

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)

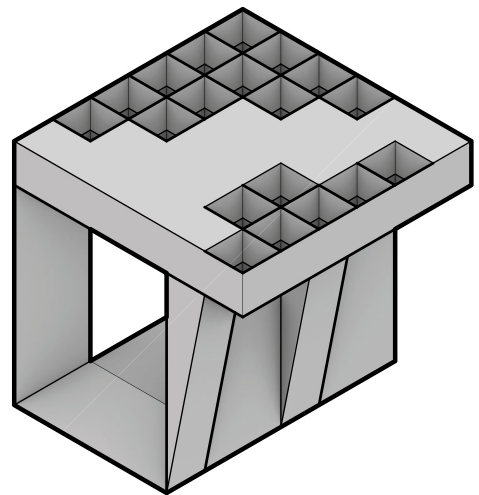
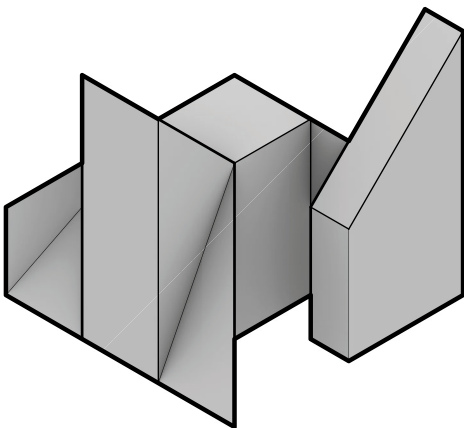
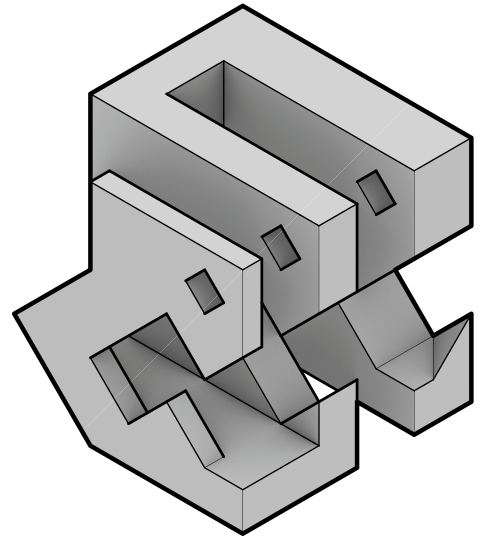
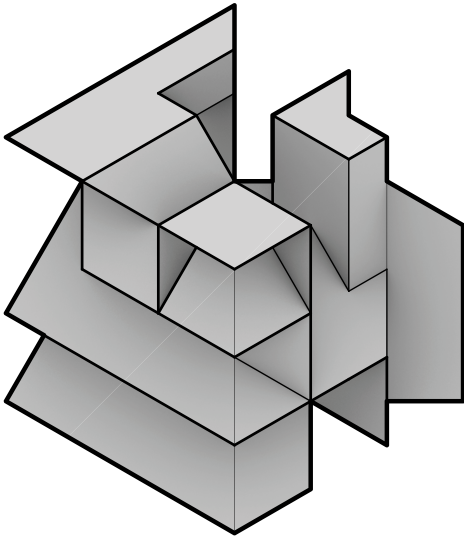
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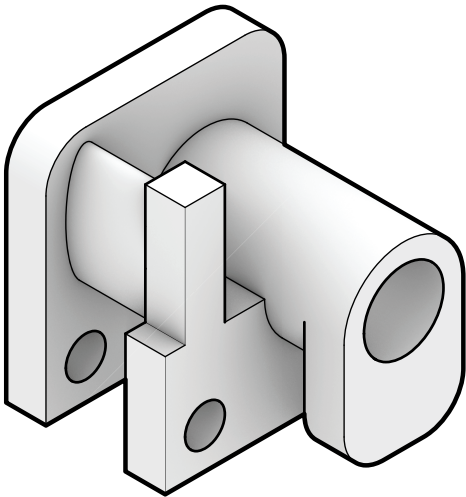
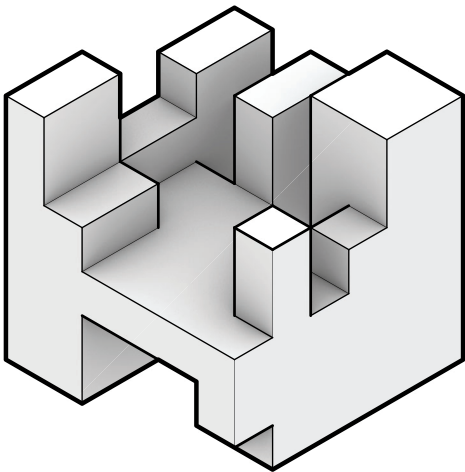
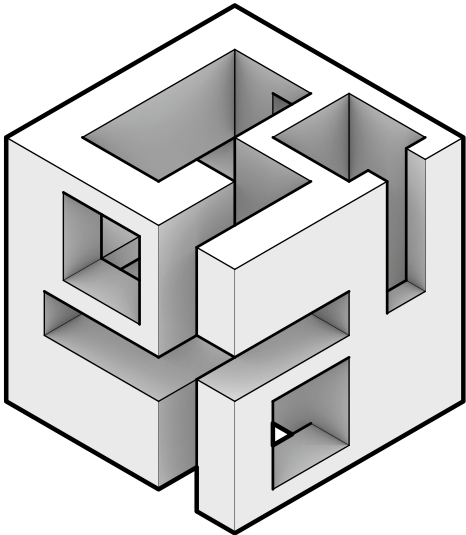
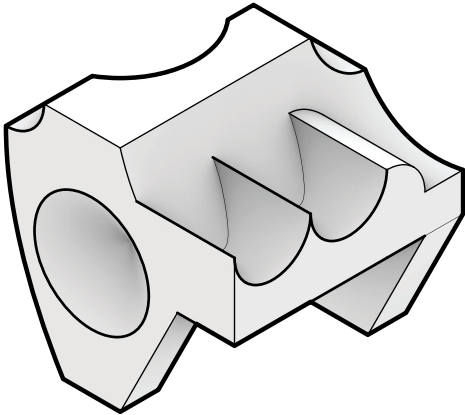
isometric hybrid drawings
descriptive drawing
physical model pictures
orthographic drawings & axonometric drawing

PROJECT 3 | OLYMPIC PAVILION/FOLLY

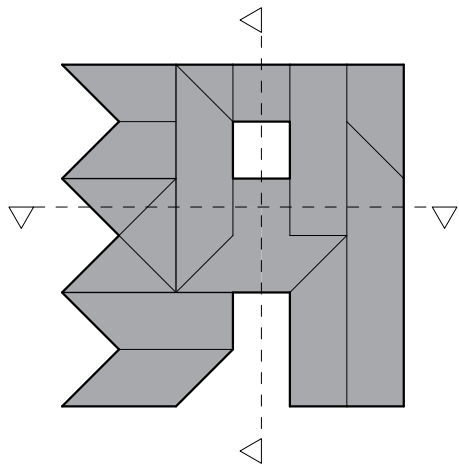
PAGE 3.1 - 3.5

site synthesis plan
axonometric drawings
physical model pictures
orthographic drawings
renderings

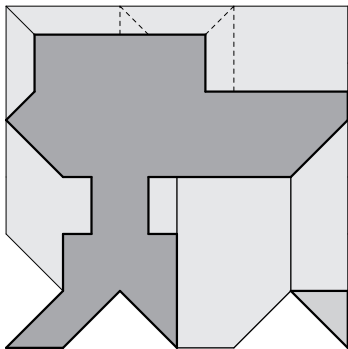




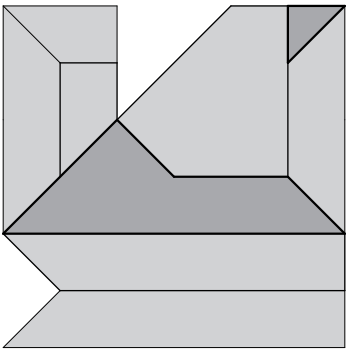
ELEVATION



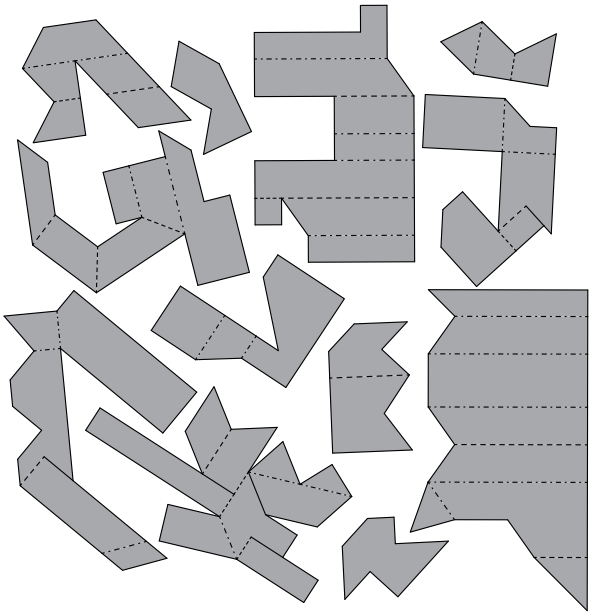
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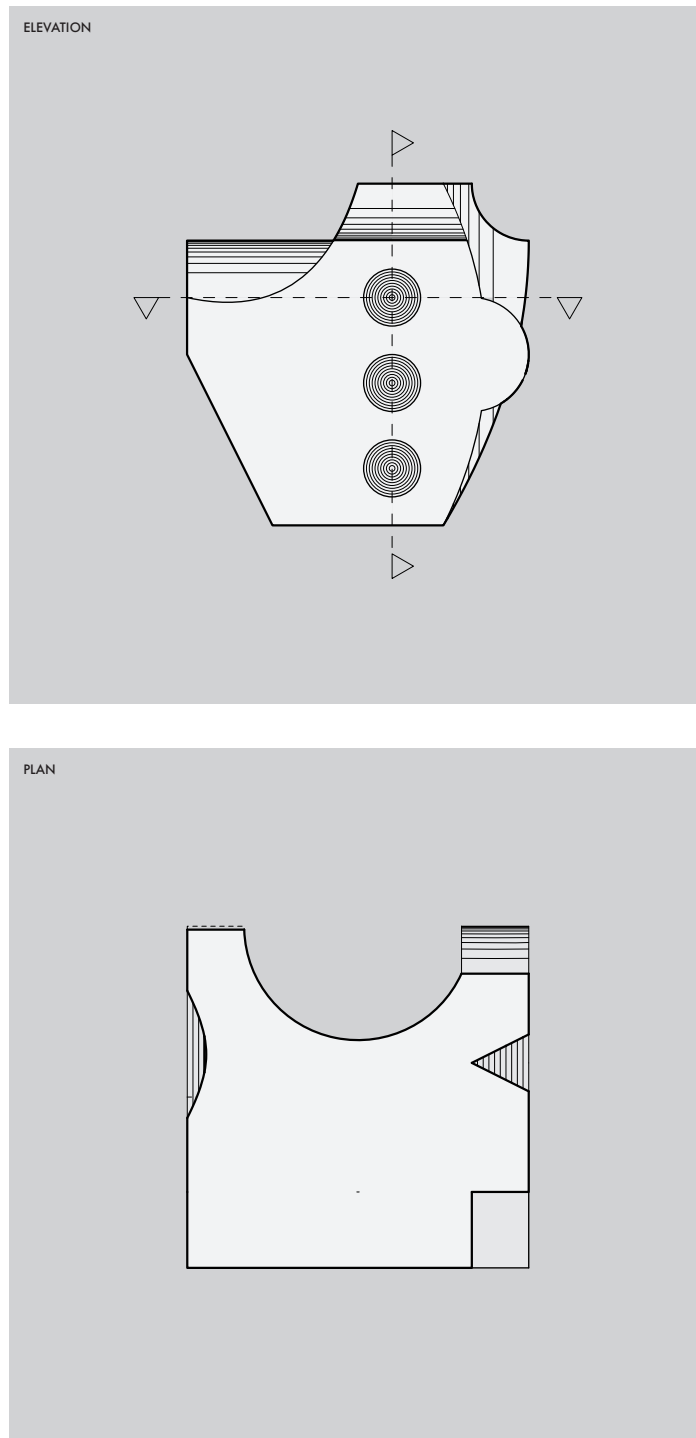


