CONSIGLIO NAZIONALE
DEGLI INGEGNERI

Ingenio al femminile

Storie di donne che lasciano il segno

Ingrid Paoletti

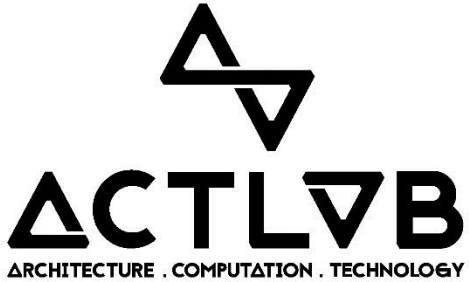
Titolo intervento

ROMA | 25.02.2016

POLITECNICO DI MILANO

ABC

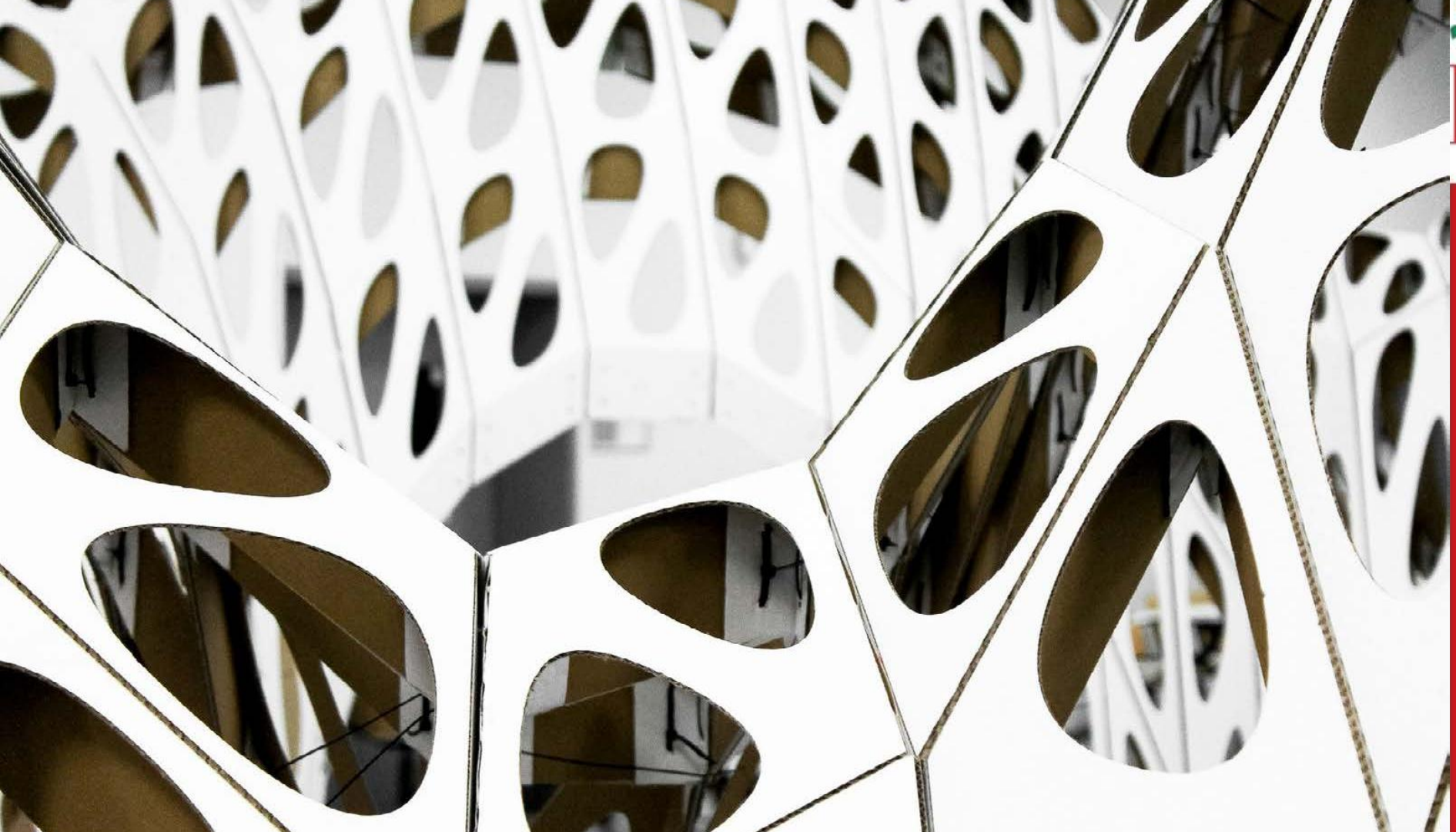
Department of architecture,
built environment and construction engineering



