

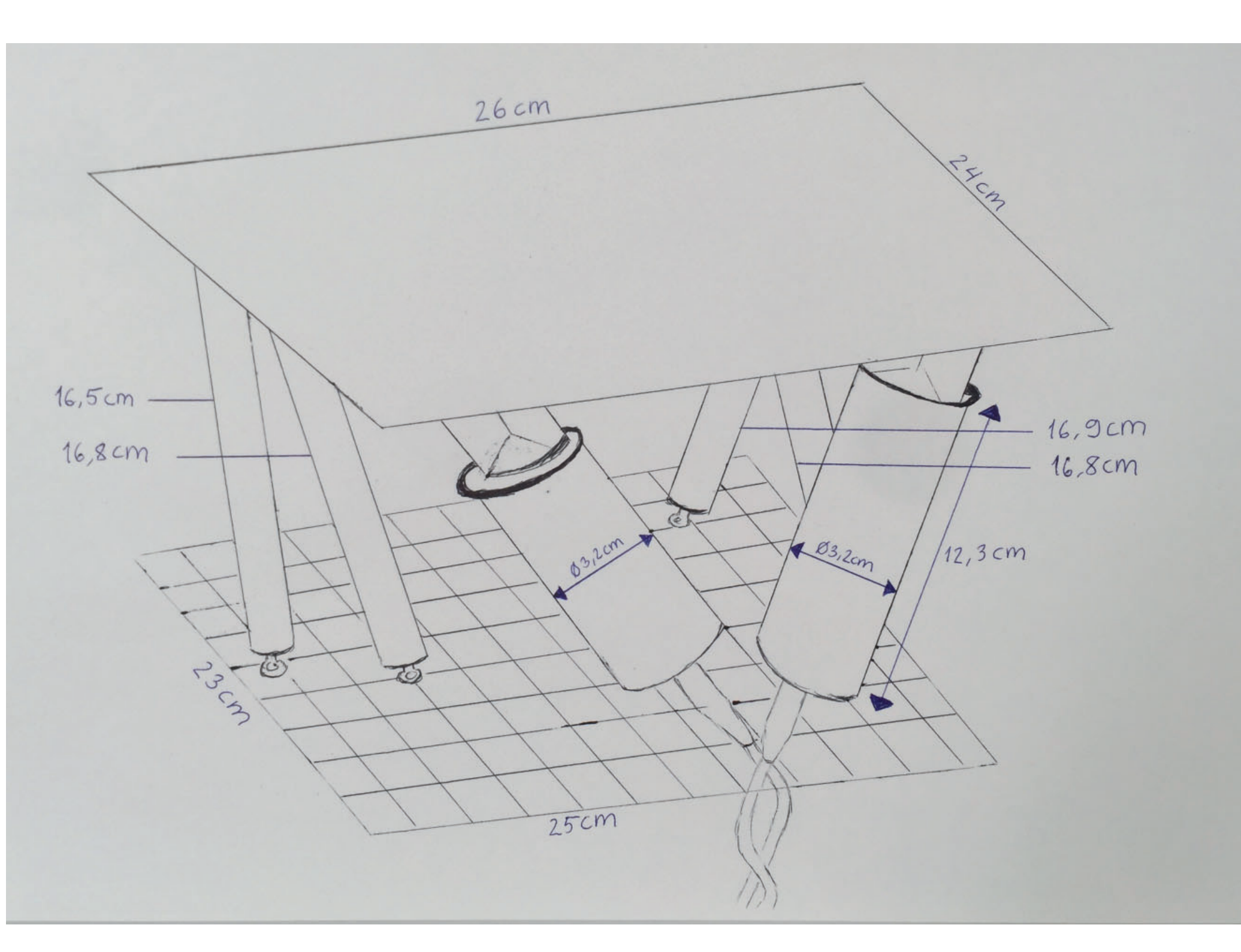
# SOLARIS



## Introduction

Our goal was to make a spatial structure modifying the SGP. At first all groups made the original 6-sticks-and-2-grids-platform, whose idea was to make a lightweight structure very stable in every dimension. After that, we replaced two of the sticks with hydraulic cylinders (syringes).

