



SHADOWS and WHISPERS

Domaine de Boisbuchet 2024

LIVING ARCHITECTURE SYSTEMS GROUP
PHILIP BEESLEY STUDIO
GORBET DESIGN



Domaine de
Boisbuchet
Design Architecture Nature

Publisher: Riverside Architectural Press | www.riversidearchitecturalpress.ca
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Title: Shadows and Whispers - Domaine de Boisbuchet, 2024
Names: Beesley, Philip - Editor. | Chîu, Adrian - Editor. | Gorbet, Matt - Author.
| Gorbet, Rob - Author. | Gorbet, Susan - Author. | Living Architecture Systems
Group, issuing body.

Description: Series statement: Living Architecture Systems Group folio series.
With Living Architecture Systems Group. Includes Index.

Design and Production by Living Architecture Systems Group

Publication: August 2024
Riverside Architectural Press
7 Melville Street
Cambridge, Ontario, N1S 2H4
Canada

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Errors or omissions would be corrected in subsequent editions.
This book is set in Garamond and Zurich BT.

Funding gratefully acknowledged:

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Introduction

"All words, written, read, spoken, heard, or thought, connect. Any combinations of letters and sounds, in a bird's song, a text, or a coughing, is a combination of circles, singular in their tone and message. All messages connect."
- Mathias Schwartz-Clauss

The workshop is about natural and human-made light, shadows, sound, and whispers. Nature and technology can seem like different worlds. However, could these worlds cross over and combine into new forms? Could the subtle boundaries between artificial and natural worlds hold keys to new kinds of harmony in our expanded, turbulent world? What can we learn from the patterns of nature? In turn, what can we offer nature? By intimately exploring our perception and responses to the materials that create shadows and whispers around us, we will build a shared story of echoes and reflections.

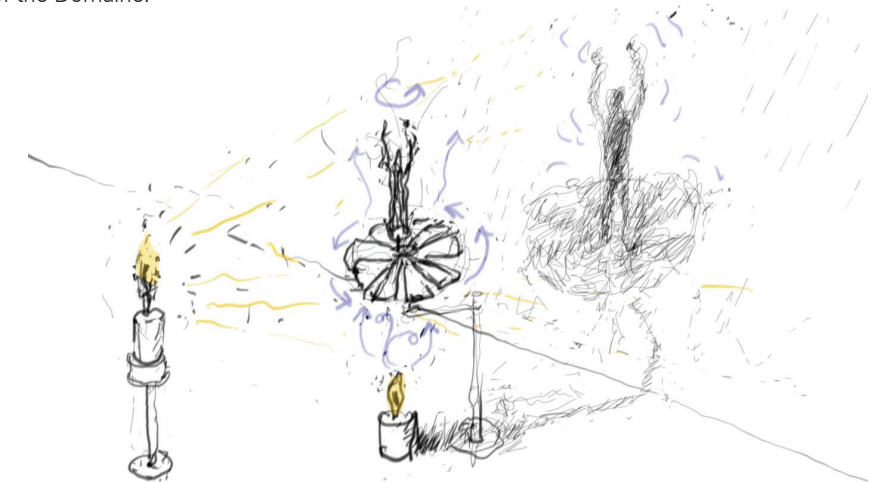
Experimenting Together

In an installation that seeks new conversations with the world of nature we will experiment and create a hybrid landscape of light, sound and motion. A series of talks and explorations will reflect on some of the deep connections and transitions that can be found in the natural and technical world. We will use these exercises to inspire physical creations that contribute to a collective performance.



Materials

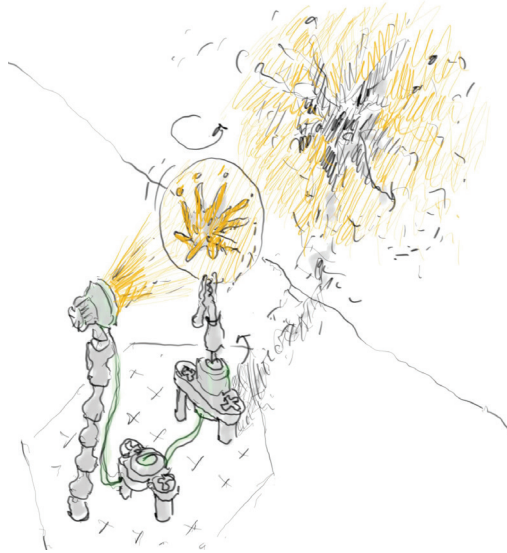
To equip students for the workshop, Philip Beesley's Toronto-based sculpture studio is working with collaborating partners Gorbet Design and researchers of the Living Architecture Systems Group. We are preparing kits of geometric connection parts, recorders and sound players, and lights for creating shadows. In an introductory day we will follow kit patterns that introduce specialised ways of working. Individual explorations will follow. Parts of these kits can be extended by using materials you'll find within the grounds of the Domaine.



Collective Performance in Shadows & Whispers

Collaboration is based in the layered echoes and reflections of the ideas that we give to each other. Collaboration can be magnified by the prisms of other people's unique perspectives. If we see reflection as the act of being influenced by each others' state of being in the world, then it can be seen as the embodiment of intra-connectedness. By perceiving and reflecting each other's presence we can move from interconnections toward the creation of an intra-connected system.

In the last days of the workshop, we will draw our explorations together into a collective installation and performance. We will create fields of new space by using artificially created shadows and projections and by making sounds and tones. Within glimmering shadows, dream-like worlds might be seen. Within whispering sounds, new voices might be heard.



Echoes and Reflection

"We do not learn from experience. We learn from reflecting on experience."

– John Dewey, 1933

Reflection is often conceived as something that happens in a smooth, perfect mirror. *Yet*, reflection is never perfect. Reflection can include reverberations, refractions and distortions. Reflection is almost always an act of transformation and metamorphosis. 'Reflection' can also mean taking in and being changed by ideas. Through reflection we can take time and space to interpret the past, recognize and perhaps embrace the present, and shape the future.

