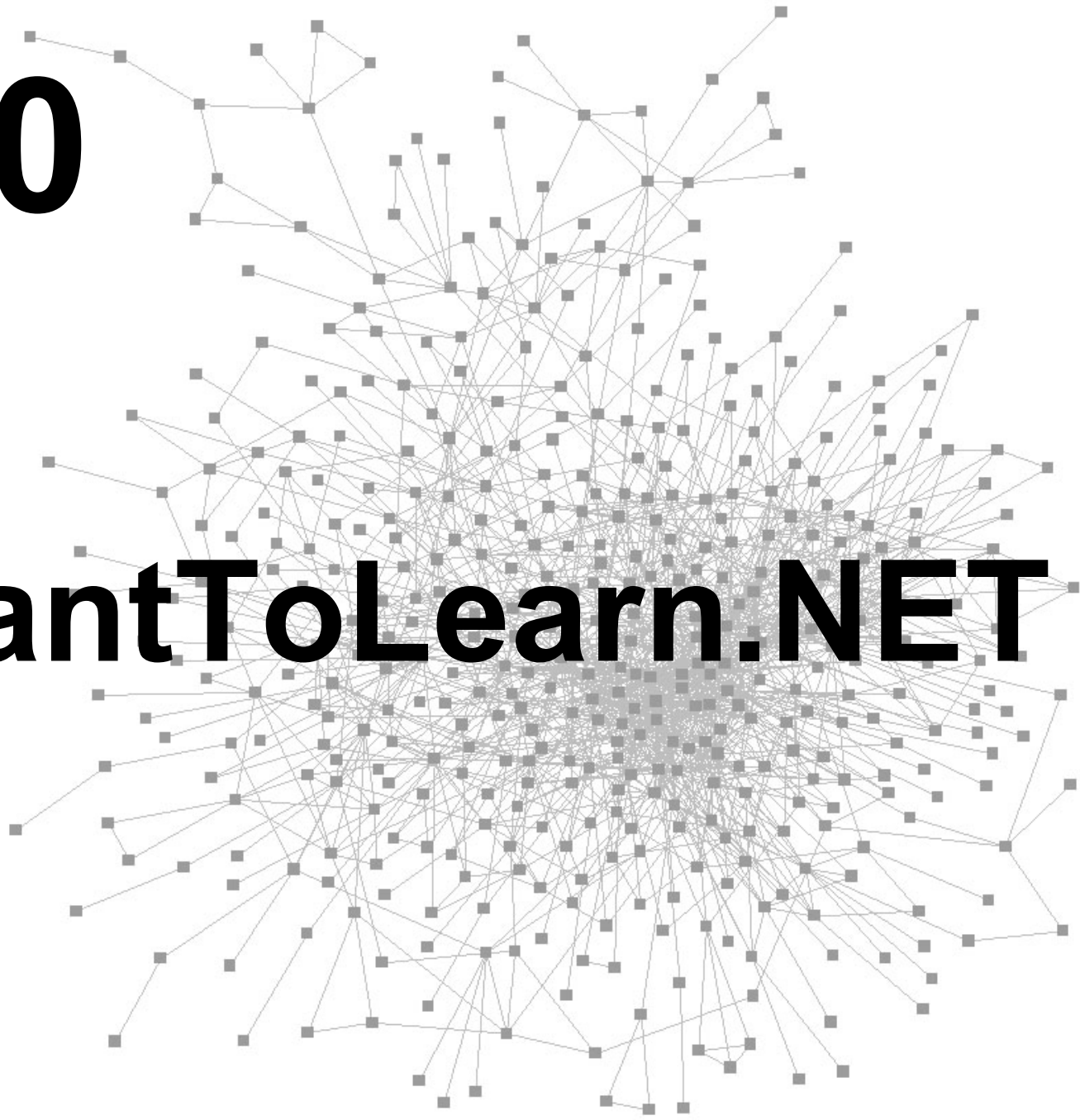
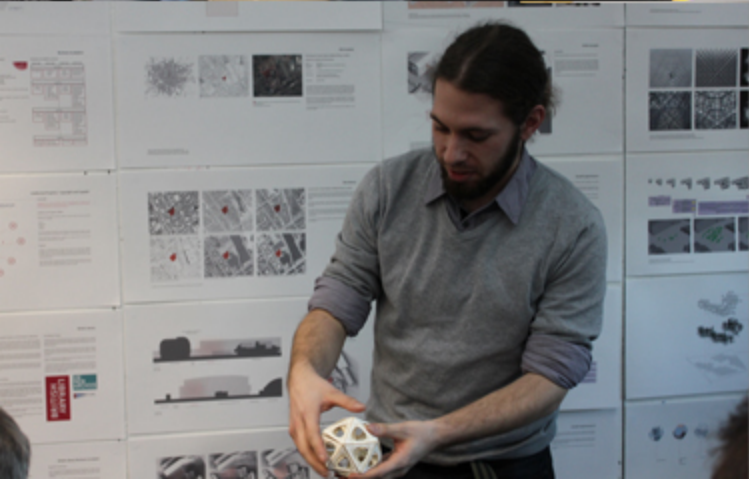


DS10

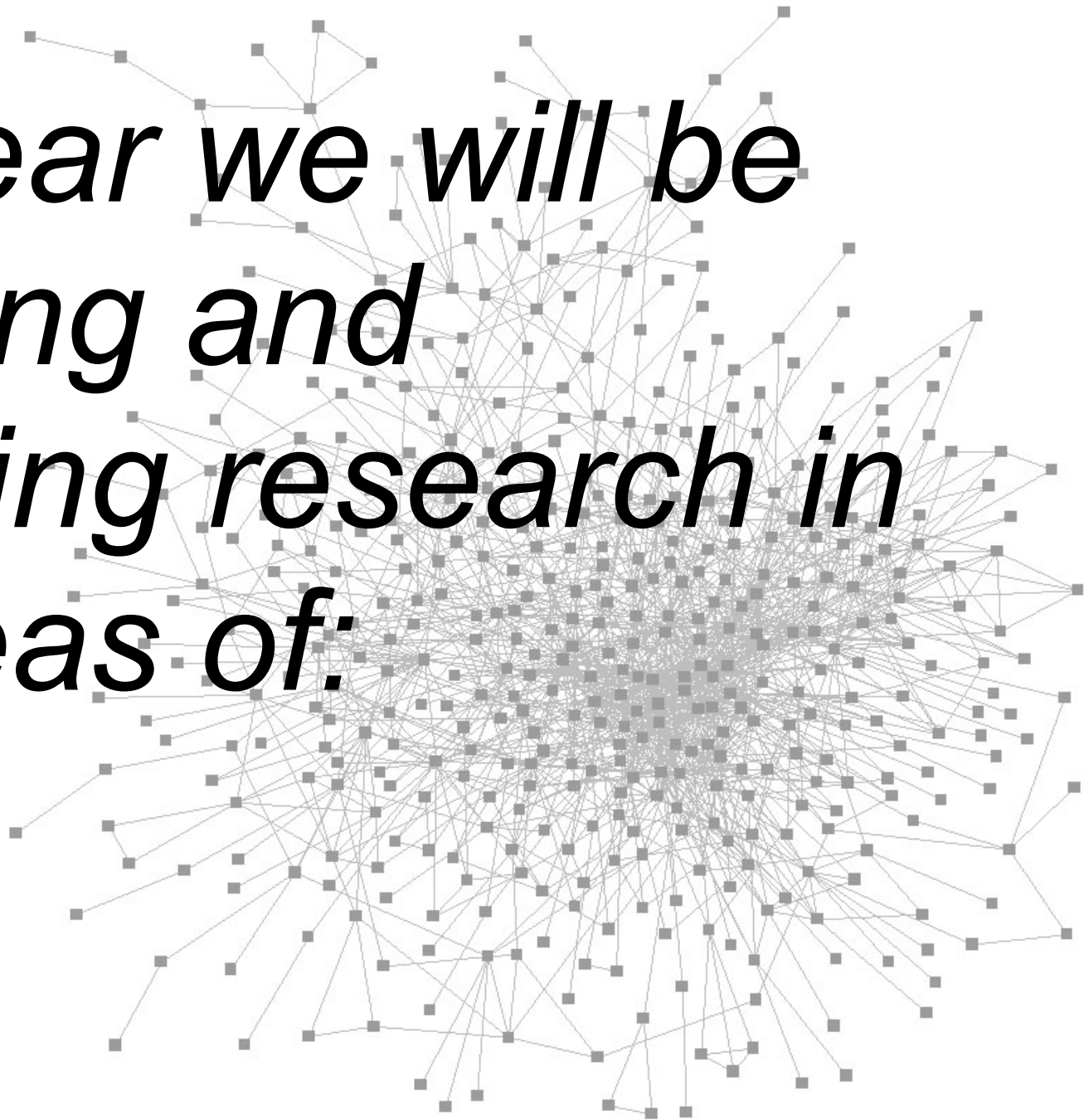
WeWantToLearn.NET



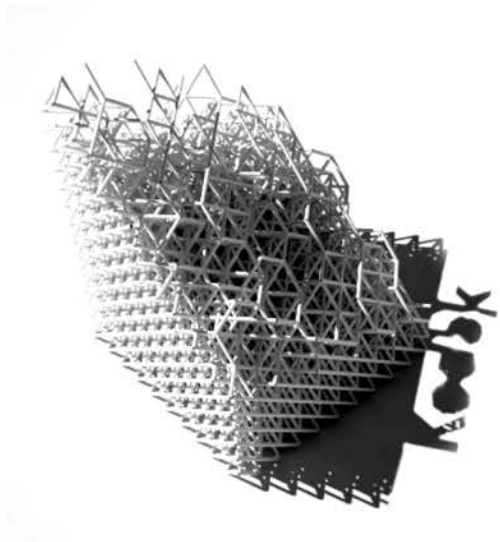
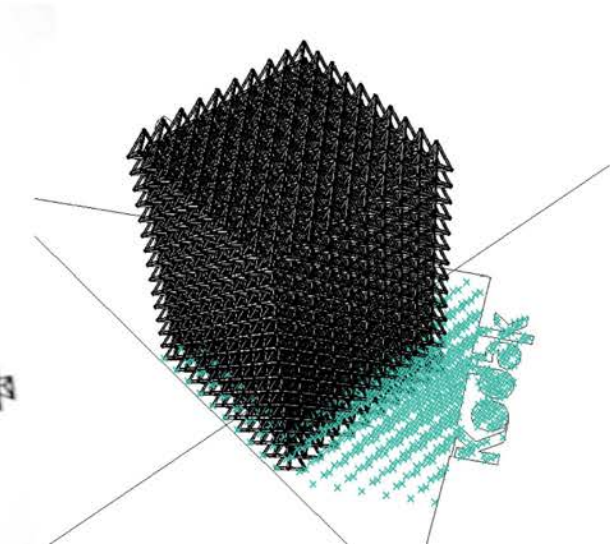
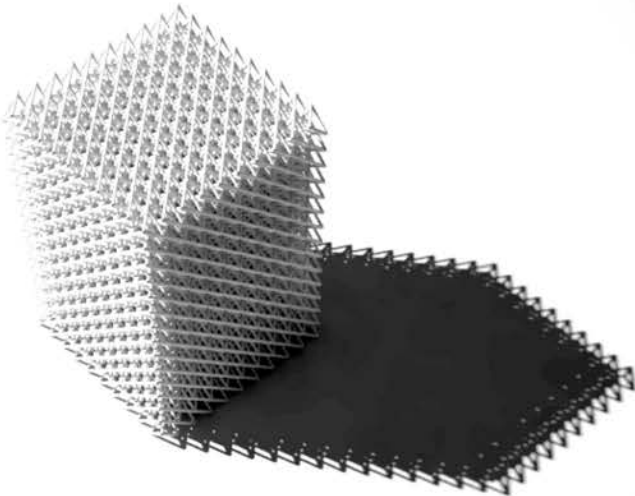


...IS HAPPY TO BE BACK

*This year we will be
exploring and
furthering research in
the areas of:*



DIGITAL DESIGN



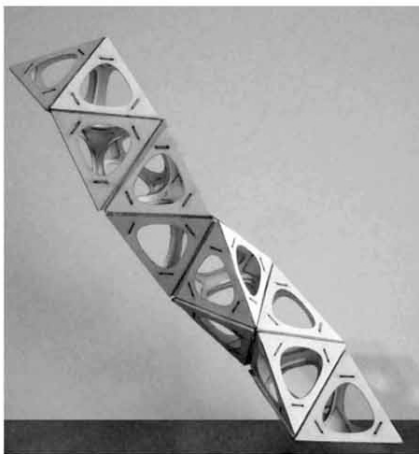
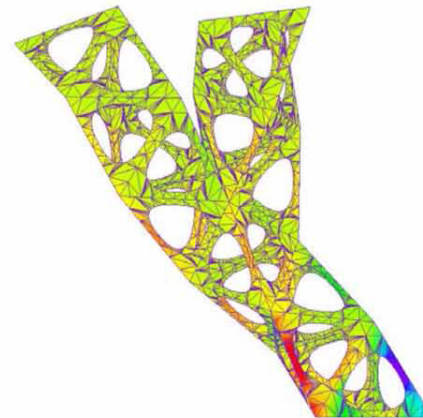
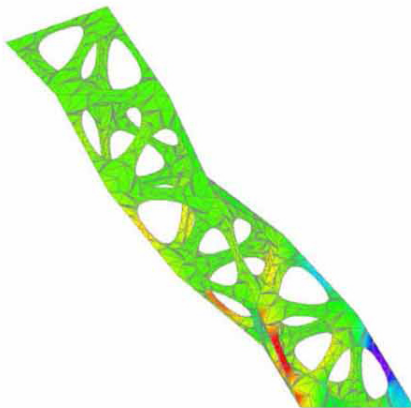
Jacob Alsop: Culling a grid with Sun rays

//Generation

DIGITAL DESIGN

Stresses are at MIDDLE of element
Output axis: global

- 40.00E+6 Pa
- 30.00E+6 Pa
- 20.00E+6 Pa
- 10.00E+6 Pa
- 0.0 Pa
- 10.00E+6 Pa
- 20.00E+6 Pa
- 30.00E+6 Pa
- 40.00E+6 Pa
- 50.00E+6 Pa



