

# Craft and Culture: the F-Stop Student Lounge

The F-Stop is a student lounge and student-curated gallery designed and built by the students and for the students. Twenty students in a third-year undergraduate design-build studio designed, fabricated, and installed this 400 square foot interior retrofit in about 11 weeks. The design challenge was to design and fabricate furniture operating at the scale of architecture creating a room as if one were walking into a piece of furniture, rather than a room with furniture in it. Enabled through the speed and precision of digital fabrication, the project was a demonstration project to integrate craft and culture through [our school omitted for review] newly acquired digital fabrication tools. With neither previous experience with digital fabrication and very minimal experience with digital design tools, the introduction of digital tools in this design-build studio was focused on the connection between conception and execution. The requirement to digitally fabricate the entire space was a didactic experiment which shifted the design process from representation to the actualization of design proposals through three pedagogical goals: the virtual prototype, the model-as-prototype, and the full-scale prototype. The virtual prototype required a distributed design space shared across design teams and focus areas. While the students began with sketch models, the model-as-prototype was 1:12 scale model laser-cut from the full-scale cut files as a test of construction prior to full-scale fabrication. The full-scale prototype in both sketch and refined fabrications became the final test-bed of competing design proposals.

The most significant aspect of this digitally-enabled design-build studio was not in the technology itself, but in the shift to an atelier model of design education through the development of a unified design proposal which required the development of distributed expertise across the studio into specialist groups from plywood finishing, upholstery, lighting design, to parametric design.

The design is organized around a minimalist display wall of maple veneer plywood, with lighted niches, and moveable model stands and pin-up space, along with an adjacent window wall with built-in sitting boxes. The space is organized a parametrically developed ceiling cloud constructed of 1,000 uniquely fabricated parts, each individually labeled and prefabricated in hexagon assemblies and installed in two days. Through a three-stage development process utilizing Grasshopper, an initial master surface was rebuilt into a single surface with hexagons distributed across this surface, from each individual hexagon, a series of 12 petals with arced edges was created from each hexagon, and finally, a third development was applied to each individual petal to create a series of connecting ridges, bridges, valleys, and connecting plates each individually labeled, unrolled and ready for fabrication. Through this parametric process, the complex design intent was made possible while giving consisting and control to a group of students with very minimal experience with digital tools. While digital fabrication enabled the refined execution of this highly crafted environment in a very tight timeframe, through connecting design conception with material execution the potential of digital fabrication has a much larger effect on the culture of design practice.