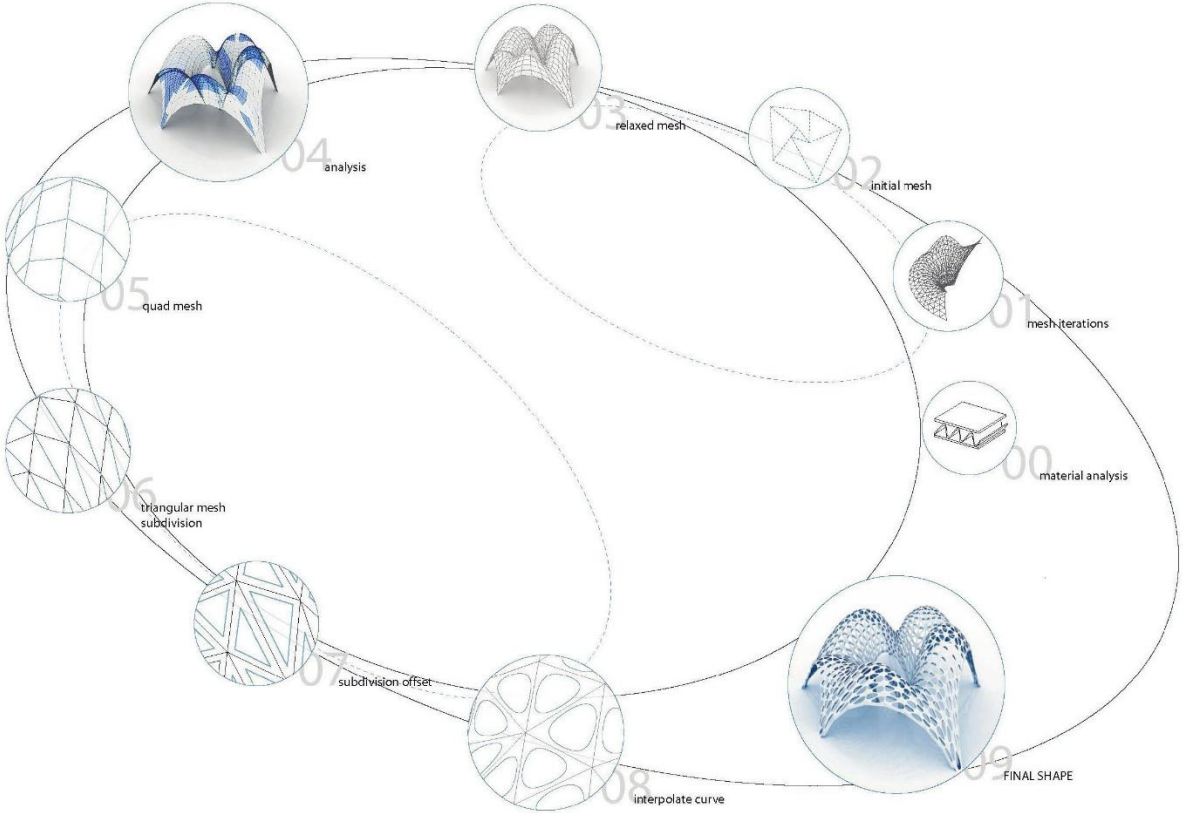
INGRID PAOLETTI

Associate Professor DABC/Founder of ACTLAB

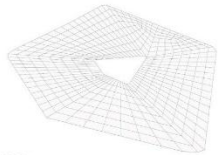
UN[EXPECTED] MATE[REALITY]
2013



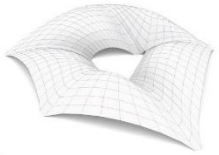
Form-Finding Process



Mesh Relaxation Process


0.00 s


0.27 s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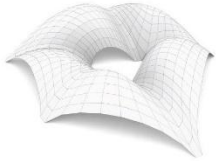
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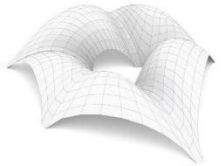
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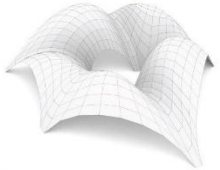
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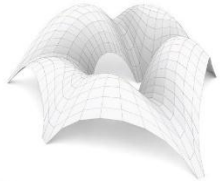
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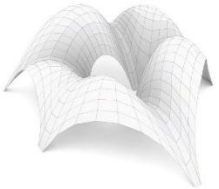
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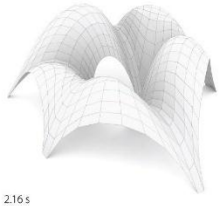
