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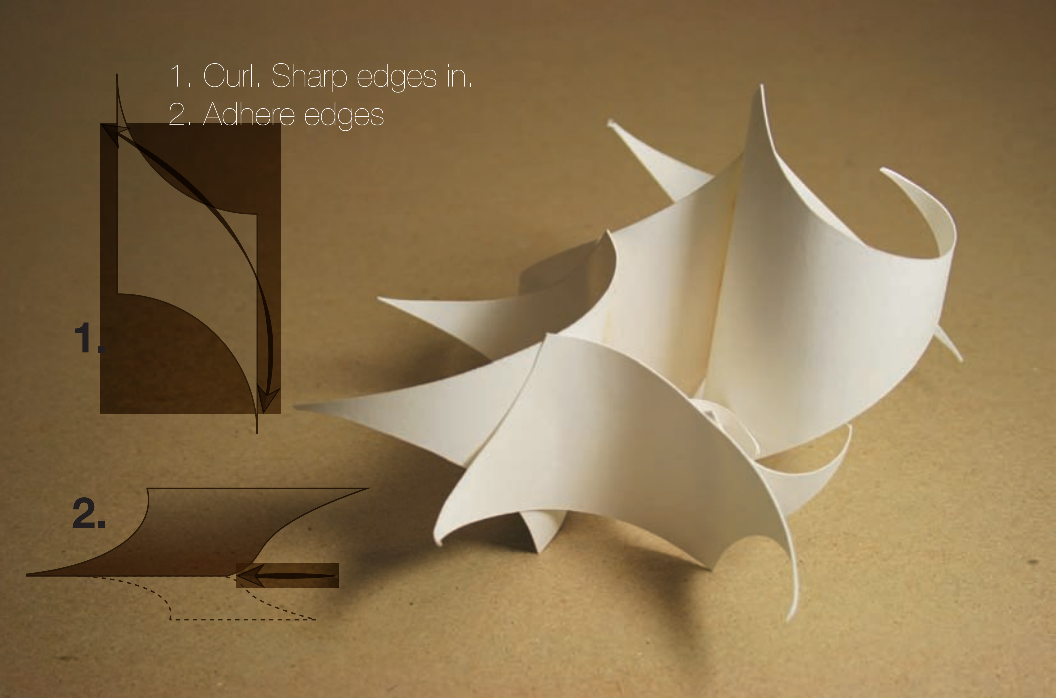
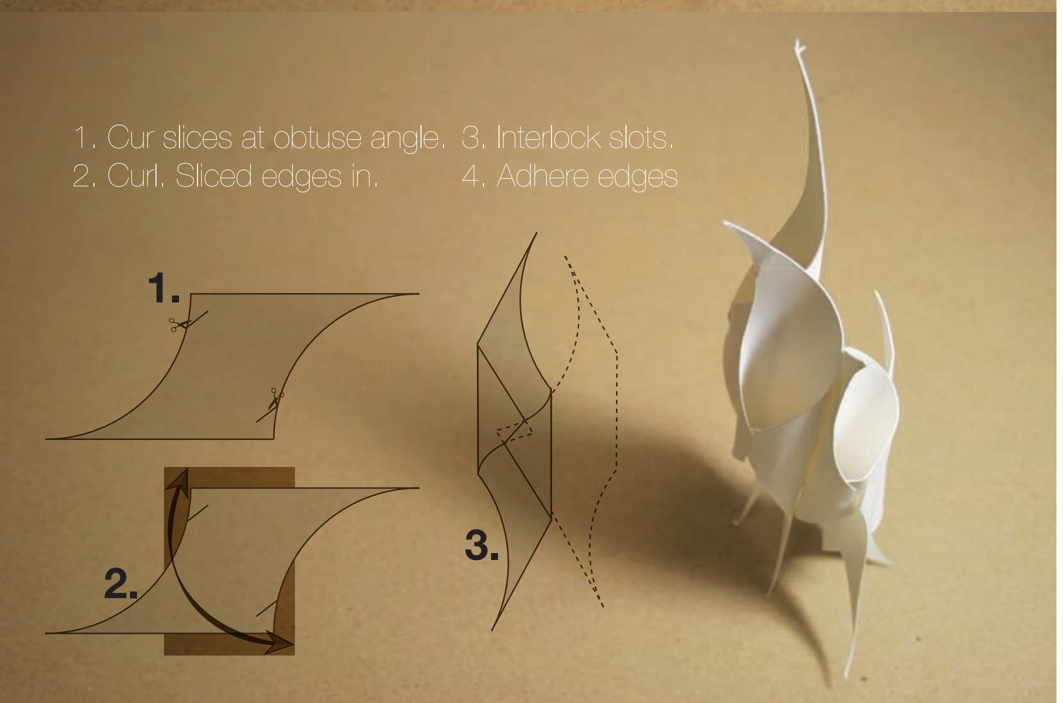
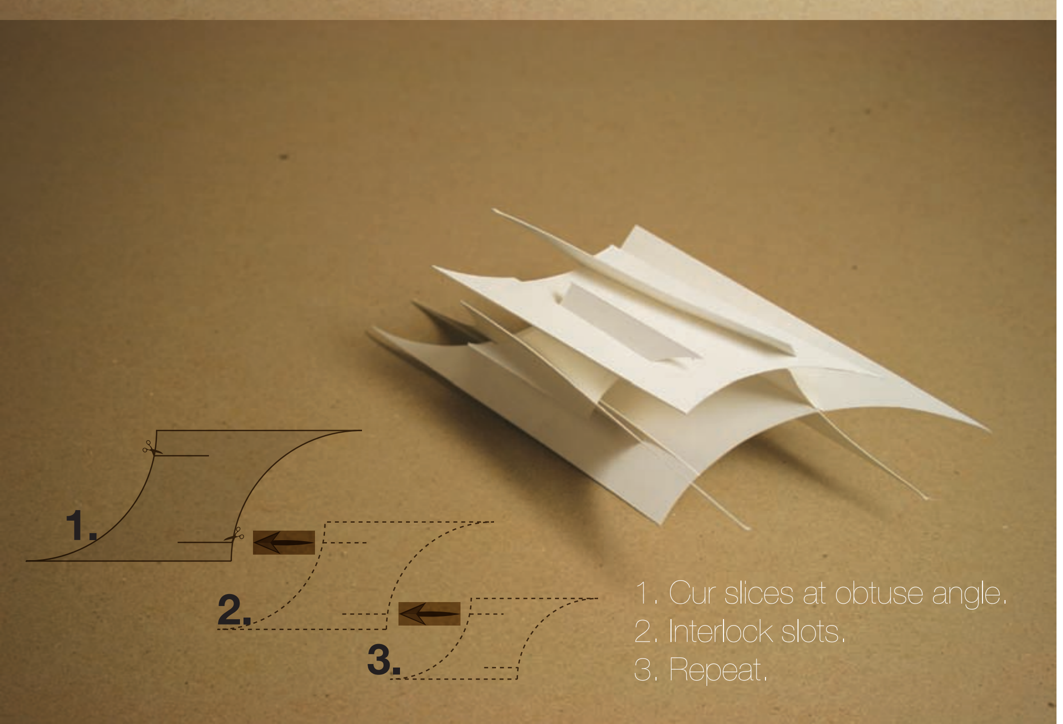
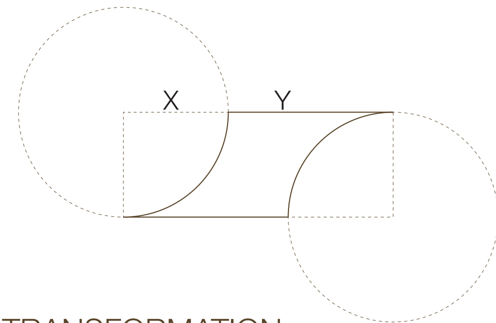
1008444
EVDA 543- Graphics II- Winter 2013
Submitted: April 23, 2013

