Advances in architechtural geometry

Rhino Level II -NURBS Modeling - Scripting ,Damascus - Syria, August (14th – 18th) 2011

ORGANISERS

MAG LAB, Syria – Spain – Italy (Materials- Advanced Architecture – Generative Laboratory) as a part of Maksoud Architectural Group, authorized reseller and authorized training center of McNeel in Syria and the Middle East.

Instructor and director
M.Arch. Aref Maksoud;

Escola Superior De'Arquitectura, Universitat Internacional de Cataluña (EsArq, UiC); Director of MAG LAB, Studies manager at MAG - Maksoud Architectural Group; Professor of Architecture, College of Architecture, Arab International University (AIU), Syria;
Visitor Professor, College of Fine Arts and Design Arab International University (AIU), Syria
Assistant Professor of Biodigital Program (Master and PHD level), Escola Superior De'Arquitectura, Universitat Internacional de Cataluña (EsArq, UiC), Spain

MAG LAB Team:

Artist Anna Dabrowska ; Arch. Dima Meiqari ; Arch. Noelle Halabi

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INTRODUCTION

This Workshop, completely revised for 2011, was tailored to professionals in the architectural and engineering industry and is suitable for architects, structural engineers, urban designers and building envelope engineers.

The course contains both intermediate and advanced content, the balance of which can be adjusted to suit particular classes.

Although classes follow a clearly defined structure there is scope for trainees to discuss individual work examples and work on real projects.

OBJECTIVES

The main objective of the course was to extract the information from the research as input in order to generate an adaptive system as output, showing the design process and applying the new digital skills taught during the workshop.

In this workshop the students focused on digital design through scripting processes in order to explore architectonical potentials seen and done by digital tools.

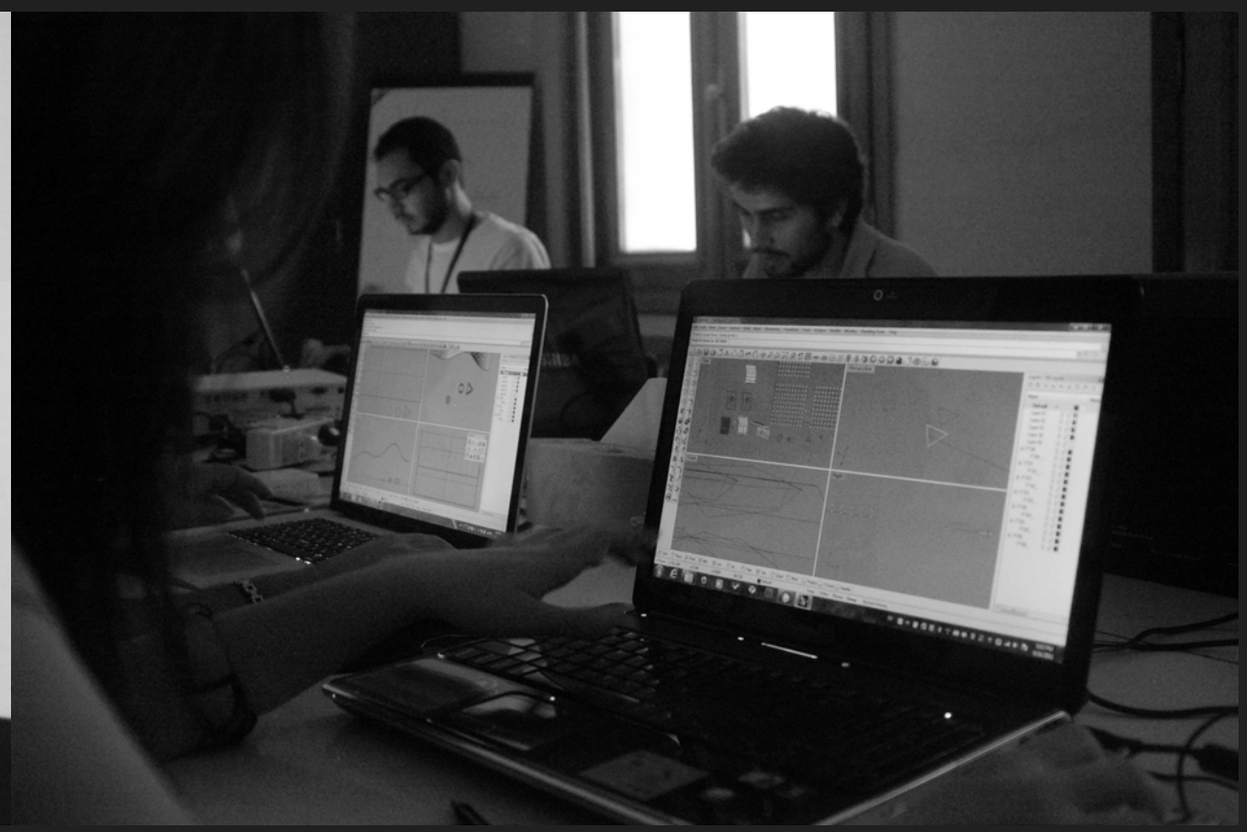
The students finished the workshop knowing how to generate design processes through Rhino tools and basic scripting tools. They applied this knowledge and were able to create architectonical proposals and physical prototypes.

STRUCTURE

Over the five day intensive workshop students learnt Rhino scripting ,digital fabrication and strategy design . By the end of the course students had the chance to present their final design showing their design strategy and process.

This workshop was built around the concept of calculating/computing design. Participants learnt how to think in algorithmic terms, and express their design ideas in procedures.

The main vehicle for the workshop was Rhino Script. Rhino script has proven to be the best platform in exploration of design-programming for beginners and experts.

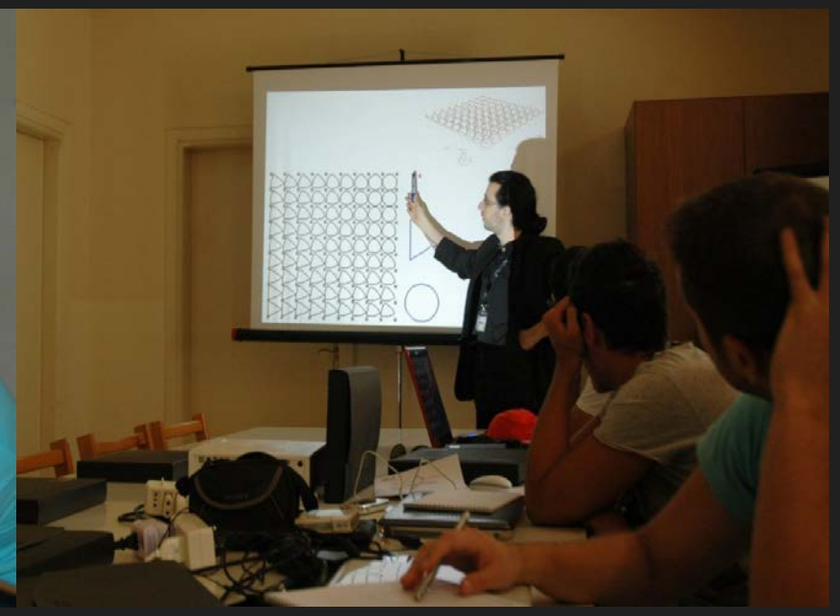


DAY 1

The training started with an introduction by M.Arch Aref Maksoud, who talked over the schedule, specifics of the course and its main objectives. The participants had time to introduce themselves, express their opinion on the former workshops and expectations.

Later the students had a lecture, during which M.Arch. Maksoud introduced the key terms (such as morphology, typology, complexity, network etc) and discussed basic programming concepts. During the presentation students learned about the definition of algorithmic scripted architecture, discovered different strategies of designing and discussed examples of their design strategy.

The workshop continued with a tutorial during which students could gain practical knowledge of the Rhino tools, refresh their knowledge and learn more about projecting surfaces. Students were practicing extracting points , use of animation tools, mesh tools, creating 2D drawings, and using tools for surface analysis.

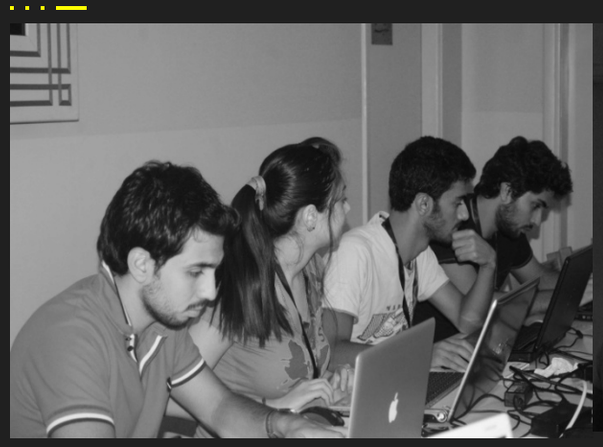


Day 2&3

The workshop started with some information about the students individual projects. Later students continued to run on their computers scripting tools and started experimenting with scripting.

After that, students participated in a tutorial during which they were practicing use of analysing tools, discussing scripting tools, adjusting toolbars and practicing scripting methods.

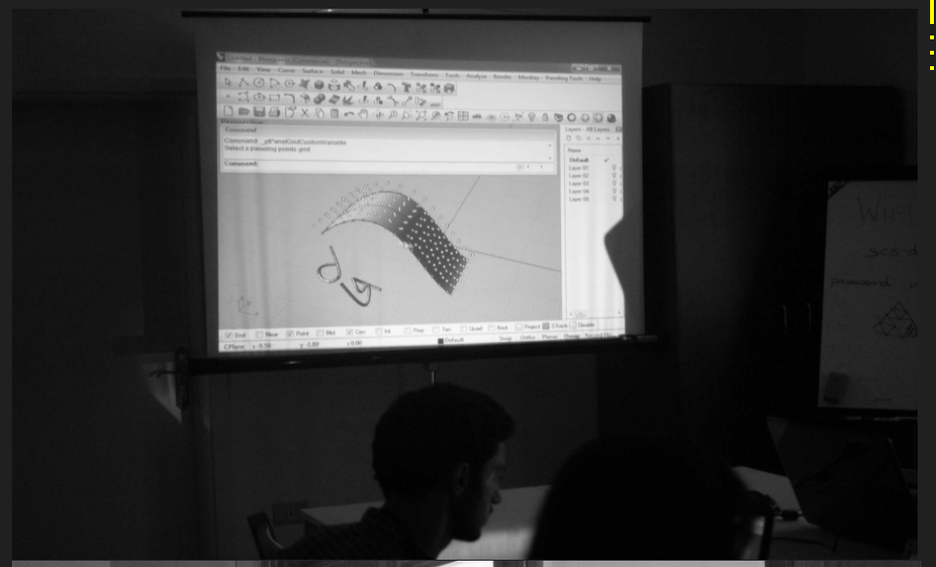
The tutorial included teaching the students how to edit and modify an existing script in Rhino and how to create their own script. Also during this tutorial students focused on the panelling process and the use of panelling tools script. In which they were able to practice these tools and processes.



Participants continued practicing panelling tools, revising the information they learned the day before. Students were learning more about ways of using the tools and the opportunities it presented.

Later Aref Maksoud introduced the students to rules of the Monkey script; learning the structure of the script and its basic codes.

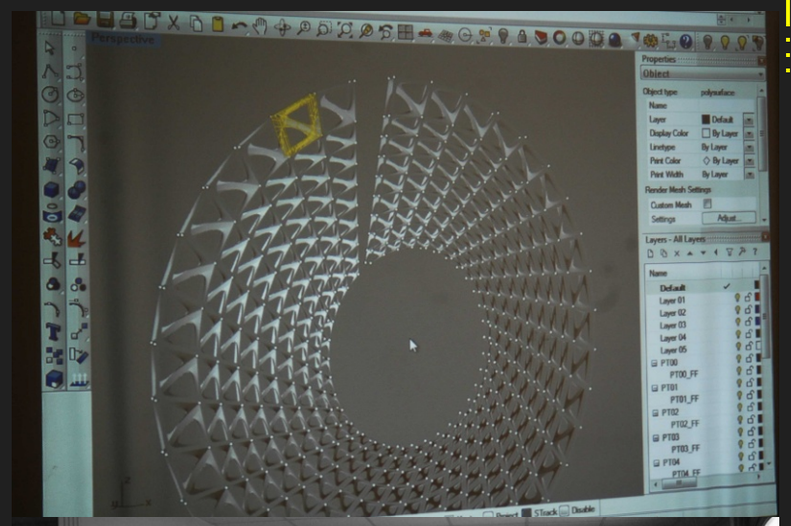
By the end of the day Students were able to apply panelling tools to different surfaces.



Day 4&5

This day started with review of individual experiments which students executed using Monkey script. The group discussed with Prof. Aref their works and occurring problems.

