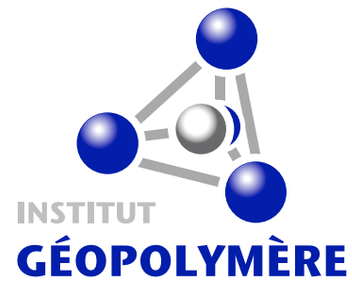
Introduction to Geopolymer International, Development of Geopolymer Concrete 3D printing in USA

William Hoff (Geopolymer International, LLC),
Alex Reggiani, Marina Dudnikova, Andrey Dudnikov, (RENCA Inc., Russia, Italy)



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About Geopolymer International (GPI) and RENCA

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OUR TEAM

William Hoff

CEO

William has 42 years experience in construction specializing in concrete, structural iron and crane operations. In 2015, as a licensed contractor, he started a new company “out of the box construction”. William’s focuses on sustainable materials, and commits to bring new technologies compliant with standard certifications, and permitting requirements needed to make them a reality. Currently he is working with Geopolymer, 3-D concrete printing, and modular housing to achieve his goals.

Andrey Dudnikov

Lead Engineer, COO

Andrey is a co-founder and CEO of Renca. Being an engineer he knows how the things should work. Having more than 10 years experience in construction materials production and R&D as well as in general management he can organize production of literally everything, from a needle to a space shuttle, but prefers creating sustainable construction materials that are game changing for the building industry.

Marina Dudnikova

Economist, CFO

Marina is BDD and co-founder of Renca. People think that construction industry is a man's business. Marina proves that it's not. She has more than 10 years experience in construction. She not only knows deeply the principles of construction as well as the technology and materials, but also cares about sustainability and green building's principles. On the other hand, Marina sees the picture from the financial perspective, making our products not only eco- but also cost-effective.

Alex Reggiani

geologist and mineralogist, CTO

Alex is CTO and co-founder of Renca. He is the data-base and creator of the breakthrough products that we have. He is a geologist-mineralogist by education and devotion and has more than 15 years experience in developing products that are used in almost every house today. He can create working recipes simply by looking at the test results of the materials at his disposal. Laboratory is his second home.

