Architectural Design

Honorable Mention

Project Title: **Studies on the Texture of a Woven Wall**

Student Name: **Jing-Ti Tsai**

Level, Course: **Fourth Grade**

Advisor/ Instructor: **Chen-Cheng Chen**

Principal Investigator: **Chen-Cheng Chen**

Department: **Department of Architecture, Tamkang University, Tanshui, Taiwan**

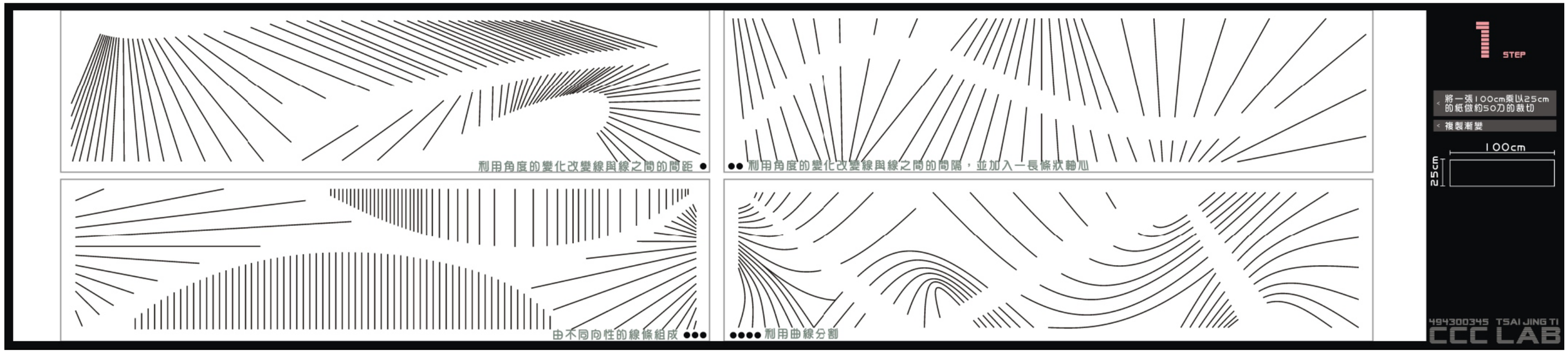
Summary description of project:

The design is intended to enable students to understand how to operate 3D computer graphics software and to use Non-Uniform Rational Bezier Spline (NURBS) to show curved surface models. Here is the designing process procedure:

1. Cut a piece of paper (100cm x 25cm) up to fifty times.
2. Make single action deformations to the four processed papers and photograph them.
3. Make multiple action deformations to the same four papers and photograph them.
4. Use Patch and NURBS in form•Z to render the models from steps 2 and 3.
5. Use Animate Form to present the models from steps 2 and 3.
6. Manually draft analysis diagrams for the models from steps 2 and 3.
7. Using drafting software, make analytical diagrams for the models from steps 2 and 3.
8. Compose the strip units into one surface based on the analysis from steps 6 and 7.
9. Design the slice units into one surface based on the analysis from steps 6 and 7.
10. Design the semi-tubular, tubular and curved surface wall from steps 8 and 9.

Reasons for which this student and his/her project should be awarded:

This design was based on the careful observation of the folded paper with its distortions and 3D computer graphics were used to make a very lifelike model. The animation from NURBS and Patch in form•Z gave an extremely clear vision of the object's interesting step by step transformations into a model. During the process, we not only had a changeable wall but also a close look at the detailed analysis of the deformation process of the paper and its application to the wall after production. The entire design process was very clear and rational.



Jury Comments:

A project whose value lies in its exploratory nature. Investigating forms that can be generated by deforming both physical and virtual media. It represents the type of studies we need to involve ourselves with in order to master the possibilities presented by the new digital media. A well organized investigation and, while the textual information is limited, one can easily draw almost personalized conclusions from the displayed images.

