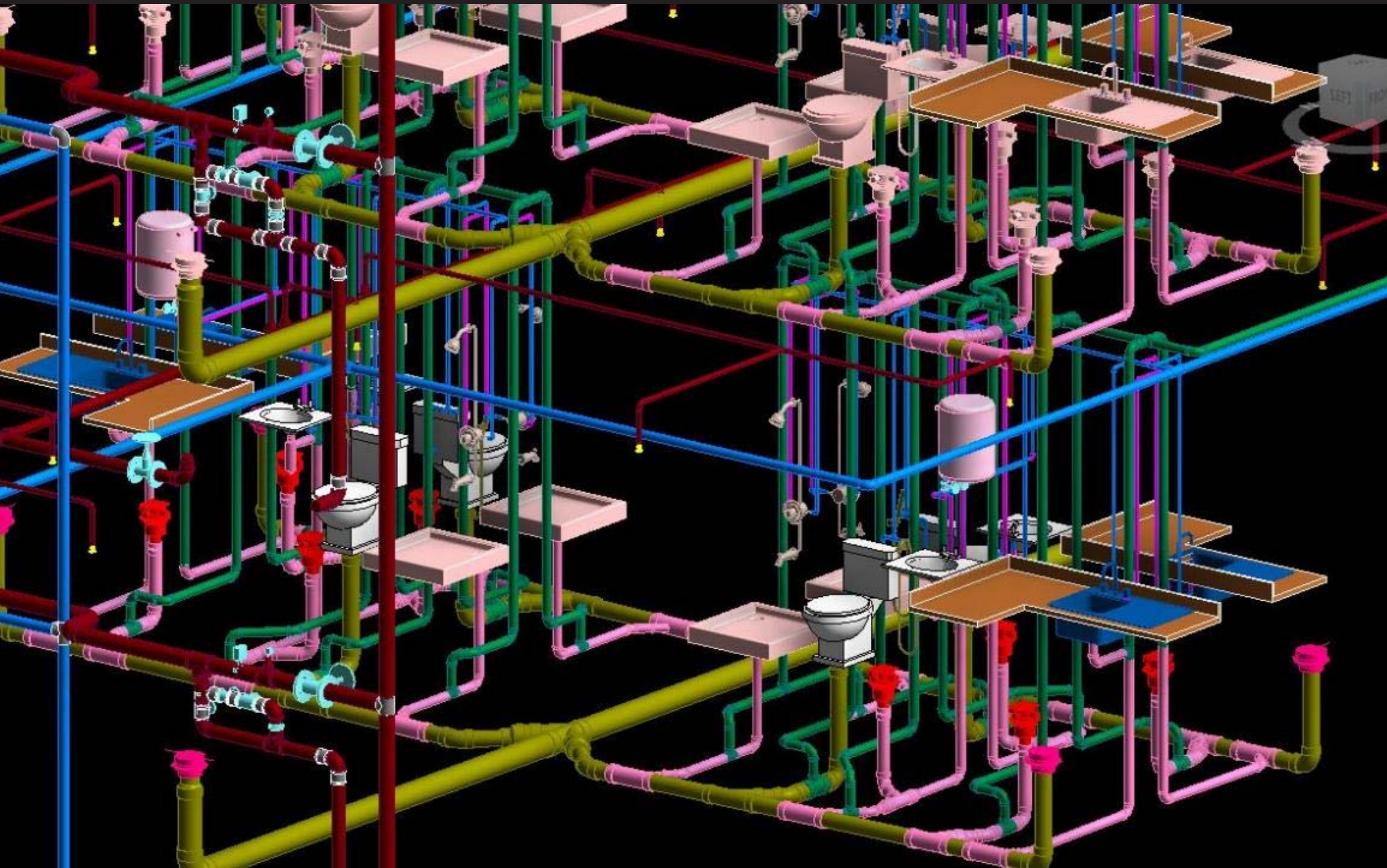
ARCH 521: MEDIA TECH VI: WORKFLOWS: FALL 2019

Federico Garcia Lammers



Post-orthographic production, let stop saying post-digital.

why do we not use technical language to describe contemporary outputs? / what type of stuff do Building Information Modelling processes produce?

Everytime you spin a model around inside a computer an orthographer falls down dead. No amount of clapping will reinstate orthography as the primary system of architectural production.

Everything is Already an Image

John May. Log 40

The status of computational images in the work of MILLIØNS.

John May and Zeina Koreitem.

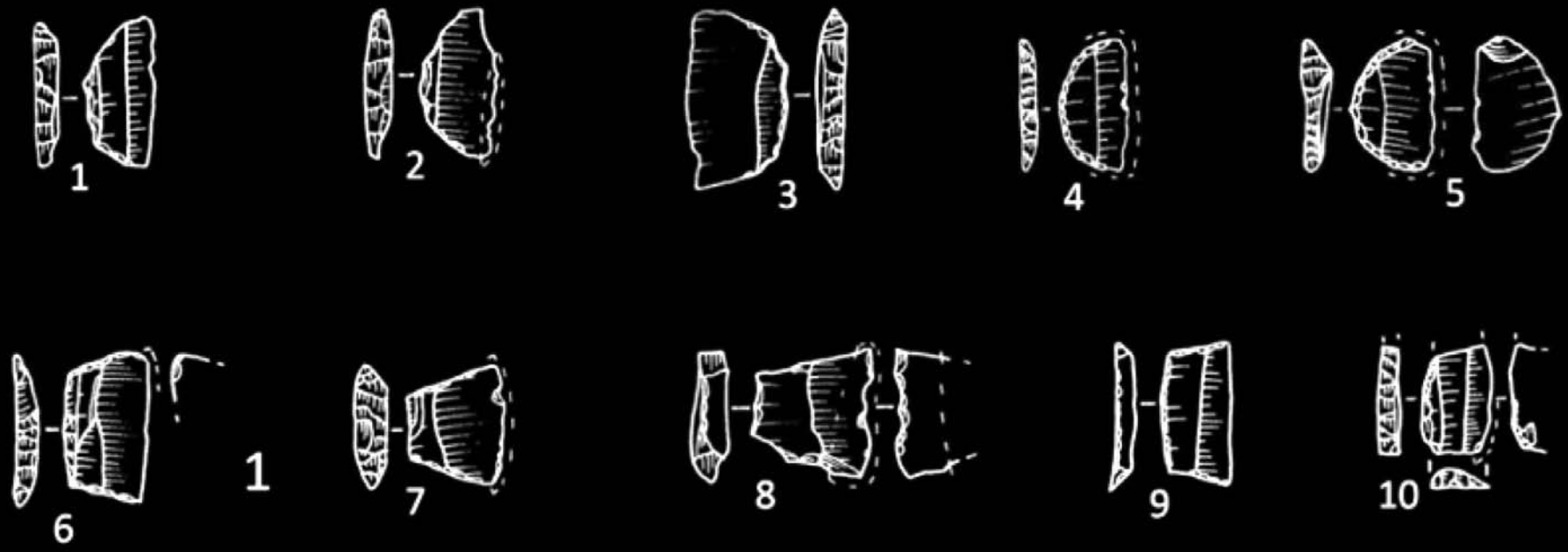
Three Axioms.

What is an axiom?

Axiom 1

There are no pretechnical forms of thought. There are no ways of thinking that remain isolated from technical acts.

Modern fallacy: ideas exist apart from their technical formation.



Early Neolithic geometric microliths.

Technical life is inseparable from processes of hominization.

Cave of Forgotten Dreams. Werner Herzog. 2012

How does John May define the difference between technics and technology?

Axiom 2

Nothing technical is ever merely technical. There are no “minor technicalities”; or rather, all technicalities are tethered, in some way or another, to the deepest regions of consciousness.

Life's technical immersion is not a problem to be solved but a condition to be continually re-understood.

The best philosophies of techincs are, strictly speaking, useless.

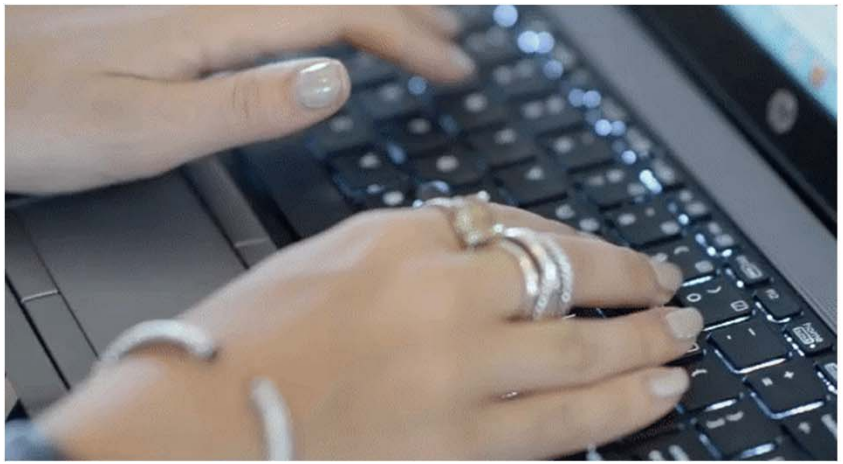
Axiom 3

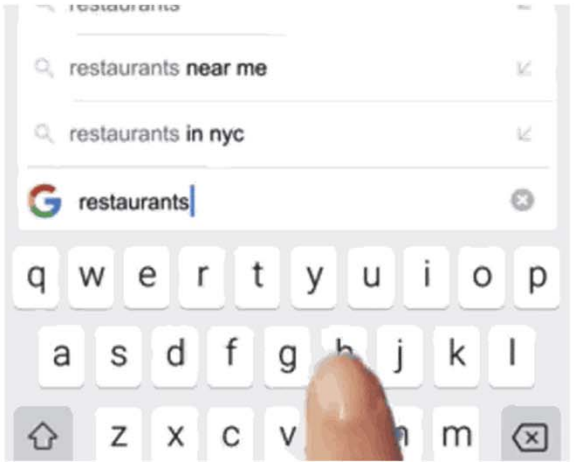
The specific conception of time embedded in a technical system is inseparable from the forms of thought and imagination it makes possible or impossible.

Distinct technical ages
are bound up with distinct
conceptions of time.

Storehouses of the cumulative knowledge and wisdom we now refer to as “culture”.

The pace with which any system allows us to record our thoughts and actions is inseparable from the ways of life it makes possible or impossible.





Three axioms driven through three primary categories of visual depiction:

Drawing
Photograph
Image

Why are these the three categories we should be interested in?

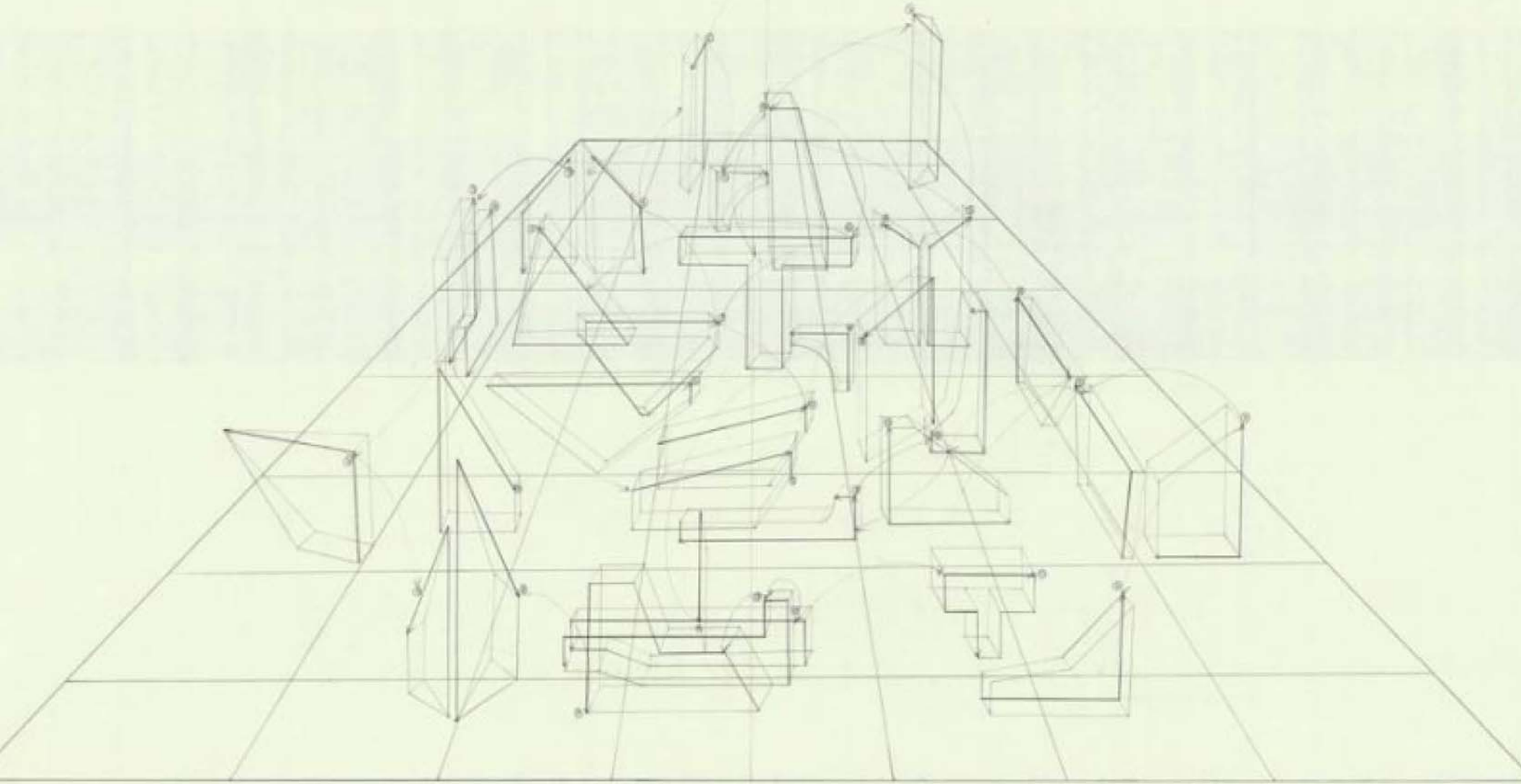
What do they reveal about contemporary architectural culture?

Contemporary architecture is quick to hybridize and assign value and interest to the ill-defined or ambiguous characteristics of visual outputs.