Dan Dodds: Self-Assembling Tetrahedron

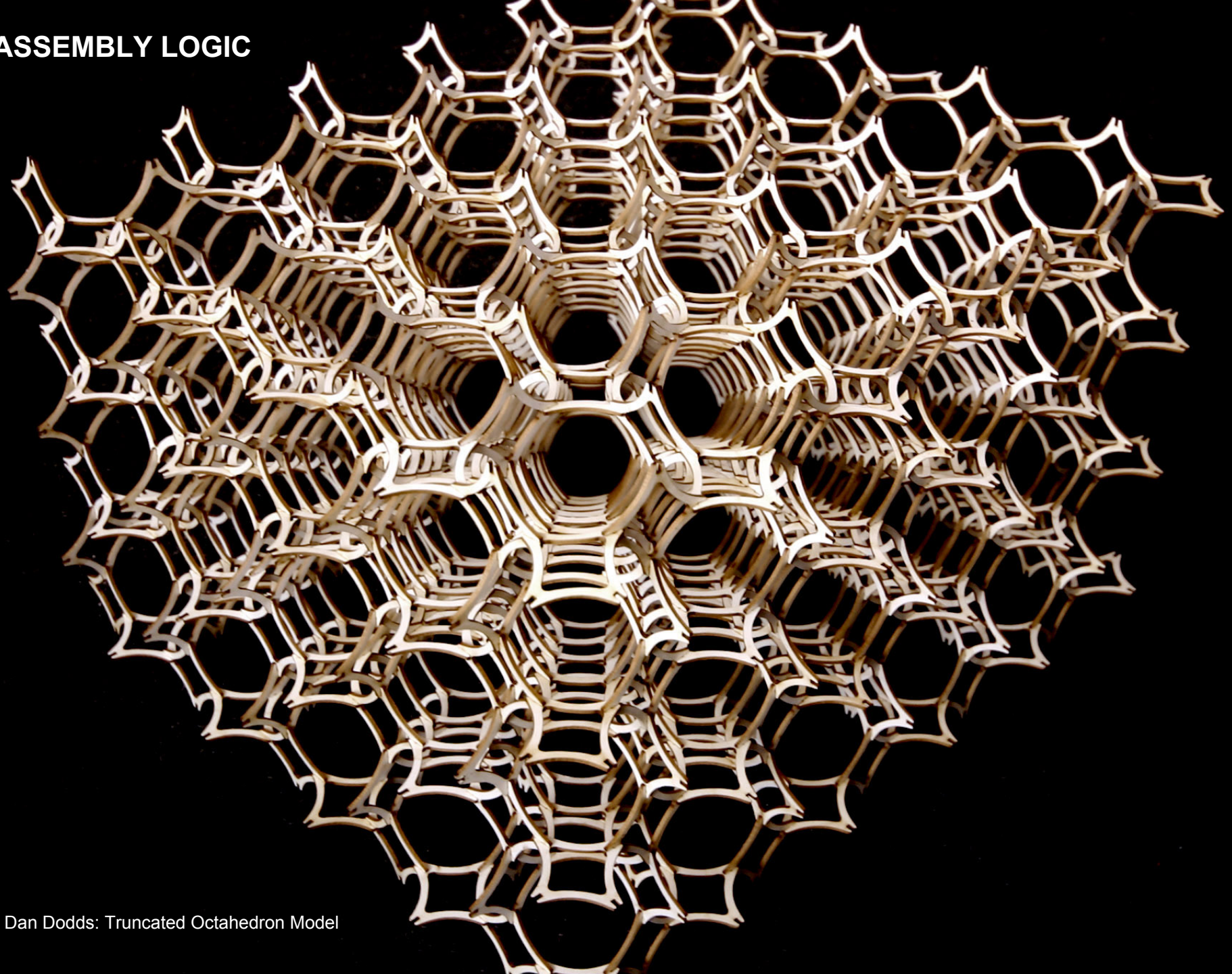
//Analysis and fabrication

MATERIAL BEHAVIOUR



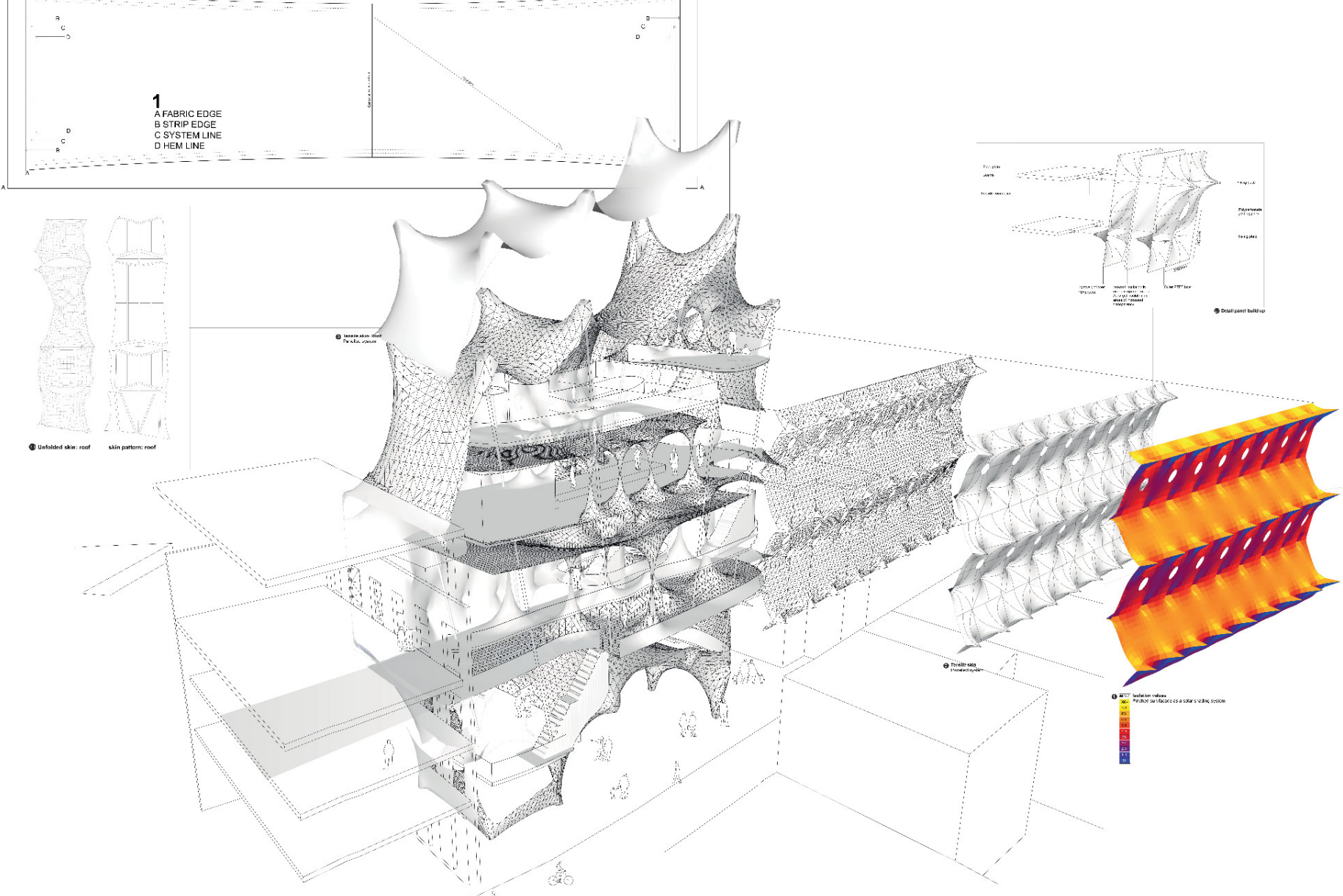
Carolyn Butler: Wool Thread model and Capillary action

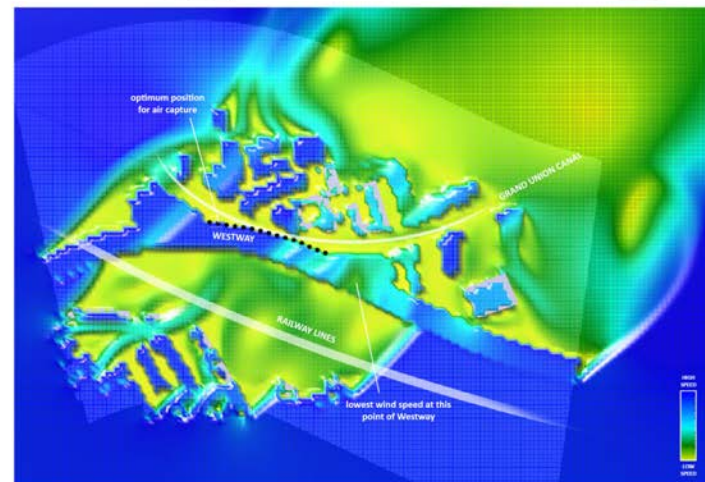
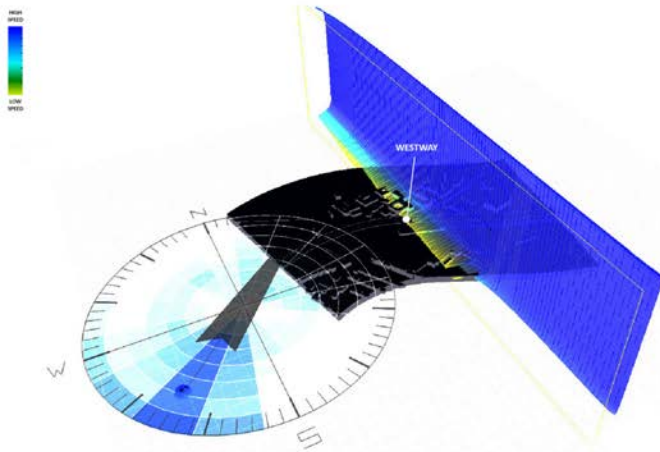
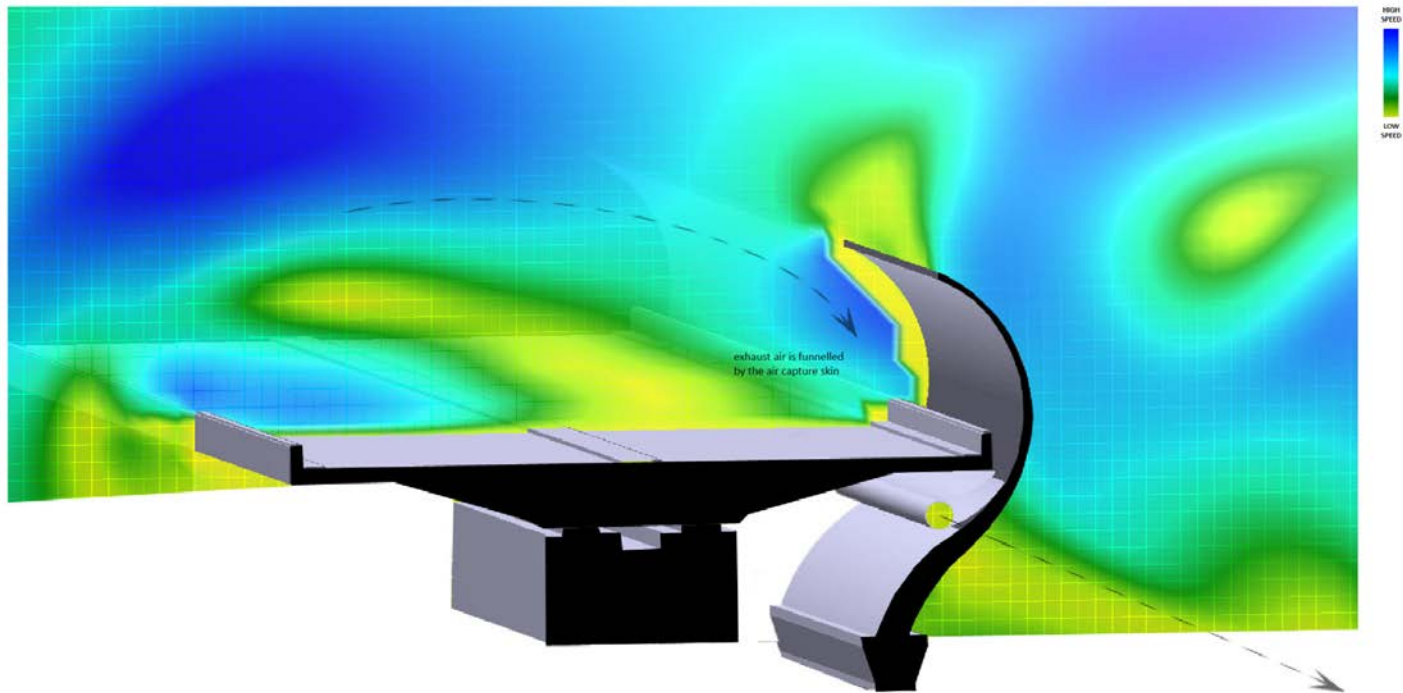
ASSEMBLY LOGIC



Dan Dodds: Truncated Octahedron Model

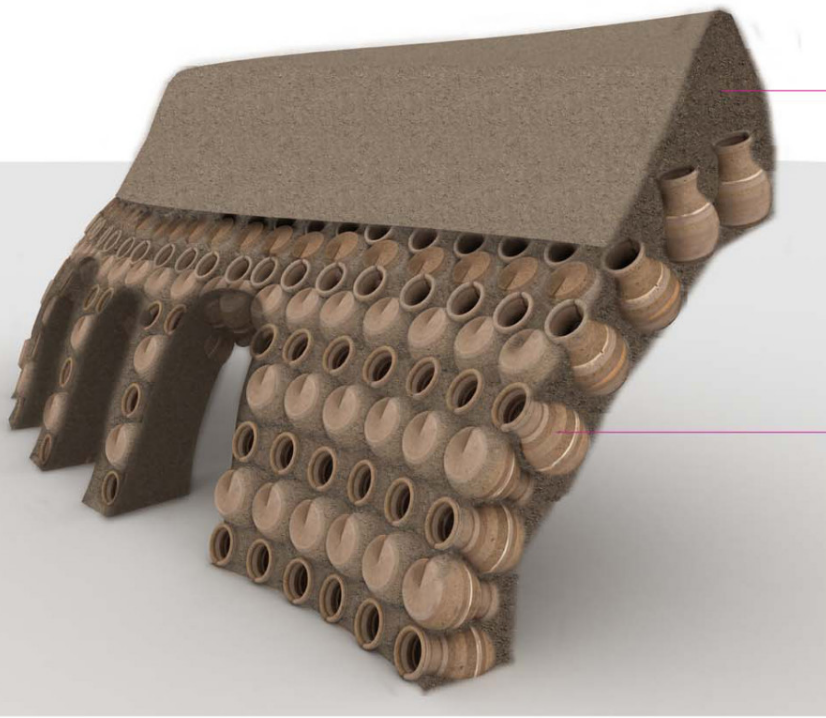
SUSTAINABILITY IS A GIVEN, NOT AN OPTION!





Wind analysis of site

SOCIAL RESPONSIBILITY



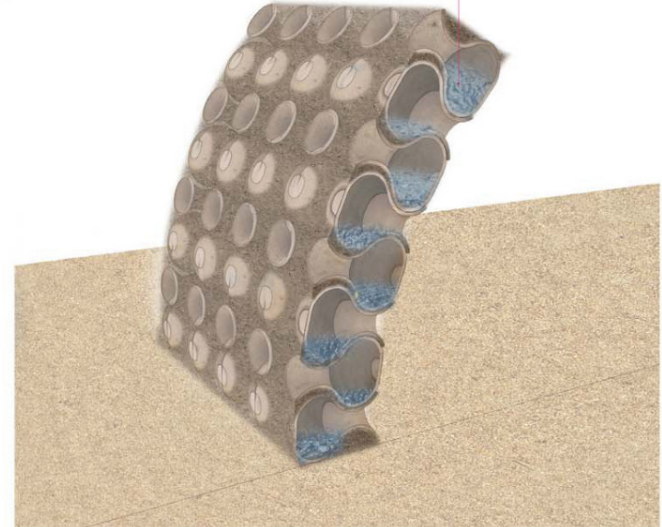
A bank is constructed on the top of the clay pot structure to provide the 3 feet depth required for the maize crop to grow. This has been minimized to reduce the overall weight of the structure to increase the buoyancy.

OBJECTIVE: To design a flood resistant architectural blueprint for the local Twa Tribes, enabling them to survive the Kafue Floods.

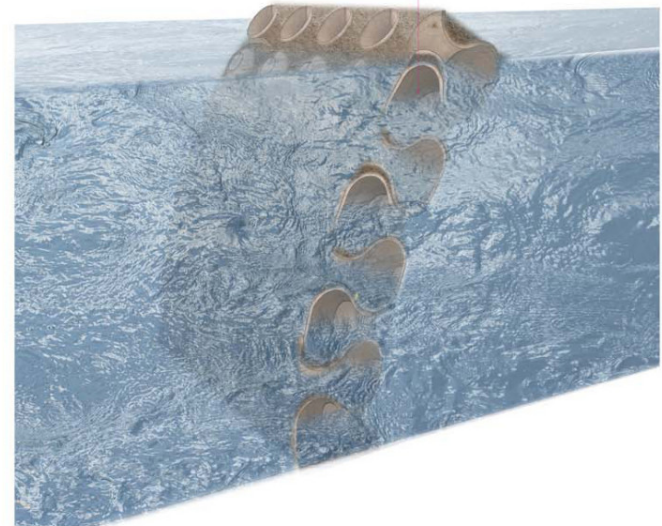
With this in mind the structure is a key element of the project which should be utilized as efficiently as possible. The previous design did not utilize the structural potential of the pots through mirroring the rotation each pot as the pot structure progressed upwards and the structural symmetry seen in the Ying Yang symbol, therefore the design can develop to include these design conclusions.

Summer Arid Season Water Maintenance

After the floods that occur in March water will still remain sitting in the pot structure, this alone poses the risk of stale water and diseases, however as the structure is not able to absorb water through the arid season the Twa Tribes can utilize this water storage to maintain their maize crop growth.



Water Buoyancy Air Pockets in The Clay Pots



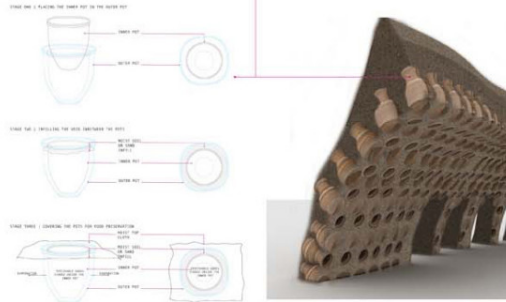
Involuntary Growth on the Structure

As seen in the previous Straw and Cement-Adobe Growth Model the straw which is used as a binding agent in the earth compound may show re-growth, this new supply of straw can be utilized by the local Twa Tribes.

