Interview

A shared vision for sustainable housing comes to life with 3D printing

Exclusive interview with Lofts to Go's Jens Rosenthal and Black Buffalo 3D's Peter Cooperman.

Lofts to Go is nearing market readiness for its flagship coodo living solution, but it is also developing 3D printed units in collaboration with Black Buffalo 3D.

Image: LTG Lofts to Go

A remote community, where people can spend time reconnecting with nature while enjoying the comforts of a sustainable dwelling. Connecting with others while still having space for themselves. Sounds like a dream doesn't it? For Lofts to Go (LTG), this vision is more than a dream; every day it is one step closer to being a reality.

Founded in 2012, LTG has set out to develop eco-friendly tiny houses using innovative design and production techniques. Today, the company is nearing market readiness for its flagship coodo modular living solution, which consists of flatpack homes that can be assembled on site. In fact, LTG is preparing to open its first coodo resort—with over 100 units—in Germany next year. Despite this already ambitious undertaking, LTG has another plan in the works, which will take its vision for sustainable living and tourism to the next level. This particular project, which we'll dive into in the following interview, is supported by construction 3D printing and New York-based Black Buffalo 3D.

Meet Black Buffalo 3D

Black Buffalo 3D is a promising player in the additive construction world. But its role isn't quite as straightforward as "printer developer". Black Buffalo 3D is a U.S. affiliate of Hyundai BS&C, a large South Korea-based company specializing in IT and construction.

Peter Cooperman, Black Buffalo 3D's Head of Marketing, explains the parent company's role in the construction area: "Since 2008,

they've been involved in the construction and technology industries and today they have a lot of companies that are focused on different verticals, from small structures to high-rise buildings and everything in between. A few years ago, Hyundai BS&C's founder pursued and acquired a construction 3D printing company—HISYS—and they've since been working on fine tuning and improving their technology. Black Buffalo 3D was established as a U.S. affiliate and sister company of the R&D arm in South Korea."

To specify, Black Buffalo 3D is the global sales distribution arm for Hyundai BS&C's construction 3D printing technology, but it also has its own engineering team and factories. According to Cooperman, the company's overarching mission is to provide scalable 3D construction printers and cement-based inks through partnerships in the construction, development and tourism sectors. "The goal is to scale our technology with partners that excel in design and tourism, like Lofts to Go, so we can bring construction AM to the world," he says.

3D printed coodo units could be placed anywhere, giving people access to live in remote, natural settings.
Image: LTG Lofts to Go

A partnership is born

It seems fated, therefore, that Lofts to Go and Black Buffalo 3D should find each other and form a partnership. Jens Rosenthal, LTG's Director of Resorts and Brands, explains how the connection was born: "We were searching for a 3D printing partner, and our CEO traveled the world to meet with several firms. We were also talking with the Fraunhofer Institute here in Germany because they work with 3D printing. Eventually, we were approached by Black Buffalo 3D."
Cooperman adds: "We reached out because we feel that in all partnerships, it's really important for the teams to mesh well and for there to be cohesion between both businesses' theories and missions. We really liked Lofts to Go and I think we have similar goals. One of our big pushes is sustainability."

Sustainability is one of the key connection points between Lofts to Go and Black Buffalo 3D. Both companies see a future in which housing and tourism are more ecological. For the former, this is achieved through intelligent design and smaller footprints. For Black Buffalo 3D, sustainability is achieved on the construction side through on-site production, which leads to fewer transport emissions, as well as through the use of recyclable materials. The companies are joining these two visions in LTG's new tredee solution.

3D printing tredee

LTG's tredee offering, powered by Black Buffalo 3D's construction AM system, was first unveiled in September 2020. Both

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companies are currently working together to fine tune the 3D printing technology and materials as well as the tredee’s design.

“Everything is moving towards the highest quality and we are really thrilled to be working with Black Buffalo 3D,” said Rosenthal. “We are now focusing on delivering the perfect product. It’s about sustainability, but it is also about new ways we can build together to achieve the best quality and most efficiency. 3D printing will enable us to bring our tiny houses to various regions in the world and will allow us to speed up construction time. At the moment, our conventional production needs three to six months to set up a coodo resort, with 3D printing it could be as little as 30 days.”

