



FERDINAND FACKLAM

PARAMETRIC DESIGN

Parametric Methods

Introduction

An attempt to explain the technology of Parametric Design with the help of some examples.

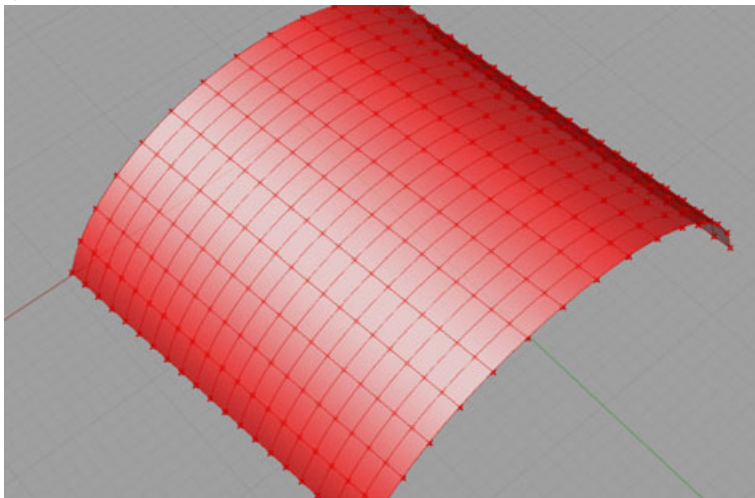
Work flow

- ① Design
- ② Parametric Modeling
 - To built the history tree
 - Connecting components
 - To modify the parameters
- ③ Formfinding
- ④ Rendering
- ⑤ Digital Fabrication

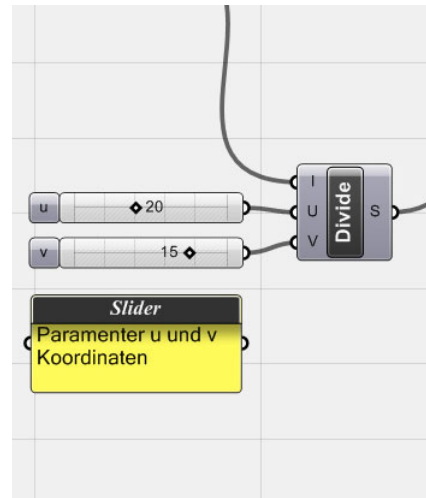
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Parametric Methods (For Structural Engineering and Supporting Structures)

