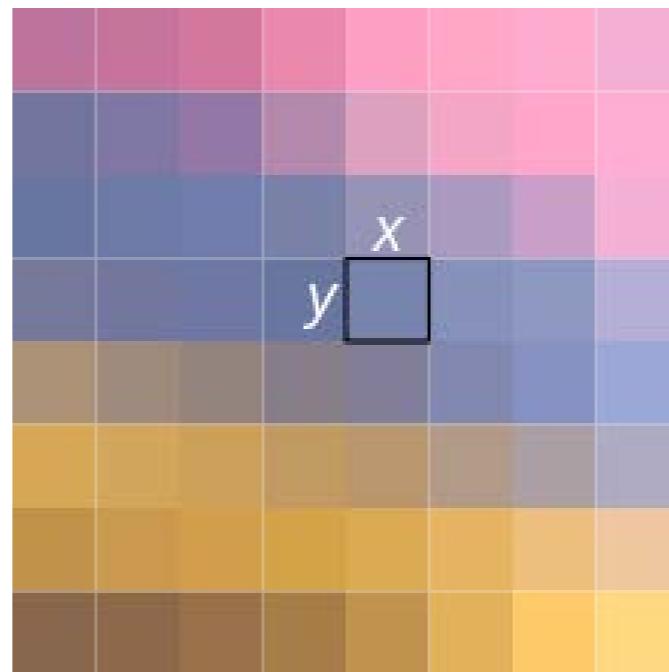
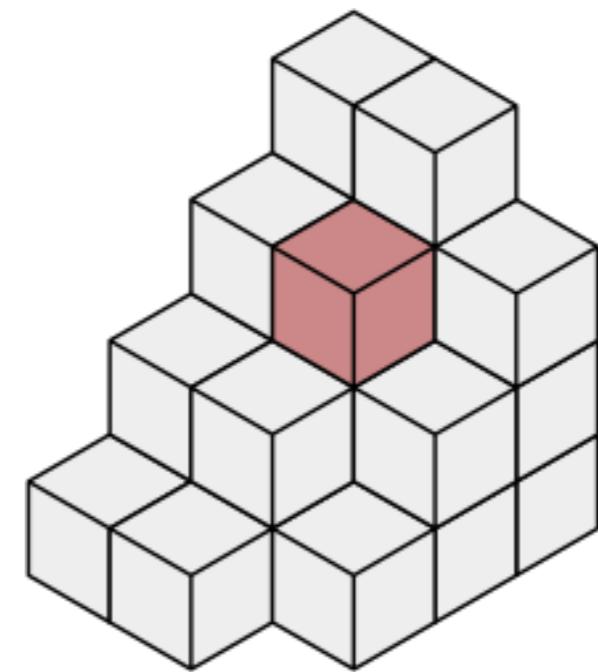


GRID

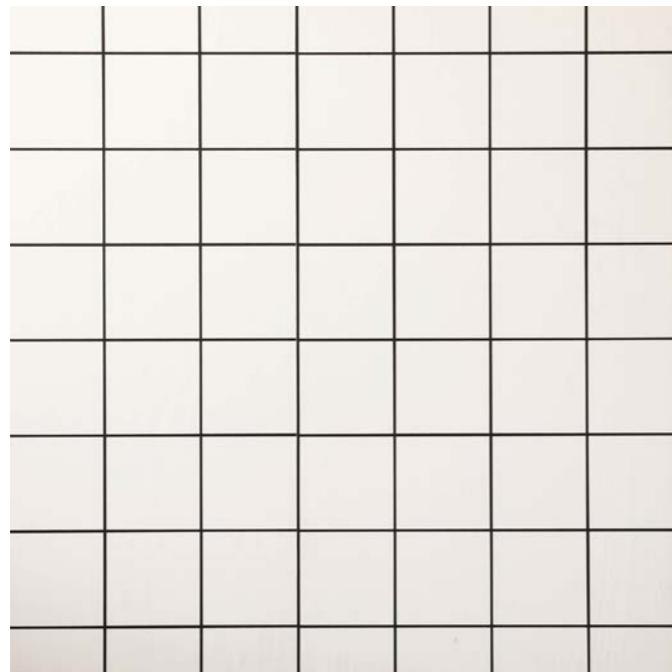


PIXEL



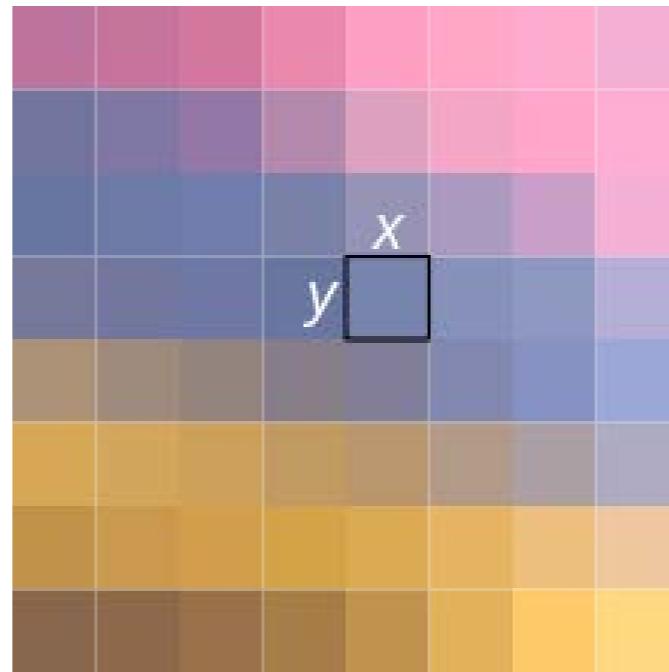
VOXEL

**Grid references** define locations in maps using Cartesian coordinates.



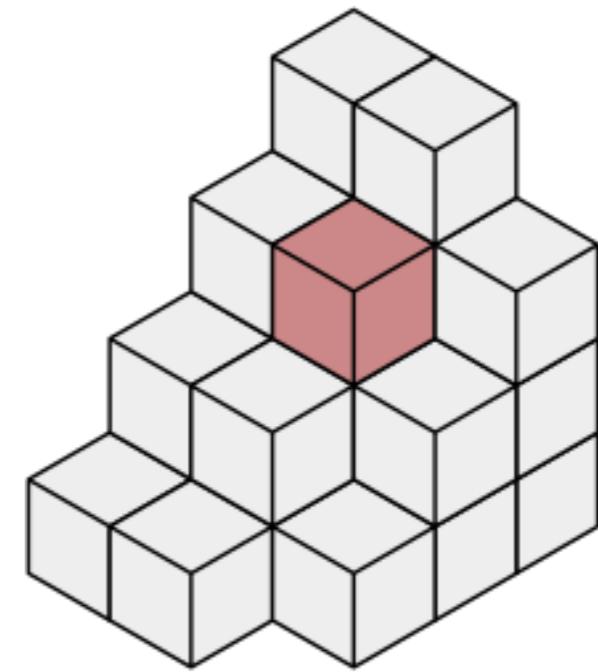
# GRID

a **pixel**, **pel**,<sup>[1]</sup> **dots**, or **picture element**<sup>[2]</sup> is a physical point in a raster image, or the smallest addressable element in an all points addressable display device; so it is the smallest controllable element of a picture represented on the screen.



# PIXEL

A **voxel** represents a single sample, or data point, on a regularly spaced, three-dimensional grid. This data point can consist of a single piece of data, such as an opacity, or multiple pieces of data, such as a color in addition to opacity. A voxel represents only a single point on this grid, not a volume; the space between each voxel is not represented in a voxel-based dataset



# VOXEL

**Grid references** define locations in maps using Cartesian coordinates.

GRID

a **pixel**, **pel**,<sup>[1]</sup> **dots**, or **picture element**<sup>[2]</sup> is a physical point in a raster image, or **the smallest addressable element in an all points addressable display device**; so it is the smallest controllable element of a picture represented on the screen.

PIXEL

A voxel represents a **single sample, or data point, on a regularly spaced, three-dimensional grid**. This data point can consist of a single piece of data, such as an opacity, or multiple pieces of data, such as a color in addition to opacity. A voxel represents only a single point on this grid, not a volume; the space between each voxel is not represented in a voxel-based dataset

VOXEL

**CONTROL/MAINTAINING  
INFORMATION**

**GRID**

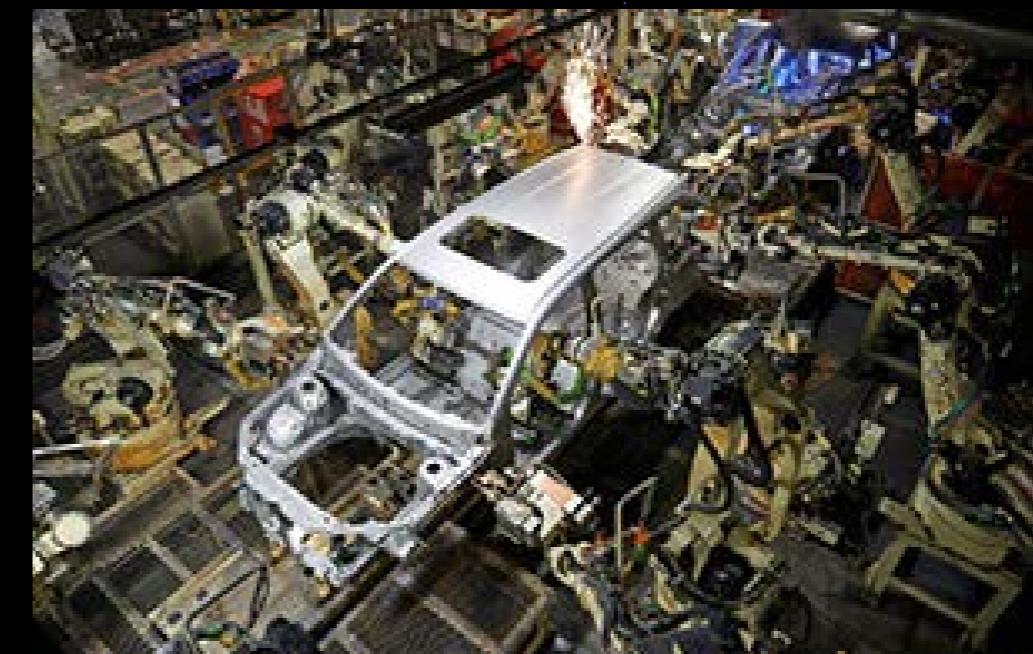
**PIXEL**

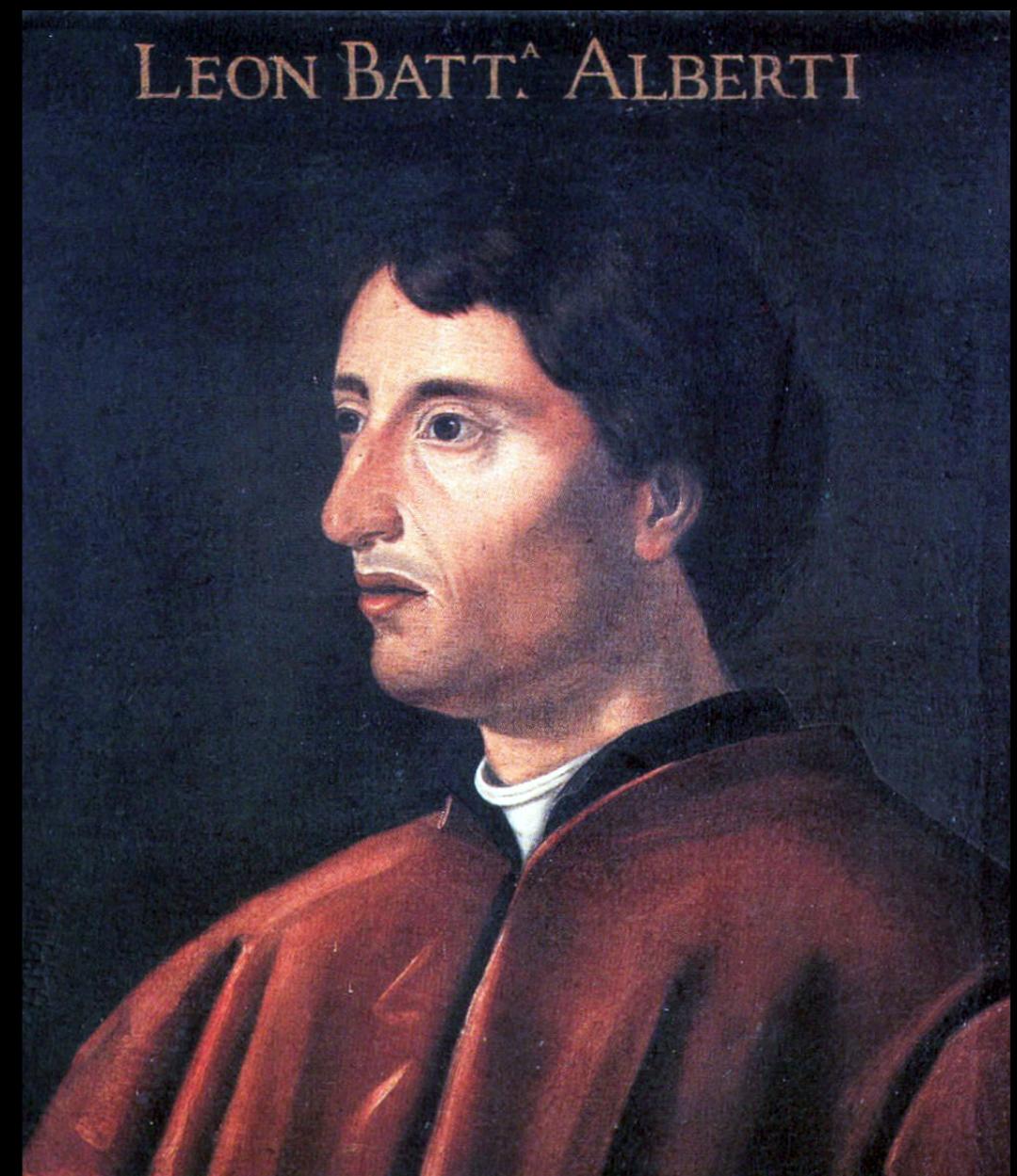
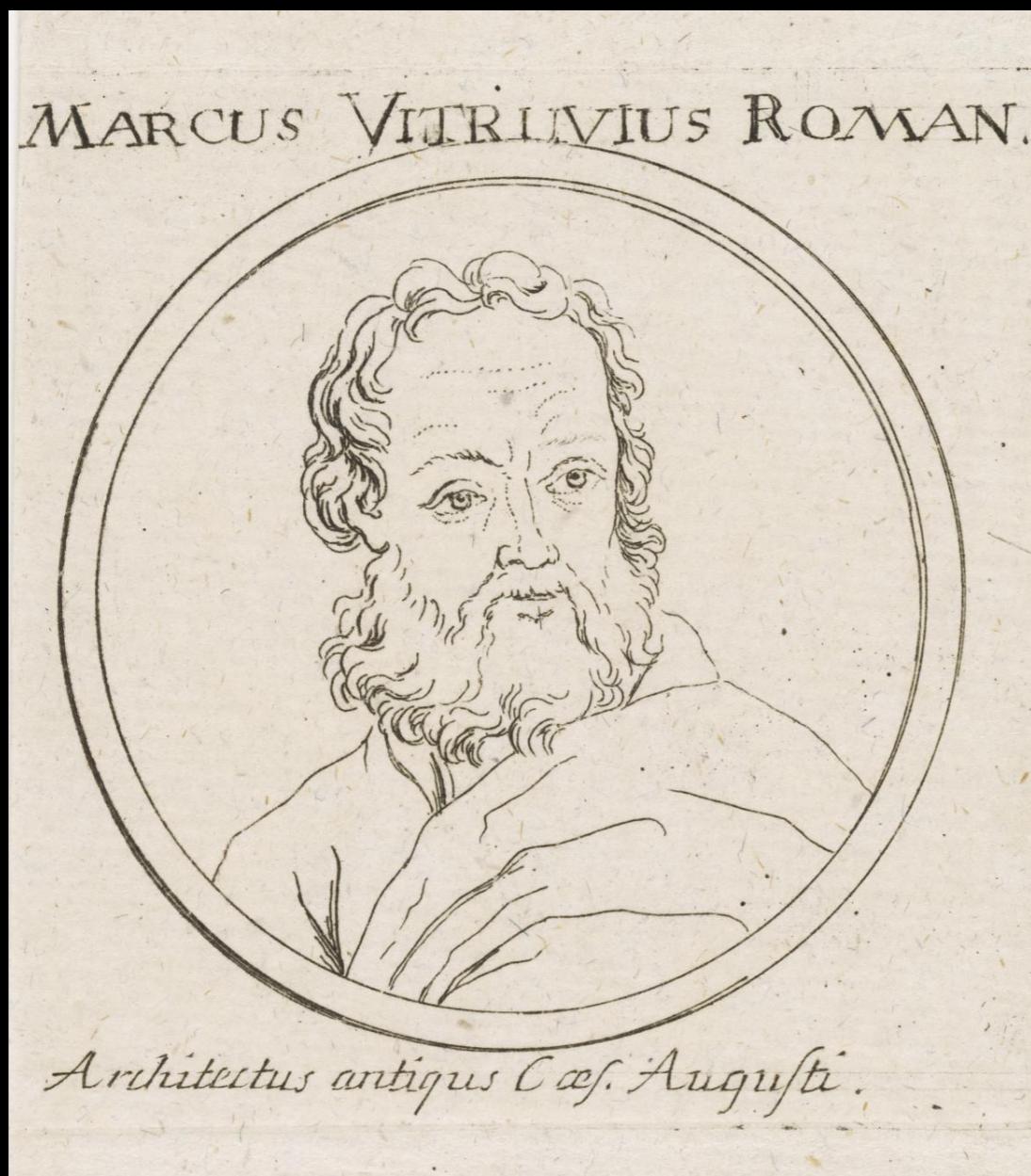
**VOXEL**