The Oxford dictionary definitions for the word 'reflection' are surprisingly contradictory:

1. The throwing back by a body or surface of light, heat, or sound without absorbing it
2. Serious thought or consideration

It is fascinating that the first definition explicitly denies absorption while the second very much implies it. While scientific definitions of reflection describe an "abrupt change in the direction of propagation of a wave," that indicate a momentary event, educational definitions of reflection tend to oppose that kind of action. Within education, reflection is often encouraged it as an insightful practice where new ideas and beliefs can be integrated by widening and deepening our understanding.

The concept of an "echo" has a similar dual meaning: both physical and intellectual, both scientific and metaphorical. We can hear an echo—a sound reverberating from a surface at a distance, or we can feel an echo—a close parallel to an idea, feeling or event.

Rhythms and Polyrhythms

"As you begin to realize that every different type of music, everybody's individual music, has its own rhythm, life, language and heritage, you realize how life changes, and you learn how to be more open and adaptive to what is around us."

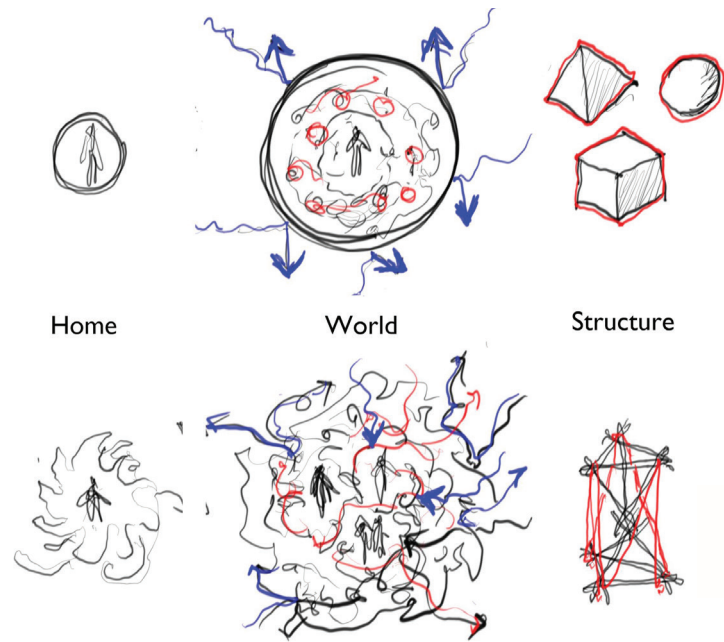
- Yo Yo Ma

Just as a collaboration is built from the diverse ideas and experiences of people, formed over time into a coherent whole, musical *polyrhythms* are built from the concurrent overlay of distinct rhythms. Polyrhythms can emerge from the shifting of an underlying relationship between rhythmic elements, and often result in *phasing*, or the appearance of short periods of synchronicity before beautifully separating in a periodic dance. As we explore the potential for bringing light and sound together, we will layer individual experiments into a nuanced narrative that invites people to follow the breathing rhythms and counter-rhythms built of shadows and whispers.

Open Macroscopes

The forms and structures that are contained in workshop construction kits are based on special qualities that differs from classical design. In the same way that microscopes can reveal the hidden worlds of things vastly smaller than ourselves, we can use new instruments to reveal large, complex systems. We hope that the installations and performances we create together can function as 'macroscopes' that embrace our vast surroundings. By embracing the complex systems that surround us, large and small, we hope to make subtle things visible and tangible.

We can ask: what is the experience that this thing is going to deliver? In all of the elements we touch- in water, light, and sound- we can see resonance. We are building a system. We can see this as a spatialized system that is transforming energy. We're putting energy into the system. The energy is being transformed in some way, and it is received by us. The tools we are using determine the amount of energy, when we place the energy, and where the energy comes from.

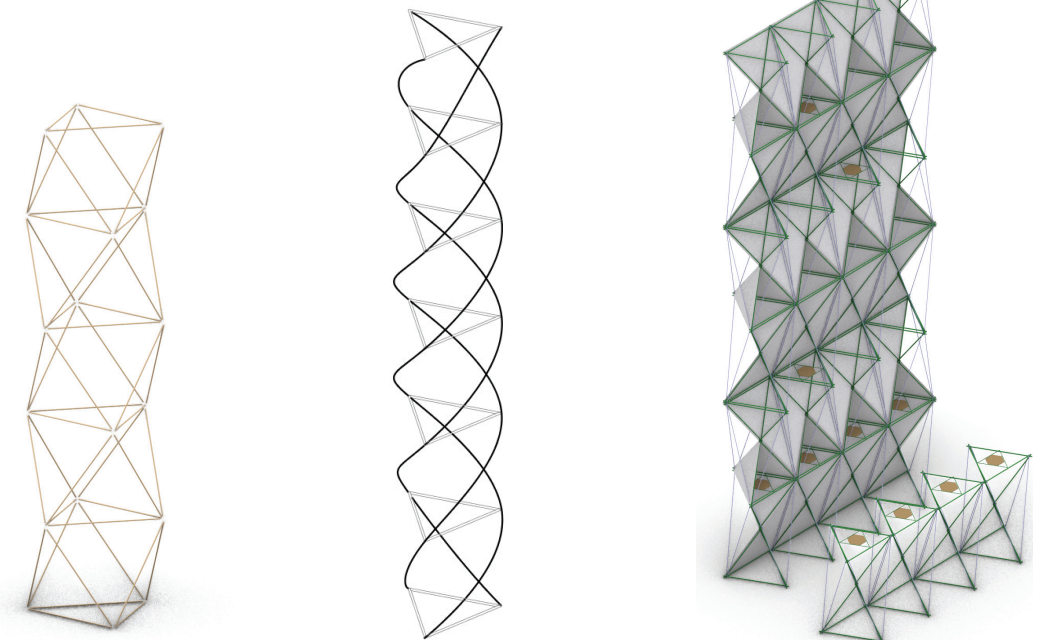
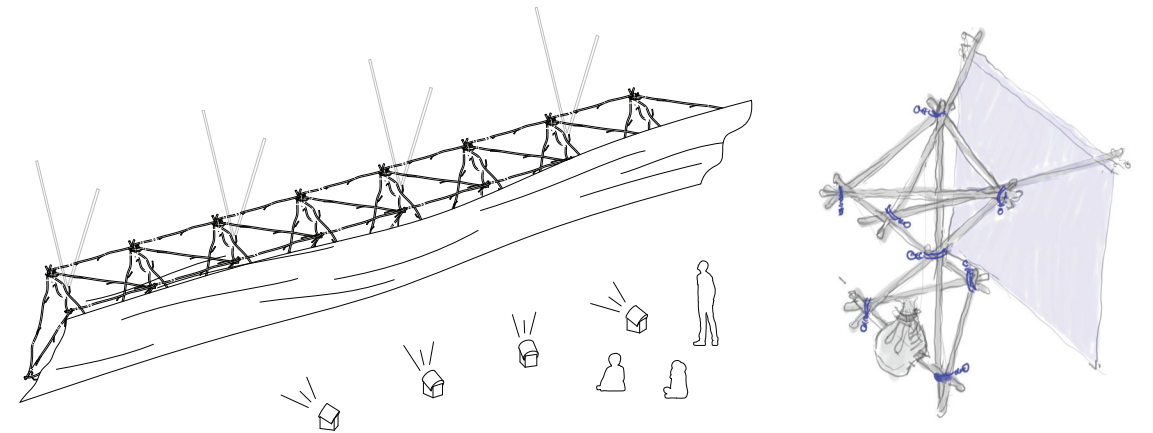


