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ARCH 501: Design Studio II: Everyday Assemblies

2024/2025 winter session term 2

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Course Overview

This studio critically examines the interplay between everyday objects and architectural design, focusing on how material, form, and spatial assemblies are derived from seemingly ordinary inspirations. Architects have long drawn on everyday objects, transforming their materiality, scale, and formal properties into habitable spaces imbued with cultural meaning. This process, far from being a mere postmodern gesture, is deeply rooted in the history of architecture and continues to inform innovative design practices.

From Le Corbusier's *Still Life* (1920), where culinary objects inspired the layering of planes in Villa Stein at Garches, to Aldo Rossi's *Coffee and Tea Piazza* (1983), where coffeepots and teapots became metaphors for buildings in a piazza, architects have engaged in what Arthur Koestler termed "bisociation": the merging of unrelated concepts to create novel ideas. Similarly, Frank Gehry's *Fish Lamps* (1984 & 2013) and Greg Lynn's explorations of folding in architecture demonstrate how material and cultural associations can drive formal innovation.

This studio builds on this lineage, challenging students to reinterpret everyday objects as drivers of architectural creativity. Grounded in theories of creativity by cognitive scientist Margaret Boden, the studio introduces three creative processes:

- **Combinational Creativity:** Producing novel combinations of familiar ideas.
- **Explorative Creativity:** Iteratively exploring the potential of conceptual spaces.
- **Transformational Creativity:** Generating previously unimaginable ideas by redefining constraints.

The integration of computational tools, including generative AI, enhances these processes, enabling students to augment and accelerate their creative workflows. By blending precedent research, iterative prototyping, and contextual synthesis, the studio aims to demystify creativity, presenting it as a rational, quantifiable, and computable process that is accessible to all.

By the end of the studio, students will have developed an in-depth understanding of how everyday objects influence architectural systems, gaining both technical proficiency and conceptual clarity in design thinking. This studio aims to produce design outcomes that not only respond to functional and aesthetic needs but also address cultural and environmental considerations.

Key Themes:

1. **Everyday Objects as Design Drivers:** Transforming ordinary items into architectural innovation.
2. **Precedent Analysis:** Understanding existing architectural works to inform new ideas.
3. **Iterative Prototyping:** Developing forms and systems through repeated exploration.
4. **Computational Integration:** Leveraging AI tools to support creative processes.
5. **Contextual Synthesis:** Bridging abstract forms with site-specific constraints.

Learning Objectives

1. Investigate the design potential of everyday objects through precedent research and analysis.
2. Develop critical thinking skills to evaluate and document formal, material, and spatial principles in architecture.
3. Master iterative prototyping techniques for form-making and system development.
4. Utilize generative AI and computational tools effectively to support architectural ideation and production.
5. Synthesize abstract design concepts with real-world environmental and social contexts.

Studio Structure and Modules

Module 1: Case Study (3 Weeks)

In this module, students will focus on precedent research and explore how everyday objects can serve as inspiration for architectural design. Working in pairs, students will select a category of everyday objects, choosing from **artifacts** (such as culinary tools, food items, industrial products, and musical instruments), **art and material expressions** (including paintings, sculptures, folding techniques, origami, textiles, and patterns), or **natural patterns and forms** (such as landforms, Voronoi patterns, and biomimetic shapes). After selecting their category, students will identify architectural precedents that demonstrate the integration of forms inspired by their chosen category. They will then conduct detailed studies examining the formal, material, and spatial aspects of these precedents.

The module will culminate in two key deliverables: a comprehensive research report that summarizes the precedent analysis through diagrams and visual documentation, and an in-class presentation where students will share their findings with their peers.

Module 2: Siteless Prototyping / Formal Library (4 Weeks)

In Module 2, students will translate their research insights into a library of architectural forms through iterative prototyping. The process begins with developing iterative prototypes inspired by object-derived principles, followed by

experimentation with **geometric operations** such as scale, rotation, and shear, while considering **programmatic and performative** elements like shading and circulation. Students will then explore **materiality and assembly** using computational tools. The module's deliverables include formal prototypes with annotated diagrams, material collages or models, and comprehensive process documentation that captures the evolution of their design thinking.

Module 3: Situate / System (6 Weeks)

The final module focuses on transitioning from object-based exploration to context-driven system integration. Students will begin by conducting comprehensive site analysis, examining both environmental and social contexts. They will then select a primary driving force, such as cultural context or environmental performance, to guide their design development. This process will lead to refining and integrating their prototypes into cohesive architectural systems. The module culminates in a final presentation that includes site analysis documentation, an integrated proposal, and a comprehensive set of models and drawings.