

Lyon 2013

tensile architecture
international student workshop





international student workshop

Ecole Nationale Supérieure d'Architecture
de Montpellier, France

Ecole Nationale Supérieure d' Architecture
de Nancy, France

Ecole Nationale Supérieure d' Architecture
de Grenoble, France

School of Architecture, HTW/
University of Applied Sciences, Germany

University of Applied Sciences, Saarbrücken
School of Architecture

1st edition 2013



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preface

Several years ago, the cooperation between the ENSA Nancy, France and the HTW Saarbrücken, Germany started in the field of Light Weight Structures. Last year two more partners from France joined the cooperation ENSA Grenoble and ENSA Montpellier for a joint workshop on Membrane Structures, held in March 2011 at the 'Grands Ateliers' in Lyon, France. The purpose of this year workshop was the modelling and construction of large scale membrane constructions with special focus on the realisation of models.

During the one week workshop colleagues and students from the four participating European Universities worked closely together at the 'Grands Ateliers'. This location is perfectly equipped and designed for hosting workshops oriented towards the main purpose of the 'Grands Ateliers' which is experimental constructing. The Region Rhône-Alpes has set up the 'Grands Ateliers' for Universities in the greater region to enhance innovation in construction methods and modelling.

On the way to Lyon the participating workshop members had the opportunity to visit several examples of Contemporary Architecture as well as Le Corbusier's chapel of Notre Dame du Haut in Ronchamp.

programme

international student workshop, architecture of tensile constructions
ENSAmontpellier, ENSAnancy, ENSAgrenoble, HTWsaar

date: 15th march to 22th march 2013

site: everywhere outside like inside

project: the design and realisation processes of the Tensile Architecture are the heart of the training. Theoretical aspects of Form Finding, Pre-dimensioning as well as Cutting Pattern are presented. Afterwards there is an application in physical reality with small model experiments and scale 1 to 1 realisation for a textile structure with free purpose.

objectives: the purpose of this training, is to give theoretical and practical basics of the textile and cable nets building design. Each step of the design process is clearly described in order to overcome the complexity and allow the students to use these new design tools directly in an architectural practice. The proposed experiments use the professional materials in order to well understand the specific knowledge needed by the company technicians.

participants: students of the ENSA Grenoble
students of the ENSA Nancy
students of the HTW Saar

teams: mixed

teachers:	ENSA Montpellier:	Nicolas Pauli
	ENSA Nancy:	Daniel Gross
	HTW Saar:	Klaus Köehler

studio: Les Grands Ateliers de l'Isle d'Abeau, Villefontaine

equipment: all provided by Les Grands Ateliers

material: all provided by Les Grands Ateliers

teachers

Prof. Daniel Gross, ENSA Nancy



Prof. Nicolas Pauli, ENSA Montpellier



Prof. Klaus Köehler, HTW Saar





students

Karo Matthes
Jérémie Hué
Antoine AuVillain
Rémi Claret
Bianca Troha
Myriam Asbati
Julien Claveau
Yassine Kerach
Helene Defert
Rodrigo Batlles
Milena Tadjer
Florent Labruyere
Monika Bednarikova
Amélie Bernard
Marie Flecheux
François Langlais
Amélie Baudois
Théo Chemin
Jules Guerin
Augustin Lasnier
Kawtar Rohami
Nicolas Kuznik Corre
Pierre Becheret

Zoheir Mechiche
Simeon Cote
Timothée Biju-Duval
María González Escartín
Joanna Parker
Mateo Recio Poo
Pierre Louis
Jessica Suret
Valéria Bonin
Arthur Griselle
Nicolas Rude
Amiral Gaël
Bouanich David
Unteriner Thomas
Wang Xiang
Lola Boyau
Massimo Brancati
Xavier Heydel
Benoît Vallet
Chegut Amandine
Hilpert Antony
Marchetere Antoine
Viennet Johan

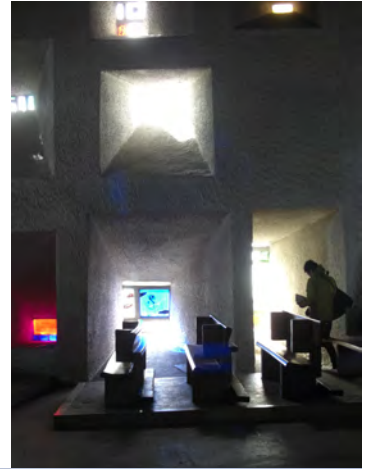


study trip

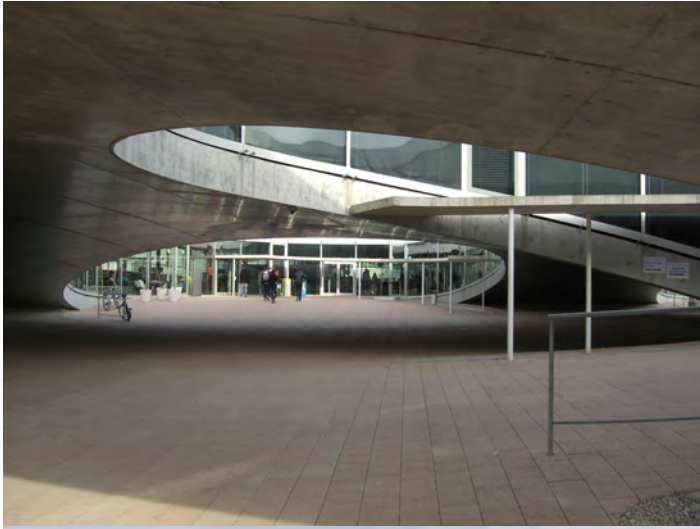
Monastery Ronchamp, Renzo Piano



Ronchamp, Le Corbusier



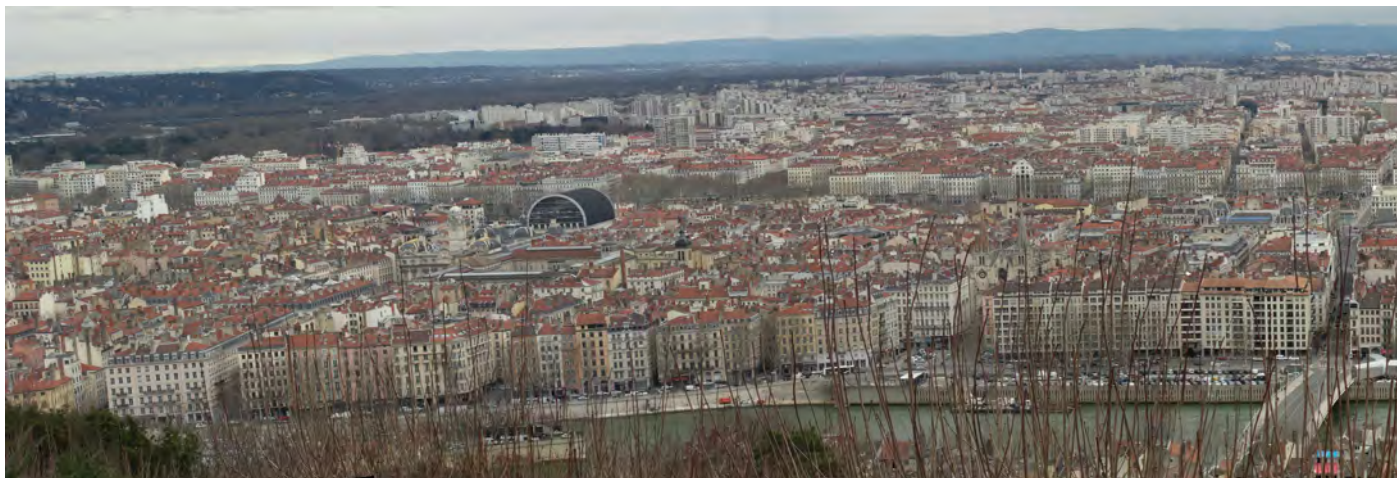
Rolex Learning Center, École Polytechnique Fédérale de Lausanne, SANAA



