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(For digital version two-page view.)

Year 1, Fall 2024

Patrick Devine

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Course/Studio Information

Arch 102a: Architectural Design I

This course introduces architecture as a discipline that integrates techniques, histories, and theories to address social, cultural, and environmental conditions through design. Organized into three phases, the studio develops foundational skills and critical thinking. Students will first explore form-making through digital and physical mediums, then expand to larger aggregations, and finally apply their knowledge to design a pavilion responding to cultural contexts. Emphasis is placed on geometric principles, spatial organization, and the interplay of two- and three-dimensional representations. Students will master orthographic, isometric, axonometric, and perspective drawings, alongside digital and physical modeling. Precedent analysis and diagramming will inform design decisions, while progressively complex projects will explore key architectural concepts such as proportion, scale, light, and movement. The course fosters rigor, clarity, and precision, equipping students to articulate design intent and engage in constructive critique while participating in the broader tradition of architectural representation.

PROJECT 1 “Digital to Physical (White/Gray Phase)”

In this project, students will create two gray models and two white models, progressing from basic geometric principles to advanced solid modeling. Starting with points, lines, and surfaces, they will construct a solid cube, learning geometric properties like normals, vectors, and NURBS. The second phase introduces curved surfaces and solid operations, such as union, subtraction, and intersection, culminating in the production of two white models. Students will translate digital models into physical forms, bridging virtual and tangible design. They will refine their best gray and white models, focusing on mass, voids, and ground relationships, with evaluations guided by class discussions and reviews.

Page 1.1: Isometric Drawings

Page 1.2: Orthographic Drawings and Unrolled Template Drawings

Page 1.3: Model Pictures

PROJECT 2 “Aggregate + Operate (White + Gray Phase)”

In the second assignment, students will create hybrid models by merging the “gray” and “white” models, focusing on solid-void, part-whole, and volume-surface relationships. They will transform formal attributes into spaces, patterns, structures, and facades while exploring spatial aggregation and geometric rigor. Using iterative design, students will manipulate the cube to balance order and complexity. Emphasis is placed on documenting the process through drawings to refine and enhance designs.

Page 2.1: Isometric Hybrid Drawings of Combined White + Gray Digital Models

Page 2.2: Descriptive Drawing

Page 2.3: Physical Model Pictures

Page 2.4: Orthographic Drawings Axonometric Drawing

PROJECT 3 “Olympic Pavilion/Folly in Exposition Park (Color Phase)”

In ARCH 102a’s final project, Project 3 continues the design development from the previous project by transforming the final cube model into a pavilion, focusing on site context, scale, and programmatic articulation. Students will scale up their final cube model, and situate it within a real-world site at Exposition Park, where some major games and events of the 2028 Summer Olympics will take place. The site is currently an empty lawn to the north of the BMO Stadium, and it is part of the master plan for Exposition Park’s development for the 2028 Summer Olympics. Students will apply architectural considerations such as entry points, spatial relationships, and contextual responses. This project emphasizes the importance of adapting a conceptual model into a site-specific structure while addressing architectural issues related to scale, occupancy, spatial experience, and materiality. The process will guide students from a scaled-up conceptual exploration to a detailed architectural representation of a pavilion that embodies their design intent.

Page 3.1: Site Synthesis Plan

Page 3.2: Axonometric Drawings

Page 3.3: Physical Model Pictures

Page 3.4: Orthographic Drawings

Page 3.5: Renderings

ARCH-102A, ARCH-105A

PORTFOLIO CHAPTERS

PROJECT 1 | Digital to Physical (White/Gray Phase)

PAGE 1.1 - 1.3

isometric gray & white drawings
orthographic drawings & unrolled template drawings
physical models

PROJECT 2 | Aggregate + Operate (White + Gray Phase)

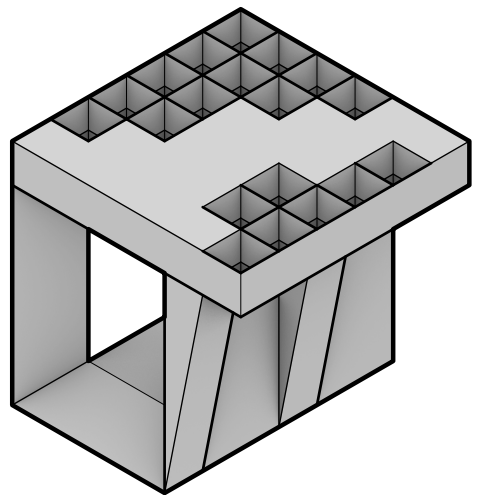
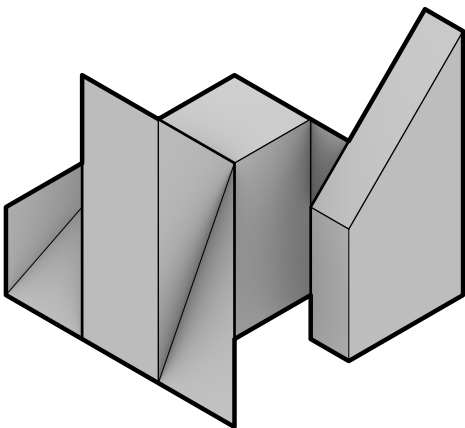
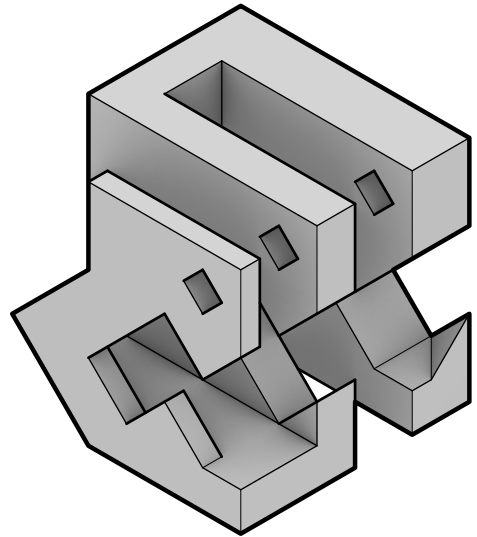
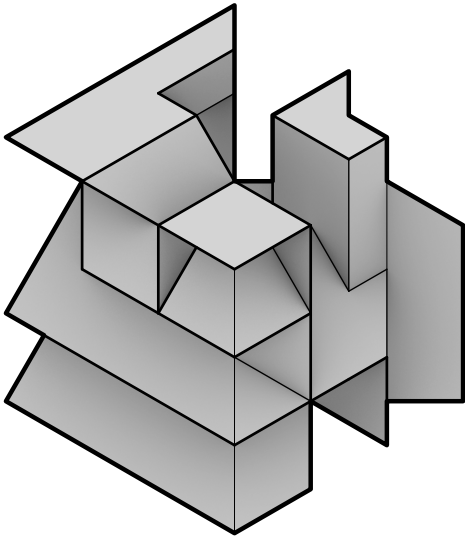
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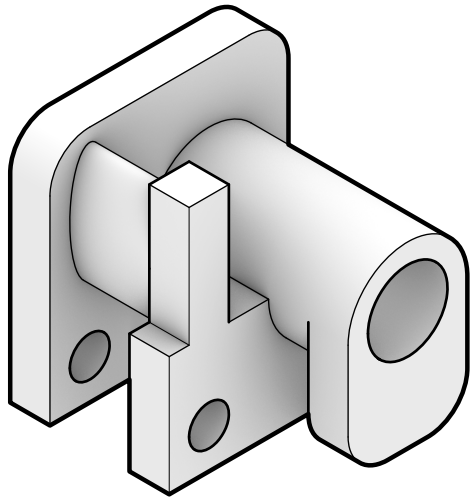
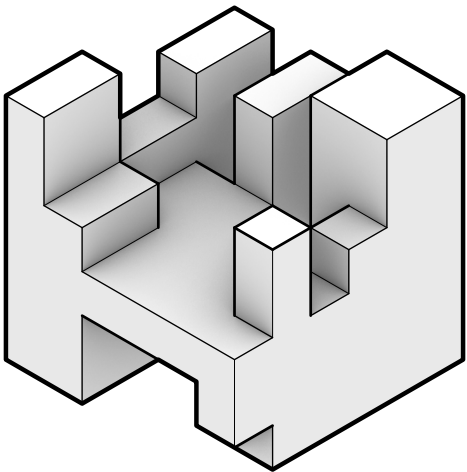
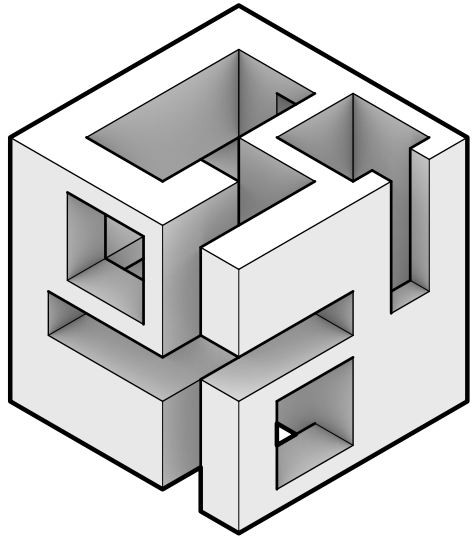
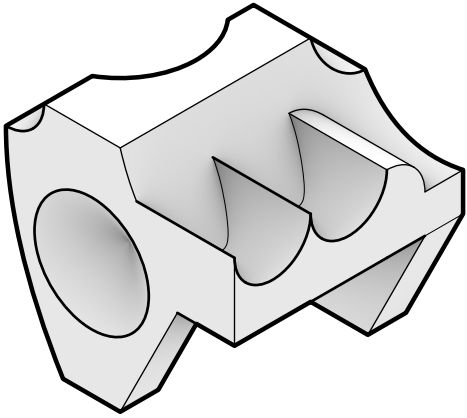
isometric hybrid drawings
descriptive drawing
physical model pictures
orthographic drawings & axonometric drawing

PROJECT 3 | OLYMPIC PAVILION/FOLLY

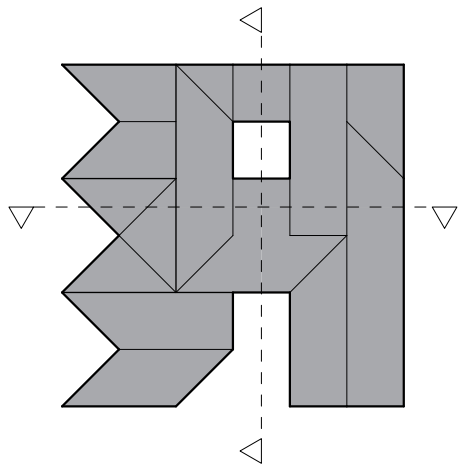
PAGE 3.1 - 3.5

site synthesis plan
axonometric drawings
physical model pictures
orthographic drawings
renderings

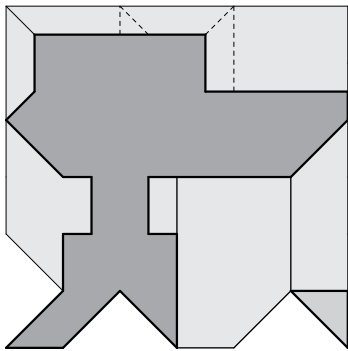




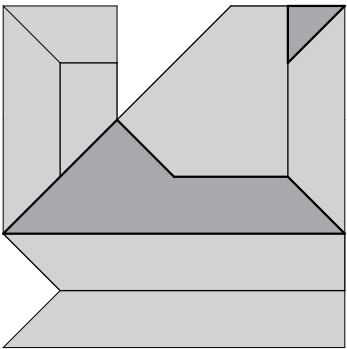
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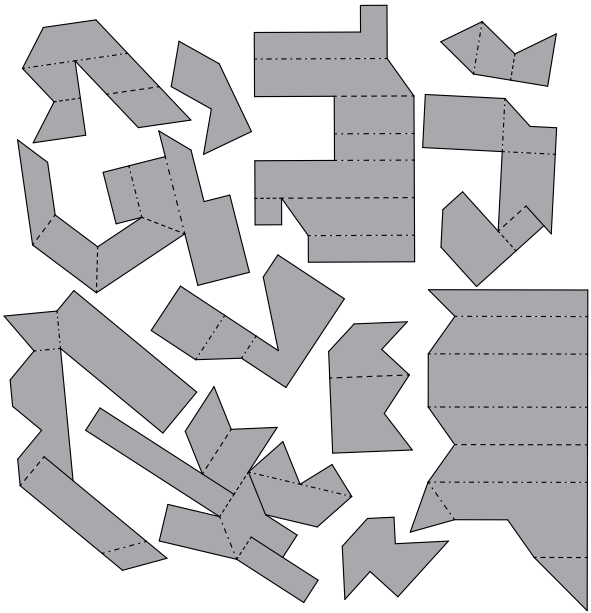
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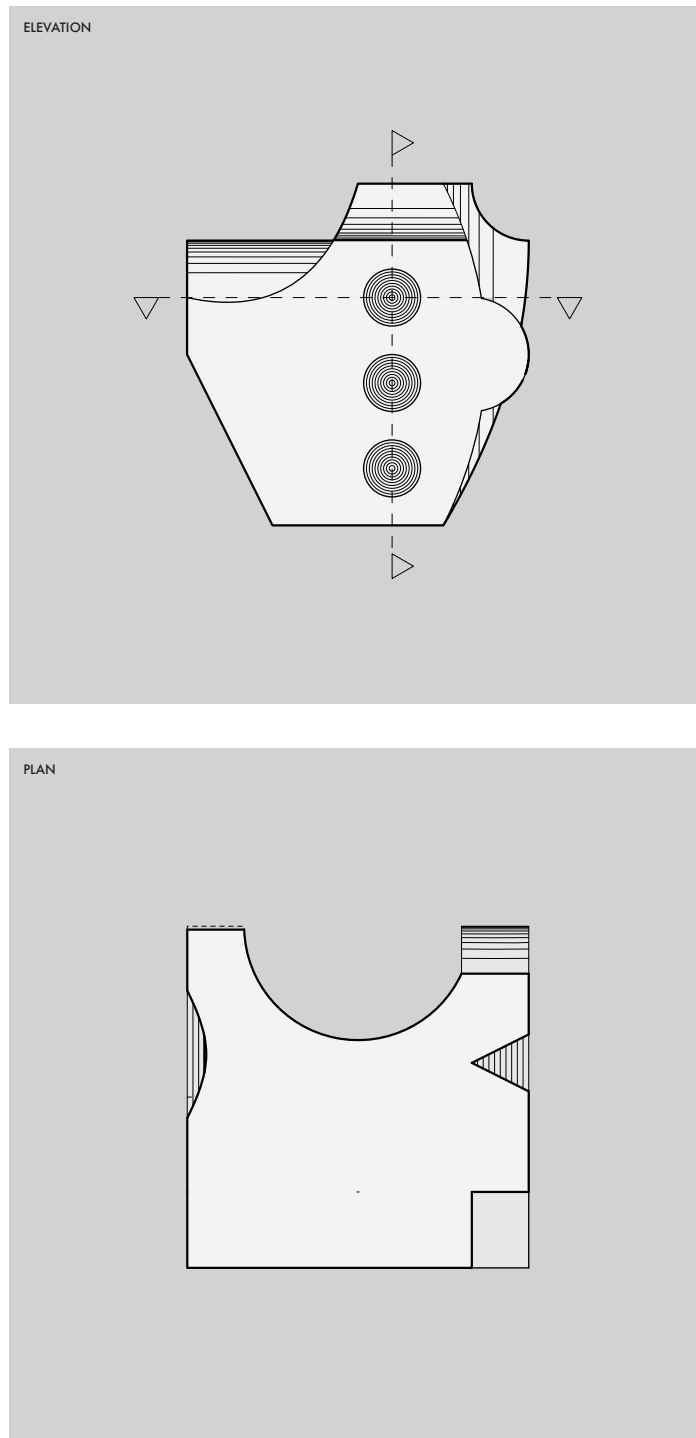


