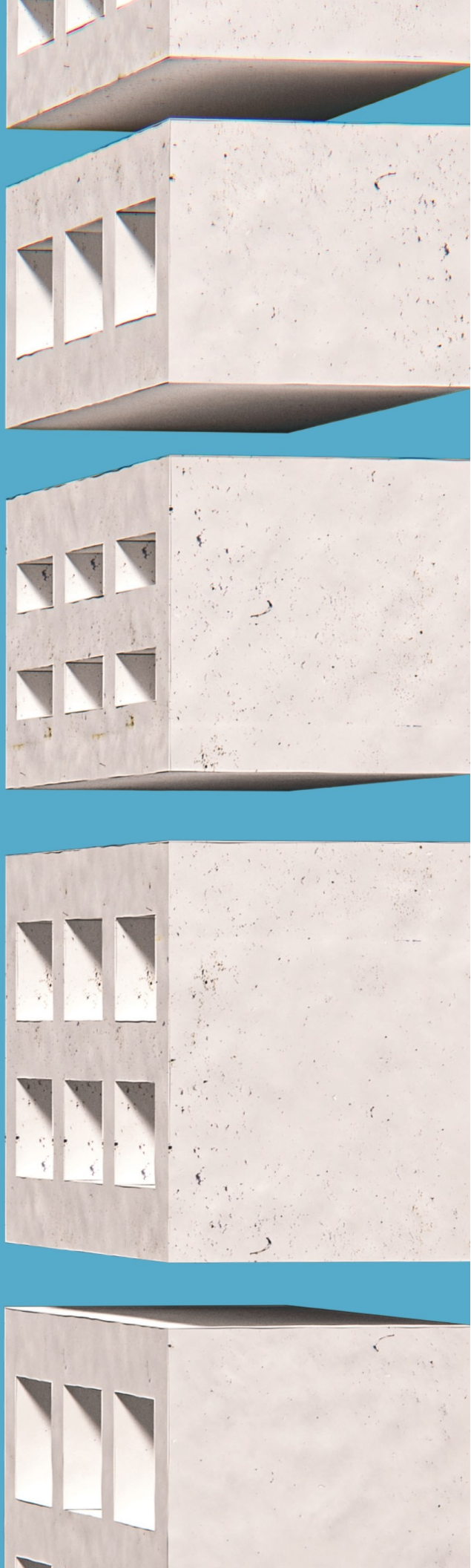
GreenJams

ā hub
aspire. associate. achieve.



Turning Buildings into carbon sinks

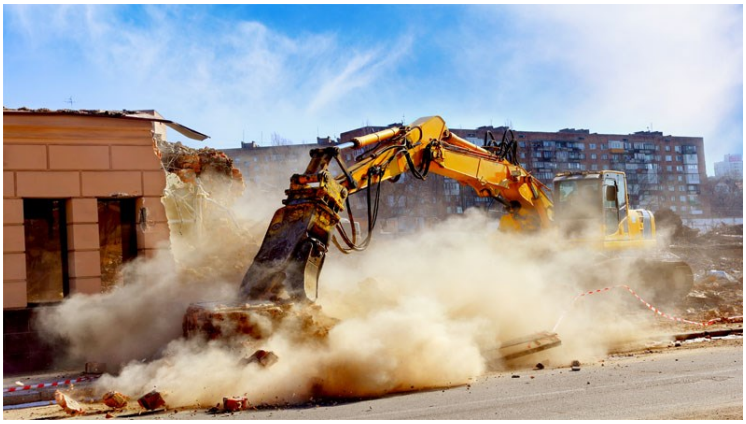
An Andhra University Incubation Hub (ā hub)
Incubated startup case study

Company;	GreenJams BuildTech Private Limited
Sector:	Construction Tech
Headquarters:	Visakhapatnam
Year of Incubation:	2022
Incubator:	Andhra University Incubation Hub (a¯hub)
Founding Team:	Tarun Jami, Varun Jami
Website:	www.greenjams.org

GreenJams is a globally acclaimed cleantech startup working to remove 10% of global carbon dioxide emissions. The company was established in October 2019 and has since grown its presence across Uttarakhand, Uttar Pradesh, and Andhra Pradesh.

In 2017, when it came to light that a staggering 45% of global carbon emissions stem from the built environment, GreenJams found its calling. The singular goal of the organization was to do all we could to create a building material that is robust enough to handle all the construction demands of the near future, and sustainable enough that climate impact would be fully curtailed. And with the creation of Agrocrete®, the course towards the goal was laid.

THE CHALLENGE



A staggering 45% of global carbon emissions stem from the built environment, The materials used for the construction activities, the space conditioning requirements and the construction activities are one of the major reasons for climate change. The real estate developers are facing severe regulatory pressure to reduce the carbon footprint of the buildings and the profits are dwindling.

Over 100 million tons of crop residues are burnt annually in India resulting in over a million premature deaths due to the associated air pollution and over Rs. 2 lakh crores of economic losses due to loss of public health and worker productivity. Across the world, almost 2 billion tonnes of crop residues are improperly discarded through burning or landfilling, accounting for up to 4% of global carbon emissions.

