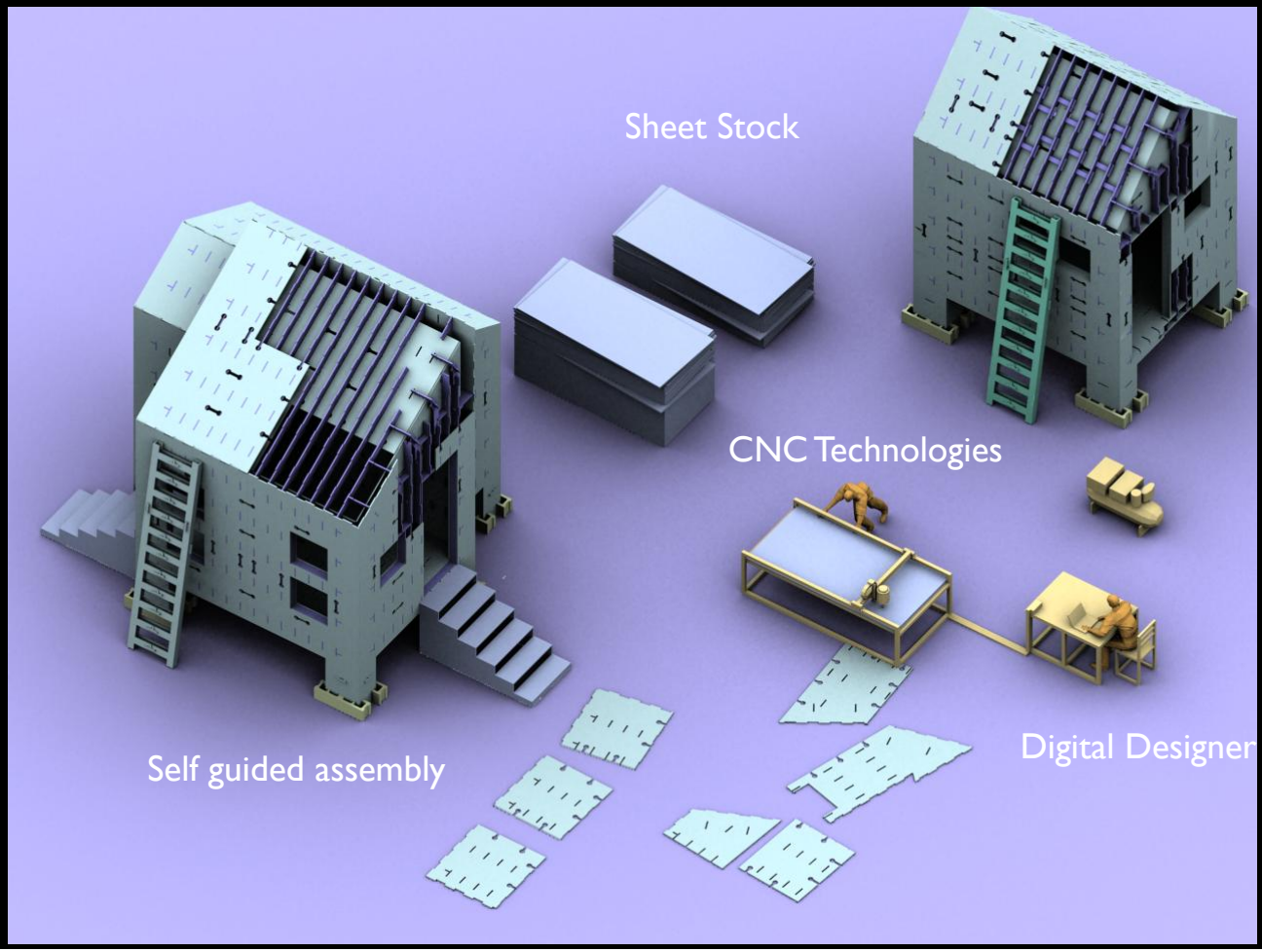
Mega Assembly

Scaling & Decomposition of Digital Designs

Larry Sass



Reduce the cost home delivery

Manufacture 100 high quality houses a day

Reflect cultural sensitivity in each design

Potential to disconnect from the energy grid

Poverty

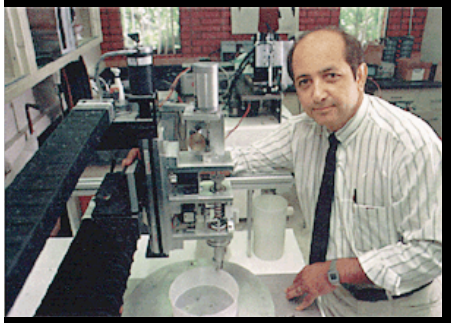
Natural Disasters

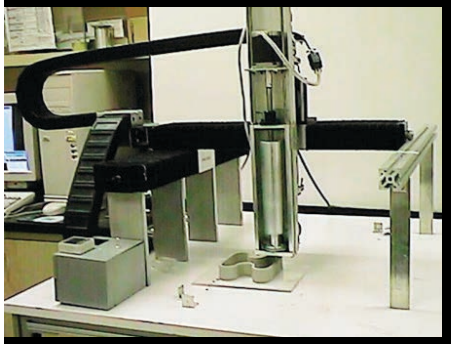
Luxury Homes

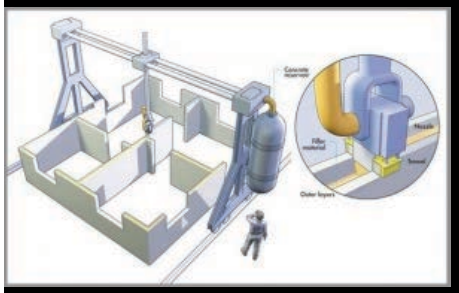
Mega Assembly

Pioneers

Contour Crafting, 2002
Behrokh Khoshnevis







Fab House, 2010
Vincente Guallart, IAAC

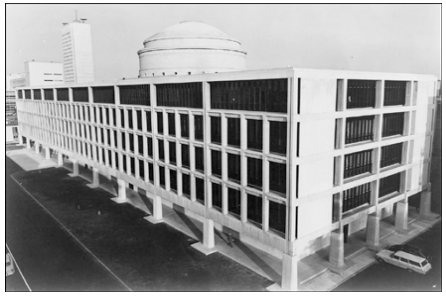
Facit Homes, UK 2011

Scaling & Decomposition

Challenge

Skidmore Owings Merrill
Bush Building, MIT, 1965

Intuitive scaling



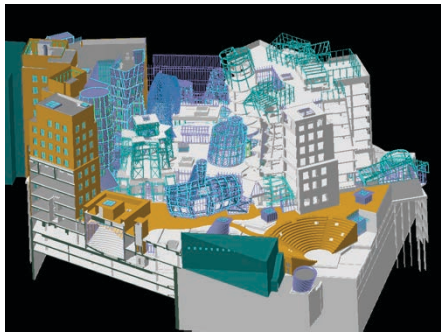
Science 5 March 2004:
Vol. 303 no. 5663 pp. 1472-1473