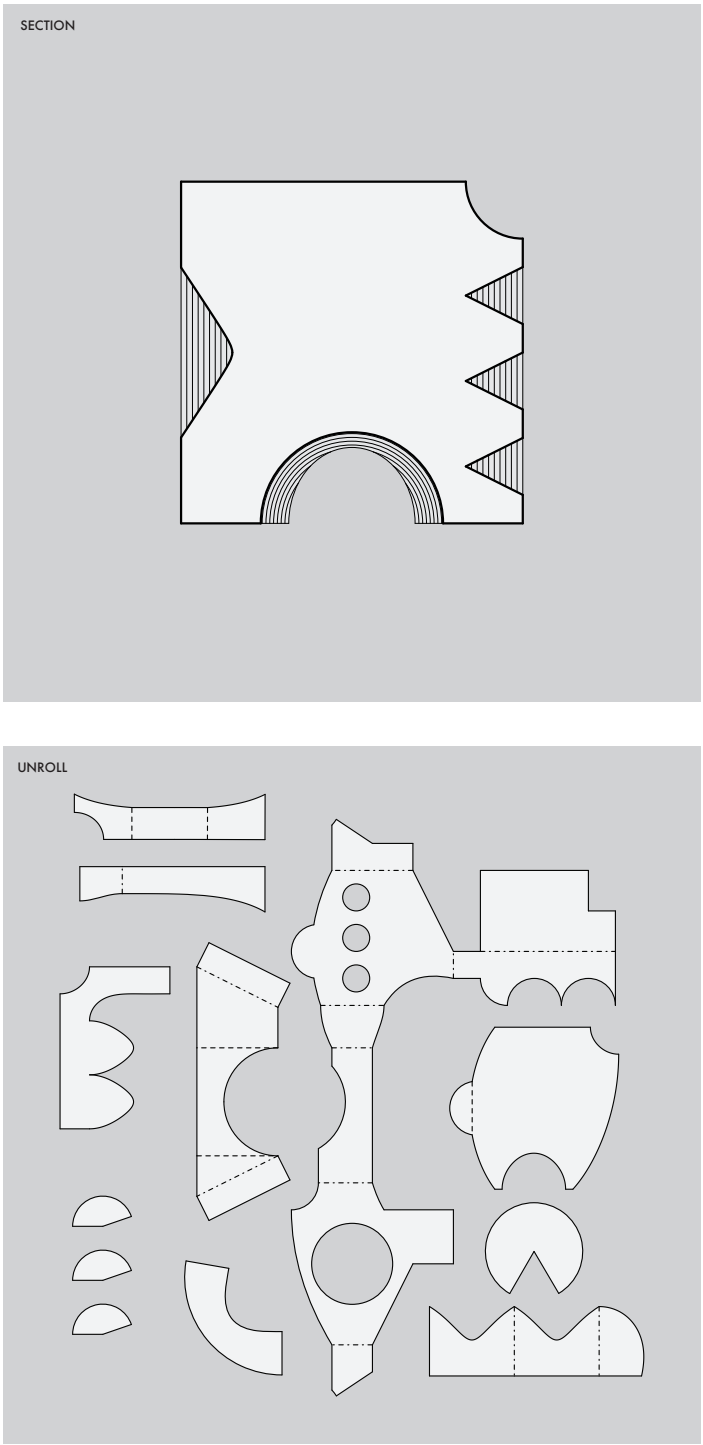
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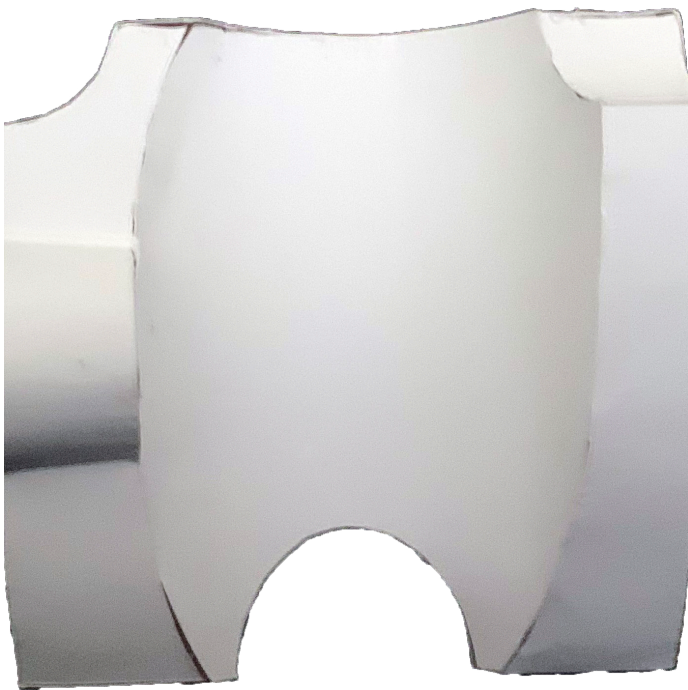
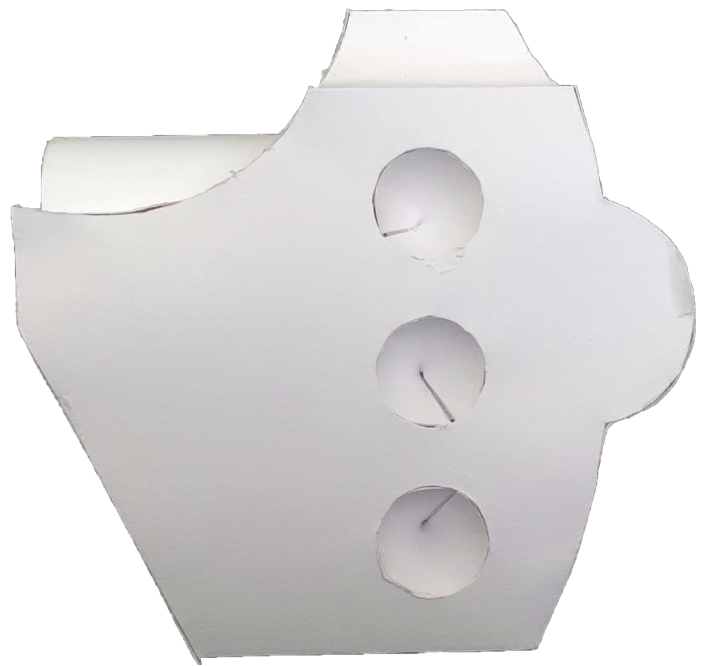
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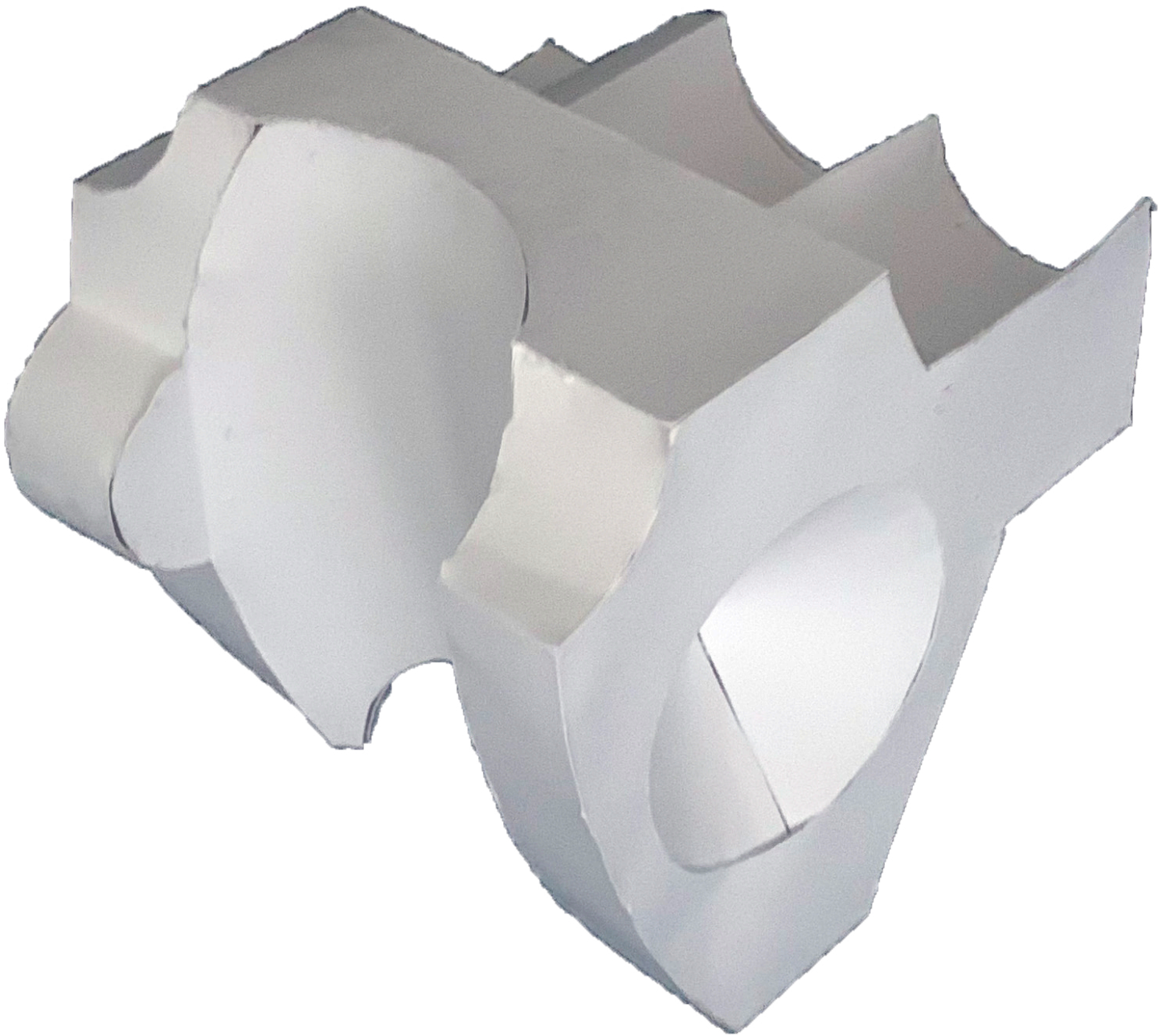




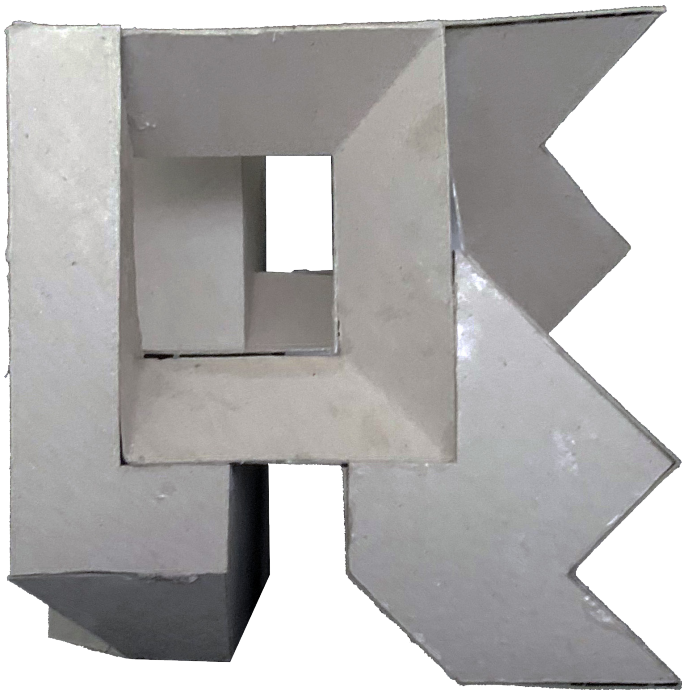


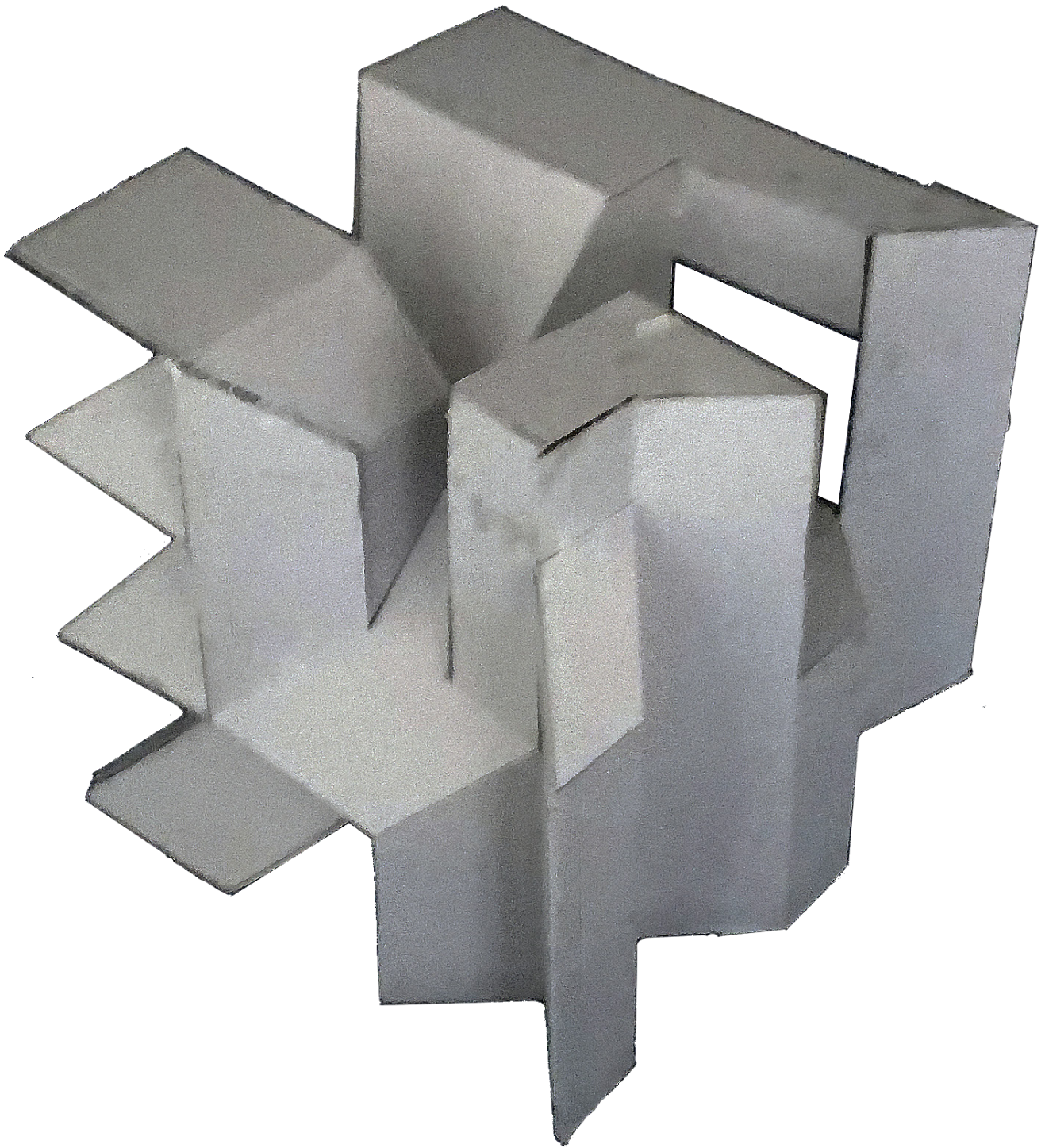
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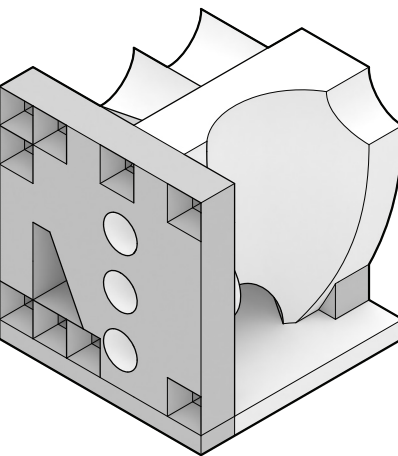
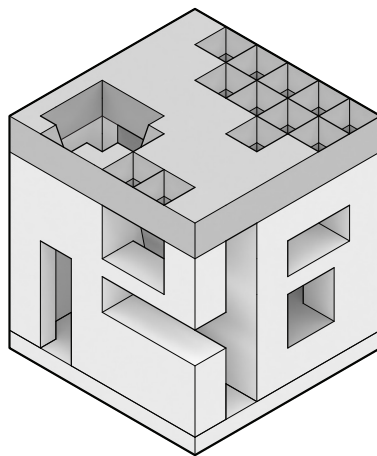
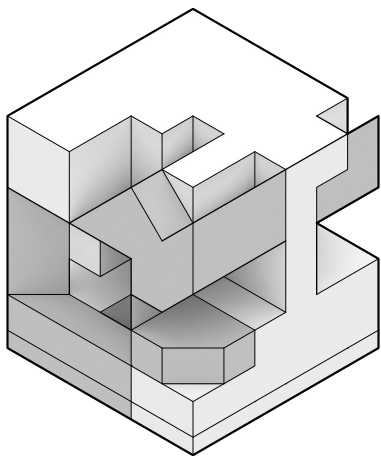
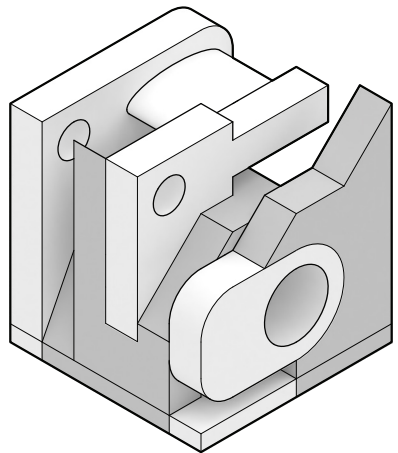
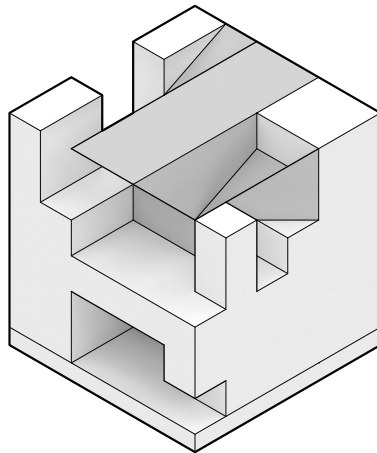
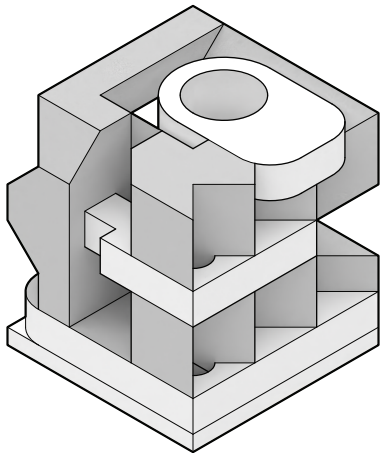
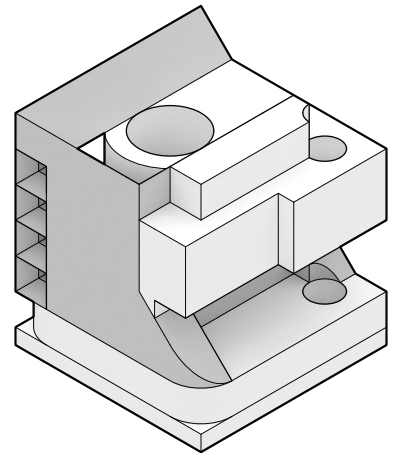
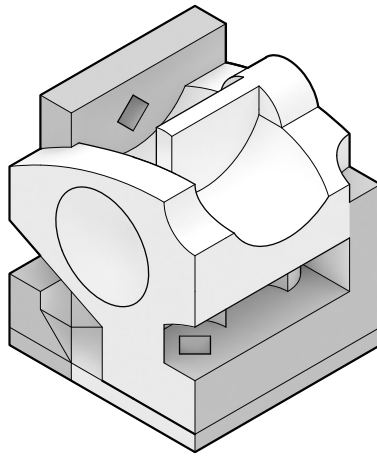
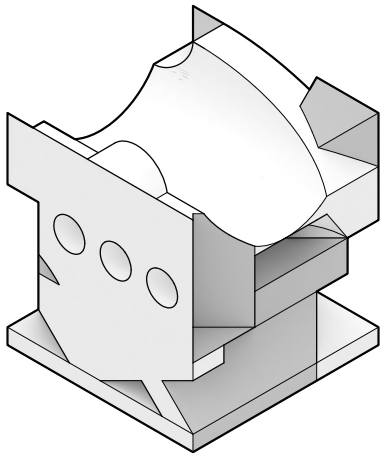


