

TRANSFORMING WASTE

**Advanced Waste-to-Resource Technology
for Sustainable Cities and Circular Growth**

Proven Municipal Solid Waste Recycling System

HOW CATORY SUPPORTS THE UAE'S NATIONAL GOALS

Catory's waste-to-resource system contributes to landfill diversion, circular material use and lower-impact urban development.



NET ZERO
2050
UAE NATIONAL PATHWAY



CATORY CONTRIBUTION:
Reduces landfill dependence
and supports circular
resource use.



47%
GHG EMISSIONS REDUCTION
BY **2035**
FROM 2019 LEVELS



CATORY CONTRIBUTION:
Helps address waste-sector
emissions through diversion
and recovery.



80%
LANDFILL DIVERSION
BY **2031**
NATIONAL WASTE-SECTOR PRIORITY



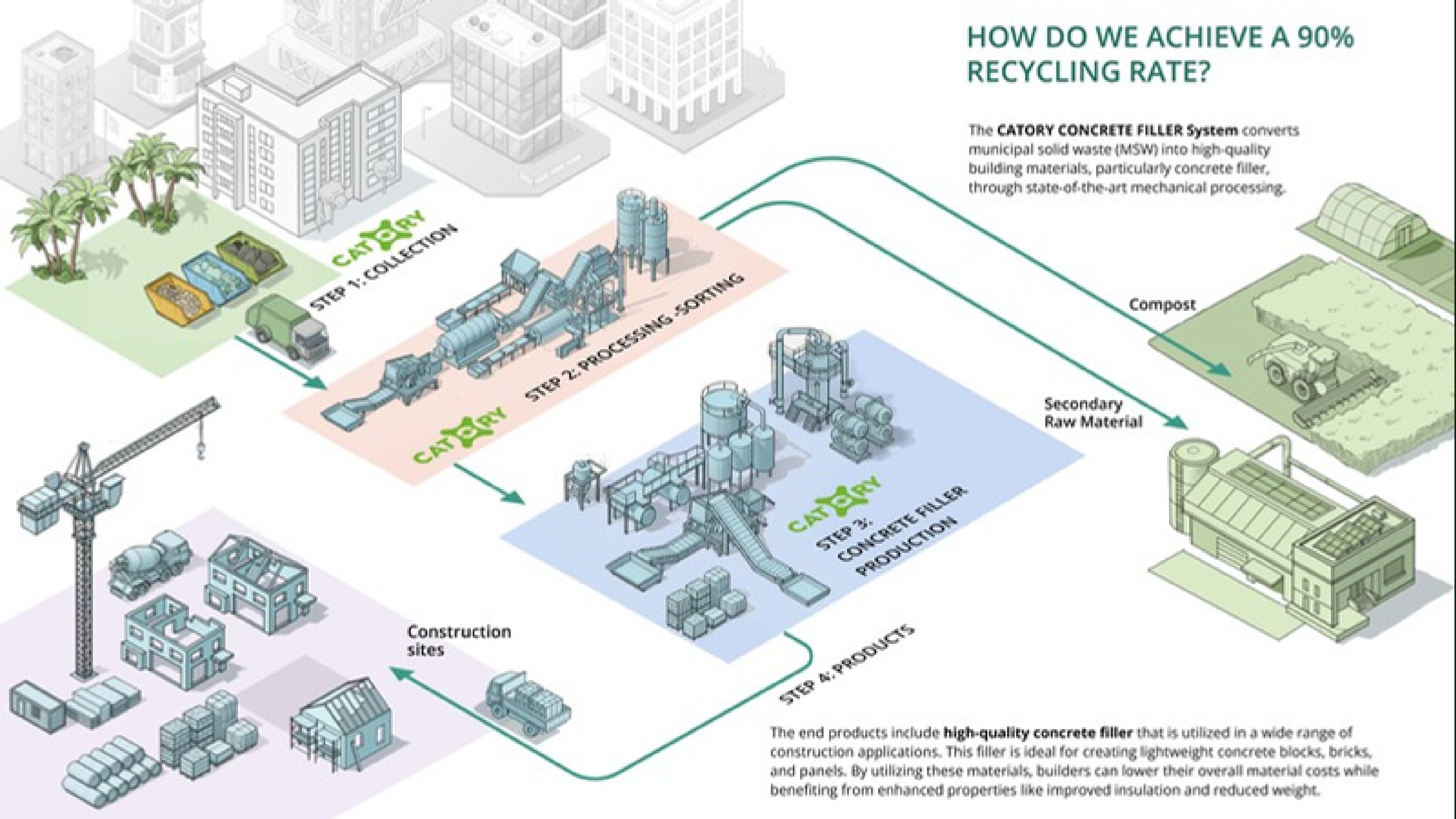
CATORY CONTRIBUTION:
Turns municipal waste
fractions into compost,
secondary materials and
construction inputs.