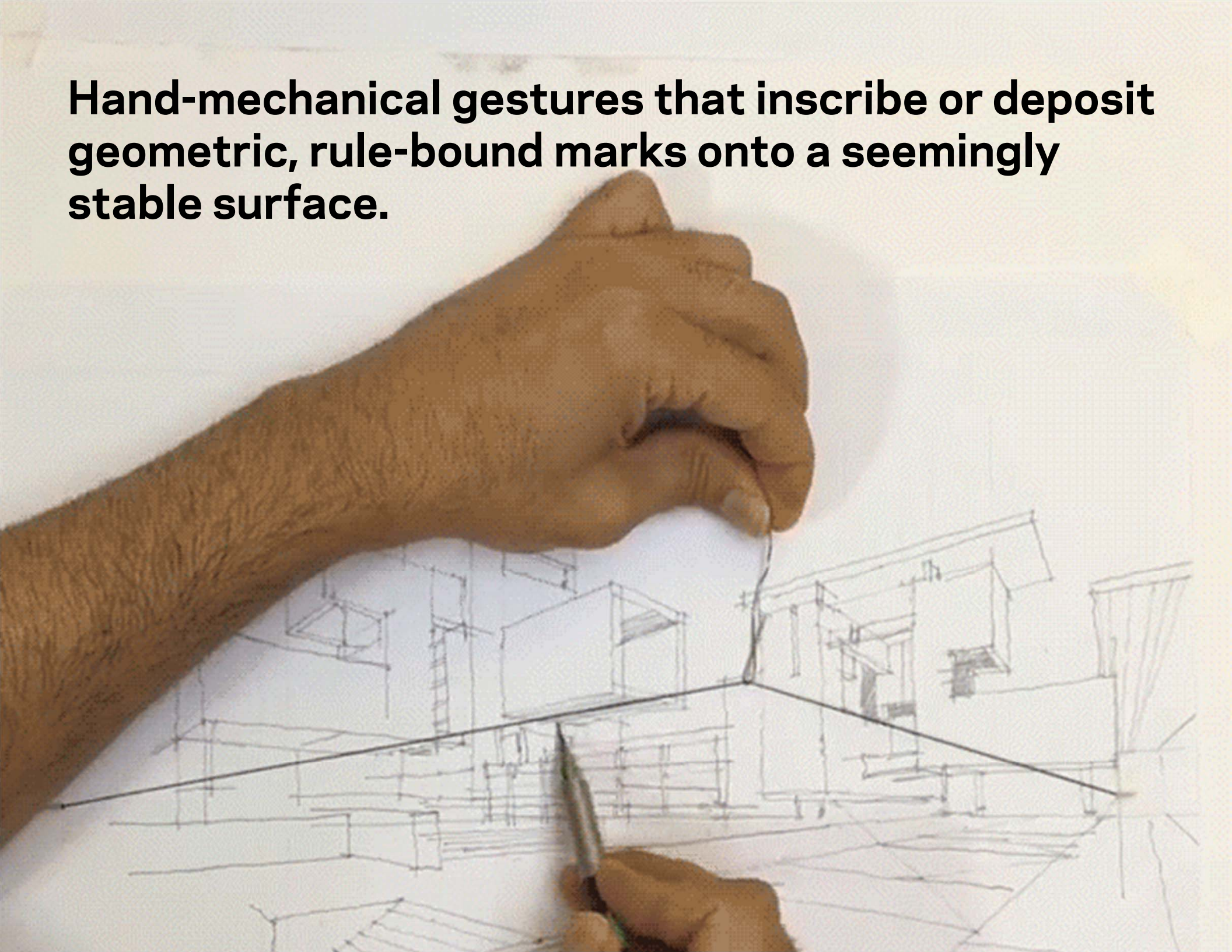
What if we consider the slippages between those three categories as evidence of a chronic confusion.

What if we consider a minimum set of technical criteria for the world we attempt to describe and work in.

Drawings



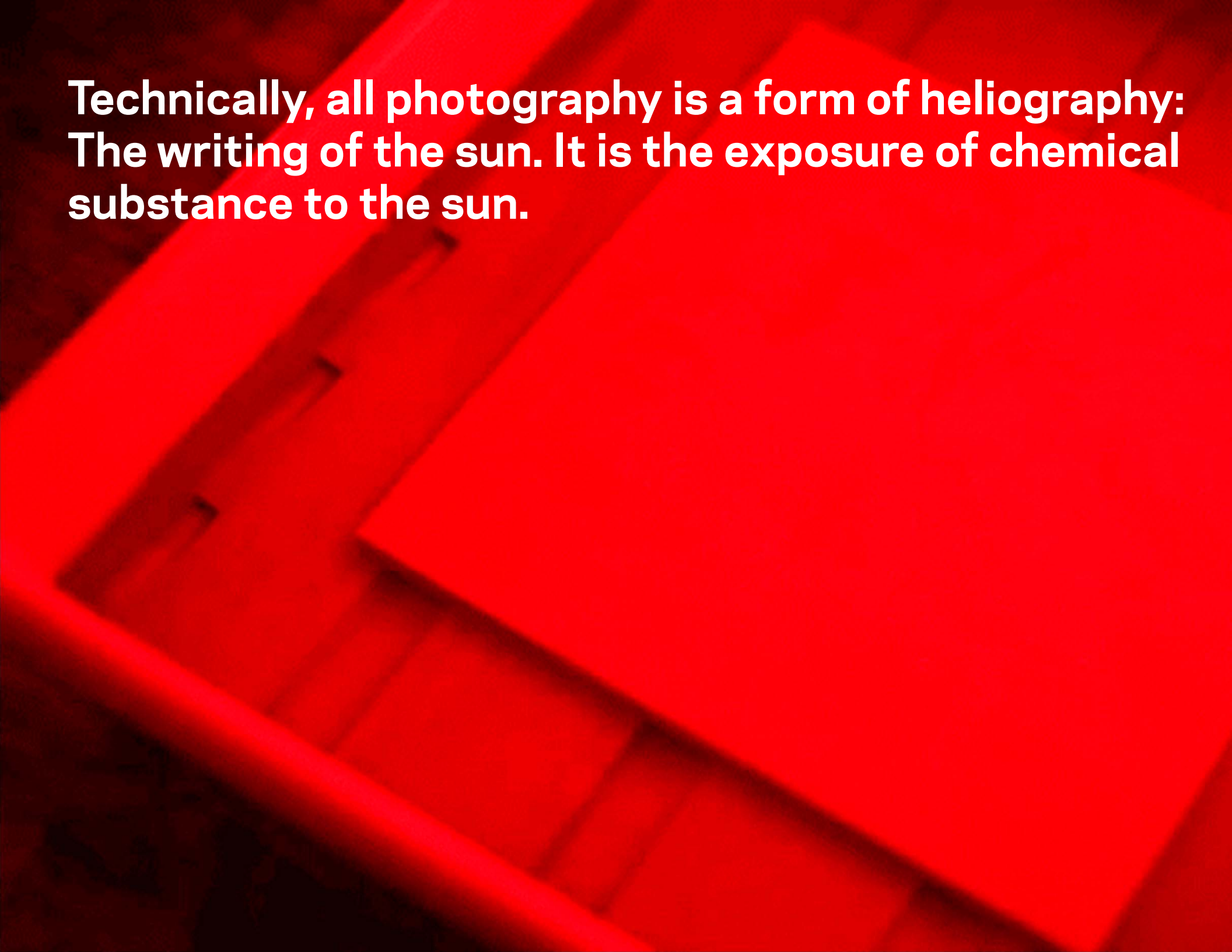
Hand-mechanical gestures that inscribe or deposit geometric, rule-bound marks onto a seemingly stable surface.



Hand-mechanical depiction is static: Once drawn, drawings do not move. The movement comes from the synchronization between hands and some external organ (straight edges, compass, squares, etc.)

Gestures are predictable, regular, controlled, and approximately repeatable; their coordination is mechanistic.

Photograph


Technically, all photography is a form of heliography:
The writing of the sun. It is the exposure of chemical
substance to the sun.

The photograph is a mechanical-chemical visual format, completely separate from the technical act of drawing.

Why did the invention of photography amount to a regression in visual mathematization?

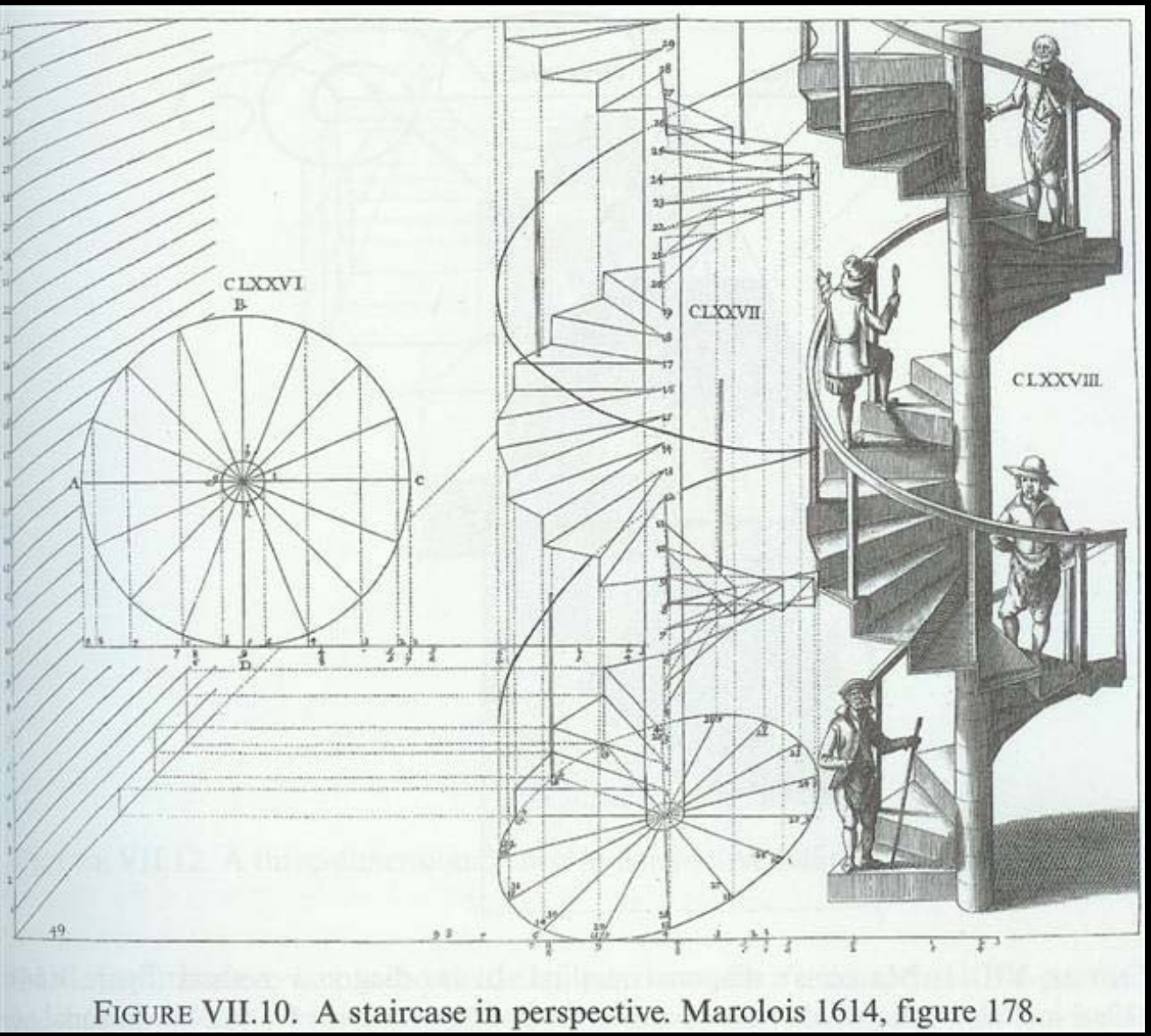


FIGURE VII.10. A staircase in perspective. Marolois 1614, figure 178.

The mathematics of a photograph always remain locked within its chemical composition.

