AIMING FOR SUSTAINABLE URBAN DEVELOPMENT!

Turn construction waste into functional pavement using recycled bricks and roof tiles!
<table>
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<tr>
<th>Goal</th>
<th>To make cities around the world more recycle-oriented.</th>
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| Issue      | In a developed city or a developing city in the future...  
As urbanization progresses, and the ground is covered with concrete and asphalt, there are increasing risks of the ‘heat island’ phenomenon and heavy rains causing urban flooding. |
| Solution   | We are working to provide solutions by offering the following:  
① Permeable paving materials  
② Water-retaining pavement materials  
③ Know-how and technology to produce the above  
④ Pavement material manufacturing equipment (mobile plant) |
Actually ...

In Japan, people are having trouble with the processing of Waste Roof Tiles (WRT).
Destruction of WRT

About 1 million tons of WRT are generated every year in Japan.

Most of this ends up in Landfills.
Convert WRT to construction materials!

WRT available in large quantities

Processing (crushing)

Gardening material

Paving material

<table>
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<th>Grades and Uses for Crushed Recycled WRT</th>
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<tr>
<td>Sand</td>
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<td><img src="image1" alt="Sand S" /></td>
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Features of roof tile pavement material
Infiltration

- Heavy rain showers caused by global warming.
- Flood damage in cities.

**KEYWORDS** Permeability and water retention.
Recycled roof tile pavement
Recycled roof tile pavement
Roof tile pavement is “COOL”

Ishikawa Prefecture

Ready-mixed concrete plant

Recycled WRT Paving Material (Permeability & Water Retention)

Cool paving material

Improve the local environment with recycled WRT paving material!
Cool paving materials in use all over Japan

Recycle roof tiles produced locally for local consumption.

Improve the local environment of all Japan with roof tile pavements.

About 1 million tons of WRT generated annually in Japan.

On-board ready-mixed concrete plant. 「MOBICON」

Ecosystem provides know-how to 20 companies nationwide.
Concrete plant revolution!

On-board ready-mixed concrete plant. “MOBICON” (Mobile Concrete Plant)

Normal ready-mixed concrete plant.

Concrete must be used within 1hr. & 30min. after production. In other words, the trade area is within about 1 hour from the plant.

Excellent mobility, no trade area limitations!
Automatically manufacture various concretes in small lots, regardless of time and place!
Both roof tiles and bricks are made by firing clay at high temperatures. If it is fired, our know-how can be utilized. Japan disposes of more roof tiles than bricks.
Ceramic products are used all over the world. In particular, Europe makes heavy use of both roof tiles and bricks, which are hard and can be recycled as pavement aggregates. There are many roof tiles and bricks used in Asia and South America as well.
Instances of roof tiles and bricks in Southeast Asia

All over Singapore, there are tile-roofed houses.


House under construction. Walls are brick.

Non-fired bricks are increasing as an environmental measure (CO2 reduction, etc.).

Brick factory in Cambodia. (Pavement brick)

Non-fired brick factory in Vietnam. (Non-fired brick = concrete block)

A brick factory emitting black smoke. There are many pre-modern facilities and there may be child labor.
Brick and concrete material, which accounts for most of the construction waste, is illegally dumped, even in urban areas.

This construction waste is unsightly, unsanitary and dangerous.

→ Construction waste is "killing" the capital lake.

→ The suburbs of Lake Damhong (Tan Suan District, Hanoi City) are flooded with garbage and construction waste, causing environmental pollution.
There are many brick factories and brick production is thriving. The factories produce considerable amounts of waste material. At present, air pollution measures are required, but it is also necessary to consider measures for dealing with waste bricks when buildings are demolished in the future.
Make cities around the world recycle-oriented future cities

A fixed plant has high installation & operating costs.

A recycle-based future city where water circulates.

We can also manufacture and supply special ready-mixed products for infrastructure maintenance, responding to every demand.

Brick & Roof Tile Factory
Manufacturing processes generate about 5 to 7% defective products, which then become waste.

Large amount of ceramic waste

Crush and Particle size adjustment.

Local Partner Company

On-board ready-mixed concrete plant. [MOBICON]
It can also be used as a non-fired brick manufacturing machine.

Waste material from building demolition.

Waste material from building demolition.

Landfill disposal site, or Illegal dumping?

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| **Needed** | All over the world by;  
1. Roof Tile & Brick (ceramic industry) manufacturers  
2. Construction contractors  
3. Ministries and agencies, such as municipalities  
4. The taxpayers |  
| **Approach** | Ceramic waste recycling know-how produces permeable, water-retentive pavement, just like the soil, using MOBICON. |  
| **Benefit/Cost** | 1. Waste roof tiles and bricks produce cool concrete pavements and are less expensive than ordinary landscape paving materials.  
2. Specialty concretes can be easily manufactured using MOBICON, making it easy to generate new business. In addition, less water is required for cleaning, which reduces the environmental load.  
3. MOBICON requires only about 1/5 of the capital investment needed for a typical ready-mixed concrete plant. MOBICON is assembled locally, which promotes local employment. |  
| **Competitors** | Fresh concrete and asphalt producers and products.  
Manufacturer of regular ready-mixed concrete plants and mobile ready-mixed concrete plants. |
ECOSYSTEM Inc. 「Overseas Expansion Plan」

**Milestone**

**Company Philosophy**
We are creating an ecosystem.
We pursue the material and intellectual growth of all our stakeholders through our joint efforts.
We contribute to the advancement of society and humankind.

**1st phase**
- Survey of possibilities
- Development of know-how
- Development and improvement of MOBICON

**2nd phase**
- OSEM 26 (Business development)

**3rd phase**
- Establishment of local corporation
- Start business
- Sale of MOBICN
- SDGs 30
- Expand to neighboring countries
- Expand to Europe

**2019～2022**
- JJ 22 (Feasibility study)

**2023～2026**
- OSEM 26 (Business development)
- SDGs 30

**2027～2030**
- Next medium to long-term plan
- Aiming for stock listing

**2027～2030**
- Expand to Europe

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Our SDGs Mapping

Interest

High

Low

Impact

High

Low

1. No Poverty
2. Zero Hunger
3. Good Health and Well-being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions

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Establishment — 1994/12/15
Capital — 19.8 million yen
Web — https://www.eco-system.ne.jp/
Contact — info@eco-system.ne.jp
6 employees (20 groups in total)
Company permission / license
— Industrial waste disposal industry (waste roof tile)
— Construction industry (civil engineering / paving work industry)

In addition to our company name, it is at the heart of our philosophy.

Starting in 1994, as a pioneer of WRT recycling, this company has worked to protect the global environment and to create a more beautiful ecosystem for future generations.

I have taken the initiative, through the recycling of WRT, to improve the global ecosystem.

That is our mission.