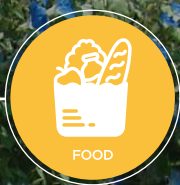


GREEN CURTAINS

SINCE 2007

JAPAN

KYOCERA



PROJECT GOALS

- Reduce energy consumption
- Save on energy costs
- Promote healthy diets
- Reduce CO₂ emissions

Since 2007, Kyocera, a Japanese manufacturer of electronic components and photovoltaic systems, has been covering the outer façades of its buildings with Green Curtains to lower indoor temperatures, save energy, and reduce pollution.

Living curtains of decorative or edible climbing plants, such as morning glory and bitter melon, help to cool the air through water evaporation, reducing the use of air conditioning while at the same time providing natural shade and sequestering carbon emissions. Additionally, the company uses food from these plants for cafeteria meals and distributes some to employees for free.¹

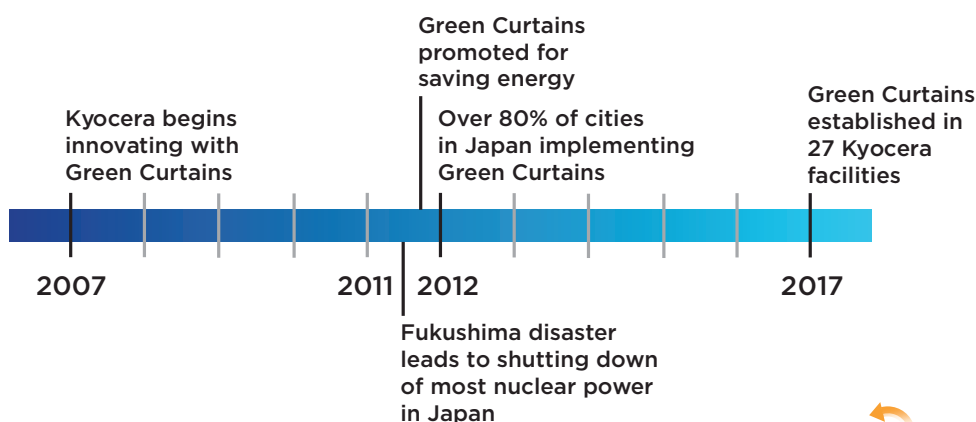
The project was initially launched in Kyocera's Okaya factory and advocated for by the city of Okaya and an environmental citizen's alliance, Eco Life Okaya. It has now spread to 27 factory locations in Japan. As of 2016, Kyocera's Green Curtains covered an area of more than 31,000 ft², resulting in significant summer energy savings and positive aesthetic effects.²

OVERCOMING OBSTACLES






To encourage the spread of Green Curtains, Kyocera created guidebooks and DIY kits and distributes seedlings to its employees and local residents.

Kyocera documented the energy savings impact by conducting thermographic testing to compare the temperature in areas with and without Green Curtains.

GREEN CURTAINS TIMELINE



BENEFITS OF GREEN CURTAINS ACROSS JAPAN^{3, 4, 5}

-  **2°C** Reduction in indoor temperature
-  **15°C** Reduction in outdoor building surface temperature
-  **1.5** Hours/day reduction in air conditioner use
-  **\$256** Monthly energy cost savings in Kamiita town hall building
-  **5** Types of Green-Curtain-grown vegetables served in company cafeterias



LEADERSHIP AND COLLABORATION

BUSINESS

Kyocera (C, D, F, I)

GOVERNMENT

City governments (A, C, D, I)

SOCIAL MISSION

Eco Life, Okaya (A, D)

VOLUNTEERS

Employees, citizens (A, I)

A: Advocacy, C: Champion,
D: Design, F: Funding,
I: Implementation

While Kyocera's Green Curtains started in its Okaya factory in cooperation with the local government and an NGO, the project has become a preferred Corporate Social Responsibility initiative since it directly results in energy savings and involves employees. Since 2011, the Japanese government has promoted Green Curtains as an energy conservation solution following the Fukushima nuclear disaster that affected electricity supply. The government organizes an annual photo contest for Green Curtains, and Ecobank, an environmental NGO in Aichi, has published a Green Curtains teaching manual.

REPLICATION

Over 80% of cities in Japan were implementing Green Curtains by 2012, and as of 2017, there were 231 local governments and 130 elementary schools in Kyoto alone taking part in the Green Curtain movement. Restaurants in Tokyo are serving meals prepared from their Green Curtains, city residents have embraced Green Curtains to cool their homes, and many Japanese companies have emulated Kyocera in establishing Green Curtains.

BENEFITS

CLIMATE BENEFITS



Vegetation helps reduce the urban heat island effect.

HEALTH BENEFITS



OTHER BENEFITS



FOOD & WATER
JOB & ASSETS
**HEALTH, WELL-
BEING, & SAFETY**

CONNECTION
ENERGY & MOBILITY
RESILIENCE

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Multisolving at the Intersection of Health and Climate References

Green Curtains

¹ Japan for Sustainability. 16 January 2009. "Manufacturer Saving Energy by Growing Vertical Gardens on Factory Walls." https://www.japanfs.org/en/news/archives/news_id028656.html.

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<https://global.kyocera.com/ecology/greencurtains/about.html>.

³ Japan for Sustainability. 29 July 2006. "Kamiita Town Growing Bitter Gourds as Office Sunshades." https://www.japanfs.org/en/news/archives/news_id026397.html.

⁴ Tucker, Ikko. 2016. "The 'Green Curtain' as an Educational Project for Spreading Sustainability Awareness." *International Journal of Environment and Sustainability* 5 (1): 1-9.