- EVDA 543 Graphics II - Winter 2013 - Student name -

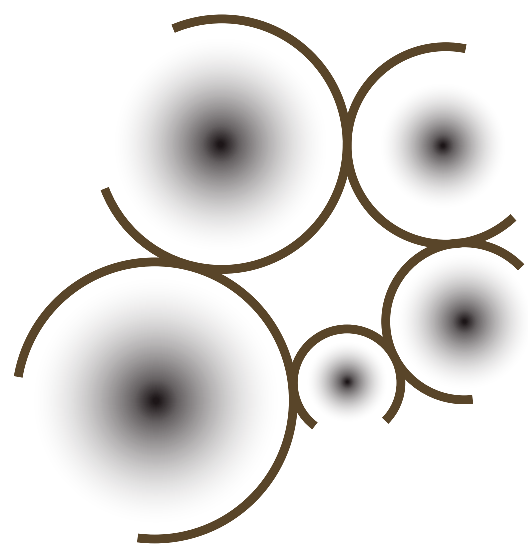








TRANSFORMATION
X-Axis= (x+1)+(y+1)=x+y+2
Y-Scale= x+1

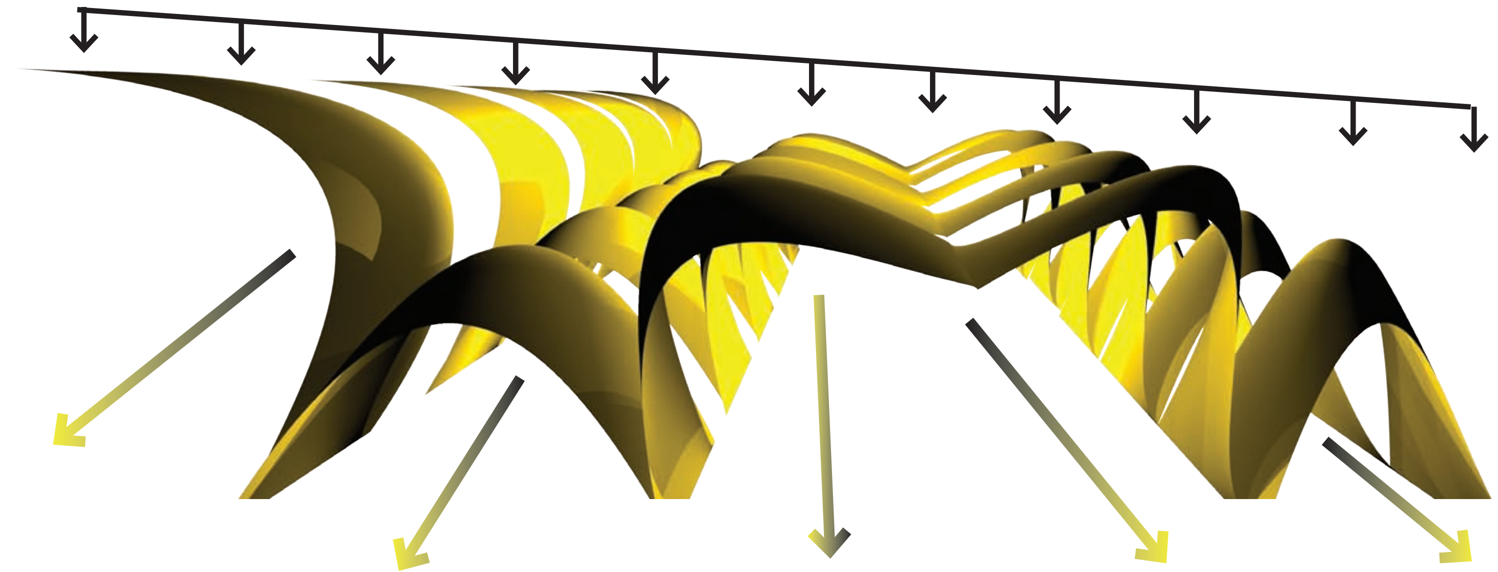


Performance: Filter

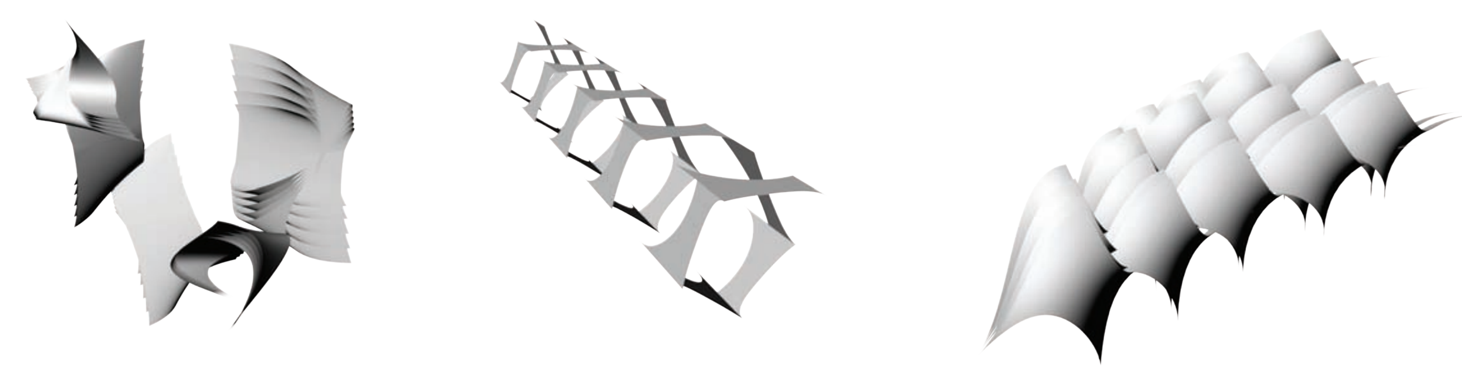
The assignment centered on the process of manual fabrication of a small set of topologically similar components. Three methods by which these components may connect to form linear assemblies were explored.

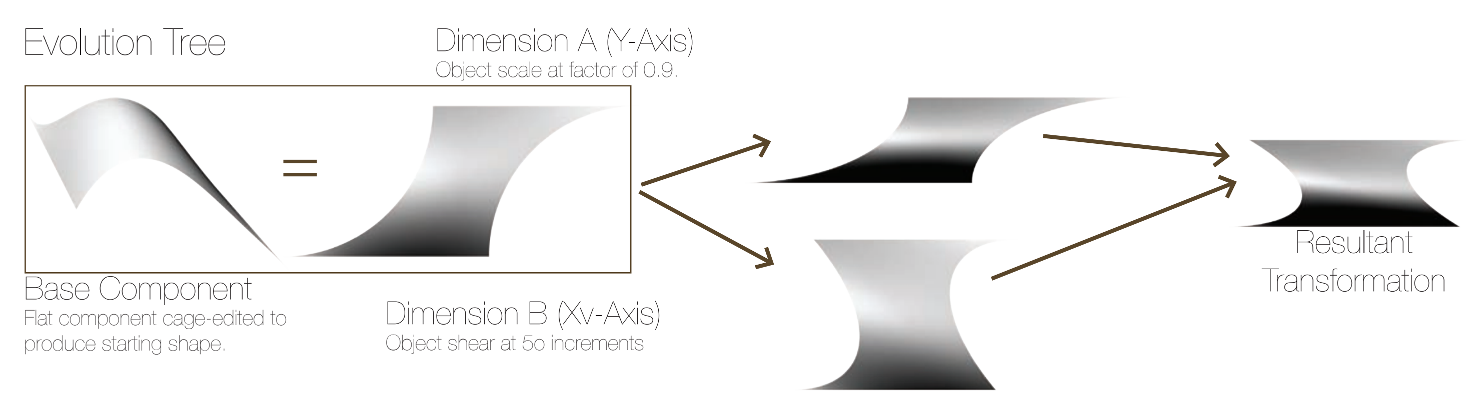
Once fabricated, the components were transposed into digital space, allowing for a further exploration of transformative potentionalities in multiple dimensions. The digitizing proces also allowed for refinement and evolution of the original design concept, with digital model feedback informing this evolution.

