

PORTFOLIO / 2026

# JACK OLIVA- RENDLER

ARCHITECTURE · LIGHT · MASS · MATTER

SELECTED WORK

Architectural objects, drawings and research

M.Arch Harvard GSD  
B.Arch SCI-Arc  
CONTACT jackrendler.com

REF · J.O.R / BIO-001  
34.05° N · 118.24° W  
SERIES 2026 / A3

INDEX

# Contents

Profile, curriculum vitae and 25 bodies of work in two parts — architectural objects first, then research at the scale of terrain and the city.

|                  |    |
|------------------|----|
| PROFILE          | 03 |
| CURRICULUM VITAE | 04 |

|    |                       |                        |    |    |                      |                          |    |
|----|-----------------------|------------------------|----|----|----------------------|--------------------------|----|
| I  | ARCHITECTURAL OBJECTS |                        | 05 | 14 | BO                   | Biomorphic Objects       | 45 |
| 01 | LM                    | Light & Mass           | 06 | 15 | CH                   | Parametric Chair         | 47 |
| 02 | OA                    | Oasis                  | 09 | 16 | KO                   | Kora Instrument Design   | 49 |
| 03 | LT                    | Lightbox Tectonics     | 11 | 17 | TT                   | 30 × 30                  | 52 |
| 04 | HS                    | Hillside Architecture  | 13 | 18 | CR                   | Morphology of Crystals   | 54 |
| 05 | WP                    | Winged Pavilion        | 16 | 19 | DH                   | Drawings by Hand         | 56 |
| 06 | SW                    | Student Work           | 19 | 20 | TP                   | Topology                 | 58 |
| 07 | AX                    | Tectonic Assemblies    | 24 | 21 | EL                   | Eco-Lab                  | 60 |
| 08 | PS                    | Plan & Section         | 27 | 22 | MF                   | Mathematical Forms       | 62 |
| 09 | TW                    | Inclined Tower         | 30 | II | TERRITORIAL RESEARCH |                          | 64 |
| 10 | CA                    | Cinematic Architecture | 33 | 23 | TA                   | Terrestrial Architecture | 65 |
| 11 | HA                    | Helios Arc             | 37 | 24 | AT                   | A.T.L.A.S                | 67 |
| 12 | EX                    | Exodus                 | 39 | 25 | FC                   | Fractal Cities           | 68 |
| 13 | SS                    | Shell Structures       | 41 |    |                      |                          |    |

SUBJECT / J.O.R



800 x 800 PX

SUBJECT / J.O.R

PROFILE

# Jack Oliva-Rendler

DESIGNER · DESIGN TECHNOLOGIST

Jack Oliva-Rendler is a designer and design technologist working between tectonic form, ecological systems and the image. Trained at SCI-Arc and the Harvard Graduate School of Design, his practice runs on a single conviction: architecture is a system of relationships across scales, and algorithms are how those relationships become visible. Geospatial data turns terrain from site into structural member — what results reads less like a building on a landscape and more like a landscape that has learned to hold occupation.

EDUCATION

M.Arch — Harvard Graduate School of Design  
B.Arch — SCI-Arc

AUTHOR

Terrestrial Architecture, Vol. I – II

TOOLS

Rhino · Grasshopper · GIS / ArcGIS · Unreal Engine · Mandelbulb 3D · fabrication

CONTACT

jackrendler.com

RECOGNITION

2018

Mars City Design — 1st Place, Urban Design (Helios Arc)

2024

A+D Museum Los Angeles — Design Awards Juror

2017 · 2019

Harvard GSD — Academic Scholarship

2017

SCI-Arc — Undergraduate Thesis Prize

2016

SCI-Arc — Academic Scholarship



CURRICULUM VITAE

Record

| PRACTICE |                                                                                                                                                                                                                                                                                               |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2024 –   | <div><div>AURA</div><div>Co-founder / CEO</div><div>XR interfaces for geospatial information, hydrological networks and urban fabrics. Exhibited at Augmented World Expo 2024.</div></div>                                                                                                    |
| 2023 –   | <div><div>California Center for Climate Change</div><div>Director / Professor – Digital Twins, AEC Industry Cluster</div><div>Geospatial Consortium for Los Angeles with NASA and JPL; digital twin workshops with USGBC; three-mile corridor with the Baldwin Hills Conservancy.</div></div> |
| 2023     | <div><div>Morphosis Architects</div><div>Project Designer</div><div>Large-scale megastructure: drawings, diagrams, parametric algorithms. Intern, 2019.</div></div>                                                                                                                           |
| 2022 –   | <div><div>Metabolic Studio</div><div>Design Consultant</div><div>GIS cartographies of interdependent infrastructures and environmental systems.</div></div>                                                                                                                                   |
| 2020 –   | <div><div>e7 Architecture Studio</div><div>Director of Design</div><div>Digital twin workflow and curriculum; schematic design for a house in San Diego and an ADU.</div></div>                                                                                                               |
| –        | <div><div>Council District 2, Holly J. Mitchell</div><div>Design Director – LA Conservation Corps</div><div>GIS workshops, drafting, game-engine geospatial platform, shape-grammar parametrics.</div></div>                                                                                  |

| TEACHING |                                                                                                                                                                                 |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2024 –   | <div><div>LATTC</div><div>Professor of Architecture</div><div>GIS, Rhino 3D and Grasshopper. Executive Advisor, Architecture &amp; Environmental Design since 2017.</div></div> |
| 2022 –   | <div><div>Futurly</div><div>Instructor</div><div>Fractal Architecture — fractal software integrated with 3D modeling.</div></div>                                               |
| 2024     | <div><div>Parametric Architecture Academy</div><div>Instructor</div><div>Grasshopper / Pufferfish and Mandelbulb 3D workshop.</div></div>                                       |
| –        | <div><div>Arizona State University</div><div>Narrative Emerging Media MA</div><div>Game-engine visualization, photogrammetry, lesson plans.</div></div>                         |
| 2022     | <div><div>Woodbury University</div><div>Assistant Manager, Maker Complex</div><div>Laser cutting, 3D printing, model production.</div></div>                                    |

| EARLY / INTERNSHIPS |                                                                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 2017                | <div><div>MAD Architects</div><div>Intern</div><div>Drafting, 3D site modeling, rendering, landscape, algorithms.</div></div>               |
| 2016                | <div><div>Zellner Naecker Architects</div><div>Intern</div><div>Container Yard — AIA Award, Excellence in Architectural Design.</div></div> |
| 2016                | <div><div>Gensler</div><div>Airport + Transportation Studio</div><div>Airport proposal, schematic design, animation.</div></div>            |
| 2015                | <div><div>PAR — Platform for Architecture and Research</div><div>Intern</div><div>Wilshire Tower — American Architecture Award.</div></div> |

| PUBLISHED |                                                                             |
|-----------|-----------------------------------------------------------------------------|
| 2024      | Terrestrial Architecture — author; book launch at LATTC                     |
| –         | A+D Vol 96.2 — Graham Harman, “On the Subject of Utopia”, eight images      |
| 2024      | Parametric Architecture — “Algorithmic Design for Environmental Engagement” |
| 2023      | Instituto de Arquitectura, Antagonismos — “Fractals in Architecture”        |
| –         | ArchDaily — PAR Reinterprets Courtyard Housing with LA Skyscraper           |

| TALKS |                                                        |
|-------|--------------------------------------------------------|
| 2024  | Metrotopia Metaverse — Fractal Architecture            |
| 2023  | ESRI Geodesign Summit — Eco-Computational Architecture |
| 2022  | Virginia Tech — Eco-Computational Architecture         |

| RECOGNITION |                                                         |
|-------------|---------------------------------------------------------|
| 2018        | Mars City Design — 1st Place, Urban Design (Helios Arc) |
| 2024        | A+D Museum Los Angeles — Design Awards Juror            |
| 2017 · 2019 | Harvard GSD — Academic Scholarship                      |
| 2017        | SCI-Arc — Undergraduate Thesis Prize                    |
| 2016        | SCI-Arc — Academic Scholarship                          |





PART I

# Architectural Objects

Buildings, rooms, models and artifacts — work at the scale of the architectural object, where light, mass and material are resolved.

|    |                        |    |
|----|------------------------|----|
| LM | Light & Mass           | 06 |
| OA | Oasis                  | 09 |
| LT | Lightbox Tectonics     | 11 |
| HS | Hillside Architecture  | 13 |
| WP | Winged Pavilion        | 16 |
| SW | Student Work           | 19 |
| AX | Tectonic Assemblies    | 24 |
| PS | Plan & Section         | 27 |
| TW | Inclined Tower         | 30 |
| CA | Cinematic Architecture | 33 |
| HA | Helios Arc             | 37 |
| EX | Exodus                 | 39 |
| SS | Shell Structures       | 41 |
| BO | Biomorphic Objects     | 45 |
| CH | Parametric Chair       | 47 |
| KO | Kora Instrument Design | 49 |
| TT | 30 × 30                | 52 |
| CR | Morphology of Crystals | 54 |
| DH | Drawings by Hand       | 56 |
| TP | Topology               | 58 |
| EL | Eco-Lab                | 60 |
| MF | Mathematical Forms     | 62 |



# 01

PROJECT LM / SECTION 01

## Light & Mass

TYPE Interior / spatial studies

MATERIAL Cast concrete · water · light

SUBJECT Aperture · void · threshold

Rooms made of a single material and a single opening. Cast concrete walls are cut by slots and voids so that daylight becomes the primary element of the architecture, moving across mass, water and stair.

PLATES 11

SHEETS 03



FIG LM.01

1024 × 1024 PX



01 Light & Mass

VOIDS & APERTURES



FIG LM.02



FIG LM.03



FIG LM.04



FIG LM.05



FIG LM.06



# 01 Light & Mass

CONCRETE INTERIORS

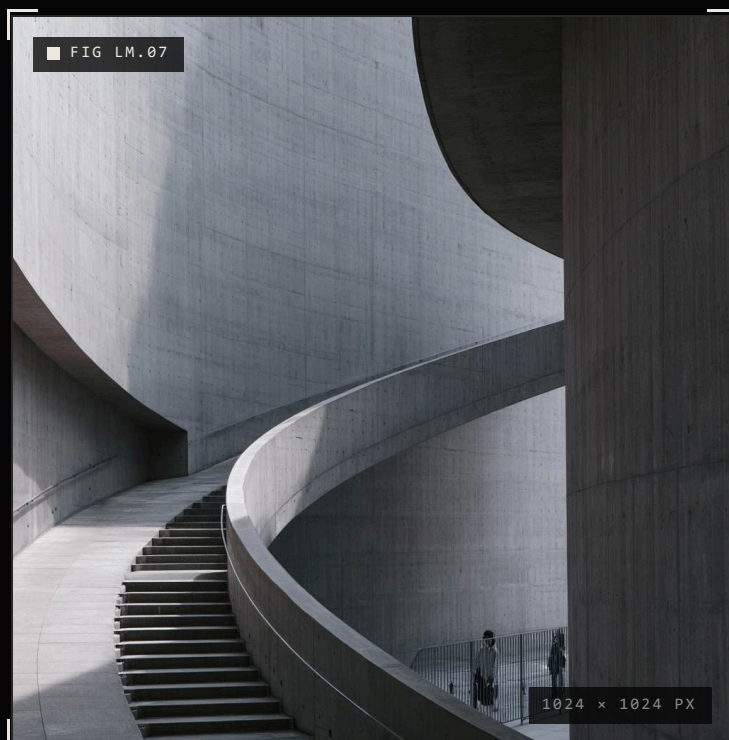


FIG LM.07

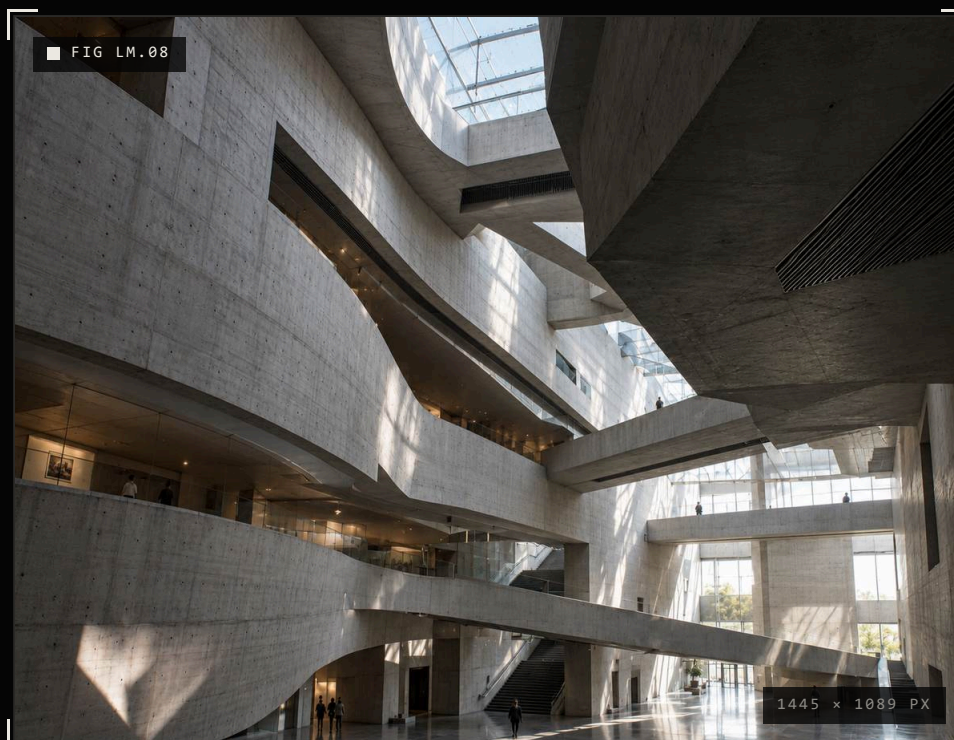


FIG LM.08

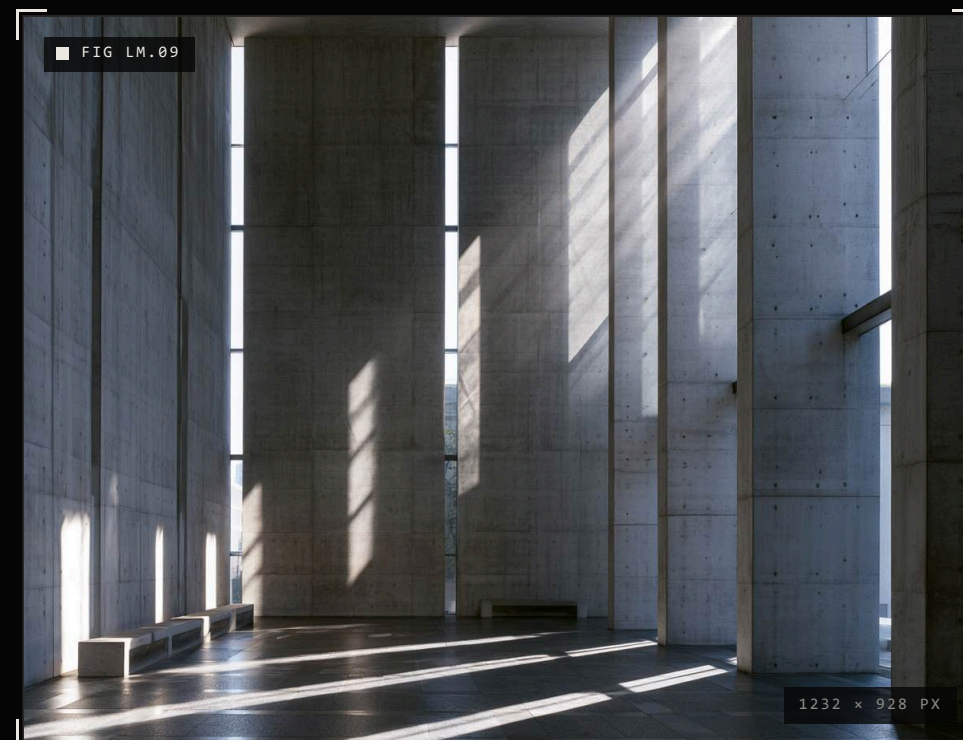


FIG LM.09

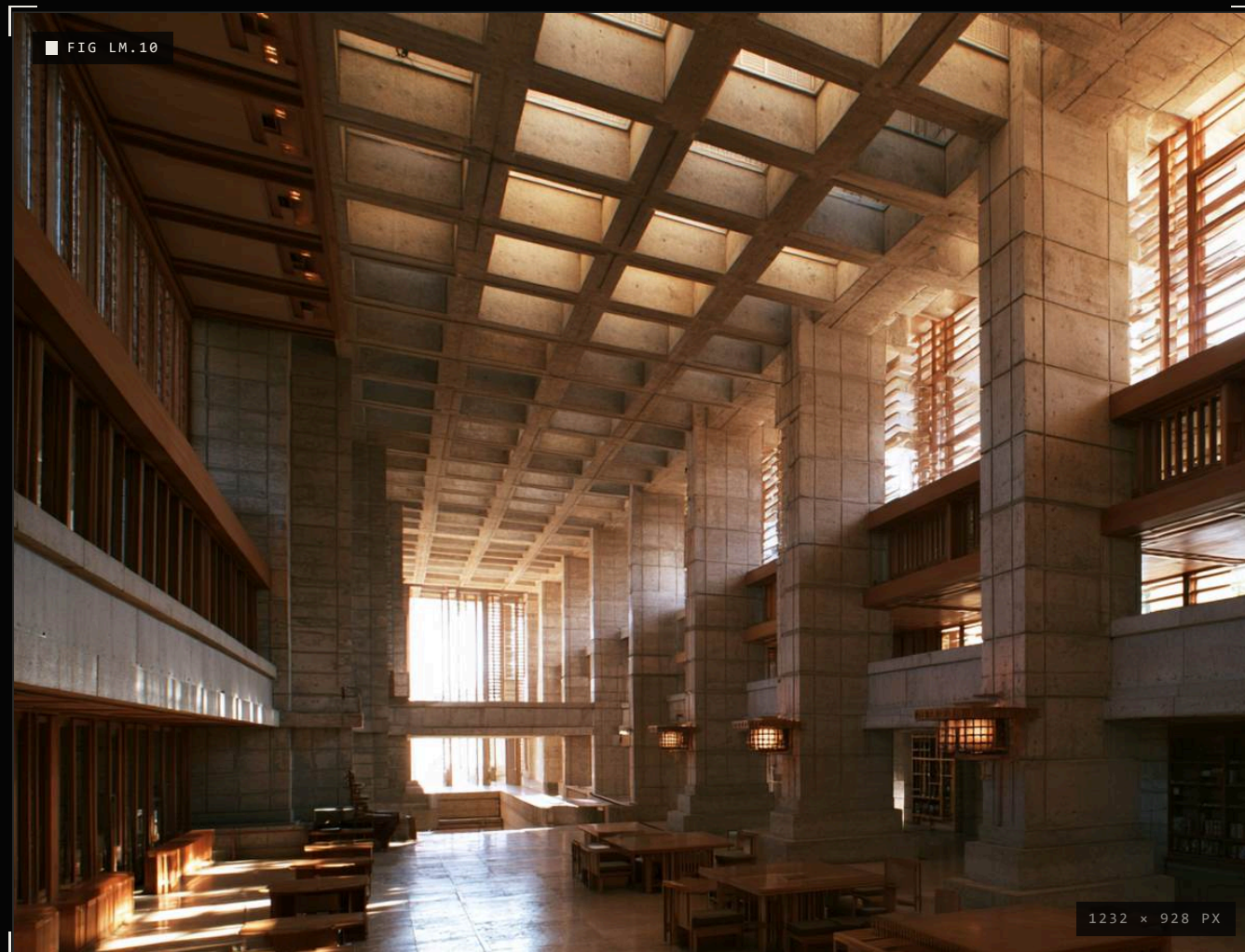


FIG LM.10

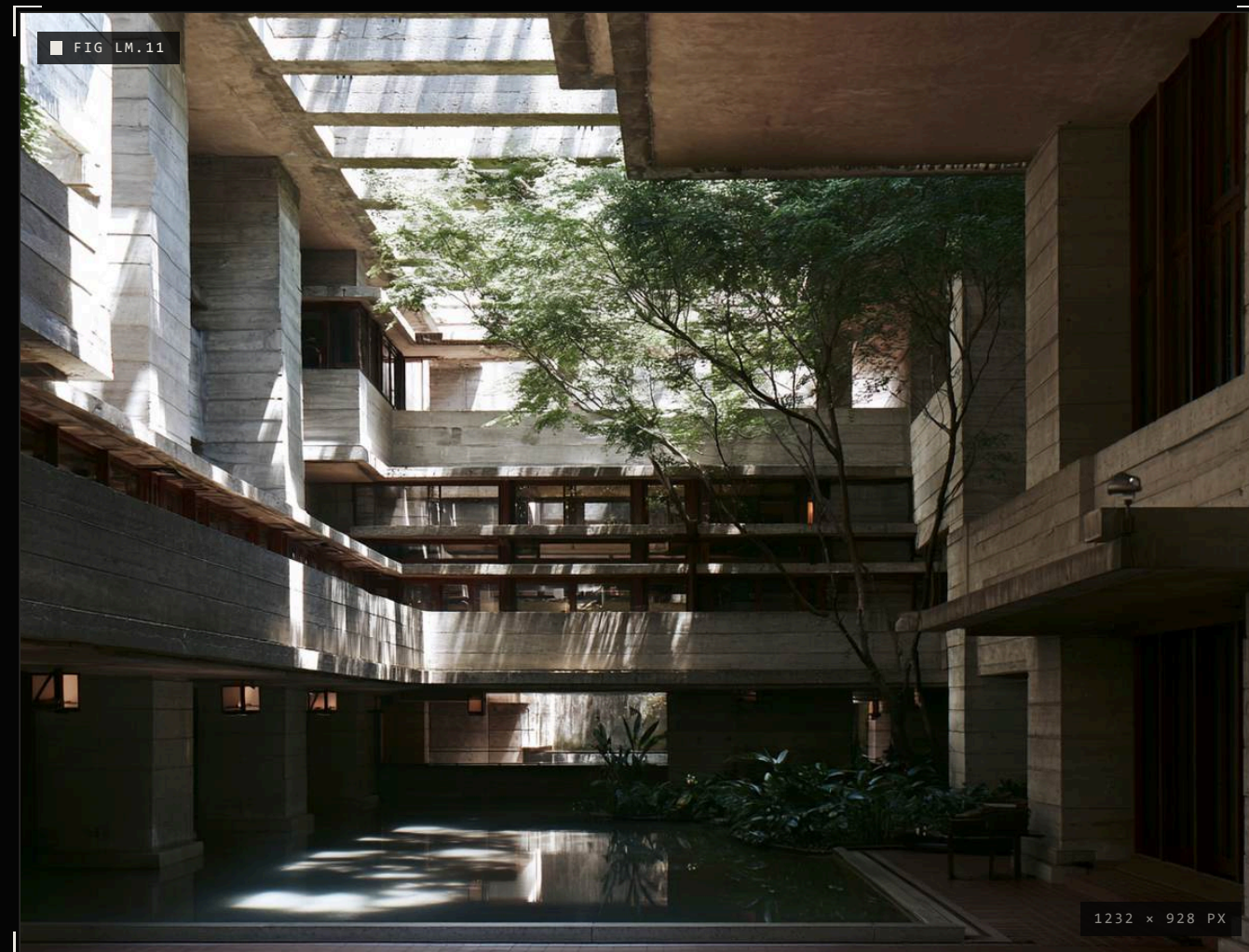


FIG LM.11





■ FIG 0A.01

1672 x 941 PX

FIG 0A.01

# 02

PROJECT 0A / SECTION 02

## Oasis

|         |                           |
|---------|---------------------------|
| TYPE    | Interior / spatial study  |
| SUBJECT | Light · water · enclosure |

Spatial studies of an enclosure opened to light.

PLATES 05  
SHEETS 02



## 02 Oasis

INTERIOR STUDIES



FIG OA.02

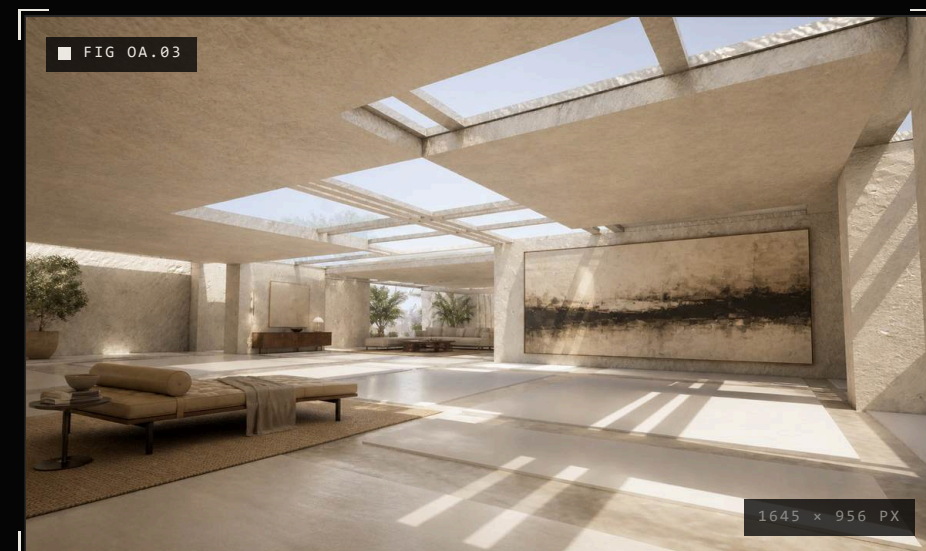


FIG OA.03

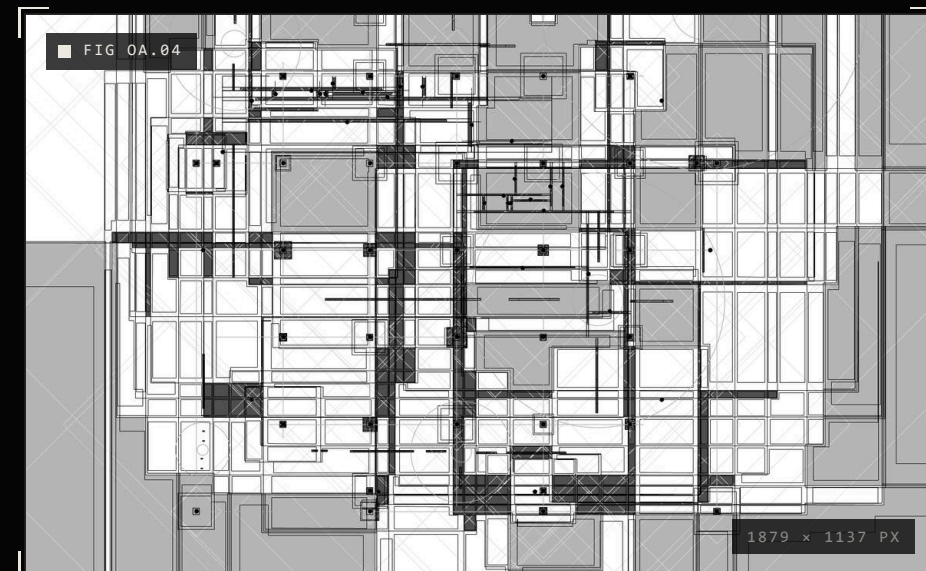


FIG OA.04

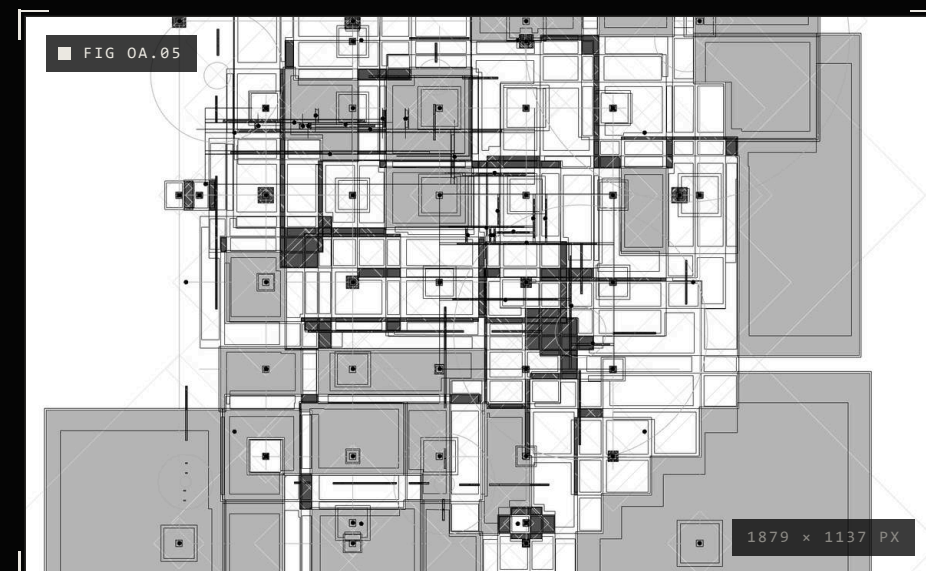


FIG OA.05



# 03

PROJECT LT / SECTION 03

## Lightbox Tectonics

TYPE Tectonic study

SUBJECT Light · mass · aperture

Tectonic studies in which light is the organizing material of the mass.

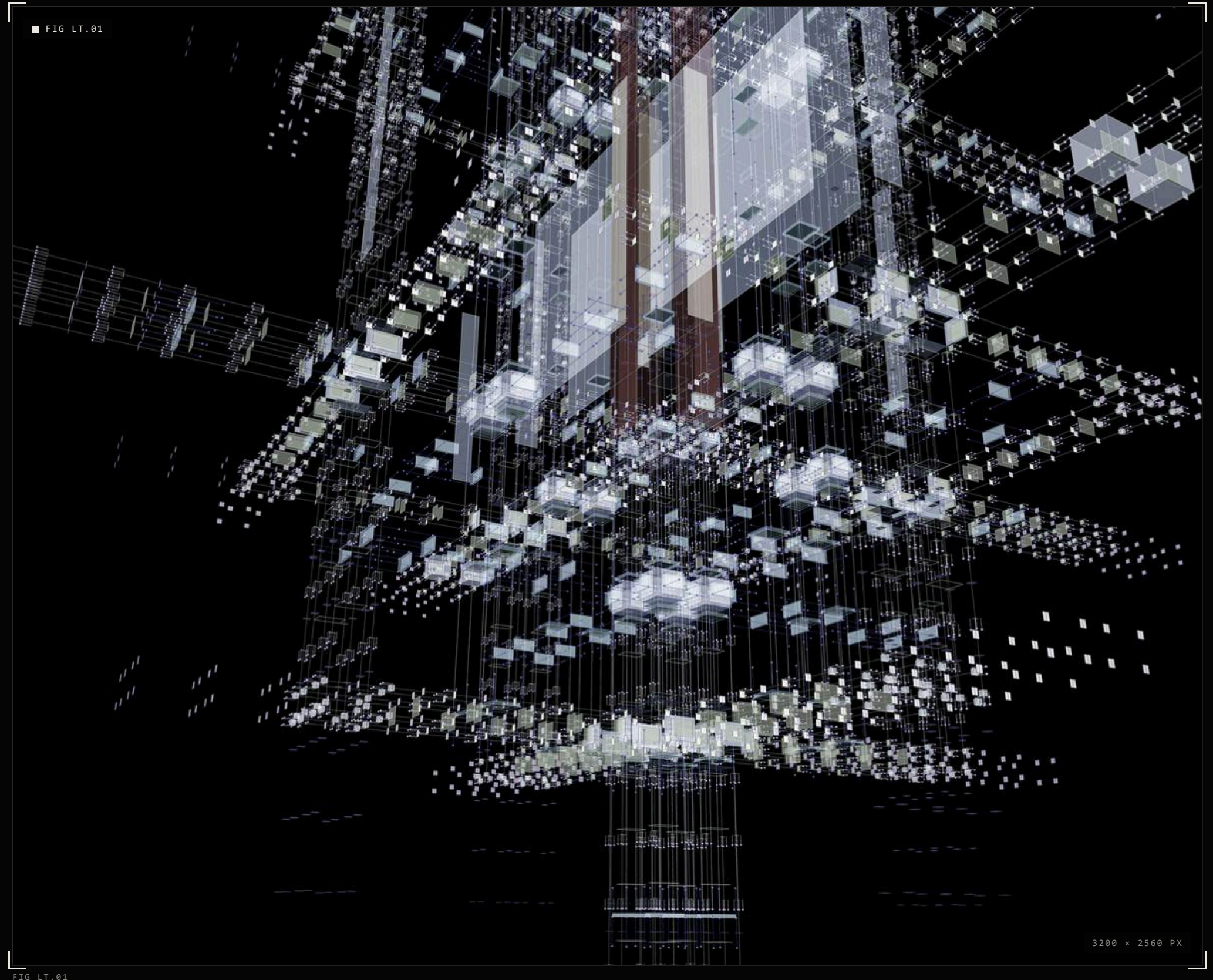


FIG LT.01

3200 x 2560 PX

PLATES 04

SHEETS 02



# 03 Lightbox Tectonics

TECTONIC STUDIES

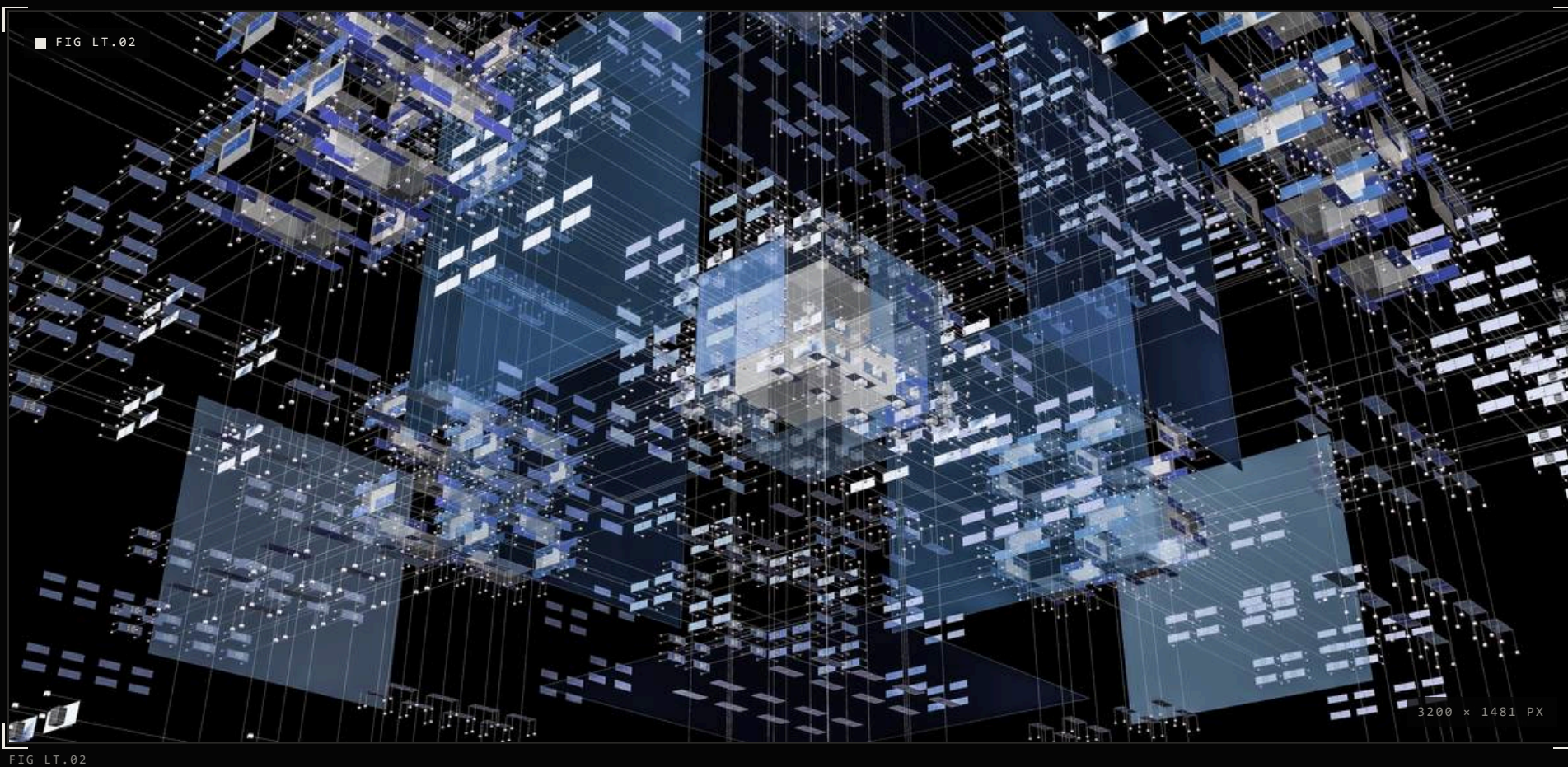


FIG LT.02

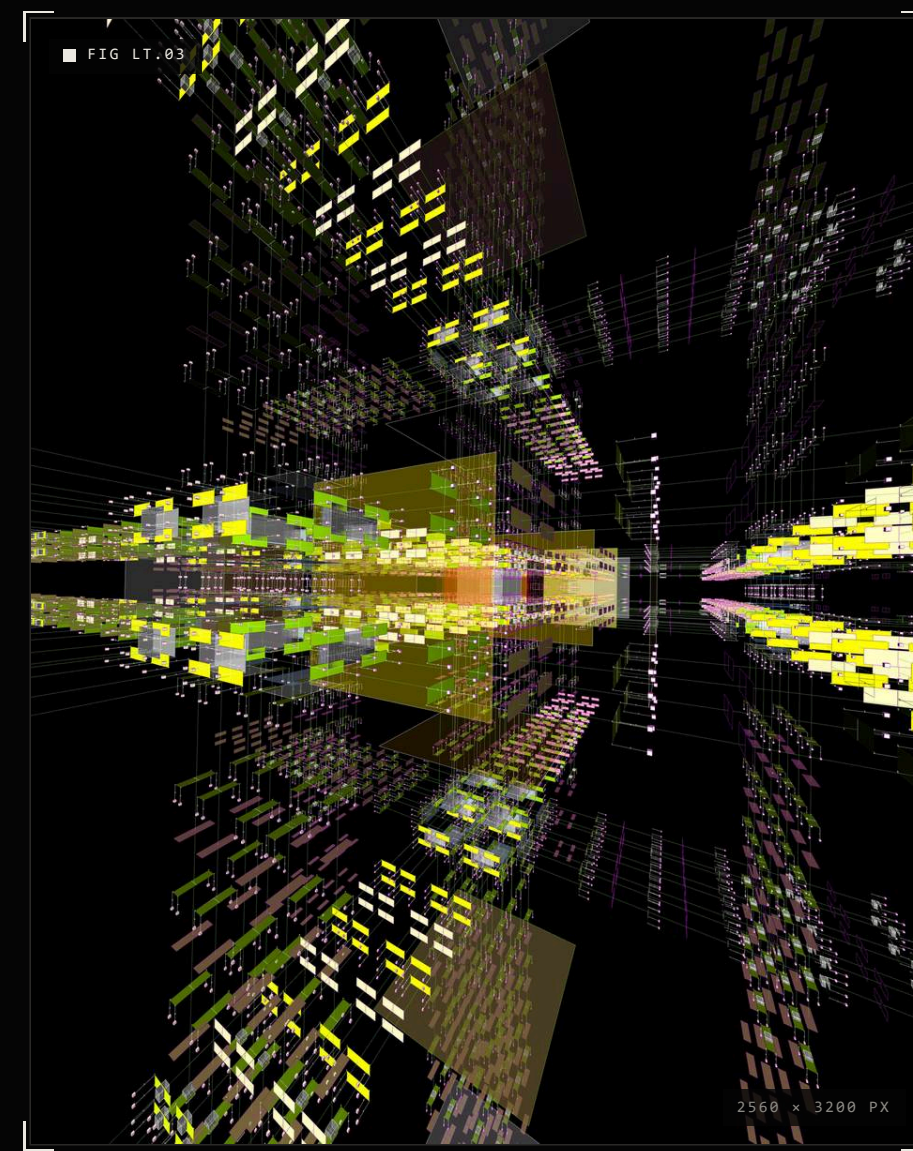


FIG LT.03

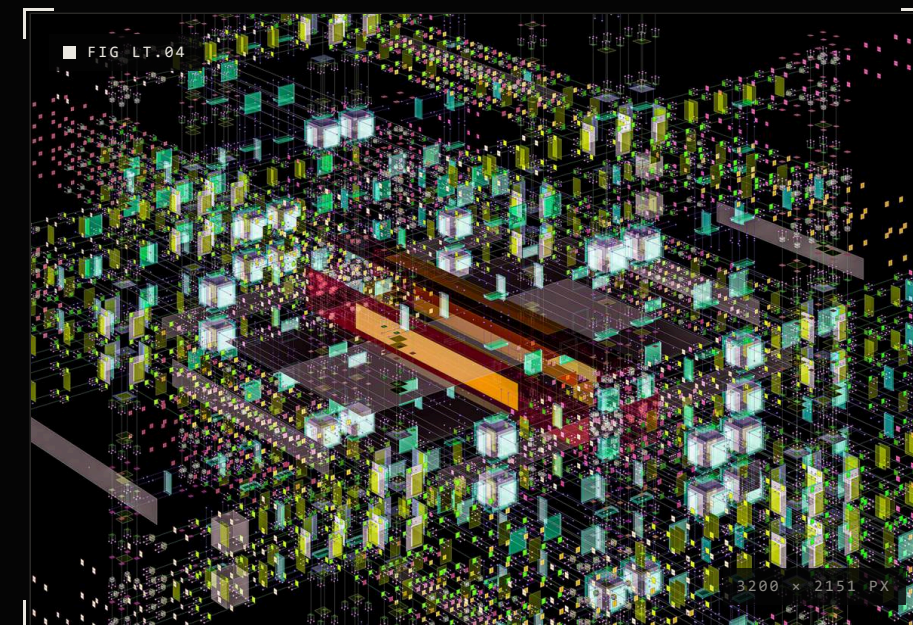


FIG LT.04





FIG HS.01

# 04

PROJECT HS / SECTION 04

## Hillside Architecture

|          |                                 |
|----------|---------------------------------|
| TYPE     | Buildings in landscape          |
| SUBJECT  | Terrace · cantilever · court    |
| MATERIAL | Concrete · glass · planted roof |

PLATES 08  
SHEETS 03

Buildings set into sloped ground: a terraced civic complex with glazed domes and a monolithic tower, houses cantilevered over the hillside, and a low complex resolved in model and against water.