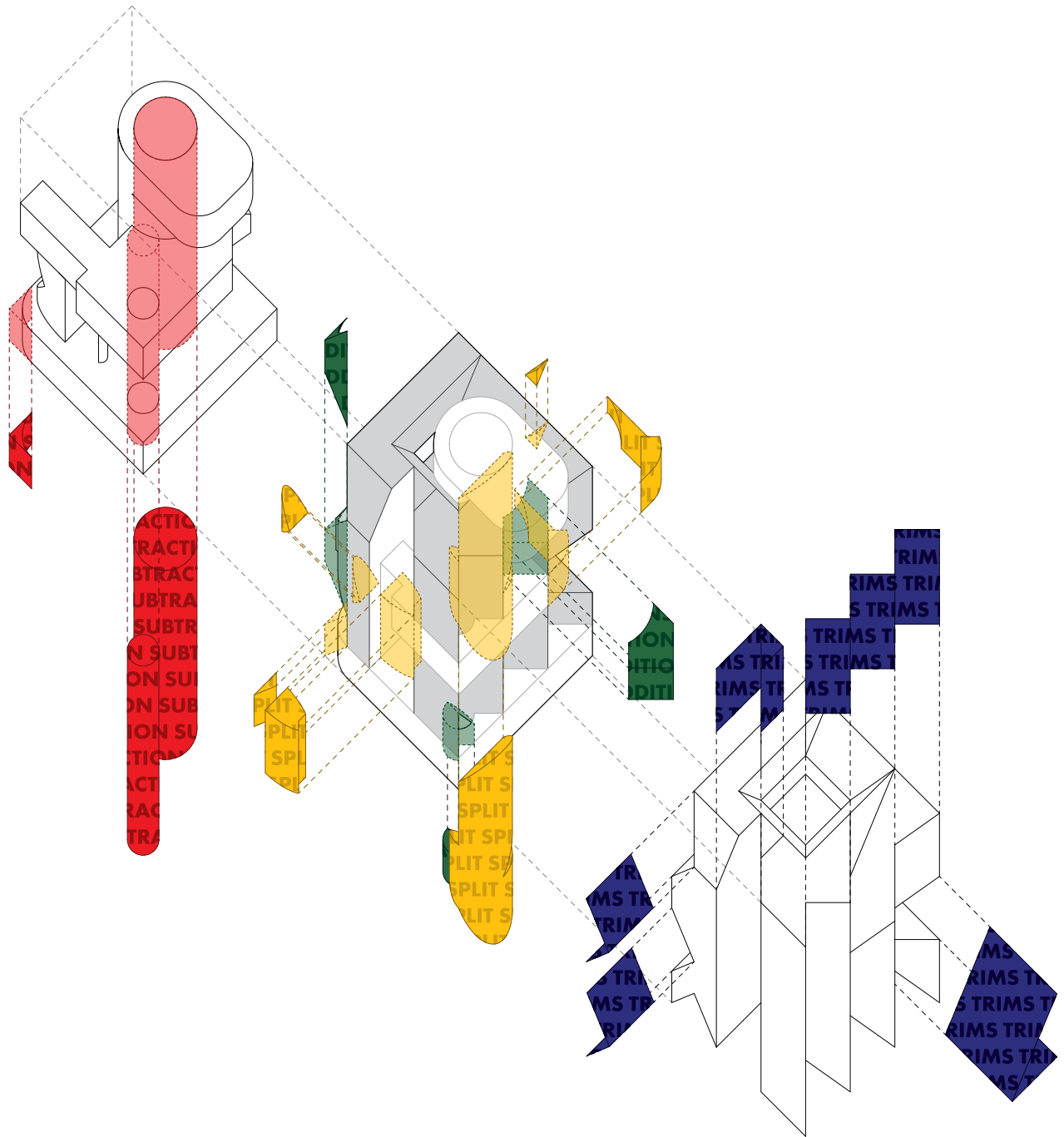
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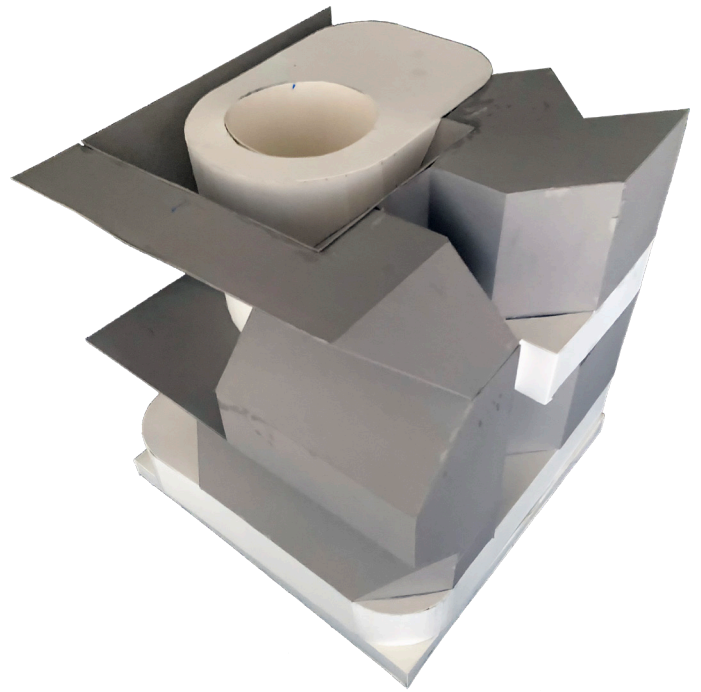
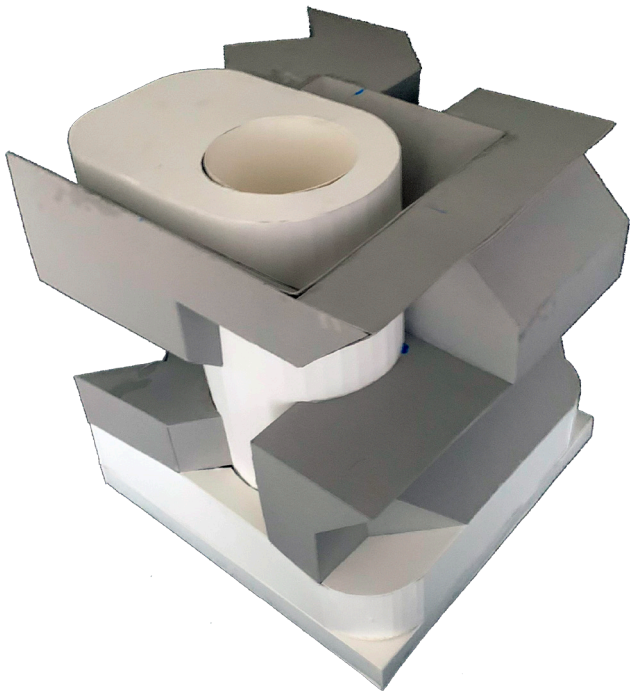
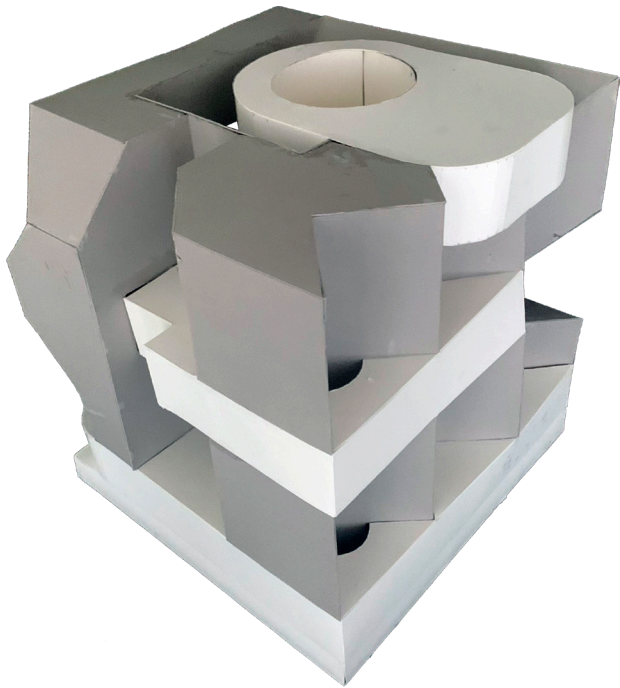