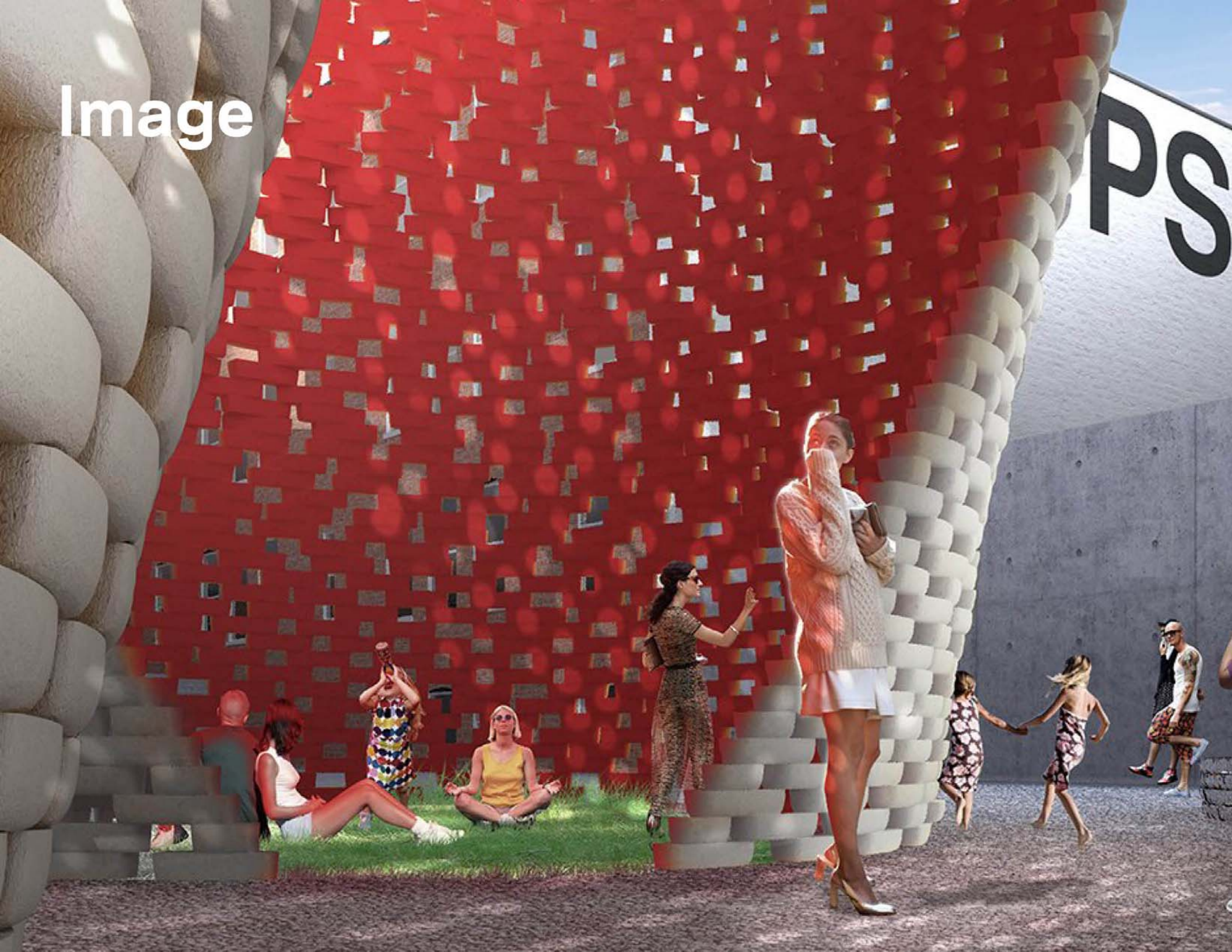
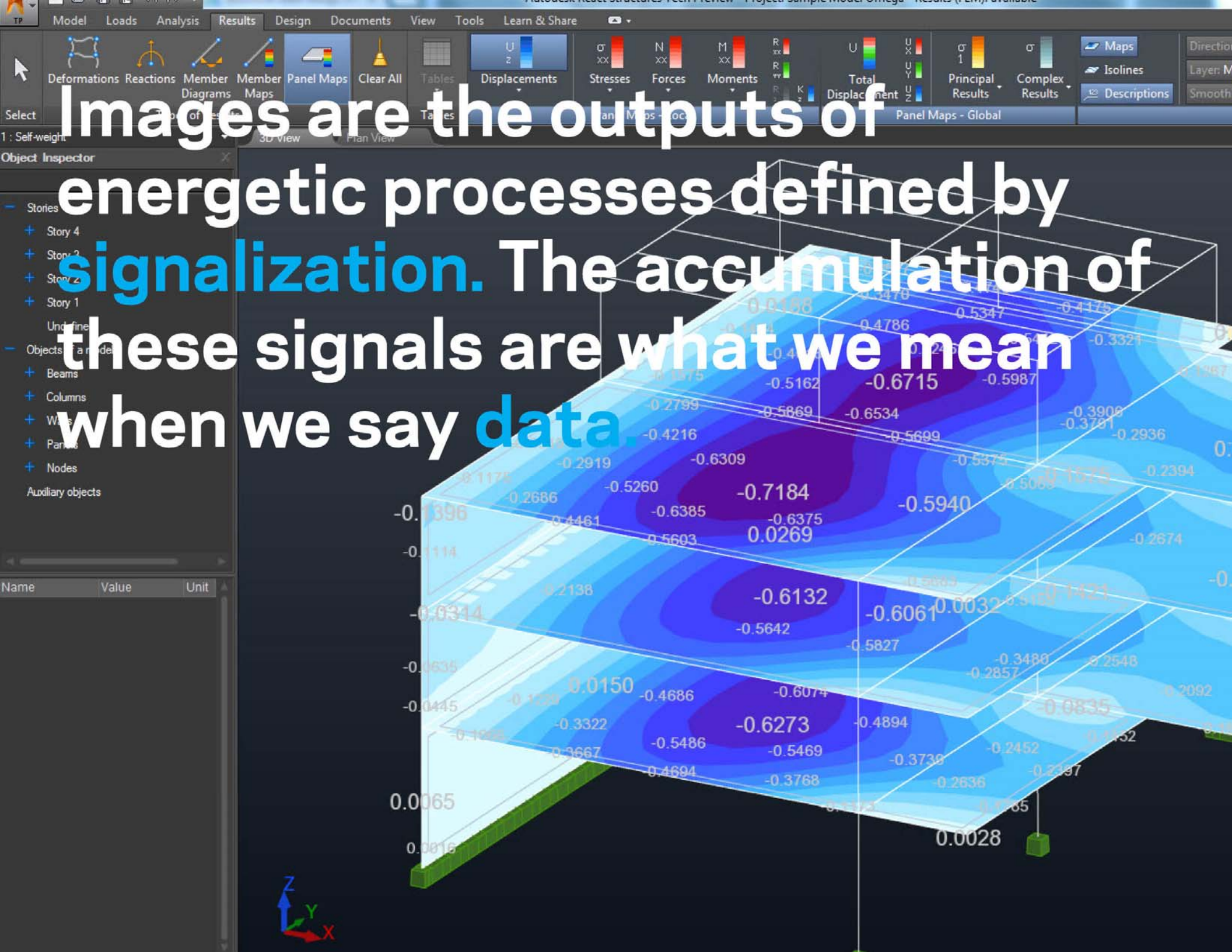


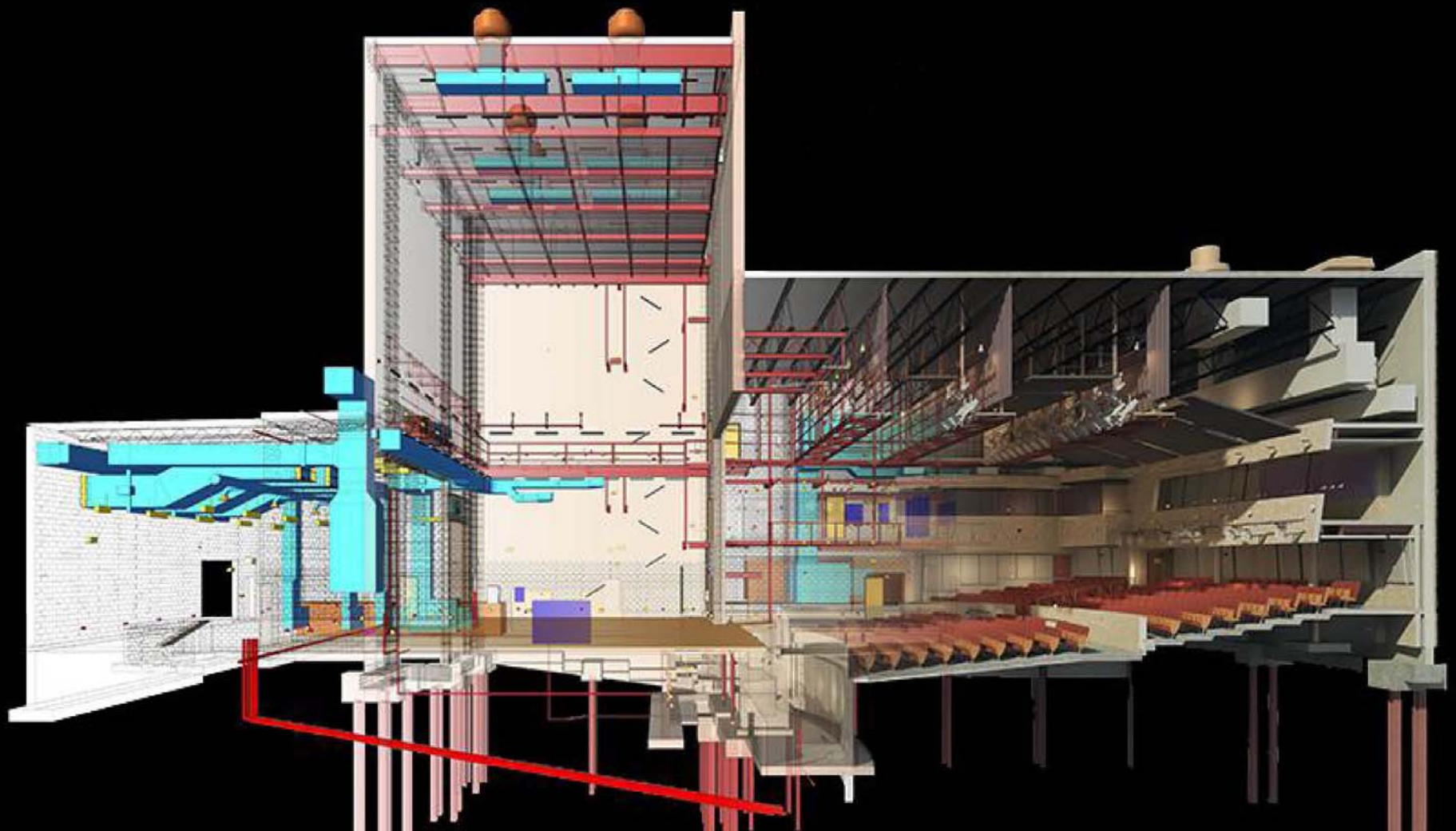
Image
PS

Imaging is a form of photon detection. Unlike photographs, in which scenic light is made visible during chemical exposure, all imaging today is a process of detecting energy emitted by an environment and chopping it into discrete, measurable electrical charges called signals.



Images are the outputs of energetic processes defined by signalization. The accumulation of these signals are what we mean when we say data.

All images are data, and all imaging is, knowingly or not, an act of data processing.



Next

Why are images inherently dynamic? Why do we think of them as fixed.

Normal Clarendon Gingham M

Filter Edit

Next

Crema Ludwig Aden

Filter Edit

Photography as written light; Imaging as detected energy

Inaccurate language that reflects a shallow understanding of the technical world we live in.

~~Digital Photographs~~ don't exist
~~Computer Graphics~~ don't exist

This will kill that...

VRES DE VICTOR HUGO.

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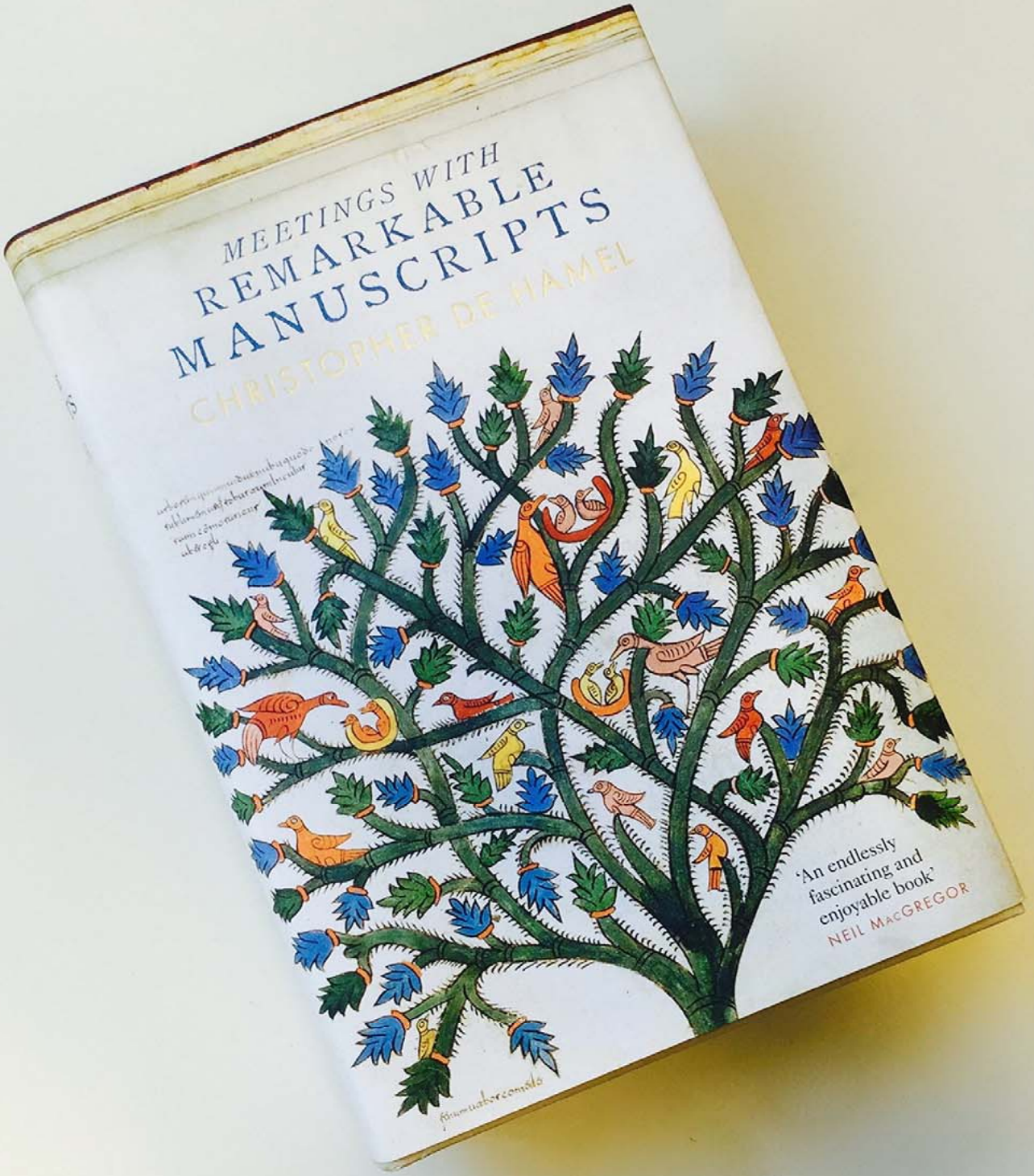
Orthography

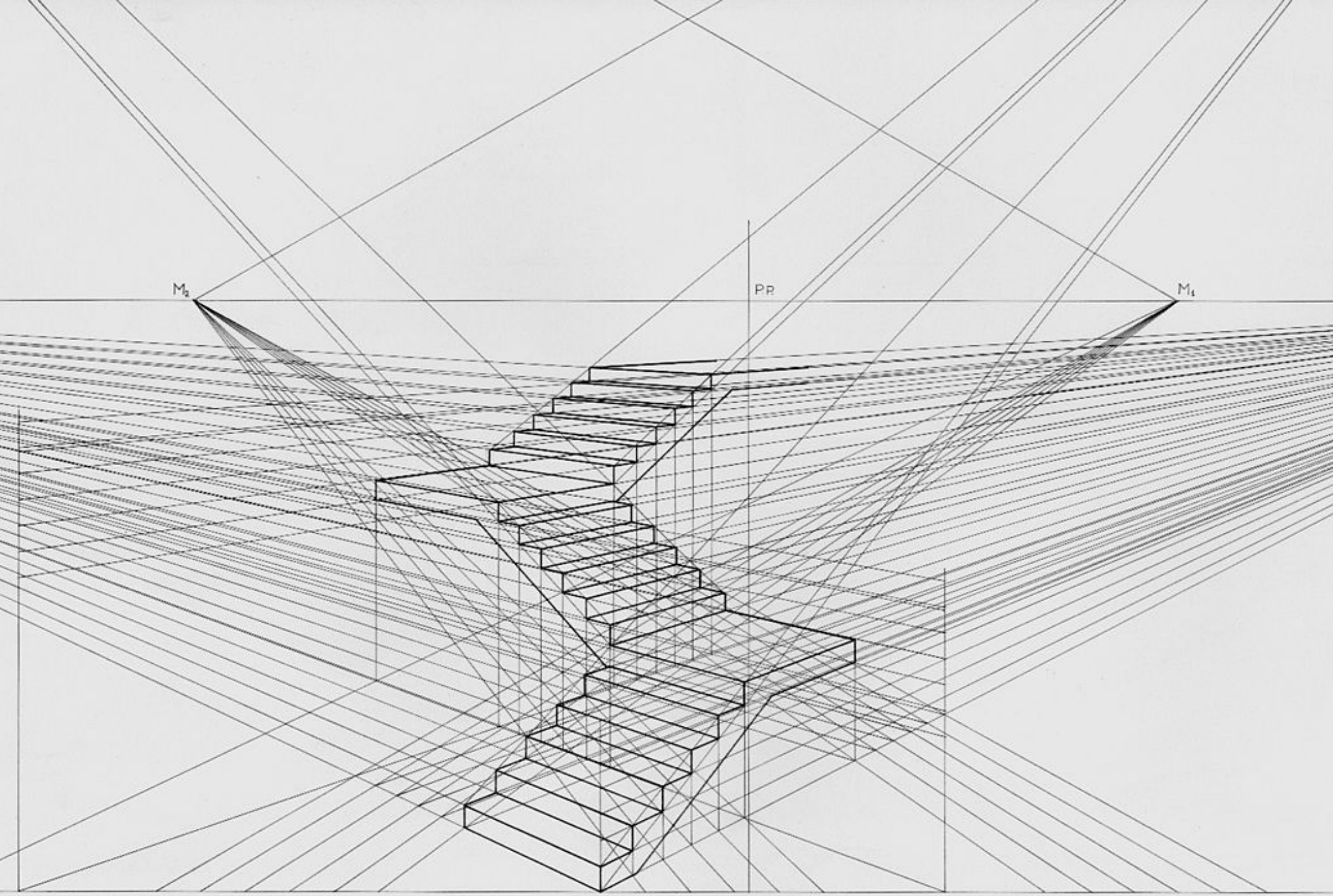
Orthography is a geometric gesture that arranges marks into legible lines and texts.