During the tutorial students were progressing in scripting with Monkey script; learning how to draw lines, curves and solids. They were practicing these scripts with random parameters.



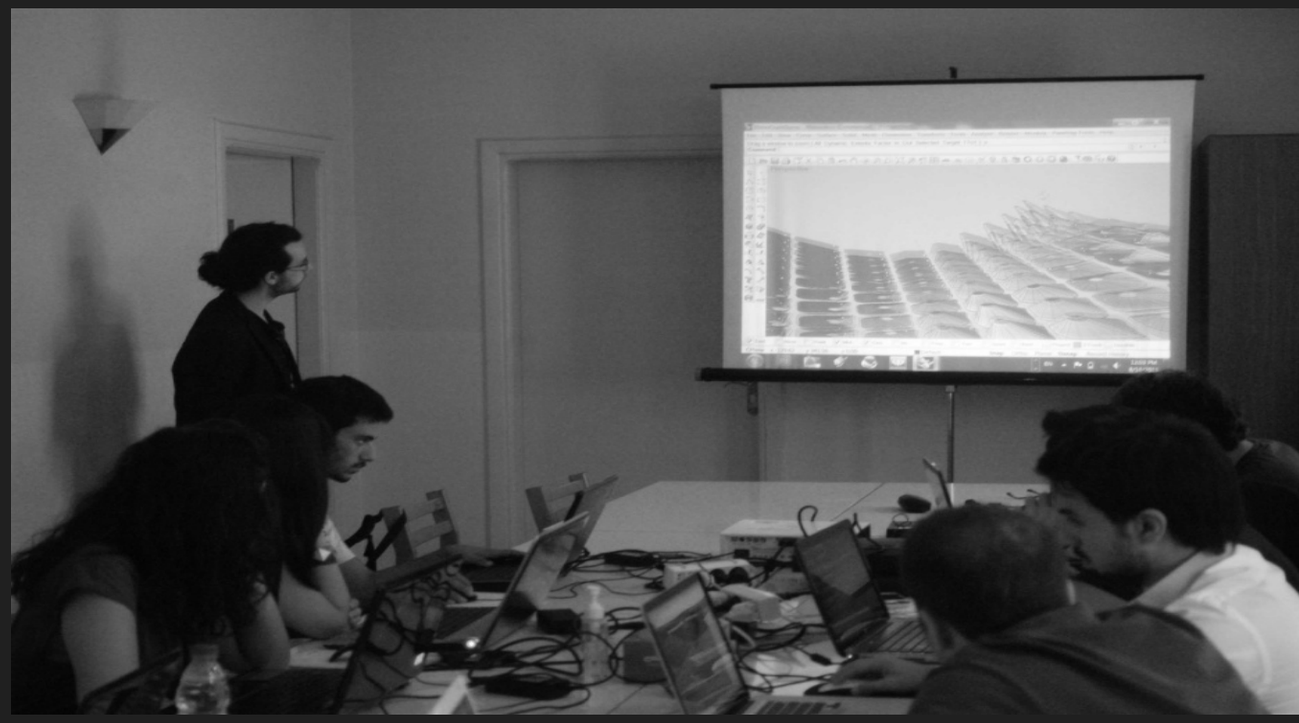
Day 5

Last day of the workshop started with discussions over the second round of experiments with panelling tools and scripting.

Later the tutor introduced field stimulation script. After that participants were practising Monkey script using the new information learnt ; for example how to write Fibonacci script.

At the end of the workshop the students had 10 days to prepare their final projects. Results of their work was presented during the MAG LAB conference, in front of the public, jury and the media.

Students from different universities, professors and other guests were invited to this event.



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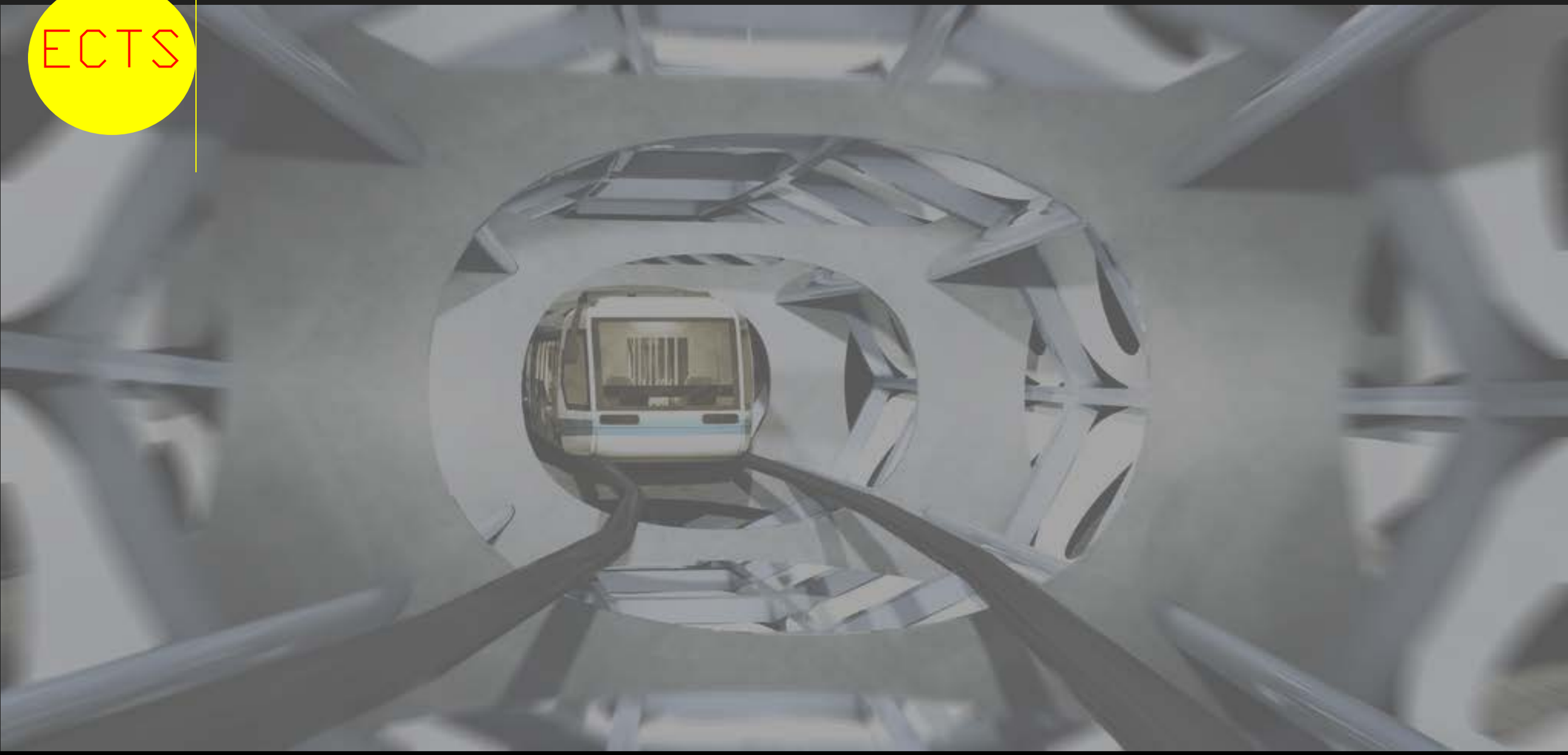

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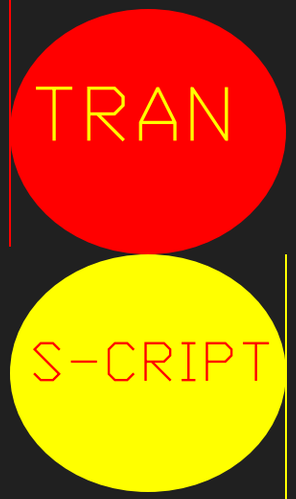

Tran - S - cripT

By Adnan Al Maleh
Samir Kilani

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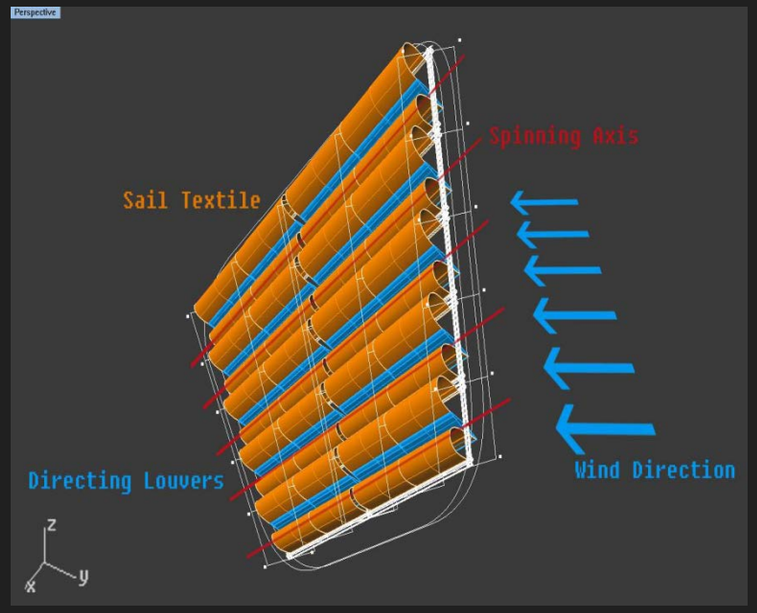
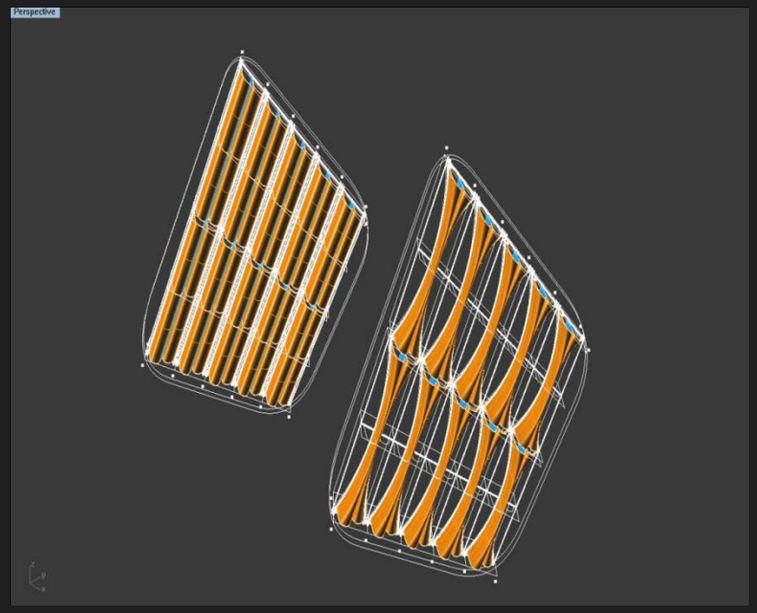
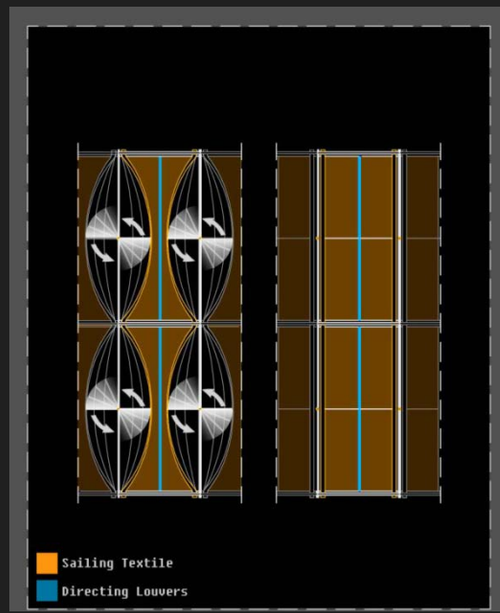
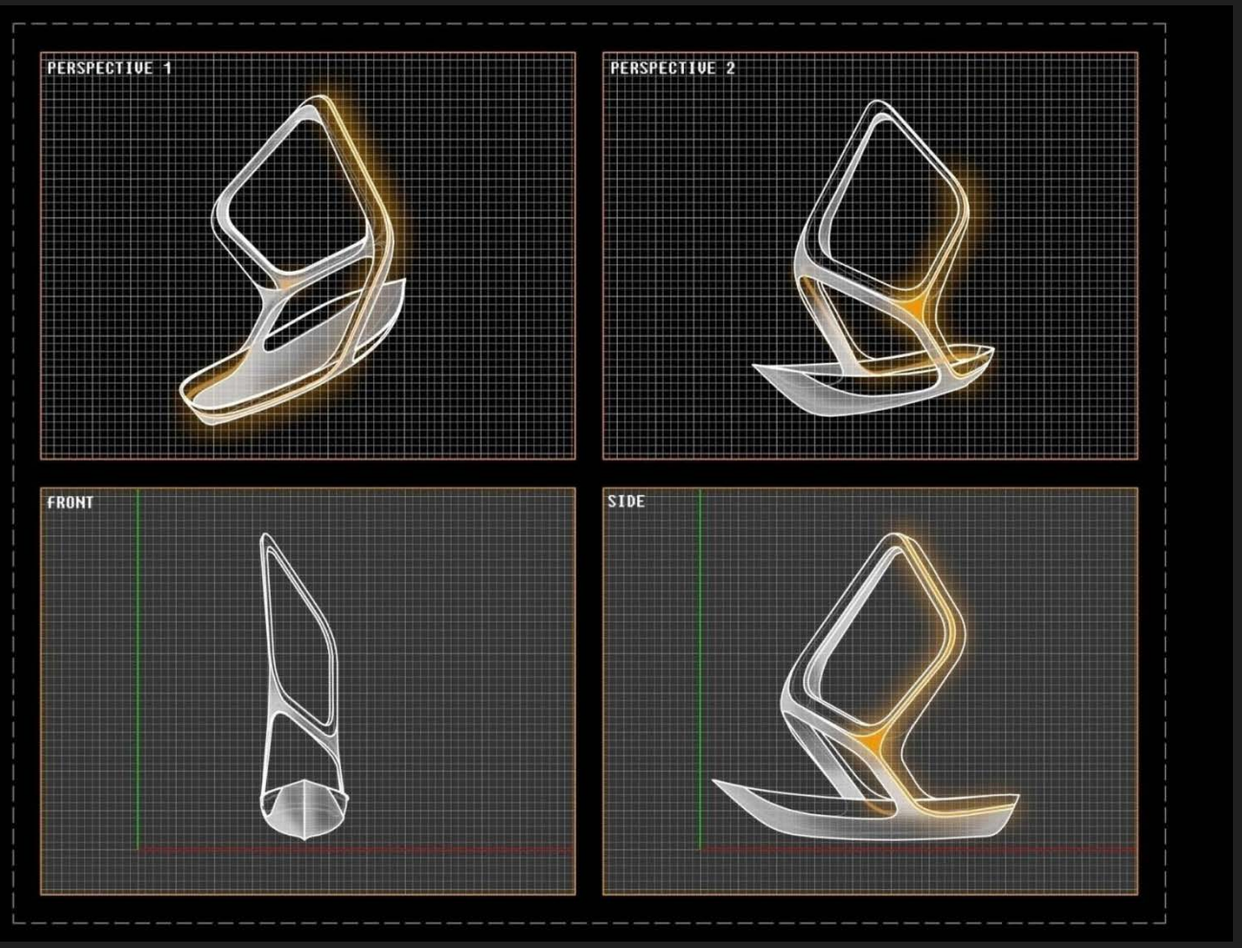
Wireless Sail Boat

