

Green Façades:

The Future of
Sustainable Architecture



Cleaner Air,
Healthier Cities



Energy Efficiency,
Lower Costs



Cooling Cities,
Greener Tomorrow



Better Wellbeing,
Stronger Communities

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Façade Systems

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ABOUT THE AUTHOR

Ahamed Jasim graduated with a Bachelor of Technology in Automobile Engineering from SCMS Group of Institutions and has most recently worked as a Sales Engineer at Rolling Aluminum. In this role, he specialised in the sales of cold-rolled aluminium products across industrial, automotive, and construction sectors, including pre-painted and laminated coils for specialised applications. He contributed significantly to technical sales initiatives by working closely with clients to deliver tailored solutions, preparing detailed quotations, and coordinating with internal teams to ensure seamless execution of customer requirements. Ahamed has demonstrated strong capabilities in building and maintaining client relationships, offering technical support, and monitoring market trends to identify emerging sales opportunities.



By integrating plants and greenery into building exteriors, they bring significant environmental, economic, and social benefits

As cities continue to grow vertically, the demand for innovative solutions that merge functionality with sustainability has never been greater. One such solution gaining momentum across the world is the green façade.

Green façades are not just an aesthetic choice—they are a strategic approach to urban sustainability. By integrating plants and greenery into building exteriors, they bring significant environmental, economic, and social benefits.

WHY GREEN FAÇADES MATTER

- **Space-saving Sustainability:** in dense urban areas where open green spaces are limited, vertical greenery transforms otherwise unused wall surfaces into living ecosystems.
- **Improved Air Quality:** Plants act as natural filters, reducing dust, pollutants, and CO₂ levels, while enriching the air with oxygen.
- **Energy Efficiency:** Green façades act as insulation—lowering heat absorption in summer and reducing energy demand for cooling. This directly

translates to cost savings and lower carbon footprints.

- **Urban Heat Island Mitigation:** By reducing surface and ambient temperatures, green façades contribute to creating cooler, healthier cities.
- **Enhanced Wellbeing & Aesthetics:** Studies show that

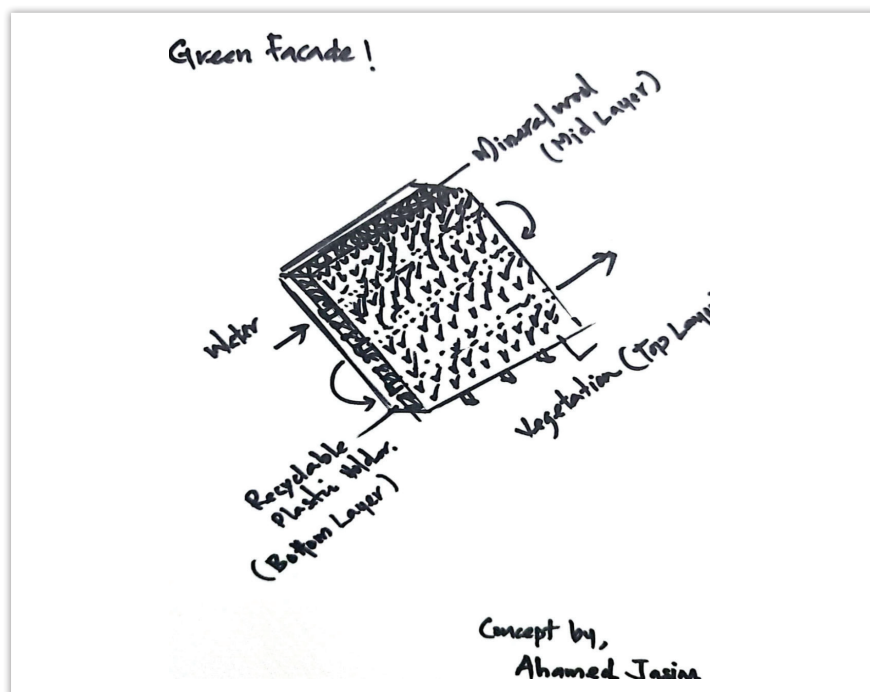
greenery promotes mental wellbeing, reduces stress, and increases productivity. For buildings, it elevates design, creating a blend of technology and nature.

