pontagon:

the future memory of a bridge

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Faculty of Architecture
University of Manitoba

Published by DoA Press
201 J.A. Russell Building
University of Manitoba
Winnipeg, Manitoba
R3T 2N2, CANADA
T: +1.204.474.7177
www.umanitoba.ca/faculties/architecture

ISBN 978-1-77284-002-5

Printed in Minnesota by Smartpress

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pontagon team would like to thank the Faculty of Architecture, the Partners Program, The Centre for Architectural Structures and Technology (C.A.S.T), The Forks, Peter Hargraves (Sputnik Architecture), and the City of Winnipeg Department of Public Engagement for their generous support to the project.

DoAPress

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Keeping humans at play Eduardo Aquino, associate professor

Every situation has qualities. Essentially, we quantify them and that's the practical side of our lives, so the involvement with perception and in acquiring the perception is our ability to understand qualities. They exist only as long as a human being keeps them in play. They're— Therefore they are akin to energy… Whenever you look at light, basically it's just air. It has no tactileness to it. It's totally without density. —Robert Irwin

Pontagon is a hybrid generated from the words *pentagon* (a five-side *polygon*; *gon* as in angle) and *pont* (*path* in Greek, *pent* five in Greek, *pont* bridge in French), to designate a five-part bridge conceived in angles. If one could confirm there is a strategy to achieve a design intention, that intention is not fully attained until one goes through the actual experience of the space. Geometry and the use of light affect the environment and the perception of passers-by. However, the intangible qualities of the design produce unanticipated experiences for each individual. That was the very case of Pontagon.

Pontagon, a group of five structures and an "ice plaza," link the two sides of the Assiniboine River in between Osborne Village and the Legislative grounds. The project served as a winter gathering place, an "ice village" conceived as screens windbreakers, and as well experimented with the application of dichroic filter, an interference filter that generates a very accurate colour filtration used to selectively pass light of a small range of colours while reflecting other colors. If Pontagon intended to make the screen structures "disappear" emphasizing the spatial qualities of the projected colours against the ice it was the dreamlike phenomenon of dichroic light and colour being simultaneously filtered and reflected that created the true virtual and ephemeral space of the bridge, and the intimate connections to the visitors, alluding to the future connection between two different neighbourhoods in the city.

Future Memory of a Bridge Chad Connery, sessional instructor

Pontagon is a collaborative effort by the Faculty of Architecture at the University of Manitoba, submitted for the 2018 Warming Huts Art & Architecture festival at The Forks in Winnipeg, Manitoba. The team is comprised of the 4 foundation year architecture studios including 40 students from the Environmental Design and Architecture Masters Preparation programs, as well as instructors Eduardo Aquino, Chad Connery, Terri Fuglem, and Liane Veness. This collaborative design-build process is the second generation of the team's efforts to design and learn through construction with the Warming Huts Program.

In past iterations of the project, teams have endeavored to explore an immense range of imaginative possibilities for notions of "warming hut" on the frozen surface of the Red River. Building on such a rich lineage of varied projects is a daunting task but the 2018 design team was provided with a unique opportunity through support from the City of Winnipeg. The design team was given the task of generating a hut that could act as a public provocation of the future Osborne to Downtown Walk Bike Bridge, which is currently in its public consultation and engagement phase. This more specific and sited project provides a sharp departure from the usual modular format and warmth specific program of the International Warming Huts competition. Instead, the team was engaged in a dialog of connection, conversation, and multiplicity.

In the modern city, phenomenal and experiential complexities develop only partially by intent. More frequently, they result accidentally from the semi-ordered, yet unpredictable, overlapping of individual intentions.

—Steven Holl, *Questions of Perception*

The design team's process was a focused discussion of fire, light and auditory or visual stimulus as phenomena that might act as connective agencies. The idyllic gathering place of a fire pit, the image of

warmth, and the legibility of that image at a distance motivated studies of reflection, projection and color as possible design tools. Through an iterative modeling and research process, the design was proposed as a distillate of the following phenomenal criteria:

1. Dichroic reflective/projective surfaces
Laminated with dichroic film, Pontagon's surfaces both reflect the changing image of the visitors that surrounds it and project a range of chromatic emanations across the surface of the ice. Through the day it both reads its context and alters that reading by projecting itself from shore to shore.