1

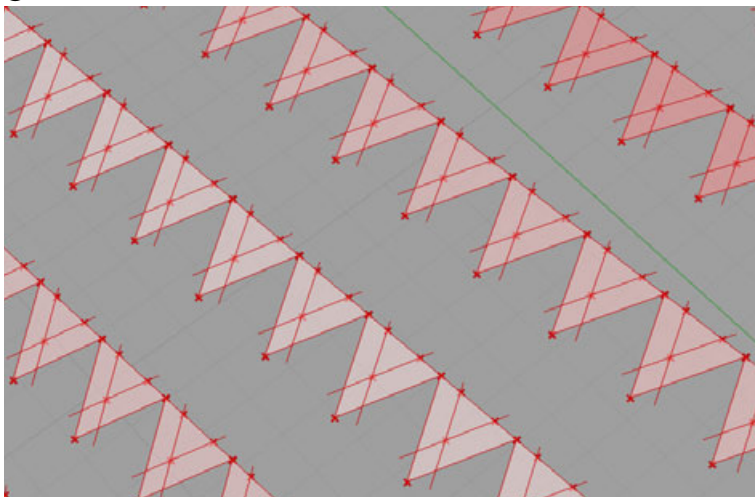


Definition Grid

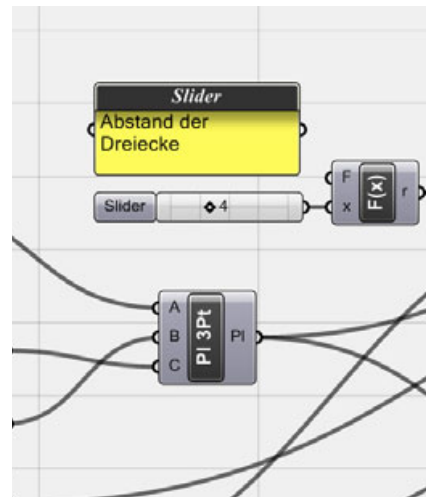


Parameter: UV-Coordinate

2

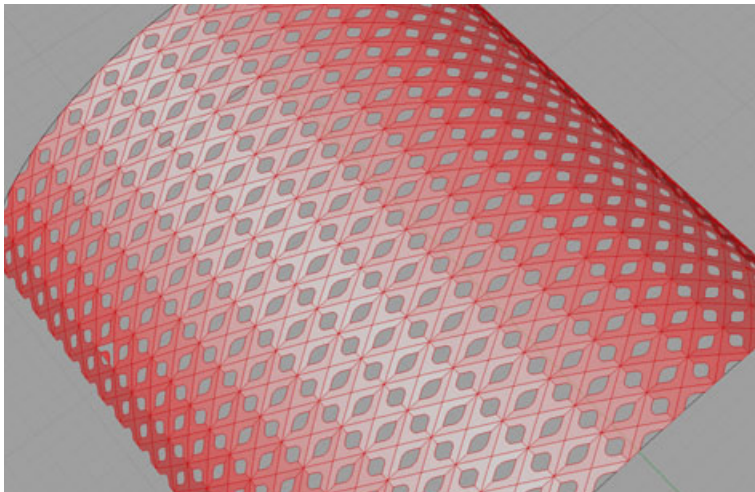


Definition Distance

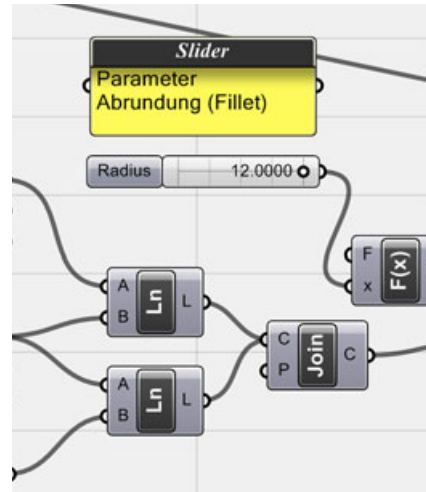


Parameter: Distance

3



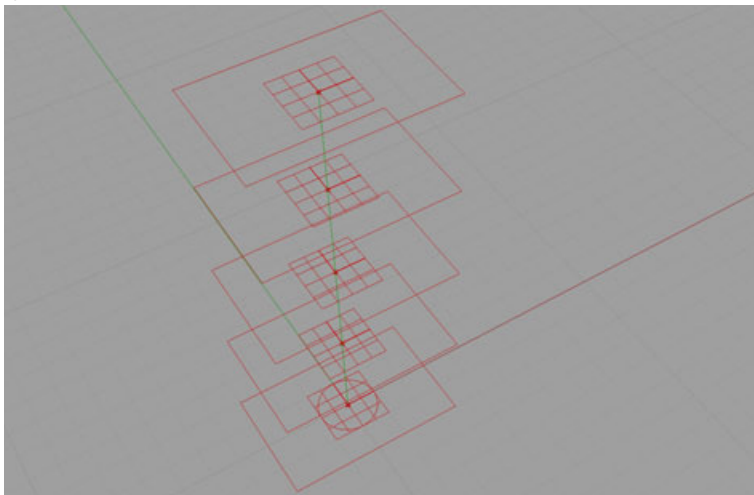
Several solutions



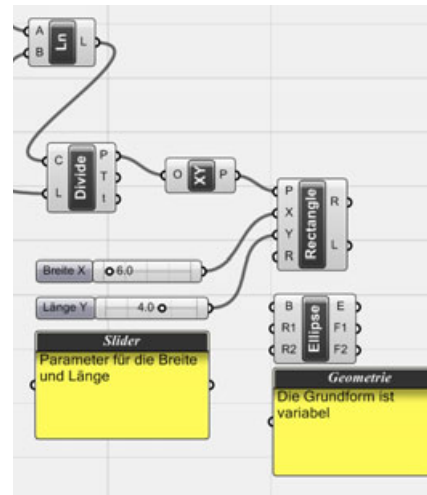
Parameter: Fillet

Parametric Methods (For Skyscraper and Industrial Design)