# 04 Hillside Architecture

HOUSES ON THE SLOPE



FIG HS.02



FIG HS.03



FIG HS.04



# 04 Hillside Architecture

CIVIC COMPLEX – MODEL & WATER

■ FIG HS.05



FIG HS.05

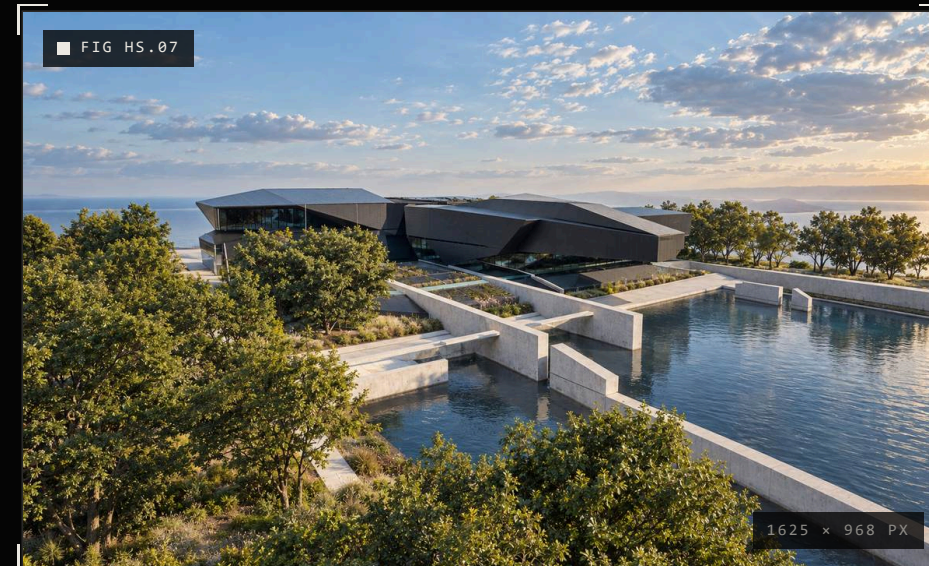
■ FIG HS.06



1653 x 951 PX

FIG HS.06

■ FIG HS.07



1625 x 968 PX

FIG HS.07

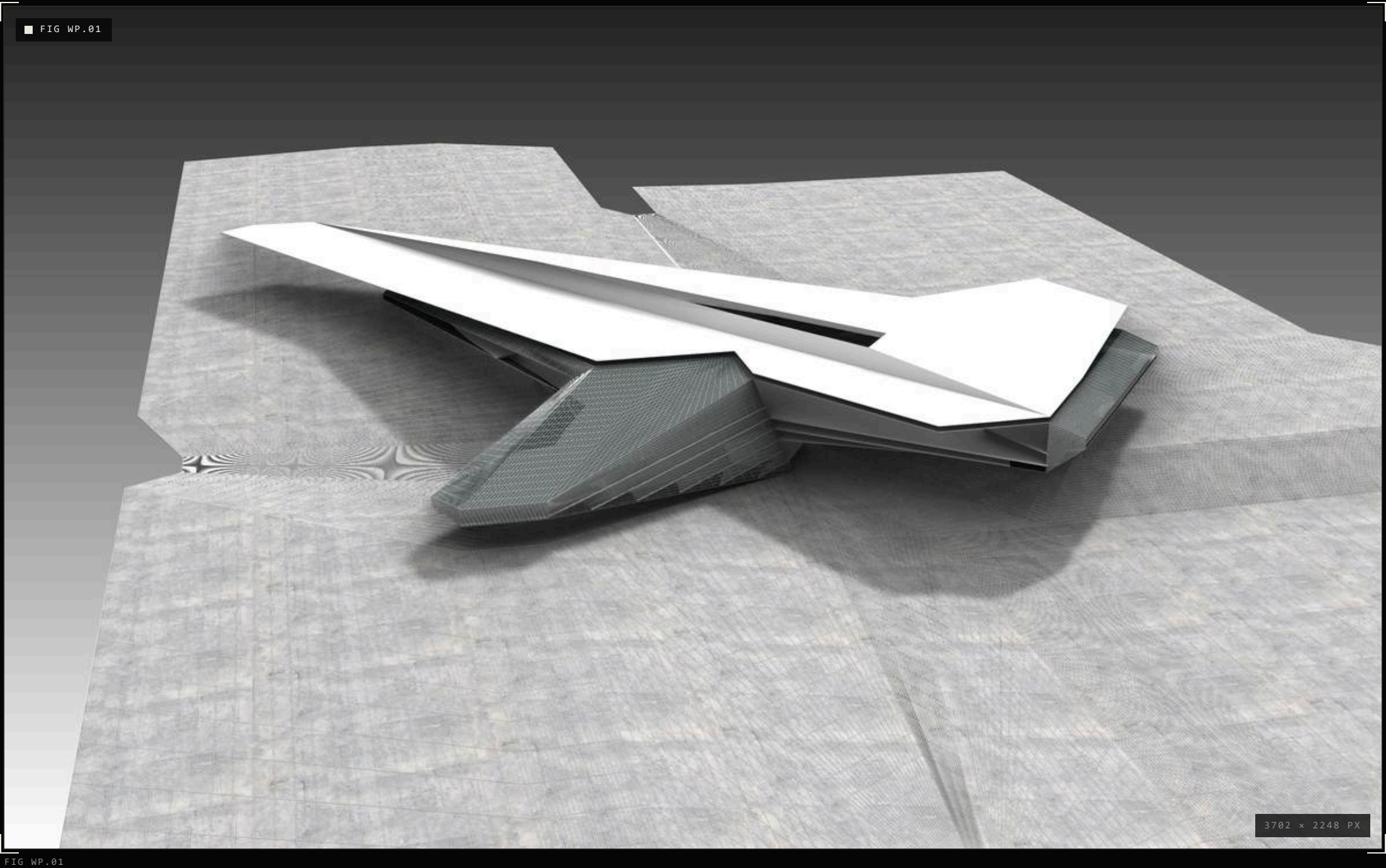
■ FIG HS.08



1621 x 970 PX

FIG HS.08





05

PROJECT WP / SECTION 05

Winged Pavilion

|         |                                    |
|---------|------------------------------------|
| TYPE    | Pavilion / landform                |
| SUBJECT | Folded plate · cantilever · ground |
| MEDIA   | Physical models · renders          |

A pavilion folded from a few sharp planes that lift off a mapped terrain and cantilever over it, developed through a series of white physical models and renders.

|        |    |
|--------|----|
| PLATES | 06 |
| SHEETS | 03 |



# 05 Winged Pavilion

MODELS

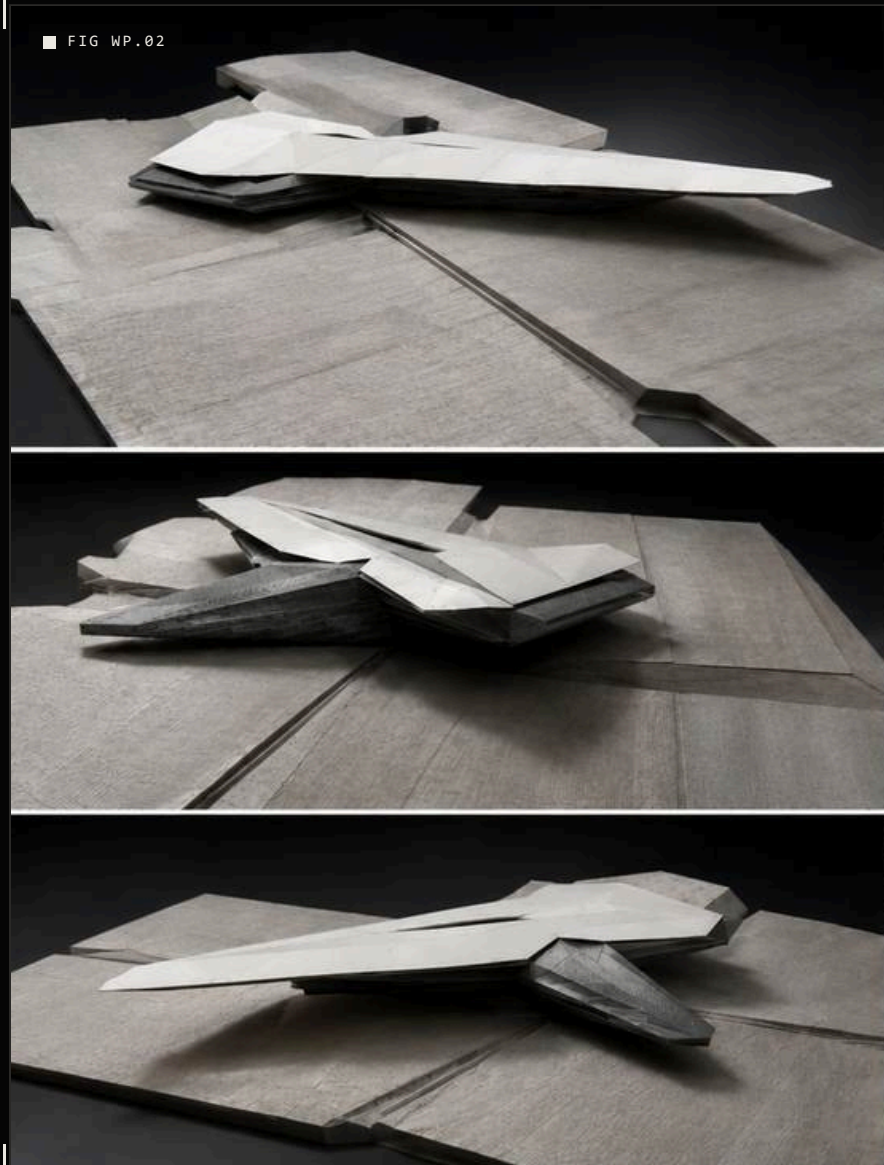


FIG WP.02



1609 x 978 PX

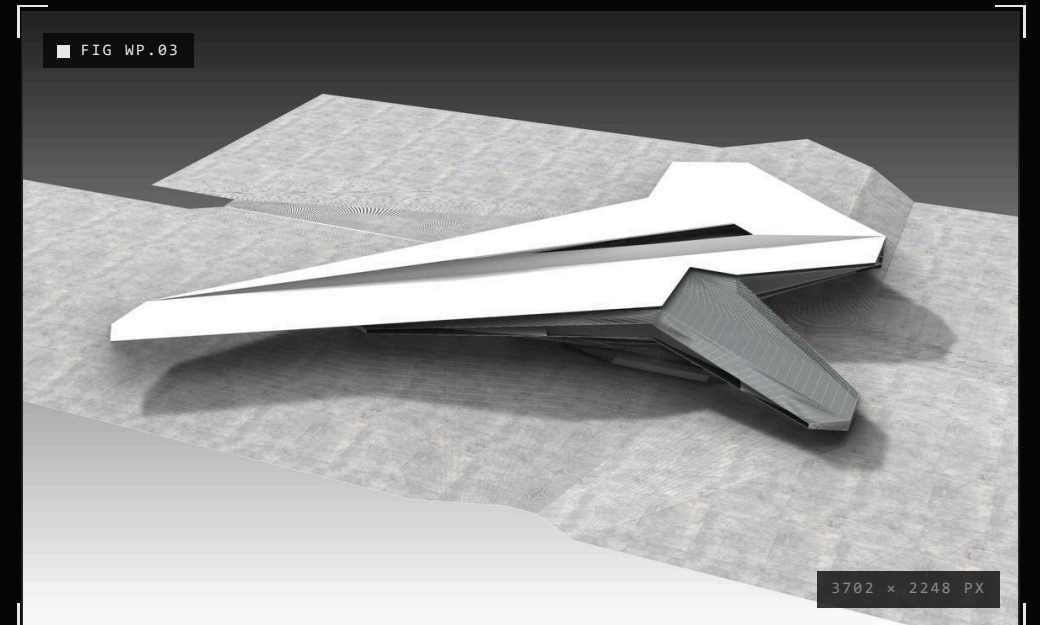


FIG WP.03

3702 x 2248 PX

FIG WP.03

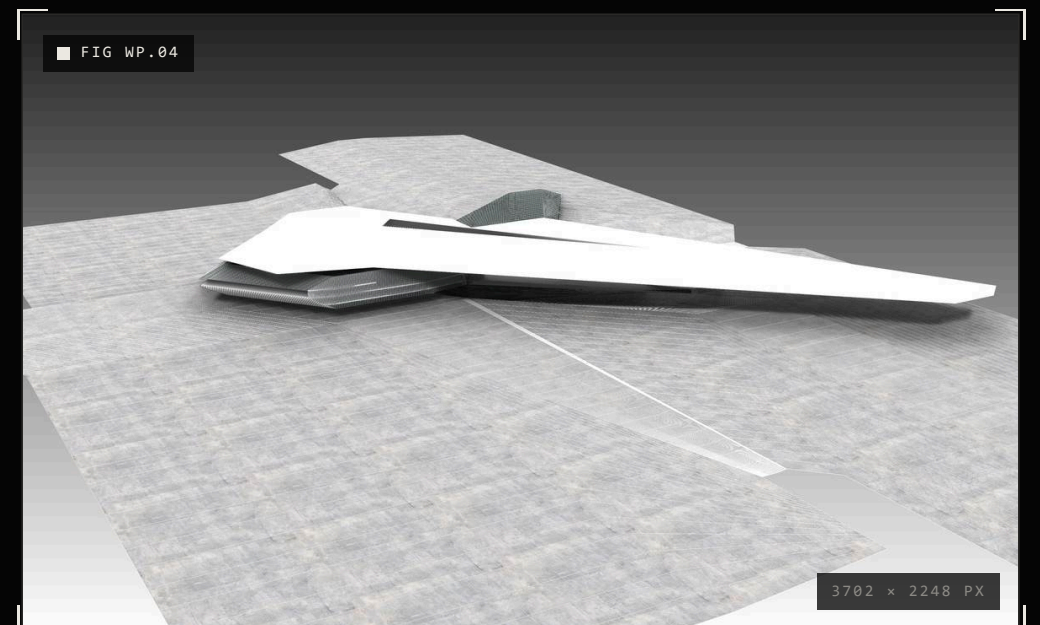


FIG WP.04

3702 x 2248 PX

FIG WP.04



# 05 Winged Pavilion

RENDERS

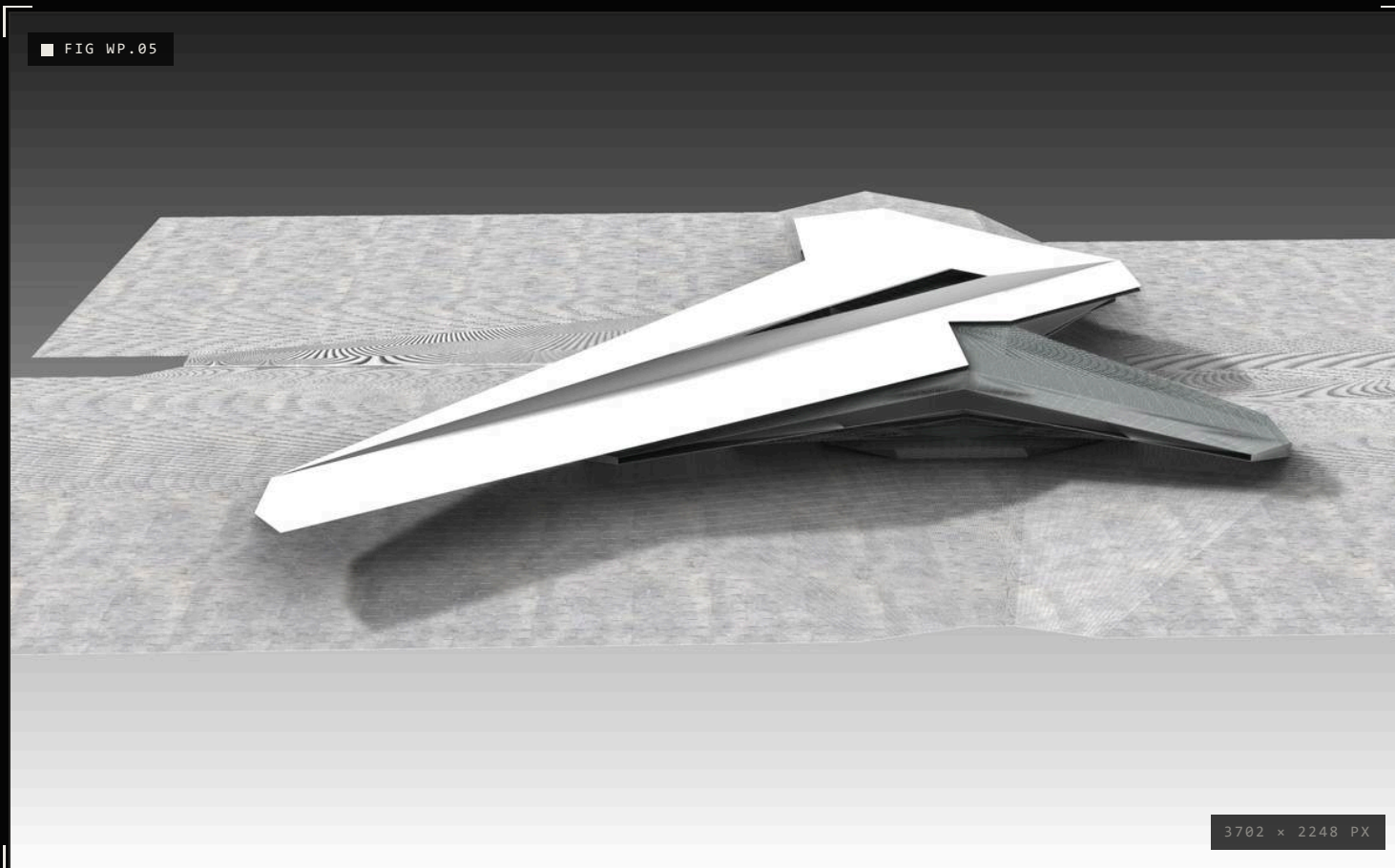


FIG WP.05

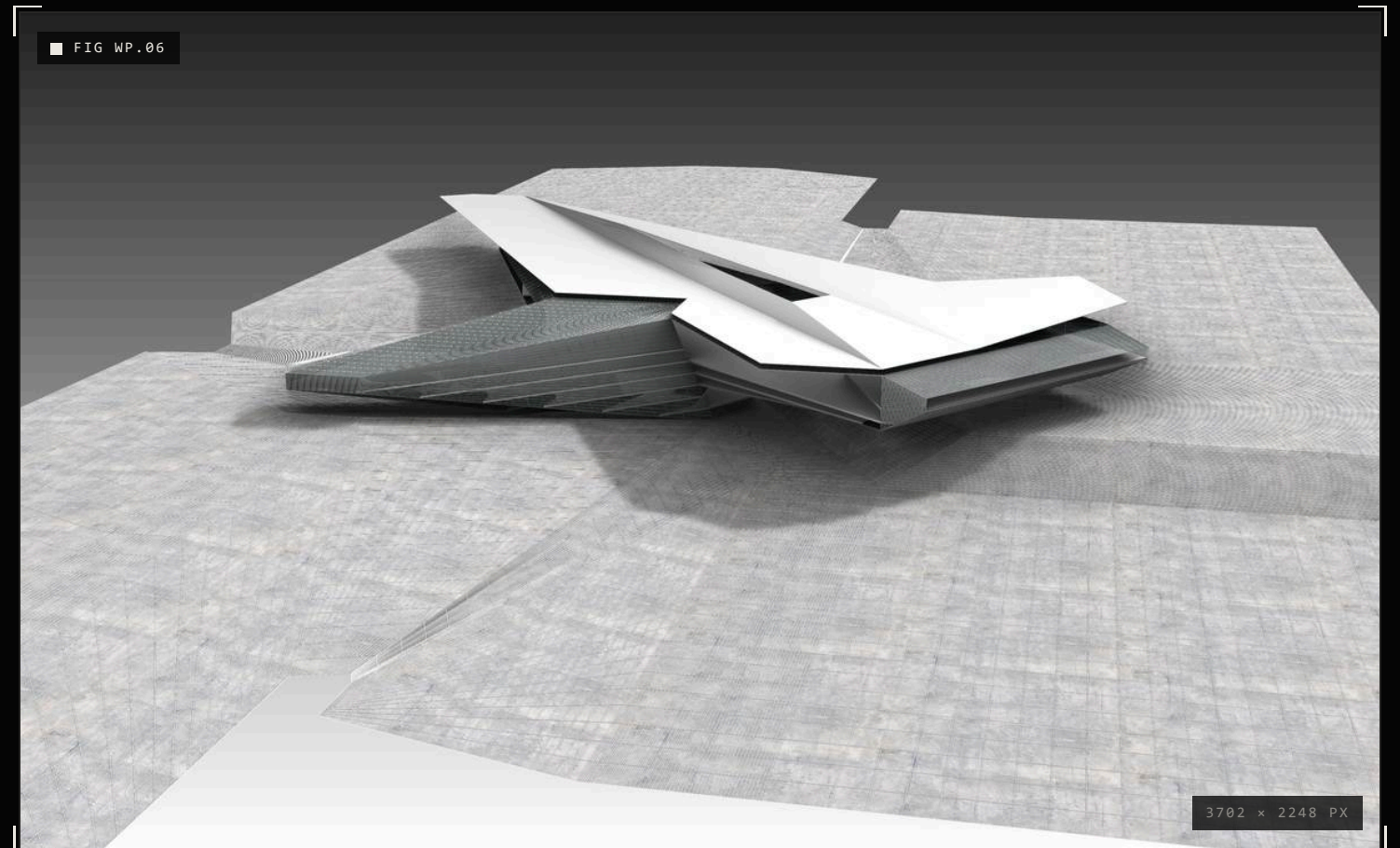
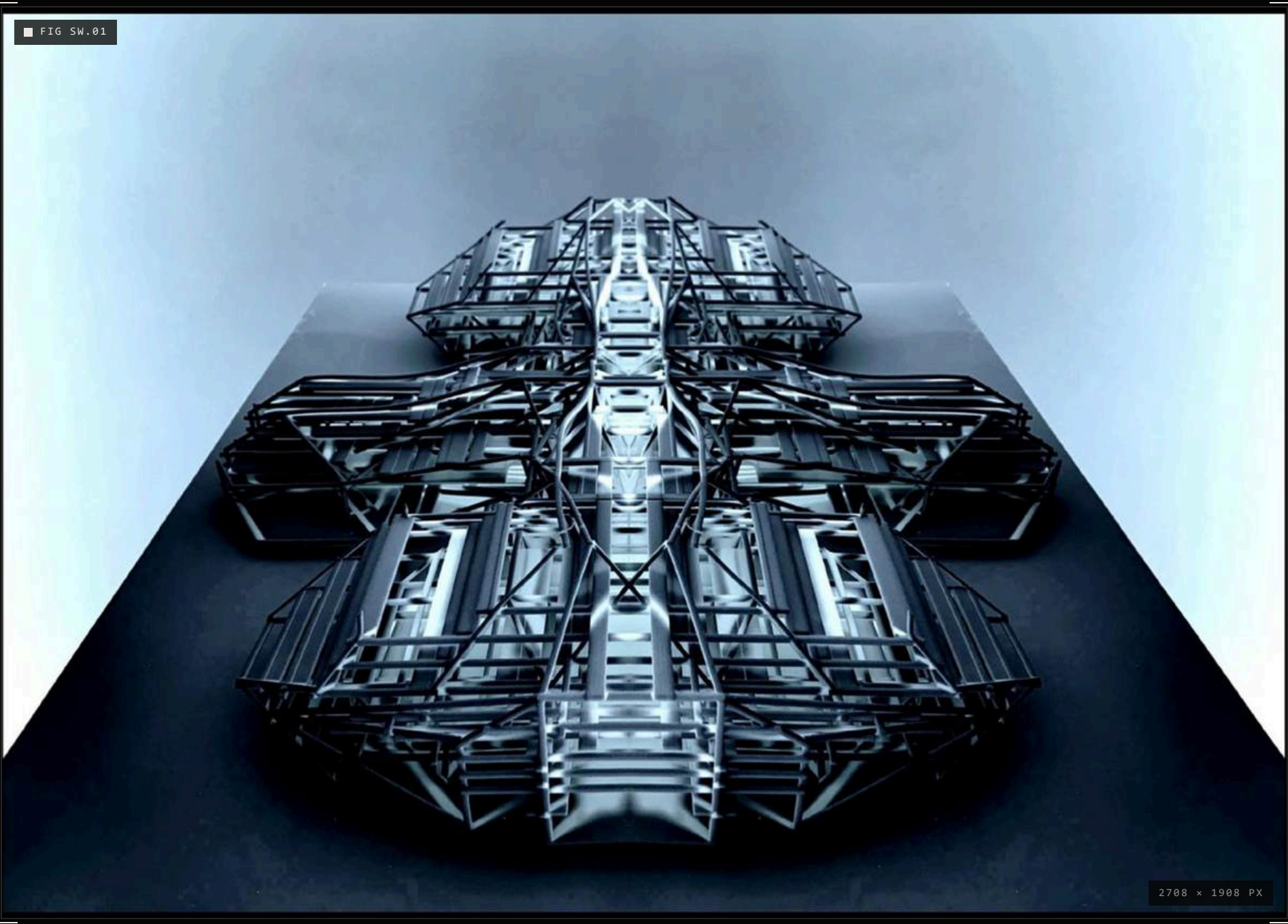


FIG WP.06





■ FIG SW.01

2708 x 1908 PX

FIG SW.01

# 06

PROJECT SW / SECTION 06

## Student Work

|         |                                                        |
|---------|--------------------------------------------------------|
| SCHOOLS | SCI-Arc · Harvard Graduate School of Design            |
| HONORS  | SCI-Arc Thesis Prize 2017 · GSD Scholarship 2017, 2019 |
| MEDIA   | 3D-printed models · drawings · renders                 |

PLATES 14

SHEETS 05

Selected studio work from SCI-Arc and the Harvard GSD: a tower developed in plan and section in Peter Zellner's SCI-Arc studio (Spring 2016); a series of 3D-printed models in which an aggregate expands from smaller to larger grouped components as information and program are added; and symmetric model studies.