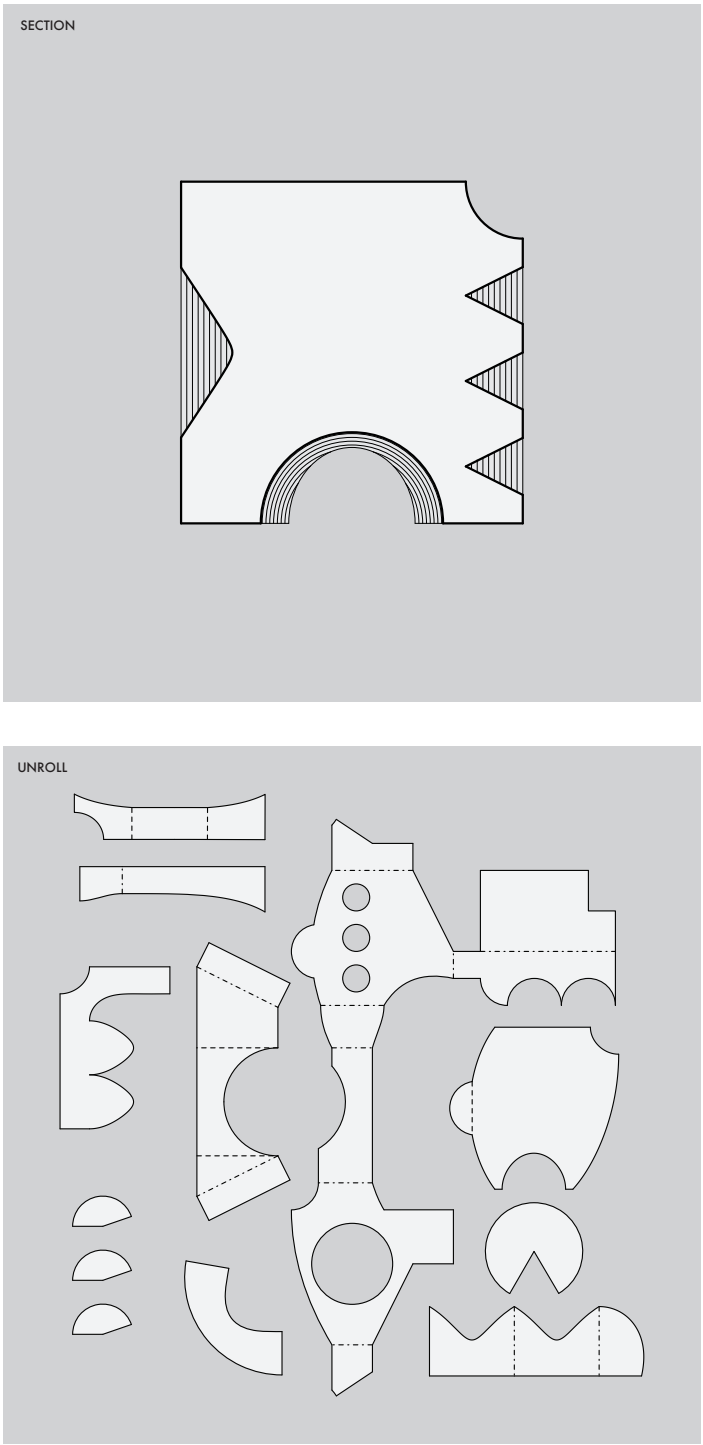
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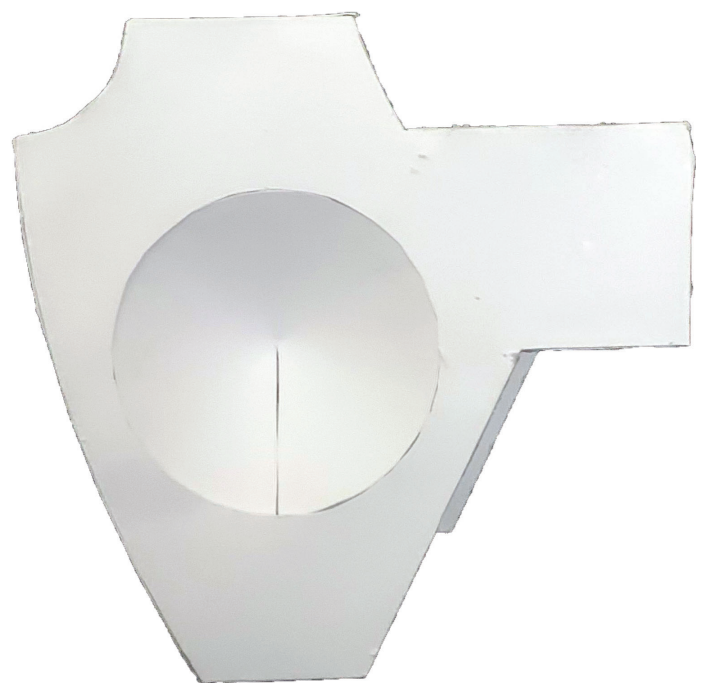
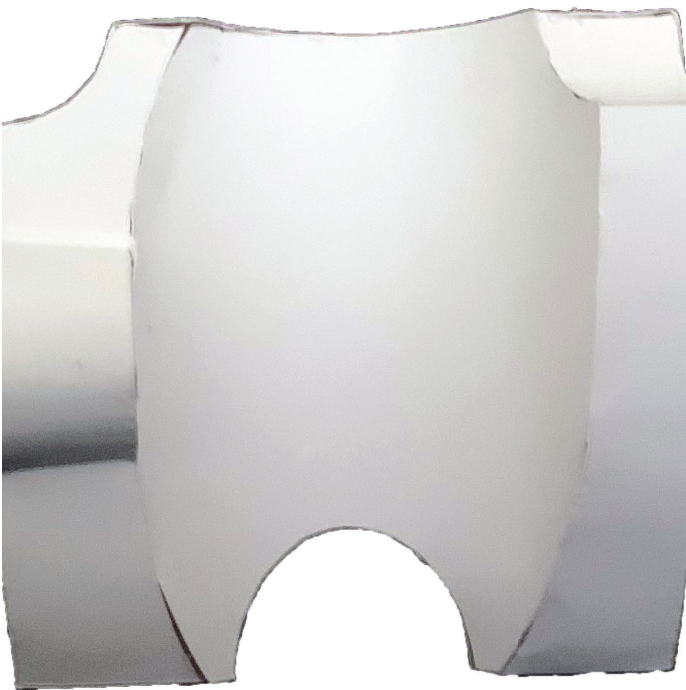


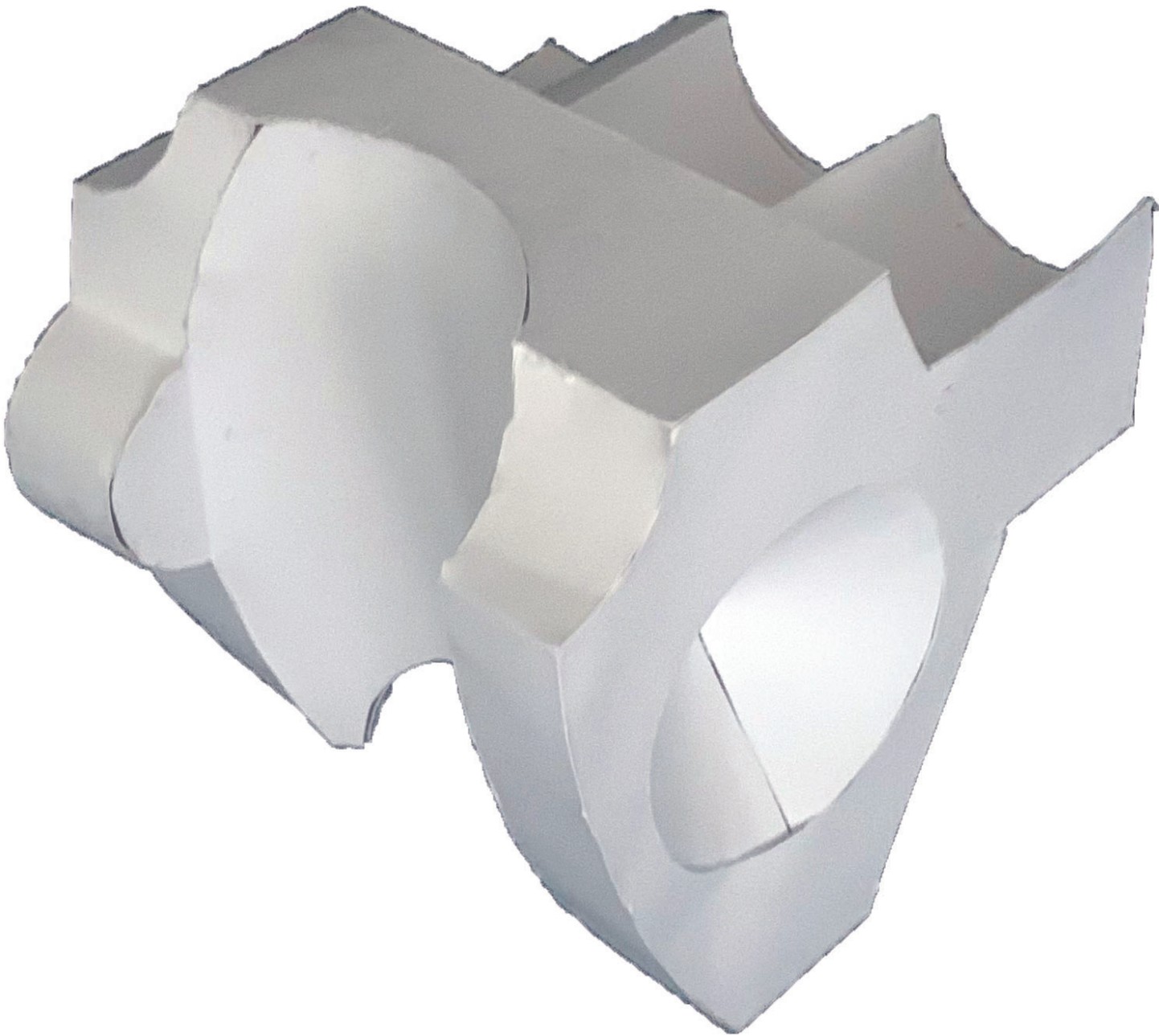
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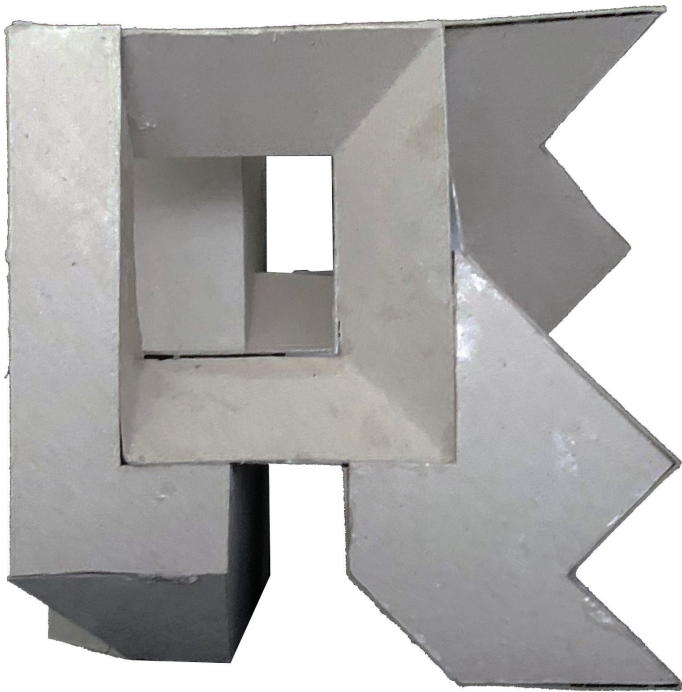
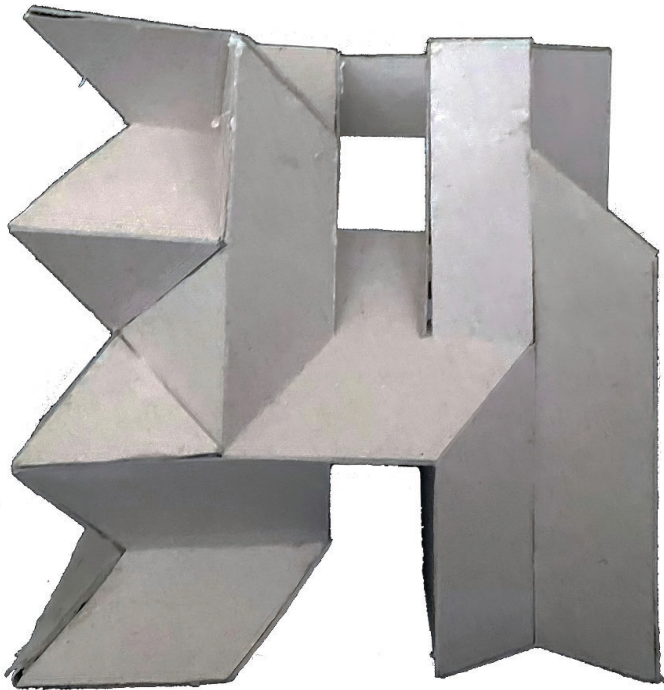


