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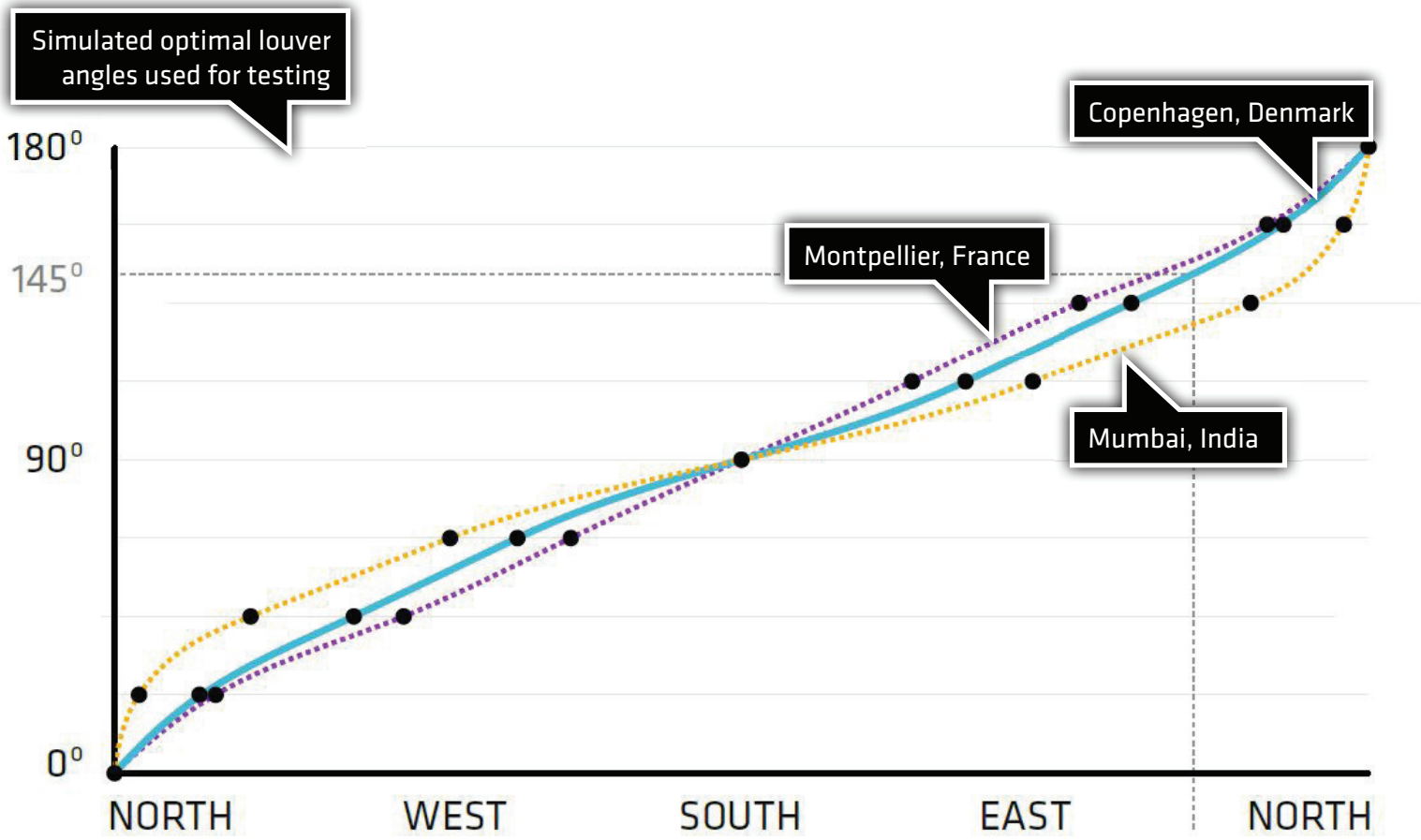
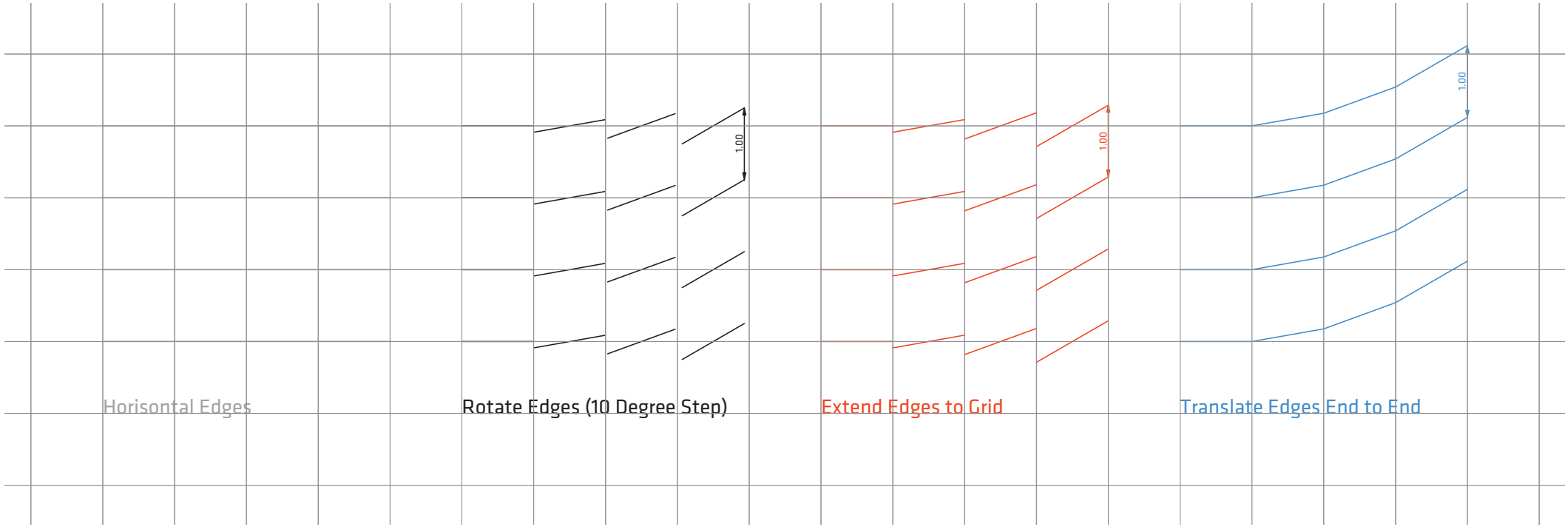
Generating Optimal Louvre Angles (Using Solar Analysis Data)



Design Constraints Exploration in 2D Unit Grid



1) Horisontal Edges: The inital louvre bands are constructed from a starting grid of four by four horisontal line segments (edges).

2) Rotate Edges: The horisontal edges are rotated around their centers in ten degrees increments along the X-axis, maintaining their vertical distance of one unit.

3) Extend Edges: The rotated edges are extended (i.e. made longer) such to have a horisontal length of one unit.

4) Translate Edges: The extended edges are translated (i.e moved) vertically such to connect end to end and again form running louvre bands.