## 06 Student Work

TOWER – SCI-ARC STUDIO, PETER ZELLNER, SPRING 2016

■ FIG SW.02



FIG SW.02

■ FIG SW.03



FIG SW.03

■ FIG SW.04

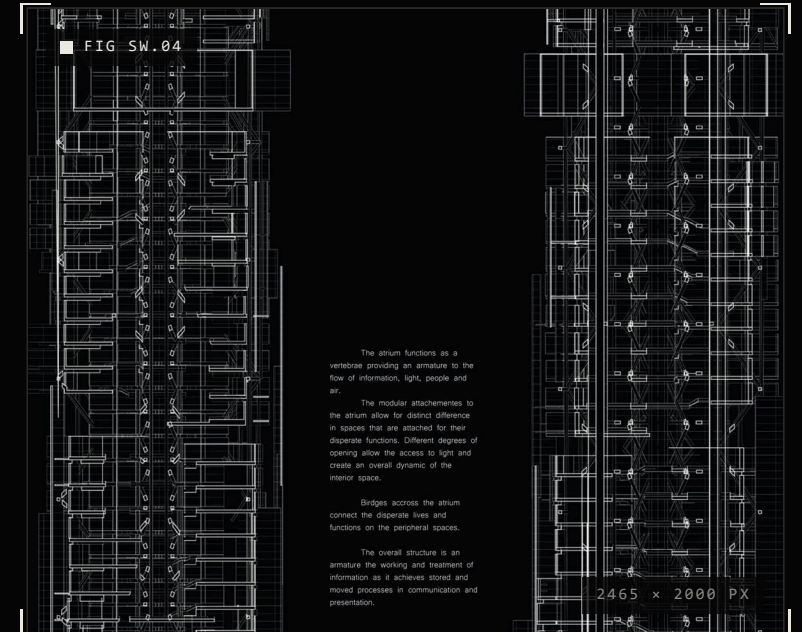


FIG SW.04

■ FIG SW.05

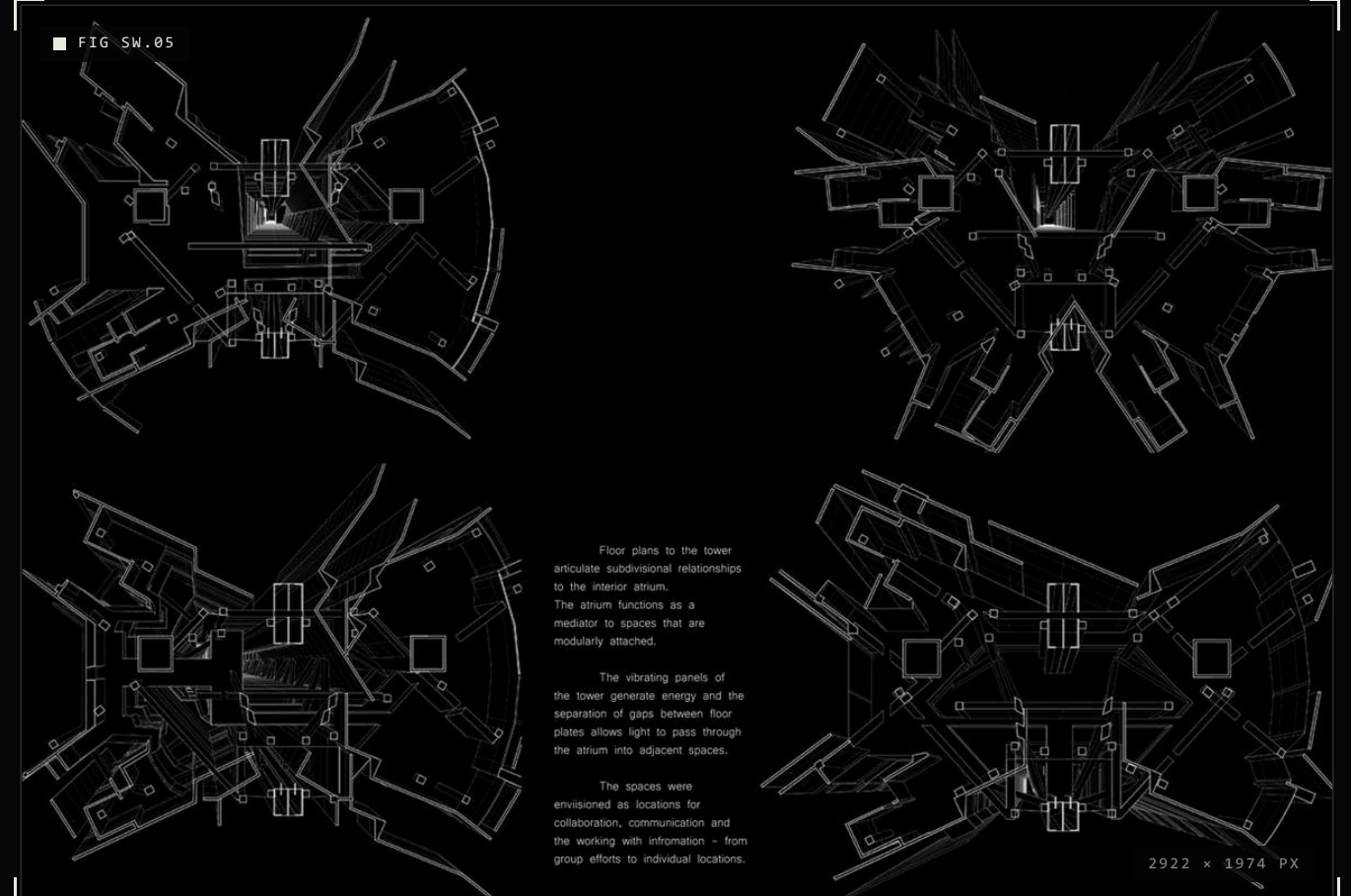


FIG SW.05



## 06 Student Work

3D-PRINTED AGGREGATION MODELS

■ FIG SW.06

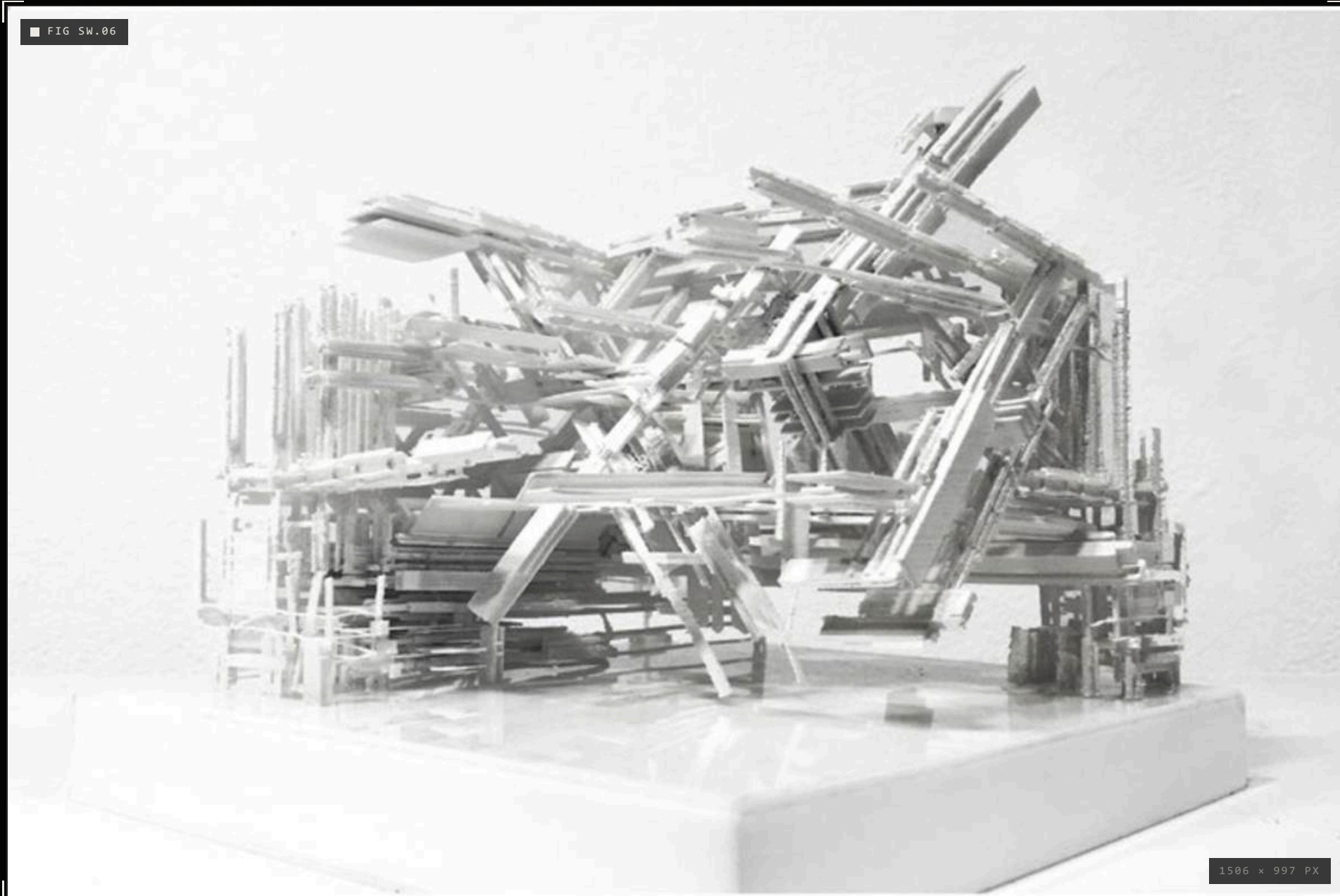


FIG SW.06

1506 × 997 PX

■ FIG SW.07

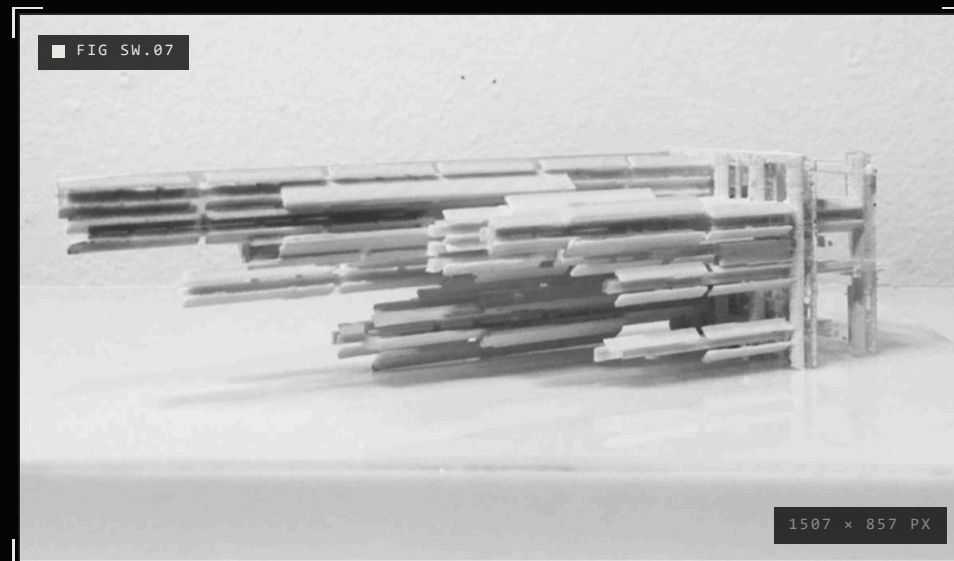


FIG SW.07

1507 × 857 PX

■ FIG SW.08



FIG SW.08

1505 × 996 PX

■ FIG SW.09

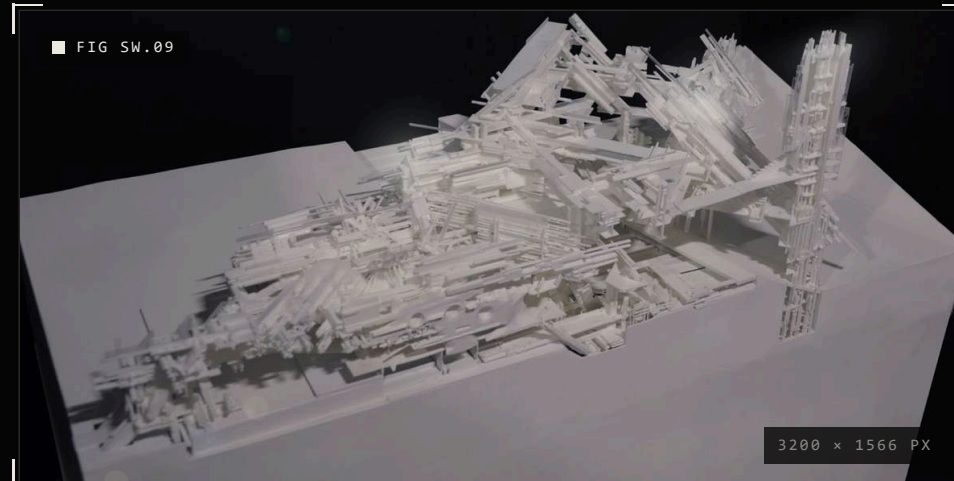


FIG SW.09

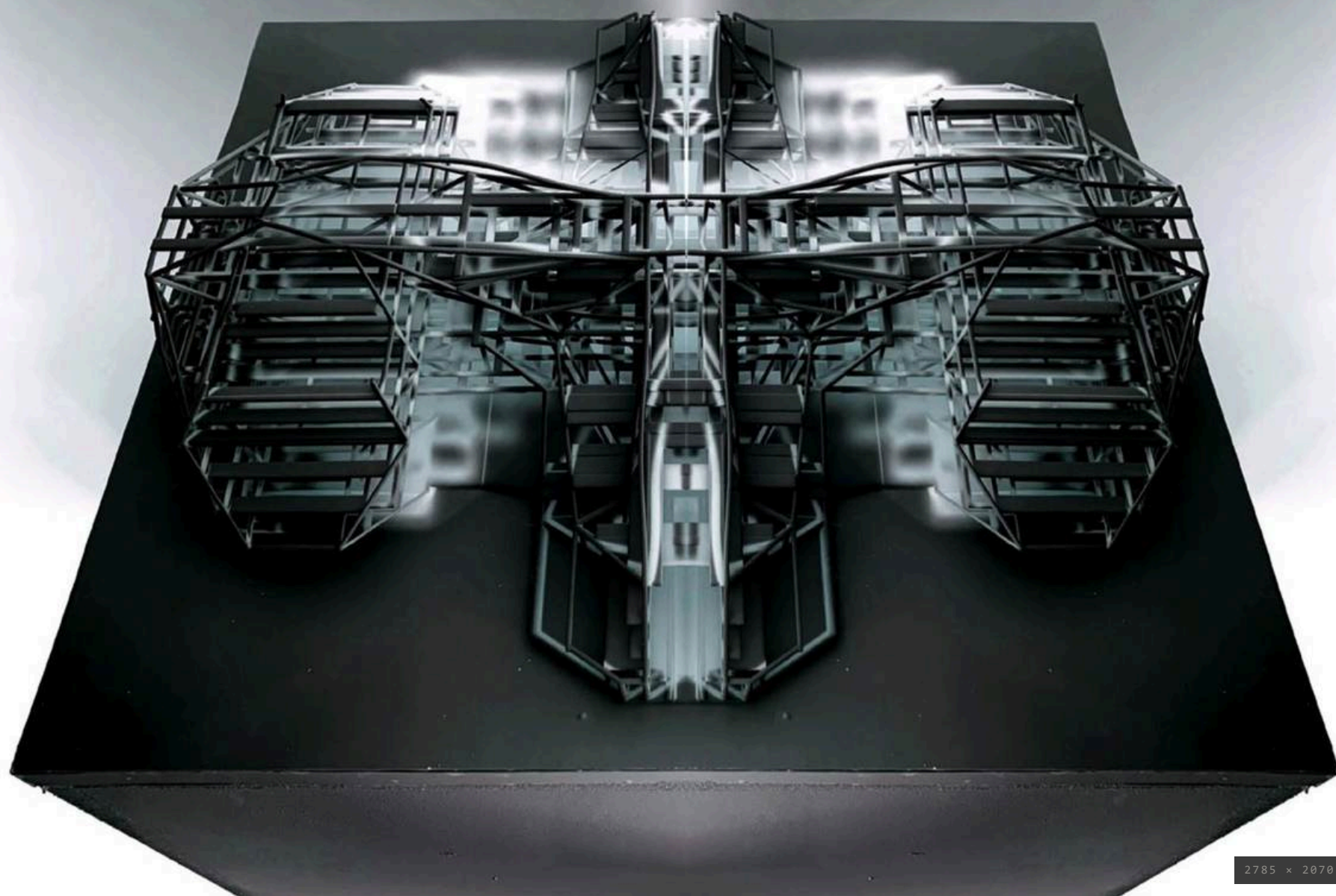
3200 × 1566 PX



## 06 Student Work

MODEL STUDIES

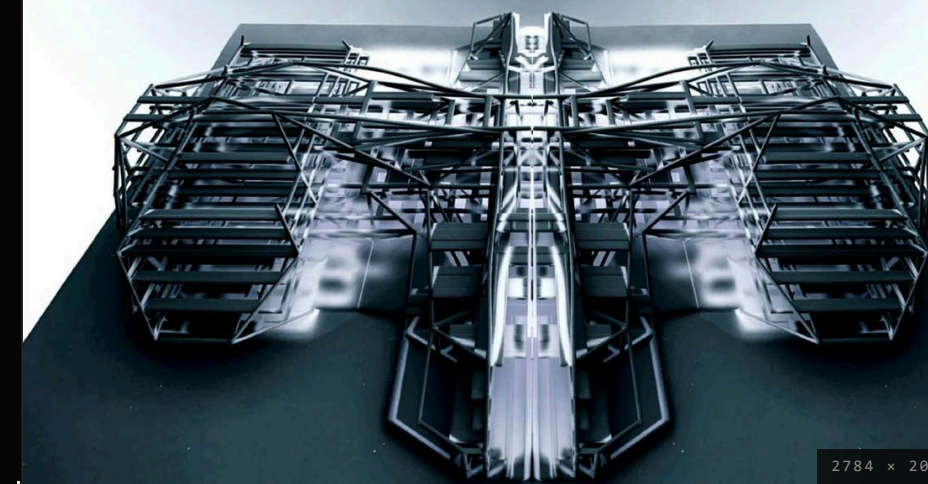
■ FIG SW.10



2785 × 2070 PX

FIG SW.10

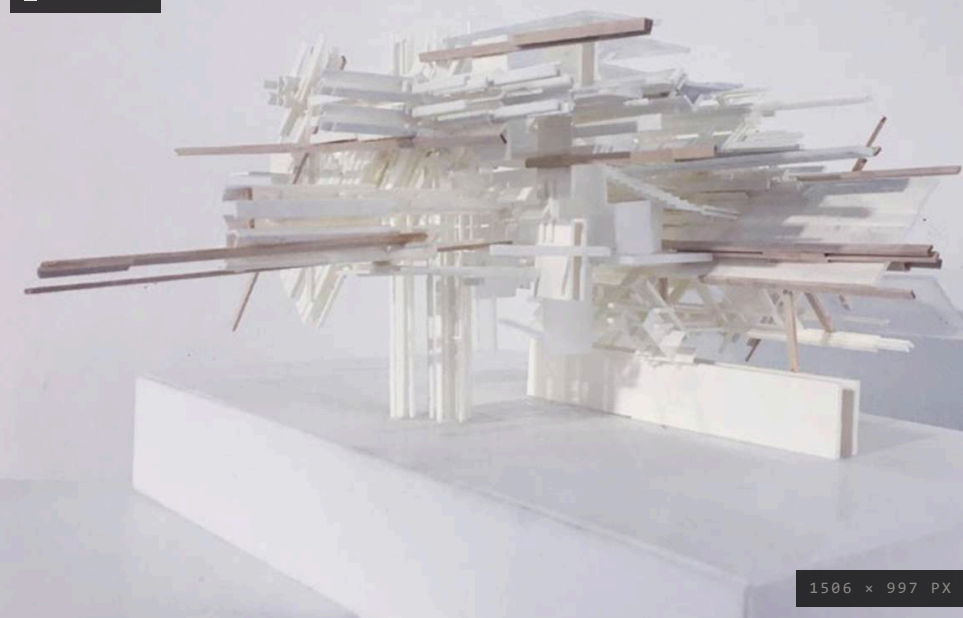
■ FIG SW.11



2784 × 2070 PX

FIG SW.11

■ FIG SW.12



1506 × 997 PX

FIG SW.12



## 06 Student Work

HARVARD GSD - STUDIO 5B

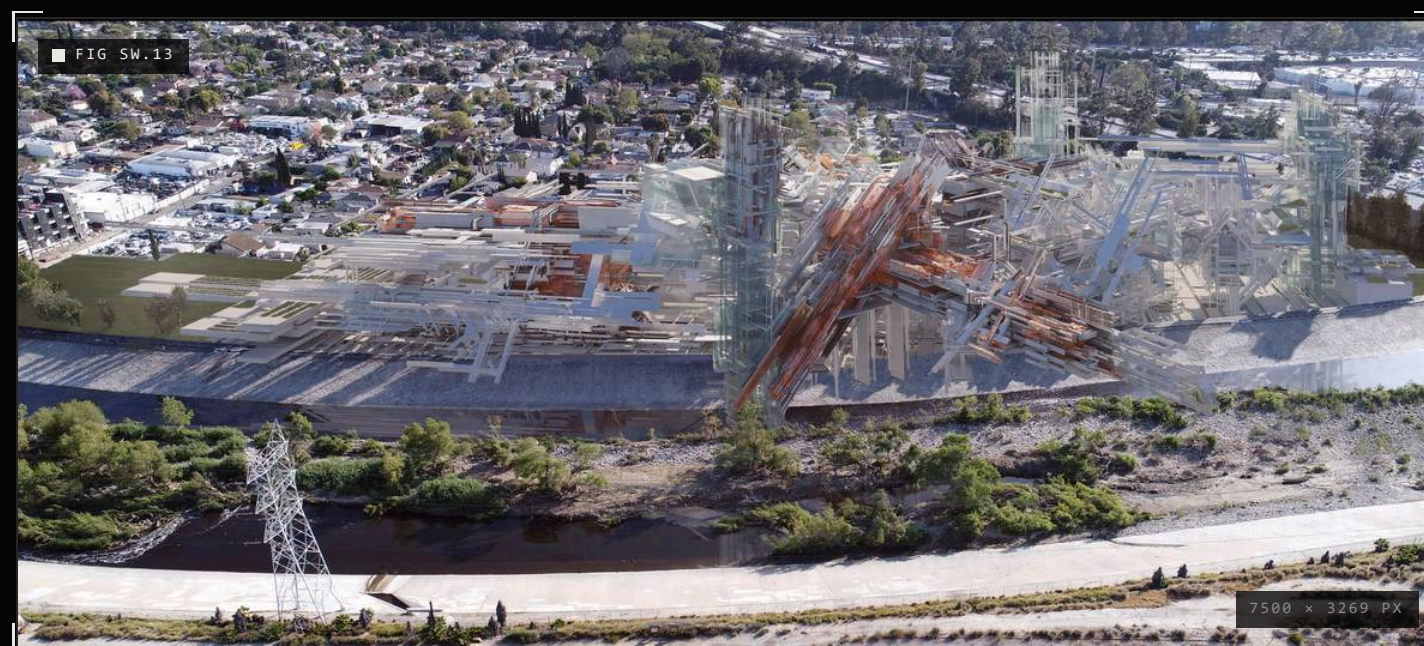


FIG SW.13

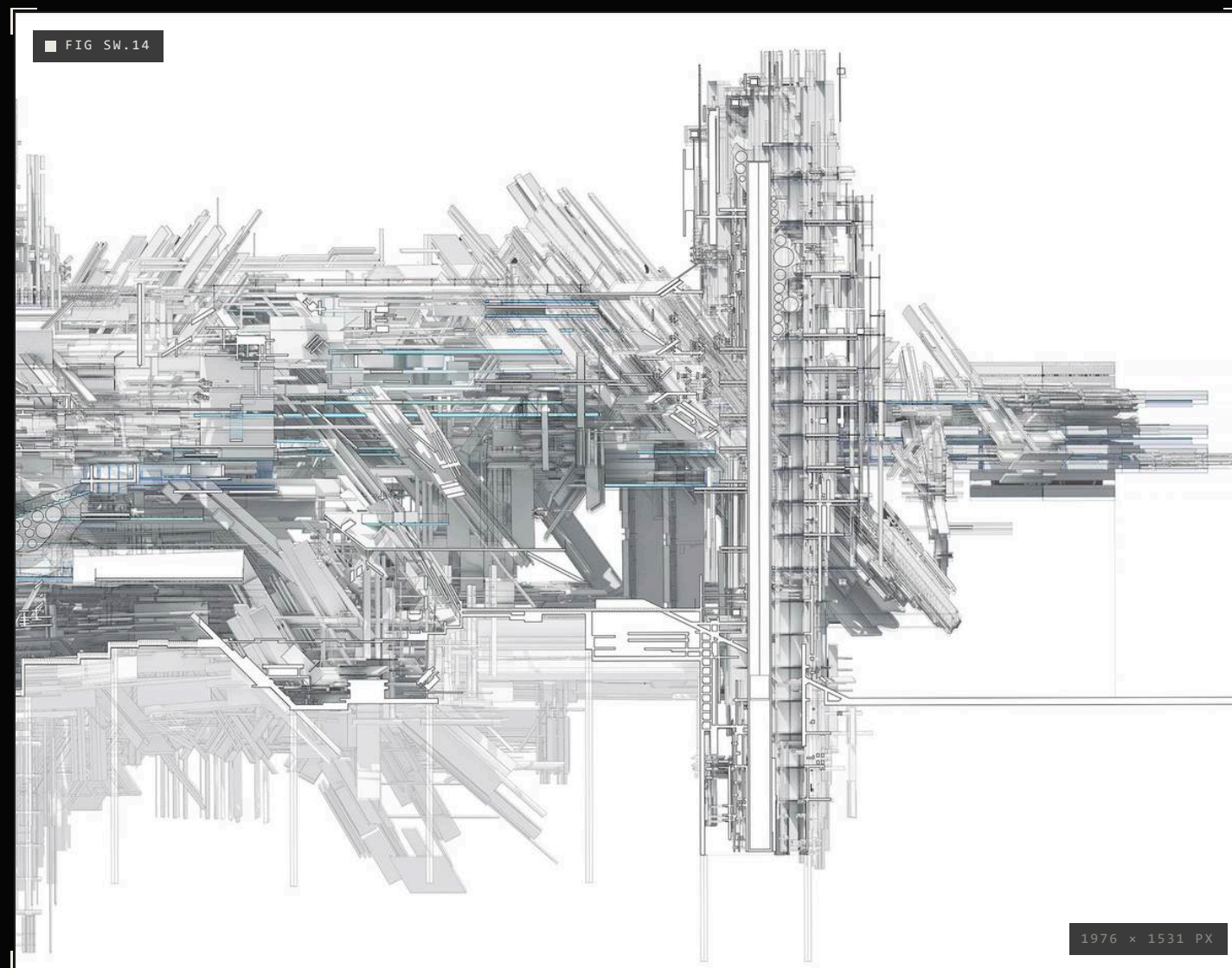


FIG SW.14



## 07

PROJECT AX / SECTION 07

## Tectonic Assemblies

TYPE Exploded axonometric studies

SUBJECT Structure · enclosure · joint

Buildings taken apart: exploded axonometrics in which structure, enclosure and service are separated and annotated as a kit of parts, alongside the assembled objects they describe.

PLATES 09  
SHEETS 03

■ FIG AX.01



NODE COMPONENT  
MATERIAL: ALUMINUM CAST  
FINISH: BEAD BLASTED  
SCALE 1:5



TENSION LINK ASSEMBLY  
MATERIAL: STAINLESS STEEL  
FINISH: MACHINED  
SCALE 1:5

- 01 STRUCTURAL NODE
- 02 TENSION LINK
- 03 COMPRESSION STRUT
- 04 STAINLESS STEEL PIN
- 05 ALUMINUM BRACKET
- 06 STEEL SUPPORT
- 07 THERMAL BREAK
- 08 GLAZING UNIT
- 09 MULLION
- 10 ANCHOR PLATE



SUPPORT BRACKET  
MATERIAL: ALUMINUM CAST  
FINISH: BEAD BLASTED  
SCALE 1:5



COMPRESSION STRUT  
MATERIAL: ALUMINUM CAST  
FINISH: BEAD BLASTED  
SCALE 1:5 1122 x 1402 PX

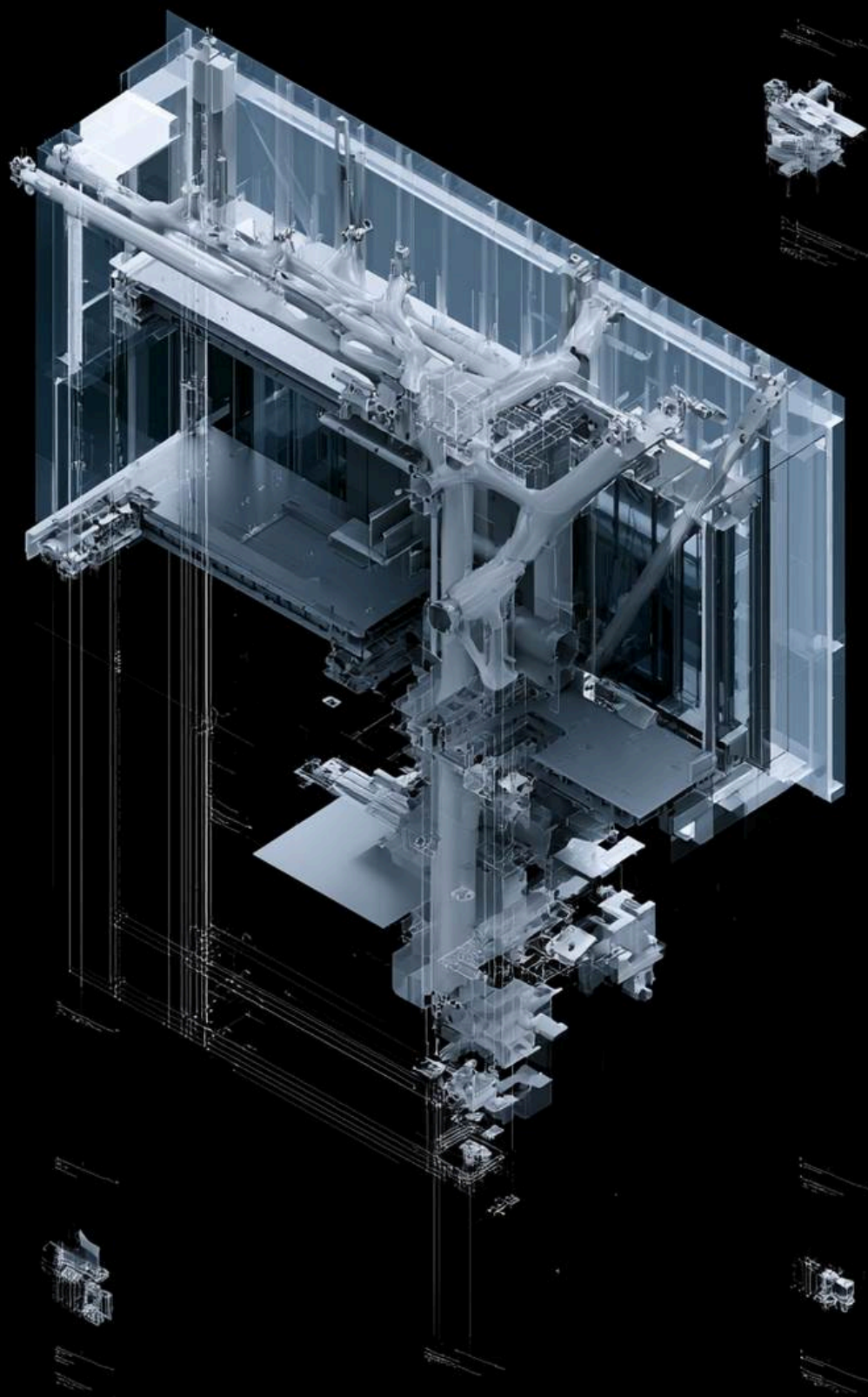
FIG AX.01



# 07 Tectonic Assemblies

EXPLODED AXONOMETRICS

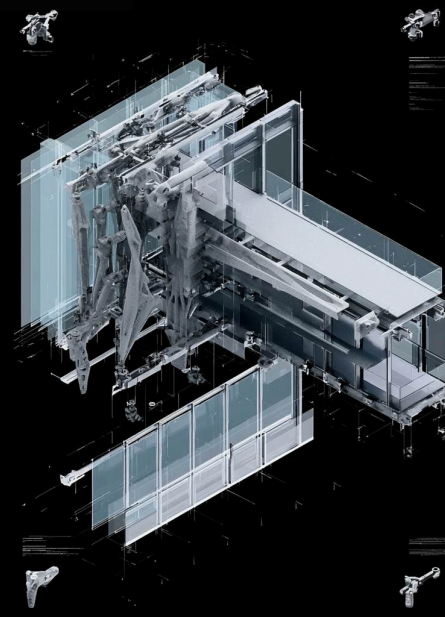
■ FIG AX.02



928 x 1232 PX

FIG AX.02

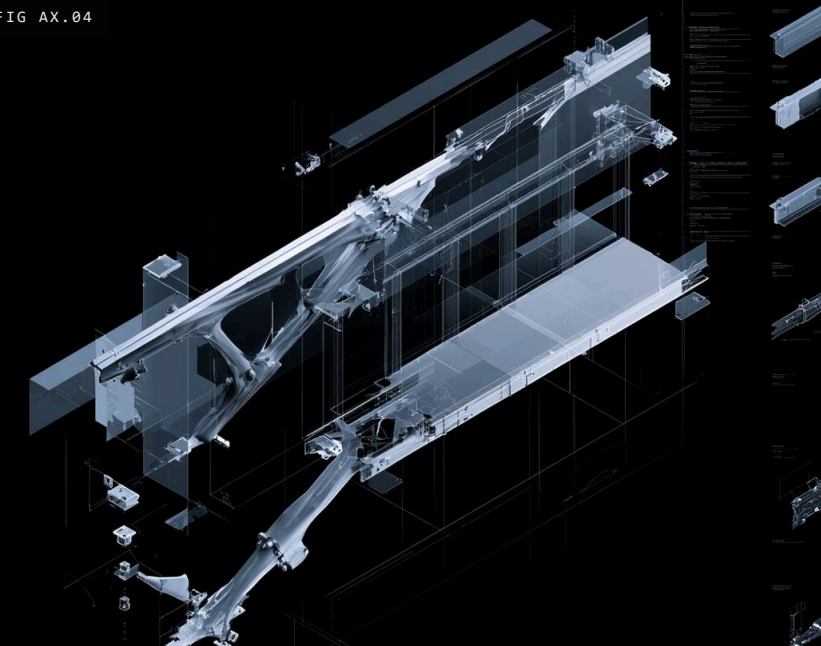
■ FIG AX.03



928 x 1232 PX

FIG AX.03

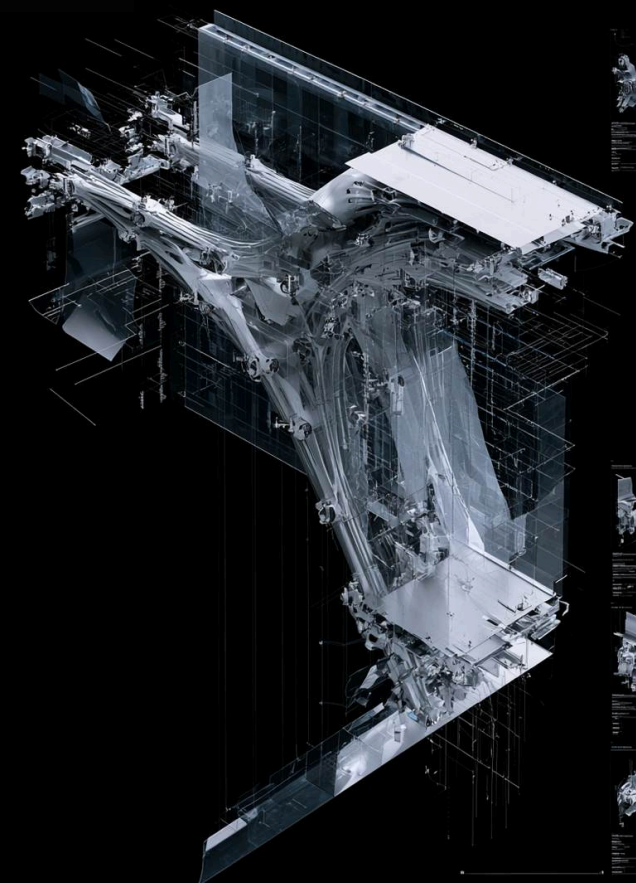
■ FIG AX.04



1232 x 928 PX

FIG AX.04

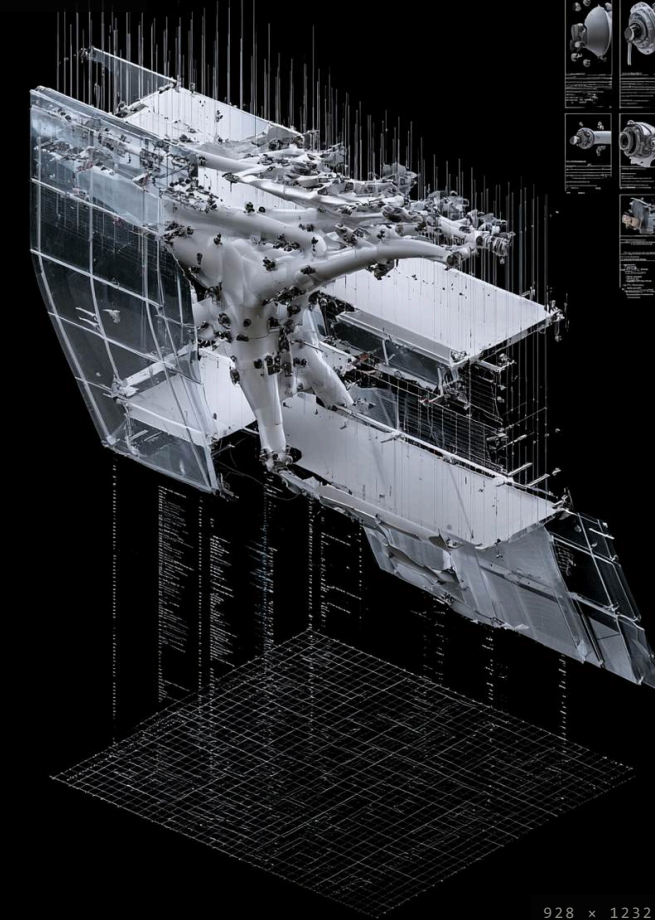
■ FIG AX.05



928 x 1232 PX

FIG AX.05

■ FIG AX.06



928 x 1232 PX

FIG AX.06



# 07 Tectonic Assemblies

ASSEMBLIES & OBJECTS

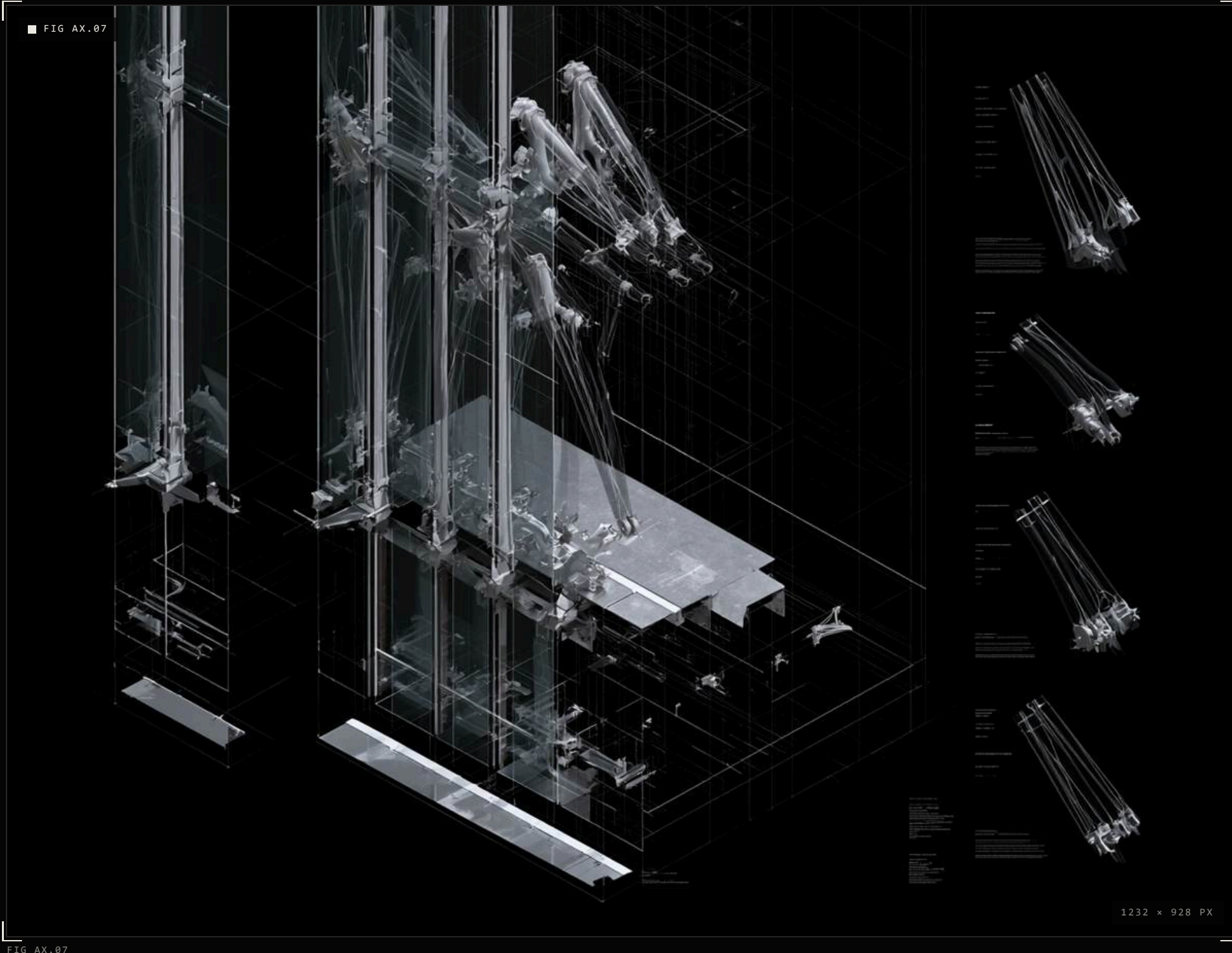


FIG AX.07



FIG AX.08



FIG AX.09



## 08

PROJECT PS / SECTION 08

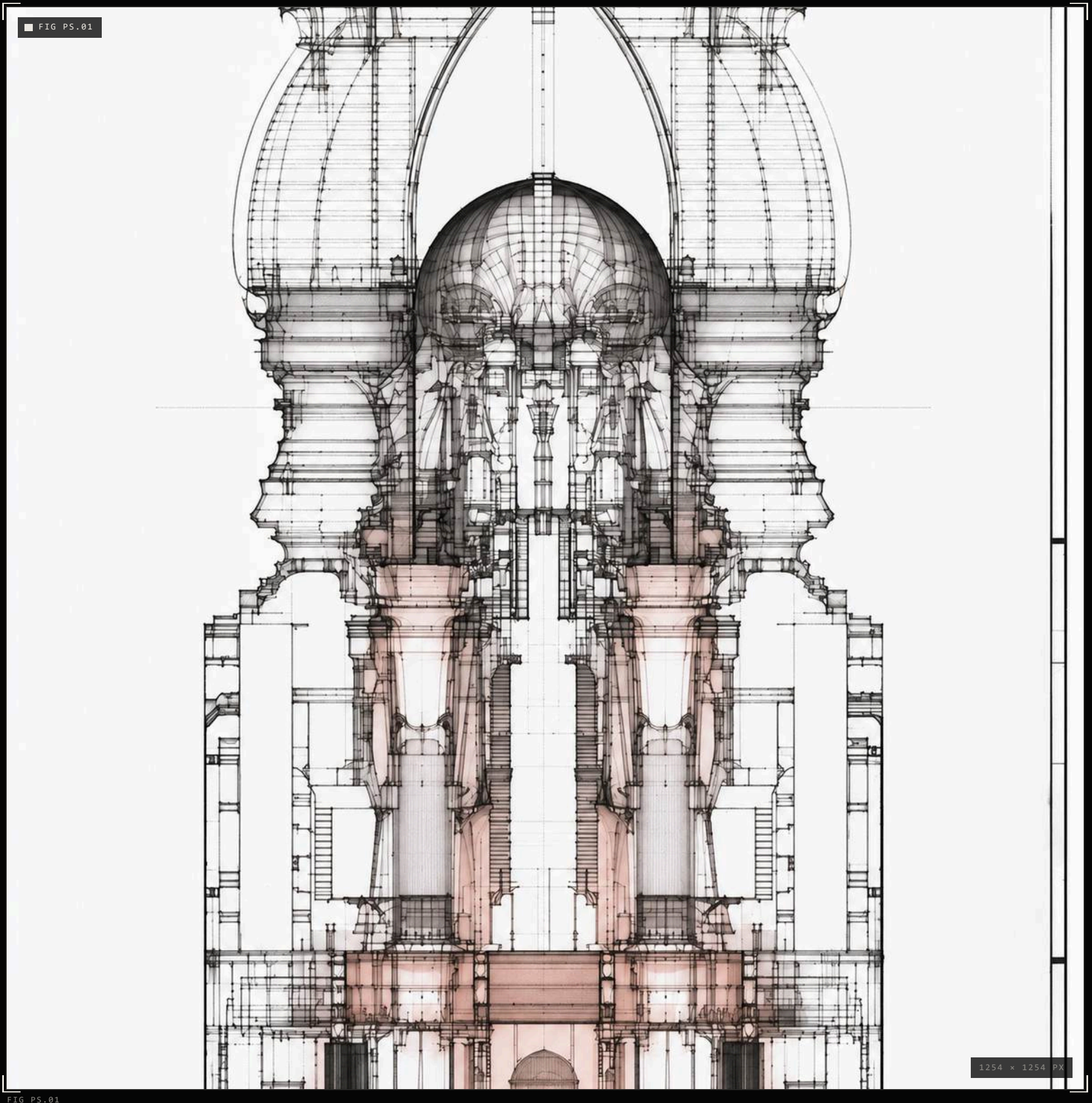
## Plan &amp; Section

TYPE Orthographic drawings

SUBJECT Plan · section · diagram

Orthographic drawings: sections through a domed interior, collaged plans in which programme is layered as material, and analytic diagrams.