MEETINGS WITH
REMARKABLE
MANUSCRIPTS
CHRISTOPHER DE HAMEL
'An endlessly
fascinating and
enjoyable book'
NEIL MacGREGOR

For the orthographer the world was geometry, as both text and drawing.

What is “linear graphism”?

Thought is structured by rule-bound lines with beginnings and ends. Orthography brought the notion of literacy into the world.


M2
PP
M1

If you are reading this right now you are engaged in a form of "linear graphism", knowingly or not, orthographic systems brought new objects and objectives into the world.

Orthography transformed a visual world of non-linear, associative markings, into a linear depiction of the world.

PIU' TARDI...
ROMEO, ASPETTA, CHE FAI?
E' ENTRATO NEL GIARDINO DEI CAPULETI!
E' PAZZO!
AMICO, NON SAI CHE L'AMORE E' UNA PAZZIA!? O UNA DOLCE PAZZIA!

COME SEI ARRIVATO FIN QUI?
SULLE ALI DELL'AMORE...
SE TI SCOPRONO TI UCCIDONO!
MI PROTEGGE LA NOTTE.
O ROMEO, ROMEO, PERCHE' APPARTENIAMO A FAMIGLIE NEMICHE?
CHIAMAMI SOLTANTO AMORE, E, COSI' RIBATTEZZATO IO NON SARO' PIU' UN MONTECCHI.
ANCH'IO: SE TU VUOI NON SARO' PIU' GIULIETTA...
BAMBINA, TI GIURO...
NON GIURARE!
SE LA TUA OFFERTA D'AMORE E' ONESTA IO DEPONGO IL MIO DESTINO AI TUOI PIEDI.
SEI LA MIA VITA!
E' L'ALBA... DOBBIAMO LASCIARCI. DOMANI TI MANDERO' UNA PERSONA FIDATA PER AVERE TUE NOTIZIE.
BUONANOTTE...
LASCIARCI E' UNA PENA COSI' DOLCE CHE TI DIREI "BUONANOTTE" FINO A DOMATTINA...

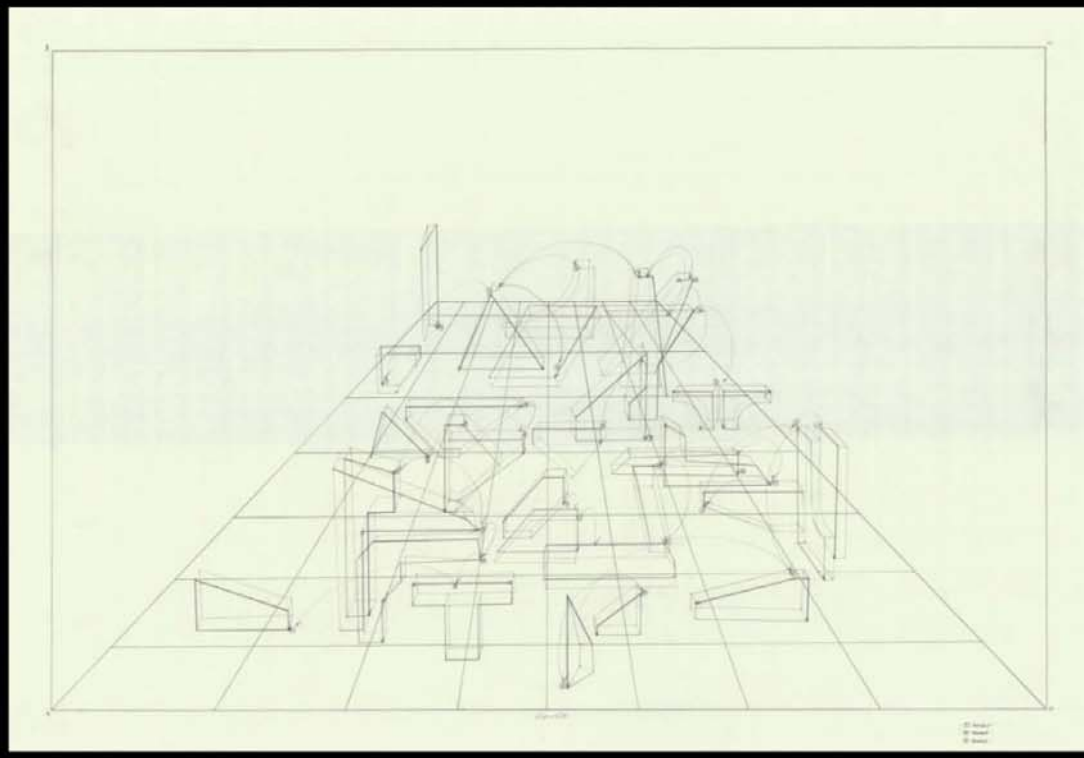
Why were history and orthography co-emergent?

Orthography generated two competing visions of the world:

Alphanumeric handwriting (speech)

Orthographic drawing (silence)

Drawing is a form of nonalphabetic orthography.

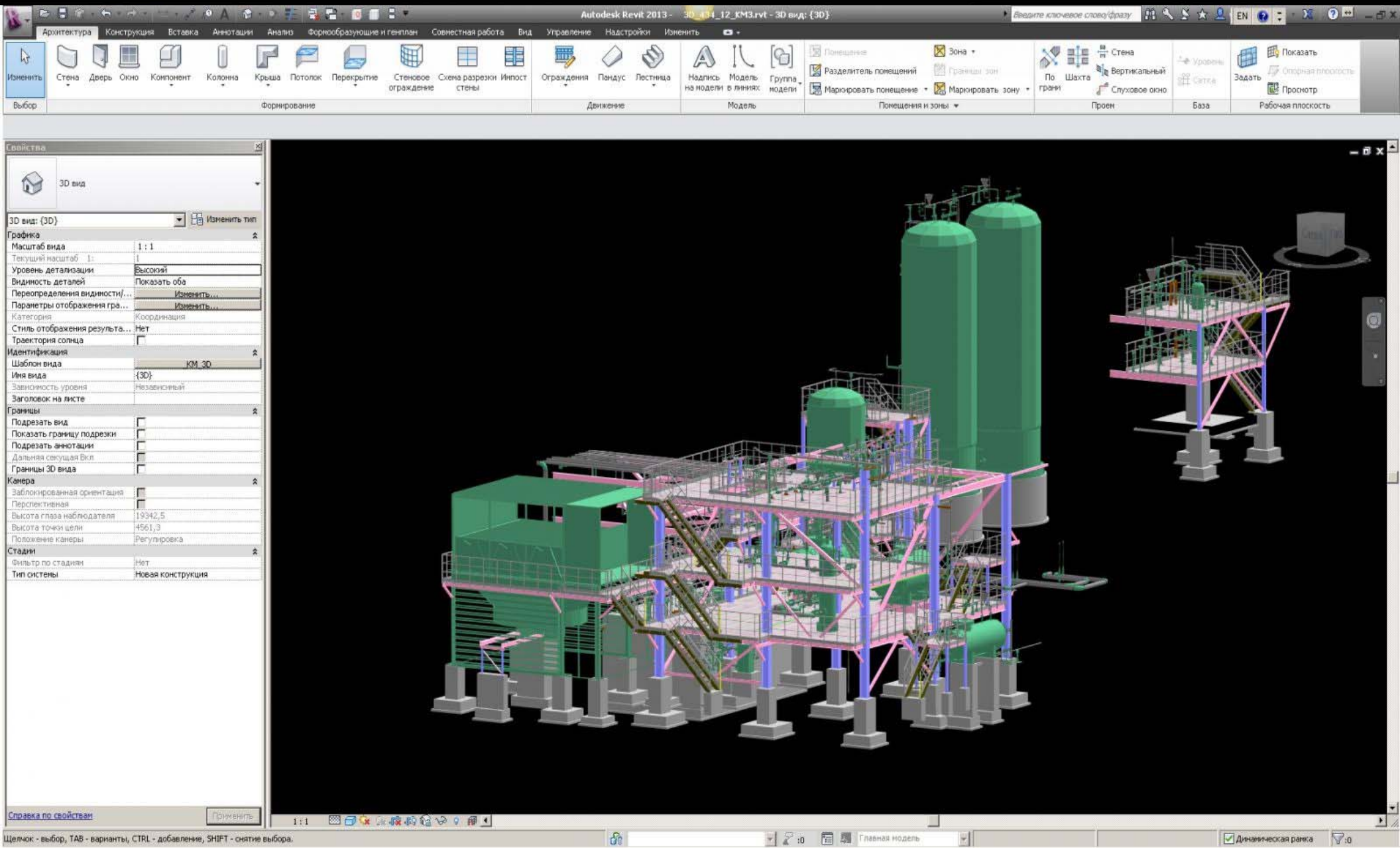


The fact that prior to the emergence of orthographic writing, time was conceived of as a circle or cycle is proof that we are not born thinking linearly.

Linear thinking is a product of our culture and the technical systems that are at play, such as scientific management.

How do cultures train themselves out of linear orthogrphic thinking?

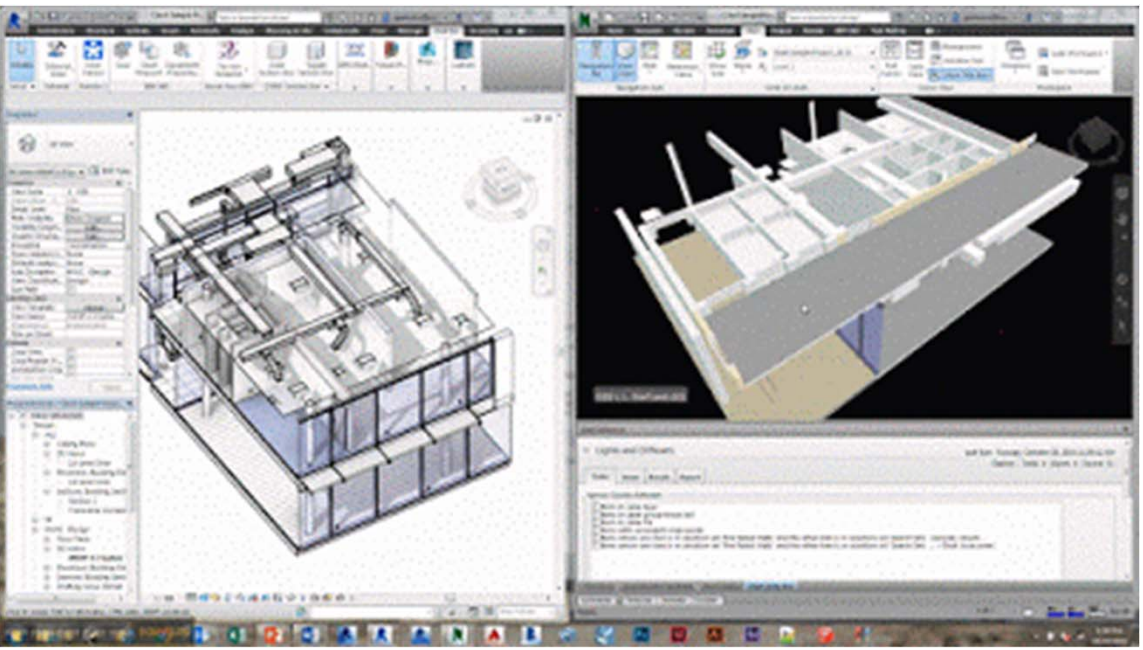
Post-orthography

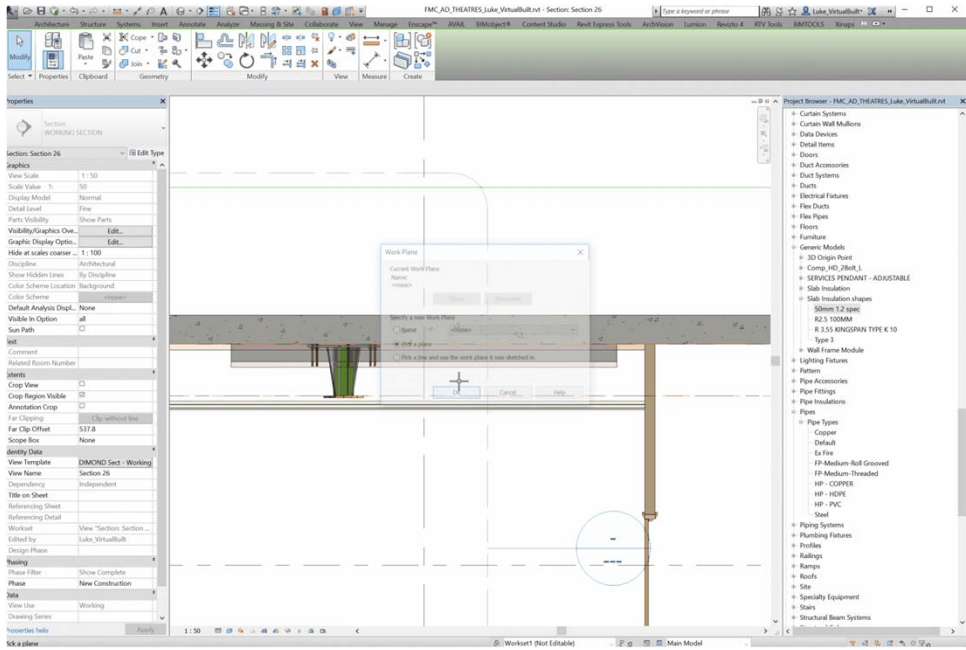


Post-orthography doesn't mean that drawing is dead or useless.

