Mr Big Stuff: designer Joris Laarman takes 3D printing large

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Left, Dutch designer Joris Laarman at his MX3D workshop, sitting on a section of the 3D-printed bridge he is building for the city of Amsterdam. Right, a work in progress model of Laarman's 'Gradient' screen, which will also be shown in New York, created using the Algorithm as the bridge. *Photography: Marleen Sleeuwits*

In 2003, Joris Laarman – who had only just graduated from Design Academy Eindhoven – redefined one of the most mundane and overlooked household objects: the radiator. His curvaceous design considered how heat is transmitted, but came with plenty of rococo-inspired spin. When Wallpaper* magazine celebrated its first ten years in 2006, the 'Heatwave' radiator was included in our selection of the decade's most influential designs. Eleven years on, the piece that skyrocketed Laarman to design stardom remains one of the most memorable concepts in the field.

'It was a complete rethink of the radiator, from appearance to efficiency,' says Caroline Baumann, director of New York's Cooper Hewitt design museum, which acquired a model in its permanent collection in 2008. 'It showed that ornament can be inherently functional, and challenged the dogma of functionalism with Baroque exuberance.'

This month, an exhibition chronicling Laarman's work to date will open at the Cooper Hewitt, before moving on to the High Museum in Atlanta and Houston's Museum of Fine Arts.

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A rendering of the bridge, a scale model of which will be on display at the Cooper Hewitt. Photography: Marleen Sleeuwits

The works on show offer a glimpse of Laarman's reach as a designer and a maker, but also as a thinker and an explorer of imagined futures. 'I have a broad interest in the world,' he says. 'I am very much the author of a certain story about progress.' His interests include futurism and modernism, economics, technological progress, predictions from science fiction movies of the past, as well as changes in global temperatures and stock markets, which give him an idea of the pace of the world's development. 'I kind of surf the waves of innovation and try to give them a face or form. The things I make are frozen moments in this timeline.' This process makes for a body of work with a wide range of visual codes, usually originating from manufacturing experiments.

Laarman launched his studio in 2004 with his partner, filmmaker Anita Star, dubbing it a 'lab': 'It's a lab in the sense that we are not an industrial design brand, we experiment like scientists to make stuff,' he explains. 'The Lab is a hive of R&D activity that brings together engineers, craftspeople, designers and programmers to develop new skills, materials and digital technologies,' adds Baumann. 'It's transforming our understanding of materiality, pushing the boundaries of form, and even surpassing the limitations of industrial production.'

Some of the lab's creations, such as the 'Bone' chair, have become design icons. Launched in 2005, it marked the beginning of Laarman's love affair with digital fabrication. The aluminum chair (and its accompanying series, including a rocker – see our Sotheby's auction story) was produced using technology that mimics the growth of a tree, or of bones in the human body. It is designed through an algorithm to use minimal material, with a shape very much guided by the technology, leaving an element of surprise to the design process. Another project that exemplifies the breadth of Laarman's

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experimentation, and that will be included in the travelling show, is the Maker series of furniture. A symbiosis between craftsmanship and technology, the range started with a chair, composed of digitally fabricated wooden modular parts. The project is based on the idea that anyone could produce the furniture using a domestic 3D-printing machine, or small consumer CNC-milling tools (the code for the chair was published under a Creative Commons licence so that it could be downloaded by anybody).



A rendering showing a top view of the curved, asymmetric design. Photography: Marleen Sleeuwits

'Joris' work has never ceased to develop,' reflects his New York gallerist Marc Benda, who has worked closely with Laarman since 2005. 'He has helped substantially in bringing the practice of contemporary design, especially studio work, into the 21st century.' One key development, Benda notes, has been in the way Laarman has harnessed the latest technology, graduating from revolutionary domestic design projects to collaborating with material and building specialists on a massive scale.

In 2014, Laarman and Star set up a new company, MX3D (standing for Multi Axes 3D printing), with the intention of taking digital fabrication to an industrial scale. 'Right after our first experiment with robots and 3D printing,' says Laarman, referring to the sculptural 'Dragon' bench created that year using a metal 3D printer and a combined robot/welding machine, 'we were thinking about how we could scale this up. The technology was too good to be true, and too good to just keep as a tool to make the designs that I came up with. So we partnered with people who create the software, who provide the materials, the welding machines and the robots to establish MX3D.'

Laarman is working on his largest MX3D project yet, the first (and probably last, he jokes) piece of infrastructure he has created. With his team, he is printing a bridge for the city of Amsterdam, to be completed in summer 2018. 'We needed a poster project for the company, so we thought of doing something for Amsterdam, and what could be better than a bridge, since we are in a city full of bridges and water?' In a 'smart' approach to building, the construction hinges on just one machine, which prints in a cost-effective manner, while the design, engineering and manufacturing processes are interwoven. When complete, the structure may be fitted with sensors able to collect data 'about the bridge or about the

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traffic', adds Laarman. The upcoming US exhibitions will showcase a 3D-printed scale model of the bridge, and a new piece, the 'Gradient' screen, created using the same algorithm. The shows will be accompanied by a new edition of the book, Joris Laarman Lab (August Editions), edited by Star, who has also created video content for the exhibitions, offering a behind-the-scenes peek into life at the lab.

The exhibited works only offer a glimpse of Laarman's potential, 'a sliver of the universe that he is in the process of building', says Benda. 'The future of any creative practice rests on what comes next, and in Laarman's case, there is a noticeable lack of time in his life: there is simply not enough time in a lifetime to do all the things he is setting out to do. That is a hallmark of a great mind and a great practice.'

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