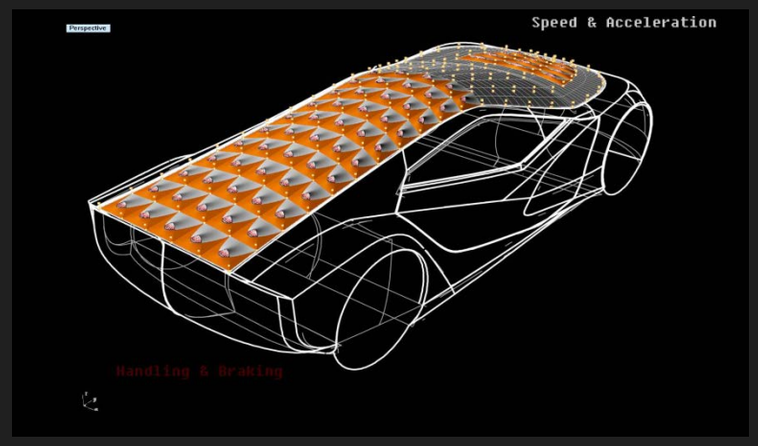








Paneling -GT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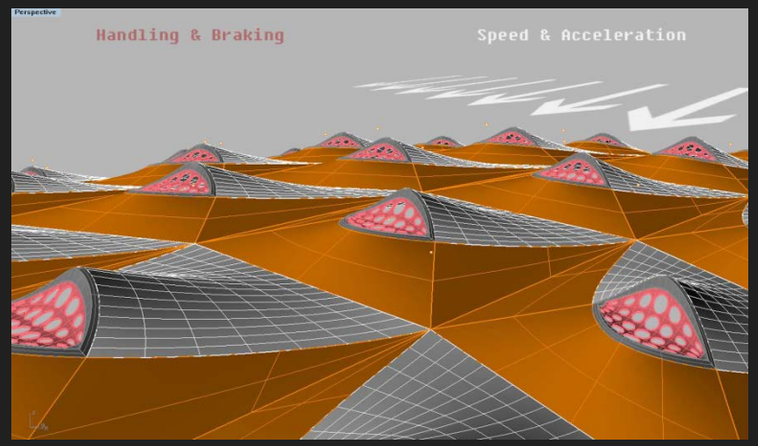
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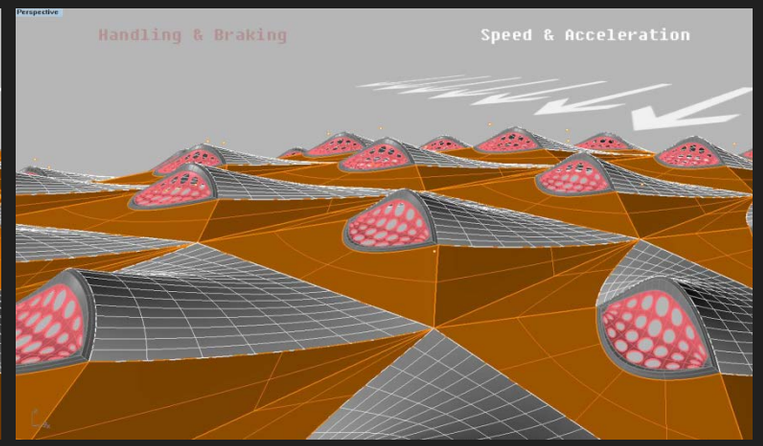
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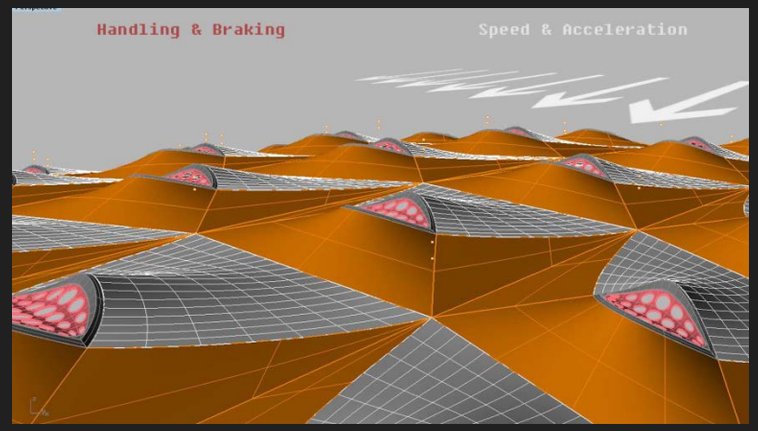
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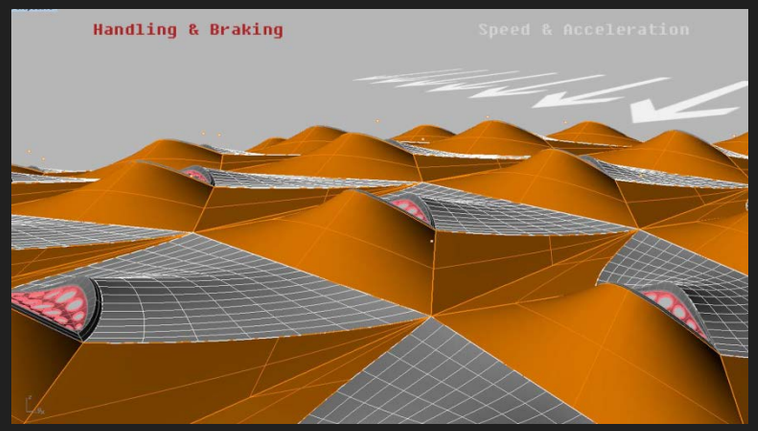
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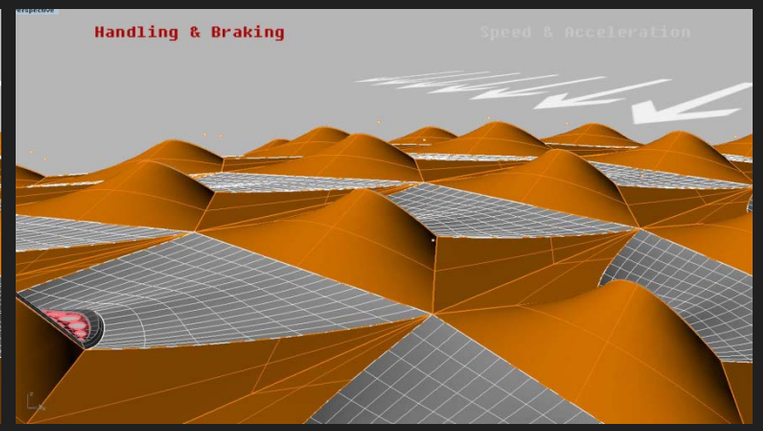
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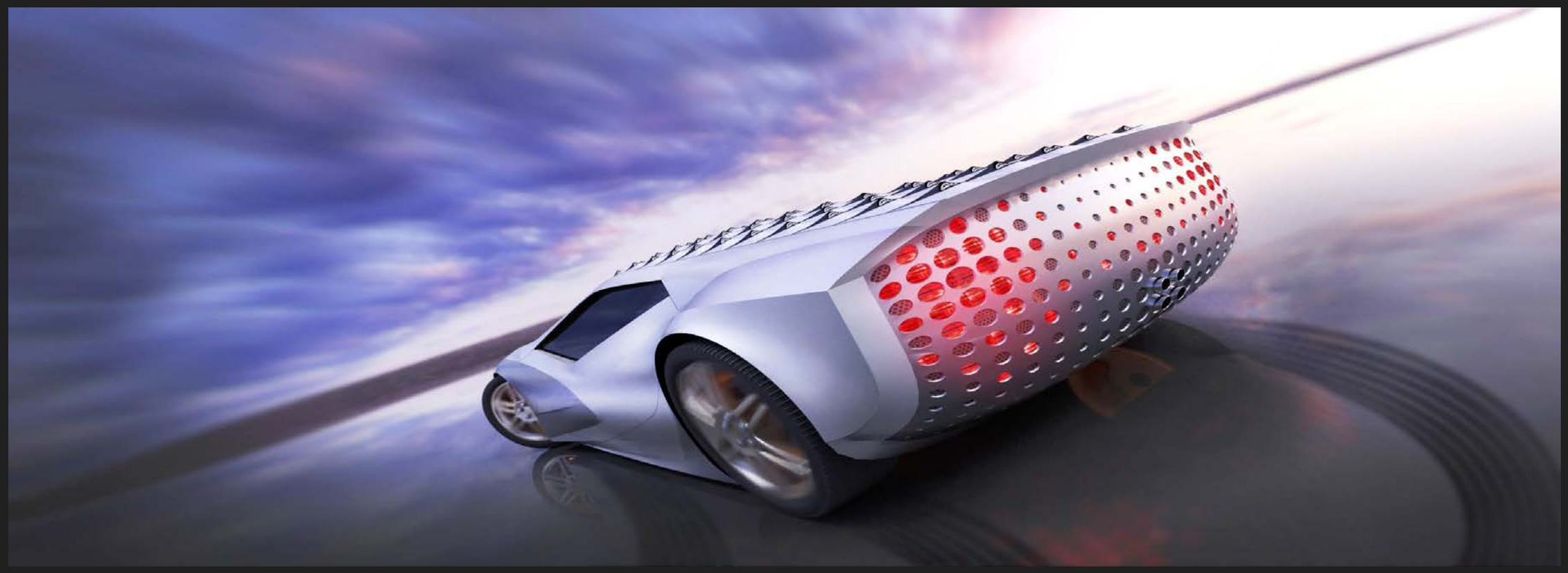