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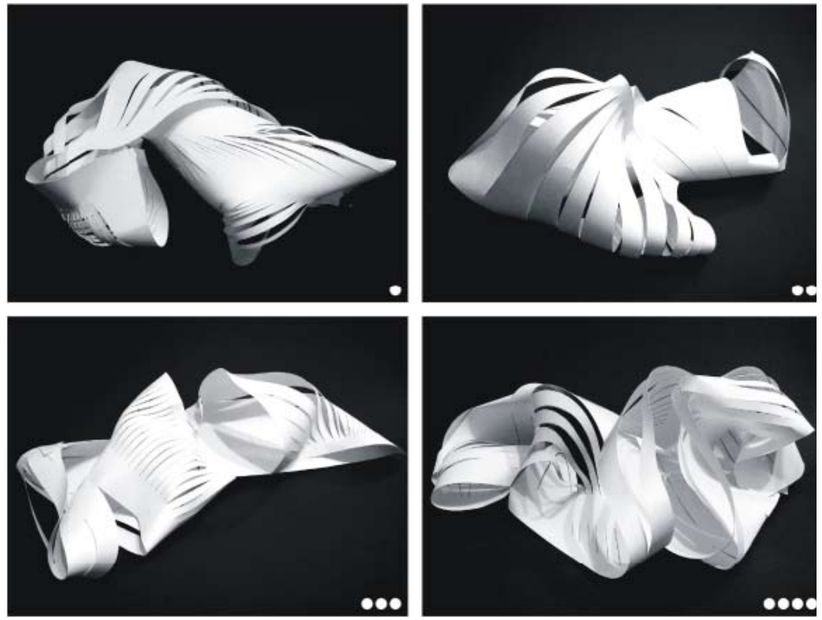
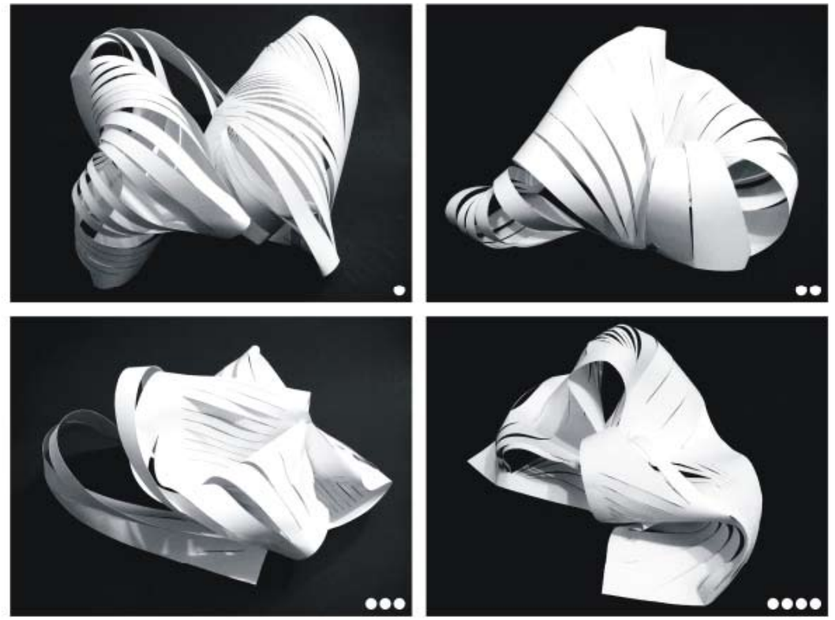
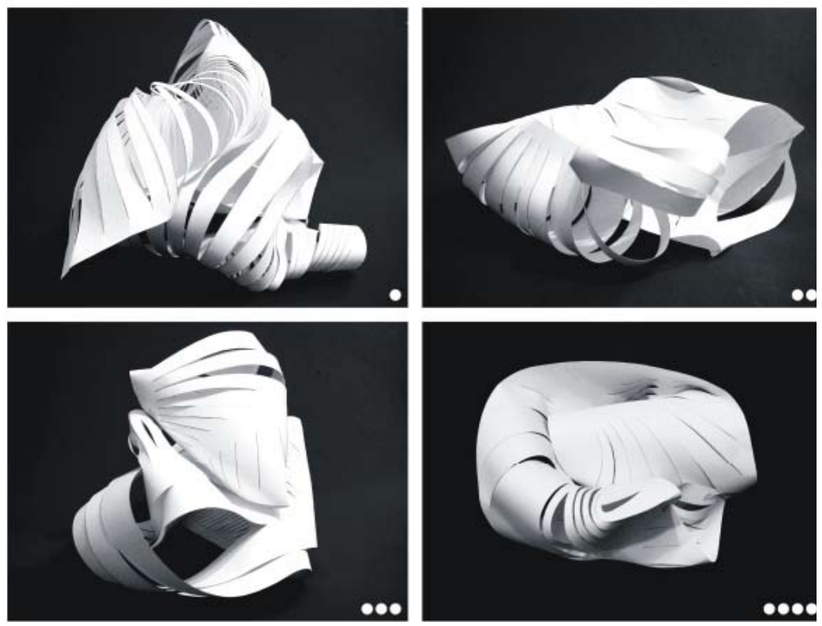


