

TEA HOUSE DESIGN/ BUILD 2

Historic photo of Wa-shin-an - Eliot House, Wa-Shin-An, view
of traditional Japanese meditation garden, with stone pathway
Date Created: circa 1984-1994



TEA HOUSE DESIGN/BUILD 2

MAY 1-5, 2023
MACGREGOR HALL
MOUNT HOLYOKE COLLEGE

2	FORWARD
3	ACKNOWLEDGEMENTS
4	PRECEDENTS
8	WORK

“ Architecture, objects, fire, bodies, words – those five elements form a perfect whole in a small space, and an intensely personal time is passed.”

- Fujimori Terunobu, Fujimori Terunobu Architecture, pp 50.

“ Tea ... is a religion of the art of life. The beverage grew to be an excuse for the worship of purity and refinement, a sacred function at which the host and guest joined to produce for that occasion the utmost beatitude of the mundane. ”

- Okakura Kakuzo, The Book of Tea.

FORWARD

Sharing a bowl of tea in the context of Japanese Tea Ceremony is intimate, meditative, philosophical, and spiritual. It demands that the participants are fully present in the moment. The tea ceremony takes place within a tea room or cha-shitsu, sometimes housed within a stand-alone structure or tea house. Although we are half a world and many centuries away from the birth of this tradition, there are many aspects of tea that are valuable to our society today.

For architects, the traditional Japanese Tea House, known for its simplicity of program and space, is an exciting typology with which to test ideas and experiment with materials, technology and construction techniques. Facing the climate crisis, it also becomes a vehicle through which as designers we can practice restraint, reuse and design for disassembly. This spring, 2023, Tea House Design/Build – ARCH 311, was offered at Mount Holyoke College and taught in the Fimbel Maker and Innovation Lab. Students from Mount Holyoke College, Hampshire College and UMass Amherst participated. This exhibit highlights student work undertaken over the course of the semester including models and analytical drawings of traditional and contemporary tea houses as well as eight unique full scale tea houses.

The students were given the following design requirements:

- The tea house must have a clear design concept.
- The tea house must accommodate 2 people – a host and one guest.
- The tea house must be portable.
- Each person may work alone or with a partner.
- Each person has a budget of \$80 plus any free materials.

Please enjoy and have a cup of tea!

Naomi Darling
Five College Associate Professor of Sustainable Architecture
Mount Holyoke College // UMass Amherst

