BARKOW LEIBINGER

AN ATLAS OF FABRICATION

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An Atlas of Fabrication

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In 1990, in a lecture at the American Academy in Rome, the historian Joseph Connors argued that it was not a history of painting or sculpture that enabled the novel spiral form of Borromini's S Ivo alla Sapienza (1643) to be imagined and constructed, but rather the invention of a tool, the wood lathe. This comment got our attention. How do tools (now more elaborately defined as emerging technologies or techniques) drive our architecture? Tools shape materials that make forms, not the other way around.

Tools are inclusive: for us the handcrafted and the digitally controlled are equally legitimate. We have a visceral distrust of the digital as a means of producing images or pictures yet we use it physically and directly for making architecture. It is a revolution of choice. We believe the most compelling shifts in design occur when new technologies and fabrication capabilities are made available and interpreted in new ways. In our work, this impulse coincides with a strong discipline for making, guided by the belief that ideas emerge from the drawn line or fashioned artefact, rather than it being a case of the representation illustrating an idea after the fact.

As unit masters at the AA in the mid-90s we asked our students to propose an architectural prototype that emerged from the control of a technical system. We wanted them to consider how you make architecture from specific tools. Rejecting the rampant formalism produced by computer software (then as now), we used laser machine-tools to cut, bend and punch sheet-metal to produce an architectural prototype. The result was a reversal of the normative design process: the starting point is a material, which leads to a detail, which leads to a prototype, which leads to programme and siting.

Our current work is focused around three fields of activity: the practice itself (building projects and competitions), research and academic teaching. This triangulation defines autonomous yet mutually supportive areas of work. While we do architectural competitions, it is clear that this way of working is too flawed (inadequate deadlines, costs, briefs, strategy) to be considered as an independent research project. For this reason, we use our research within the field of new tools and capacities as a source catalogue, folding this knowledge into ongoing building projects unburdened by the orthodoxy of the competition system. A prototype begins as an experiment which may or may not become a building.

Another avenue for this work is the exhibition installation, which for us means something quite different from the conventional displays trying to represent an architecture that is outside of the gallery. Fabrication is explained through fragments or mock-ups documenting or preceding actual buildings. Installations of our work in the gallery tend to be self-referential, creating their own internal logics. They represent nothing beyond themselves, and are architectural events in their own right.

We work for industry, which gives us proximity to emerging fabrication technologies. From Trumpf GmbH – a Stuttgart-based machine tool company that introduced laser-cutting in the late 70s – we have learned how digital fabrication technologies can be used to make buildings. We like building factories, a rather loaded typology that influenced German modernism in the 20s. Utilitarian and economical, this building type has been neglected for some time, which gives us a degree of experimental freedom that would be hard to match in public institutions like museums or libraries.

Our initial response to Trumpf's technology was one of envy. In recent years we've learned to understand it better and incorporate it into our own projects, mimicking the way Trumpf works. Trumpf have a laboratory/workshop that makes mock-ups for clients (such as Alessi, Audi, John Deere and the aircraft industry) to see if they fulfil expectations. This also allows them to become aware of their machines' potential applications. We now access their tools to make prototypes or, better still, use the machines to make the buildings they make the machines in. We emulate their testing process in order to understand the viability of their machines.