PLATES 10  
SHEETS 03



1254 × 1254 PX



# 08 Plan & Section

PLANS

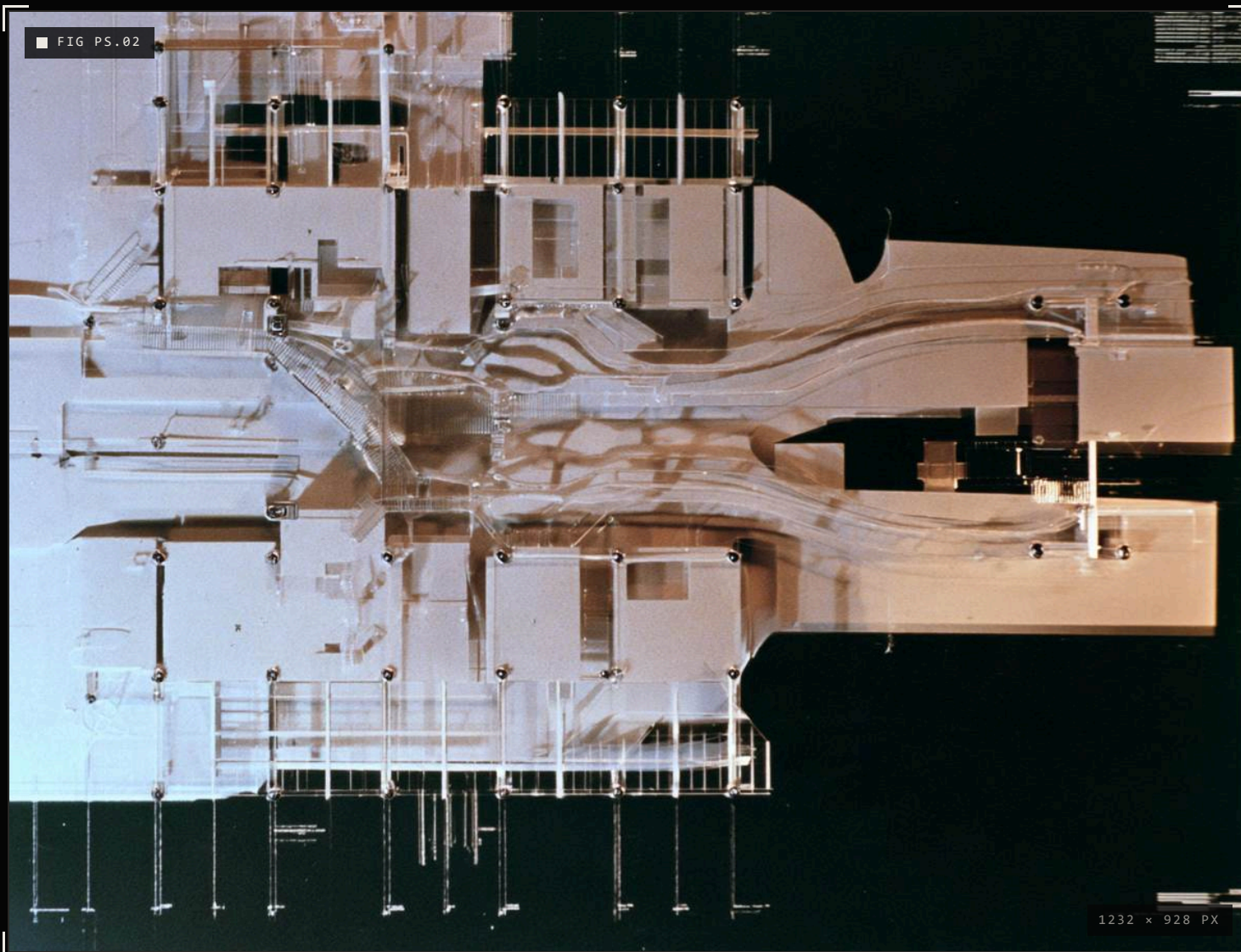


FIG PS.02

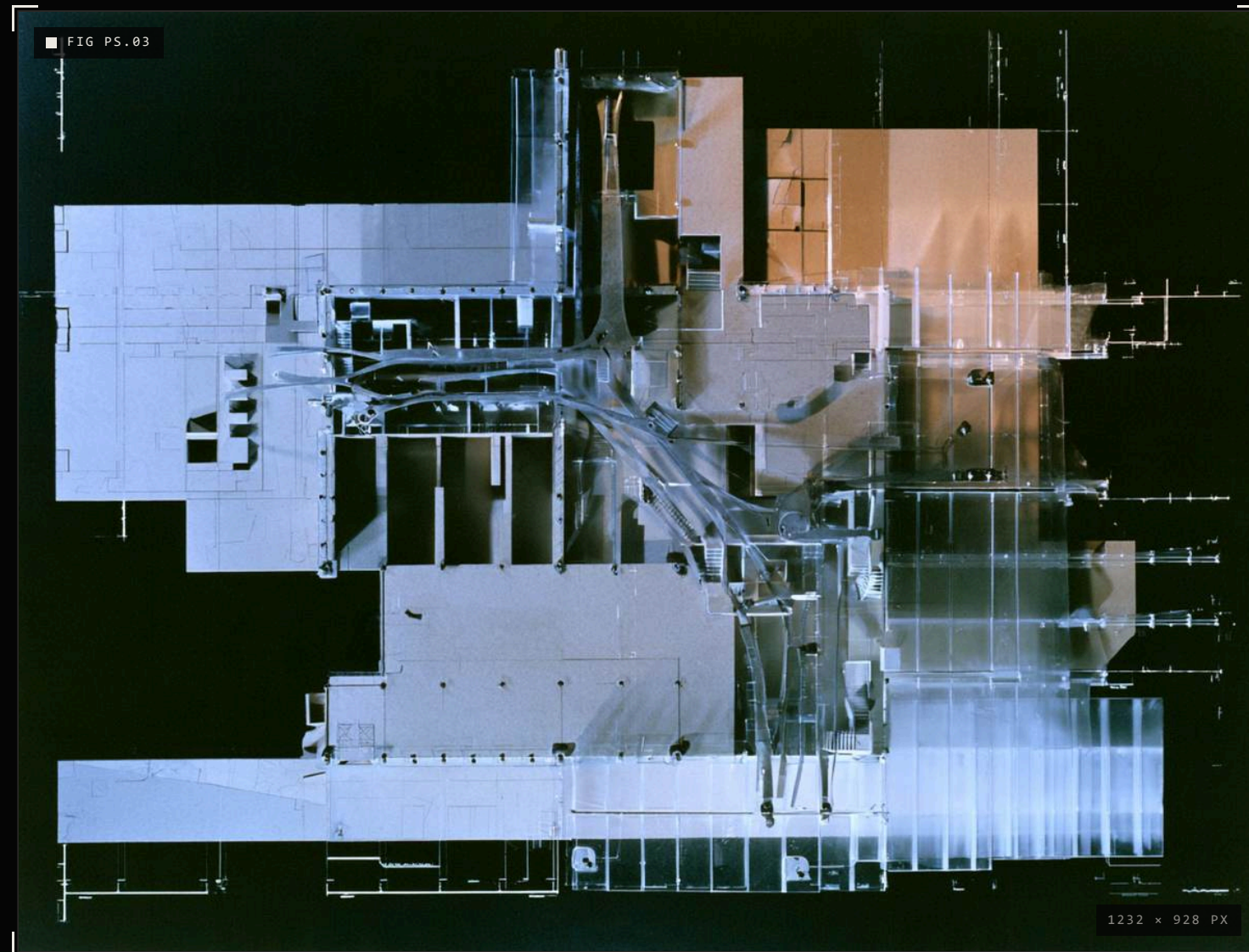


FIG PS.03



FIG PS.04

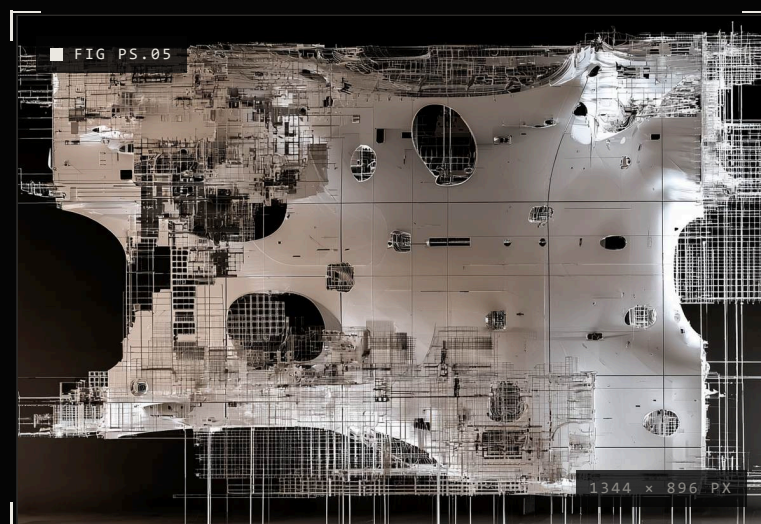


FIG PS.05

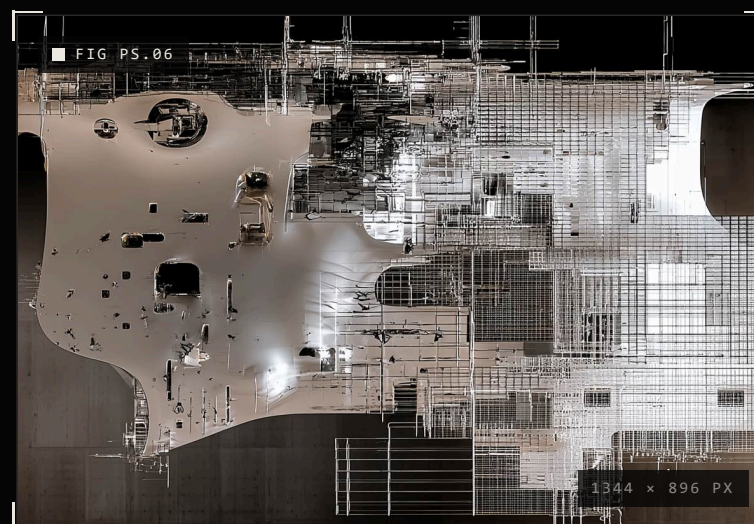


FIG PS.06

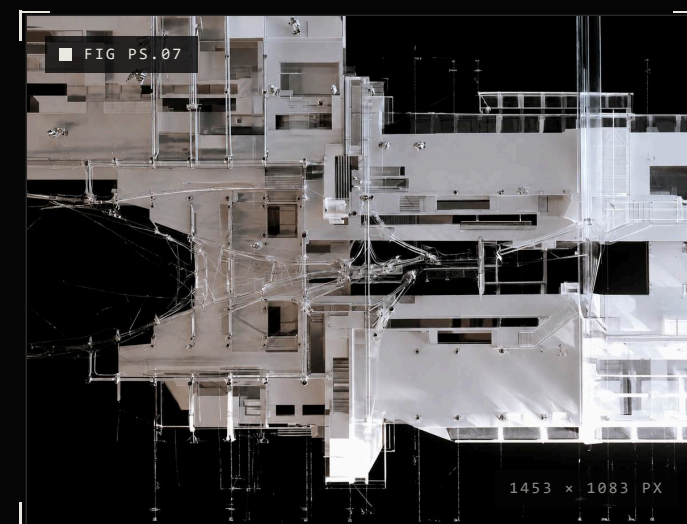


FIG PS.07



08 Plan & Section

SECTIONS & DIAGRAMS

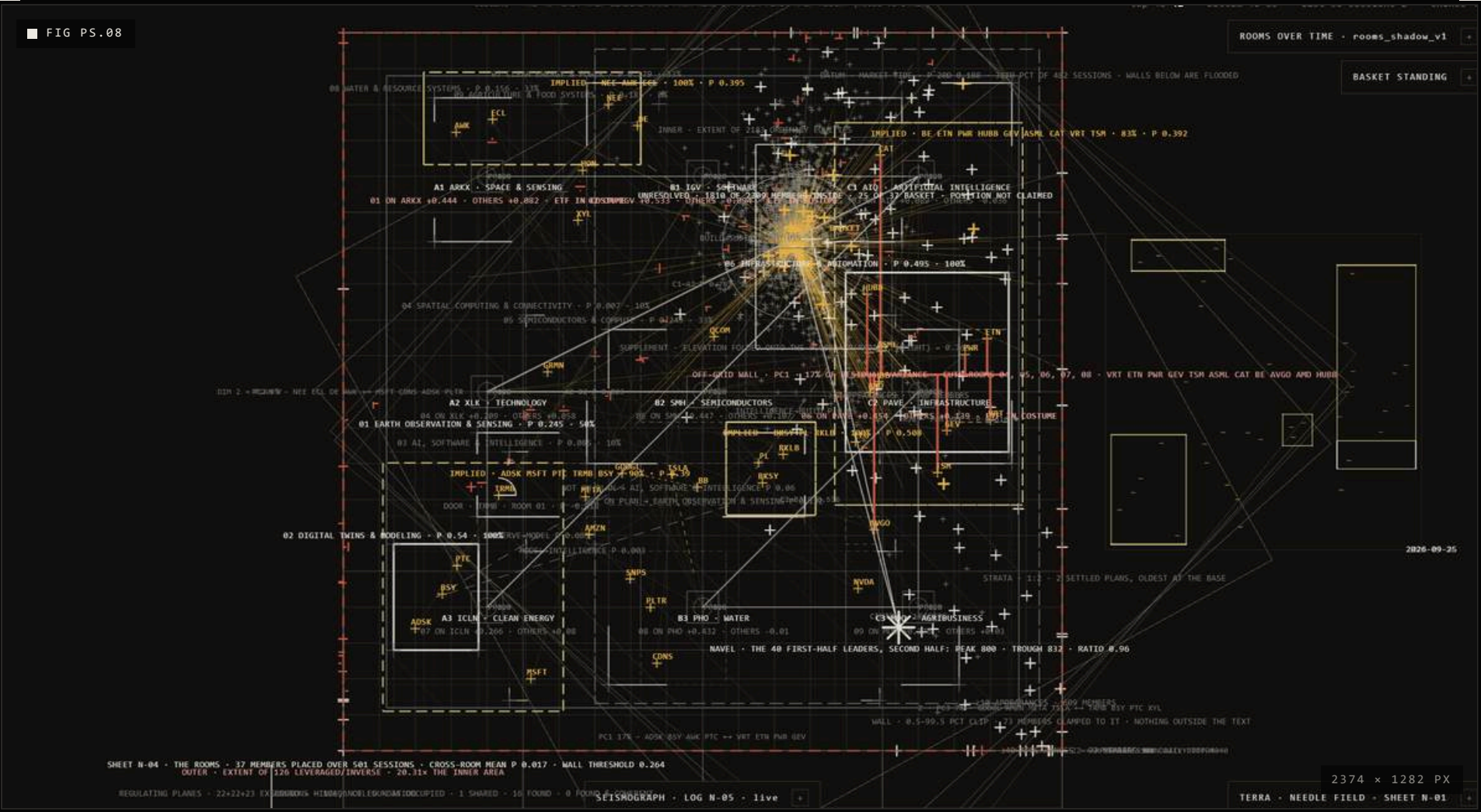


FIG PS.08

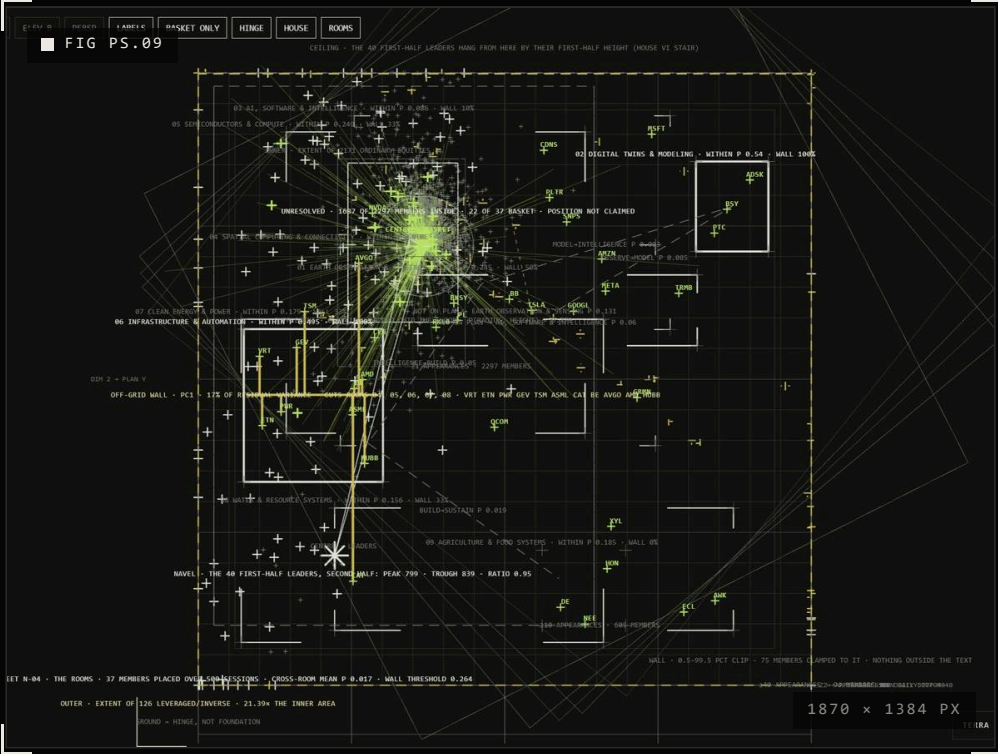


FIG PS.09

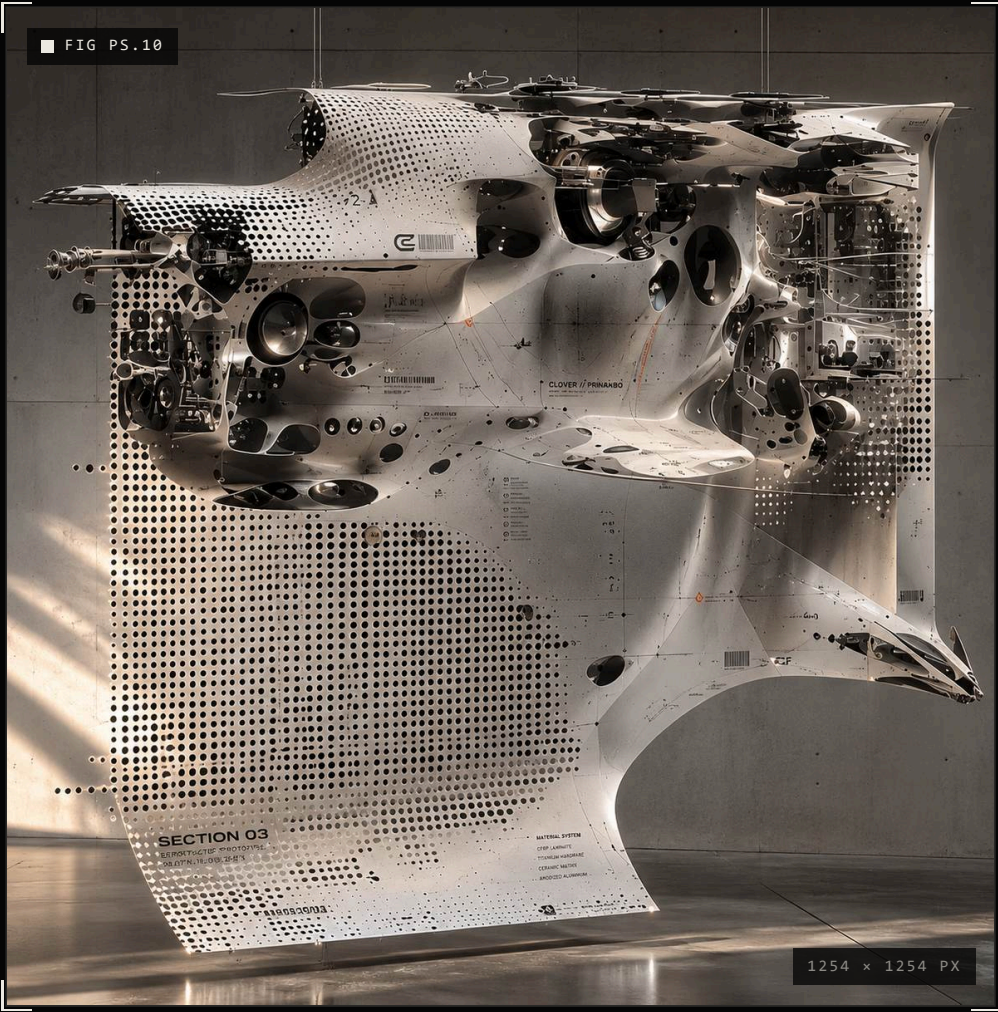


FIG PS.10



# 09

PROJECT TW / SECTION 09

## Inclined Tower

TYPE Tower / structural study

SUBJECT Lean · suspension · membrane

A leaning tower in which a dark structural spine carries suspended platforms and a translucent membrane, studied in a sequence of elevations against a white field.

PLATES 08  
SHEETS 03



■ FIG TW.01

928 × 1232 PX

FIG TW.01



# 09 Inclined Tower

ELEVATIONS



FIG TW.02

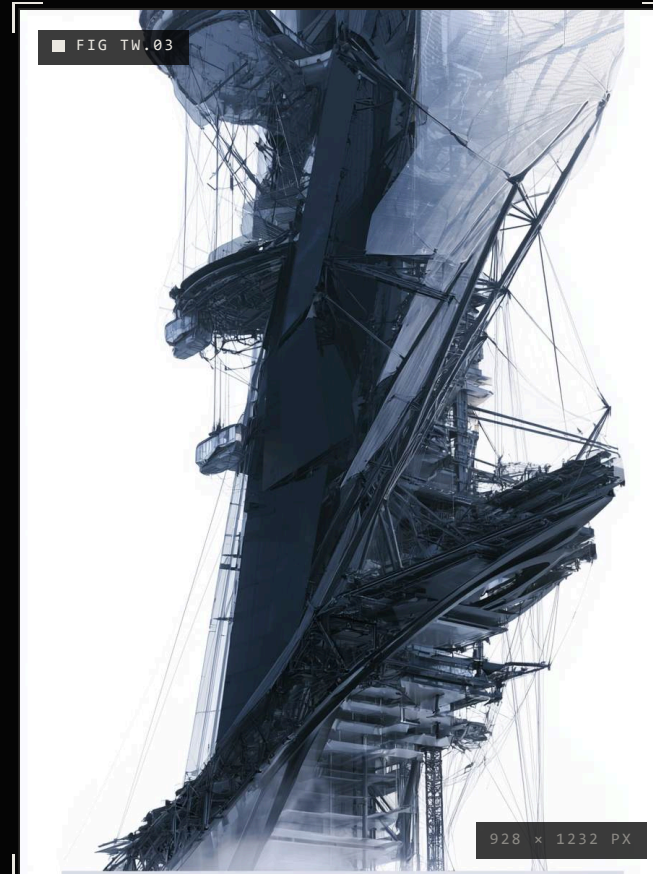


FIG TW.03

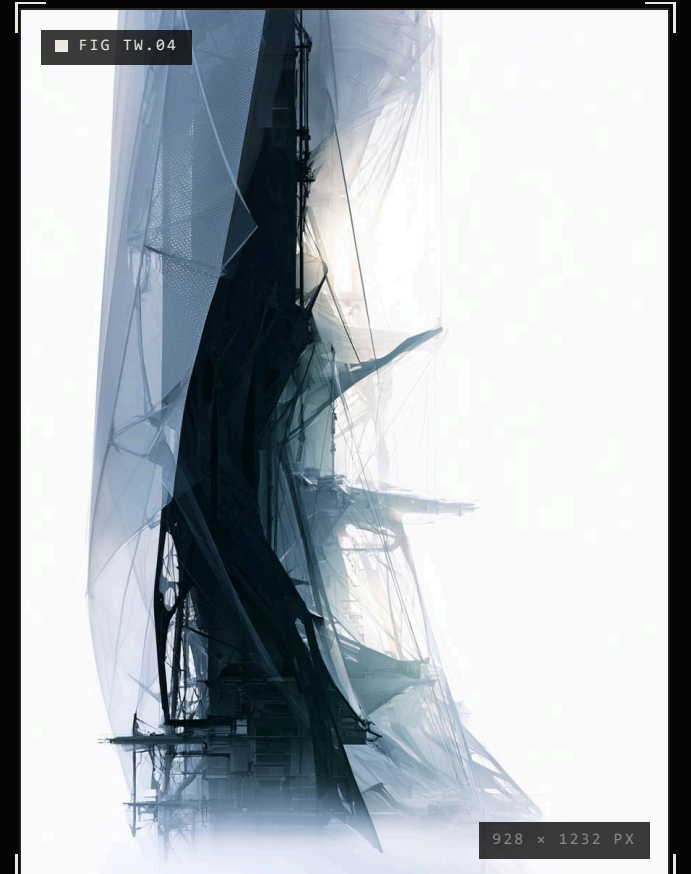


FIG TW.04

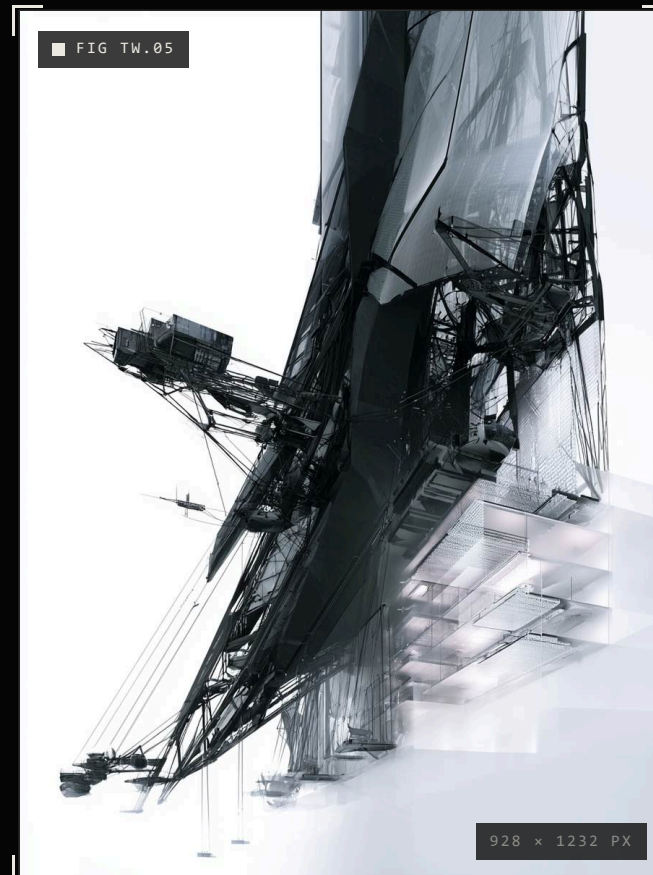


FIG TW.05

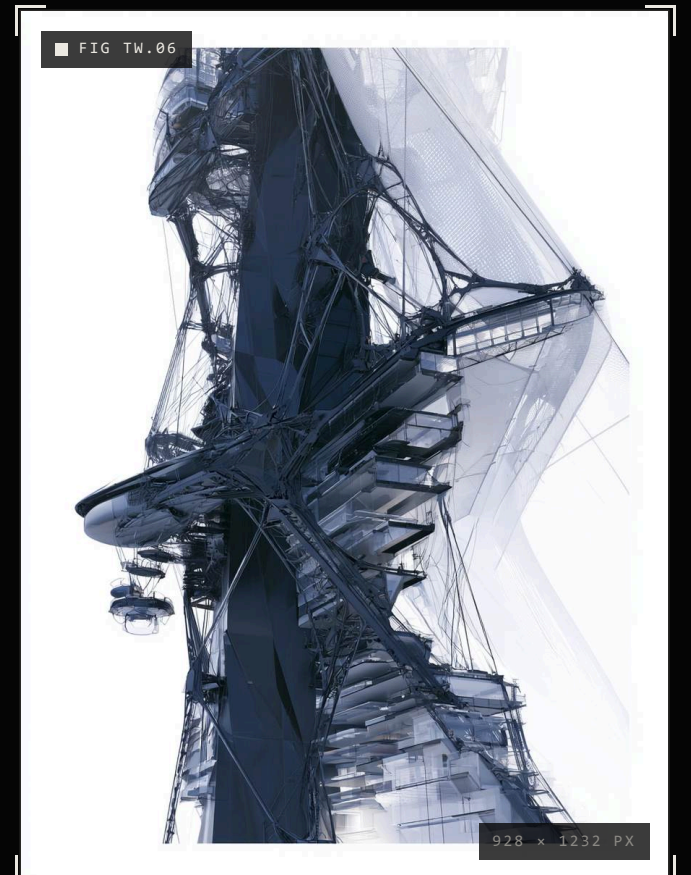


FIG TW.06



# 09 Inclined Tower

DETAILS



FIG TW.07

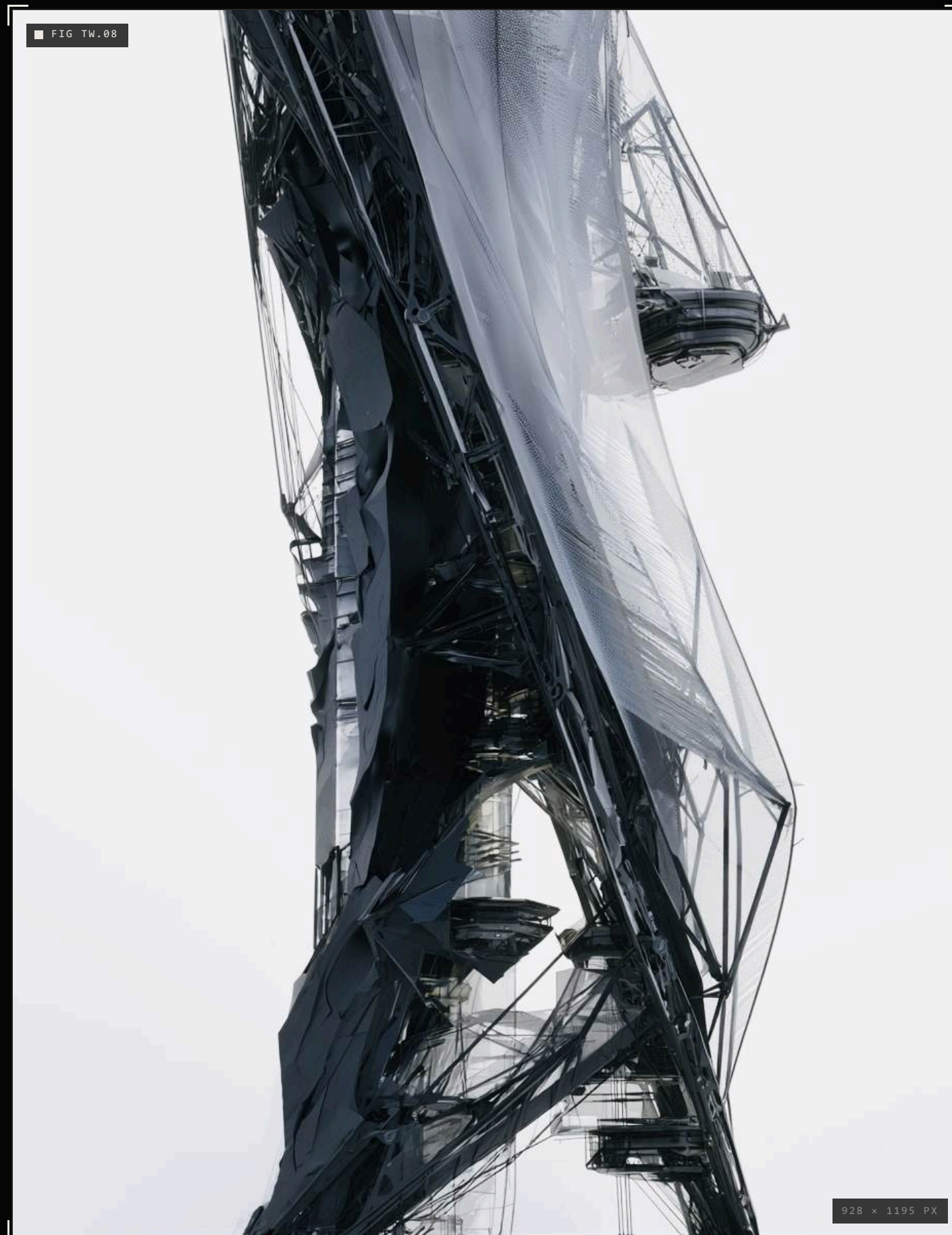


FIG TW.08





■ FIG CA.01

1620 x 971 PX

FIG CA.01

# 10

PROJECT CA / SECTION 10

## Cinematic Architecture

|        |                                         |
|--------|-----------------------------------------|
| TYPE   | Archive — houses · sanctums · artifacts |
| SOURCE | jackrendler.com                         |
| USE    | Film · television · virtual production  |

PLATES 16  
SHEETS 04

A working archive of speculative structures composed as film frames rather than drawings. This selection holds to the scale of the architectural object — houses, thresholds, sanctums and artifacts — each a single moment of a building that behaves like geology.