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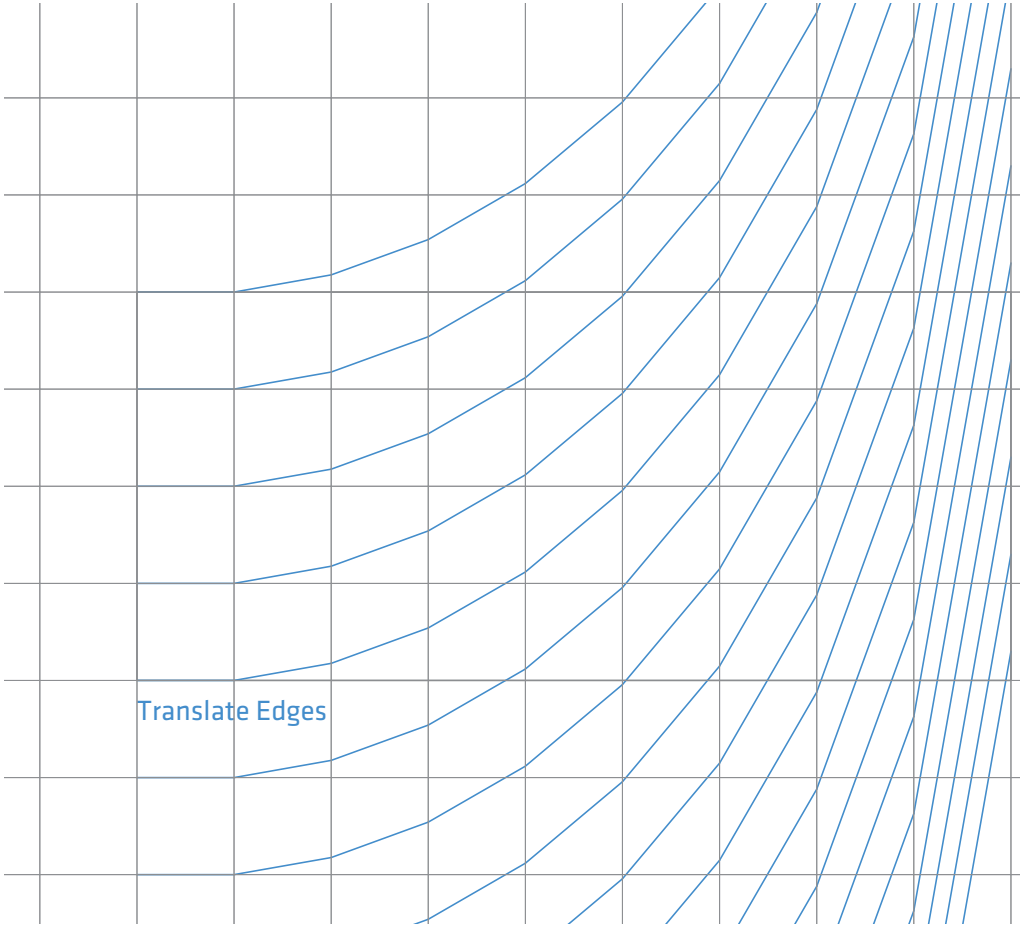
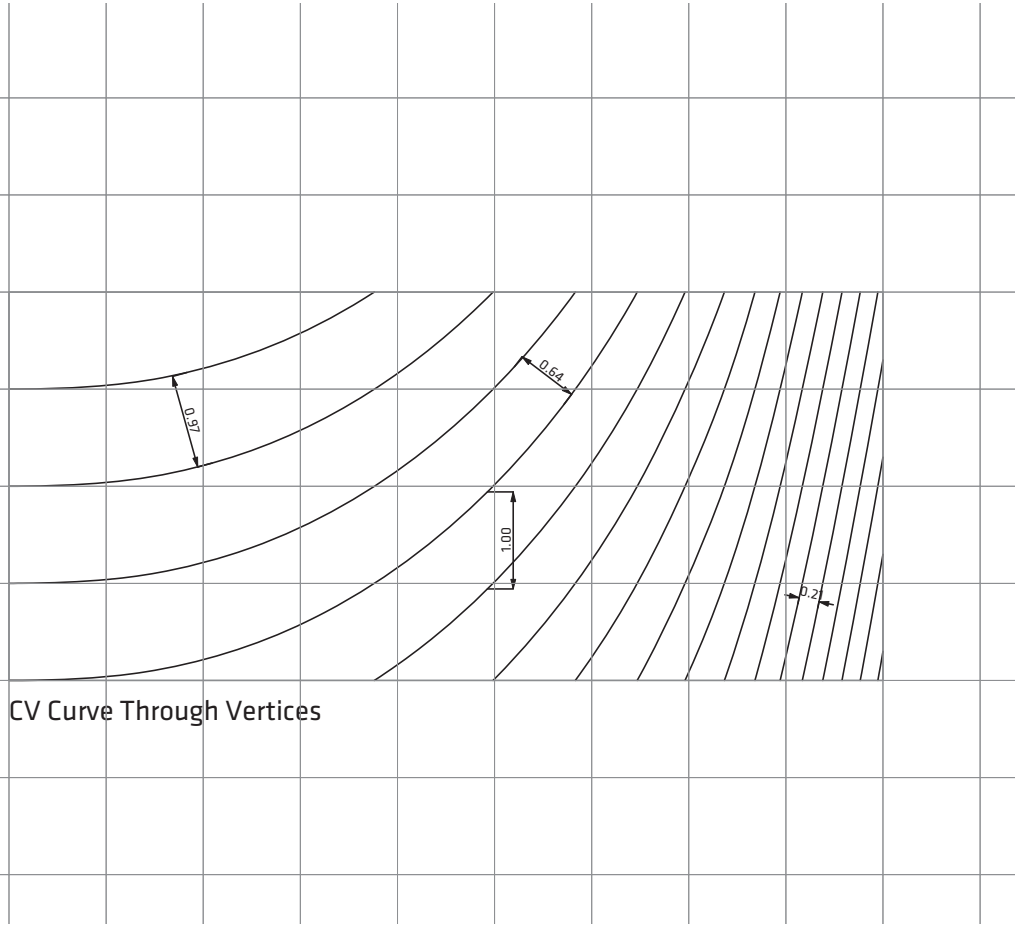
Design Constraints Exploration in 2D Unit Grid