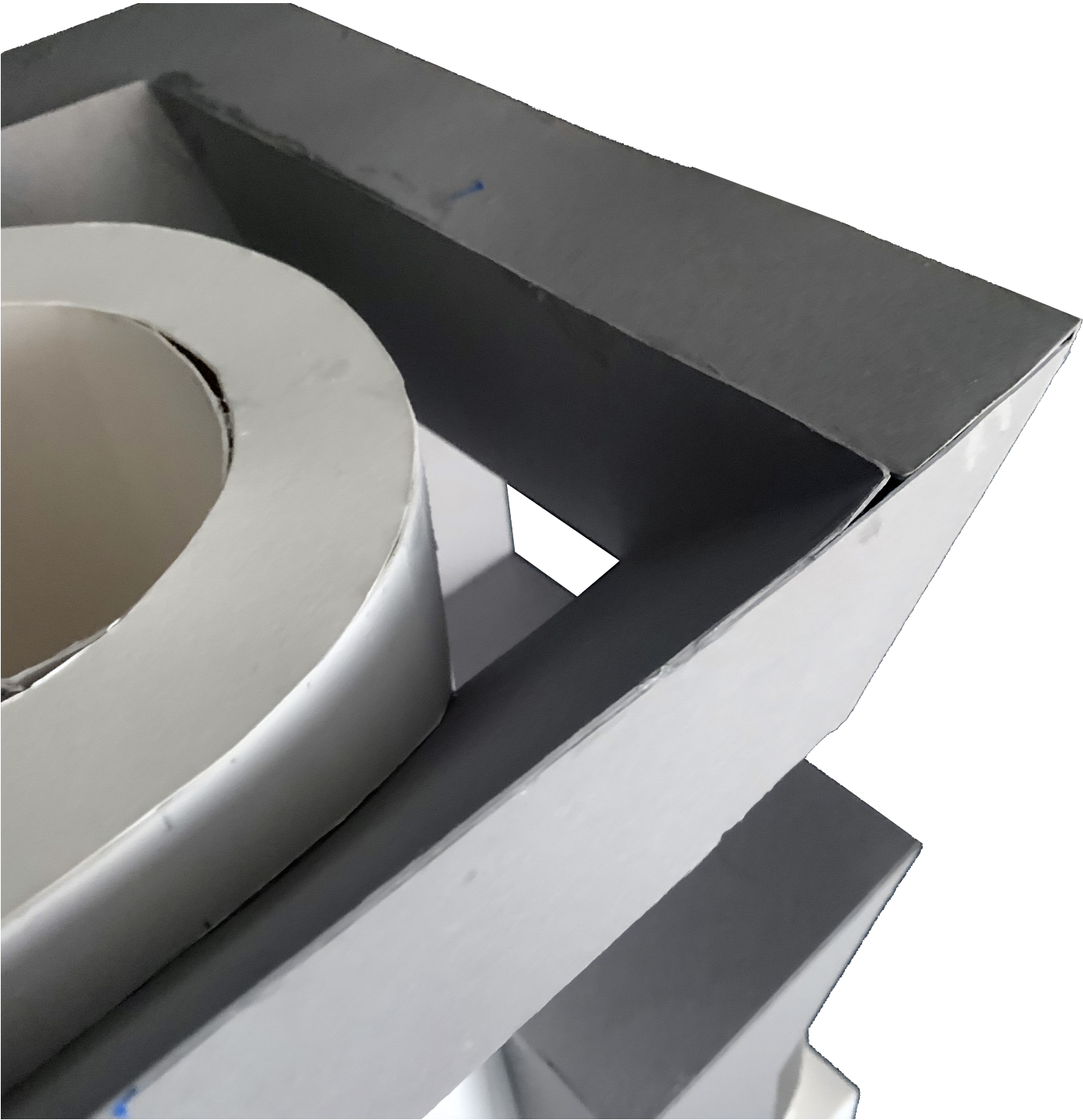


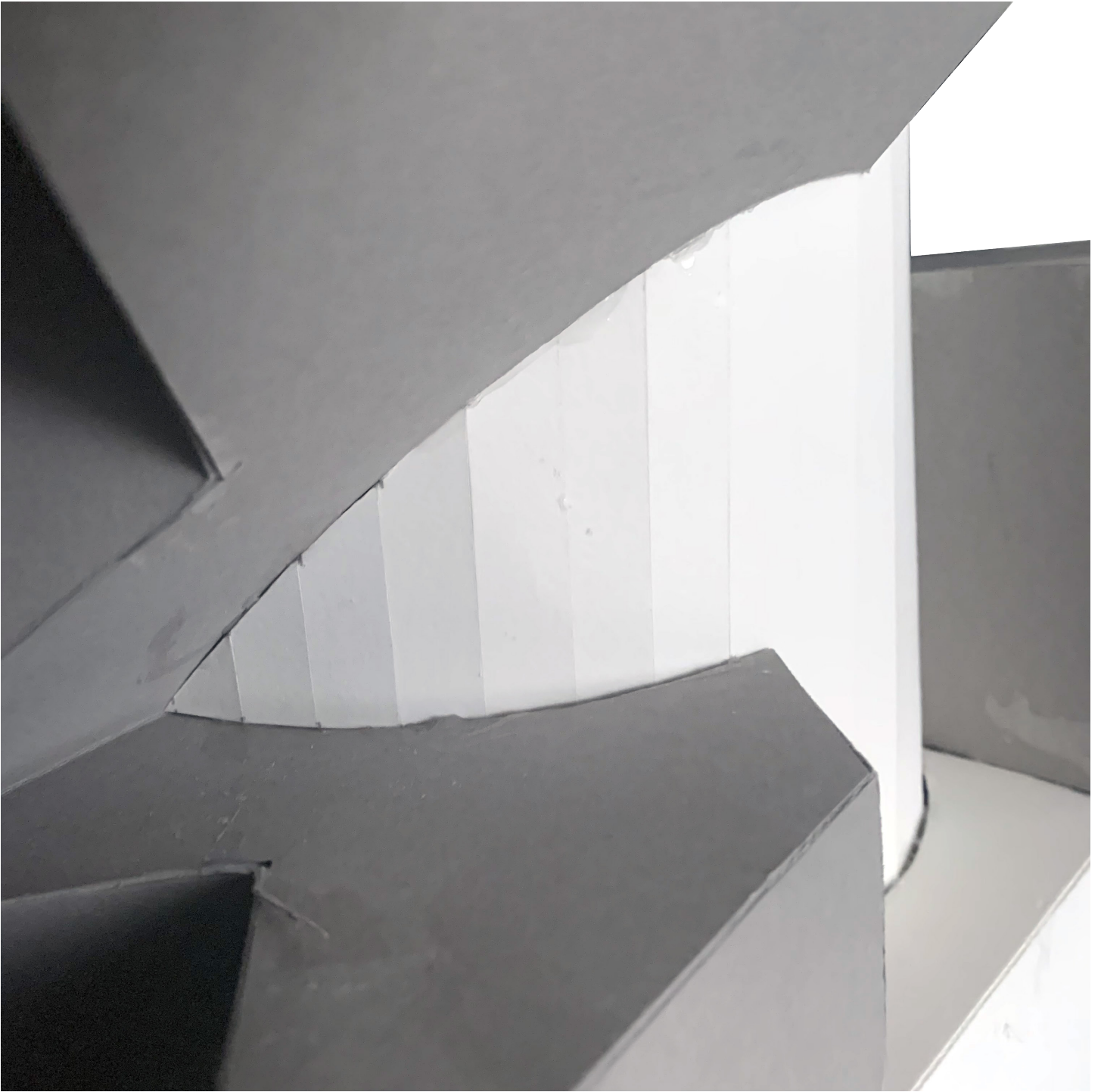
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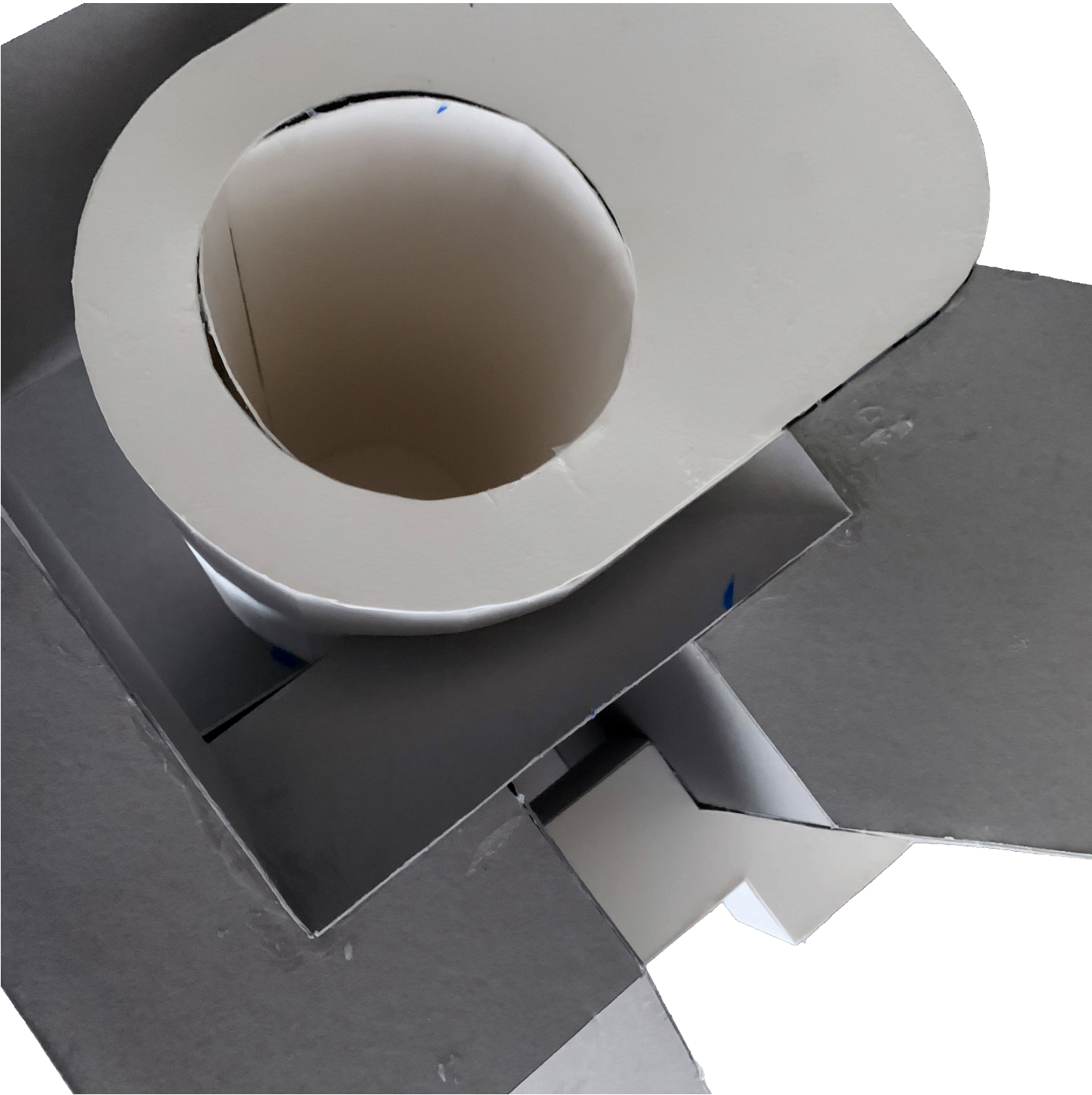


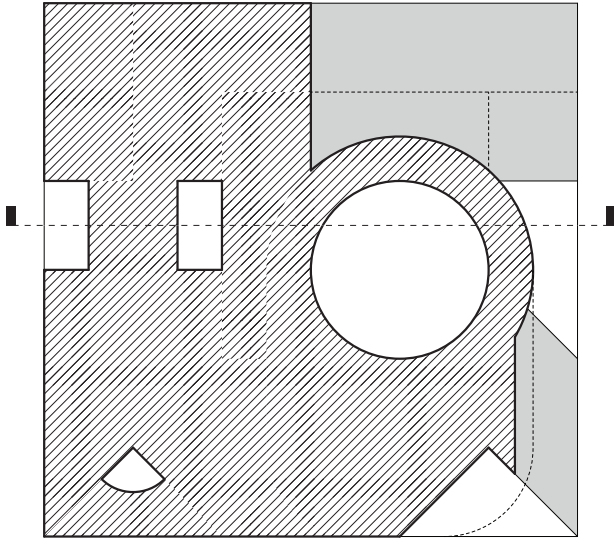




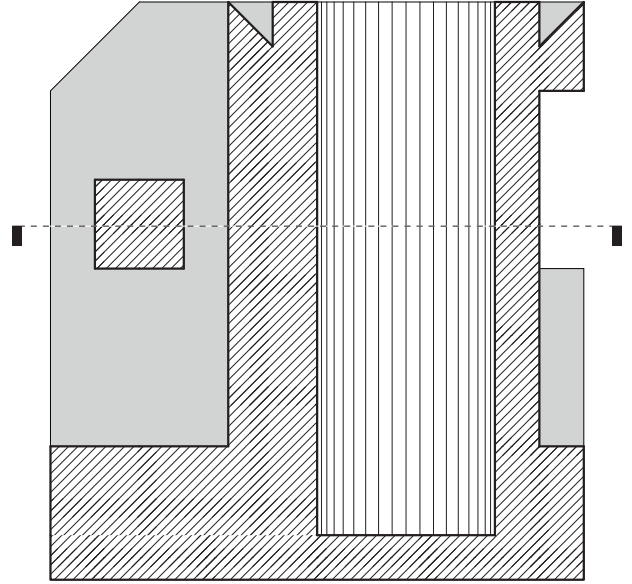




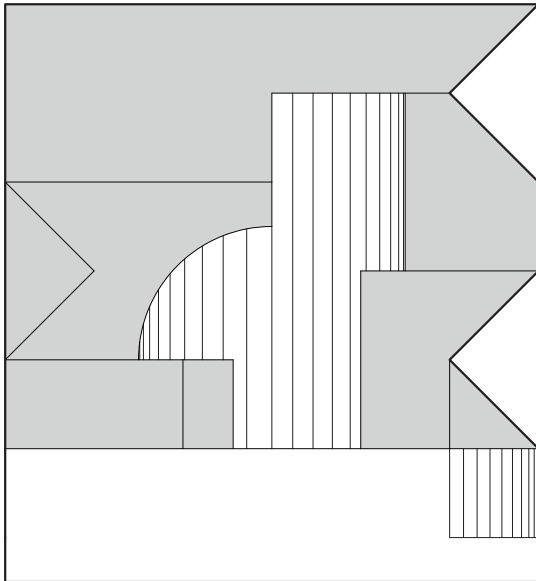




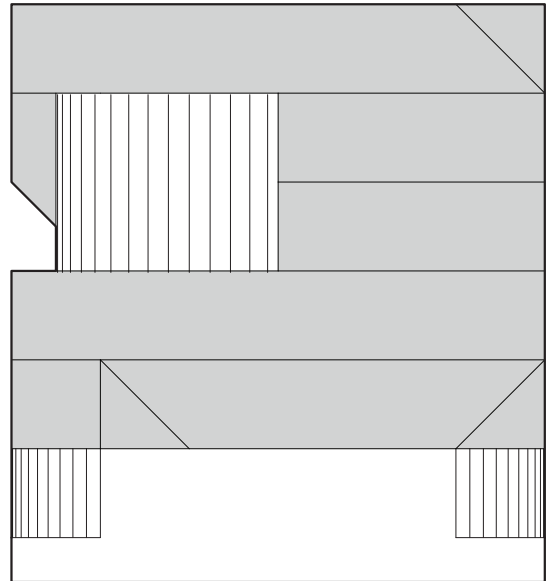
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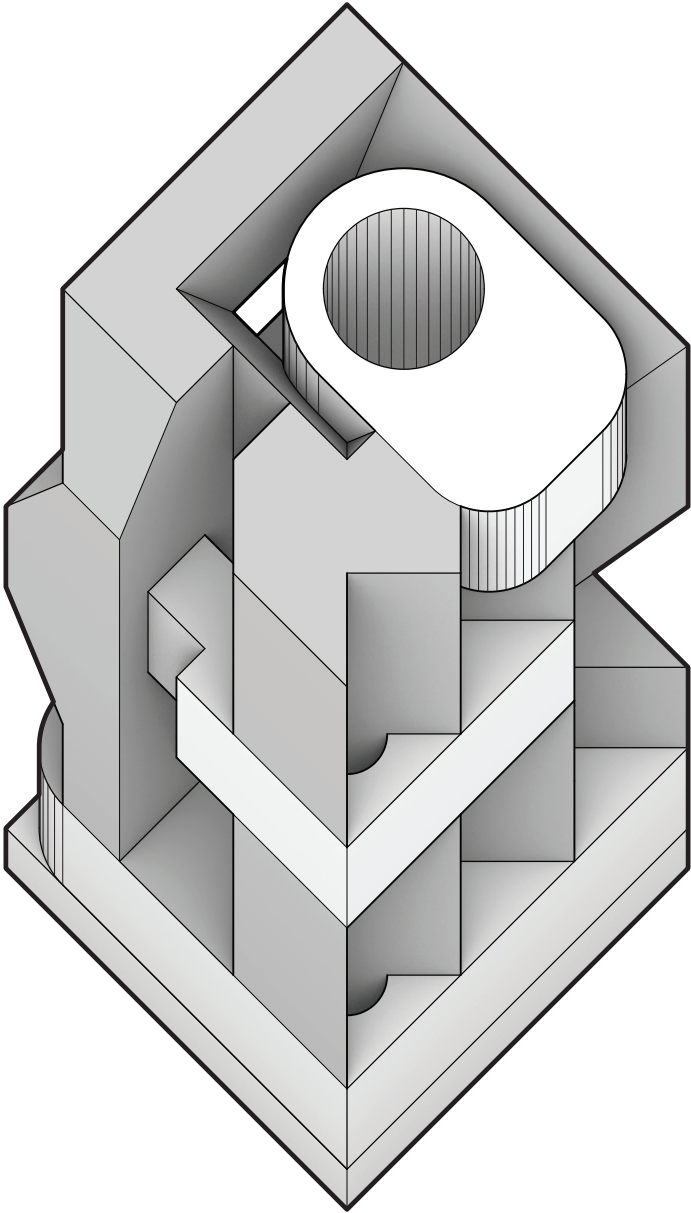
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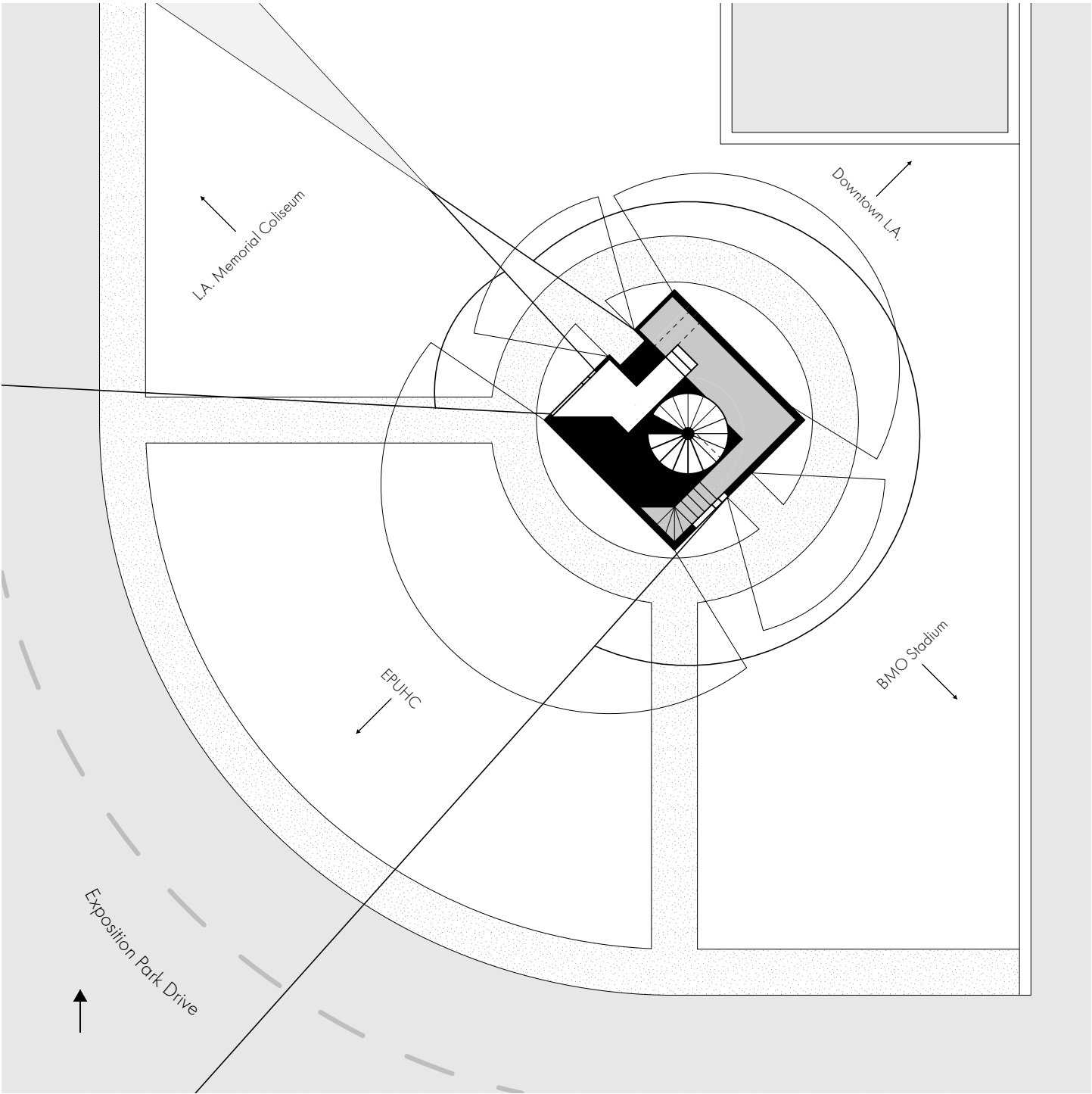


