

Amleto Picerno Ceraso

Fabbricazioni Digitali

Scenari produttivi per la Terza rivoluzione Industriale

Arch. Amleto Picerno Ceraso



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**Amleto
Picerno Ceraso**

Architetto

Master in Architettura Digitale

Istituto Nazionale d'Architettura;

Master Degree in Advanced Architecture

IaaC Barcellona

Attualmente:

Docente, Master **"Tecnologie Emergenti"**

INARCH.

Docente ad **Atene e Madrid +** visiting school.

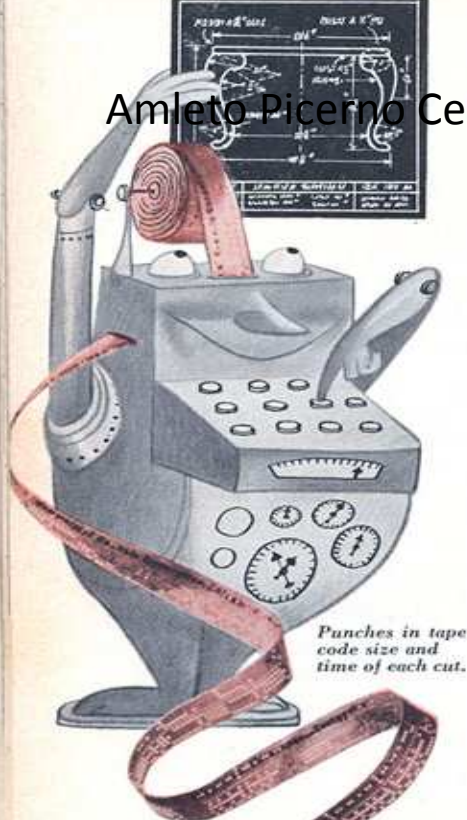
Docente per **l'Accademia Mediterranea
d'Architettura.**

Responsabile Mediterranean **FABLAB**

Direttore di **INFOGRAM**, agenzia di
infovisualizzazione.

Ceo **"picernocerasoLab"** Architettura ed
Ingegneria.





Punches in tape code size and time of each cut.

Tape is fed into computer where code is converted to electric signals.



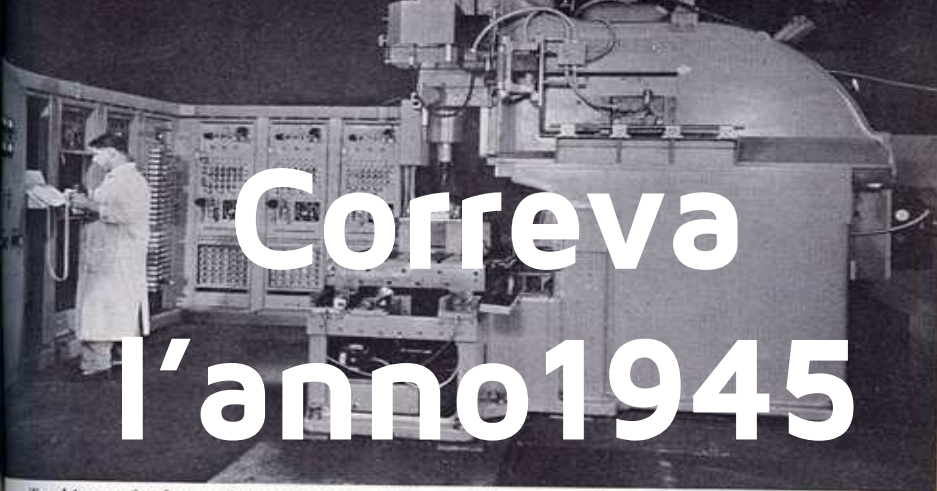
In an electronic lab at MIT,
engineers now are

Teaching Power Tools to Run Themselves

By Hartley E. Howe

SO JOE WORKSHOPPER figures he'd like to turn out a set of dining-room chairs—and at the same time break in his new Model 100 Super Tapemaster. Joe whips down to the hardware store and looks over photographs of different designs. He settles on a Swedish pattern popular way back in 1955—delicate and handsome, but full of difficult reverse curves.

That doesn't worry Joe. He plunks down \$10 for a week's rental of a batch



Correva l'anno 1945

Too big yet for home shop, this MIT milling machine is run by computer-control at left.

of tapes—one each for legs, arms, back and seat.

That night, he clamps a nice piece of birch into his Tapemaster, slips the tape into the control box, flips the switch, and sits back with his pipe and the new issue of *Outdoor Life*.

Forty minutes later, the rumble of the Tapemaster stops and Joe takes a look. One leg is finished. So he clamps on another piece of birch...

Sure it's a dream—in 1955. But the

engineering basis for Joe's Tapemaster exists right now. Sitting up in the Servomechanisms Laboratory of the Massachusetts Institute of Technology in Cambridge, Mass., is a milling machine that will turn out any metal part at the command of a little roll of tape. Originally a standard, vertical 28" Cincinnati Hydro-Tel, it now has hitched to it \$50,000 worth of electronics.

To conceive, design and build the MIT machine took some quarter-million

Signals control three-dimensional movement of cutter head, time each cut.



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**The
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APRIL 23ST - 30TH 2012

Economist.com

Romneyomics explained

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The third industrial revolution

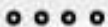
A 14-PAGE SPECIAL REPORT



“..un lavoro diverso.
All'operaio
manifatturiero
subentrano profili con
alto livello di
conoscenza, e la
necessità di ripensare
radicalmente le
strategie di
delocalizzazione..”

APRIL 21ST - 27TH 2012

Worldwide cover



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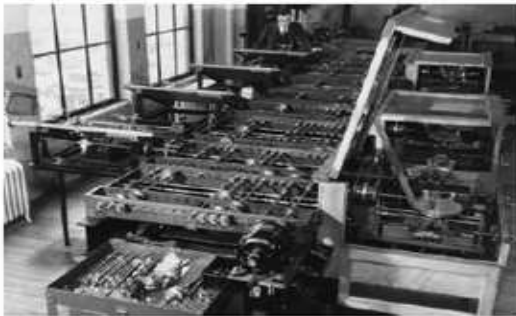
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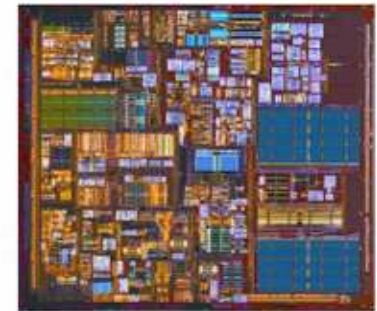
Digital Revolutions



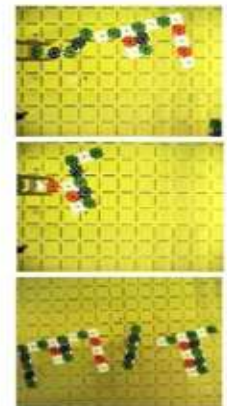
analog → digital communication
~1945



analog → digital computation
~1955



analog → digital fabrication
~2005



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FabLab: Laboratorio di Fabbricazione



dall'Informazione alla Materia



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© Bill Cramer / Wonderful Machine For Forbes

Neil Gershenfeld, Professore al MiT, Boston



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Amleto Picerno Ceraso Cosa c'è all'interno dei fab lab?

Macchine per la fabbricazione

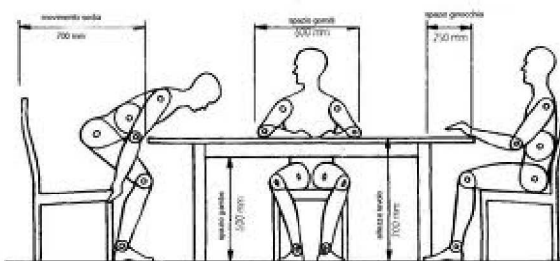
Persone



Computer e software



Conoscenze e Saperi



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Cosa si può fabbricare nei fab lab?

Manufatti di diverse dimensioni



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Cosa si può fabbricare nei fab lab?