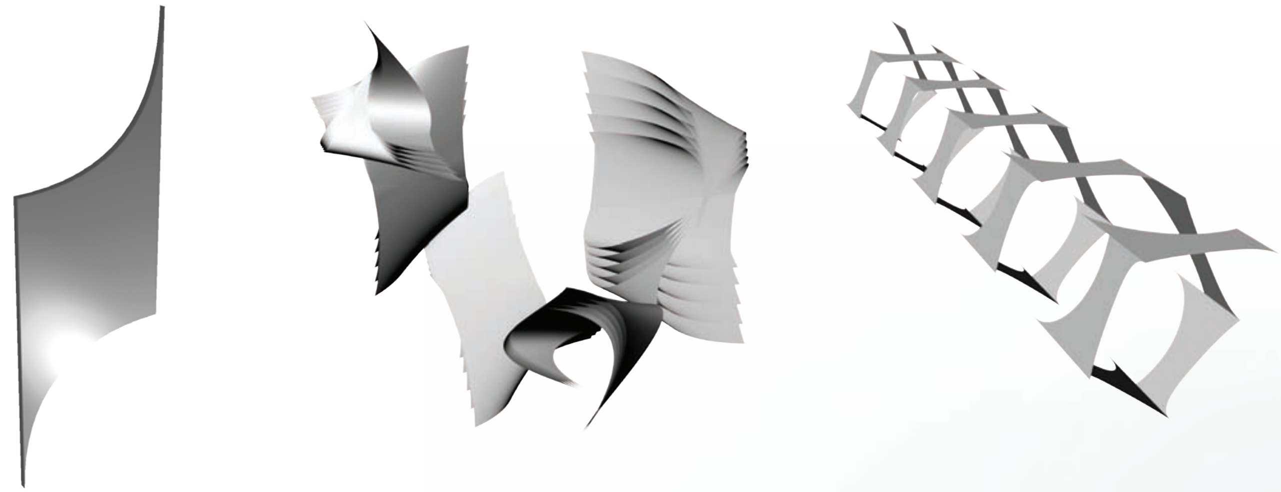
Performance: Stability

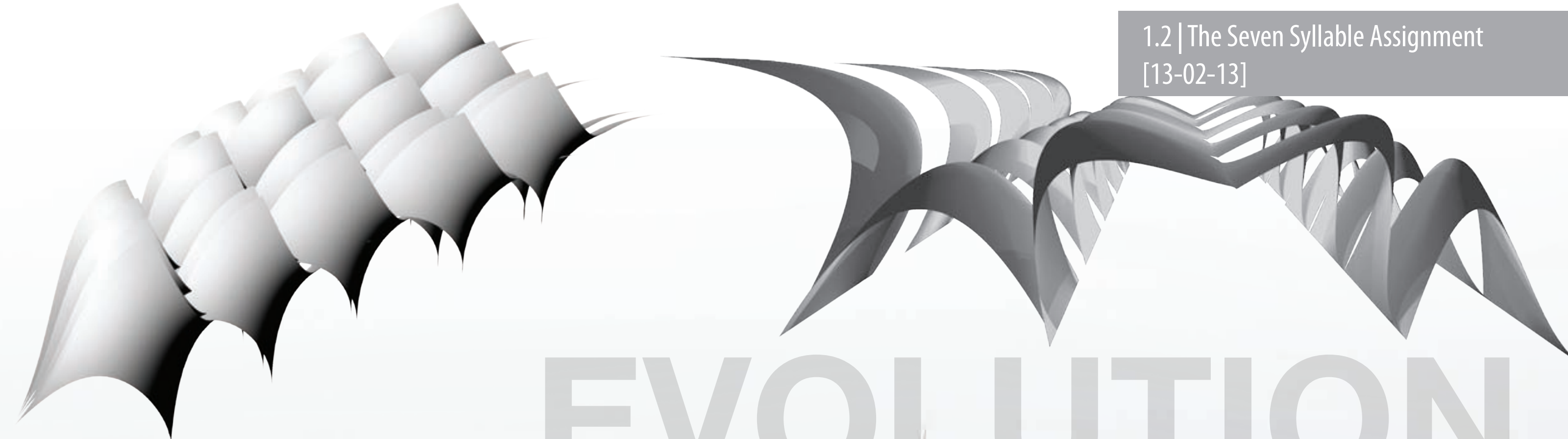


Performance: Transparency

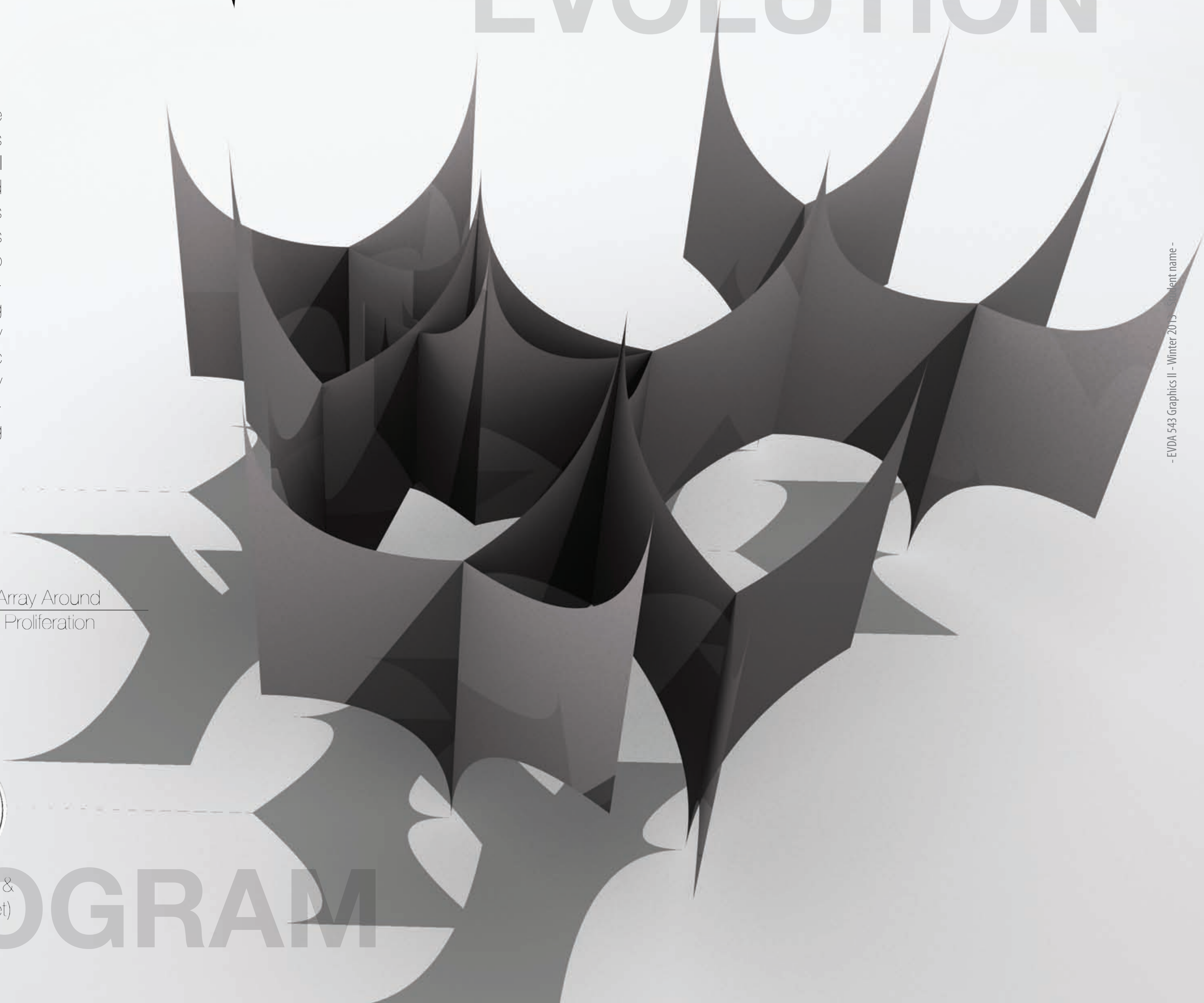




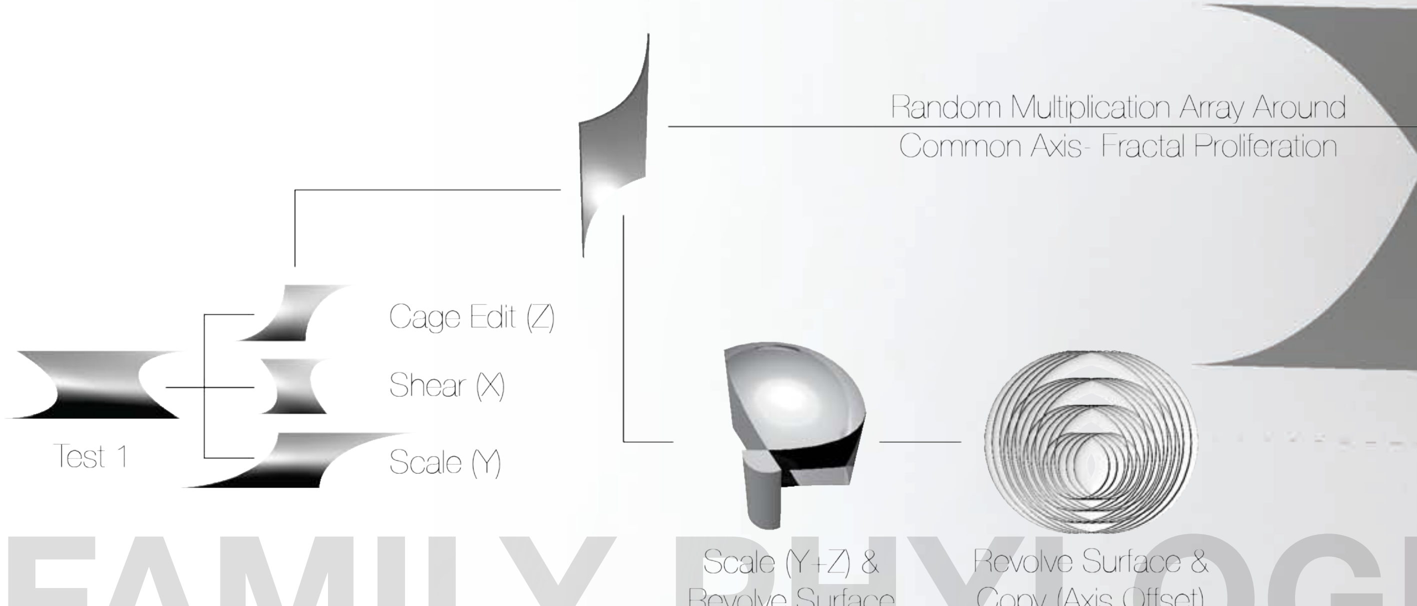




EVOLUTION



The design response consists of a parametrically multiplied single primitive surface object. The shape was derived through a series of physical experiments; the resultant object starts off as a rectangle with two diagonally opposing corners removed with quarter circle arcs. The original surface underwent a series of physical and digital tests involving manipulations, first