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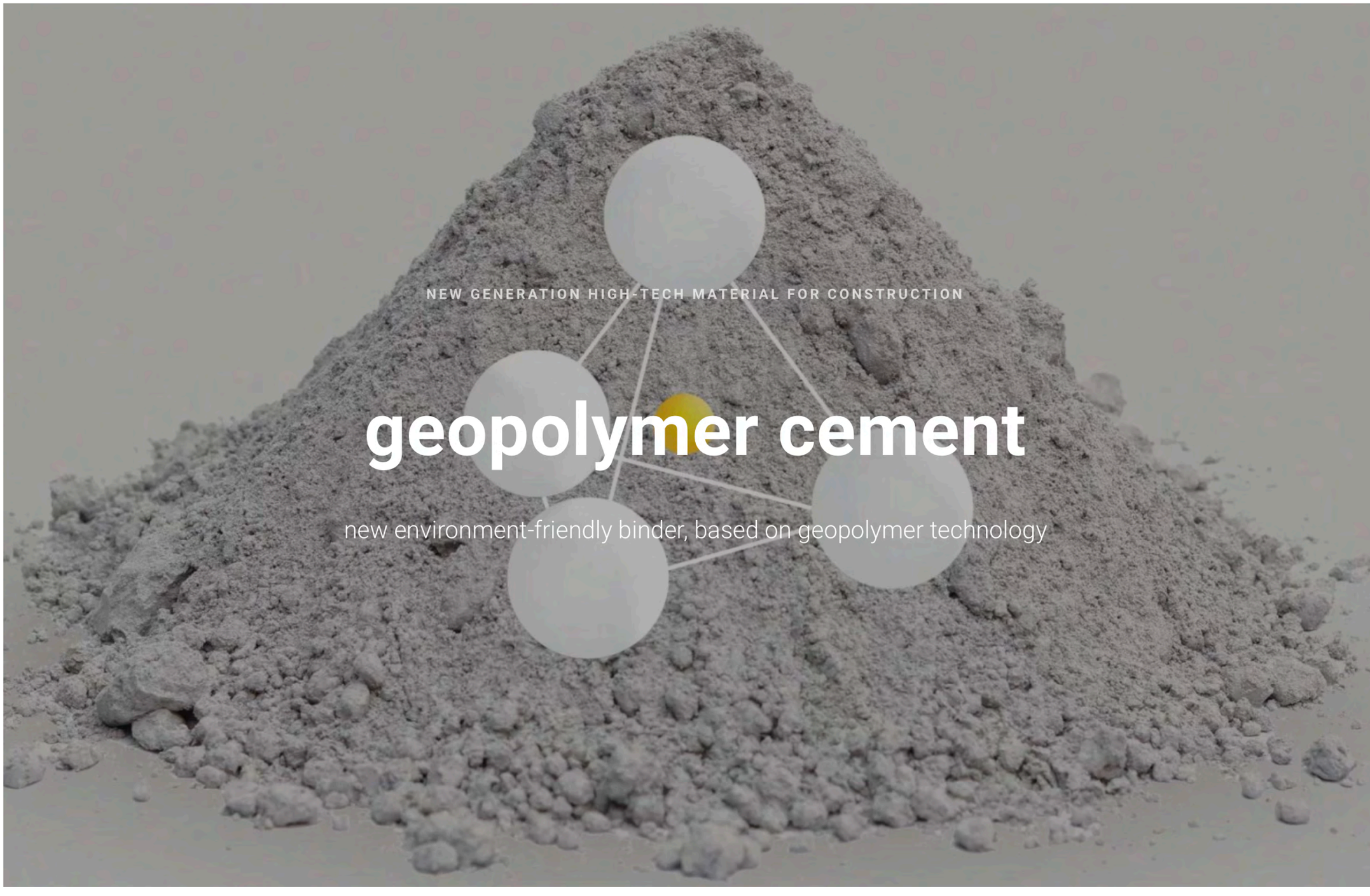
CORE PRODUCT



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Product Range

renca

3D PRINTING GEOPOLYMER MORTAR IS COMING TO AMERICA

AVAILABLE FROM MAY 2021

GEOPOLYMER INTERNATIONAL

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PRODUCT RANGE

General Purpose Geopolymer Concrete

Geopolymer has many different formulations to produce different characteristics such as compression strength tensile strength to include utilizing recycled materials into the mix.

Assorted color Geopolymer

Different color geopolymers, that includes formulations for water proofing and other characteristics, for casting different items. As in this example we are casting a geopolymer sink.

Wood fiber geopolymer

New developments in using an assortment of wood fiber and geopolymer has created new products that through the chemical process mineralizes/ chemically petrifies the cellulose in the wood making it fireproof. The porous products can also be used as an insulating material.

Geopolymer 3D Structural mortar

Renca has joined with Geopolymer International Providing their 3d printing structural mortar. **This product will be available in Las Vegas Nevada, mid-April 2021.**

PRODUCT RANGE

Aerated Concrete

Additional formulations have been created to make both lightweight and geopolymer concrete, reducing weight and maintaining strength.

Recycled polystyrene

Different color geopolymers, that includes formulations for water proofing and other characteristics, for casting different items. As in this example we are casting a geopolymer sink.

Recycled rubber

Additional research and development have been in the areas of recycling different waste materials to include plastic, rubber tires, industrial waste, and mine tailings, to name a few.

