

Ceramics (gr. κεραμικός keramikos) - "of pottery"

- hard
- corrosion-resistant
- brittle

CERAMICS

Traditional ceramics - clay based, end product determined by additives and firing temperature.

Earthenware

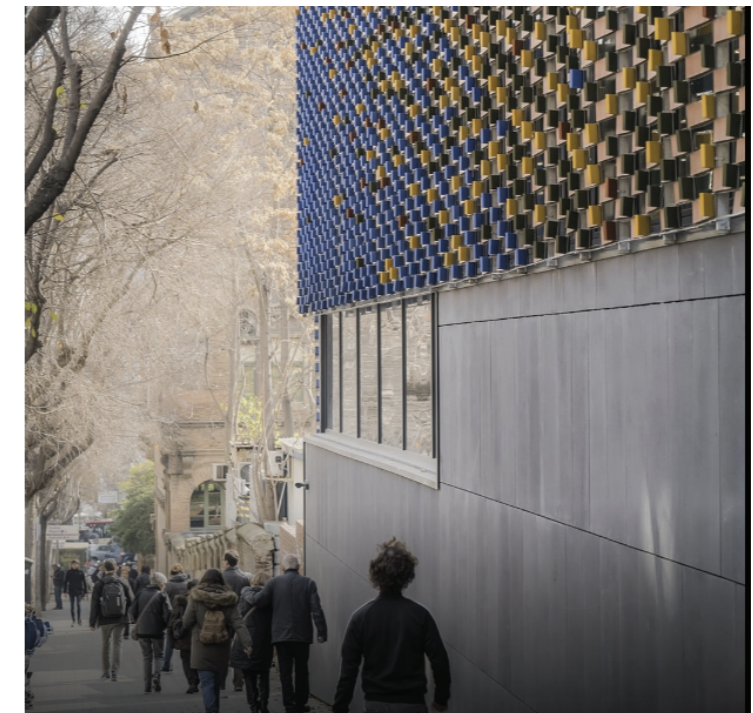
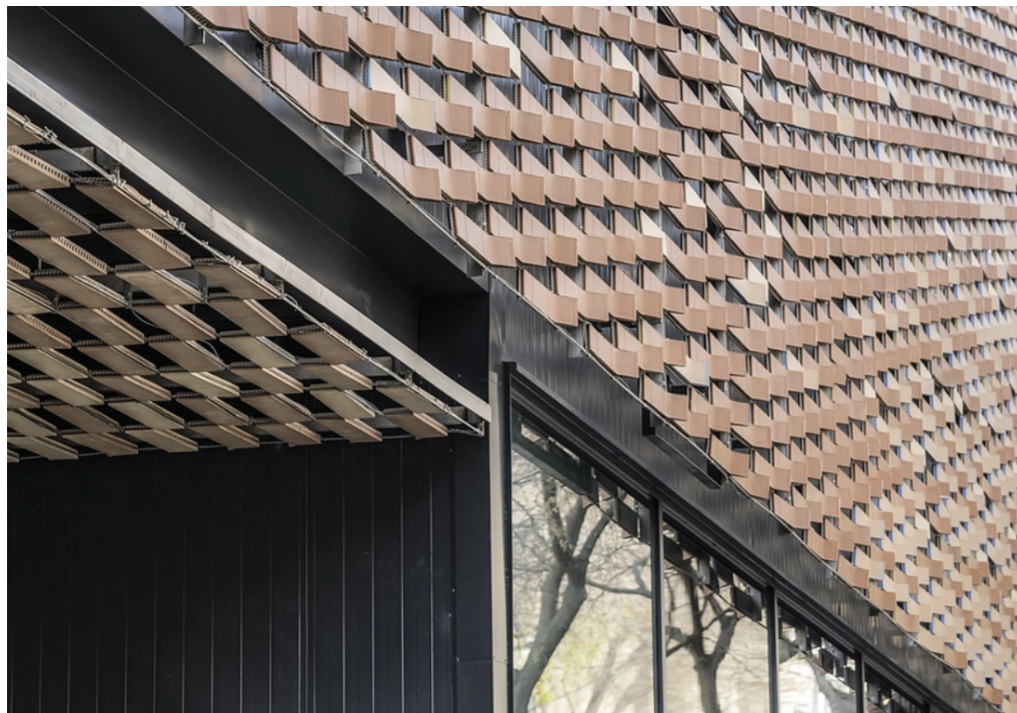
Porcelain

Stoneware



Pottery however is just one part of the ceramic world.

Nowadays the term 'ceramic' has a more expansive meaning and includes materials like glass, advanced ceramics and some cement systems as well.



Ceramic Textyle System - Sant Pau Research Institute

- 45,000 ceramic pieces
- geometric fold to reduce weight
- sunlight protection of glass facade

- Graphical simulation of a fabrication process to make an object in digital form
- Manufacturing process where used machine is controlled by a computer
- Design and production process that combines 3D modelling or CAD software with additive or subtractive manufacturing

DIGITAL FABRICATION

PROCEDURES:

- Additive
- Subtractive
- Robotic manipulation (bending, forming, weaving. etc.)