in one and two dimensions, followed by all three. Physical tests looked at connection methodologies as well as material reactivity to different types of manipulations. The digitization process involves the generation of a primitive through the interpolation of xyz coordinates of two lines and two curves, forming a planar surface. Once digitized, the object underwent a further series of experimental manipulations. Using cage editing, scaling and shearing in Rhino digital modeling software, a solution combining relative transparency through lightness with structural stability was reached. The introduction of parametric controls saw the emergence of the original basic shape as the agent of visual control by creating multiple layers of self emulating, randomly oriented surfaces. With each iterative level of object multiplication, the number and axial orientation of objects generated is controlled parametrically, resulting in a range of control varying from very porous to virtually solid.



FAMILY PHYLOGRAM

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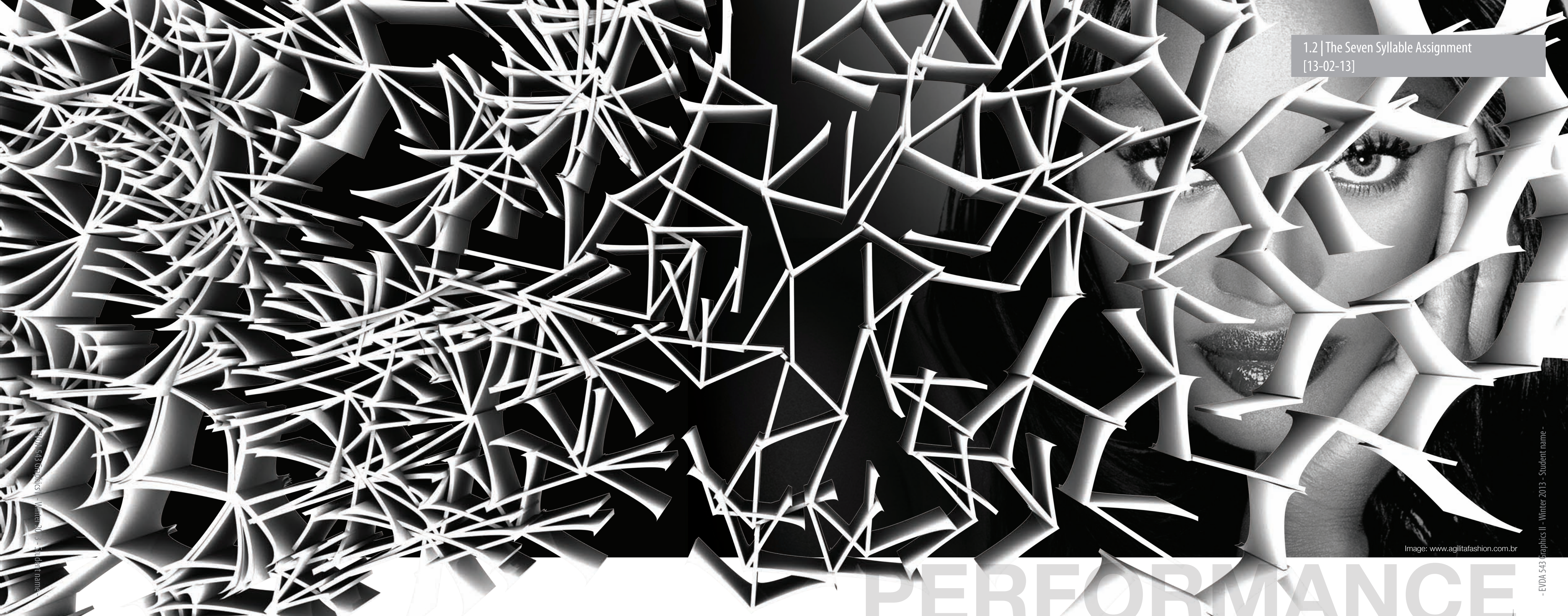
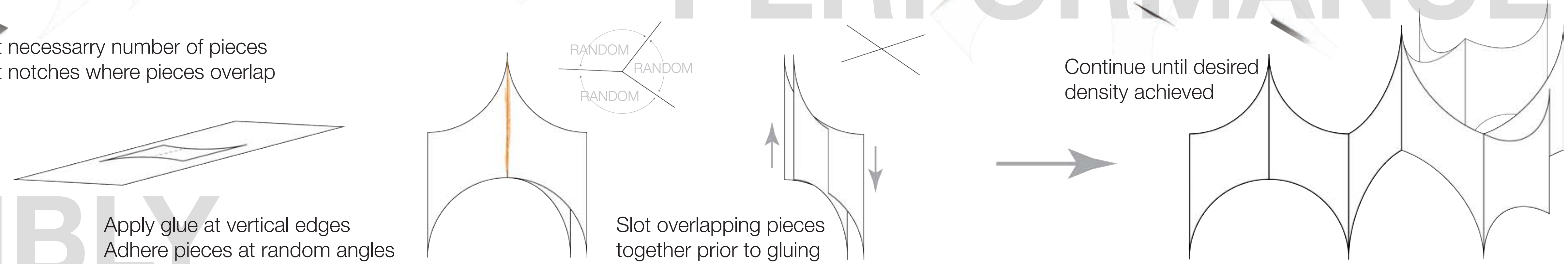
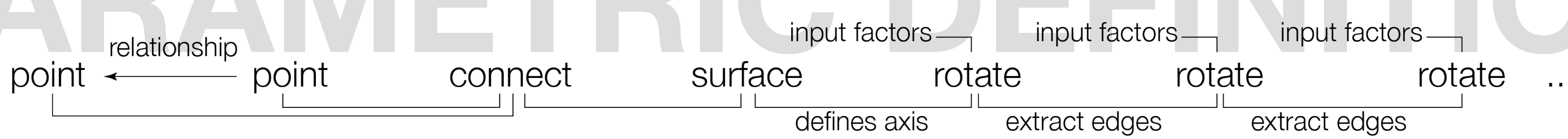