# 10 Cinematic Architecture

HOUSES & THRESHOLDS

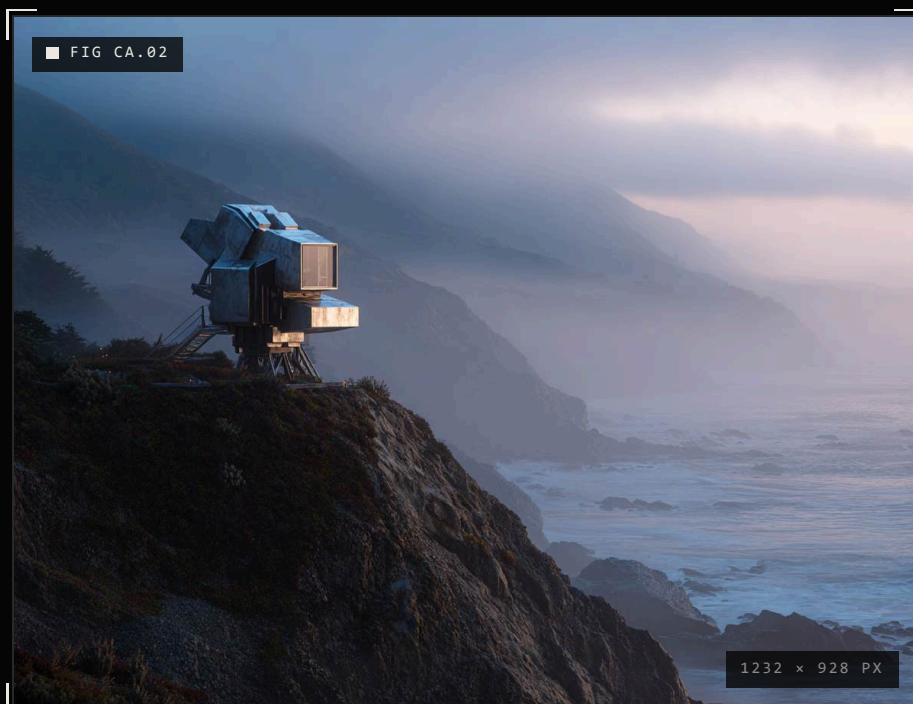


FIG CA.02

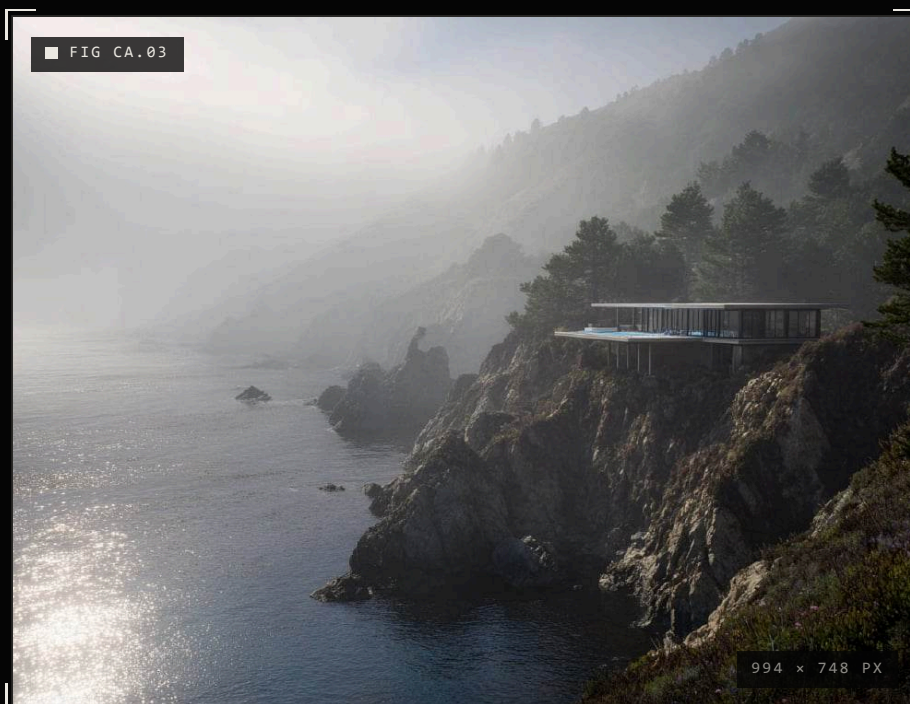


FIG CA.03

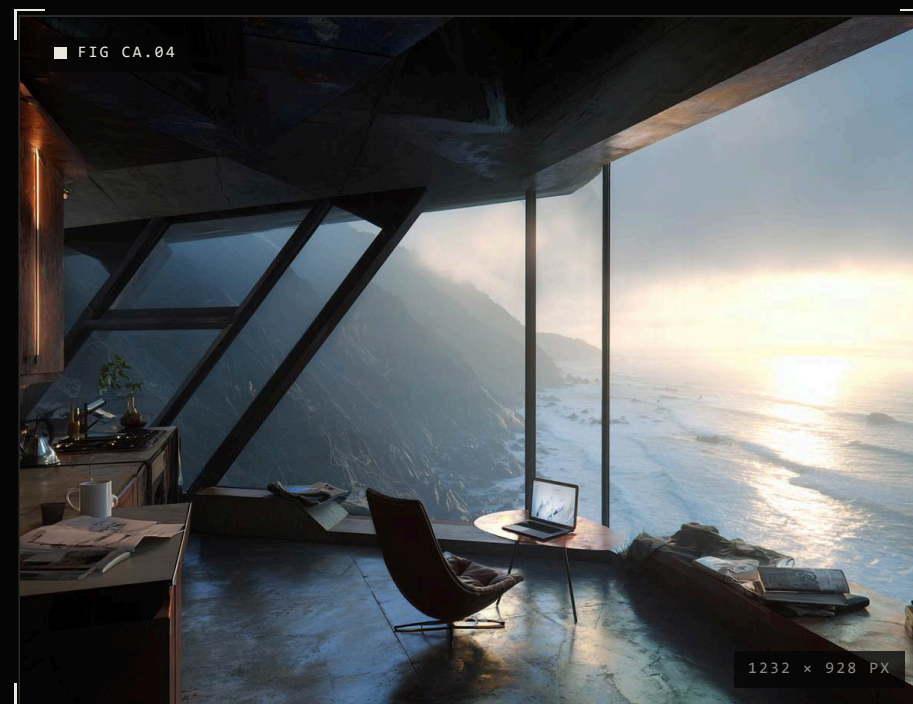


FIG CA.04



FIG CA.05

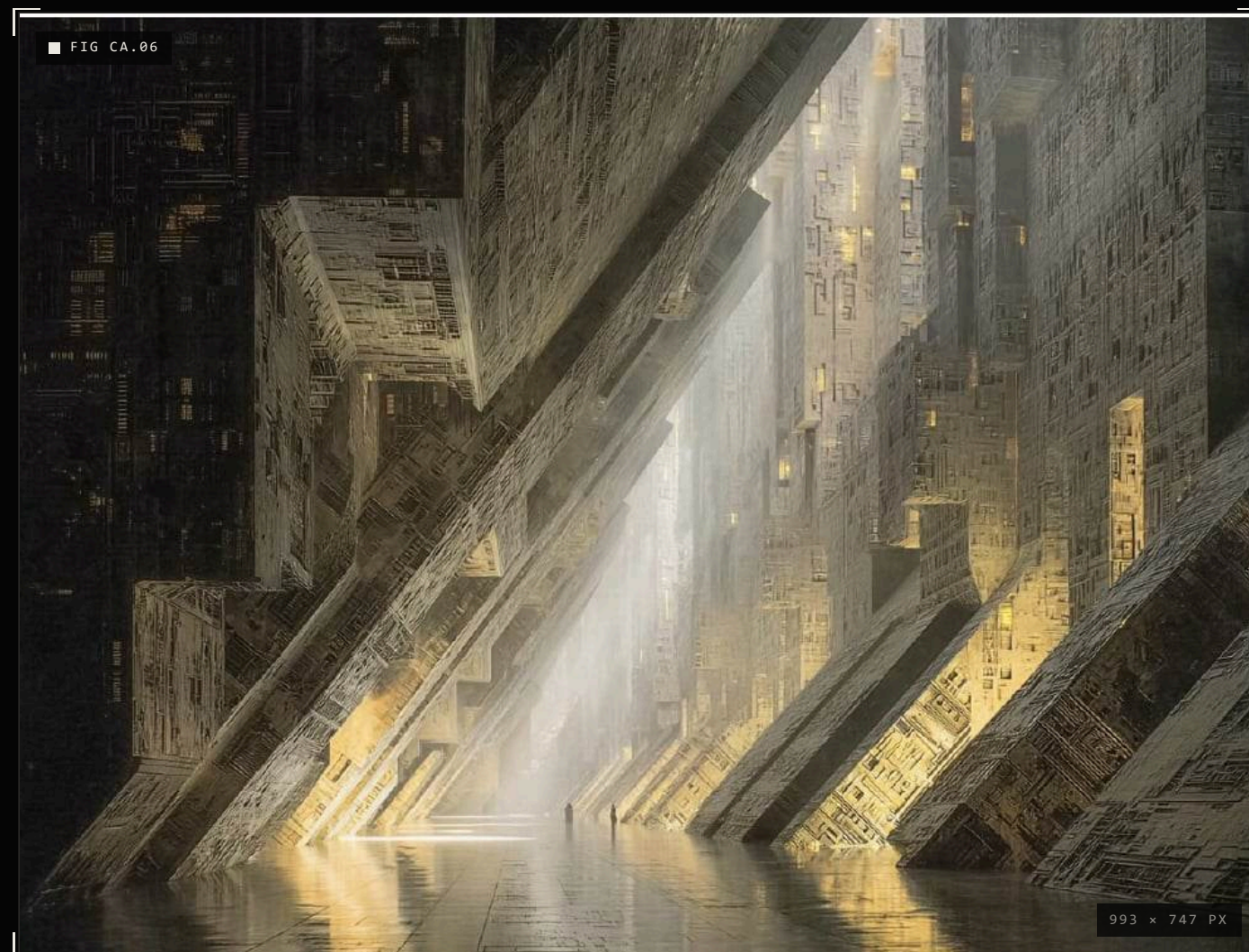


FIG CA.06



# 10 Cinematic Architecture

SANCTUMS

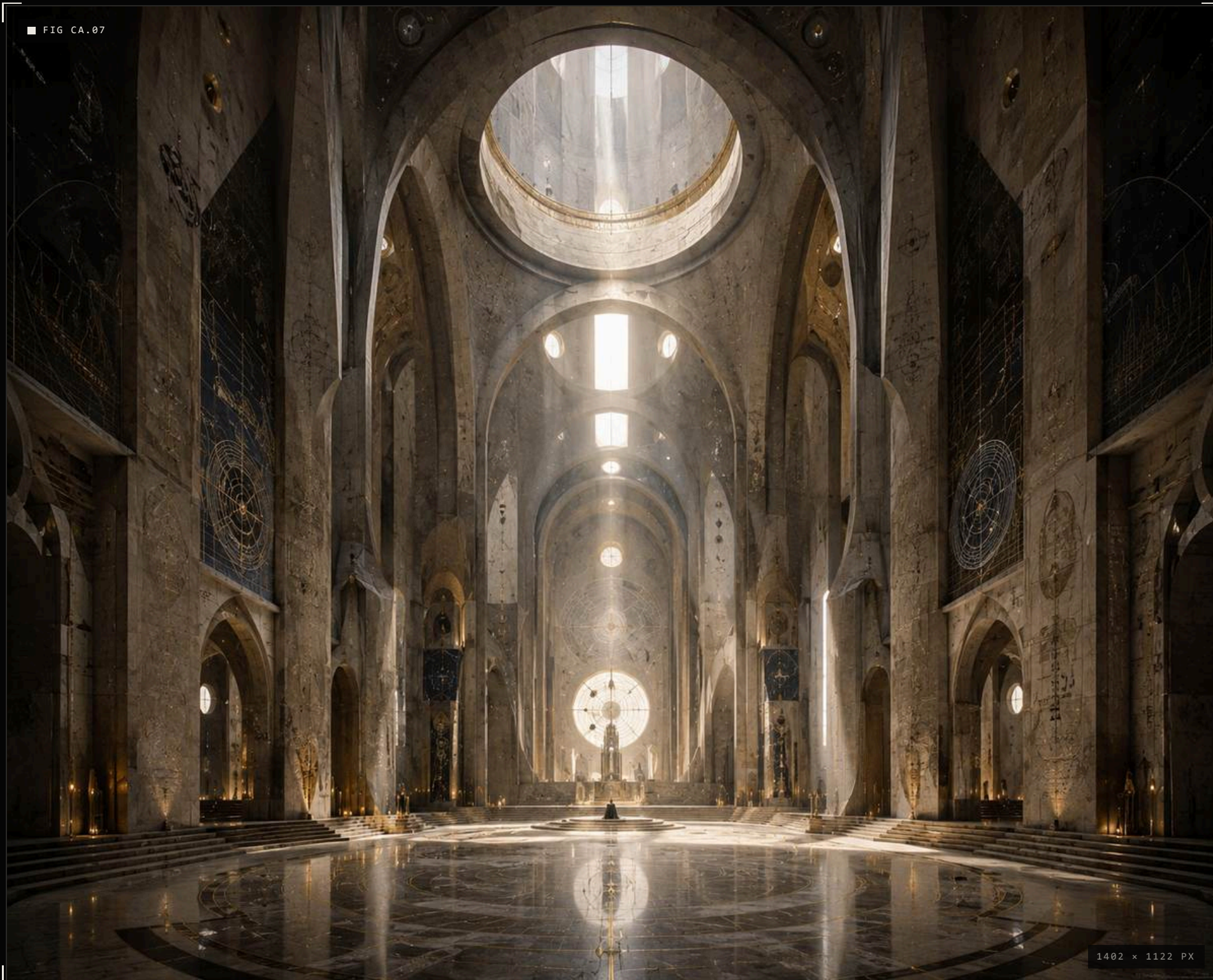


FIG CA.07



FIG CA.08

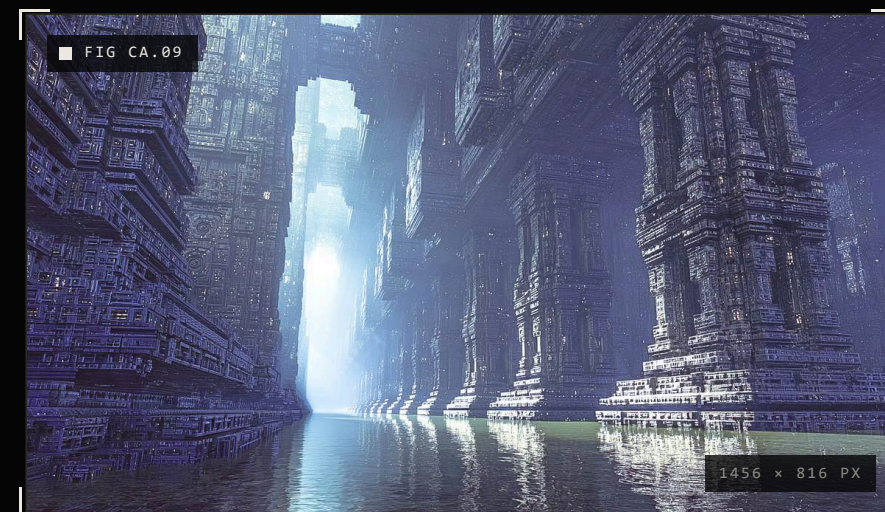


FIG CA.09

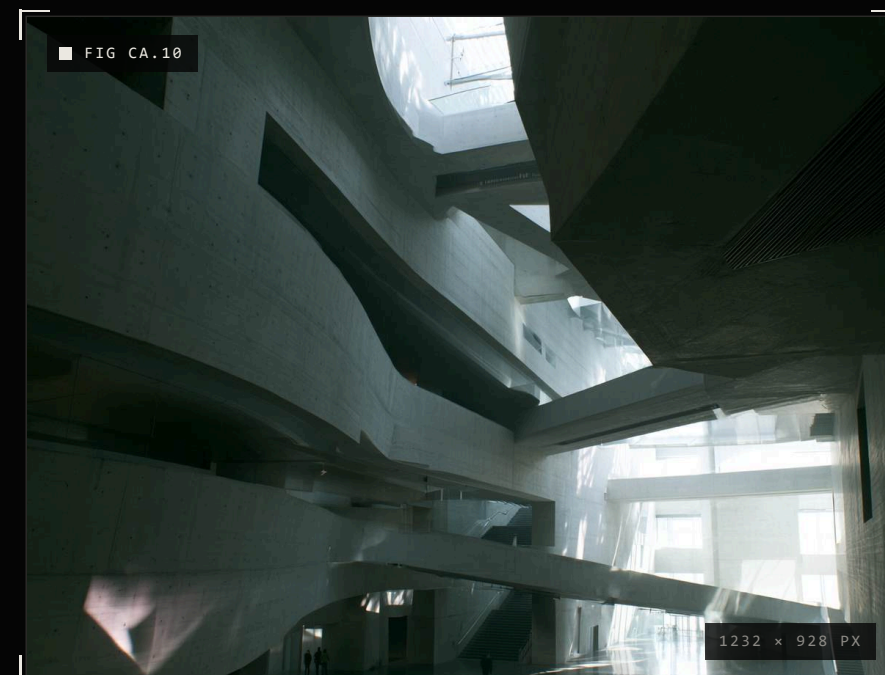


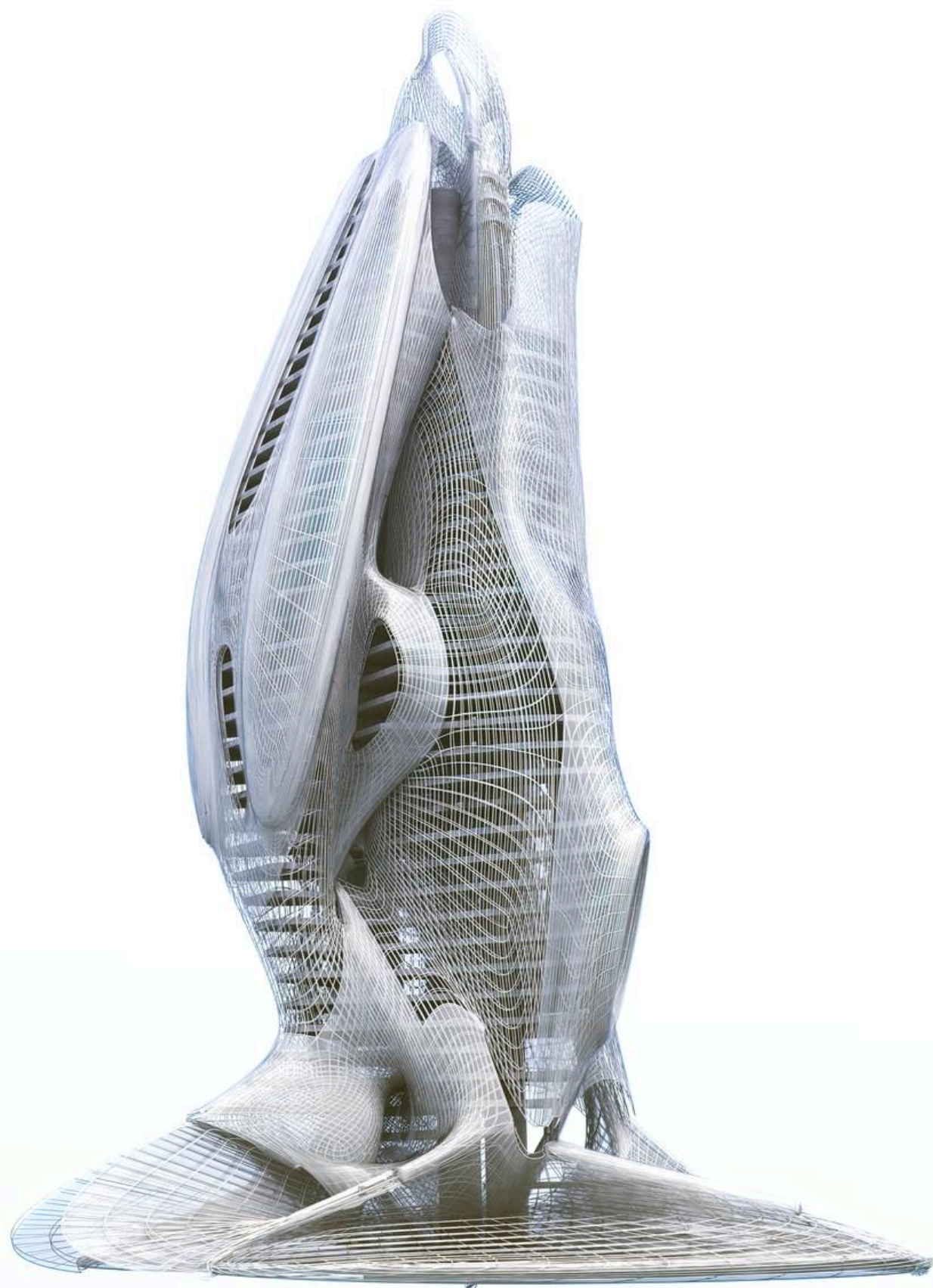
FIG CA.10



# 10 Cinematic Architecture

OBJECTS & ARTIFACTS

■ FIG CA.11



3112 × 4124 PX

FIG CA.11

■ FIG CA.12



928 × 1232 PX

FIG CA.12

■ FIG CA.13



928 × 1232 PX

FIG CA.13

■ FIG CA.14



1232 × 928 PX

FIG CA.14

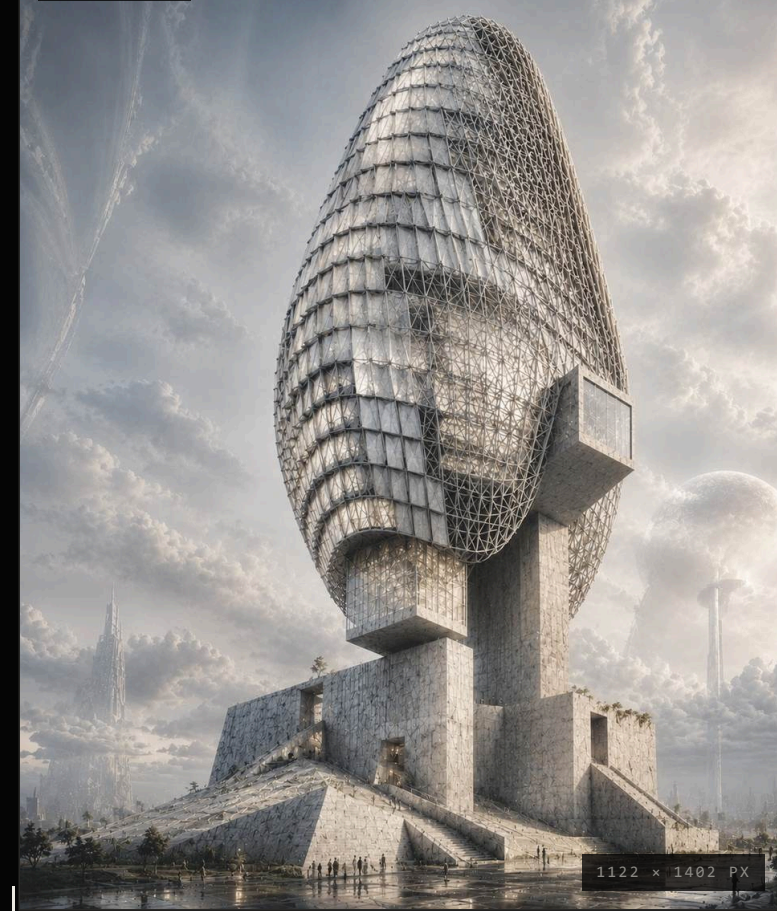
■ FIG CA.15



1856 × 2464 PX

FIG CA.15

■ FIG CA.16



1122 × 1402 PX

FIG CA.16





■ FIG HA.01

1660 x 948 PX

FIG HA.01

# 11

PROJECT HA / SECTION 11

## Helios Arc

|        |                                                                   |
|--------|-------------------------------------------------------------------|
| TYPE   | Competition / architectural object                                |
| RESULT | 1st Place — Mars City Design 2018                                 |
| JURY   | NASA JSC · NASA JPL · Boeing · Dassault Systèmes<br>US Foundation |

PLATES 06

SHEETS 02

First-place winner of the Mars City Design 2018 Urban Design category. A structure composed into canyon terrain, where the landform is treated as structure rather than site. The cinematic archive in this portfolio descends from Helios Arc.



## 11 Helios Arc

COMPETITION PLATES



FIG HA.02

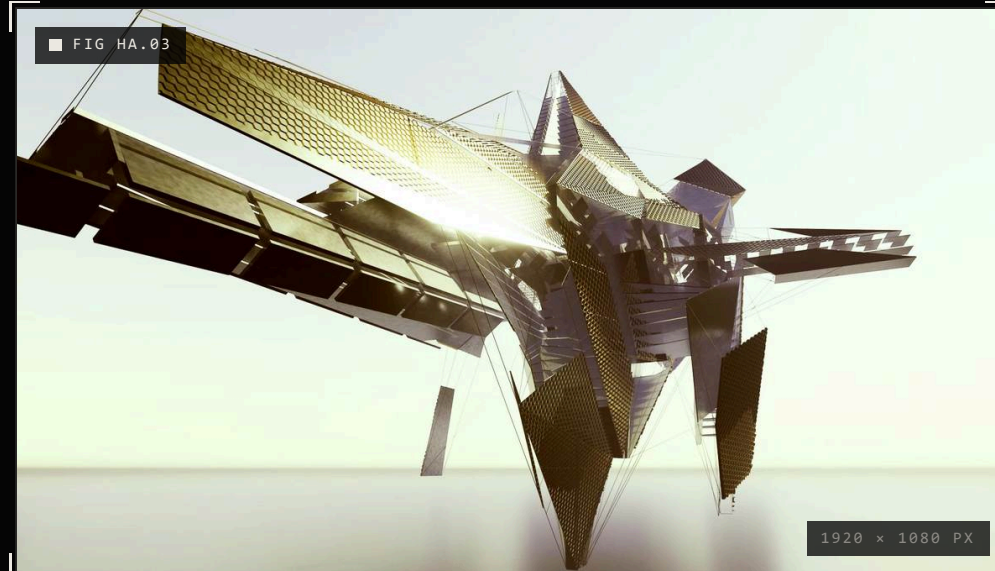
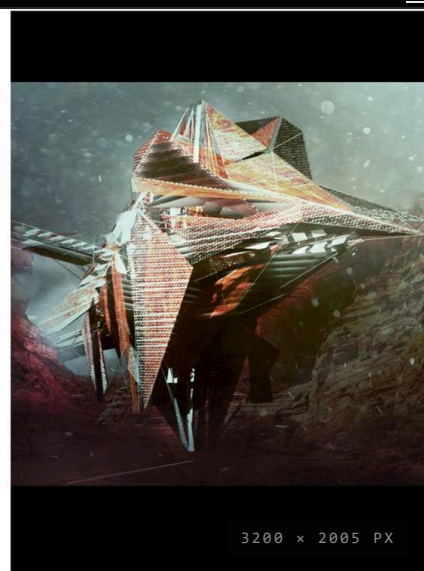


FIG HA.03



FIG HA.04

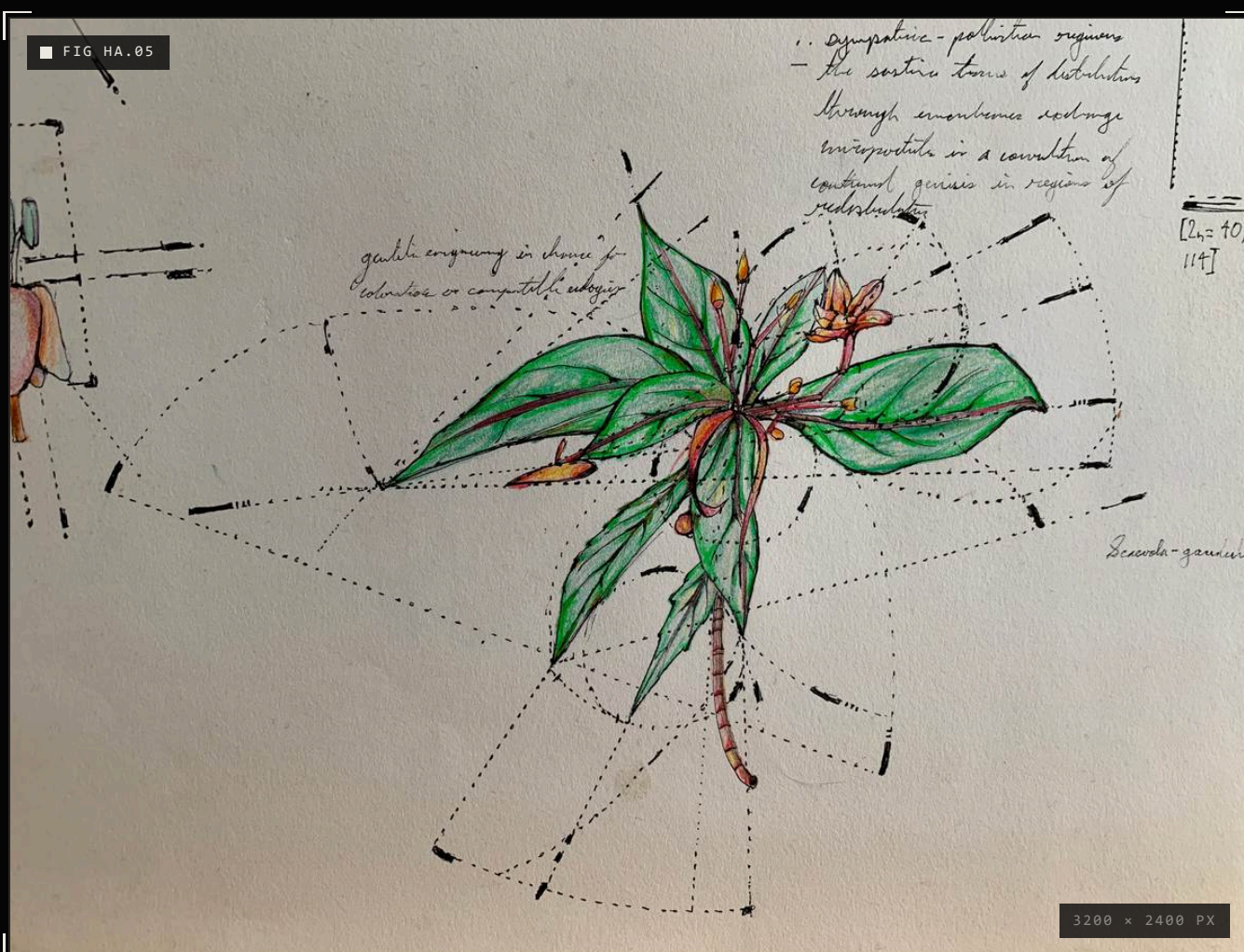


FIG HA.05

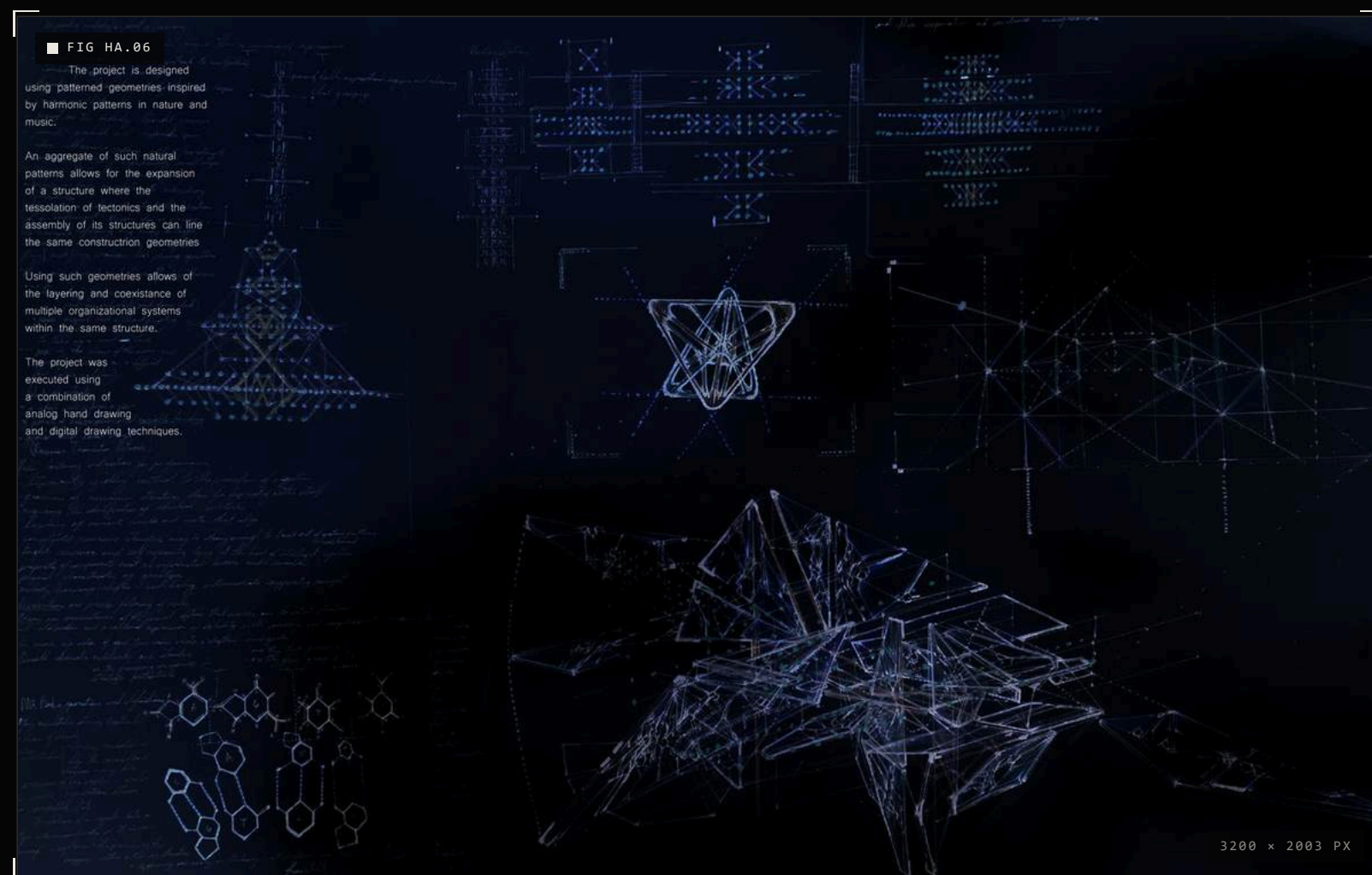


FIG HA.06





FIG EX.01

PROJECT EX / SECTION 12

## Exodus

TYPE

Object study / speculative architecture

PLATES

04

SHEETS

02

A speculative architectural object studied through a sequence of renders.



# 12 Exodus

STUDIES



FIG EX.02

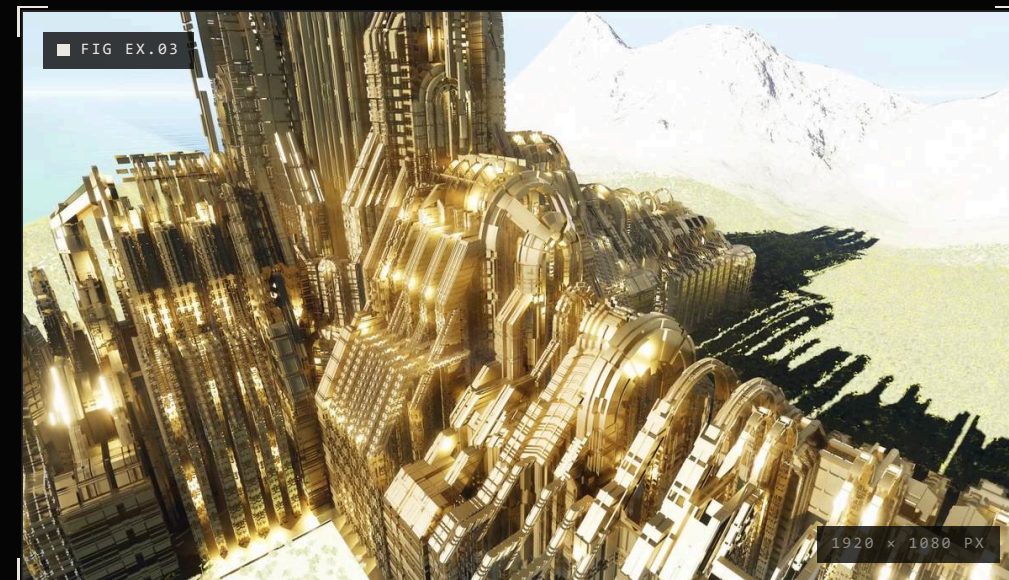


FIG EX.03

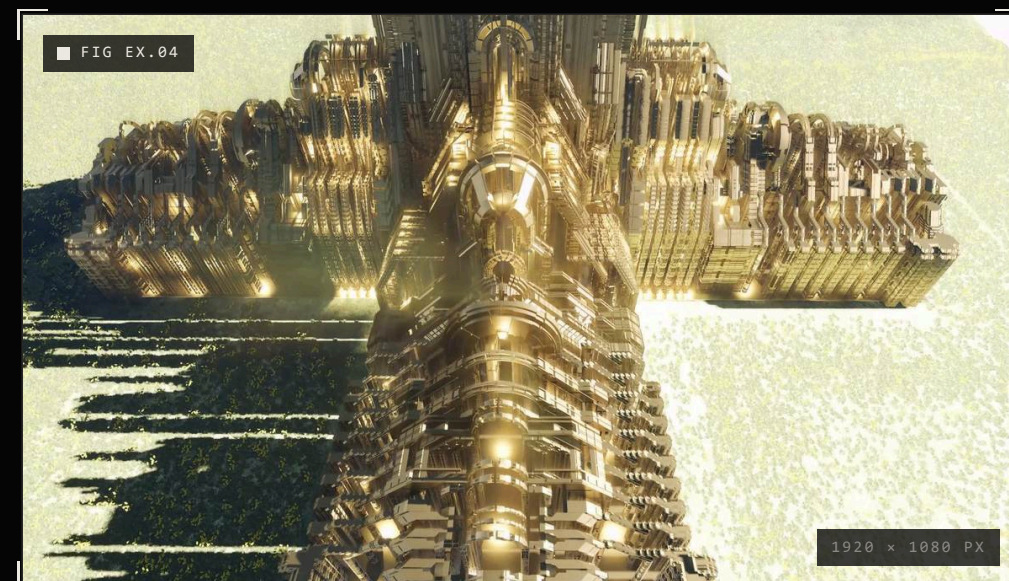


FIG EX.04



# 13

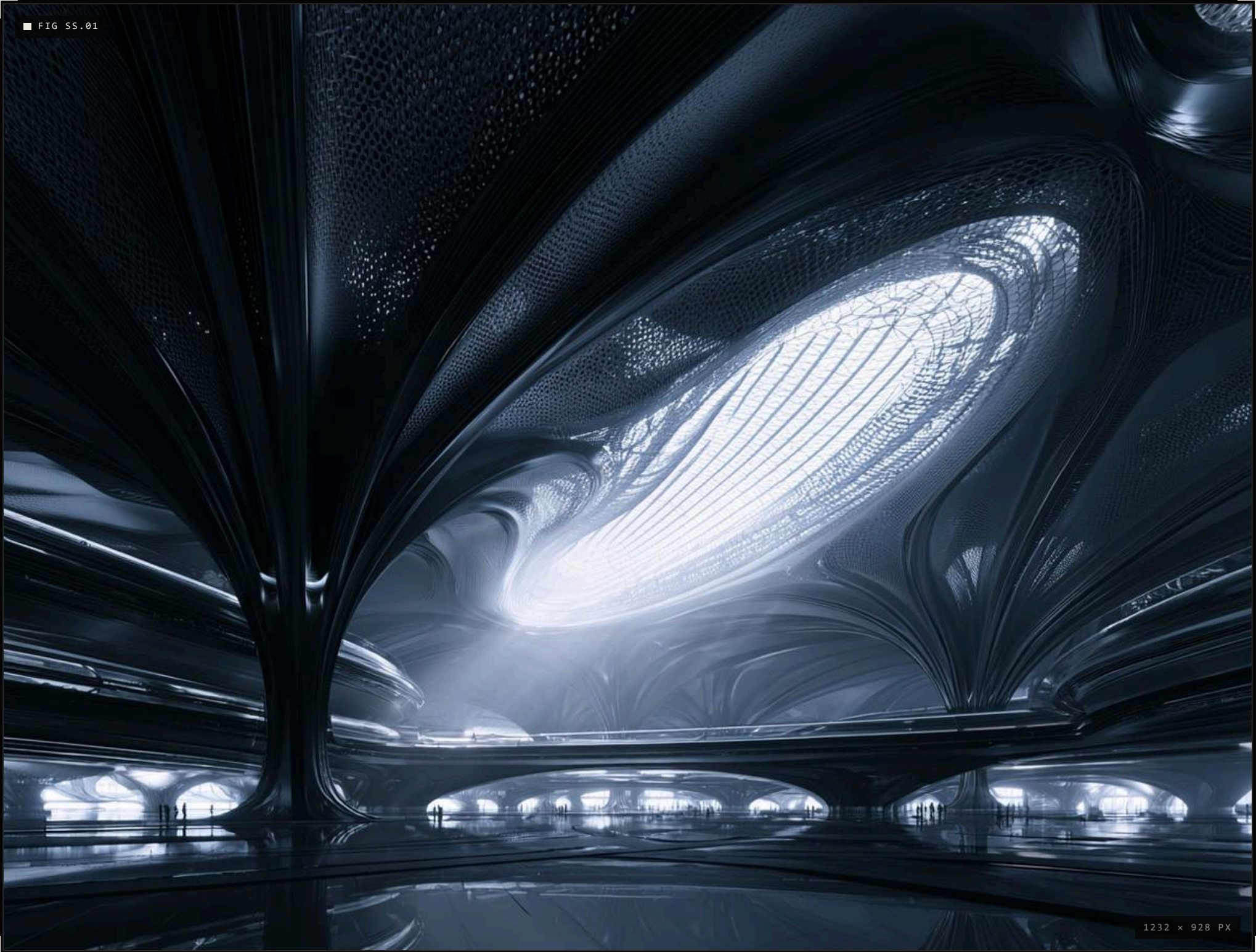
PROJECT SS / SECTION 13

## Shell Structures

TYPE Structural / formal studies

SUBJECT Shell · surface · span

Long-span shells and suspended surfaces — interiors lit from above through a continuous roof, and layered surface objects studied at the scale of a model.