ADVANCING THE UAE'S GREEN TRANSITION THROUGH INNOVATION, PARTNERSHIP AND LOCAL IMPACT.

HOW DO WE ACHIEVE A 90% RECYCLING RATE?

The **CATORY CONCRETE FILLER System** converts municipal solid waste (MSW) into high-quality building materials, particularly concrete filler, through state-of-the-art mechanical processing.



The end products include **high-quality concrete filler** that is utilized in a wide range of construction applications. This filler is ideal for creating lightweight concrete blocks, bricks, and panels. By utilizing these materials, builders can lower their overall material costs while benefiting from enhanced properties like improved insulation and reduced weight.

ALIGNED WITH THE UAE'S ENVIRONMENTAL PRIORITIES

One integrated system supporting waste reduction, circular materials and more resilient urban development.



ONE SYSTEM, FOUR ENVIRONMENTAL OUTCOMES

LANDFILL DIVERSION



REDUCE LANDFILL DEPENDENCE

Recover useful materials from mixed municipal waste and reduce the residual fraction requiring disposal.

Reduced residual waste

SOIL AND LANDSCAPE SUPPORT



RETURN ORGANIC VALUE TO THE LAND

Convert biodegradable material into nutrient-rich compost to improve soil health and support landscaping, agriculture and urban greenery.

Compost

CIRCULAR MATERIALS



PROVIDE SECONDARY RAW MATERIALS

Recover and prepare materials for industrial reuse, supporting manufacturing and other industrial applications.

Secondary raw materials

LOWER-IMPACT INFRASTRUCTURE



SUPPORT SUSTAINABLE INFRASTRUCTURE

Provide locally produced concrete filler and blocks for lightweight and thermally efficient construction products.

Concrete filler / blocks

FROM LINEAR WASTE DISPOSAL TO A LOCAL CIRCULAR RESOURCE SYSTEM

KEY COMPONENTS



SORTING

- Automatic sorting of household waste collected from various sources
- Advanced technology efficiently separates plastics, metals, and organic materials
- Recovers valuable recyclables, increasing recycling rates and reducing landfill volume



The equipment is **CE** certified, ensuring it meets the all modern requirements and standards for safety and efficiency.



COMPOSTING (35–45%)

- Biodegradable materials are processed in closed fermenters under controlled conditions
- Produces nutrient-rich compost that improves soil quality, supports plant growth, and contributes to agricultural sustainability



CONCRETE FILLER (40–60%)

- The non-recyclable light fraction of the waste is transformed into valuable product: a lightweight concrete admixture



SECONDARY RAW MATERIAL (10–20%)

- The system sorts out secondary raw materials, reducing reliance on virgin resources and supporting the circular economy



TRANSFORMING FEEDSTOCK TO COMPOST

An intelligent, high-temperature aerobic fermentation system that converts organic waste into nutrient-rich fertilizers for agriculture and landscaping.

STAGE 1: FEEDSTOCK

Multiple organic waste streams enter the system.