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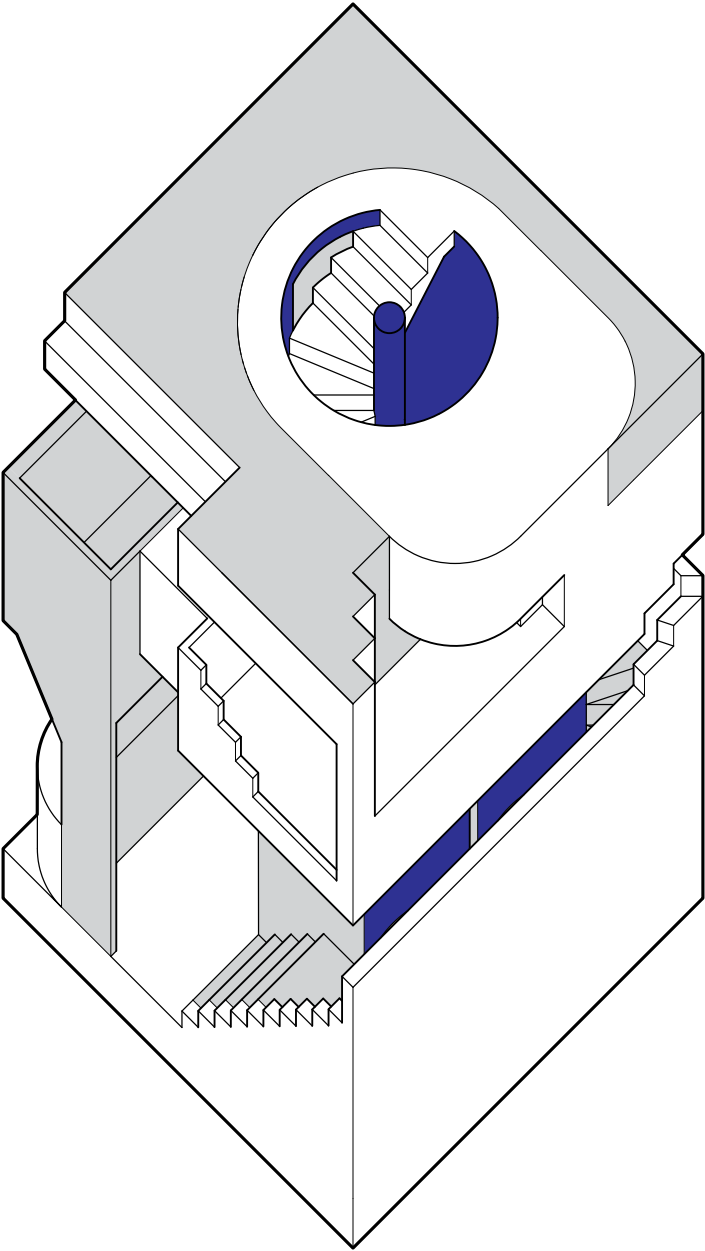


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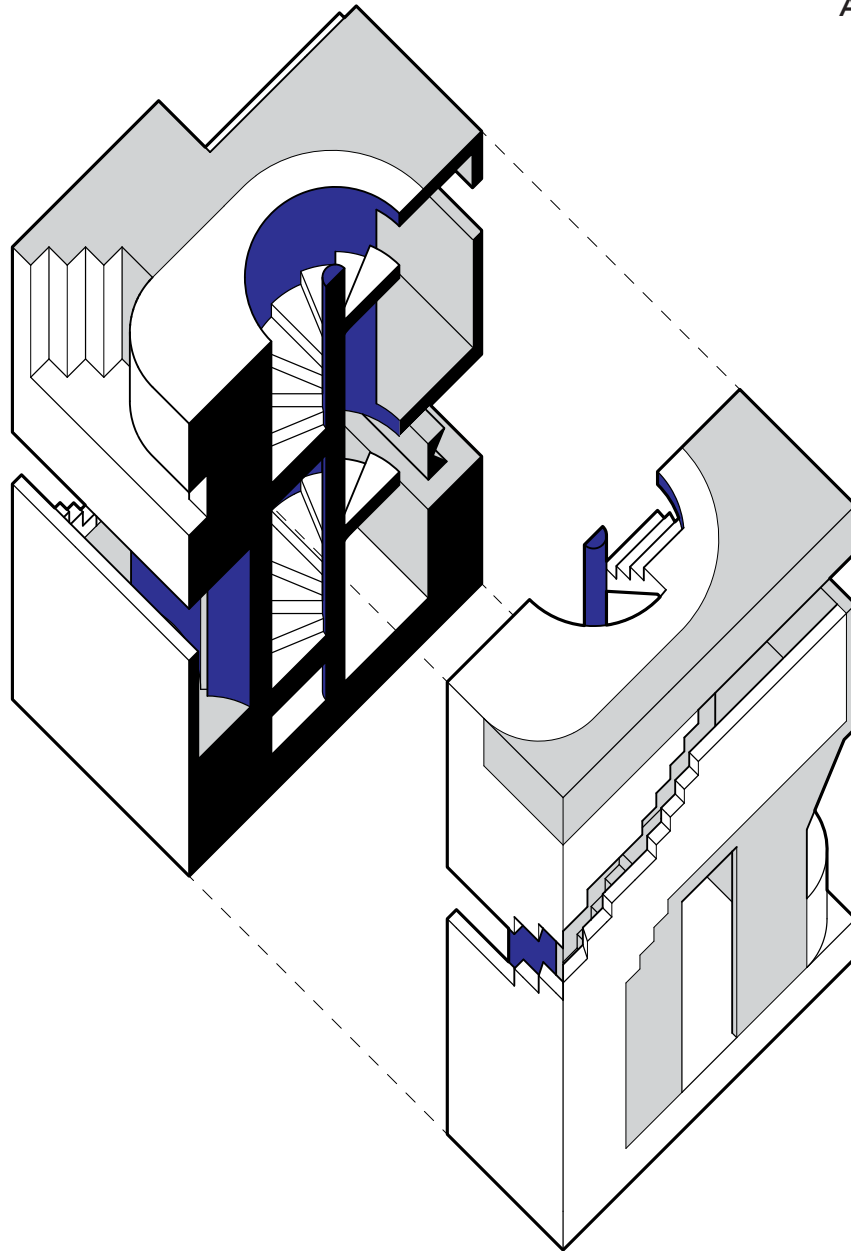




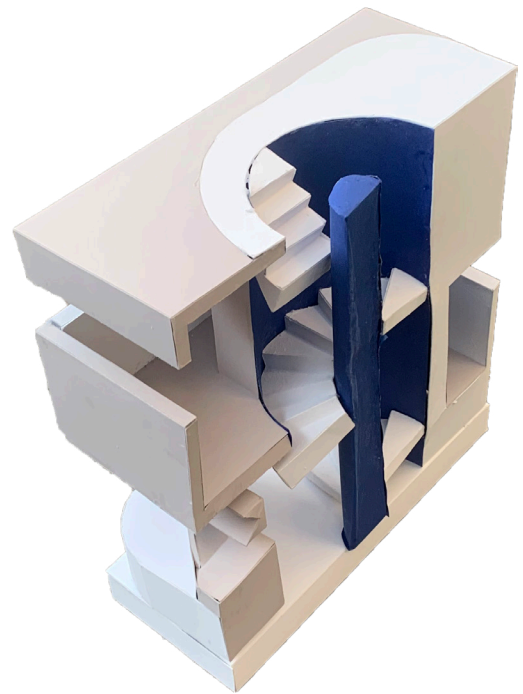
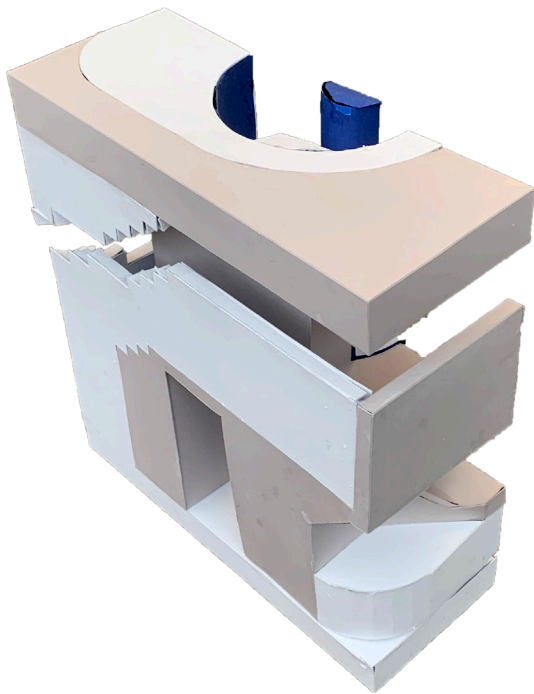
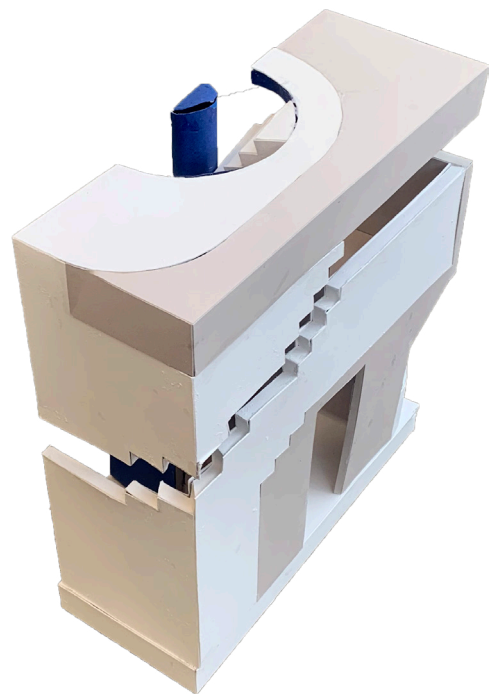
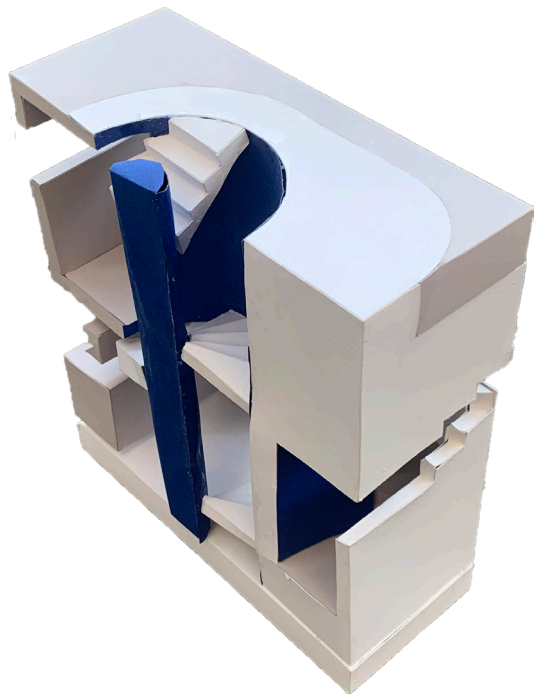
Axonometric