PERFORMANCE

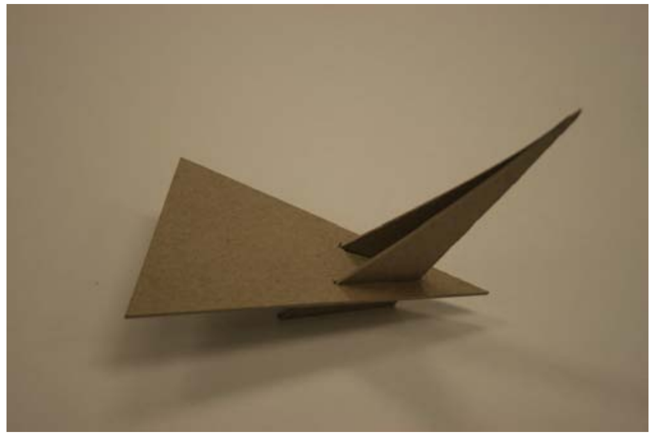


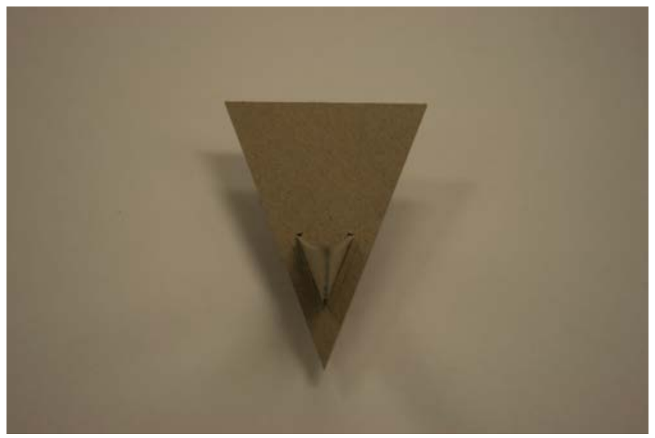
ASSEMBLY

PARAMETRIC DEFINITION

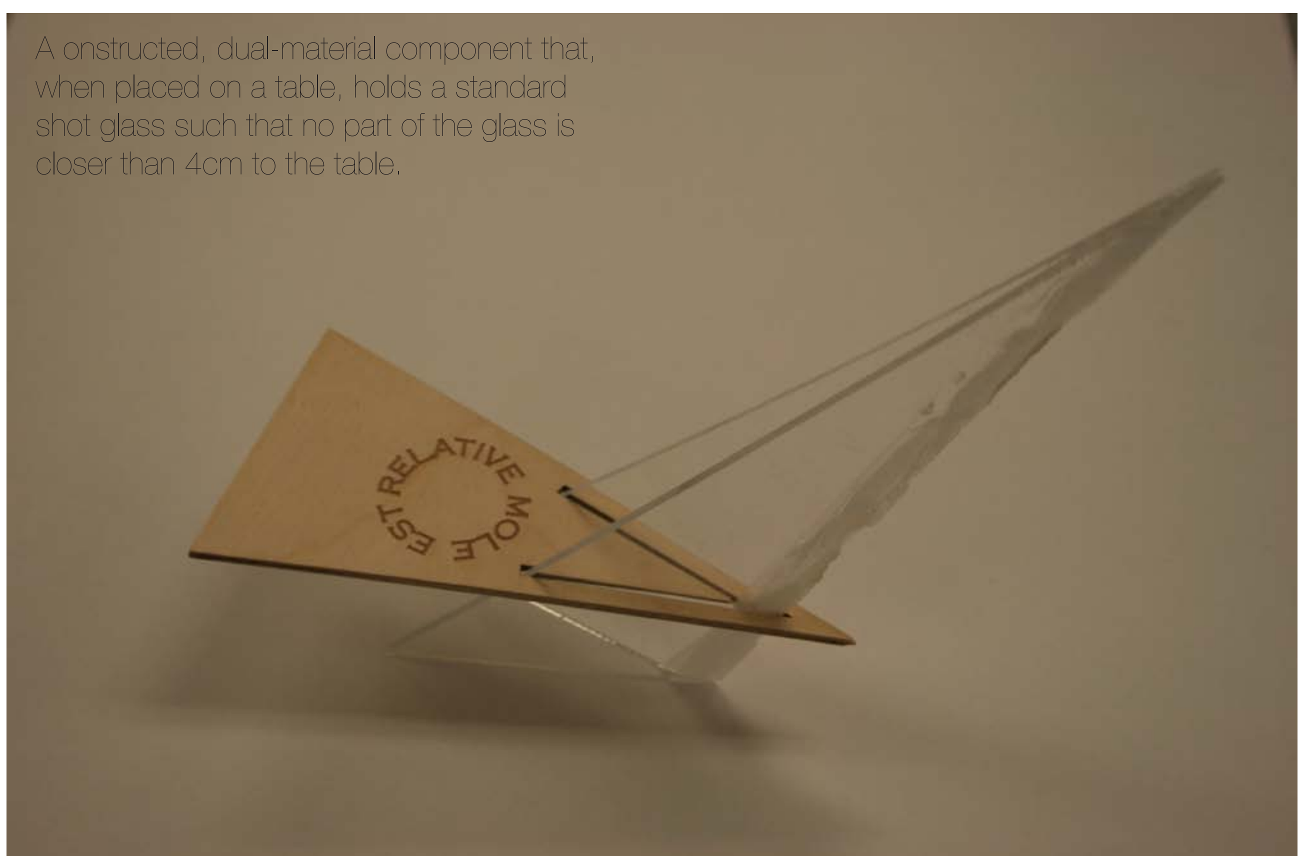


2A | Assembly & Diagram
[13-03-03]

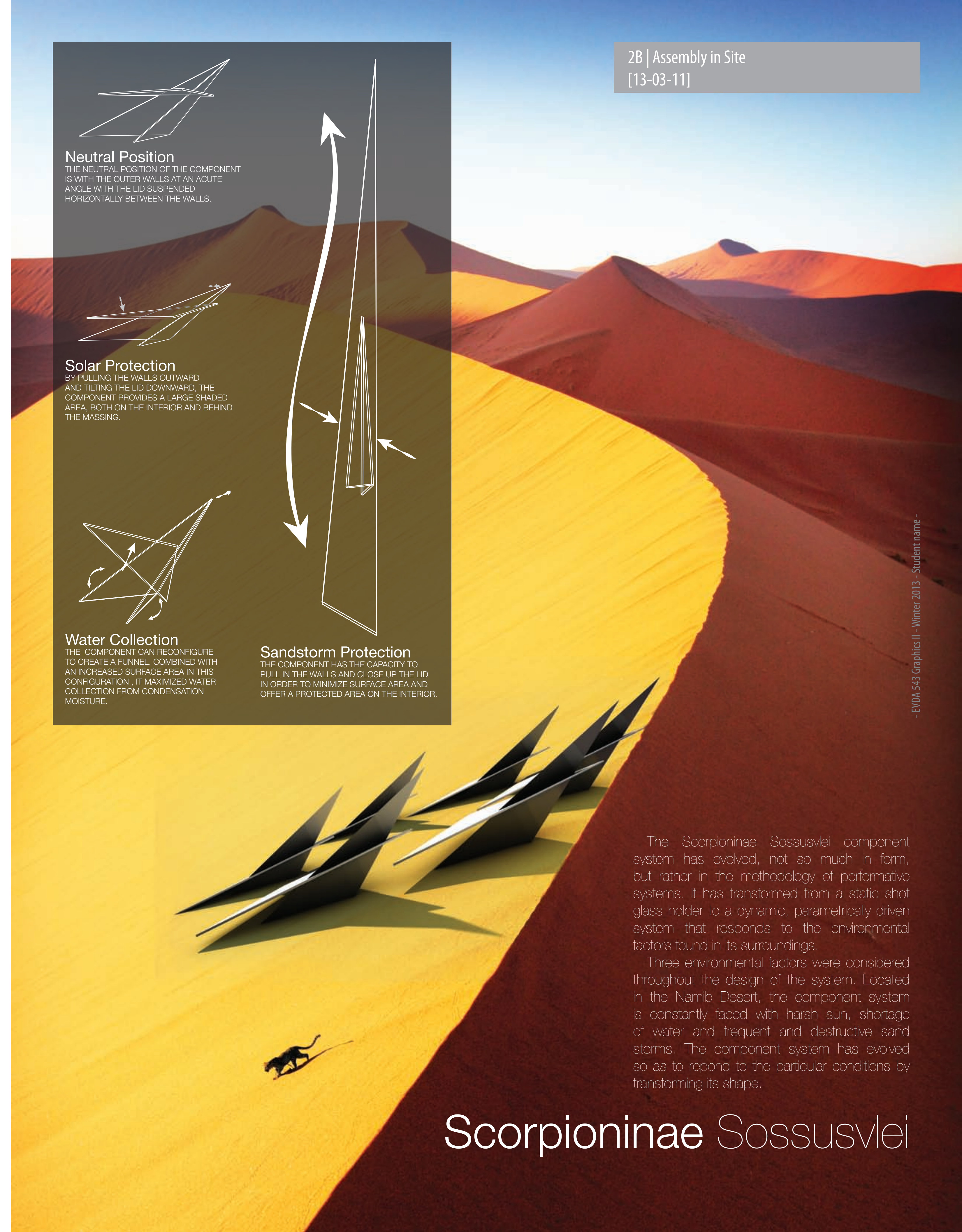




A onstructed, dual-material component that, when placed on a table, holds a standard shot glass such that no part of the glass is closer than 4cm to the table.



2B | Assembly in Site
[13-03-11]



The Scorpioninae Sossusvlei component system has evolved, not so much in form, but rather in the methodology of performative systems. It has transformed from a static shot glass holder to a dynamic, parametrically driven system that responds to the environmental factors found in its surroundings.

Three environmental factors were considered throughout the design of the system. Located in the Namib Desert, the component system is constantly faced with harsh sun, shortage of water and frequent and destructive sand storms. The component system has evolved so as to repond to the particular conditions by transforming its shape.

