

Press Release

THE GENESIS ECO SCREEN / WORLD PREMIERE IN BERLIN

Making Cities Greener: Groundbreaking Urban Green Habitat 3D-Printed with Multiple Recycled Filaments, Presented in Downtown Berlin.

Sustainable, eco-friendly & innovative: NOWLAB presents the world's first fully 3D-printed eco wall installation / GENESIS Eco Screen with embedded drainage system for plants and insect habitat / PET-bottles recycling & 3D printing demonstrated at Fiction Forum Berlin in stunning historic university hall.

Berlin (Germany), July 31st 2019 – BigRep, the global leader in large-format 3D printing, today has launched the manufacturing of the world's first fully 3D-printed urban green habitat installation, the GENESIS Eco Screen. Addressing some of the biggest environmental challenges such as plastic waste, overconsumption of energy and other resources, rapidly deteriorating biodiversity and urbanization, the installation is a groundbreaking prototype in urban architecture and an industry-first showcase in Additive Manufacturing (AM) of a scalable, city-developing circular economy. It features unprecedented innovations made possible only by using custom-made generative design algorithms and the world's largest, serial production 3D printers (FFF) by BigRep.

The GENESIS Eco Screen will feature an embedded water and drainage system for plants and insect habitats, including a shelter for solitary bees. Measuring a full 4 by 4 meters, the GENESIS Eco Screen is reminiscent of a massive root system, and is printed using multiple filaments – consisting of BigRep PETG and BASF Innofil3D rPET made of 100% recycled PET printed on four large-scale BigRep ONE printers. The GENESIS Eco Screen is scheduled for completion in late August and will be on display in downtown Berlin.

The actual printing, starting today, is set up at a public site, the Thaersaal at Humboldt University, one of Europe's most stunning historic university halls (Invalidenstr. 42). Once completed, the GENESIS Eco Screen will be on display at the Fiction Forum exhibition center (Invalidenstr. 86) – the site of a now demolished East German border control station that left a gap between East and West.

The Fiction Forum is organized by the Federal Government's Center of Excellence for the Cultural and Creative Industries on behalf of the Federal Ministry for Economic Affairs and Energy. From August to October, it presents innovative approaches from the cultural and creative industries.

BigRep CIO and NOWLAB Managing Director Daniel Büning says, "Disruptive technologies such as 3D printing are key to solving some of the world's biggest problems. We want to deliver groundbreaking innovation to maximize the potential of AM, thereby creating entirely new applications. With this project, we are introducing a new and truly sustainable manufacturing protocol to the manufacturing of polymer objects using multiple pre-used plastic materials. The GENESIS Eco Screen shows how society can develop a greener future – with circular economy solutions that are sustainable, local, modular and collaborative."

Circular economy is aimed at minimizing waste by closing the gap between resource input, waste, emissions and energy usage. This is achieved by reducing consumption and material usage. Set up at Fiction Forum as a closed loop process, the PET bottles are recycled as an input material and 3D printed for an innovative, yet hands-on, showcase for production to demonstrate this approach.

At the Thaersaal, the public can learn more about this closed loop process in an exhibit detailing the five steps turning waste into high-tech printing material: First, used PET-bottles are delivered to a collection point, cleaned and pre-processed for the Dual Axel Shredder, a machine designed by the Germany company raw paradise. It processes the plastic into printable raw material for the actual filaments that are produced with a filament extruder.

The filament is a long strand, only 2,75 mm in diameter that looks like a cable. Coiled on filament spools, one for each printer, it is fed into the large-format BigRep ONE printers – and so the printing process begins.

The GENESIS Eco Screen was created using the most world's most advanced self-generating design algorithms and agent-based modeling. These algorithms and agents are intelligent tools, almost comparable to AI, capable of autonomously designing complex geometries with only a few pre-set parameters. For the GENESIS Eco Screen, these included, for example, a data analysis of the sun exposure across the installation in order to be able to optimize the diameter of the 3D-printed “branches” and the creation of the shading features and plant positioning accordingly.

The GENESIS ECO SCREEN at a glance:

Dimensions: 4000 x 4000 x 300 mm, made up of 16 segments

Materials: BigRep PETG and Innofil3D recycled rPET

Team: Daniel Büning, BigRep CIO and NOWLAB Co-Founder

Project Lead: Lindsay Lawson

More about Fiction Forum: www.kreativ-bund.de/fictionforum

More about BigRep GmbH: www.bigrep.com

About BigRep

BigRep develops the world's largest serial production 3D printers, creating the industry benchmark for large-scale printing with the aim to reshape manufacturing. Its award-winning, German-engineered machines are establishing new standards in speed, reliability and efficiency. BigRep's printers are the preferred choice of engineers, designers and manufacturers at leading companies in the industrial, automotive and aerospace sectors. Through collaborations with its strategic partners – including Bosch Rexroth, Etihad Airways and Deutsche Bahn – and key investors – including BASF, Koehler, Klöckner and Körber – BigRep continues to develop complete solutions for integrated additive manufacturing systems, as well as a wide range of printing materials on an open-choice source. Founded in 2014, BigRep is headquartered in Berlin with offices in Boston and Singapore. Leading the way in one of the world's key technologies, our multinational engineering teams are highly trained, interdisciplinary and customer-focused.

For additional information, please contact:

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