2. Fragmentary geometry
The huts exemplify a kind of fragmentary geometric condition. Partly wind walls, partly ice forms, they evoke notions of incompleteness, improvisation, and ruin. The ambiguous identity of the resultant group of huts is simultaneously anonymous and iconic; a curiosity.

3. Multiplicity of form
Pontagon is not a singular unit, but a collection of shelters. It is intended to read as both village and a plaza, acting as a node of activity along an otherwise linear skating trail. The plaza offers temporary respite and the opportunity for play and dialogue.

We imagine Pontagon not as a simulacrum of a bridge, but rather as a catalyst for connections. Phenomenal provocations, causal relationships and a modular arrangement mirror the complexity and richness that acts of bridging are capable of. Competition organizer and local architect, Peter Hargreaves cleverly suggested to the design team at the Outset of this project that our hut might function as a "future memory for a bridge." In retrospect this is perhaps more apt than we might have expected. After all, it is ultimately not the physical artifact that will eventually qualify the value or memorable effects of the Osborne to Downtown Walk Bike Bridge, but the generous actions of connection, bridging and the conversation it generates.

Pontagon: A Collaboration with the City of Winnipeg

Winnipeg, March 2, 2018

We approached the students with a challenge: can you build something that asks Winnipeggers to think about a future bridge connection over the Assiniboine River and how that could bring people together?

With such an imprecise assignment, we would have settled for some added project awareness. The result was much better: a beautiful and thought-provoking installation that has provided citizens with a tangible and interactive space to connect with the planning process of the City of Winnipeg's Osborne to Downtown Walk Bike Bridge and Connections project.

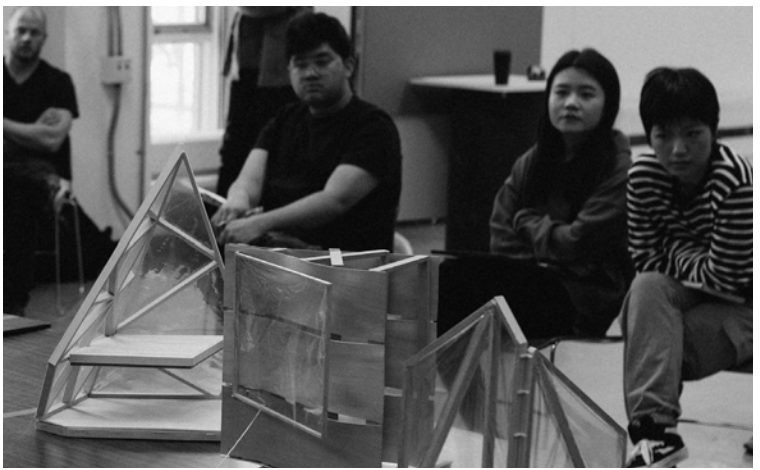
One of the main goals during this design study was to develop pedestrian and cycling infrastructure designs that reflect the needs and desires of the community. The development of a physical structure (Pontagon) on the busy Red River Mutual Trail provided a high-profile opportunity to publicize the project and public engagement program. We were able to showcase the City's project, and engage those who otherwise would not have the opportunity to learn about this exciting undertaking. The same location is a popular winter crossing for residents in the area, and the structures also provided additional touch points with nearby residents.

The gathering of wide-spread public attention has encouraged feedback from a diverse array of perspectives, providing more robust engagement results and project support for what will be a future landmark structure in Winnipeg. We thank you for your involvement.

Damir Muhurdarevic, Project Manager / City of Winnipeg
Osborne to Downtown Walk Bike Bridge and Connections