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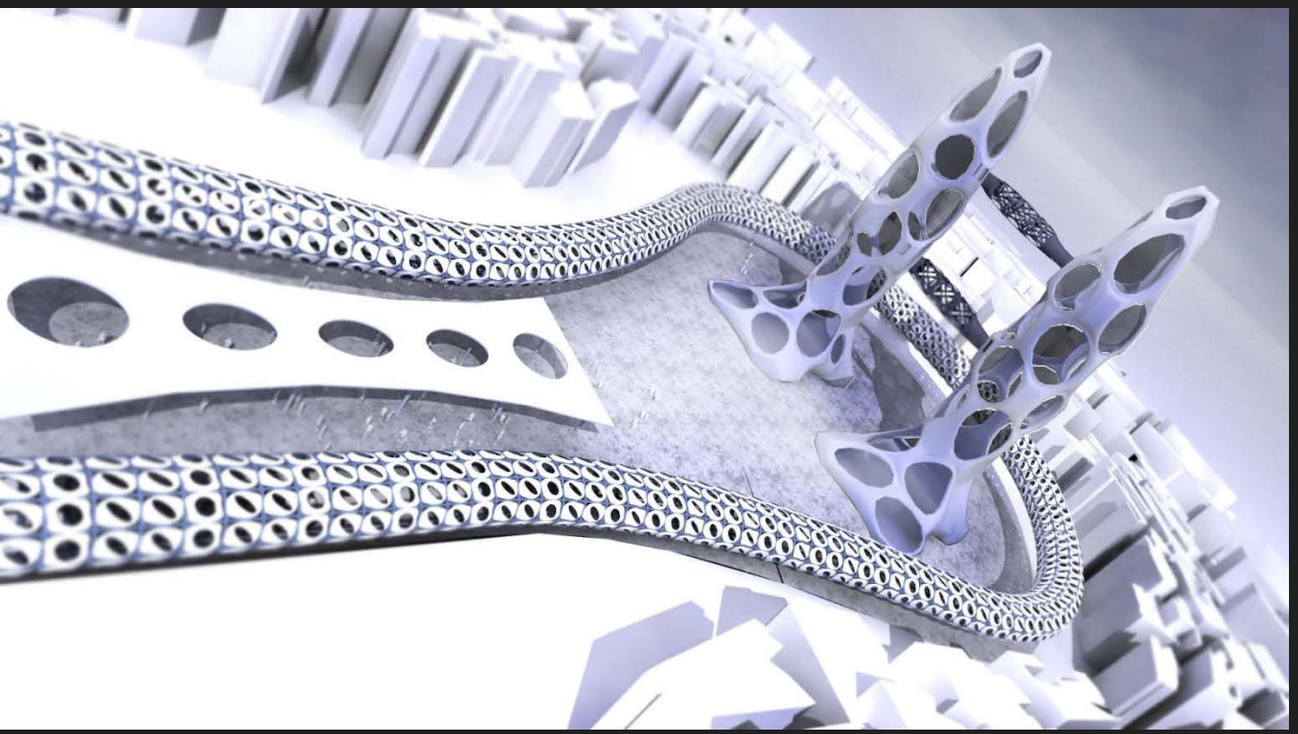

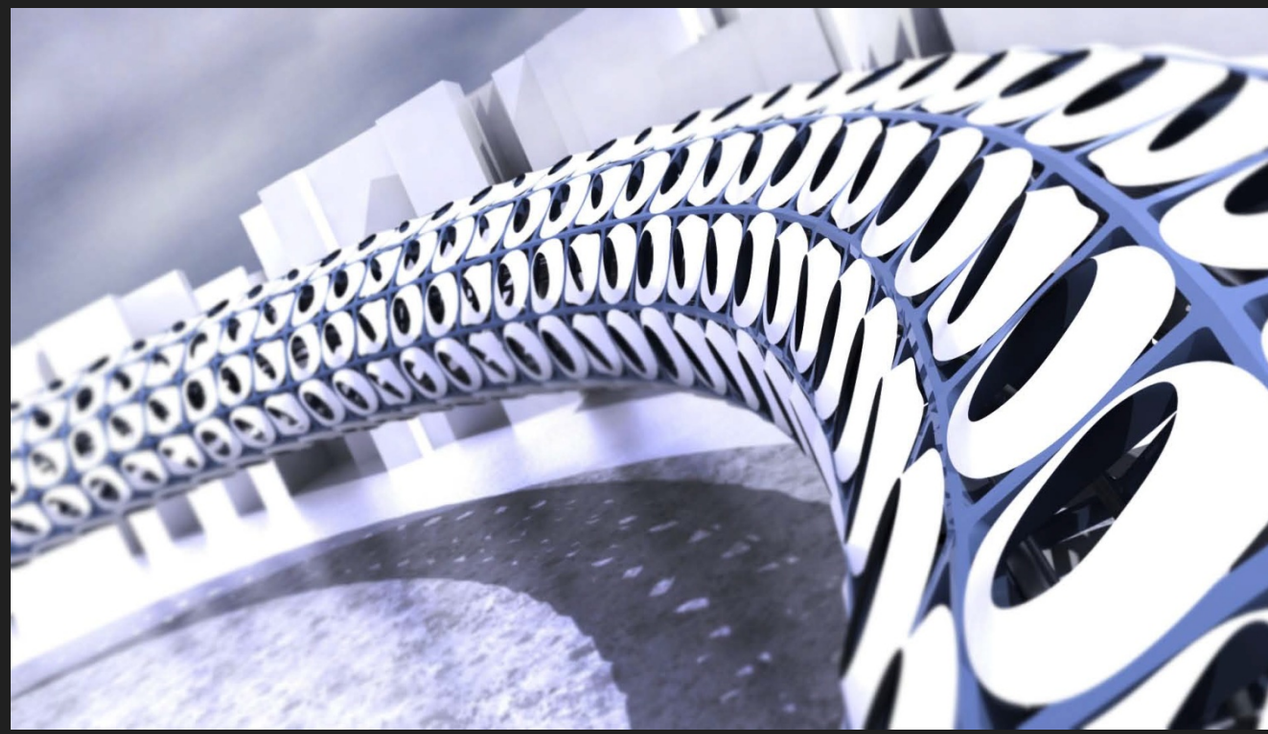

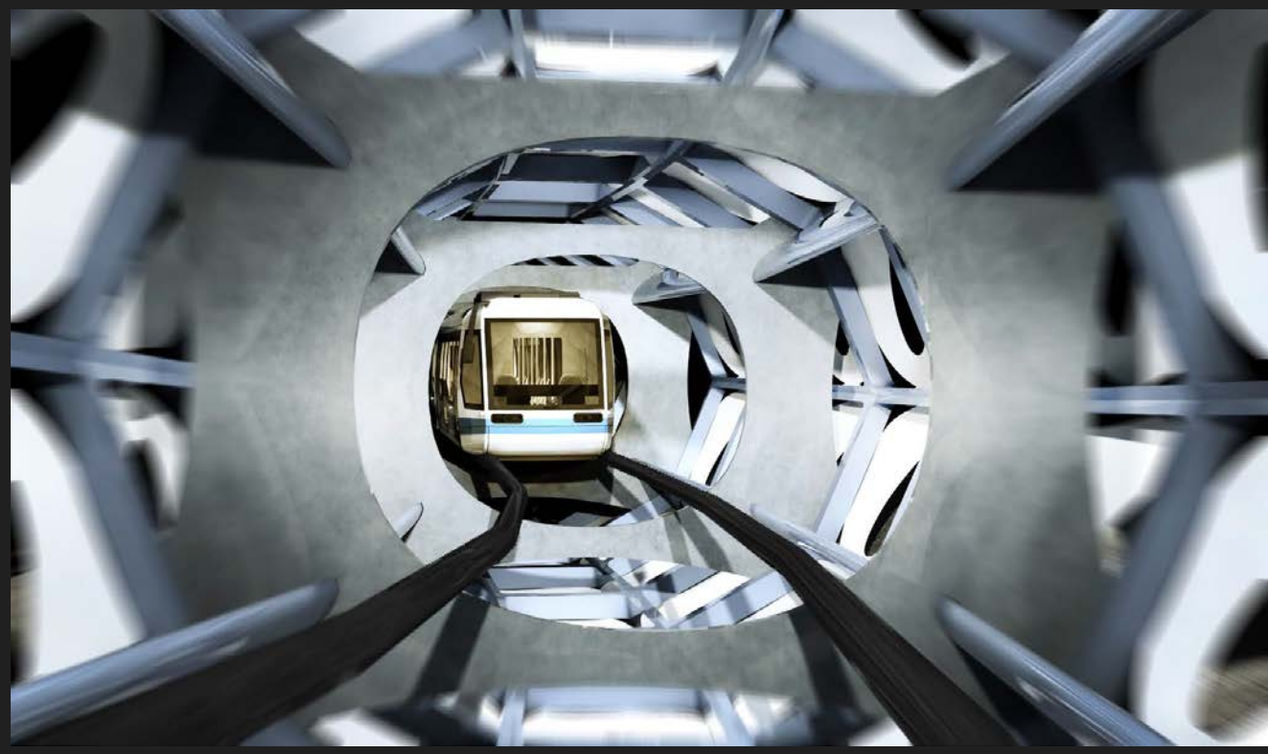

P - pores

By Sobhi Mobassaleh

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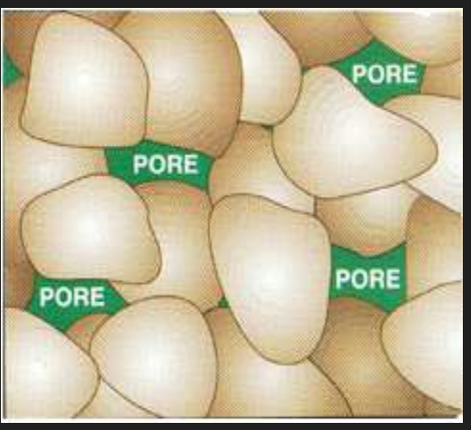
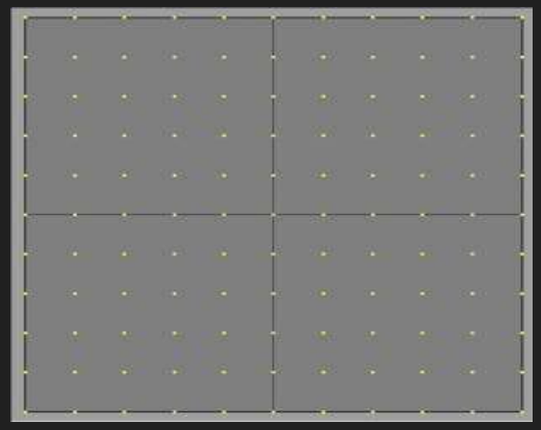
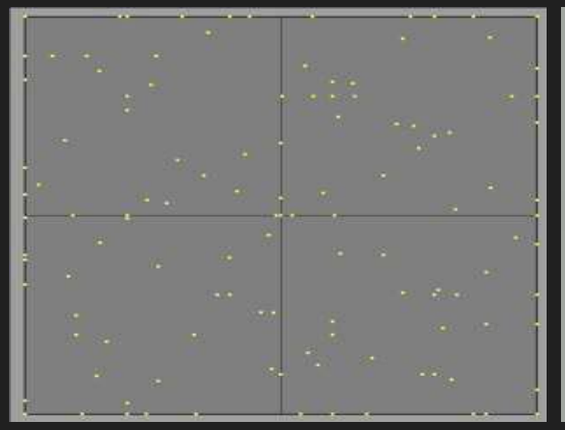
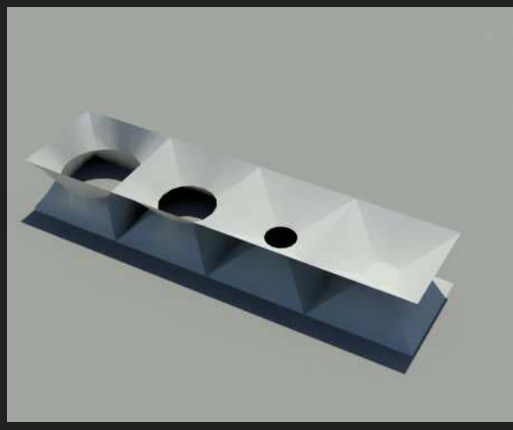
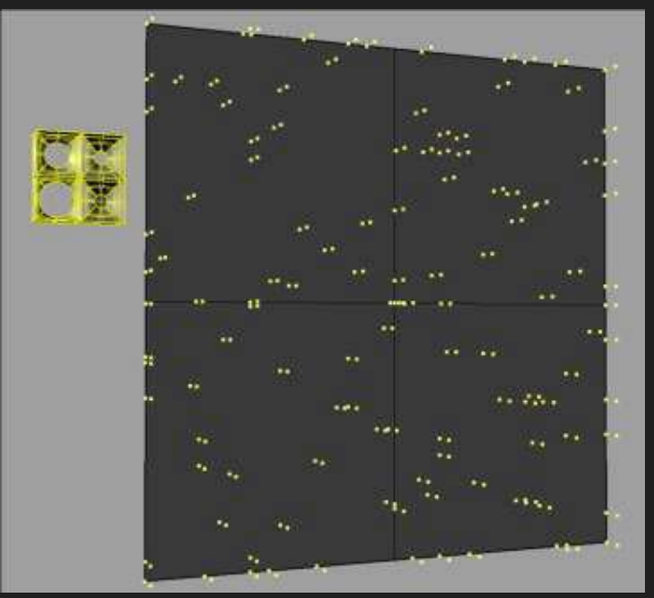
Ideas