Manufatti di diverse Materiali

carta, cartone

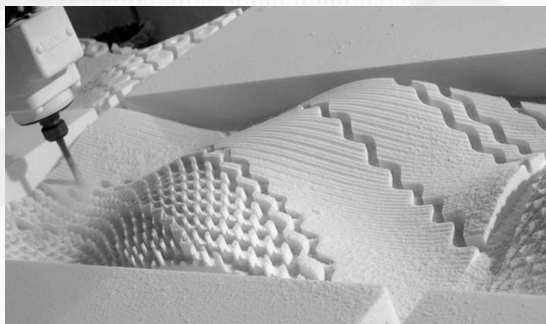


legno

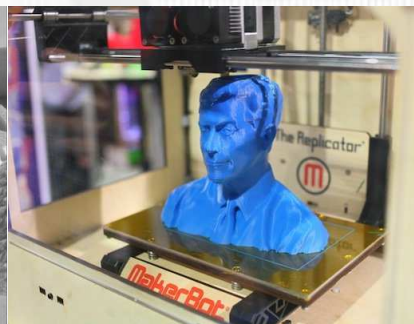


....e molti altri....

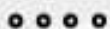
spugne e polistiroli



polimeri plastici

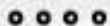


alluminio



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TUTTI



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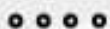
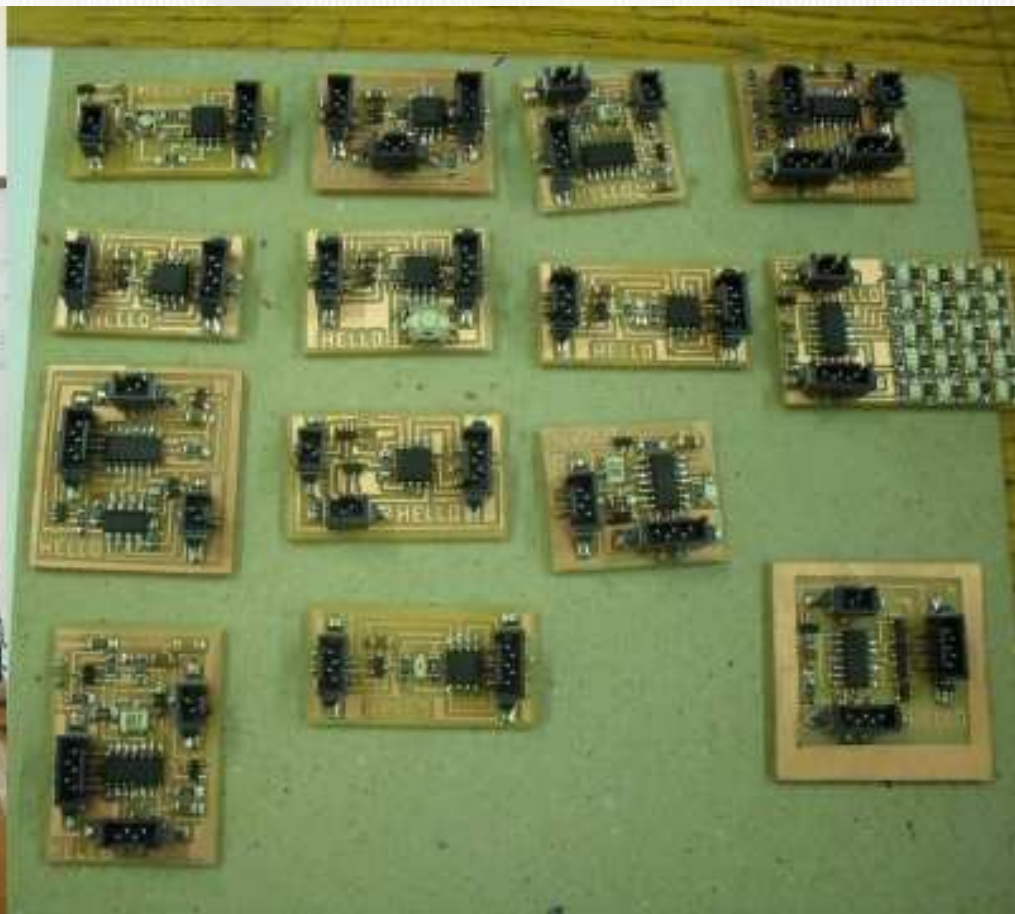
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II PROVIDENCE fab lab

Pretoria South Africa



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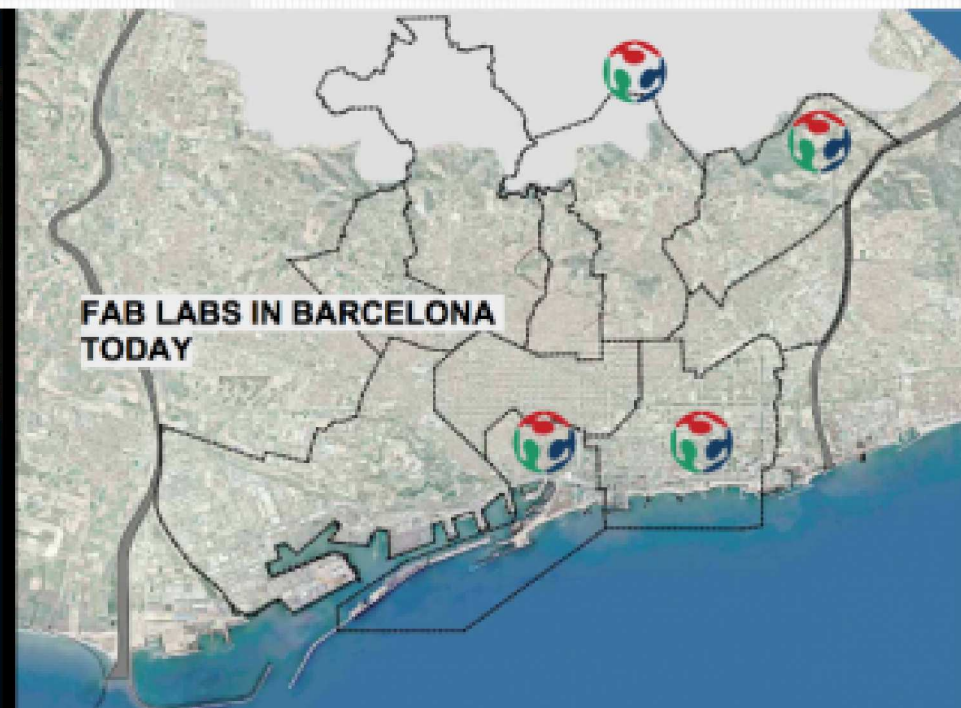
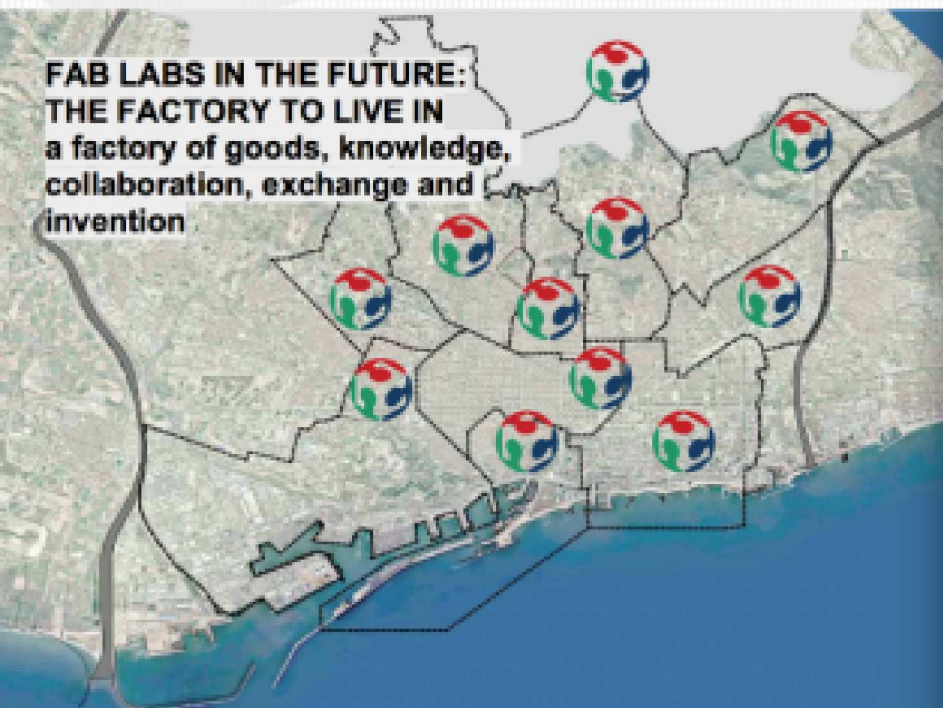
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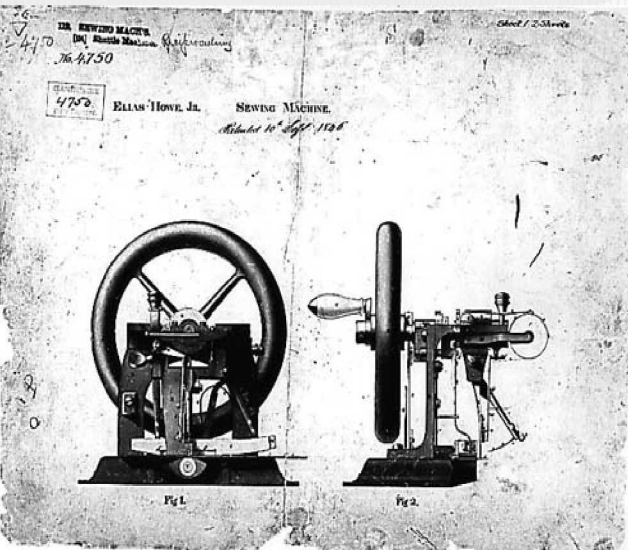
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Barcellona City fab lab