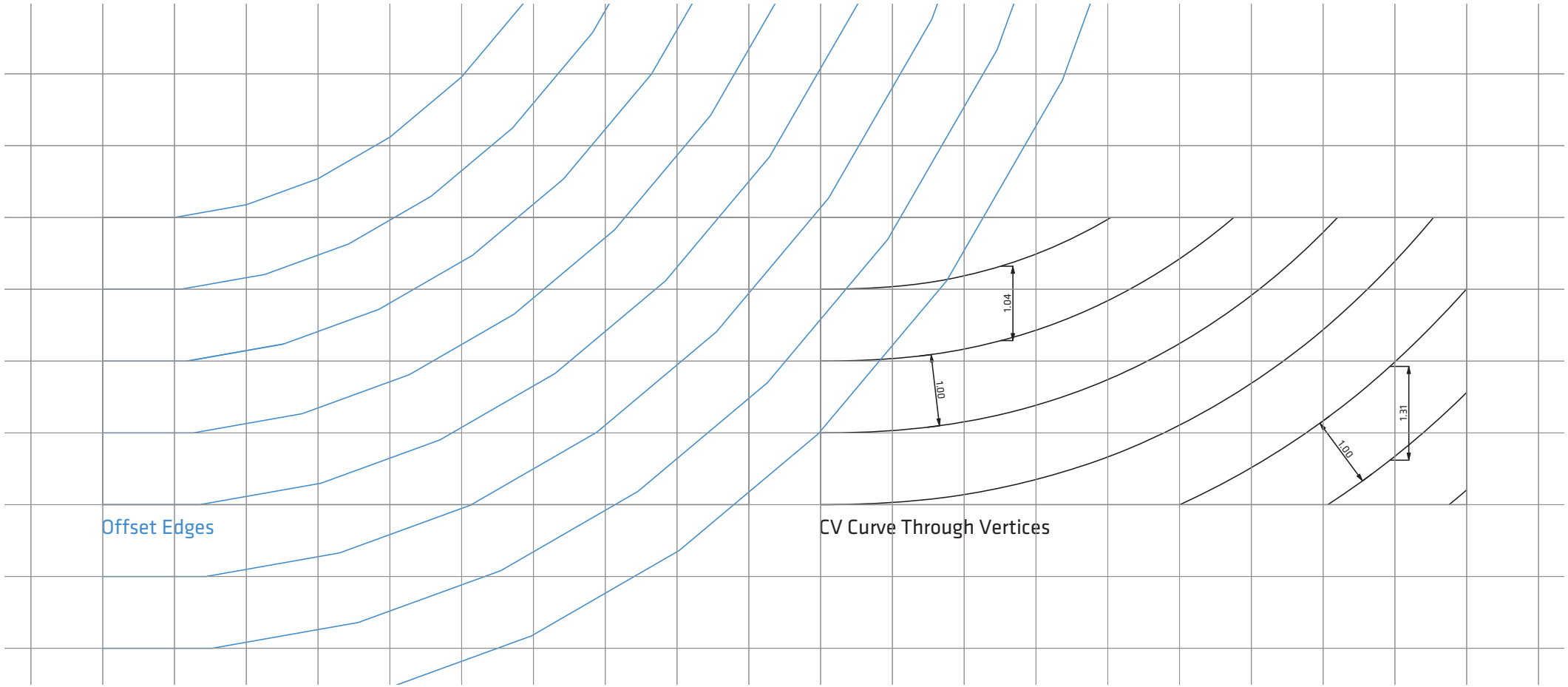


Translate Edges



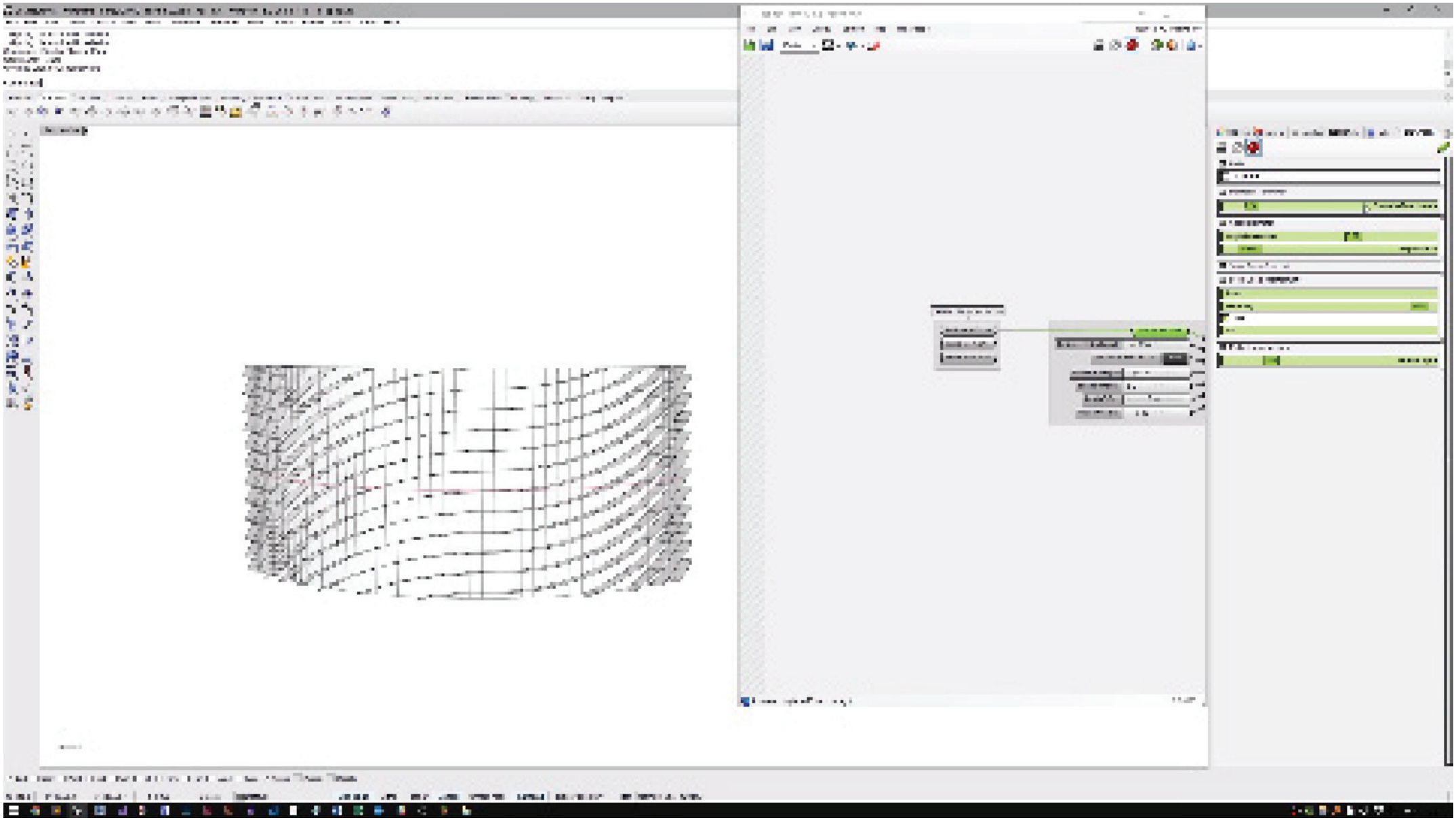
CV Curve Through Vertices

Design Constraints Exploration in 2D Unit Grid



SOT

Design Constraints Exploration in 3D Using Dynamic Solver (Video 01:09)



Video Link

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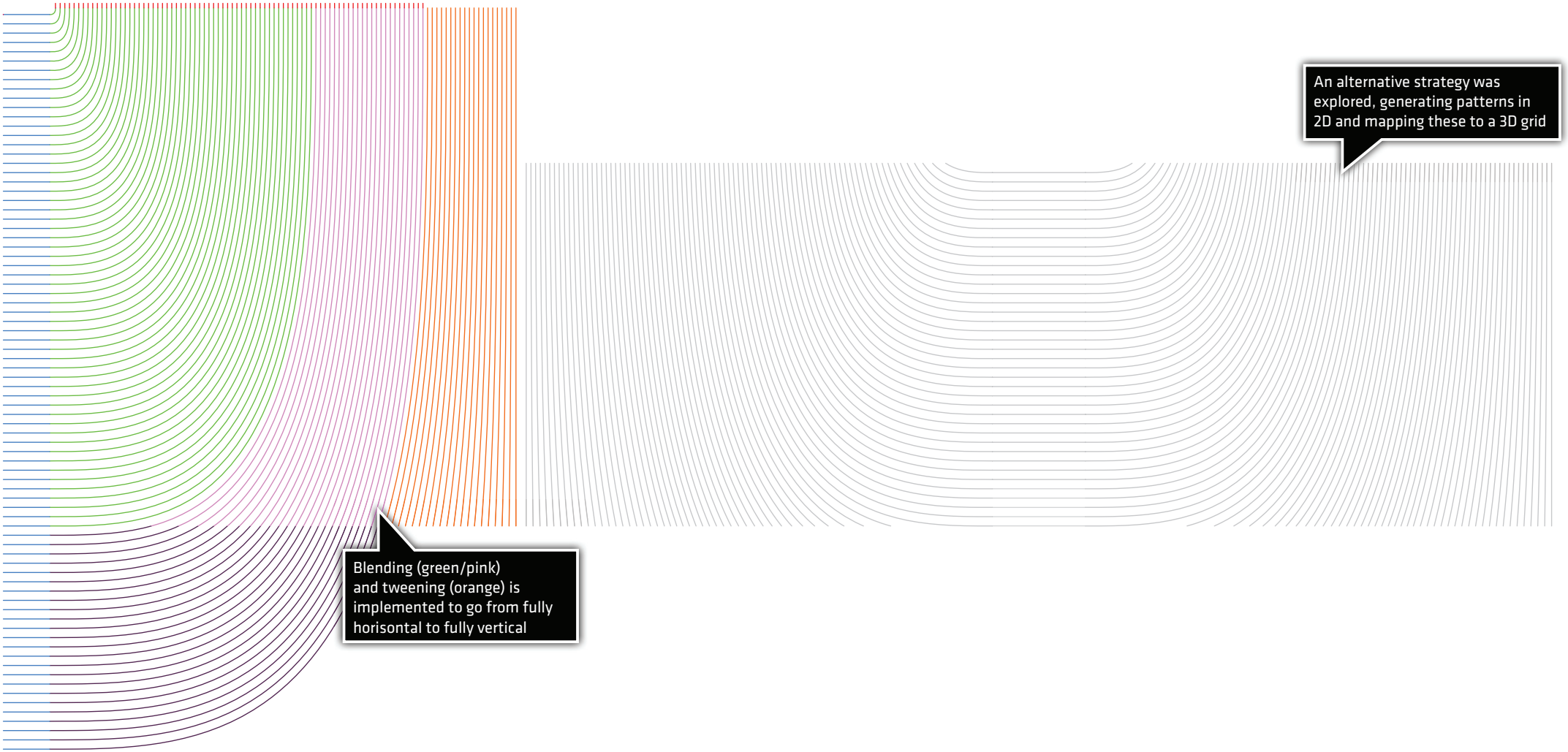
Horisontal To Vertical Pattern Generation With 2D To 3D Mapping