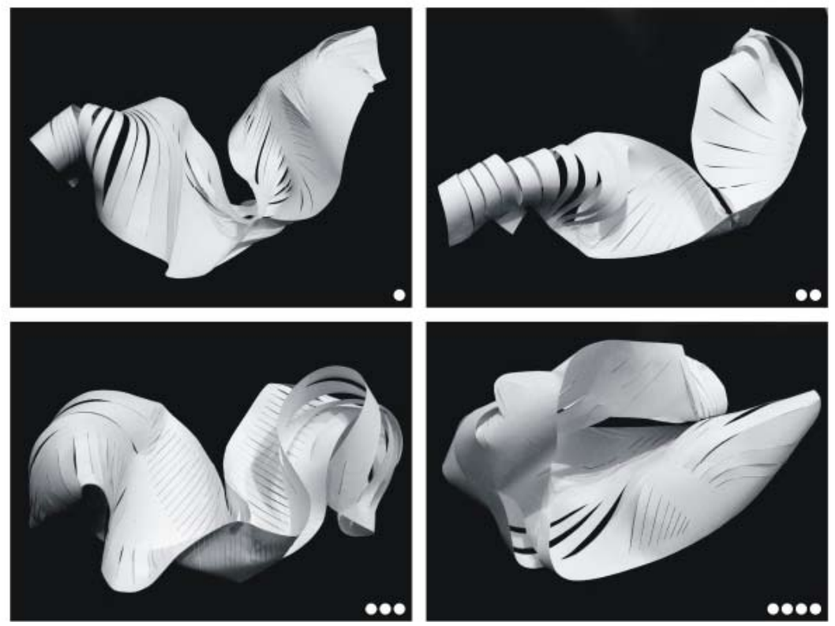
2-2 摺 PLEAT



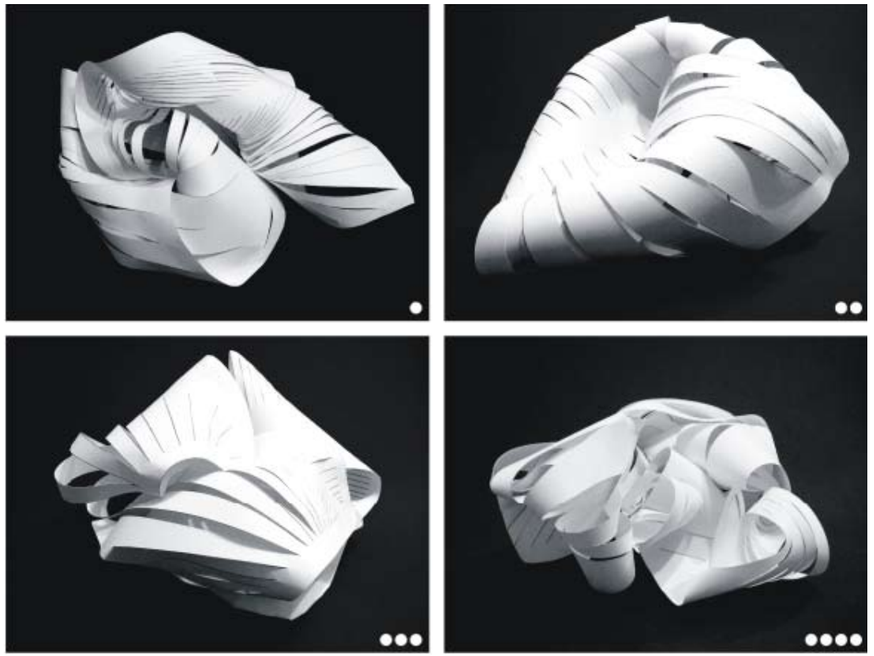
2-3 捲 COIL



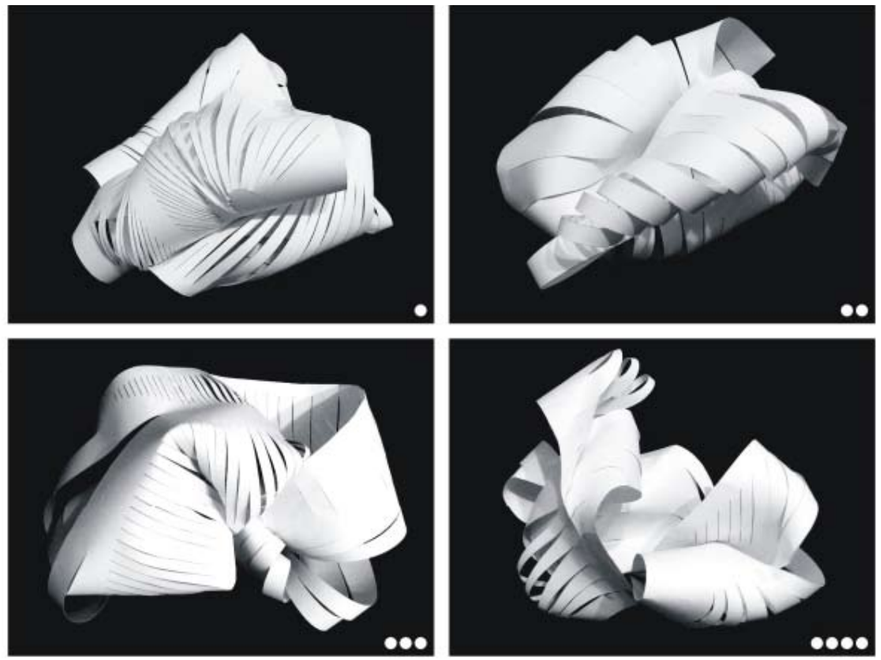
2-4 扭 WARP



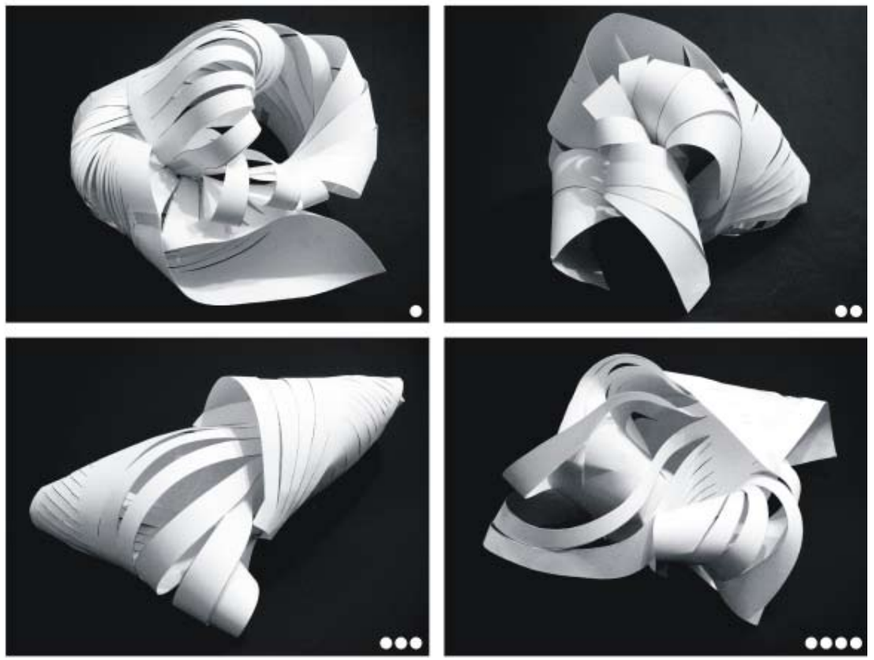
3-1 轉&捲
TURN&COIL



