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- **Kunjpreet Arora**, Co-Founder & CEO, Angirus

India's construction boom is colliding with mounting plastic and demolition waste. **Angirus** is responding with **Wricks®**, made from recycled waste and already deployed in over 400,000 units nationwide. **Kunjpreet Arora**, Co-Founder and CEO, explains the technology, impact and growth roadmap.



Kunjpreet Arora,
Co-Founder & CEO, Angirus

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performance and economics.

Wricks® is made from locally available single-use plastic and construction waste, without virgin resources. Plastic replaces cement as the binder, while recycled construction aggregates provide strength. The manufacturing process is also highly automated, requires significantly less land than traditional brick kilns, and is independent of seasonal weather conditions.

Could you explain the technology behind Wricks® and how it compares with conventional materials?

Wricks® is designed to solve practical construction

challenges, not merely provide an eco-friendly alternative. It is 50 per cent stronger than conventional bricks and absorbs 90 per cent less water. Its water absorption is below 2 per cent compared to around 15-20 per cent for clay bricks. It also provides significantly better thermal insulation and is completely dampproof.

Its finish can reduce or eliminate waterproofing and plastering in exposed-brick applications. The patented process involves mixing, melting and moulding. Plastic and construction waste is processed under controlled temperature and pressure, then moulded through hydraulic compression. The products are demoulded within five to 10 minutes.

Could you share a project where Wricks® delivered measurable impact?

Wricks® was used for the walls and roofing of a sustainable farm villa near Bengaluru. The project used about 15,000 bricks and 3,500 roofing tiles, recycling more than 44 tonne of plastic and construction waste. It avoided nearly 20 tonne of carbon emissions compared to clay bricks, validated through a third-party lifecycle analysis. Its dampproof properties

With several alternative building materials available, what industry gap did Angirus identify and how does Wricks® address it?

The construction industry already has alternatives such as AAC blocks, fly-ash bricks and concrete blocks but these have limitations. AAC blocks may crack due to contraction and expansion, while fly-ash bricks can be region-specific and still require cement, water and natural resources. We saw the need for a material combining sustainability,



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suited Bengaluru's monsoon climate and the site's high groundwater levels. Installation remained the same as for conventional materials.

Exposed brickwork saved ₹40-50 per sq ft in plastering costs. Our estimate indicates an overall cost reduction of 30 per cent by saving on mortar and waterproofing cost, although this has not been independently assessed.

How has the construction industry responded and what have been the main adoption challenges?

Construction is a traditional industry, so convincing builders and architects to adopt a new material was initially difficult. We realised that sustainability alone was not enough. Adoption

had to be supported by test reports, case studies, demonstrations and free pilots.

Our approach has therefore been evidence-based. We invested heavily in government-accredited laboratory testing, field trials, demonstration projects and pilot installations. Confidence improved when users saw that Wricks® offered strength, waterproofing and insulation while fitting into existing construction practices.

Today, we see increasing demand driven not only by sustainability goals but by ESG reporting, green building certifications and the need for durable, maintenance-friendly

materials. Developers are increasingly asking how construction materials can contribute towards carbon reduction without compromising project economics – and that's exactly where Wricks® creates value.

How are Angirus' partnerships helping drive wider adoption of Wricks®?

Angirus works with authorised waste-management organisations such as Hasiru Dala and Saahas Zero Waste to source low-value plastic waste, and has collaborated

STARTUP INNOVATION

Innovation in Action

Project Name: Biome Environmental Solutions – Sustainable Farm Villa

Location: Bengaluru, Karnataka, India

Project Type: Sustainable Residential Farm Villa

Developer/Client: Biome Environmental Solutions

Application of Wricks®: Construction of exposed masonry walls and roof tiles for a climate-resilient farm villa.

Material Impact

Quantity of Wricks® used: 15,000 Wricks® + 3,400 Roof Tiles

Conventional material replaced: Conventional fired clay bricks and traditional roofing materials.

Type and quantity of waste utilised:

- Single-use plastic waste recycled: 12 tonne
- Construction & Demolition (C&D) waste recycled: 36 tonne

Total waste utilised: 48 tonne

Measured Outcomes

Waste diverted from landfill: 48 tonne

Carbon reduction achieved: 26 tonne CO₂e (compared to conventional clay brick construction)

Cost/time/resource savings:

- Eliminated waterproofing requirements due to the inherent dampproof properties of Wricks®.
- Saving 45-50 Rs/sq ft plastering cost.
- No curing and soaking required for Wricks, saving time and approx 1 litre water/unit
- Approximately 90 per cent lower water absorption, reducing moisture-related deterioration.
- Improved thermal insulation helps maintain lower indoor temperatures and reduces cooling energy demand.
- Uniform machine-made dimensions lead to better alignment and lower construction waste.
- Same handling and installation process as conventional bricks, enabling seamless adoption by masons.

training. As recycled materials vary between batches, we closely control raw-material processing, inspection and production. We are also developing a decentralised manufacturing model with local partners to reduce logistics costs, recycle waste locally and serve different states. The objective is to create a manufacturing network that is both scalable and quality-assured, allowing builders to access Wricks® with the same confidence as any conventional construction material.

What is Angirus' vision for future growth?

Circular construction materials will become essential as India's urbanisation grows alongside plastic waste, construction debris and carbon emissions. Materials will increasingly be assessed on lifecycle performance, embodied carbon, durability and circularity, rather than cost alone. Angirus plans to expand beyond bricks into paver blocks and tiles, establish decentralised manufacturing hubs across India and build a broader portfolio of circular construction materials.

Our short-term plan is to focus on India and eventually move into international markets. Our long-term ambition is to demonstrate that every city can transform its own waste into high-performance building materials, creating local jobs, reducing landfill waste, lowering carbon emissions and fundamentally changing how sustainable cities are built.

Ultimately, our mission is not just to manufacture better bricks; it is to help redefine the future of construction through circular engineering.

— PRANJAL PATIL | CW

with Brigade to procure construction debris. On the demand side, we collaborate with architects, developers, sustainability consultants and engineering firms to integrate Wricks® into real-world projects. These early projects provide valuable technical feedback while demonstrating commercial viability. We also work with research institutions for product testing and

validation, helping ensure that our materials meet rigorous quality and performance standards.

What are Angirus' priorities as it scales?

Our immediate focus is expanding manufacturing capacity while maintaining consistent quality through standard operating procedures, automation and worker

To share your views, write to editorial@ConstructionWorld.in