• Paper / Proposal Title:
Spatial Design and Sensory Processing Disorders: transformational practice at interstices of text-based and data-rich models of architecture

• Author(s) Name:
Toby Blackman

• University or Company Affiliation:
Assistant Professor in Architecture, University of Nottingham, United Kingdom

• Abstract (300 words):
In terms of architectural practice and spatial design of the built environment, the human factors of physical disabilities are seemingly well understood, and mapped to the requirements of statutory legislation, spatial dimensions and geometries, construction details and material surfaces. However, the spectrum of individual cognitive experience, and the sensory processing of visual stimuli in the built environment is less well understood by the spatial designer, and less well accommodated. In consequence, individuals with Sensory Processing Disorders (SPDs) may find themselves confused, distressed, anxious, or excluded from public and private spaces in the built environment. This paper presents research investigating the relationship between the text-based design practice of specification writing, the guidance documents published by the UK Ministry of Housing, Communities and Local Government known as the ‘Approved Documents’, and the interaction of these text-based models with the emerging protocols of Building Information Modelling (BIM). It is demonstrated that the paradigms of disability design
seek to normalize the experience and use of these environments through augmentation of geometries and surfaces, whilst BIM protocols which have seen techniques developed combining the disciplines of computer aided design (CAD) representation, simulation, animation and virtual reality, may offer positive experience and phenomena for individuals identified with SPD. In transforming the design space, the community of practice may yet offer a transformational environment for individuals with sensory processing disorders. This paper demonstrates that these digital architectures offer inclusive spatial design paradigms, providing accommodation and delight for cognitive and sensory difference, situating this interpretation in research at the interstices of text-based and data-rich modelling of architecture, and the construction of public and private space in the built environment.

**Keywords**

Sensory Processing Disorder; Spatial Design; Digital Architectures; Specification; Virtual Reality

- **Author(s) Biography (200 words each):**

Toby Blackman is an Assistant Professor in Architecture at the University of Nottingham in the United Kingdom, and a passionate, committed architect, academic, and Fellow of the UK Higher Education Academy. Toby lectures in the field of materials and technology, and supervises both Masters and PhD students in the fields of Architecture, architectonic matters and architectonic theories. Previously, I led a final year Design Studio Unit, UNit5a The Creative Commons: Disruptive Innovation. Toby studied at the University of Edinburgh, graduating in 2000 and earning a RIAS Portfolio Commendation for his final year thesis project.

Toby is a member of the Architecture, Culture and Tectonics (ACT) Research Group at the University of Nottingham. His current research is investigating text-based models of architecture, and the exchange of ideas between filmmaking, cinema and digital architectures. Toby has presented papers at a number of international conferences and symposia, including TU Delft in 2017, Altinbaş University, Istanbul for Architecture Media Politics Society’s Moving Images - Static Spaces conference in 2018, and S.ARCH 2018 in Venice, Italy. Recent papers and publications include *Tron and Tron:Legacy, The Epic Struggle of Non-Places* (2018), and *Certainty and Risk: Describing the Material Surface after David Pye* (2018).