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Joris Laarman on exhibit: the ornamental functionality of robotic design

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NEW YORK CITY – A modern-day design magician is one way to describe Joris Laarman. Bringing a touch of poetry into the digital era, Laarman and his team don't just harness the latest technologies but invent their own systems in order to make works that combine science-fiction, narrative and aesthetics. The Dutch designer's ingenuity and his exploration of digital and robotic tools in his practice are underscored in a new exhibition at the Cooper–Hewitt, Smithsonian Design Museum in New York.



Made from a resin that has a frosty transparency, Bone Chaise (2006) is the only item in the series cast in a handmade mold.

The museum's interest in Laarman, 38, began when it acquired his thesis project 'Heat Wave Radiator' when he was a student at Design Academy Eindhoven. The wave-like shape with ornamental arabesques demonstrated Laarman's independent thinking, eschewing the sober functionalism being taught by Gijs Bakker, co-founder of Droog Design – and making a statement for appropriating decorative arts into the realm of contemporary design.



Branch (2010) and Rocker (2007). Rocker is cast in a 3D-printed mold from resin and Belge Noir, the darkest marble in the world.

Marrying the ornamental with the innovative has become a fundamental feature of Laarman's work, as also seen in his Digital Matter (2011) table, the Rococco form of which was robotically assembled in numerous parts, and in MX3D Bridge, his forthcoming 3D-printed stainless-steel footbridge for a canal in Amsterdam. He has also made furniture generated by algorithms and a series of 12 3D-printed Makerchairs assembled from small parts; attuned with the sharing economy, some of the Makerchair patterns can be downloaded from the Internet as an open-source design.

'The creative core of my work is creating these frozen moments, like physical, functional poems that tell about our time in transition, as we develop tools that bring technology like robotic fabrication to the real world,' says Laarman, who is fascinated by how 'the industrial era is visually and slowly being transformed into the digital era'.



On exhibition until 15 January 2018, Joris Laarman: Design in the Digital offers a chronological overview of Laarman's career over the last 14 years. On view are the Bone Chair (2006), for which Laarman used an imaging and simulation algorithm by Adam Opel GmbH, a German General Motors subsidiary, to create an organic shape; the Asimov (2010) installation, one of his first robot-manufacturing experiments, where four robots are programmed to fold a chair out of sheets of aluminium; the Dragon Bench (2014), the first sculptural piece created with the metal printer MX3D, which Laarman's team developed in-house; the Adaptation Chair (2014), composed of vertical long cells that start at the bottom like legs and transform their geometry to fulfill the overall design needs of the chair; and the bronze Butterfly Screen (2016), based on hexagonal cell division, which exemplifies what can be achieved with computer-generated aesthetics.

Built via robotic assembly, the Digital Matter (2011) tables use an eight-bit Rococo form language that evokes digital graphic resolutions. In the background, Super Mario represents the evolution from eight-bit to more realistic, blurring the boundaries between the digital and physical world.

Dragon Bench (2014), the first sculptural piece created with the MX3D metal printer.

What emerges is how Laarman adapts digital tools from other industries according to his ambitions, whilst creating organic forms mimicking cell growth and patterns in nature. 'Working with robots allows you to create technically complex works that you could never make with industrial machinery, and that has aesthetic as well as functional benefits,' Laarman says. 'Robots can create things that are highly ornamental – for instance, the MX3D Bridge is fully functional but also highly ornamental. I think of it as the future of digital craftsmanship – a cross between blacksmithing and highly digital design.'

The stainless steel of the MX3D Bridge is 3D-printed 'mid-air' using advanced robotic technology. Without the need for a support structure, and will be the first digitally-manufactured bridge worldwide. Laarman describes it as a 'huge team effort' made with an international construction and engineering partner. The footbridge is scheduled to be completed by early 2018. However, there is a slight hitch because the canal's walls are damaged and need to be repaired by the Amsterdam city council.
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Looking ahead, Laarman is collaborating on a bar in Miami and creating a door for a museum in the Netherlands (details of which are currently undisclosed). His team is also creating an app 'to show the timeline and context' behind the MX3D bridge.

Indeed, Laarman is passionate about how information on digital technology can be shared online and the freedom that this and 3D manufacturing offers to designers and makers. 'The entire system is changing because of how we share things online – like when I found the idea for the Bone Chair, which, unexpectedly, enabled me to make a more efficient, beautiful and comfortable shape. I literally saw the industrial era transforming into the digital era online. It means that designers can make things without needing a partnership contract with an industrial giant. What's happening now will change things.'