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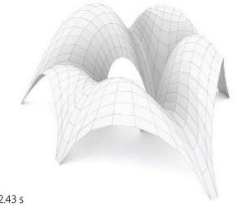
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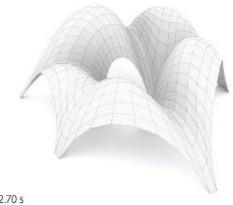
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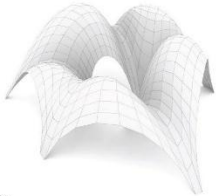
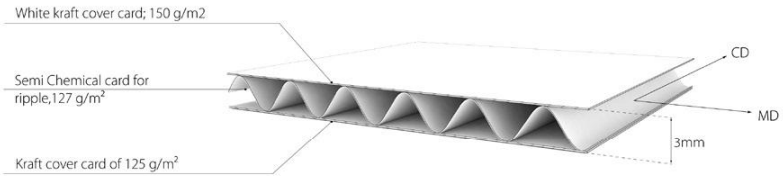
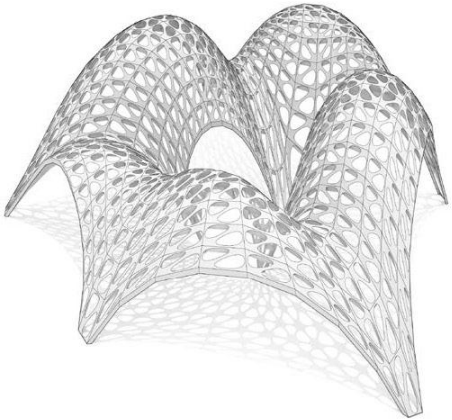
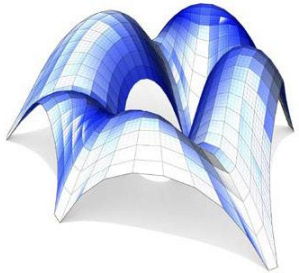

2.97 s

Material System- Corrugated Cardboard

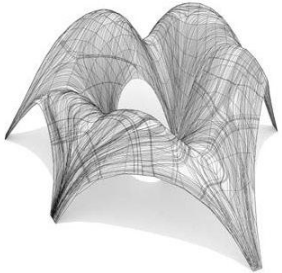




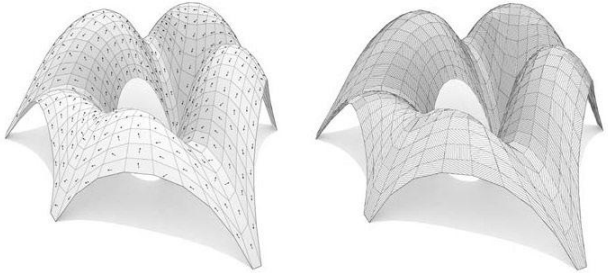
Principal Stress Analysis



Curvature Analysis

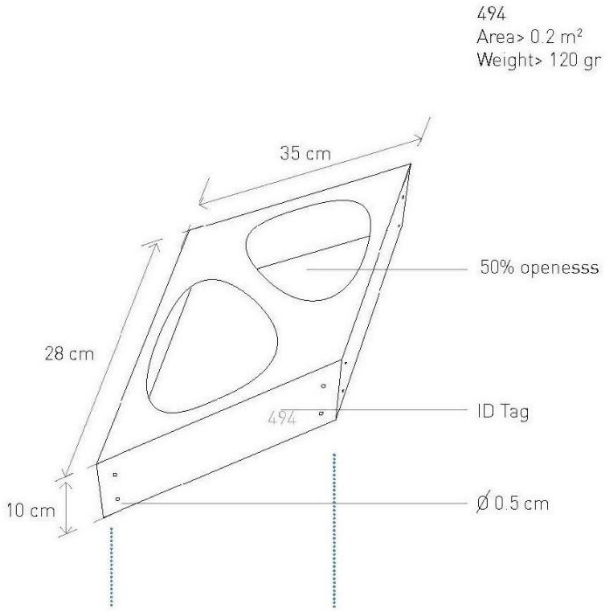


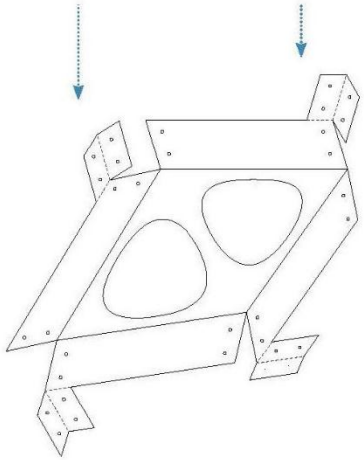
Compression trajectories along the structure



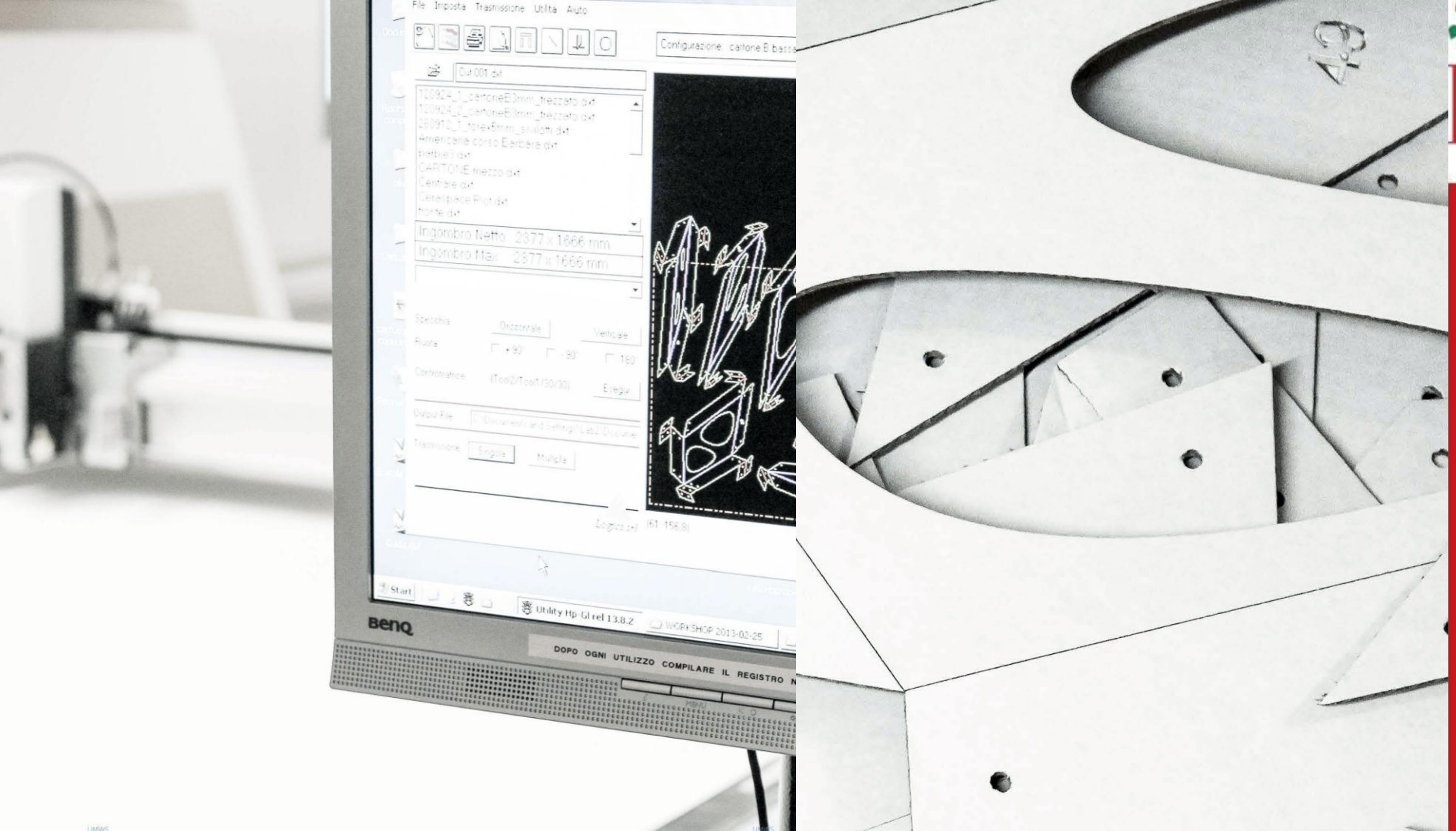
Flute orientation scheme corresponding to the main direction of compression