# THE DIAGRAM OF EVOLUTION OF TECHNOLOGY AND DESIGN STRATEGY.

HANDMAKING → MECHANICAL → DIGITAL  
[SIMILARITY] → [IDENTICAL]

- Autographic :
  - handmade by their authors.
- Allographic :
  - scripted by their authors in order to be materially executed by others.

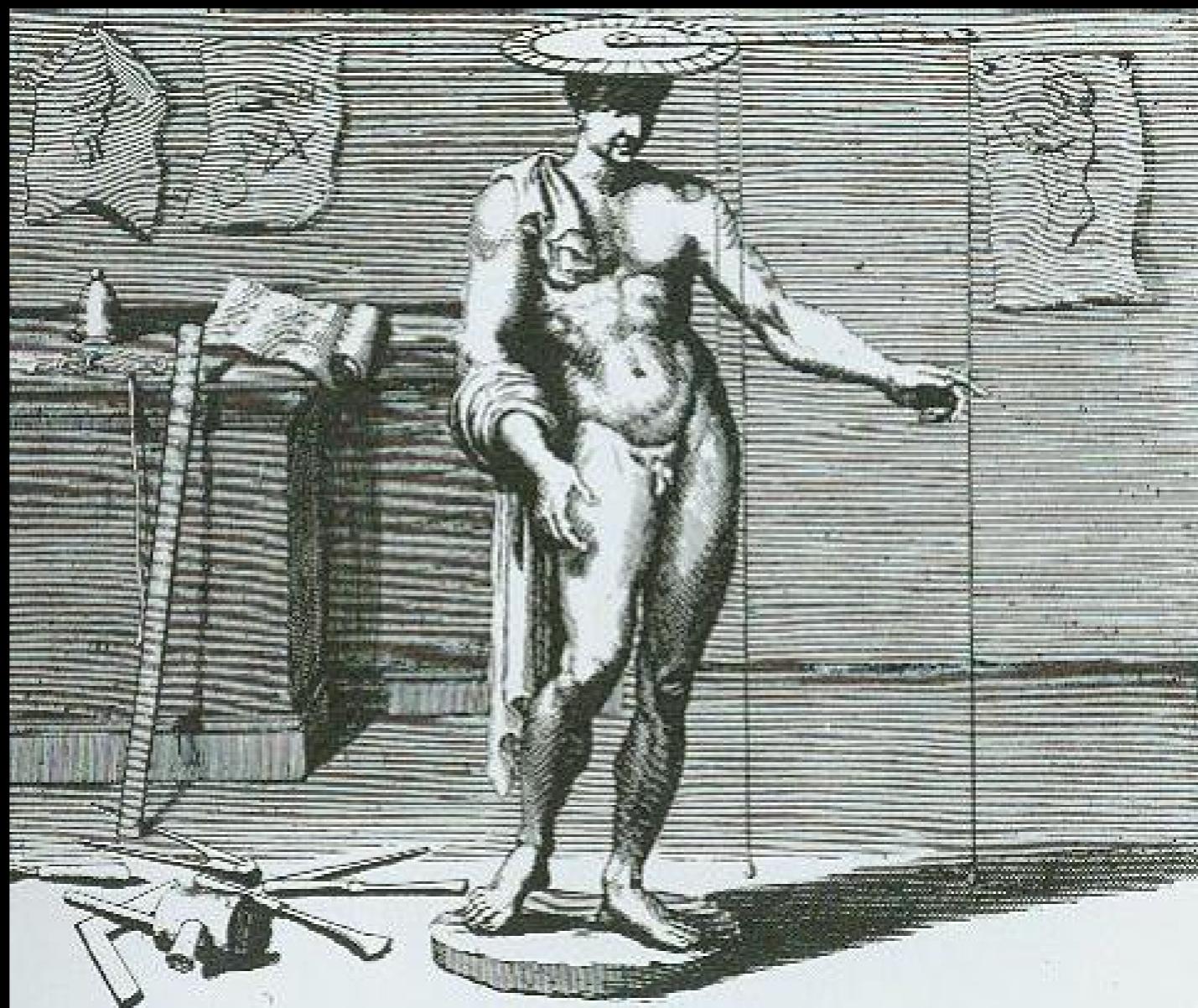




A B E R T  
D U R E R ' S  
I L L U S T R A T I O N  
O F A L B E R T I ' S  
P E R S P E C T I V E  
M A C H I N E



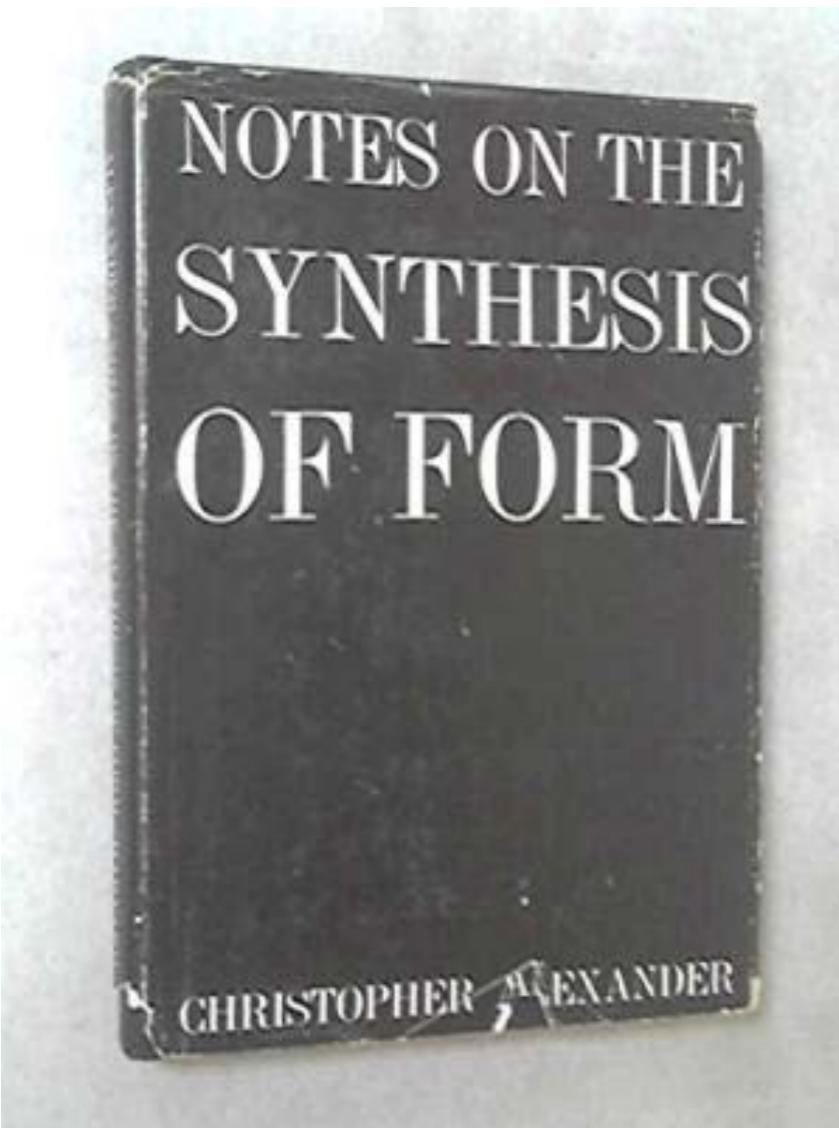
ALBERTI'S  
MACHINE TO  
SCAN  
VOLUMETRIC  
OBJECT.



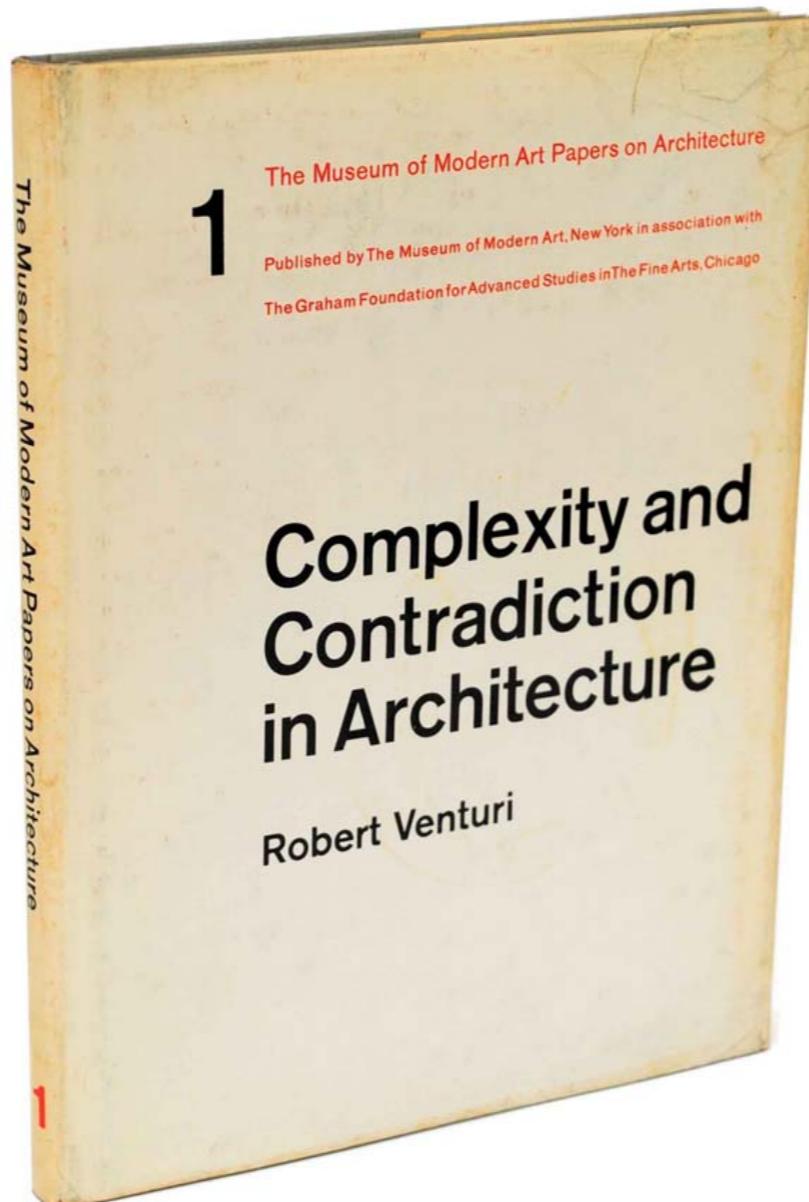
# THE PURSUIT OF IDENTICAL

.