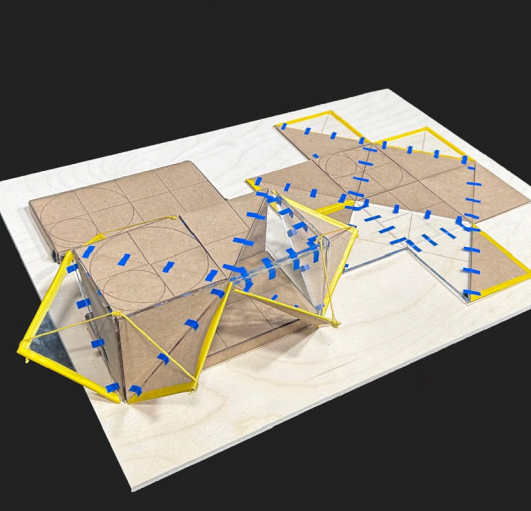
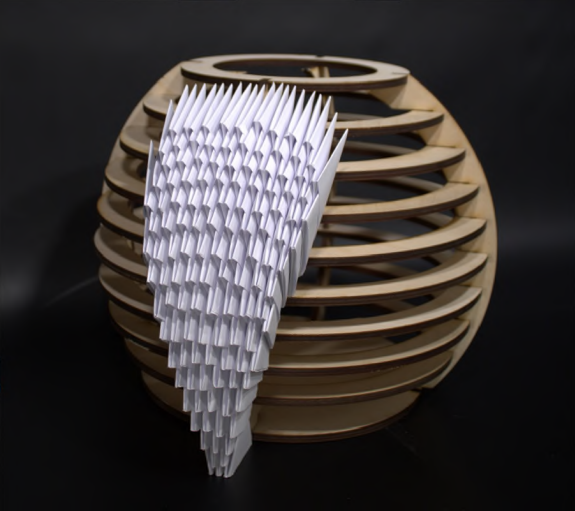
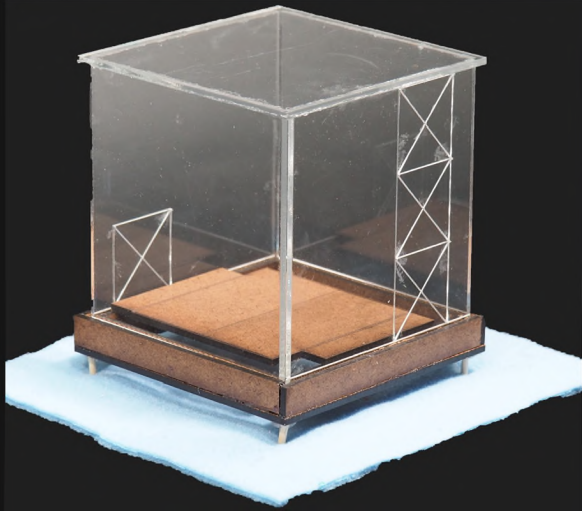
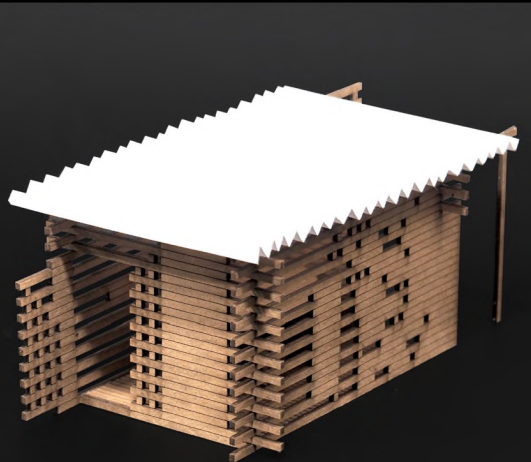
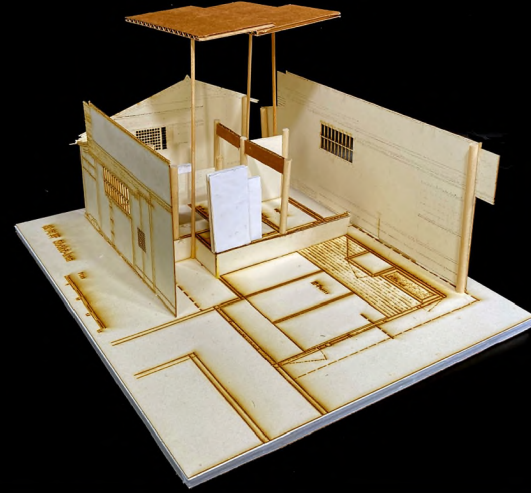
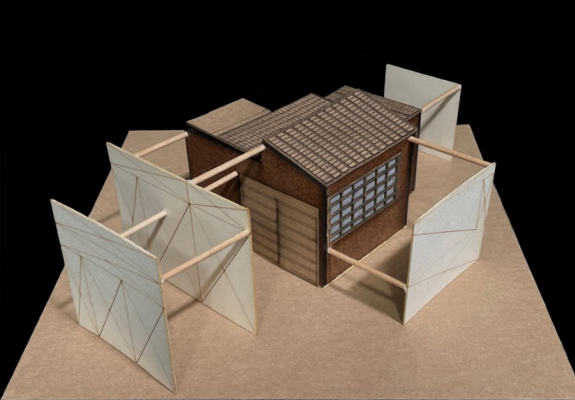
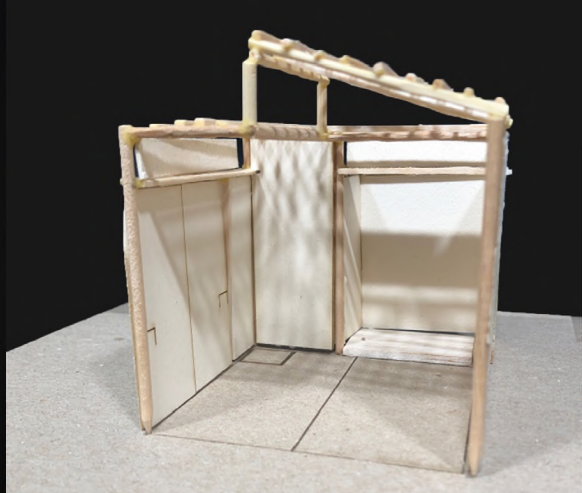
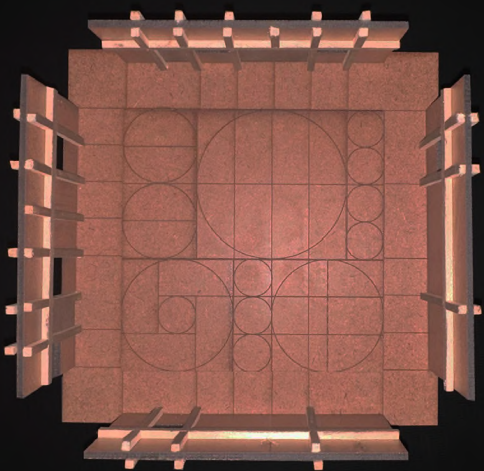
Linh Mai
Teaching Assistant // Exhibition Designer

ACKNOWLEDGEMENTS

There are many people to thank in the making of a course and exhibition. The Fimbel staff are true collaborators who have contributed to all of my Fimbel courses – Kris Camp, Shani Mensing, Luke Jaeger, Fiona Milton and Rachel Beane – Thank You. The first time I taught this course was in the fall of 2014 at Hampshire College. At the time, we did not have an adequate space in which students could develop their projects. I am very thankful for the Fimbel Maker and Innovation Lab on campus and what it enables our students to do! Thanks to Kathy Aidala, and everyone at Mount Holyoke who made this space such an important part of our campus today. Tea Master Johnny Fogg joined us at the start of the semester for a Tea Ceremony in Wa-shin-an. Joshua Hokata Roth, Professor of Anthropology, joined us for a guest lecture as we were researching precedents. Professor Emeritus Michael Davis, Prof. Joshua Roth, Ellen Alvord, Associate Director for Engagement and Weatherbie Curator of Academic Programs, Kris Camp and senior architectural studies students contributed their comments and insights at our final review. Ellen Alvord has also been very supportive of the class and exhibiting the work. Rachel Alldis, Executive Director of Residential Life, gave us permission to use the former dining hall in MacGregor Hall as our exhibition venue. Melissa Burke, our academic coordinator is untiring in her support of the Architectural Studies Program and our students. My colleagues in Art History and Architectural Studies Jessica Maier, Ajay Sinha, Paul Stati, Tony Lee and Samuel Barber are always supportive in a myriad of ways. Linh Mai has been an invaluable teaching assistant who has helped the students realize their projects as well as fueled the students with special treats. Linh has also taken a leadership role in designing the printed matter for the exhibition. Finally, I would like to thank all of the students who embraced the course with their energy, passion, hard work and dedication. It was such joy to witness both your projects and friendships grow!

Thank you!