1

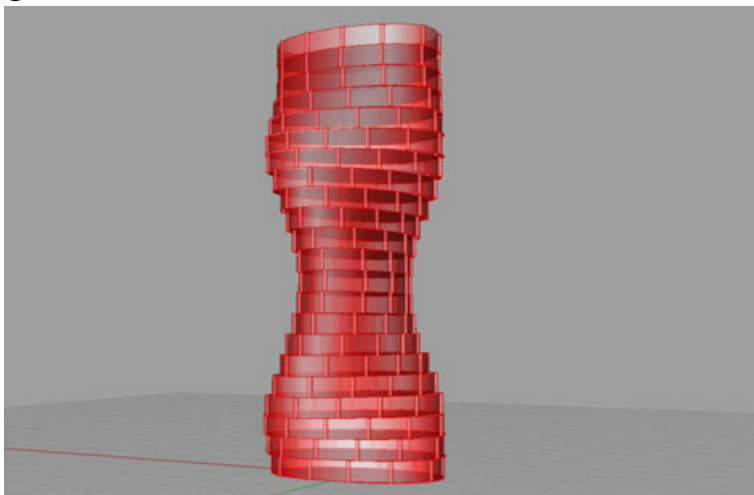


Definition Height, Width and Length



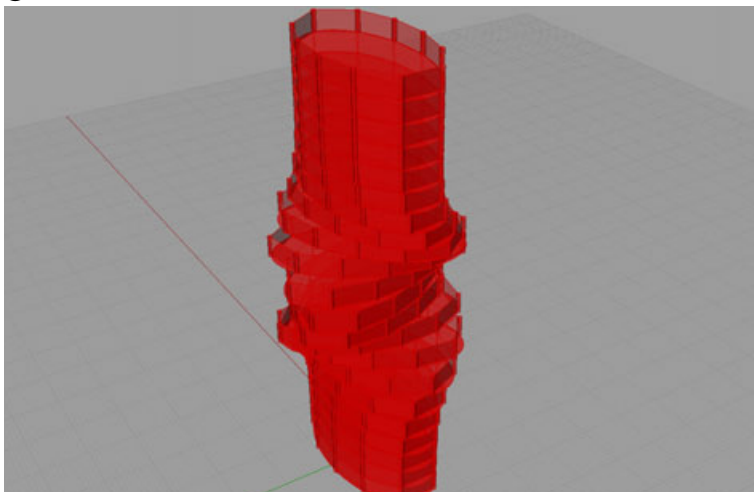
Parameter: Geometry

2



Several solutions

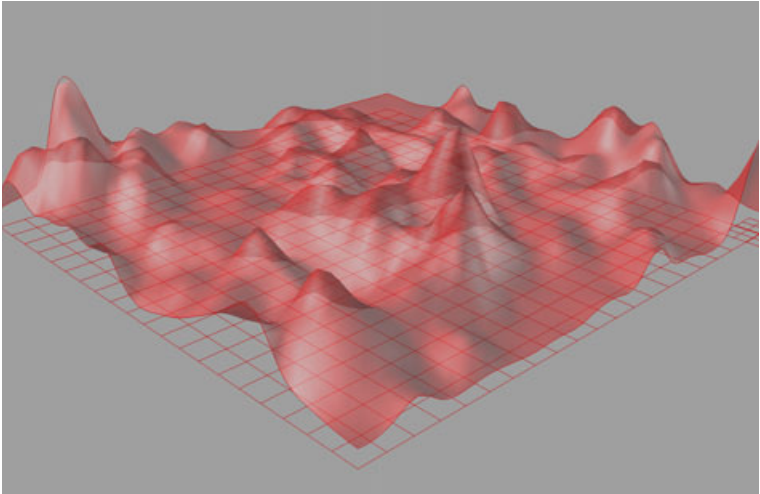
3



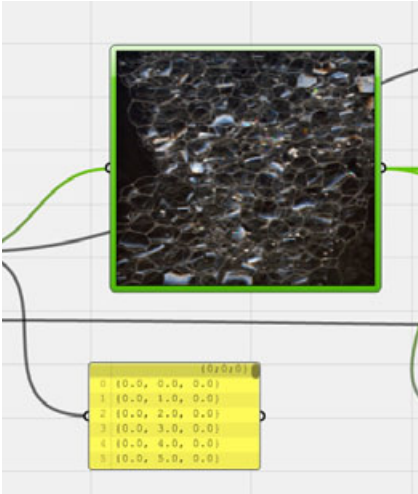
Several solutions

Parametric Methods (For Landscape)