Scorpioninae Sossusvlei

Suricata Sol Angelus

2C | Three Performances
[13-03-20]

The Suricata Sol Angelus system evolved from the individual subsets of the Scorpioninae Sossusvlei system. Over millenia of physical and cultural adaptation, the Scorpioninae Sossusvlei came to adapt the popular local belief that the meerkat, also known as Sun Angel, protects villages from the moon devil or the werewolf, believed to attack stray cattle or lone tribesmen. The Suricata Sol Angelus is water collection and transfer system, combined with a solar reactive shelter for the Namibian Meerkat. As such, the system has evolved not only as a support system for, but as a shrine to the meerkat.

Solar Filter

Calyculus Sol Spurcamen

The solar filter structure utilizes solar exposure as the aperture control mechanism for the openings on its skin. As the sun travels across the sky throughout the day, the openings react by closing on direct exposure and opening when not directly exposed to intense sun. In doing so, the system is able to maintaing natural climate control in conjunction with natural ventilation.

Water Conduit

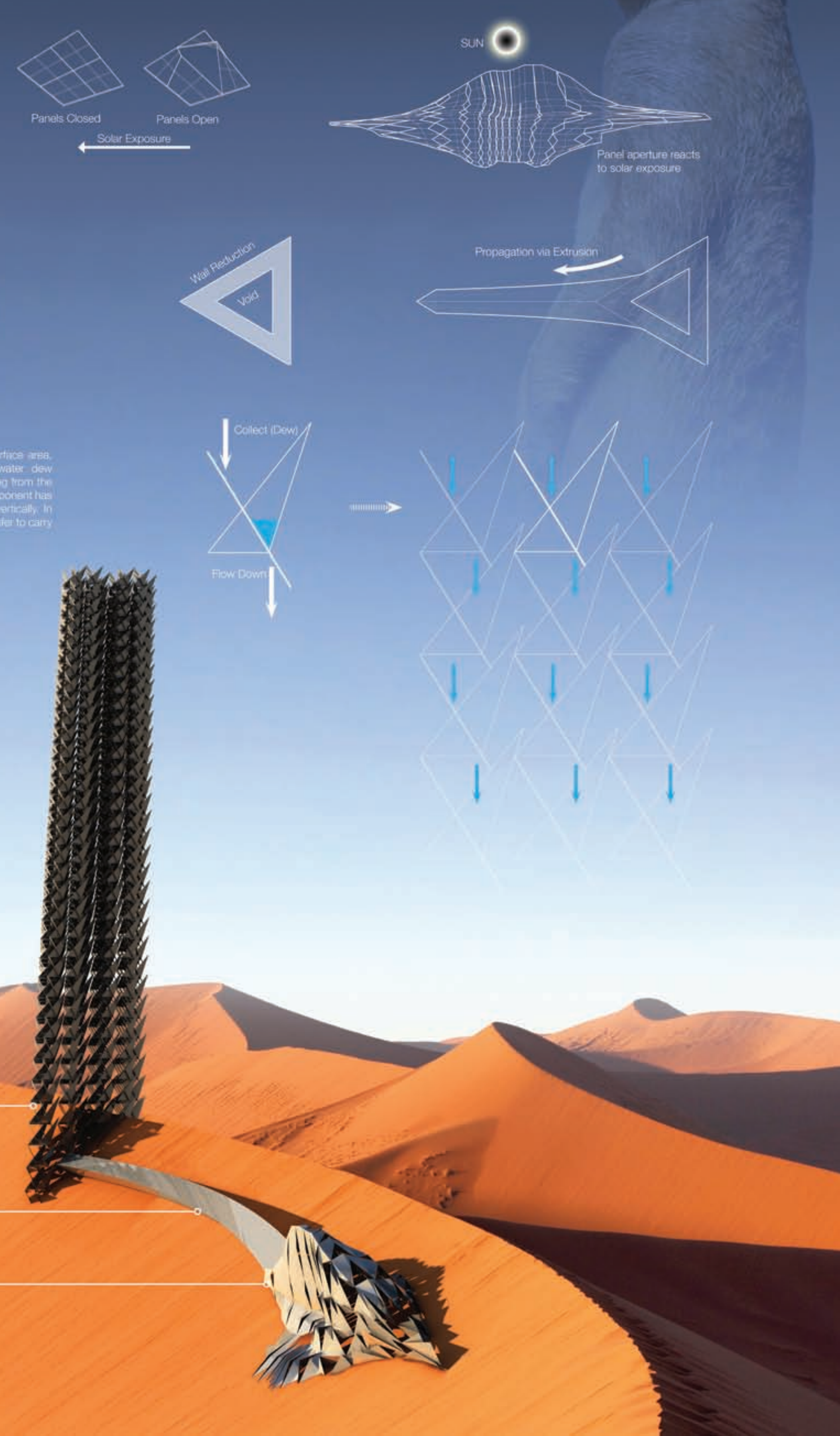
Viperidae Aqua Aquæductum

The conduit receives the water from the water collector tower and carries transports it to the filter structure for storage and use by its inhabitants. The conduit maximizes efficiency through utilization of its triangular section to produce minimal drag and resistance to water flow.

Water Collector

Suricata Aqua Collector

The water collector maximizes it's surface area, thereby maximizing the output of water dew collection from the morning fog coming from the shores of the nearby Atlantic. The component has evolved to propagate itself primarily vertically. In doing so, it uses gravity fed water transfer to carry moisture away to the water conduit.



Suricata Inhabito

2D | Evolved Habitat
[13-04-04]

The Suricata Inhabito system is an evolutionary sub-system of the Suricata Sol Angelus component system. It emerged as a fusion of the solar filter component Calyculus Sol Spurcamen, and the water collector Suricata Aqua Collector. The Suricata Inhabito combines the functional performance aspects of it's component predecessors by utilizing a repeating pattern of tassellated aperture tiles. These apertures perform two functions, depending on the orientation of the tile openings.

The size of the tile apertures is regulated by the acuteness of the incident angle of sunlight. Tiles with inward opening apertures form collector cavities when fully closed. Sensing increased moisture levels of the morning dew, they open up, passing the collected water to the shaded collection ponds below the canopy of the structure. As a result of the ability to regulate environmental factors,the system becomes a terraforming entity, converting an arid desert location into a fertile oasis.