Gare de Lyon Saint-Exupéry, Calatrava



La ville de Lyon



Place Bellecour



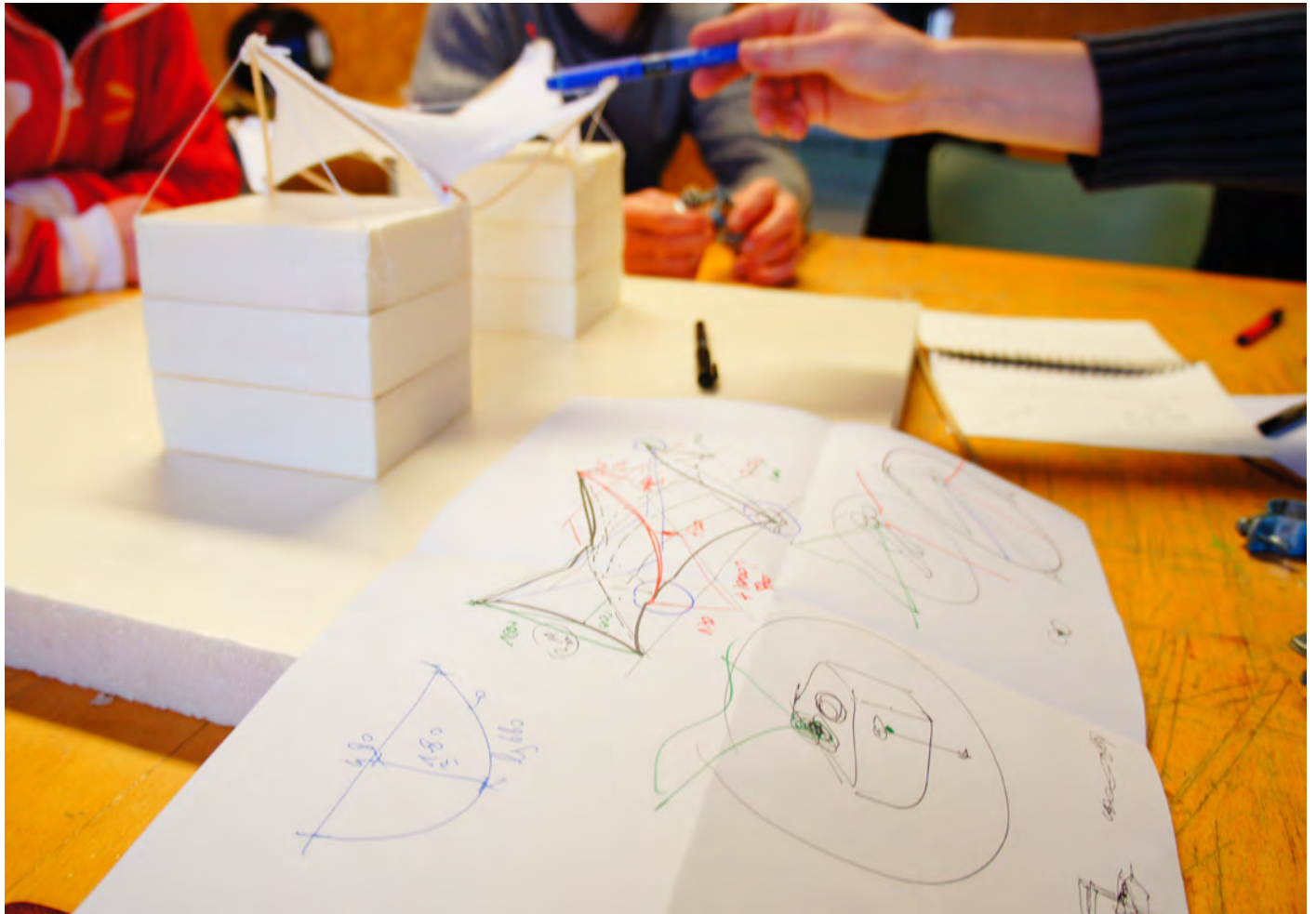


Cité Internationale, Renzo Piano

La Confluence



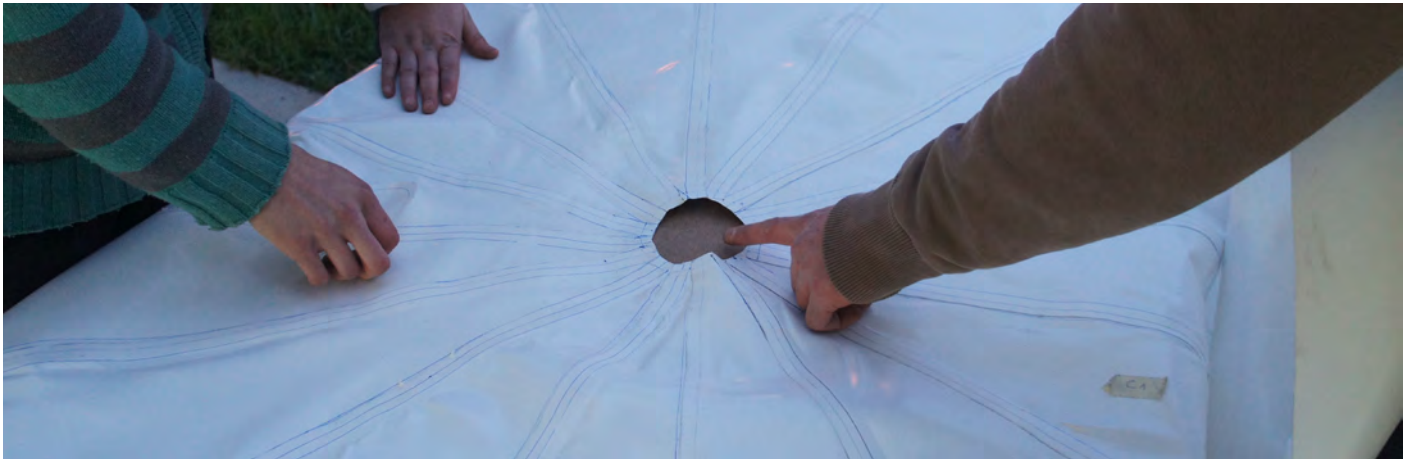
workshop













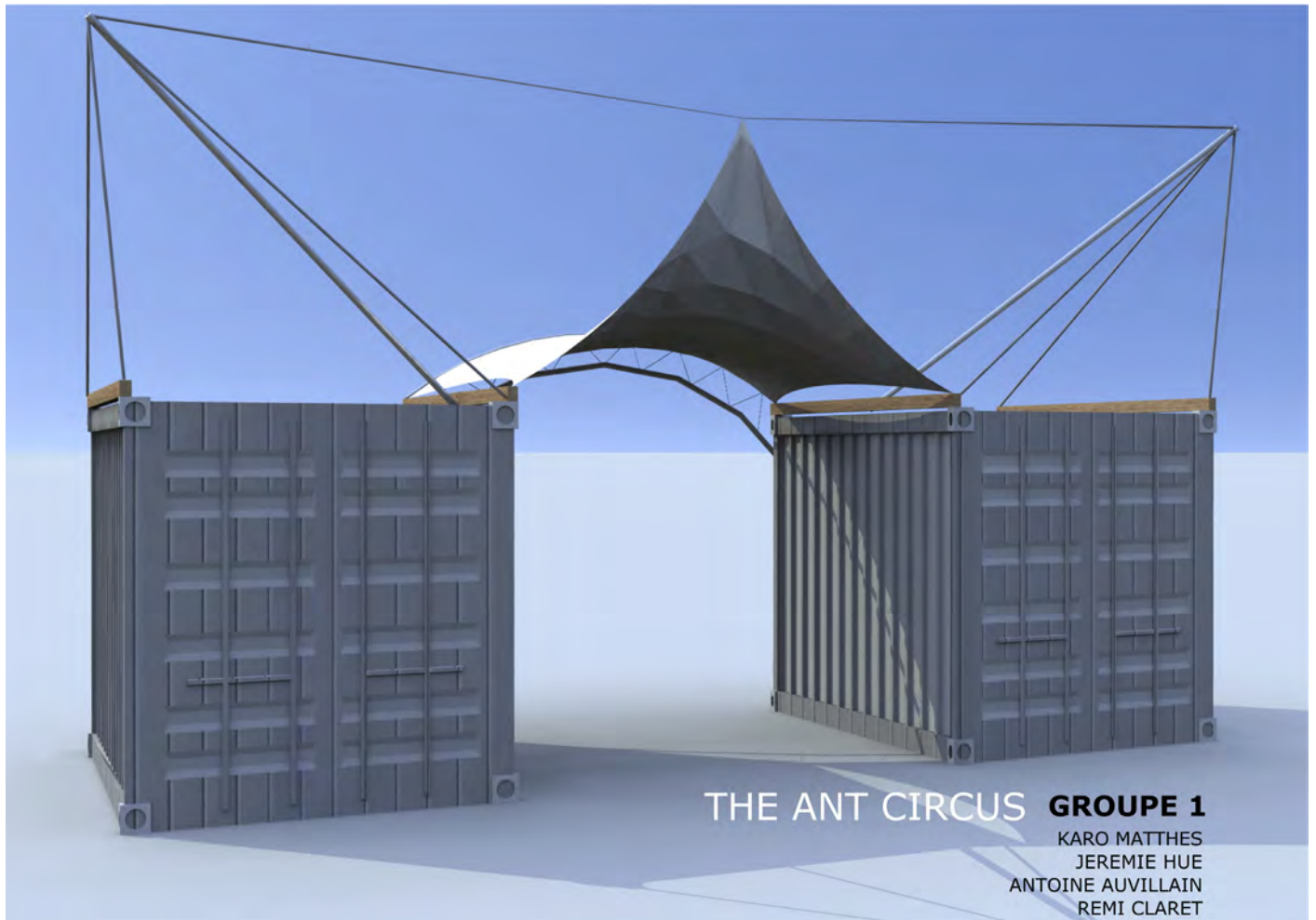


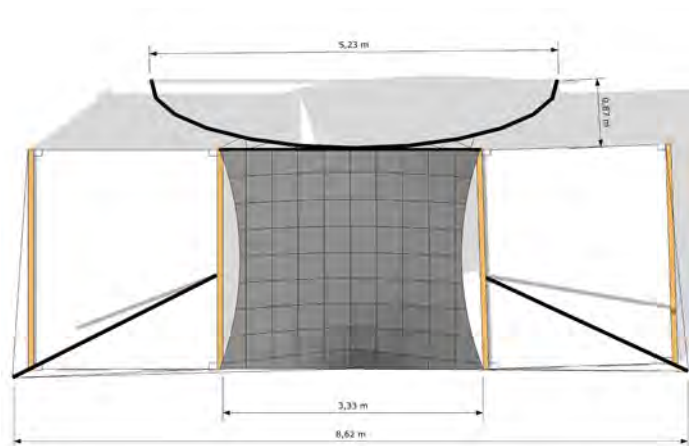


studies

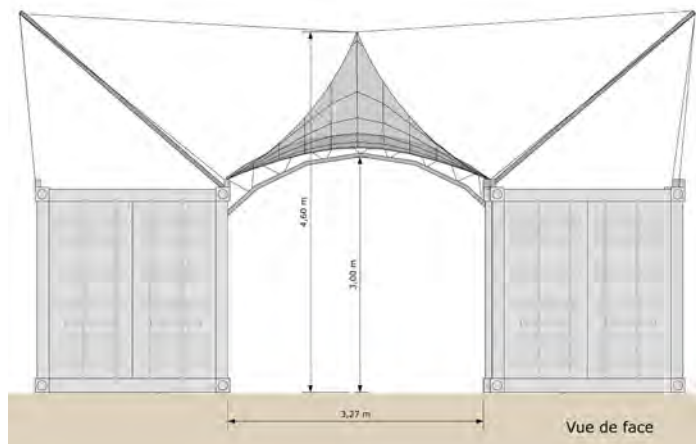
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Karo MATTHES_Jeremie HUE_Antoine AUVILLAIN_Remi CLARET

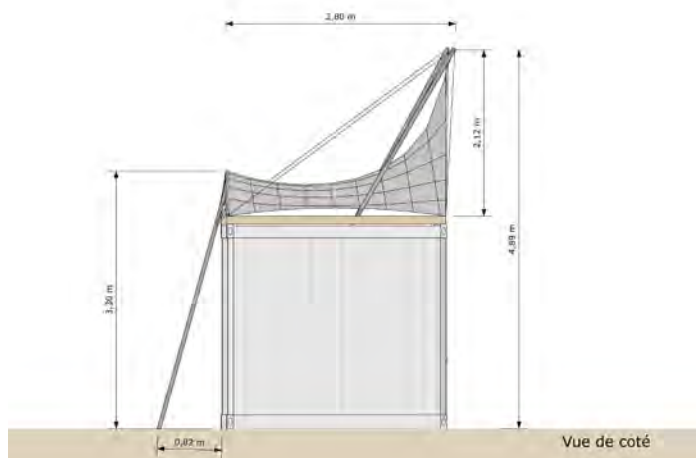
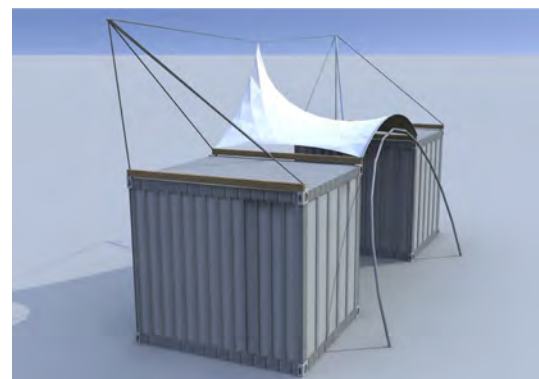




Vue de dessus



Vue de face

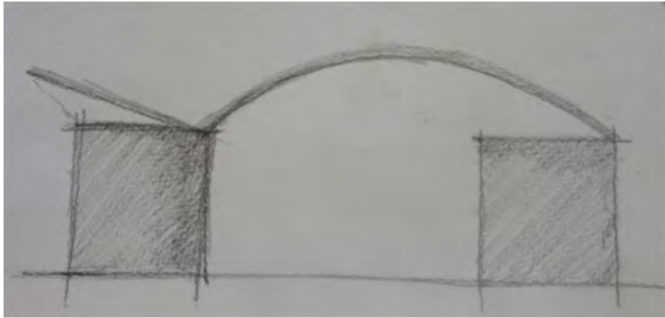


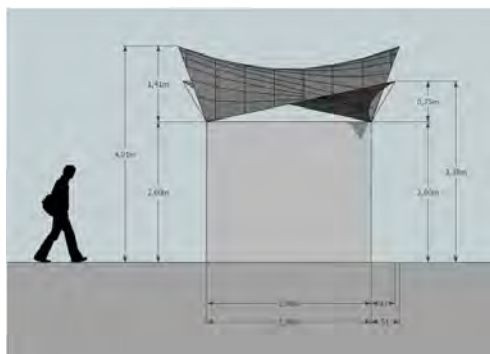
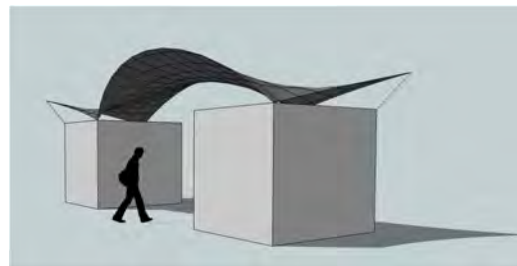
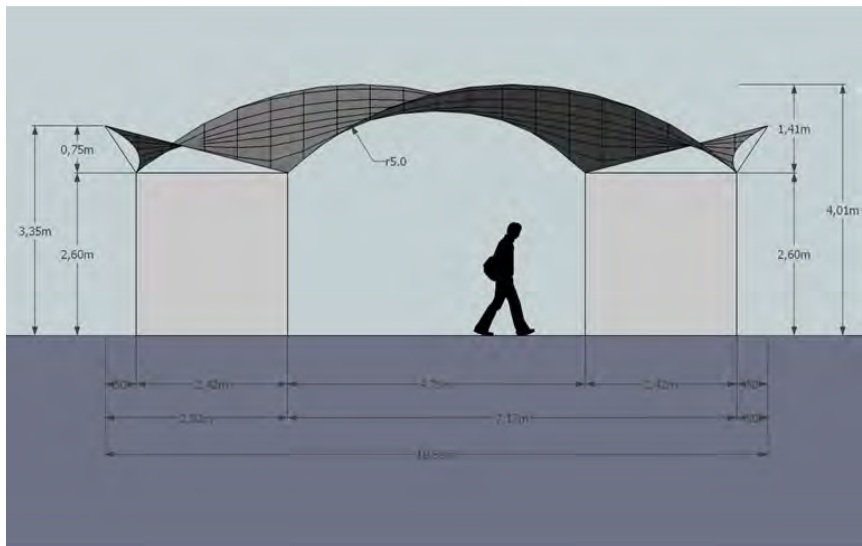
Vue de côté



B. Projet CONSTRUCTION D'UNE COUVERTURE EN MEMBRANE

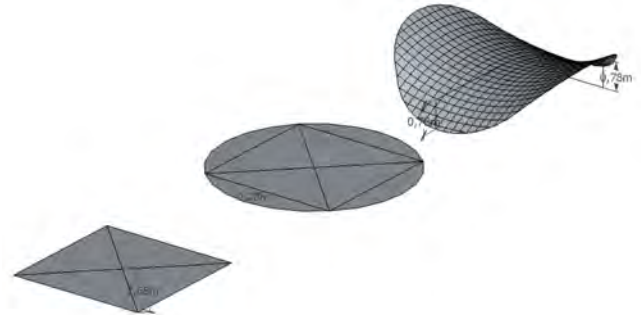
Bianca TROHA_Myriam ASBATI_Julien CLAVEAU_Yassine KERACH

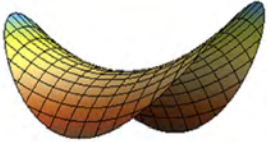


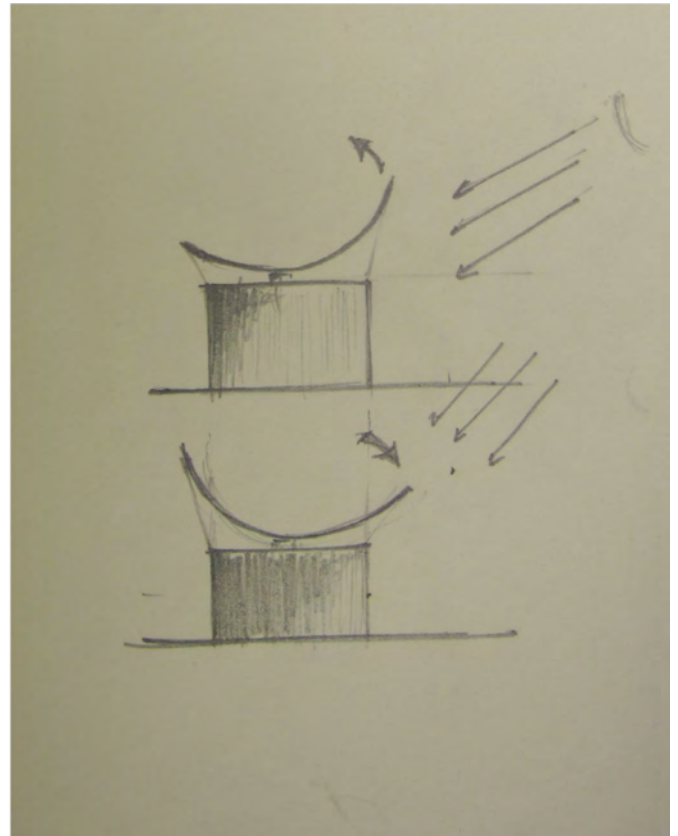
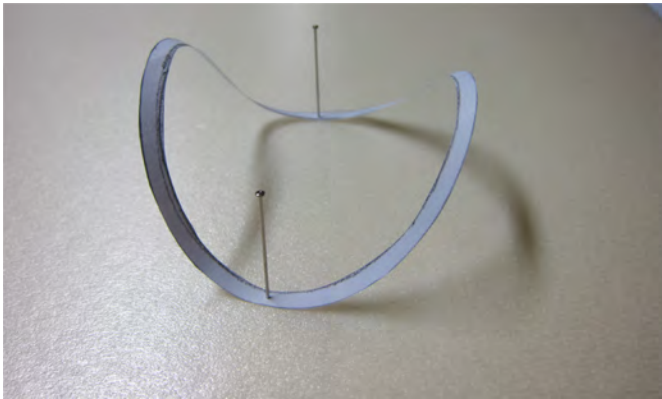


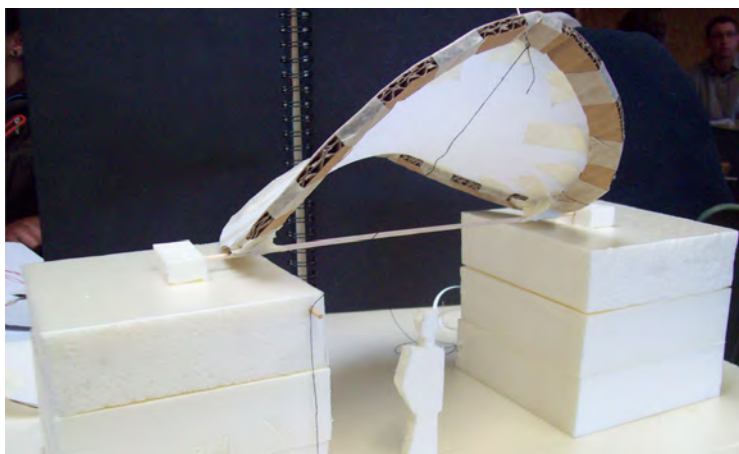
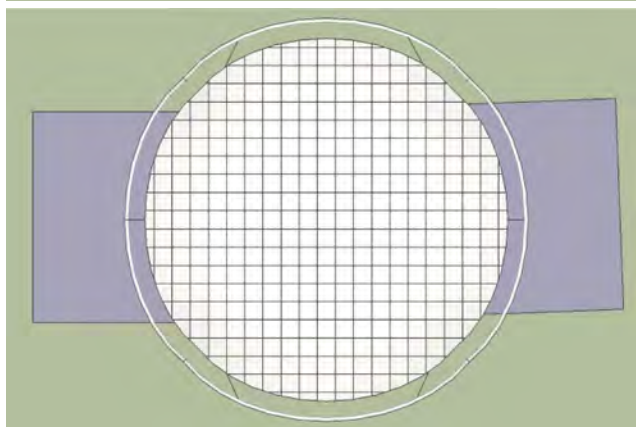
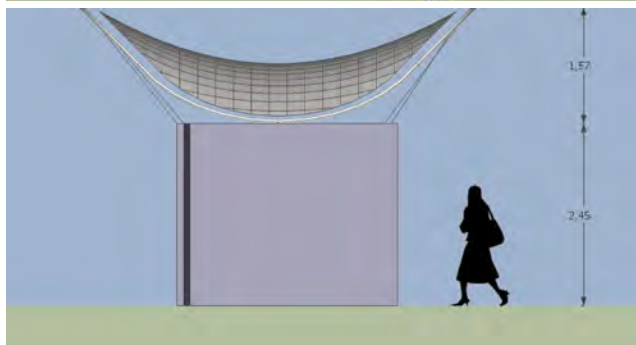
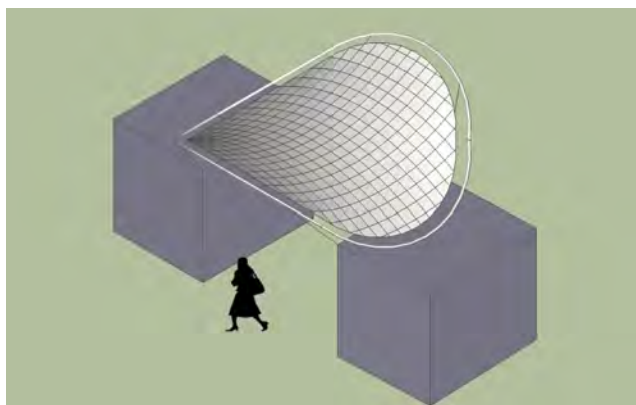
C. THE CHIPS_ LA CHIPS