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Always Manually Controlled machines



1940 Numerical Controlled machines



~1960 Computer Numerical Controlled machines



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CNC:Computer Numerical Control

CAD:Computer Aided Design

CAM:Computer Aided Manufacturing



Additive

Subtractive

Deforming

Hybrid

Rapid
prototyping

*STA _
stereolithogra
phy,

*3Dprinting,

*Fused
deposition
modeling,...

2D

*Laser
cut,

*Wire cut,

*Waterjet
cut,

*Plasma
cut,...

3D

*Cnc
Milling

*Cnc
Turning

*Cnc
Chiseling

*Cnc
Forging

*Cnc
Bending,

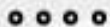
*Theormof
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Press ,...

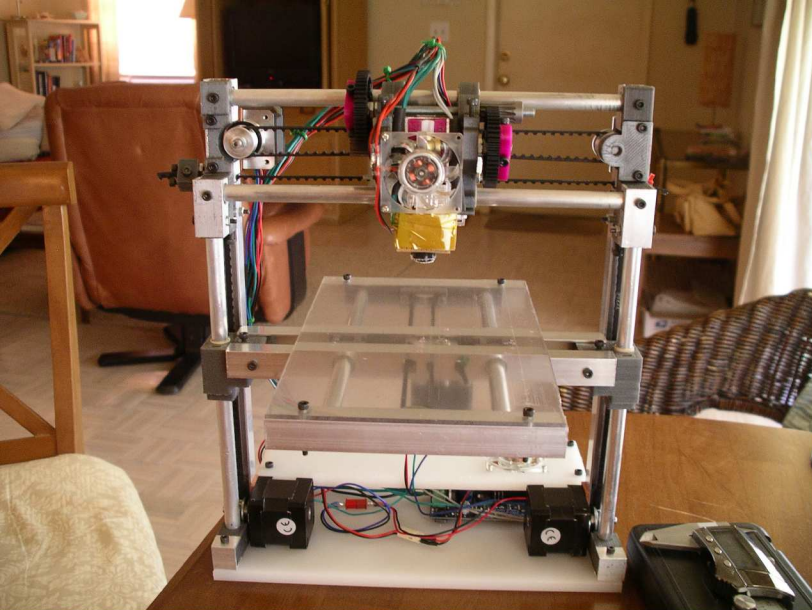
*Cnc
Lasercut/
cnc folding

*Robotic
Brick
deposition

*Cnc Wire
cutting/
cnc
Coloring

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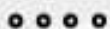


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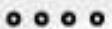


Iris van Herpen and
Jolan van der Wiel





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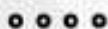
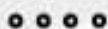


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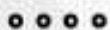
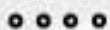
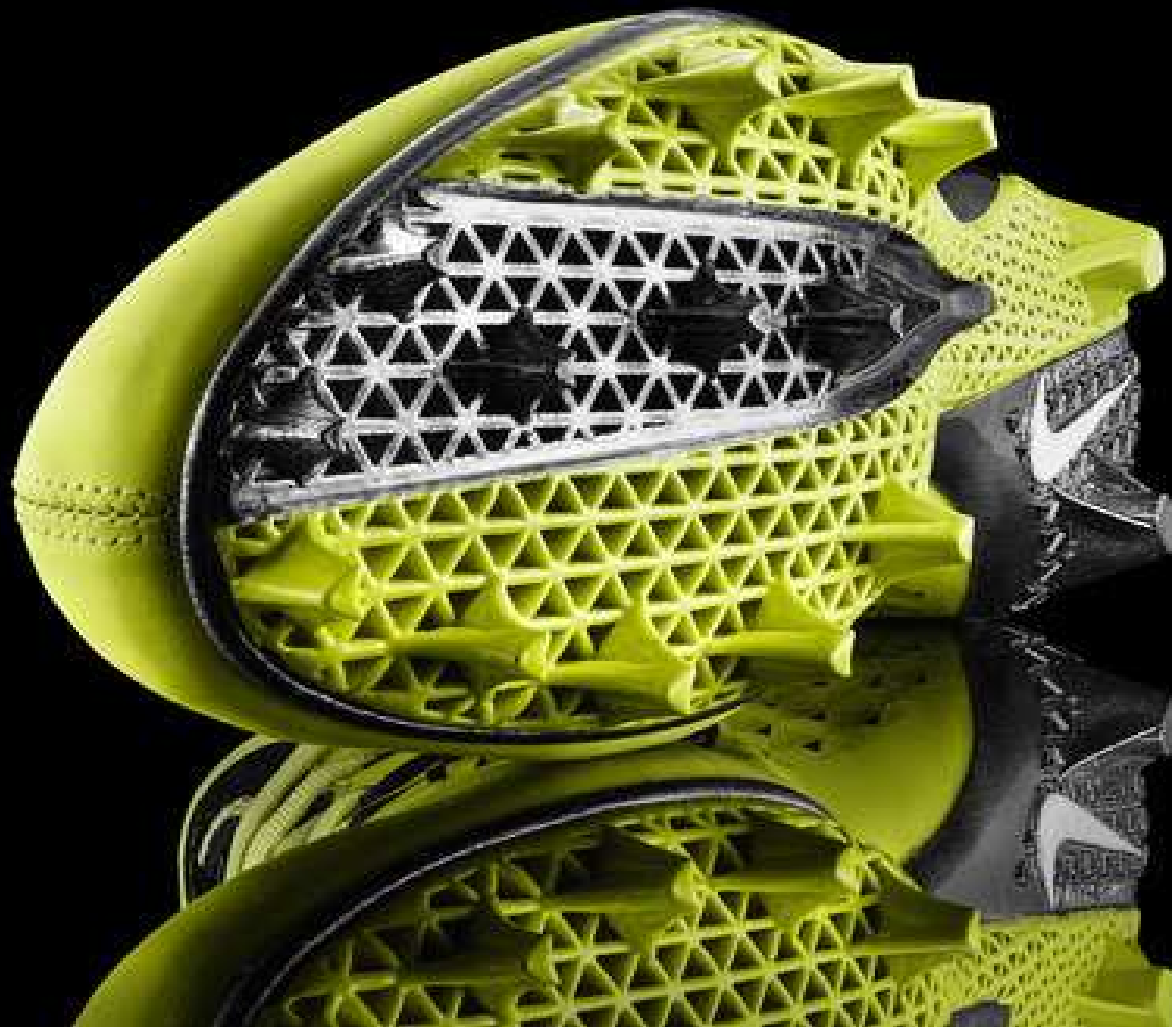
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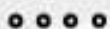