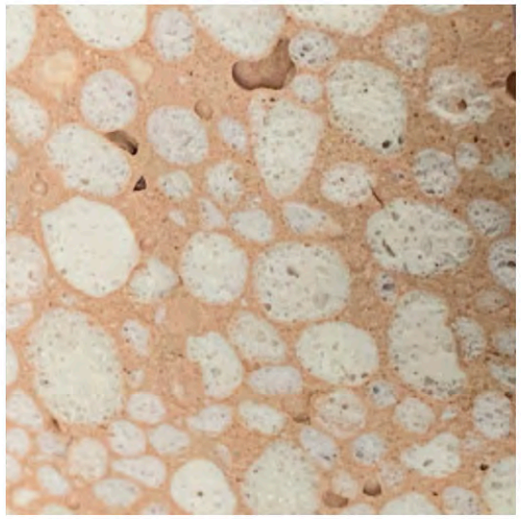
High Strength Geopolymer

This was the UHPGP mortar with 127-137 MPa (almost 19000-19600 psi) obtained using crushed granite or crushed basalt or wastes from zirconium aluminates from used refractory bricks.

PRODUCT RANGE

Expanded Clay

Additional geopolymer developments have been formulated to use recycled expanded clay and render it fireproof.



Composite

Additional geopolymer developments have been formulated to use composites and render it fireproof.

Cork

Additional geopolymer developments have been formulated to use recycled cork and render it fireproof.

Plastic

Additional geopolymer developments have been formulated to use recycled plastic and render it fireproof.

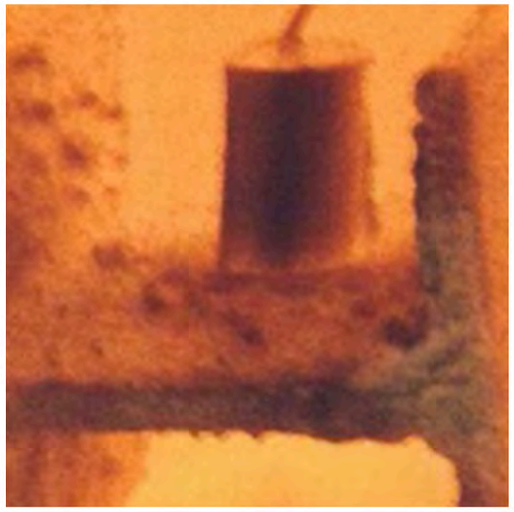
PRODUCT RANGE

Spray

Additional geopolymer developments have been formulated to use molds with sprayed material and render it fireproof.

Spray on Steel

Additional geopolymer developments have been formulated to use to spray on structural steel and render it fireproof.



Spray Fireproof Testing

Additional geopolymer developments have been formulated to test spray on applications that prove it fireproof.