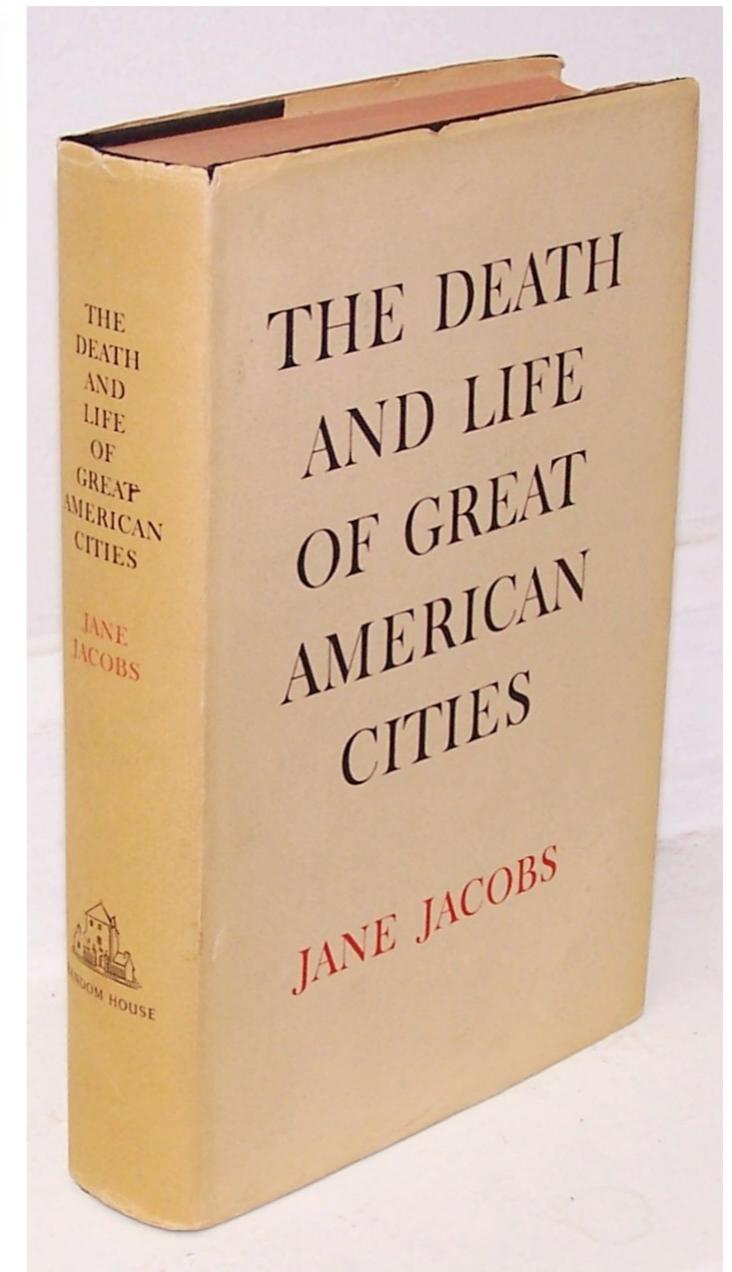




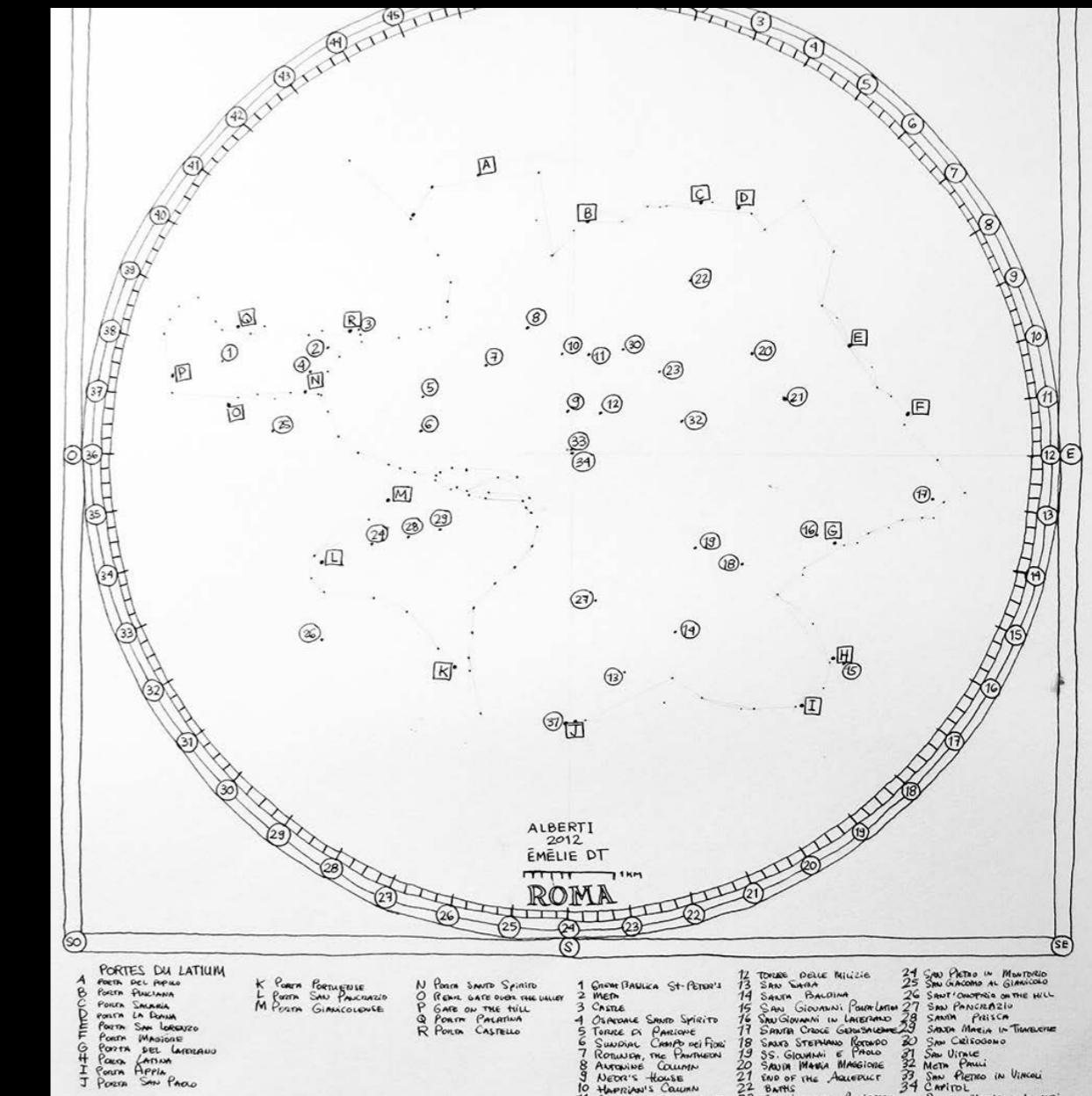
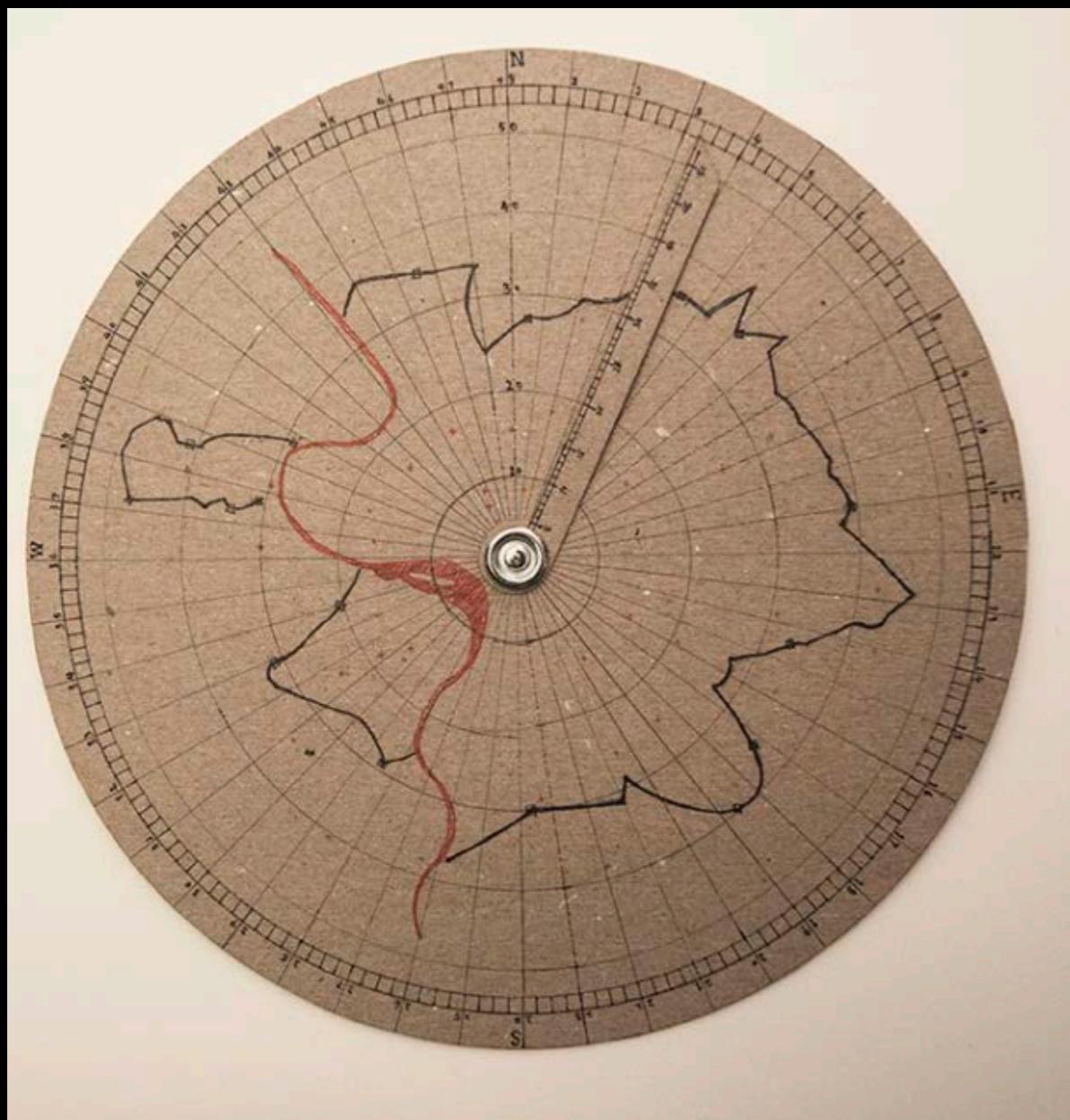
1964



1966



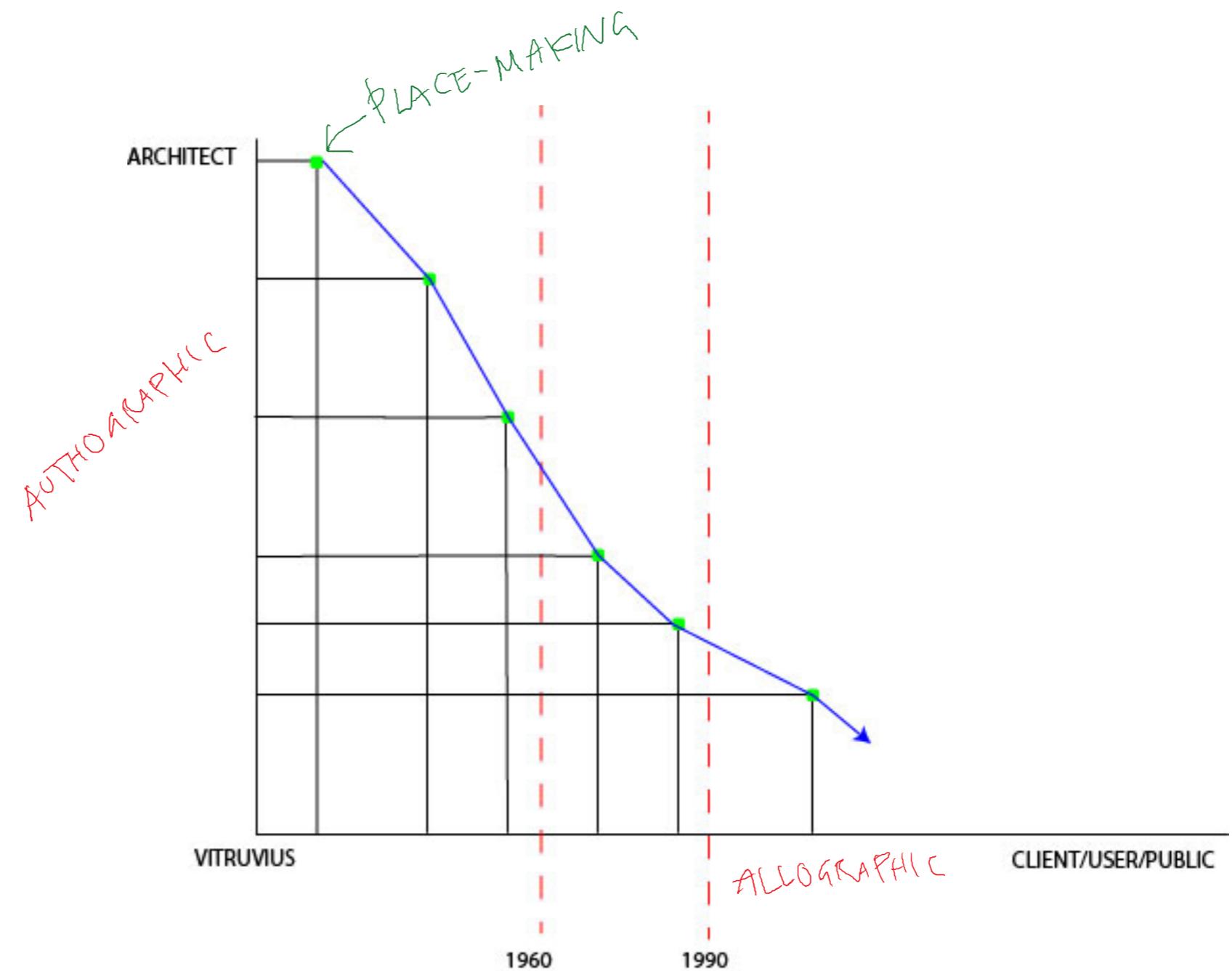
1961



## THE PROBLEM IN THE PRODUCTION OF ARCHITECTURE

Maintaining the information intact during the translatability process.

