Matthias Kohler, Hannes Mayer
The digital calls for a digital building culture

Even though the binary system has defined computing, the digital in architecture has never been about black and white polarities. On the contrary, it promotes gradients, procedural approaches, the understanding of complexity and communication. As an open network, it is relational and fosters exchange.

The digital can enable and the digital can control. The digital can empower and the digital can be authoritarian, it can be inclusive or exclusive. It is a technology shaped by us, developed by us, it requires our understanding, our contributions, our commitment. We define its way of operation. Much in contrast to a digital avant-garde, a digital building culture is to be understood and shared by many. It is formed by diverse actors, by architects, scientists and engineers, by the government and those responsible for norms, by the whole of society and industry and all the groups and associations that represent them. Thus, a digital building culture defines the role of the architect as an integrative figure who is tech-savvy, but does not see technology as an end in itself. Rather, technology is employed and developed to transform architecture and construction into a more sustainable and social discipline by synthesising the knowledge of many disciplines.

The digital is a carrier of knowledge

Most of our sciences use digital tools in one way or the other. This is not limited to the natural sciences and engineering but includes the humanities. Even archaeology heavily relies on digital tools such as scanning. This shows the digital is not limited to the future. It can reform and expand our knowledge about the world's past and present and does not extend the reductive claims of modernism and other –isms in architecture. It challenges our standards and reveals by visualisation of manifold data what has hitherto been unseen. In architecture, traditional knowledge and craftsmanship can be combined with advanced digital design and fabrication processes to create surprising, beautiful and sustainable architectural structures.

The digital is contextual

There has been scepticism about accelerated linear progress and its transformative power. Machines replaced artisanship and the pre-modern city made way for modern buildings – which quickly revealed the limitations of then state-of-the-art technologies. Yet, while buildings might be lost, knowledge can be reintroduced. Software and digitally-driven machines constantly evolve and can address shortcomings that had earlier been criticised. Today, sensors and on-site robotic processes can read the environment and existing building stock, making a tabula rasa approach obsolete. Construction methods become site-specific and adaptive due to computational design and digital fabrication methods. They also allow for new ways of working with local, found, diverse, reclaimed and unstructured building materials – a progressive approach to geographically routed identities in architecture. Yet, this is only a fleeting moment since methods constantly evolve. They follow our visions and goals towards a Computational Contextualism.

The digital is diverse

The seductive quality of scale leaves its marks on the debate about the digital. This is an extension of modern thought with its emphasis on global scale, homogeneity and universal validity. In architecture and construction, a discipline that has always been bound to capital and economic considerations, digital technologies allow for a different paradigm. Because of our increasing power to process data through algorithms, a new realism succeeds the modern idealism – allowing individual and unique qualities to be
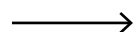
recognised and taken into account by an open system in the public domain.

The digital is natural

As the result of a man-made act, buildings are artificial. Industrialised building methods as advocated and applied by the modern movement and its followers were often in stark opposition to nature. Their inability to design and cope with dynamic processes and their mono-functional products ultimately led to a "functionalism", which is only functional in economic terms.

With its emphasis on process, the digital borrows from our understanding of nature. Yet, it is not only on the level of computation where concepts of emergence and generation are popular, but also on the level of materials where the digital naturalises architecture and construction. Computation and digital fabrication propel well-established construction methods. More radically, digital technologies make it possible to explore the use of bulk materials, such as gravel or the controlled deposition of clay and earthen materials and call for a revived collaboration between man and nature.