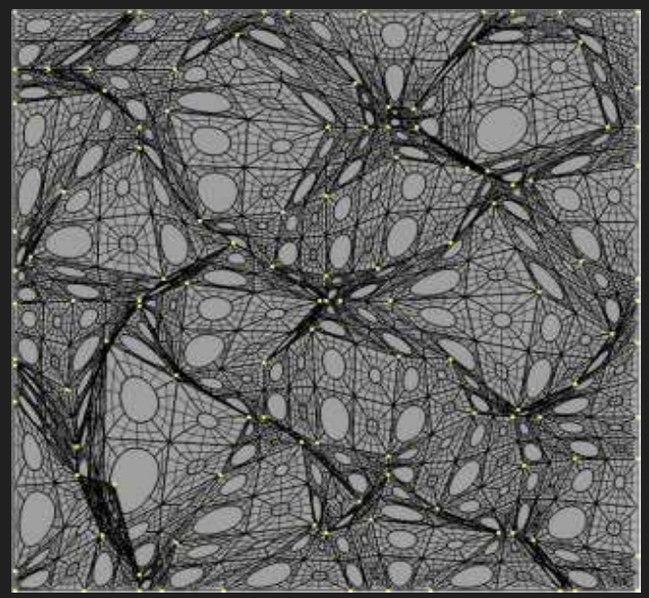


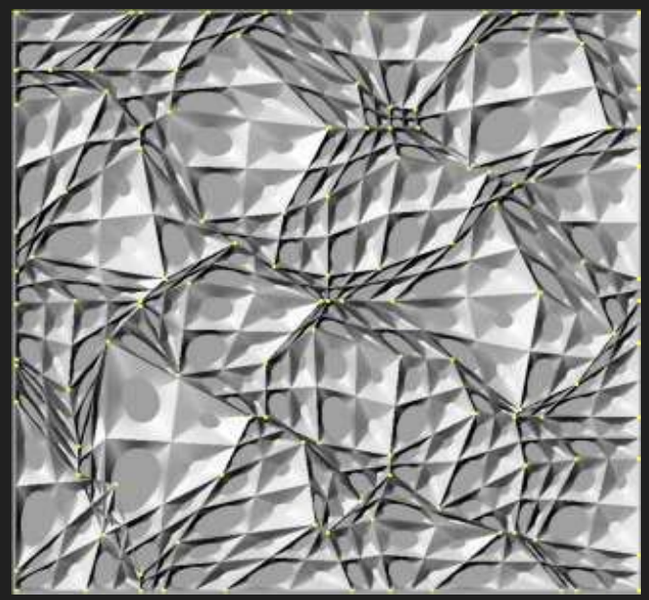


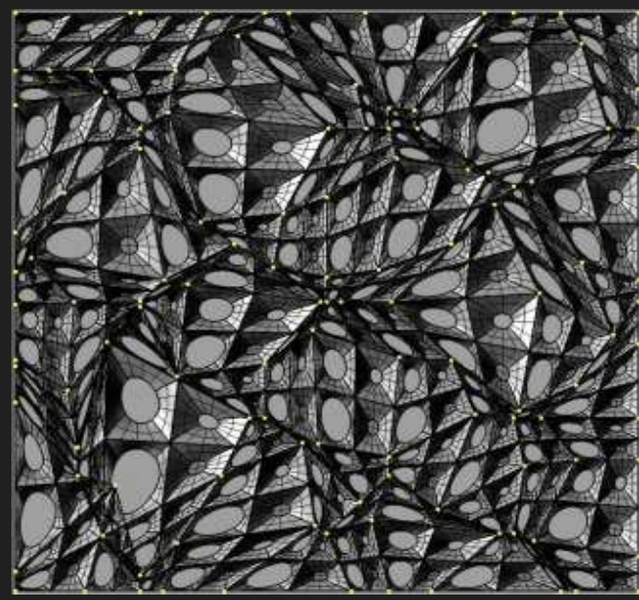


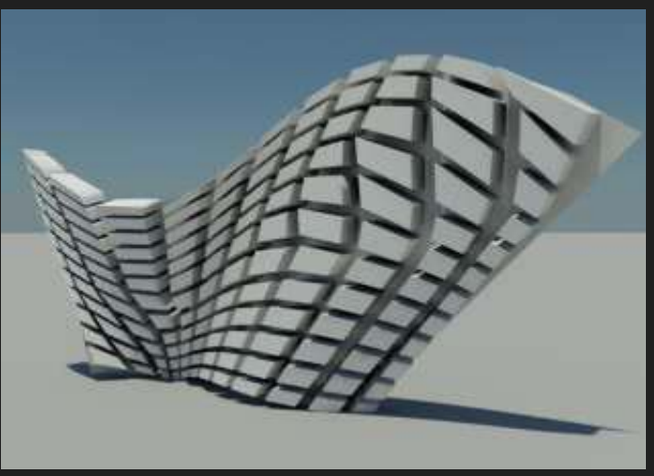


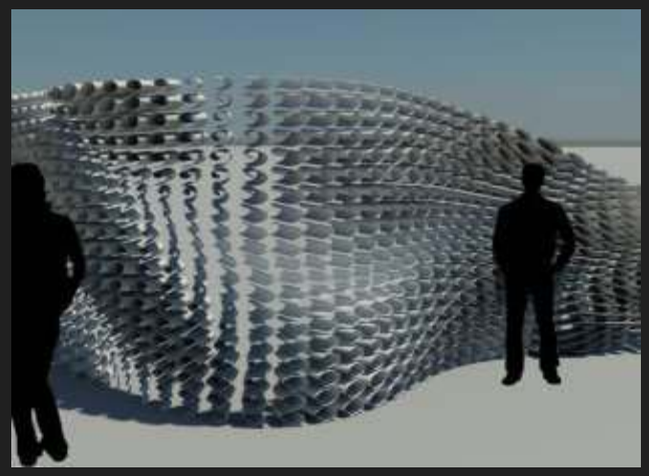


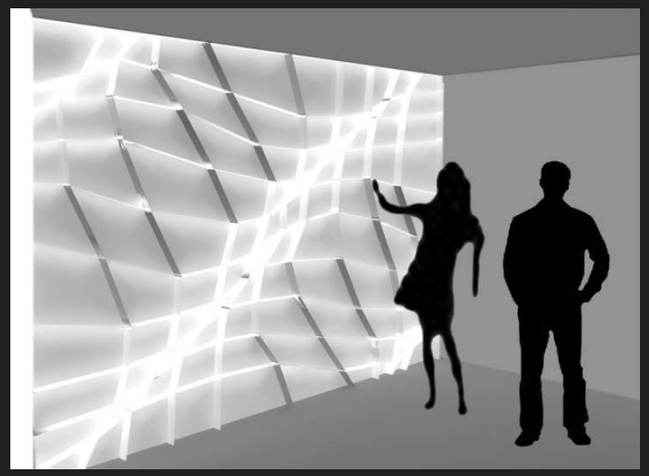












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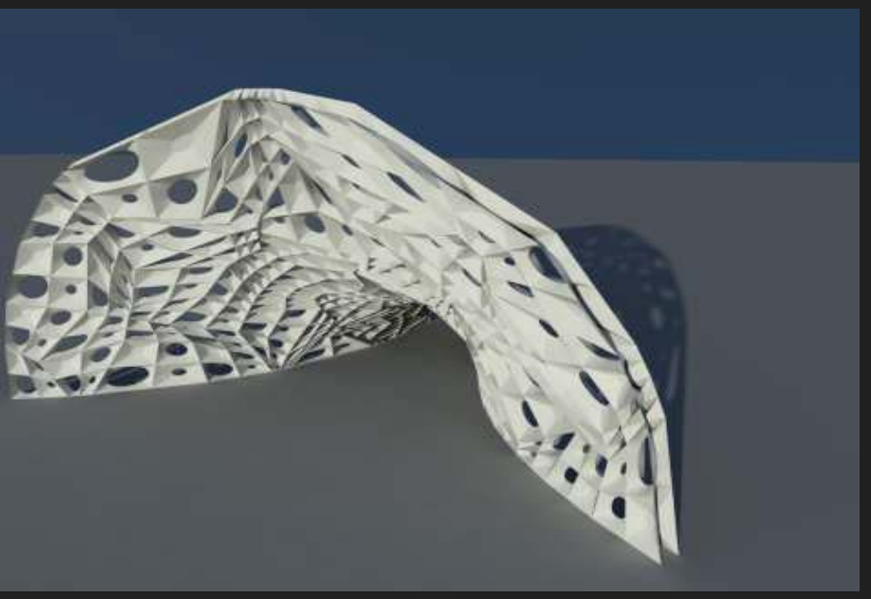

