginza District, is home to innovative architectural design. One of the most recent examples is Ginza Six (GSIX), the largest commercial development in the history of Ginza, designed by architect Yoshio Taniguchi. This paper describes his design concepts behind GSIX: *Hisashi* (eaves) and *Noren* (fabric dividers hung at the shops entrance), and examines six different luxury brand stores with *Noren* inspired façade designs. The paper briefly covers the benefits of these façades as Double Skin Façade (DSF) systems and compares them with a conventional curtain wall renovation of the Louis Vuitton Matsuya on the same street.

KEYWORDS

commercial façade design, plug-in façade, innovative double-skin, adaptability, aesthetics

INTRODUCTION

Figure 1: Street view of Chuo Dori with Ginza Six under construction (picture courtesy of Asahi Building Wall company). Although the 115-meter street frontage is out of context, the height of the complex was kept at 56 meters to fit into the street scape of the Ginza district.

Ginza is synonymous with luxury and prestigious fashion. It is home to numerous global brand name stores, and is often compared to New York's Fifth Avenue, Rodeo Drive in Beverly Hills, or Bond Street in London. At the height of Japan's "bubble economy" in the 1990's, the most expensive land in the Ginza district was $750,000 per square meter. Although the price has fallen dramatically in recent years, it fetched $514,000 in 2018, according to the Ministry of Land, Infrastructure, Transport and Tourism, and still remains some of the world's most expensive real estate. Due to this status and prestige, Ginza has become not only a center for high fashion, but also for innovative and iconic examples of contemporary architecture, often expressed as very sophisticated double-skin façades. One example of this is Ginza Six (GSIX) completed in 2017. The complex is designed by architect Yoshio Taniguchi, best known in North America for his 2004 MoMA addition in New York City. Combining two city blocks, GSIX occupies a 9,080 square meter lot, and achieved 1360% floor area ratio (FAR) compared with the conventional 600 to 800% FAR found throughout Ginza (Ginza 6-chome, 2017). With 47,000 square

SHOFUSO JAPANESE HOUSE

YEAR: Fall Semester 2023 ROLE: Design studio instructor STUDENT COMPENSATION: 6 Design Studio Credits

Shofuso Japanese House

This DRS studio focuses on how to design a building that is sympathetic to both an existing historic building and its site. The design of the addition to the Shofuso Japanese House and Garden is to be informed by the architectural principles and aesthetic of traditional Japanese architecture, not merely the physical appearance.

Shofuso Japanese House and Garden is located in Philadelphia's West Fairmount Park. Shofuso, or "Pine Breeze Villa", designed by Junzo Yoshimura was constructed in Nagoya in 1953. In the same year, it was disassembled and moved to the courtyard at the Museum of Modern Art (MOMA) in New York City as the third house exhibited as a part of "House in the Museum Garden" exhibition series. A\er the closing of the exhibition, it was moved to the current location of Fairmount Park in the Japanese Garden that was originally created in 1878. In 1976, new gardens featuring three types of traditional Japanese garden were designed by Sano Tansai who designed the garden at the original MOMA exhibition in the 1950's.

As described by modernist architects such as Bruno Taut and Walter Gropius, the distinctive architectural characteristic of traditional Japanese architecture is its close connection to land and nature. This studio starts with the research on how traditional Japanese architecture embraced and responded to its environment, including climate. Therefore, the discussion on sustainability will be introduced to the studio from a different perspective, as ethic of connectedness as discussed by Tetsuro Watusju. Considering Shofuso as a hinge between traditional Japanese architecture and modern architecture in the west, this studio also investigates the issue of cultural cross-fertilization in the age of globalism.

Seminars and lectures during semester examine this distinctive characteristic of "connectedness" in both traditional and contemporary Japanese architecture, and Japanese aesthetic tradition's influence in the modernists such as Frank Lloyd Write, Richard Neutra and Walter Gropius. Students go on to perform an indepth analysis of Japanese architecture precedents to apply to their tea house and visitor center designs.

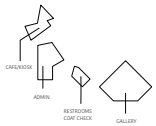
Katsuhiko Muramoto

Students:
Audrey Leung
Kali Lewis
Olivia Heim
Marisa Calbi
Tia Hammond
Andrew Ferreri
Lora Kateley
Mia Fantasia
Teniola Adebayo
Allison Faux
Alana Van Grouw
Adam Figueroa
Abby Miller
Joshua Pontell

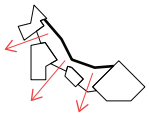
September 21, 2023 - Studio Field Trip to The Shofuso House and Garden

