Using 3D Printing and Associated Technologies in an Art/Craft Environment

David Huson

University of the West of England
3D lab equipment
3D laser scanning
3D laser scanning
Z Corp 3D printed artworks
Objet 3D printed
Areas of investigation

• The use of 3D printing technologies and CNC machining to translate a computer 3D model into a mould capable of producing a bespoke ceramic artefact
• The use of laser scanning, reverse engineering and digital fabrication techniques to facilitate the production of short runs of bespoke ceramic artefacts
• To research the possibilities, and then develop the methodology of forming a bespoke ceramic artefact directly by the use of 3D printing and other RP technologies
3D printing of ceramic artworks

- The 3D computer model is drawn in a CAD program or generated from data collected by a 3D scanner (or a combination of the two)
- The proprietary material in a Z Corp 3D printer is replaced with a ceramic body powder
- 3D printing of ceramics allows an artist to move directly from the 3D model to a finished article without using traditional modelling and mould making processes
CAD model of ‘impossible’ ceramic object
Printing object in ceramic powder
Post-processing printed ceramic
Ceramic object in kiln
3D printed ceramics
3D printed ceramics
3D printed ceramics
3D printed ceramics
3D printed ceramics

[Images of various 3D printed ceramic objects, including a skull and vases.]
Vase
Skull
Baby angels
Baby angels
Dead swallows
Dead swallows
Dead swallows
Dead swallows
Future developments

- Use of calcined (pre-sintered) clays to reduce layer shifting
- Custom grinding to optimal particle size to improve printing performance and surface detail
- Improved binder additives to increase green strength
- Use of infiltrants to reduce porosity
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David Huson  david.huson@uwe.ac.uk  University of the West of England