Naomi Darling
Five College Associate Professor of Sustainable Architecture
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1	2	3	4
5	6	7	8
9	10	11	12

AS SEEN ON PREVIOUS PAGE

PRECEDENT MODELS

1. Lynn Sleiman
Tokyu-do, built by Ashikaga Yoshimasa (1483)
2. Kai Grocki
Tai-an, built by Sen-no-Rikyu (1582)
3. Xinyi Qi
Teigyokuken, unknown (n/a)
4. Yahui Lui
Shoko-ken, unknown (1602)
5. Sohini Bhatia
Veneer Tea House, Tadao Ando (1985-1986)
6. Grace Chen
Yoidorebune, Arata Isozaki (1992)
7. Claire Williams
Takasugi-an, Terunobu Fujimori (2003-2004)
8. Catherine Kazel
Paper Tea House, Shigeru Ban (2008)
9. Lauren Madsen
Umbrella Tea House, Kazuhiro Yajima (2012)
10. Dara Weingarten
Glass Tea House, Hiroshi Sugimoto (2014)
11. Jiaming Ma
'shi-an', Katagiri architecture + design and
akinori inuzaka design (2020)
12. Meghan MacBeath
Oribako Pavillion, Kengo Kuma (2021)



Blooming Teahouse

Sohini Bhatia & Lynn Sleiman

As designers and mathematicians, we find inspiration in the beauty and complexity of the natural world in relation to logic. This project, a tea house, draws its inspiration from the Hoberman Circle, a kinetic structure that expands and contracts.

The Hoberman Circle is a symbol of harmony and balance, reminding us of the interconnectedness of all things. These themes are reflected in the design of our tea house, which offers a tranquil and contemplative space for visitors to connect with nature and themselves.

The Hoberman Circle is not only a source of inspiration for the design of the tea house, but it also serves a functional purpose. The structure of the tea house is flexible, allowing it to expand and contract like the Hoberman Circle. This design allows for a seamless integration of the tea house into the surrounding environment, creating a sense of flow between the interior and exterior spaces.

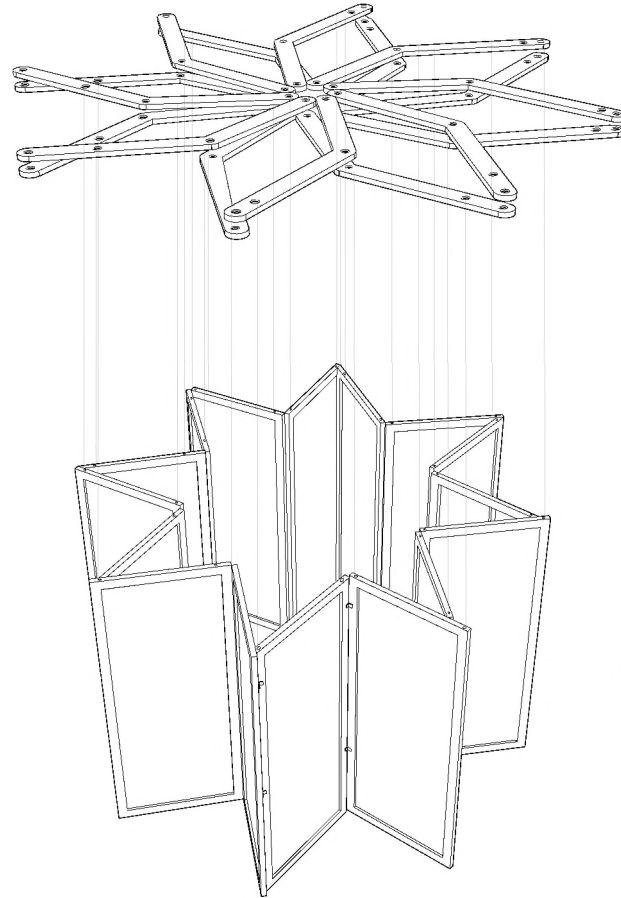
BUDGET

Item	Quantity	Total Cost
Pine 1x2	40	\$ 70.00
Paper and Tape	1 roll	\$ 29.41
Flooring – packaging to Fimbel, gift*		\$ 0.00
Total		\$ 99.41

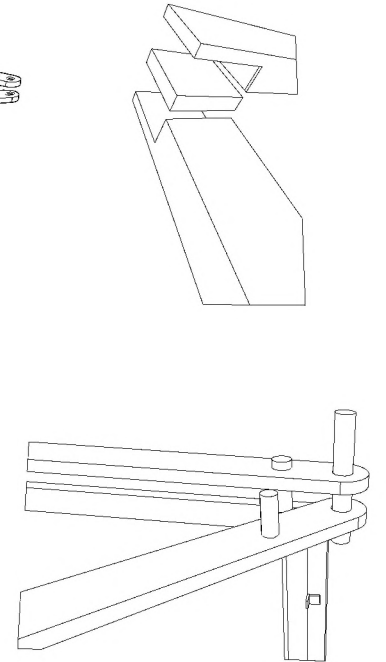
Photographed by: Sohini Bhatia & Lynn Sleiman



Exploded Axonometric



Detail Drawings





雪松霖 (Xuěsōng Lin)

Grace Chen and Kai Grocki

Inspired by our own Taiwanese and Chinese heritage, we built a teahouse that highlights tradition, craftsmanship, and local materials. In the process of researching wood joints, specifically the Dougong (斗拱), we became interested in both the structural integrity and longevity of the joints – without nails or glue, broken pieces can be replaced rather than rebuilding large portions, offering ways to expand the structure’s lifespan while considering the inevitability of decay and natural disaster. The craftsmanship of the joints challenged us to confront the unpredictability of wood, and its agency guided our design process as well as delighted us in its perpetual state of wabi-sabi.