BEYOND AESTHETICS: A PROBLEM-SOLVING APPROACH

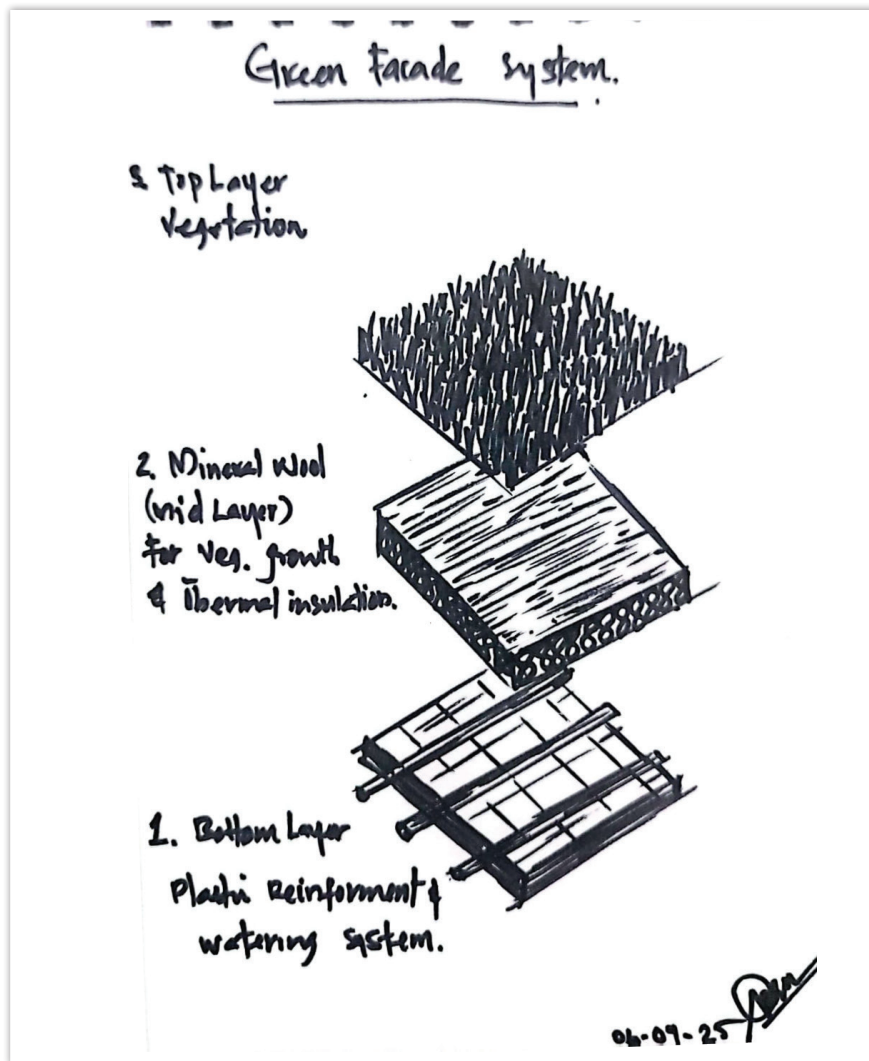
Green façades solve real-world problems for developers, architects, and city planners:

- Limited land for landscaping.
- Rising energy costs.
- Increased demand for sustainable certifications (LEED, WELL, Estidama).
- Corporate ESG commitments to greener operations.

The demand for sustainable and climate-smart construction is reshaping how we design our cities. To meet this challenge, a 3-layer green façade system has been developed that combines engineering, sustainability, and smart resource management.



The demand for sustainable and climate-smart construction is reshaping how we design our cities



A 3-layer green façade system that combines engineering, sustainability, and smart resource management

This solution is not just about aesthetics—it is about delivering energy efficiency, biodiversity, and water-smart innovation to urban projects.

THE THREE-LAYER SYSTEM EXPLAINED BASE LAYER

Plastic mold with water & fertilisation circulation at the foundation lies a customised plastic mold designed to hold an integrated irrigation and fertigation system (water + nutrient supply).

- Water circulation ensures plants receive consistent

hydration, while recycling minimises waste.

- Fertilisation (fertigation) delivers nutrients directly with water flow, promoting healthier and faster plant growth.
- Smart controls can be added for automated monitoring, ensuring efficiency even in large-scale façades.

MID LAYER

Rockwool Insulation The second layer is rockwool, a sustainable growth medium offering:

- High water and nutrient retention.

- Excellent root support and oxygen balance.
- Natural insulation properties to stabilise façade surface temperatures.

This creates a resilient base for vegetation to thrive in diverse climates.

SURFACE LAYER

Vegetation / Plant Growth: The visible outer layer showcases greenery tailored to the environment—from climbers and modular panels to shrubs or flowering plants. This layer provides:

- Urban cooling and air purification.
- Noise reduction and dust filtration.
- Aesthetic value that transforms buildings into living architecture.

WHY THIS SYSTEM IS FUTURE-SUSTAINABLE

- Smart Irrigation + Fertigation – Reduces water and fertilizer use by up to 50%, supporting resource efficiency.
- Durability & Performance – Plastic molds and aluminium supports extend system life, while rockwool sustains growth.
- Energy Savings – Acts as natural insulation, reducing building cooling demand.
- Modularity & Scalability – Suitable for towers, commercial complexes, and retrofit projects.
- Compliance Ready – Helps projects achieve LEED, WELL, and Estidama certifications.

A CALL FOR FAÇADE COMPANIES

This 3-layer green façade system with integrated water and fertilisation circulation is more than an idea—it is a ready-to-implement solution for façade companies aiming to stand out in a competitive, sustainability-driven market