Helene DEFERT_Rodrigo BATLLES_Milena TADJER_Florent LABRUYERE



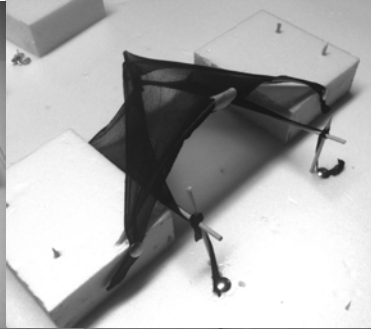
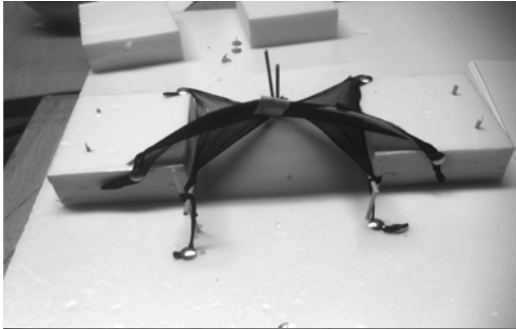

$$z = \frac{x^2}{a^2} - \frac{y^2}{b^2}, \quad \frac{x^2}{a^2} + \frac{y^2}{b^2} < 1$$





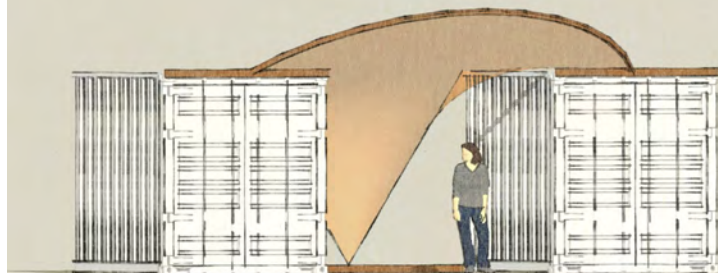
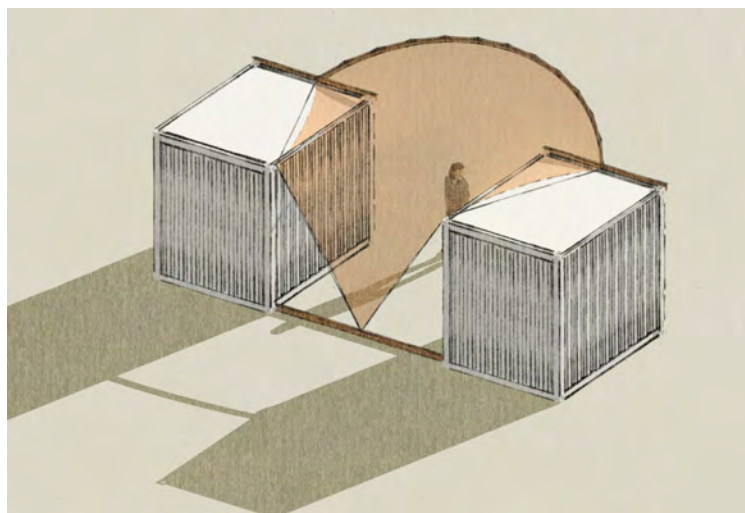
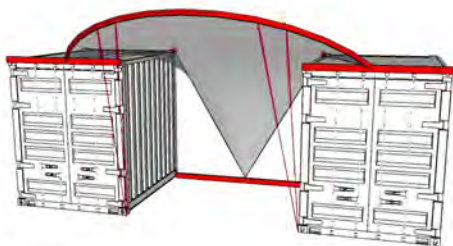
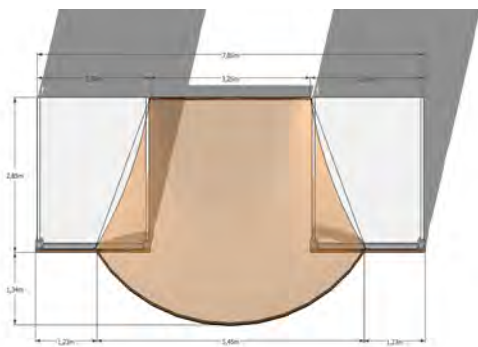
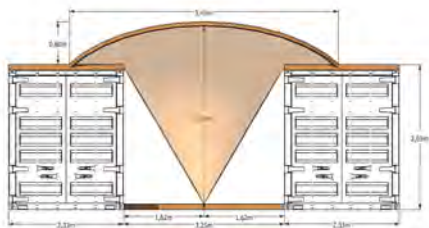
D. CAPTurer L'ESPACE

Monika BEDNARIKOVA_Amélie BERNARD_Marie FLECHEUX_François LANGLAIS



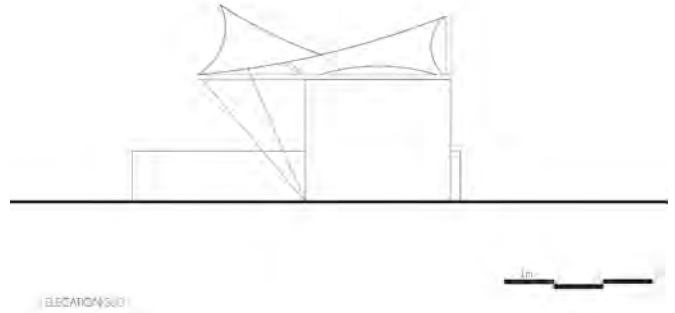
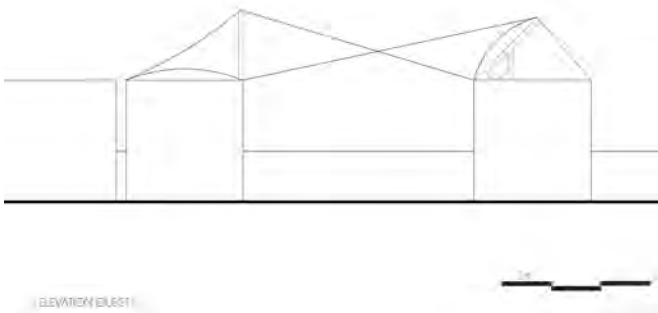
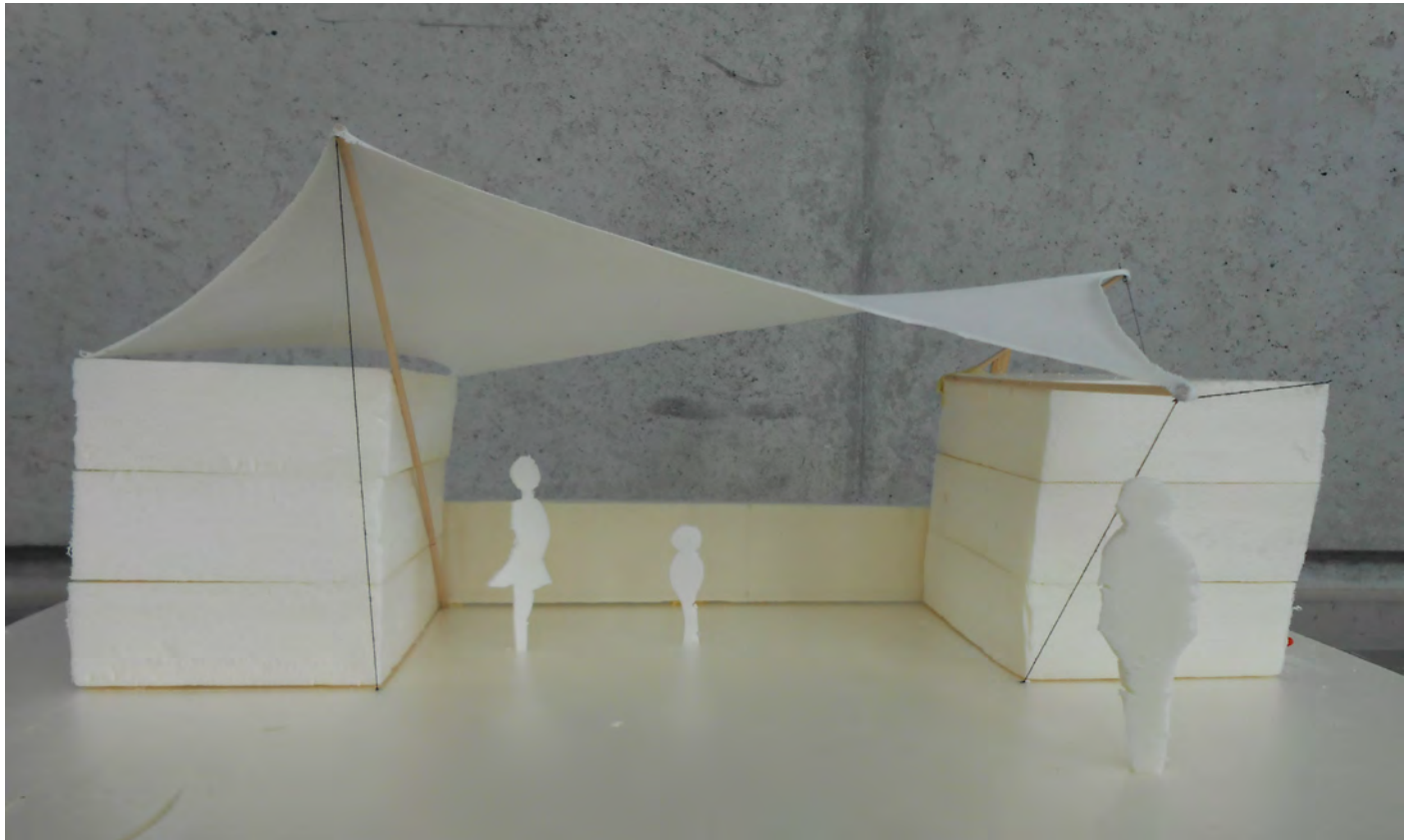
CAPTurer L'ESPACE

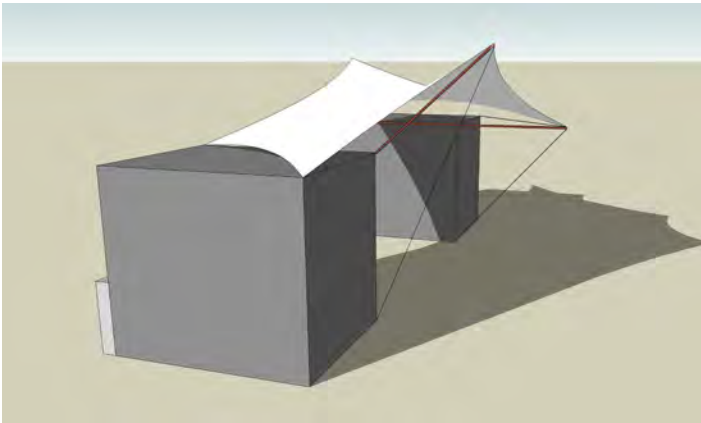
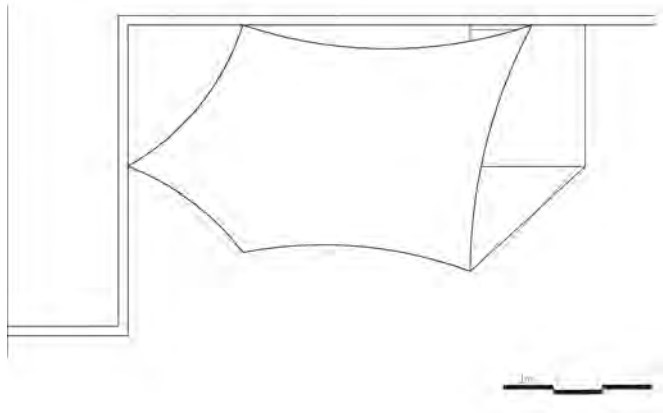
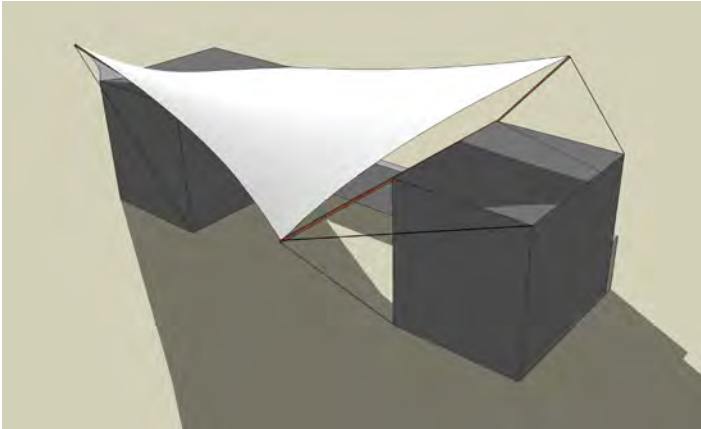
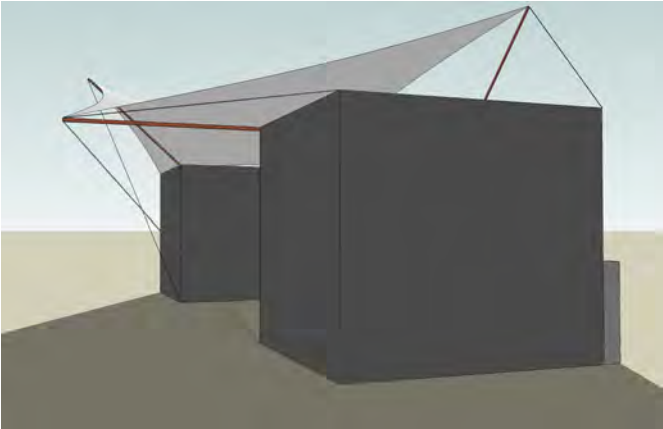
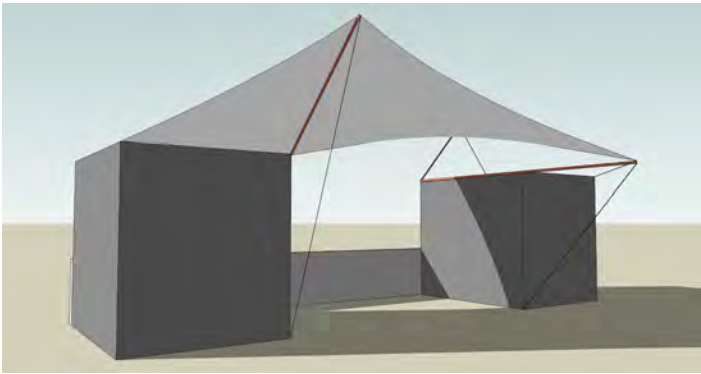
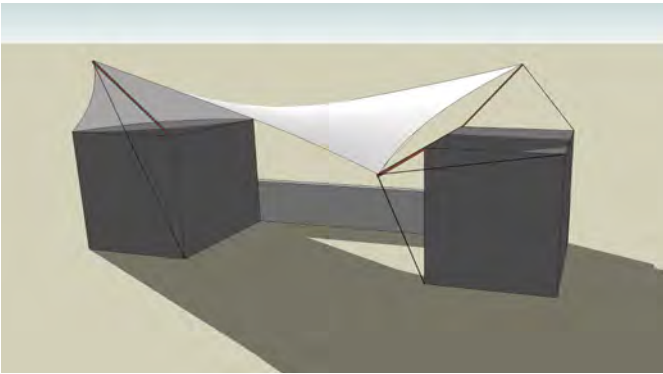




