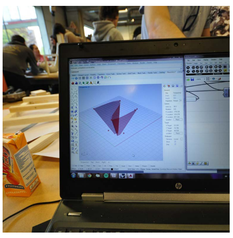
GROUP 8 Folding Concrete

Day 1: Conceptual Design and Sketches

Our concept was to push the boundaries of concrete and to test it beyond its typical stereotype; bulbous and heavy. Instead we explored concrete as a thin and flexible membrane with fabric as its main formwork.

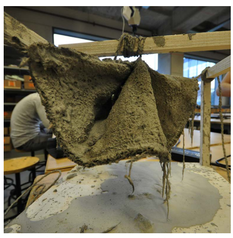

Conceptual Sketches


Paper model of initial form


Form Optimization

Three different experiments were first carried out to test the different ways we could cast the concrete and how the concrete would behave in each mould. Jute was dipped into the concrete mix before it was hung, weaved and put in at an angle

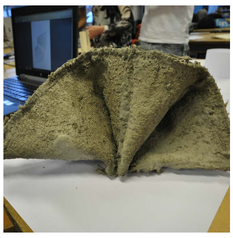

Mould Experiment A - Hung


Mould Experiment A - Hung


Mould Experiment B/C - Weaved

Day 2: 16:00 - 1st Test Pour

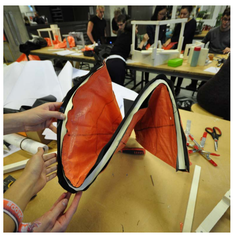
The results of how the concrete reacted to the jute and gravity proved a little different to what we expected; to collate at the edges. Instead , the concrete was evenly spread out though very rough. This aspects were something we wanted to improve on.


Test Pour 1 - Result of Mould A


Test Pour 2 - Result of Mould B


Material Surface

In the second mould, we worked towards a thin, organic form with a smooth surface structure. To prevent the curve from bulging at its ends and sides, we layered two pieces of fabric and tightly stitched them together. This mold would eventually be hung between two stools.


Second Mould - Form


Second Mould - Hanging


Second Mould - Framework

Day 2: 16:00 - 2nd Test Pour

However, the loose stiching and staples proved to be insufficient in preventing the concrete from leaking. Nevertheless, we did learn that it is important to keep the edges tight to prevent further leakage.

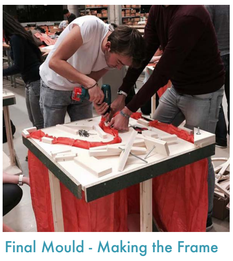

Test Pour 2 - Pouring

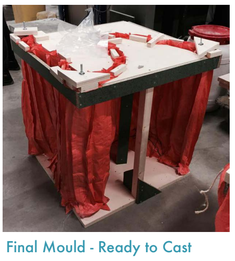

Test Pour 2 - Bulging Framework


Test Pour 2 - Openings

As we worked towards our final form, we considered our past experiments and failures and worked towards an improved mould. We stitched in pockets to create partially connected compartments to reduce the bulge and used stitching to shape our form.


Final Mould - Double Stiching


Final Mould - Making the Frame

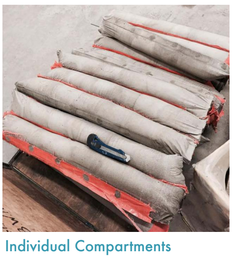

Final Mould - Ready to Cast

Day 3: 18:00 - Final Results

The results were perfect folds , smooth surfaces and arcs that accentuated its shape. , true to what we aimed to achieve. Although it eventually fell apart due to insufficient structures, we now better understand concrete as a material where the process of making made the experience extremely exciting.


Final Results - Perfect Folds


Final Results - Insufficient Structure


Individual Compartments

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