



### Mission:

Facilitate the mass production of village-scale developments from the conversion of large-scale waste streams into high performance concretes. Developments incorporating sustainable housing and holistic life-support infrastructure, using construction technology that is environmentally and socially conscious, cost-effective and profitable.

### Vision:

Provide viable solutions to governments, disaster relief organizations and industries to address the vast housing shortage and global waste streams.



### Why Use 3DSD's High-Performance Eco Domes?

Strength, Durability, Safety, Beauty, Resource & Energy Efficiency

**The Domes:** 3DSD's Eco Dome Printers™ go straight from raw material to full-scale home shells in a matter of hours. Designs are digitally transferred and printed on site. 3DSD Eco Domes™ are cost-efficient, earth-friendly, extremely durable and easy to maintain. Moreover, without modifications, our domes are designed to use less than half the heating and cooling energy required for equivalent conventionally constructed buildings — making them ideal for low-cost modifications required to achieve net-zero and net plus energy performance.

3DSD Eco Domes™ made from G-ROCK™ high and ultra-high-performance concretes (UHPCs) are literally super structures. Designed to withstand wildfires, tsunamis, earthquakes, hurricanes and tornadoes, 3DSD Eco Domes™ are an ideal structure for many vital applications in areas affected by volatile weather and geological conditions. Our domes are also the ideal housing solution for industrial facilities that need plant-worker housing installed quickly and cost effectively.



**3D Sustainable Developments** is a sustainable building start-up company that combines **3D printing**, superior construction materials and the world of **clean tech alternatives**.





Domes made from G•ROCK™  
exceed FEMA's standards for providing  
*near-absolute* protection.



**SAFETY:** *Near-absolute* protection for occupants against hurricanes, tornados, wildfires, earthquakes and other natural or man-made disasters.

**ENERGY SAVINGS:** Savings of 50% without additional modification costs. R-values can be modified to accommodate any design or code requirement.

**LOWER INSURANCE COSTS:** Invulnerability to fire, natural and man-made disasters, mold, mildew and pests.

**FASTER CONSTRUCTION TIMES:** Weeks vs. months = faster occupancy and lower cost.

**EXTREME LONGEVITY & DURABILITY:** Designed to last for centuries with little maintenance.

## Our 3D Printer & High-Performance Concrete

**The Printer:** Our first- generation structural dome printer is 44 ft. in diameter and 25 ft. tall. It is designed to print full-scale structural domes using our environmentally friendly concrete formulations. It has the capacity to print domes up to 38 ft. in diameter and 19 ft. tall. When built for housing, our standard design includes a second floor, creating over 1,800 sq. feet of living space in the 38 ft. dome. The second floor covers only 60% of the dome to allow for a great room with 19 ft. ceilings.

**The Process:** The Eco Dome Printer™ is modular and packs into one shipping container for ease and affordability of transportation. Once on a construction site, the printer requires approximately six hours to construct. A dome can be printed within one day. If the dome is to be used as housing, additional time is required to install precast wall segments, doors, windows and interior finishes.

The versatility in programming of the printer is passed on to the end product. With changes made in the digital specifications, 3DSD Eco Domes™ can be used for housing, water reservoirs, industrial applications, grain silos, waste-water treatment facilities, processing tanks, event venues, wine cellars, chemical storage, underground climate-controlled storage facilities and more...





**Design Options:** Choose from one of our standard models or work with our in-house design team to create an original design of your own. The possibilities are endless!



Indonesian Style Dome



Gothic Style Dome



Indonesian Style Village





**The Developments:** Whether projects require turnkey, mass-production housing for the minimum possible price, luxury eco-resort cabins or shell-only installations developers can customize to order, we've got options!

Using a system of equipment & technology, we make the onsite, mass-production of housing affordable without sacrificing beauty or quality. Combining 3D printing and elements precast onsite keeps our system efficient in both time and resources.