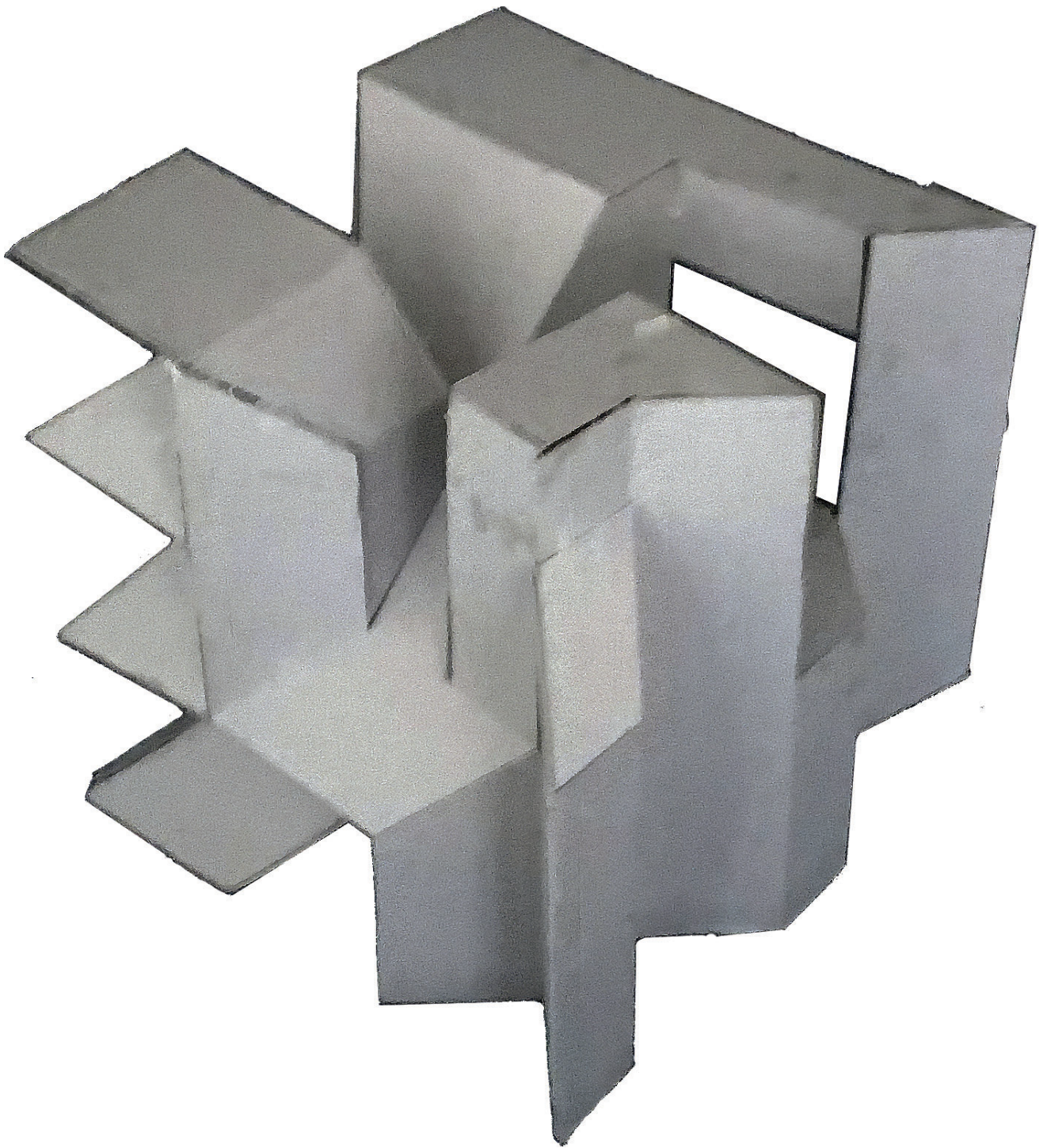




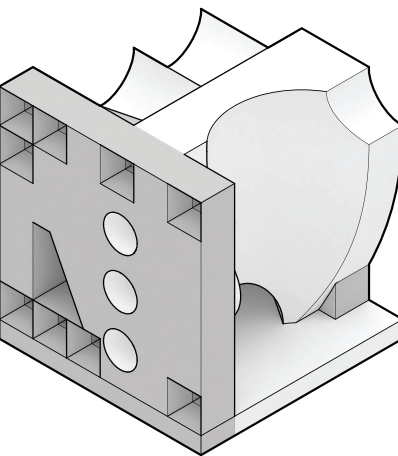
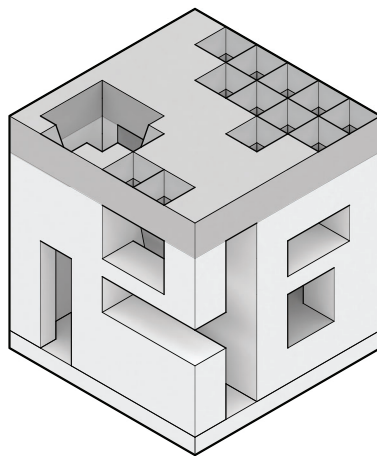
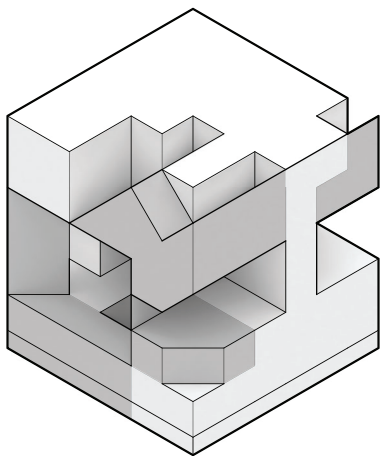
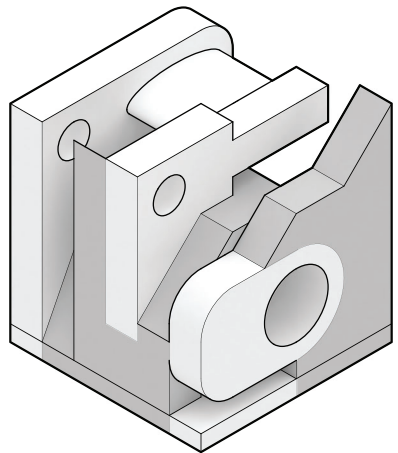
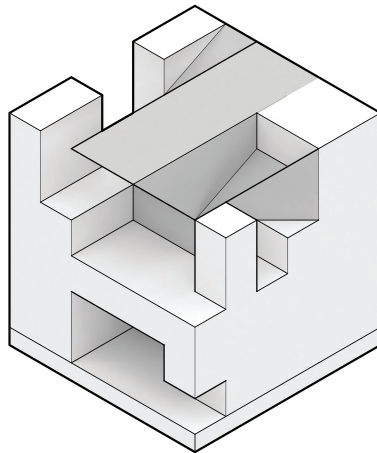
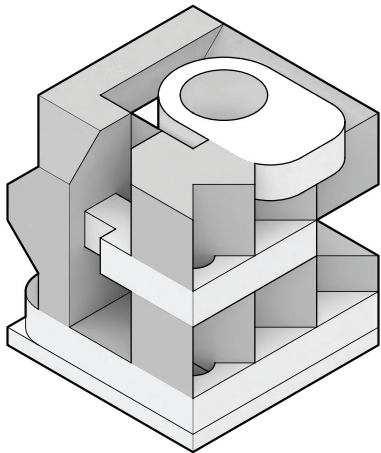
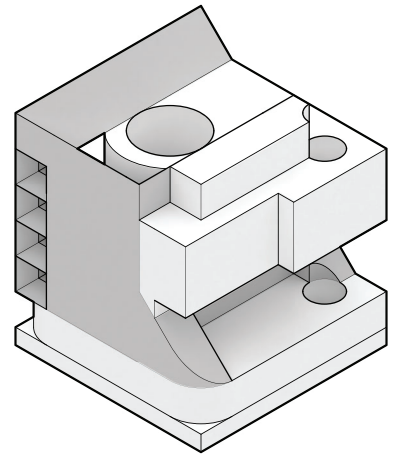
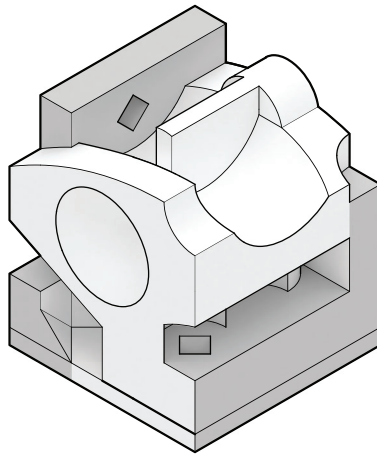
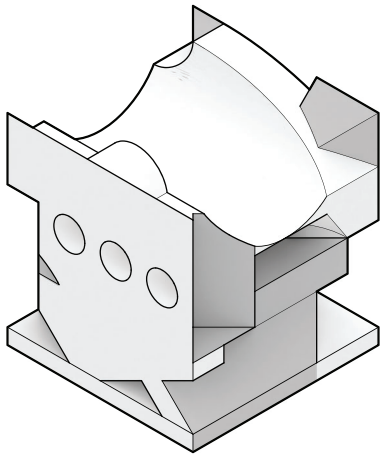