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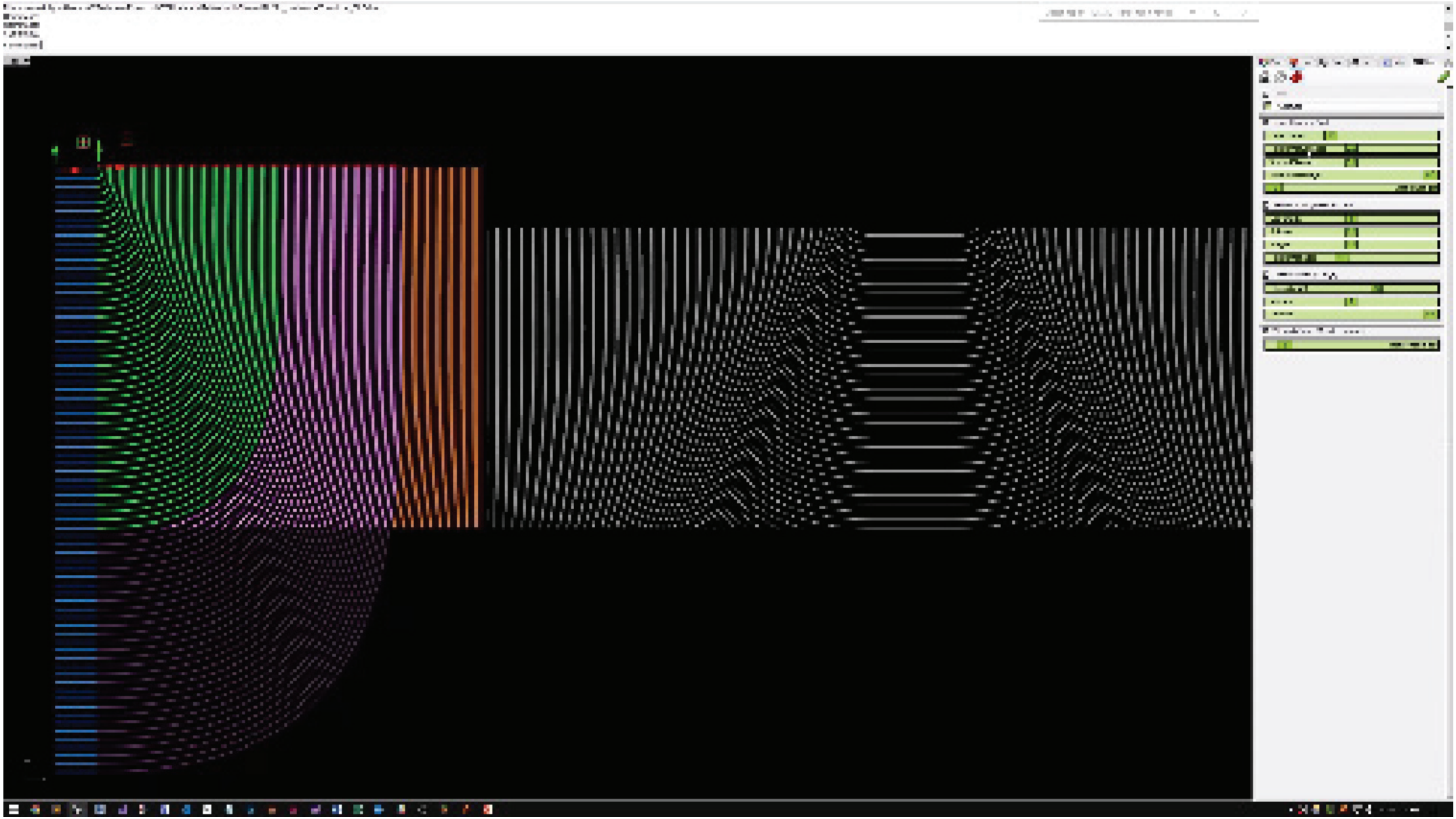
Horisontal To Vertical Pattern Generation With 2D To 3D Mapping (Video 00:55)



Video Link

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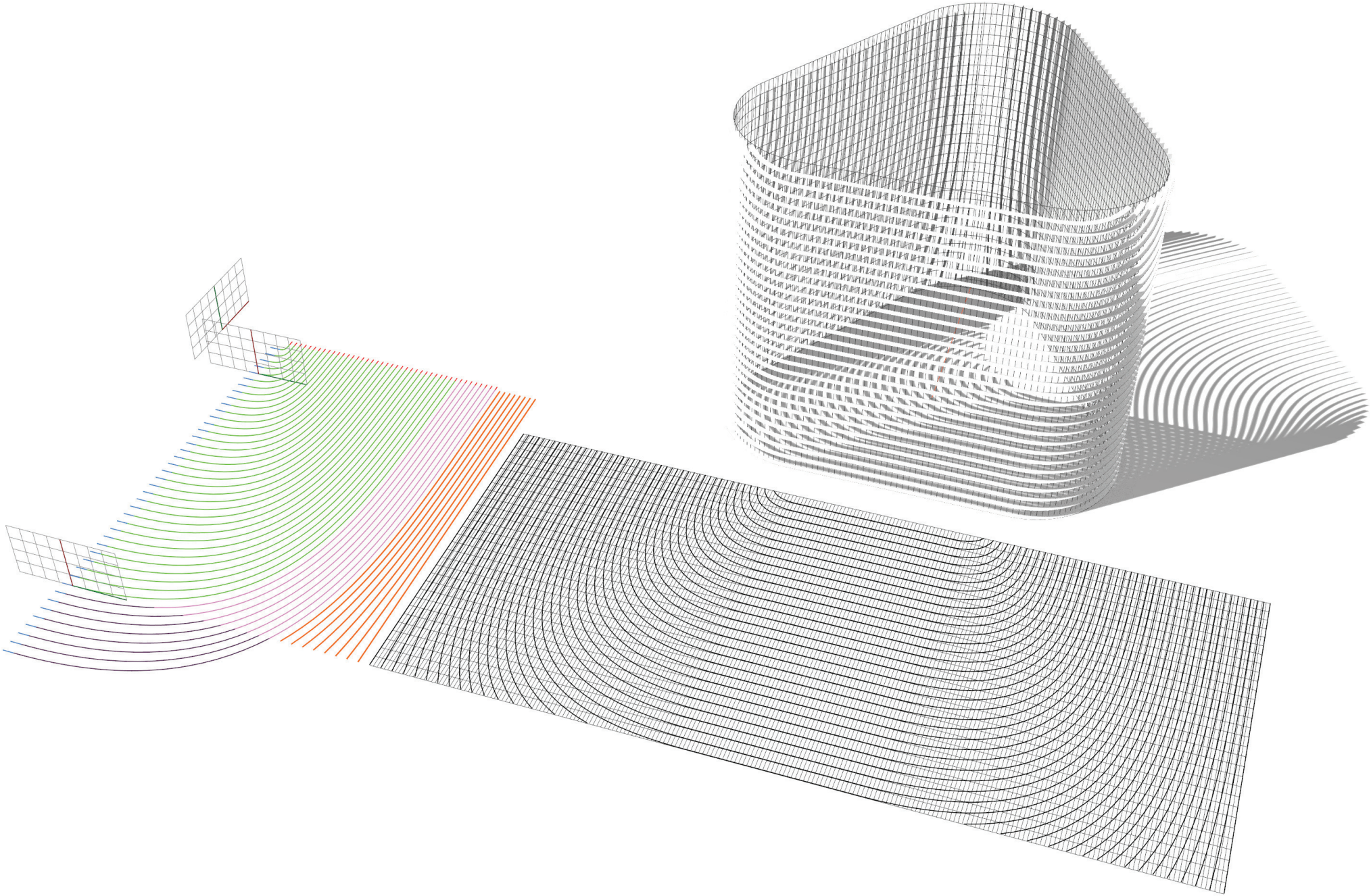
SOT