AGROCRETE® BLOCKS

To do this, GreenJams found a way to reuse the crop residues being burnt in the Indo-Gangetic plains to create a robust building material by inventing BINDR™, a revolutionary binder that enabled the combination of crop residues and other industrial by-products to create the carbon-negative building material: Agrocrete®, the world's first carbon-negative load-bearing construction block. Agrocrete® is a 100% upcycled material made from crop residues that farmers would otherwise burn. The crop residues are chemically bound within a mineral matrix created by BINDR™. Therefore, the biogenic carbon in the crop residues is locked forever within Agrocrete®, making it carbon-negative.

Agrocrete® Hollow Blocks aren't only carbon-negative and lightweight; they offer 3.5 times higher thermal insulation at half the cost while being just as strong as traditional clay and fly-ash bricks, making AAC blocks a thing of the past. It is for this reason that they don't cause any changes in construction procedures. They can easily withstand hammering and resizing, have excellent bonding with plaster, and are mason friendly.

Technical Specifications

Strength
≥5 MPa

Durability
75+ Years

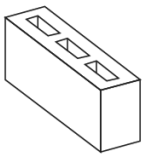
Water Absorption
10 - 12%

Density
800 kg/m³

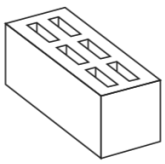
U - Value
1.3 - 1.6 W/m²K

Embodied Carbon
–0.15 kg CO_2/kg

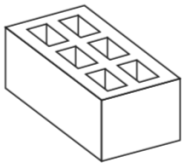
Available Sizes



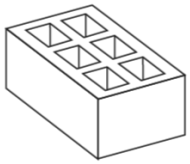
L: 400mm/ 16in
B: 100mm/ 4in
H: 150mm/ 6in



L: 400mm/ 16in
B: 150mm/ 6in
H: 150mm/ 6in



L: 400mm/ 16in
B: 200mm/ 8in
H: 150mm/ 6in



L: 400mm/ 16in
B: 225mm/ 9in
H: 150mm/ 6in

VALUE PROPOSITION

50%
Lower Cost of Construction

350%
Higher Thermal Insulation

100%
Faster Construction

Other Features

Accepts hammering and chiselling

Excellent bonding with plaster

Monumental durability and life

Mason-friendly

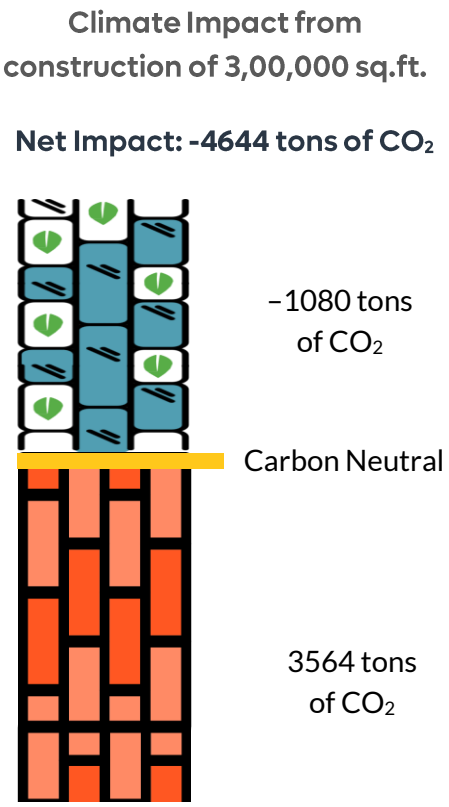
Higher strength

Excellent finish

CLIMATE IMPACT

90% of the bricks manufactured in India are from the unorganized sector. They are hand-molded by underpaid workers under poor occupational safety standards and fired in primitive, energy intensive kilns. These kilns use coal and contribute to 20% of the world's black carbon emissions. In some South Asian cities, they're responsible for up to 91% of particulate matter emissions, a major component of the air pollution that kills 7 million people around the world every year.

Agrocrete® is a rare find in today's carbon-intensive market, having both high-thermal performance and a low-environmental impact. Life Cycle Analysis of Agrocrete® blocks done as per the European Standard EN 15804 (A1 and A2) as well as ISO 21930, indicates that Agrocrete® blocks capture more CO_2 than the total emissions. This is achieved because of use of crop residues as the major component.



INTELLECTUAL PROPERTY

INTELLECTUAL PROPERTY INDIA
PATENTS | DESIGNS | TRADE MARKS
GEOGRAPHICAL INDICATIONS

Patent No. 380547

Agrocrete® was developed by GreenJams indigenously. It is proudly made in India for the world. It is patented (granted) in India and pending in 9 jurisdictions around the world. The patent comprises of any masonry unit primarily made of crop residues, the different viable compositions of the raw materials, the prescribed manufacturing process and the equipment used to manufacture Agrocrete® Blocks. Agrocrete® is a registered trademark in India.