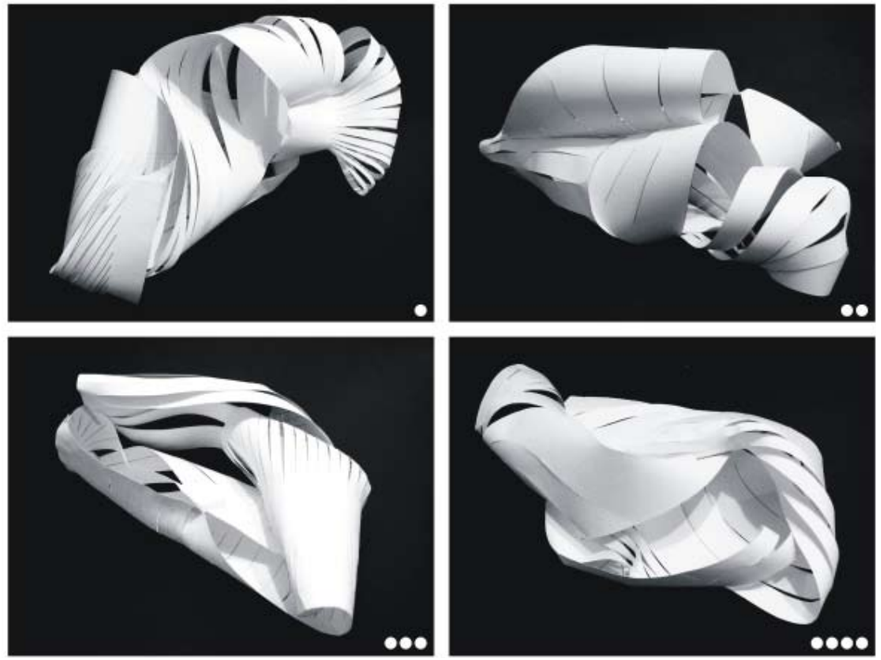
3-2 轉&摺
TURN&PLEAT

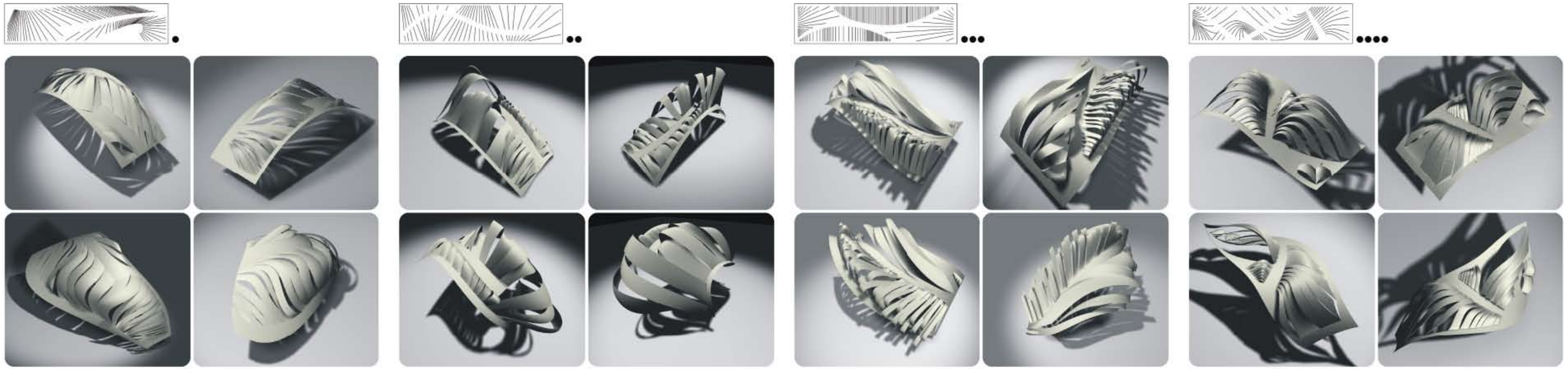


3-3 扭&捲
WARP&COIL



3-4 摺&捲
PLEAT&COIL





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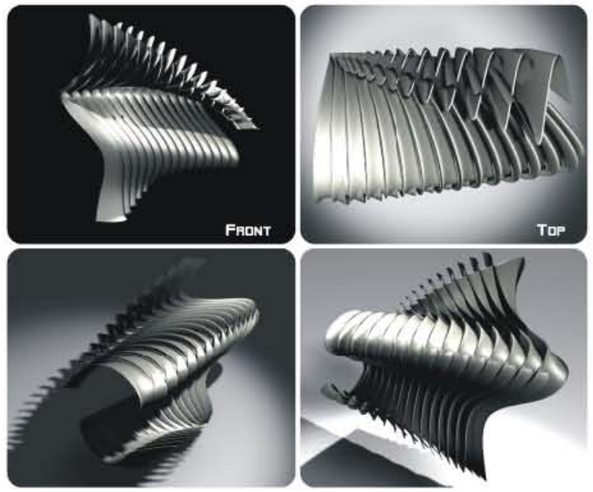