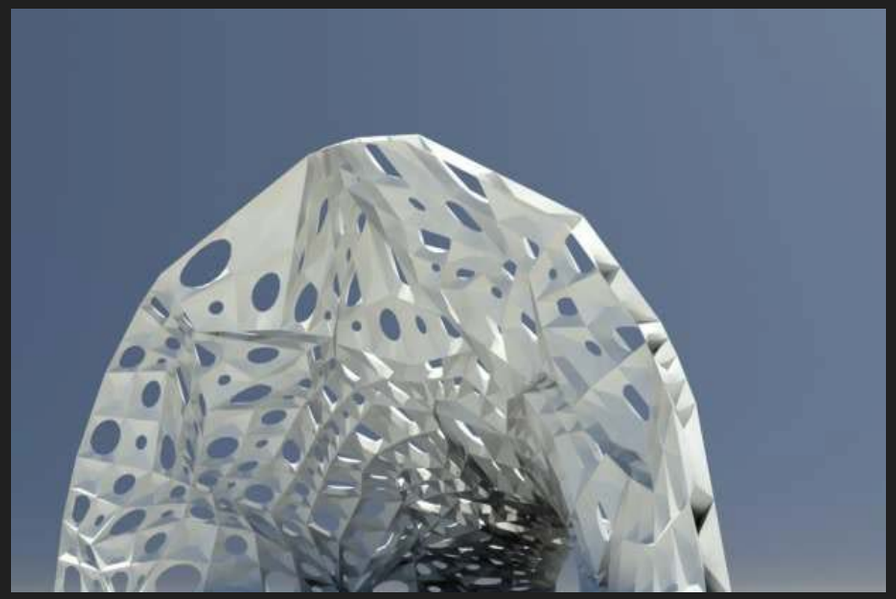

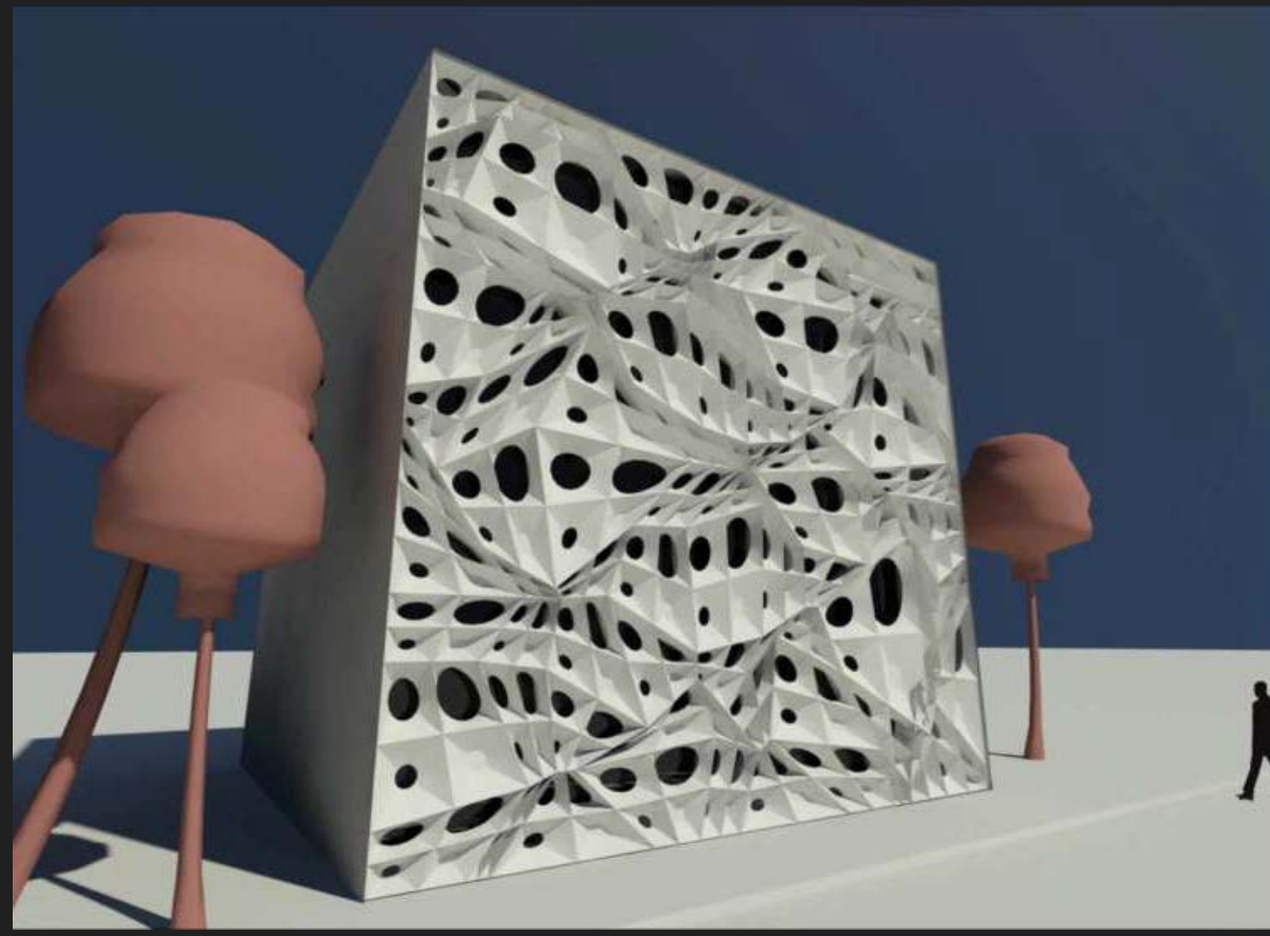

VIBRA

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Vibration - Chaos

By Alya Al Hamwi Al Fahham
Suzana Jumaa

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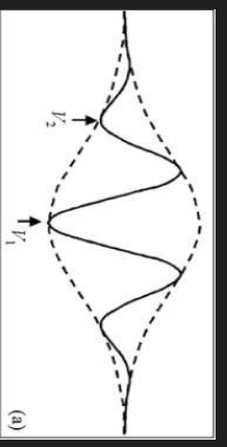
Ideas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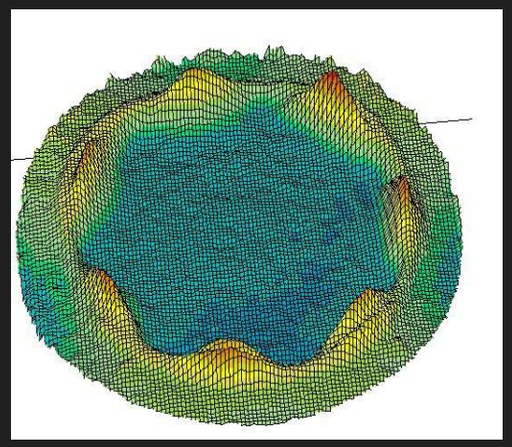

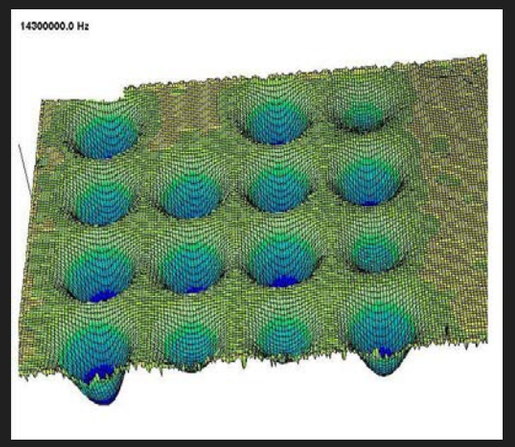
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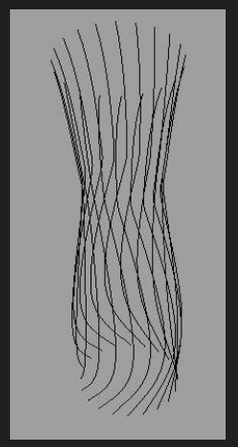
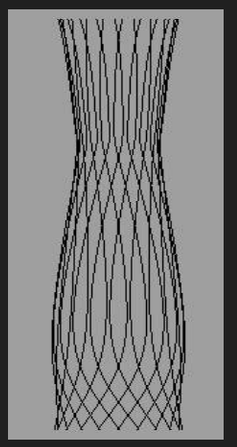
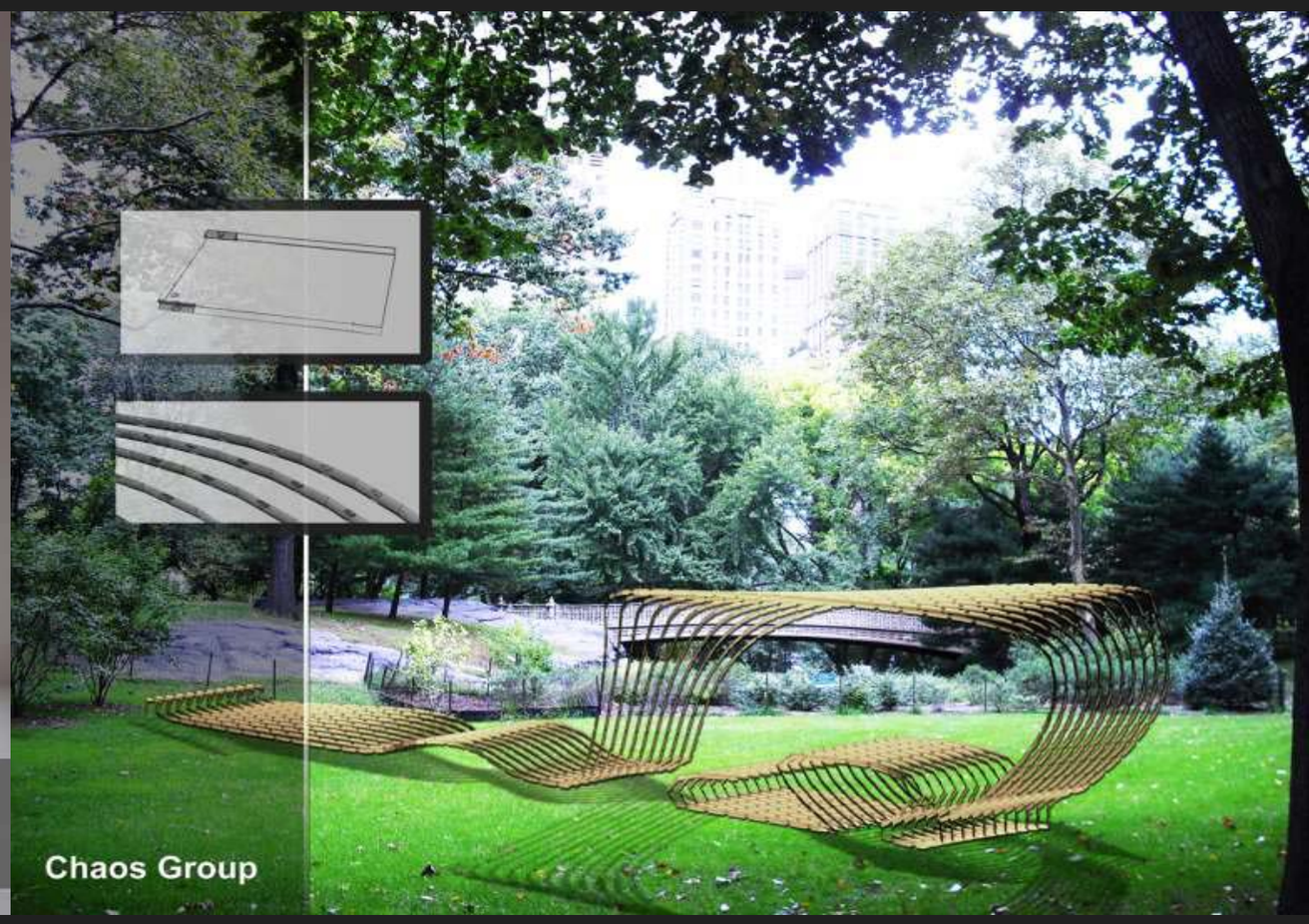
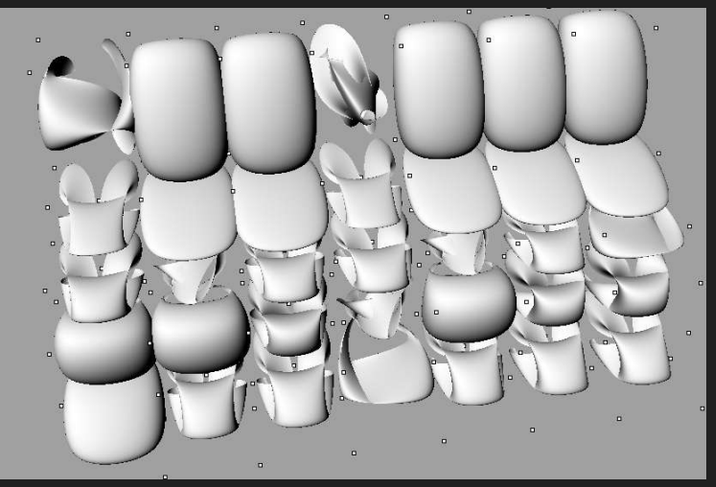


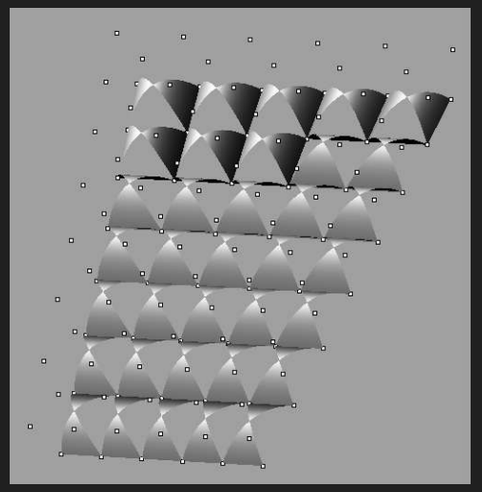


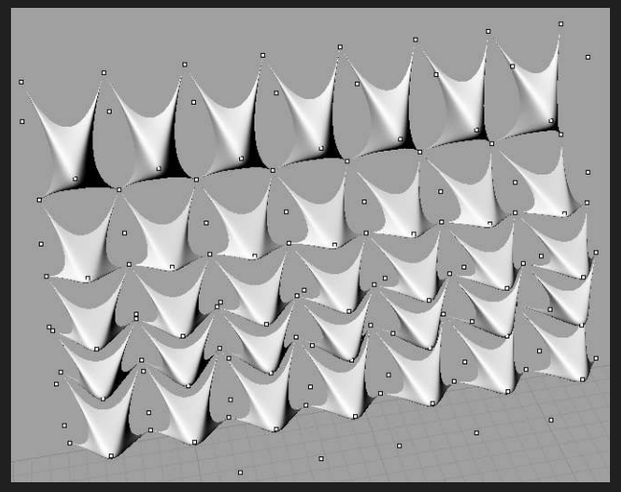
Chaos Group
Vibration of Water Drop
Paneling Tools Custom 2d