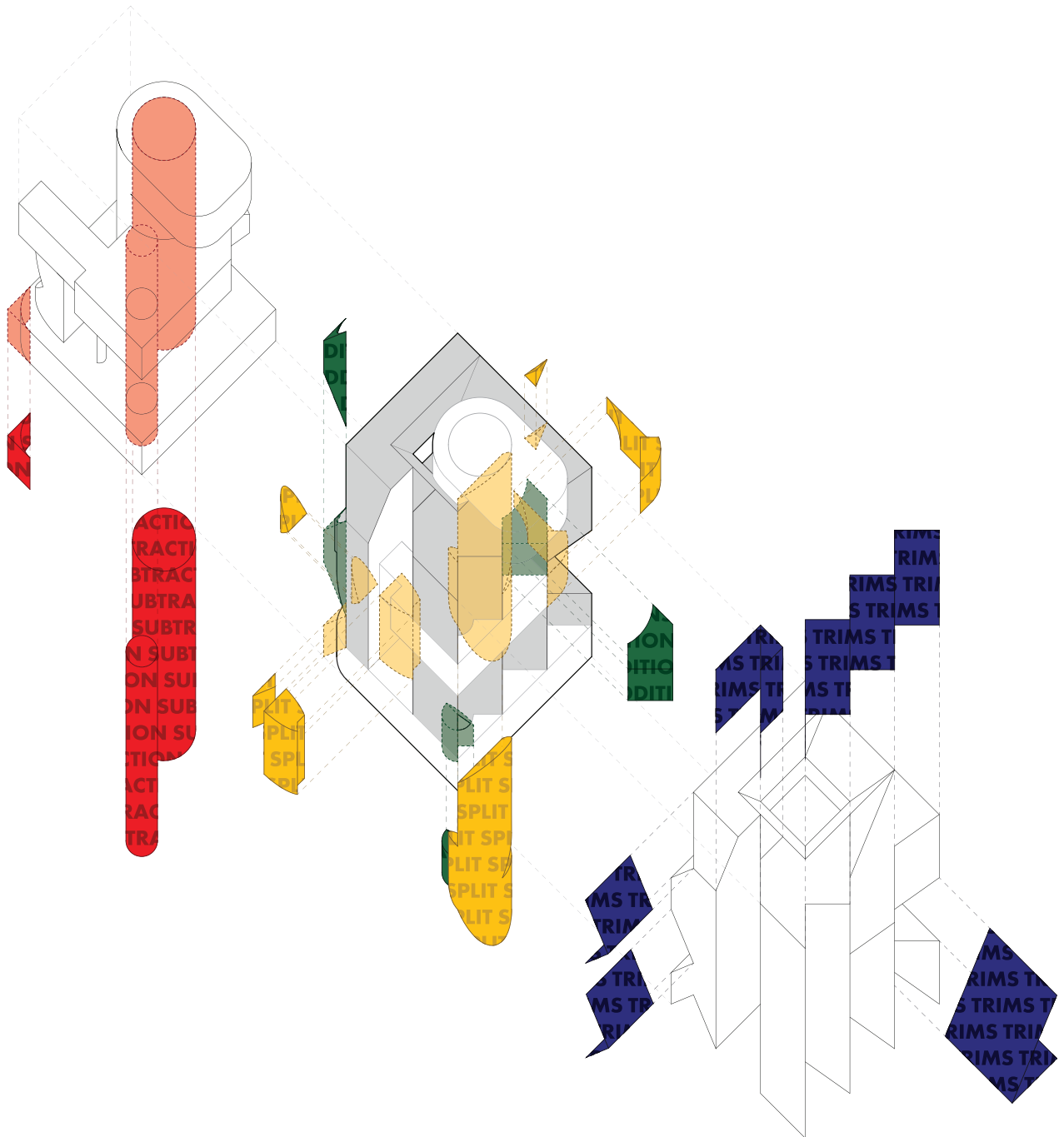
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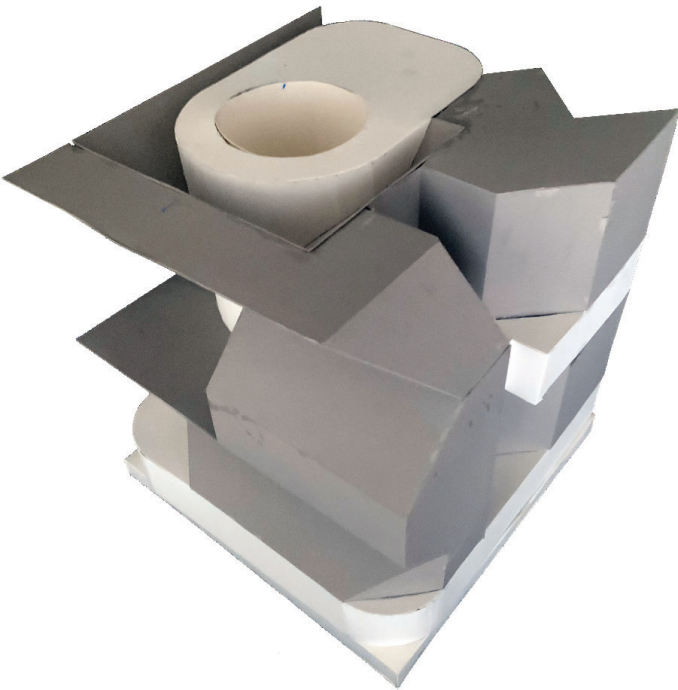
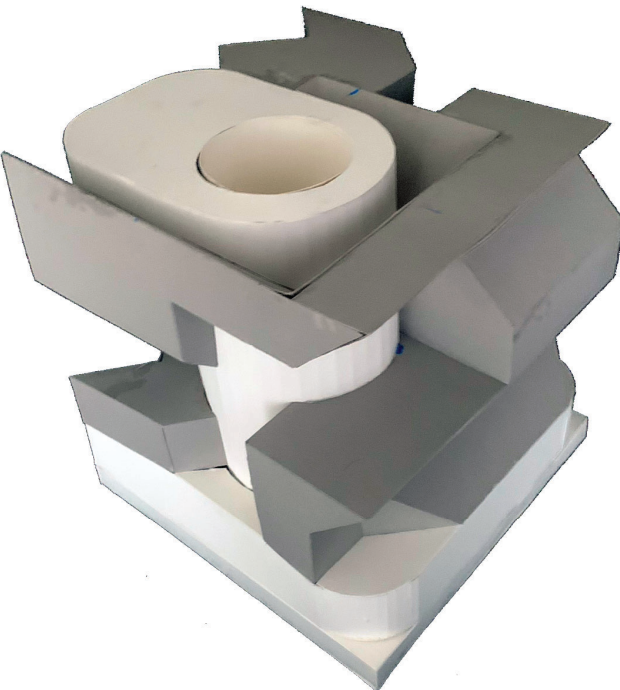
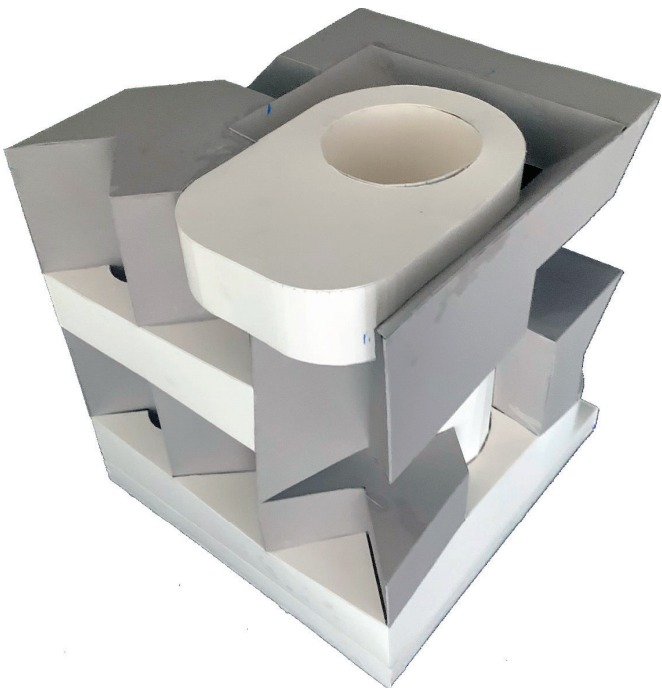
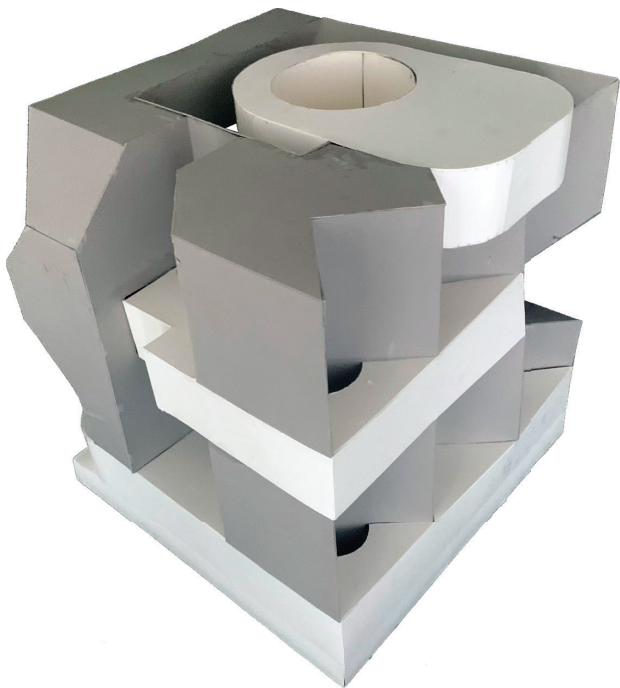


