

Pattern and the digital narrative: the impact of digital innovation on pattern and placemaking

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Digital processes allow for experimentation with, and representation of, place, culture and identity in readily customized design and production workflows that support the incorporation of localised, site specific pattern within the built environment, across all design scales. With an increasing ability to create diverse, complex and easily replicated forms, the digital process enables and has in turn defined a new pattern narrative. This parametrically and digitally fabricated driven workflow has generated a suite of pattern approaches that exploit the digital possibilities and concurrently generated an identifiable pattern narrative, such as cross-disciplinary approaches to include science and biomimetics. Where technologies were originally employed to replicate what could be done by hand, “advancements in modelling spatially complex 3-dimensional shapes has affected our design thinking” (Thomas 2007: 140) and, in turn, the patterns we can create and manufacture. The rise of fabrication technologies such as 3D printing has further impacted on the control over shape and composition (Lipson & Kurman 2013) and influenced aesthetics of complexity (Warnier, Verbruggen & Klanten 2014: 38-39).

Drawing on Gombrich's (1984) theories, the use of pattern is a key factor influencing how an environment or object is perceived and interacted with, and how it impacts on human ex-

perience. Ryan et al. (2014: 68) discuss the idea of complexity and order with reference to replications of natural forms and the “associative relationships between the patterns, structures, flows and rhythms – that provide, support and organize information – and human perception.” To consider the role of pattern as a signifier of place and culture one can examine design processes that elevate space to place.

Considering the impact of pattern and the ways in which emerging technologies facilitate diverse prototyping, the paper explores what a surface, cladding and structure can be when its ability to incorporate patterned responses is increased. This can be discussed through the works of key practitioners and their localised site responses, such as Digital Grotesque, the ICD/ITKE Research Pavilions, King Abdullah Financial District (KAFD) Metro Station, and the Portrait building in Melbourne. Ben Pell (2010: 12), for example, investigates translations of ‘digital surface’ and patterning generated both through digital models and digital fabrication processes. Given the possibilities of digital technologies, this paper argues that a new pattern narrative has been established – influenced by a globalised digital aesthetics. Key exemplars are discussed along with challenges and opportunities for site-specific and culturally reflective localised design responses.