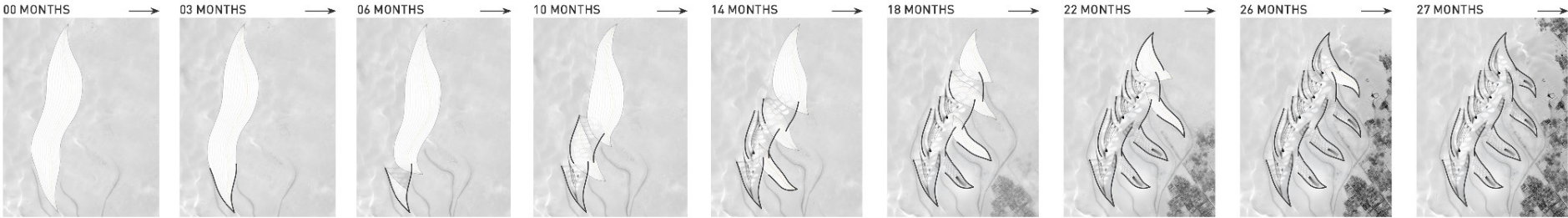
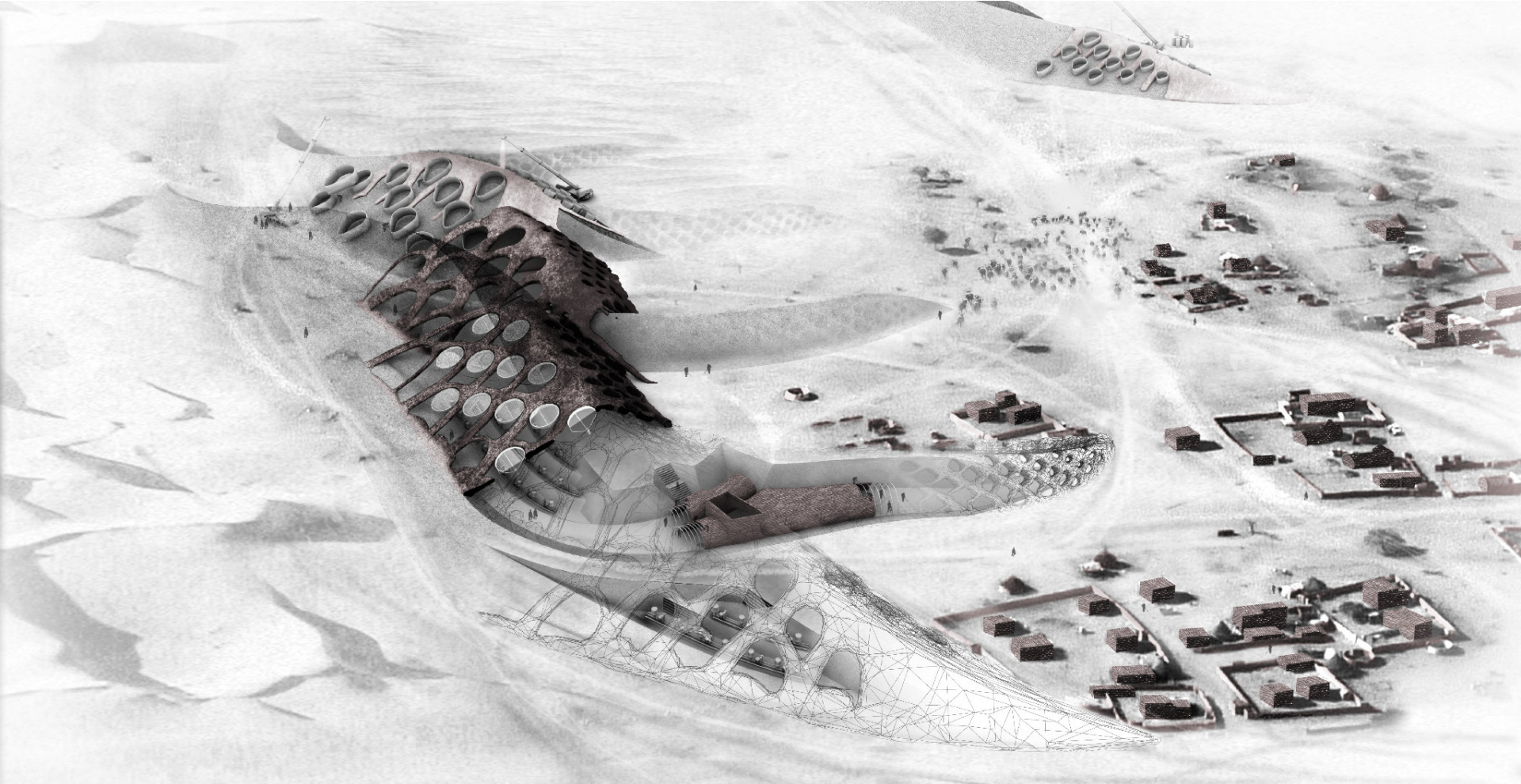


Thermal Mass Food Storage in the Structure

The construction of the structures is centred on the buoyancy aims, although during the summer period when the floods have receded and the structures are now inhabited by the TWA Tribes the clay pot structure lends itself to the concept of the 'ridge in the desert'. Pot-in-pot refrigerator or Deer Pots is a refrigeration system which keeps food cool without electricity through evaporative cooling. A porous outer earthenware pot, which contains an inner pot inside is separated by wet sand or soil, the evaporation of the outer liquid draws heat from the inner pot.



CLOSED LOOP SYSTEMS



Jack Munro: Sand Dunes Solidified with Cow-Blood

//Programmatic + Social + Financial

BEAUTY AND AWE

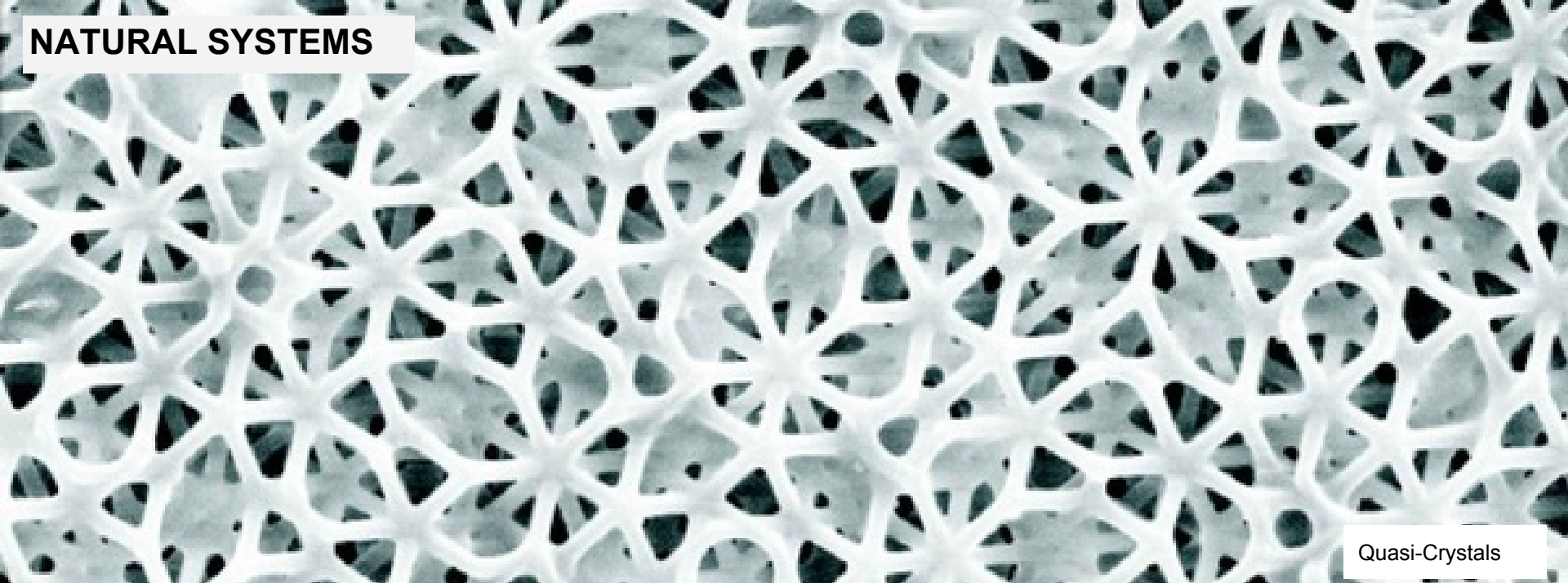


Alhambra: Spain

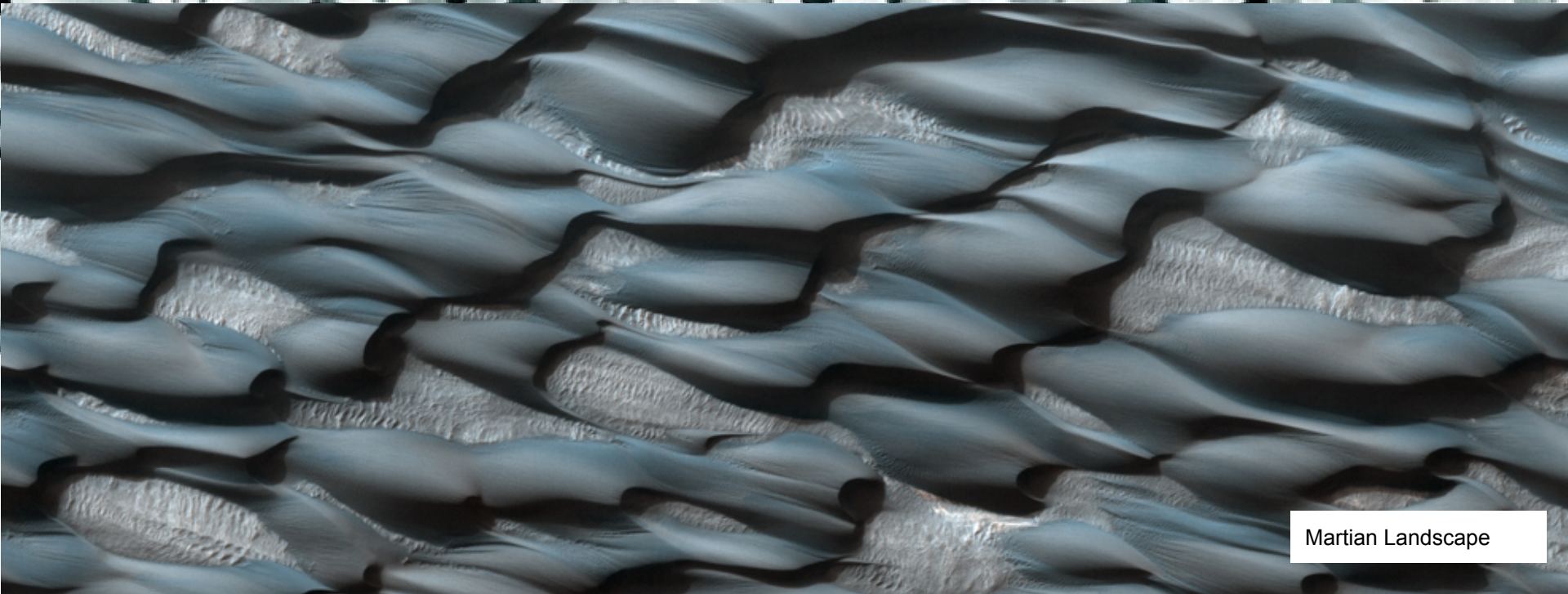
"We will begin with an intensive period of analysis and digitising of generative systems. 3 systems will be chosen by each student with a distinct emphasis on beauty. Systems may be natural, structural, geometrical, physical or mathematical, with an aim to understand the underlying rules through intensive cross testing and documentation of physical and digital experimentation"