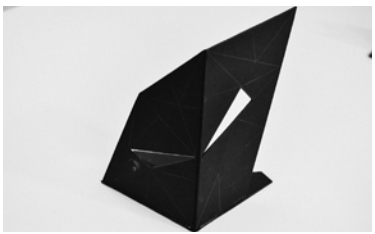
design charette

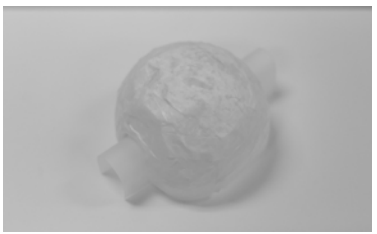
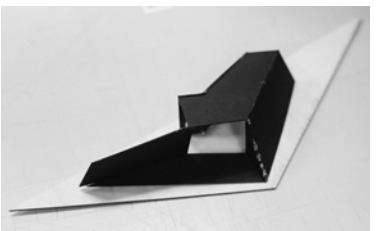
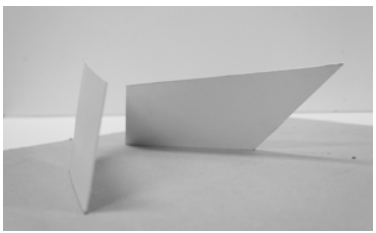
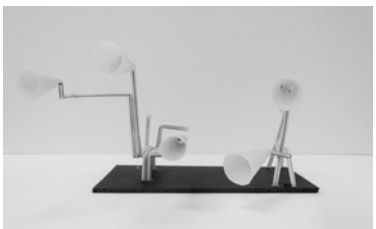
Students were given a three week timeline to design and build a warming hut in collaboration with the City of Winnipeg, focusing on an investigatory pedestrian-walk bike bridge project. Students divided into pairs to develop a concept that proposed specific plans for bridging the parks via communicative interactions. Deliverables included conceptual sketches and a model in a short timeline of two hours. All concepts were reviewed and combined into more focused intentions. Extensive research and numerous tests were generated before any design decisions were committed to, giving students an authentic insight into tangible practice. Final intentions of communicating through conversation, reflection and movement were combined over the next two weeks to design a truly cohesive and integrated hut.



design development

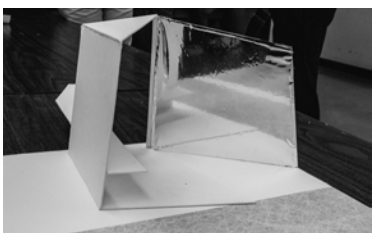
Movement was explored in terms of a modular architecture that could be alternatively interconnected or expanded out. This mobility of program creates a flexible space making tool for conversation within the community. To further join the separated banks, reflection was investigated as an illusionary tool to fill the gap between this span and allude to the future bridge. The initial form consisted of two structures, which further evolved into five individual and unit modules, generated from one form. The allotments individually span the ice to represent a future connection between the two communities, but also fit together to create an intimate gathering space to further the dialogue.