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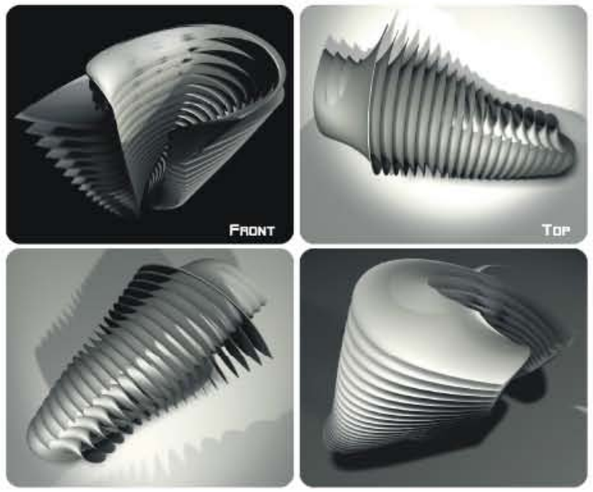

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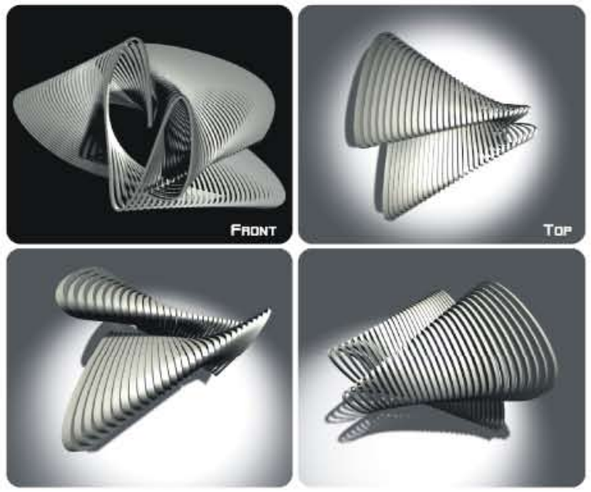

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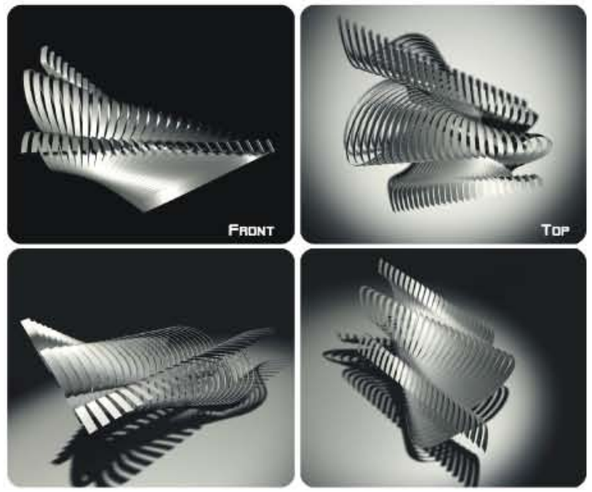