BRIEF 01: TEST... PHYSICAL/DIGITAL

NATURAL SYSTEMS

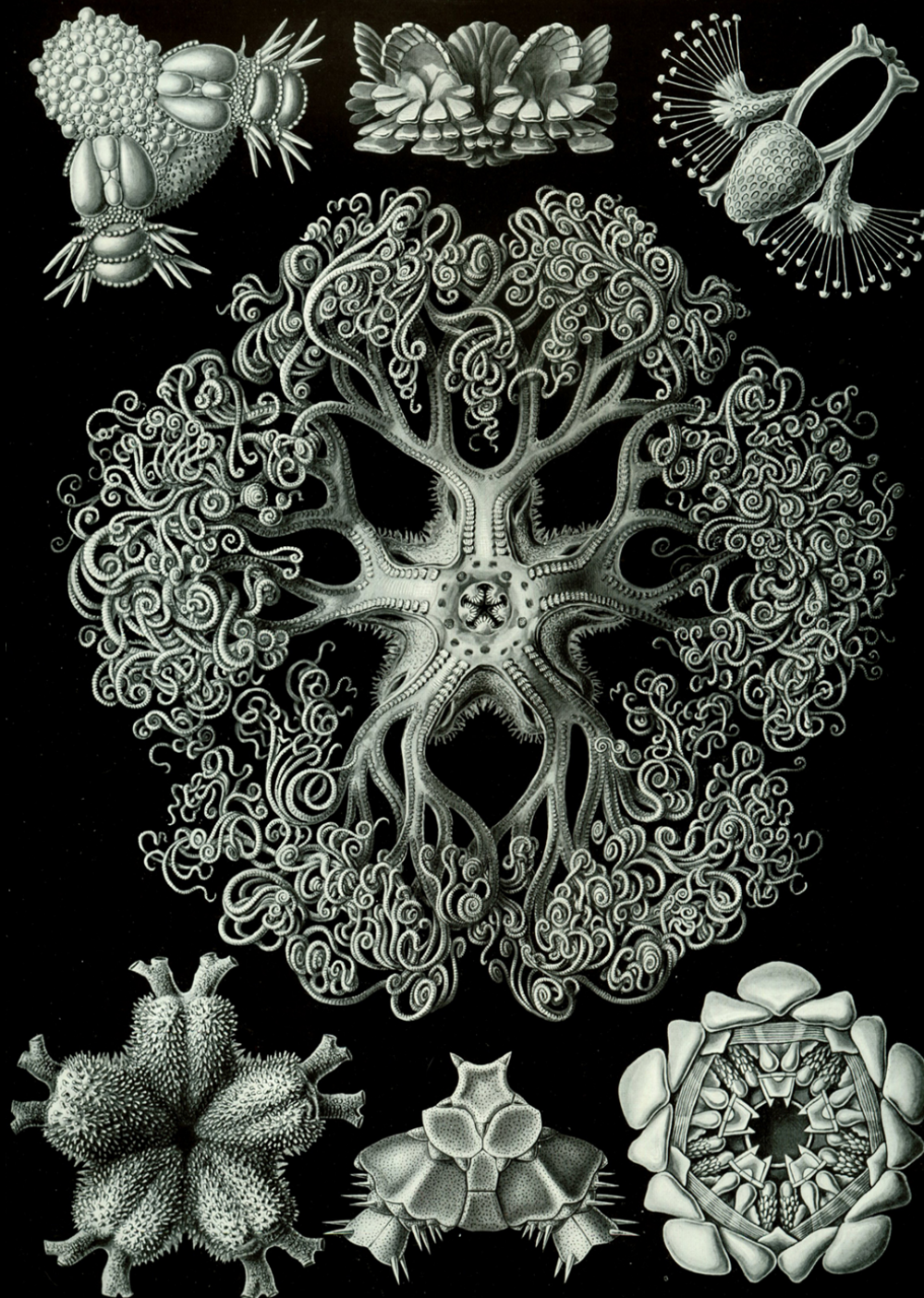


Quasi-Crystals

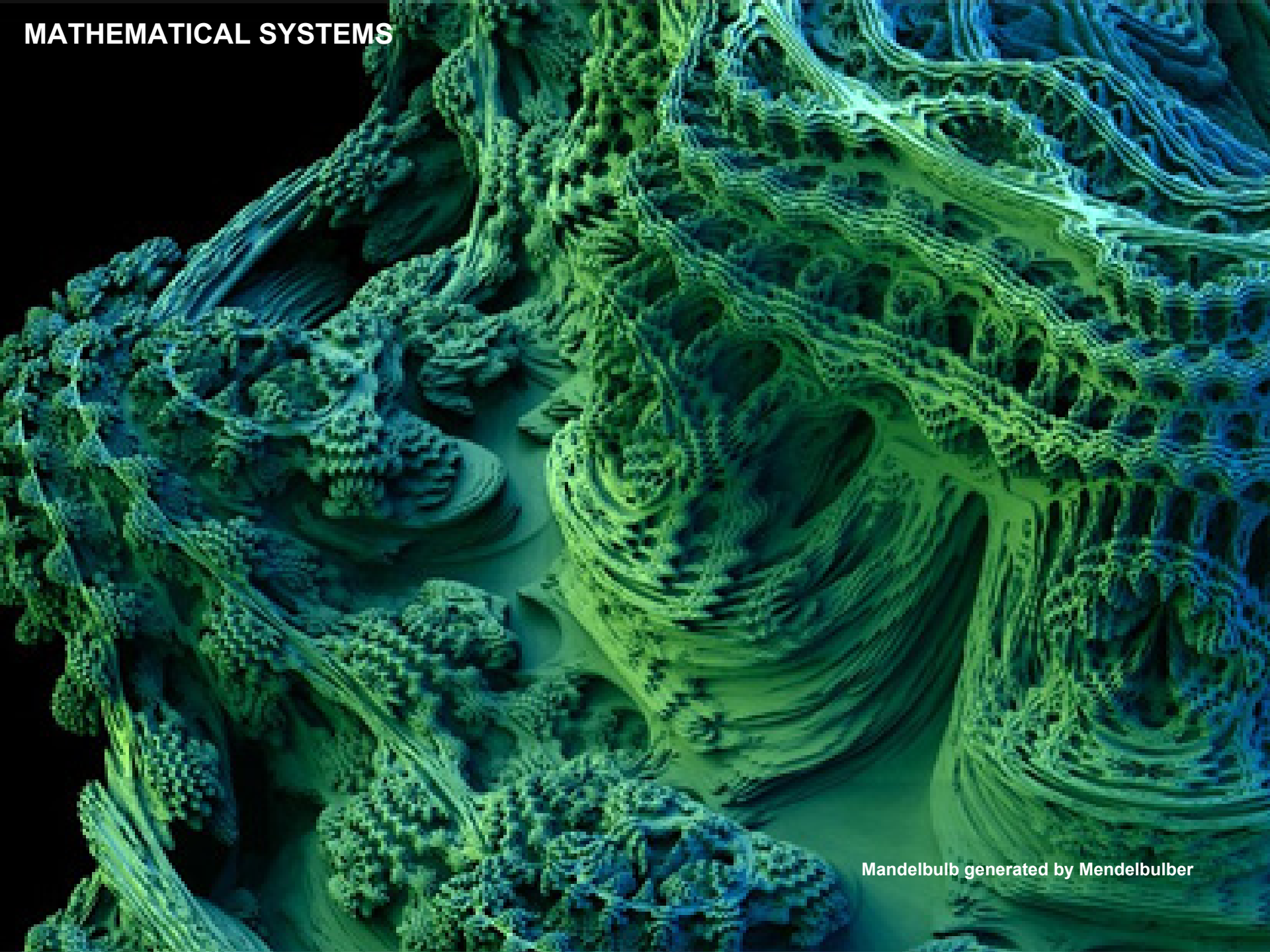


Martian Landscape

NATURAL SYSTEMS

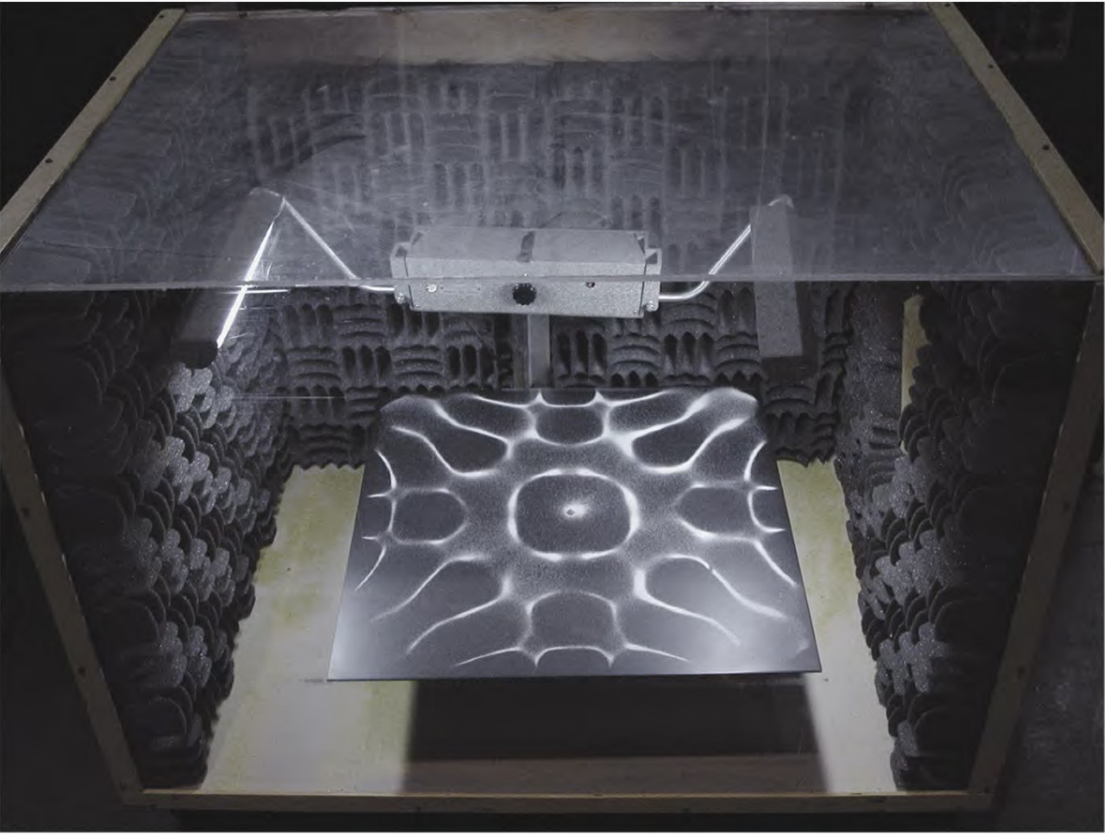
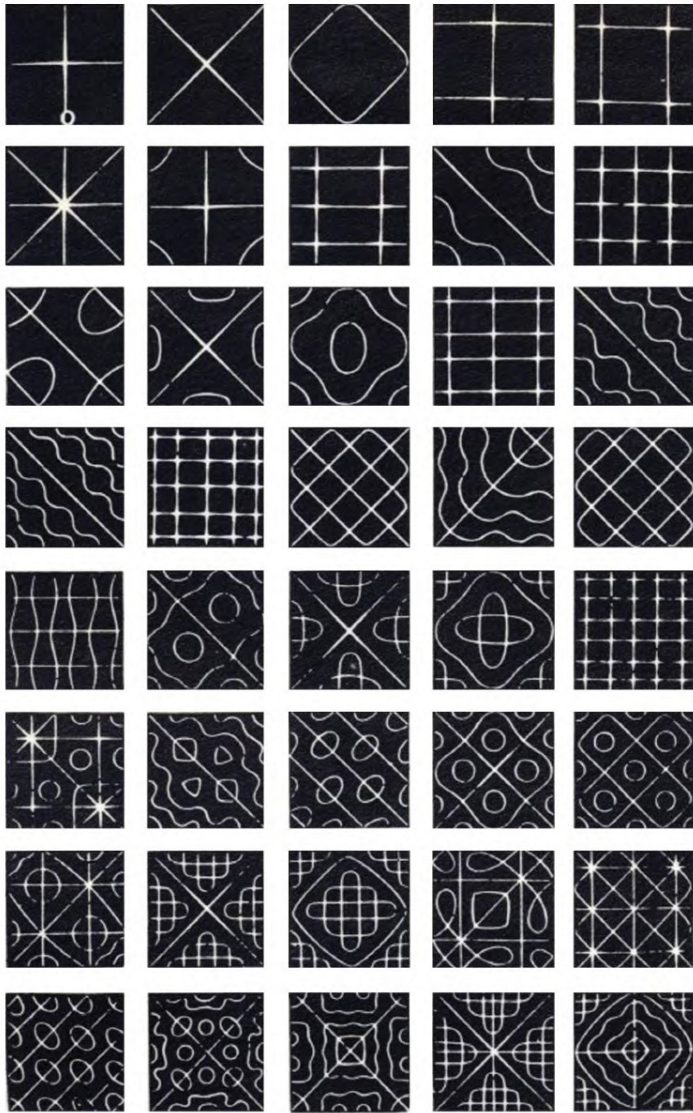


