PARAMETRICISM VS MATERIALISM

Evolution of digital technologies for development

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The ever-increasing speed of technological improvements is dictating a new paradigm in which design, performance and behaviour are outcomes. Nowadays, the use of the word 'architecture' is subsiding in favour of the 'Built Environment', which is automatically recognised as a subset of the 'Environment'. By replacing or redefining the term 'architecture' by the term 'built environment' the discourse becomes purposefully and intentionally more inclusive of the different aspects of our 'Being-in-the world'. In conjunction, our everyday "Being-in-the-World" is critically influencing the environment. Here, we note the two recent outcomes that addressed this, namely, the Sustainable Development Goals (SDGs) set out by the United Nations, and the Climate Change Summit recently held in Paris. In recognition of the role of Computer Applications in Architecture (CAAD), we tie this effort to the on-going exploration into ways to combat climate change, through optimised environmental performance of buildings, sustainable use of materials and resources, and the resulting underlying development through enhancing the living conditions, but with minimal impact on the environment.

We build on previous technological developments in CAAD by looking into *parametric design* exploration and the development of the concept of *parametricism*. We use the phenomenological backdrop to account for our physical experiences and encounters as well as our mental ones; both evident in the link between parametric design as a process and an outcome. In specific, we previously examined two particular metaphors. The first metaphor addressed aspects of virtual environments that resemble our physical world; In other words, computer model as physical model and digital world as material world. In this volume, we extend the exploration into aspects of virtual environments and their resemblance to physical environments by looking at 'performance' aspects: the way in which environments are sensed, measured, tracked and visualised. Moreover, we reflect on matters and materiality in both virtual and physical space philosophically, theoretically, practically and reflectively. The second metaphor looked into the modes and means of interaction between our bodies and such virtual environment. Here we extend the investigation to look at the ways in which measures of environmental performance influence human interaction in real environments. The exploration takes us further to look into the area of *design fabrication* of the built environment, and methods in which developed processes meet environmental performance requirements, and the innovative outcomes that lead to *disruptive technologies* getting introduced into design and we revisit parametric design under this focus area.

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