1

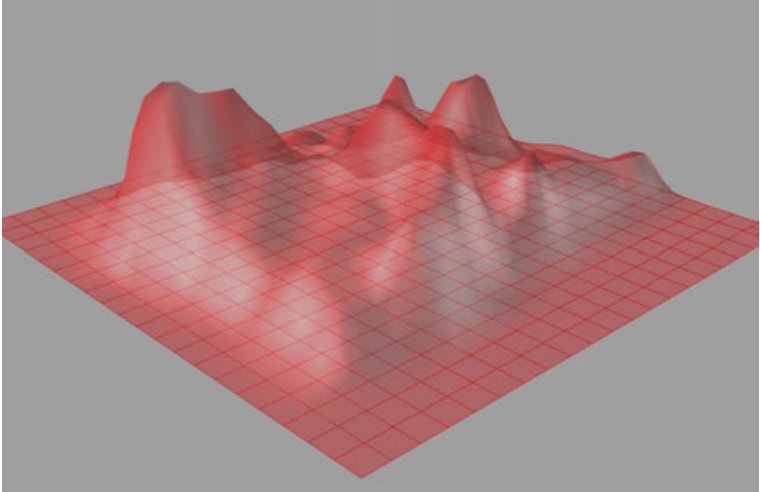


Several solutions



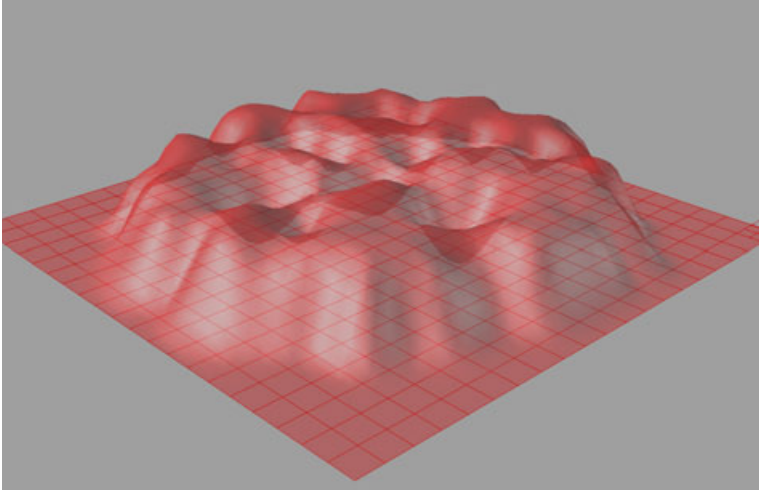
Parameter: Image

2



Several solutions

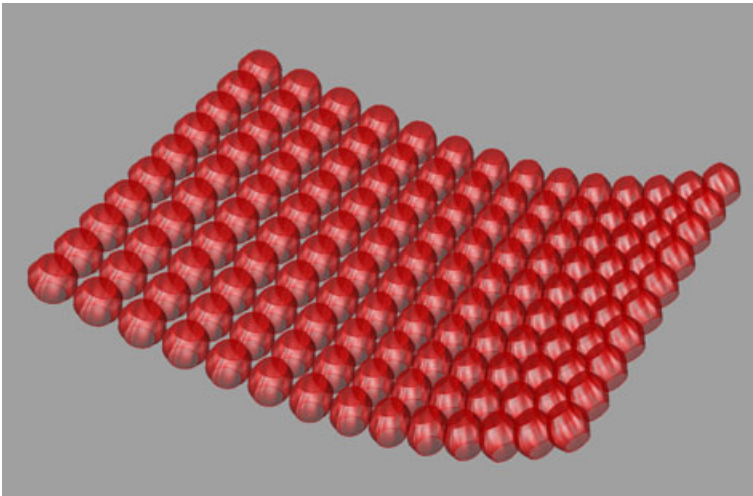
3



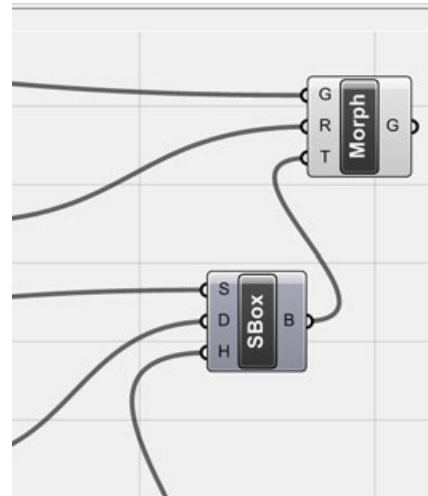
Several solutions

Parametric Methods (For Facade Paneling and Industrial Design)