MATHEMATICAL SYSTEMS

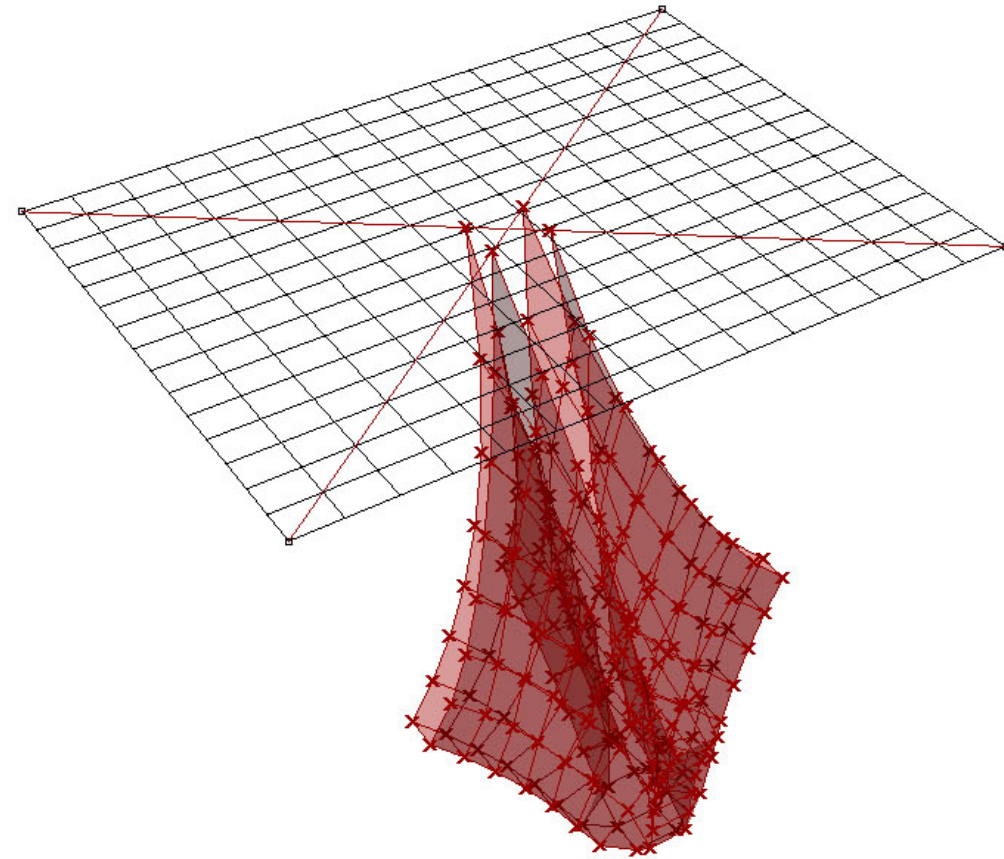


Mandelbulb generated by Mendelbulber

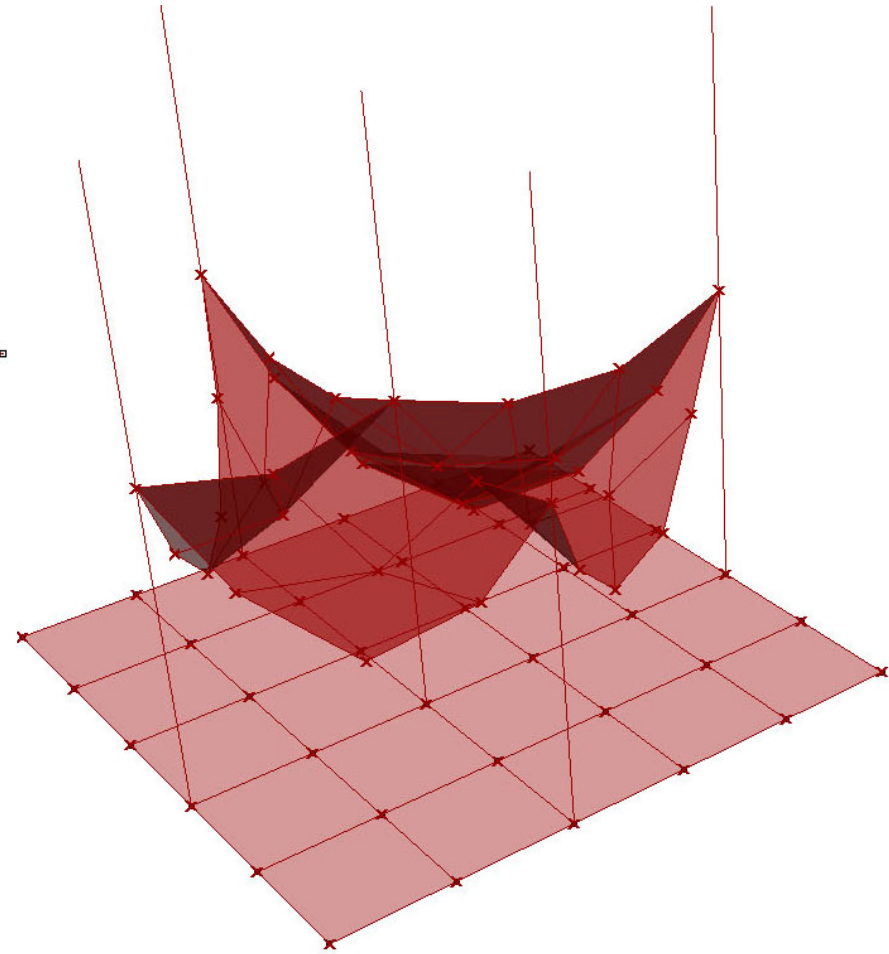
SELF-ORGANISING SYSTEMS



DIGITAL/PHYSICAL

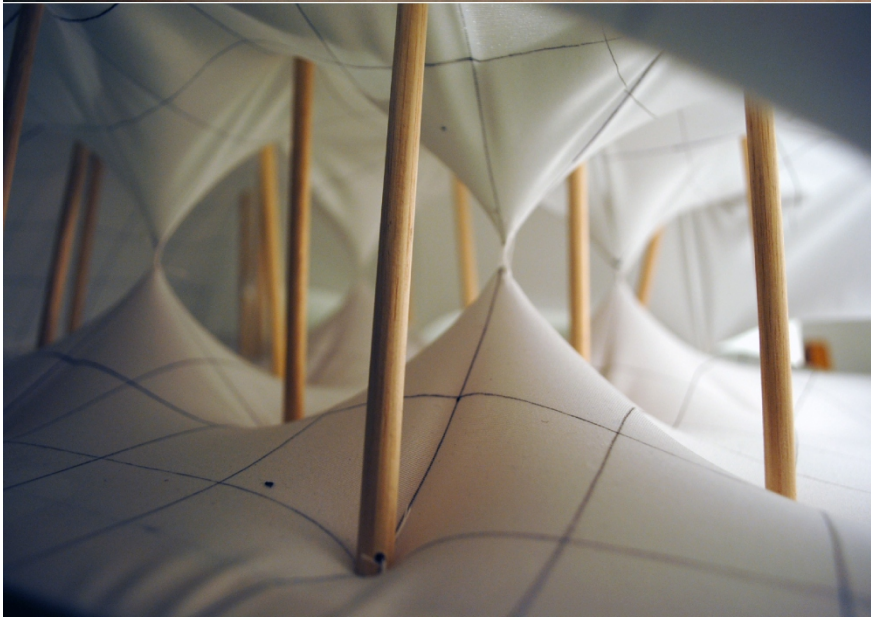


Jack Munro/Megan Sadler: Studies of Fabric



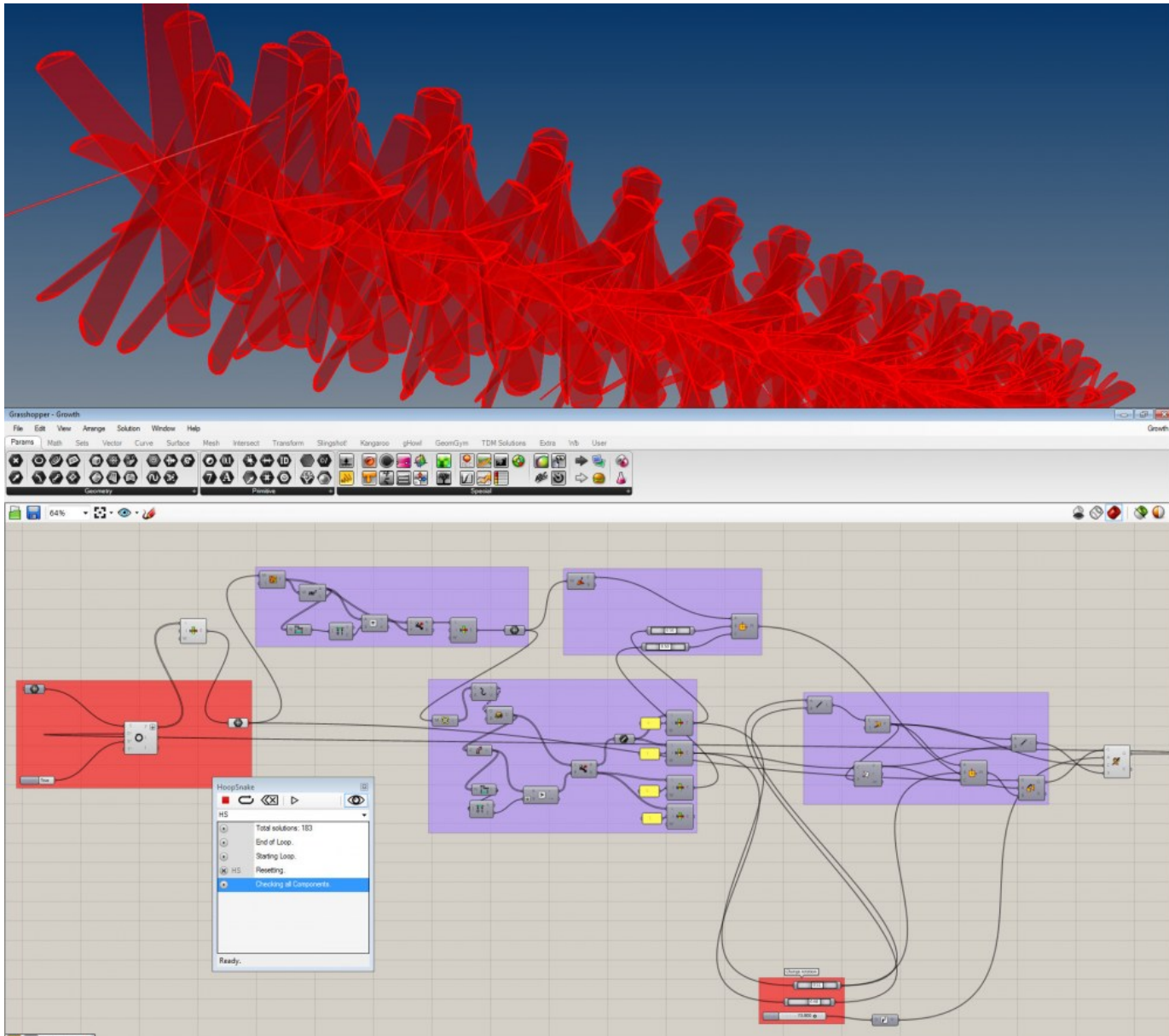
//Kangaroo Physics Modelling: Daniel Piker

DIGITAL/PHYSICAL

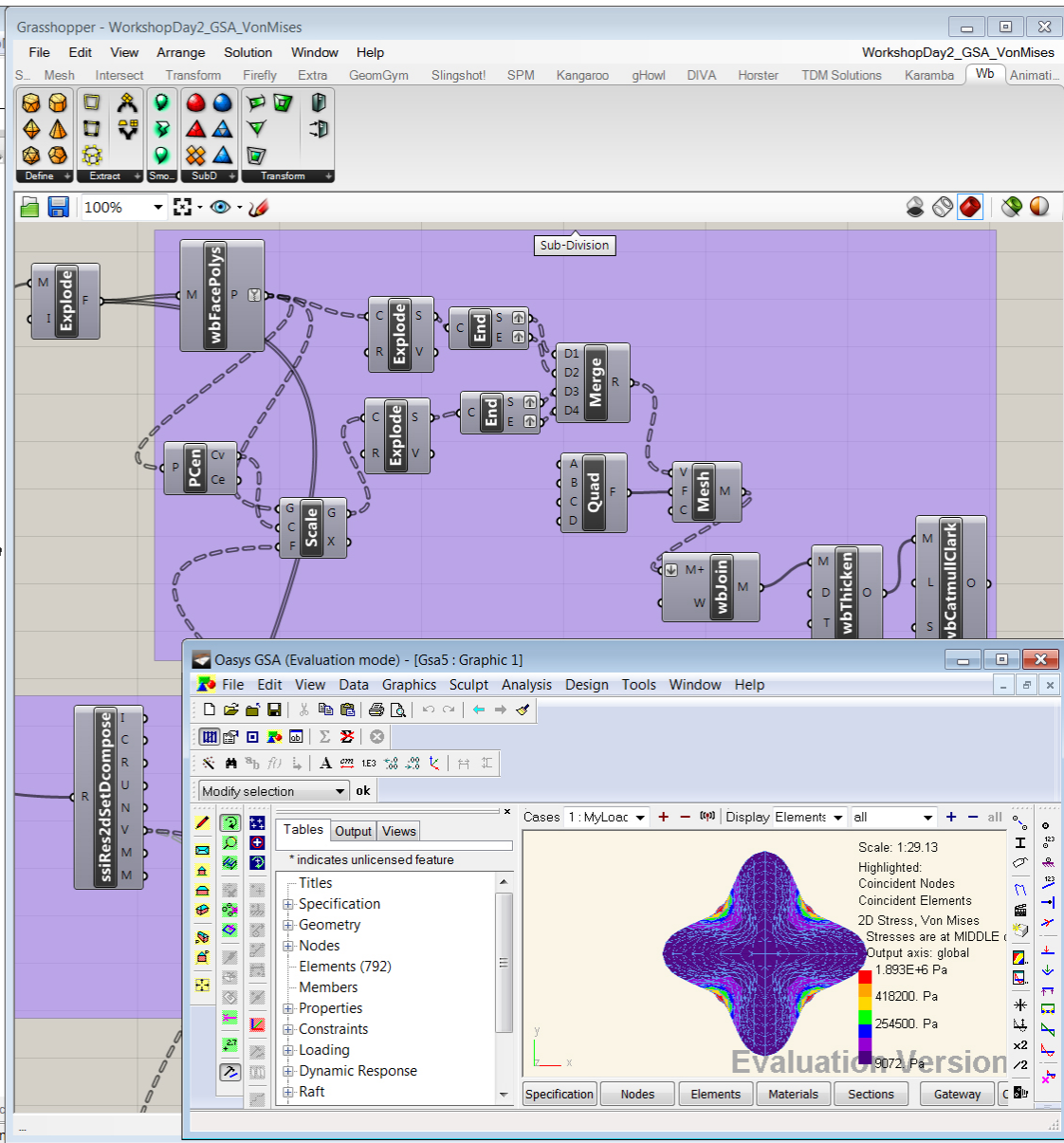


Megan Sadler: Fabric Models

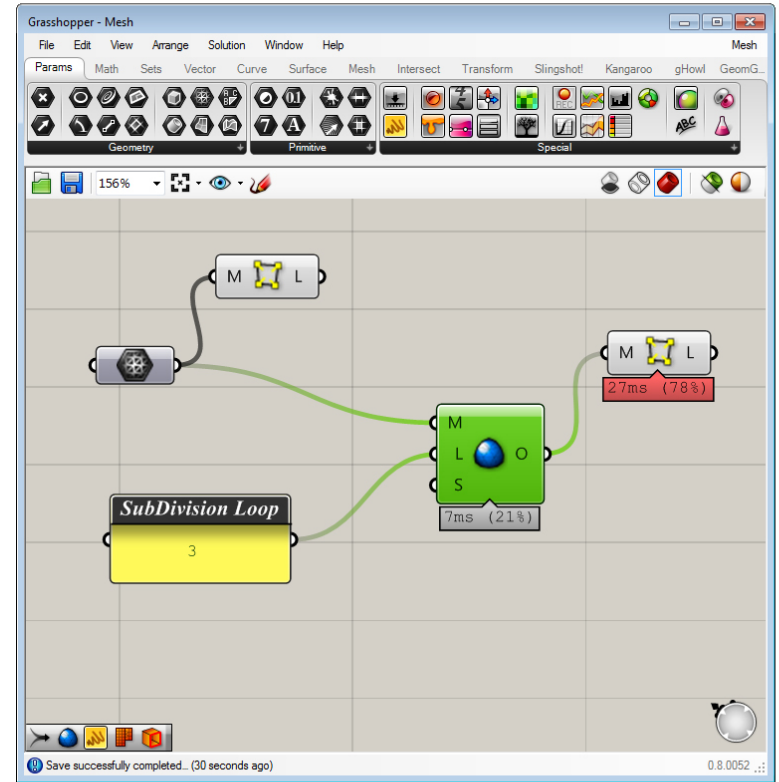
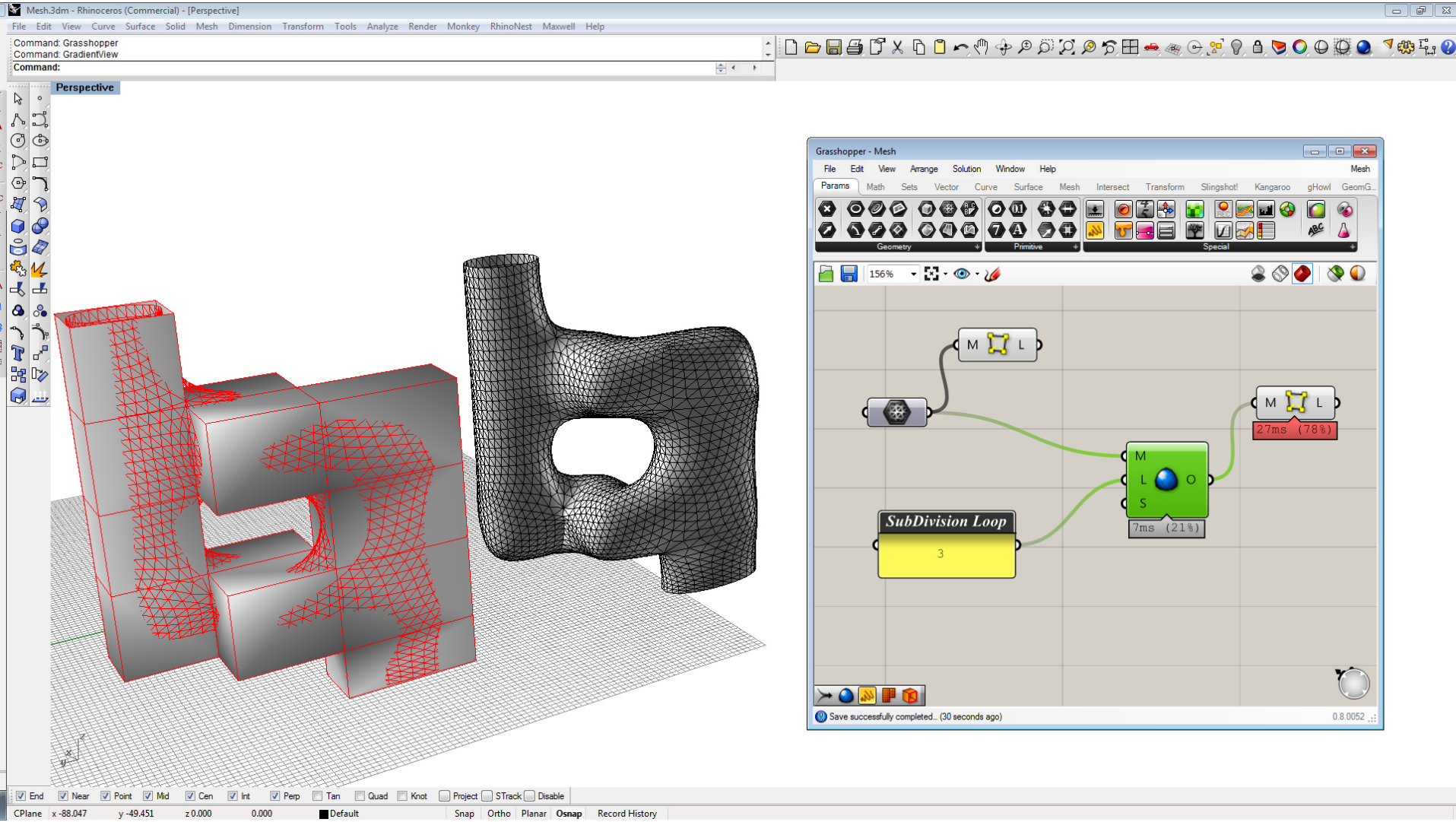
DIGITAL/PHYSICAL



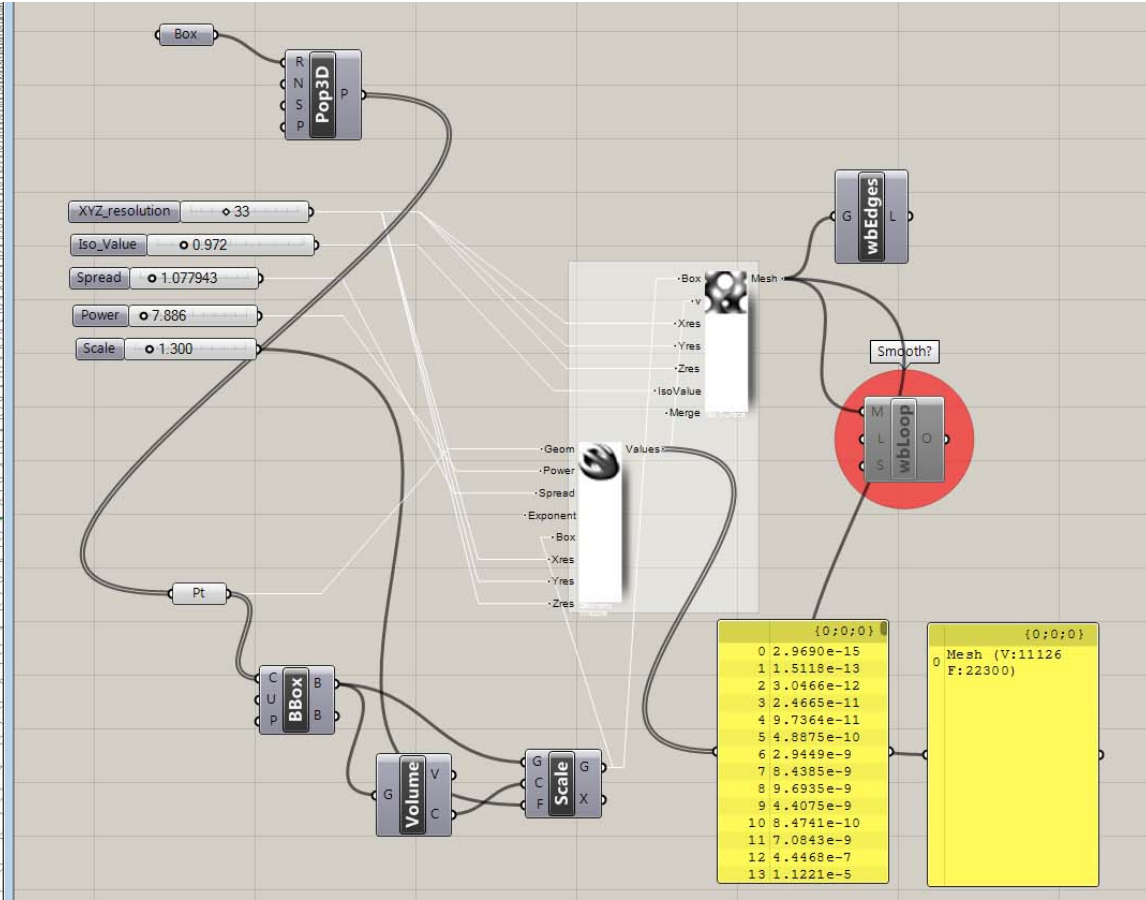
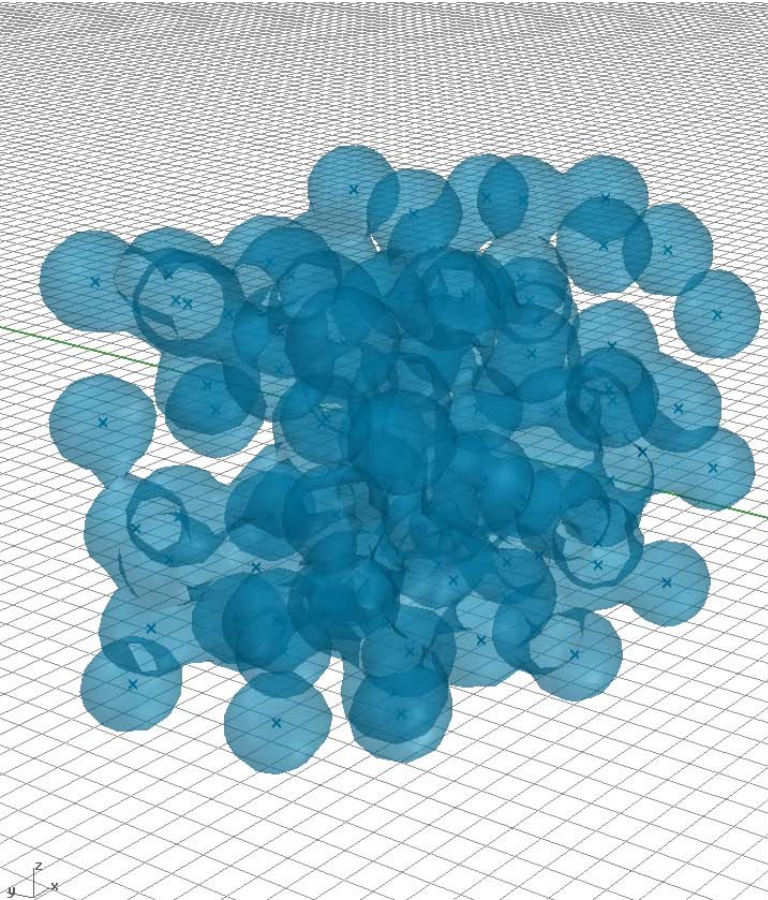
DIGITAL/PHYSICAL



