

# COMMUNITY DESIGN WORKSHOP

## ENGAGING THE CITY THROUGH CONTEMPLAY

THE CONTEMPLAY PAVILION IS A STUDENT LED INITIATIVE DEVELOPED AT THE MCGILL SCHOOL OF ARCHITECTURE AS PART OF THE DIRECTED RESEARCH STUDIO PROGRAM, IN COLLABORATION WITH F.A.R.M.M. (FACILITY FOR ARCHITECTURAL RESEARCH AND MEDIA MEDIATION) LED BY JASON CROW.

The pavilion project is an excellent demonstration of the latest developments in the DRS program, exposing advanced construction techniques, digital processes and theoretical approaches to architecture in the public realm. Furthermore, the project highlights the student potential as well as the capacity for trans-disciplinary team work on a high level project. The project benefits from the use of novel design and fabrication techniques, utilizing algorithms for digital modelling and thus, facilitating fabrication of complex geometries and assemblies.

The project is a unique opportunity to allow students and the McGill School of Architecture to present an unprecedented graduate studies project in North-America, setting the standard for new architectural programs. It creates an opportunity for debate and discussion as to what public space can be, and how its structures can be conceived. The pavilion is donated to the public and open to all as a means of making architecture relevant and important in the community.

The pavilion was conceived over a period of 6 months and is currently being built by: Hamza Alhbian, Simon Bastien, Justin Boulanger, Evguenia Chevtchenko, Elisa Costa, Jason Crow, Nicolas Demers-Stoddart, Andrew Hruby, Olga Karpova, Shelley Ludman, Diandra Maselli, Maria Mingallon, Courtney Posel, Dina Safonova, Dieter Toews, Sophie Wilkin.

### Project Description

The pavilion is meant as a multi-generational artefact that gathers the ideas of contemplation and playing in a single clear gesture. As a socially sustainable public infrastructure that plays with the visual field through form and cladding, it questions the current trend in public space furniture and encroaches in the realm of the abstract sculpture or artefact.

The gesture itself is a three dimensional Möbius strip supported by a triangular truss. The truss is a combination of plywood and steel members. The cladding is a visual pattern generated to create a simultaneous Moiré and parallax effect. As the public approaches and engages with the pavilion, the visual field is modified and interrupted by the interference created by motion and the two layers of cladding. The eye continuously covers the never ending surface of the Möbius inviting dynamic motion from the user. A base platform serves both as foundation and bench, providing a central area for seating within a never ending structure. The light filters through the cladding generating an ambiguous relationship between the notions of the inside and outside as well as furniture and shelter.

As you move around the pavilion, new interference patterns are continuously created and destroyed due to the Moiré mechanism, creating a responsive, interactive experience. The simplicity of a half-twist in a ribbon was rendered extremely complex through the doubling and offsetting of the Möbius strip: the creation of two surfaces activated the Moiré but required strong yet minimal structural solution. The solution to this complexity was a space frame. To resolve all these design criteria, the Moiré pattern and an optimized space frame are generated via customized digital parametric modelling.

The project enhances the potential for utilizing latest developments in digital design and manufacturing, exposing advanced construction techniques, digital processes and theoretical approaches to architecture in the public realm. The hybrid structure of galvanized steel and exterior

grade plywood is fully reversible and its construction process allows the pavilion to be built, disassembled and recycled. The complex form created unique opportunities to develop research through parametric design without increasing waste and simultaneously minimizing cost.

### Dimensions

The pavilion has an 8.8m x 6.7m footprint with a total height of 3.7m. It is has an oval shape in plan that is the result of the structure being an infinite Möbius strip. Made of standard galvanized steel tube and exterior grade BC fir plywood, the pavilion can resist all seasons outdoors without the need for supplementary and wasteful paints or varnishes. All materials were locally available from suppliers and cam in standard formats.

### Manufacturing

The production of the pavilion was the result of parametric design which allowed for the efficient management of material and optimized structural and formal solutions. Using grasshopper, Rhino and SolidWorks, the team managed to maximize the use of materials while simultaneously producing a distinct project. The manufacturing included CNC cutting for the plywood and CNC laser cutting for the steel details.

### Construction

As a result of the pavilion's need to move around the city, the construction process had to be fully reversible. All joints and connections are bolted and do not require adhesives, meaning that the pavilion can be fully disassembled and recycled. Furthermore, the individual parts are light enough for people to carry, removing the need for machinery during construction, making for a quieter and safer building process.