Horisontal To Vertical Pattern Generation With 2D To 3D Mapping



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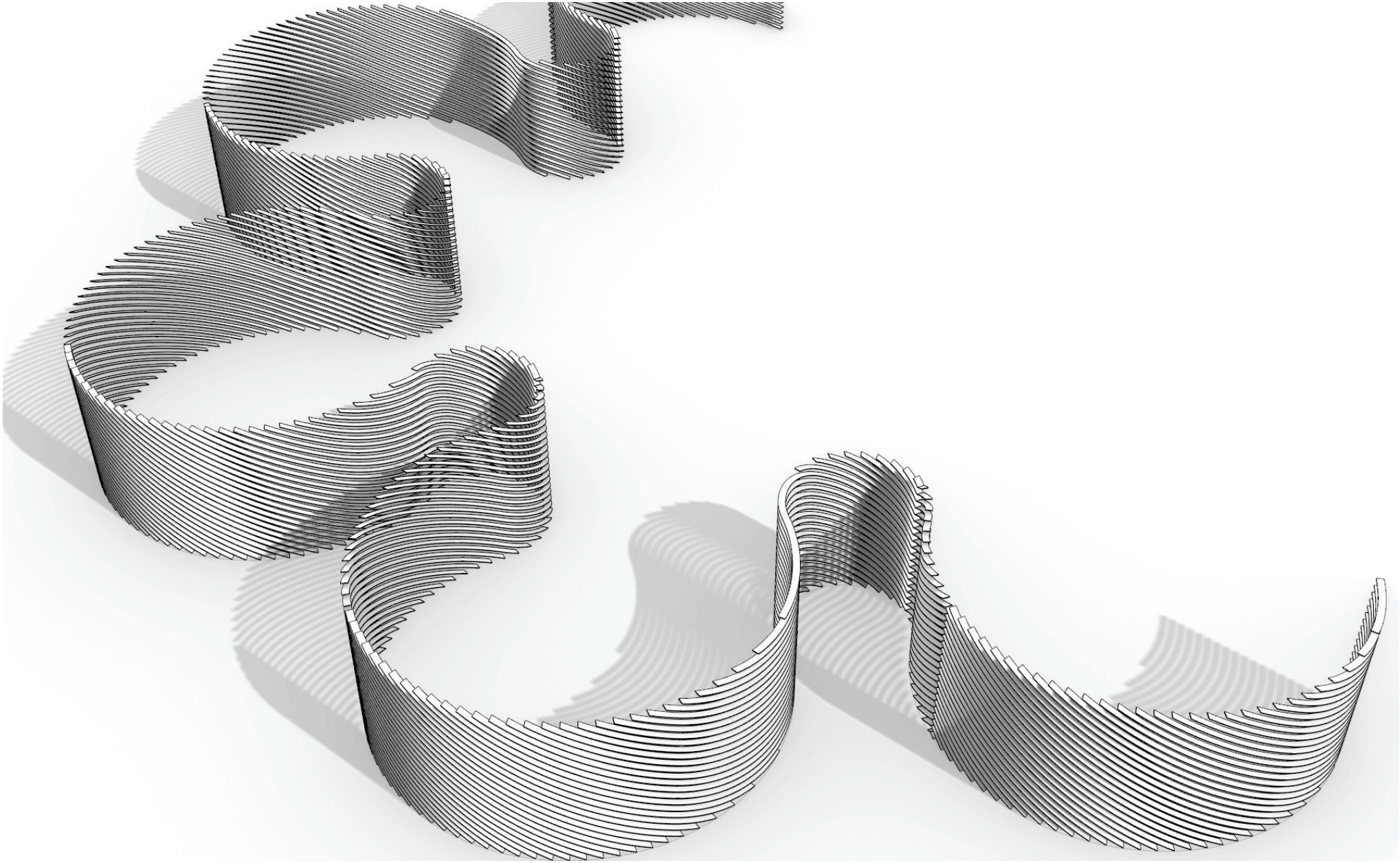
Align To Optimal Angle Pipeline



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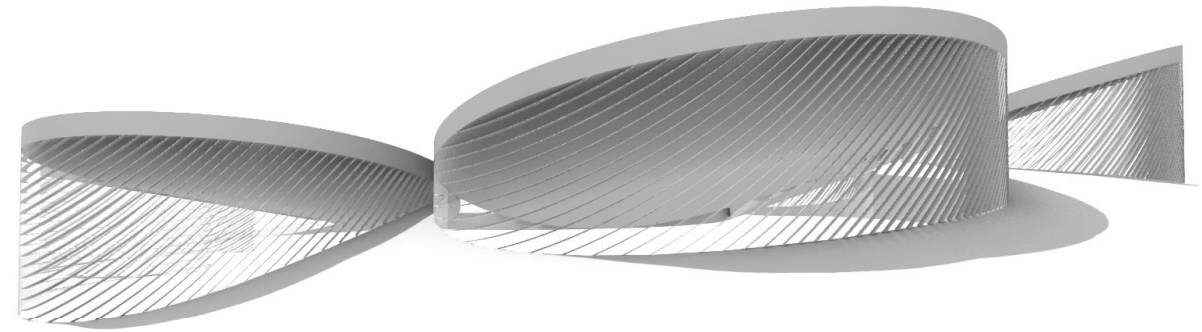
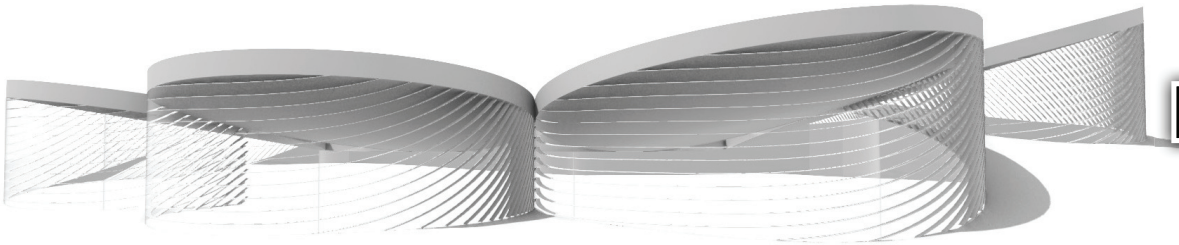
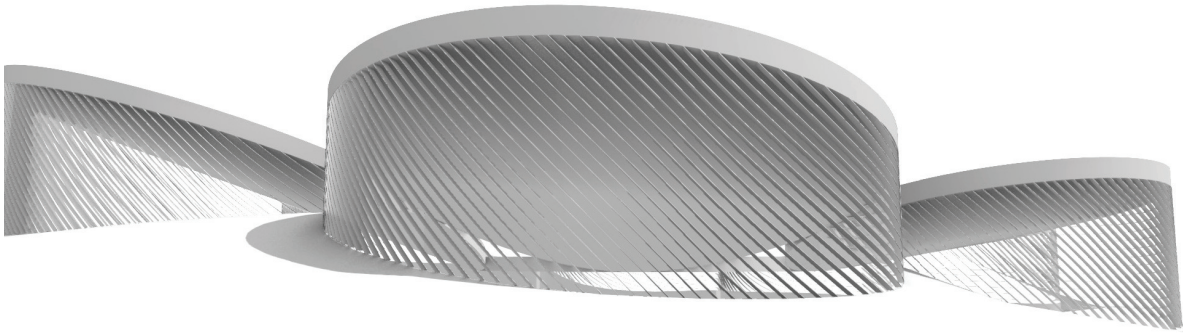
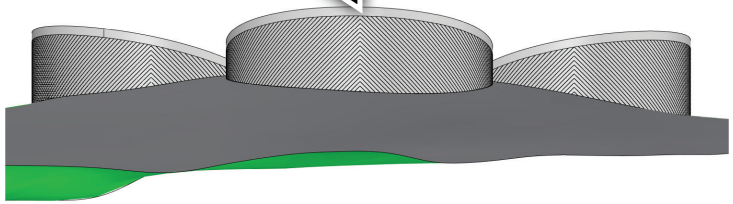
Orient To Optimal Angle Pipeline