E. PROJET

BAUDOIS Amélie_CHEMIN Théo_GUERIN Jules_LASNIER Augustin





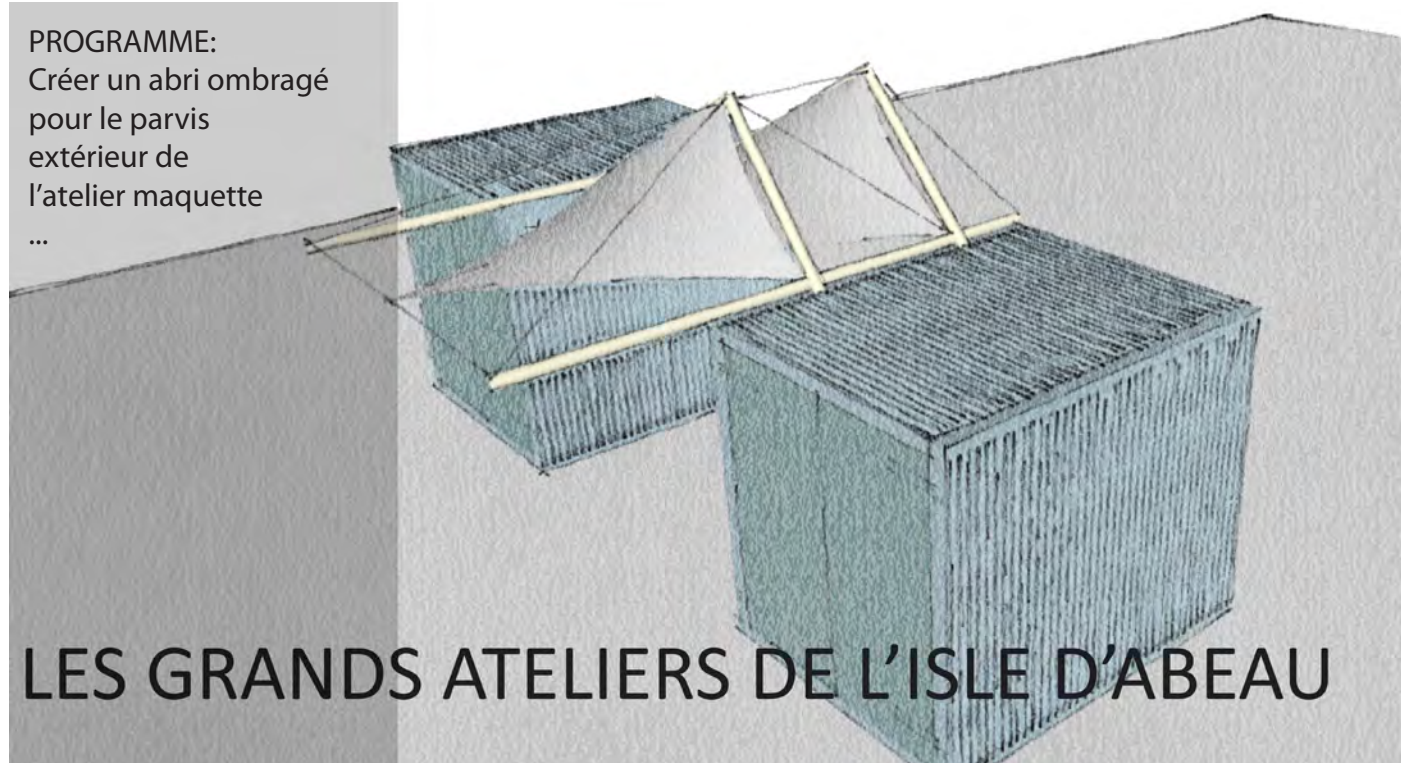
F. UNE DOUBLE PEAU_PARTI PRIS ARCHITECTURAL

ROHAIMI Kawtar_KUZNİK CORRE Nicolas_BECHERET Pierre_MECHICHE Zoheir
_SIMÉON Côte

PROGRAMME:

Créer un abri ombragé
pour le parvis
extérieur de
l'atelier maquette

...

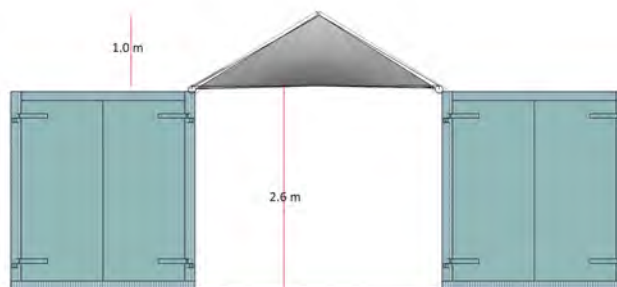


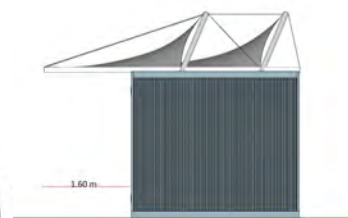
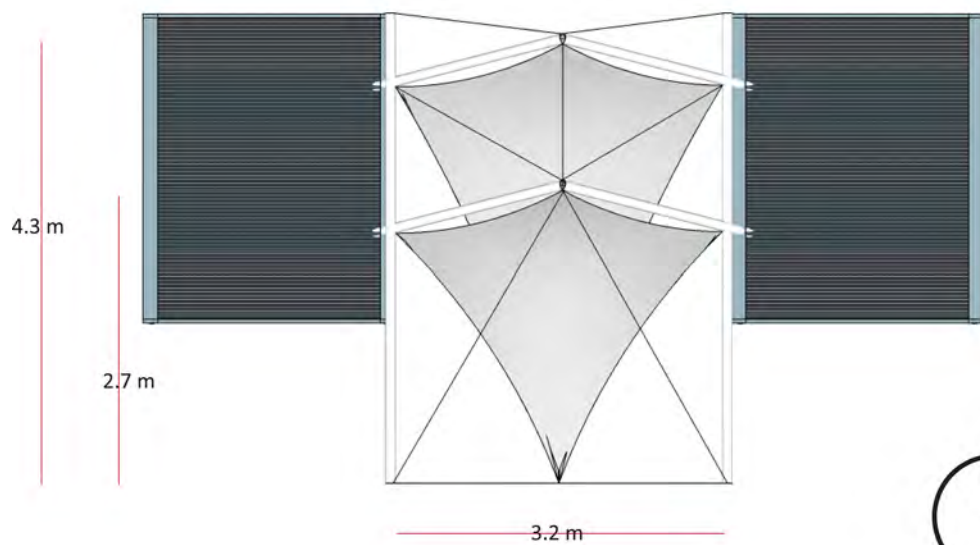
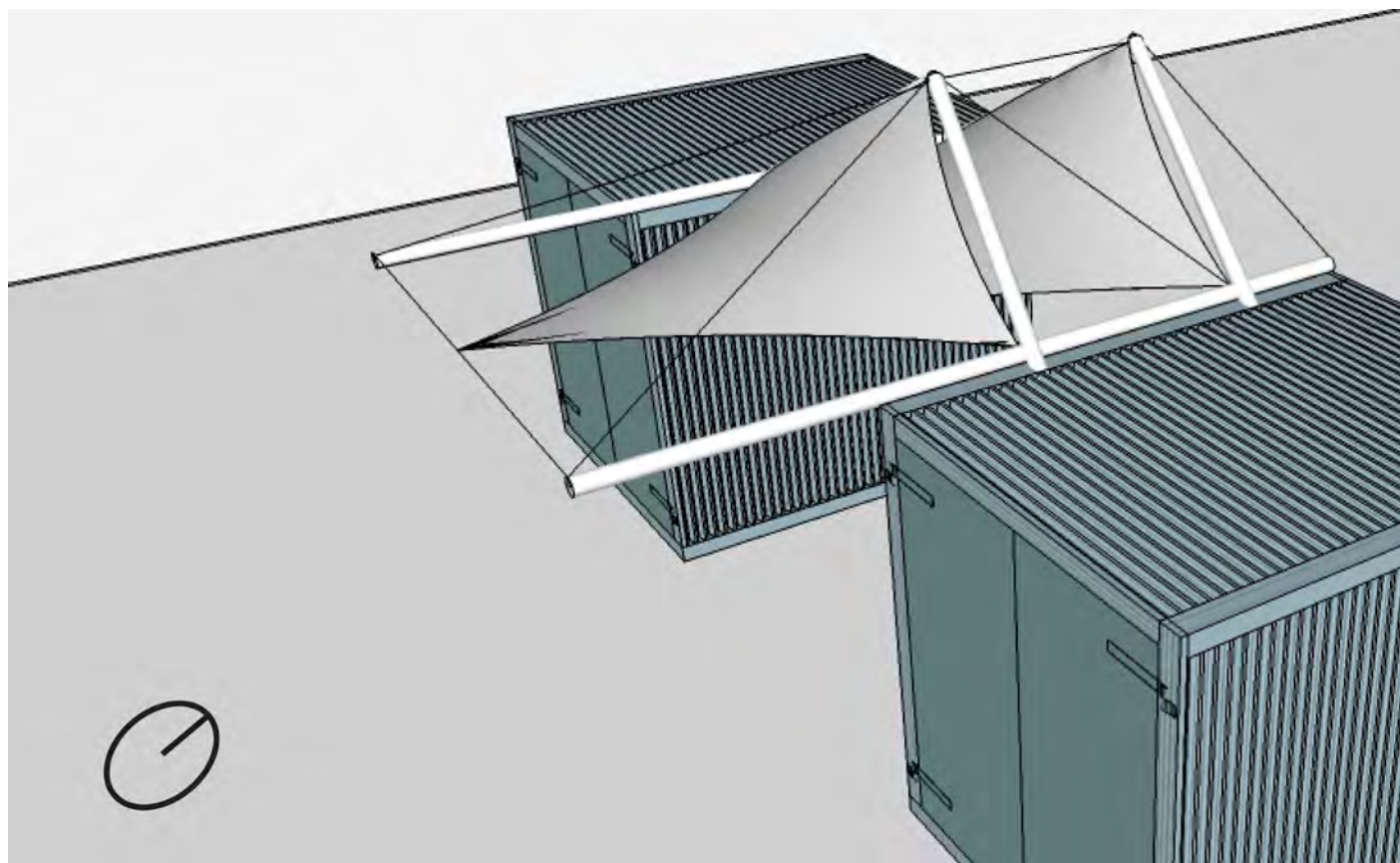
LES GRANDS ATELIERS DE L'ISLE D'ABEAU

PARTI PRIS ARCHITECTURAL

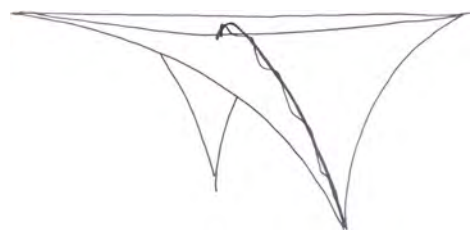
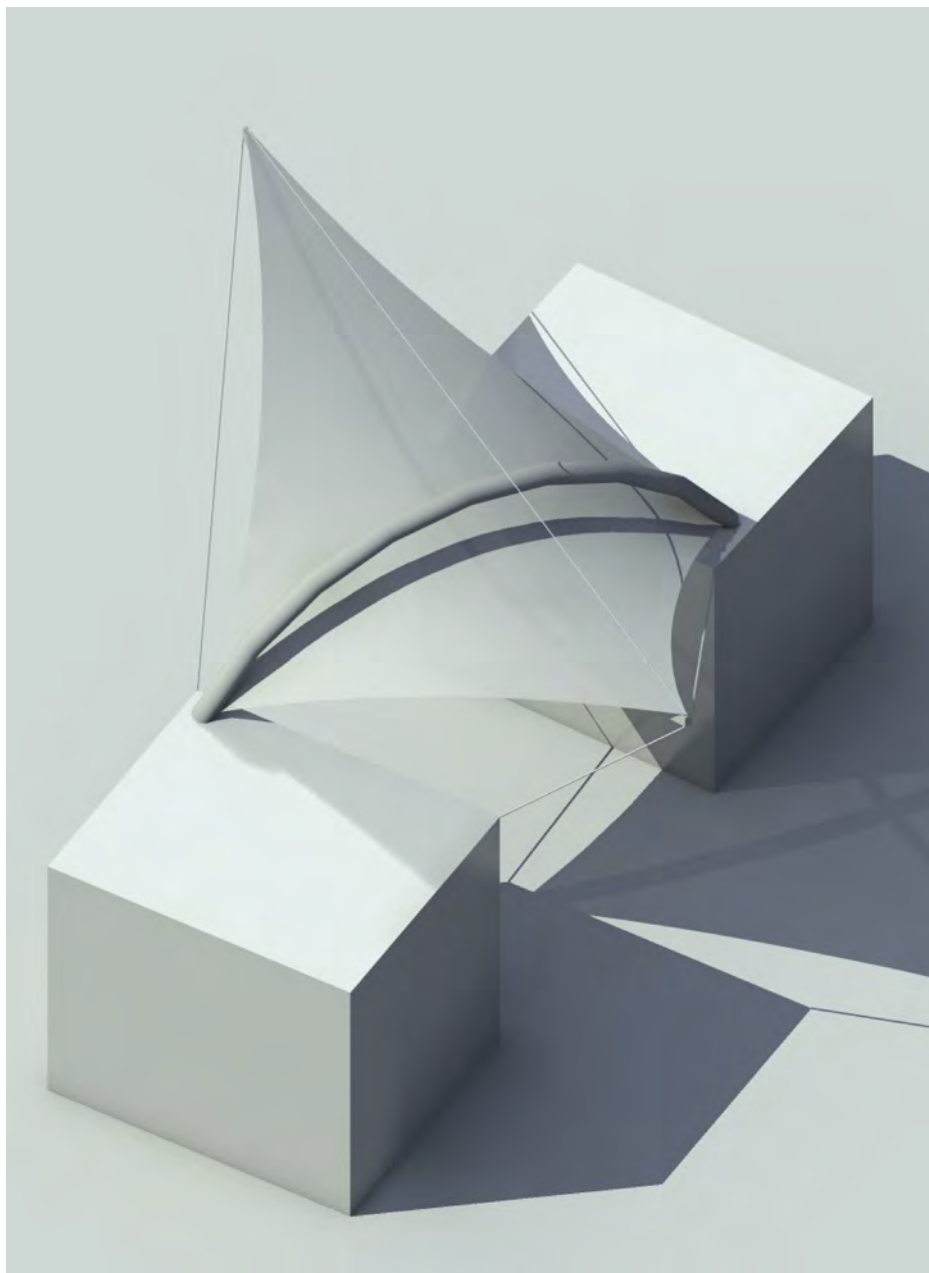
UNE DOUBLE PEAU

