



MAKING DESIGN IDEAS REAL

Should practical ‘making’-experience form a part of architectural curriculum? A recent collaborative workshop hosted by University of Pretoria’s Architecture Department and RAW Studios gave lecturer Johan Swart pause to reflect on the benefits of such exposure.

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A recent experience has led me to reflect at leisure on matters of design tuition, the pertinent issue being the oft-lamented interrelationship between the activities of ‘design’ (on paper or screen) and activities of ‘making’ (by hand and machine). The event which prompted this reflection was a voluntary student workshop, held in partnership with RAW Studios, a Pretoria-based design collaborative that develops and manufactures furniture systems through the digitally controlled manipulation of engineered timbers.

Students were tasked with developing modular and adaptable furniture systems, that could be implemented within the constraints of container-sized microliving units. The students had to consider the complete living unit conceptually, and then develop components thereof as product systems which were required to be limited in material selection to plywood and in technology to what RAW studios could offer. Over the course of the seven-day workshop, alternating between studio days on campus and prototyping days at RAW Studios, students were guided in how to design and develop working prototypes within specific technological parameters.

While I am tempted to indulge in a description of the workshop’s design outcomes, the more thought-provoking discussion emerges from the workshop’s generative explorations of technological processes and



consequent understanding of it in relation to the current circumstances, i.e. of architectural practice and pedagogy.

The ability to integrate design and making as an iterative process seems to remain beyond the reach of most architects. Students might regularly build scale models, but these are not working prototypes. Practitioners, on the other hand, have access to manufacturing industries, but these are removed from the design office and invariably excluded from the design process. The RAW workshop (in its second iteration this year) has reminded or, rather, convinced students and lecturers alike that a closer interaction between design and physical testing leads to more immediate educational benefits, as well as to more successful and refined design products.

In the broader context of design-make relationships, it seems that increased access to manufacturing technologies and open-source design networks might elicit questions about the traditional practice of architecture. We could, perhaps, argue that all of this relates more to product designers or to the hobbyists of the maker movement. But consider our workshop as an example: the outcomes were furniture-design products, but these were conceptualised as systems which combine to form living units. These units can be developed, using mostly the same limited palette of materials, as serviced and weather-proof options for housing. The conceptual limits of this argument could even suggest an urban-development model, and its challenge – or, rather, invitation – to architects is thus seemingly direct.

Another aspect of the workshop, which is cause for introspection, is the value of gaining mastery over very specific materials and technologies. Based on the ethos of RAW Studios, the workshop limited students in terms of materials to flat sheets of birch plywood and, in terms of construction, to dry-fitted joints. The consequence was enthusiastic student engagement and a narrow focus which, perhaps counter-intuitively, led to a great deal of innovation. Furthermore, students were able to gain a far better understanding of material properties and

manufacturing processes than that which is gained from months of formal coursework.

The point I wish to make is not that of the promotion of a specific material, but rather that the workshop illustrates a process of engagement with benefits that might apply equally to other materials and technologies; think of Tadao Ando's absolute control over concrete, or Tom Kundig's mastery of steel detailing.

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I further speculate that a lack of focused engagement with materials and technologies is evident in our built environment. Does the generic nature of architectural output not point to details and specifications that allow the designer to get away with being less knowledgeable of materials? Does a lack of design cohesion not stem from architects entrusting technical control to engineers and product suppliers?

There are valid reasons in both academia and practice for the education of the architect as generalist, but my involvement with the RAW workshop has highlighted the viewpoint that a more direct and passionate engagement with specific materials and technologies is to the benefit of the designer and the discipline. ■

1 Workshop participants explore assembly methods such as dry joints. 2 Students were introduced to computer-aided cutting and router machines employed by RAW Studios in the production of their furniture and products. 3 Working in an iterative prototyping manner means students got well acquainted with the material properties of the flat sheet birch plywood used. 4&5 Students test out prototypes that were designed, developed and manufactured over the course of the workshop.