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	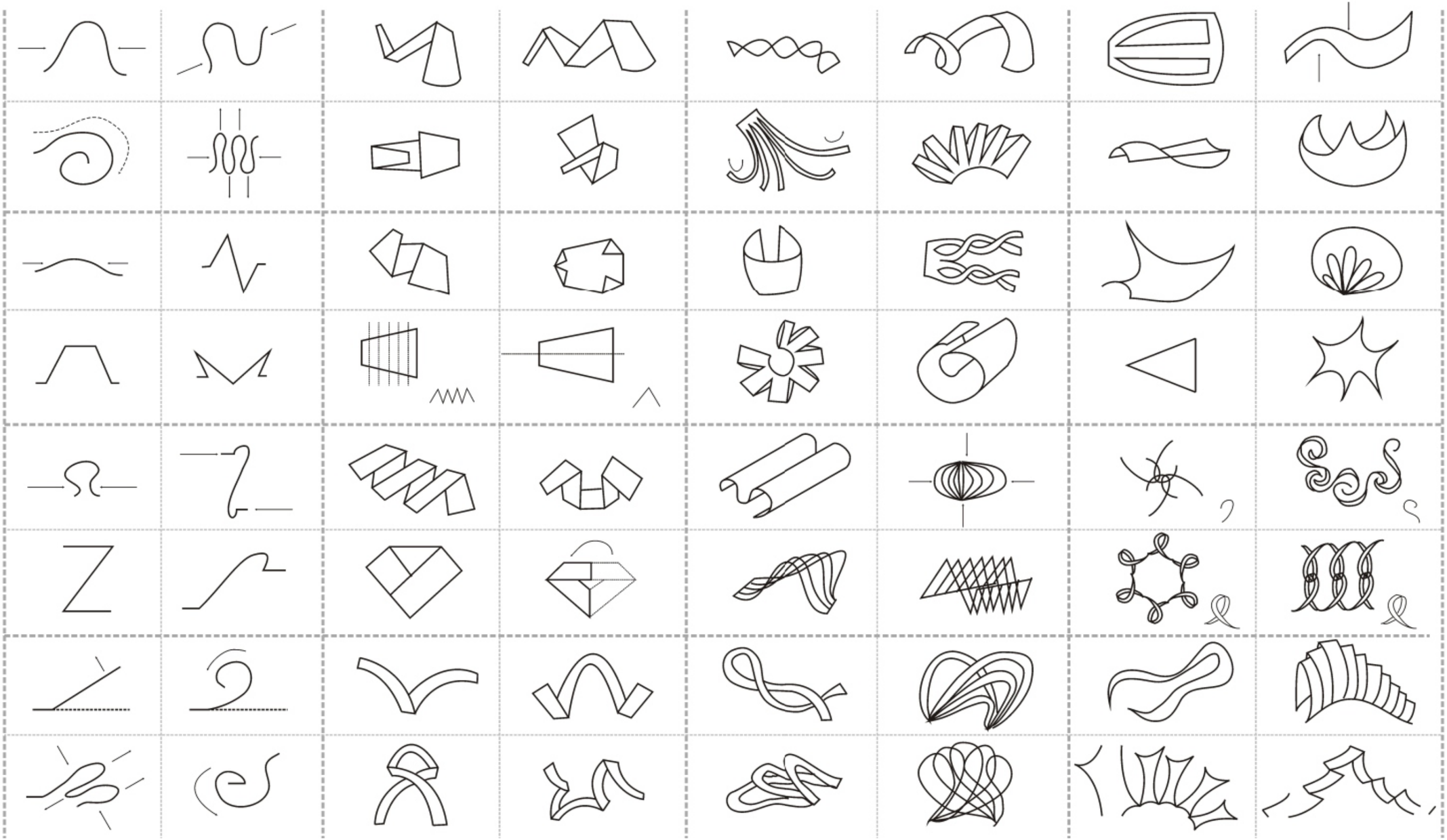			
				
				
				

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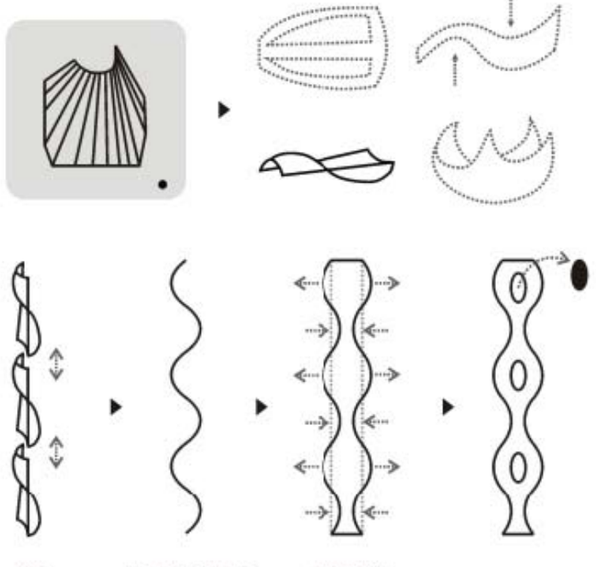
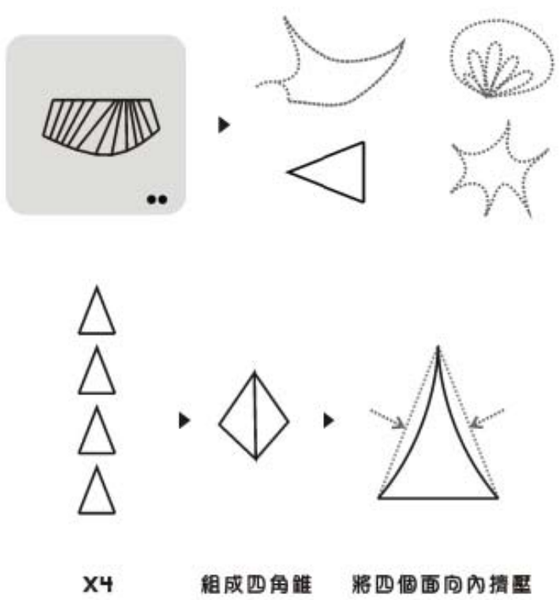