1

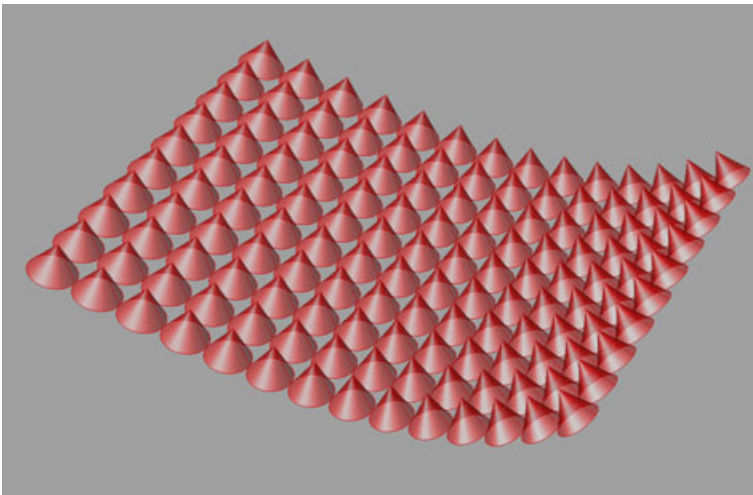


Several solutions



Parameter: Shape (Morphing)

2

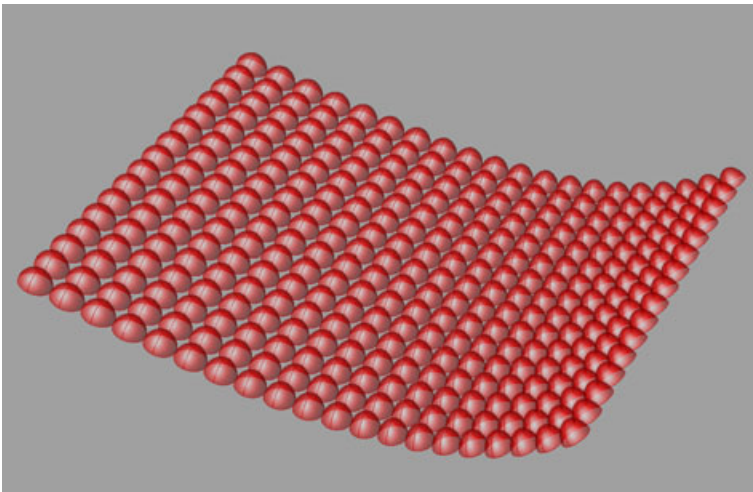


Several solutions

Note:

Transform simple and complex shape (Box Morphing).