3D Printers

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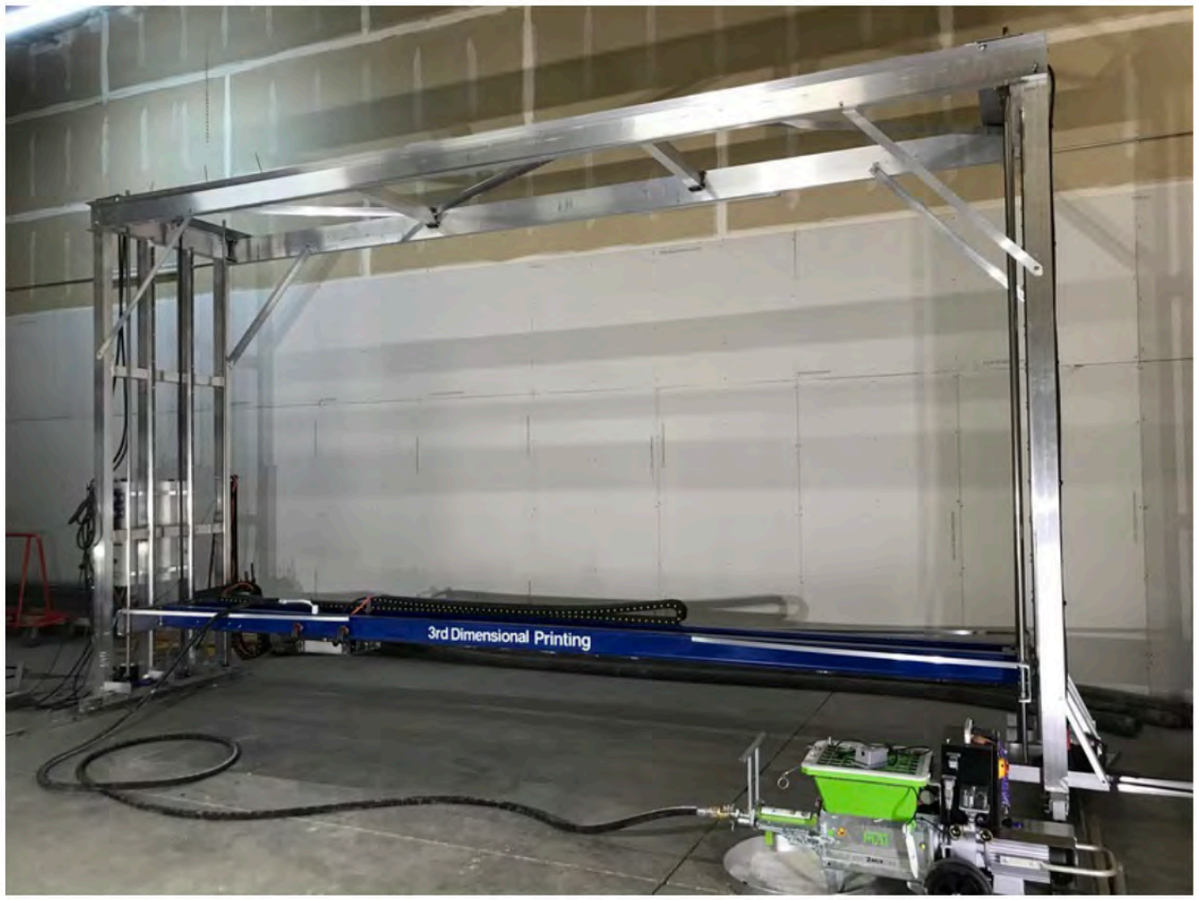
REVOLUTION ONE

Geopolymer International **3D concrete Printer** Revolution One was the first developed printer for geopolymer 3d printing, specifically for testing our formulas. An additional smaller unit was made to be easily transportable to different locations.

Revolution One is the first **open-source** 3D printer built from the ground up to be a robust, low cost, easy to deploy and operate, geopolymer and concrete house printer. Using simplified construction techniques and commodity parts, Revolution One lowers the barrier of entry for construction based 3D printing. Build it as simple or complex as you want. Contact GPI to inquire about leasing or purchasing this amazing machine.