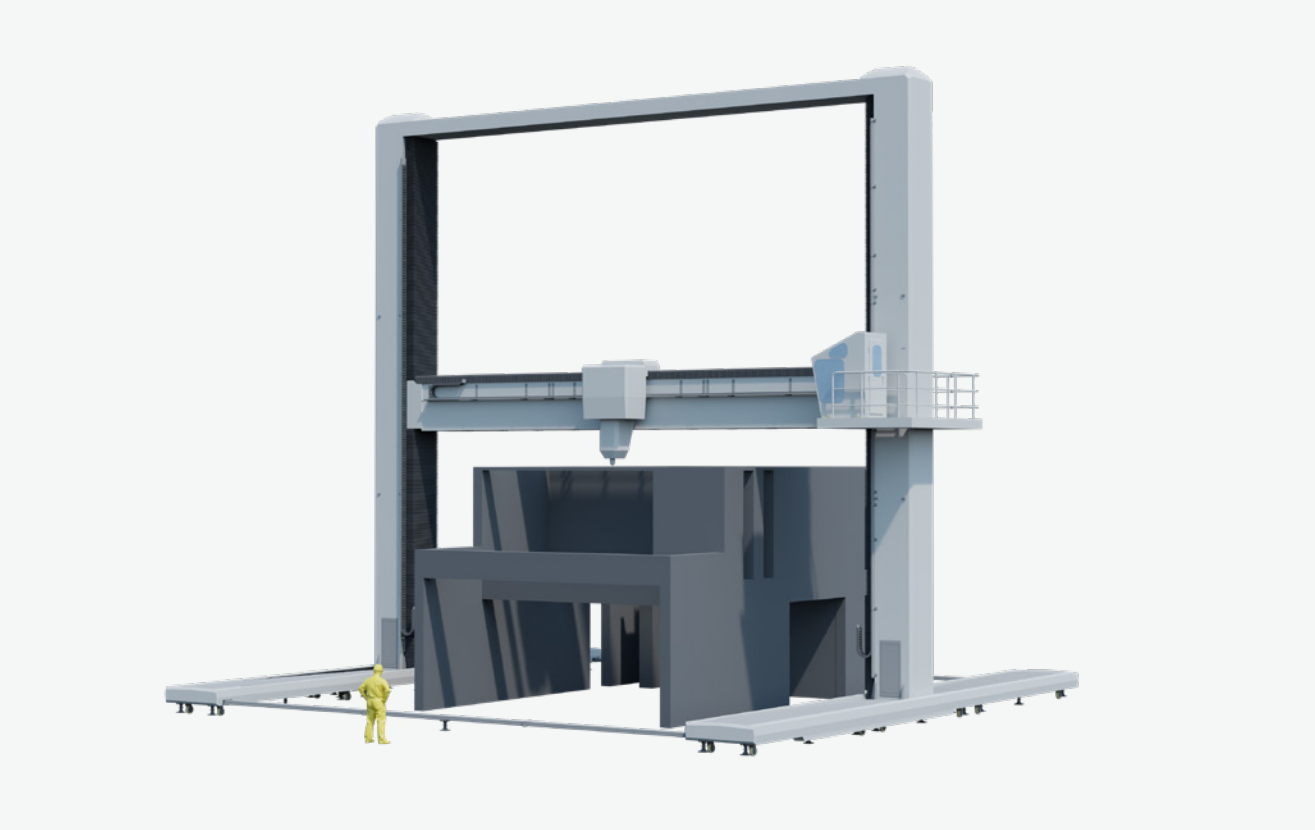
In terms of structure, the treedee model has a modified design for 3D printing. It is more square than LTG’s signature coodo style, but it bears many of the same hallmarks, including broad open windows, designed for optimal immersion in nature. Presently, the companies are working to automate the construction process as much as possible so that it is fully scalable. Down the line, the aim is to ultimately 3D print the original coodo design and more.
“It’s important for us to make different models,” adds Rosenthal. “The coodo is our icon. But setting up coodo resorts means more than simply placing 500 of the same unit somewhere. We wanted some diversity in design. Travelers have different requirements in terms of space and layout. We also needed to think about amenities. I very much appreciate 3D printing because it allows us to develop different models and can be used to create interesting features such as restaurants and washrooms, etc. This is very important because we want coodo resorts to offer unique experiences without sacrifice.”

3D printing also has the potential to reduce construction costs for the coodo units. This is due to a number of factors, including the high degree of automation associated with 3D printing vs traditional construction, as well as its on-site nature, which reduces the need for transporting construction materials. This benefit, paired with the sustainability factor, is making 3D printing an important part of LTG’s future plans.

The tredee timeline

Like most businesses, LTG and Black Buffalo 3D were faced with supply chain challenges due to COVID-19. Despite these setbacks, the companies are back on track to move ahead with tredee construction. One upcoming

Black Buffalo 3D's construction 3D printer is a large-format, gantry-based system, capable of printing structures on-site.
Image: LTG Lofts to Go



milestone will be the launch of a test print in the U.S. in Q1 2021 (other ongoing tests are being carried out in South Korea). If all goes well there, LTG plans to have the product market ready as soon as Q2.

"There are reasons we haven't yet entered the market with our coodo resorts," Rosenthal says. "In the past years, we have really focused on optimizing the production methods we want to work with. We worked on patents, quality improvements and so on. What we are doing now is really laying out our big approach and we are doing that together with Black Buffalo 3D. Overall we want to introduce a new form of tourism, where we can focus a little bit more on ourselves and be a bit more distanced from each other. From our standpoint, we are working with the team in South Korea but we also have a leased warehouse set up in New Jersey," Cooperman explained. "We're also working to acquire land officially, where we'll actually print a permanent warehouse towards the end of next year." Black Buffalo 3D's printer, which will take on this project, can print structures measuring up to 1,500 square feet and up to four stories in height.

Ultimately, LTG plans to sell coodo units in the resorts. The resorts will be operated by LTG and partners in cooperation with members of the hospitality industry. As is natural with these types of initiatives, there are lots of ways to go about it. As Rosenthal says, people can either buy coodos to live in or they can rent them as holiday homes. All that to say, if you're looking to escape to a 3D printed holiday home, it won't be long before it's a possibility! ◆