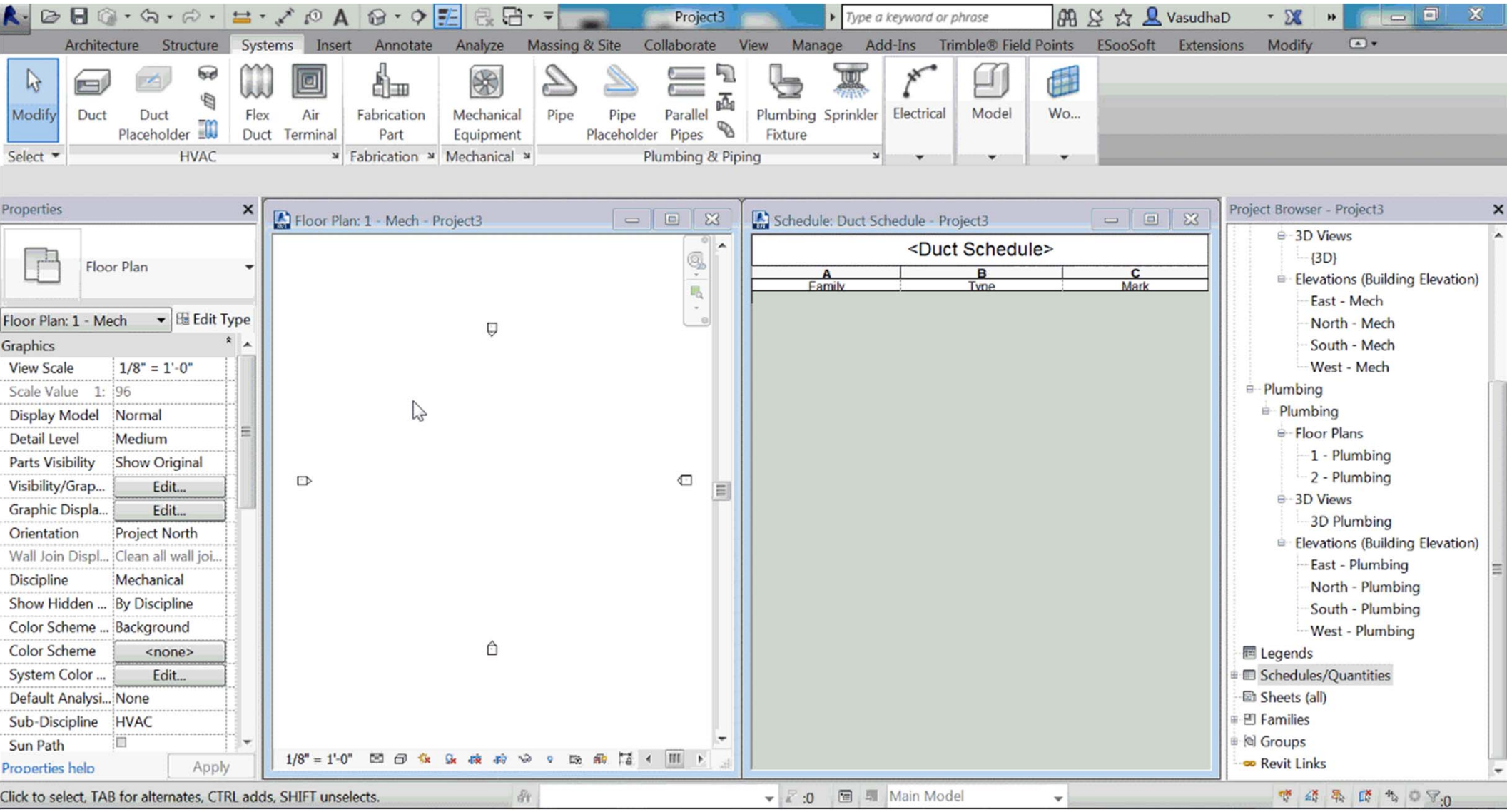
If the world of the orthographer was simultaneously a text and drawing; what is the world of the post-orthographer?

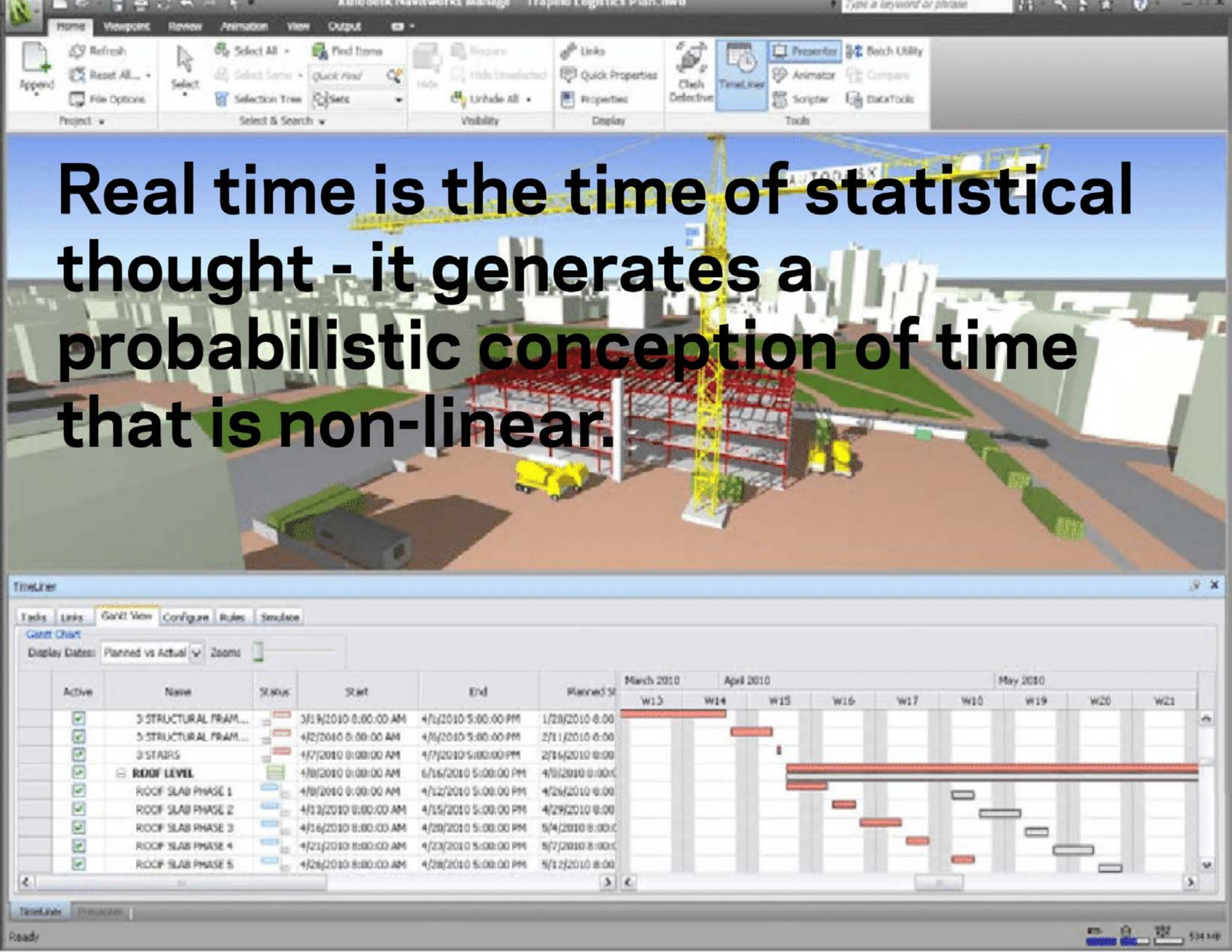
Simultaneously image and model





How do post-orthographic systems enmesh our work in “real time”?

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Clash Detective
TimeLiner
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Animator
Scripter
Batch Utility
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Real time is the time of statistical thought - it generates a probabilistic conception of time that is non-linear.
TimeLiner
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3 STAIRS
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ROOF SLAB PHASE 1
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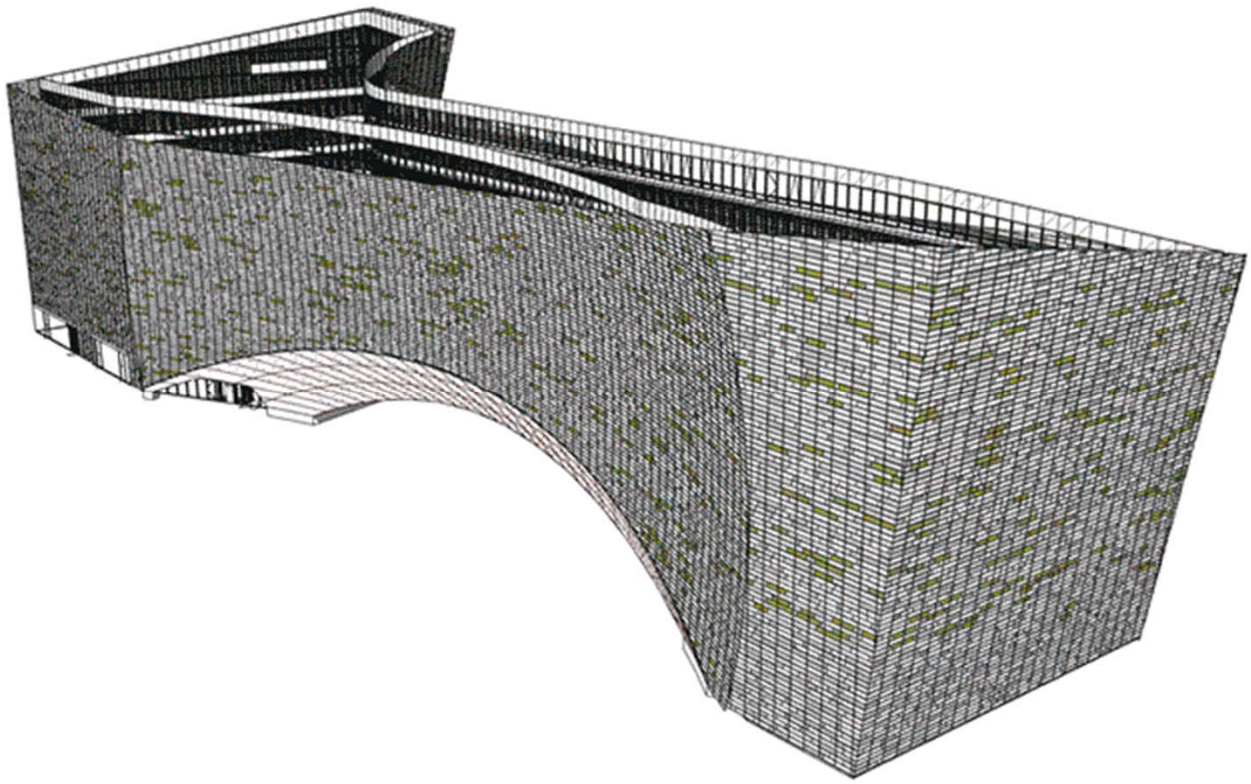
ROOF SLAB PHASE 3
ROOF SLAB PHASE 4
ROOF SLAB PHASE 5
Ready

An image and model is latent with infinite images and probable outcomes at the finger tips of its technical production.

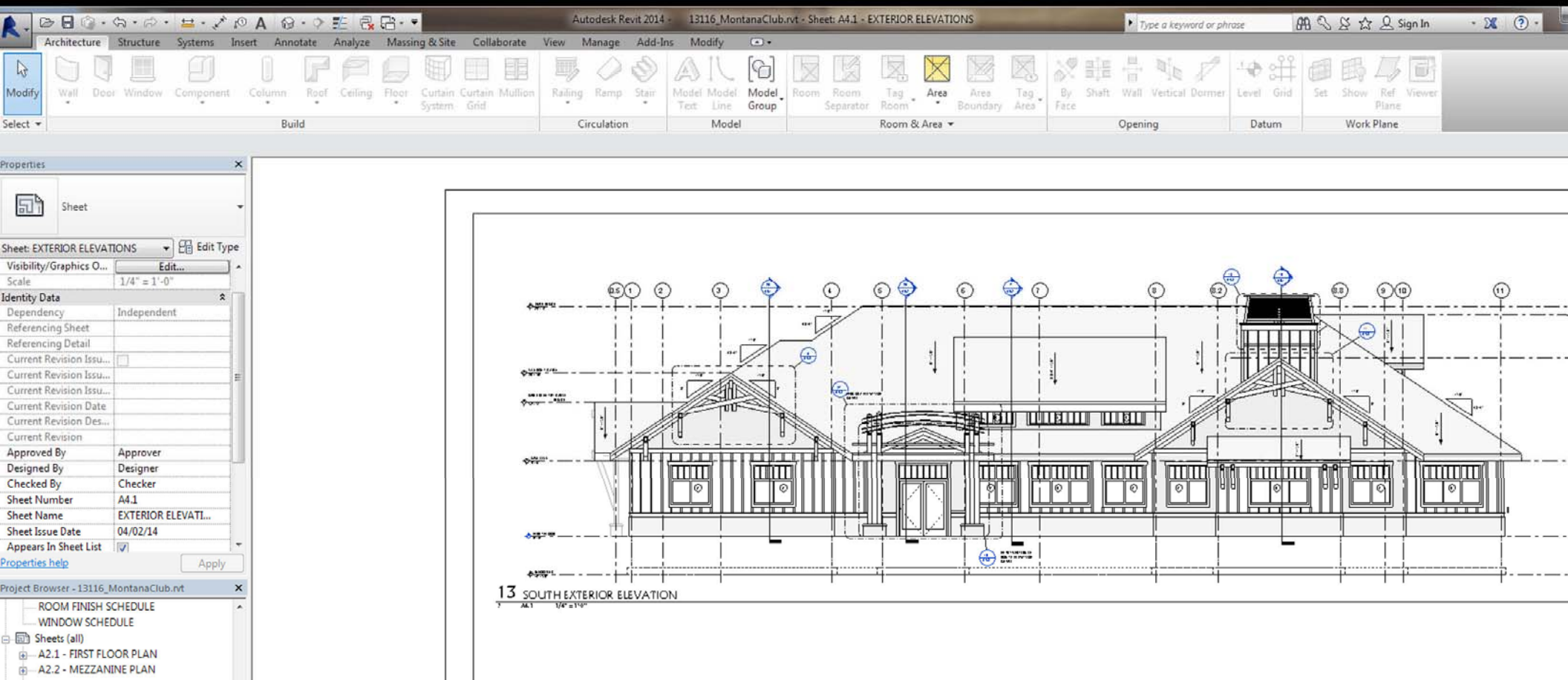
A drawing and text is latent with many probable outcomes, but its production is limited by its technical system.

Models contain simulations of all possible future drawings.