**The Material:** G-ROCK™ ultra high-performance (UHPC) and high-performance concretes (HPC) are our unique, organic fiber-reinforced concretes. G-ROCK™ is a highly sustainable choice in the cement world as it uses 70% less clinker than conventional concrete which translates to less embodied energy and over 70% less CO2 emissions. With cement production accounting for 8% of the earth's annual CO2 emissions, a 70% reduction could have real impact. Our G-ROCK™ formulations are non-toxic and can safely contain up to 60% waste material, so we are partnering with industrial scale waste producers to convert waste streams into high-performance building materials at their source.

What's the difference in performance between standard concrete, HPC and UHPC? HPCs are classified as cementitious concrete materials that have a minimum compressive strength of 8,000 pounds per square inch (psi) as compared to conventional concrete at 2,800-4,000psi. Our standard HPC mix, used in our low-cost developments, and can have a rating of 15,000psi, making it more than 3 times stronger than conventional concrete.

UHPC is concrete which has a psi of 17,000 or greater, with our UHPC formulations reaching psi ratings of up to 25,000. This classification of concrete is primarily used in Europe but costs up to ten times more than G-ROCK™. UHPCs have extreme ductility and durability, with MIT estimating a 16,000-year life-cycle!

G-ROCK™ also has high flexural strengths being between 1,500-4,000psi, compared to conventional concrete at 400-600psi. This ability to flex much greater distances without failing translates to greater resiliency and resistance to natural disasters such as earthquakes.

**Waste Streams:** We are passionate about transforming industrial waste streams into high-performance concretes on a scale that can drastically reduce the amount of land-filled materials and mining waste left to pollute surrounding waterways. We are partnering with government organizations, industrial facilities and mining operations to convert waste, at its source, into new building materials. Sequestered wastes have been tested for leaching by state and national laboratories, and the results showed no detectible levels of toxins.







**We have great alternatives for large-scale waste in these areas:**

- Wastewater
- Desalination
- Municipal Waste
- Steel Manufacturing Slag
- Mine Tailings & Remediation
- Construction & Demolition Waste
- Styrofoam & Packaging

### The Team:

**Noah Israel** is President and Director of Technology Integration with over forty years as a developer, designer, builder, consultant and problem solver.

**Ms. Commitment L. Israel** is our Chief Executive Officer with ten years experience as a conference and project coordinator as well as eight years experience in construction.

**Dr. Konstantin Sobolev** is our Concrete Research Adviser and has a PhD. from the Research Institute of Concrete & Reinforced Concrete in Russia. He is also a professor in the Civil & Environmental Engineering Department at the University of Wisconsin-Milwaukee.

**George Kallis** is our Mining Operations Engineer with over 40 years of international experience.

**Endearment Sophia Parker** is Director of Industrial Design, who has for the last twelve years been an Independent Contractor working as an architectural designer, metal artist, construction project manager, and aesthetic director.

**Ammishaddai Kindness Israel** is Office Manager with 30 years experience in community development, event planning, office management and graphic design.

Dome Diameter	Sq. Ft. of 1st Floor	Sq. Ft. w/ 2nd Floor	Volume in Cu. Ft.
38'	1134	1870	14365
36'	1017	1678	12215
34'	907	1497	10290
32'	804	1326	8579
30'	706	1166	7069
28'	615	862	5747
26'	531	743	4601
24'	452	633	3619
22'	380	532	2788
20'	314	440	2094
18'	254	n/a	1527
16'	200	n/a	1072

**Licensing:** We are currently offering regional licenses to developers and other qualified individuals who want to put our patented system to use on their own projects.

**The Second-Generation Printer:** Coming soon, our second-generation printer is designed for larger industrial and commercial applications, capable of building domes up to 100' in diameter.

**Contacts:** For more information on 3DSD, licensing or investment opportunities, please contact Ms. Commitment L. Israel, Chief Executive Officer [commitment@3dsd.org](mailto:commitment@3dsd.org) 425-210-4175.

To discuss development project specifications and feasibility please contact Noah Israel, President & Director of Technology Integration, [noah@3dsd.org](mailto:noah@3dsd.org)