

Space and Digital Reality Conference

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Fresh from the Forest : Raw, Discrete and Fully Automated.

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The notion of automation grounds the digital firmly in reality. Whereas initially, architects speculated on the digital as something virtual, today, even the most banal aspects of our lives are reconfigured by the digital. The driving force behind this proliferation of digital technology is automation. In continuity with 19th century industrialisation and 20th century mechanisation, the drive for ever more efficient modes of production is

what has embedded digital processes in our daily reality. Whereas the architects' notions of "digital design" and "digital fabrication" are technical and innocent, it's the notion of automation that reveals that our own architectural work with robotics and digital tools is not exempt from the political and the social.

This paper starts off in the vast, fully automated forests of North-Europe. Continuously responding to the increasing global demand for more sustainable production, Swedens total area of forest has increased over 70% in the last decades. To manage these larger and larger areas, forestry has heavily invested in automation throughout its entire production chain. Forests are now managed digitally, with every tree tracked and stored in a database, its lifetime monitored closely until the day it's chopped down. No longer part of a romantic nature, trees are now a product of the human sphere, the global space of production. They are planted and managed to be cut into slices and glued back by automated machines into standardised sheets with EN, DIN and ISO standards labels attached to it. These sheets can then be computed, engineered, insured, traded, shipped, cut and assembled into spaces we can then inhabit ourselves or enter on a market where it can be sold off over and over again.

Just as how the first primitive dwellings were constructed from found materials, huts assembled from tree trunks or stones, this fully automated architecture is also directly extracted from the forest. Its extremely short production chain strips building from its layers of modern and post-modern meaning, down to its raw and primitive state. Pre-modern architecture such as the log cabin are a direct result of the assembly of materials extracted directly from nature. The raw building block and the resulting whole are in permanent conversation and can not be reduced to each other. Parts are not derived from the whole, but remain autonomous even when assembled. Equally, when fully automated, architecture returns to this primordial core. Whereas mechanisation led to classification, types, form-function and optimisation, automation leads to the primitive monolith, the raw assembly and the building block.

The discrete building blocks in projects such as Tallinn Architecture Biennale Installation (2017) and Real Virtuality (2019) can be understood as fully automated, standardised versions of the pre-modern raw part extracted from nature. Timber sheets are cut by machines and assembled into building blocks with a precise tolerance and engineered performance. These can then be computed, assembled and disassembled into functional wholes, where the parts remain parts. The result is a kind of primitive monolith, a tectonic assembly without modernist typification, classification and mono-function. Controversially, this monolith is never whole, but always remains assembled out of parts. Architecturally, we are now in a smooth space, a space where one single serial operation and interaction defines everything.

Short bio

Gilles Retsin, originally from Bruges, Belgium, is an architect and designer living in London. He studied architecture in Belgium, Chile and the UK, where he graduated from the Architectural Association. He recently edited an issue of Architectural Design (AD) on the Discrete and has co-edited Robotic Building: Architecture in the Age of Automation, with Detail Verlag. Gilles Retsin is Programme Director of the M.Arch Architectural Design at UCL, the Bartlett School of Architecture. He is also co-founder of the UCL Design Computation Lab.