AGROCRETE® RECOGNITION

Testing & Certifications

Agrocrete® Blocks are tested in accordance with IS 2185: Part II. While the standard published is for specifications of concrete masonry units, the same metrics of measurement and testing procedure is adopted for Agrocrete® Blocks. The blocks have been certified by CSIR-Central Building Research Institute, Roorkee and Building Materials Technology Promotion Council (BMTPC), Ministry of Housing & Urban Affairs. Additionally, the Agrocrete® blocks climate impact has been verified and filed with the International EPD System.

Achievements & Press Coverage

GreenJams has established itself as a leading company in the field of decarbonizing the construction industry through innovative solutions. It has gained recognition from various organizations and media outlets, which has helped to establish its credibility and value proposition, as well as demonstrate potential for growth and customer interest.

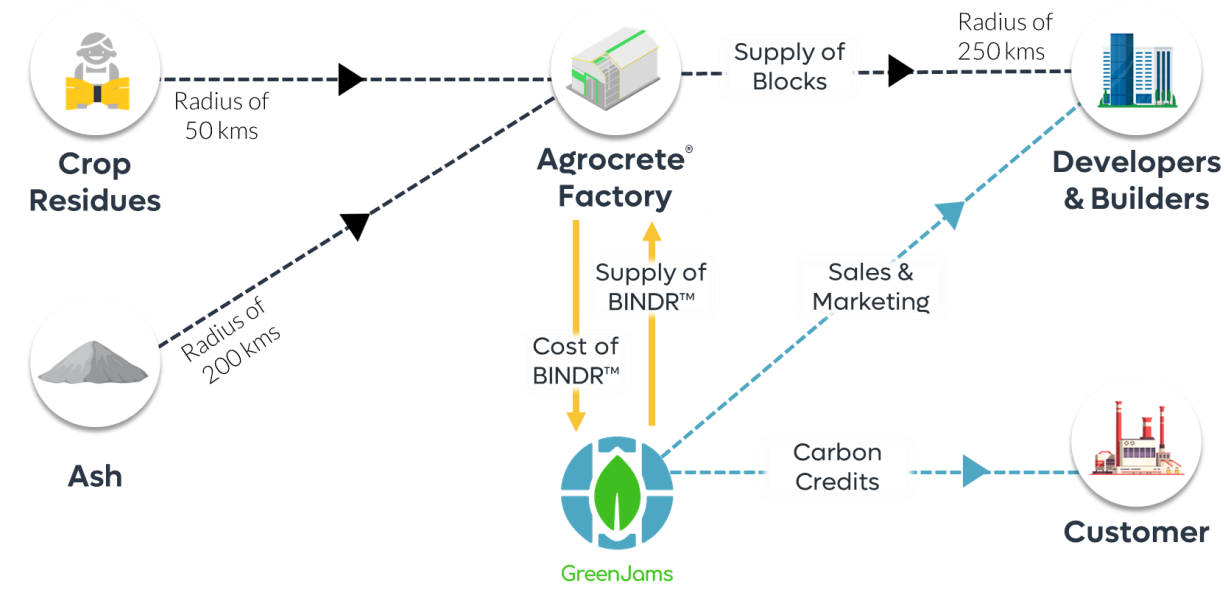
Recognized & Supported by

MINISTRY OF AGRICULTURE & FARMERS WELFARE Government of India

MINISTRY OF HOUSING & URBAN AFFAIRS Government of India

DEPARTMENT OF SCIENCE & TECHNOLOGY Government of India

BUSINESS MODEL



At GreenJams, we have devised an innovative franchise manufacturing model, where the technology is licensed to manufacturing partners who set up greenfield or brownfield factories. With an exceptionally low setup cost vs alternatives like AAC blocks, franchisees establish manufacturing units and supply to markets within a radius of 250kms. GreenJams supplies the BINDR™ to the franchisees and ensures commercial success through sales, marketing and promotions.

IMPACT

75.9 MT Carbon dioxide captured	**2x** Agrocrete® Factory at Meerut, U.P. & Vizag, A.P. with total capacity of 5,000 blocks per day.	
257.4 MT Carbon emissions avoided	**10+** Projects Completed using 50,000+ blocks for Residential & Industrial Buildings.	**90%** Customer Retention Rate and ₹65+ Cr. enquiries for Agrocrete® blocks across India.

INCUBATION SUPPORT AT ā hub

GreenJams is incubated at Andhra University Incubation Council (ā hub) from start of 2022, and has received support in various forms;

Branding through media (digital, electronic and print)

Access to markets through networking

Access to Investors in India and US and readiness for Series A investment

Access to mentors and advisors

Access to engineering and management talent from Andhra University

Access to low-cost infrastructure and office space

Low-cost retainer services

Event participation and networking opportunities

Access to labs and other scientific resources

GreenJams is rapidly expanding its manufacturing capacities across the country and internationally, with focus on onboarding marquee tier 1 real estate developers and builders and large multi-national corporations focused on achieving their ESG goals. The active support from ā hub is enabling opportunities for GreenJams for raising funds, developing franchise network, and manufacturing expansion, as it looks to remove 10% of global carbon emissions.

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