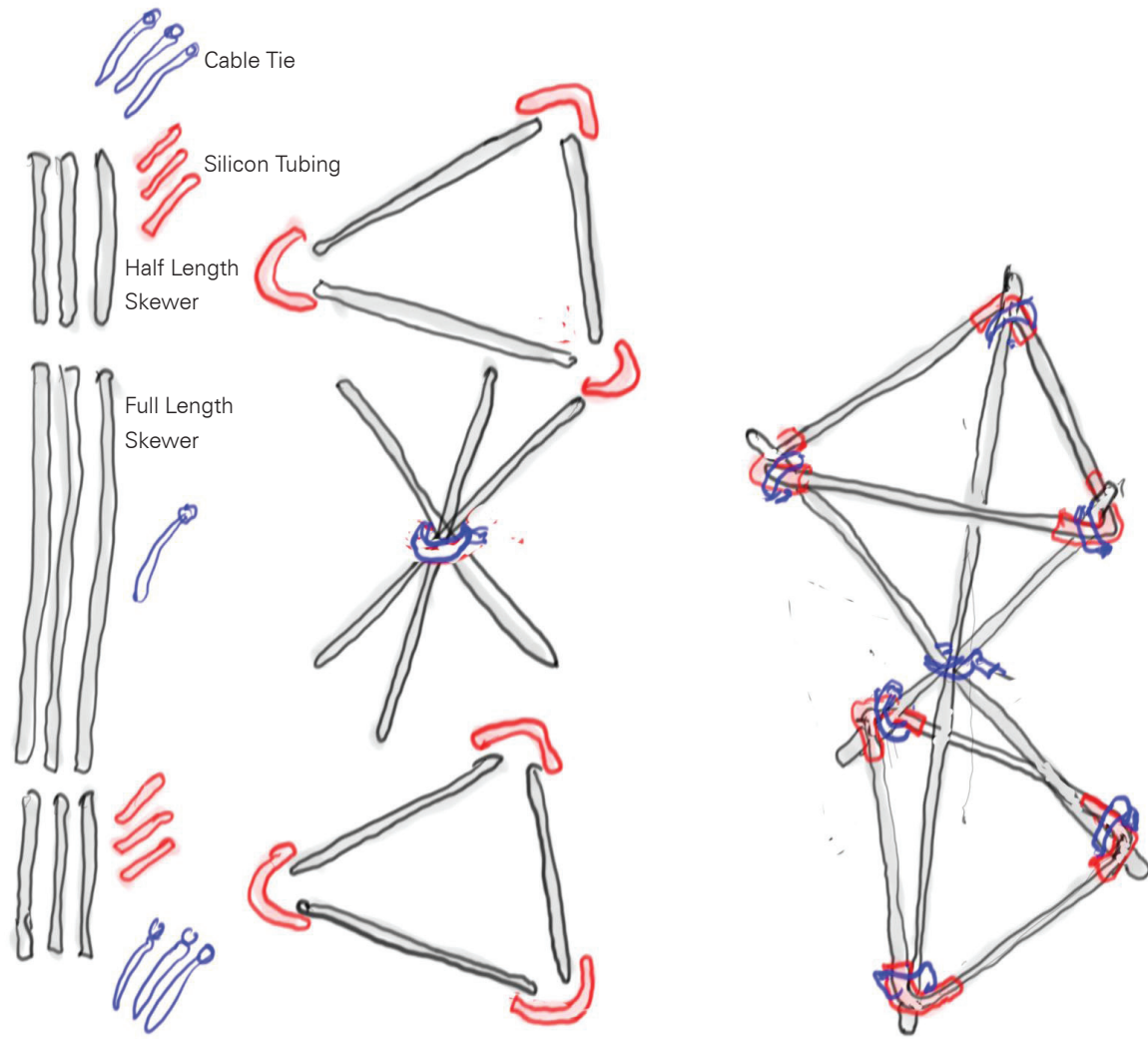
The pursuit is something that seems quite different from the historical space that Isaac Newton conceived. In Newton's famous equation of space where every action results in an equal and precisely opposite reaction, he visualized the world as a vast number of finite bodies, reaching out across the void of empty space.

In recent insights, that almost-empty world has changed and become very full. The mid-20th century Belgian physicist and chemist Ilya Prigogine formed new equations based on open, constantly forming dynamics. By including the 'disruption' and 'contribution' of external energy- the flow of the sun into our worlds, the solar wind, Prigogine defined a vibrant space full of connections. Standing waves stutter, and shift, and break, and also rebuild, and hold on, and keep building. They have an extraordinary toughness and durability. They last, creating the world.