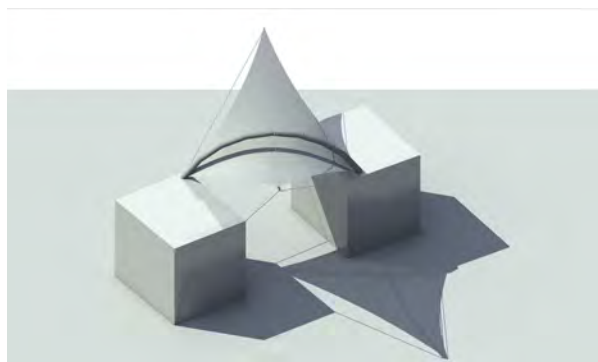
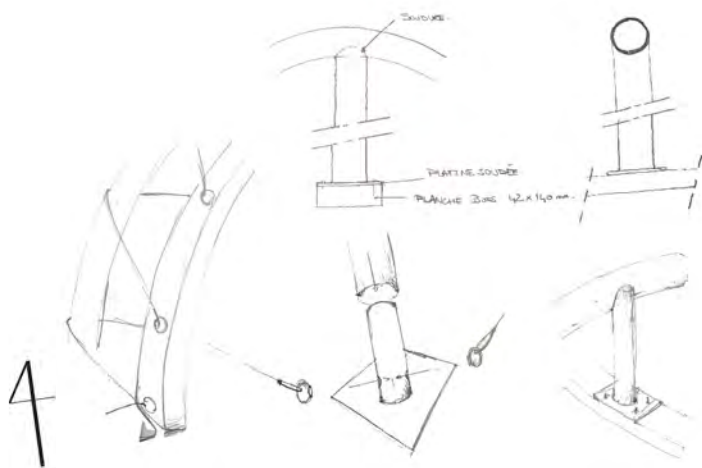
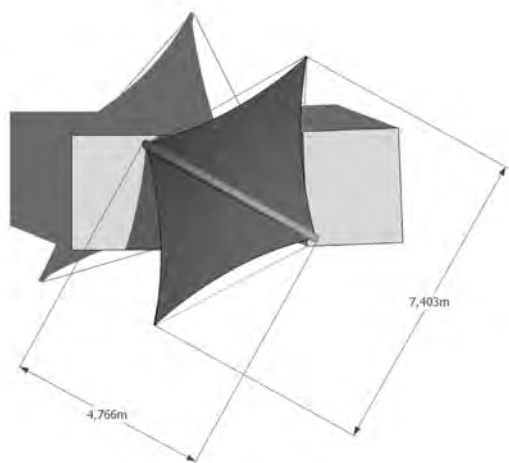
POUR
OMBRER
et VENTILER
2 fois plus !





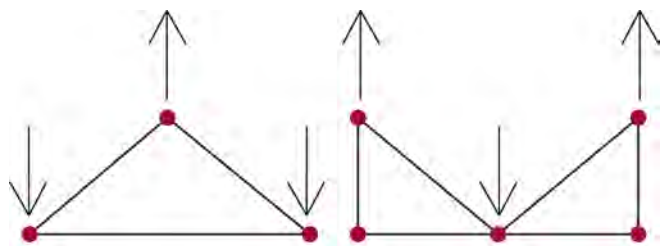
G. LA VOILE



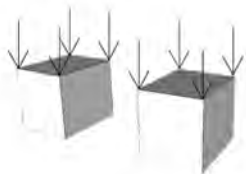


H. ESQUISSE

BIJU- DUVAL Timothée_GONZALEZ ESCARTIN Maria_PARKER Joanna_RECIO POO Mateo_VUILLEMINE Pierre Louis



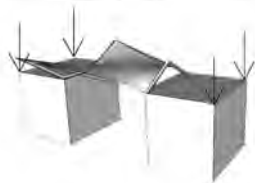
points d'appui inversés



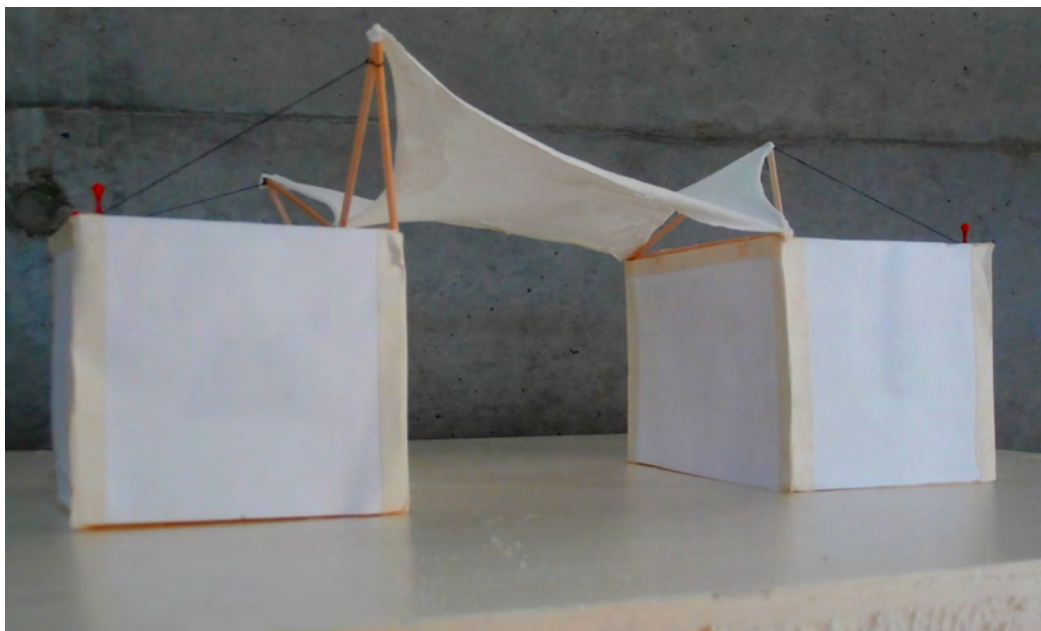
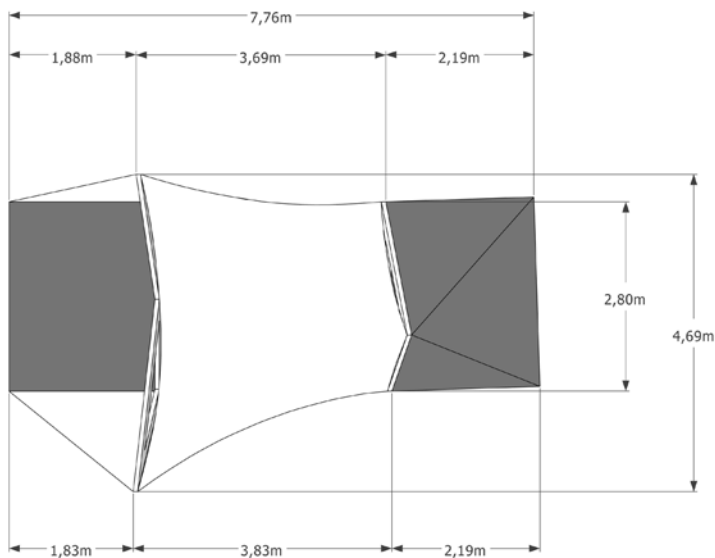
8 points d'appui

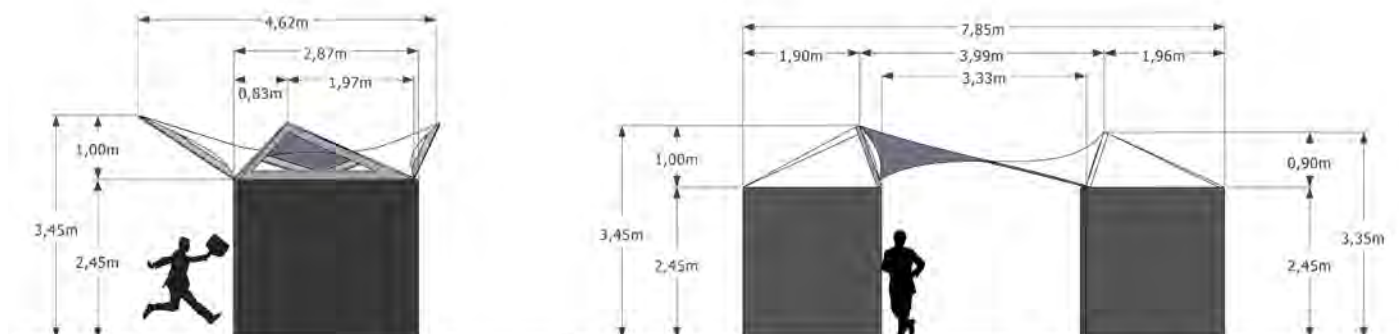
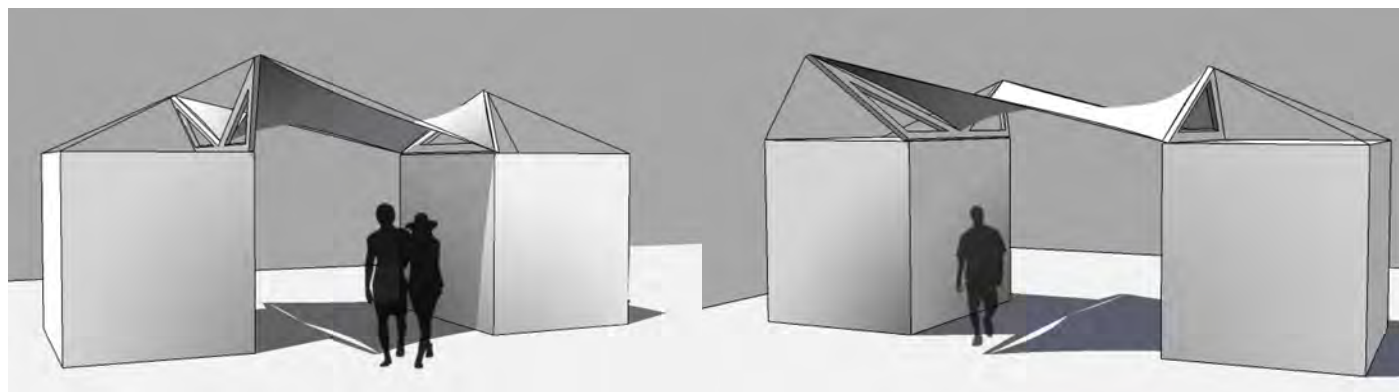


deux cadres en bois
triangulés



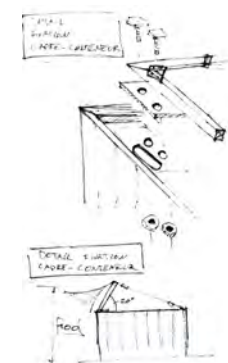
double paraboloïde hyperbolique





Est 1 : 25

Sud 1: 25



Fixation cadre container



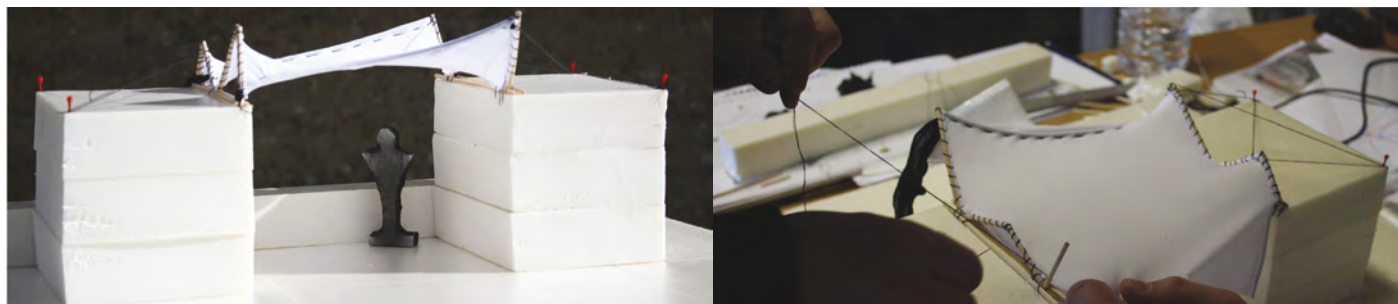
Système de tendeur

I. PROJET

SURET Jessica_BONIN Valéria_RUDE Nicholas_GRISELLE Arthur

CONCEPTION

Croquis de principe structure en V



STRUCTURE

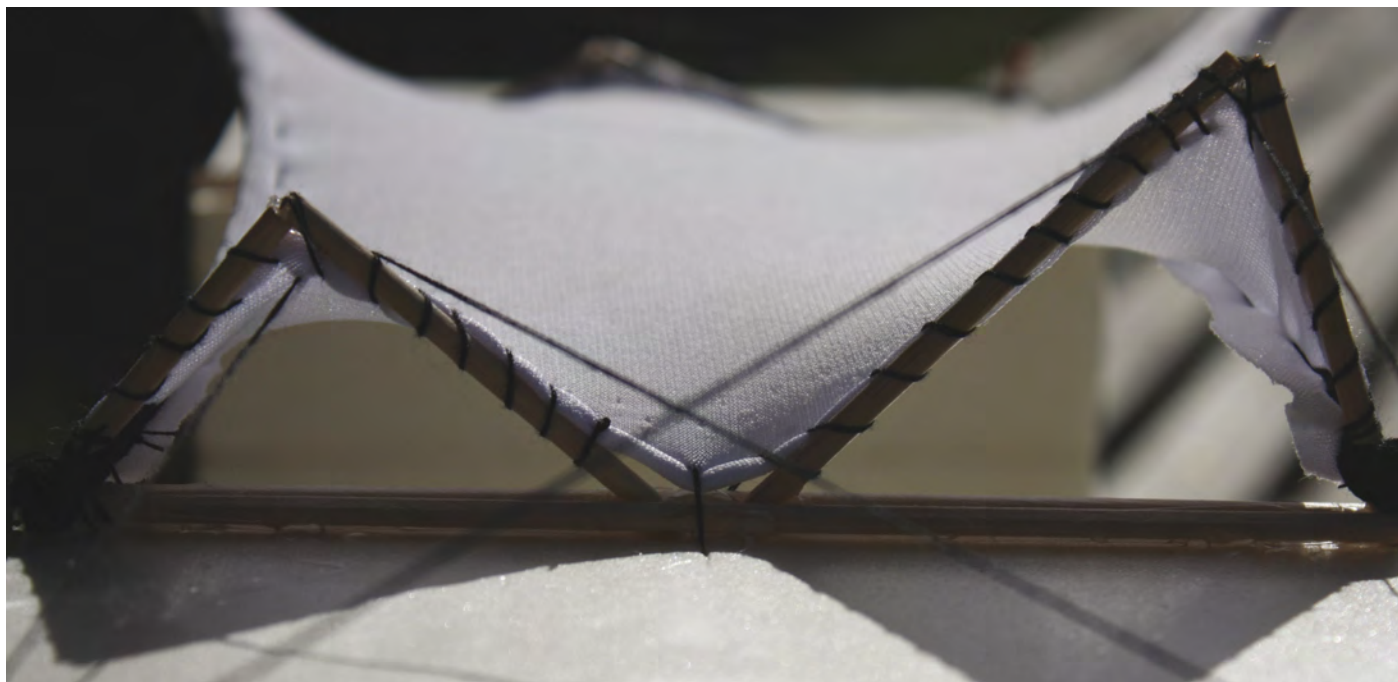
Point d'acrotche : Deux lisses basses fixés de chaque côté sur les arrêtes intérieures des conteneurs.