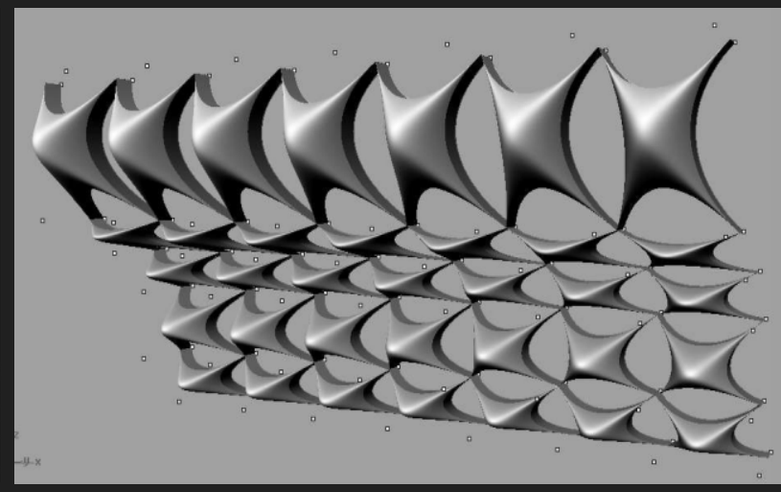

Chaos Group

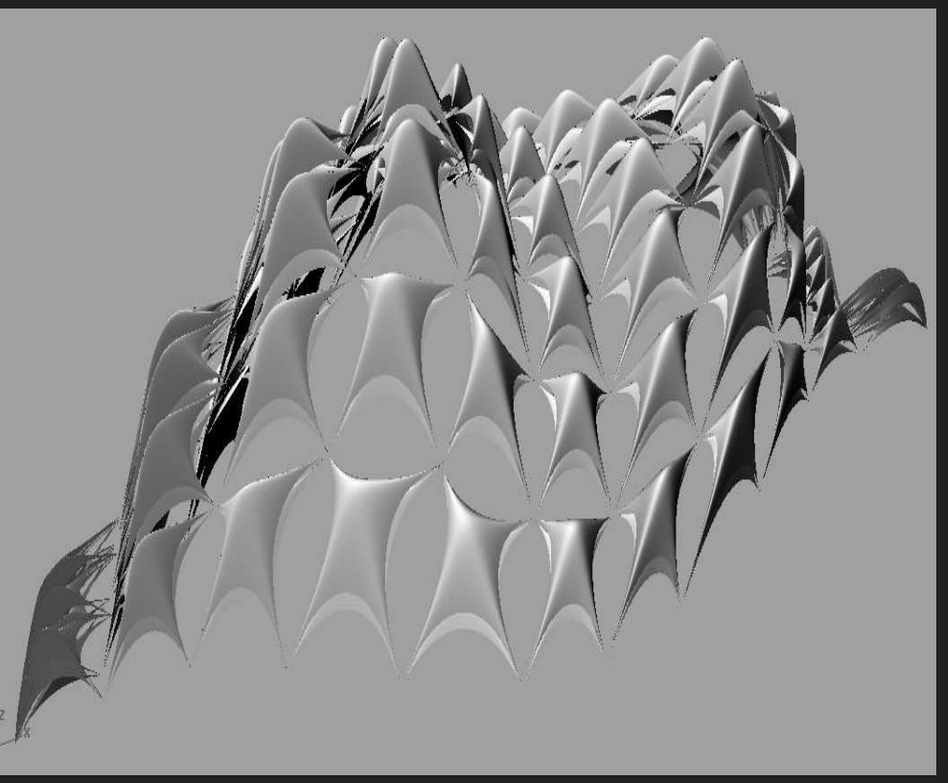
Result

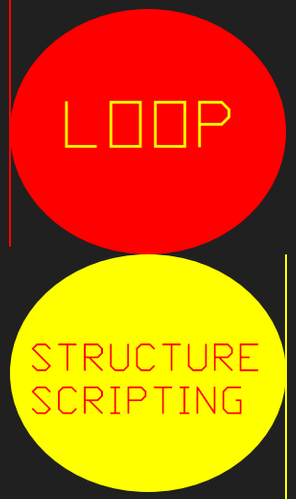










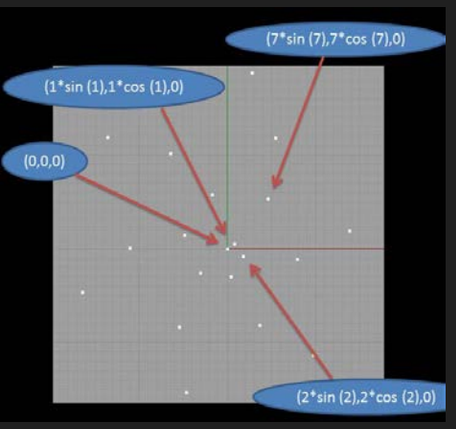


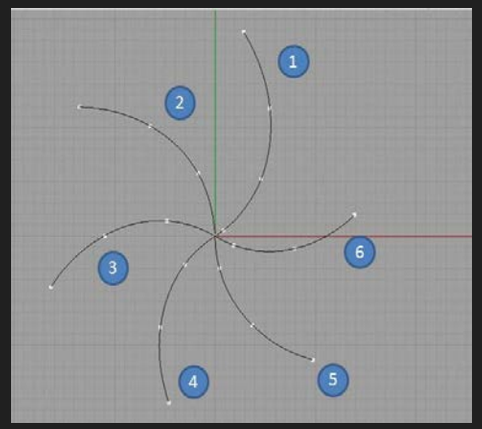
Loop Structure Scripting

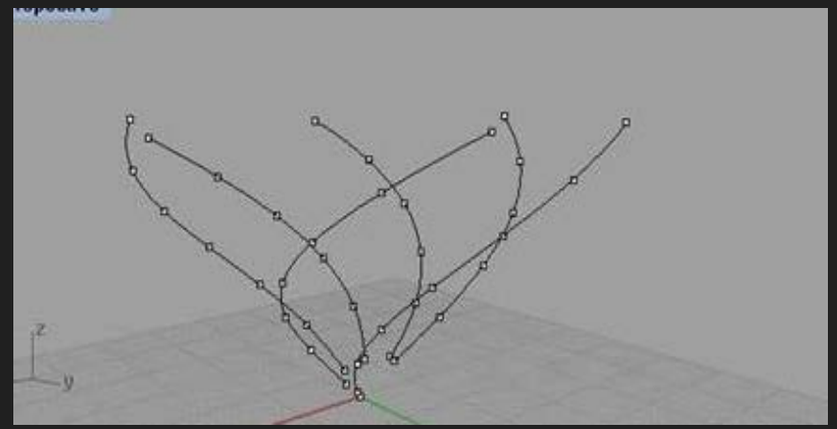
By Mostafa Yosef

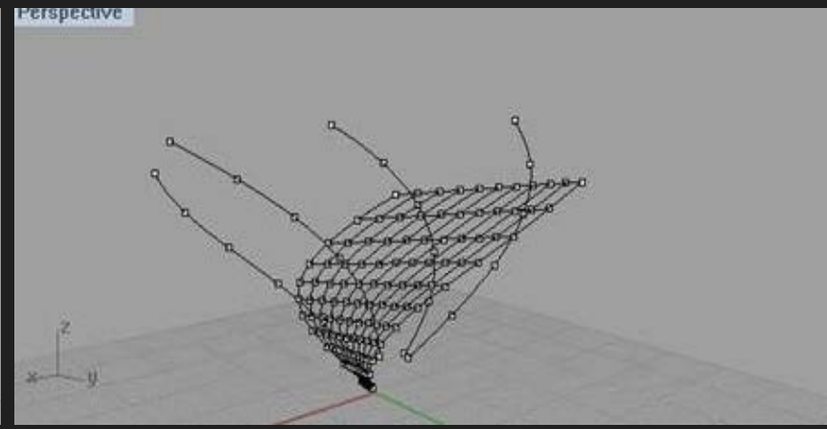
Rhino Level II -NURBS Modeling - Scripting ,Damascus - Syria, August (14th – 18th) 2011

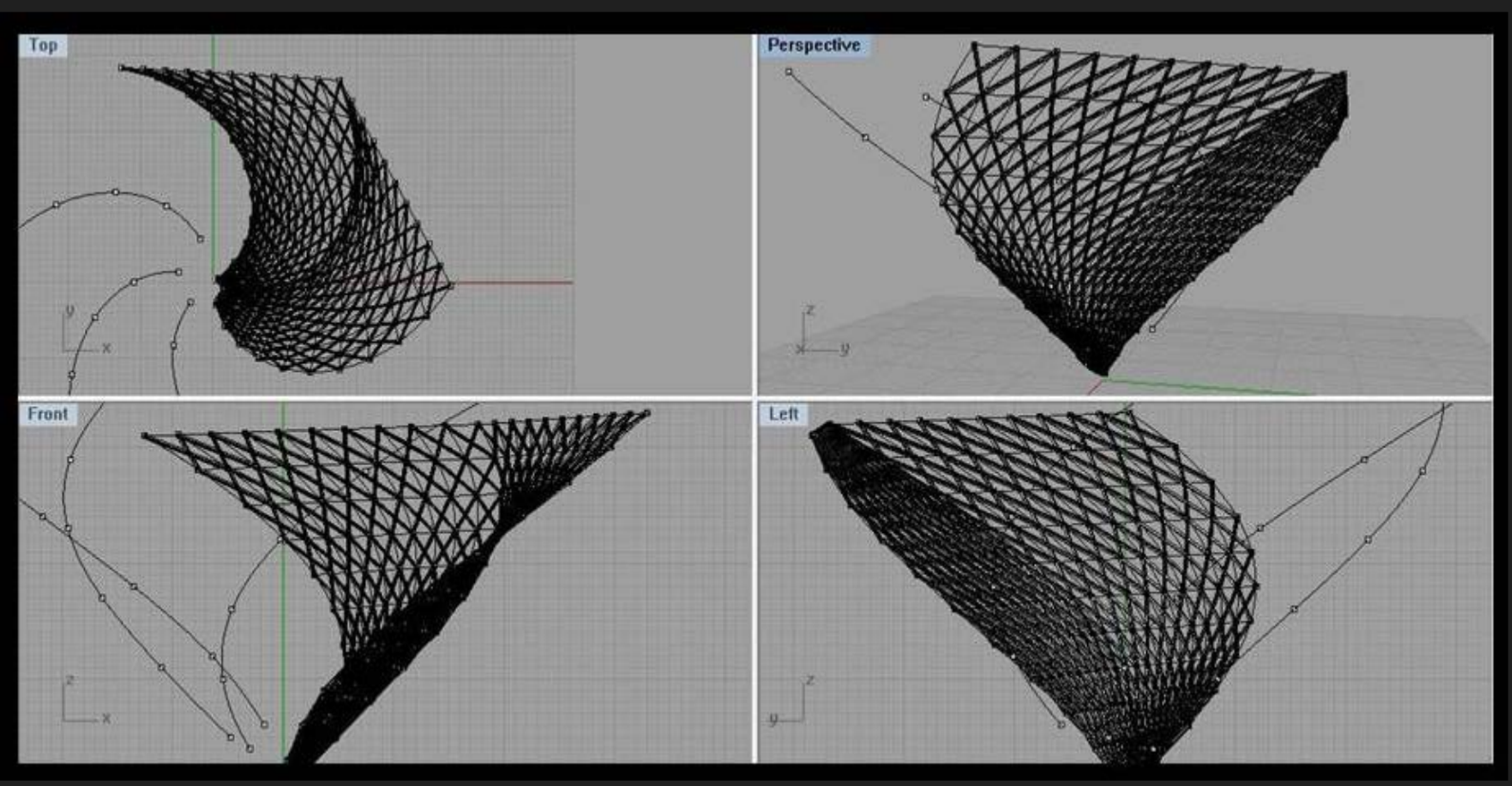
Ideas

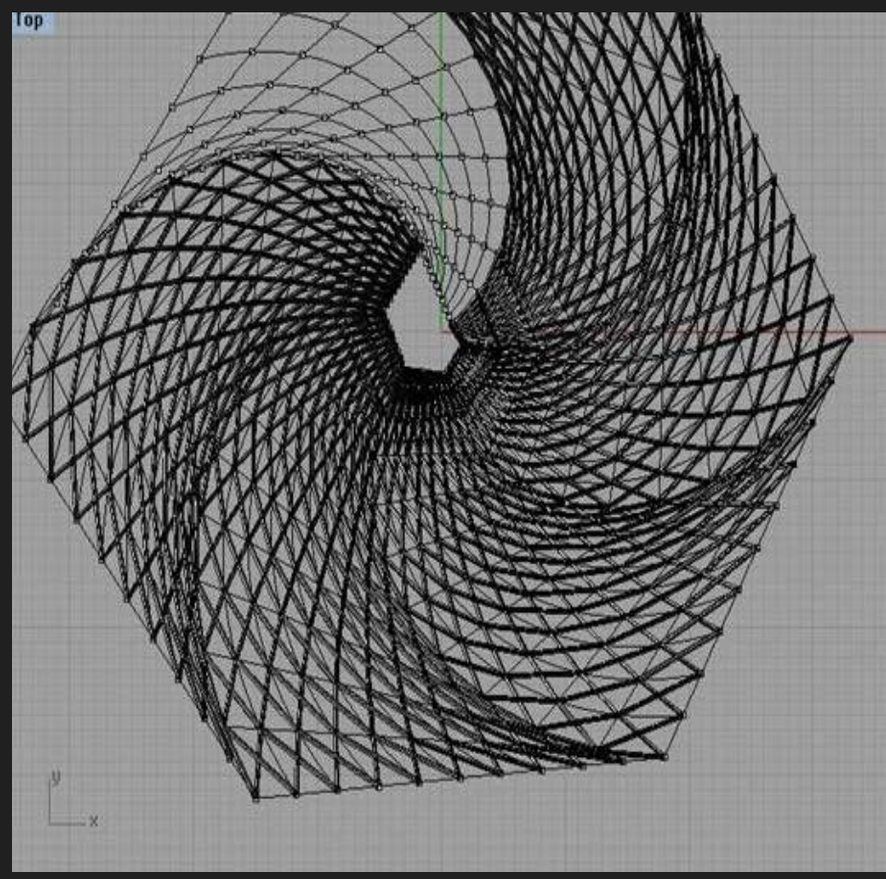

(7*sin (7),7*cos (7),0)
(1*sin (1),1*cos (1),0)
(0,0,0)
(2*sin (2),2*cos (2),0)