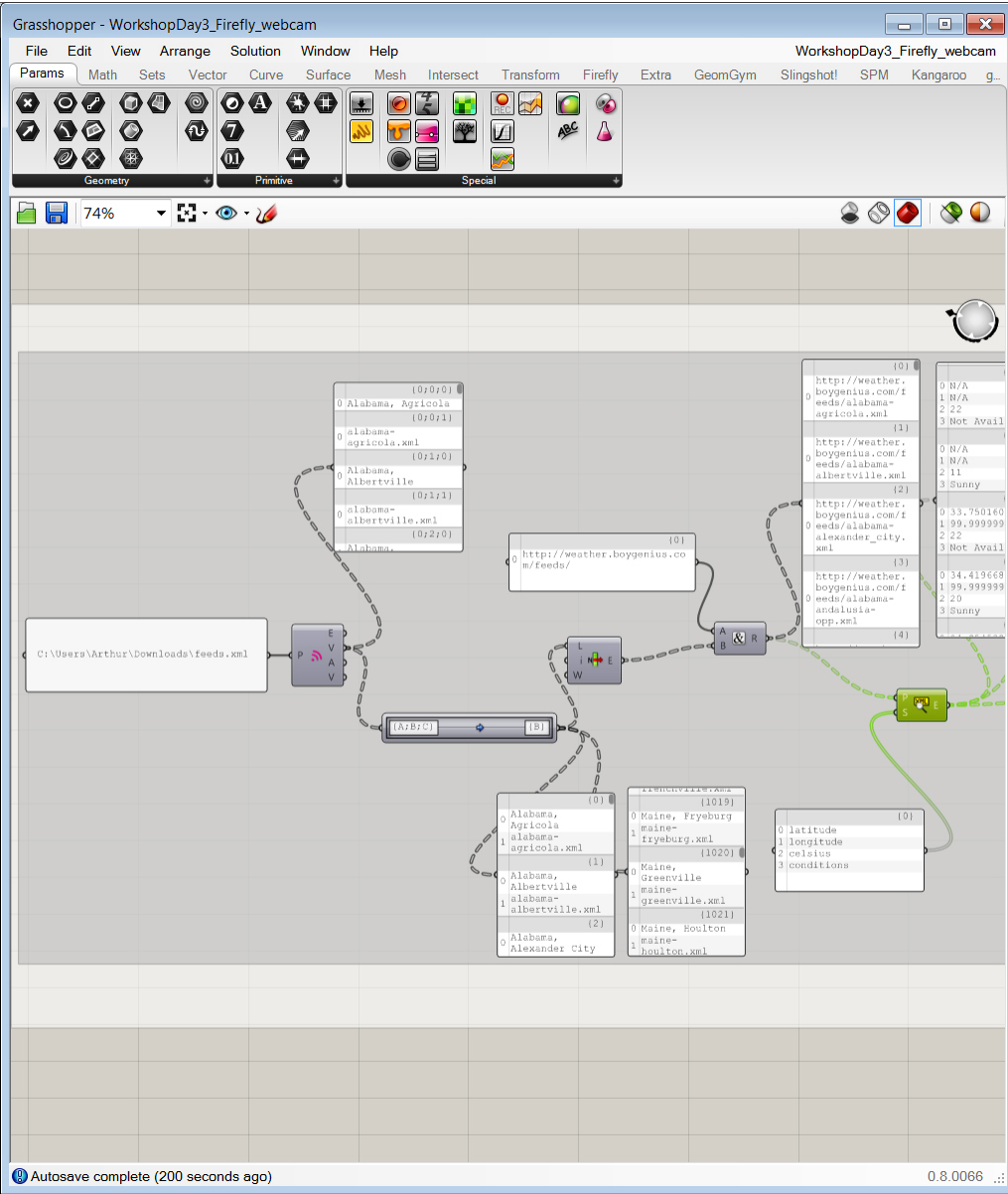
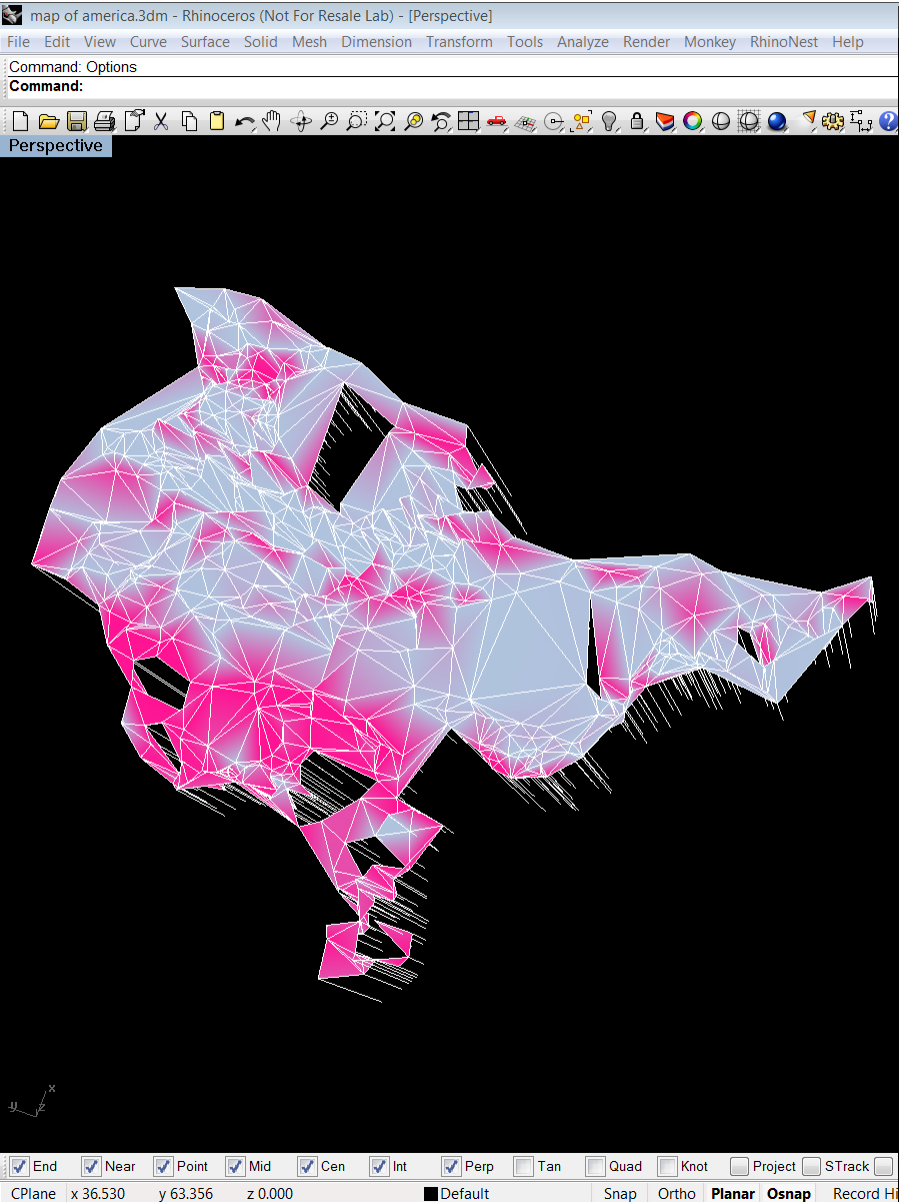
DIGITAL/PHYSICAL



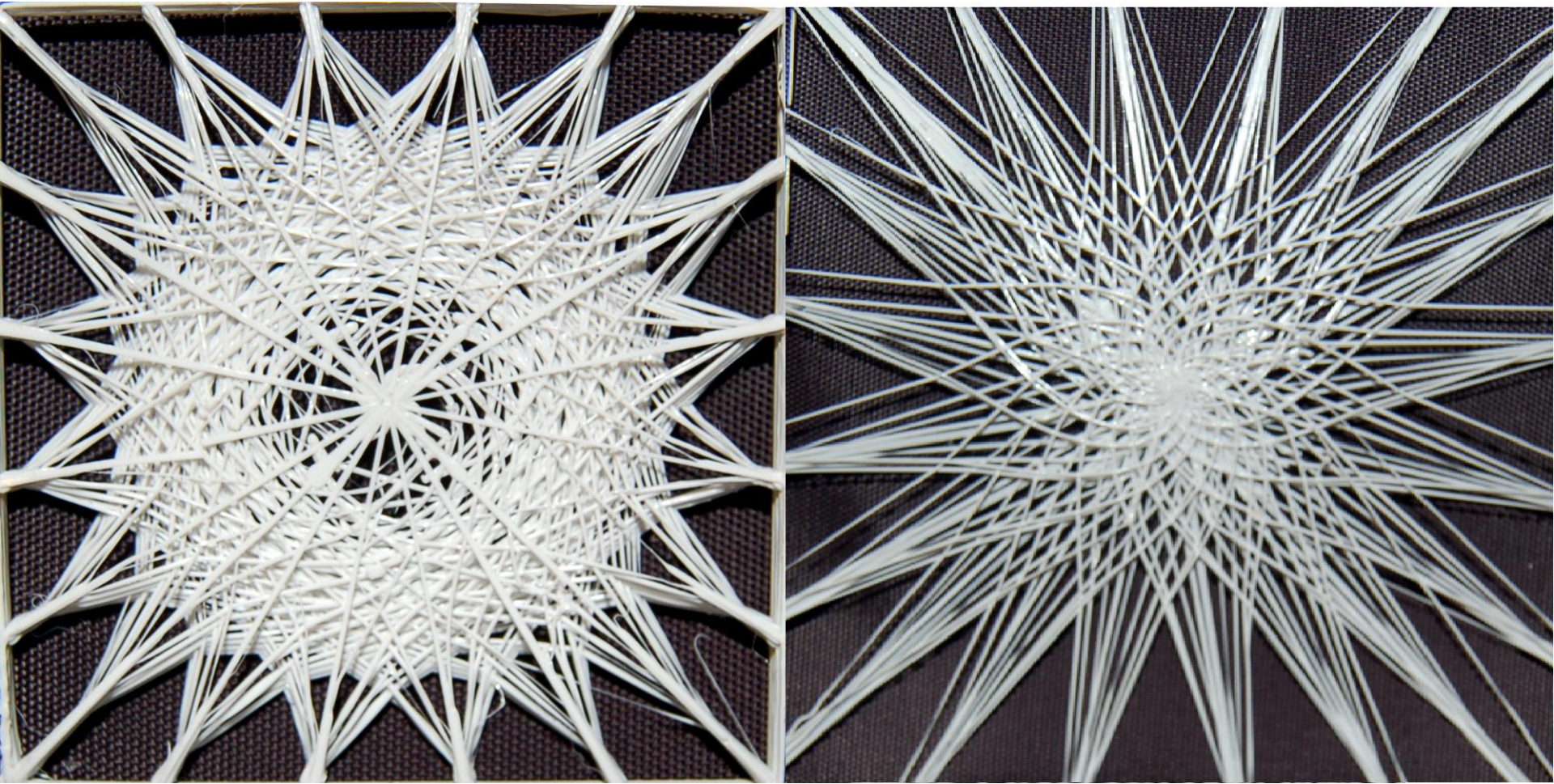
DIGITAL/PHYSICAL



DIGITAL/PHYSICAL

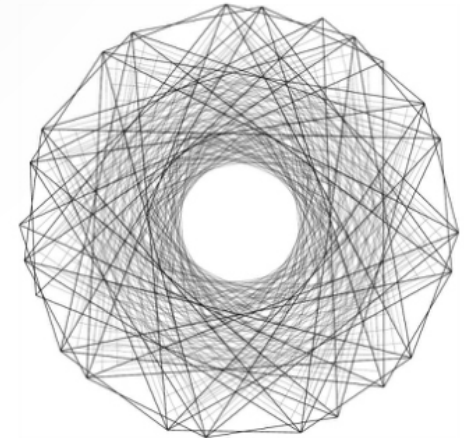
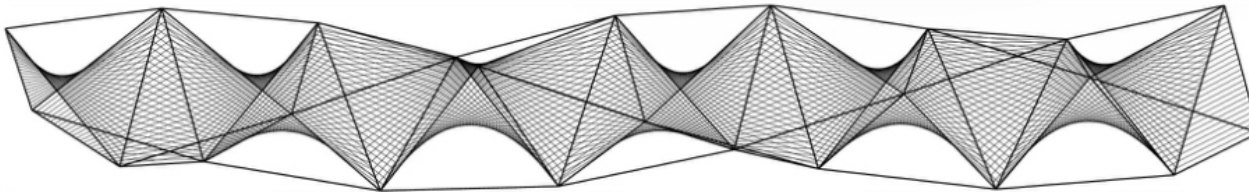
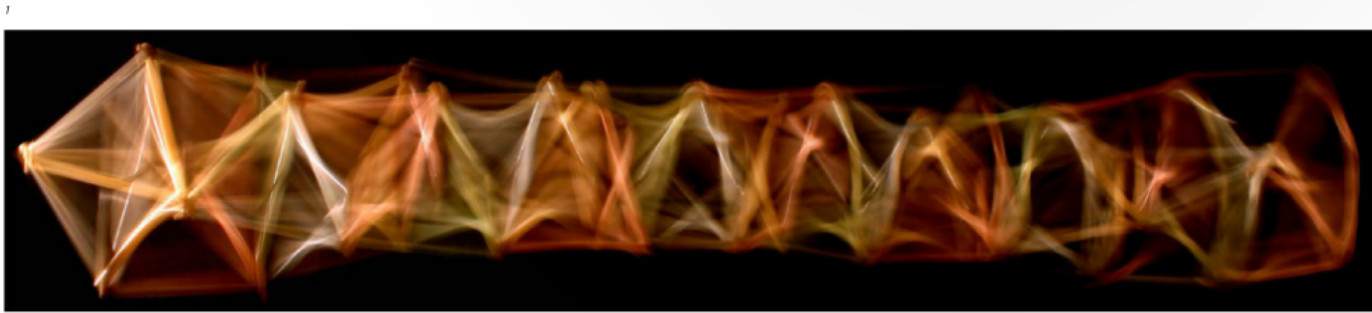
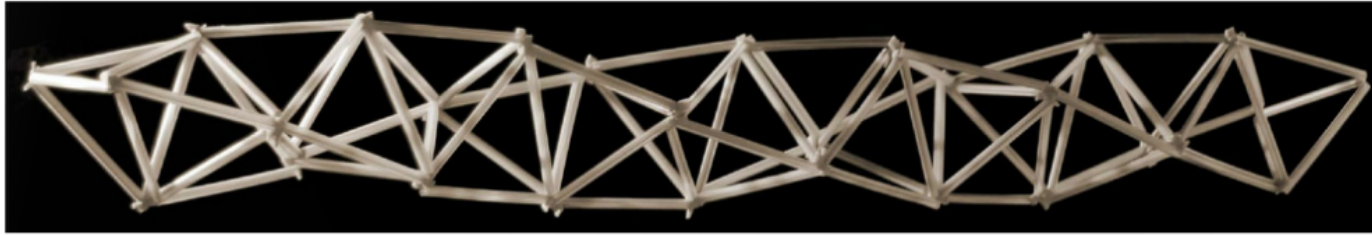


DIGITAL/PHYSICAL



//Silkworm: Adam Holloway, Arthur Mamou-Mani, Karl Kjelstrup-Johnson

EXPECTED OUTCOME



Regular tetrahelix

"The tetrahelix is a helical array of triple-bonded tetrahedra. We have a column of tetrahedra with straight edges, but when face-bonded to one another, and the tetrahedra's edges are interconnected, they altogether form a hyperbolic-parabolic, helical column. The column spirals around to make the helix, and it takes just ten tetrahedra to complete one cycle of the helix."

