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
Mega Assembly
Pioneers

Contour Crafting, 2002
Behrokh Khoshnevis

Facit Homes, UK 2011

Fab House, 2010
Vincente Guallart, IAAC
Scaling & Decomposition

Challenge

Intuitive scaling

Skidmore Owings Merrill
Bush Building, MIT, 1965

3D Prints of Palladio’s
Material scaling

Isotropic 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*
Incremental Scaling
Digital Fabrication Courses

Design
1/8" - 3.1 mm

Product
1/2" - 12.7 mm
Procedural Decomposition

2005 CBA
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
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