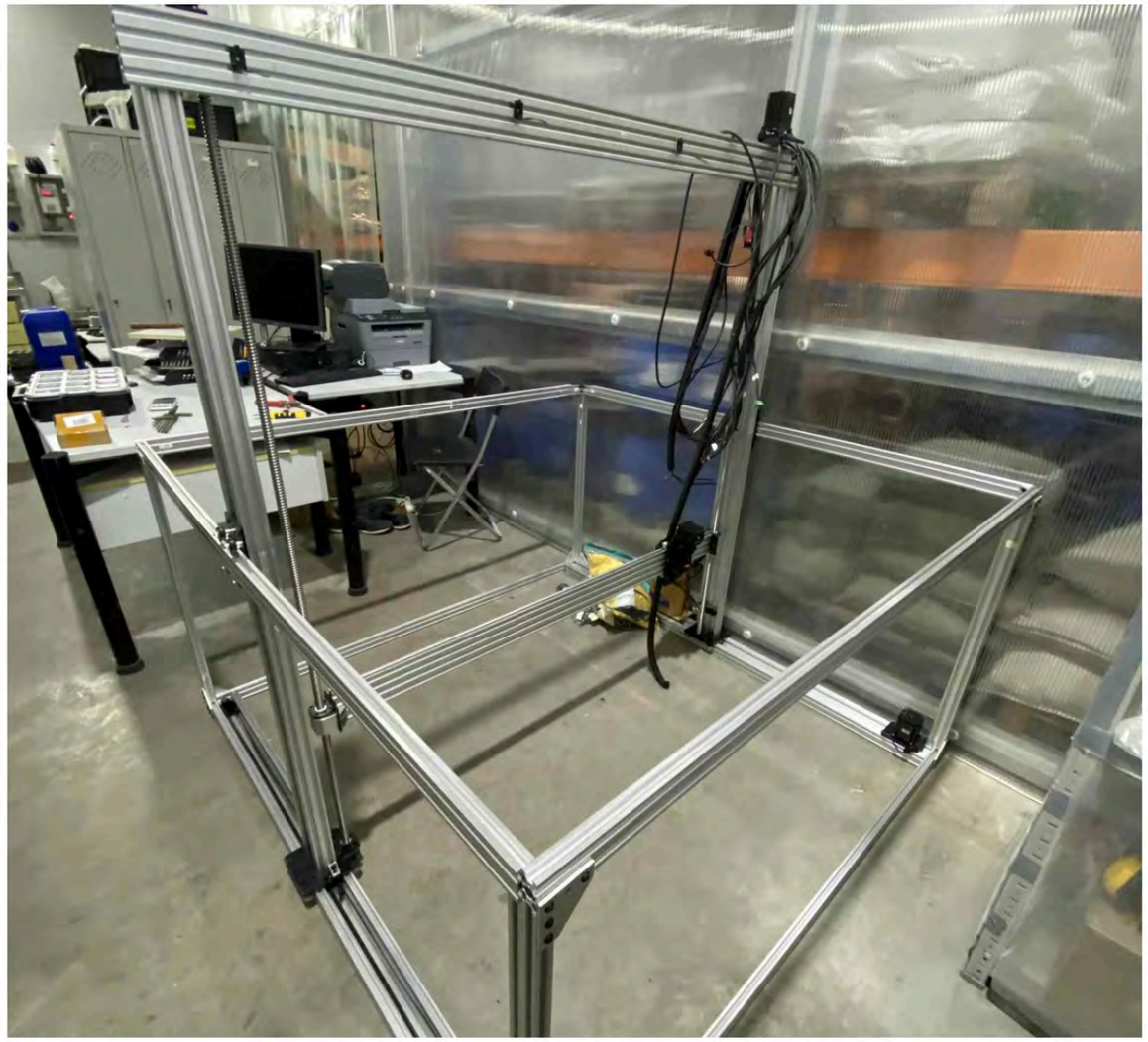
Revolution One 3D Concrete Printer

Specifications

- Sturdy Gantry based design using low cost material options.
- Cartesian (XYZ) motion system
- Open-Source software control based on community available firmware.
- Scaleable build size: 22ft Wide, 9ft Tall, and 20ft to Infinite Depth on rails
- Outer dimensions: 24ft Wide, 12ft Tall, 7ft deep
- Printable Materials: Geopolymer, Concrete

Revolution-One breaks down into four components for easy transportation.

UPLIFT DEVELOPMENT PLATFORM



Uplift Development Platform

The design of the **Uplift Development Platform** is for the rapid development and testing of dimensional construction materials. Bring your extruder and print with clay, plastic, concrete, geopolymer, foams, and more using industry-standard g-code. Using simplified construction techniques and commodity parts, Uplift can be up and running in just a few hours. Build size is dependent on the extruder and nozzle used.