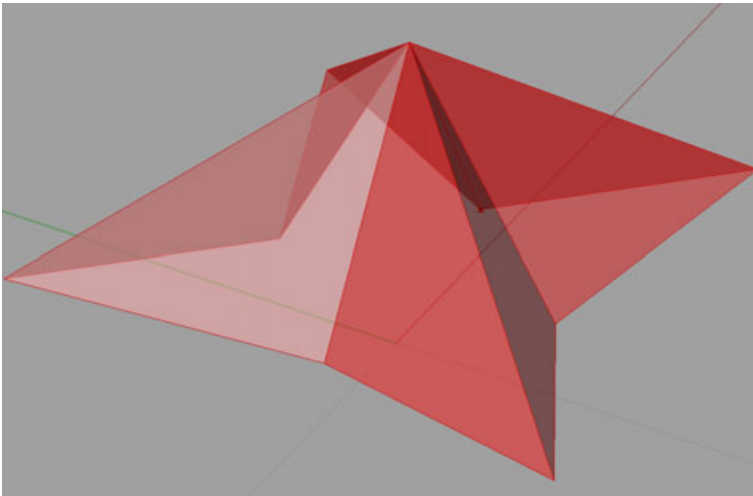
3



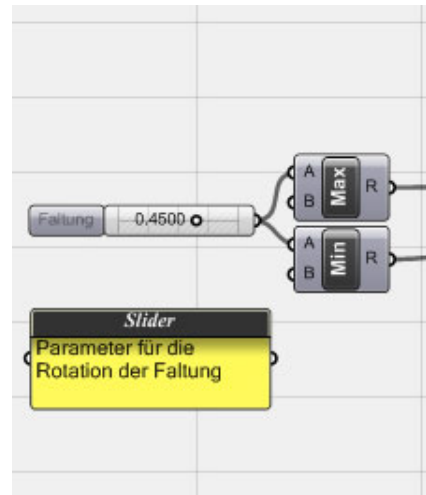
Several solutions

Parametric Methods (For Structural Engineering and Facade Paneling)

1

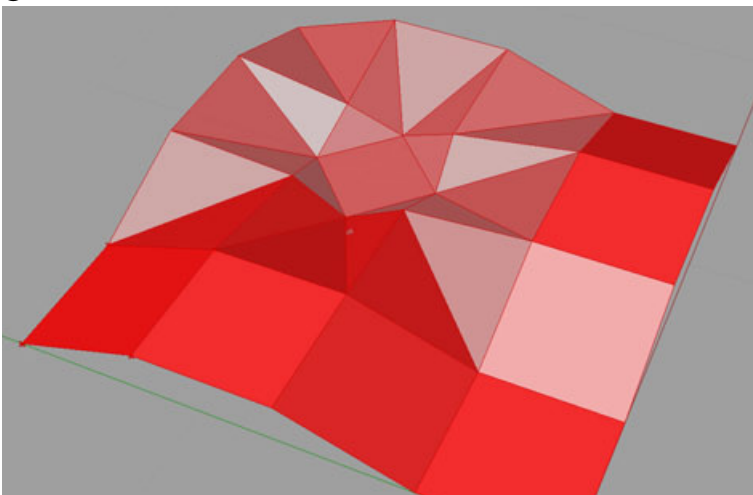


Definition Trigonometry and Rotation



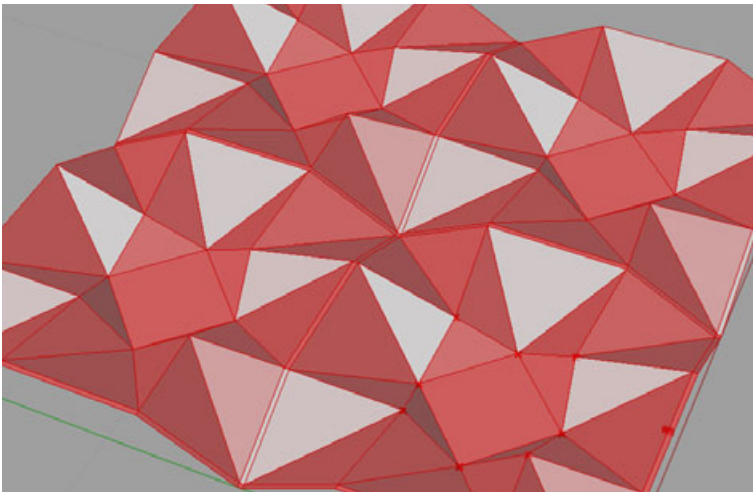
Parameter: Folding

2



Several solutions

3



Several solutions

Resource

Websites

Grasshopper - Generative Modeling for Rhino

<http://www.grasshopper3d.com/>

With many thanks for: David Rutton, Jonas Bredel, Dan Piker und Hans Sachs

LIFT architects

<http://www.liftarchitects.com/>

EcoLogicStudio - Claudia Pasquero and Marco Poletto

<http://www.ecologicstudio.com/>

Giulio Piacentino

<http://www.giuliopiacentino.com/>

Manual

LIFT architects - Andy Payne

The Grasshopper Primer - Second Edition

Mohamad Khabazi

Algorithmic Modelling with Grasshopper

Frikearq - Guillermo Ramírez und Miguel Vidal

Manual básico de Grasshopper