DOI: 10.1126/science.1091973
BEYOND THE IVORY TOWER: Constructing Complexity in the Digital Age
William J. Mitchell*

3D Prints of Palladio's

Material scaling

Frank Gehry
Stata Center, 2005

Isotropic Scaling

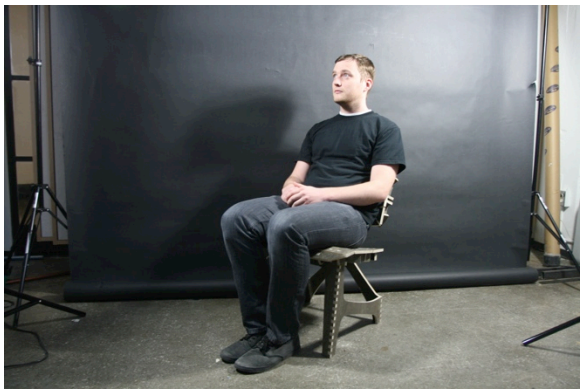


Incremental Scaling

Digital Fabrication Courses

Design
1/8” - 3.1 mm

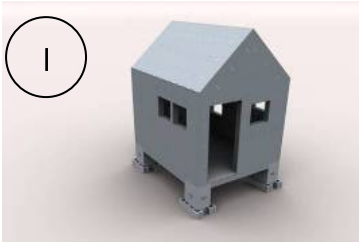
Product
1/2” - 12.7 mm



Procedural Decomposition

2005 CBA

1



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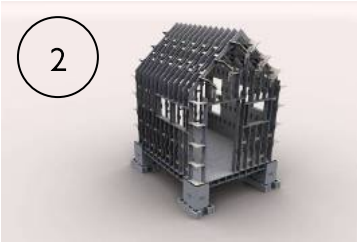

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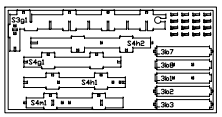

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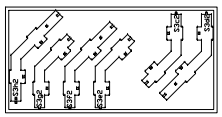

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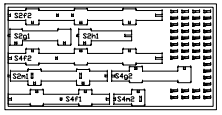