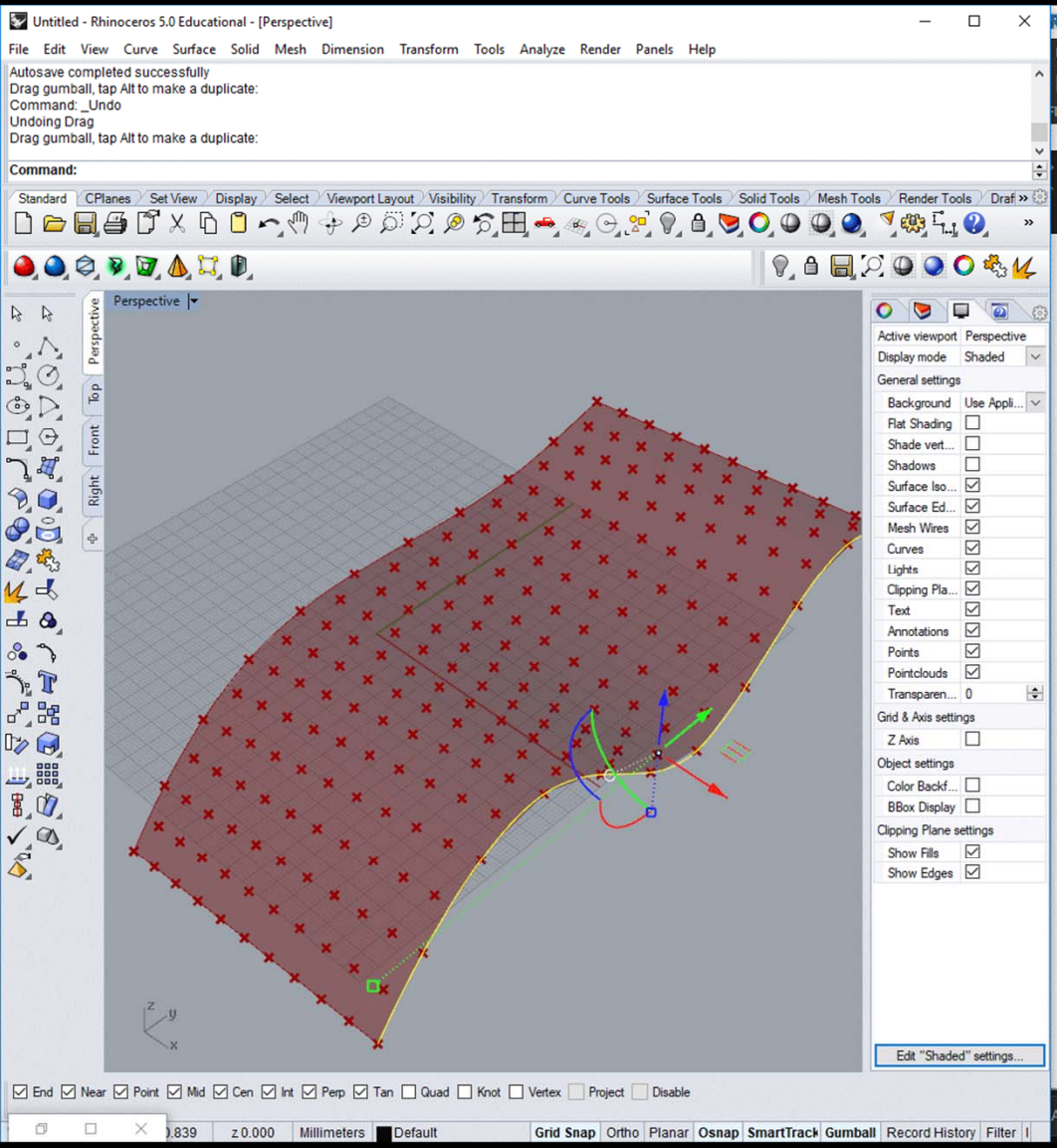
Using the "Make 2D" command or making a "Revit Section View" is not at all like drawing an orthographic plan.

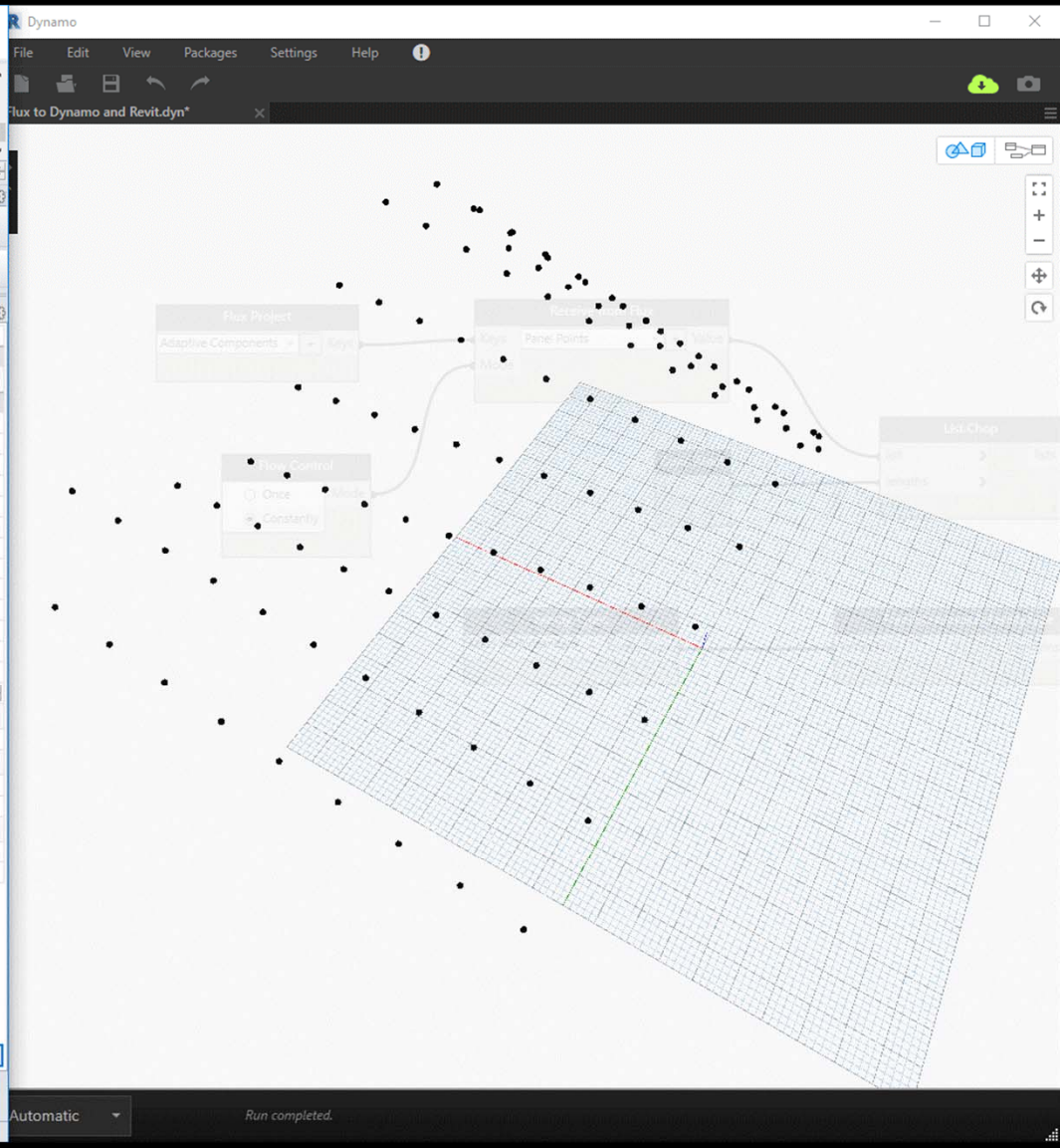
The outcomes of these commands are simulated orthographic results; 2D reports (images) from 3D objects (models).



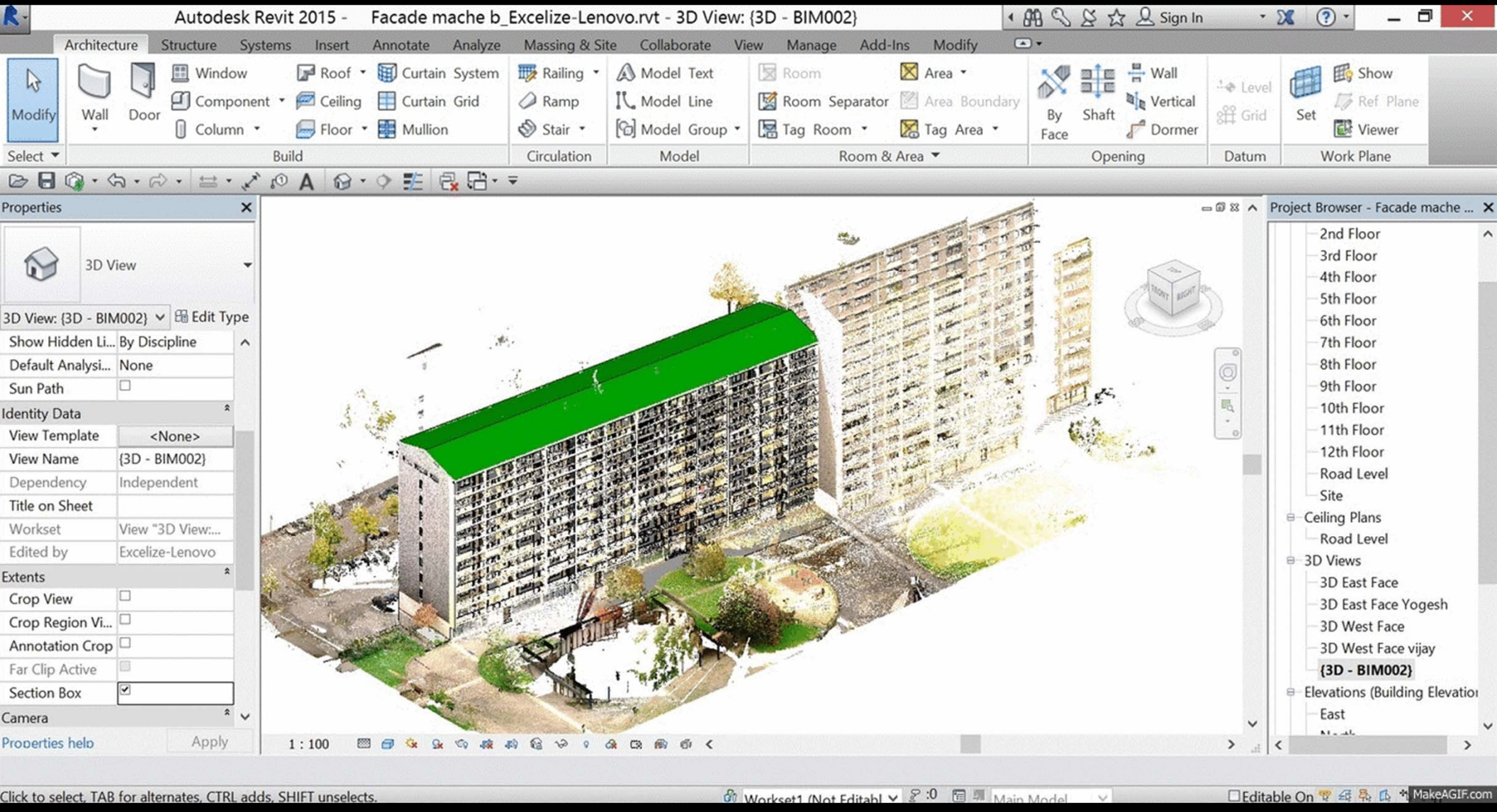
Why does John May refer to images as a presentation and not a representation of the world?

Up-to-date, real time models of the world.





The always - present experience of all calculable possible future states - the logic of real time modeling - is very different from an orthographic imaginative framework.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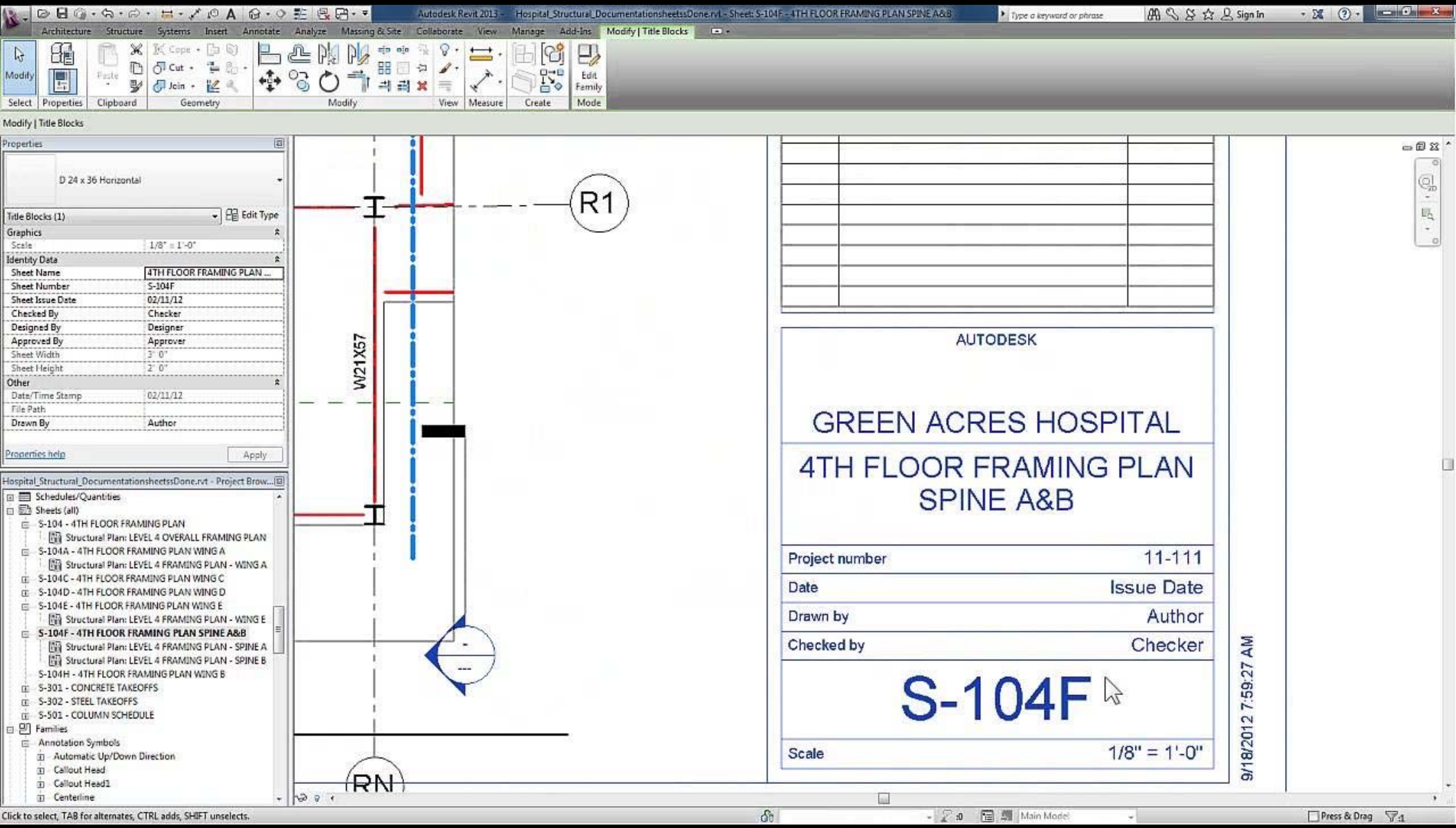
MakeAGIF.com

Spin the model right - round - right round, and other tacit critiques of students' "digital work", or rather, our ubiquitous post-orthographic production techniques.