**AUTHOGRAPHIC - ALLOGRAPHIC**



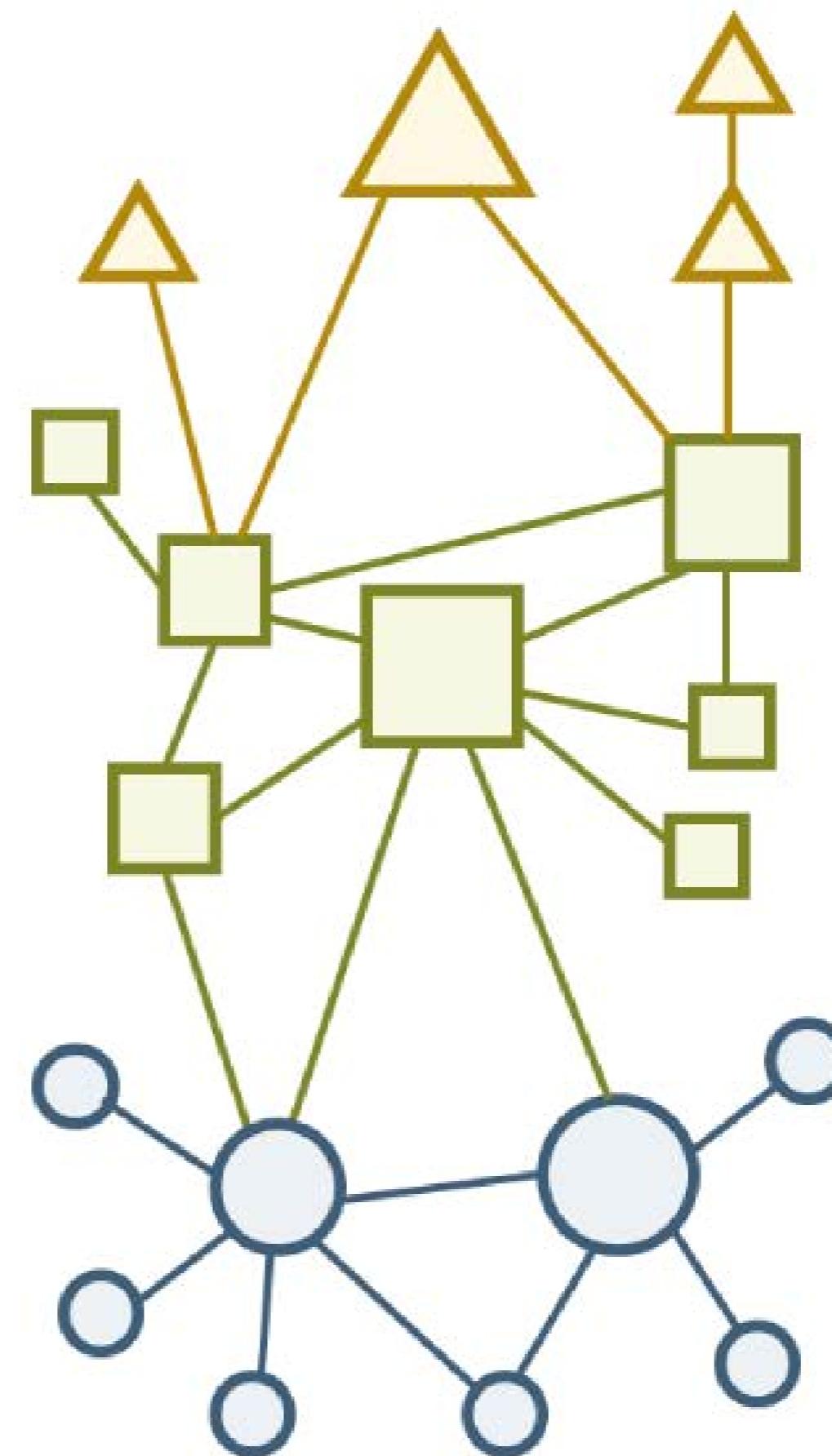
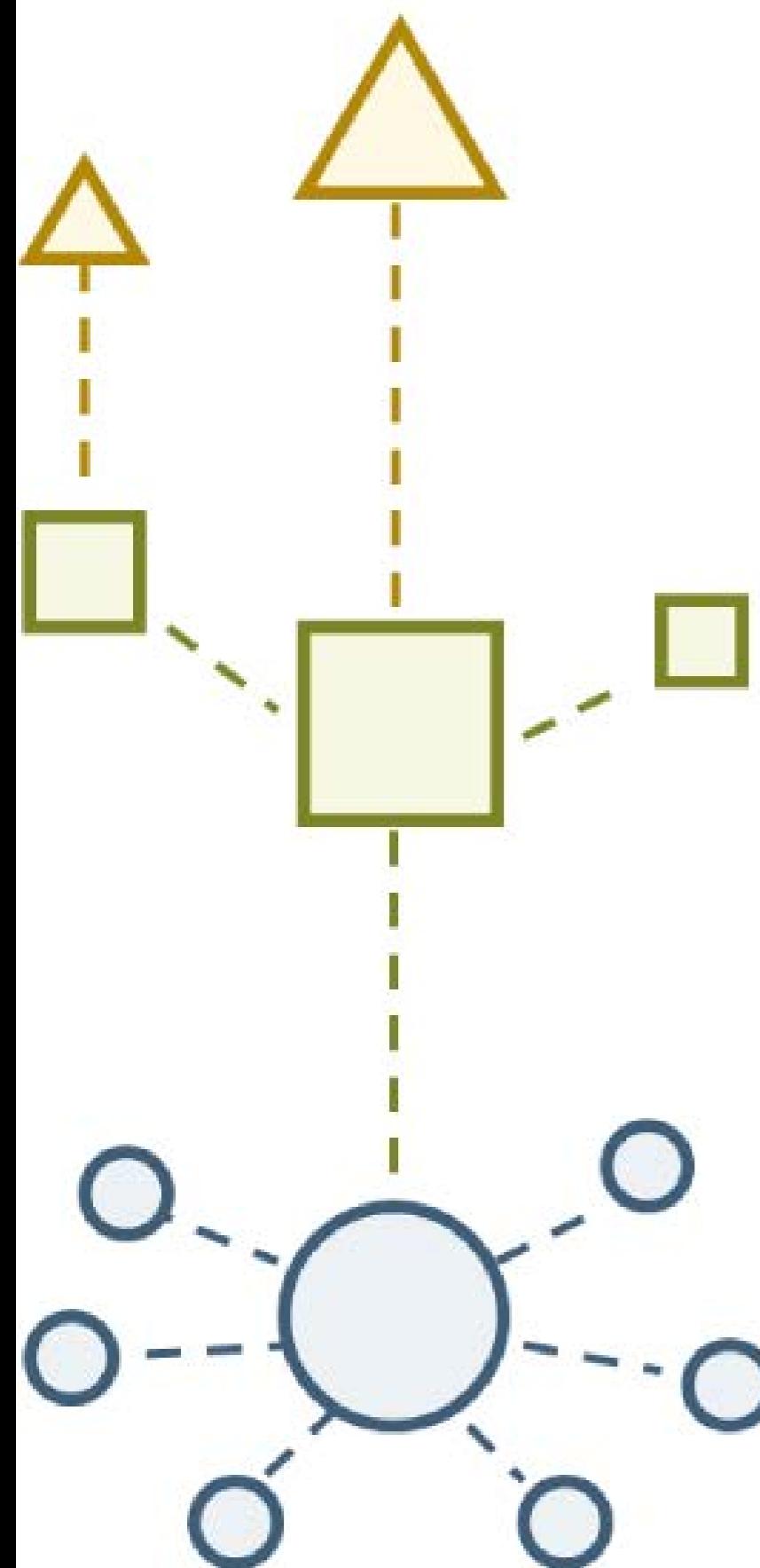
## THE PURSUIT OF 'THE ULTIMATE' DESIGN METHOD

Systematic way to manage and translate from design information to building information.



# Fordism

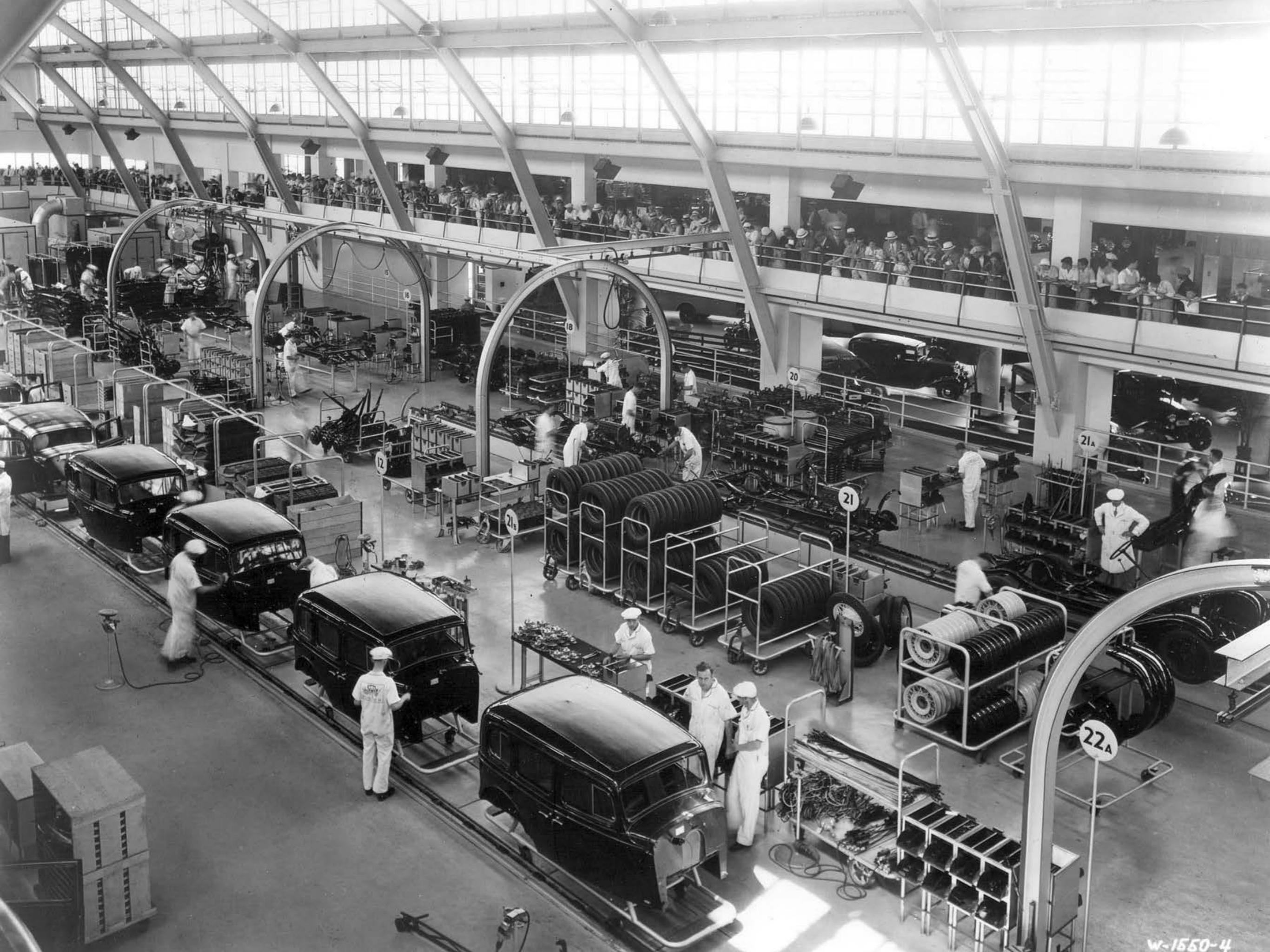
# Post-Fordism



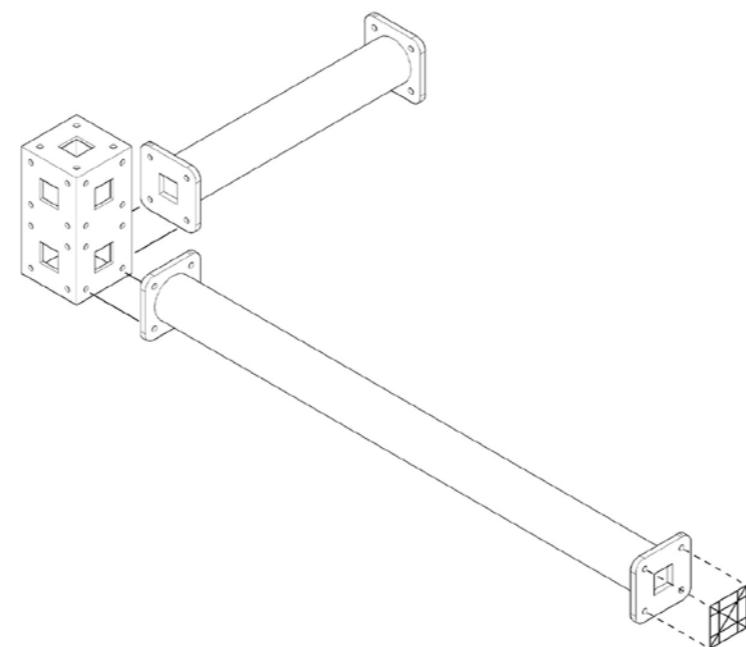
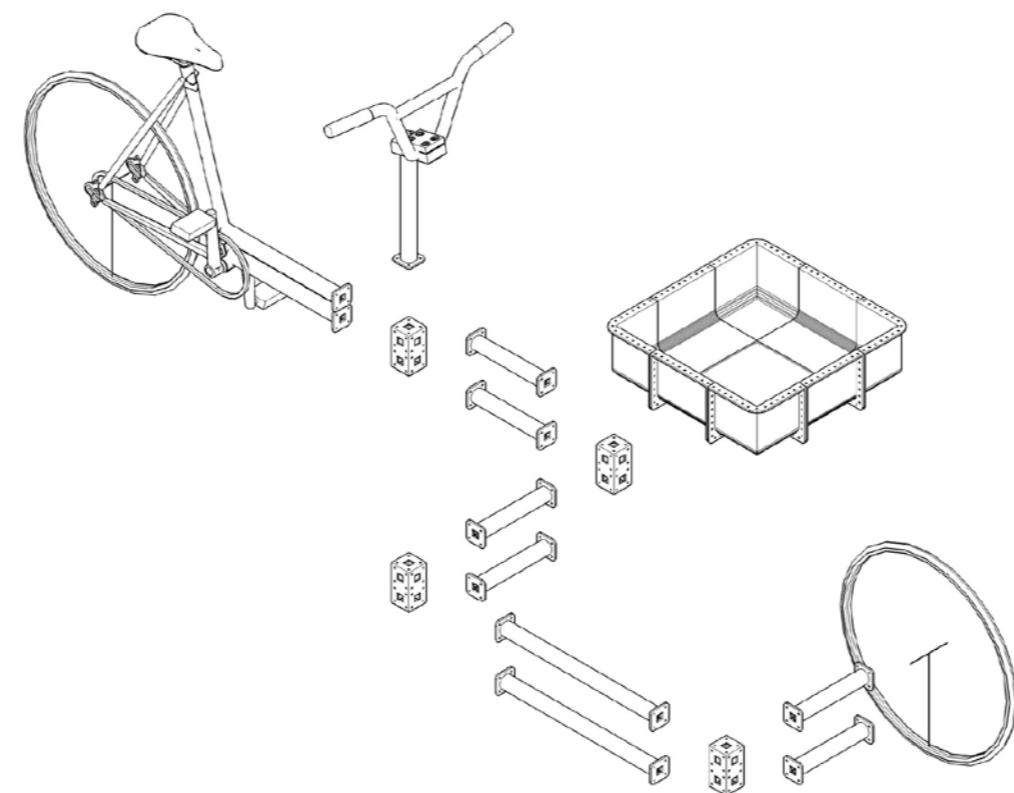
Raw materials  
and parts