■ FIG SS.01

1232 × 928 PX

FIG SS.01

PLATES 14

SHEETS 04



# 13 Shell Structures

SHELL INTERIORS

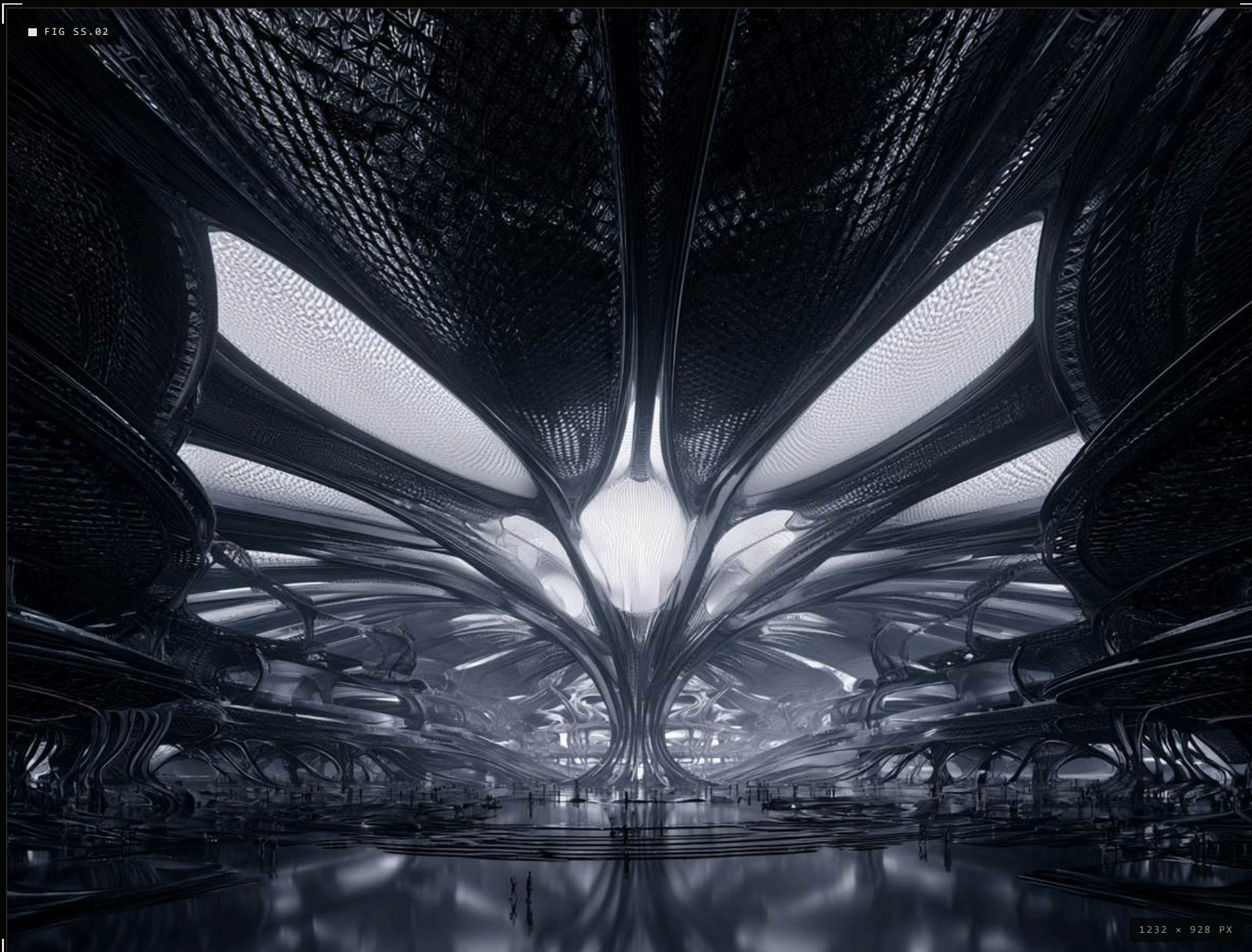


FIG SS.02

1232 x 928 PX



FIG SS.03

1232 x 928 PX



FIG SS.04

1232 x 928 PX



FIG SS.05

1232 x 928 PX



# 13 Shell Structures

DOMES



FIG SS.06



FIG SS.07



FIG SS.08

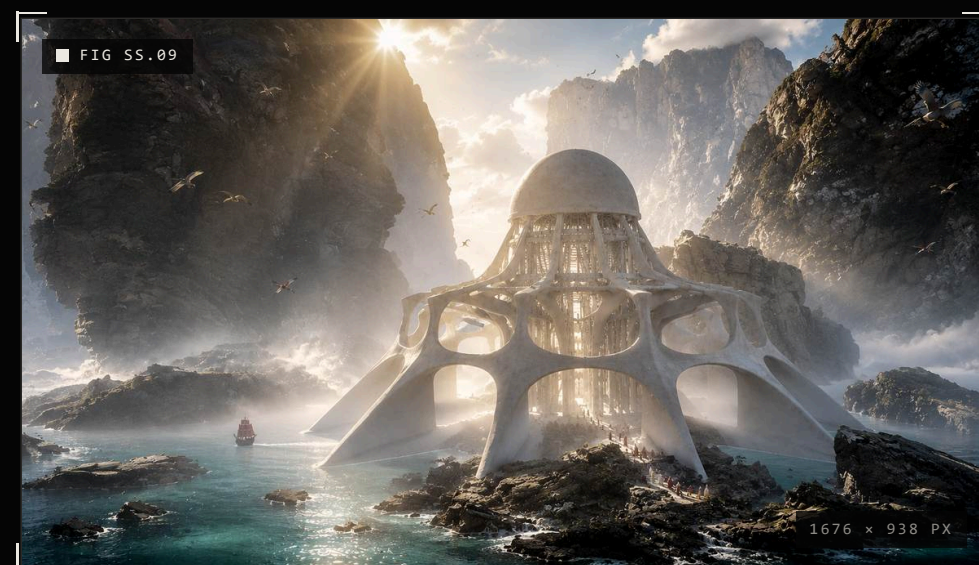


FIG SS.09



# 13 Shell Structures

SURFACES & OBJECTS

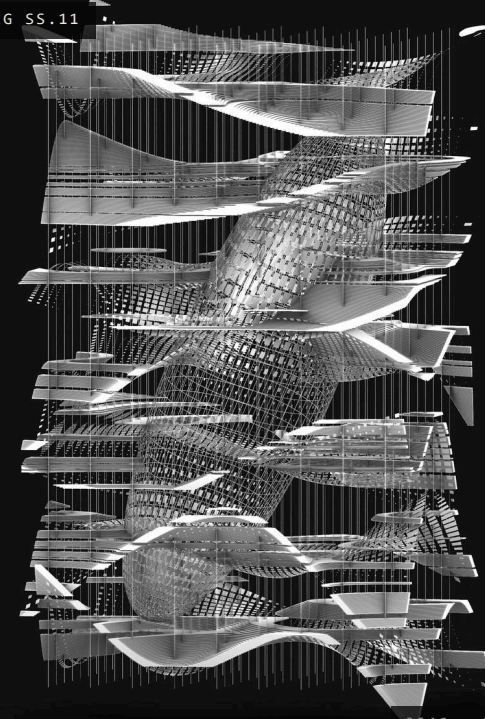
■ FIG SS.10



2014 x 2358 PX

FIG SS.10

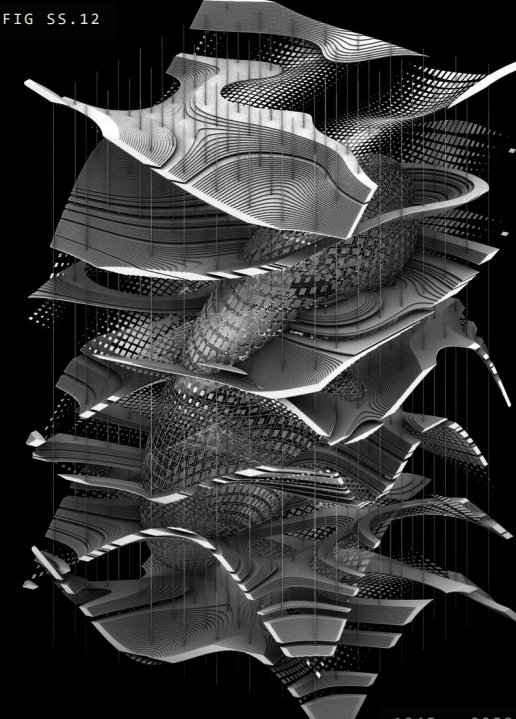
■ FIG SS.11



2046 x 2358 PX

FIG SS.11

■ FIG SS.12



1945 x 2358 PX

FIG SS.12

■ FIG SS.13



960 x 1200 PX

FIG SS.13

■ FIG SS.14



1122 x 1402 PX

FIG SS.14



# 14

PROJECT B0 / SECTION 14

## Biomorphic Objects

TYPE Object studies

SUBJECT Bone · shell · joint

Objects formed like bone and shell — hollow, jointed and polished — studied at the scale of the hand and the building.

PLATES 04  
SHEETS 02

■ FIG B0.01



1088 × 1445 PX

FIG B0.01



# 14 Biomorphic Objects

OBJECTS



FIG B0.02

928 x 1232 PX



FIG B0.03

1088 x 1445 PX



FIG B0.04

1089 x 1445 PX



# 15

PROJECT CH / SECTION 15

## Parametric Chair

|         |                                    |
|---------|------------------------------------|
| TYPE    | Furniture / object design          |
| SUBJECT | Lattice shell · cantilever · light |
| TOOLS   | Rhino · rendering                  |

A chair designed as a single continuous lattice shell, studied in light against a concrete wall.



FIG CH.01

PLATES 04  
SHEETS 02



# 15 Parametric Chair

VIEWS

■ FIG CH.02



1448 x 1086 PX

FIG CH.02

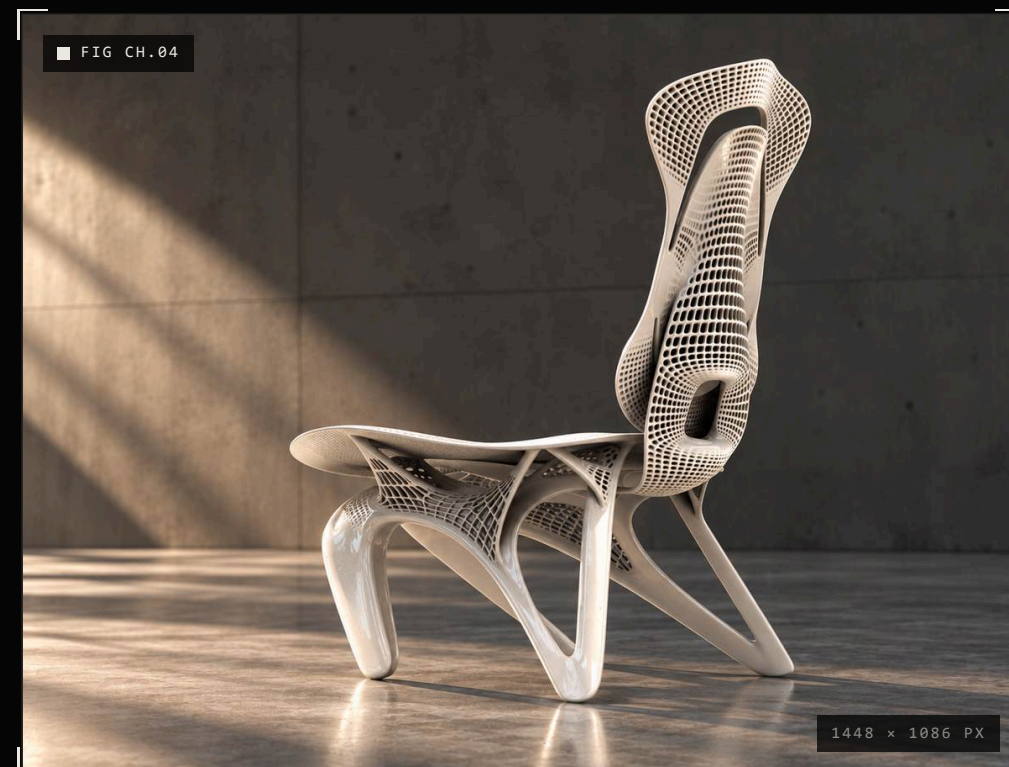
■ FIG CH.03



1448 x 1086 PX

FIG CH.03

■ FIG CH.04



1448 x 1086 PX

FIG CH.04



■ FIG K0.01

FIG K0.01

5313 × 3213 PX

## 16

PROJECT K0 / SECTION 16

## Kora Instrument Design

TYPE Instrument / object design

PLATES 09  
SHEETS 03

Design of a kora — the West African harp — as an object between craft and acoustics, developed in drawings and realised as a white model with strings, tuning pegs and a timber base.



# 16 Kora Instrument Design

MODEL

■ FIG K0.02



3657 x 3018 PX

FIG K0.02

■ FIG K0.03



5712 x 3213 PX

FIG K0.03

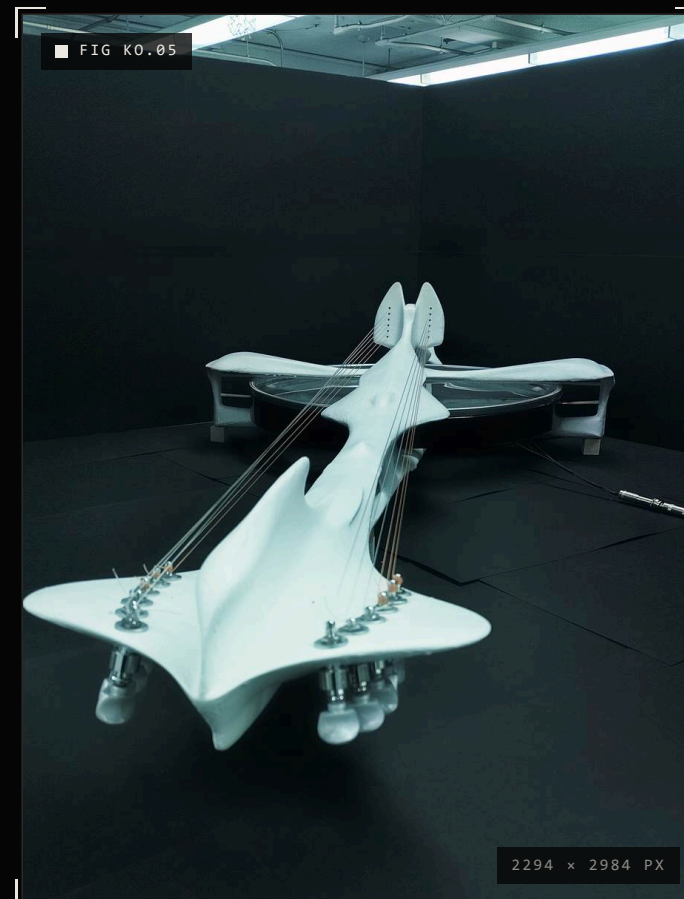
■ FIG K0.04



4080 x 1964 PX

FIG K0.04

■ FIG K0.05



2294 x 2984 PX

FIG K0.05



# 16 Kora Instrument Design

DESIGN



FIG K0.06

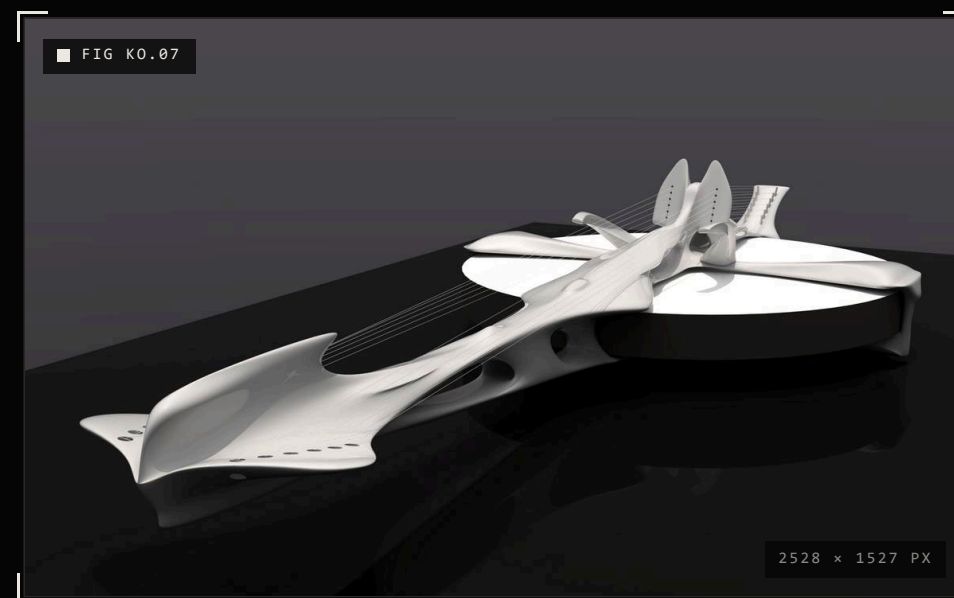


FIG K0.07

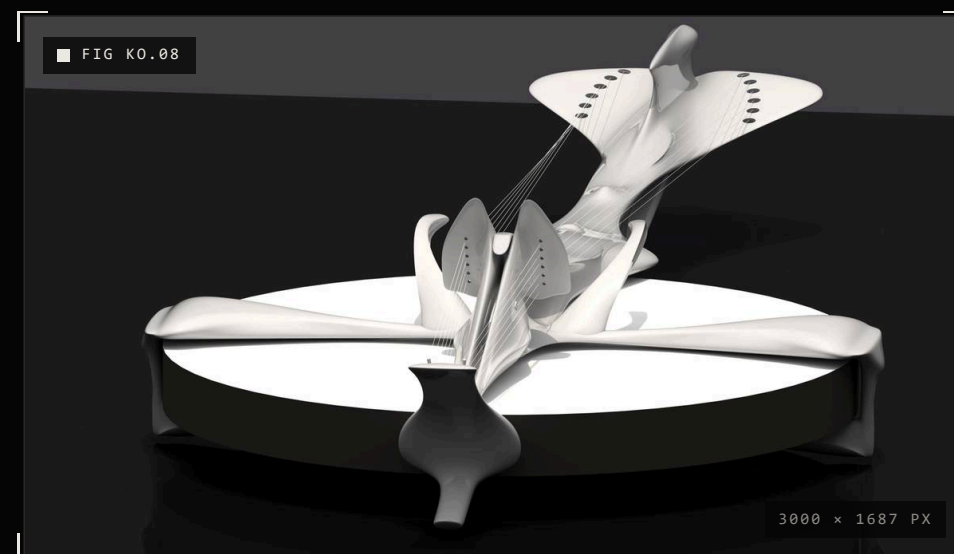


FIG K0.08

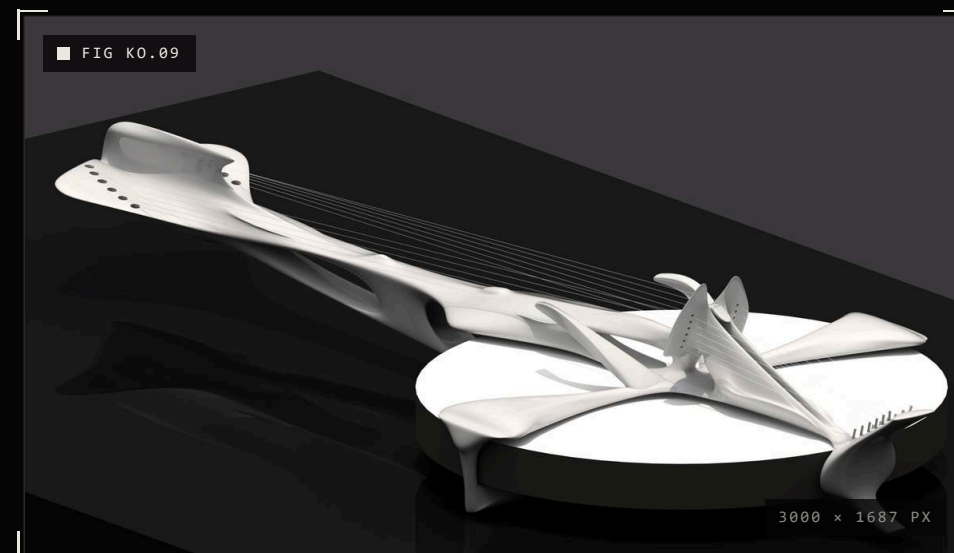


FIG K0.09



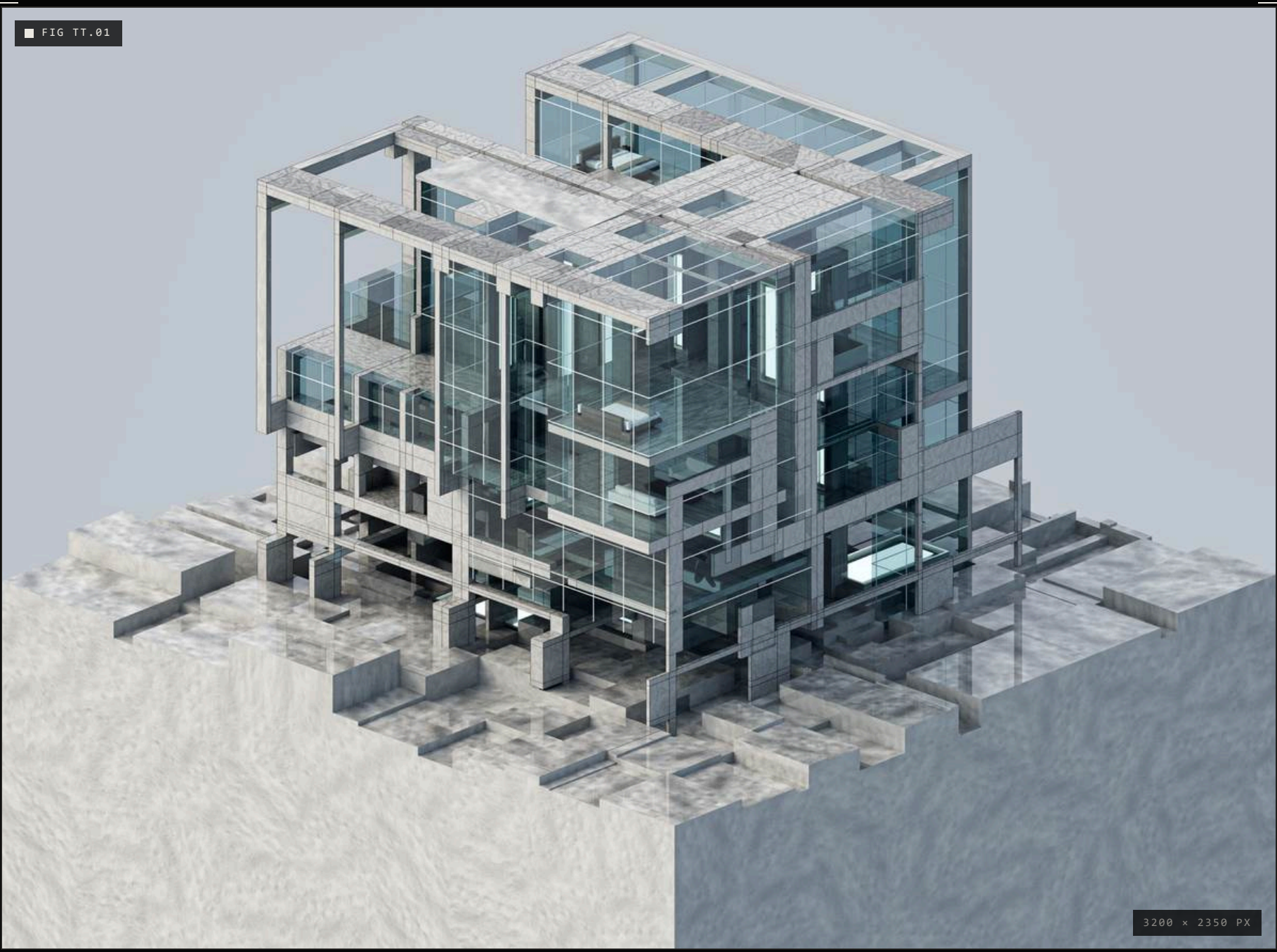


FIG TT.01

17

PROJECT TT / SECTION 17

30 × 30

|        |                     |                                                                            |
|--------|---------------------|----------------------------------------------------------------------------|
| TYPE   | Architectural study | Studies of a framed, modular building assembly and its structural lattice. |
| PLATES | 06                  |                                                                            |
| SHEETS | 02                  |                                                                            |



17 30 × 30

STUDIES

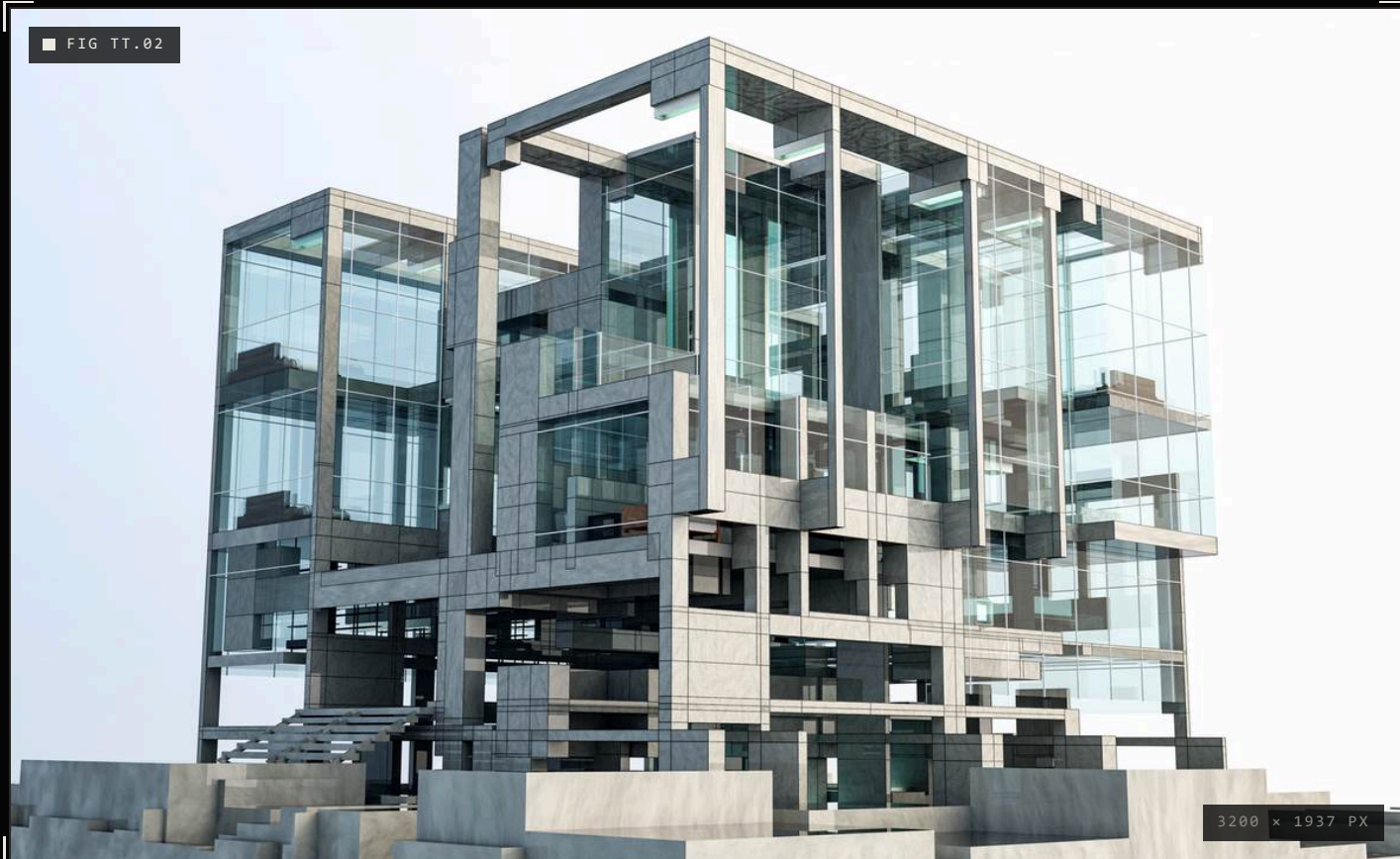


FIG TT.02

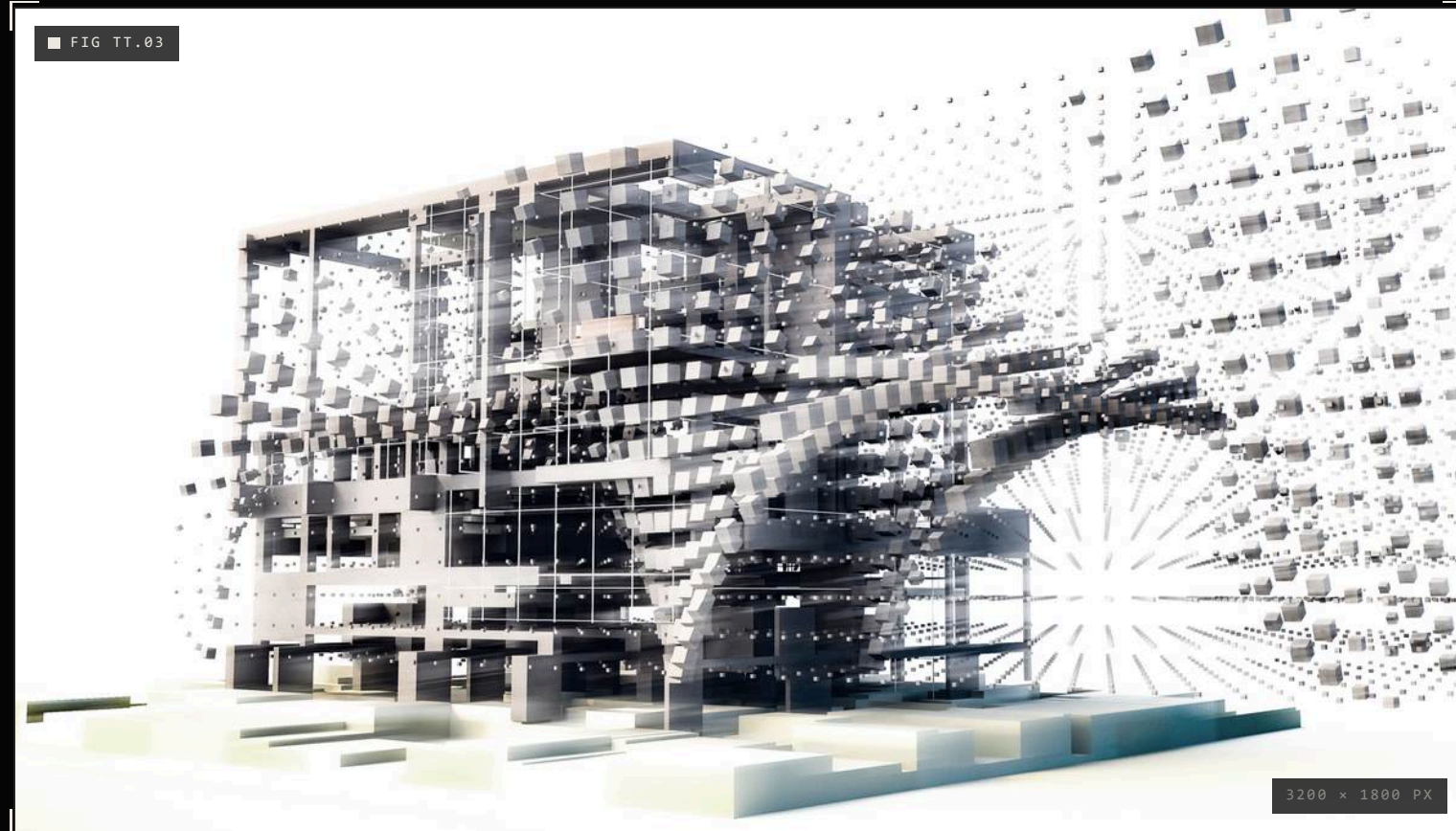


FIG TT.03

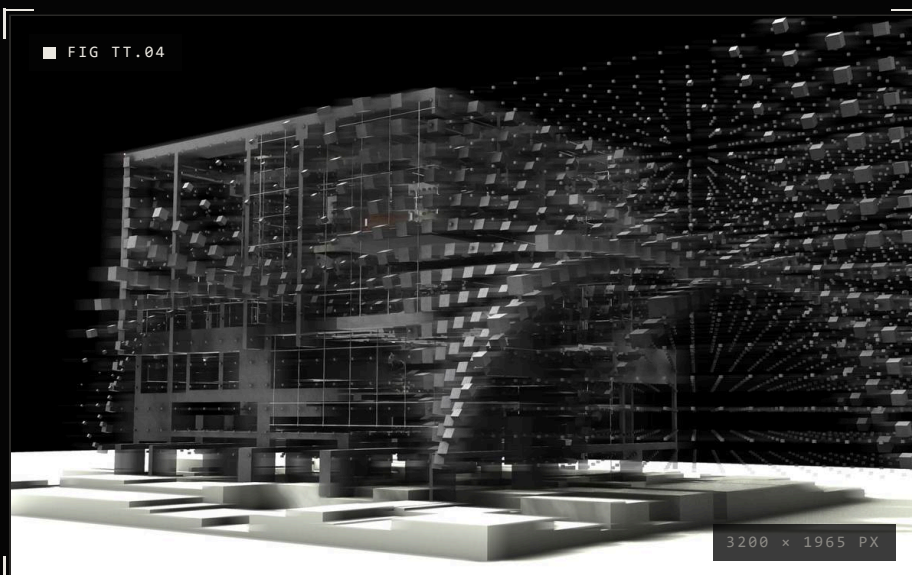


FIG TT.04

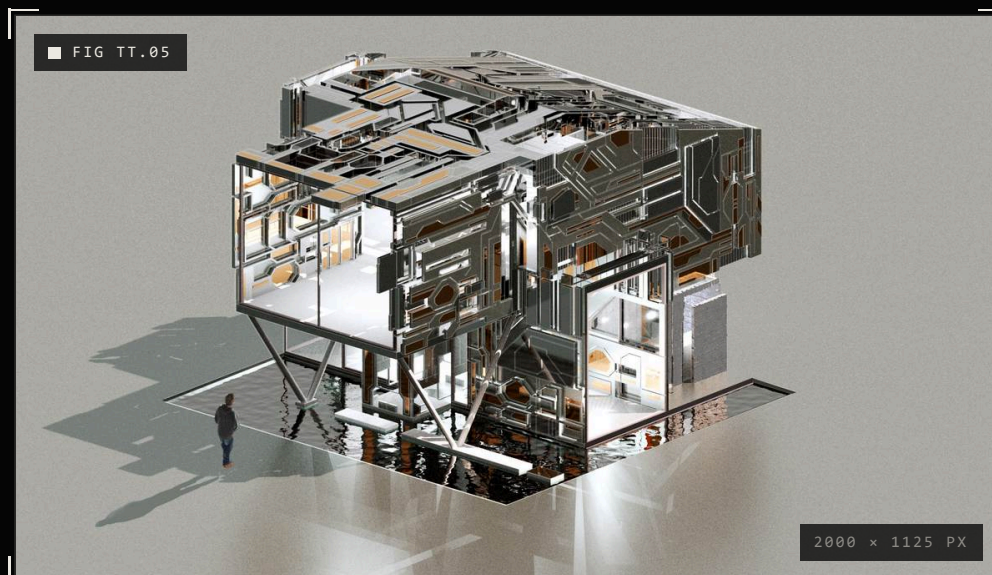


FIG TT.05



FIG TT.06



## 18

PROJECT CR / SECTION 18

## Morphology of Crystals

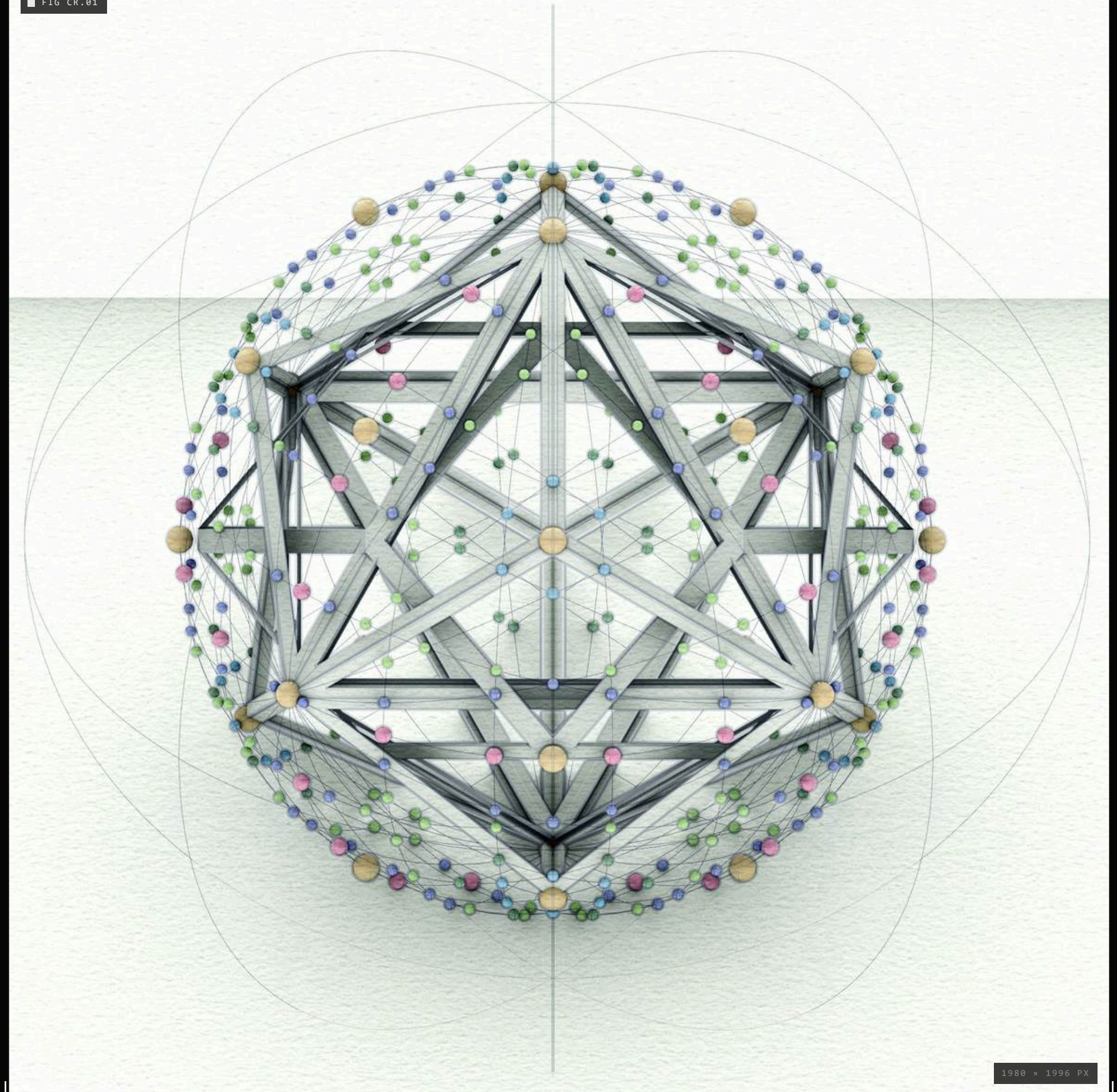
TYPE Formal research

SUBJECT Crystallography · growth · symmetry

Studies of crystalline growth and symmetry as generators of architectural form.