Specifications

- Sturdy Gantry based design using low cost material options.
- Cartesian (XYZ) motion system
- Open-Source software control based on community available firmware.
- *Scale-able build size: About 4.5' Wide, 4.5' Tall, and 4.5' Deep
- Outer dimensions: About 5' Wide, 5' Tall, 5' deep
- Printable Materials: Geopolymer, Concrete, Plastic, Clay

Upcoming Projects

3D PRINTED HOUSE

First 3D Printed house with Geopolymer Concrete

Coming this year in Las Vegas, NV

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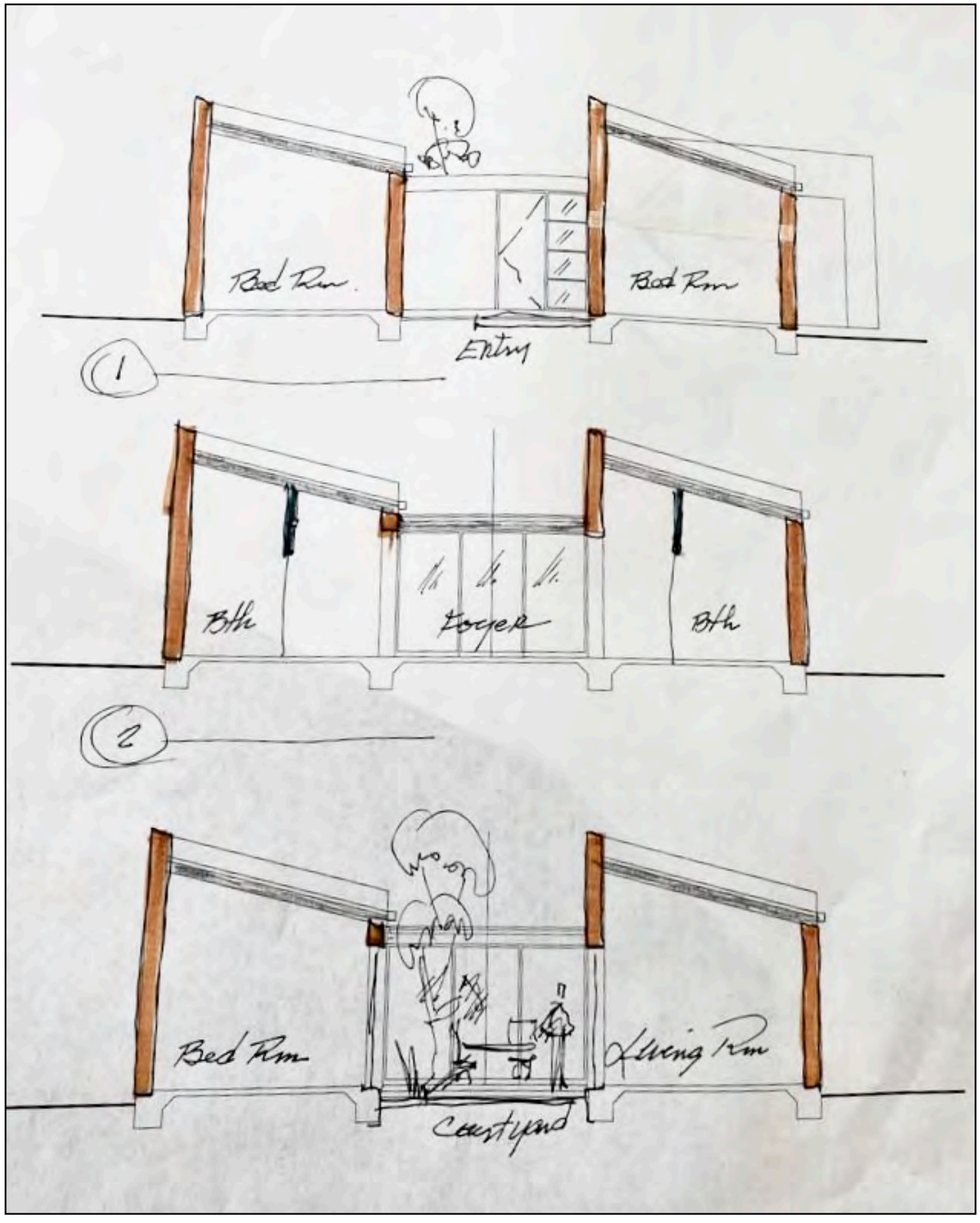

3D PRINTED HOUSE

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