POPULAR MACHINES FOR FABRICATION:

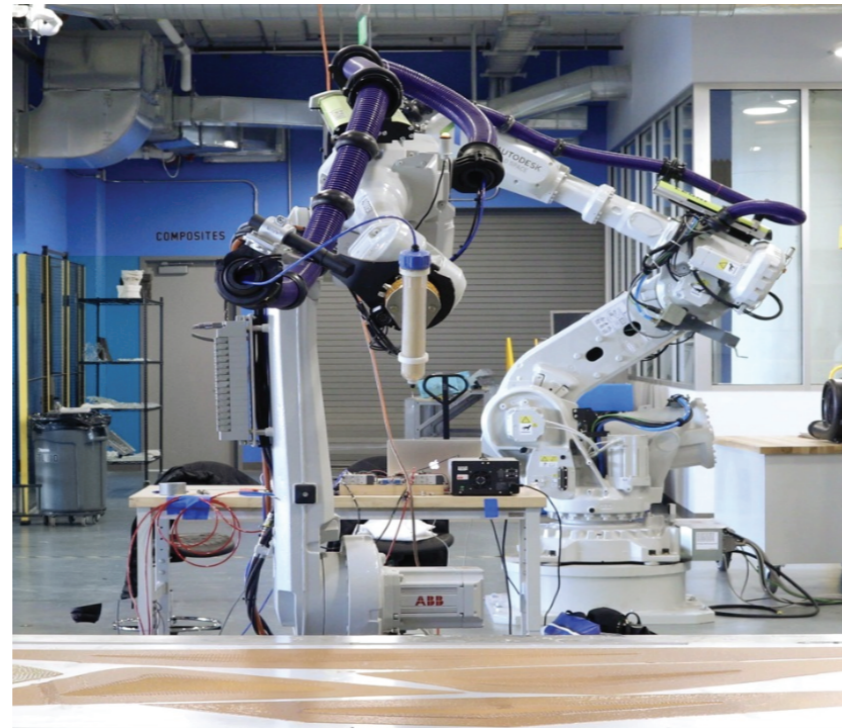
- CNC Router
- Laser Cutter
- 3D Printer

Digital fabrication offers more efficient use of materials across a variety of structures and designs (less waste, weight, etc.).



Off-site manufactured pre-stressed stone panel method:

Arup team modelled each and every component in 3D to a construction level of detail (including nuts, bar threads, couplers, fillets and chamfers).



ETH Zurich - Smart slab
3D sand printing technique used to create a form-work to fabricate an 80m² lightweight concrete slab.

MASS CUSTOMIZATION

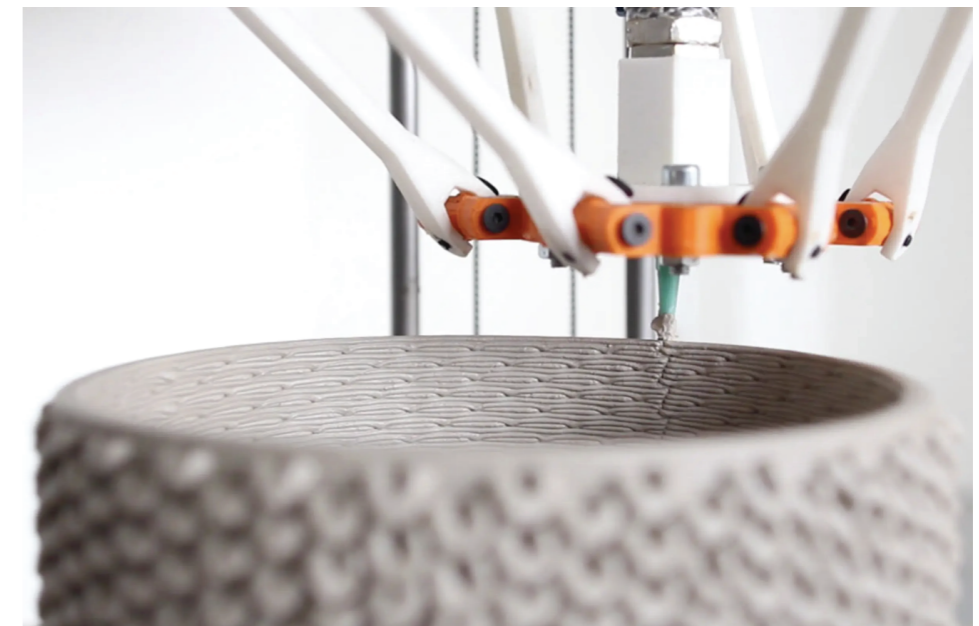
Handmade and customized



Mass production - example xxxlutz



Mass customization - 3D printed and customized ceramic tableware product by Olivier van Herpt



A short paper on mass customization of ceramic tableware through digital fabrication:

https://www.researchgate.net/publication/264558072_Mass_customization_of_ceramic_tableware_through_digital_technology

http://papers.cumincad.org/data/works/att/ecaade2013_126.content.pdf

CRAFT

Brač stone

is the name for petrologically different varieties of white limestone with brown inclusions of rudist karst.

Brač stone has been known in construction since ancient times, for example the representation of Hercules carved in the living rock of the Roman quarry Rasoha near the town of Škrip on the island of Brač. Since the Middle Ages, stone carving and plastic processing of Brač marble flourished. Works made of Brač stone can be found in countries on both shores of the Adriatic Sea as well as in overseas countries.

Used to build Diocletian's Palace in nearby Split, fine stone from the island of Brač is still crafted today on the island, most notably in Pučišća, where you find one of the only schools of stonemasonry still active in Europe today. The results are laid out for display on the main promenades of Bol and Supetar, fashioned and polished into decorative or useful items for the home and kitchen.