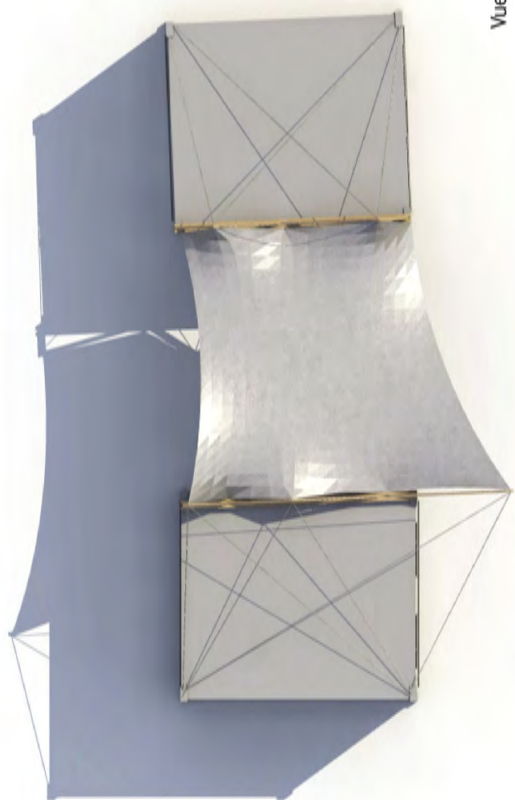
Structure principale : Système de V asymétriques moisés entre les lisses basses

Structure secondaire : Câbles d'acier tendus aux coins extérieurs des deux conteneurs et Câbles d'acier aux bords de la toile

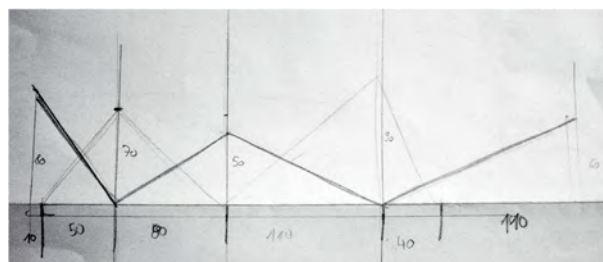
Surface de Toile : $10,07\text{m}^2$

toile cousue sur la structure primaire





Vue de dessus

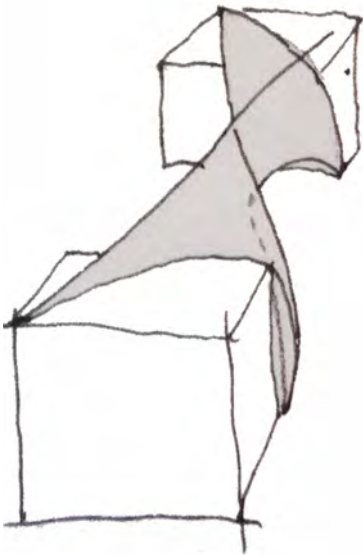
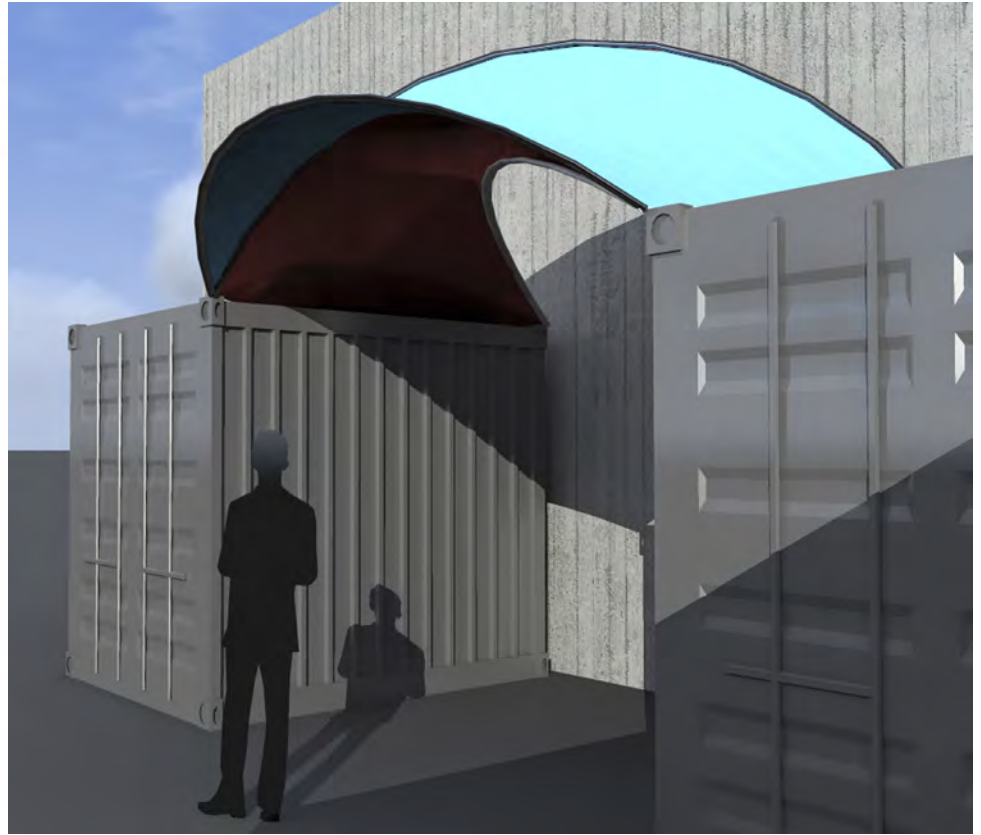
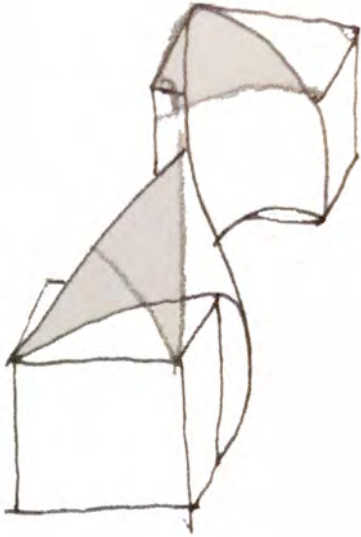


Vues de côtés

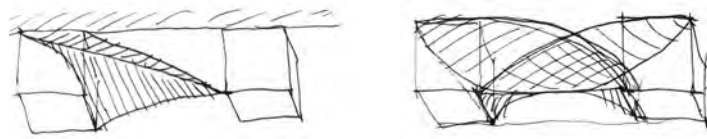


J. MIEUX BIUS

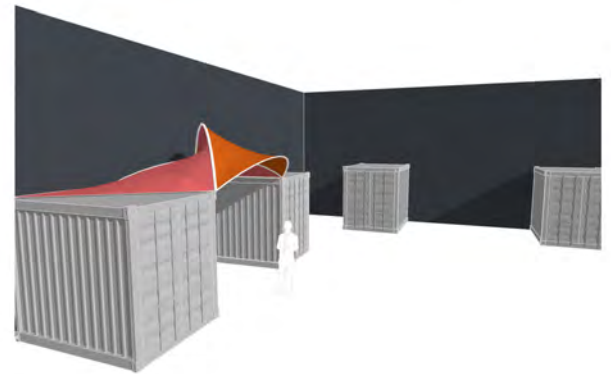
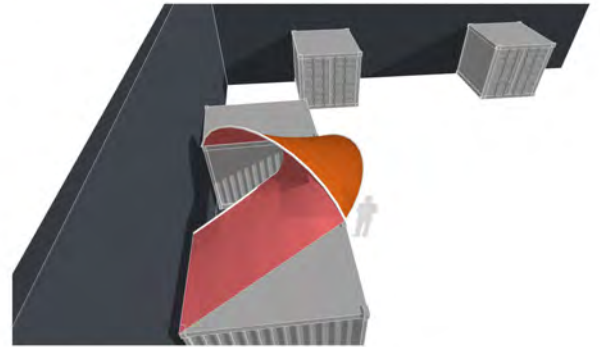
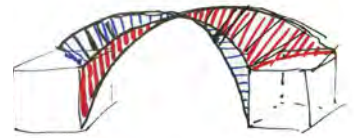
AMIRAL Gaël_BOUANICH David_UNTERINER Thomas_WANG Xiang



INSPIRATION

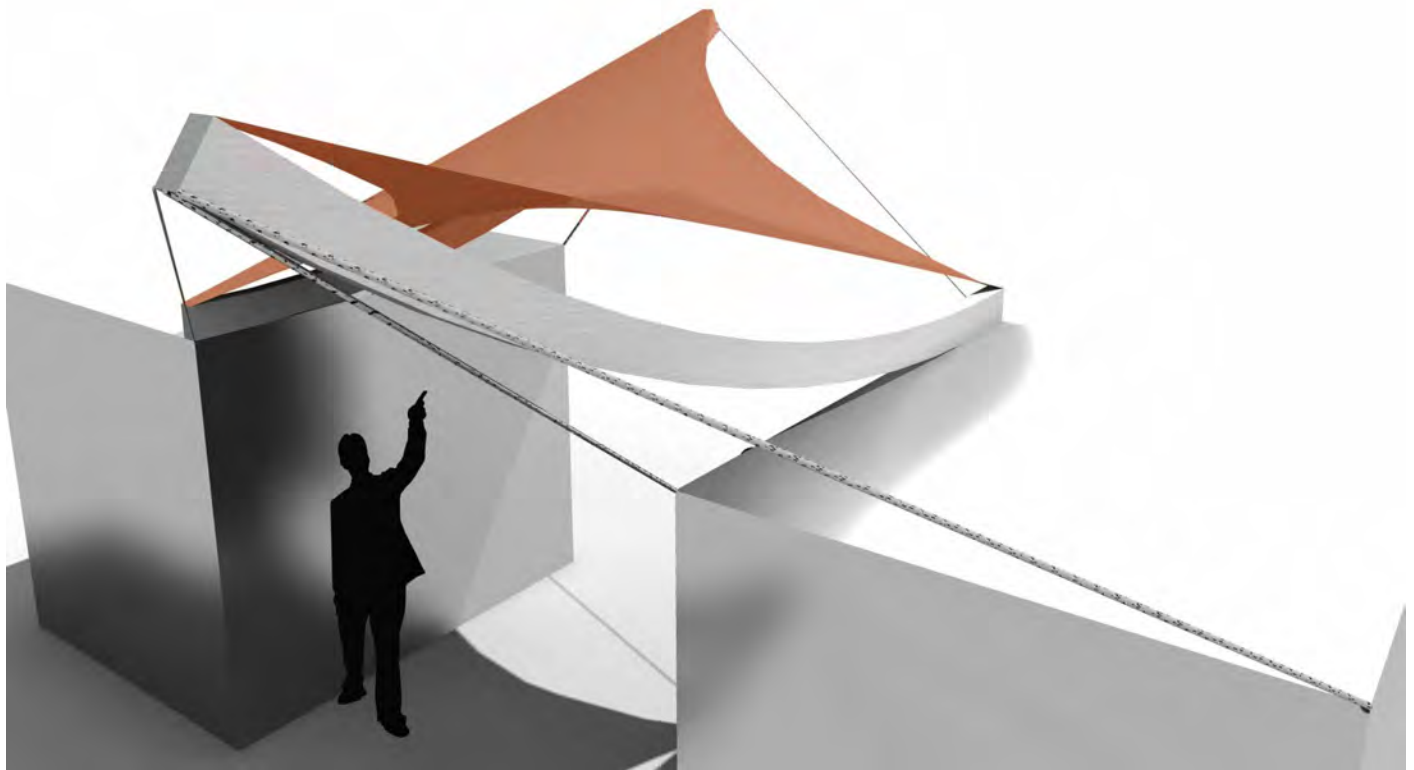
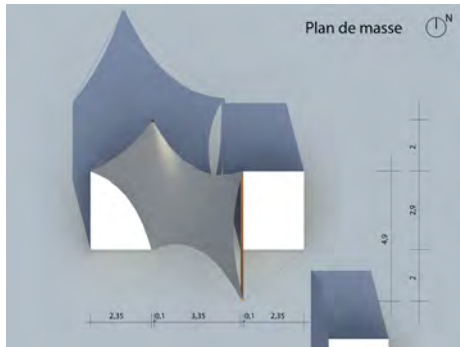


L'inspiration de la forme naturelle



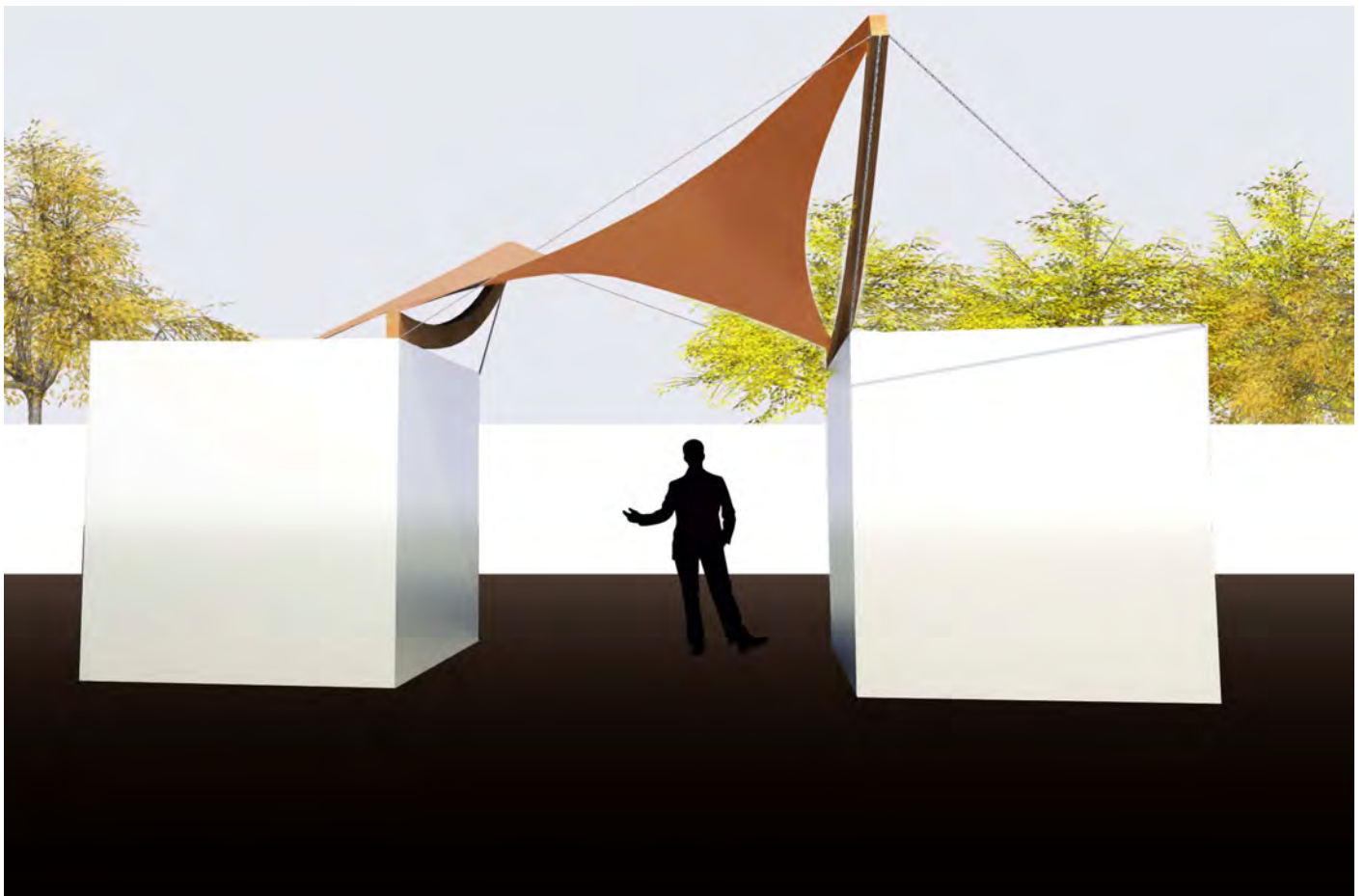
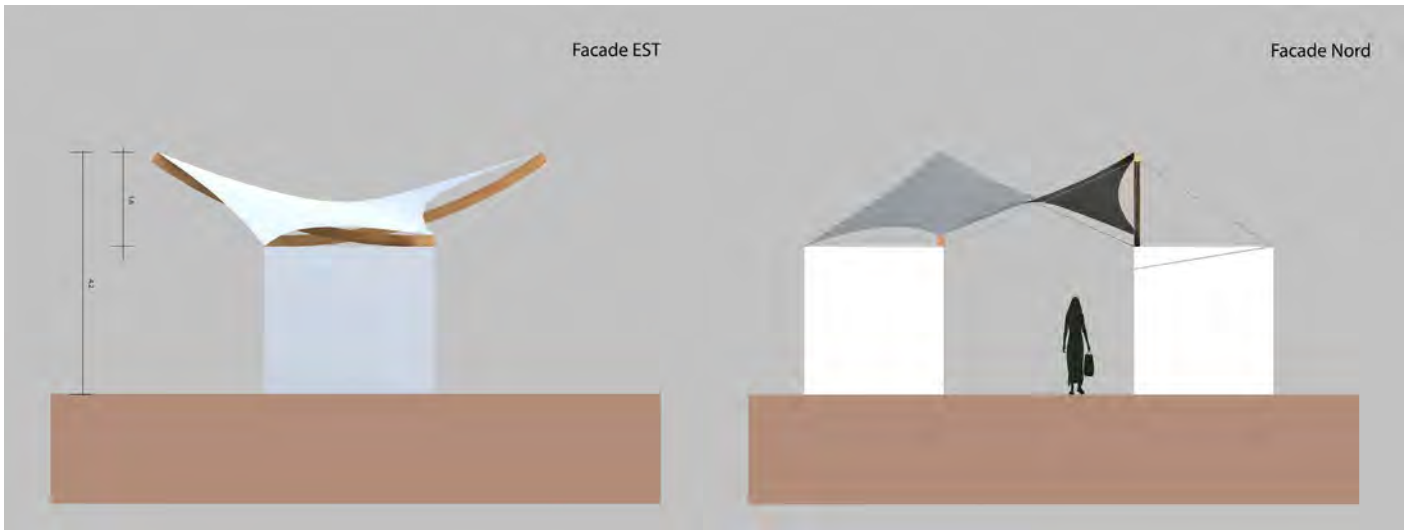
K. L'ÉLAN