X3
RIGHT SIDE
FRONT

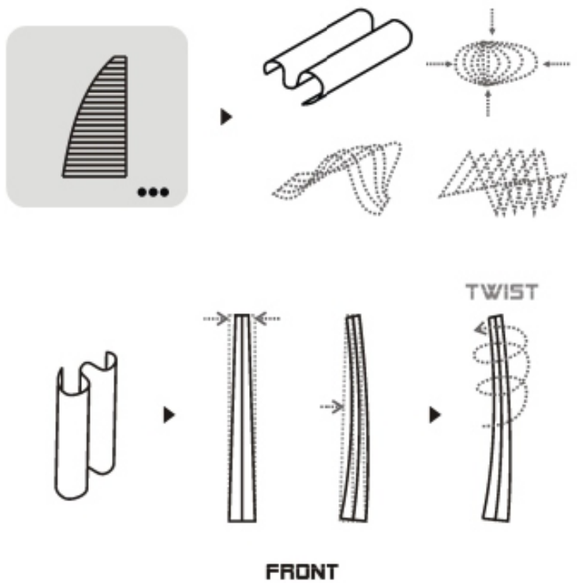

UNIT

6-2


X4
組成四角錐
將四個面向內擠壓


UNIT

6-3


TWIST
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UNIT

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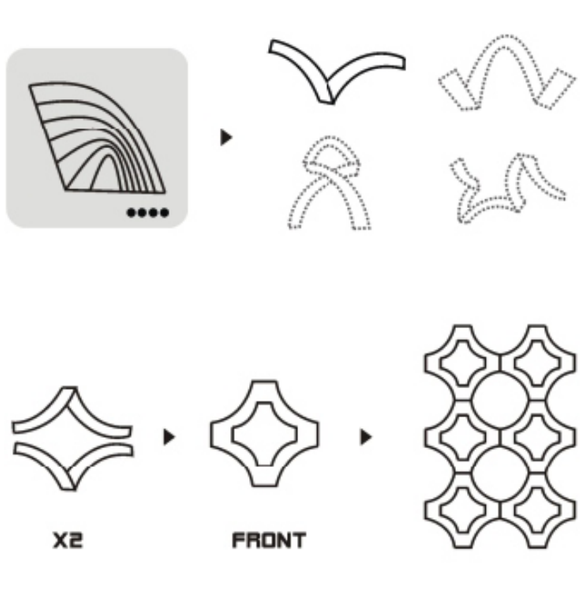
X2
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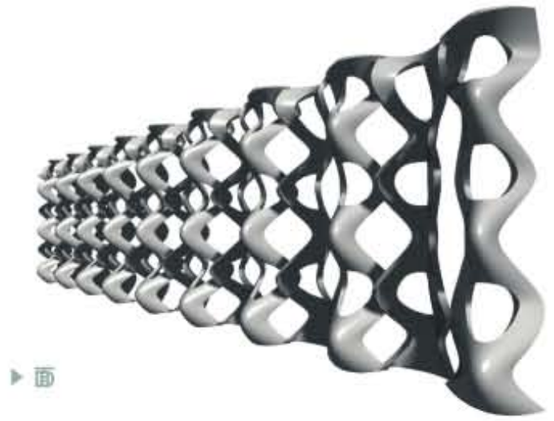
UNIT



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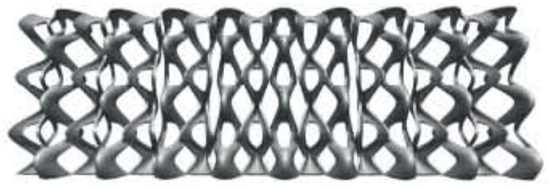

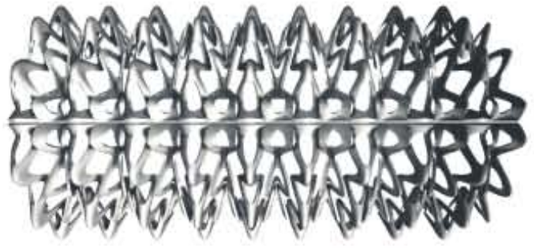

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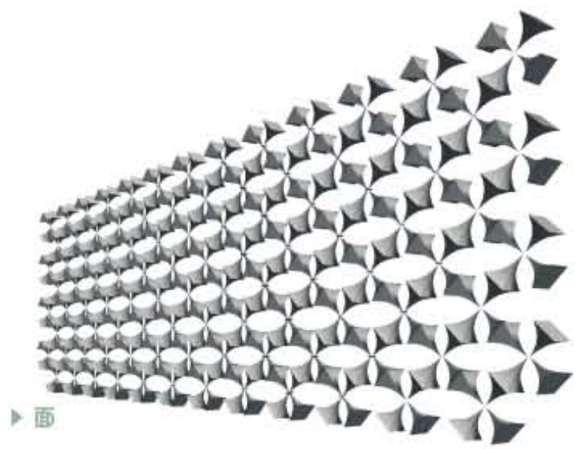

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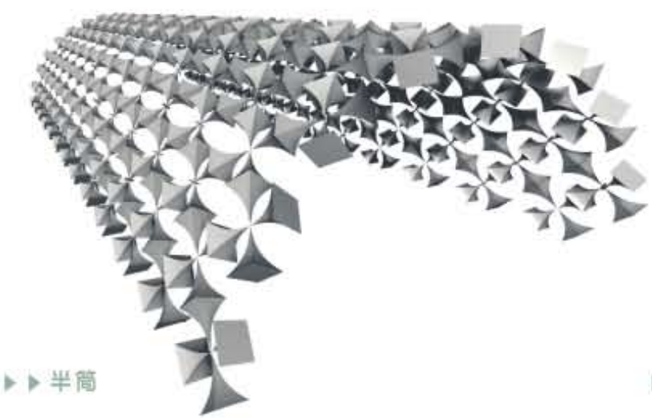

