

# HOSOYA SCHAEFER ARCHITECTS

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## Designing process

Architects started to experiment with generative algorithms in the late 80's. John Fraser, genetically created new building forms at the AA, Marcos Novak geometries in cyberspace that gave way both to the formal language of Zaha Hadid and ideas of mass-customization advocated by Greg Lynn. The underlying dream was that mass-production and standardization would evolve into mass-customization, triggering the next big paradigm change after the industrialization of the construction business. It was meant to root architecture again in the authenticity of production processes, and continue the modern project with a new sense of playfulness.

This dream has not yet materialized. While the building industry, window or façade manufacturers, steel producers and even cabinet-makers use advanced CNC machinery in order to remain competitive, designing architecture is still an incredibly arduous and idiosyncratic process. Algorithms increased the vocabulary of forms and the possible solutions for structures. They resulted in a symbolism of their own, but they did not yet affect process. In architecture, algorithmic designs are still part of the Postmodern search for new styles, a type of niche marketing. Just about now, in the hands of engineers like Cecil Balmond and his team at Arup, algorithms start to promise more than style.

Kram/Weisshaar use algorithms to generate new forms. Yet, the algorithms' underlying logic is based on an understanding of the production process that will follow. The forms are germinating not based on authored cues, on a digital 'will to form' alone, but on an understanding of the habitat, i.e. the production process, the form will go through. Unlike architectural designs, these forms also are not one-offs, but part of a species (or race? Future genealogists of these breeds will need to judge). This gives me as interested observer and sometimes collaborator a starting point for speculation.

Digital technologies brought us a degree of globalization which to accomplish was unthinkable for Roman roads and armies or British naval and merchant fleets. Digital technologies simultaneously integrate and separate. They integrate large value and supply chains by moving information, capital and providing the base for near perfect logistics. Globalization is characterized by an increasing perfection of the large global 'now'. - On a side note, due to the increased liquidity and volatility of the system, it seems as if the time horizon is shrinking proportionally. At some point in the future, we will know everything about 'now' and nothing about the next moment. - At the same time, digital technologies separate. Suppliers of software are in the business of parceling up the value chain and reconfiguring production processes. By reconnecting the broken parts digitally, they decrease the need for spatial continuity. In other words, Post-Fordism means that the factories are always elsewhere. Production processes have become a connect-the-dot exercise for ever more integrated global enterprise systems with poetic names like ERP, SCM or CRM. This affects us not only in the ever higher degrees of abstraction, but also in the ever more undefined places we exist in, from hemorrhaging cities to sprawling airports. 'Junkspace' as Rem Koolhaas described it, is a space where order has been outsourced to the virtual, where the real increasingly ticks to a virtual beat.

But back to the reality of these tables: Visceral and heavy, they have been produced by advanced machinery from a small amount of parts. Despite the seemingly ornamental form, there is an almost modernist purism to the construction. Here complexity is embedded in the shaping of the material, not the assembly line used to produce it or the style created to sell it. The form has been made with the machine in mind that will fabricate it. CNC, or computer numerically controlled production together with the use of algorithms, might offer an interesting alternative to the disintegrating quality of the digital. It could be seen as a reinvention of craftsmanship as it shifts the focus from industrial processes that need to be kept in motion by cheap labor, to machines that are fed with increasing amounts of design intelligence. It is a model for a high-value-add cottage industry and a lays out a possible future for skilled, but high-priced production areas like Germany, in the face of cheap, efficient and well-integrated global industries.

The added value, the algorithms, and the knowledge about the production process are in the hand of the designer. And added value, as we all know in our increasingly intangible culture can be stretched almost limitlessly. The fact that in this case the resulting logistical footprint of the product, is not spanning the entire globe might make it also more sustainable.

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– Is it not the case, that in order to feed our children and save the planet, we need to shift the production of complexity from the real to the virtual, have fewer stations in the chain with more value added in each? - Let's hope then that these tables are not a formal exercise, a 'style', but rather an archaic phenotype of a new and evolving germline of products that will surprise us in the future with ever more subtle and unexpected manifestations

In some ways then, the digital is giving back to the real a sense of continuity and opportunity. I think this is as good a reason as any to continue the collaboration the two designers started.

Hosoya Schaefer Architects, Zürich  
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