

Design-Build in the International Setting: Syntactic Transformation From Part to Whole

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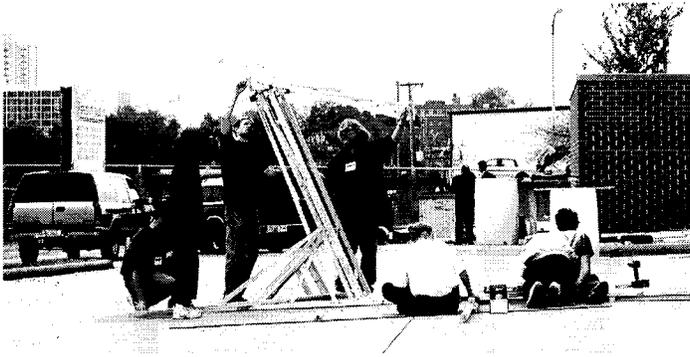


Fig.1. The Design-build conference workshop in progress

Concept and detail are inseparable in the development of a quality architectural environment. If successful architecture is as dependent upon the development of the part as it is to a parti, then architectural educators have a responsibility to introduce students to methods that contribute to the resolution of the total design environment. The ultimate goal should be the understanding of how to develop the general and specific parts of a concept simultaneously to create a unified, integral design.

The author has explored a method that develops holistic design thinking at different scales in the senior level design studio entitled "Craft and Concept in Architecture". The usual architectural design process is reversed to assure that the student focuses on conceptual detailing. The student designs at the intimate scale and then moves into the larger scale, or from the part to the whole, instead of approaching the subject from the whole to the part. This approach suggests that the essence of a design can be discovered within a fragment of the whole.

The CCA studio consists of two major projects. The first project involves the design and construction of an object at full-scale – a chair, table, or lamp. The second project explores the transformation of this object into an architectural construct at a representative scale – typically a pavilion, chapel, or bridge (figure 2). The basic requirement for the construct is to transform the potential tectonic of the object into a larger realm of experience.

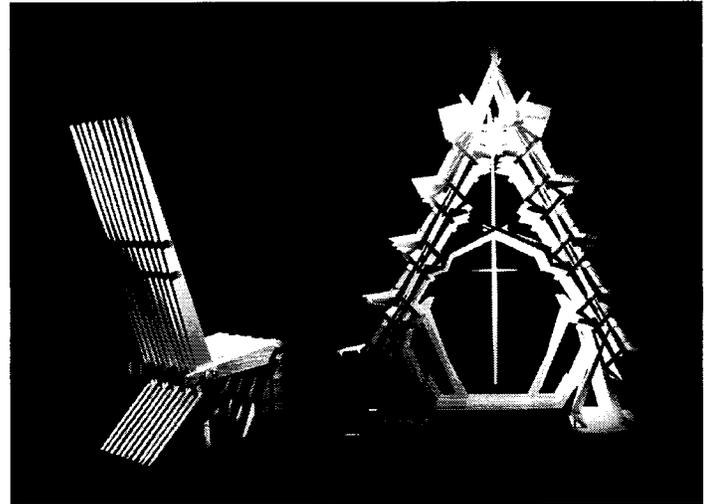


Fig.2. Projects from the CCA Studio by Jessica Weber: Scuttle Chair (left). The chair elements are then re-combined to form Chapel of the Scuttle Chair (right).

The October, 2000 Design-Build Conference at Drury University in Springfield, Missouri provided the opportunity to develop a two-day workshop to experiment with part-to-whole transformation. The workshop team – five second-year Drury Architecture students, two sixth-year UIUC graduate students, and the author - began the process by studying a wooden folding chair. The intention was to conceptually stretch, expand, and develop the folding chair into a larger domain that still maintained the "DNA" of the original. The patterns and movements inherent in the object were to be studied, repeated, disassembled, and recombined into another scale of structure and enclosure. This *syntactic transformation* of the folding chair would also allow for the kinetic exploration of closure options by manipulating the swinging, sliding, and interconnecting pieces - all variations of the original chair movement.

The general form and scope of the construct was determined through scale modeling during the first afternoon of the conference by the workshop team. Each team member developed quick study models and sketches to share with the rest of the team. The team agreed upon a construction strategy for the next morning – a basic triangulated framework in which to develop a series of kinetic operations.

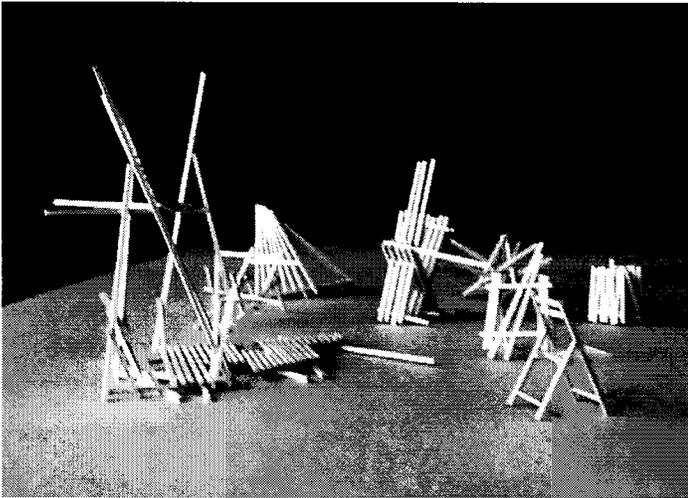


Fig.3. Folding chair model (front right) and transformation models.

The following morning the team was divided into two groups. The first group built the triangulated frameworks. The second group developed the operable infill pieces. Construction methods were kept simple. Pine 1x2's and 2x2's, cut with a miter saw and fastened with drywall screws, were the only construction materials. This meant that pieces were easy to carry, cut, fastened, and unfastened, allowing design experimentation to continue throughout the construction process. By limiting the required technical skills, members of the team with little or no construction experience could become full and active participants in the building process in little time.



Fig.4. Preliminary construction during the morning of the workshop.

By midday the construct began to take shape. The frameworks were erected, and the first infill piece was ready for attachment. Because the group had decided that the kinetic operations inherent in the chair would also be an essential component of the construct, time and care was required to develop smooth, safe, and precise operation. At the same time, the simple construction vocabulary allowed team members to improvise the expression of each component.



Fig.5. Final construction during the afternoon of the workshop.

The project's success was due to three factors: First, the development of realistic limits in regards to time, materials, and technique provided a clear framework for both modeling and building. Second, the opportunity to improvise within those limits provided an atmosphere of focused play. Finally, and most important to the project's success, was the enthusiasm of all of the team members and their willingness to be creatively, intellectually, and physically engaged through the entire process.



Fig.6. Workshop participants, minus author.