Sewage Sludge

Municipal sludge from wastewater treatment plants



Kitchen Waste

Leftover food, food scraps, hotel and restaurant waste



Manure from Livestock Farms

Animal manure from farms

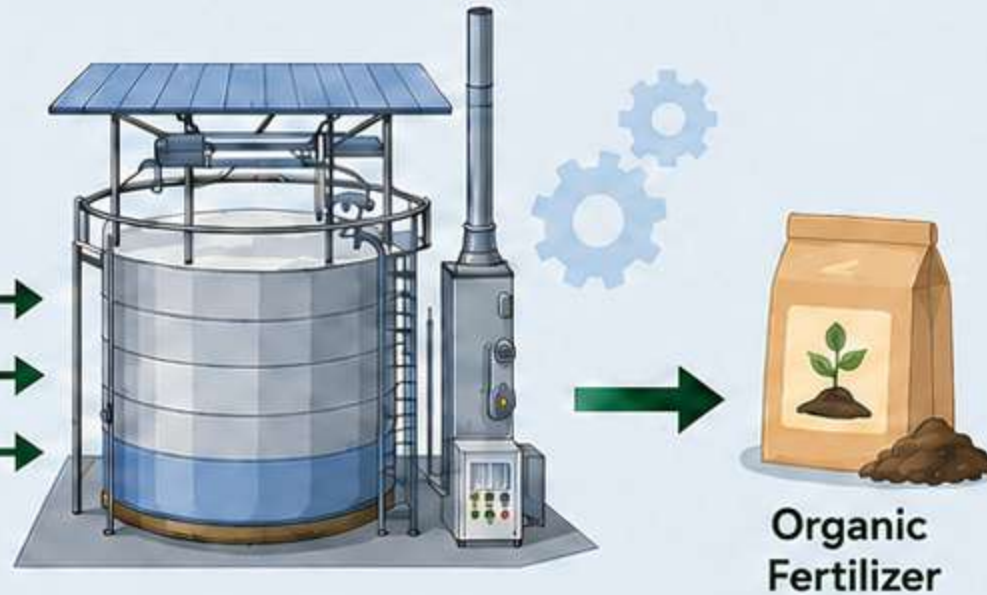


Green Waste

Grass clippings, leaves, small branches, coffee grounds, tea bags

STAGE 2: BIO-MECHANICAL COMPOSTING PLANT

Intelligent high-temperature aerobic fermentation in 3 steps.



The system processes feedstock in the intelligent high-temperature aerobic fermentation tank in three steps. First, municipal sludge is mixed with auxiliary materials (like straw and rice bran) and bacterial agents to reach a moisture content of 60–70%. This mixture is then fed into the tank, where temperature, oxygen levels, and mixing are closely controlled. Aerobic fermentation occurs at 55–75°C for at least seven days, decomposing organic matter and killing pathogens. The result is a nutrient-rich organic fertilizer, ready for agricultural and landscaping use.

STAGE 3: APPLICATIONS

Organic fertilizer is used to improve soils and green spaces.

Crop Fields Improvement

Enhances soil fertility and crop yields



Lawns for Parks

Promotes healthy, green lawns



Ornamental Trees

Supports strong growth and vitality



FROM RESIDUAL WASTE TO CIRCULAR CONSTRUCTION MATERIALS

How the Catory concrete filler system converts a sorted waste fraction into lightweight construction applications.

STAGE 1: INPUT MATERIAL

Mixed municipal solid waste enters the system and is sorted into material fractions.



Mixed Municipal Solid Waste

Sorting & Separation

Non-recyclable Light Fraction



Plastics & Films

Packaging Residue

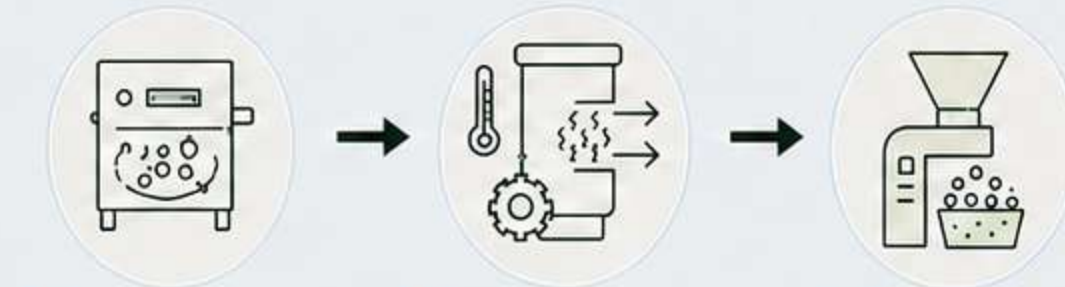
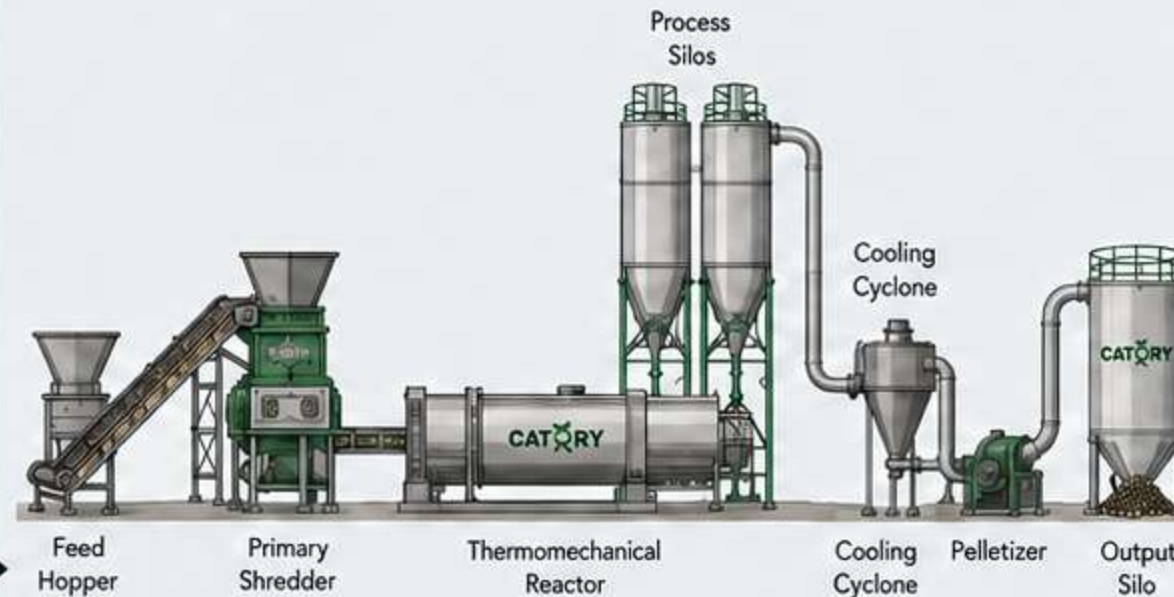
Paper & Cardboard