Axonometric Split

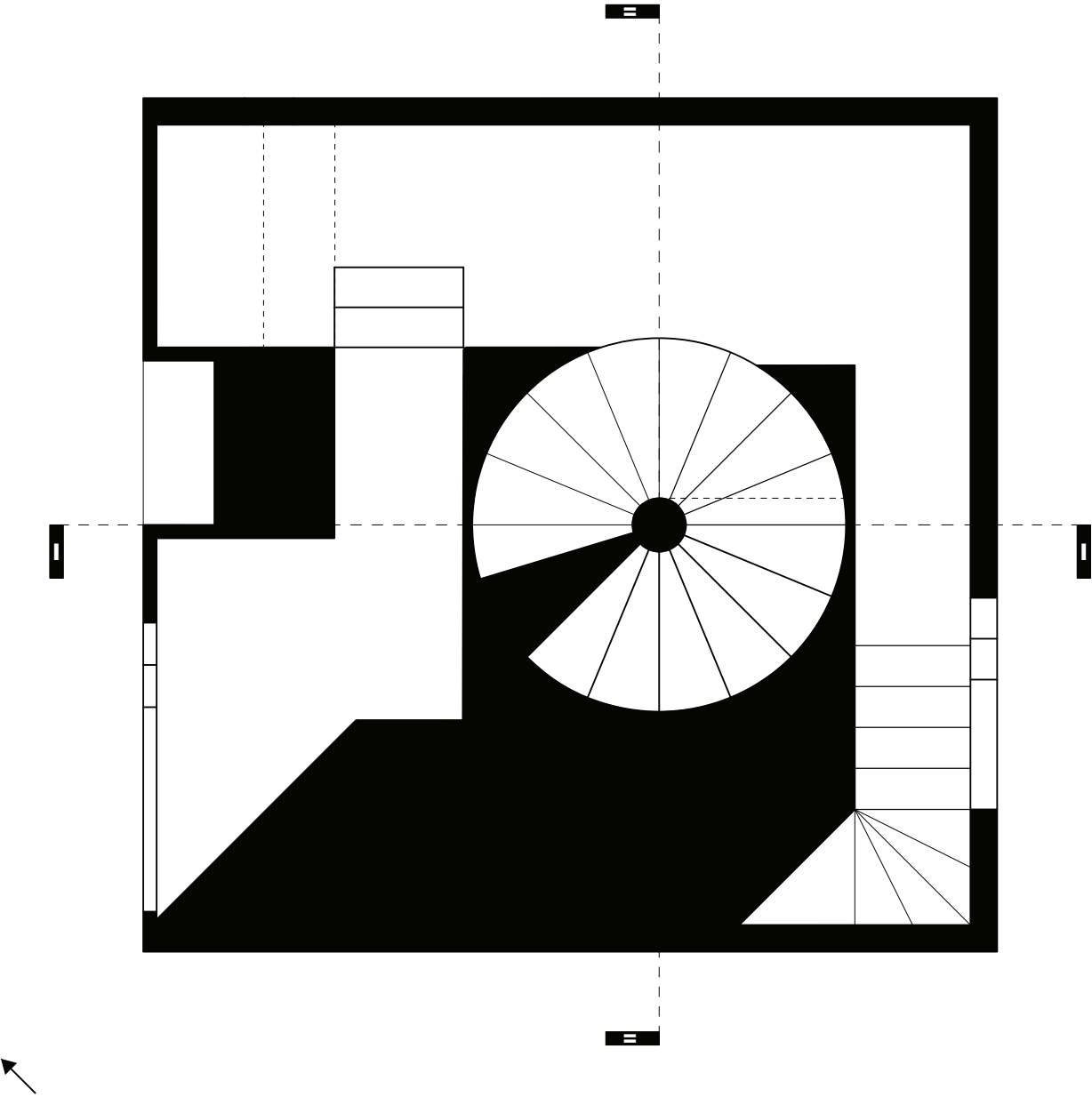




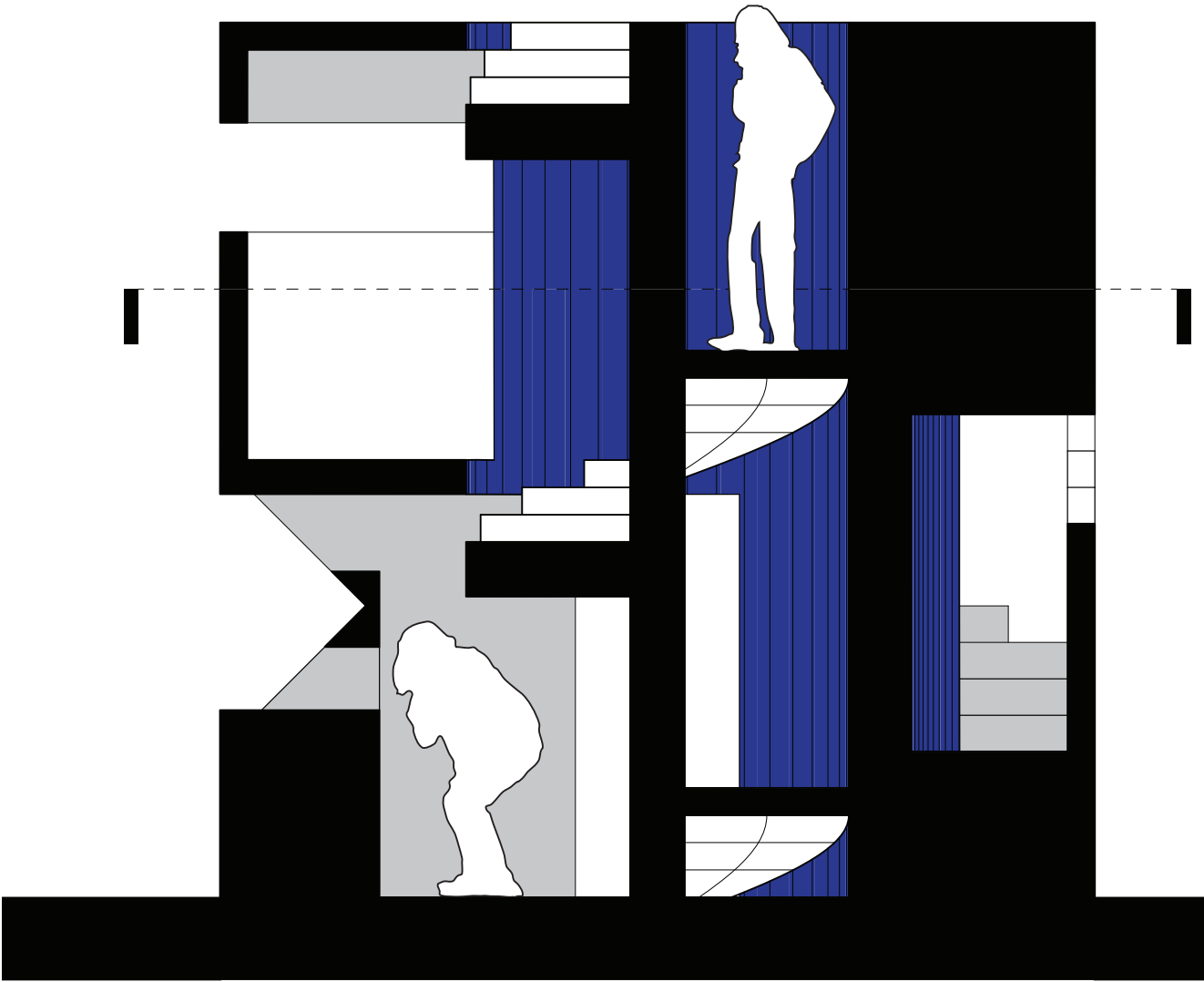


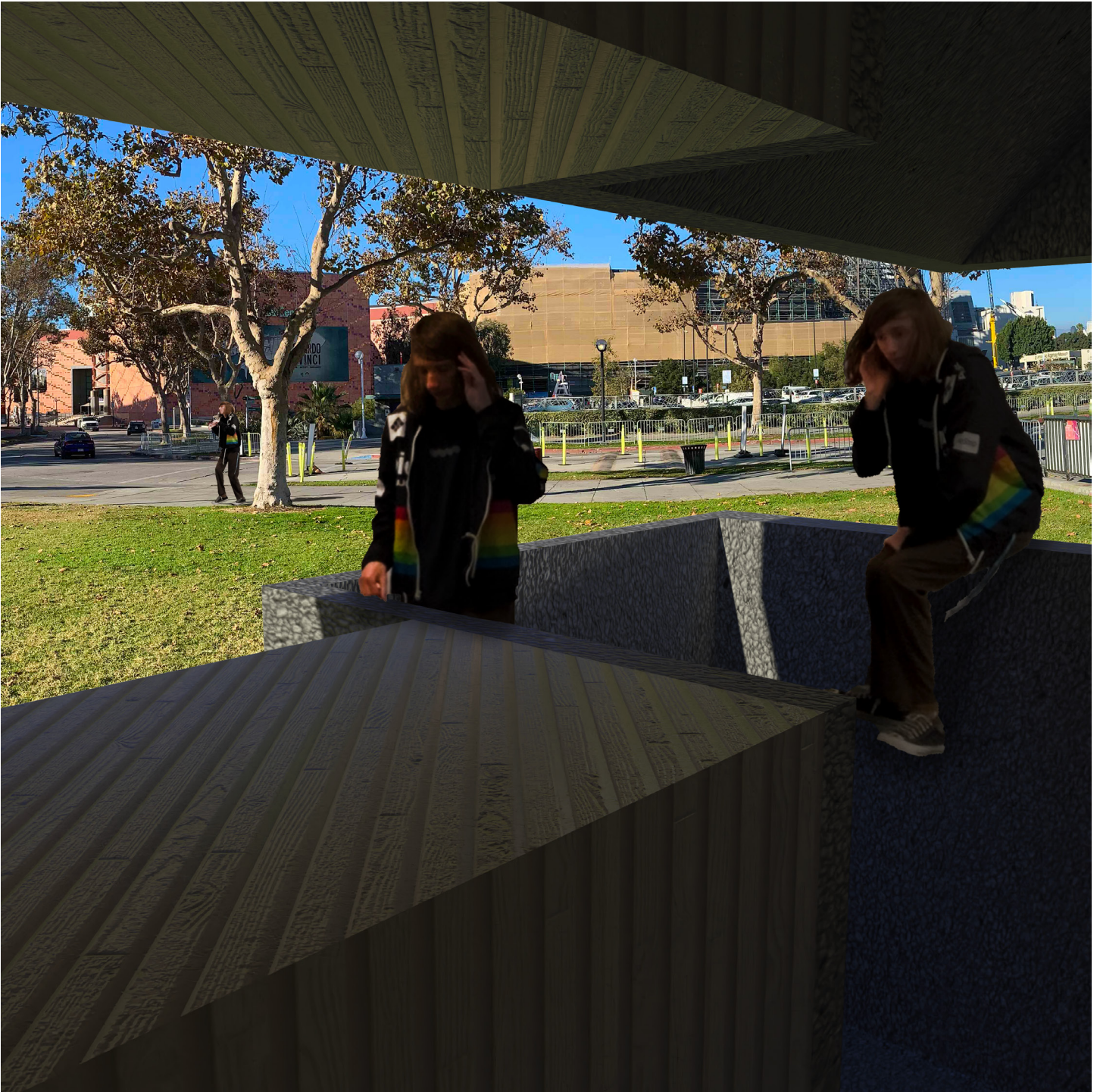


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Year 1, Spring 2025

Patrick Devine

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Course/Studio Information

Arch 102b: Architectural Design I

This design studio guides students to create meaningful forms, design the massing model by combining these forms using methods of addition, subtraction, and intersection, adjust the massing model based on programmatic requirements, and finish the building by adding architectural elements. The students begin by tackling a series of abstract problems - creating abstract/figural forms, analyzing these forms through diagrams, and examining these forms in terms of artistic/rhetoric expressions such as solid vs. void, volume vs. shell, repetition/pattern/rhythm, and light and shadow. The students will engage in critical debates in the current architectural discourse. The students then shift their attention to programmatic concerns. They begin by studying precedents and making diagrams based on the spatial/formal qualities as well as the programmatic attributes of the precedents. During the final phase of the studio, the students further develop their building design by adjusting the existing forms and creating new ones based on programmatic explorations.

Health, Safety, and Welfare in the Built Environment SC1 noted with +

Design Synthesis SC5 noted with *

PROJECT 1 "Iterative Design and Formal Exploration"

In this project, we use analog and digital tools to explore formal techniques and produce a series of digital and physical objects. We will learn basic parametric and computational tools to help each individual student to develop their unique formal strategies. These formal strategies will continue to be specified, adjusted, and refined throughout the semester.

The project focuses on animation as an iterative design process. We explore the idea of animation beyond its common use as a representational medium.

In addition to digital modeling, we also utilize digital fabrication tools. Just as how computational tools help designers explore different iterations more effectively, digital fabrication helps designers materialize their designs and examine the physical attributes of their designs efficiently and, more importantly, accurately. The direct translation of their design from digital to physical with very little information lost in the process has made digital fabrication a desired way to make both study models and final presentation models.

Page 1.1: Axonometric Drawings Depicting 4 Objects*

Page 1.2: Animation Stills & Axonometric Drawings of the 9 Models*

Page 1.3: Model Pictures*

Page 1.4: Descriptive Drawings*

PROJECT 2 "Site Synthesis, Modeling, and Formal Development"

The second project of ARCH 102b aims to develop the students' skills in site analysis and program analysis. The project site is located at 320 S. Alameda in the Arts District of Los Angeles. The project is divided into five parts that build upon each other, starting with precedent study, and site and program analysis and culminating in 3D massing drawings and diagrams that meet site and programmatic requirements.

Page 2.1 - 2.2: Site Documentation & Physical Site Model+

Page 2.3: Formal Control+

PROJECT 3 "Mercado La Paloma 2.0"

In ARCH 102b's final project, students will design an expansion of the Mercado La Paloma located at 3655 S. Grand Ave. Throughout the course, we have explored different design approaches, including a rule-based approach in Project 1 and a thorough analysis of the project site in Project 2. For this final project, we will expand on the 3D massing studies conducted in Project 2, integrating the formal explorations from Project 1 and taking into account programmatic and contextual features analyzed throughout the course.

Page 3.1: Formal Evolution*+

Page 3.2: Physical Model Pictures*+

Page 3.3A: Orthographic Drawings*+

Page 3.2B: Axonometric Drawings*+

Page 3.3C: Renderings*+

ARCH-102B, ARCH-105B

PORTFOLIO CHAPTERS

PROJECT 1 | ITERATIVE DESIGN AND FORMAL EXPLORATION

PAGE 1.1 - 1.4

the basic design blocks
from 3d to 4d - parametric modeling
digital fabrication
descriptive drawings

PROJECT 2 | PRECEDENT STUDY + SITE AND PROGRAM ANALYSIS

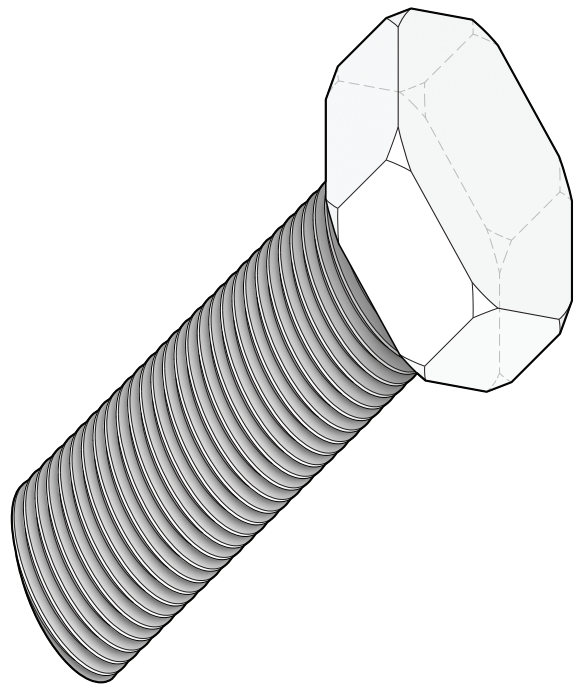
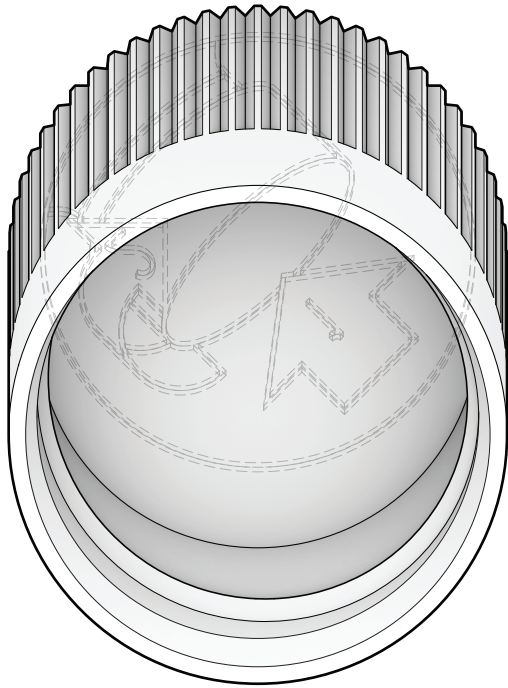
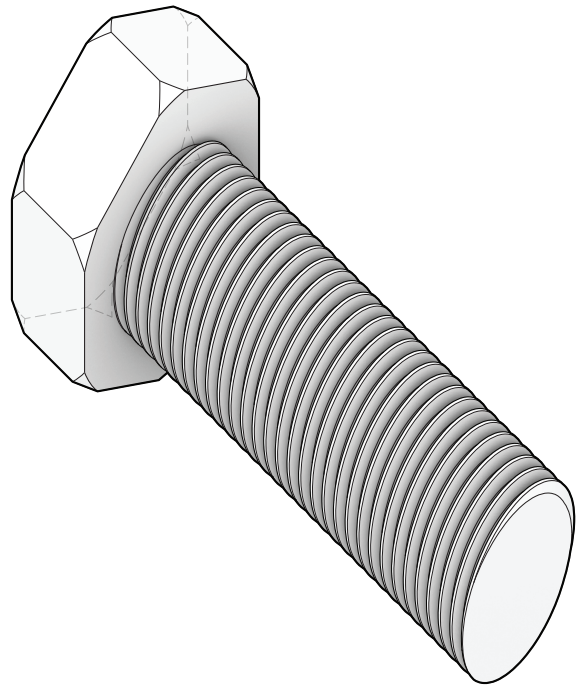
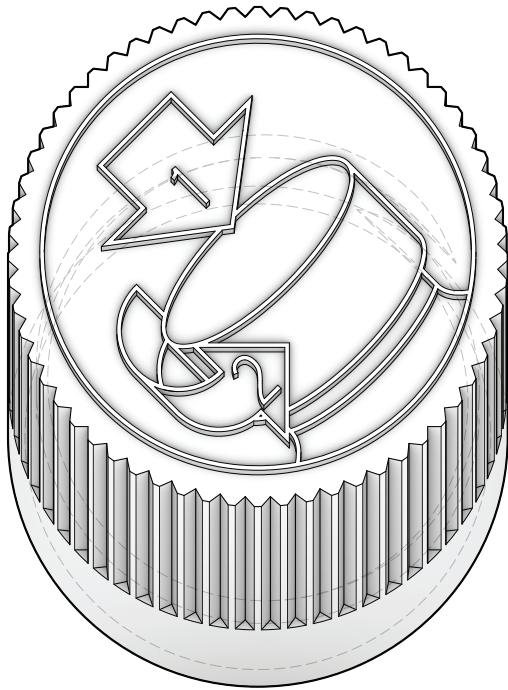
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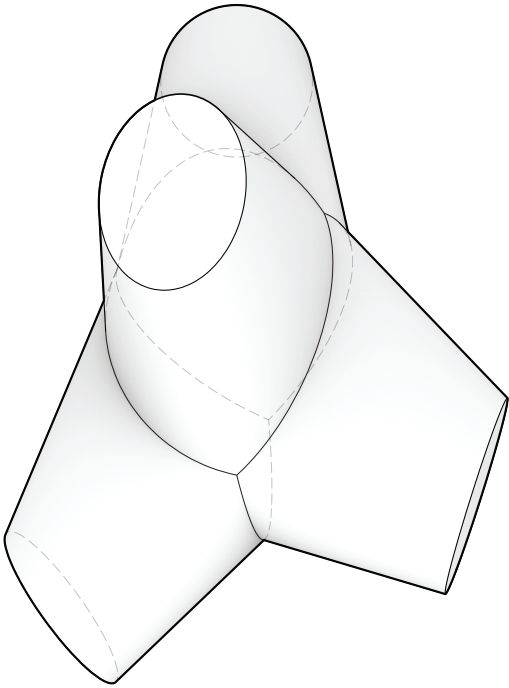
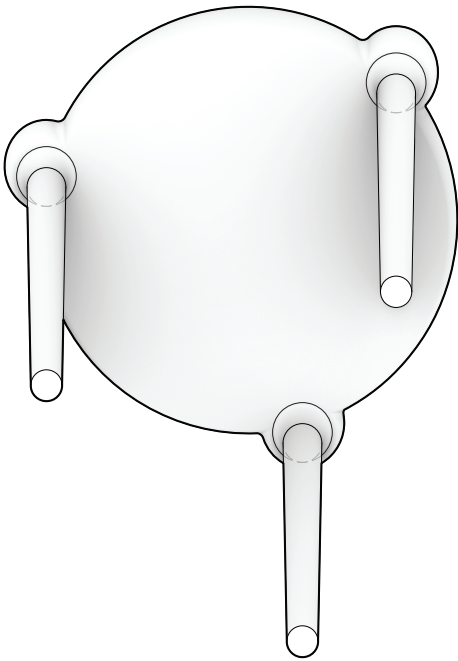
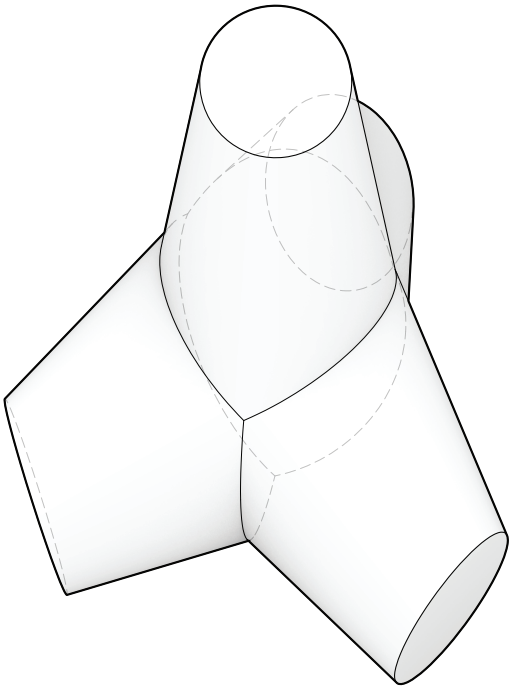
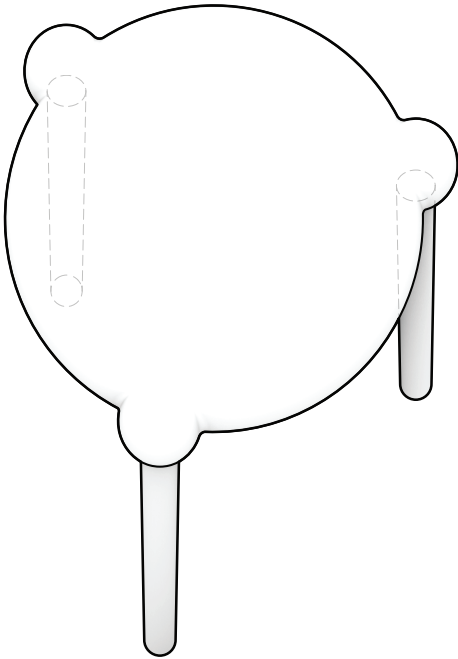
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physical model
formal control