Manufacturing

Sales and  
distribution



W-1550-4





MANPOWER

PROJECTS

TECHNOLOGY

quick boosting but increase overhead cost

MANPOWER

PROJECT

TECHNOLOGY

less revenue but more control

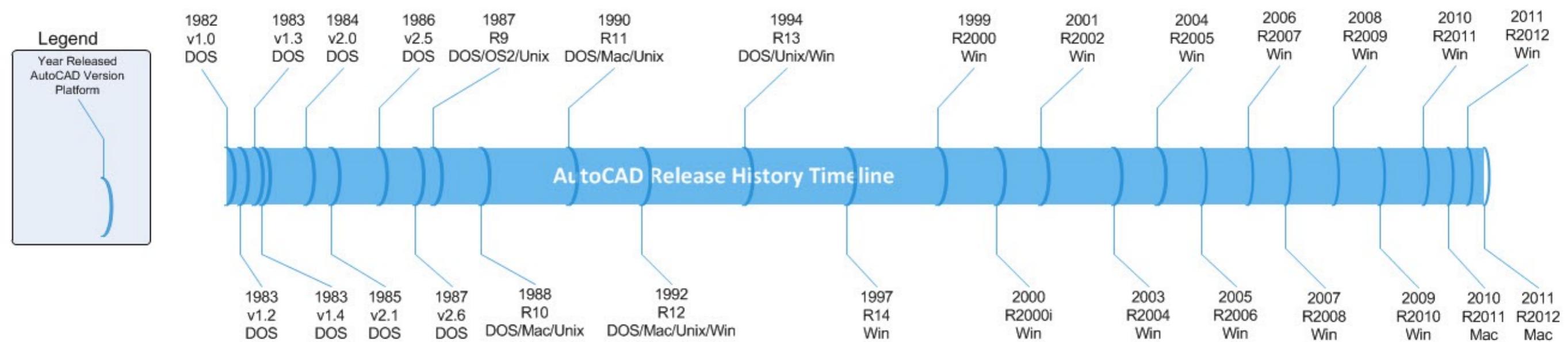
MANPOWER

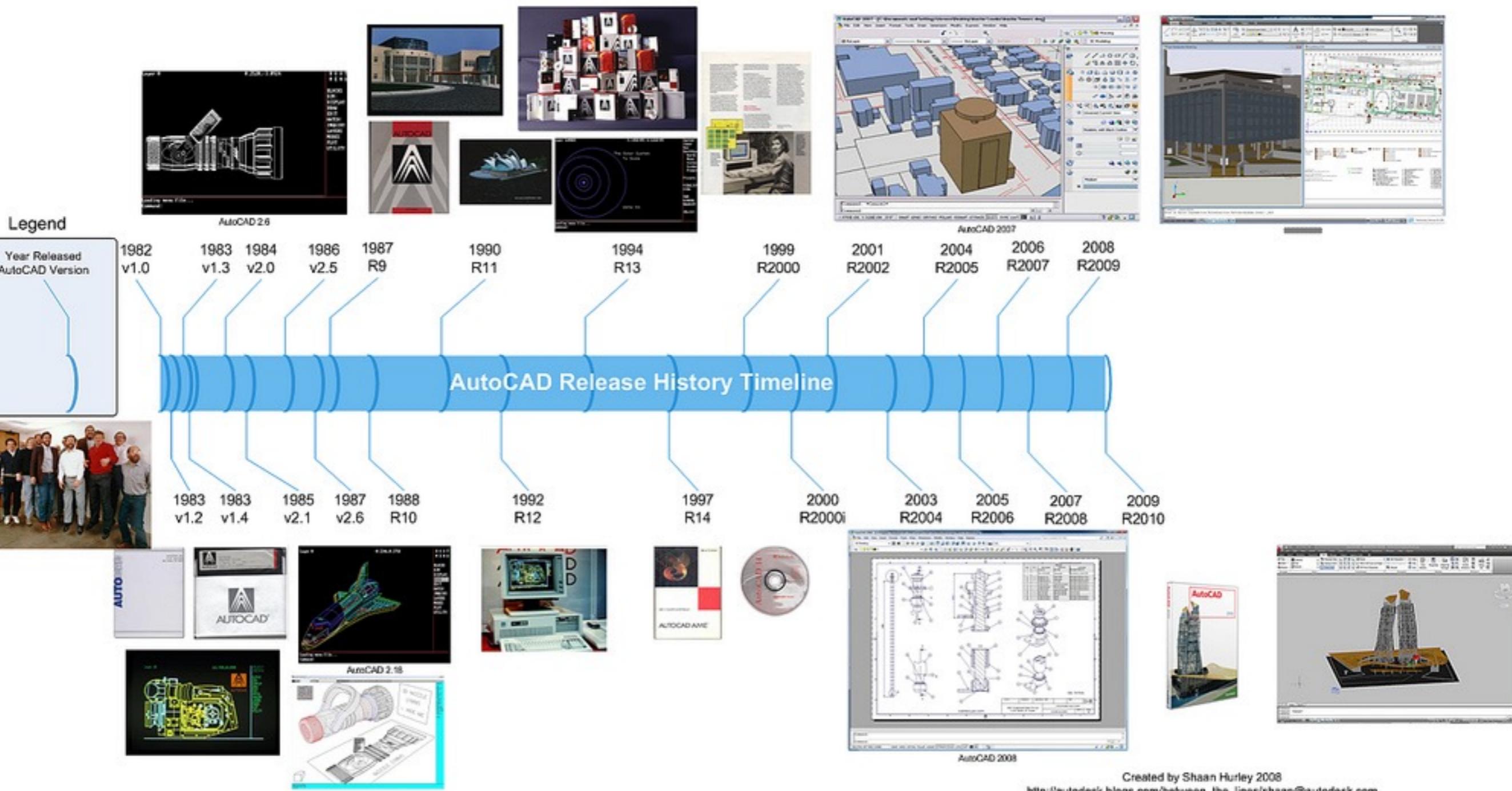
PROJECTS

TECHNOLOGY

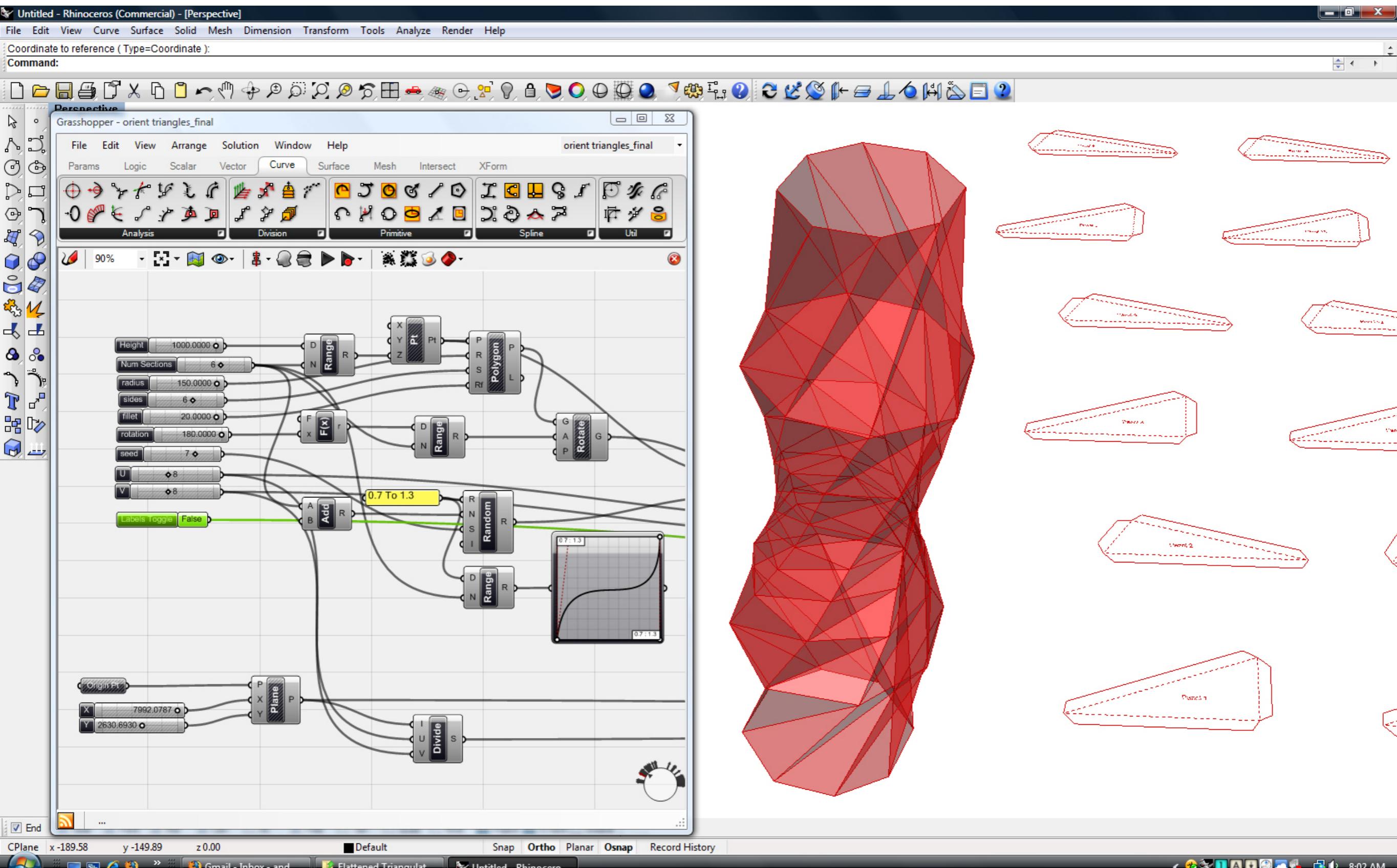
learning curve yet effective -  
high cost at initial setup







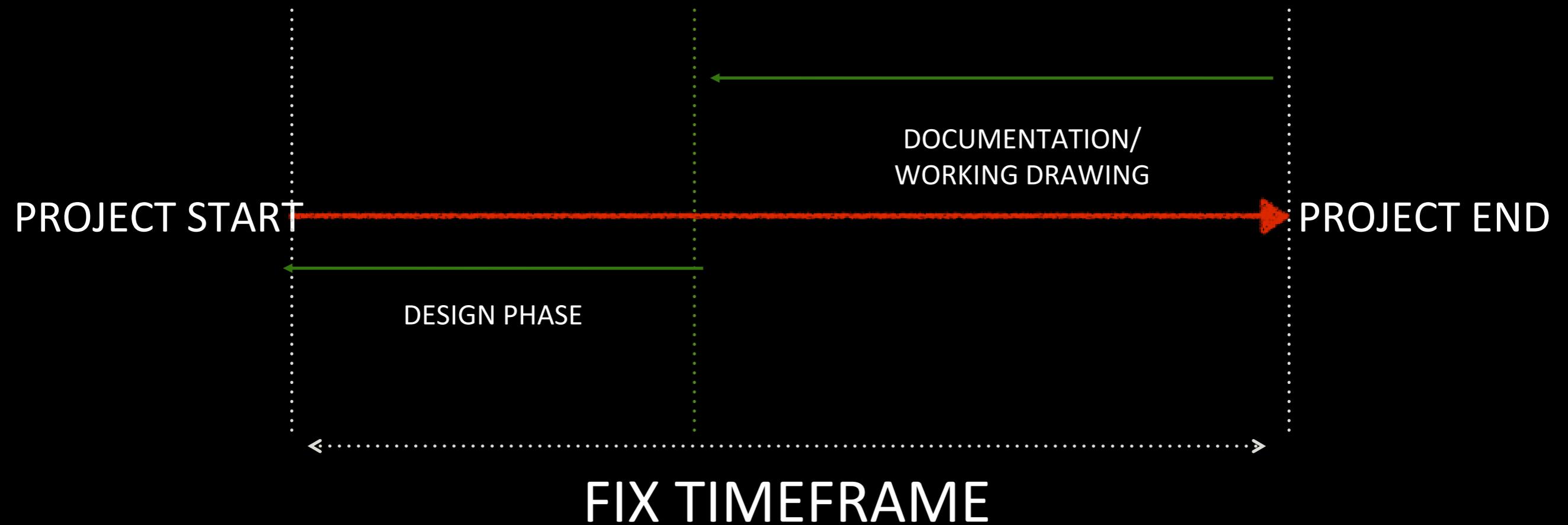
Created by Shaan Hurley 2008  
[http://autodesk.blogs.com/between\\_the\\_lines/shaan@autodesk.com](http://autodesk.blogs.com/between_the_lines/shaan@autodesk.com)