Our structure represents a solar panel. It can be adjusted to follow the movement of the sun to make it work as efficient as possible. We solved this problem/opportunity using a simple physical phenomenon. The cylinders are attached to a tube and by filling the cylinders and the tube with hydraulic fluid, it is possible to change the cylinders length which eventually changes the spatial location of the panel.

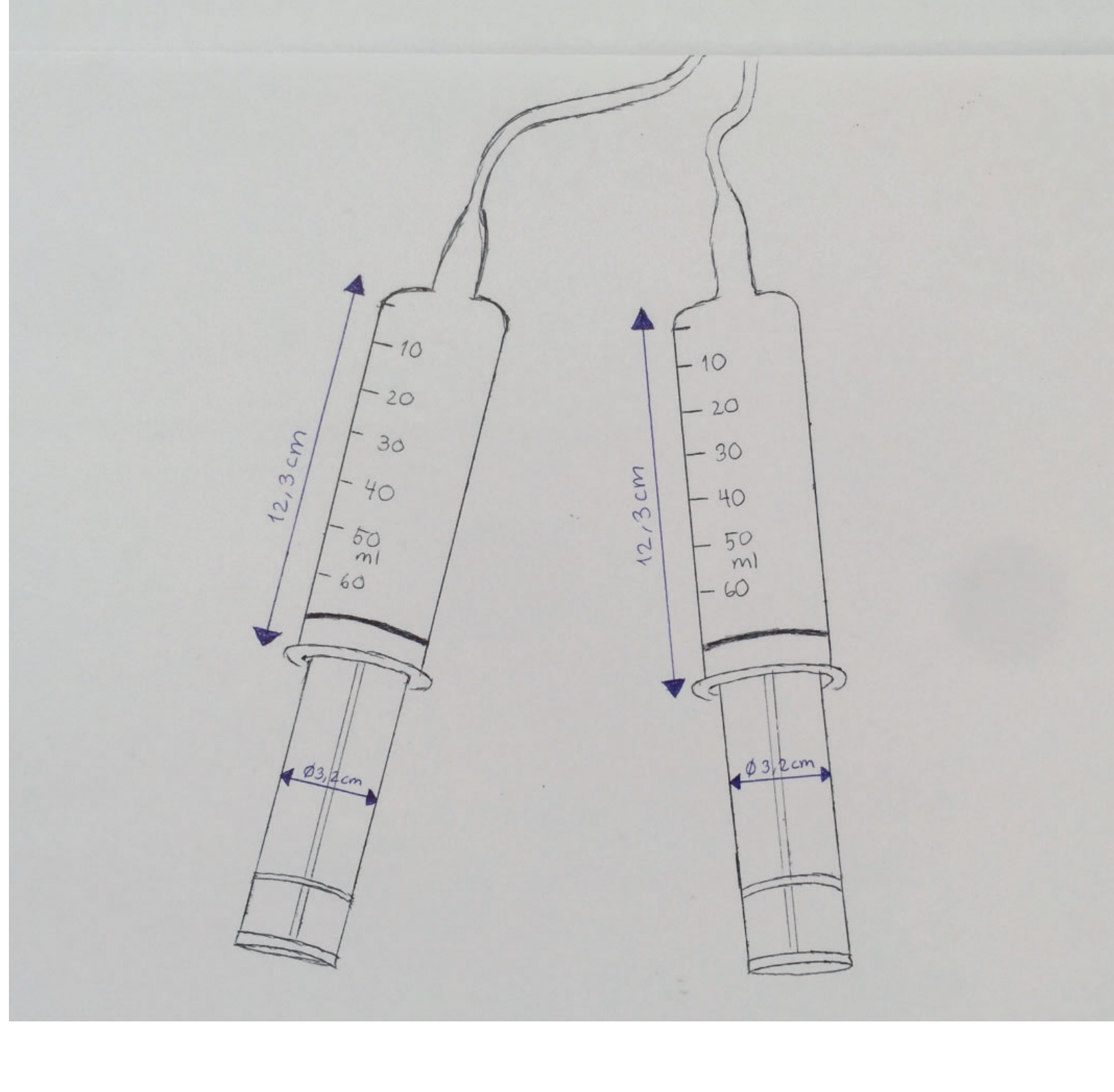


## Technical drawing

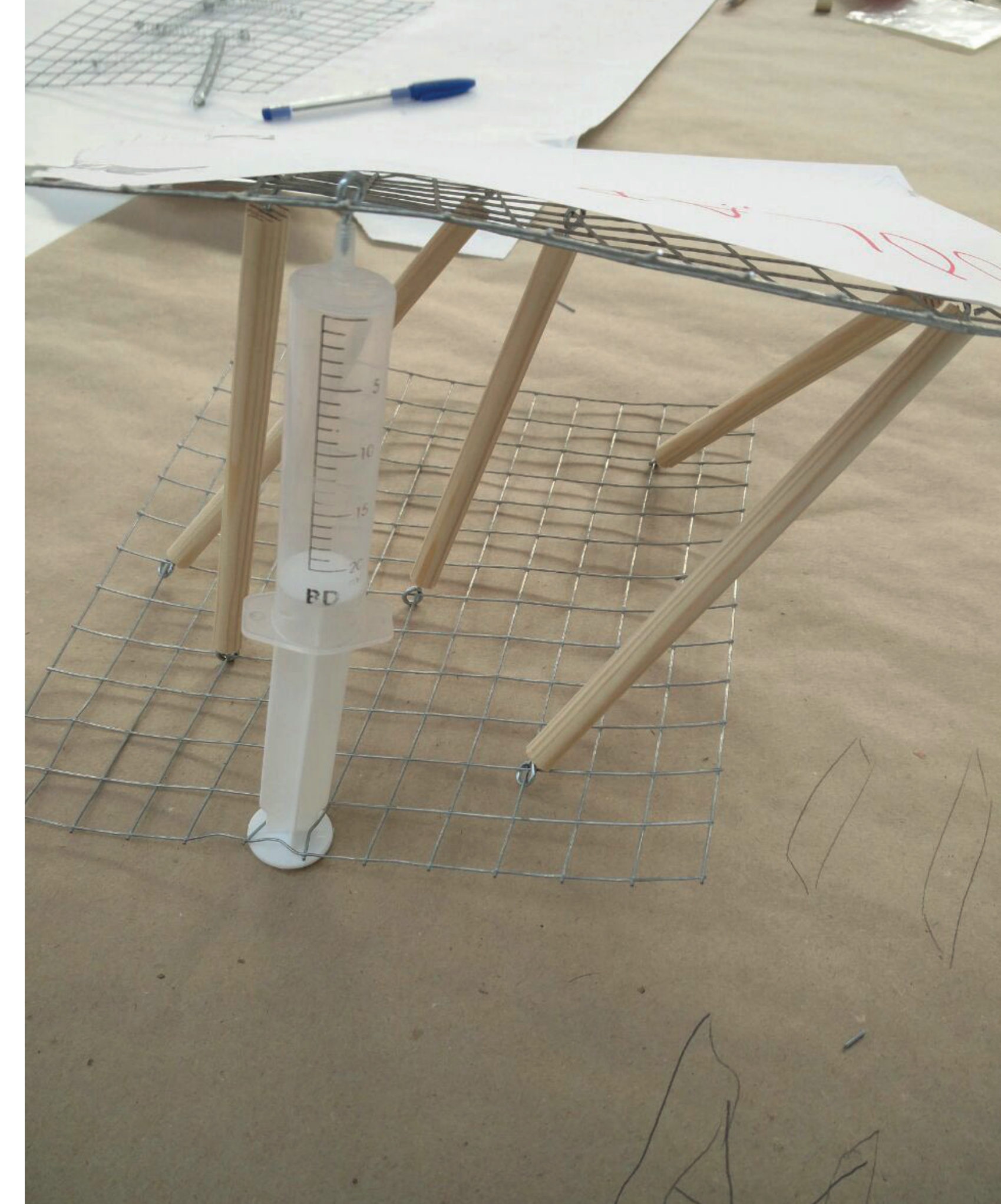
Full structure without the supporting platform. The left picture contains information of the dimensions. The scale of the model is 1:13, so its height will be around 2.2m.