BOYAU Lola_BRANCATI Massimo_HEYDEL Xavier_VALLAT Benoît



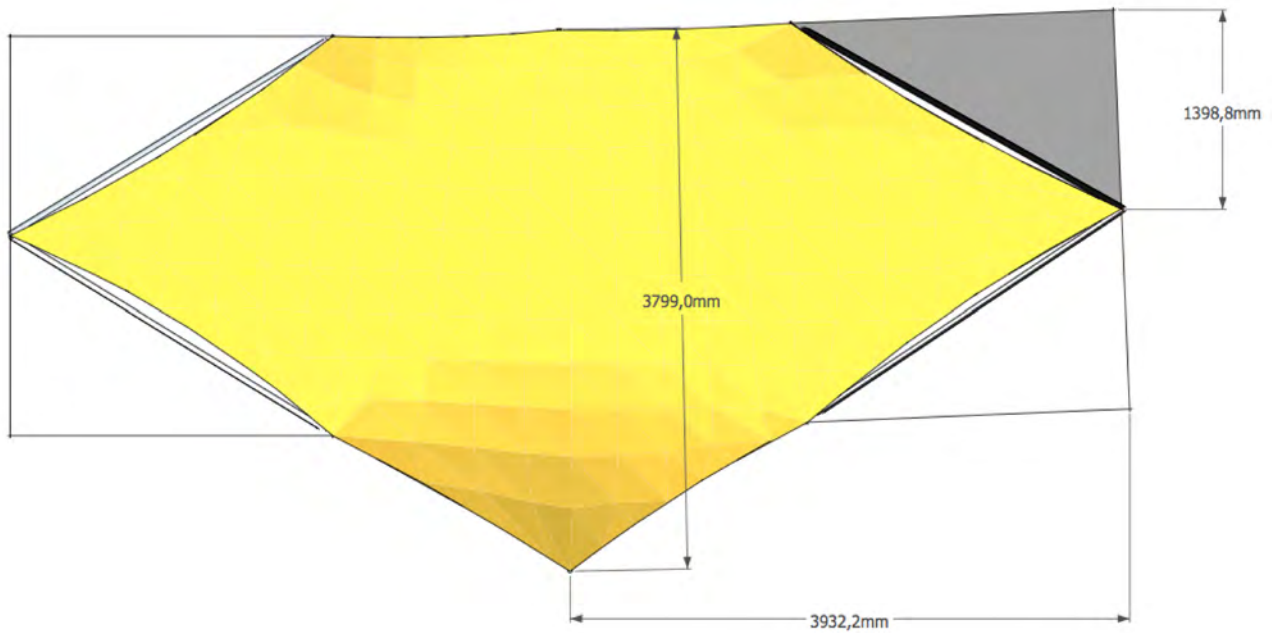
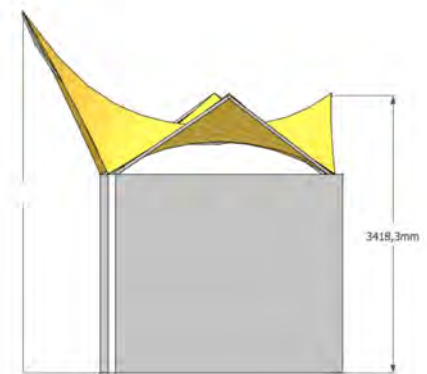
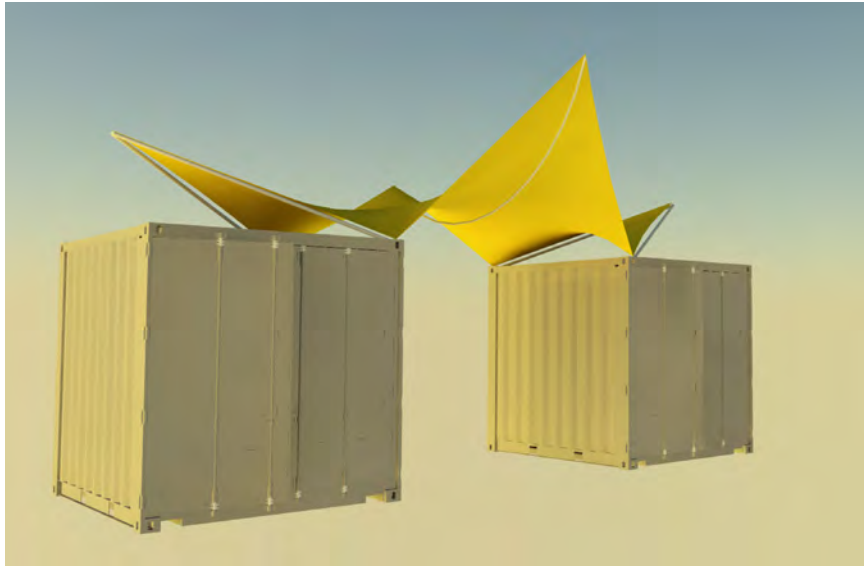
Facade EST

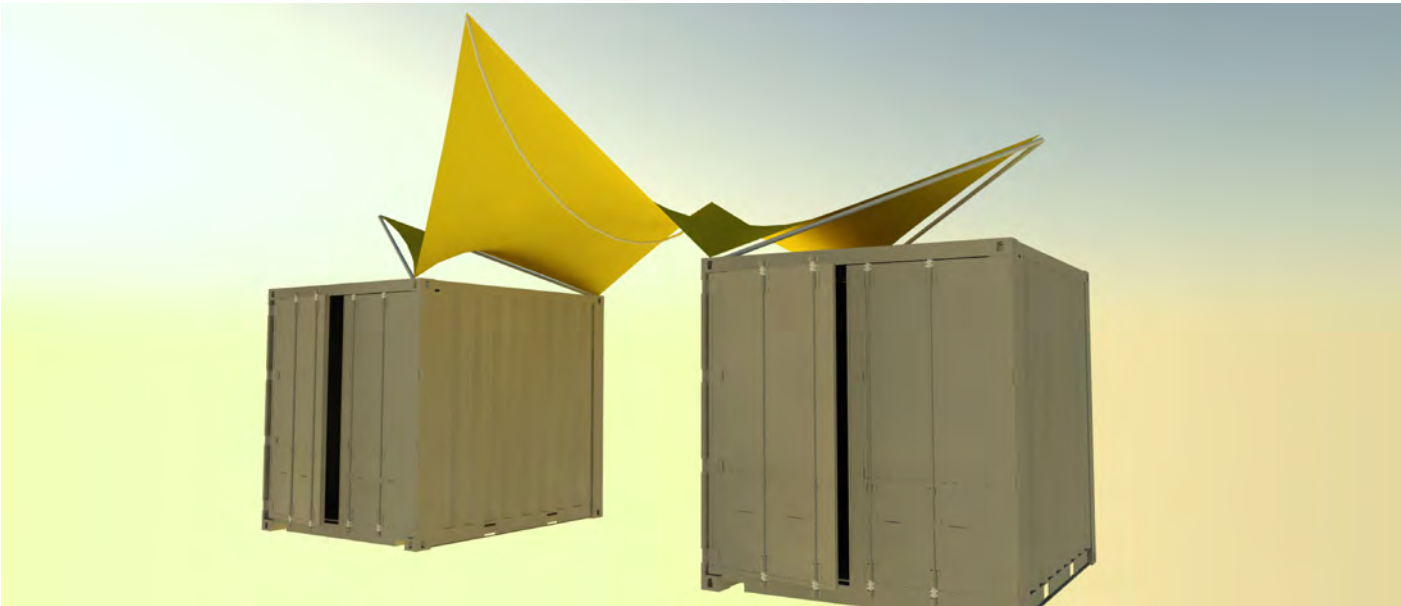
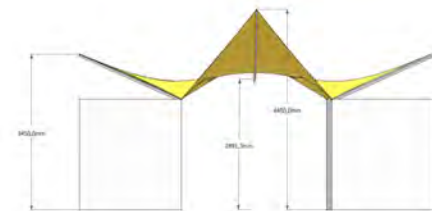
Facade Nord



K. PROJET

CHEGUT Amandine_HILPERT Antony_MARCHETERRE Antoine_VIENNET Johan





project 1









project 2



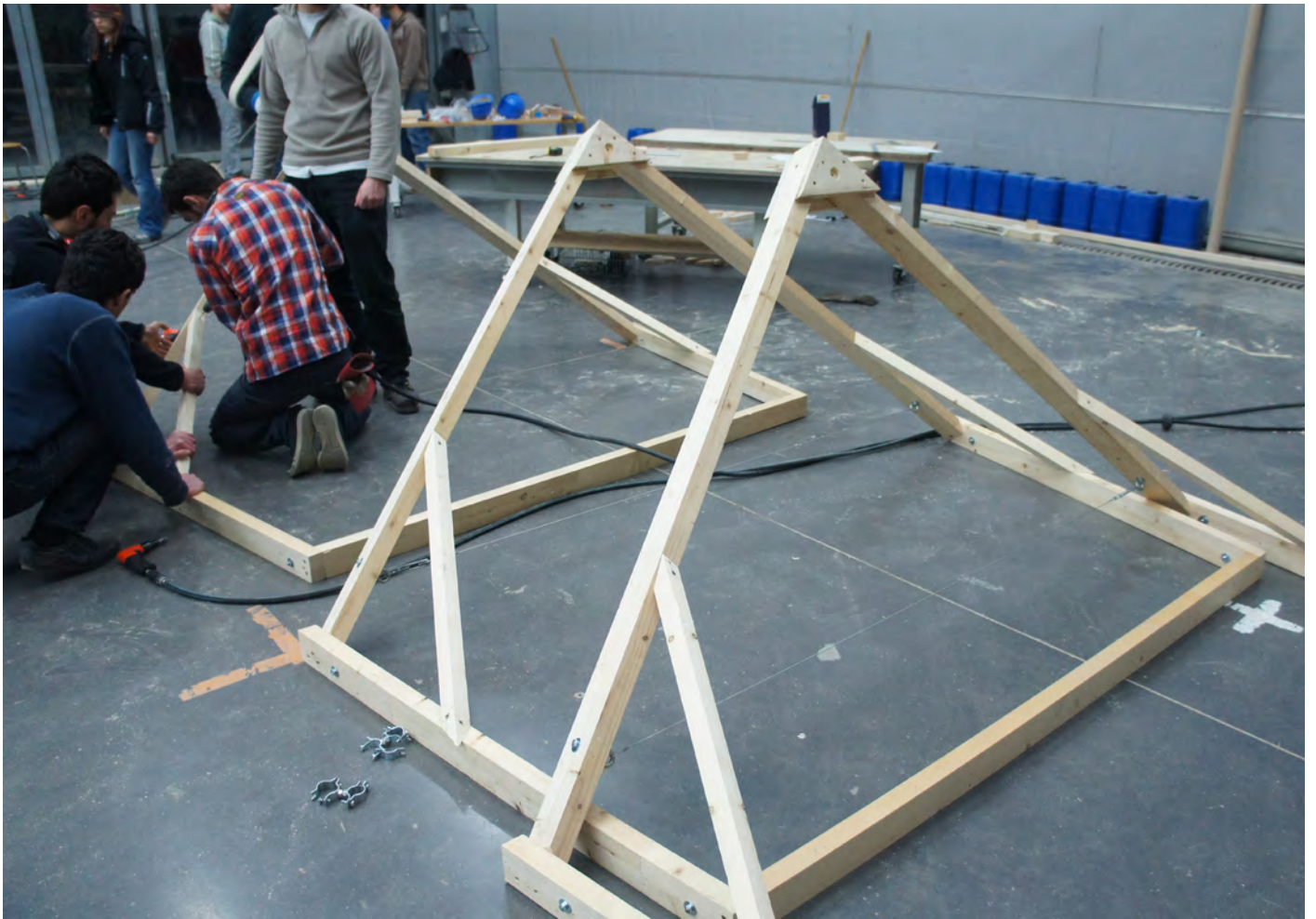
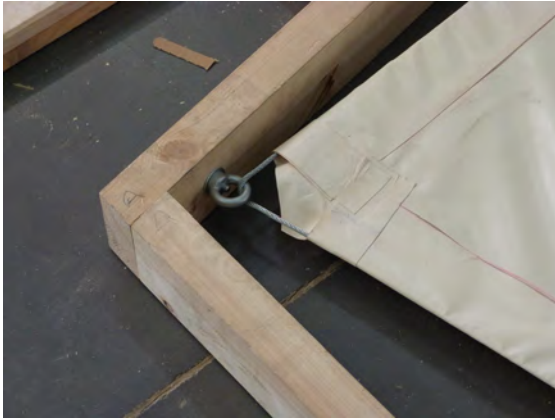