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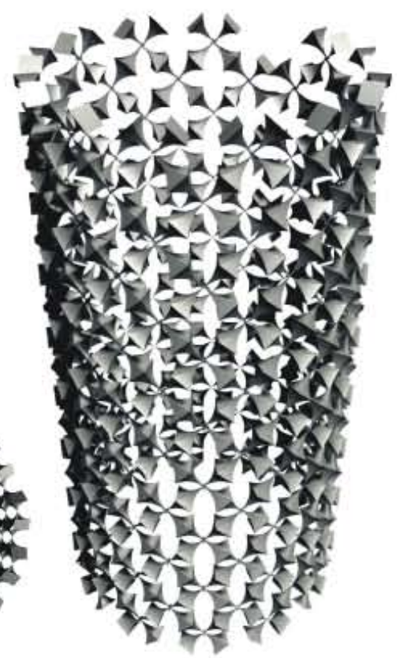

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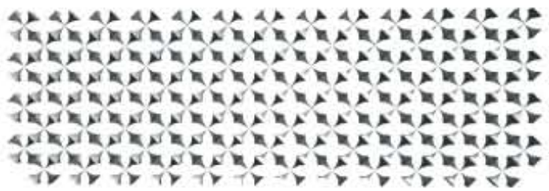

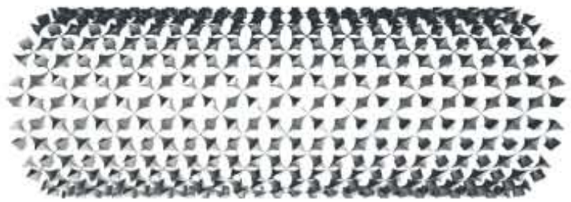

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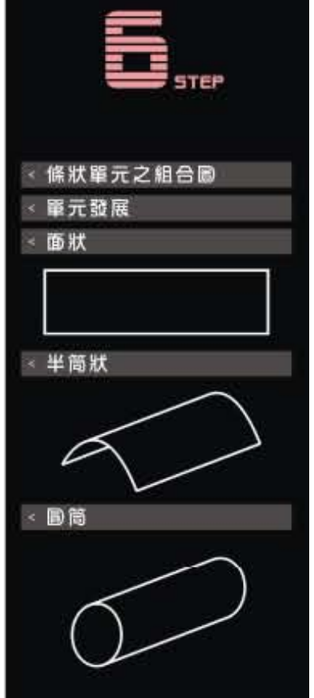

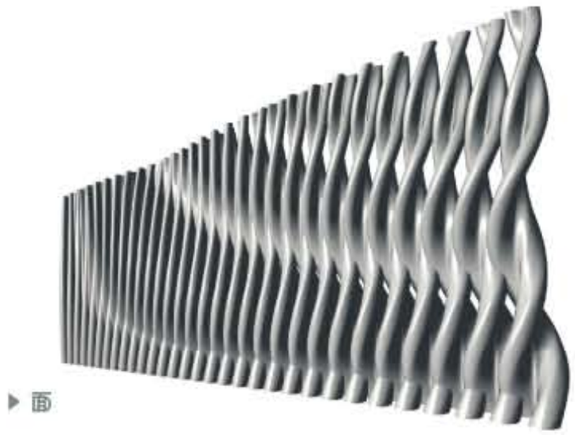

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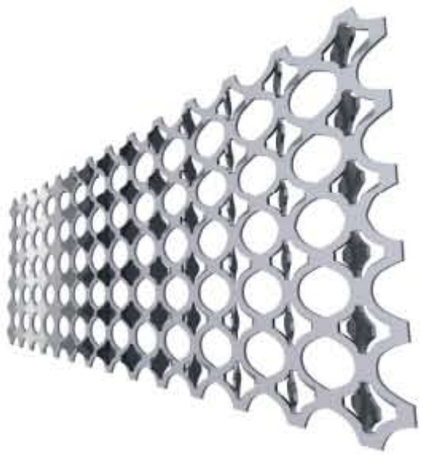

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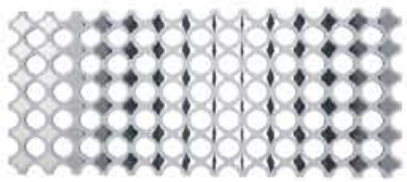

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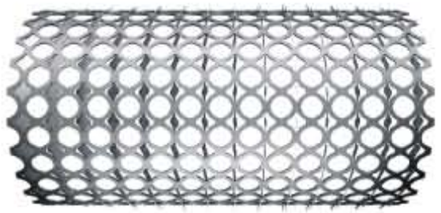

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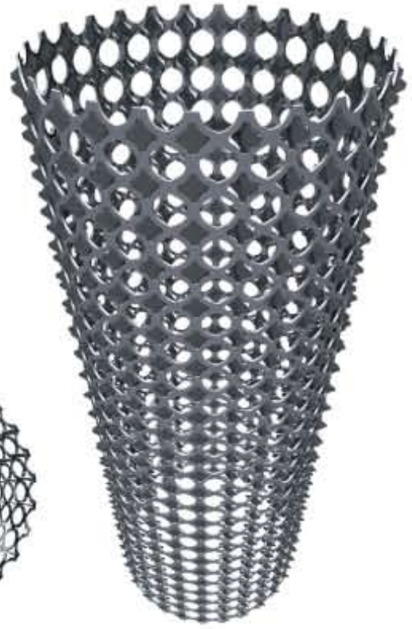

- 條狀單元之組合圖
- 單元發展
- 面狀

- 半筒狀

- 圓筒

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