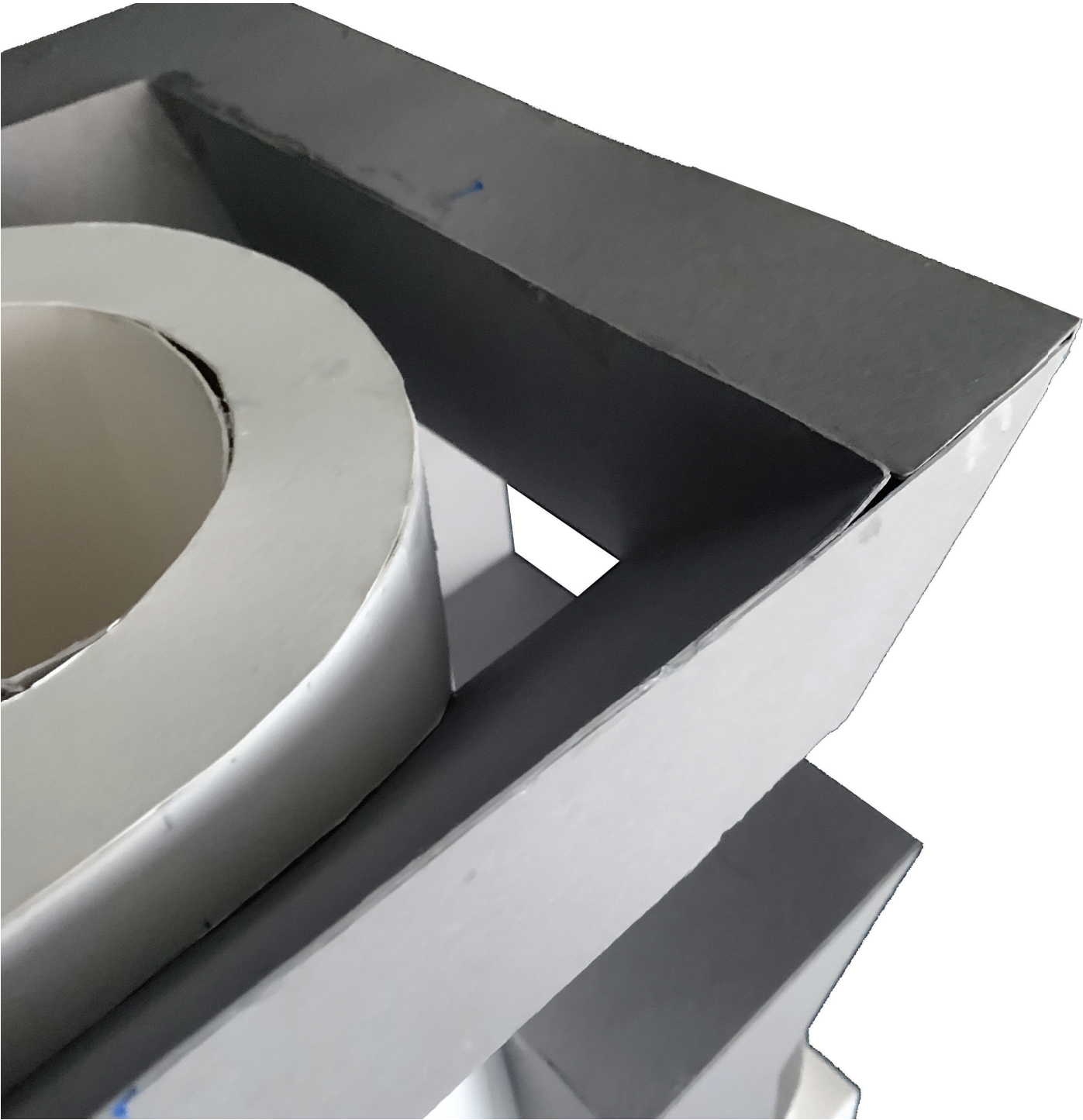


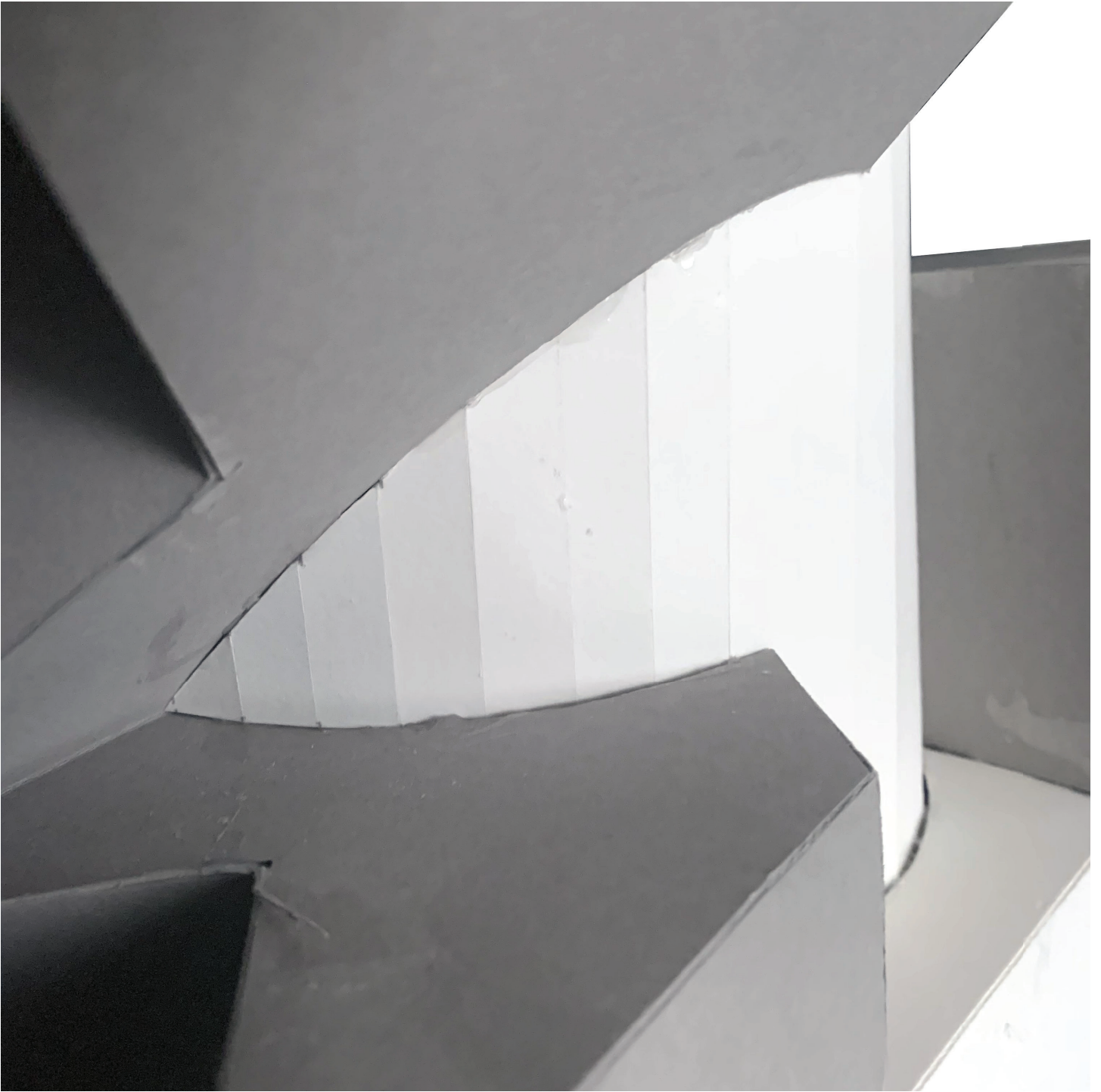
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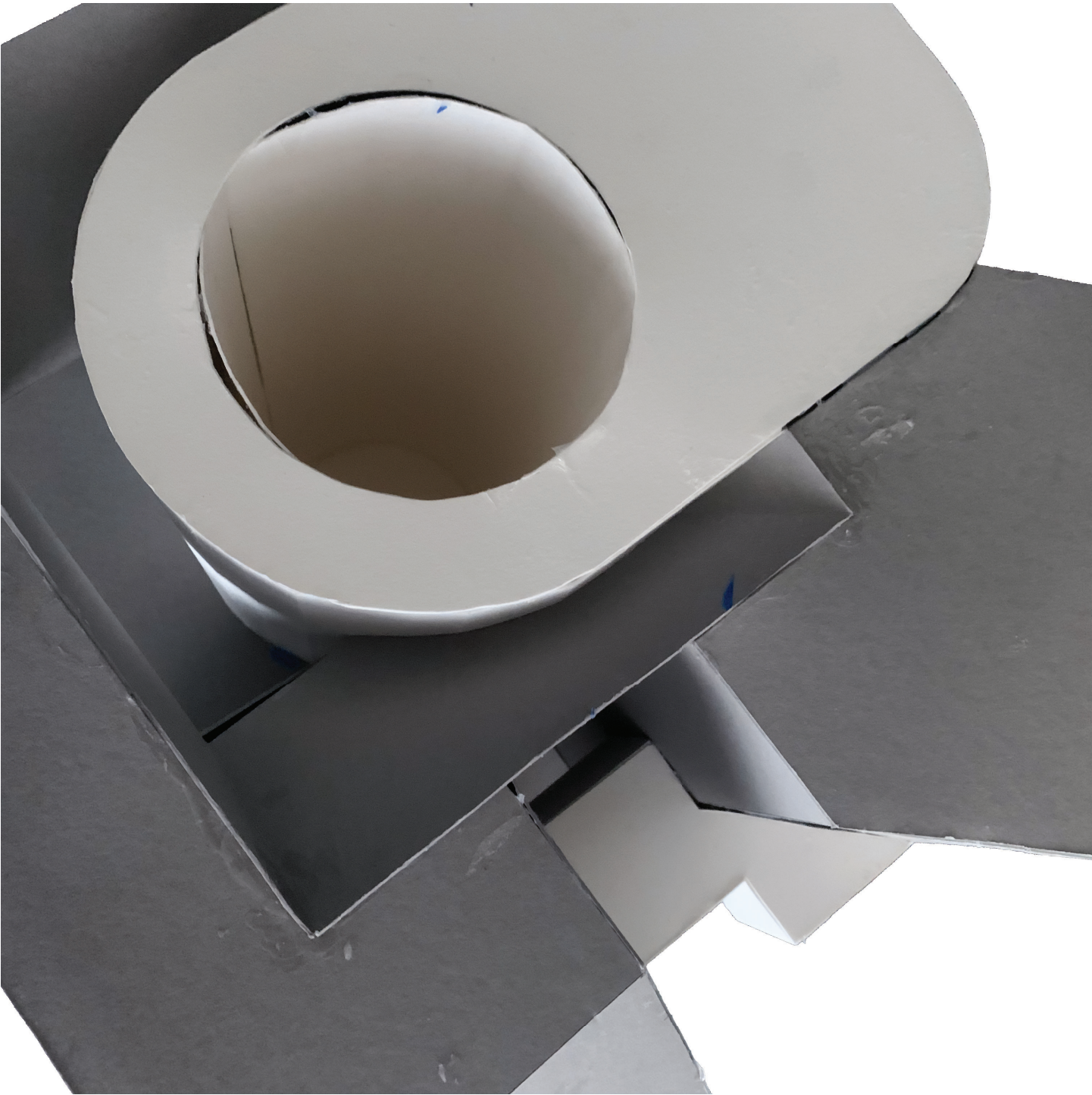