Basic Component

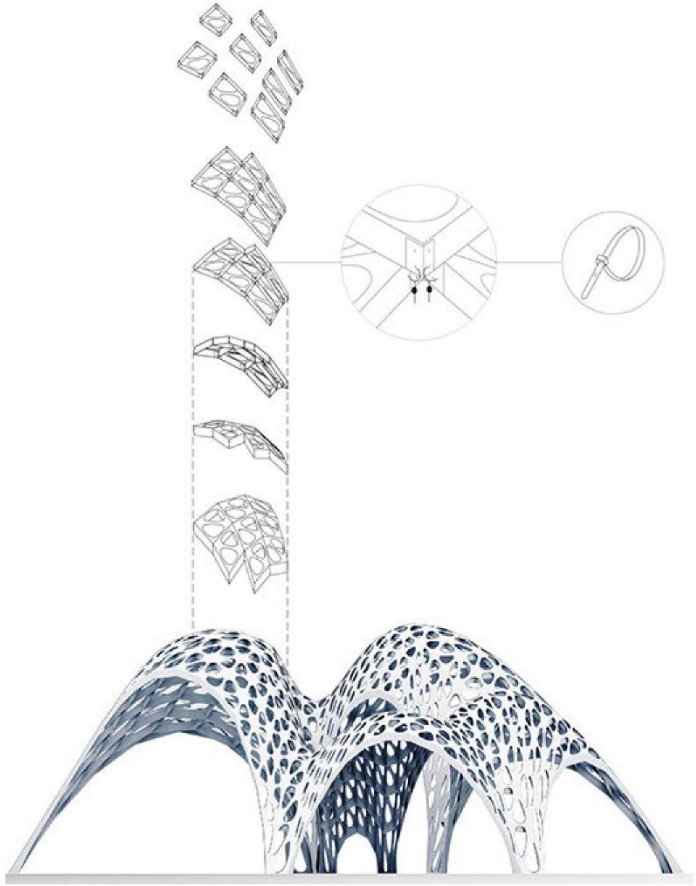


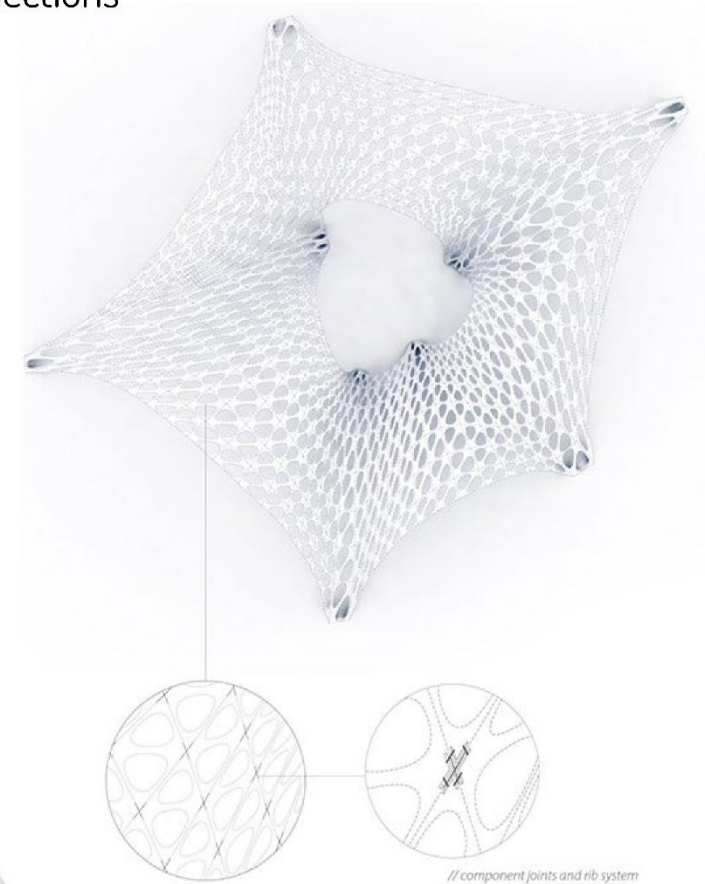


// 3D component charcteristics & unrollled component

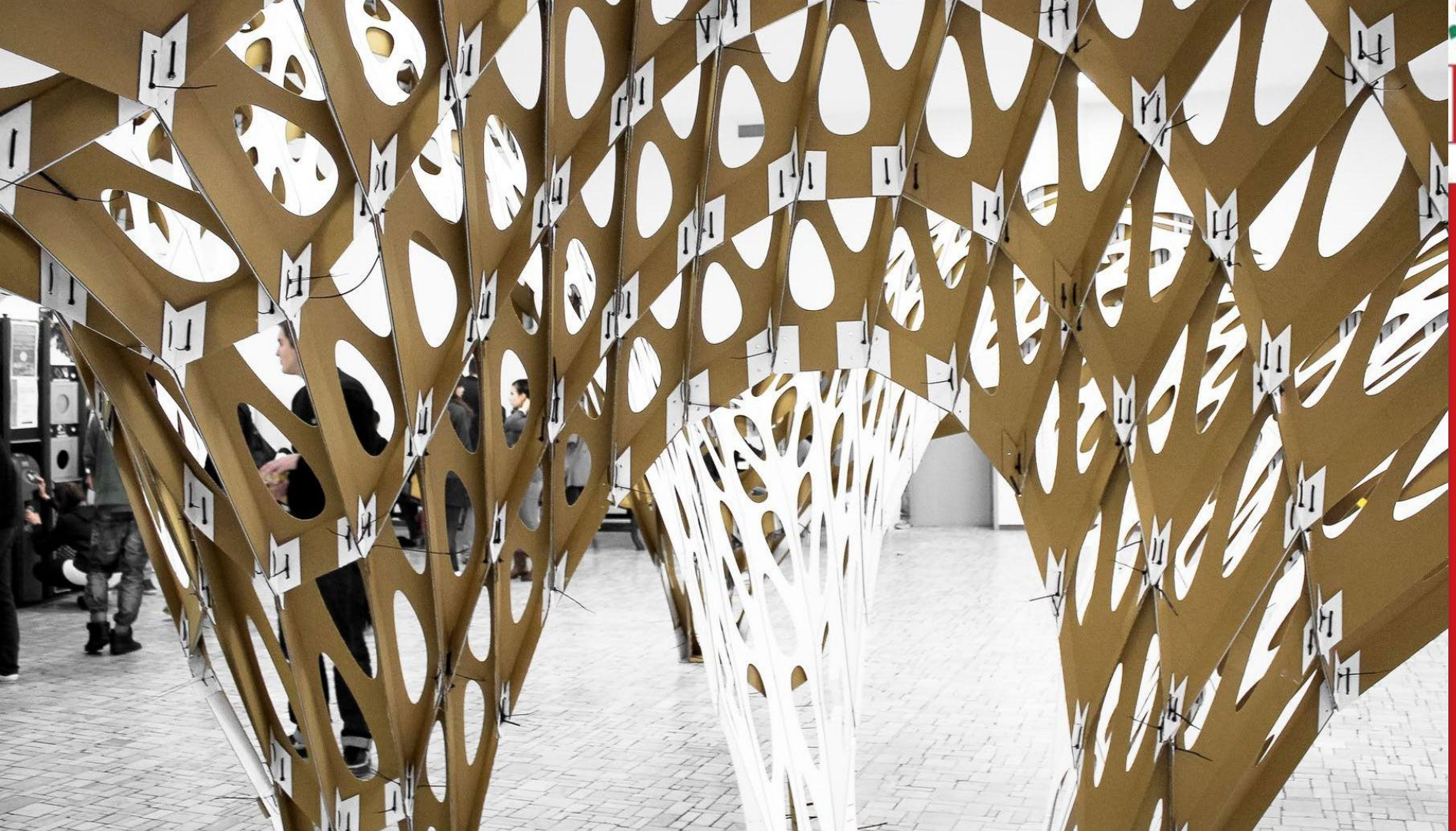

File Imposta Trasmissione Utilità Auto
Configurazione cartone B bass
Out 001.dxf
Ingombro Netto 2877 x 1666 mm
Ingombro Max 2877 x 1666 mm
Specchia
Orizzontale
Verticale
Ruota
Controsagoma
Esegui
Output File
Trasmissione
Seguita
Multipla
Start
Utility Hp Gl rel 13.8.2
WORKSHOP 2013-02-05
BenQ
DOPO OGNI UTILIZZO COMPILARE IL REGISTRO