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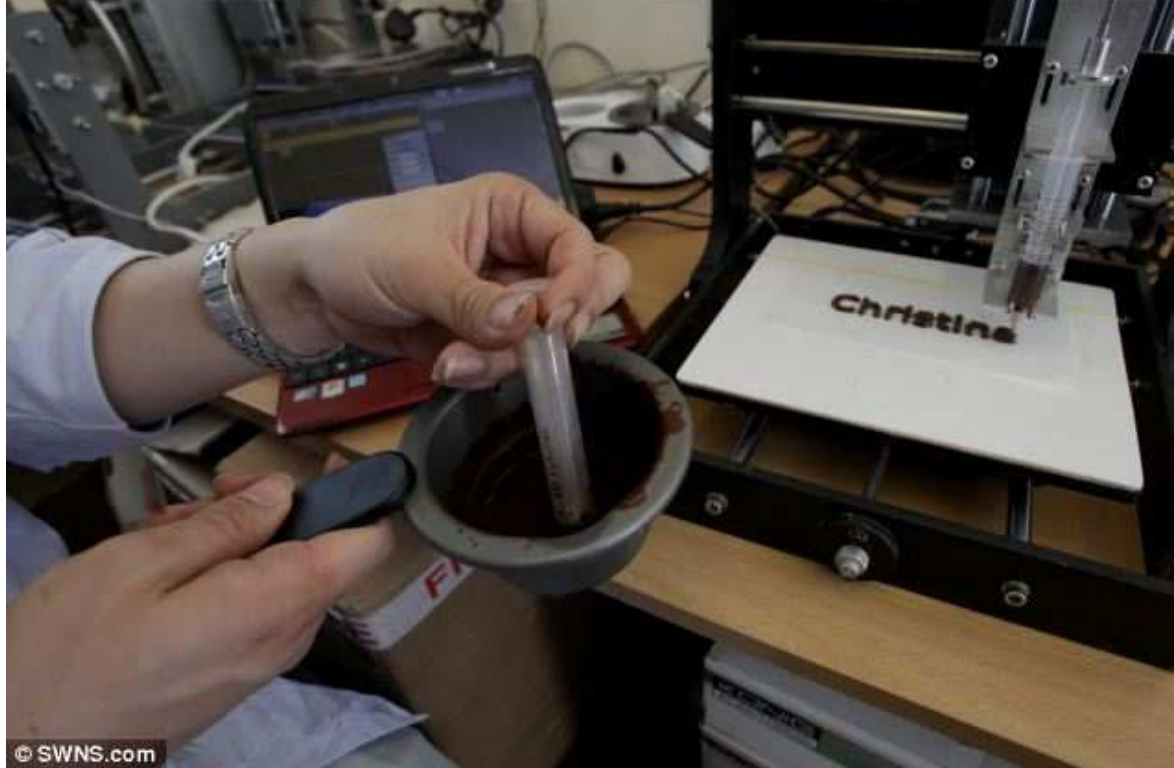
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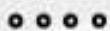
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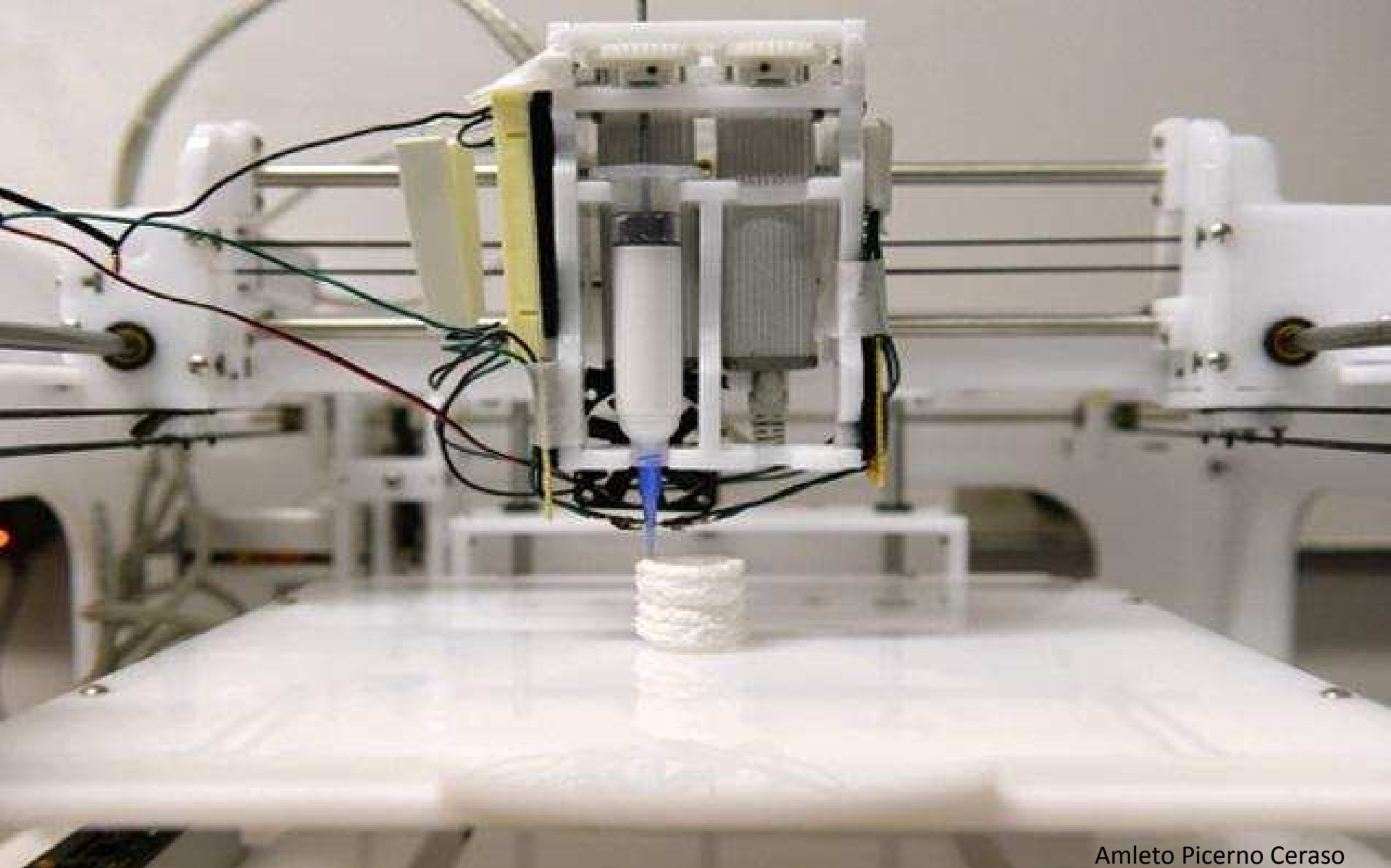
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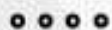
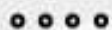


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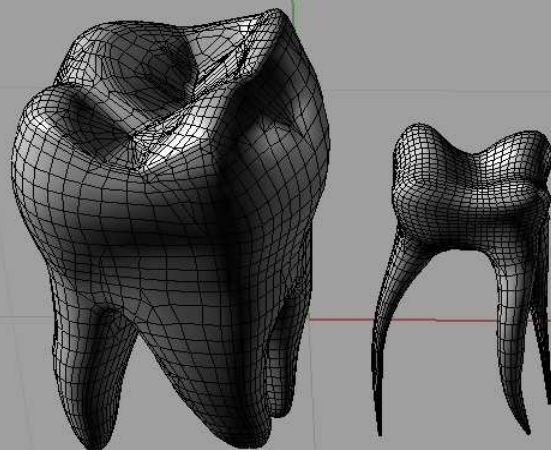
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CPPlane x -0.294 y 0.302 z 0.000