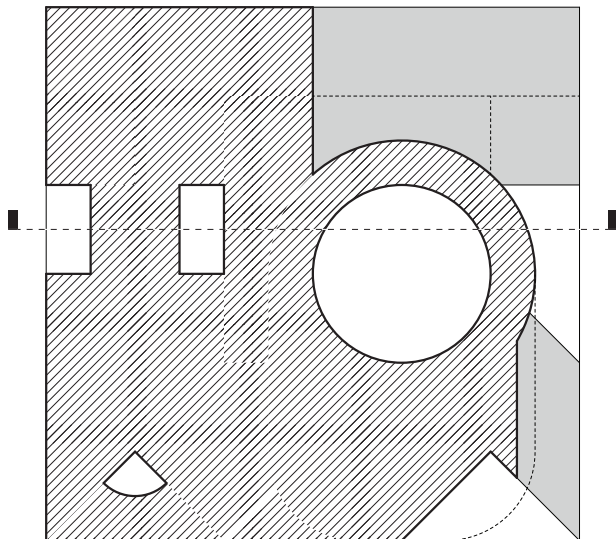




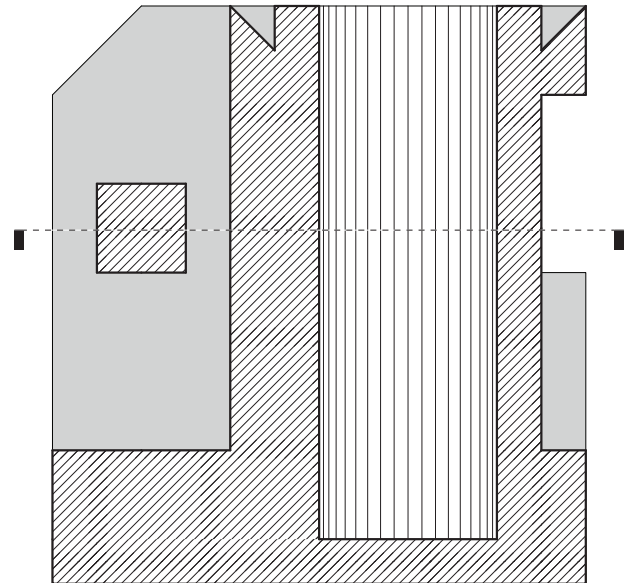




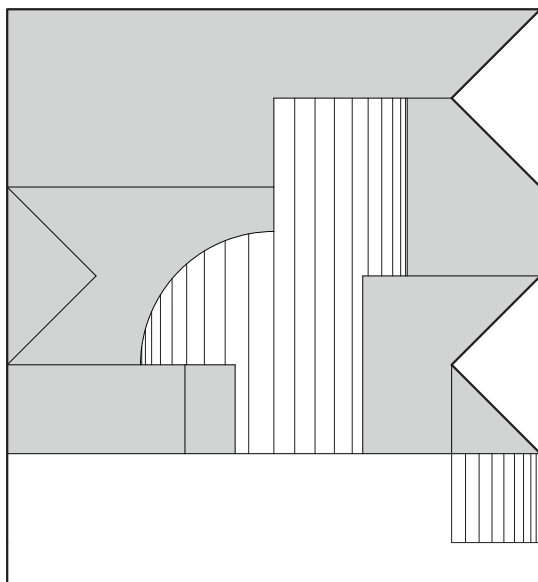




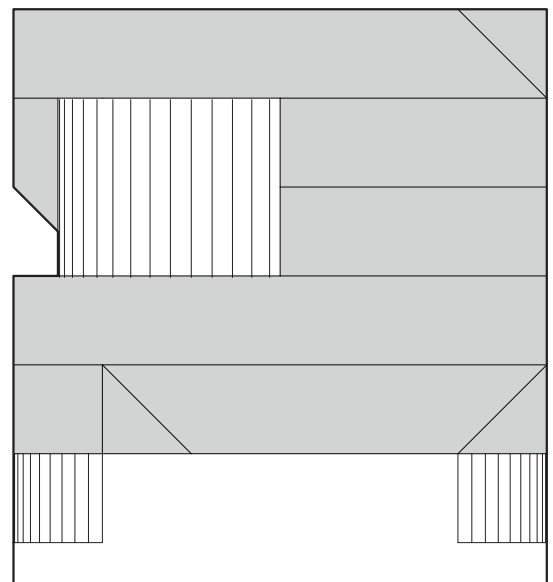
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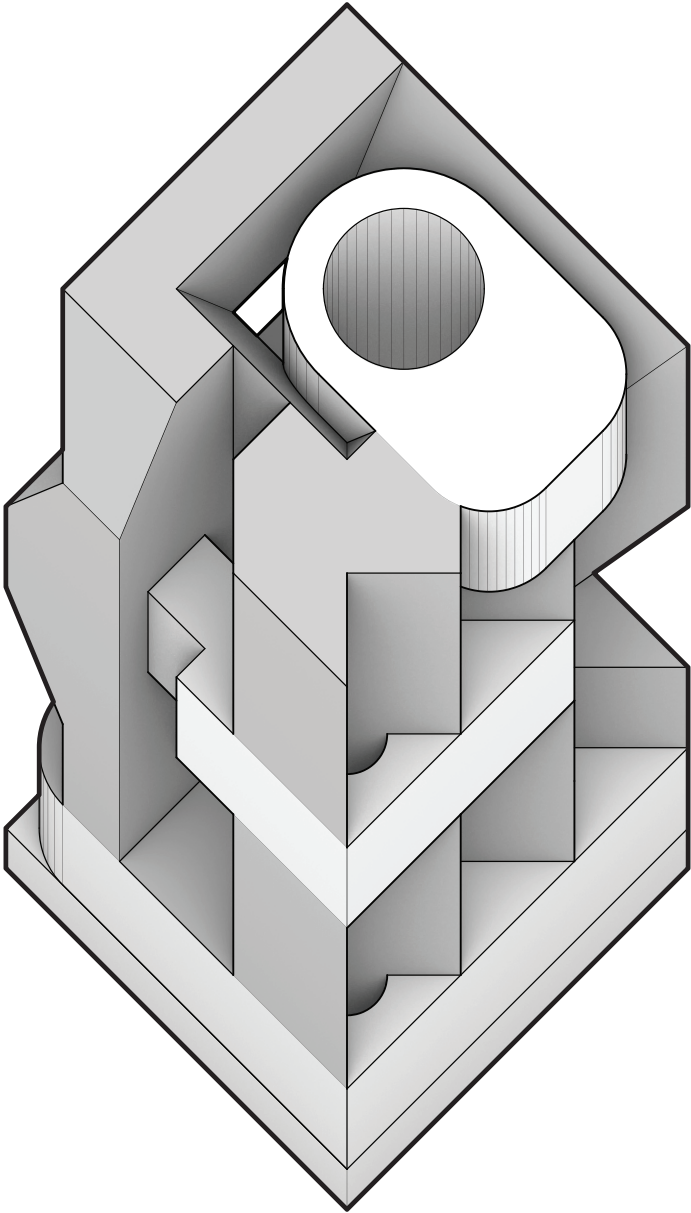
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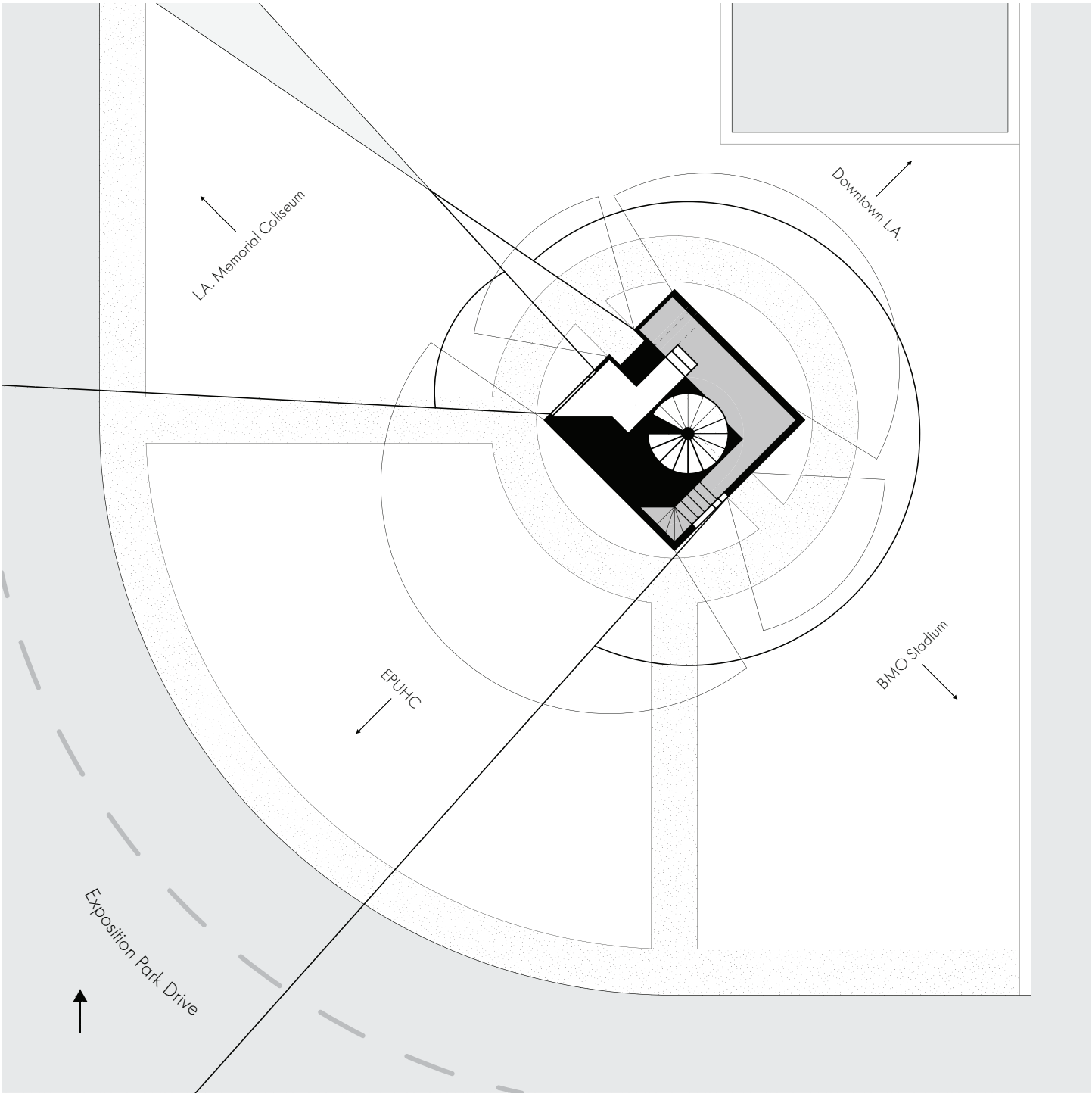


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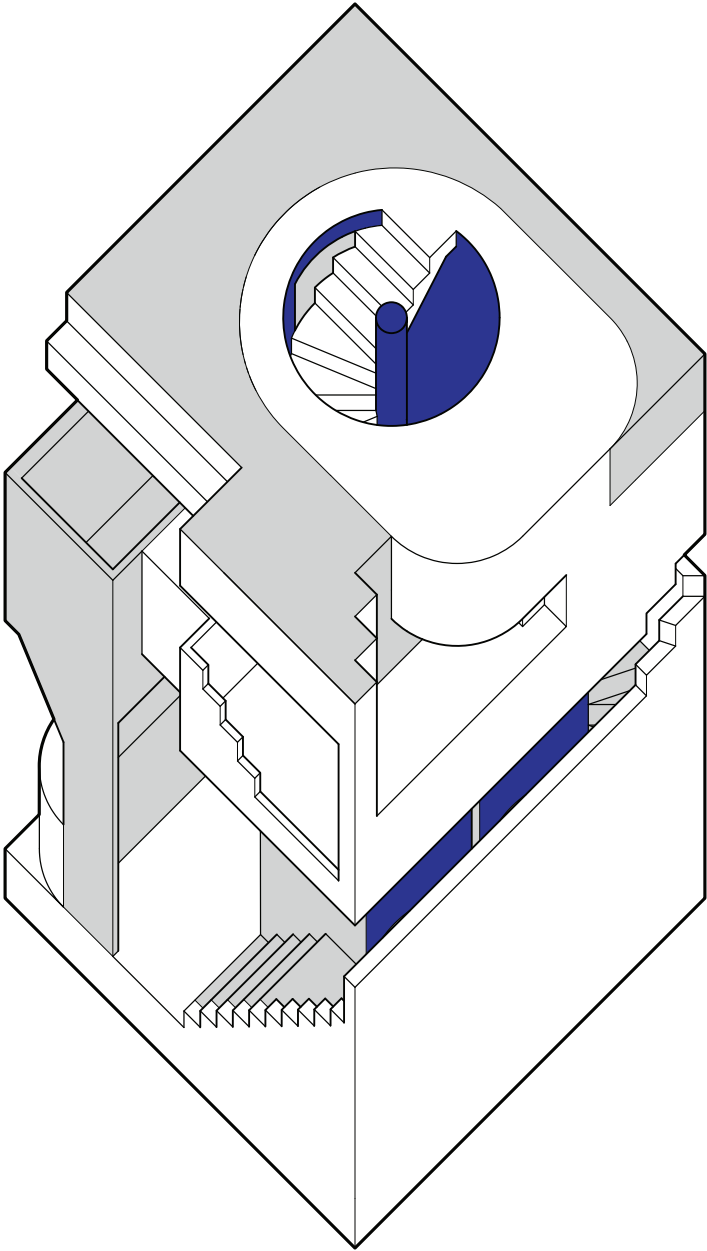