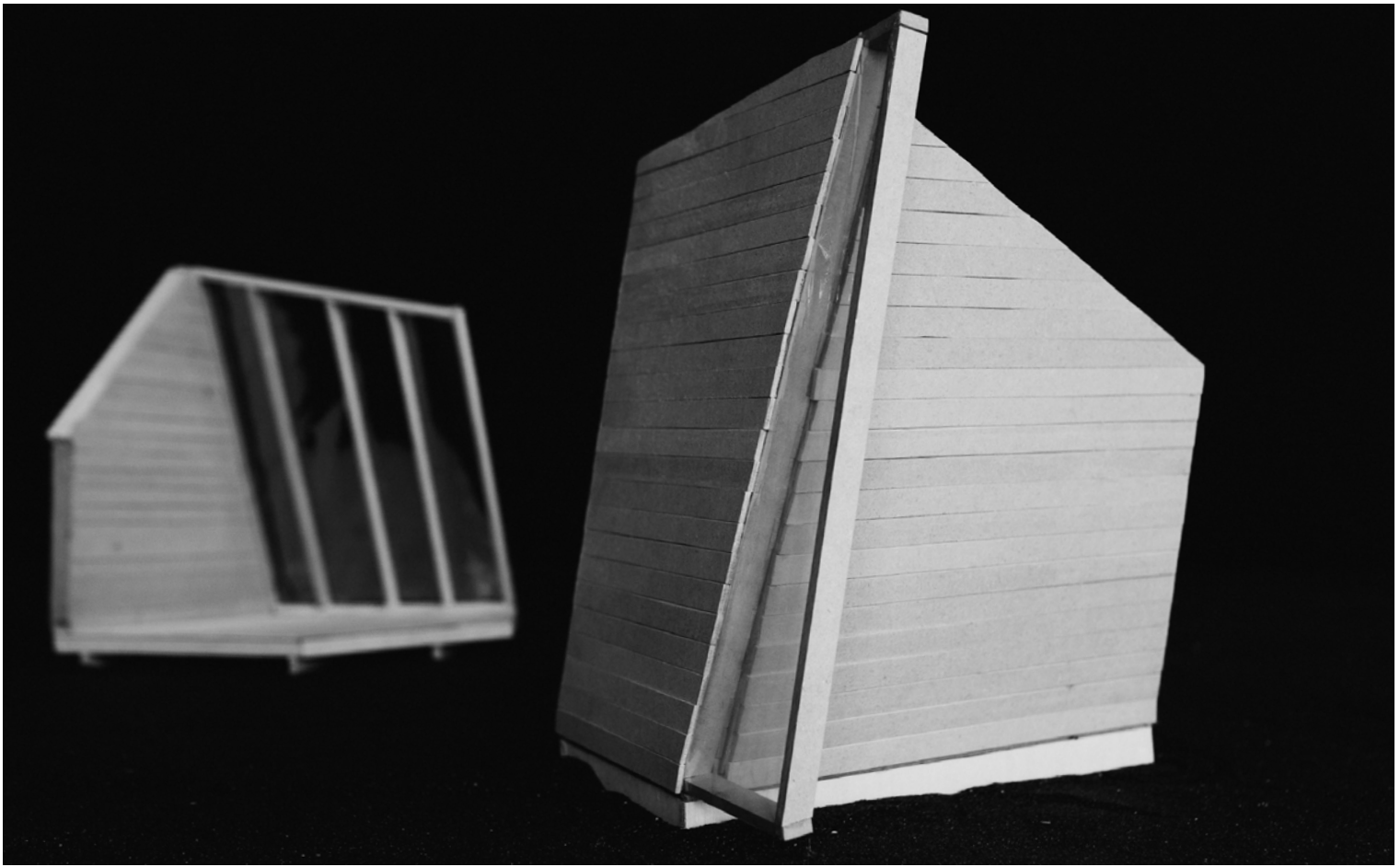






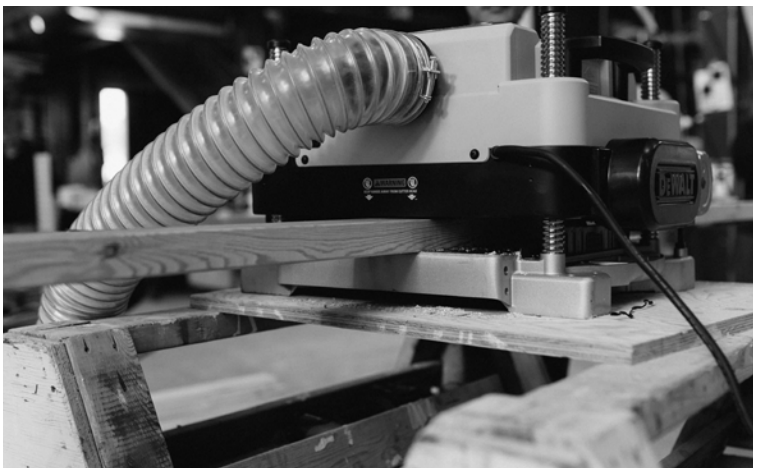
work process

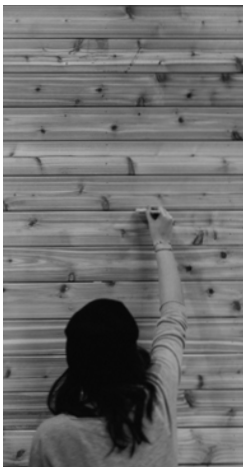
The design-build was carried out as a collaborative exercise between students and instructors. The final concept was erected over a one week period while final details were adapted simultaneously to the construction process. Students were divided into assemblages of both interest and skill, which focused on research, drawing, photography, graphics, or management. Additionally,each student was an active participant in the construction process, in accordance with a shift schedule and detail-specific tasks. The accelerated pace of the project and team based structure of the work necessitated higher levels of student-lead decisionmaking and initiative.