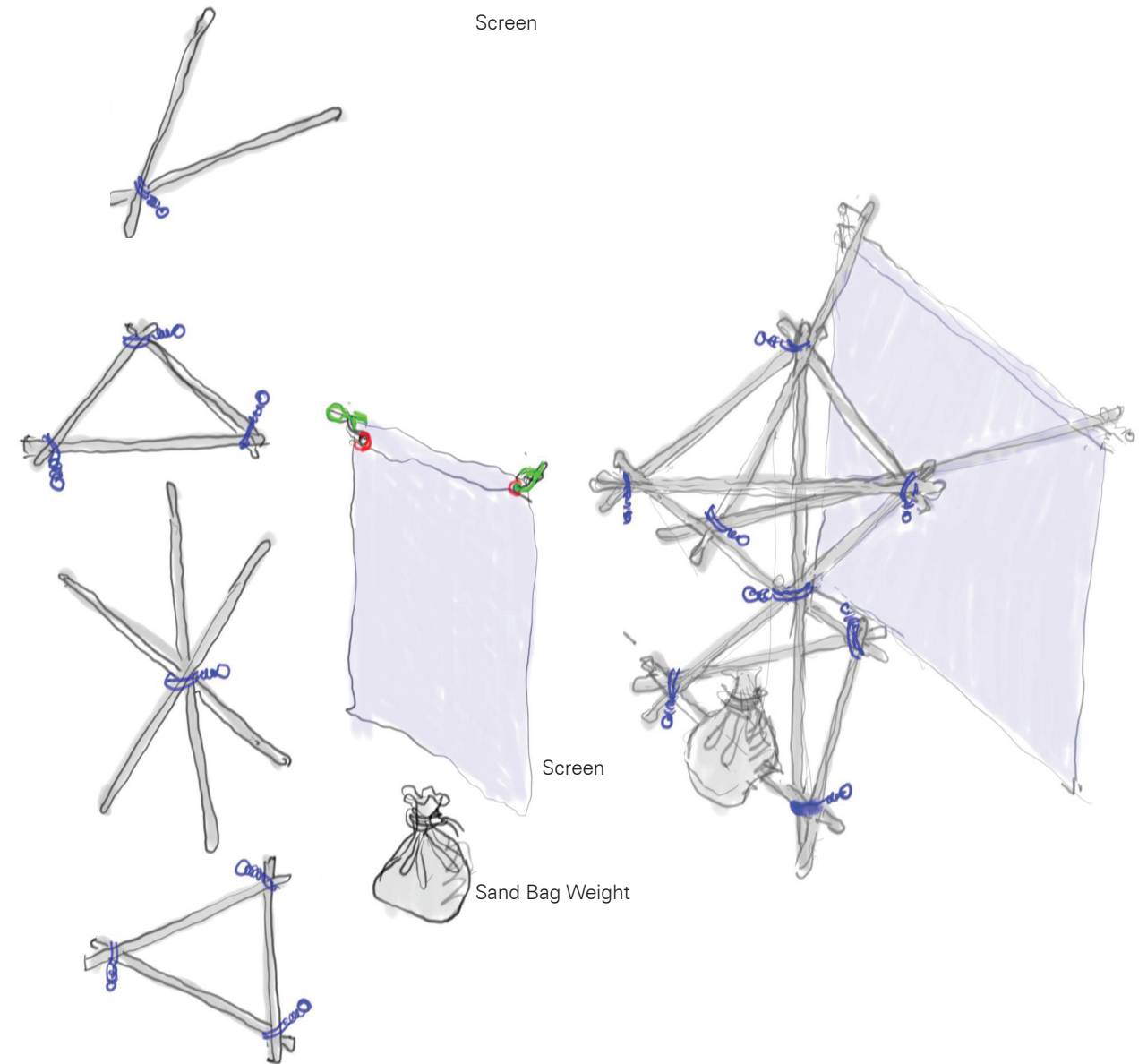
The contemporary physicist Jeremy England describes an even more radical sense in his 'Every Life is on Fire'. He describes how those standing waves are not just landscapes where we live, but they are our living bodies and our minds as well: we, as living organisms, are the inevitable result of that flux of open systems. Life is the inevitable result of the universe. England suggests if we embrace the open universe carefully, respecting our bodies and each other, but staying open and curious and wondering, then we will be carried by the world and will flourish and grow. It is not necessary to seek closure.

Scaffold Systems

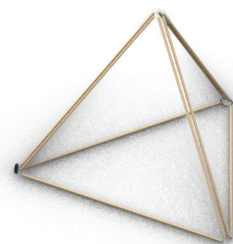
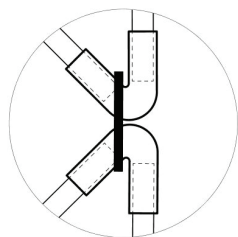
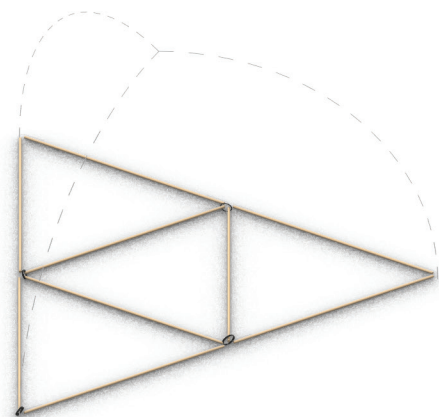
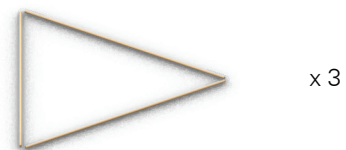