Pseudorthography

Pseudorthography is not fake, it simply means we have not yet come up with terms and conditions for this visual digital sphere we work in.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S-104A - 4TH FLOOR FRAMING PLAN WING A
Structural Plan: LEVEL 4 FRAMING PLAN - WING A
S-104C - 4TH FLOOR FRAMING PLAN WING C
S-104D - 4TH FLOOR FRAMING PLAN WING D
S-104E - 4TH FLOOR FRAMING PLAN WING E
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Structural Plan: LEVEL 4 FRAMING PLAN - SPINE B
S-104H - 4TH FLOOR FRAMING PLAN WING B
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S-302 - STEEL TAKEOFFS
S-501 - COLUMN SCHEDULE
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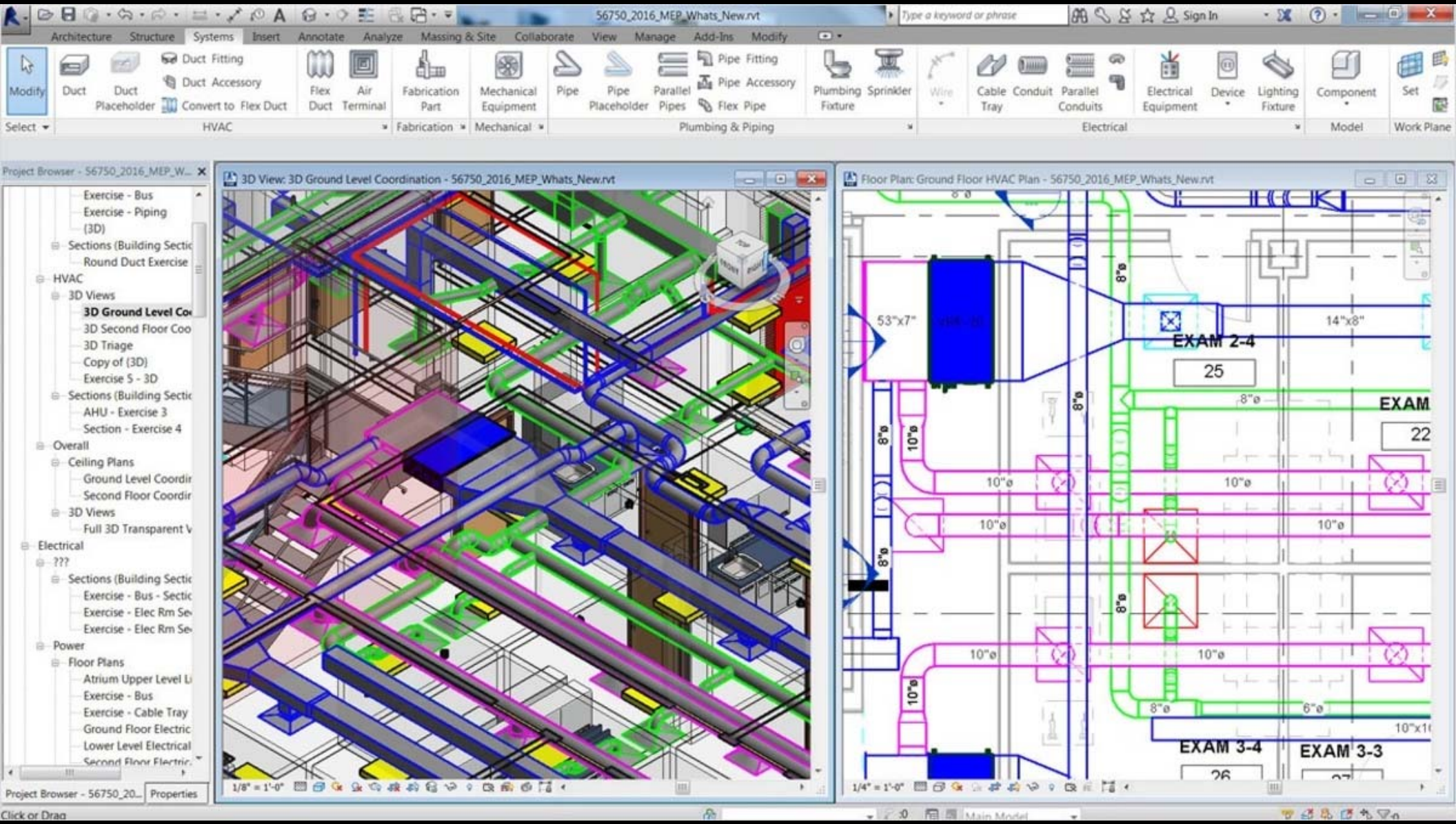
Main Model
Press & Drag

Familiarity is preserved as a coping mechanism that allows us to veil our unfamiliarity with the technical systems that are now under our management.

In order words, tools tend to break the world they make.

In a technical sense we haven't used (instrument of direction) a drawing to build a building in decades.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Pipe Accessory
Flex Pipe
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Exercise - Bus - Sectic
Exercise - Elec Rm Se
Exercise - Elec Rm Se
Power
Floor Plans
Atrium Upper Level Li
Exercise - Bus
Exercise - Cable Tray
Ground Floor Electric
Lower Level Electrical
Second Floor Electric
Project Browser - 56750_20...
Properties
3D View: 3D Ground Level Coordination - 56750_2016_MEP_Whats_New.rvt
1/8" = 1'-0"
Floor Plan: Ground Floor HVAC Plan - 56750_2016_MEP_Whats_New.rvt
53"x7"
EXAM 2-4
25
14"x8"
EXAM
22
8"ø
10"ø
6"ø
EXAM 3-4
EXAM 3-3
1/4" = 1'-0"
Click or Drag
Main Model

Everything is now built from simulated orthography.

Images of drawings produced in computers are not drawings.

Autodesk Revit Architecture 2010 - [R2010_Residence.rvt - Floor Plan: First Floor Plan]

Home | Insert | Annotate | Modify | Massing & Site | Collaborate | View | Manage

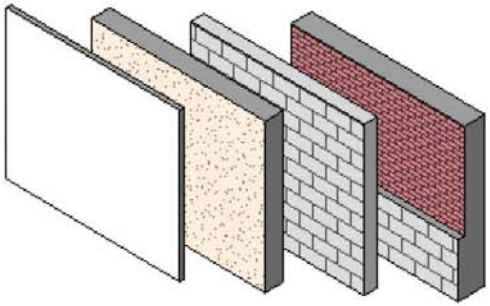
Wall | Door | Window | Component | Column | Roof | Ceiling | Floor | Curtain System | Curtain Grid | Mullion | Model Text | Model Line | Model Group | Railing | Ramp | Stairs | Level | Grid | Beam | Brace | Foundation | Room | Area | Legend | Tag | Set | Show | Ref Plane

Model | Circulation | Datum | Structure | Room & Area | Work Plane

Wall (WA)

Creates a partition wall in the building model.

Use the Type Selector to specify the type of wall to create, or use the default type to create a generic wall and specify a different wall type later.



Press F1 for more help

- Ceiling Plans
- 3D Views
- Elevations (Elevation 1)
  - E-EAST
  - E-NORTH
  - E-SOUTH
  - E-WEST
  - I-KITCHEN
  - I-KITCHEN NORTH
- Sections (DETAIL SECTION)
- Drafting Views (CALLOUT TYP.
- Legends
- Schedules/Quantities
- Sheets (all)
- Families
- Groups
- Revit Links

loor Plan: First Floor Plan

1/4" = 1'-0"

R2010_Residence.rvt - 3D View: {3D}

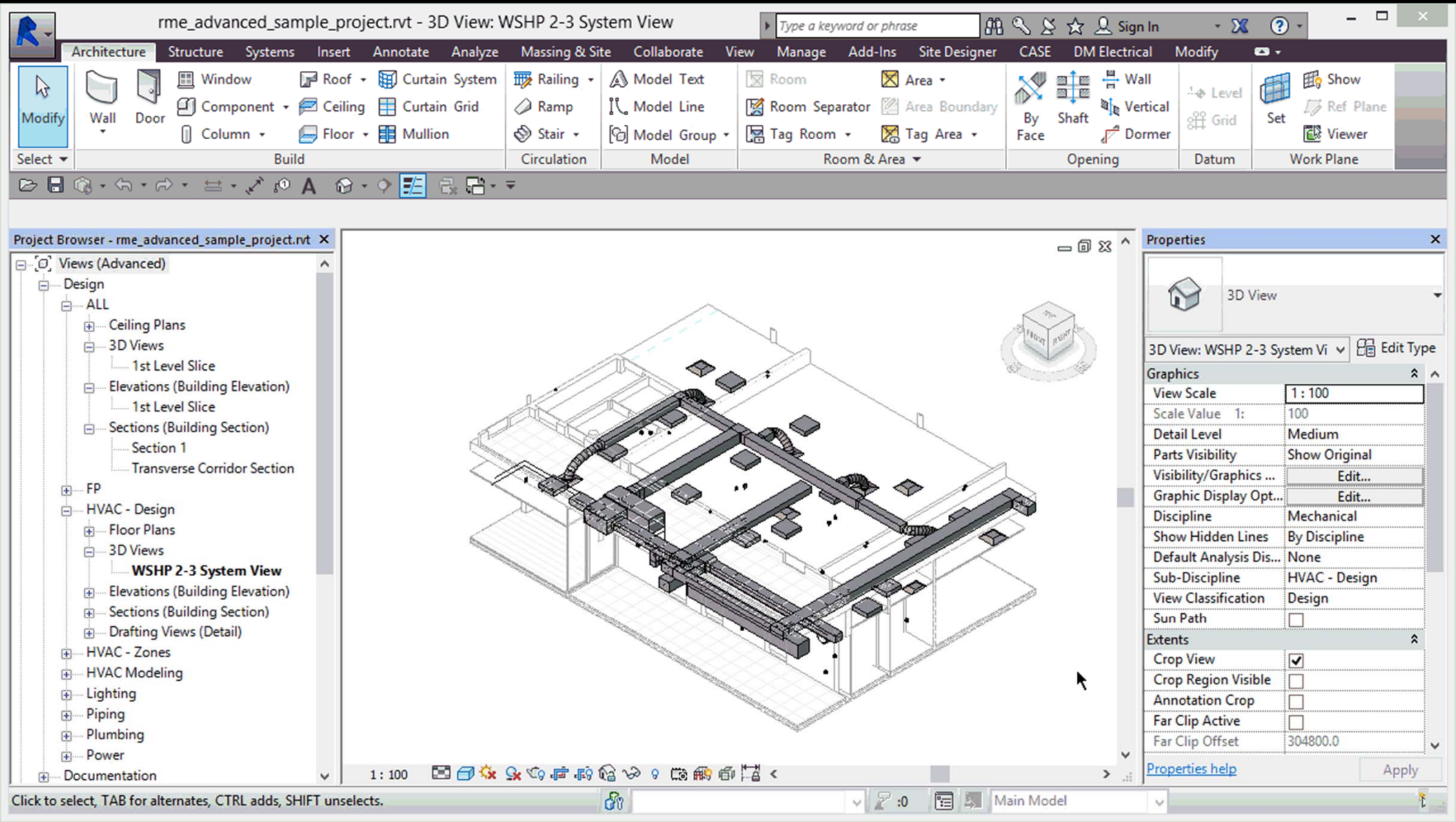
1/2" = 1'-0"

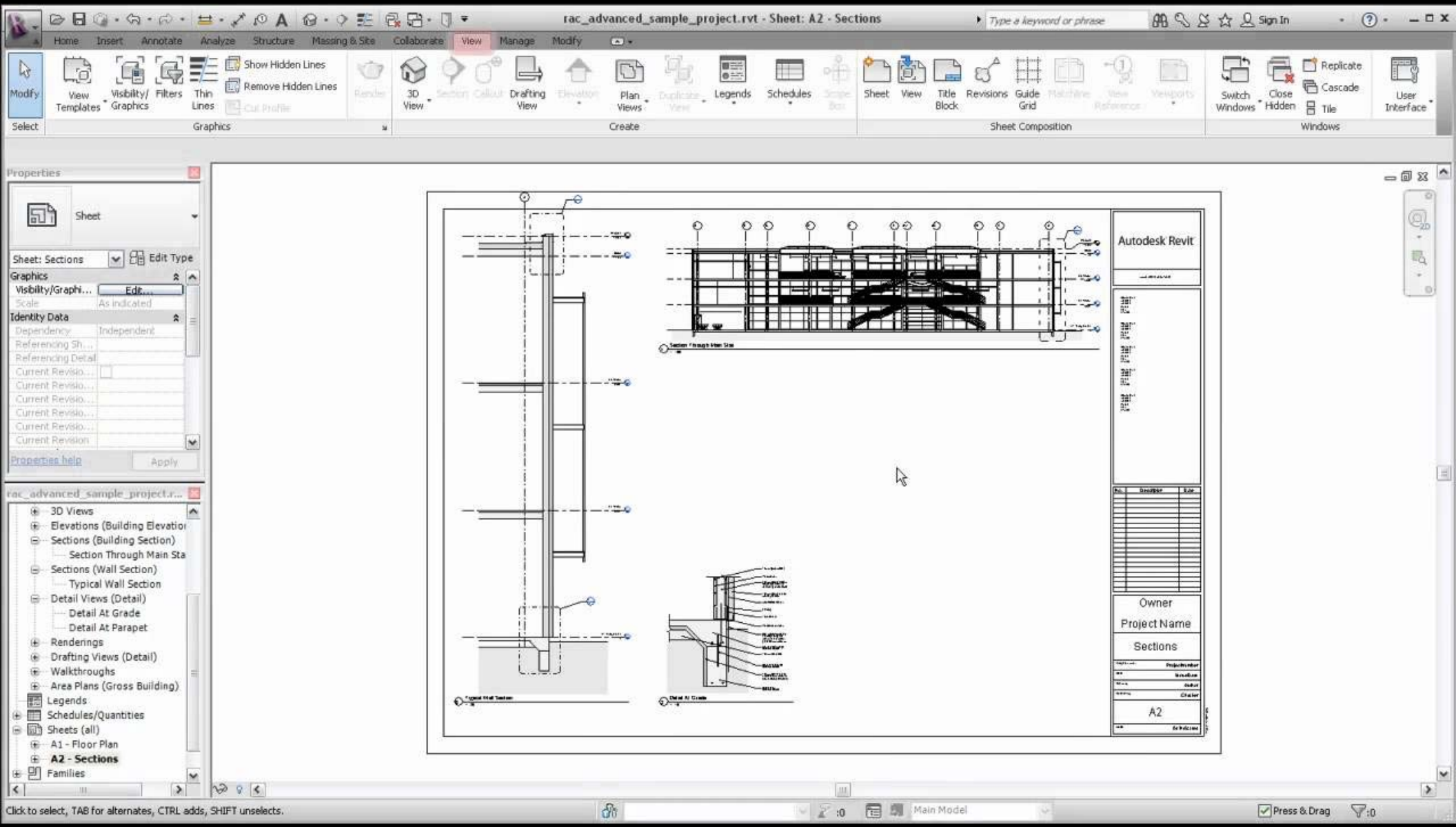
R2010_Residence.rvt - Elevation: E-WEST

1/8" = 1'-0"