BUDGET:

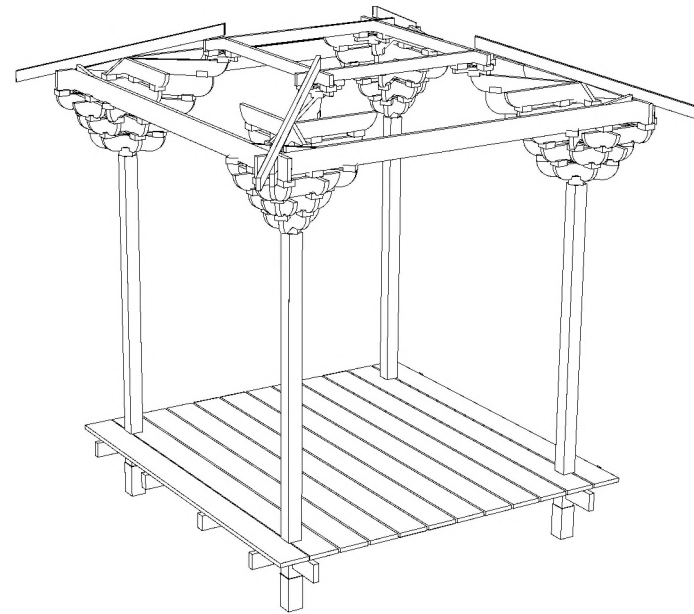
Item	Quantity	Total Cost
Alaskan Douglas Fir	2 @ 12’ x 4” x 4”	\$ 50.00
Cedar Post	1 @ 8’ x 6” x 6”	\$ 25.00
Pine boards	5 @ 12’ x 2” x 6”	\$ 64.00
Pine boards	1 @ 8’ x 2” x 6”	\$ 11.00
Schist Stone Piers – donated*		\$ 0.00
Foraged wood – from a construction site and nature		\$ 0.00
Total		\$ 150.00

*Gifts from: Ashfield Stone

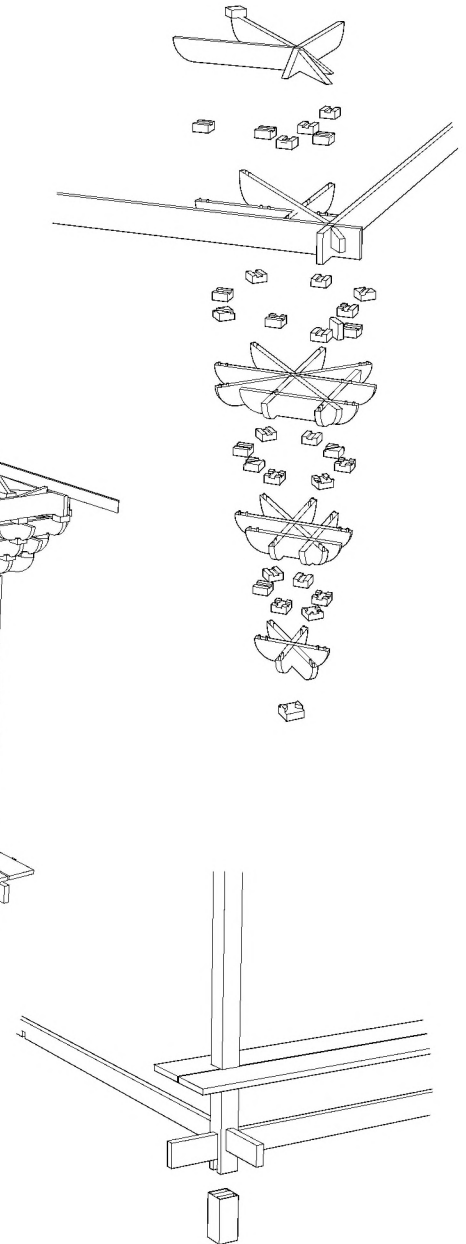
Photographed by: Grace Chen



Axonometrics



Detail Drawings





The Traveling Teahouse

Catherine Kazel

The Traveling Tea House is deeply inspired by the sensory journey of approaching a traditional Japanese Tea House through the carefully crafted landscape of a garden that captivates the eye and mind with its orchestrated features. The visitors' experience is often peaceful, meditative, and enhances an appreciation of nature. With the Traveling Tea House, the world becomes the garden.

The minimalist and foldable structure transforms from tea house to backpack, providing users with the opportunity to carry and assemble a tea house with ease in their personally suitable location. Hiking, a meditative and mindful activity, can offer a similarly relaxing experience as traveling through a traditional garden. Drawing additional inspiration from foldable precedents, the supports are composed of wood connected by a series of hinges and brackets with latches. The multifunctional fabric holds the primary structure of the tea house within its tension and is attached to the supports with wooden dowels that can be comfortably used as hiking poles during travel.

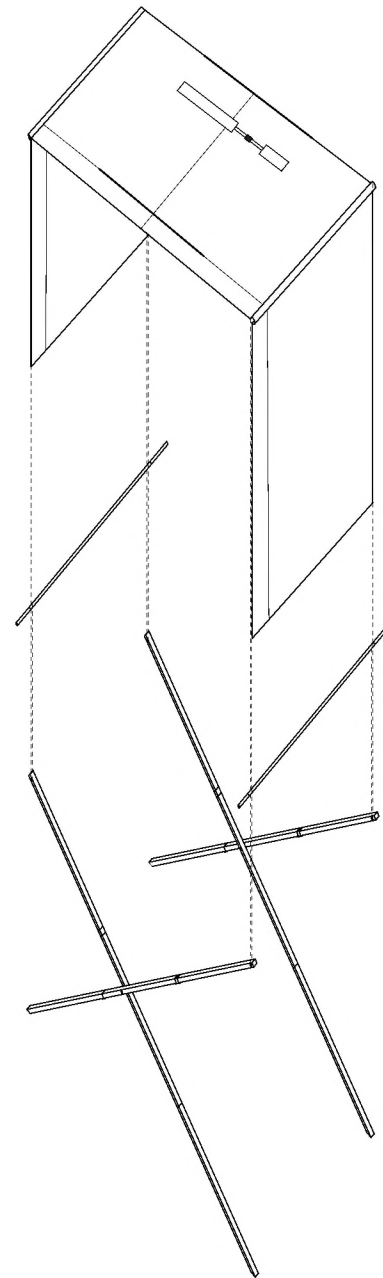
BUDGET

Item	Quantity	Total Cost
Wood	1	\$ 29.98
Wood Dowels	2	\$ 5.14
Hinges	6	\$ 14.34
Ripstop Nylon Fabric	5.5 yd	\$ 26.37
Zipper	1	\$ 4.58
Brackets	8	\$ 0.00
Latches	8	\$ 0.00
Bolt	2	\$ 0.00
Hex Nuts	2	\$ 0.00
Hitch Pins	4	\$ 0.00
Buckles	1	\$ 0.00
Total		\$ 80.41

Photographed by: Catherine Kazel & Dara Weingarten



Exploded Axonometrics



Detail Drawings





“核合和” (Hehehe)

Yahui Liu

“核合和” (Hehehe) is a tea house that explores our relationship with ourselves, the people around us, and especially the environment. “核” represents the core, “合” means unity, and “和” is always associated with harmony.