Instructor:
Katsuhiko Muramoto

SHOFUSO WELCOME CENTER

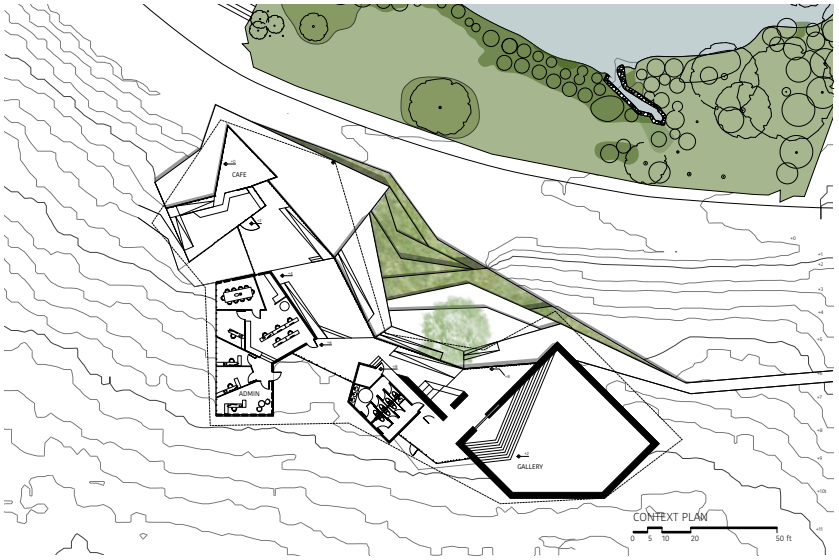


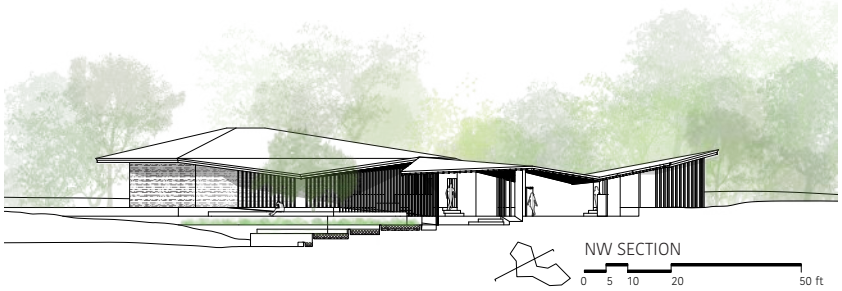
PROGRAM

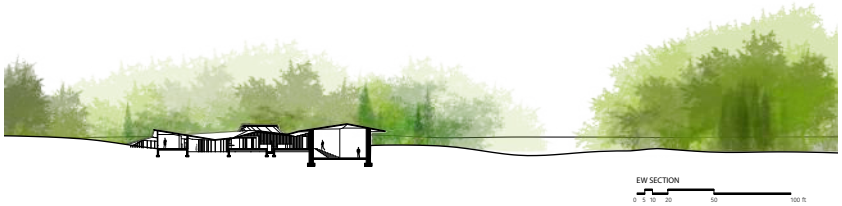


VIEWS

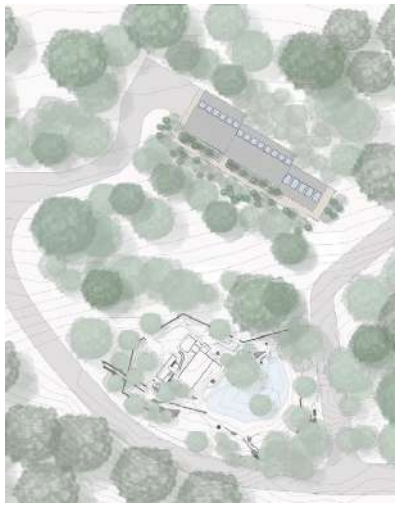
WEIGHT







SHOFUSO HOUSE JAPANESE CULTURAL CENTER



Description

This Japanese cultural center is focused on three elements in its design. There are three main program components to focus on: The administration spaces, the gallery/ exhibition spaces, and the cafe. These three elements are tied together in plan by a continuous circulation space. This space also holds key program elements like the lockers and reception desk.

When visitors arrive at the site they will be greeted by the reception desk. The program allows for visitors to flow through the building, ending up at their final destination, the cafe. Upon arrival at the cafe, visitors are greeted with the option of venturing onto an outdoor patio that offers a direct line of sight to the Shofuso house itself.

SITE SECTIONS

A page from the summer program handout

2024 Korea/Japan Summer Program
Arch499-004: Architecture, Art, and Culture of Japan

Th(*Z*)en and Now

INTRODUCTION

Japan's journey from an isolated feudal country to a modern nation between 1850 and 1920 was a rapid transformation that birthed a unique modern Japanese culture. This culture, unlike any other, seamlessly blends Western influences with a deep-rooted Asian tradition and a distinctive traditional cultural aesthetic. The transformation was not limited to culture but was also reflected in architecture, where brick, stone, glass, steel, and concrete replaced traditional timber construction. The juxtaposition of traditional Japanese gardens, shoji screens, modern technology like Sony's Aibo robot, and science fiction like William Gibson's Technopunk, is a testament to Japan's diverse and rich culture. For first-time visitors, Japan can be both extremely familiar and shockingly foreign, a paradox that is sure to pique your curiosity.