PLATES 07  
SHEETS 02

■ FIG CR.01



1980 × 1996 PX

FIG CR.01



## 18 Morphology of Crystals

CRYSTALLINE STUDIES

■ FIG CR.02

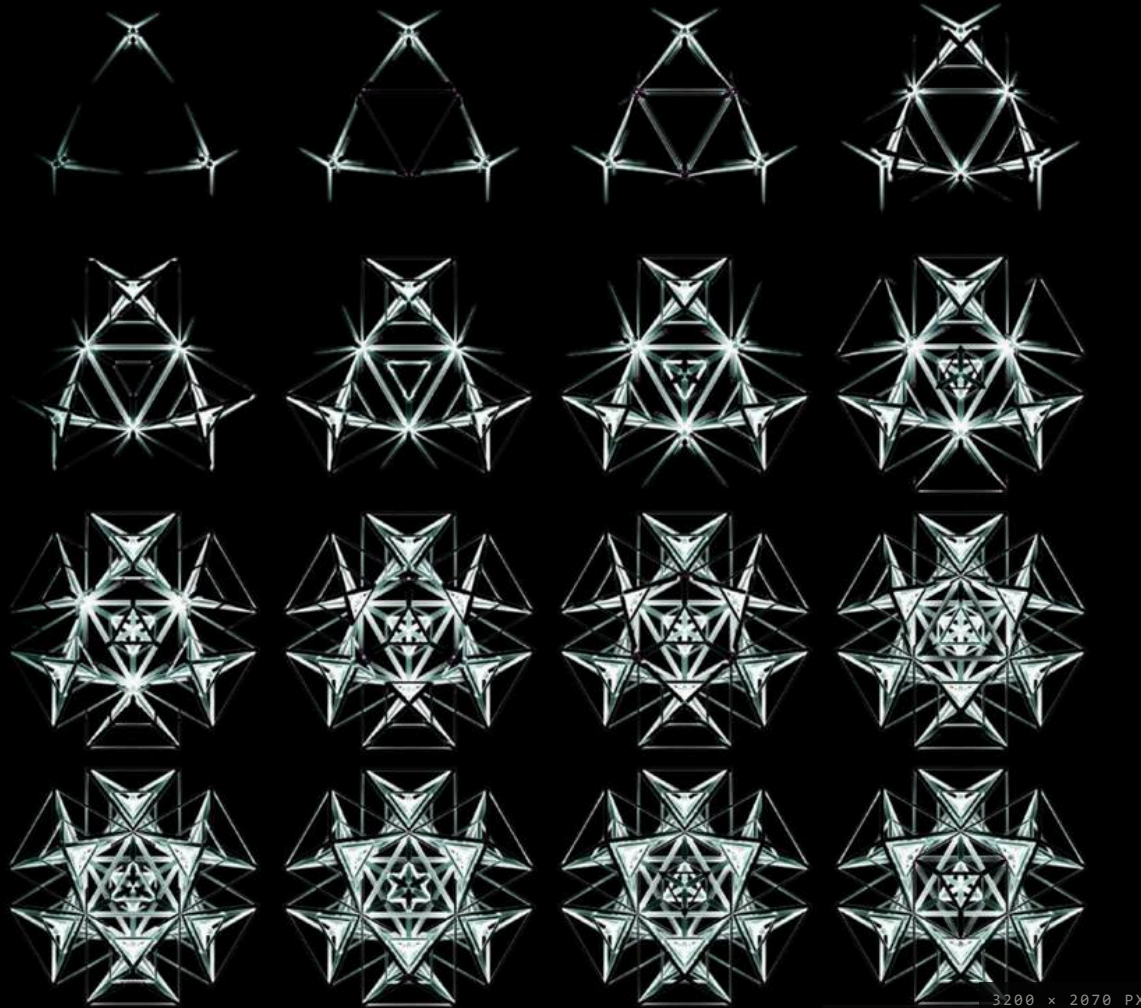
Informational matrices durable of continually increasing complexity while maintaining a disciplined structure are composed through studies of algorithmic proportions. Grids are projected in spatial ratios, intervals that are proportional, generating recursive relationships. The components of the grids are stratifications that stretch relatively vast distances while being subdivided in relative alignments.

An array or constellation of points with inherent organizational principles are projected into structures of organization forming an interdimensional space of expanding axes of mobility or freedom.

Relational frameworks of lines are projected spatially within themselves. Perspectives are nested within perspectives, volumes within volumes with proliferating organization across layers.

The genesis of the form is imbued and encoded with organizational principles that discern its future assemblage as it is animated.

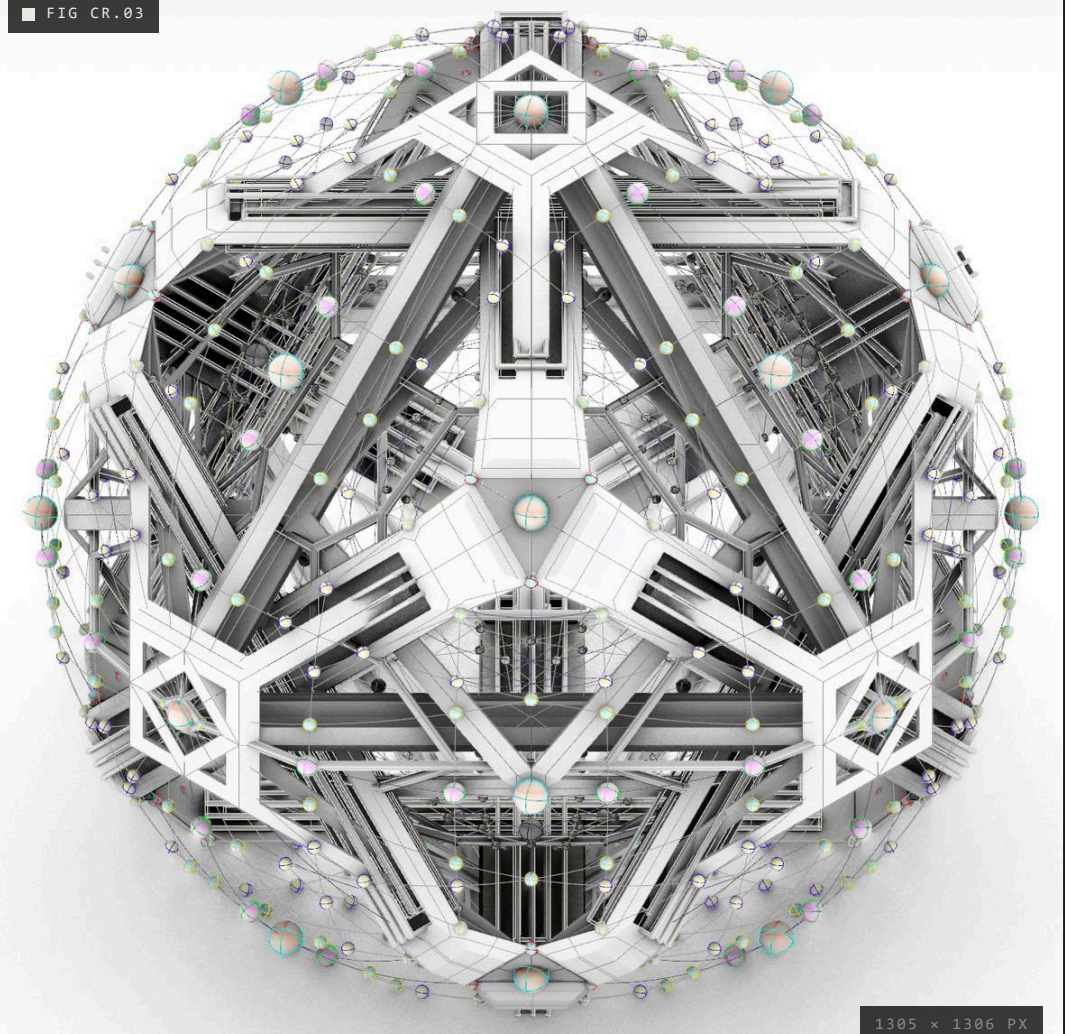
A rhythmic organization of space segments and discretizing the variant disciplines. Bridges span the vast horizon of interdisciplinary knowledge, their intersections marking intervals and segmentations.



3200 x 2070 PX

FIG CR.02

■ FIG CR.03



1305 x 1306 PX

FIG CR.03

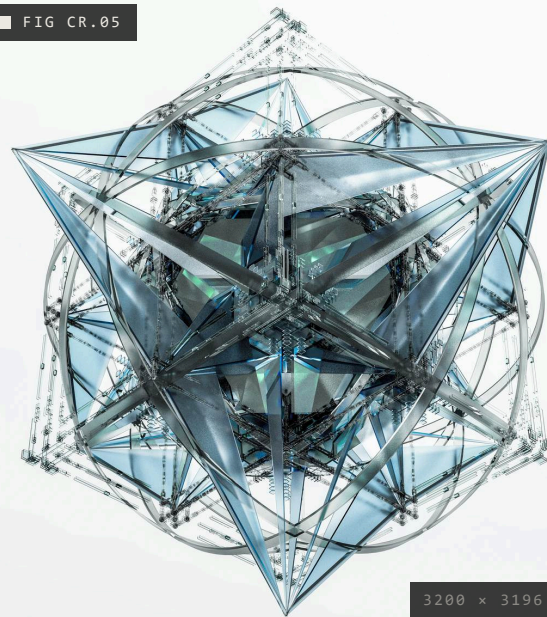
■ FIG CR.04



3200 x 2929 PX

FIG CR.04

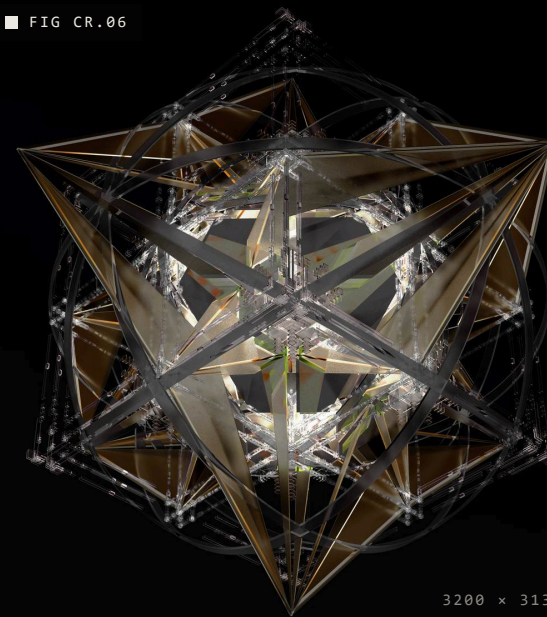
■ FIG CR.05



3200 x 3196 PX

FIG CR.05

■ FIG CR.06



3200 x 3132 PX

FIG CR.06

■ FIG CR.07



1831 x 1831 PX

FIG CR.07



## 19

PROJECT DH / SECTION 19

## Drawings by Hand

MEDIUM

Graphite · ink on paper

SUBJECT

Interiors · structure · figure

Drawing as the first instrument. Studies of interior space, structure and light made by hand.

PLATES 07  
SHEETS 02

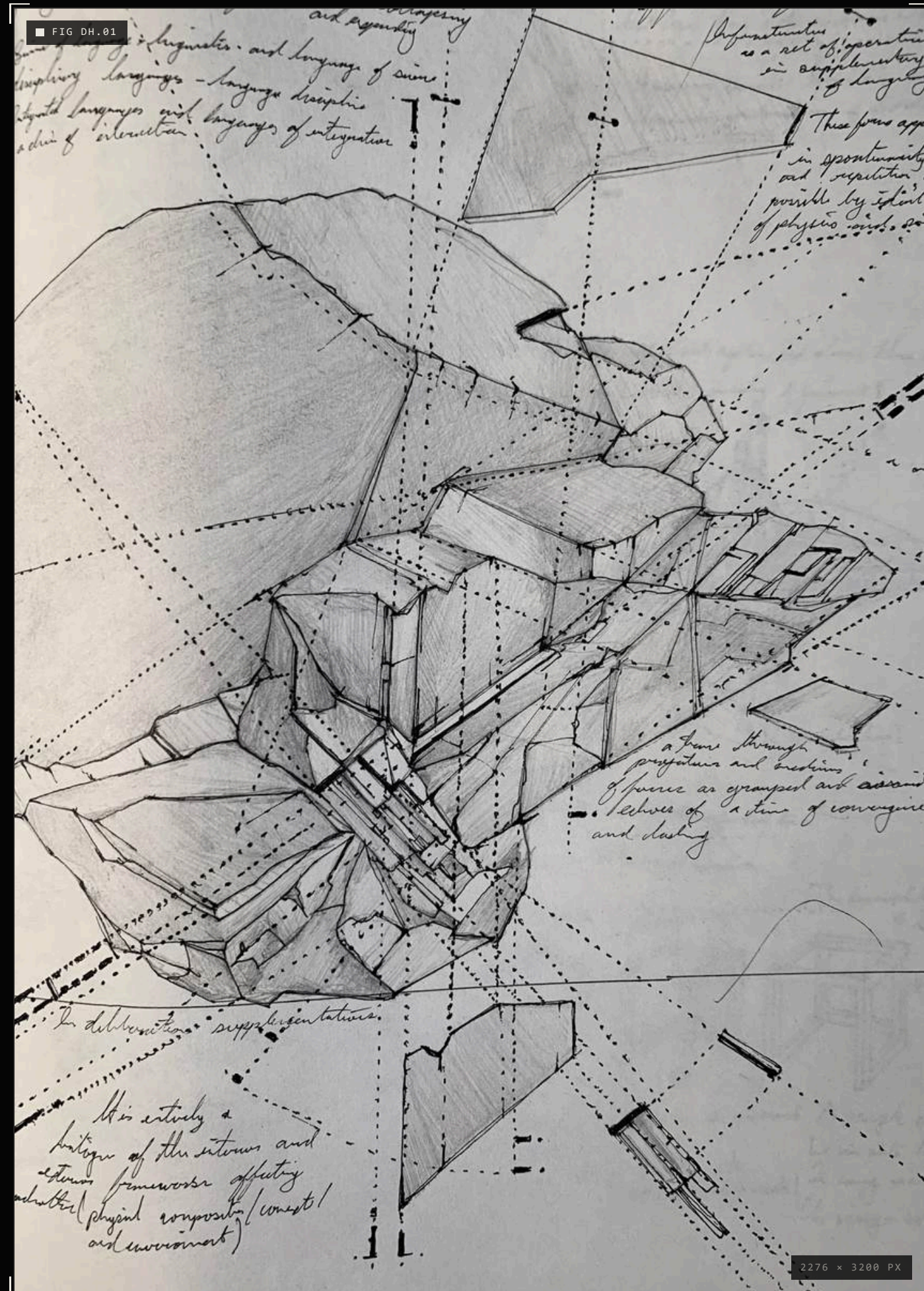


FIG DH.01

2276 x 3200 PX



## 19 Drawings by Hand

DRAWINGS

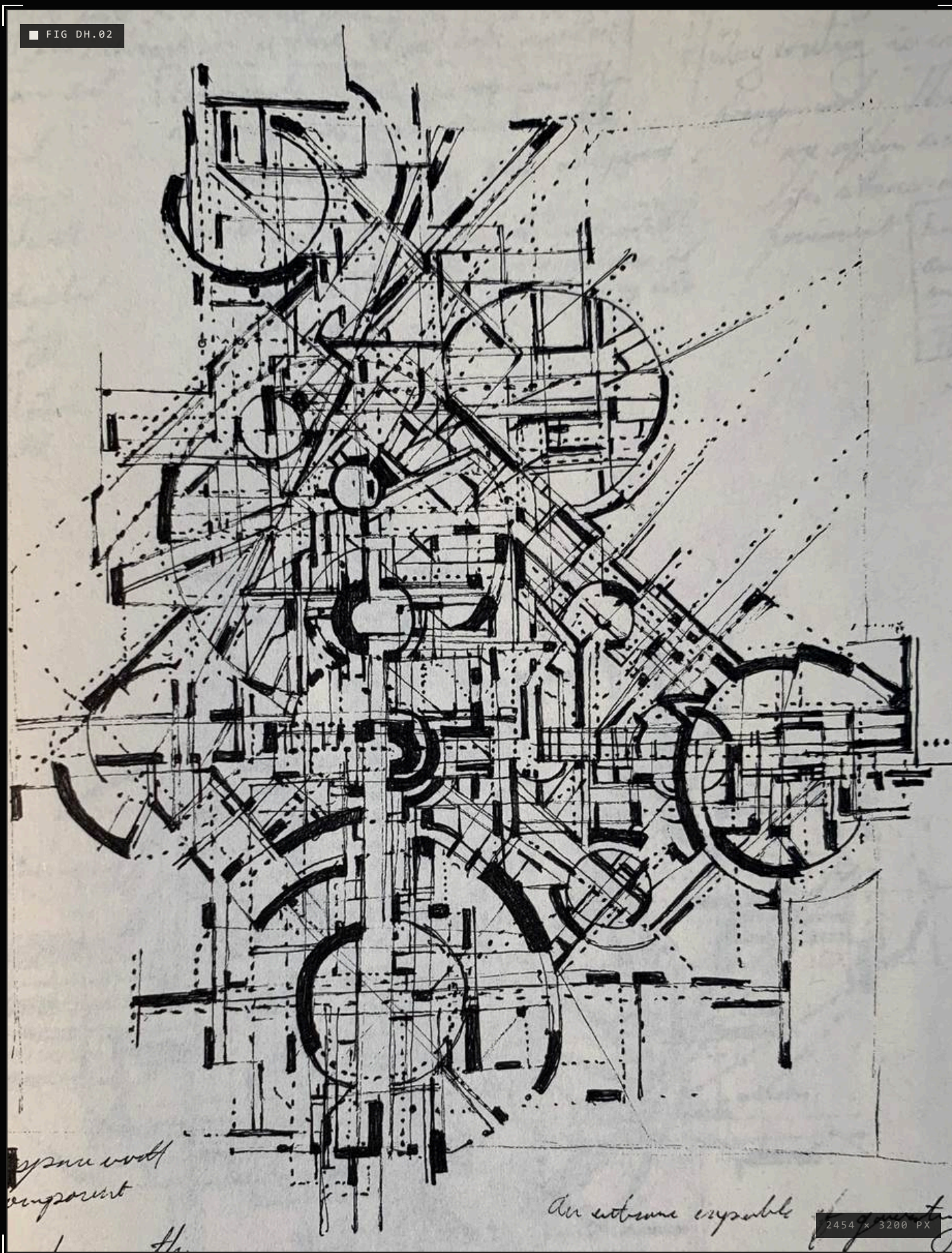


FIG DH.02

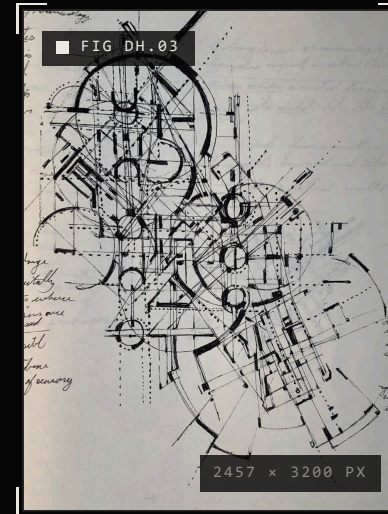


FIG DH.03



FIG DH.04

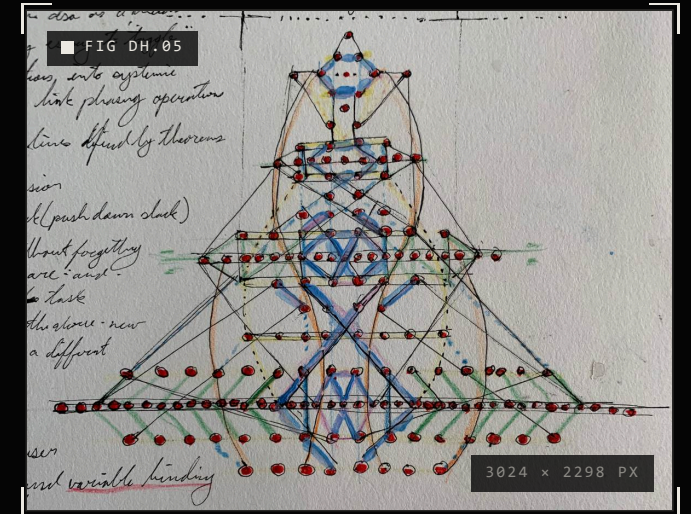


FIG DH.05

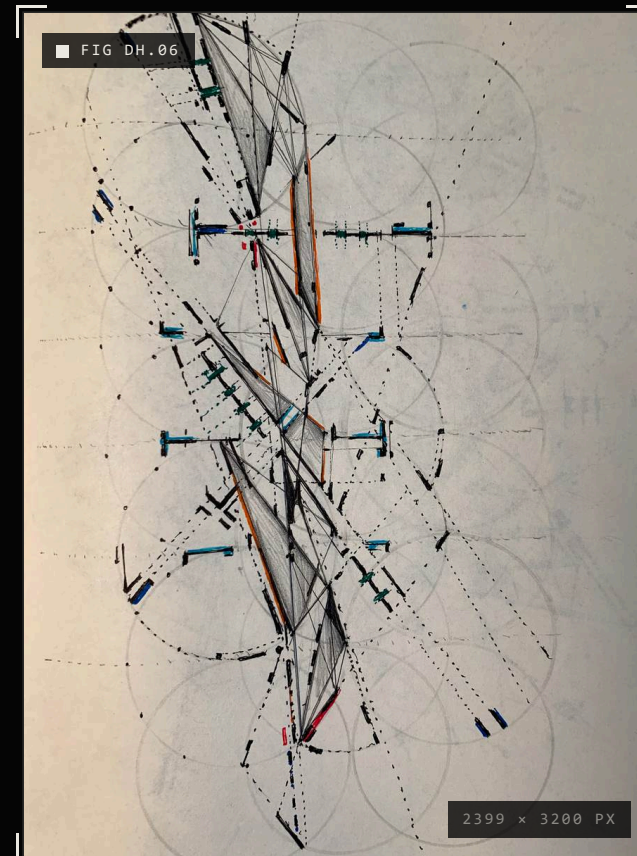


FIG DH.06

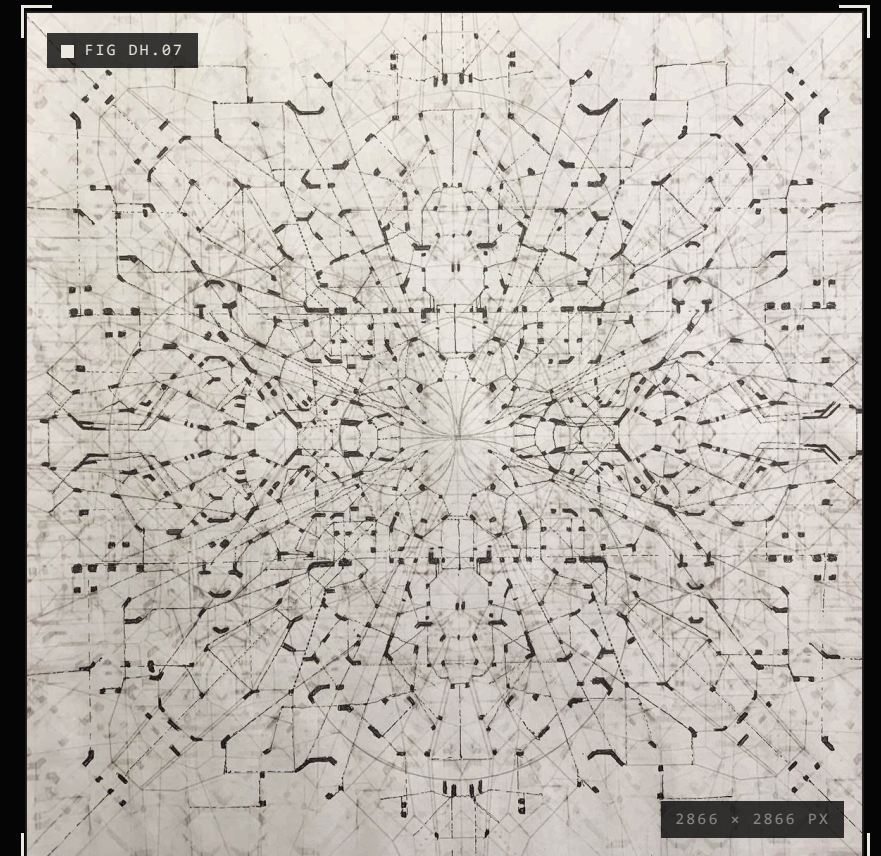


FIG DH.07



# 20

PROJECT TP / SECTION 20

## Topology

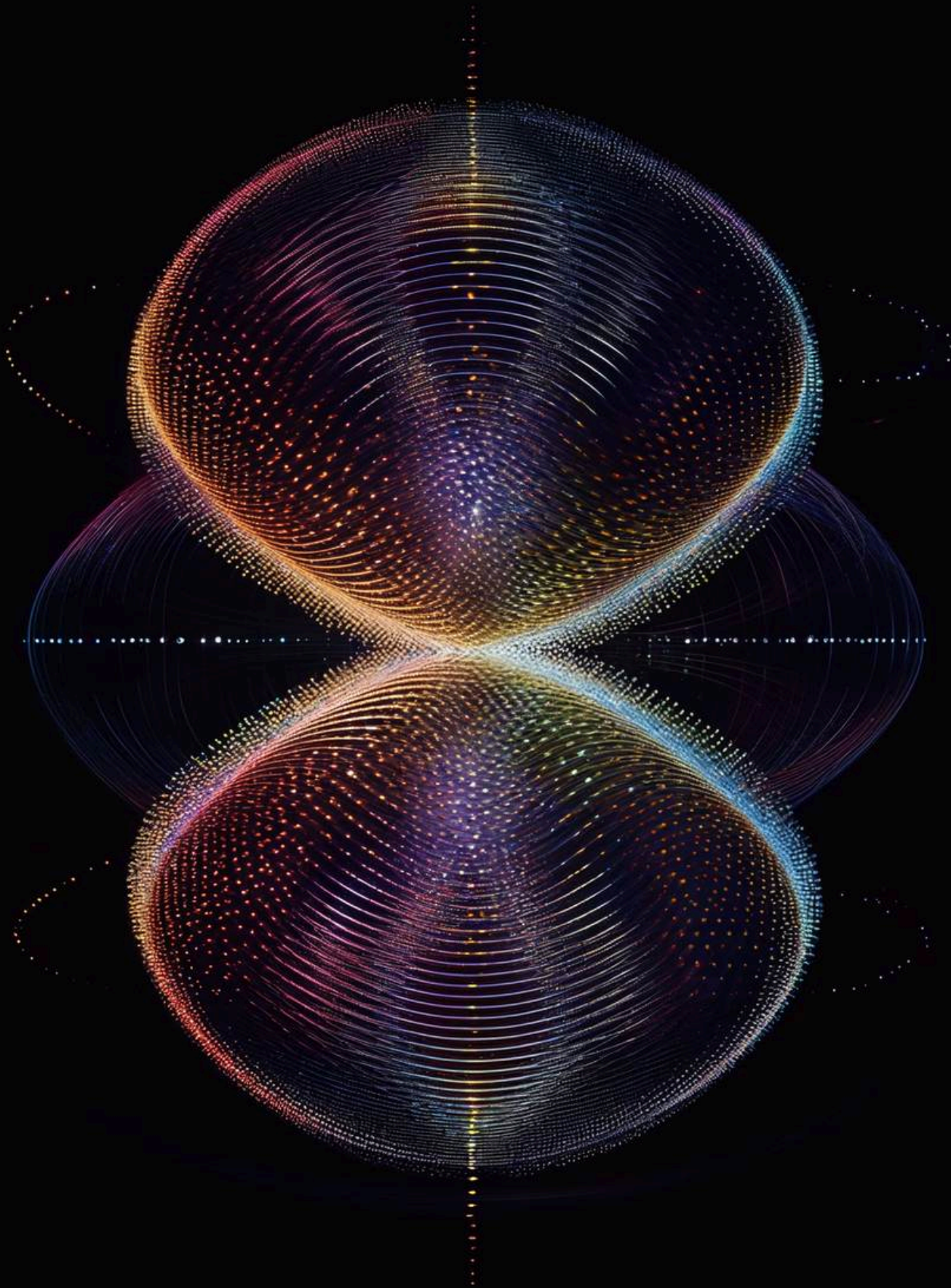
TYPE Formal research

SUBJECT Continuous surface · topology

Topological surface studies — continuous form across scales.