In my mind, this tea house is an invitation from a tree.

Sit down,
Sit on the pulse of the earth,
Sit with the extension of the land.

Look up
Look for the unlimitation of life
Look at the possibility of the universe.

With CORE
Be UNITY
In HARMONY

I believe that art, at times, can look at a subject differently and in doing so, can get people to pay closer attention. I want to use “核合和” to make the invisible visible and draw people’s attention to the invisible.

Sit down or even lie down. Hear the wind and the birds. Look at the trunk and the sky. The land is holding you and the tree is embracing you with “branches” lowering down. This is a special space for your conversation with yourself, connection with friends, and interaction with the land.

BUDGET

Item	Quantity	Total Cost
Ratchet Strap	1	\$ 8.37
White PVC Tubing	1 @ 20ft	\$ 15.26
Burlap to Protect Tree		\$ 12.74
Aluminum Foil		\$ 7.96
Bamboo leaves – off cuts*		\$ 0.00
2x4 Pine Blocking – off cuts		\$ 0.00
Metal Wire - Fimbel		\$ 0.00
Total		\$ 44.33

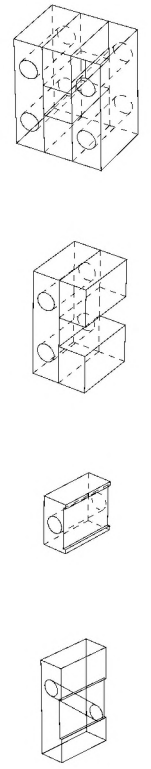
*Thanks to Claire and Dara for the off cuts
Photographed by: Sohini Bhatia

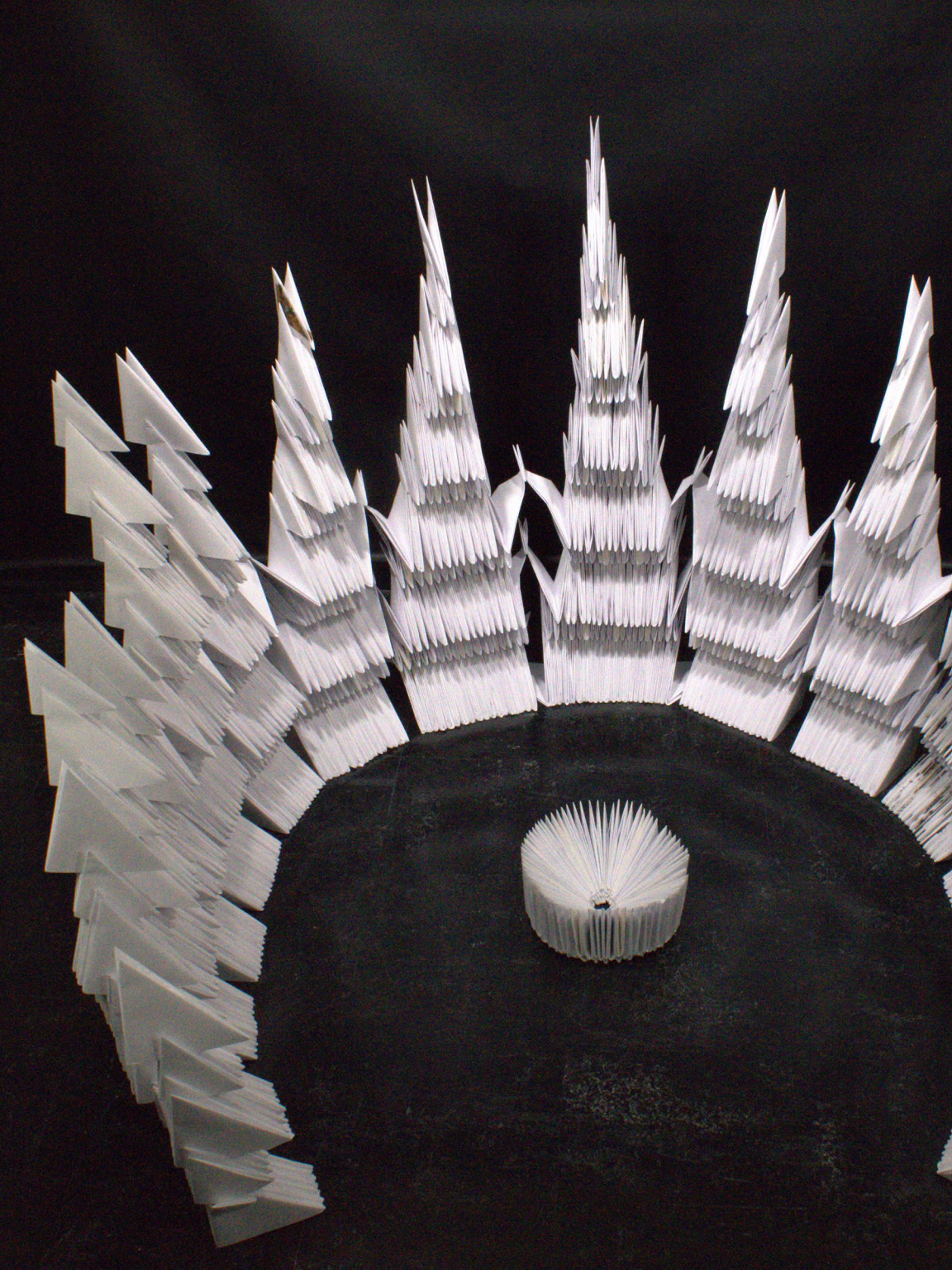


Floor Plan and Side Elevation



Iterations of Joints





2³

Jiaming Ma

2³ explores the intersection of traditional art forms and contemporary design. Constructed entirely out of origami, my teahouse celebrates the traditional Japanese art of paper folding. This teahouse pays tribute to the beauty and elegance of Japanese culture and explores the possibilities of paper as a versatile material for artistic and architectural expression.