1
2
3
4
5
6

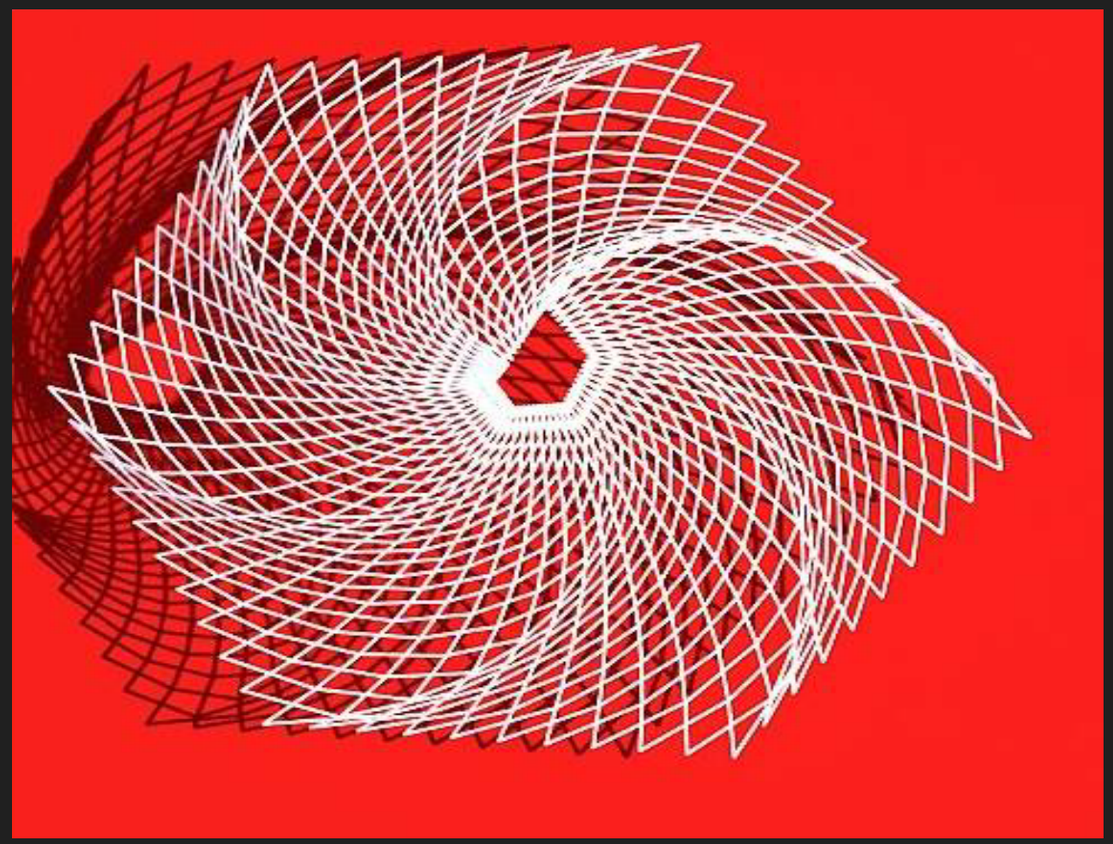


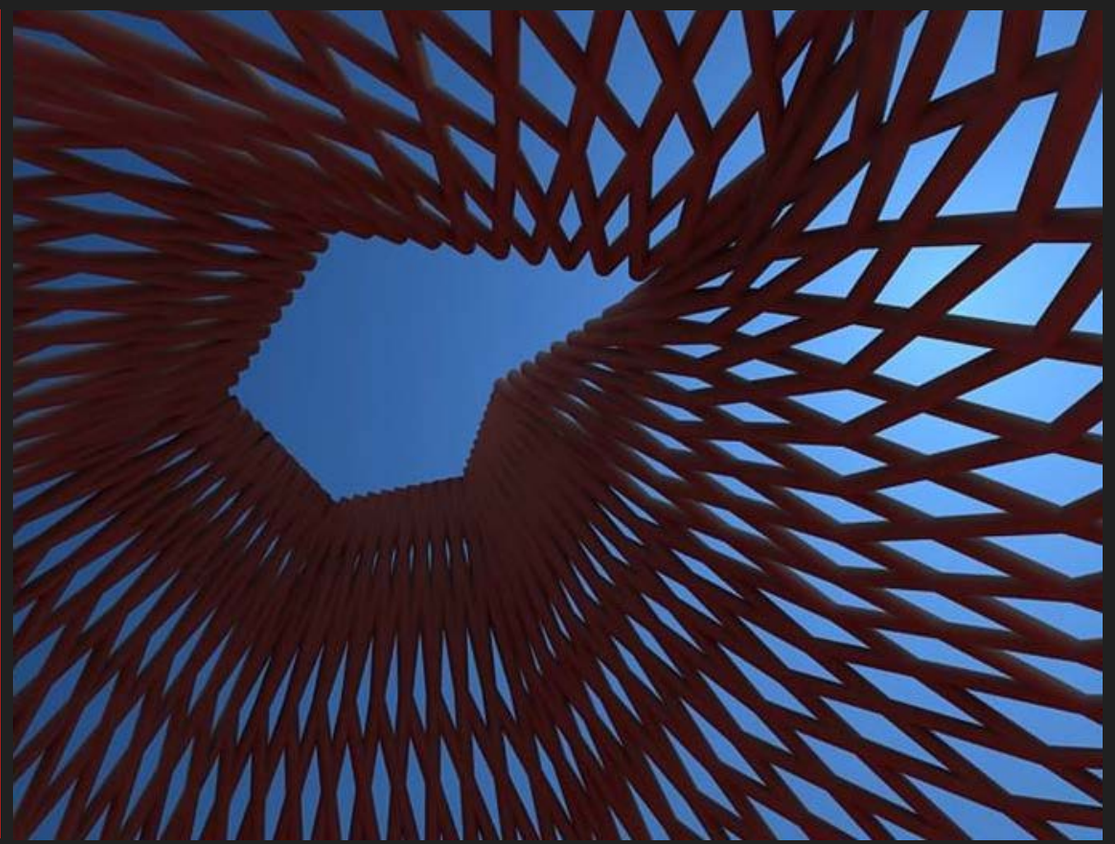

Perspective

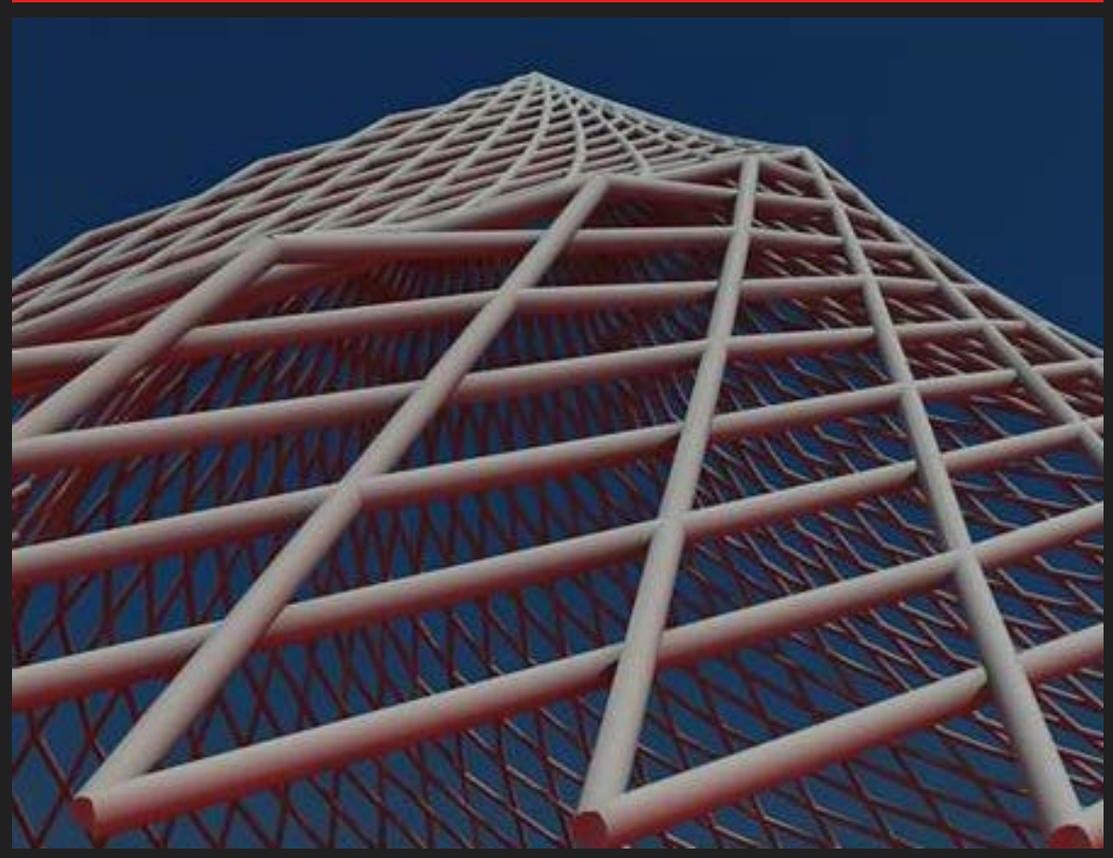

Top
Perspective
Front
Left

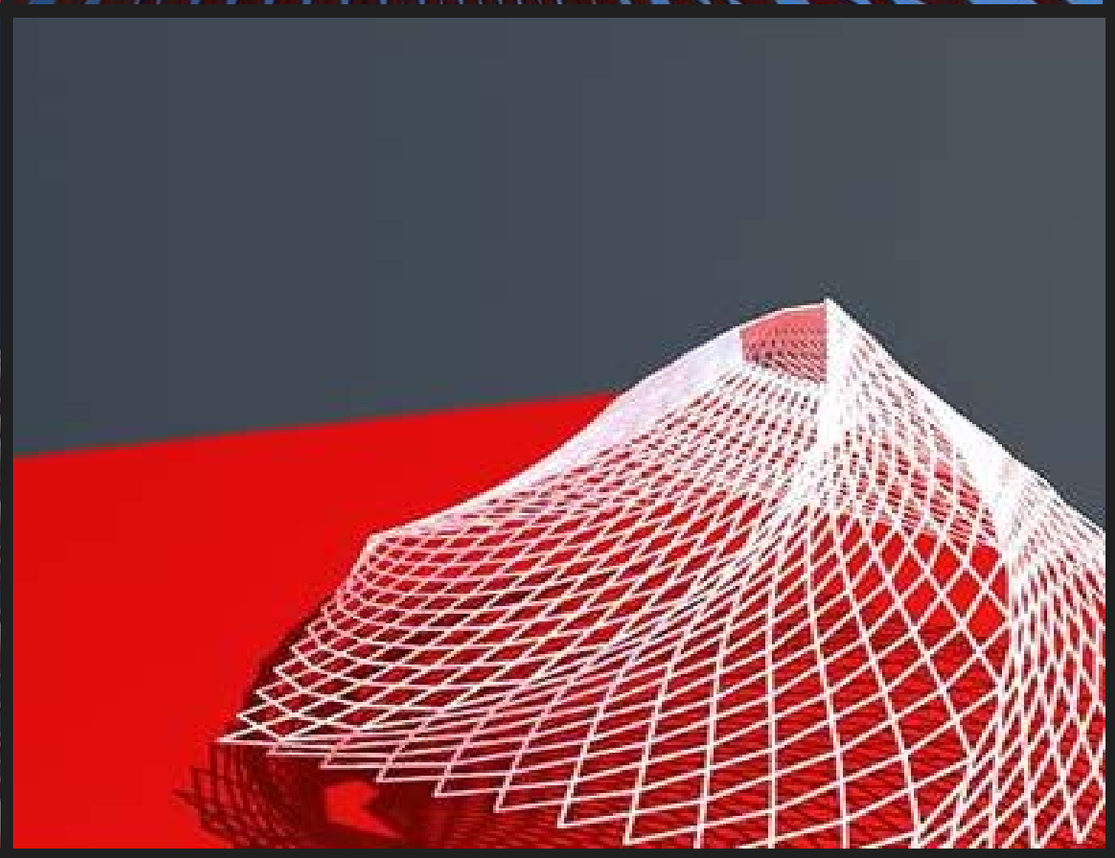

Top

Result









Acknowledgment

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