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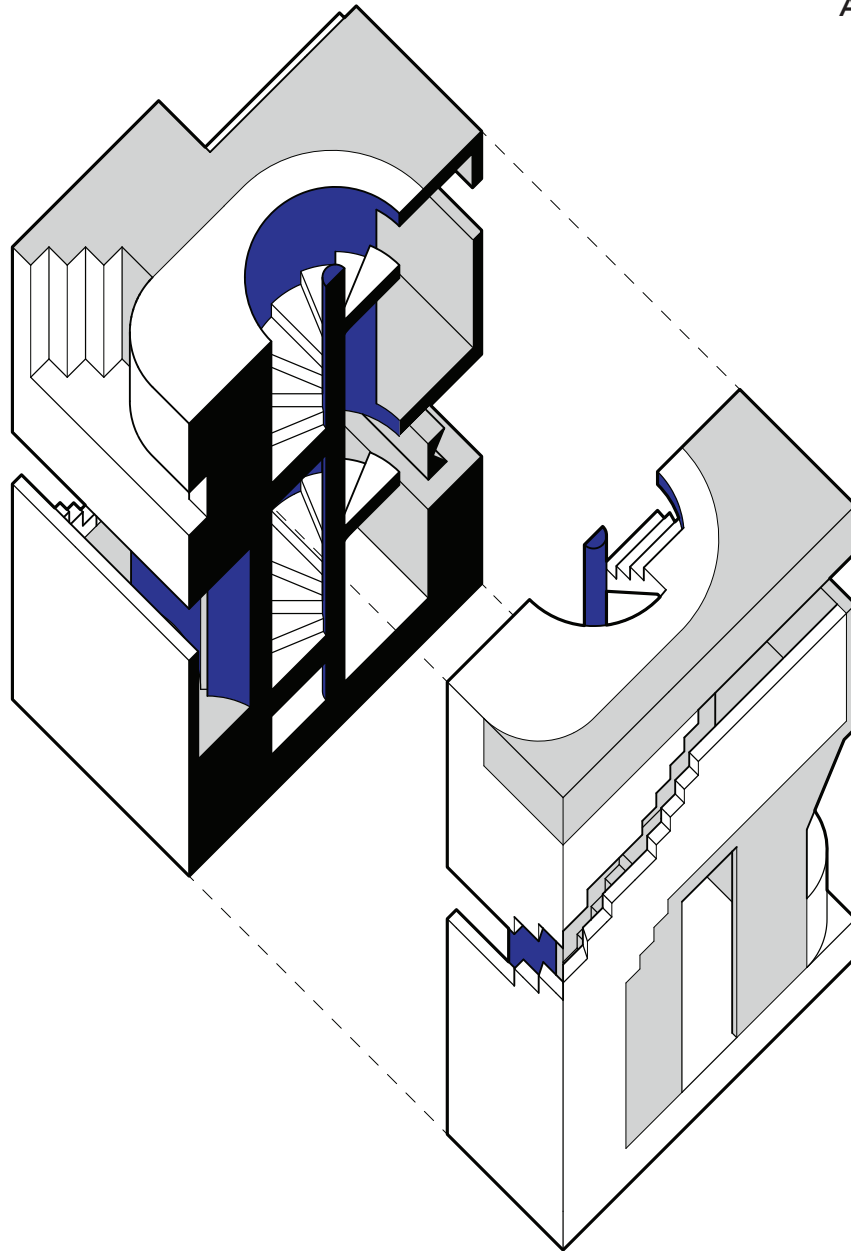


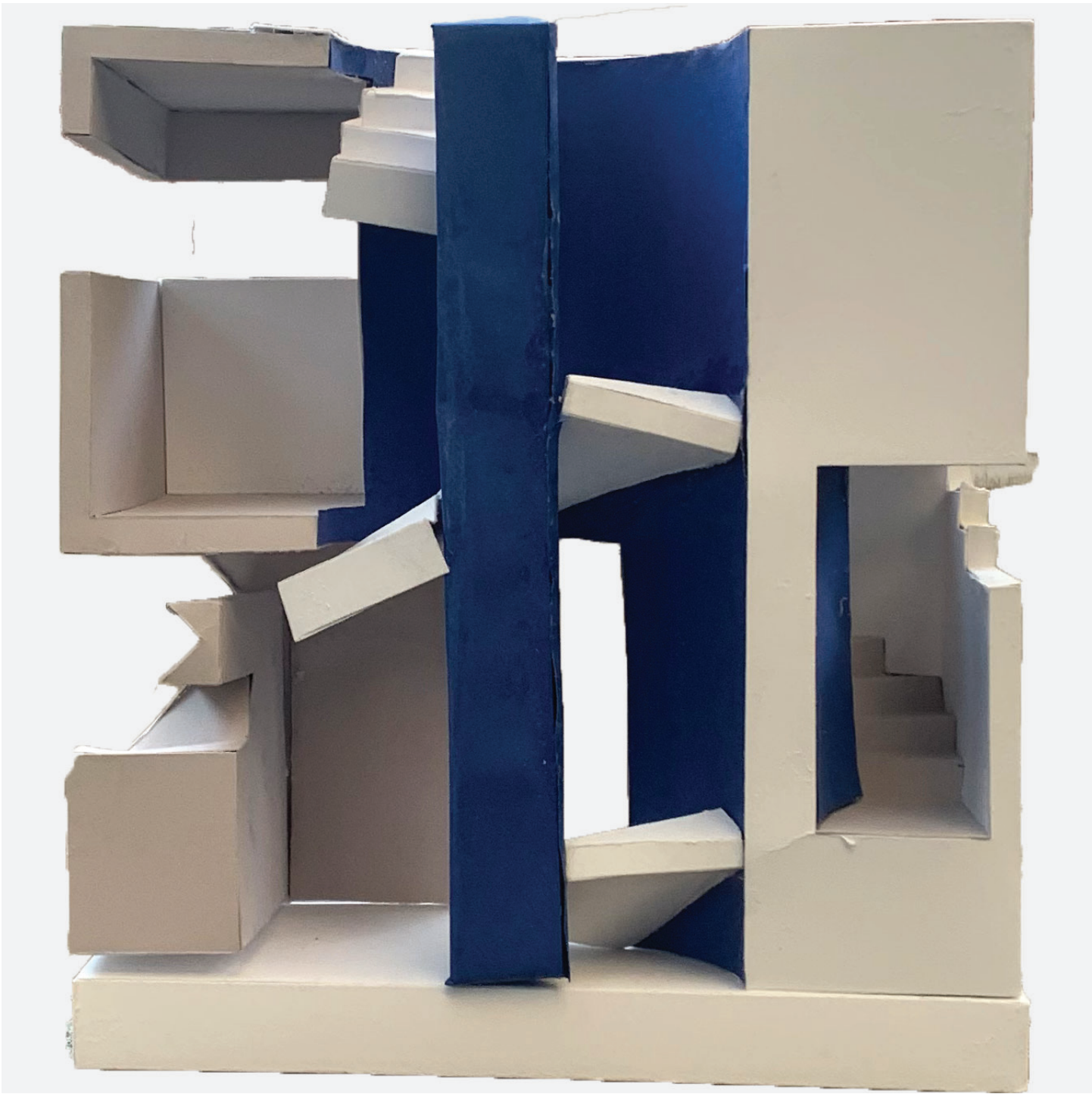


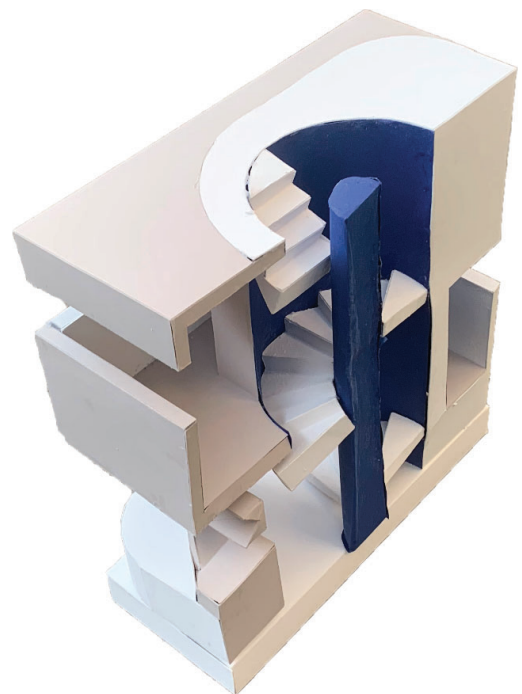
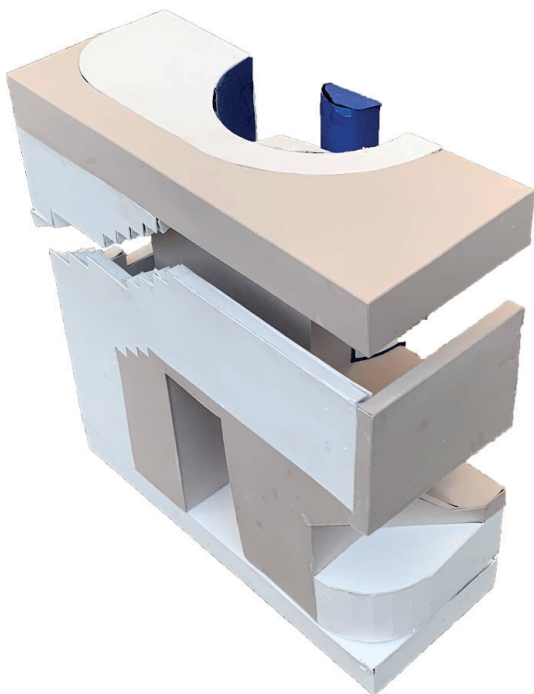
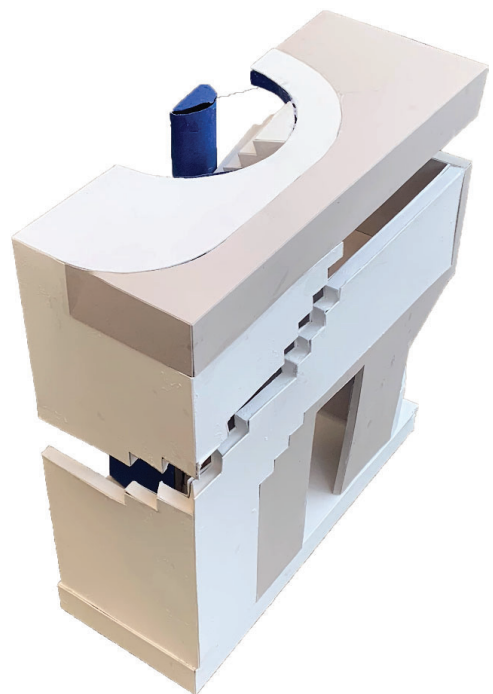
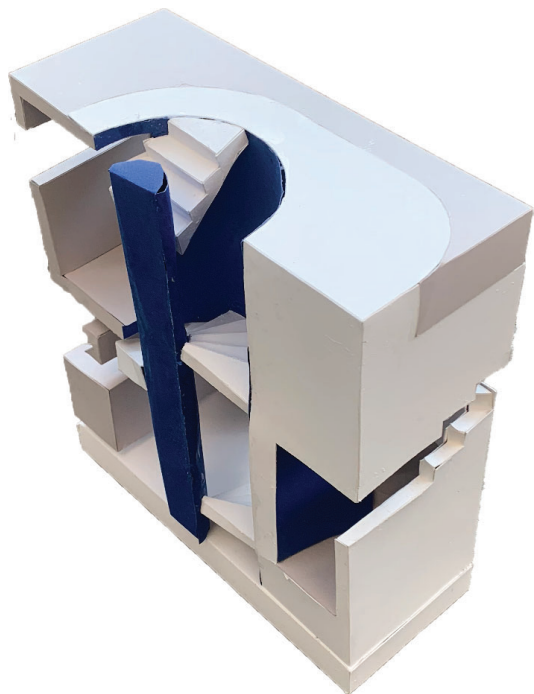
Axonometric