Textiles & Fabric

Foam & Light Composites

Small Mix Residuals

STAGE 2: CATORY CONCRETE FILLER SYSTEM



1 HOMOGENIZATION

The fraction is converted into a homogenous mass for uniform processing.

2 TRANSFORMATION

Thermomechanical processing creates a carbon-based filler suitable for concrete production.

3 PELLETIZING

The processed material is pelletized into a pre-elite fraction for lightweight concrete mixes.

STAGE 3: APPLICATIONS

The concrete filler output can be used in lightweight construction applications.



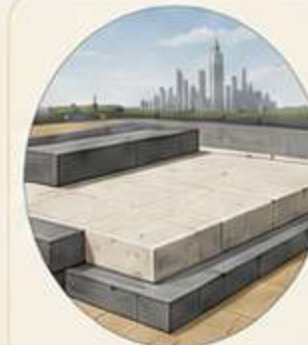
1. CONCRETE MASONRY UNITS

Used for blocks and panels with lower weight and improved insulation.



2. ACOUSTIC WALLS

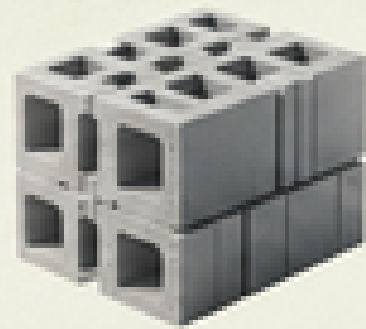
Supports lighter soundproof wall systems for urban environments.



3. PRE-MIXED BAGGED CONCRETE FOR ROOF INSULATION

Enables lighter roof insulation solutions with strong thermal performance.

BENEFITS OF CATORY OVER TRADITIONAL CONCRETE



1 ENHANCED EFFICIENCY

- **Weight Reduction:** Lighter materials mean easier transportation and installation, which is important for fast construction in Dubai.
- **Time-Saving Solutions:** Using lighter materials helps speed up the building process, allowing developers to meet tight deadlines.



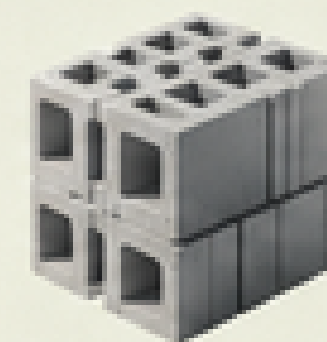
2 COST-EFFECTIVENESS

- **Competitive Pricing:** A cost-effective option that maintains quality, making it attractive for developers optimizing budgets in times of rising construction costs.



3 NOISE REDUCTION

- **Acoustic Benefits:** Helps to soundproof urban environments.



4 SUSTAINABILITY

- **Improved Thermal Insulation:** Helps buildings stay energy-efficient, reducing cooling costs and supporting eco-friendly building practices.

CONTACT US

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