Default

Snap Ortho Planar Osnap Record History



Amleto Picerno Ceraso 4:54 PM 10/10/2013



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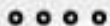


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L'ARTISAN ÉLECTRONIQUE VIRTUAL POTTERY WHEEL



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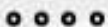


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Sketch furniture

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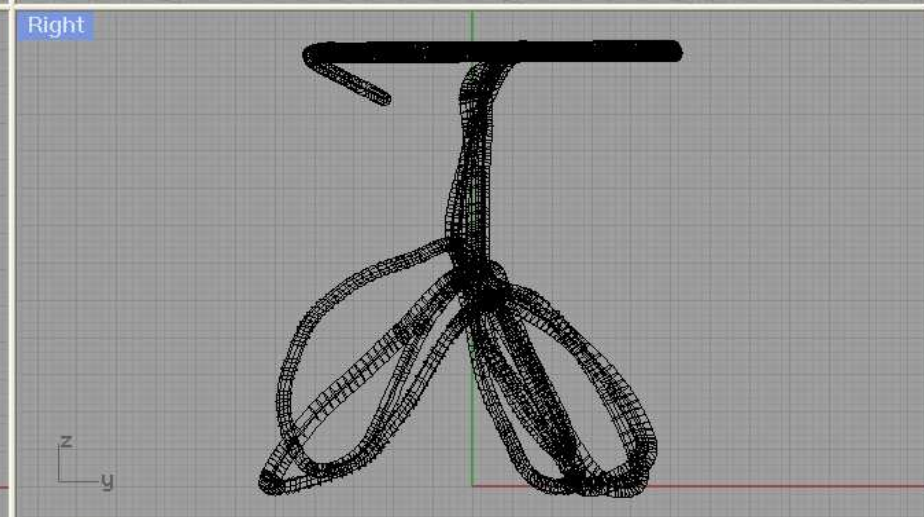
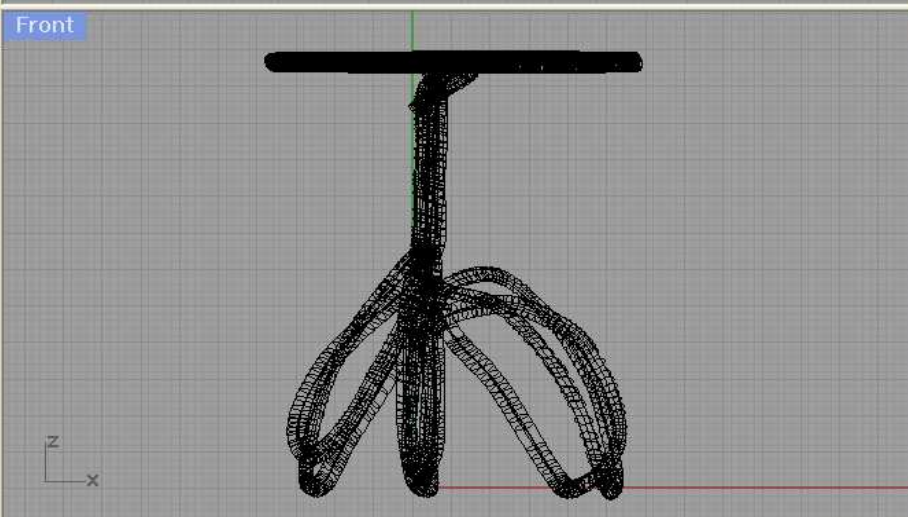
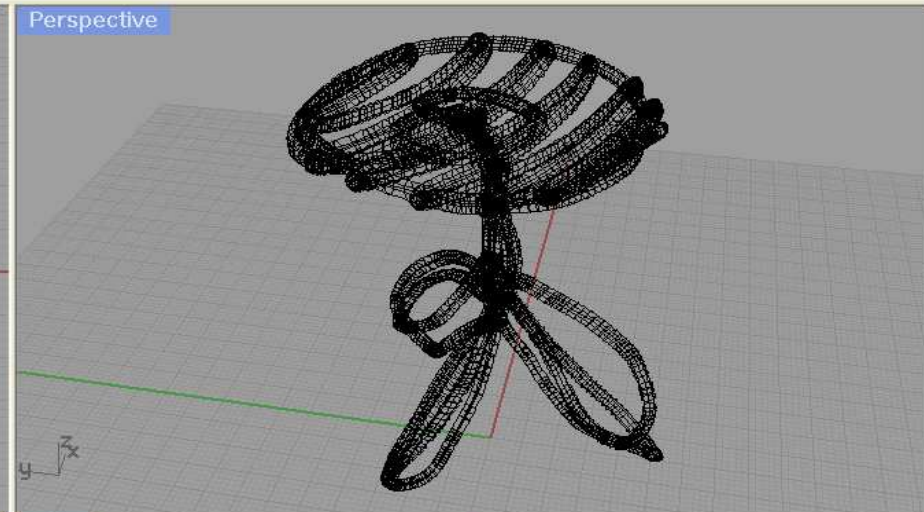
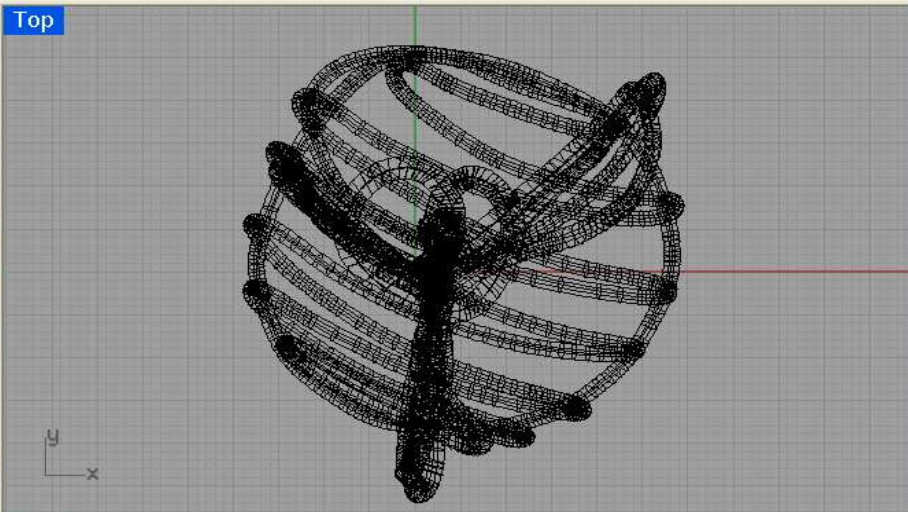
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[video](#)

Command: _WireframeViewport
Command: _WireframeViewport

Command:



☒ End ☒ Near ☐ Point ☐ Mid ☐ Cen ☐ Irit ☐ Perp ☐ Tan ☐ Quad ☐ Knot ☐ Project ☐ Disable
CPlane x 26.763 y -3.053 z 0 0 ☒ Default Snap Ortho **Planar** Osnap