Connections

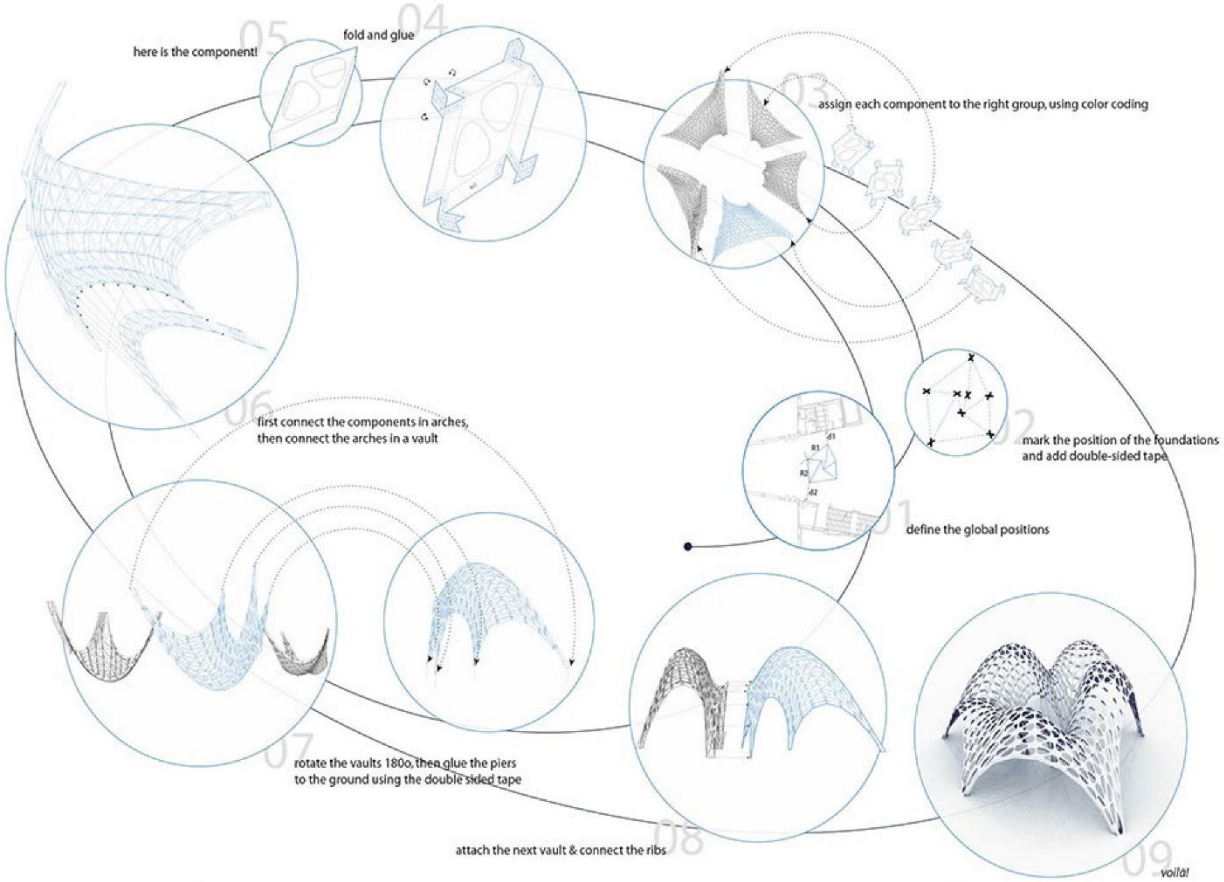




// component joints and rib system

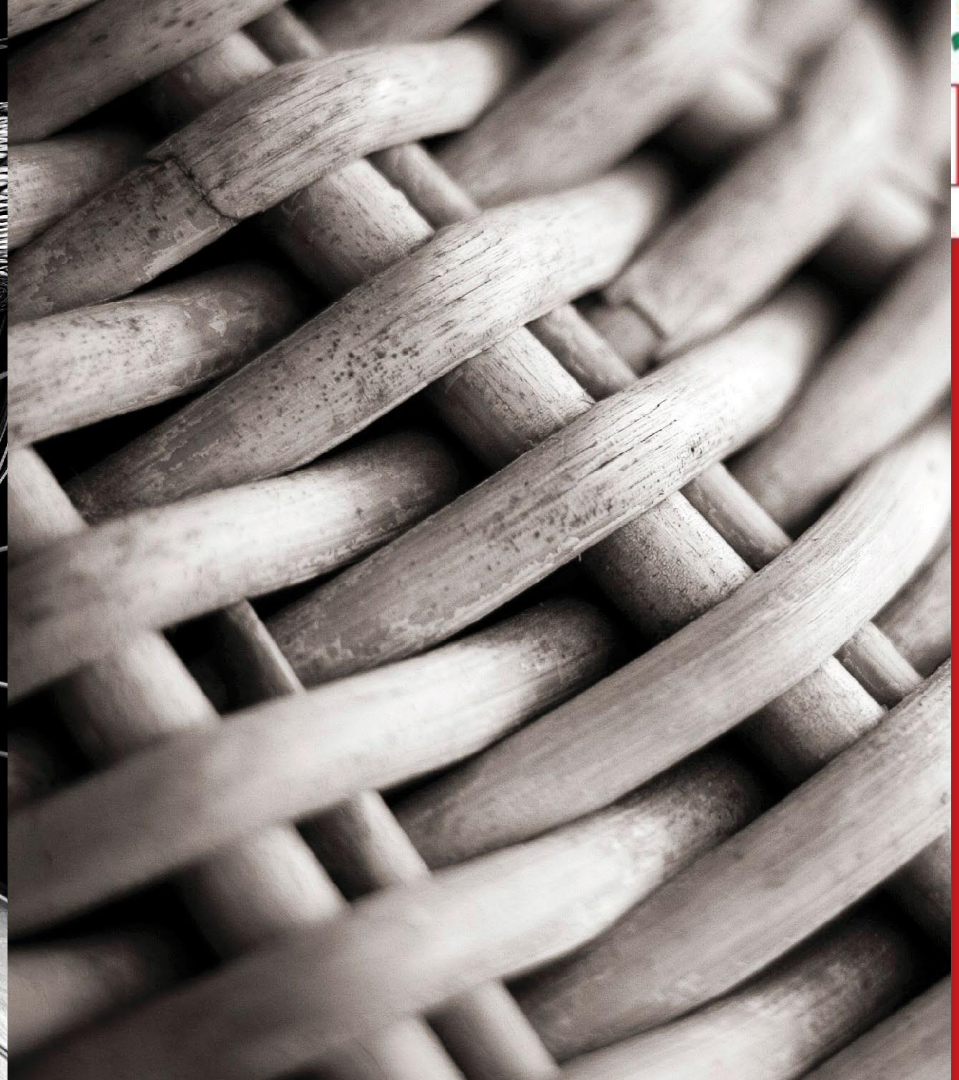


Assembly Process

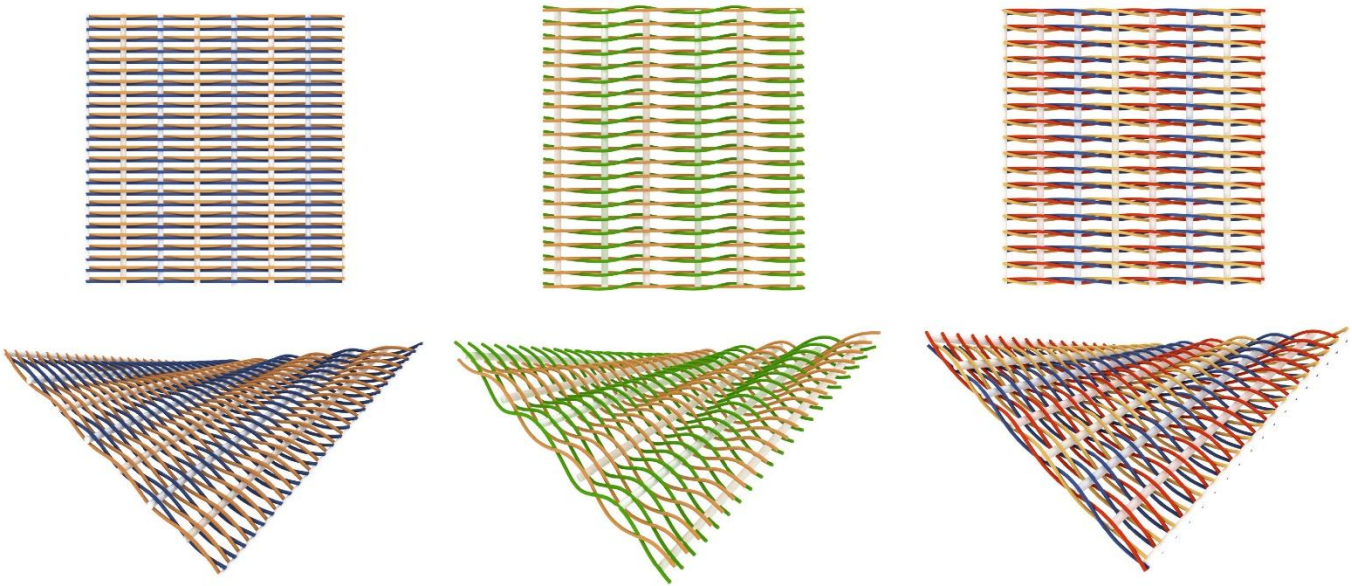



USCITA

WEAVING ENCLOSURE



Parametric Weaving Pattern



Single tensor pattern

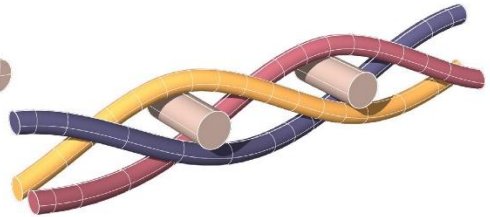
Two crossing tensor pattern

Three crossing tensor pattern

Computing Weaving Techniques

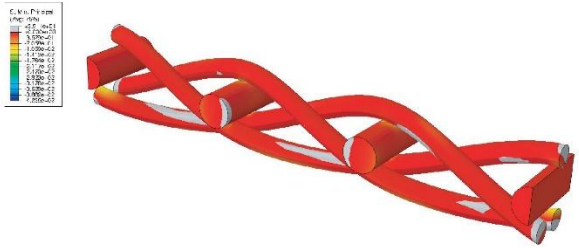
One Tensor Weaving Section

Two Crossing Tensors Weaving Section

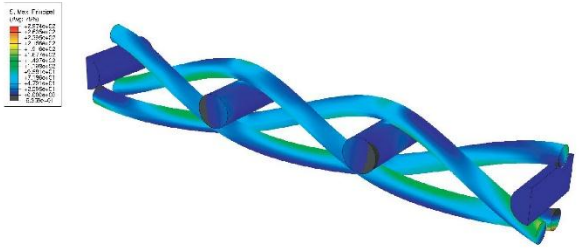