When visiting Japan, visitors are immediately struck by the stark contrast between the old and the new, the East and the West, the inside and the outside. While this may initially appear as cultural schizophrenia, many people find these seemingly opposing elements together uniquely and harmoniously in contemporary Japan. Despite the hustle and bustle of cities like Tokyo, Japan is known for its remarkable sense of order. This isn't just a cultural quirk but a reassuring aspect of Japanese culture that thrives amidst chaos and change. By exploring this enigmatic and fascinating intersection, described by Kenzabuto Oe as 'a blank where the Japanese live,' we can better understand the complexities of Japanese culture and its relevance in a rapidly changing world.

The simplicity and austerity that characterize traditional Japanese art and architecture have been admired as a virtue and aesthetic value for a long time. This can be attributed to the lasting influence of Zen Buddhism, which permeates Japanese values and aesthetic-ethical sensitivities. The aesthetics of Zen, with its concept of subtlety and minimalism, continue to shape modern-day Japan, a testament to its profound impact. They can be seen in the intricate and exquisite detail of the work of architects like Tadao Ando and Kengo Kuma, as well as fashion designers like Issey Miyake and Rei Kawakubo. The simplicity and understatedness of Zen still play a prominent role in the contemporary culture of Japan, a fact that we will explore in depth during our course.

The course, ARCH 499.004, is a comprehensive tour that immerses students in Japanese architecture and various topics related to Japanese art and culture. More specifically, it delves into Zen's aesthetics, which are deeply ingrained in Japanese culture and continue to influence modern architecture and daily life in Japan significantly. The itinerary spans the traditional and contemporary aspects of Tokyo, Nara, Osaka, Kyoto, Ise, Hiroshima, and Kanazawa. Students will visit traditional and modern architecture and landscape architecture, Japanese gardens, and tea ceremonies and explore various Japanese handicrafts. They will have the unique opportunity to experience the works of renowned architects, including Kenzo Tange, Fumihiko Maki, Kisho Kurokawa, Tadao Ando, Toyo Ito, SANAA (Kazuyo Sejima, and Ryue Nishizawa), and Shin Takamatsu, as well as some lesser-known architects to the Western audience.

The expedition will commence in the Tokyo metropolitan area, where we will inquire into the dawn of modern architecture in the Meiji period, the Metabolist movement's architecture, and contemporary architecture to witness how Westernization and modernization challenge Japanese traditions. Additionally, we will experience Tokyo's density and how architecture interacts with surrounding buildings. While in Tokyo, we will also visit some traditional sites, such as the Meiji Jingu Shrine. Next, we will move on to the Ise Jingu Shrines, followed by Kyoto, the birthplace of Japanese tradition, where we will visit medieval Buddhist temples and gardens. These sites form the foundation of Japanese identity in the 20th century. We will then travel to Nara, where Japan's encounter with Chinese culture began. After exploring the historic temples and gardens in Kyoto and Nara, we will proceed to Osaka, where you will witness a fascinating juxtaposition of past and present. We will explore a selection of Tadao Ando's buildings, from his early career to his recent work. Hiroshima will be our next stop, where we will visit Kenzo Tange's first building in the postwar period, the Hiroshima Peace Center and Memorial Park, an undeniable masterpiece of modern Japanese architecture. After a brief ferry ride from Hiroshima, you will stay at a traditional Japanese ryokan (hotel) in Itsukushima and witness the magical scene of its giant torii gate and shrine appearing to float on the water. We will then briefly stop in Kyoto before heading to Kanazawa, often called 'Little Kyoto.' Finally, after a long trip to the east, we will return to Tokyo to explore numerous modern and contemporary architectural sites.

ACCOMMODATION: HOTEL MONDAY PREMIUM UENO OKACHIMACHI

MORNING: UNIVERSITY OF TOKYO

The University of Tokyo, also known as Todai in Japanese, is a prestigious Japanese national university that was established in 1877. It is widely regarded as the most selective and prestigious university in Japan.

Ueno Okachimachi Station >> (Tokyo Metro Oedo Line) >> Kasuga Station
Korakuen Station >> (Tokyo Metro Namboku Line) >> Todai-mae Station

UNIVERSITY OF TOKYO 1

T1 Yayoi Auditorium Annex
Taiji Kawano, 2008

T1 The exposed structure of the Yayoi Auditorium Annex was constructed with unique one-directional Rahmen frames formed by alternately joining 105x105mm artificially dried cypress. Professor Inayama from the University of Tokyo invented the unique application method of node column connectors, which allowed the realization of this rhythmic and expressive auditorium. (UofT)

T2 Yayoi Auditorium Ichijo Hall
Hisao Kouyama, 2000

T2 A project commemorating the Faculty of Agriculture's 125th anniversary, the Yayoi Auditorium is an energy-efficient and environmentally conscious wood building that utilizes the field of agriculture's unique characteristics. (UofT)

T3 Graduate School of Engineering
Shogo Kishida, 2005

From top left clockwise: Kurokawa's Nakagin Capsule Tower, Itsuko Hasegawa's office visit, Tadao Ando's Gallery Akka, Mirei Shigemori's rock garden at Reiun-in Temple, and Big Torii Gate at Itsukushima Shrine.