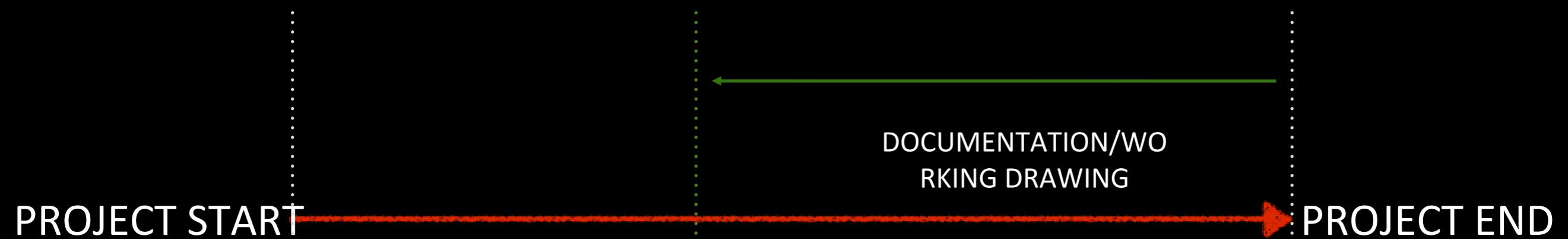




# BUILDING INFORMATION MODELLING

BIM

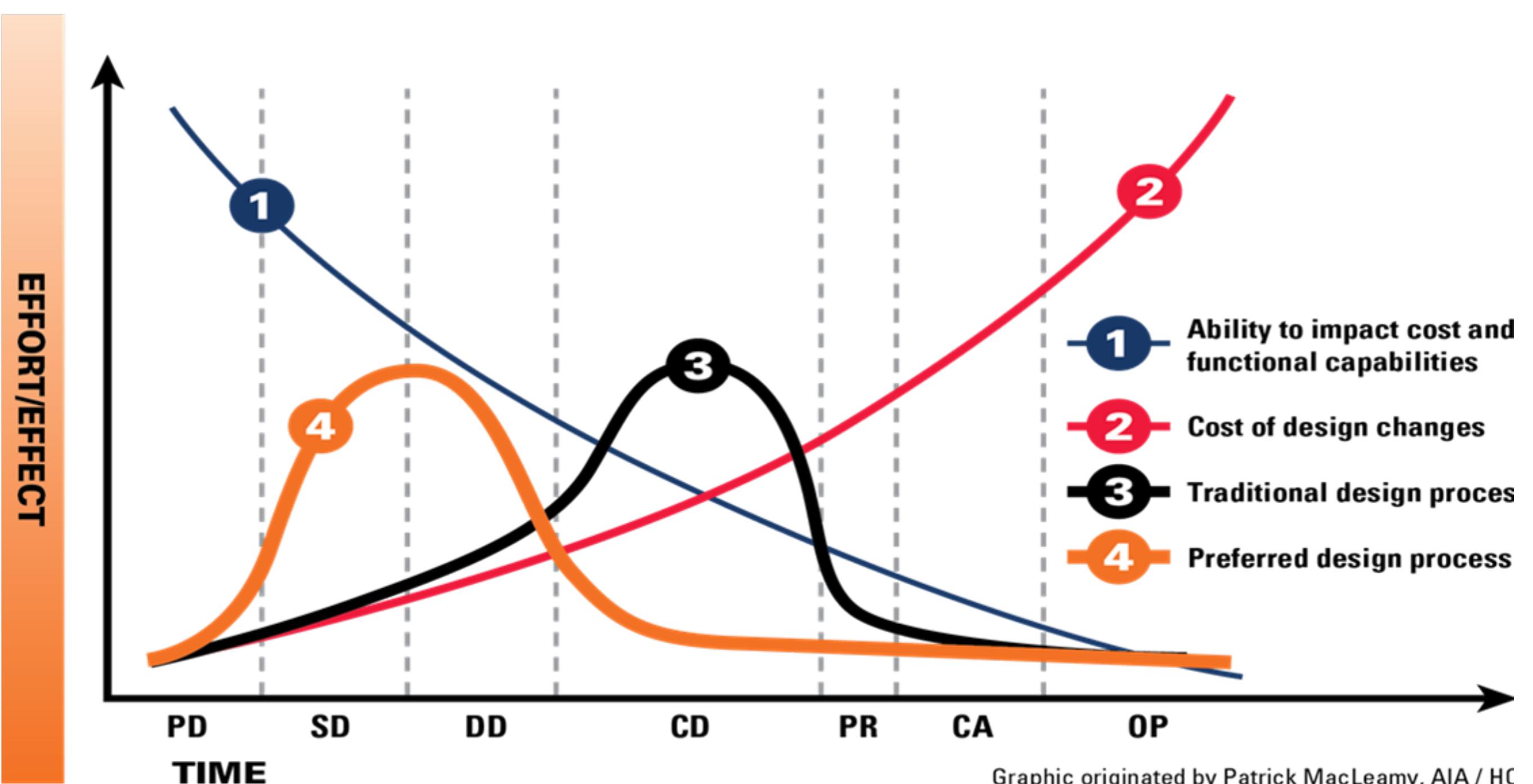


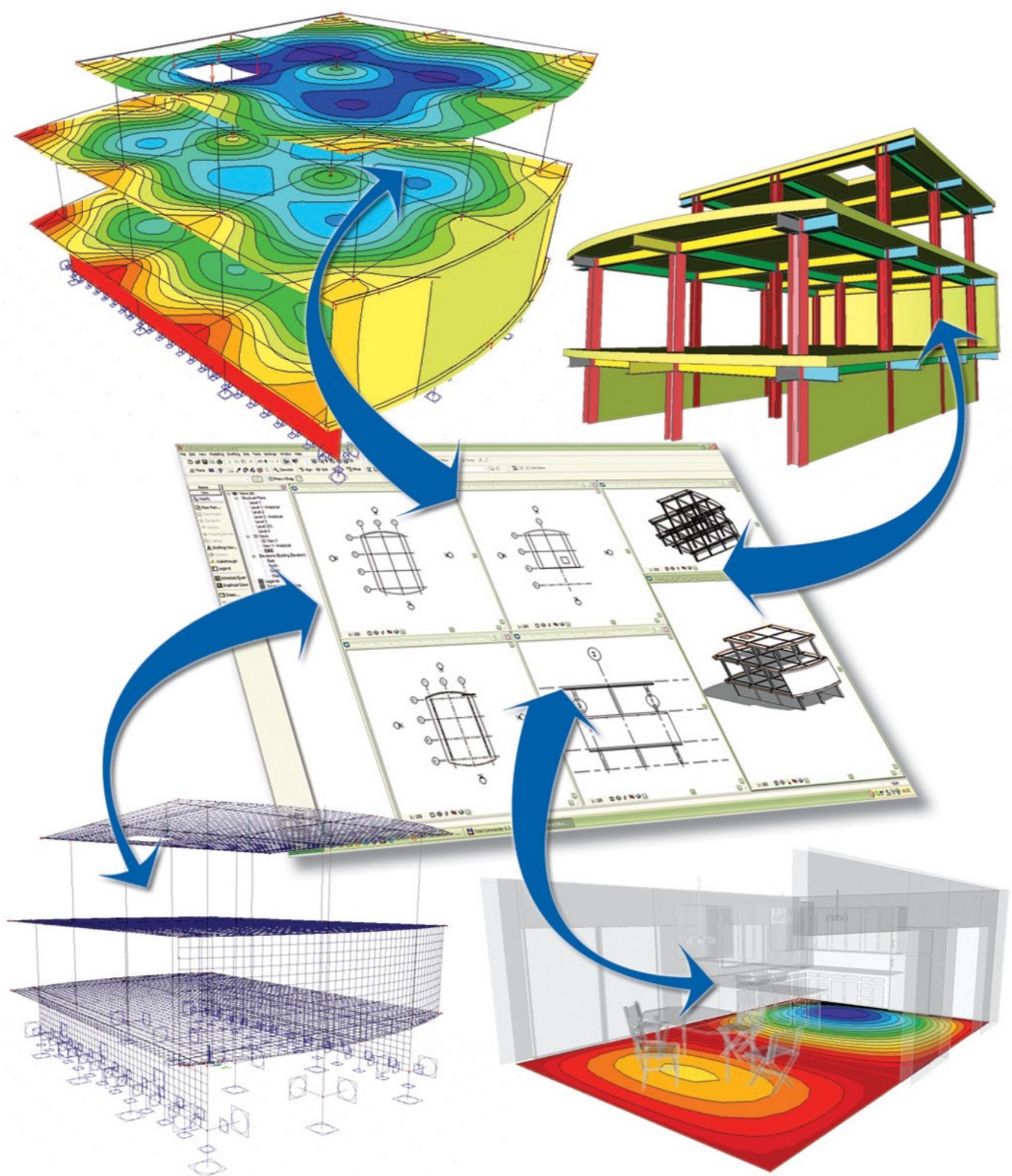


FIX TIMEFRAME

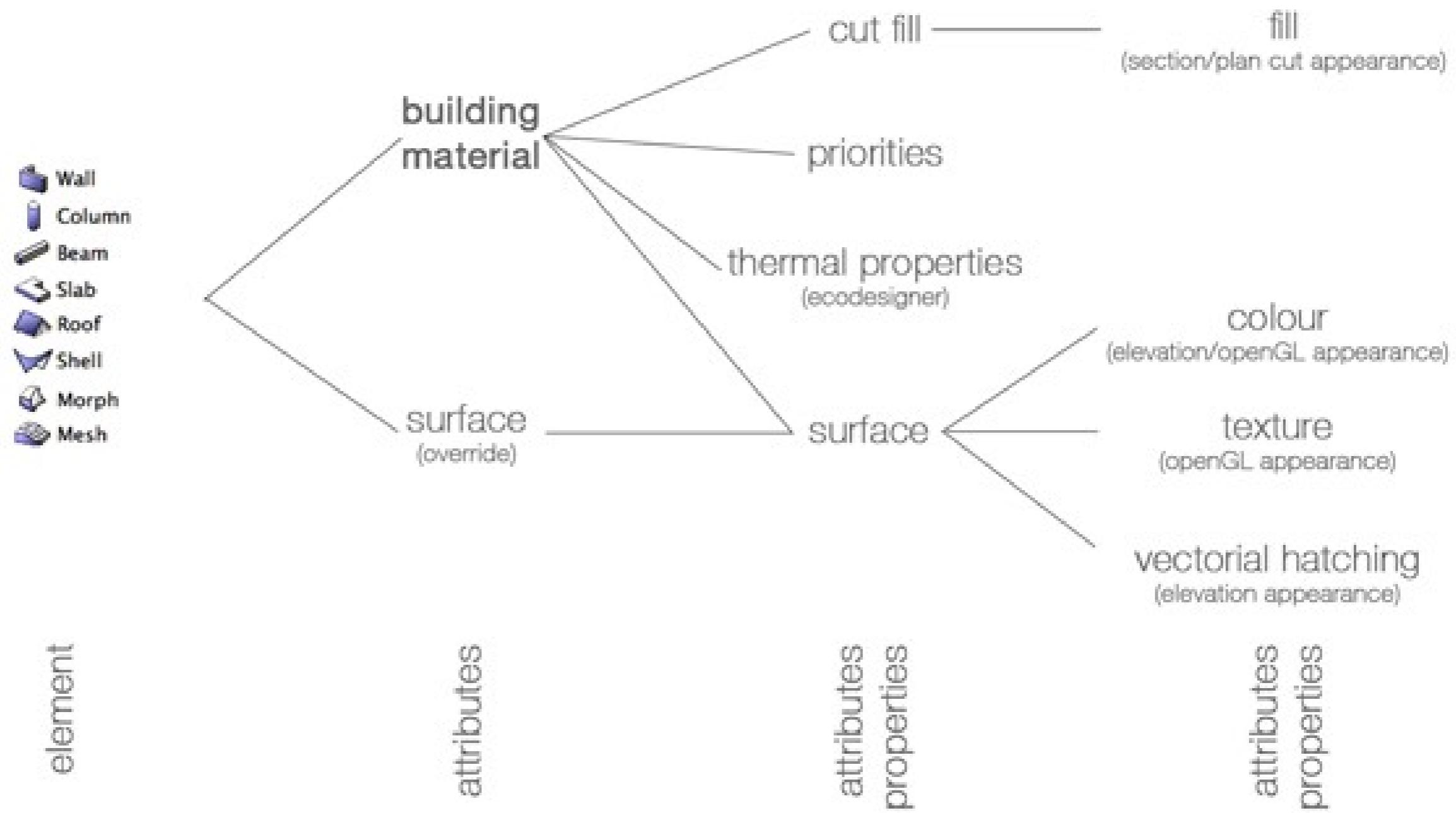


FIX TIMEFRAME

**KEY****PD:** Pre-design**SD:** Schematic design**CD:** Construction documentation**PR:** Procurement**CA:** Construction Administration**OP:** Operation

