



The new process of additive manufacturing prefabricated concrete could reduce the amount used in construction projects by half | Photo source [Fast Complexity](#)

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## 3D-PRINTING HALVES CONCRETE USE IN CONSTRUCTION

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### The process produces pieces as large as structural supports and reduces both resources and waste

**Spotted:** Artificial intelligence helps design smarter, more efficient buildings. Pre-fabricated pieces reduce the construction time and volumes of materials. Additive manufacturing combines the two to make even more savings. A multi-disciplinary team from ETH Zurich University for Science and Technology has recently created a new method for 3D-printing concrete at different levels of viscosity.

Named Fast Complexity, the new process of additive manufacturing prefabricated concrete could reduce the amount used in construction projects by half. The innovation lies in the dynamic control of the concrete's setting speed that allows designers to create and use new forms. A more liquid material produces smoother, detailed pieces for casting, and a faster drying, rougher looking form of concrete is used for essential foundational pieces.

Each piece and project requires a unique mix, helping to greatly reduce volumes of waste by producing only the necessary amounts. The additive manufacturing aspect includes functional features on both sides of a piece of concrete, which further increases efficiencies. Having successfully produced trial pieces, the next step will be to use the process in a build.

Updating production processes and combining them with materials science developments is creating a range of incredible changes in industries as diverse as healthcare and housing. Examples recently spotted by Springwise include a [biomaterial](#) used as a cartilage replacement and a [small home](#) that floats.

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### **Takeaway:**

The versatility of 3D printing is one of its strengths, with projects that use the technology running the gamut from bespoke local production centres to rocket parts destined for space. Future challenges and opportunities may lie in making the technology applicable to and accessible from areas and regions that are in earlier stages of economic development and finding the means to connect individual ideas for broader benefit.