Origami is a unique and challenging medium that requires precision, patience, and creativity. A two-dimensional piece of paper transforms into an intricate three-dimensional form that is structural, functional, and artistic. Thousands of these papers combined result in a self-standing structure supported by its delicate form with two pockets and two flaps as connections. 2³, with its delicate folds and intricate patterns, is a testament to the spirit of origami and the potential of this ancient art form to inspire new forms of design and architecture.

Entering 2³, visitors are transported into a serene and peaceful world, surrounded by the soothing colors and textures of paper. The teahouse is not just a structure, but a work of art that invites reflection, contemplation, and appreciation of the natural world. Through 2³, I hope to inspire others to explore the potential of origami and to embrace the traditional art forms.

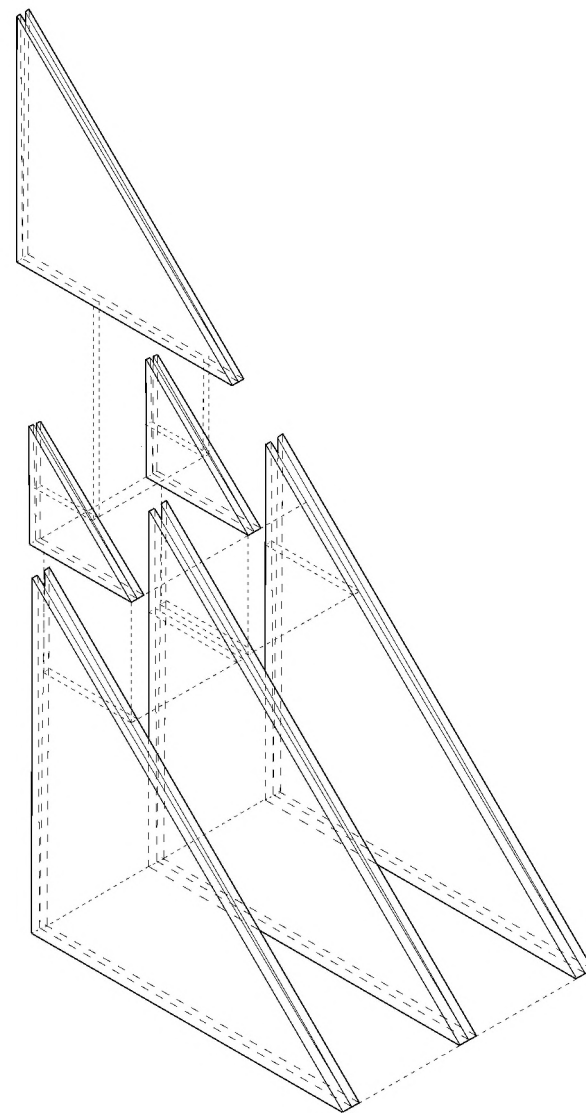
BUDGET:

Item	Quantity	Total Cost
Paper 24x rolls	3	\$ 66.14
Total		\$ 66.14

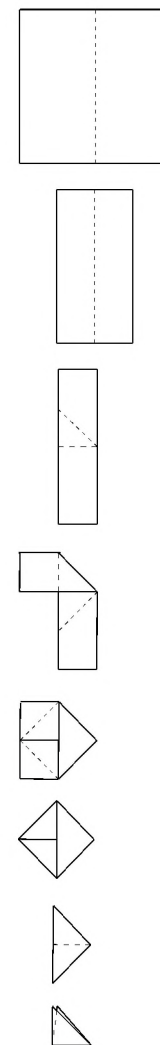
Photographed by: Jiaming Ma



Connecting Method



Folding Method





Upcycled Tea House

Meghan MacBeath & Lauren Madsen

The Upcycled Tea House is inspired by the contours of a landscape and concepts from the traditional tea house garden approach. It is constructed entirely with repurposed materials, using cardboard tubes to mimic trees or bamboo stalks with varying heights to reflect a landscape. The varied heights also create a difference in height between the host side and the guest side of the tea house as in some of the historical precedents. Upcycled Tea House uses a natural color palette, complementing the brown of the cardboard with green toned fabric. The variation in the gaps between the cardboard tubes allows for a glimpse into the space as one approaches the entrances, and decreased visibility on the walls opposite where each person sits so that the focus of the inhabitants remains on each other. The interior furnishings are composed of excess pieces of cardboard that were cut while constructing the tea house as a way to minimize waste.