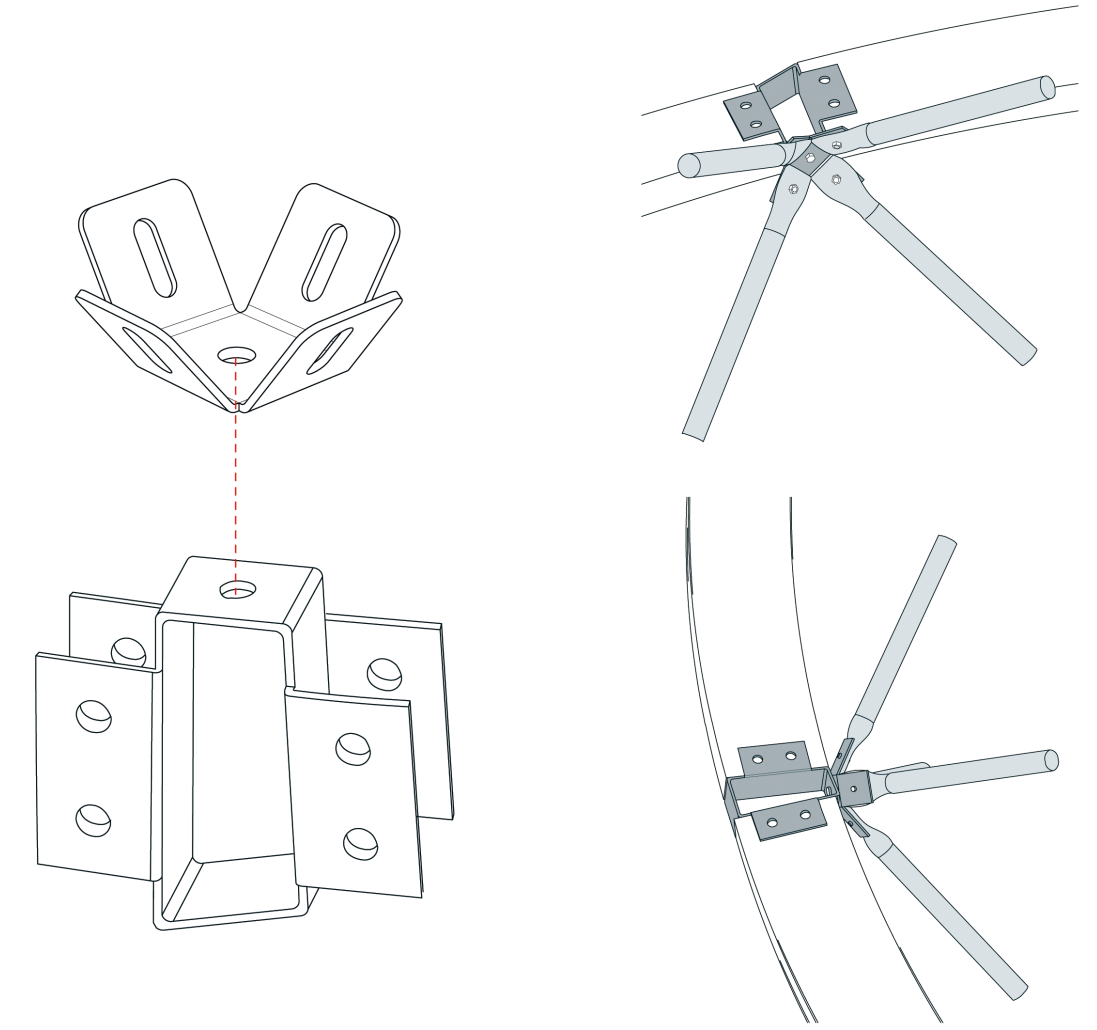
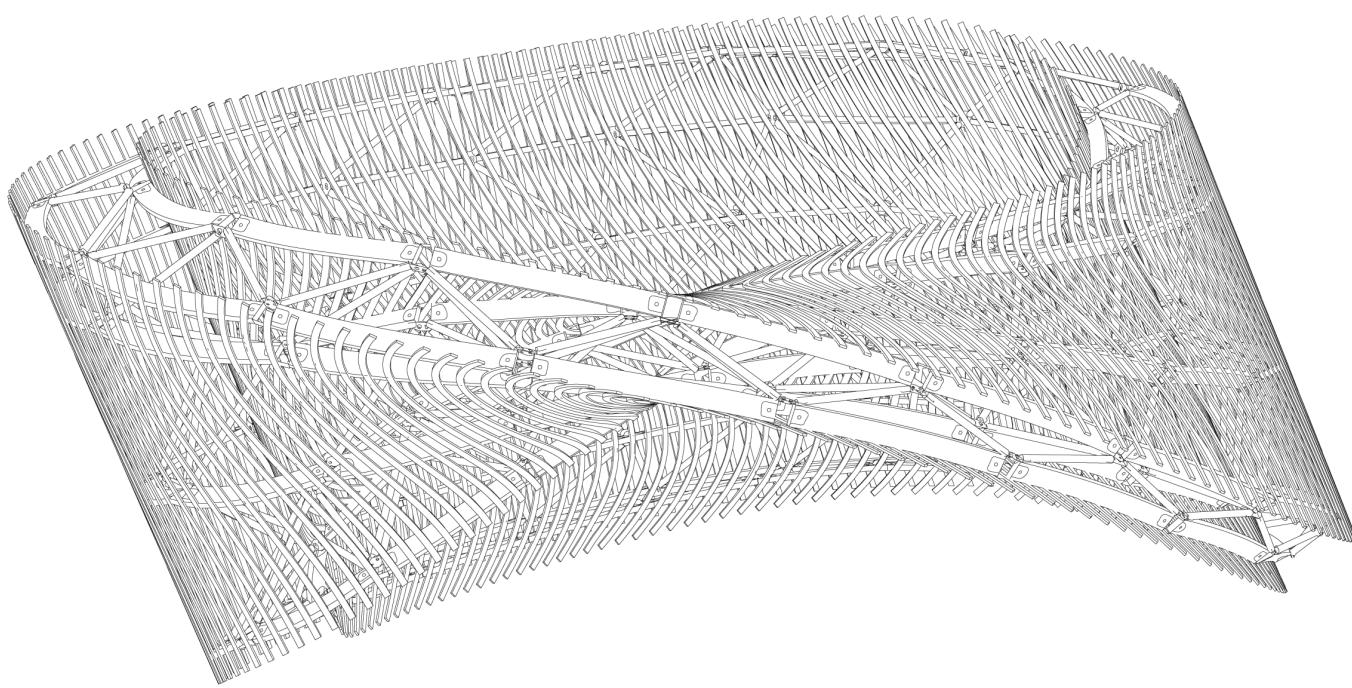
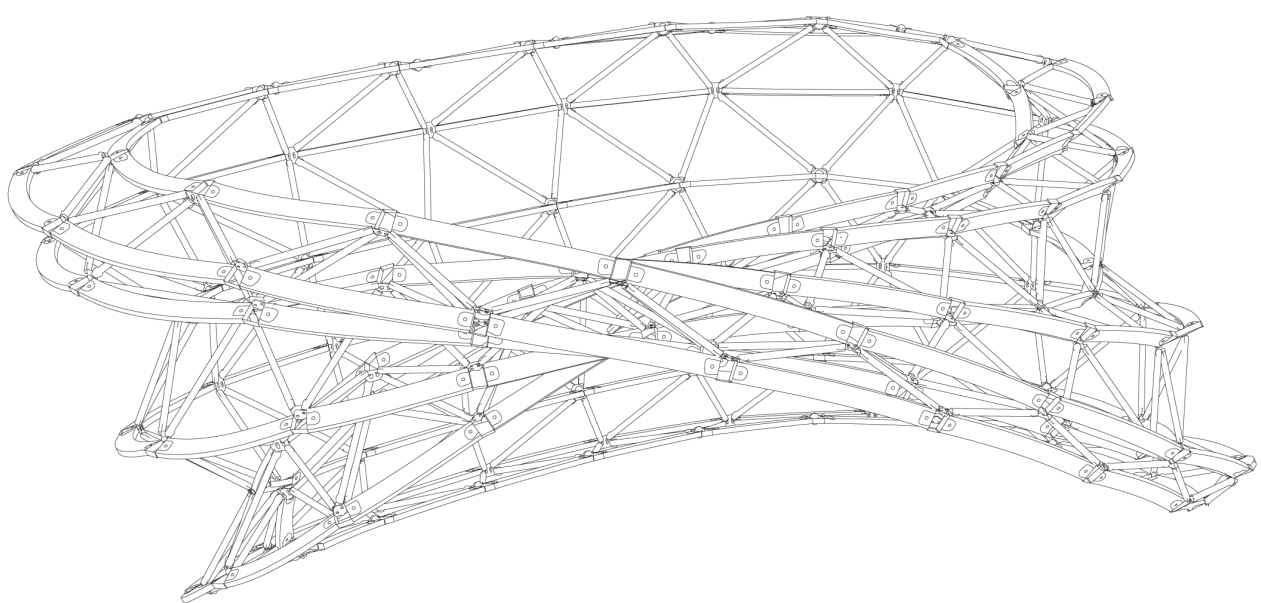
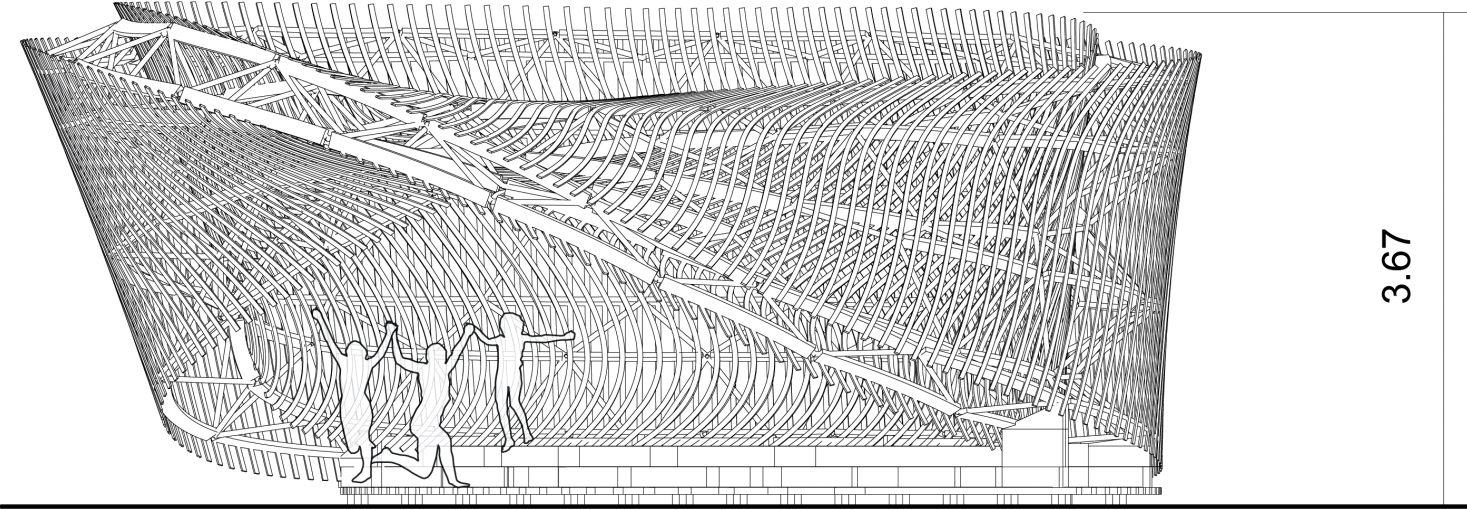
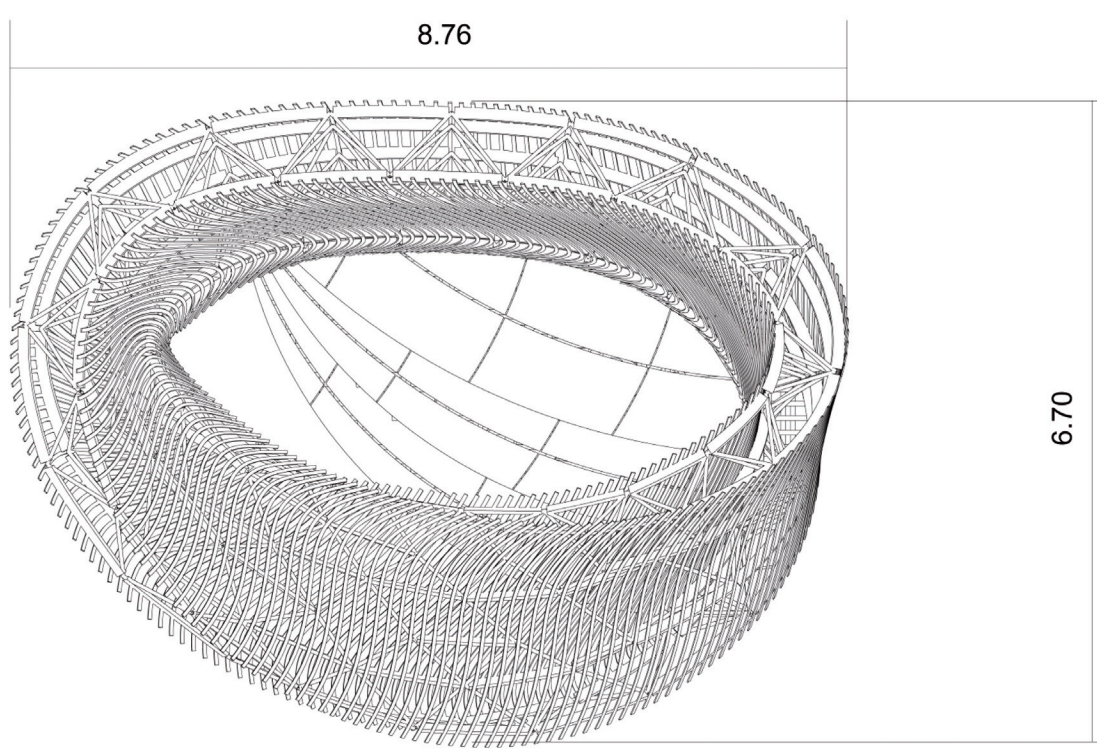
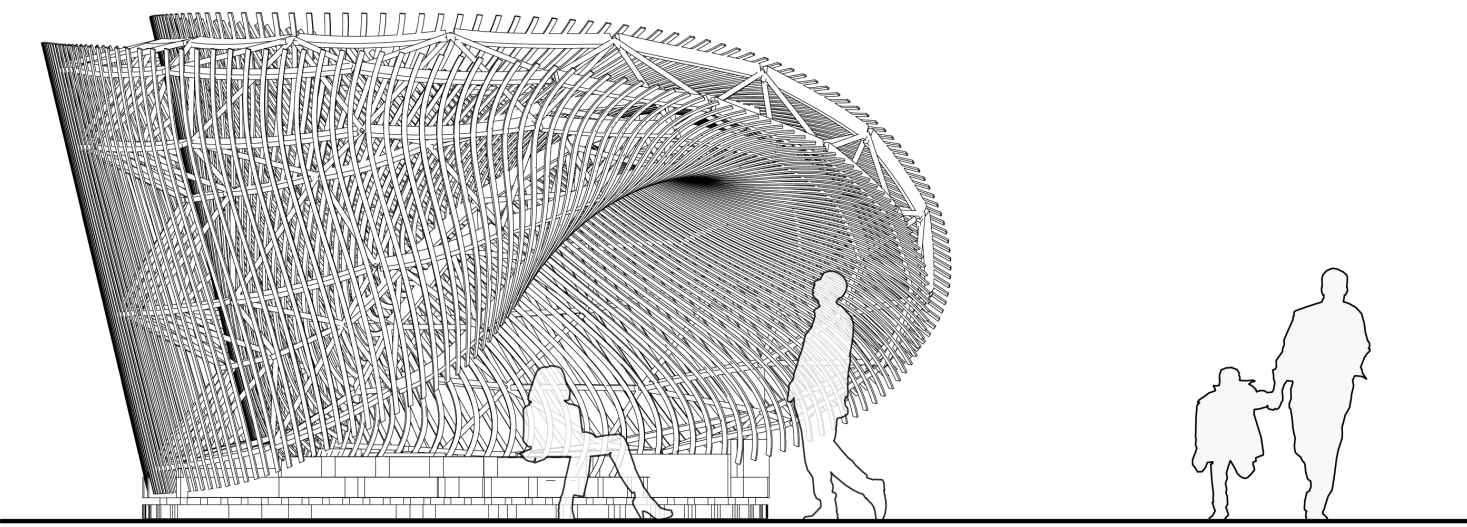


fig.1,7 — general arrangement drawings: elevations, plan view, connection details, perspective.  
fig.2 — different rendered views: installation at Place des Arts, installation at McGill Campus.  
fig.3 — galvanized steel bars: galvanized bolts for assembly of the pinned connections: ribs and moiré timber elements cut and named using the CNC machine.  
fig.4 — concept diagrams outlining the main objectives of the ContemPLAY pavilion: top view, elevation from inside.  
team: Hamza Alhbian, Simon Bastien, Justin Boulanger, Evguenia Chevtchenko, Elisa Costa, Jason Crow, Nicolas Demers-Stoddart, Andrew Hruby, Olga Karpova, Shelley Ludman, Diandra Maselli, Maria Mingallon, Courtney Posel, Dina Safonova, Dieter Toews, Sophie Wilkin.