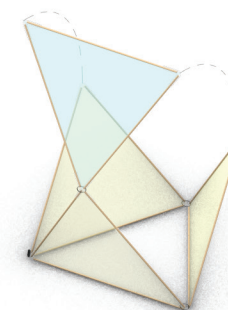
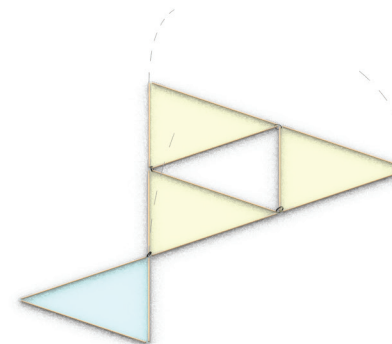
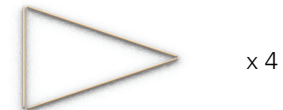
Silicon Joint Metastable Frame



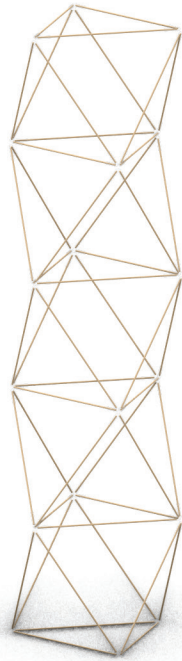
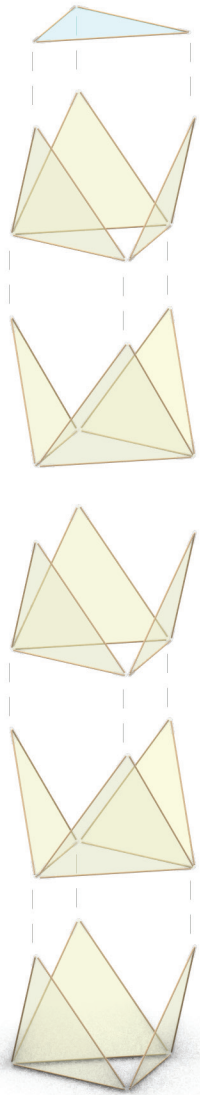
Twist Wire Joint Metastable Screen Frame