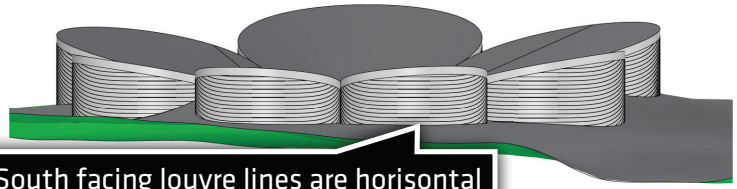




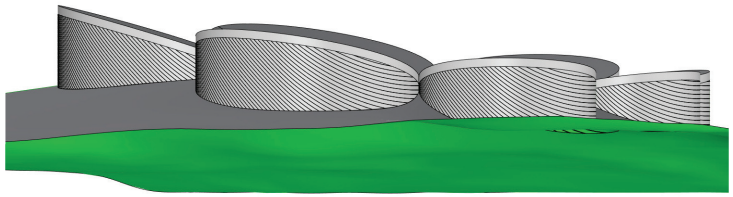


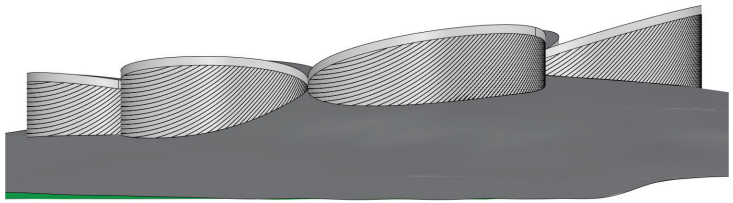
North facing louvre lines are clipped to be max 45 degrees





South facing louvre lines are horisontal





We have further developed and implemented the “Orient To Optimal Angle” logic version of the finger print facade concept.

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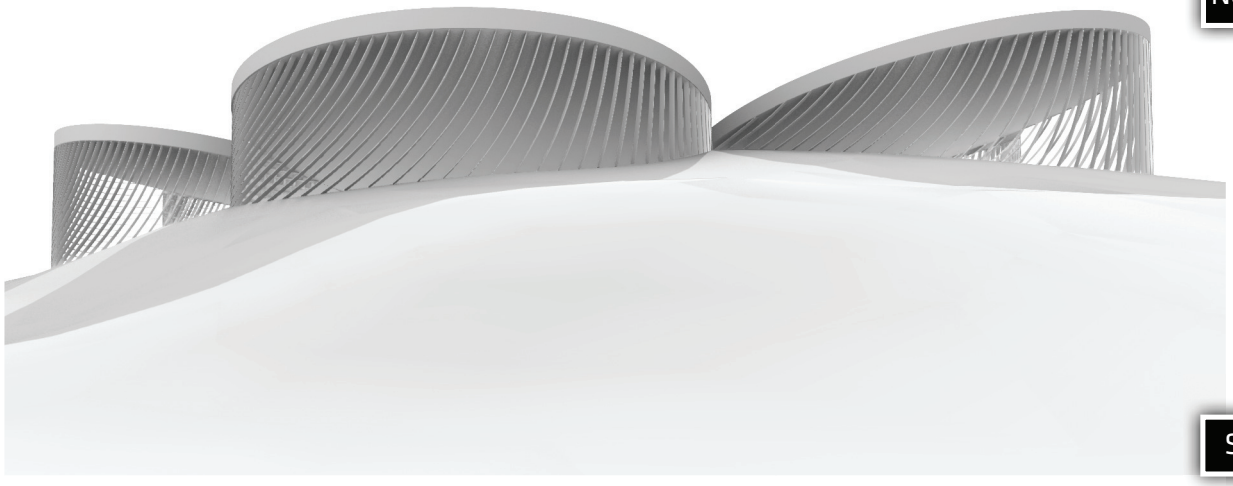
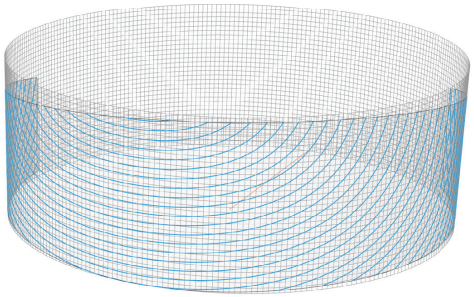
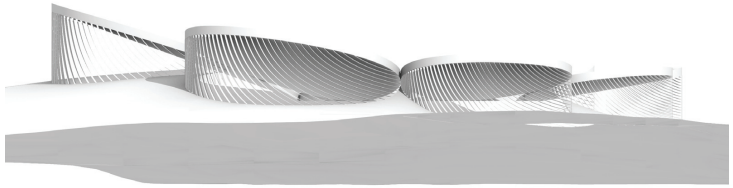
Full Horisontal To Vertical Pipeline

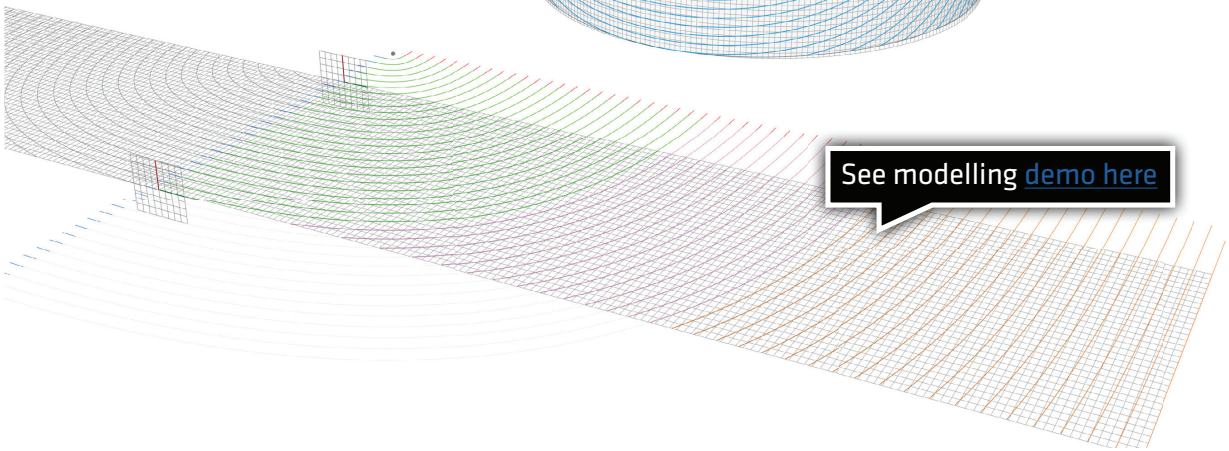


North facing louvre lines are vertical

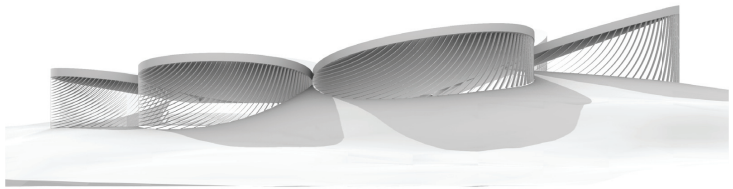
South facing louvre lines are horisontal