Three Crossing Tensors Weaving Section

Finite Element Analysis

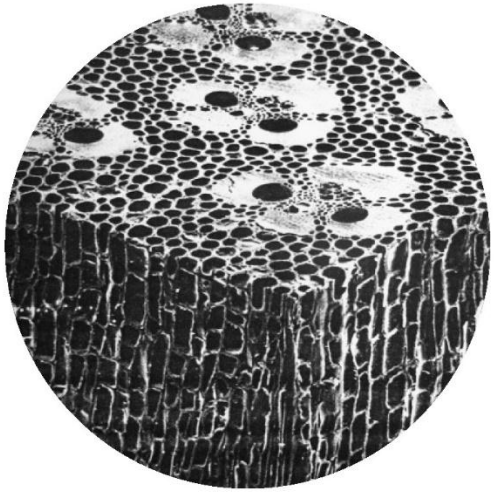


Minimum principal stresses



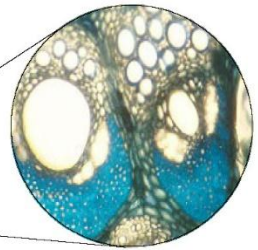
Maximum principal stresses

Rattan Cellular Structure



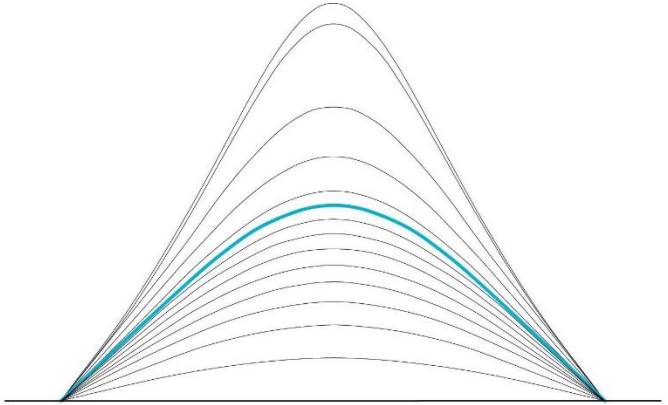
Differentiatial Vascular Morphologies

Transverse section of vascular architecture

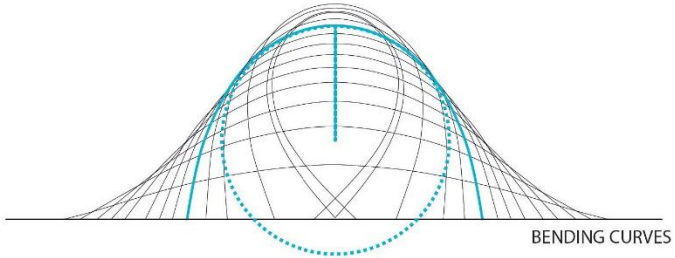


Vascular bundles with prominent metaxylem vessel

Geometry of Bending

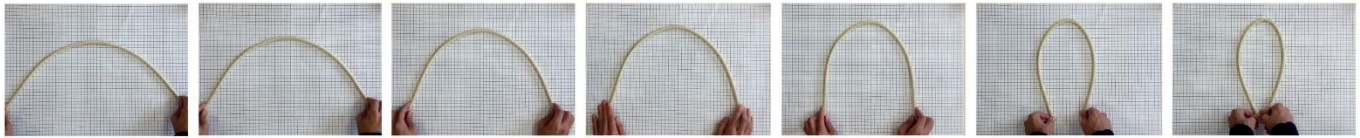


CURVATURE GRAPHS

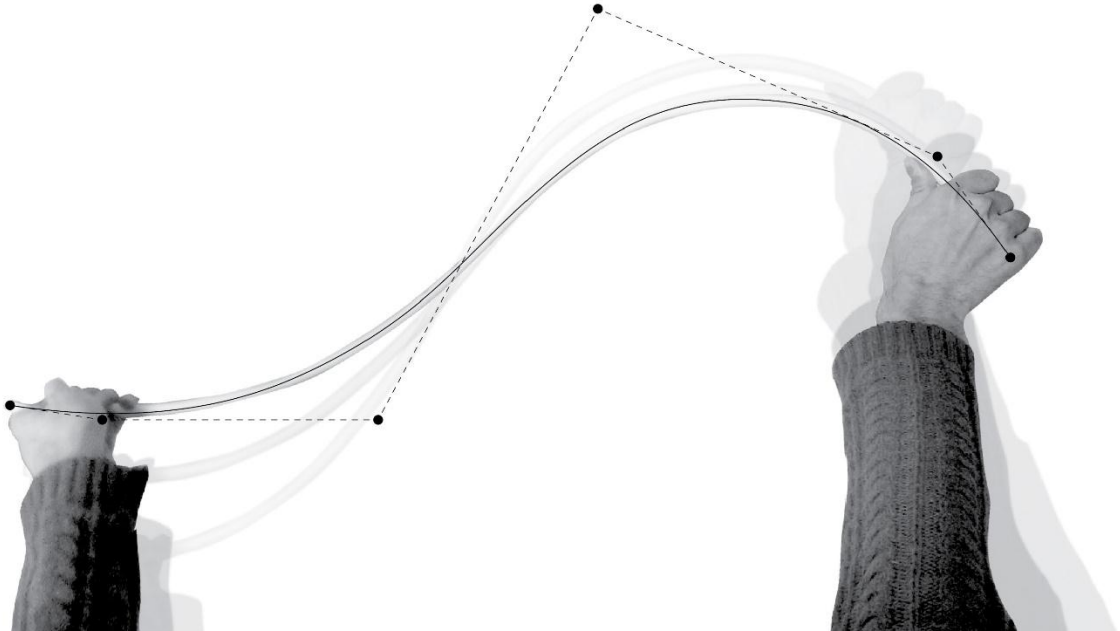