## Hydraulic System

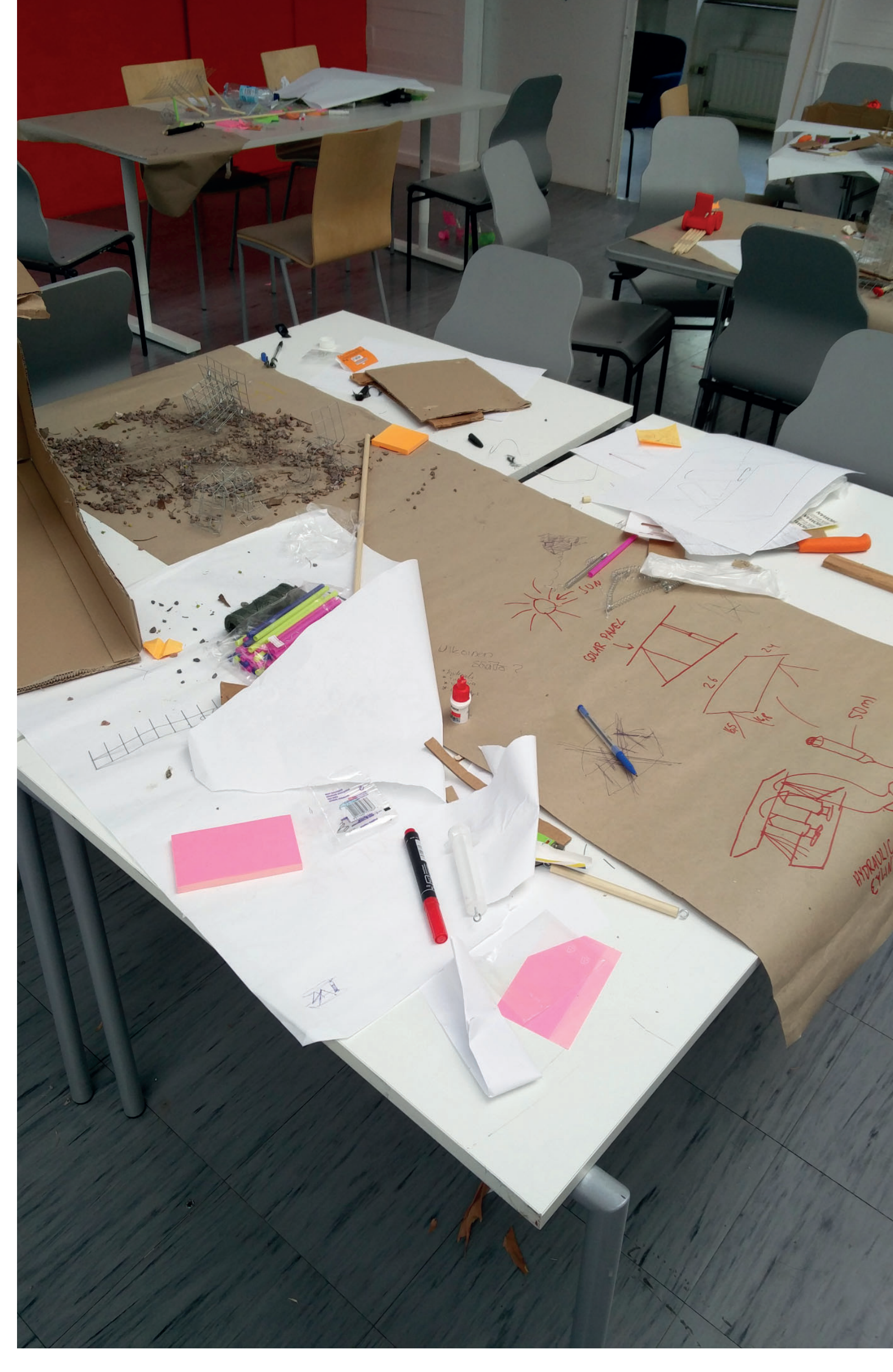
The angle of the solar panel can be adjusted with hydraulic cylinders. A piston moves back and forth inside the cylinder. As the piston rises up, water inside the system pushes the other ends piston up. Vice versa, moving down the piston, pressure in the system decreases and it can be seen by the downward movement of the other piston and finally the panel.



# Solaris is a pavilion that has an adjustable solar panel as a roof.



Solaris' first prototype. It has only one hydraulic cylinder, so the movement of solar panels was different from the final model.



3D-modeling made the design process easier, and enabled us to try different designs with minimal effort.



# SOLARIS

ENG-A1002 - ARTS-ENG Project

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