project 3



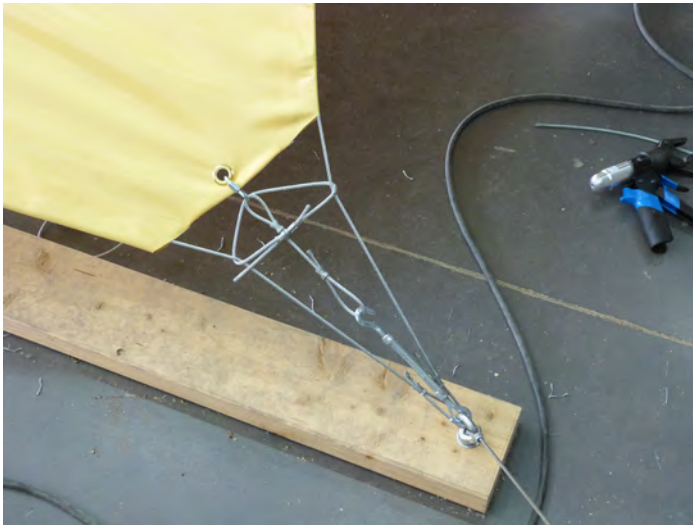


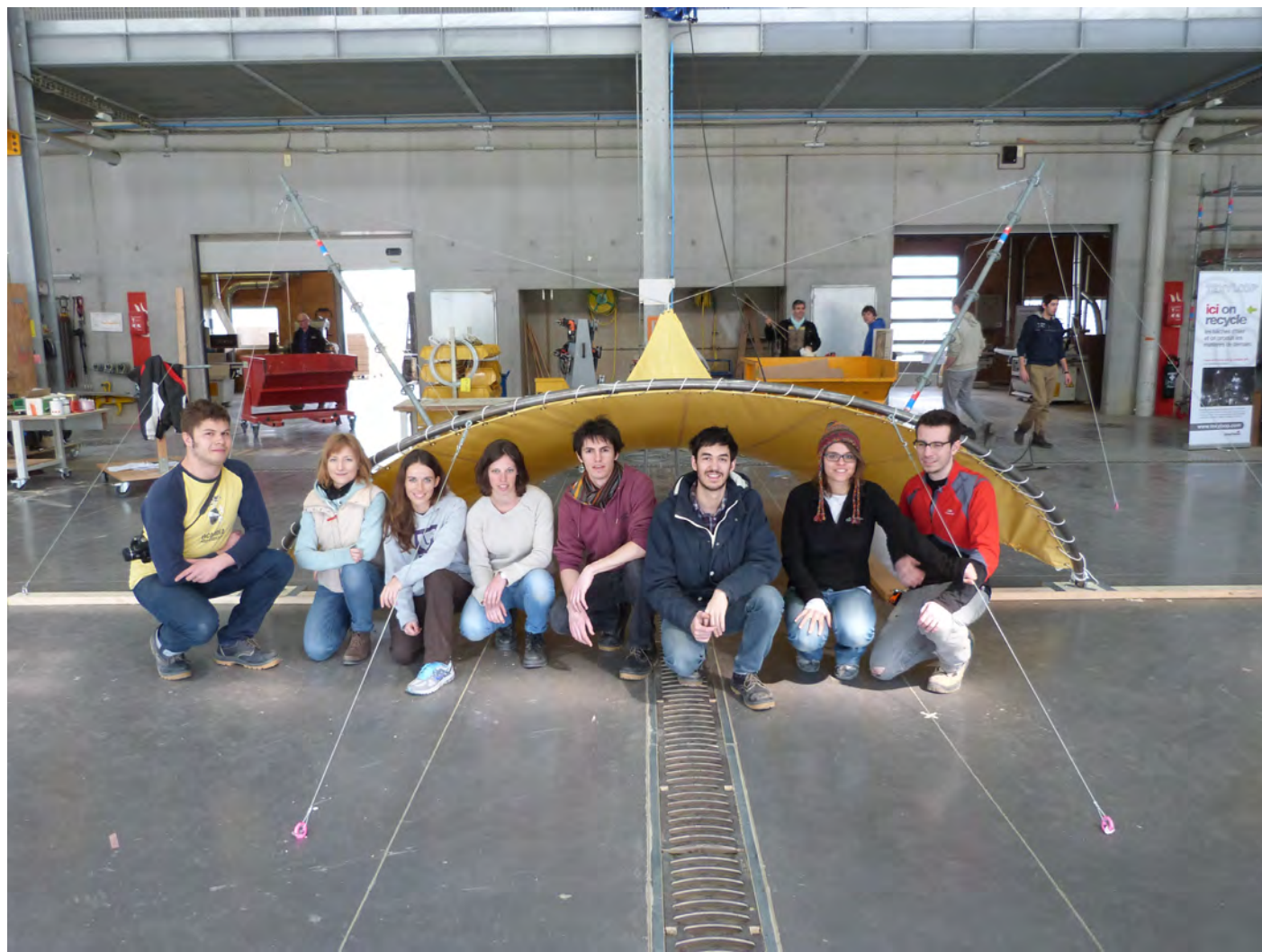


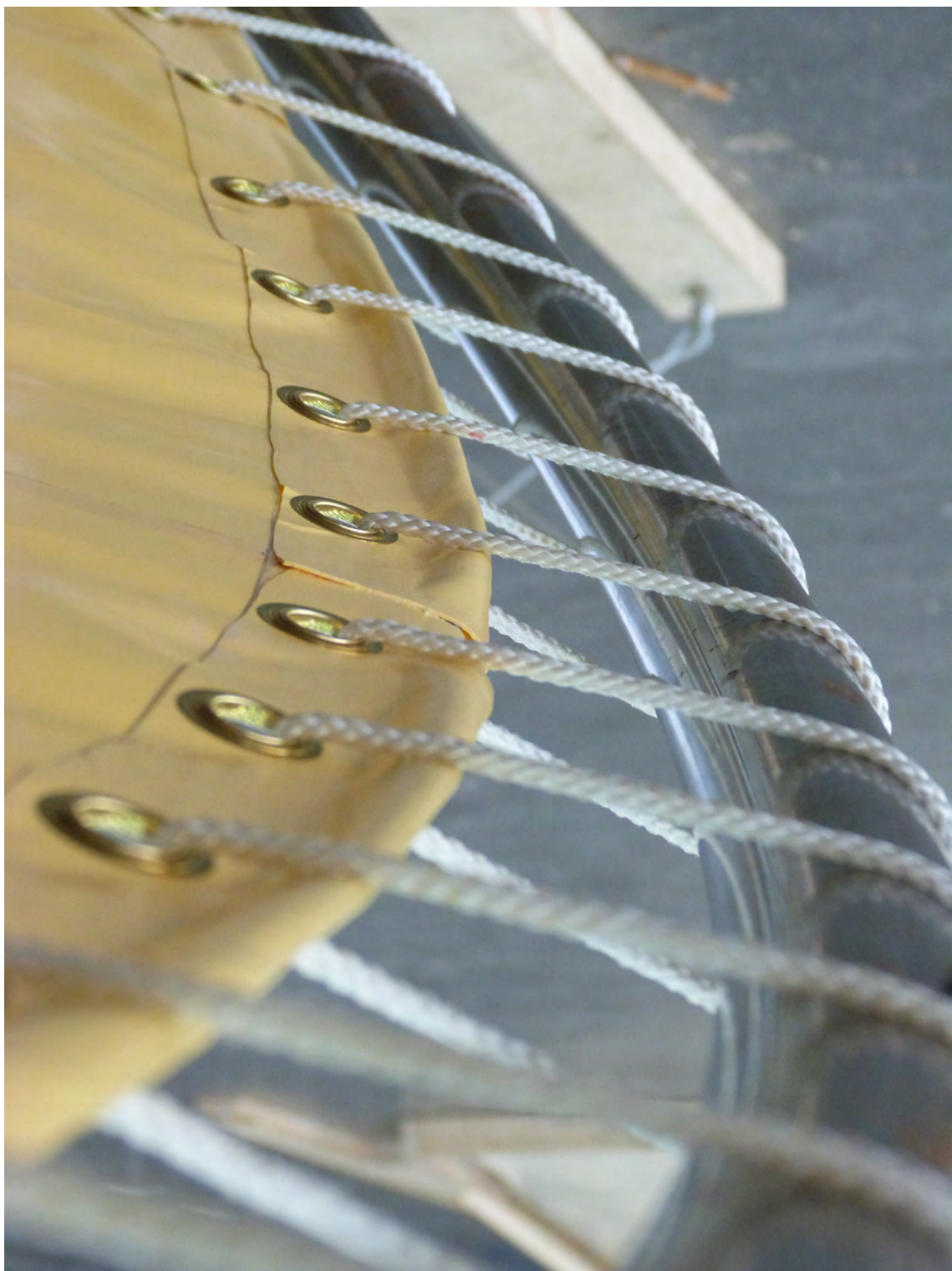


project 4





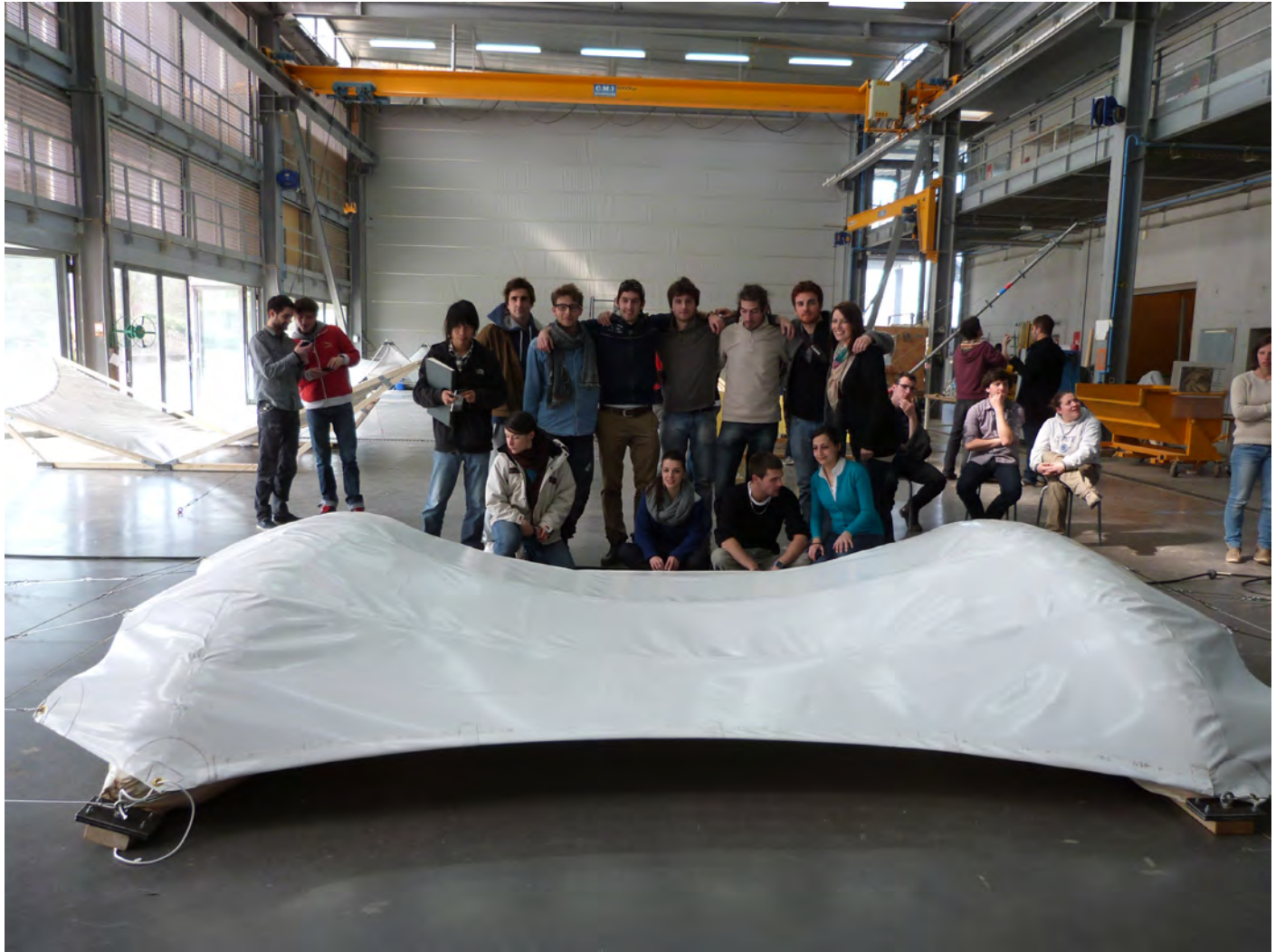


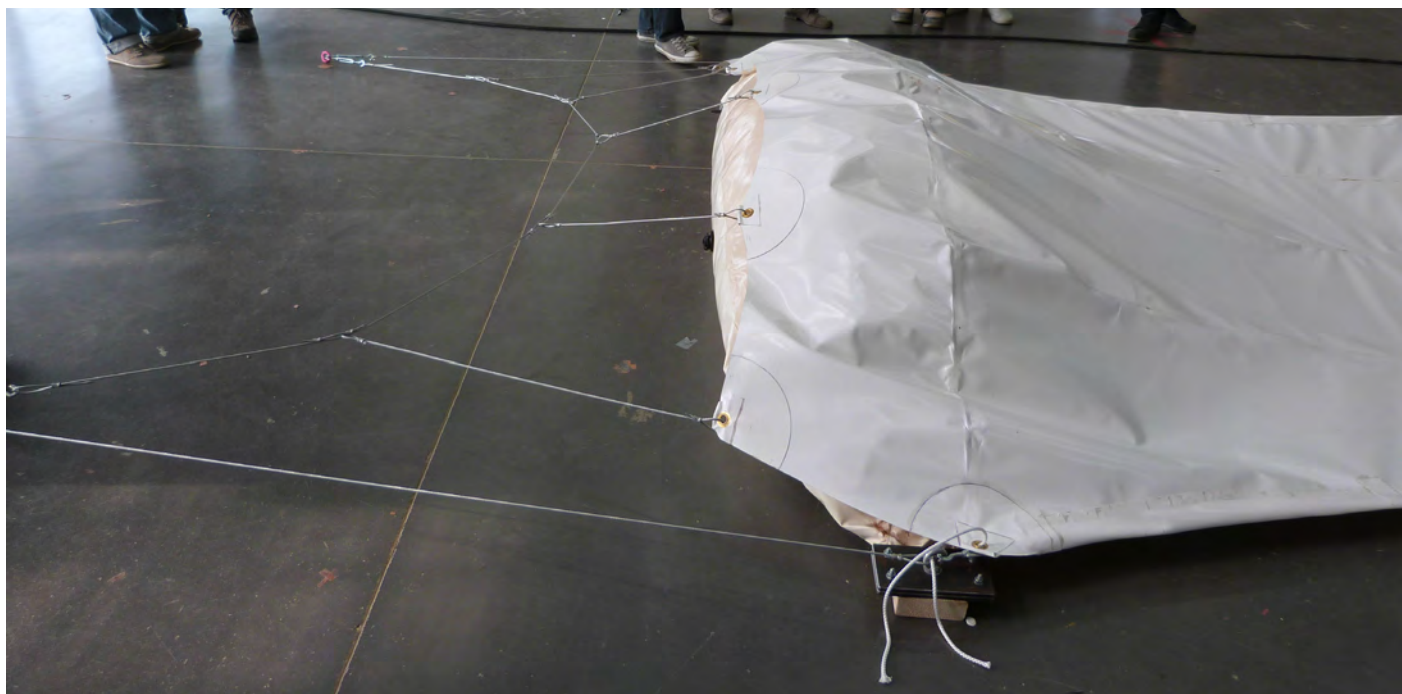


project 5









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thanks to all students