Budget

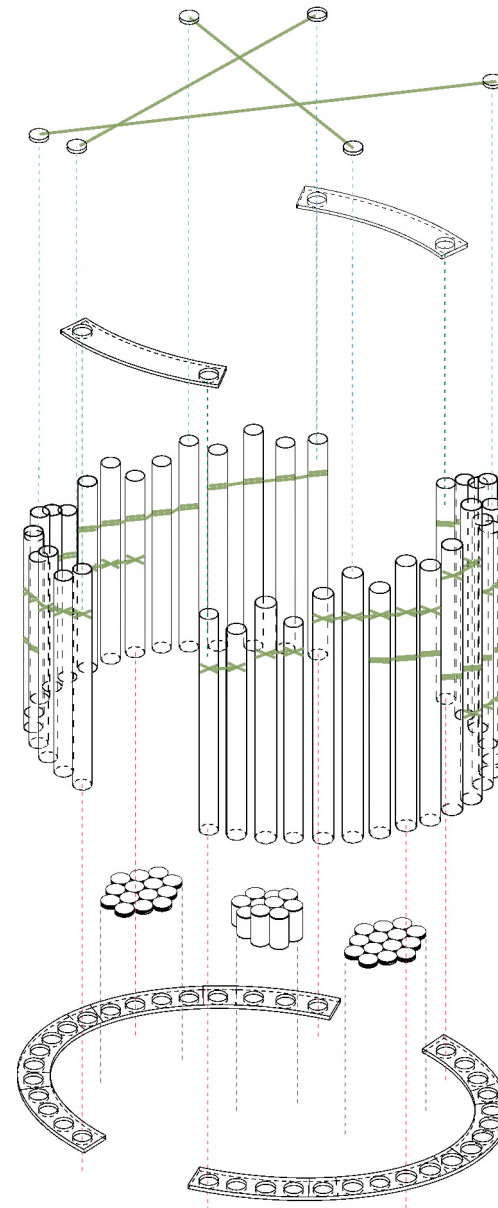
Item	Quantity	Total Cost
Fabric		\$ 1.99
Cardboard – Recycle bin		\$ 0.00
Cardboard Tubes – donated*	36	\$ 0.00
Total		\$ 1.99

*Gifts from: Hadley Printing Co., Pro Printers & Amherst Copy & Design Works

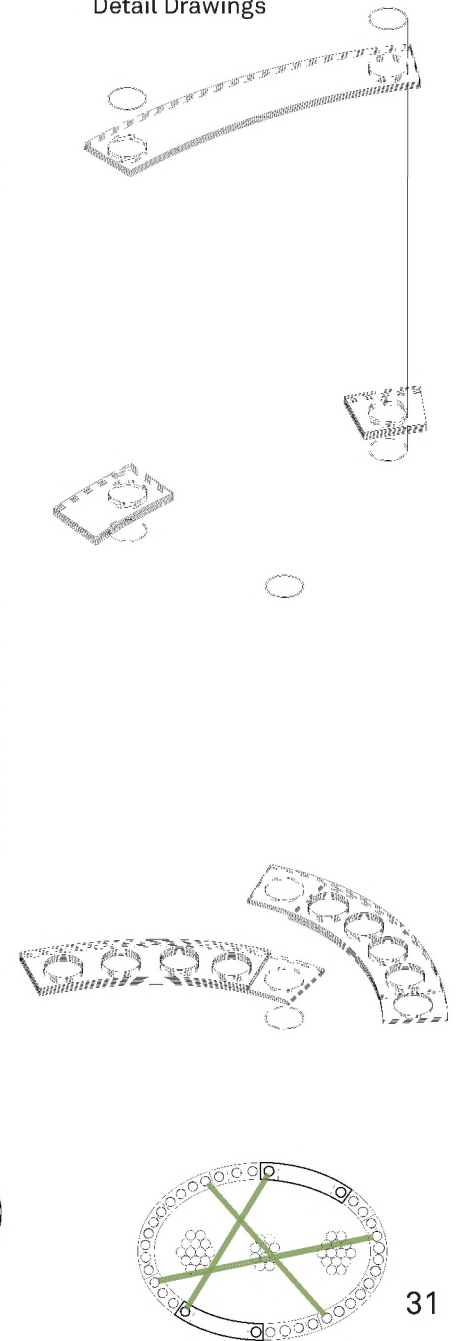
Photographed by: Meghan MacBeath



Exploded Axonometrics



Detail Drawings





一元庵 (Yi Yuan An)

Xinyi Qi

“元”(Yuan), meaning origin, is the primal source from which the immanence of all creations originates. “一元”(Yi Yuan), meaning one origin, thus embodies the principal philosophy of Japanese tea houses of achieving enlightenment from ordinary objects — a leaf or a speck of dust — and fathoming all creations as one existential unity. To see everything in one and see one in everything.

The 一元庵 (Yi Yuan An) Tea house is itself a small universe that embodies the complete life cycle through the unfolding of the pivot frames to the closing and disassembling of the frames. The conservation of energy, from its rise to fall within the simple tea house system, reflects the fundamental principles of the encompassing universe in which we are all situated, that is, the substantial union of all entities.

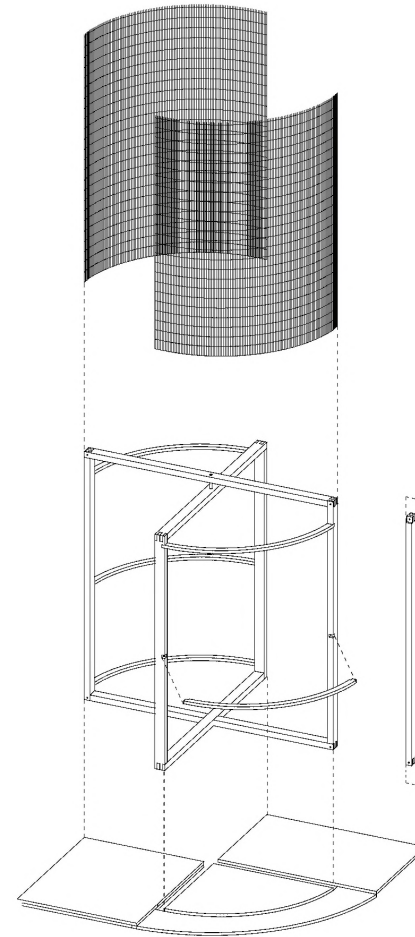
BUDGET:

Item	Quantity	Total Cost
Bamboo Rolling Shades	2 @ 39.76	\$ 84.50
Pine boards - salvaged	8 @ 2" x 4"	\$ 0.00
Flooring – packaging to Fimbel, gift*		\$ 0.00
Maple Plywood Bracing, off cuts, gift**		\$ 0.00
Total		\$ 84.50