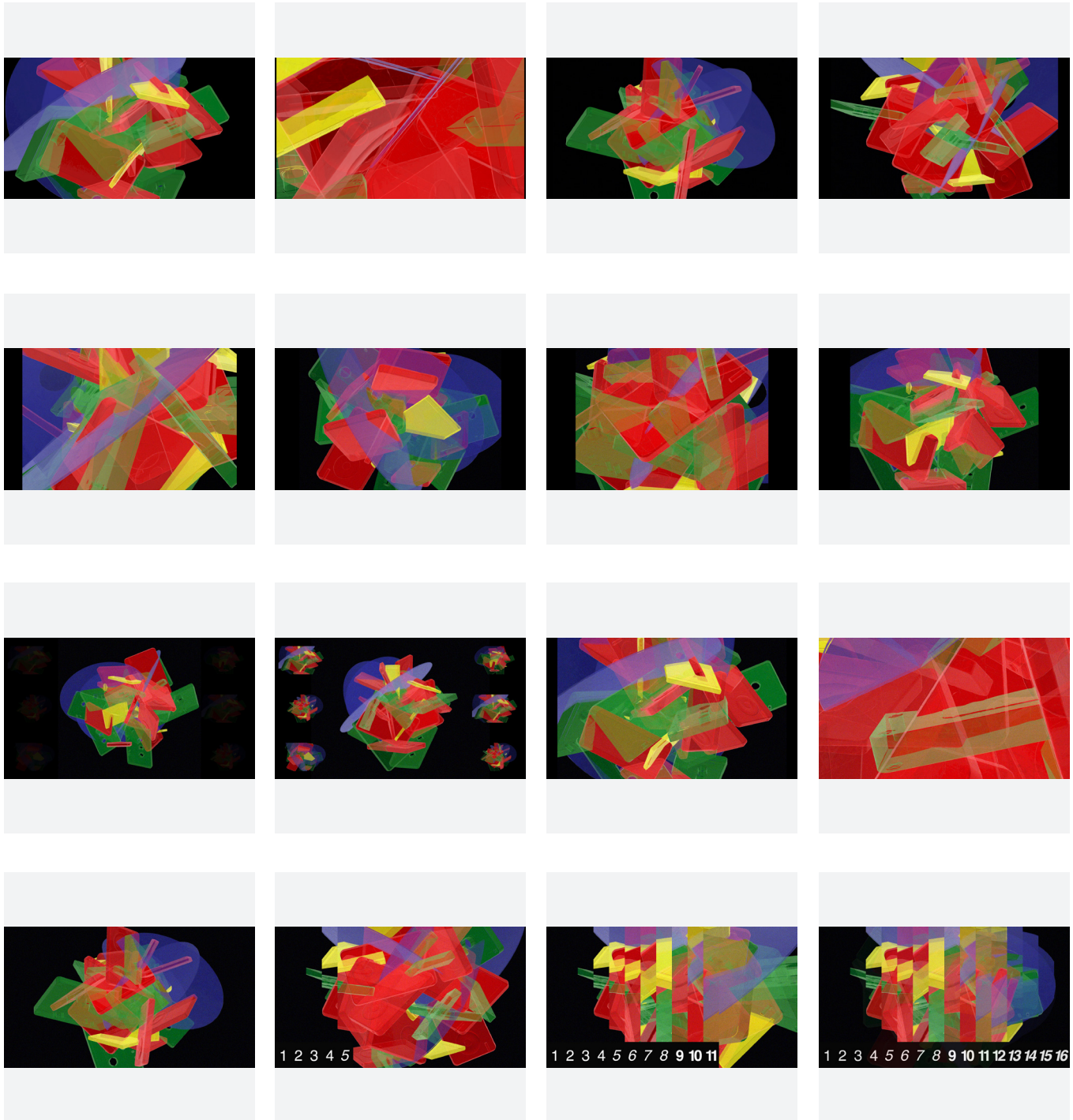
PROJECT 3 | MERCADO LA PALOMA 2.0

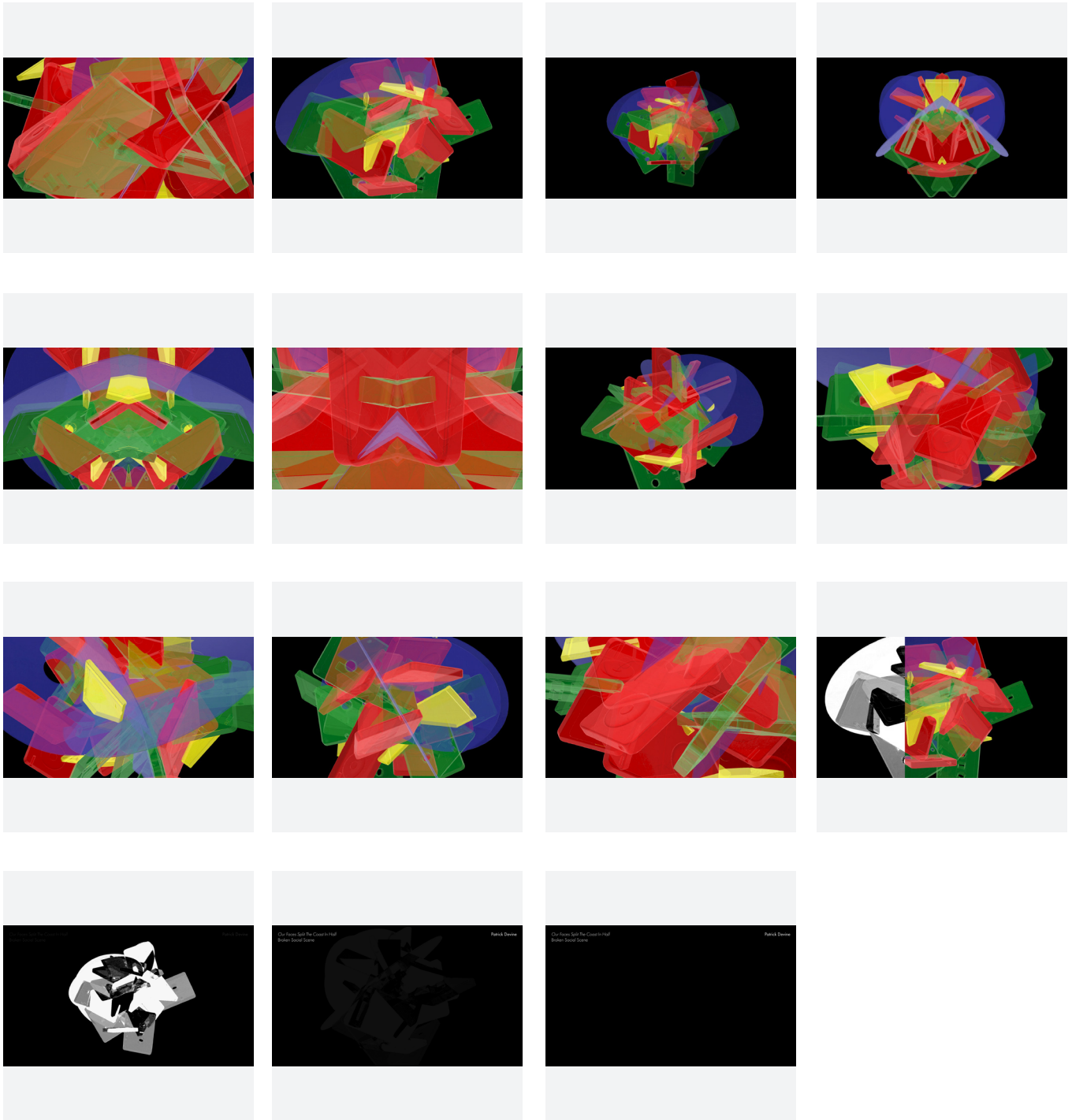
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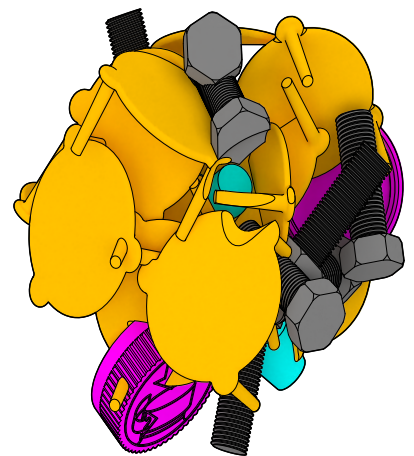
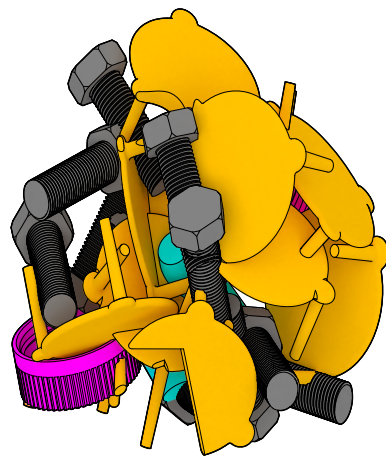
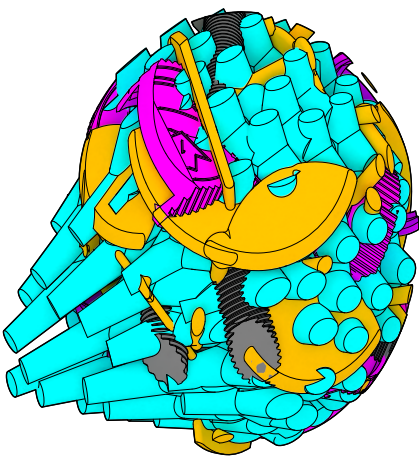
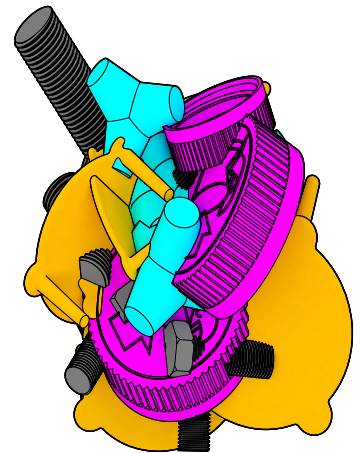
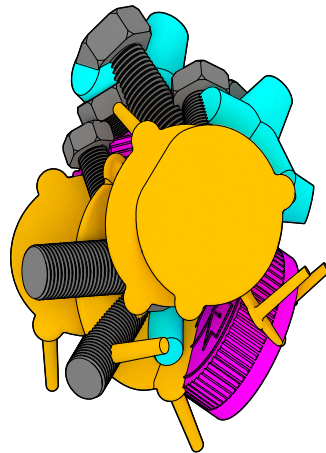
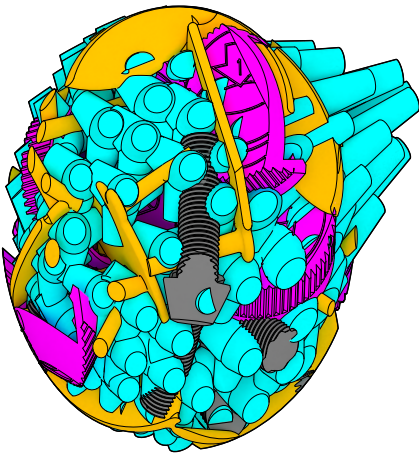
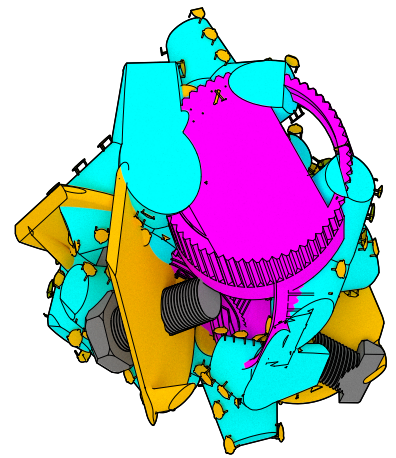
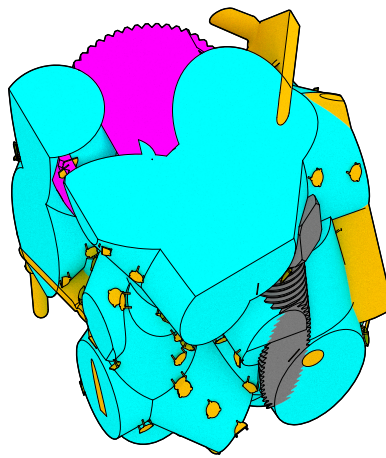
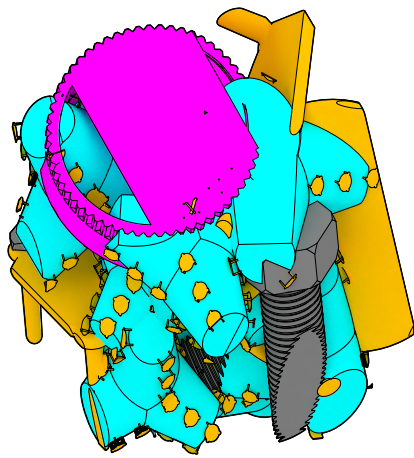
formal evolution
physical model
orthographic drawings
axonometric drawings
renderings