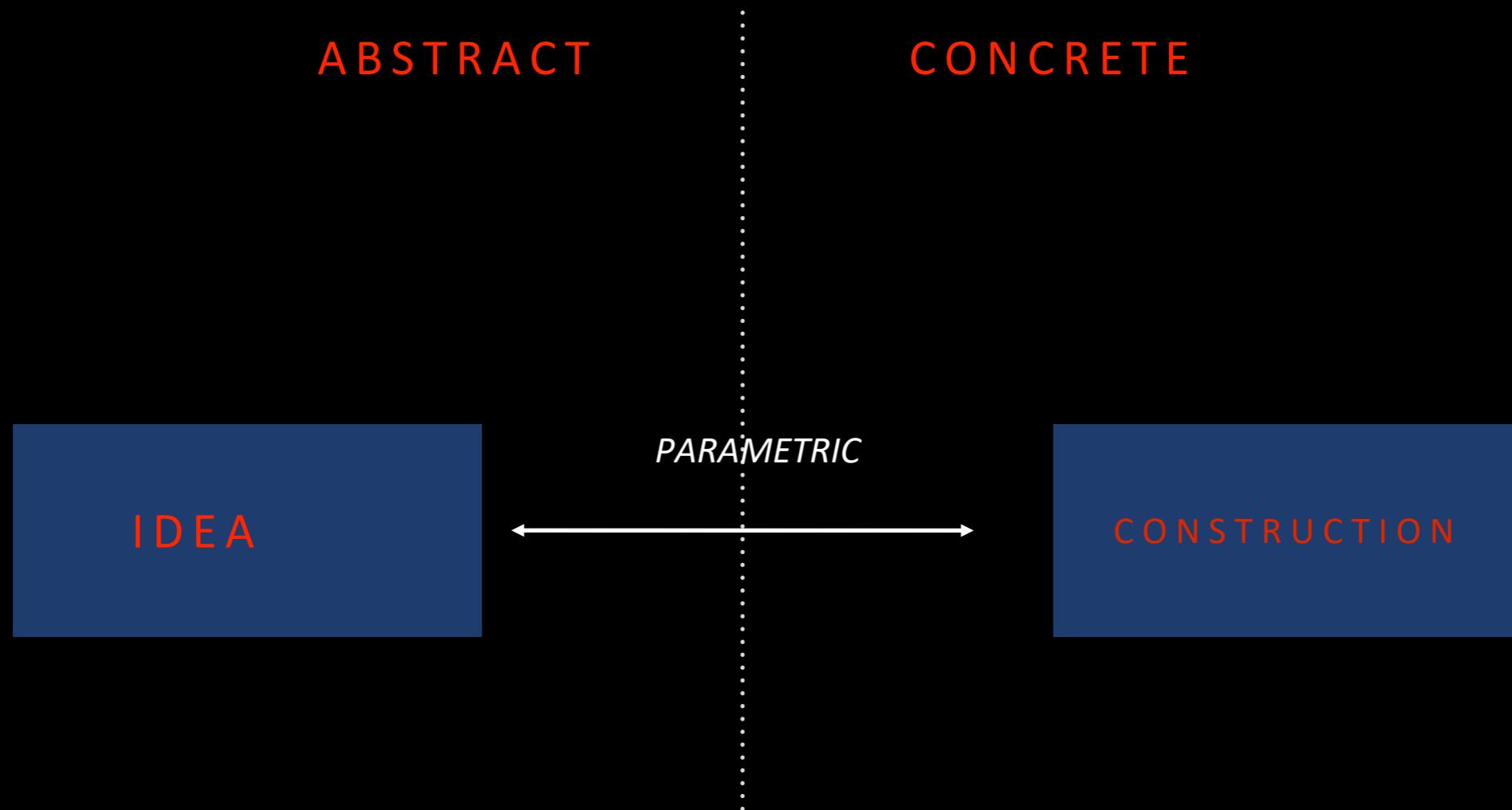


# ArchiCAD 17



EEFFICIENT  
Effective

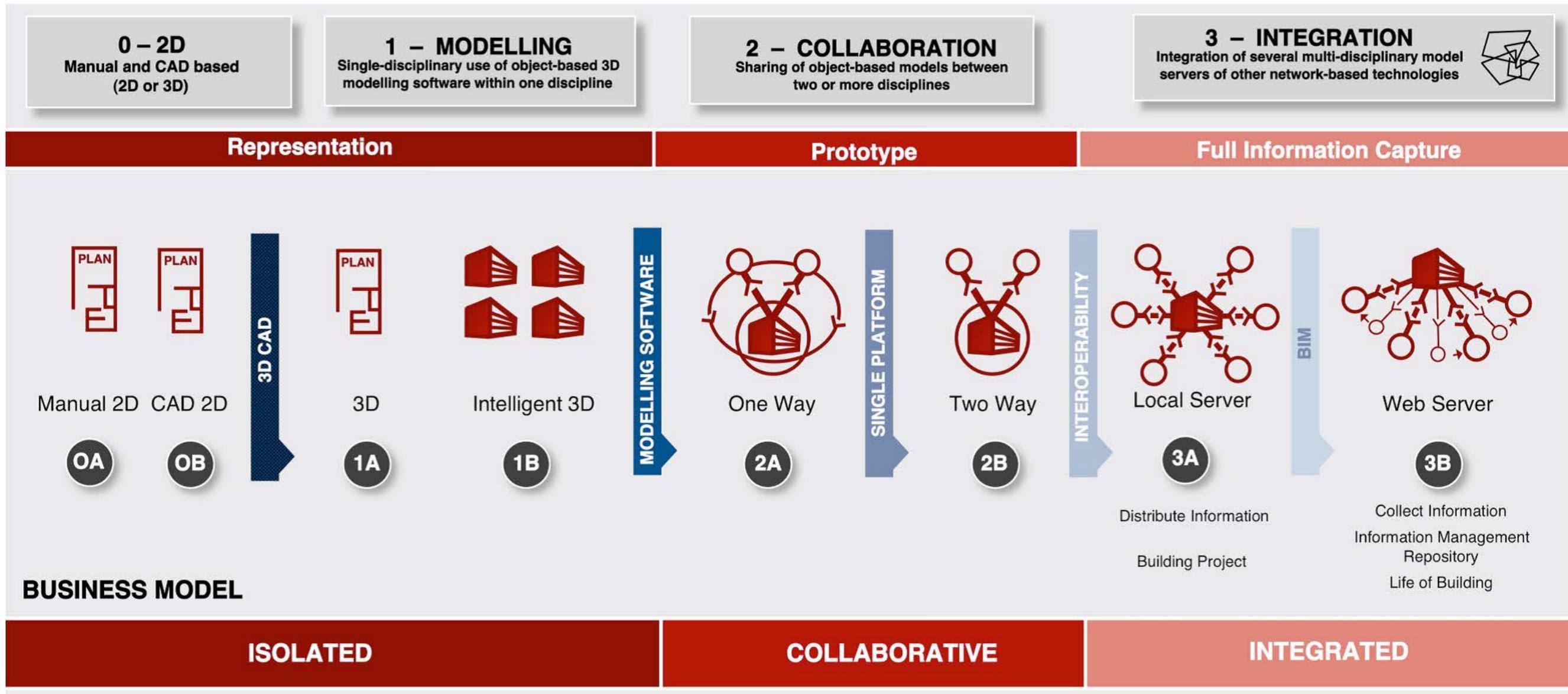
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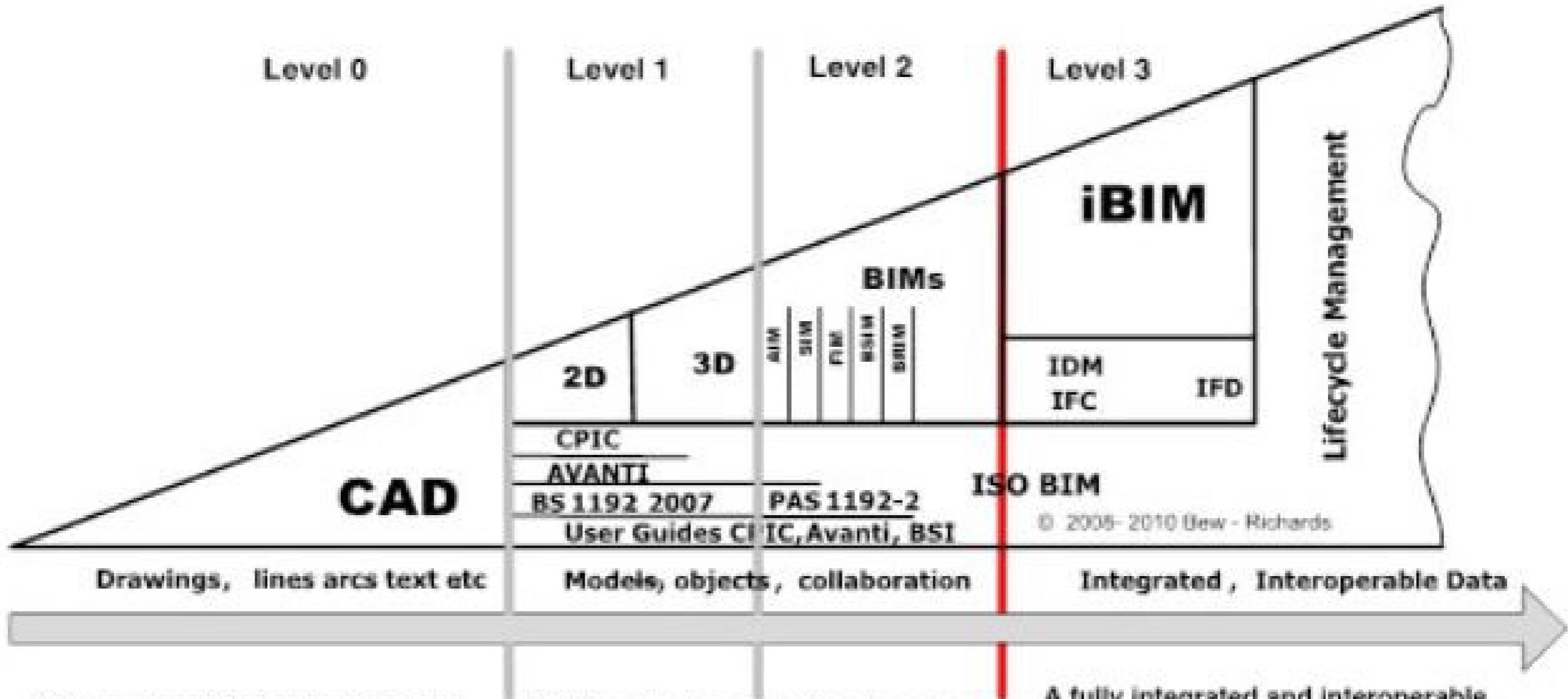


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Speed of Production







95% produce 2D drawings lacking coordination increasing costs by 25% through waste and rework.

2D 3D spatial coordination based on BS1192:2007 has the potential to remove error and reduce waste by 50%

A fully integrated and interoperable BIM(M) has the potential to mitigate risk throughout the process and to increase profit by +2% through a collaborative process.

Source: Mark Bew and Mervyn Richards

## TOOLING

- HANDS-ON TOOLING ..... ➔ DRAWING/MODELLING
- SYSTEM ..... ➔ ASSEMBLY LINE - DIAGRAM
- COMPUTATIONAL SYSTEM ..... ➔ ASSEMBLY LINE - CAD
- COMPUTATIONAL SYSTEM FABRICATION ..... ➔ POST ASSEMBLY LINE - BIM

# THE DIAGRAM OF EVOLUTION OF TECHNOLOGY AND DESIGN STRATEGY.

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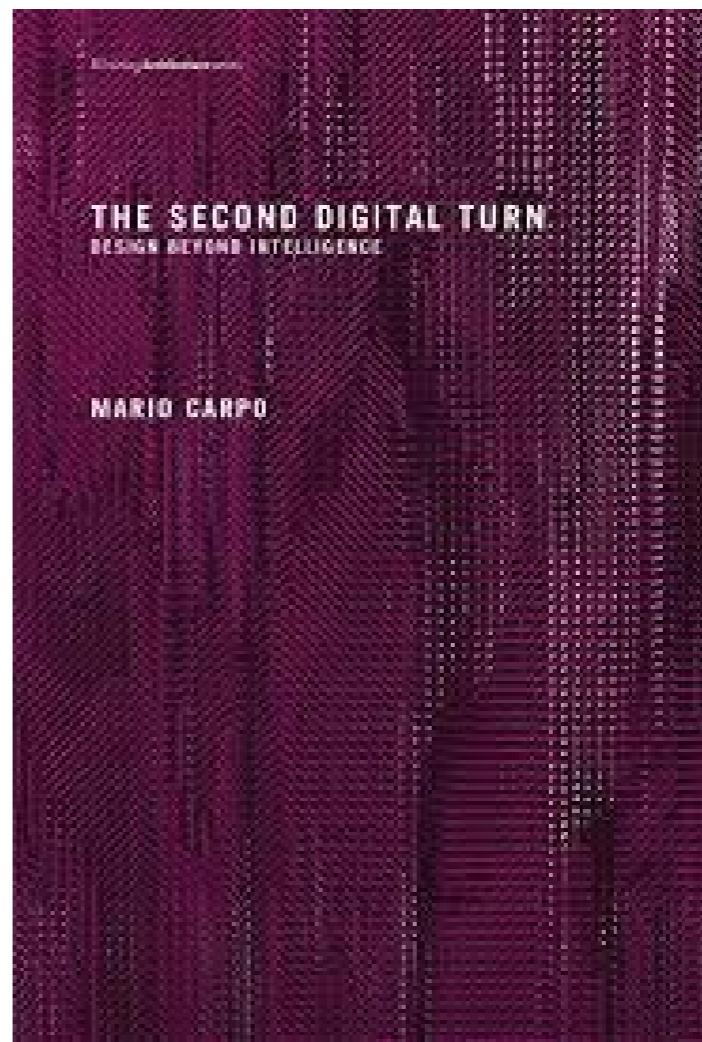
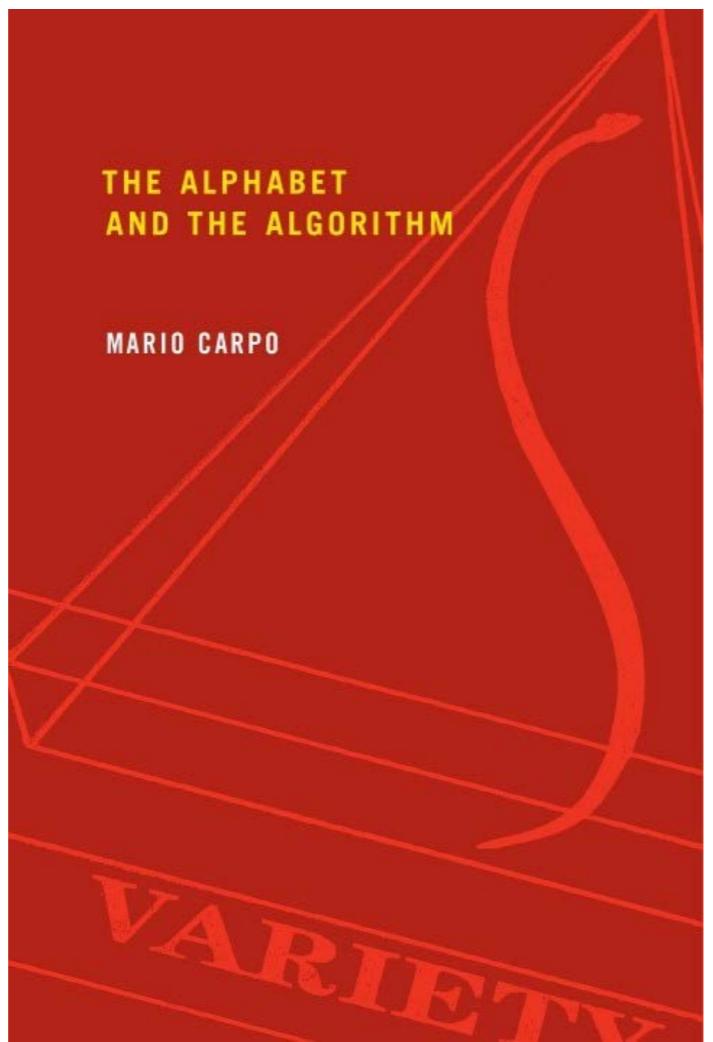
ABSTRACT