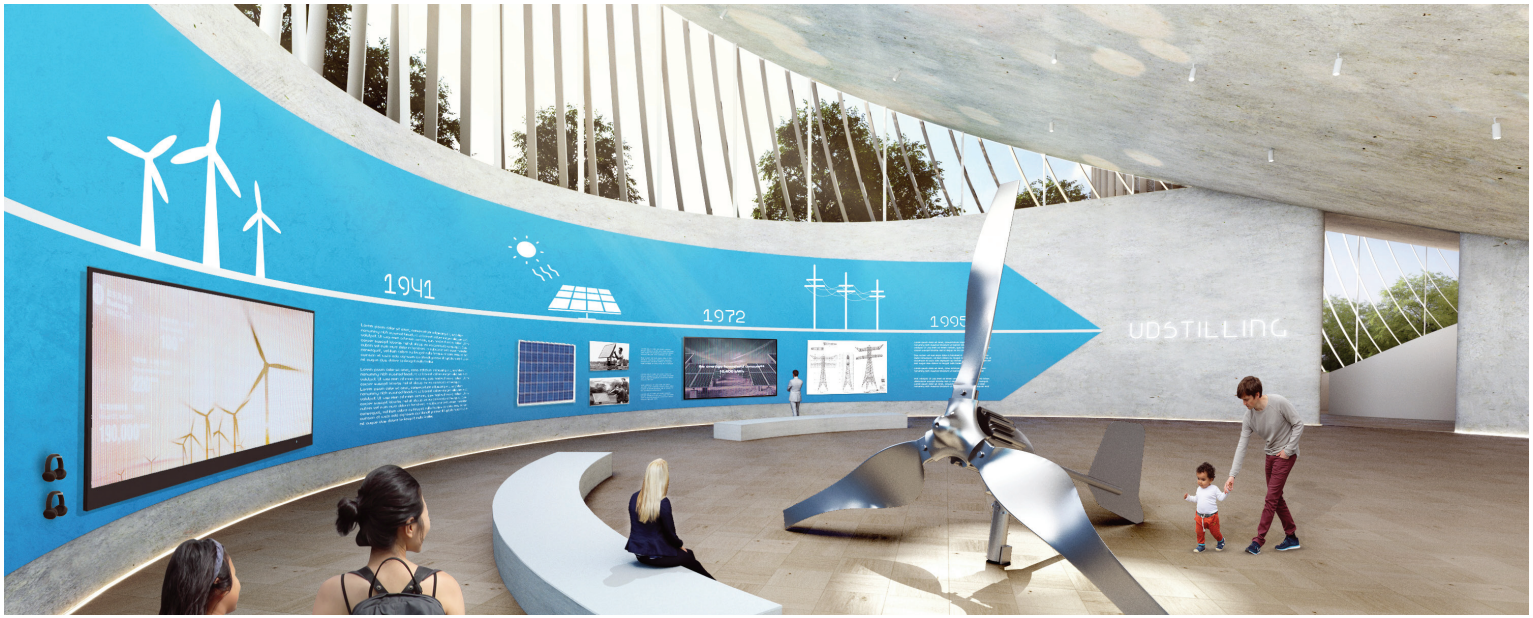


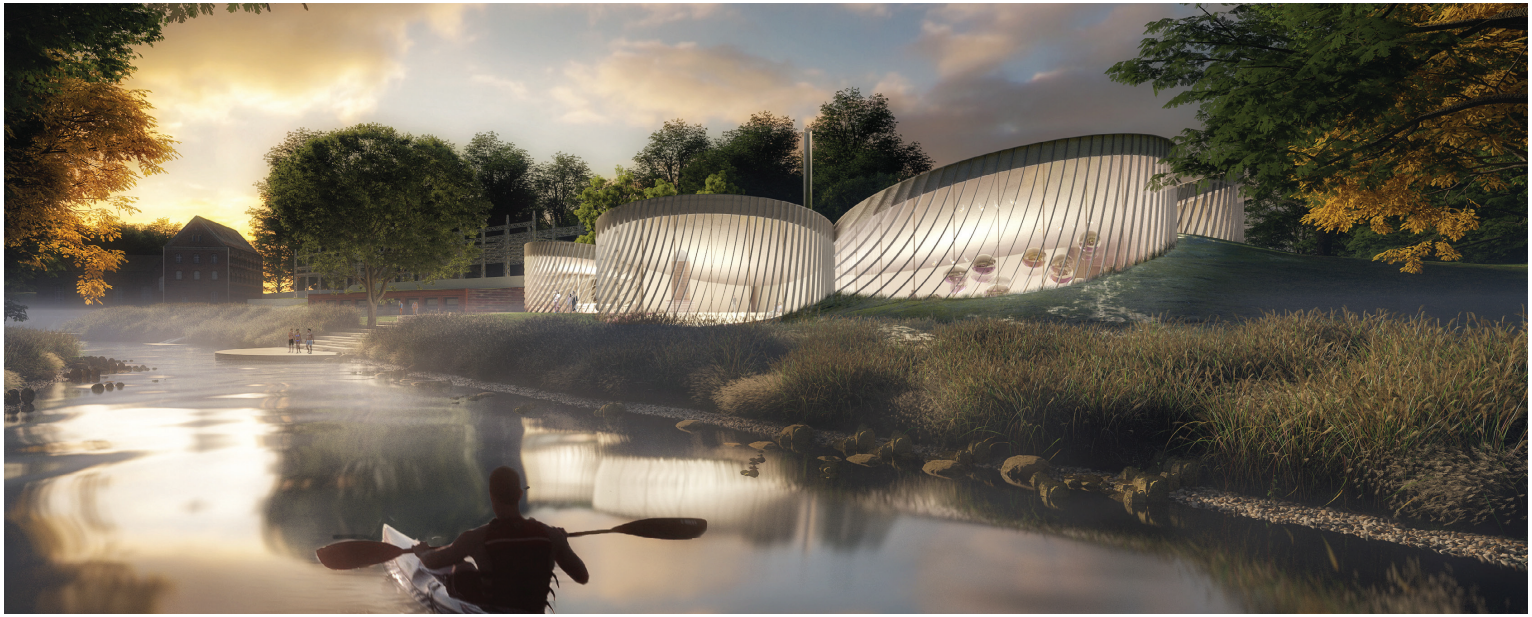
See modelling demo here



We have further developed and implemented the “Full Horisontal To Vertical” logic version of the finger print facade concept.