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Sketch furniture

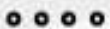
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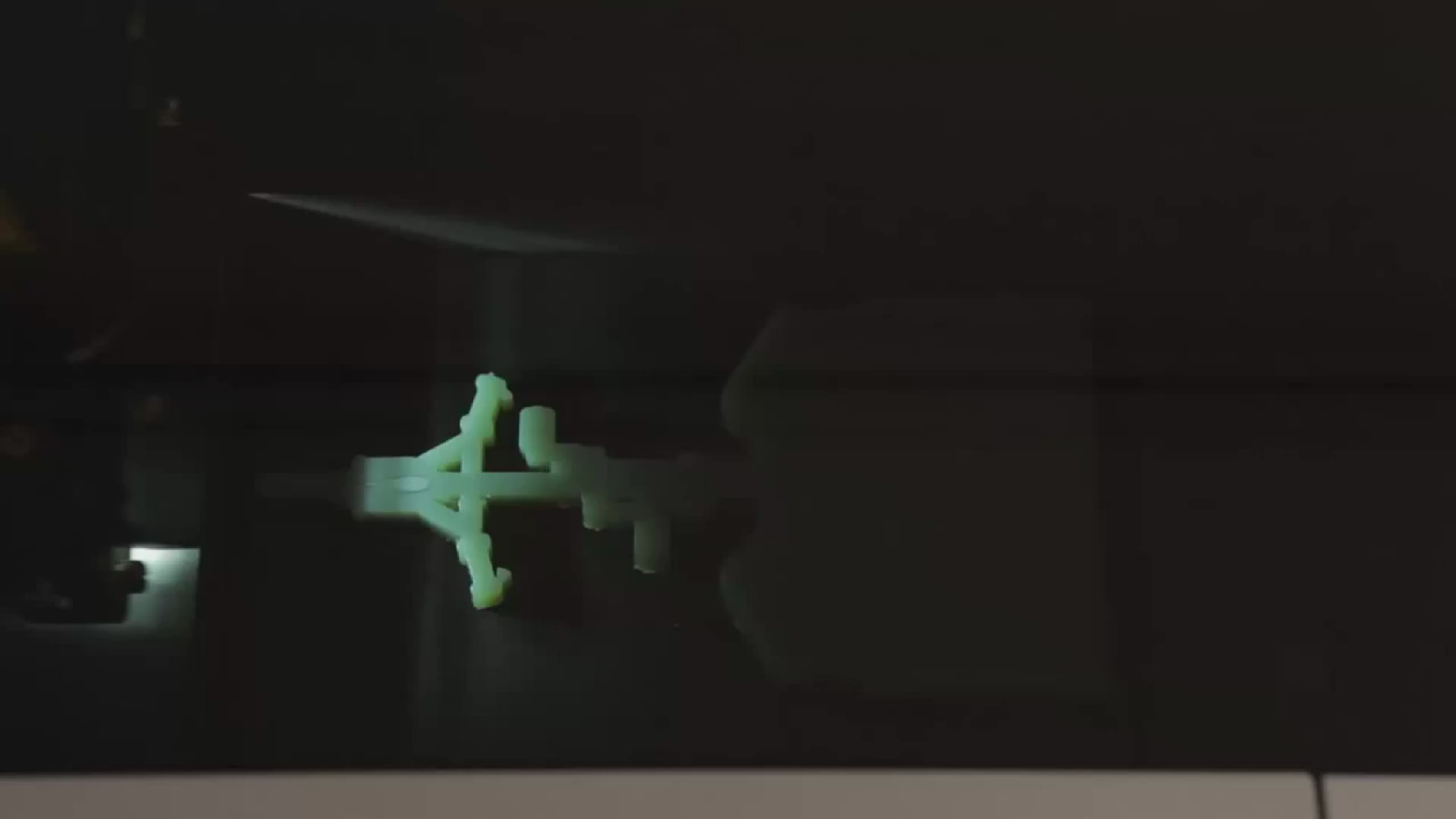
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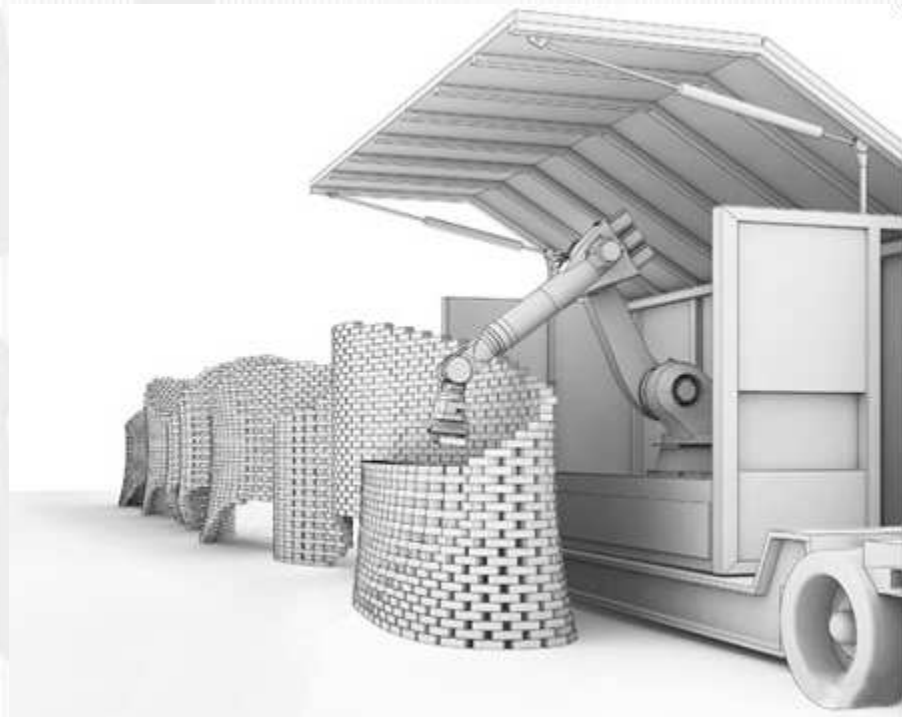
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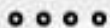
Subtractive processes

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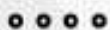
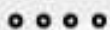


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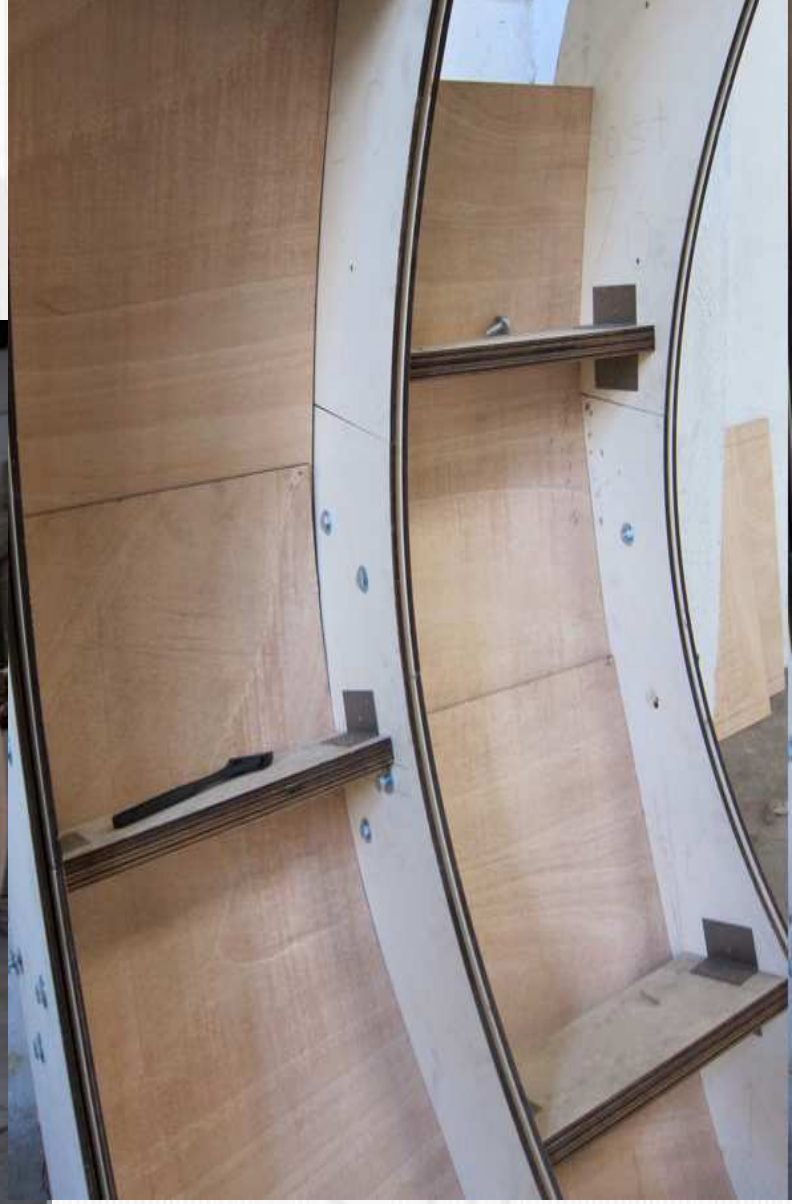