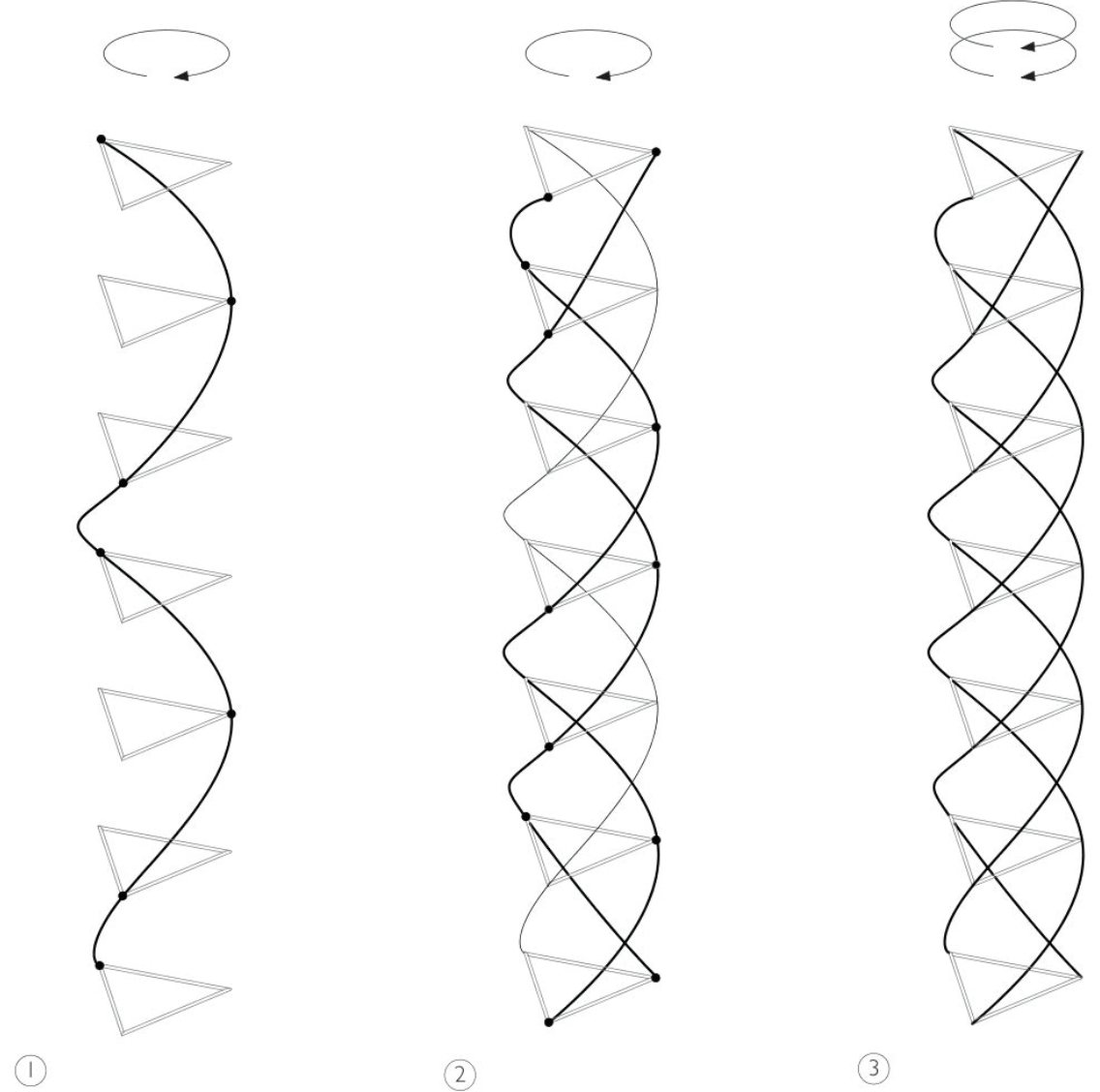
Tetrahedron Unit



Octahedron Unit

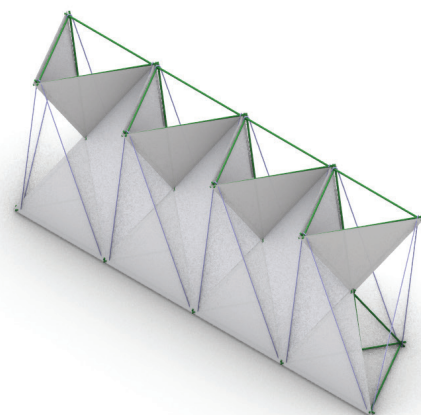
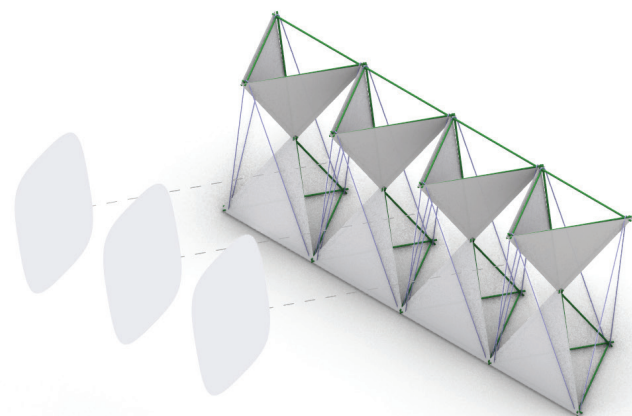
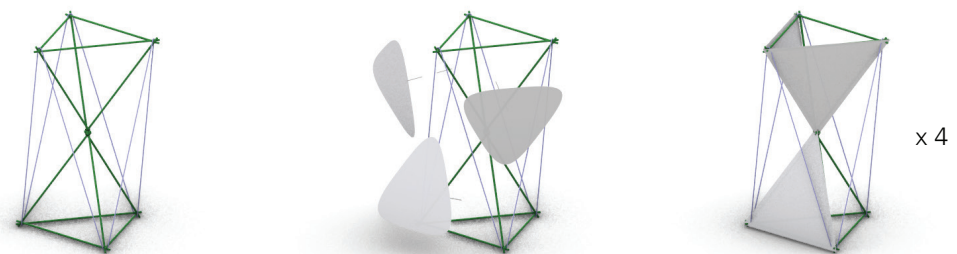


Truss Tower

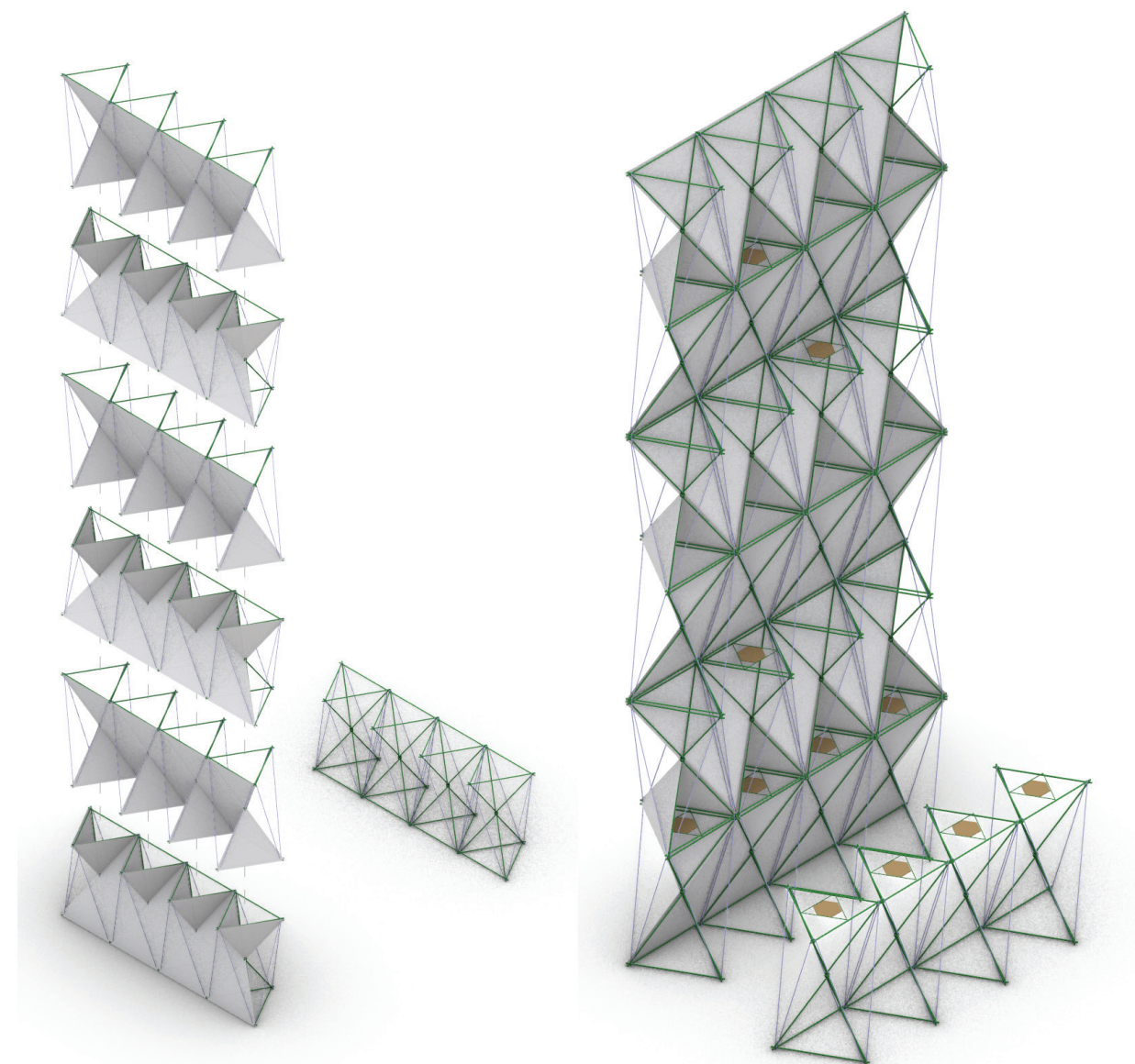


Attach the caning to each triangle joint following a spiral rotation.