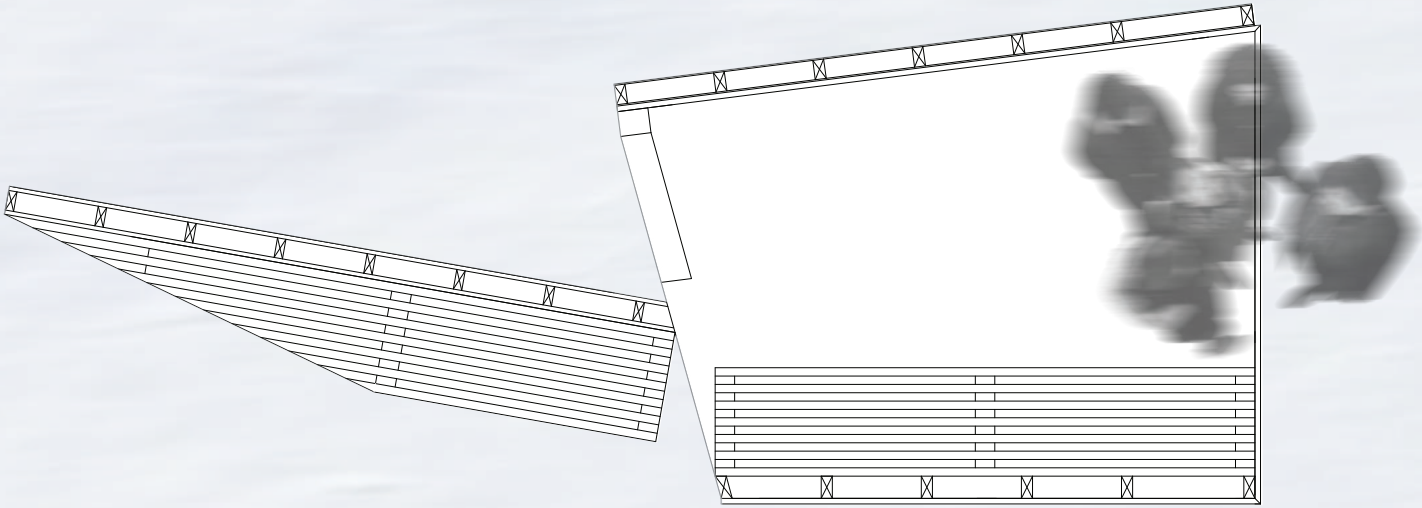


framing + cladding

The hut used SPF 2x4 wood frame construction, with exposed studs on the interior and cedar cladding on exterior surfaces of each wall. A 15° angle was applied throughout the structural framework, creating a consistent language across the arrangement. The entirety of the cedar cladding was white washed with a water-based wood stain to blend with the snowy Assiniboine river and highlight the vibrant dichroic visuals. Ultimately, this strategy sought to amplify the presence of our vibrant dichroic colors against the usually monochromatic landscape.







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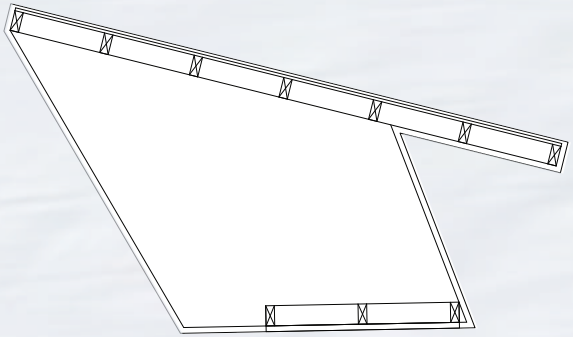

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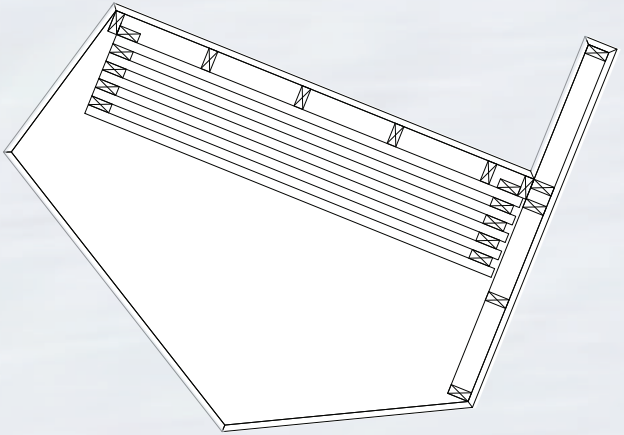