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Mock up with curvable plywood



o o o o



o o o o



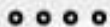
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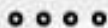


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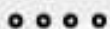


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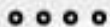


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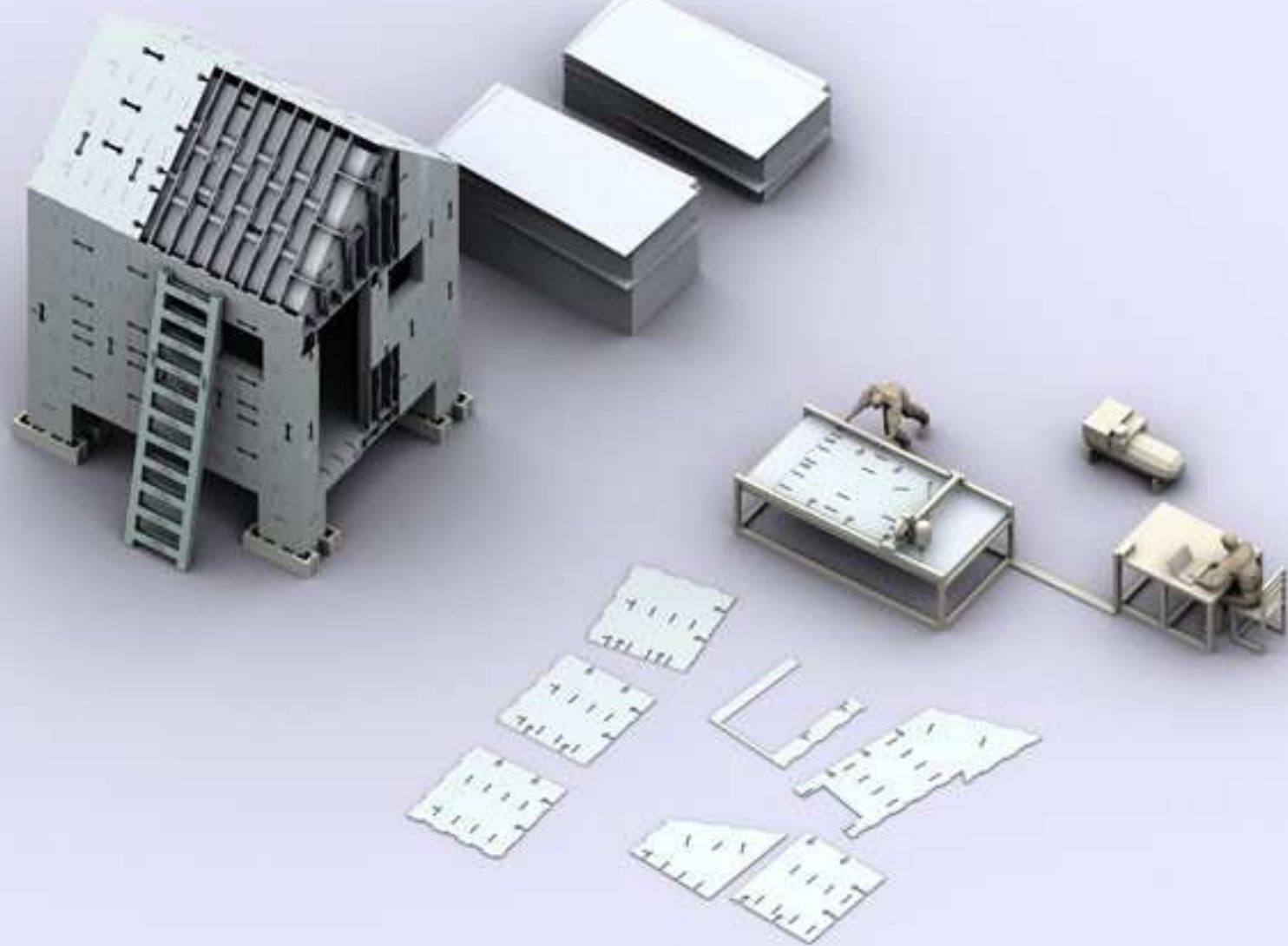
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[Larry Sass for Katrina rebuilding efforts.](#)

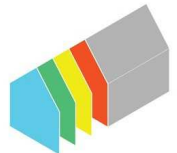
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[Larry Sass for Katrina rebuilding efforts.](#)



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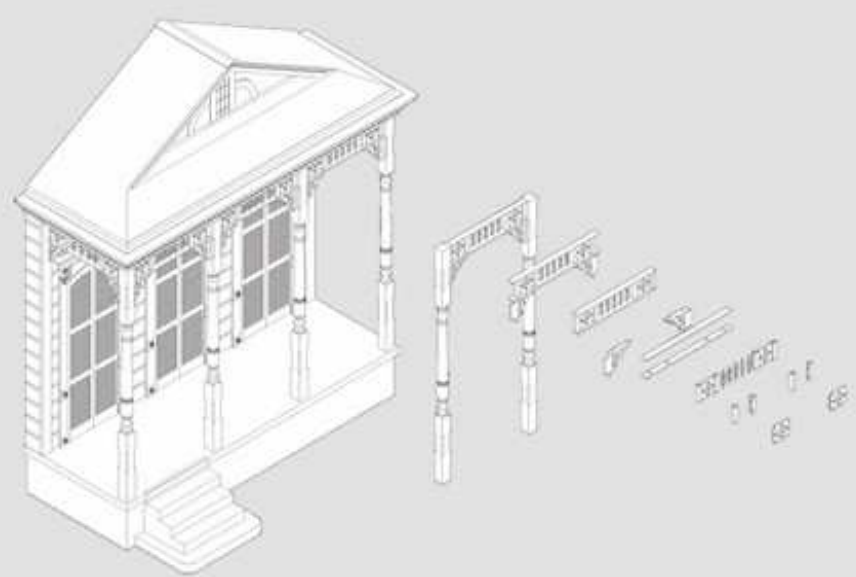
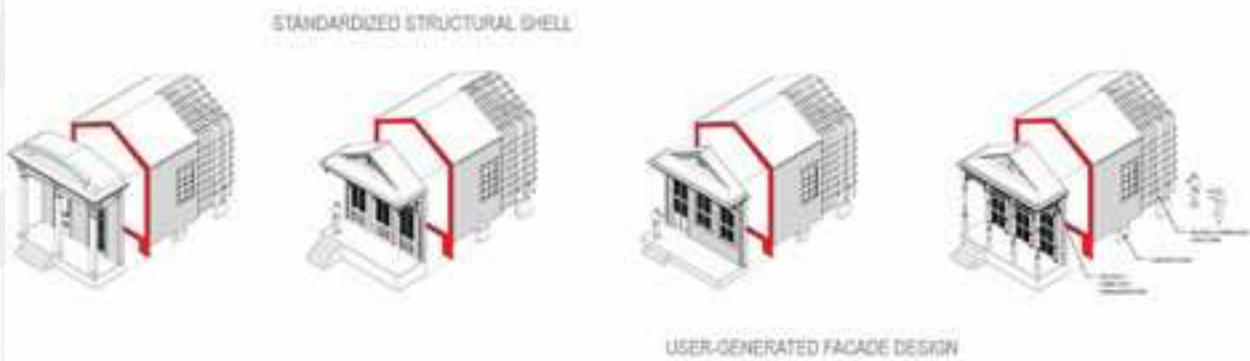
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Larry Sass for Katrina rebuilding efforts.