CONCRETE

IDEA

CONSTRUCTION

MASTER BUILDER



**BIG DATA**

sorting

*sampling*



SEARCHING

*Full-scale*

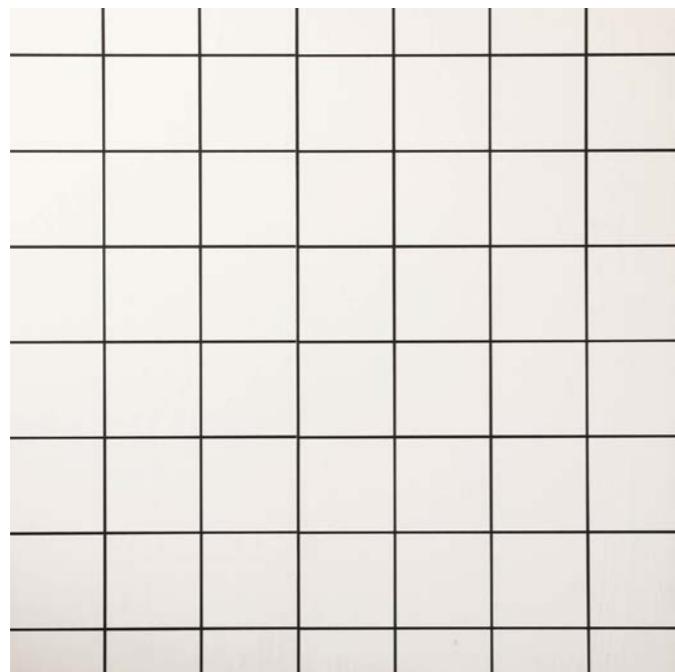
AUTOMATON



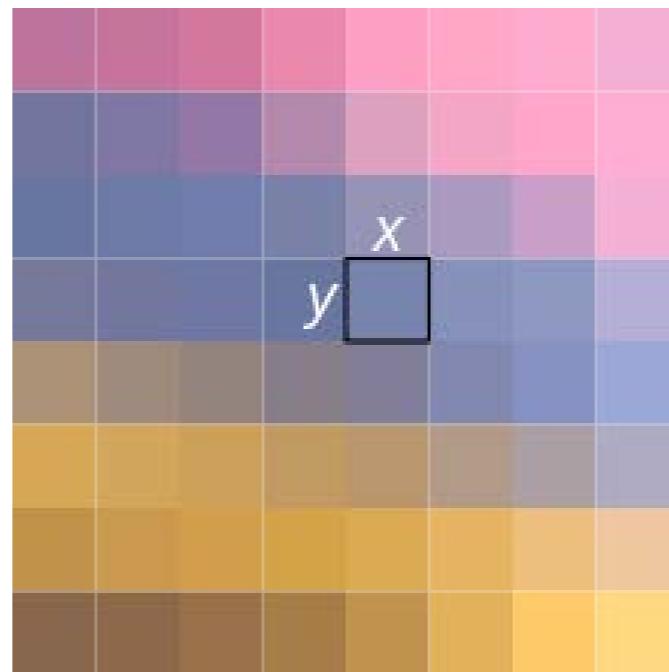
MACHINE  
LEARNING



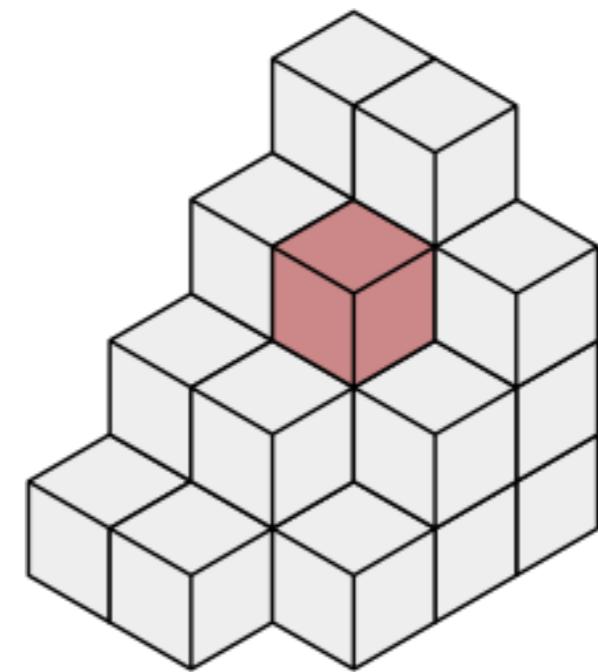
A.I.



GRID



PIXEL



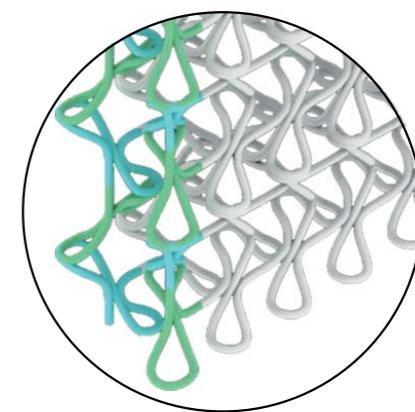
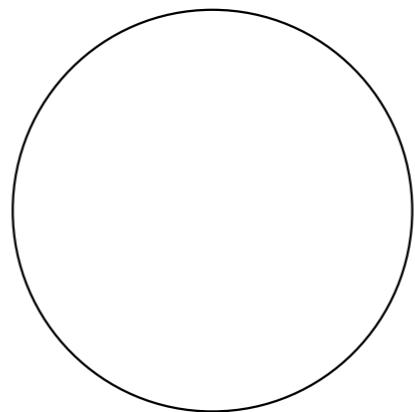
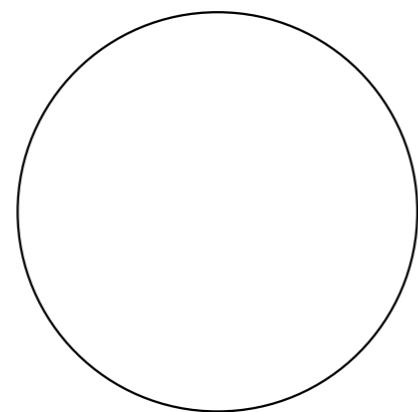
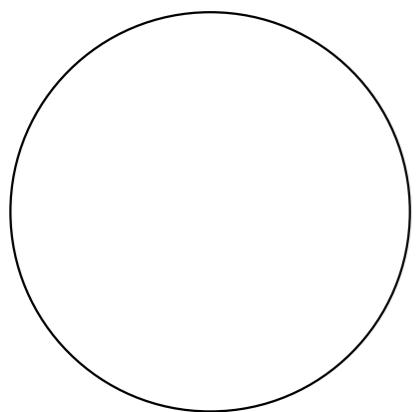
VOXEL

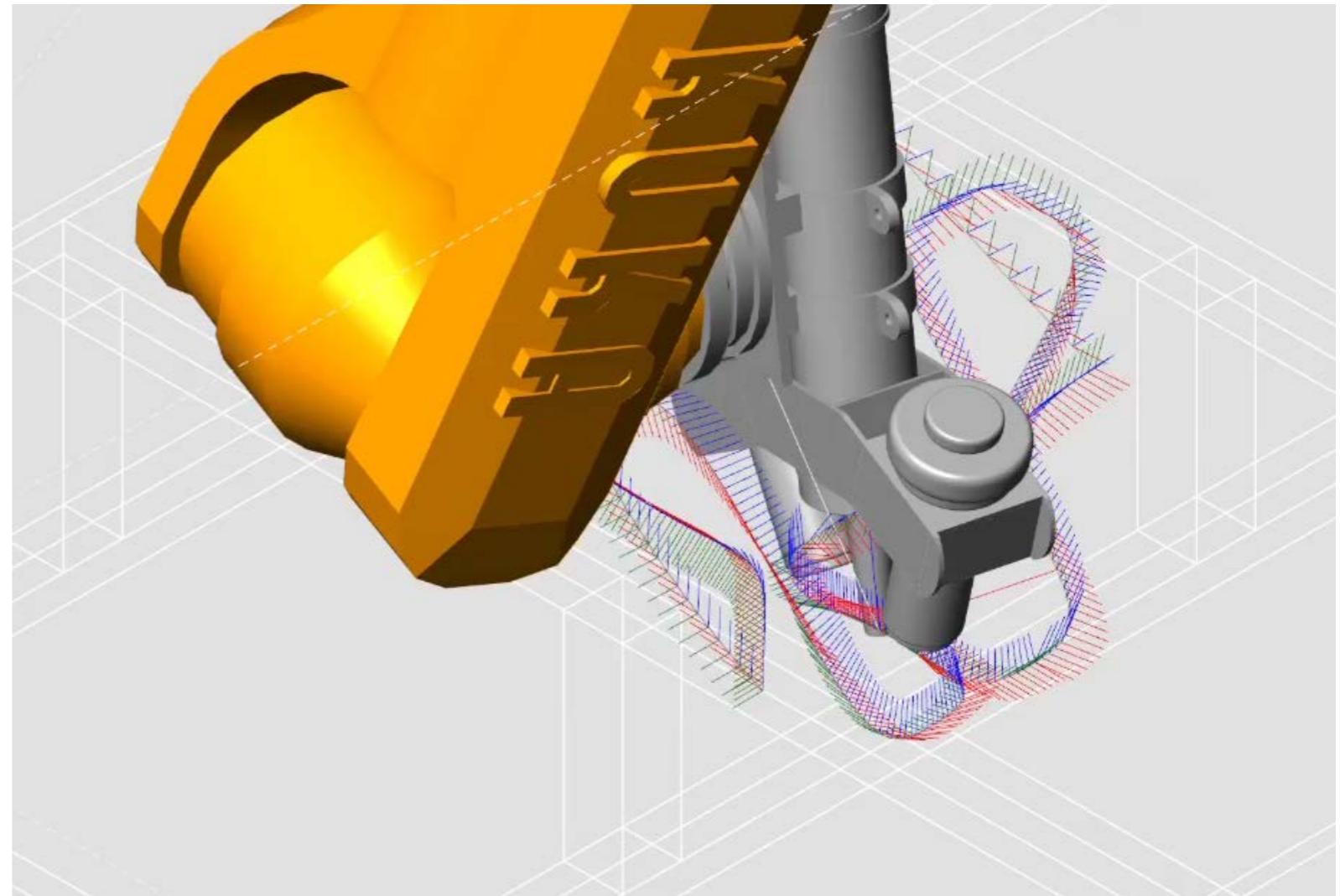
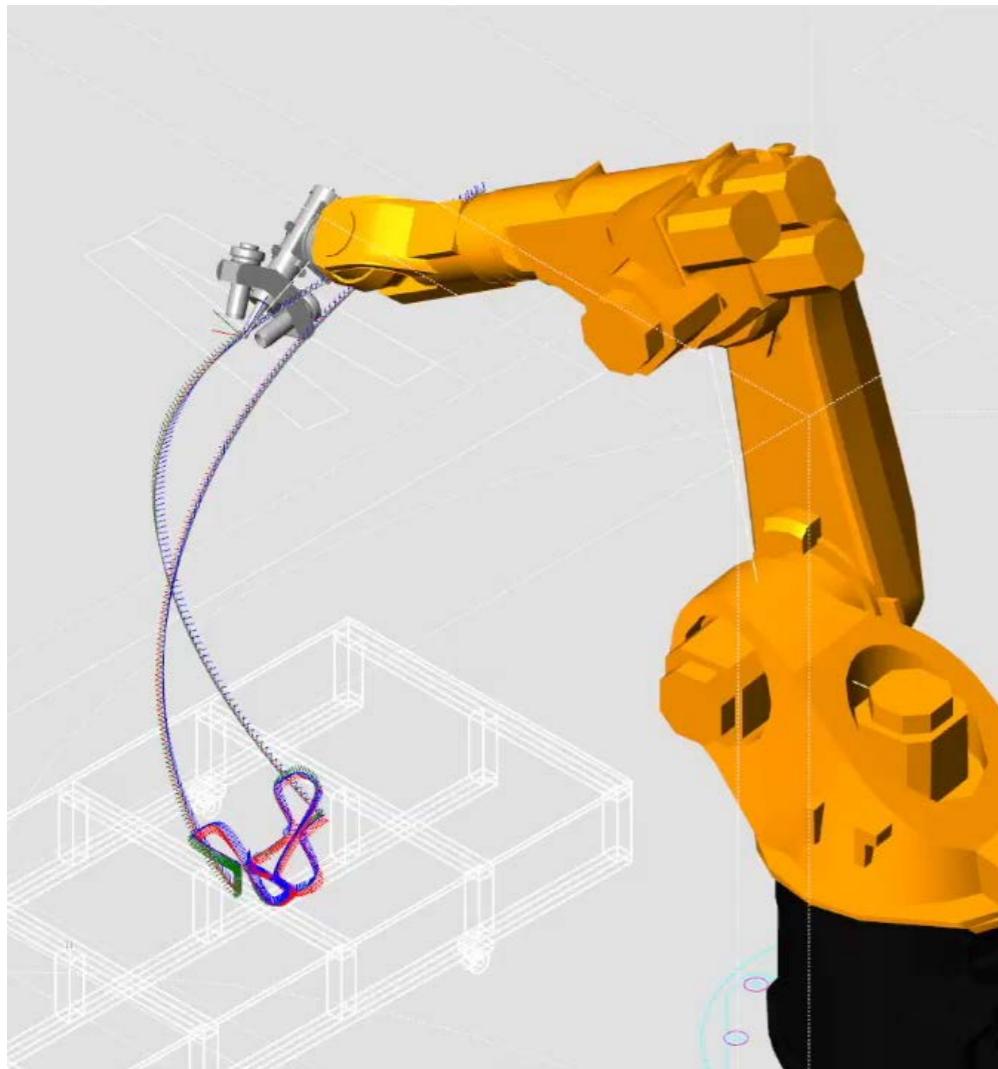


3b

Type 04

## 02. Meso Scale





A CRISIS IN DESIGN METHOD?

# A CRISIS IN ARCHITECTURAL PRACTICE?