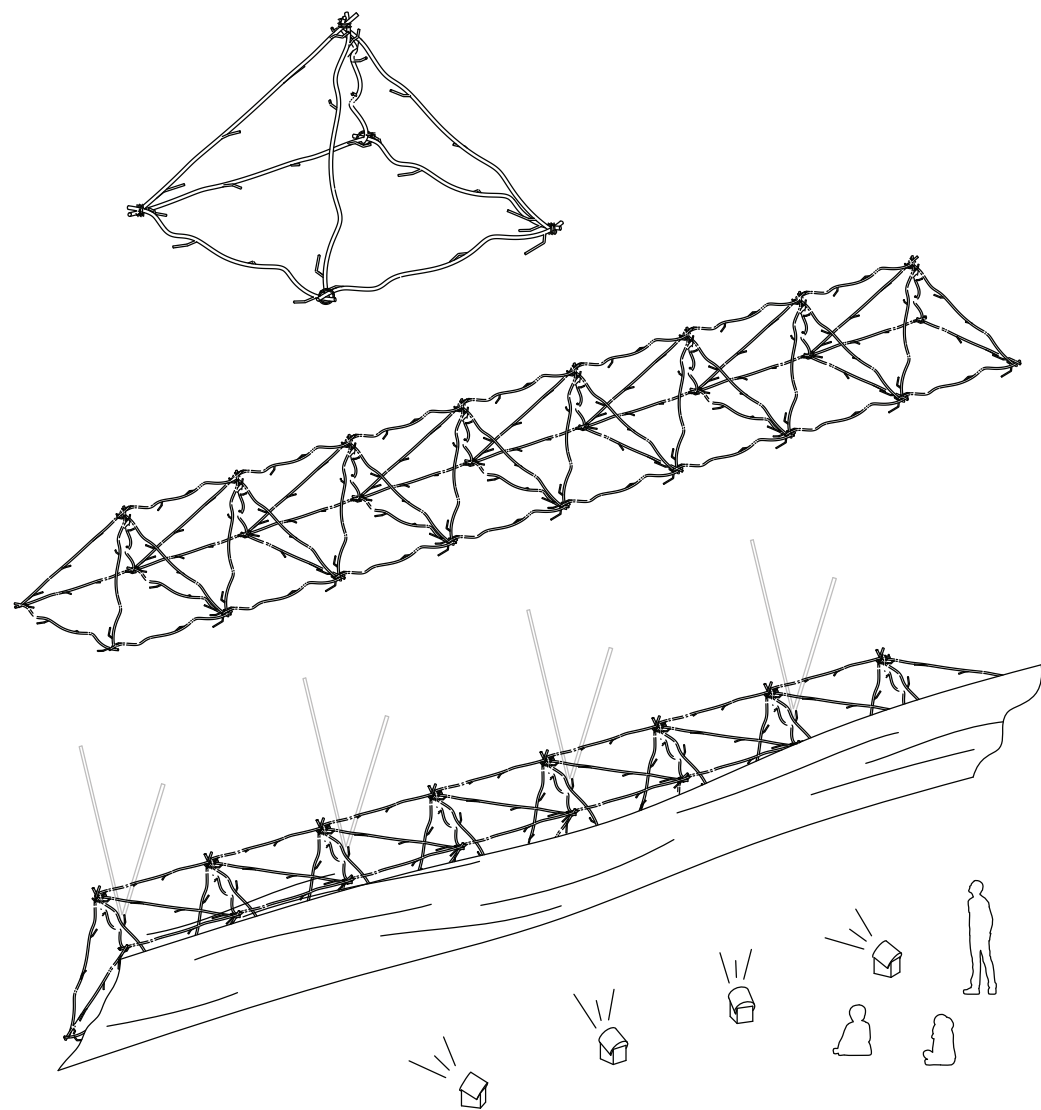
Flexible Caning Unit



Wall Unit
Skeleton Assembly Concept

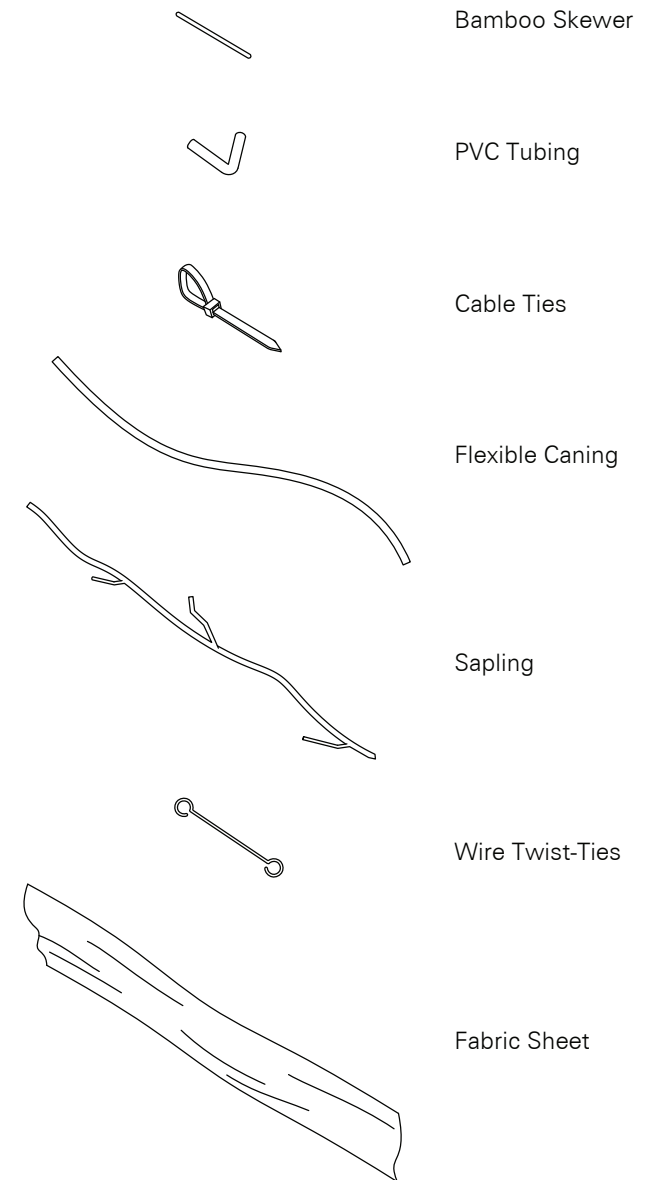


Wall Assembly
Skeleton Assembly Concept



Sapling Projection Screen

LIVING ARCHITECTURE SYSTEMS GROUP



Raw Materials

SHADOWS AND WHISPERS 2024

Team Bios

Philip Beesley

Philip Beesley is a Canadian artist, architect and University Professor (University of Waterloo). Beesley’s research is recognized for its pioneering contributions to the rapidly emerging field of responsive interactive architecture. He leads Living Architecture Systems Group (LASG), an international group of researchers and creators. His experimental architecture explores the subtle phenomena and constantly changing boundaries at the outer edges of current technology. He has been featured twice at the Venice Biennale of Architecture with Grove (2021) and Hylozoic Ground: Hylozoic Series 8 (2010), and his collaborations with Atelier Van Herpen have resulted in 15 haute couture collections.

Matt Gorbet

Matt Gorbet is an interdisciplinary technologist, researcher and artist who specializes in physically interactive technology experiences. Before founding Gorbet Design, Inc., Matt was a researcher at PARC, the Xerox Palo Alto Research Center, where his team designed and studied new document genres enabled by emerging technologies. Matt earned a Bachelor of Science in Architecture from MIT and a Master of Science from the MIT Media Lab. He has several patents on novel interaction technologies. Matt’s Doctorate of Design at FIU CARTA is focused on control strategies for interactive objects and environments. He works closely with the Living Architecture Systems Group and has exhibited technology artwork worldwide.

Susan LK Gorbet

Susan is a futurist, designer and educator who mentors organizations on integrating design, business and futures thinking. She has developed transformative programs that brought futures thinking, design thinking, and facilitation to leaders and teams on six continents. She led the development of a design curriculum for Shad Canada that has incited thousands of secondary students to believe that they can change the world. Susan holds a Master of Design from OCADU’s Strategic Foresight and Innovation program, and she has taught futures thinking, design thinking, facilitation and innovation to corporate leaders, MBA students and undergraduates. Previously, Susan spent many years with her partners at Gorbet Design building architectural-scale artworks that create connections between spaces, people and ideas. Before that, Susan spent a decade designing software in Silicon Valley where, after a short foray into graduate research at Stanford, she evangelized experience design at both enterprises and startups.

Team Bios

Rob Gorbet