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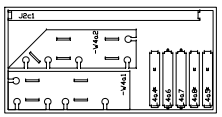
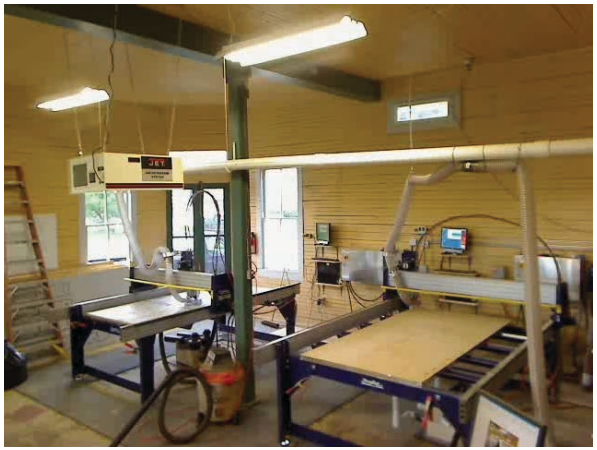


026

5

A House for New Orleans

Museum of Modern Art
New York, New York



Incremental scaling

Procedural decomposition

Press fit construction

Self guided assembly

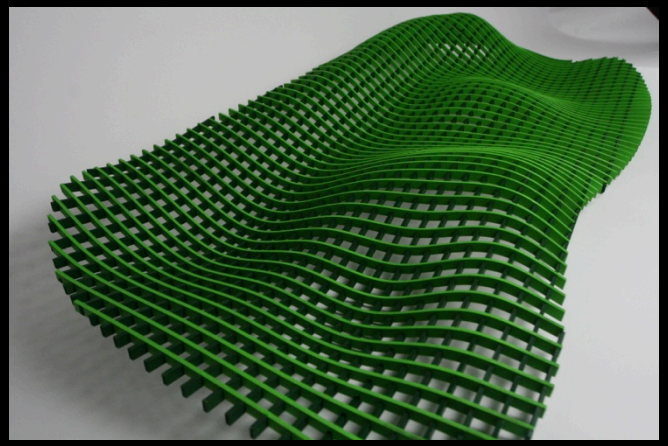
High precision construction

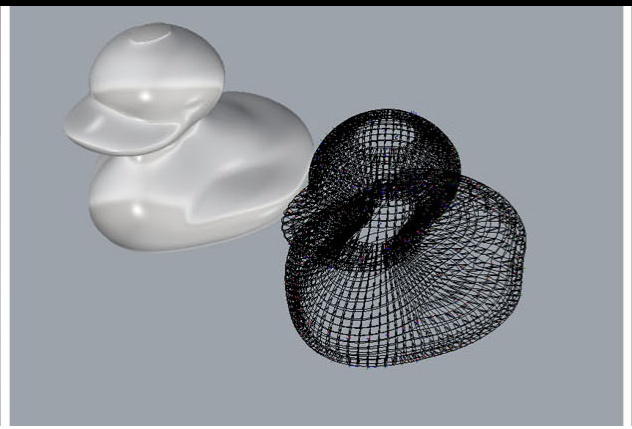

LST-7
LST-6
LSR-5
LSR-4
LSR-3
LSR-2
LSR-1
RST-7
RST-6
RSR-4
RSR-3
RSR-2
RSR-1

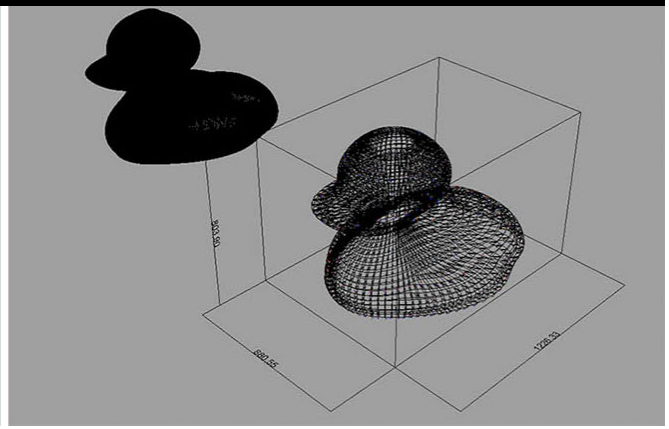
Automated Decomposition

Very Large Scale Prototyping

Larry Sass , Ki Woong, Vernelle Noel,
MIT
Lujie Chen
Singapore University of Technology and Design







Mega Assemblies

Incremental Scaling

- *multiples of "x" from design to full-scale*

Automated Decomposition

- *based on environmental & human factors of assembly*