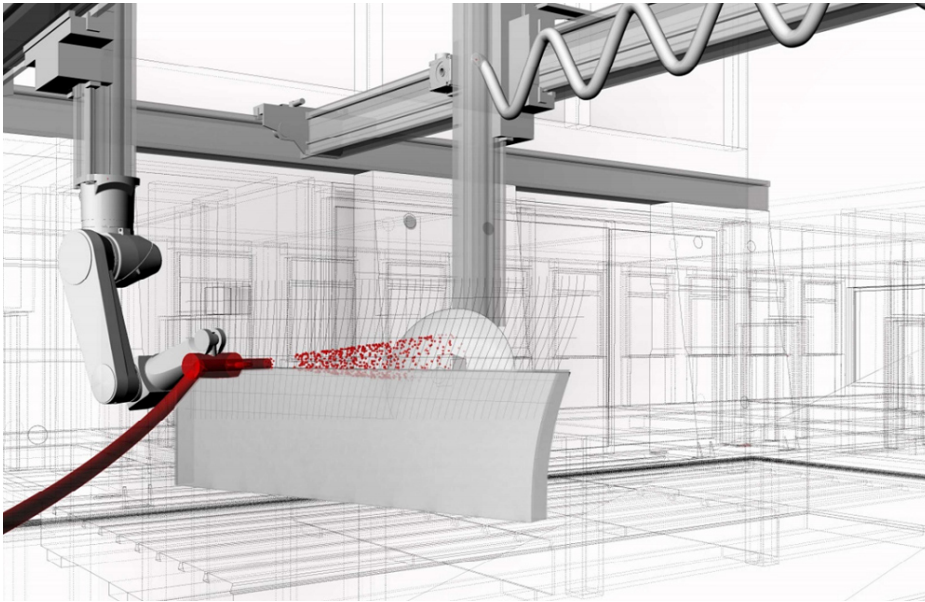


Concrete from robots



Auf einen Blick

- Highly productive manufacturing of geometrically complex concrete structures at low cost
- Freeform manufacturing for practically any shape
- Flexible manufacturing by use of robot-assisted spraying technology
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match | In future, manufacturing of concrete structures will be possible in any shape – thanks to robot-assisted concrete spraying technology. Researchers from Hanover, Brunswick and Clausthal are jointly working on the new technology – with virtually no design limits.

In theory, novel ultra-high performance concrete (UHPC) is suited to fill any form. But in construction industry, geometrically simple forms like slabs, walls and supports are still dominant. Using planar formwork structures, they can be manufactured in large quantities at a low price. Within the scope of the research project "Additive Manufacturing in Construction Industry", the Institute of Assembly Technology (match) of Leibniz Universität Hannover is developing in cooperation with five other institutes a new manufacturing technology without formwork.

The researchers want to eliminate the formerly indispensable formwork structures which limit the shape of construction elements. Instead, their focus is on spraying technology. In an automated manufacturing cell, two robots jointly work on a construction element: One robot moves the nozzle, the other one a counter plate which defines the curing position of the concrete.

With this technology, it will be possible to manufacture even complex concrete elements at a favourable price.

by Serhat Ibrahim

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