Synergetics, Buckminster Fuller

The tetrahelix pictured is constructed from regular tetrahedra as described by Buckminster Fuller [1].

The same form is rotated about its main axis to describe a series of interconnected hyperbolic volumes [2].

1. Tetrahelix composed from 26 regular tetrahedra attached to each other by three edges.
2. Tetrahelix rotating in space sweeps out a series of hyperboloid shaped volumes.
3. Side view of tetrahelix with internal hyperbolic paraboloids built in Generative Components
4. Top view of tetrahelix with internal hyperbolic paraboloids built in Generative Components

The Trip...

After brief one we will take a trip to Zurich...





Subdivided Columns - A New Order: Michael Hensmeyer



Digital assembly experimentation: Gramazio & Kohler



Fun!

'On our return to England we will begin brief two'

02: TEMPLATE...

Option 1) Burning Man

Continuing our exploration of the unique cultural event that is Burning Man Festival, a lesson in radical self-reliance in an extreme environment, students will propose beautiful and programmatically responsible low cost temporary structures with the aim of inspiring awe, against the dramatic backdrop of alternative culture and unique urban planning experimentation.

Option 2) WIKI WIKI

Inspired by the Wikihouse project by 00:/ Architect, students choosing this option will also develop a low cost small scale structure based on their previous experiment with an open site and programme. The fabrication and assembly process will be documented in a downloadable manual which should be accessible and editable by anyone.

OPTION 1: Burning Man



Black Rock City (POP 50,000)

10 KEY PRINCIPLES

1. *Radical Inclusion*
2. *Gifting*
3. *Decommodification*
4. *Radical Self-reliance*
5. *Radical Self-expression*
6. *Communal Effort*
7. *Civic Responsibility*
8. *Leaving No Trace*
9. *Participation*
10. *Immediacy*



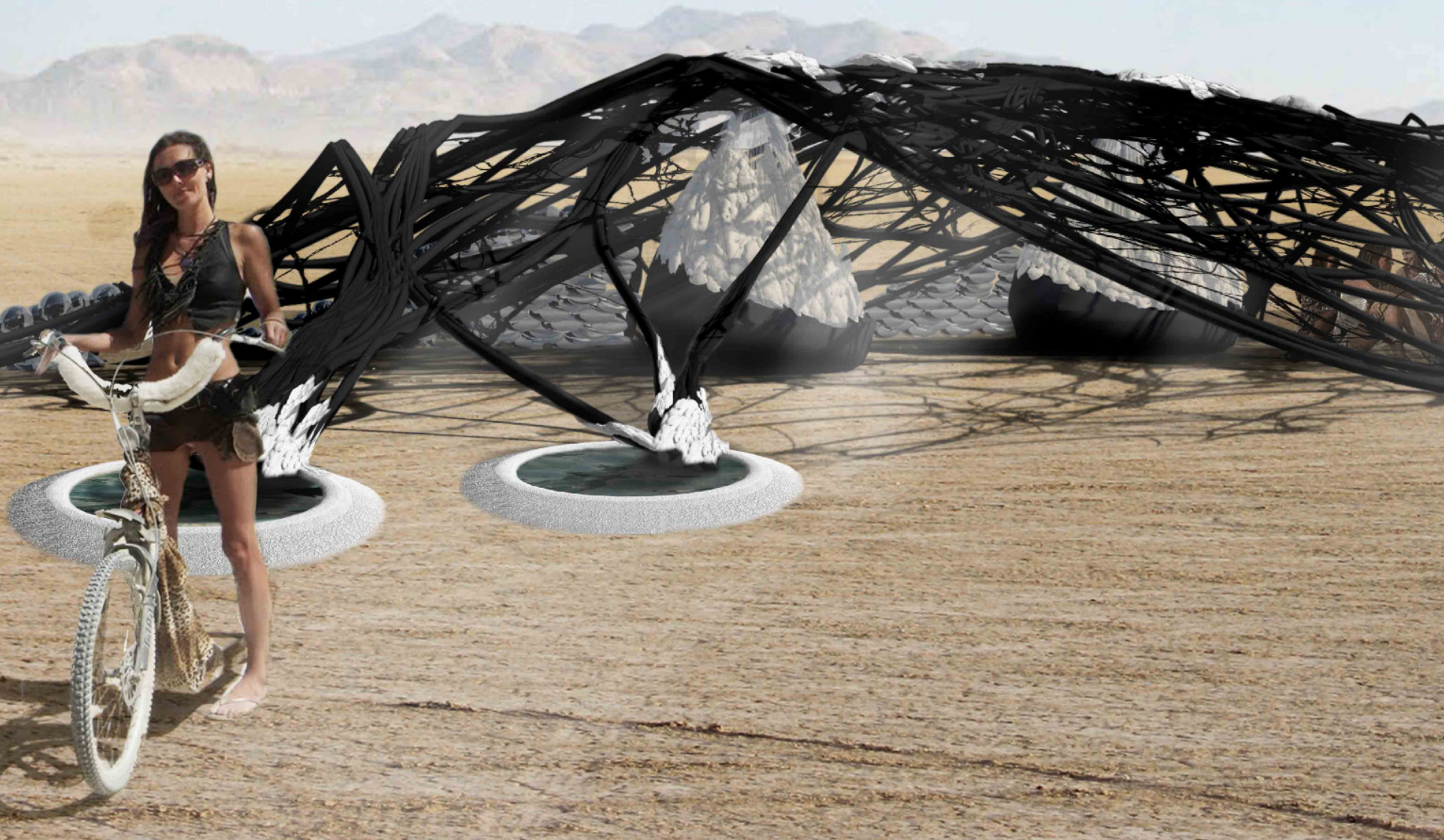
WONDER AND AWE



Anam Hasan: ladder to the burning clouds

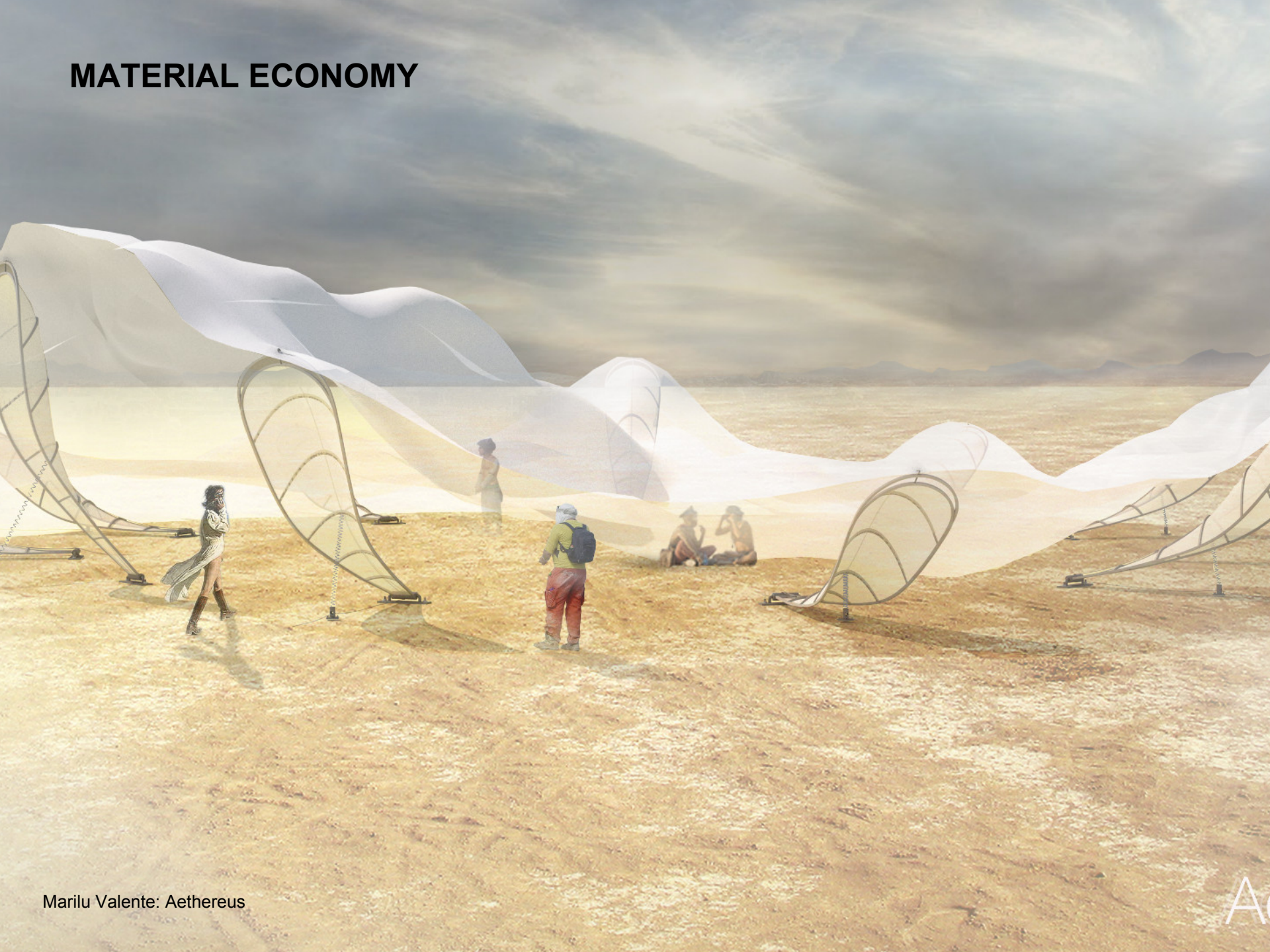


SELF SUFFICIENCY



Carolyn Butler: Solar thermal salt spa

MATERIAL ECONOMY

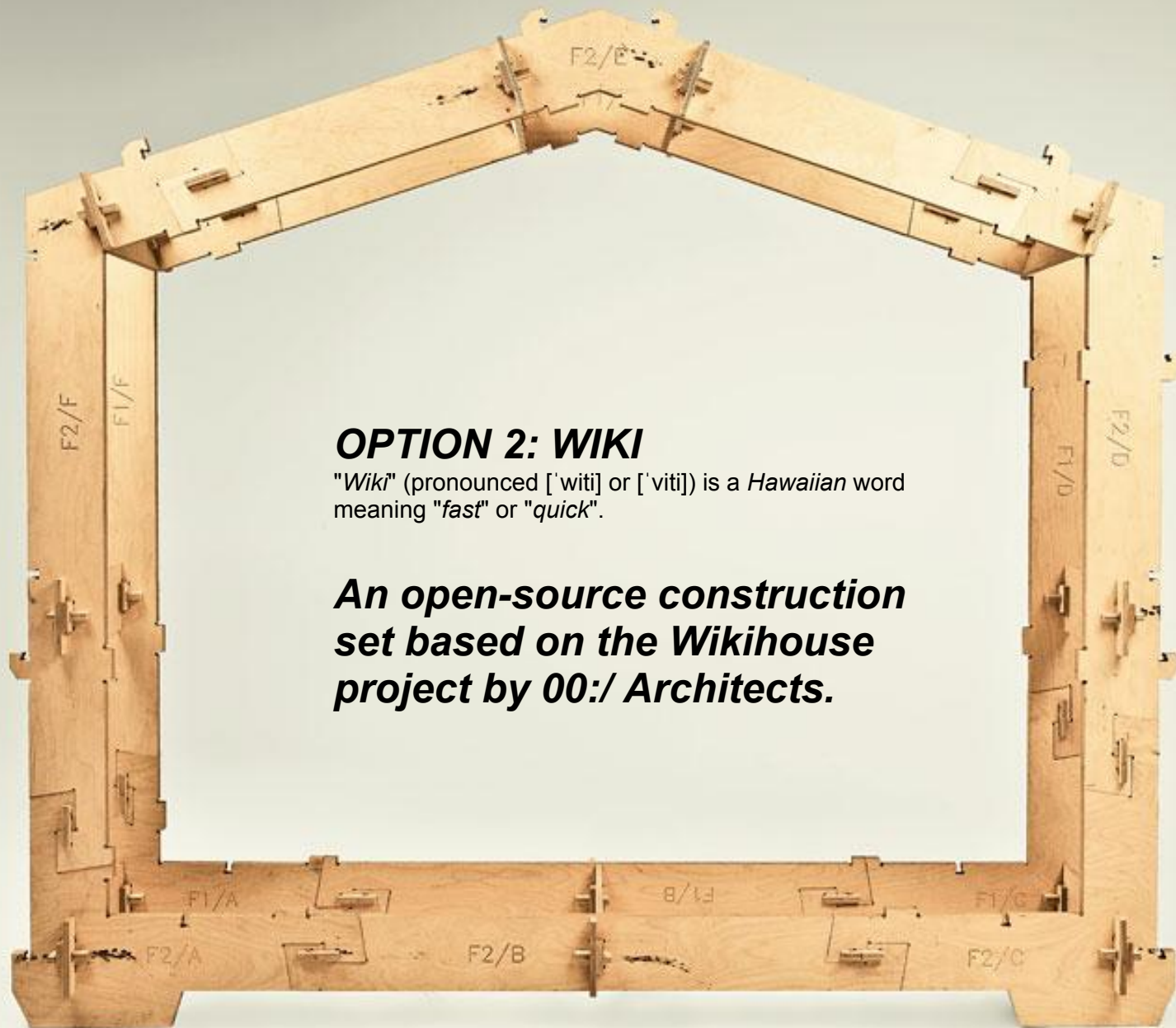


Marilu Valente: Aethereus

PLAYFULNESS



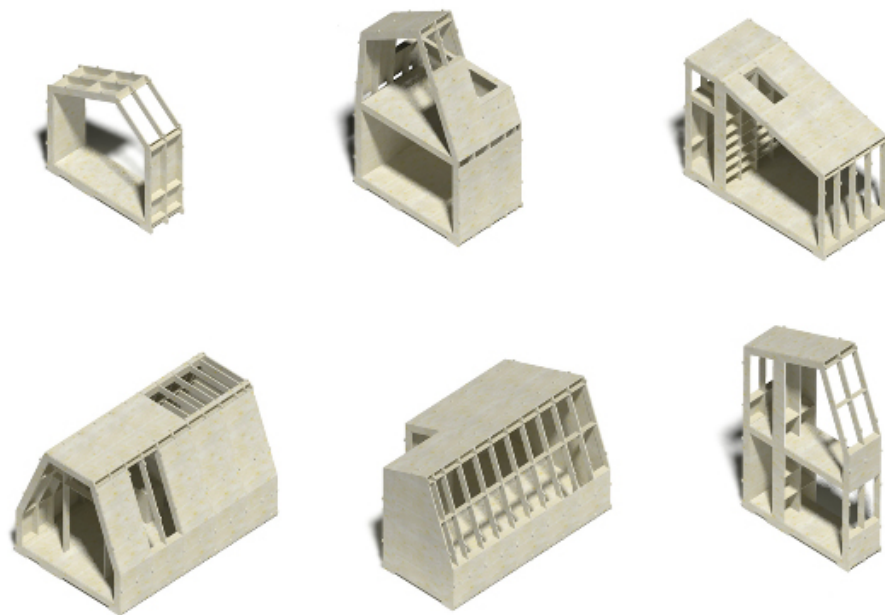
Chris Ingram: Homo Ludens play structure



OPTION 2: WIKI

"*Wiki*" (pronounced [*'witi*] or [*'viti*]) is a *Hawaiian* word meaning "*fast*" or "*quick*".