HAVANA

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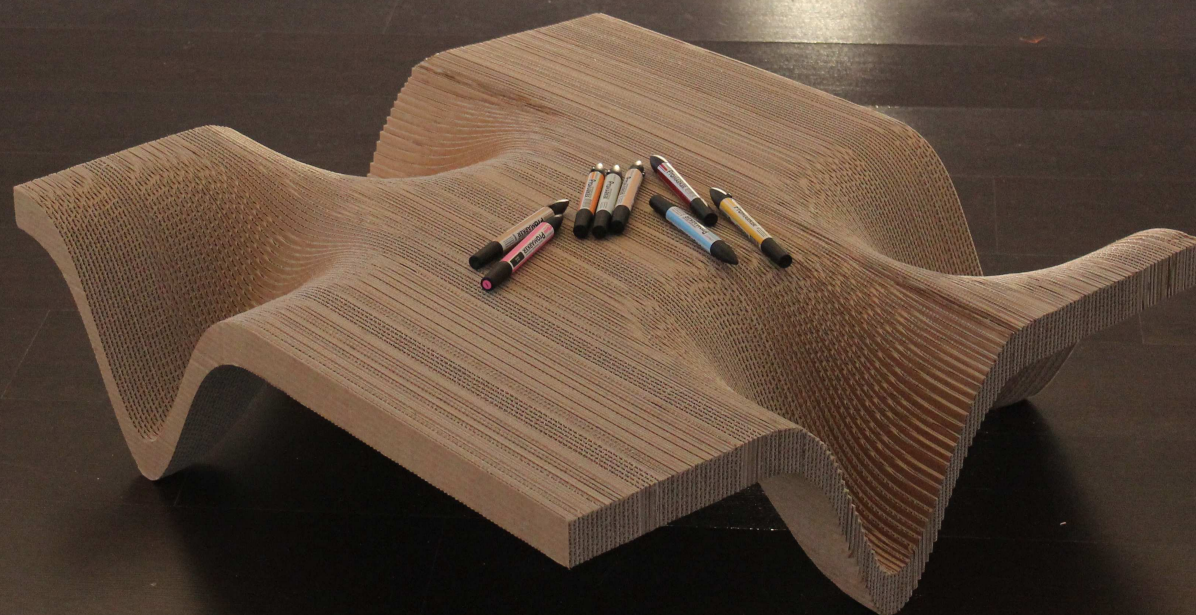
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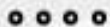
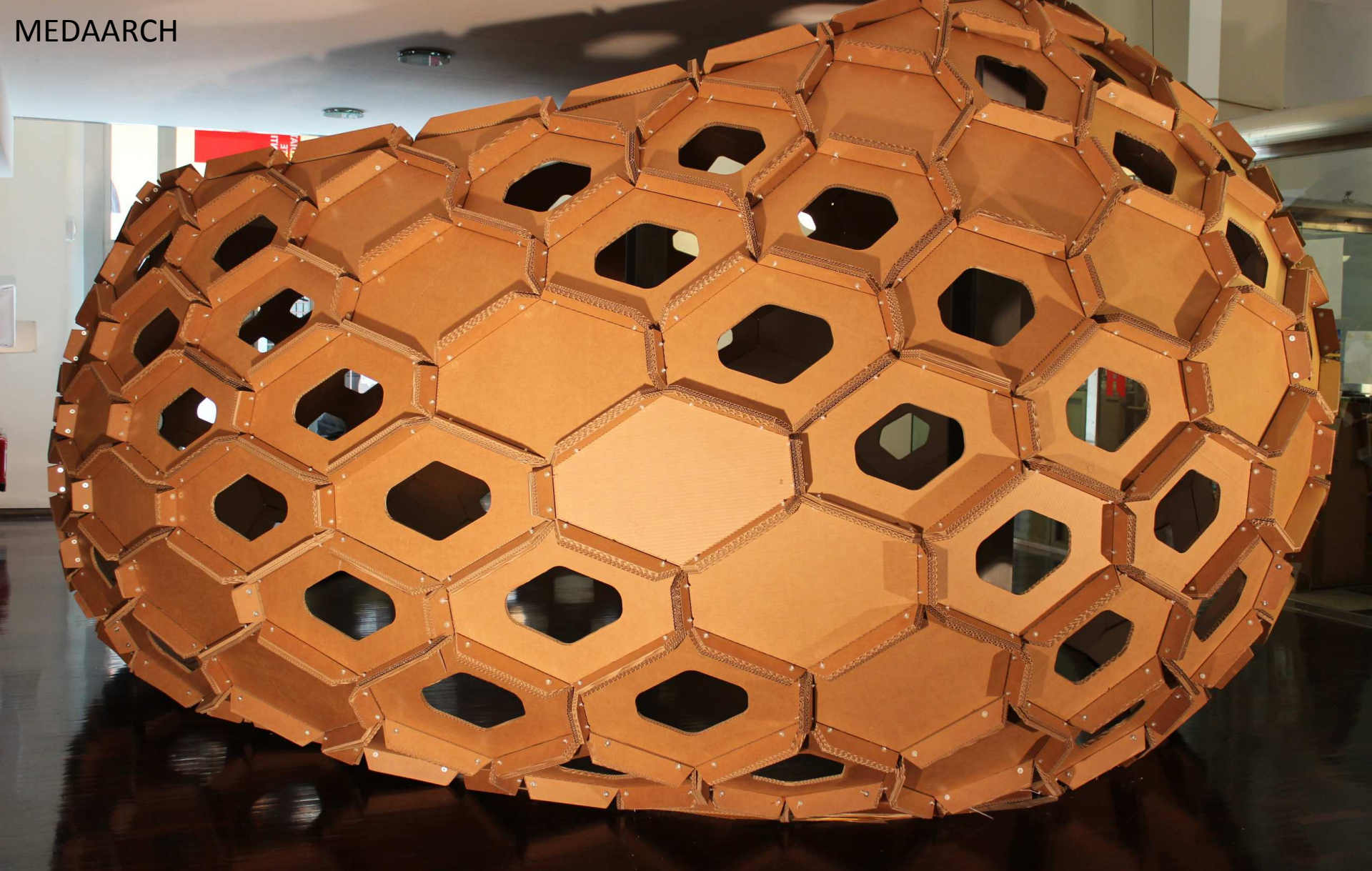
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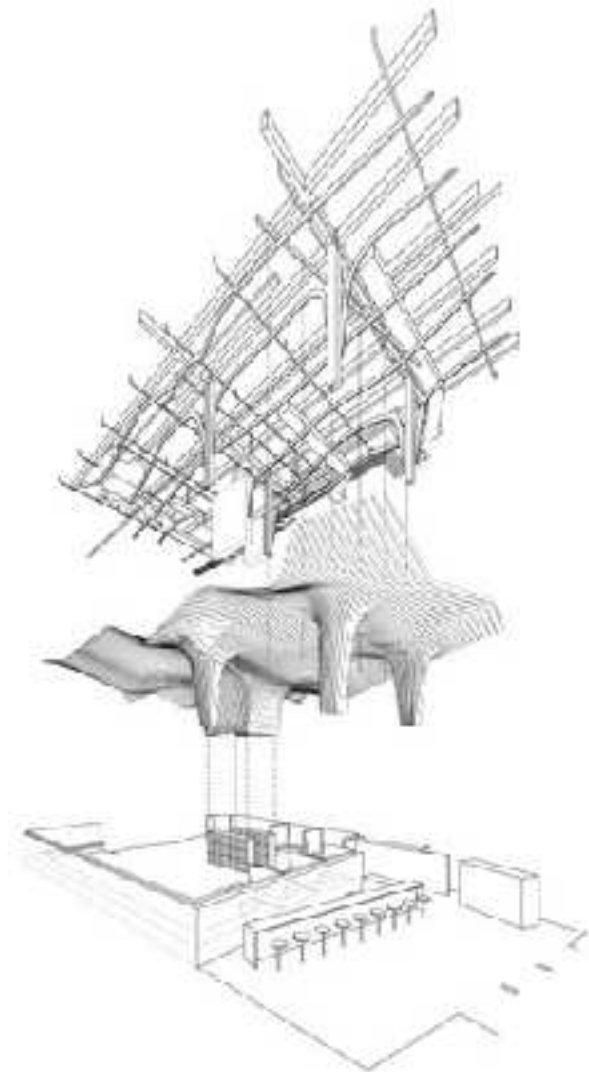
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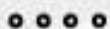
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Resturant LA





Resturant LA



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 Prezi Gus is in to smoke a catnip cigar.



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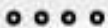
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Grazie



Amleto Picerno Ceraso



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