Full Horisontal To Vertical Pipeline





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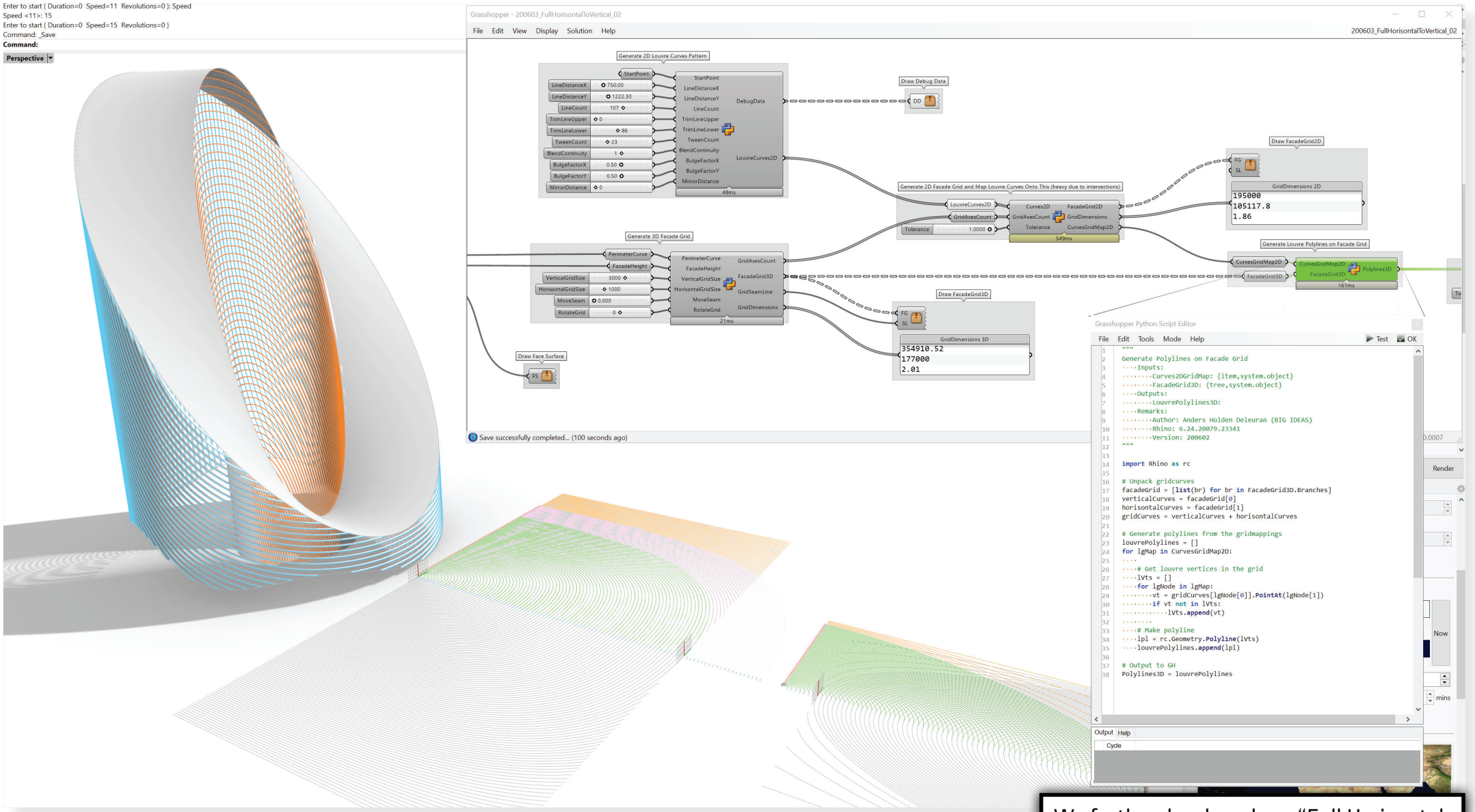
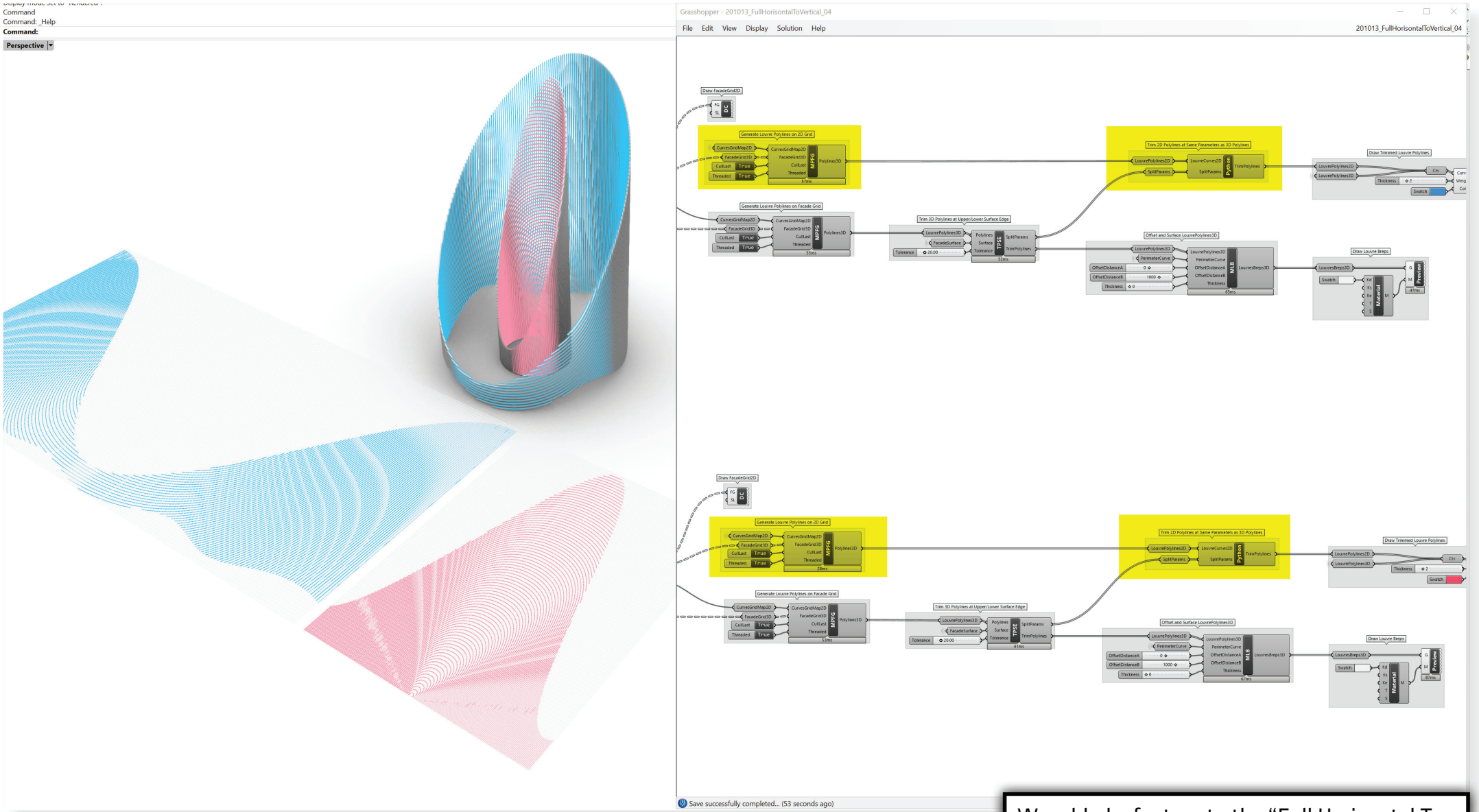
OPPOH

Full Horisontal To Vertical Pipeline



We further developed our “Full Horisontal To Vertical” finger print facade modelling pipeline with the OPPOH team.

Full Horisontal To Vertical Pipeline



We added a feature to the “Full Horisontal To Vertical” pipeline that enables one to trim the 2D louvre pattern by the 3D facade geometry.

Full Horisontal To Vertical Pipeline

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