An open-source construction set based on the Wikihouse project by 00:/ Architects.



Open Source Construction Set.



"The innovative concept opens opportunities to the public to experiment with building their own personalised structures."



[Terms of Use...](#)





1 KODAK 160VC 2 KODAK 160VC 3 KODAK 160VC 4 KODAK 160VC 5 KODAK 160VC 6 KODAK 160VC



7 KODAK 160VC 8 KODAK 160VC 9 KODAK 160VC 10 KODAK 160VC 11 KODAK 160VC 12 KODAK 160VC



13 KODAK 160VC 14 KODAK 160VC 15 KODAK 160VC 16 KODAK 160VC 17 KODAK 160VC 18 KODAK 160VC



19 KODAK 160VC 20 KODAK 160VC 21 KODAK 160VC 22 KODAK 160VC 23 KODAK 160VC 24 KODAK 160VC



25 KODAK 160VC 26 KODAK 160VC 27 KODAK 160VC 28 KODAK 160VC 29 KODAK 160VC 30 KODAK 160VC

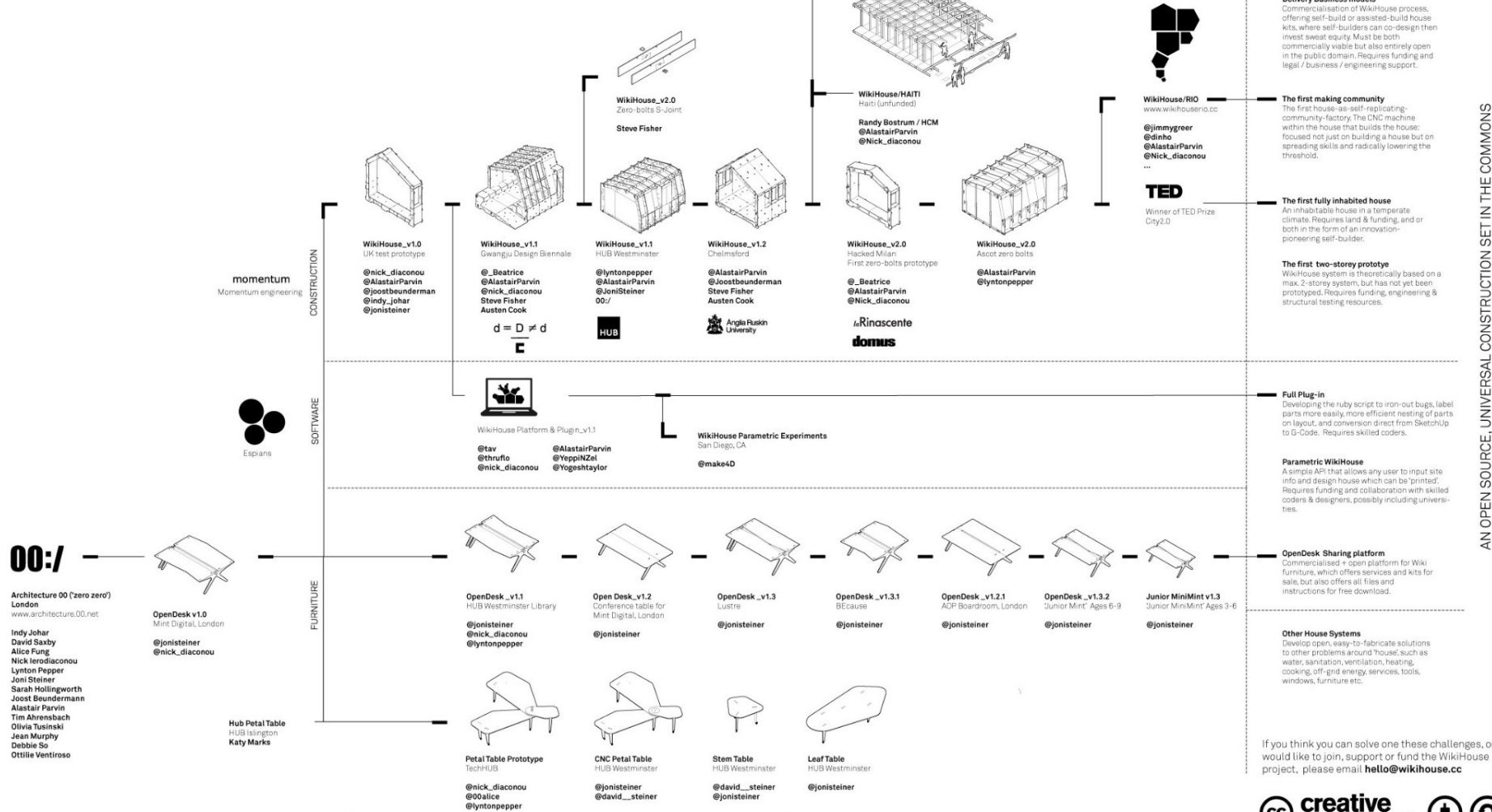


WikiHouse®

VERSION MAP

07. 2012

Map of project evolution, showing prototypes & the full team of collaborators. What, who, where next?



FUTURE GOALS

- Structural Improvements**
Vital advances in structural performance and materials efficiency, plus wider gauge for more design flexibility on doorways etc. Requires funding & support.
- New Materials**
Development of system to work with alternative materials such as recycled boards, recycled plastics and bio-polymers. This will radically improve efficiency and lower cost and access threshold, as well as increasing environmental sustainability. Requires funding & collaboration.
- Delivery Business models**
Commercialisation of WikiHouse process, offering self-build or assisted-build house kits, where self-builders can co-design their invest sweat equity. Must be both commercially viable but also entirely open in the public domain. Requires funding and legal / business / engineering support.
- The first making community**
The first house-as-self-replicating community-factory. The CNC machine within the house that builds the house; focused not just on building a house but on spreading skills and radically lowering the threshold.
- The first fully inhabited house**
An inhabitable house in a temperate climate. Requires land & funding, and/or both in the form of an innovation-pioneering self-builder.
- The first two-storey prototype**
WikiHouse system is theoretically based on a max. 2-storey system, but has not yet been prototyped. Requires funding, engineering & structural testing resources.

AN OPEN SOURCE, UNIVERSAL CONSTRUCTION SET IN THE COMMONS

00: /

Architecture 00 ('zero zero')
London
www.architecture.00.net

Indy Johar
David Saxby
Alice Fung
Nick IeroDiaconu
Lynton Pepper
Joni Steiner
Sarah Hollingsworth
Joost Beundermann
Alastair Parvin
Tim Ahrensbach
Olivia Tusinski
Jean Murphy
Debbie So
Otilie Ventiroso

OpenDesk v1.0
Mint Digital, London

@jonisteiner
@nick_diaconou

Hub Petal Table
HUB Islington
Katy Marks

2011

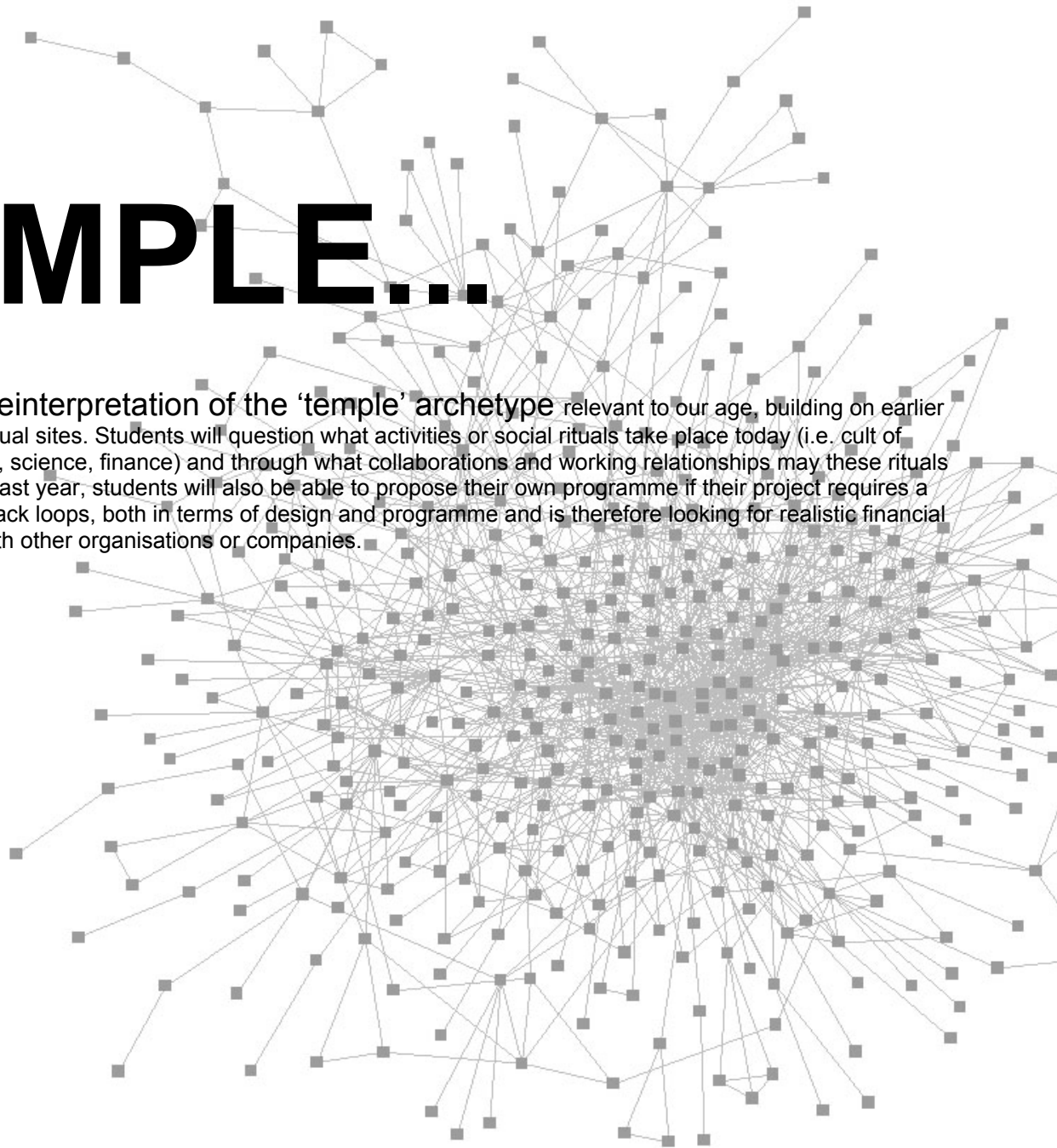
2012



If you think you can solve one these challenges, or would like to join, support or fund the WikiHouse project, please email hello@wikihouse.cc

03: TEMPLE...

We are looking for a modern reinterpretation of the 'temple' archetype relevant to our age, building on earlier work, with students free to propose individual sites. Students will question what activities or social rituals take place today (i.e. cult of celebrity, media, brands, Internet, ecology, science, finance) and through what collaborations and working relationships may these rituals sporn contemporary temples. Similarly to last year, students will also be able to propose their own programme if their project requires a different path. DS10 is interested in feedback loops, both in terms of design and programme and is therefore looking for realistic financial models, creating dynamic relationships with other organisations or companies.





Angkor Wat, Cambodia



Borobudur: Indonesia



Stonehenge: England



Chichen-itza Pyramid: Mexico



Pyramids: Egypt



Thomas Heatherwick: Buddhist Temple



Jacob Alsop: Quasi Church



Jacob Alsop: Quasi Church



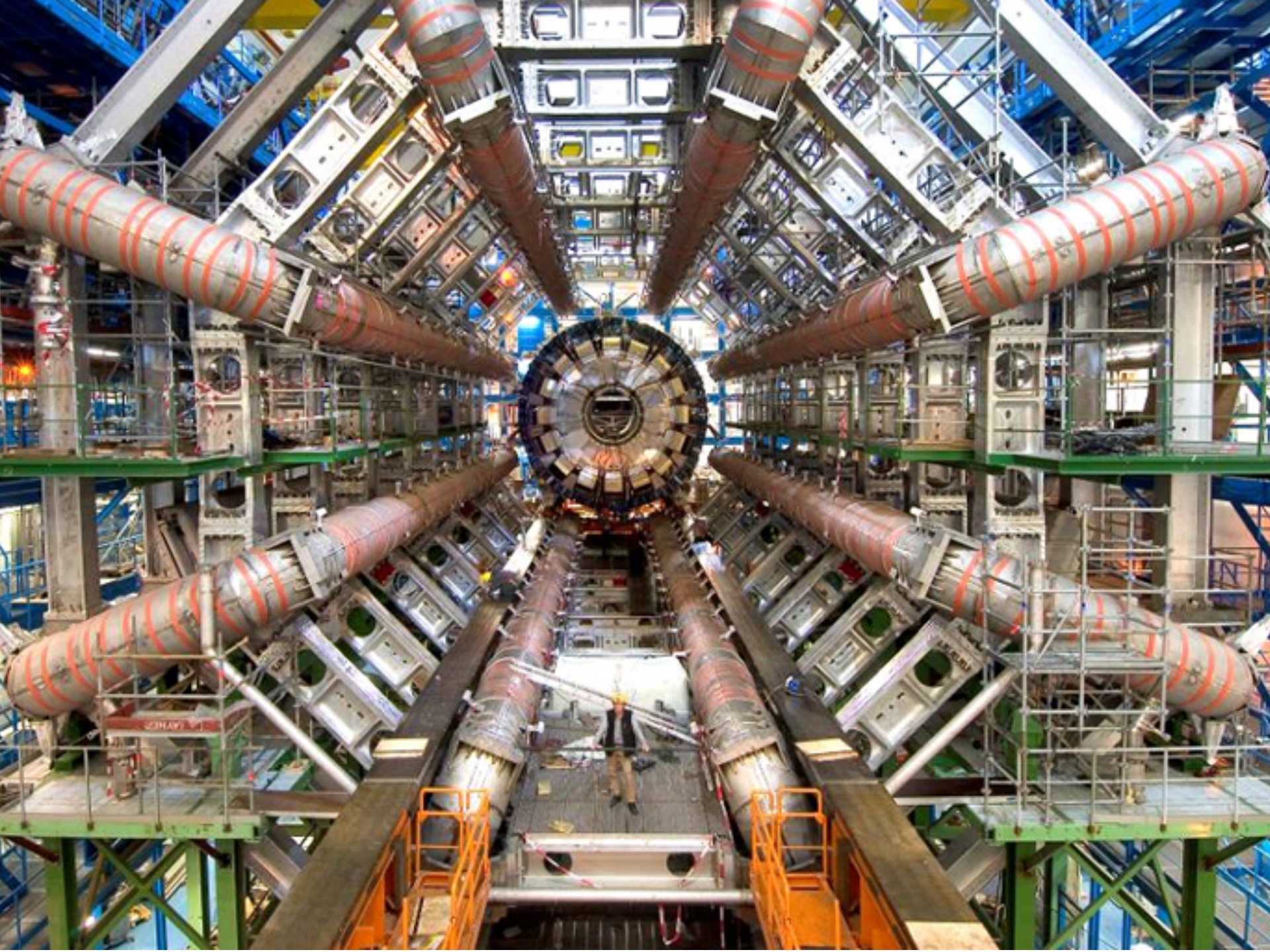
ΔΚΡΟΠΟΛΦΣ
FOR SALE

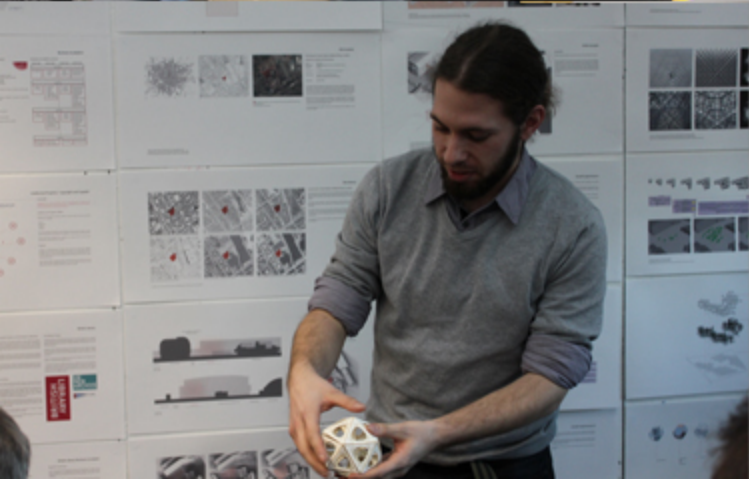




CAPITALISM IS A RELIGION







DS10

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