Axonometric Split

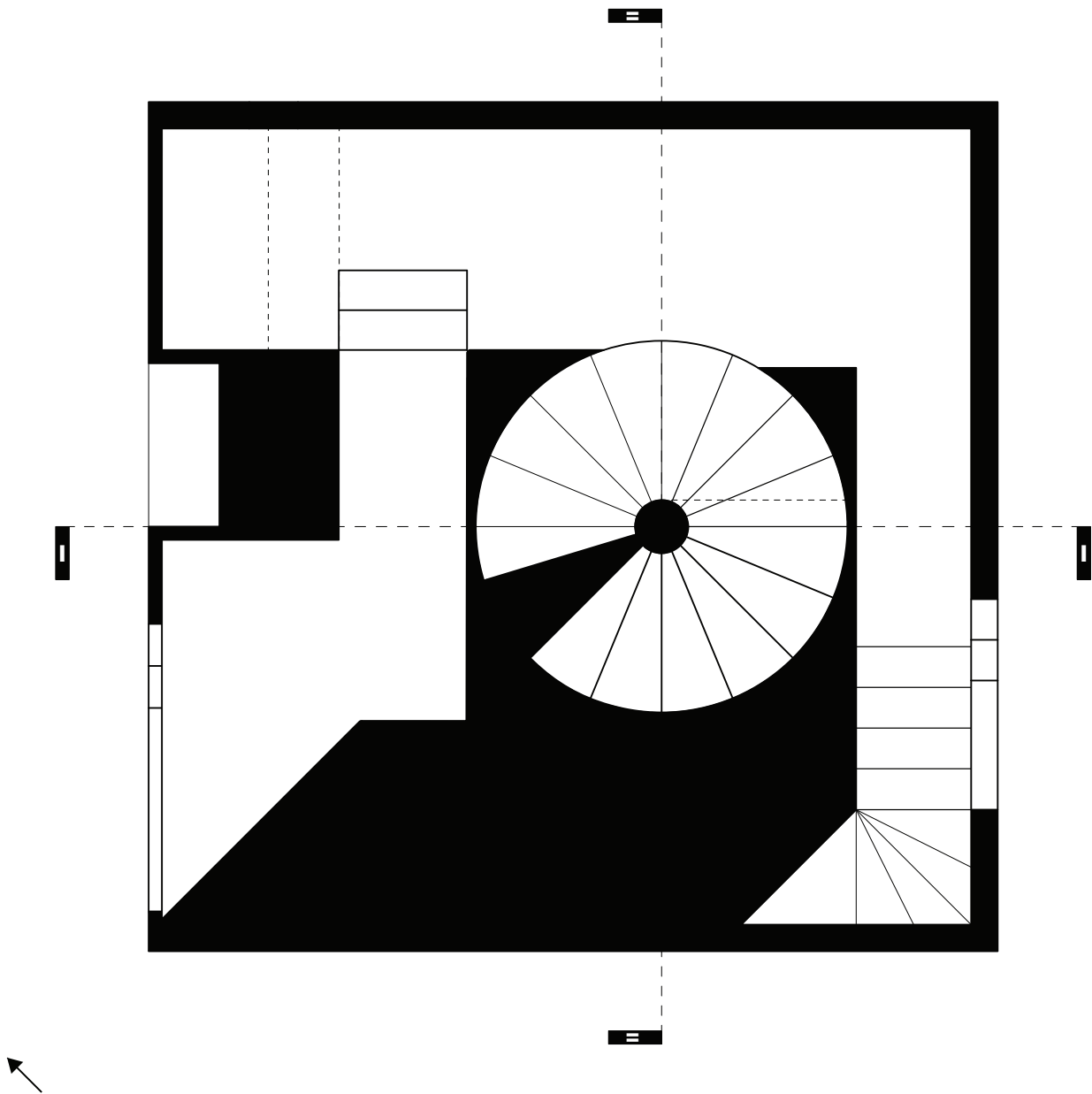




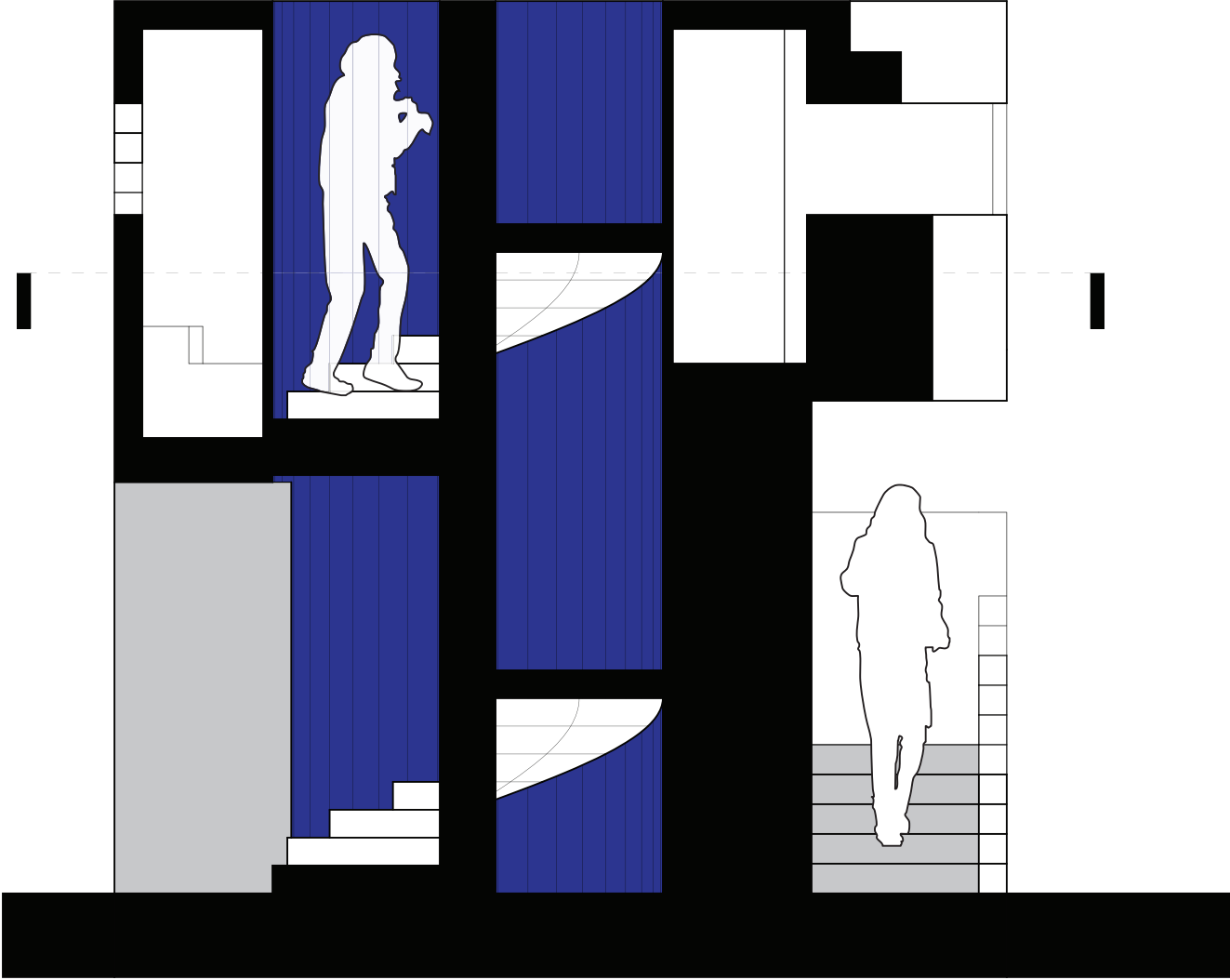


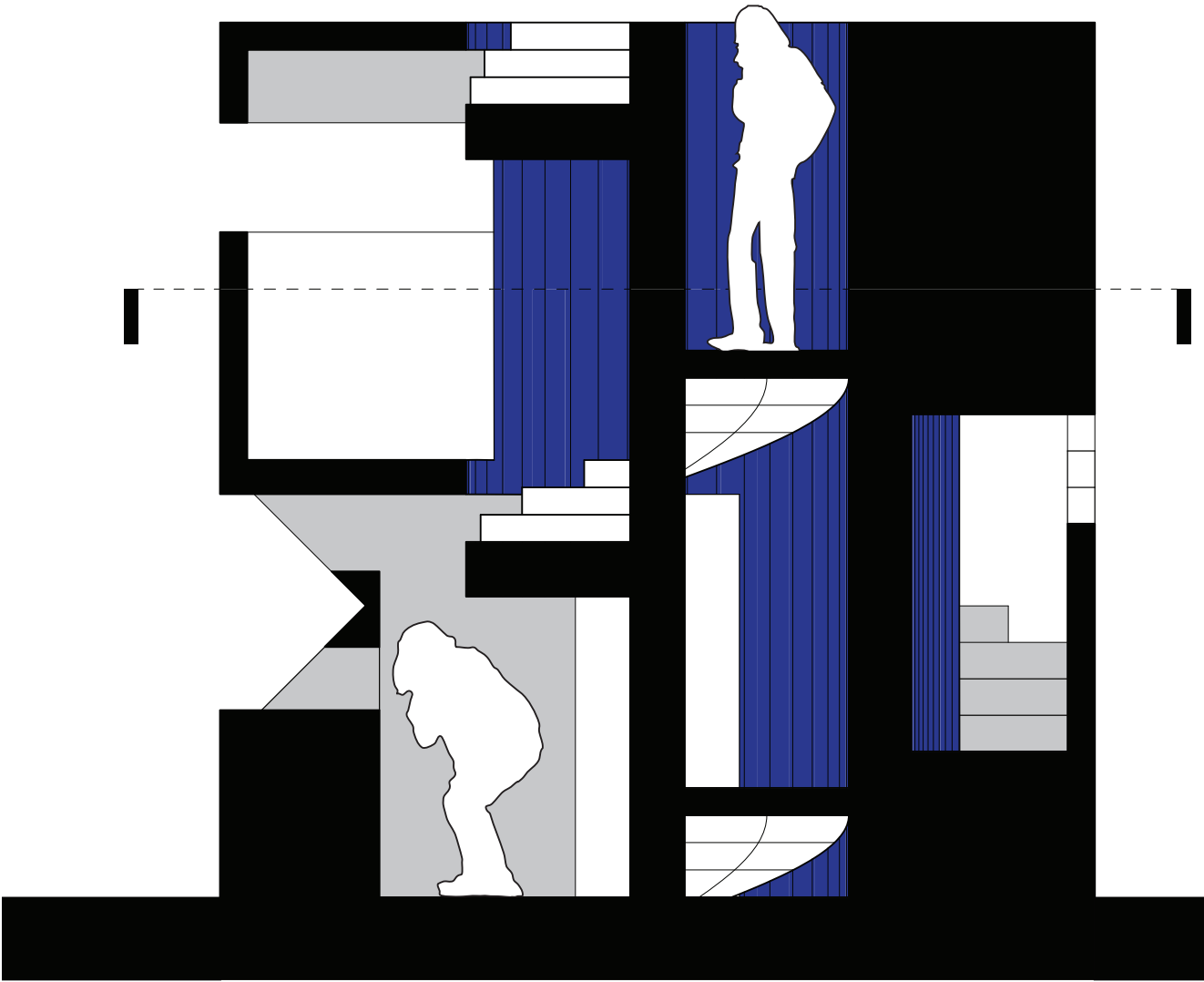


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SECTION