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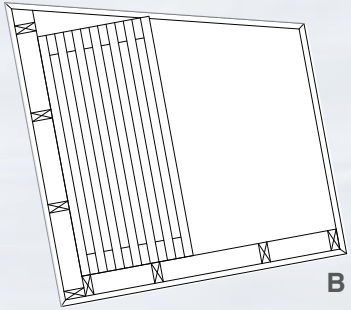

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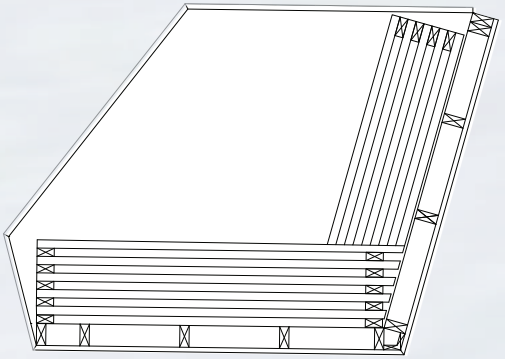

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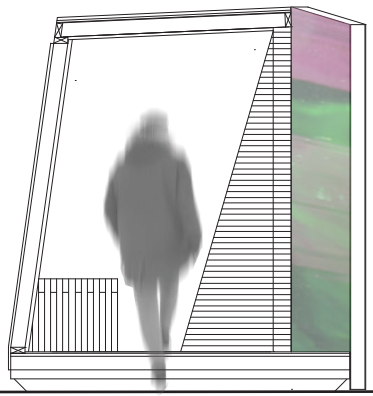

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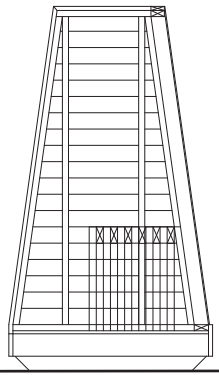

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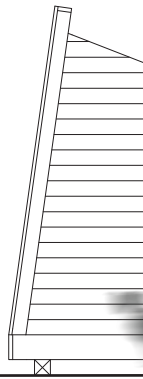

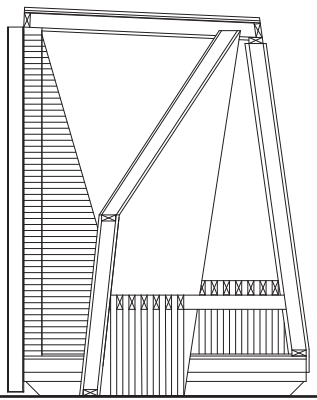

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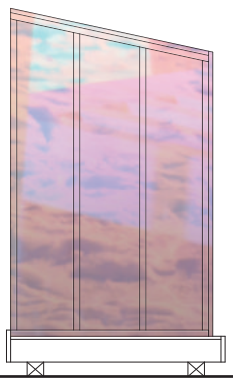

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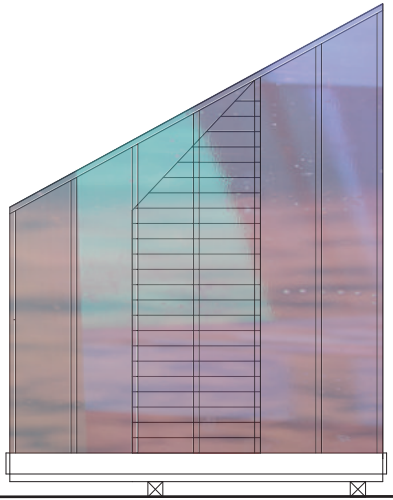

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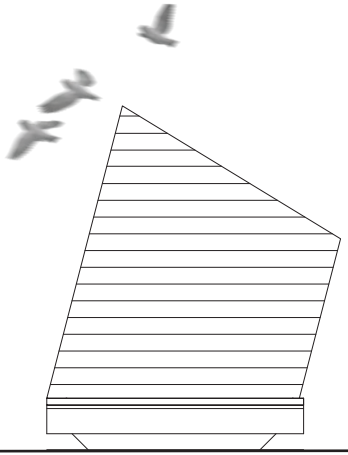