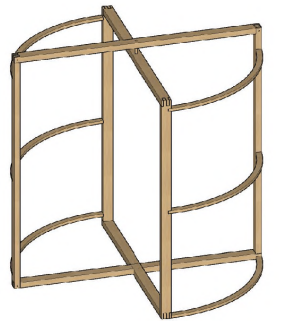
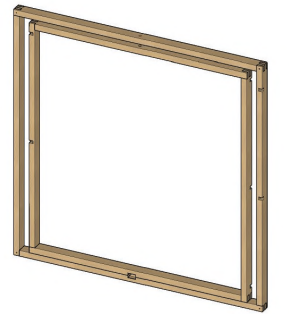
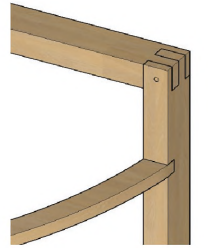
*Thanks to Prof. Dixon Williams
Photographed by: Catherine Kazel & Xinyi Qi



Exploded Axonometrics



Detail Drawings





Wishing Well

Dara Weingarten & Claire Williams

The Wishing Well is based on the Japanese festival “Tanabata.” Tanabata originates from the story of two lovers who, once forbidden from seeing each other, were separated by the Milky Way and were then only allowed to meet once a year on July 7th. Tanabata is celebrated by writing wishes on strips of paper and then tying them to bamboo.

Our precedents inspired us to use all biodegradable or found materials, spend the least from our budget, and to use the concept of forcing the guest to reflect inwards and upwards during their tea ceremony. We harvested bamboo from a local professor’s house, used plant-based twine to lash the bamboo together, and gathered fabric from free bins and remnant pieces. The seating also consists of reused fabric. The walls break apart into individual sections, allowing the fabric pieces to be folded and the bamboo rolled together. We’ll ask visitors to write their wishes on reclaimed fabric so that they may be tied to the structure.

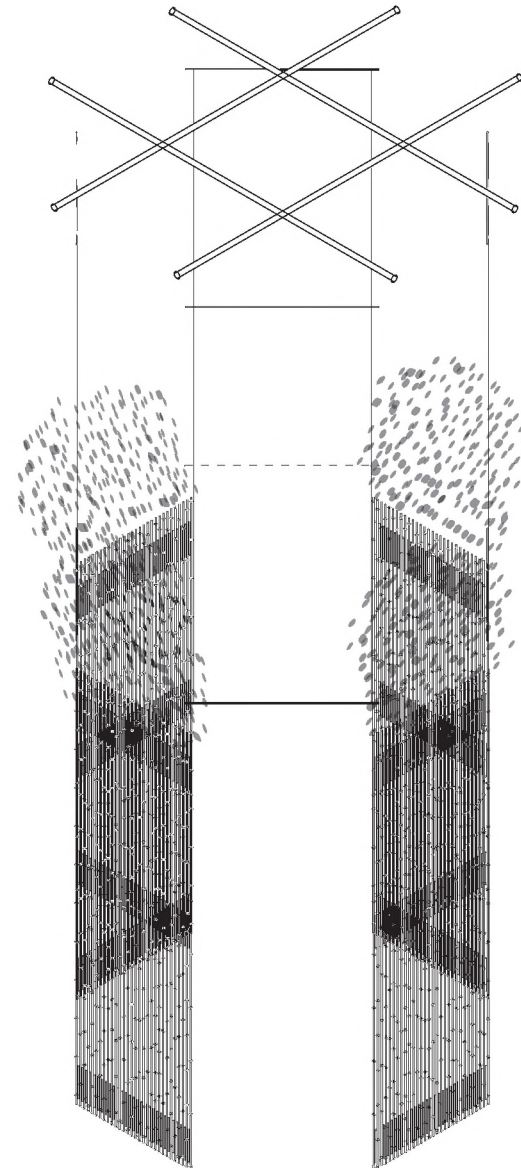
BUDGET:

Item	Quantity	Total Cost
Twine	3 @ \$2	\$ 6.00
Fabric Remnants		\$ 30.00
Bamboo – harvested locally*		\$ 0.00
Fabric – free bins		\$ 0.00
Total		\$ 36.00

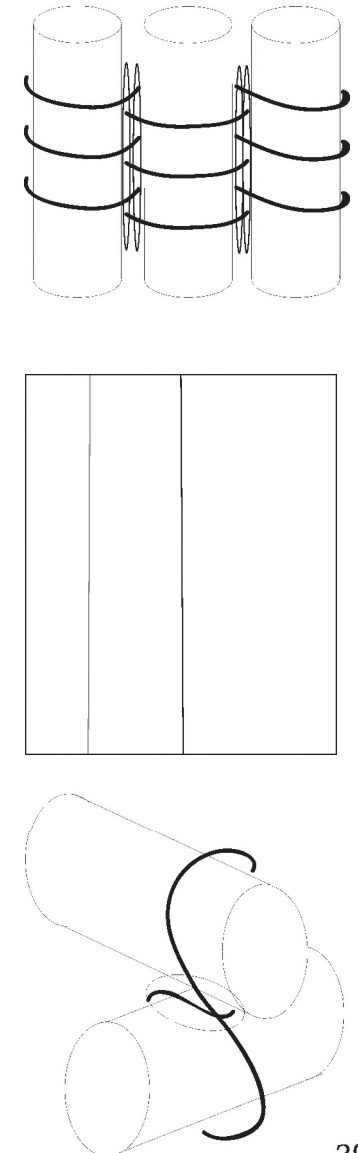
*Thanks to Prof. Karen Remmler
Photographed by: Claire Williams



Exploded Axonometrics



Detail Drawings





Back row, L to R: Lynn Sleiman, Meghan MacBeath, Catherine Kazel, Linh Mai, Naomi Darling, Grace Chen, Kai Grocki, Xinyi Qi, Yahui Lui. Front row, L to R: Dara Weingarten, Sohini Bhatia, Claire Williams, Jiaming Ma

