



The 3D-printed beams | Photo source PUV

Innovation > Property & Construction > Recycled plastic beams reduce construction pollution and cost

## RECYCLED PLASTIC BEAMS REDUCE CONSTRUCTION POLLUTION AND COST

 PROPERTY & CONSTRUCTION

### The lightweight beams are 3D-printed on site and snap together like Lego pieces

**Spotted:** The patented plastic construction support beams are the culmination of three years of research and development by scientists at Spain's Polytechnic University of Valencia. Taking inspiration from the structure of human bones, the new beams are incredibly lightweight and snap together just like Lego. Using an alveolar structure to produce the lightweight, the beams are as strong as steel and concrete and retain their structure even when stressed.

As the beams weigh 80 per cent less than current construction materials, transport times and costs, machinery use and labour fees should be greatly reduced. Moreover, in many instances, the beams can be printed on-site, completely eliminating the need for transport and even storage space, as they can be produced as needed.

Particularly useful is the ability to connect pieces without needing any other materials. Each individual piece fits together with the others, allowing teams to customise builds as projects proceed. This helps to ensure further cost and time savings. Now that the system is patented, the team is looking for commercial partners to begin full-scale production.

3D printing is increasingly being used to solve long-standing social challenges. Recent spottings by Springwise include an innovative project that permanently houses vulnerable members of the community and another one that builds [schools](#) near children's homes in Madagascar.

Written by: Keely Khoury

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Email: [informacion@upv.es](mailto:informacion@upv.es)

Website: [upv.es](http://upv.es)

## **Takeaway:**

Innovations that focus on 3D printing in construction are proliferating, and the concept itself is becoming more commonplace amongst laymen. Many of the builds that use this technology show significant cost and time savings, as well as reductions in pollution. What is missing so far is the finishing touches provided by skilled architects and craftworkers. As materials develop, hybrid construction, with its combination of human capability and new shapes from digital design, may be the future path to more beautiful and ecologically-friendly construction. Later, as 3D printers themselves become more advanced, the possibilities in design are likely to multiply further.