

## 3D Printing and Material Extrusion in Architecture Construction and Design Manual

3D printing is said to revolutionise architecture: Thanks to new technologies, plastic, concrete, or metal can be extruded in a liquid state and then hardened into its final form. With this Construction and Design Manual, architects and researchers Kostas Grigoriadis and Guan Lee present a comprehensive, up-to-date overview of the topic. The book consists of detailed case studies of 3D printed buildings, the materials that can be used in large-scale additive manufacturing, and a breakdown of the corresponding design guidelines, limitations, and achievable build dimensions. In addition to these, the focus is on the environmental aspects of the method, the lifecycle of 3D printable materials, and the embodied energy of 3D printing compared to conventional building construction.

*Kostas Grigoriadis  
Guan Lee*

Construction and Design Manual  
**3D Printing and Material Extrusion  
in Architecture**

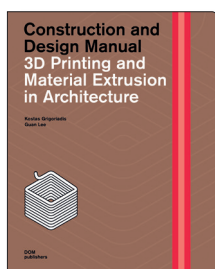
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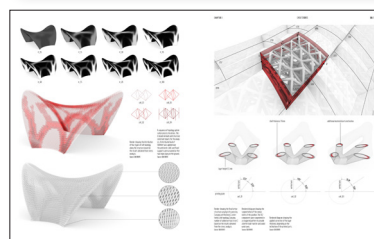
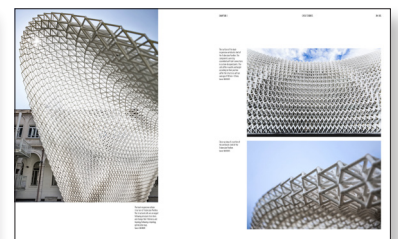
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**Dr Kostas Grigoriadis** is an architect and academic. His work explores the implications of the use of multi-materials in architecture. He is currently an Associate Professor at the Bartlett School of Architecture, UCL and runs the design practice Continuum Design and Architecture. He holds a Master's in Architecture and Urbanism from the Architectural Association and a PhD in Architecture by Project from the Royal College of Art in London. He is the recipient of the RIBA 2018 President's Award for Design and Technical Research and the 2019 Google R+D in the Built Environment Fellowship.

**Dr Guan Lee** is an Associate Professor at the Bartlett School of Architecture, UCL. Lee's practice engages in a wide range of design fabrication, digital and analogue. Its aim is to expose, articulate and demonstrate the essential connections between processes of design, making and place. He has a BSc in Architecture from McGill University, Montreal, Canada (1997), an Architectural Association (AA) Diploma (1999) and an MSc in Landscape Urbanism (2003), also from the AA. He has completed his PhD by Design (2013) at the Bartlett, UCL.



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