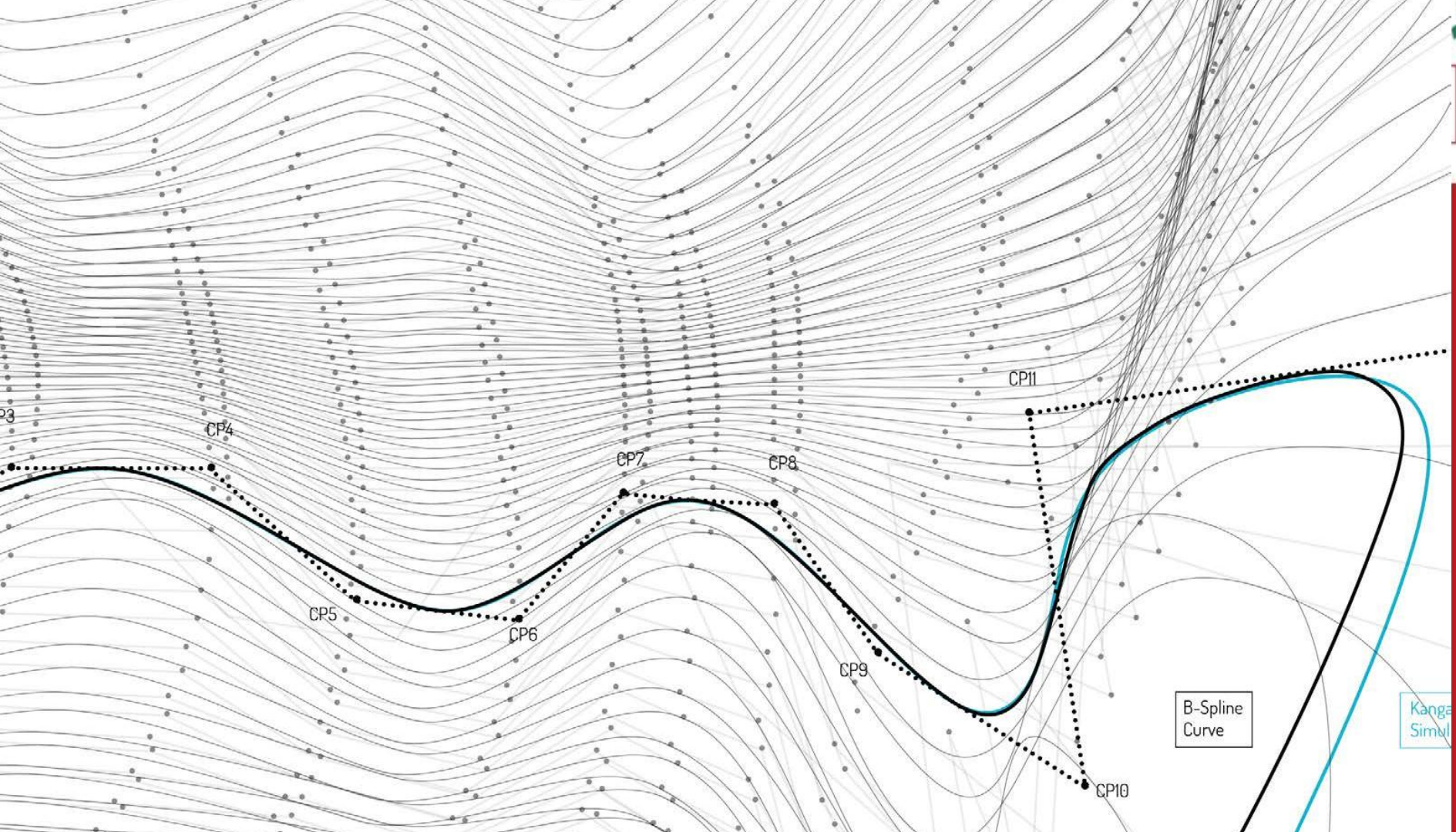
BENDING CURVES

Regular Bending Limit | 12.7 cm

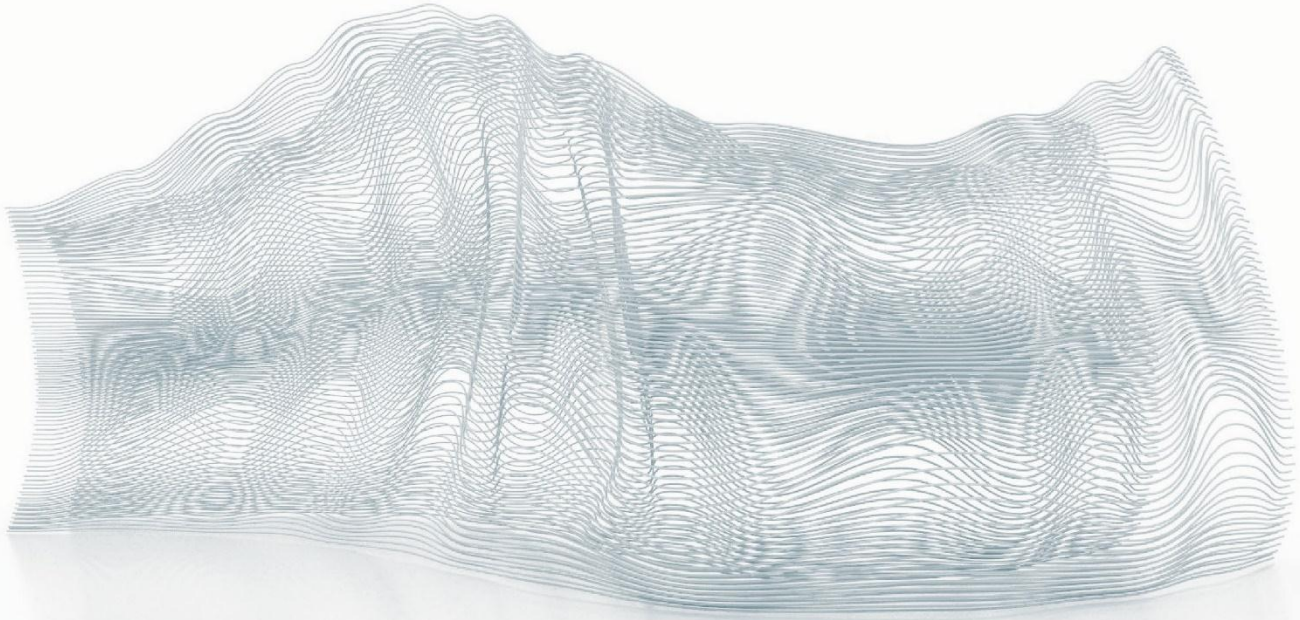


Parametrically Informed NURBS Curves




CP4
CP5
CP6
CP7
CP8
CP9
CP10
CP11
B-Spline
Curve

Rattan Strand-based - Weft System with differential screening ratio

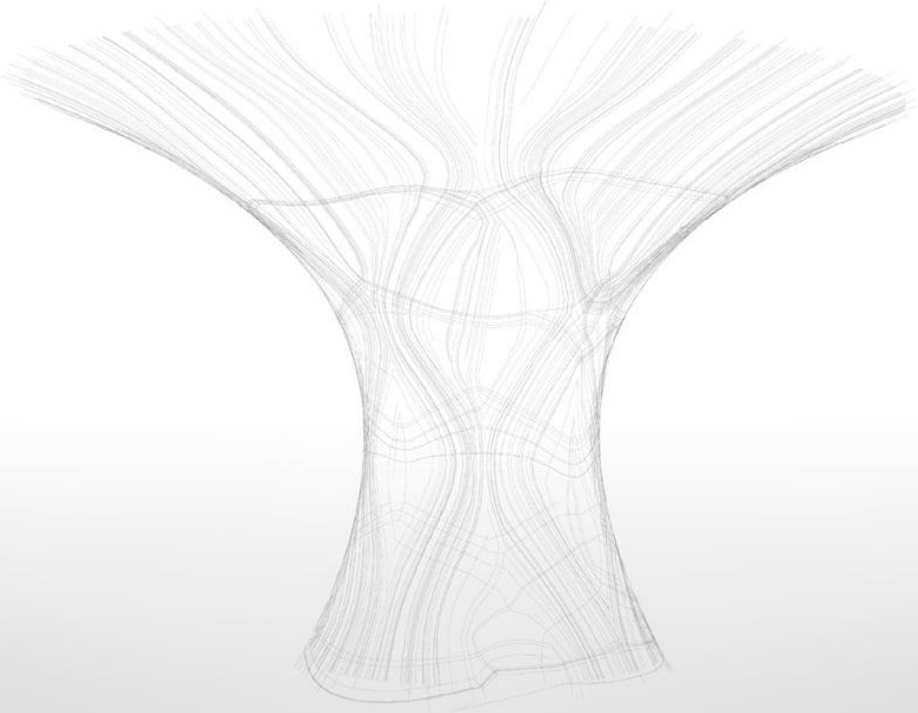


Curvature Analysis

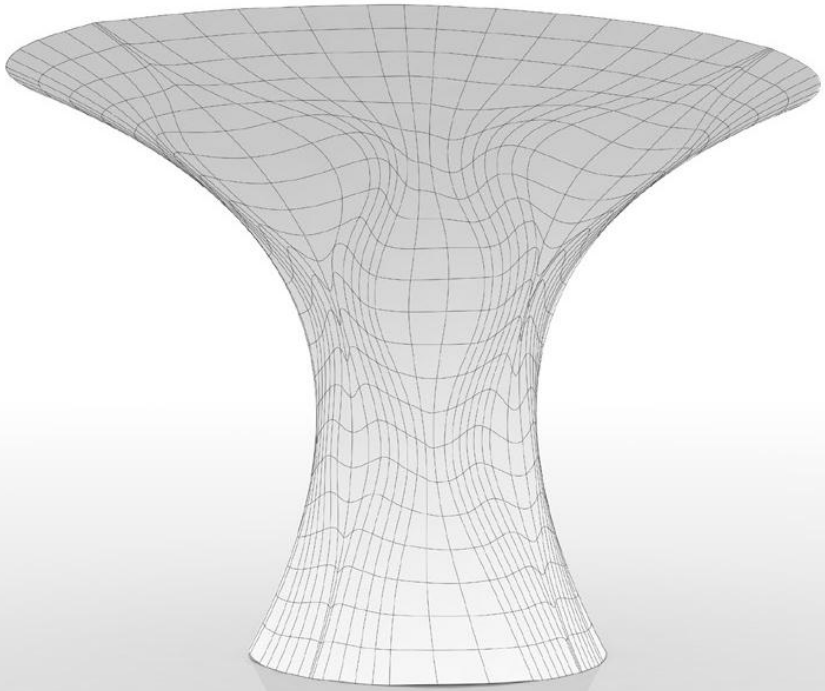
ADDITIVE ASSEMBLAGE WORKSHOP


Architettura digitale


Digital Takes Command
Orizzonti di progettazione e produzione digitale
Design horizons and digital fabrication
a cura di Giulio Iannazzella



