# Dossier: BRANCH TECHNOLOGY, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,899,995.21

**Award Date:** 2024-09-30

**Branch:** ARMY

## AI-Generated Intelligence Summary

**Company Overview:**

Branch Technology, Inc. is a construction technology company specializing in large-scale 3D printing using a proprietary freeform 3D printing process called Cellular Fabrication (C-Fab). Their primary business is providing custom architectural solutions and innovative building components, with a focus on aesthetic design freedom and sustainable construction practices. The company aims to solve the limitations of traditional construction methods, such as high labor costs, material waste, and geometric constraints, by offering a more efficient, flexible, and sustainable approach to building complex and organic structures. Their unique value proposition lies in their ability to create structurally sound, architecturally complex, and custom-designed building components and entire building shells using a robotic additive manufacturing process with significantly reduced material usage compared to traditional methods.

**Technology Focus:**

* Cellular Fabrication (C-Fab):\*\* A patented freeform 3D printing process that utilizes industrial robots to extrude polymer matrix composites (PMCs) in free space. This allows for the creation of complex, geometrically optimized open-cell lattice structures without the need for molds or supports. This methodology dramatically reduces material waste and allows for lighter, stronger structures.
* Branch Technology Construction System (BTCS):\*\* This includes the software, hardware, and materials used to design, fabricate, and assemble structures built using C-Fab. The system uses generative design algorithms to optimize the lattice structure for structural performance and material efficiency, creating custom designs tailored to specific project requirements. The company also offers proprietary materials designed for high-strength and weather resistance in construction applications.

**Recent Developments & Traction:**

* Partnership with Oak Ridge National Laboratory (ORNL):\*\* In 2022, Branch Technology partnered with ORNL to explore the use of sustainable materials and advanced manufacturing techniques for construction. This partnership aims to develop new bio-based materials and further optimize the C-Fab process for large-scale construction projects, focusing on reducing the environmental impact of building materials.
* Construction of Curvilinear House:\*\* Recent projects, while specifics are difficult to pinpoint in the last 2-3 years, continue to showcase C-Fab capabilities, with the construction of complex, curvilinear residential and commercial structures, demonstrating the feasibility and aesthetic potential of the technology. These projects continue to receive recognition in architectural publications.
* Focus on Sustainable Building Practices:\*\* Branch Technology is increasingly emphasizing the environmental benefits of C-Fab, particularly regarding material reduction and the potential for using recycled and bio-based materials in the construction process. They are actively working to integrate sustainable practices into all aspects of their operations.

**Leadership & Team:**

* Pliny Eremenko (CEO):\*\* Possesses extensive experience in architecture, design, and robotic fabrication.
* The specific leadership structure beyond the CEO is difficult to ascertain from readily available online resources, but the company's website showcases a team with backgrounds in architecture, engineering, robotics, and material science.

**Competitive Landscape:**

* ICON:\*\* ICON focuses on 3D printing entire homes using concrete-based materials, primarily targeting affordable housing solutions. Branch Technology differentiates itself through its freeform 3D printing approach using polymer matrix composites, enabling greater design freedom and structural complexity.
* MX3D:\*\* MX3D focuses on printing large-scale metal structures, such as bridges and architectural elements. Branch Technology's use of polymer composites and cellular fabrication distinguishes it from MX3D's metal 3D printing applications.

**Sources:**

1. [https://branch.technology/](https://branch.technology/) - Company Website - Provides information about the company's technology, services, and projects.

2. [https://www.ornl.gov/](https://www.ornl.gov/) - Oak Ridge National Laboratory website - Relevant for insights into potential partnerships and materials research within the construction and additive manufacturing fields.

3. [https://www.constructiondive.com/](https://www.constructiondive.com/) - Construction Dive - Provides news and analysis of the construction industry, including trends in 3D printing and sustainable building practices.

4. Various architectural publications such as \*Architectural Record\* and \*Dezeen\* (Specific URLs are difficult to provide without knowledge of specific Branch Technology articles within the last 2-3 years).