PLATES 04  
SHEETS 02

■ FIG TP.01



2048 × 2048 PX

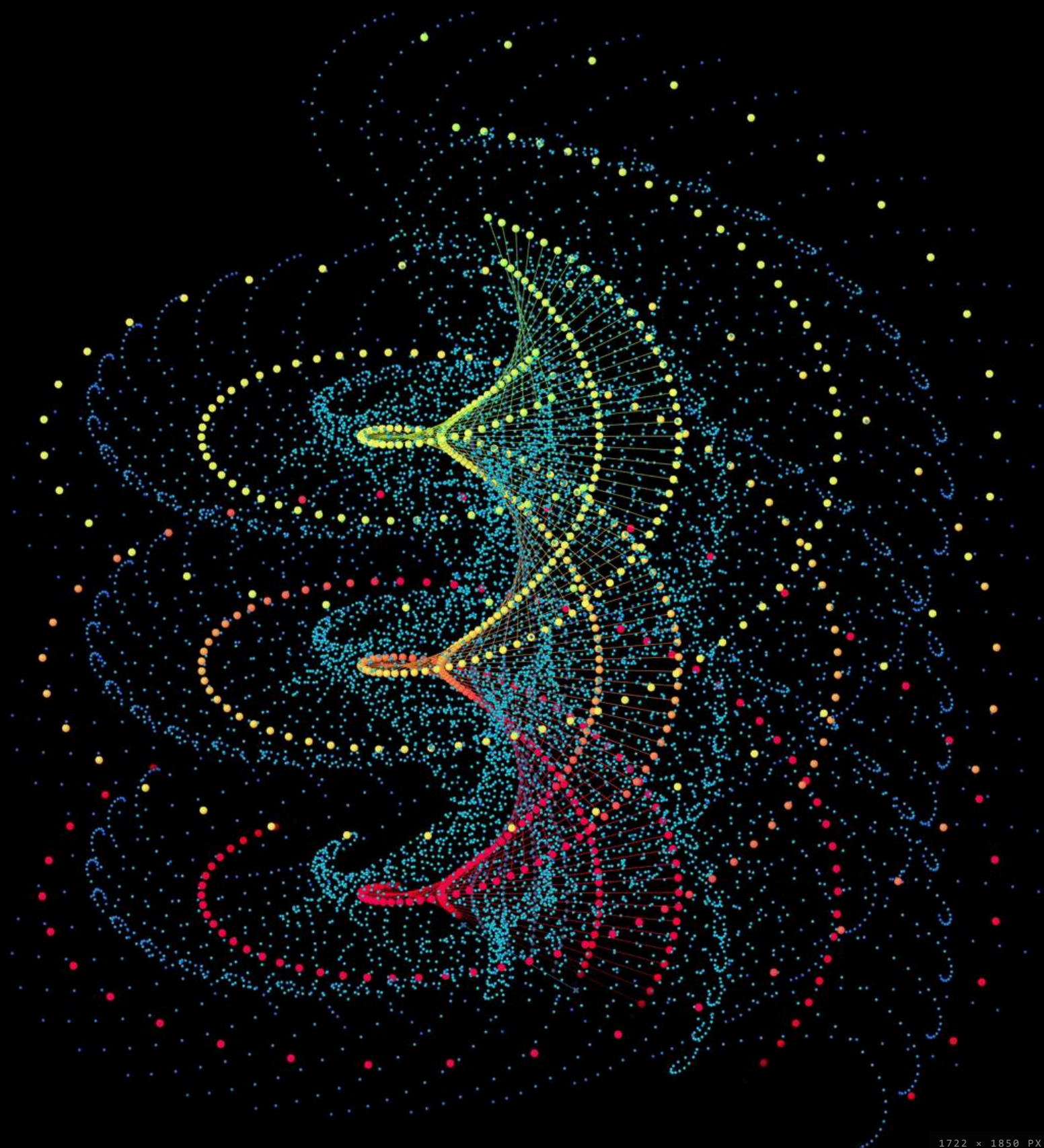
FIG TP.01



# 20 Topology

SURFACE STUDIES

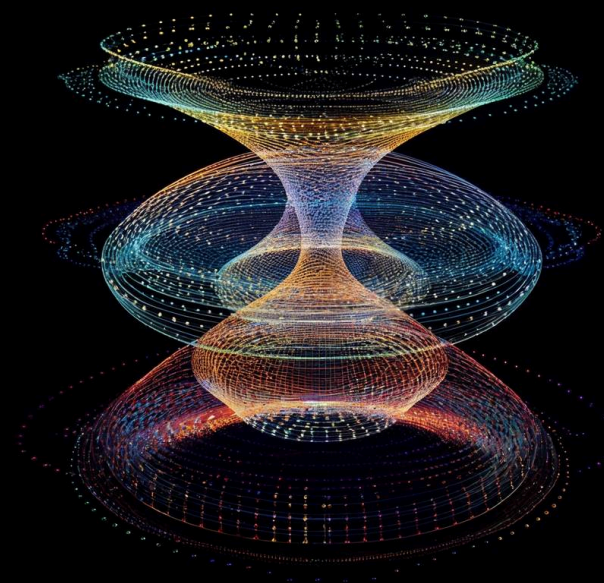
■ FIG TP.02



1722 x 1850 PX

FIG TP.02

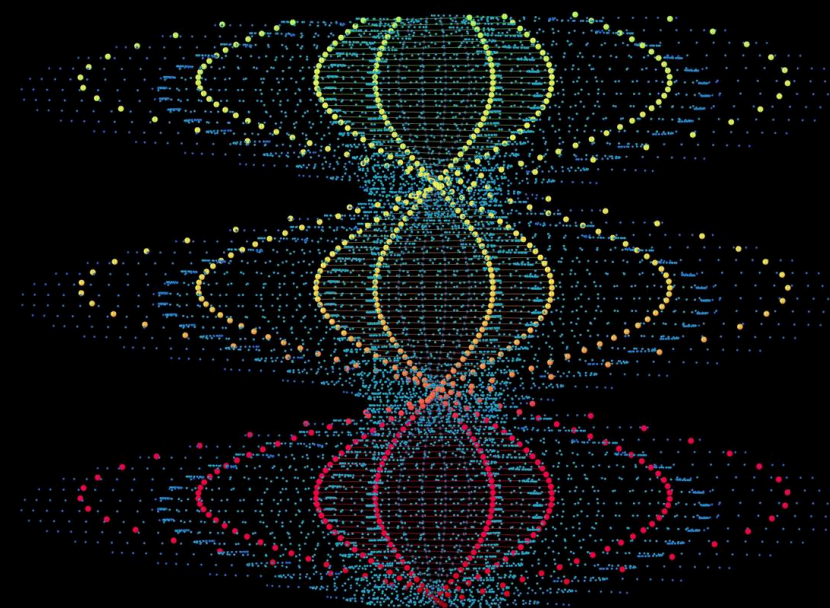
■ FIG TP.03



2048 x 2048 PX

FIG TP.03

■ FIG TP.04



2226 x 2010 PX

FIG TP.04



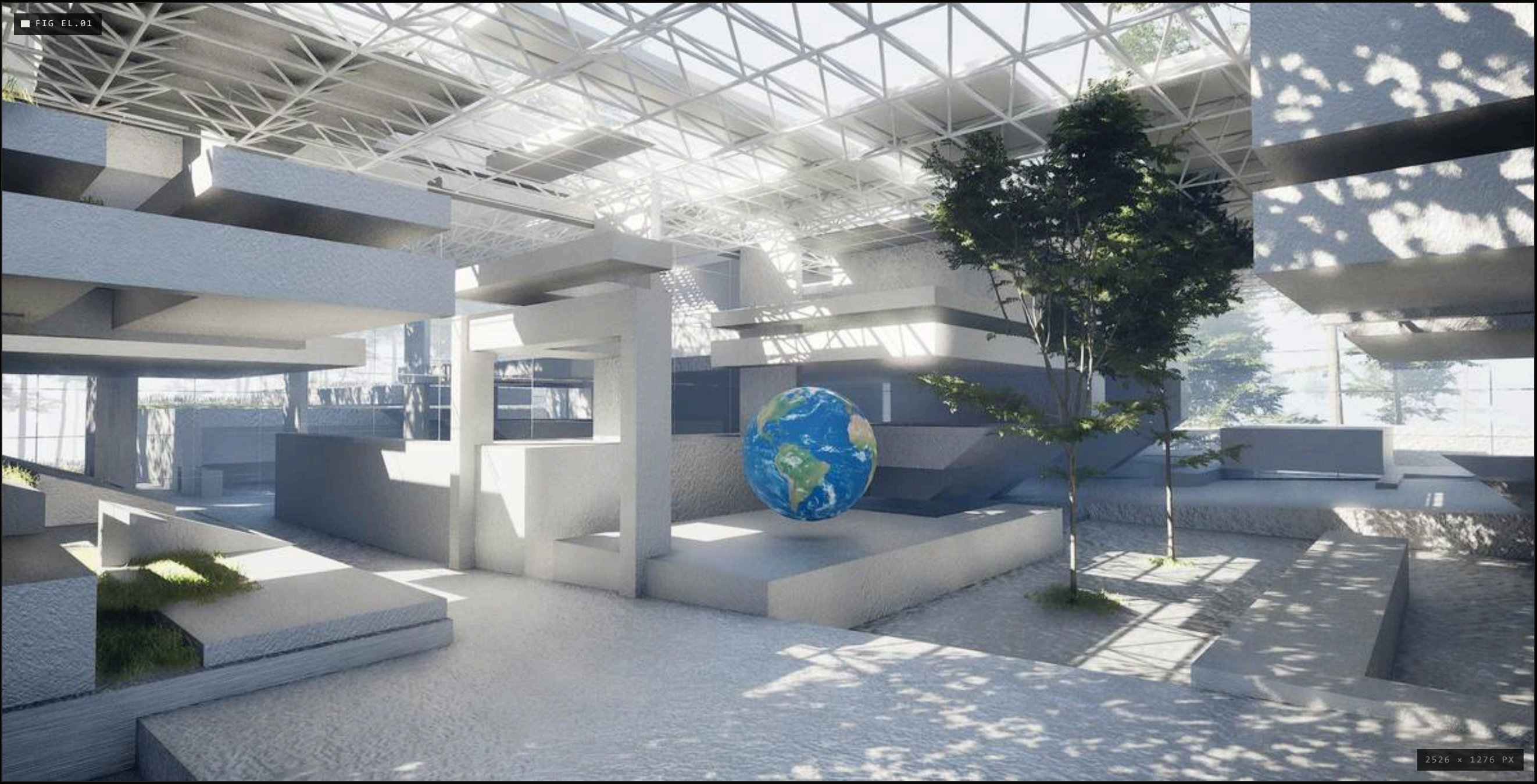


FIG EL.01

# 21

PROJECT EL / SECTION 21

## Eco-Lab

|        |                     |                                        |
|--------|---------------------|----------------------------------------|
| TYPE   | Ecological research | Ecological systems as design material. |
| PLATES | 04                  |                                        |
| SHEETS | 02                  |                                        |



21 Eco-Lab

STUDIES



FIG EL.02

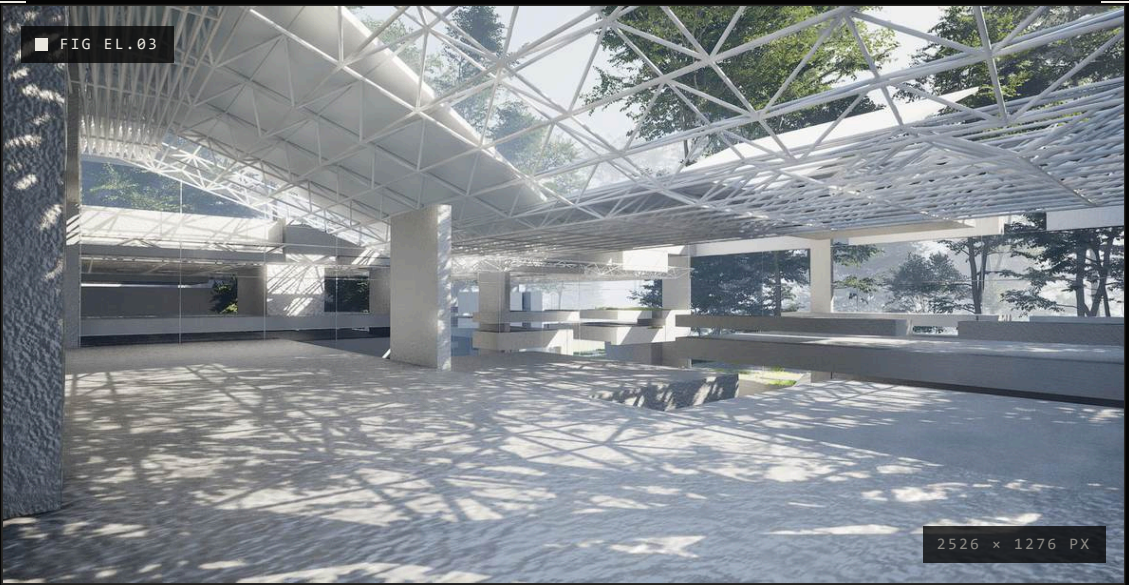


FIG EL.03

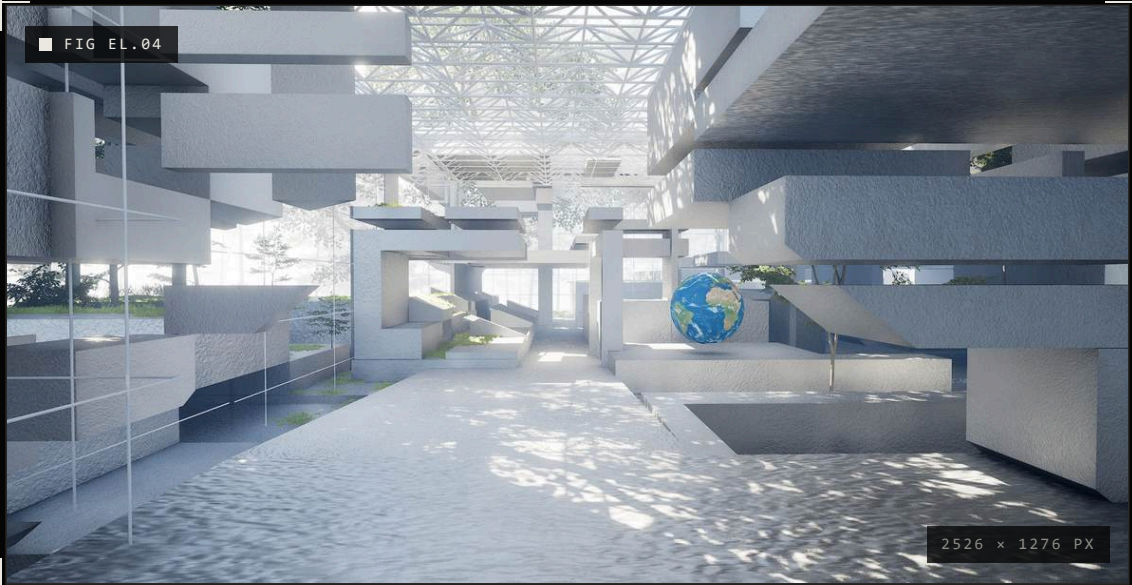


FIG EL.04



## 22

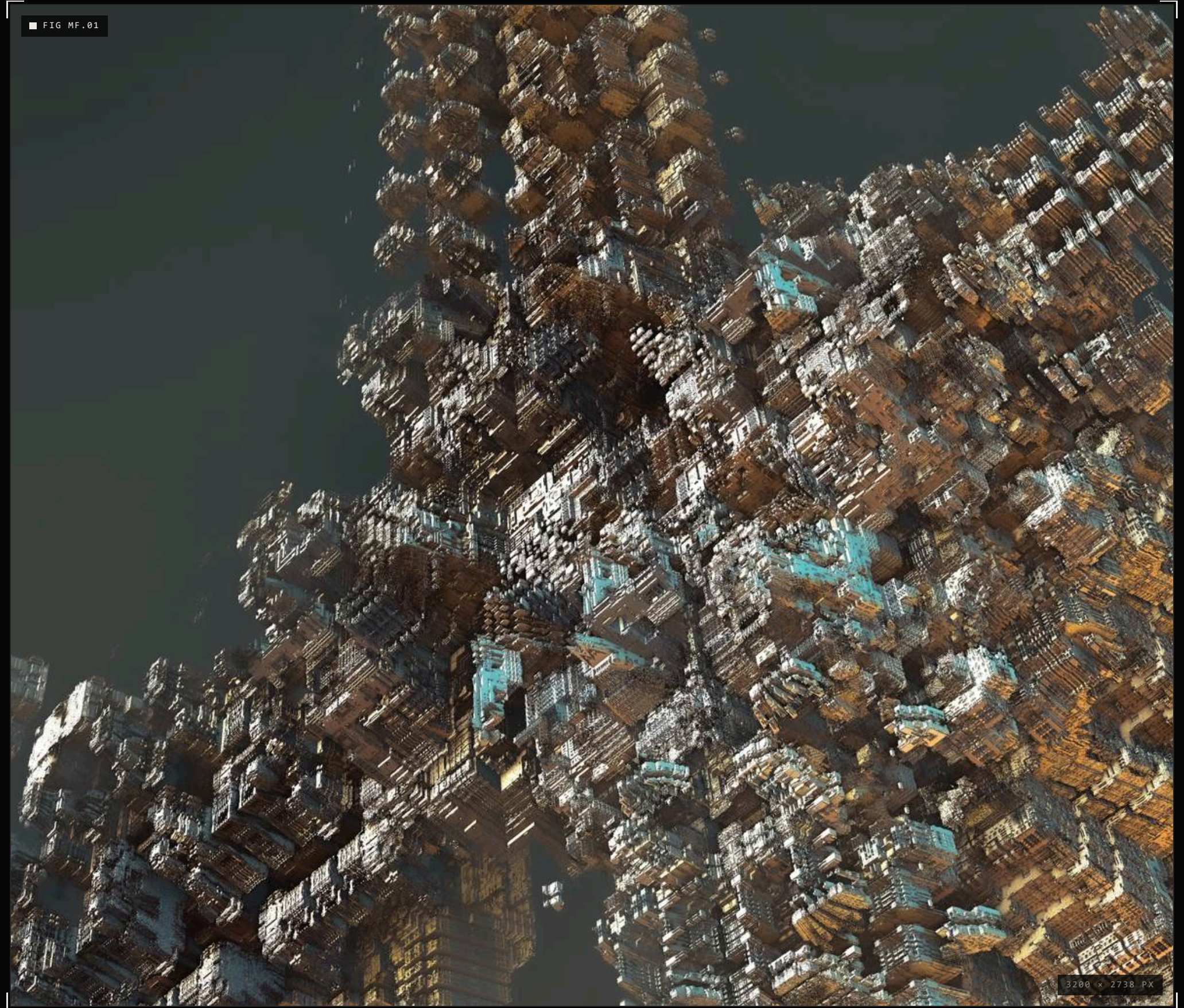
PROJECT MF / SECTION 22

## Mathematical Forms

TYPE Algorithmic design research

TOOLS Fractal software · Rhino · Grasshopper

Algorithmic design studies: fractal geometry organizing form across scales, from the aggregate to the aperture.



■ FIG MF.01

FIG MF.01

3200 × 2738 PX

PLATES 06  
SHEETS 02



## 22 Mathematical Forms

ALGORITHMIC STUDIES

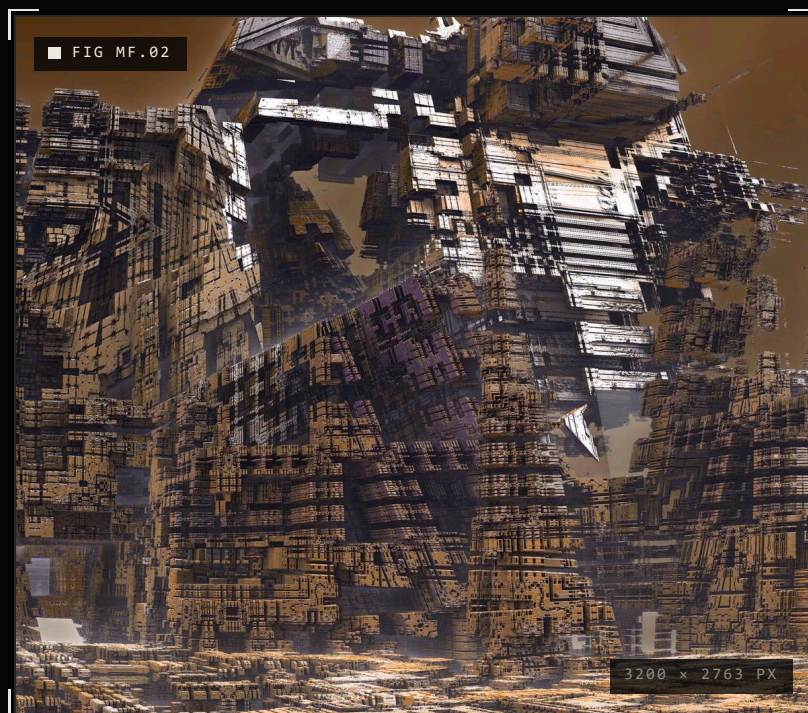


FIG MF.02

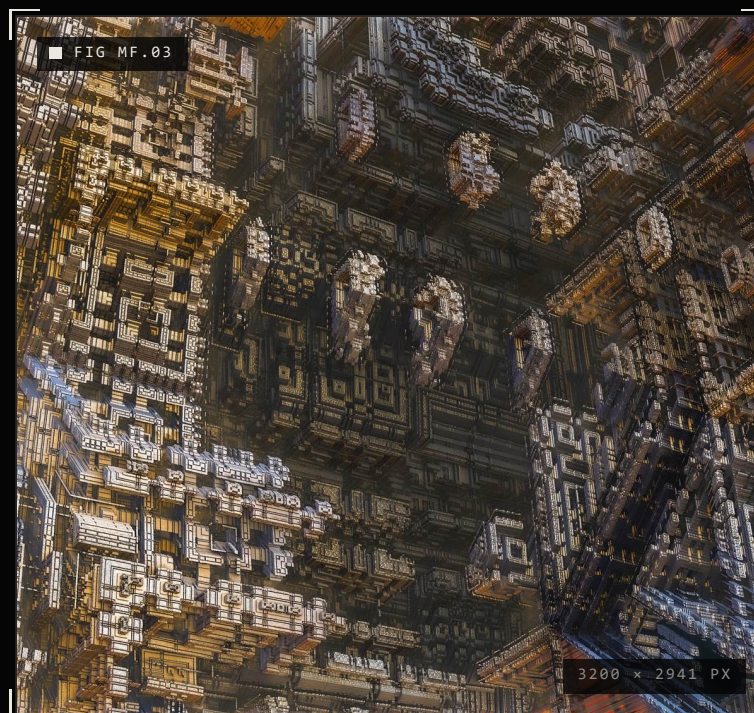


FIG MF.03

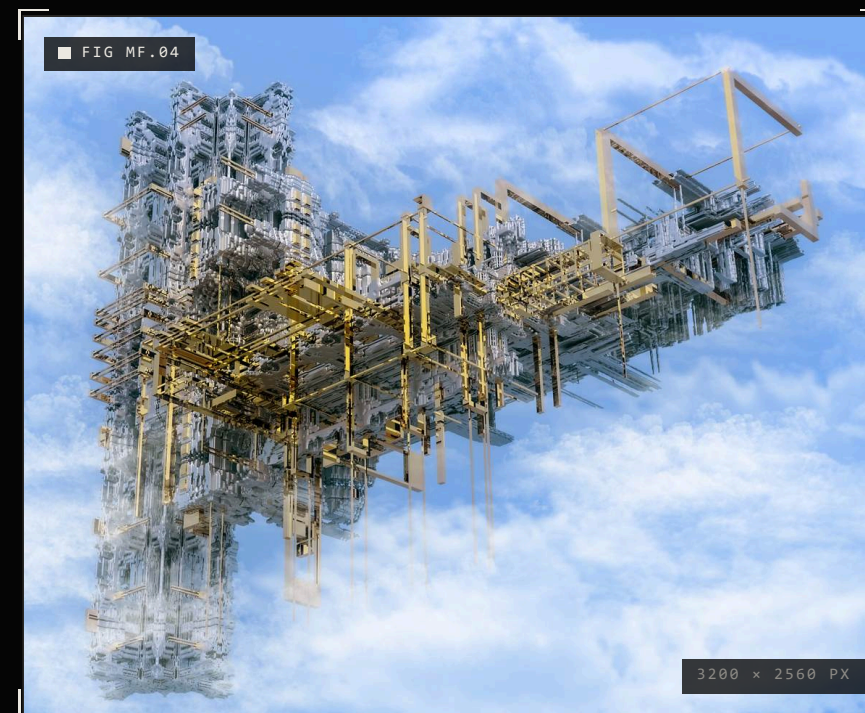


FIG MF.04

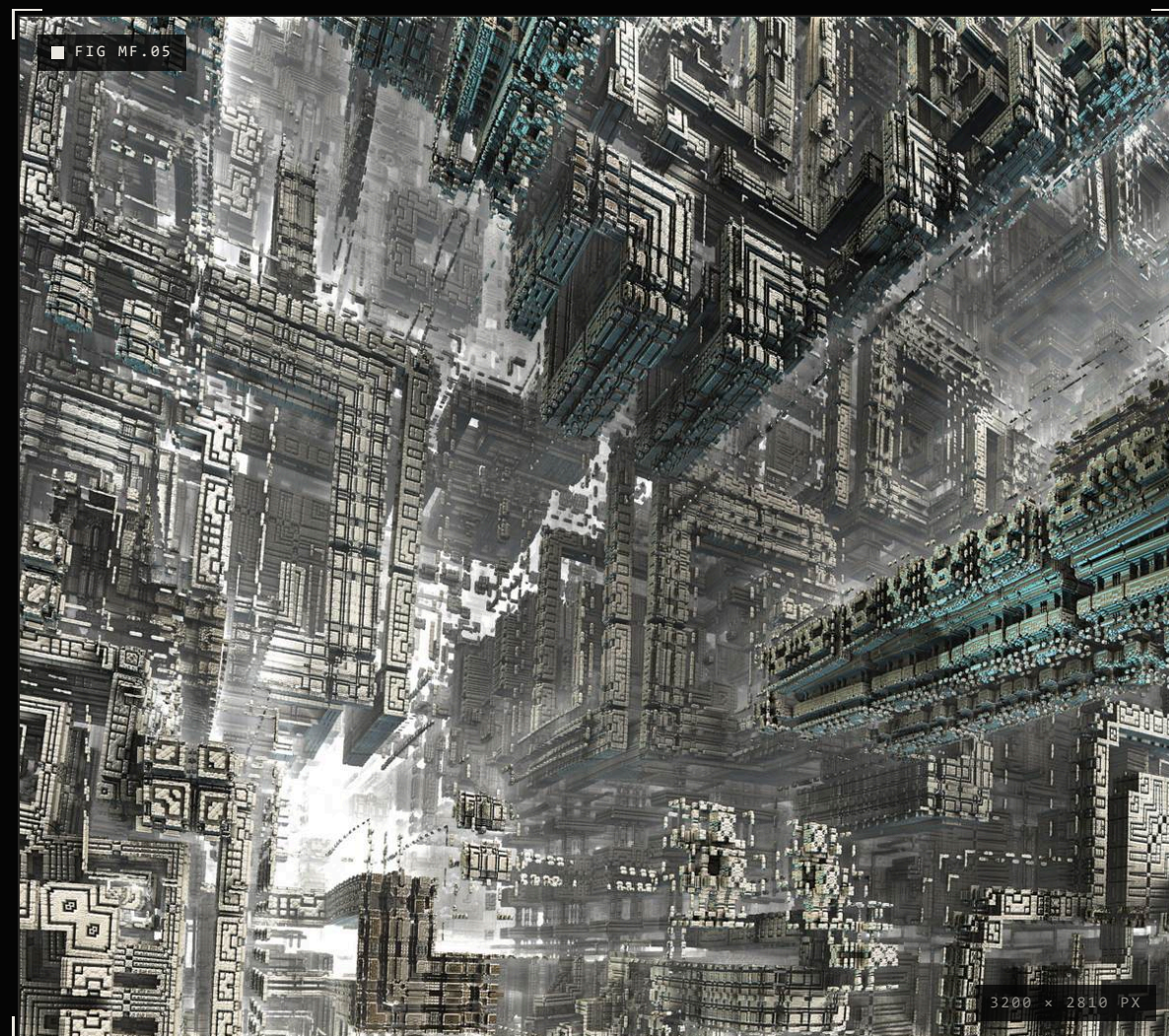


FIG MF.05

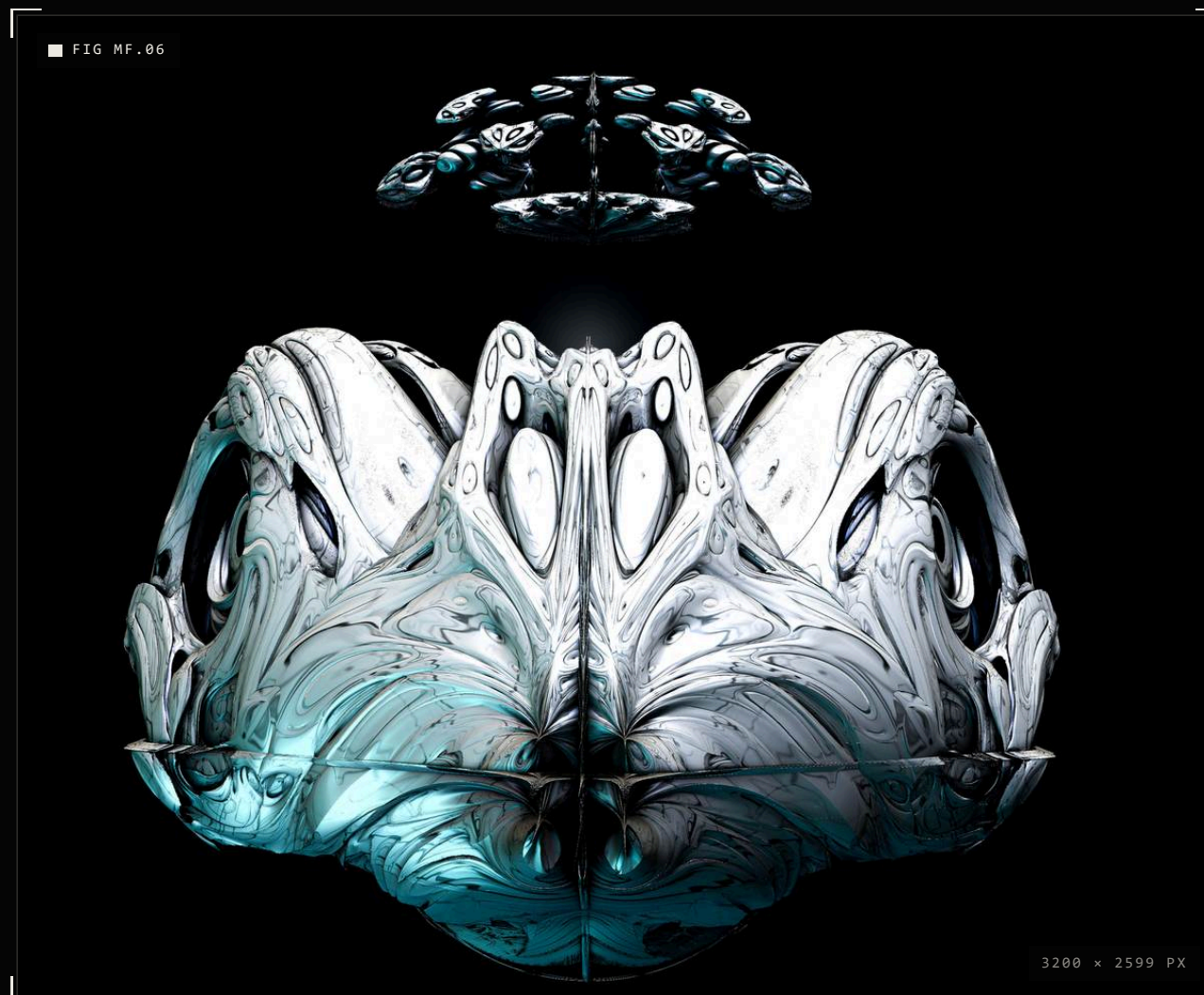
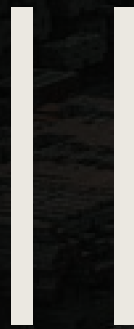


FIG MF.06





PART II

# Territorial Research

Research at the scale of terrain and the city, presented in condensed form.

|    |                          |    |
|----|--------------------------|----|
| TA | Terrestrial Architecture | 65 |
| AT | A.T.L.A.S                | 67 |
| FC | Fractal Cities           | 68 |





# 23

PROJECT TA / SECTION 23

## Terrestrial Architecture

|         |                                     |
|---------|-------------------------------------|
| TYPE    | Book / research project             |
| VOLUMES | Vol. I (2024) · Vol. II — The Codex |
| LAUNCH  | LATTC, May 2024                     |

PLATES 05  
SHEETS 02

Terrain as structural member, not site. Geospatial data and GIS cartography become the ground for speculative urban futures. Volume II, The Codex, extends the project into field architectures and fractal armatures.



## 23 Terrestrial Architecture

VOLUME II – THE CODEX

■ FIG TA.02

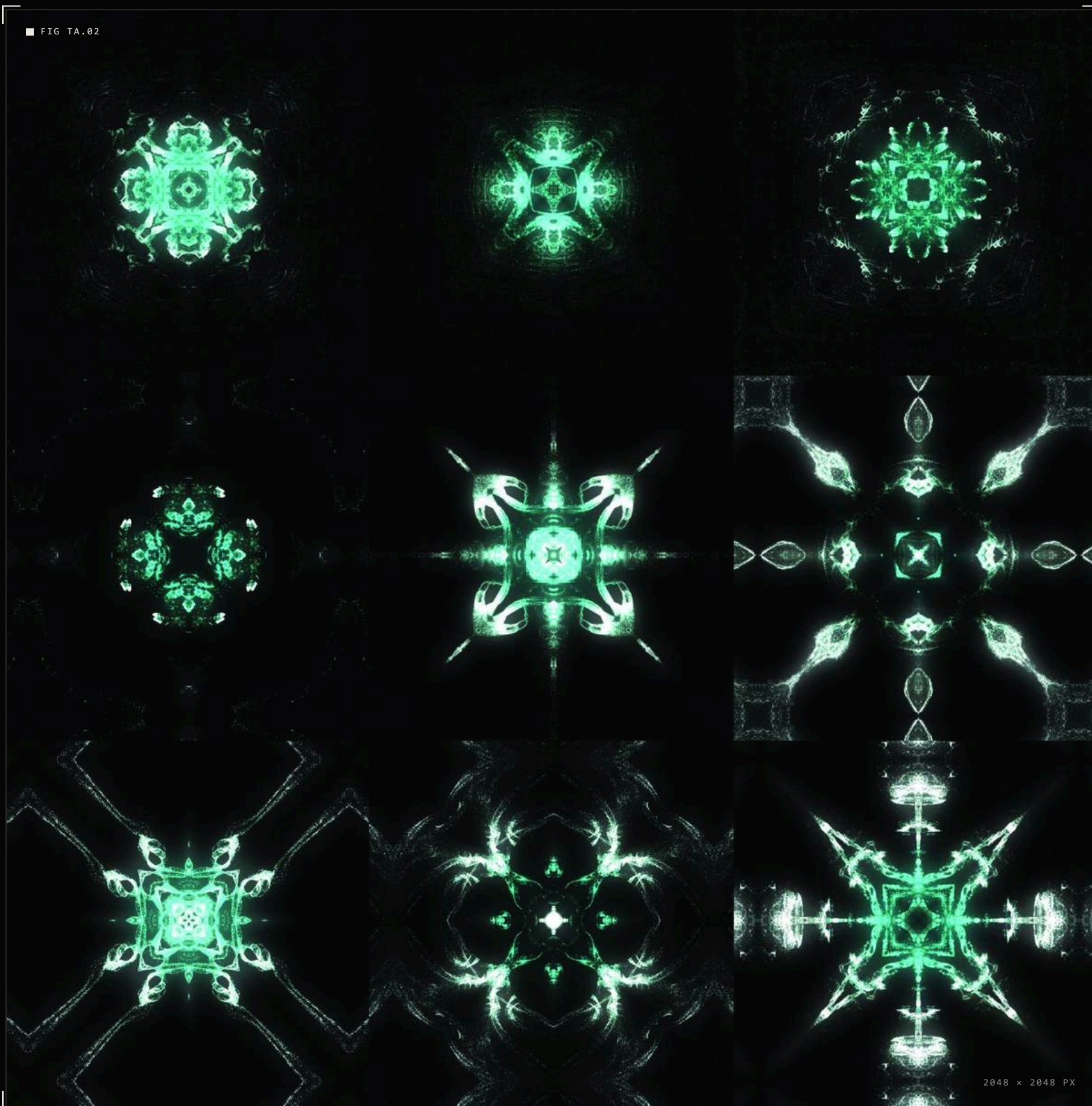


FIG TA.02

2048 × 2048 PX

■ FIG TA.03

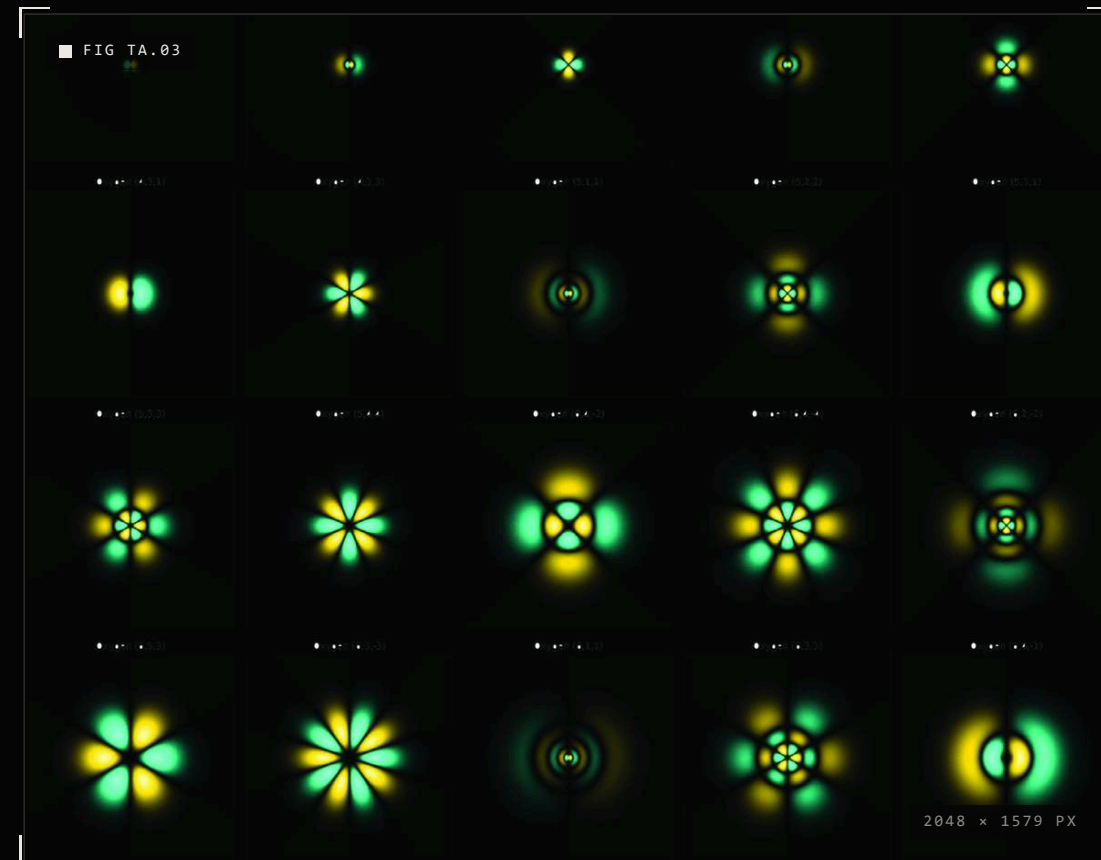


FIG TA.03

2048 × 1579 PX

■ FIG TA.04

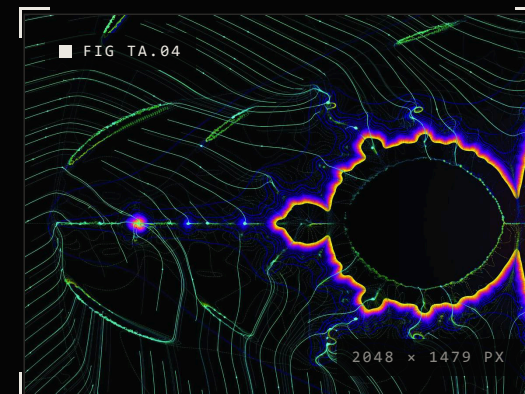


FIG TA.04

2048 × 1479 PX

■ FIG TA.05

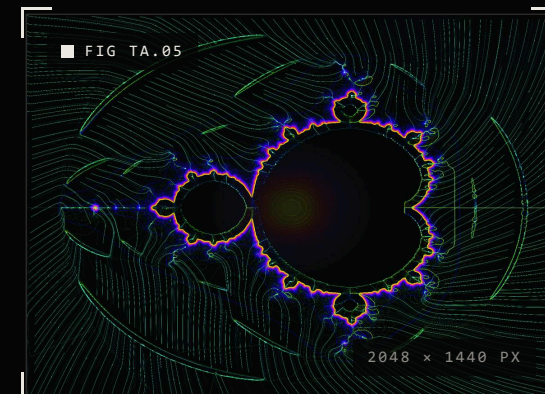


FIG TA.05

2048 × 1440 PX





FIG AT.01

# 24

PROJECT AT / SECTION 24

## A.T.L.A.S

|      |                                                      |
|------|------------------------------------------------------|
| NAME | Apparatus for Technical Logic in Analytic Structures |
| TYPE | Infrastructural / urban machina                      |

PLATES 01  
SHEETS 01

The machina configures human beings at an infrastructural and urban scale, articulated with intelligent machines — spaces for inquiry and presentation, laboratories and decoding centers — curating dependency models between architects, scientists, artists and the machines they work with.



# 25

PROJECT FC / SECTION 25

## Fractal Cities

TYPE Fractal architecture

TOOLS Mandelbulb 3D · Rhino

SOURCE jackrendler.com archive

Fractal formulas as urban systems — Quantum City, Modular Synthesis and related plates, where recursion produces an entire city fabric from a single rule.



FIG FC.01

PLATES 01

SHEETS 01



CONTACT

# Jack Oliva-Rendler

CONTACT jackrendler.com

LOCATION Los Angeles, California

Thank you.



■ FIG END

1672 × 941 PX

FIG END