Animated Systems

Toledo Gridshell

Institute for advanced architecture of Catalonia

Toledo Gridshell

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The Toledo Gridshell is a product of the master's degree thesis: "Digital Form-Finding of Timber Post-formed Gridshell" at the University of Naples. The bending active gridshell is constructed by bending a flat timber grid into a curved shell. It is then fixed by a two-way diagonal bracing structure.



Toledo Gridshell. (2019). [image] Available at: http://www.ecowebtown.it/n_5/04_pone_en.html [Accessed 1 Dec. 2019].

Pseudo Code

1. Create a grid of lines
2. Choose anchor points
3. Draw target curves
4. Bend the grid into a shell
5. Construct timber laths from bended curves
6. Add diagonal bracing
7. Add shading panels

Parameters:

Grid shape

Anchor points

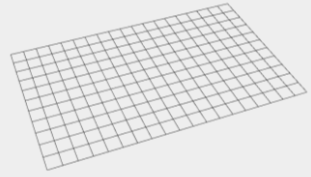
Target Curves

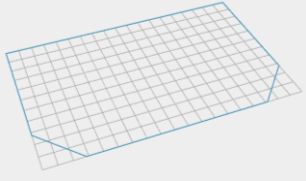
Axial Strength

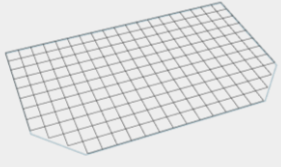
Bend Strength

Load

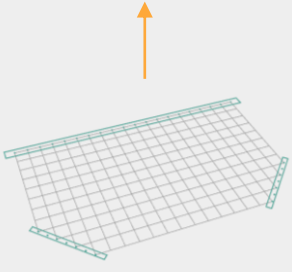
Code Development



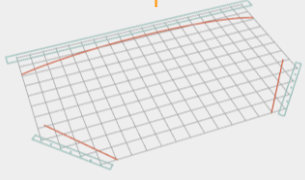




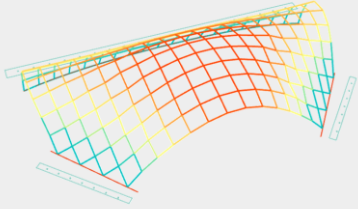
1. Create a grid of lines



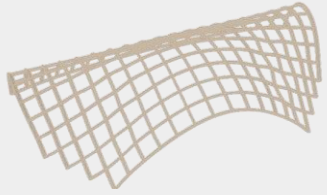
2. Choose anchor points



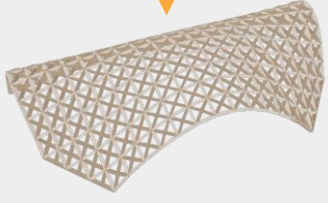
3. Draw target curves



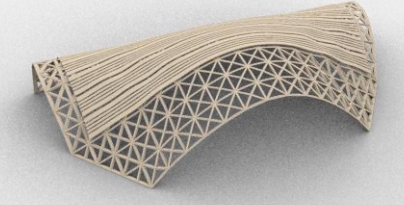
4. Bend the grid into a shell (Kangaroo)



5. Construct timber laths from bended curves



6. Add diagonal bracing



7. Add shading panels

Camera Position