Ready

Press & Drag

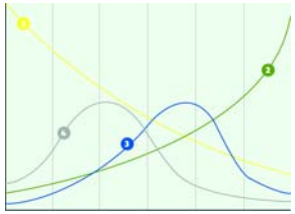

rme_advanced_sample_project.rvt - 3D View: WSHP 2-3 System View
Type a keyword or phrase
Sign In
Architecture
Structure
Systems
Insert
Annotate
Analyze
Massing & Site
Collaborate
View
Manage
Add-Ins
Site Designer
CASE
DM Electrical
Modify
Modify
Wall
Door
Window
Component
Column
Roof
Ceiling
Floor
Curtain System
Curtain Grid
Mullion
Railing
Ramp
Stair
Model Text
Model Line
Model Group
Room
Room Separator
Tag Room
Area
Area Boundary
Tag Area
By Face
Shaft
Wall
Vertical
Dormer
Level
Grid
Set
Show
Ref Plane
Viewer
Select
Build
Circulation
Model
Room & Area
Opening
Datum
Work Plane
Project Browser - rme_advanced_sample_project.rvt
Views (Advanced)
Design
ALL
Ceiling Plans
3D Views
1st Level Slice
Elevations (Building Elevation)
1st Level Slice
Sections (Building Section)
Section 1
Transverse Corridor Section
FP
HVAC - Design
Floor Plans
3D Views
WSHP 2-3 System View
Elevations (Building Elevation)
Sections (Building Section)
Drafting Views (Detail)
HVAC - Zones
HVAC Modeling
Lighting
Piping
Plumbing
Power
Documentation
1 : 100
Properties
3D View
3D View: WSHP 2-3 System Vi
Edit Type
Graphics
View Scale
1 : 100
Scale Value 1:
100
Detail Level
Medium
Parts Visibility
Show Original
Visibility/Graphics ...
Edit...
Graphic Display Opt...
Edit...
Discipline
Mechanical
Show Hidden Lines
By Discipline
Default Analysis Dis...
None
Sub-Discipline
HVAC - Design
View Classification
Design
Sun Path
Extents
Crop View
Crop Region Visible
Annotation Crop
Far Clip Active
Far Clip Offset
304800.0
Properties help
Apply
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
:0
Main Model

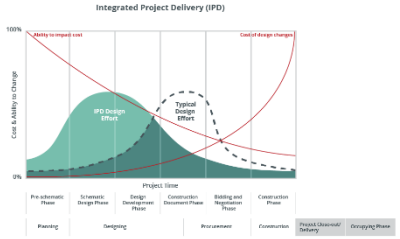

rac_advanced_sample_project.rvt - Sheet: A2 - Sections
Type a keyword or phrase
Sign In
Home
Insert
Annotate
Analyze
Structure
Massing & Site
Collaborate
View
Manage
Modify
Modify
Select
View Templates
Visibility/ Graphics
Filters
Thin Lines
Show Hidden Lines
Remove Hidden Lines
Graphics
3D View
Drafting View
Plan Views
Legends
Schedules
Create
Sheet
View
Title Block
Revisions
Guide Grid
Sheet Composition
Switch Windows
Close Hidden
Replicate
Cascade
Tile
User Interface
Windows
Properties
Sheet
Sheet: Sections
Edit Type
Graphics
Visibility/Graphi...
Edit...
Scale
As indicated
Identity Data
Dependency
Independent
Referencing Sh...
Referencing Detail
Current Revisio...
Current Revision
Properties help
Apply
rac_advanced_sample_project.r...
3D Views
Elevations (Building Elevatio
Sections (Building Section)
Section Through Main Sta
Sections (Wall Section)
Typical Wall Section
Detail Views (Detail)
Detail At Grade
Detail At Parapet
Renderings
Drafting Views (Detail)
Walkthroughs
Area Plans (Gross Building)
Legends
Schedules/Quantities
Sheets (all)
A1 - Floor Plan
A2 - Sections
Families
Autodesk Revit
Owner
Project Name
Sections
A2
Click to select, TAB for alternates, CTRL adds, SHIFT unselects.
Main Model
Press & Drag

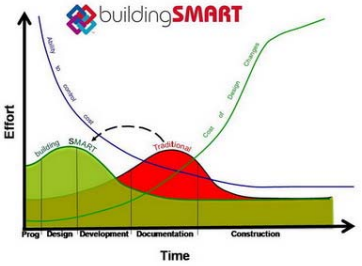
BIM Project Delivery

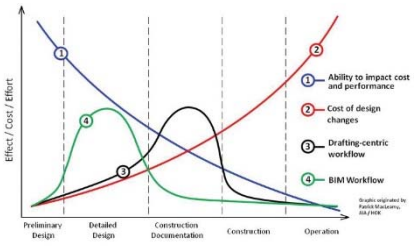
Integrated Project Delivery (IPD) has become synonymous with BIM. Therefore it is implicated in the technical system of post-orthographic production.

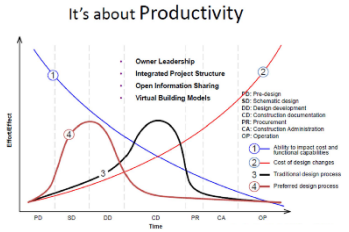
IPD is about being efficient and productive. I've collected a sampling of the same "sales" graph (MacLeamy Curve) in several languages.

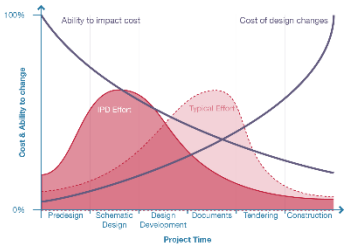


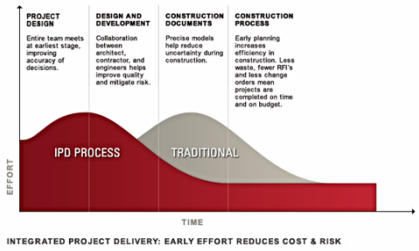


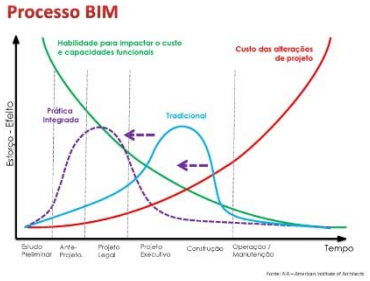




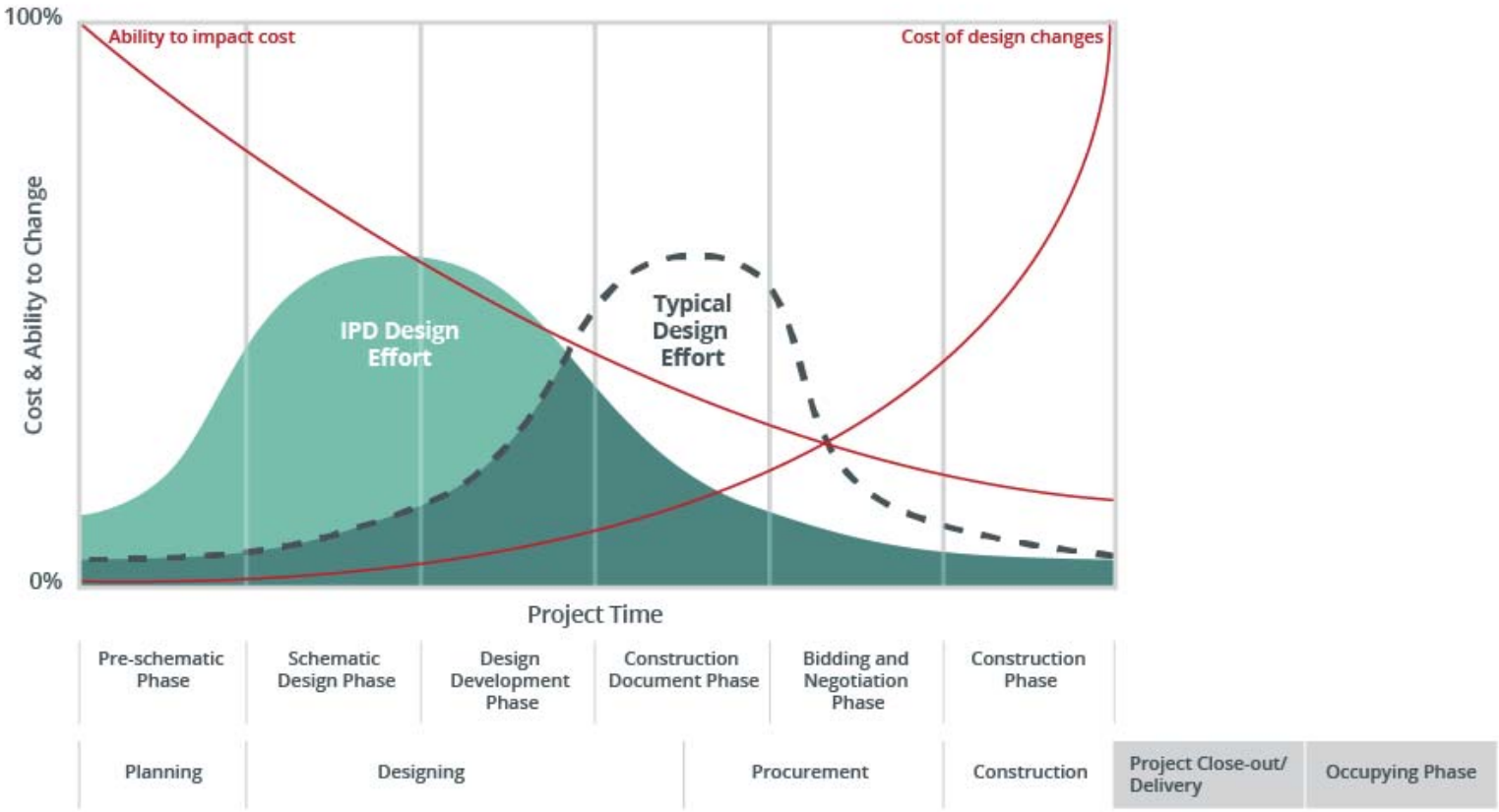


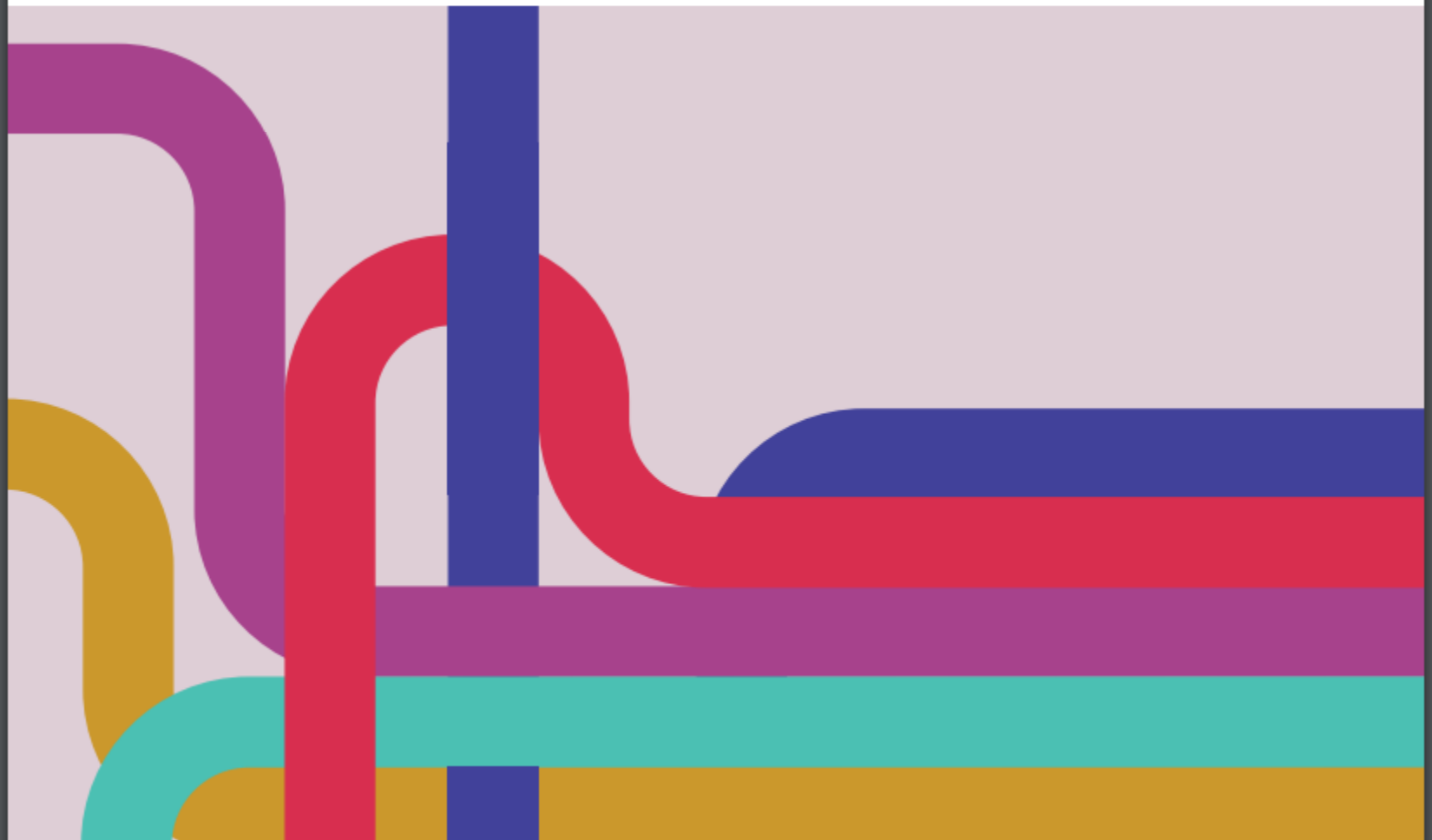






Integrated Project Delivery (IPD)



INTEGRATED PROJECT DELIVERY

An Action Guide for Leaders