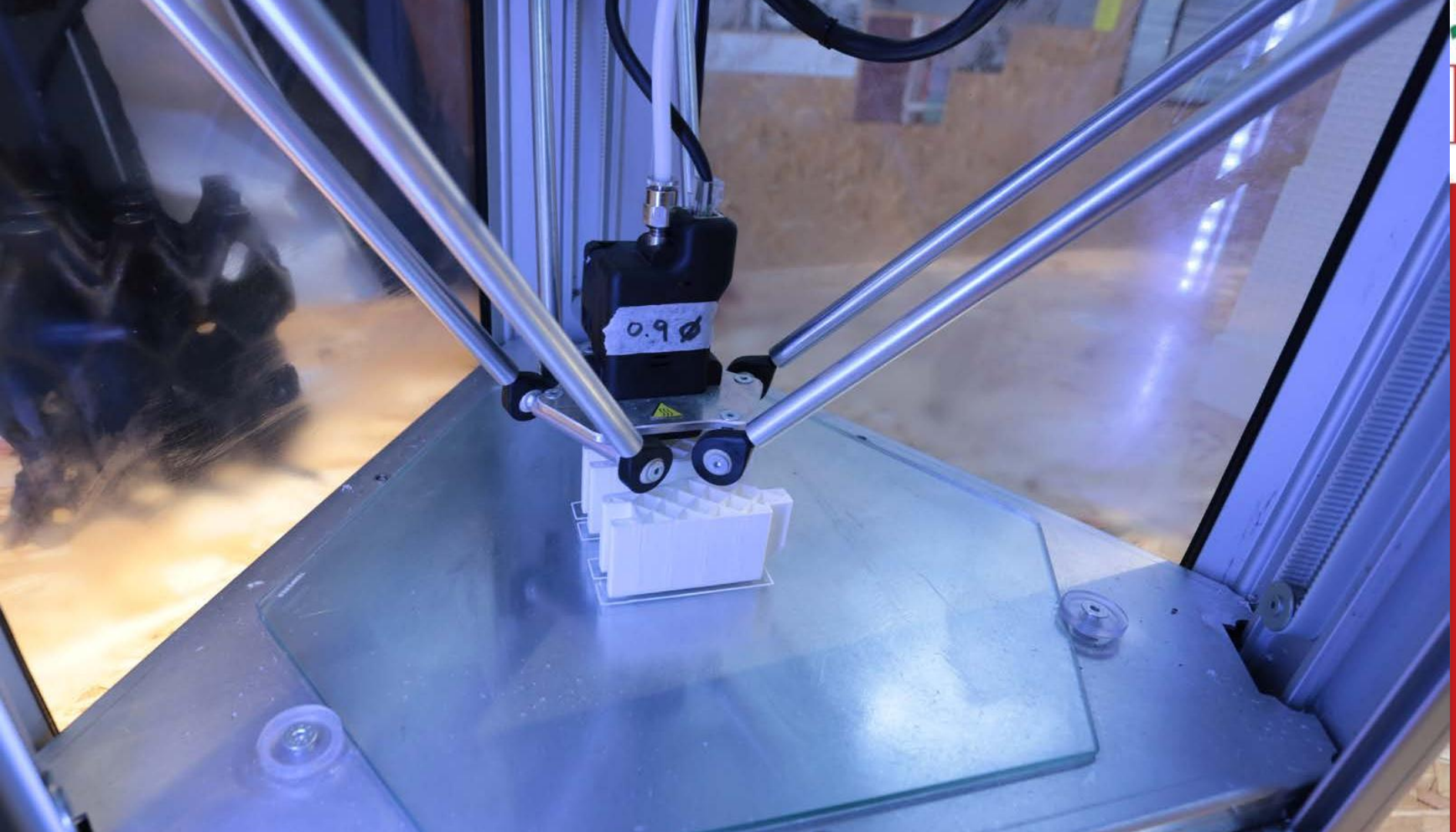
Stress lines



Performative tessellation

Joint system No.1

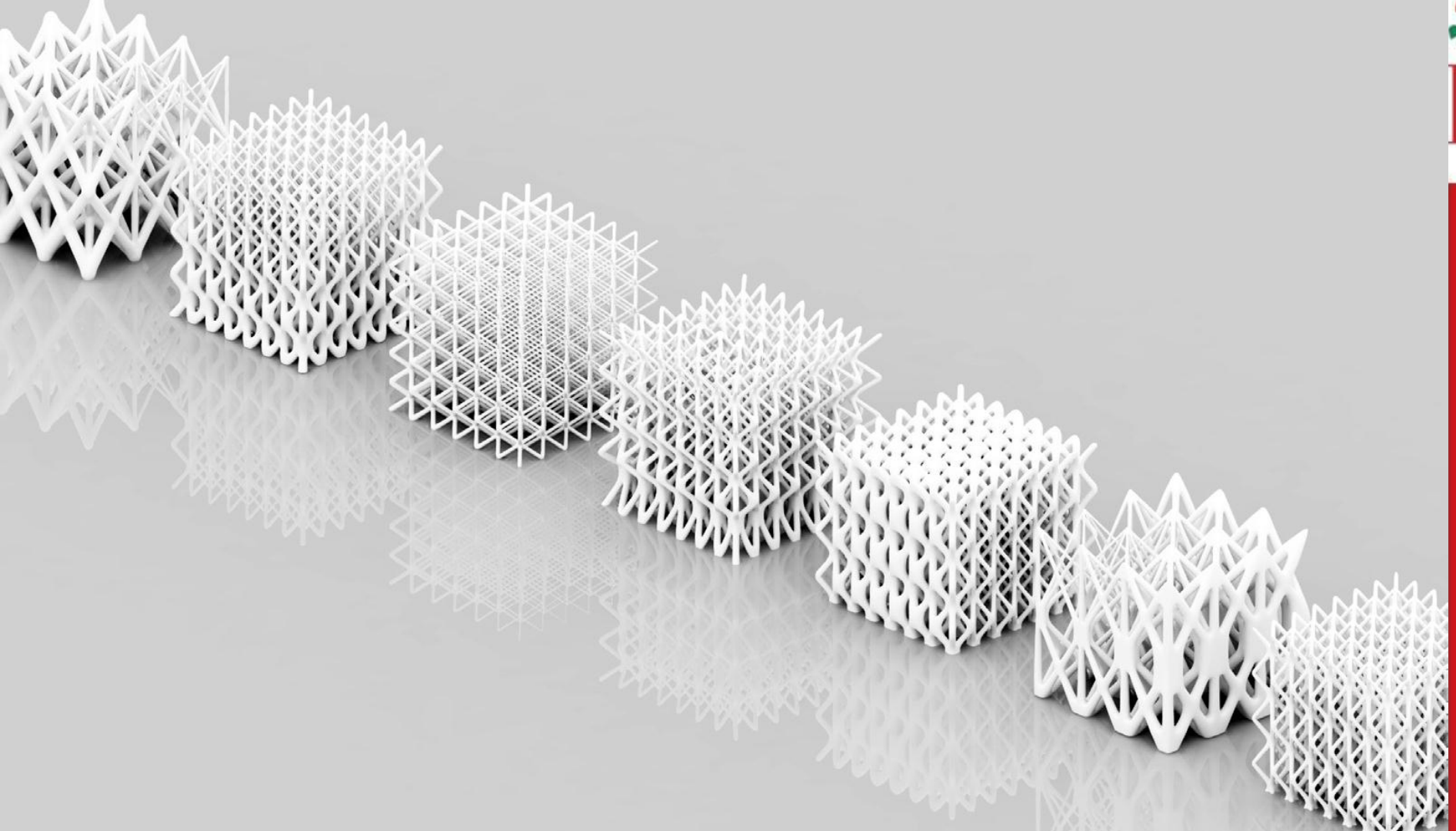
Joint system No.2

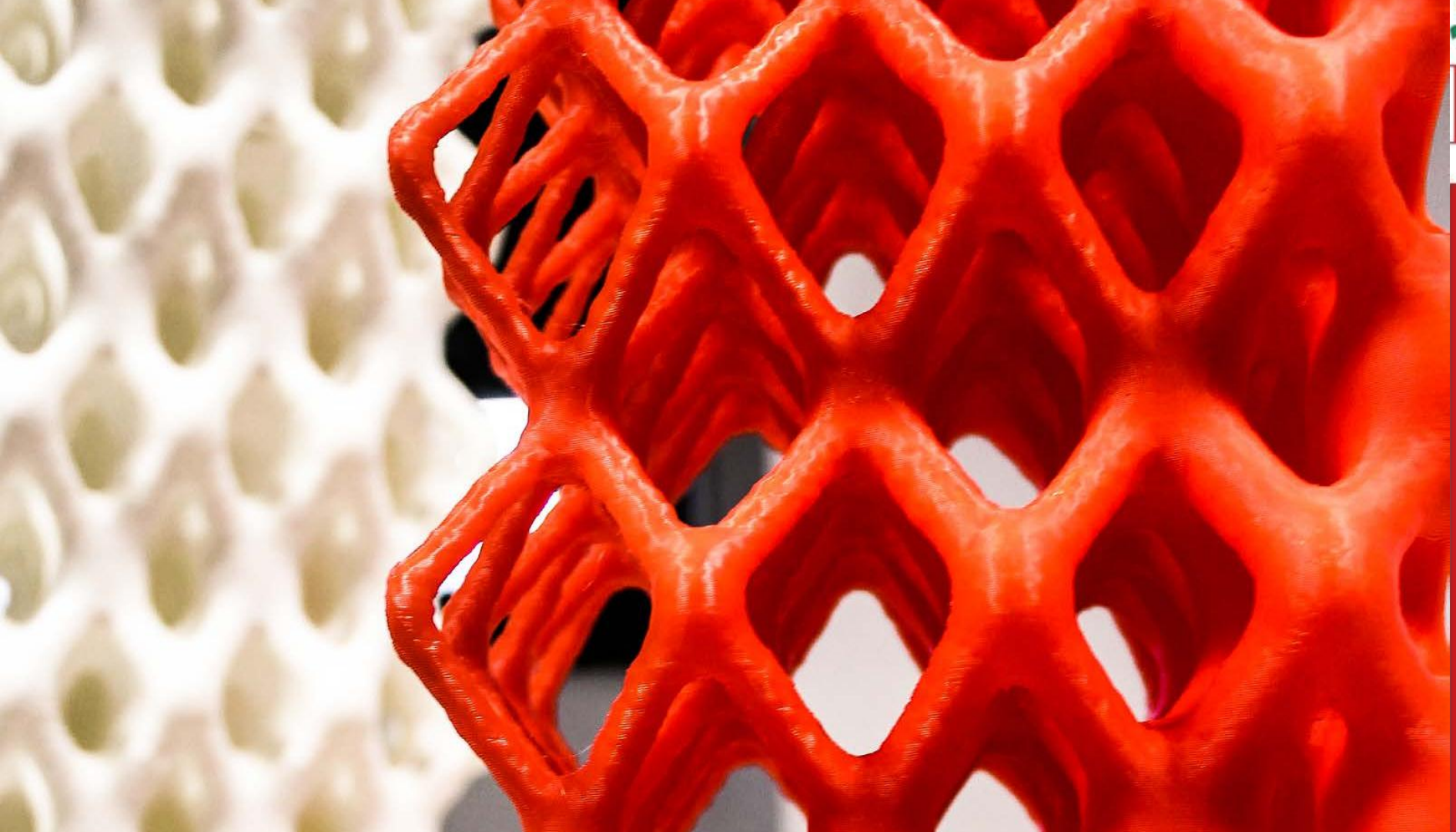

0.9ø


Computazione e materializzazione
in architettura

3D PRINTING
AND
ADDITIVE TECTONICS


BARBETTI





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