Formally trained as an electrical engineer, Rob is an interdisciplinarian, a mechatronics specialist, an award-winning teacher and a technology artist. He loves words, art, design, teaching, travel, squash, and his friends and family. At the University of Waterloo, Rob is cross-appointed between Electrical & Computer Engineering and the interdisciplinary Bachelor of Knowledge Integration program, which he chaired from 2014-2023. Rob’s teaching includes courses on microcontrollers, control systems, museum exhibit design, and technology art. His engineering research involves the design of actuators made of Shape Memory Alloys (SMA), for everything from car door locks to subtle next-generation actuation systems for responsive architectural environments. In addition to his work with Gorbet Design, Rob has engaged in international collaborations with designers, artists, and architects.

Adrian Chîu

Adrian Chîu is currently a Masters Candidate in Architecture at the University of Waterloo and holds a Bachelor of Architectural Sciences at Toronto Metropolitan University (formerly known as Ryerson) with an optional zone specialization in their Digital Fabrication Zone. His interests lie at the intersection of architecture and using digital fabrication tools to create experiential interactive environments. He has a demonstrated history of working on the design and fabrication of interactive installations, with his work being displayed as part of Winter Stations, DesignTO, the Design Exchange’s EDIT expo, the Gladstone’s Come Up to My Room and the Bergen International Wood Festival. He is heavily involved in student co-curricular experiential learning, having served as the principal of arc.soc (Ryerson Architecture Student Society) and is currently a co-director of F_RMLab, an open peer-to-peer student design collective focusing on the intersection of architecture and technology at the University of Waterloo. Adrian’s current work at the LASG is looking at ways to distill the current studio concepts through kits as part of his thesis on developing an approachable kit-of-parts for an interactive architecture with a distributed and compliant tectonic.

Luc Gorbet

Luc Gorbet is a current student at the University of Waterloo, studying chemical engineering. He has a passion in design and has expieirnce in design software. His current work at the studio involves experimenting with the use of chemicals as light moduators and developing kinetic componeents for the studio.

Credits

Shadows and Whispers Boisbuchet Leads

Philip Beesley
Adrian Chiu
Luc Gorbet
Matt Gorbet
Rob Gorbet
Susan LK Gorbet

Philip Beesley Studio Inc /Living Architecture Systems Group

Kevan Cress
Binalpreet Kalra
Ryan Leung
Teodor Taras Mlynczyk
Anne Paxton
Carolina Segura
Lena von Buren
Alexandra Yeung

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Archimedean Polyhedra
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Living Architecture
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R LASG





LIVING ARCHITECTURE SYSTEMS GROUP
Chevron Column
Riverview High School, Riverview New Brunswick
Workshop 2020, Rob Gorbet and Ian Fogarty
R





Living Architecture
Electronics Kit
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LIVING ARCHITECTURE SYSTEMS GROUP
Second Land: Ground Veiling
Scaffold and Power Cell Details
Domaine de Boisbuchet, 2019
R LASG
Boisbuchet
Design Architecture Future