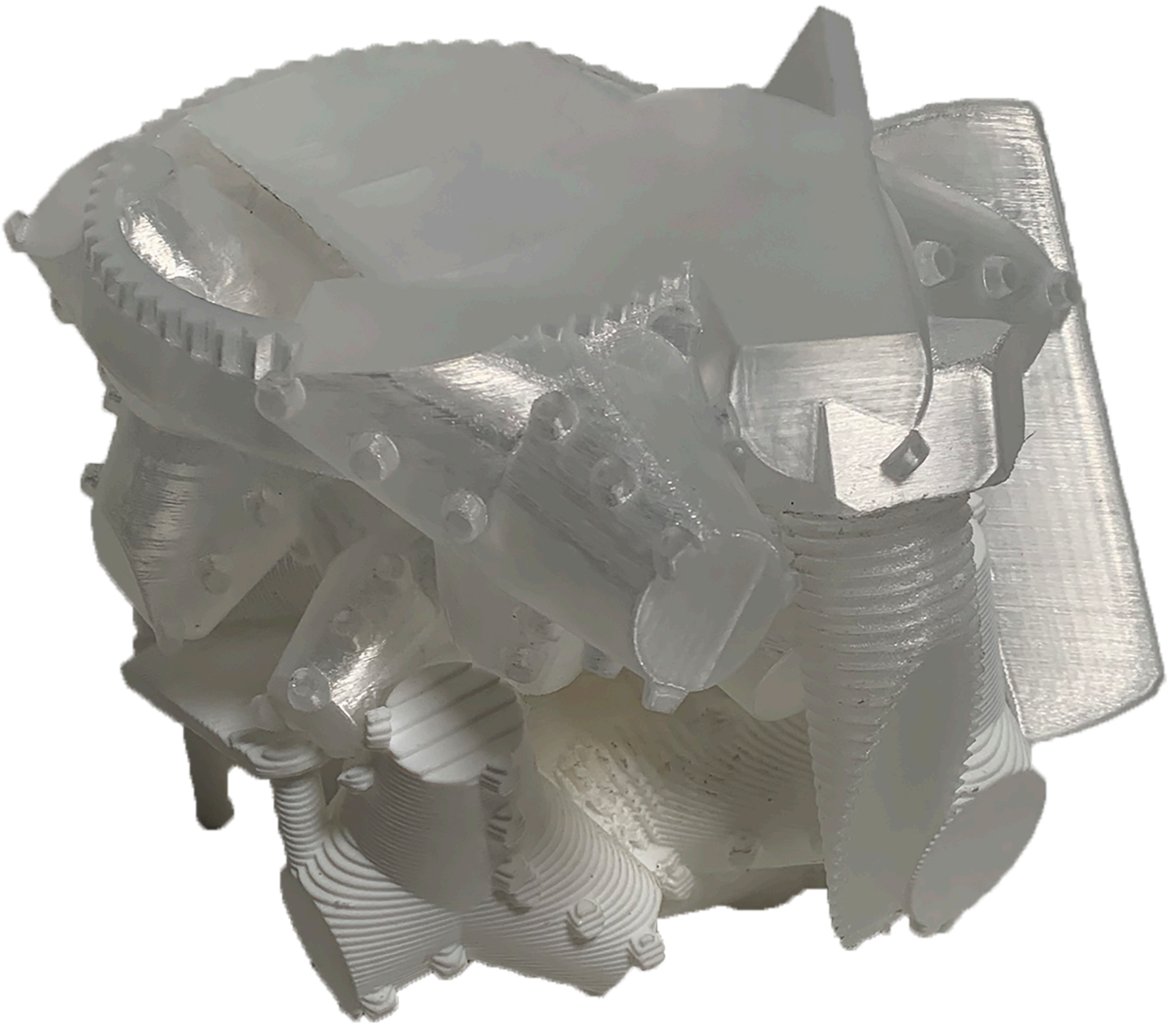


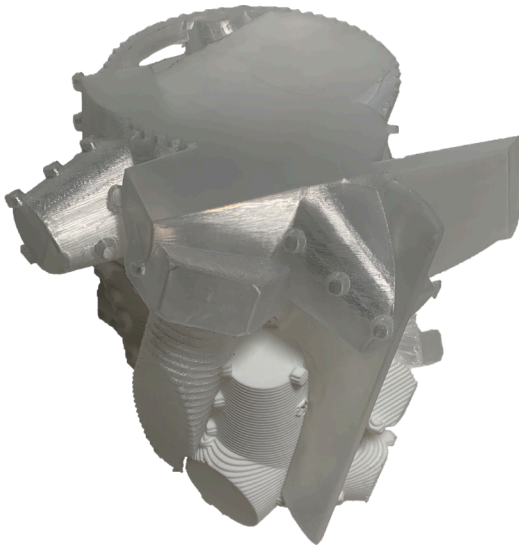
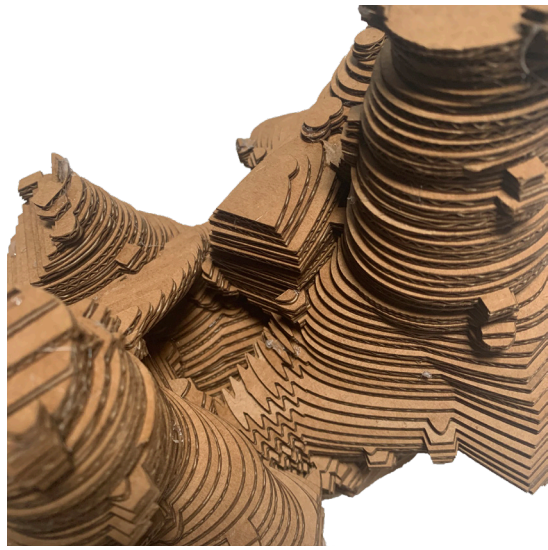
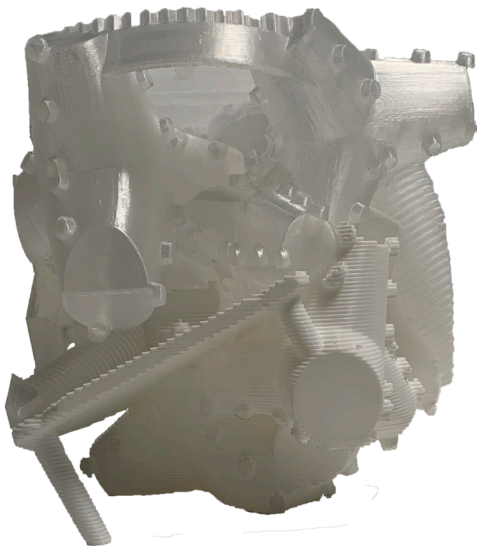


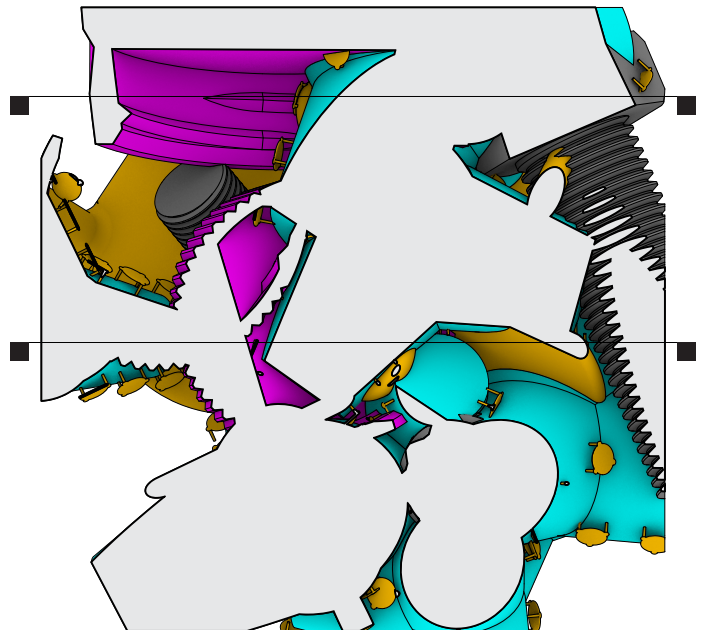
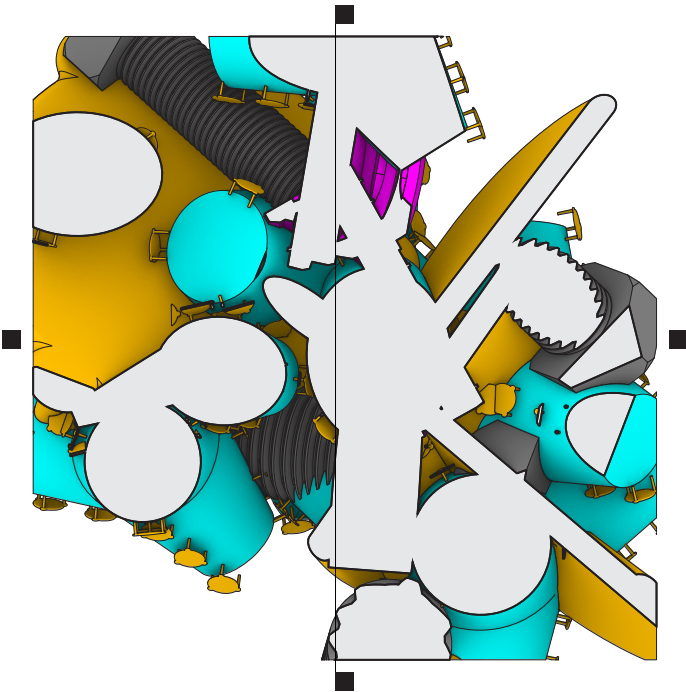
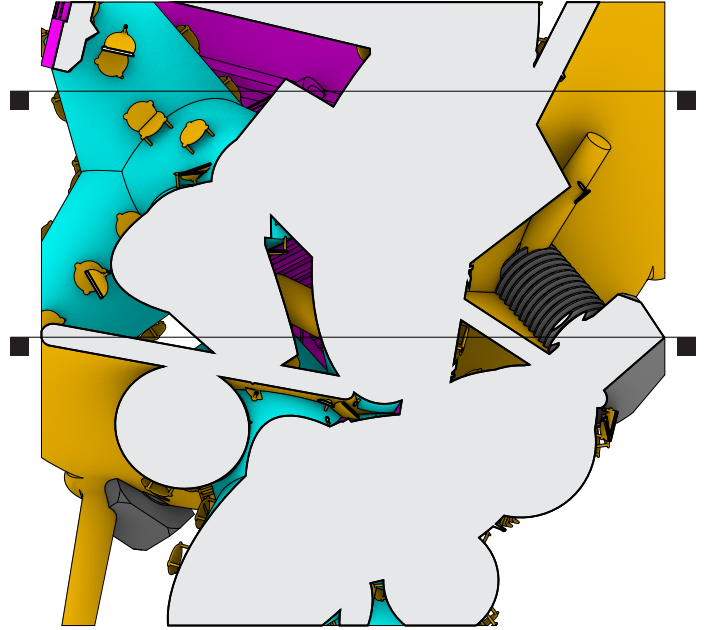
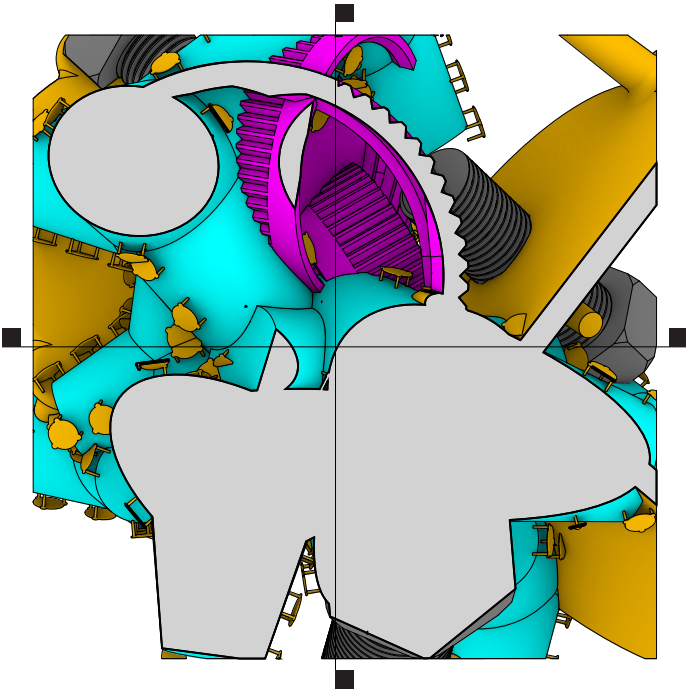






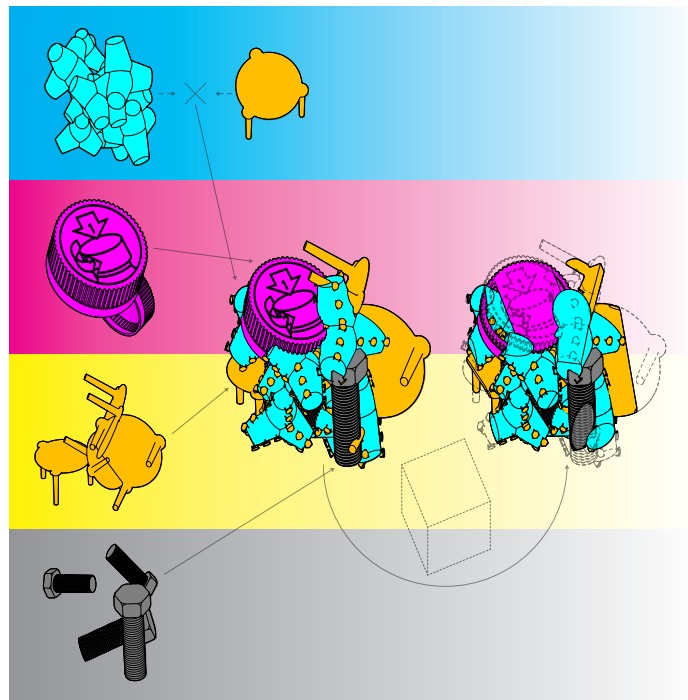




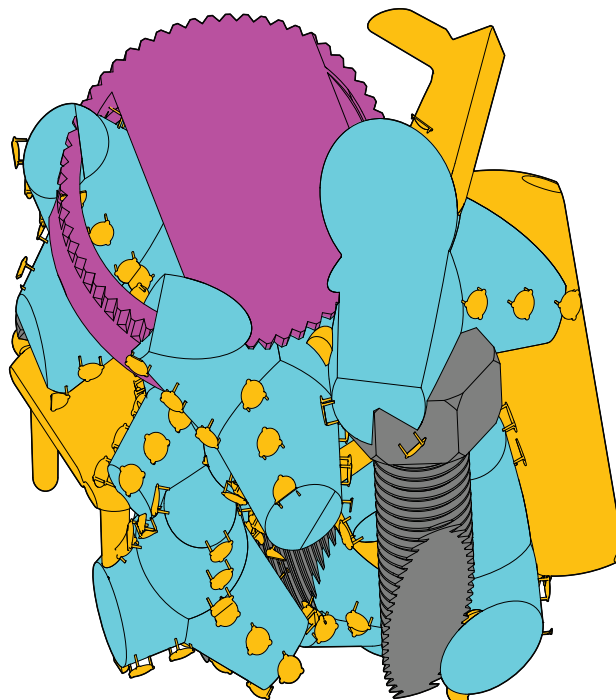


PLANS

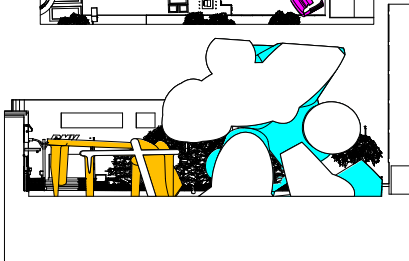
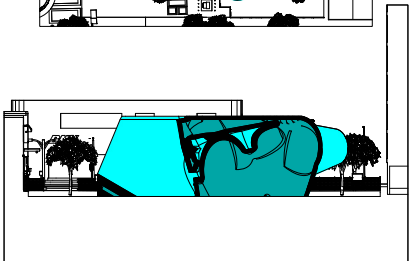
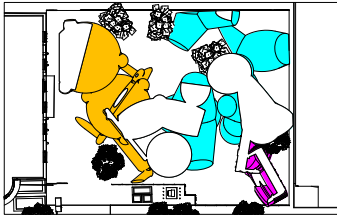
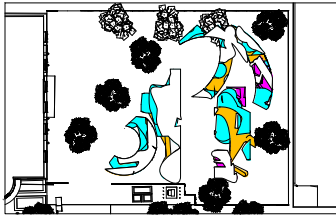
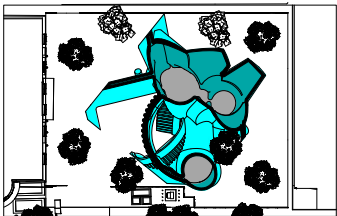
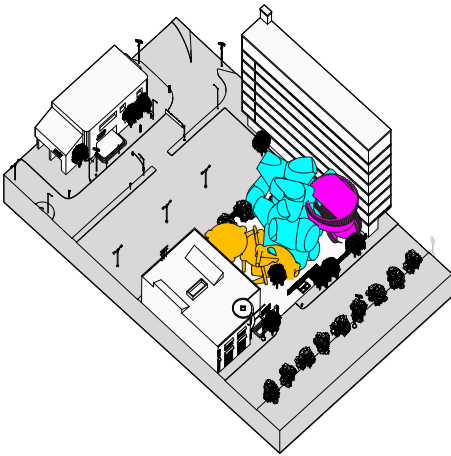
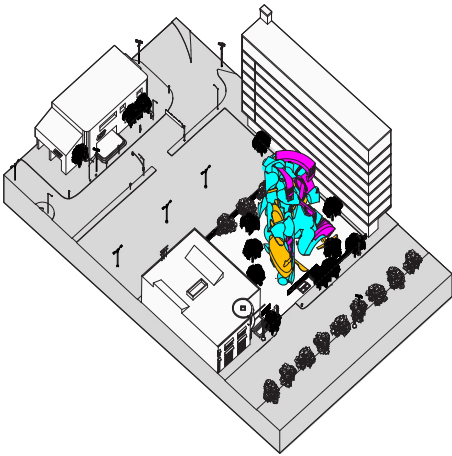
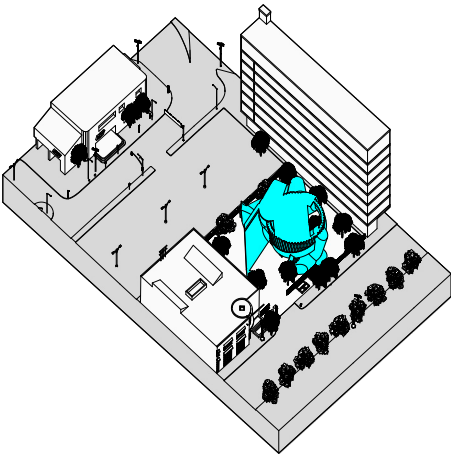
SECTIONS



DESCRIPTIVE DRAWING (ARCH105B A1)



AXONOMETRIC DRAWINGS



GREENERY AND NATURAL ELEMENTS

SUN PATH AT BUSIEST HOURS