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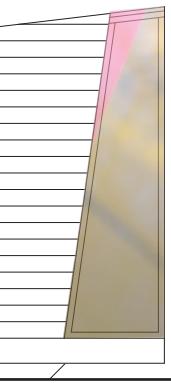

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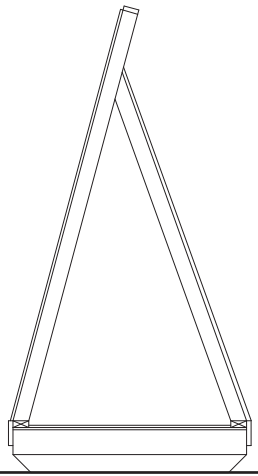

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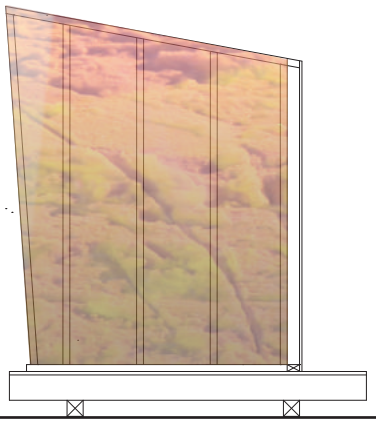
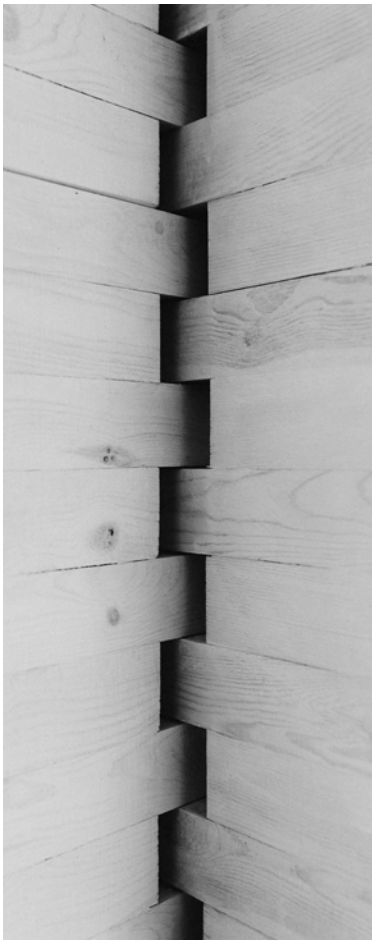


E2

finger joint wood hinge

The parent hut, although static, included a pivoting acrylic wall, which joins the structural frame with a connective finger-joint hinge. This strategy was utilized to allow for material continuity, which ensured a homogenous façade, while also alluding to the anticipated connection of the distanced communities. A steel rod threads the wooden finger joints to allow for the wall to rotate in place. This modular element allows the parent hut to take on an expansive-contractive nature and provides an increased capacity to capture space and facilitate gathering or conversation.



finger joint benches

The huts provide a generous amount of seating, with benches located in each individual module. Each bench makes use of an interlocking finger-joint system to create a seamless effect that correlates with the exposed-framing language of the hut. Research was conducted to ensure that a seating height ergonomically-appropriate for a person wearing skates was attained.

dichroic film

The iridescent colours of the huts were achieved by using a dichroic film on acrylic panels. The film is simultaneously mirrored and transparent, creating a range of optical effects and giving it a mirage-like quality. The colouring of the film is transformed by differing light conditions, and is both reflected and projected through panels onto the surface of the ice. This light can be manipulated by altering the positions of the small structures, to create a visual projection of the bridge's future location across the river.

event

The form of the structures acted as a catalyst to allow for casual day-to-day discussion regarding the conditions of the future bridge. An official event was coordinated between the faculty and the City to create a formal gathering with project leaders to educate the public while also receiving feedback. The event took place in situ and utilized fire as an intriguing identifier, drawing passersby into the vicinity.

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photo credits

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18-19	Matt Saunders
38	Daniel Basanes

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