



An intricately designed Rain Garden featuring a variety of plants, including rare local species.

KEYWORD OF LANDSCAPE DESIGN

ENVIRONMENTAL
SYMBIOSISEVIDENCE
BASED DESIGN

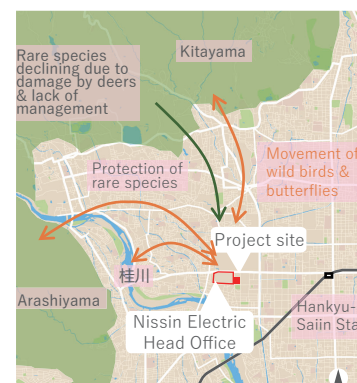
Reused natural stone pathway from the old Kyoto City Tram tracks (Sagano-so Lodge)



A courtyard functioning as a community space (Training Center)

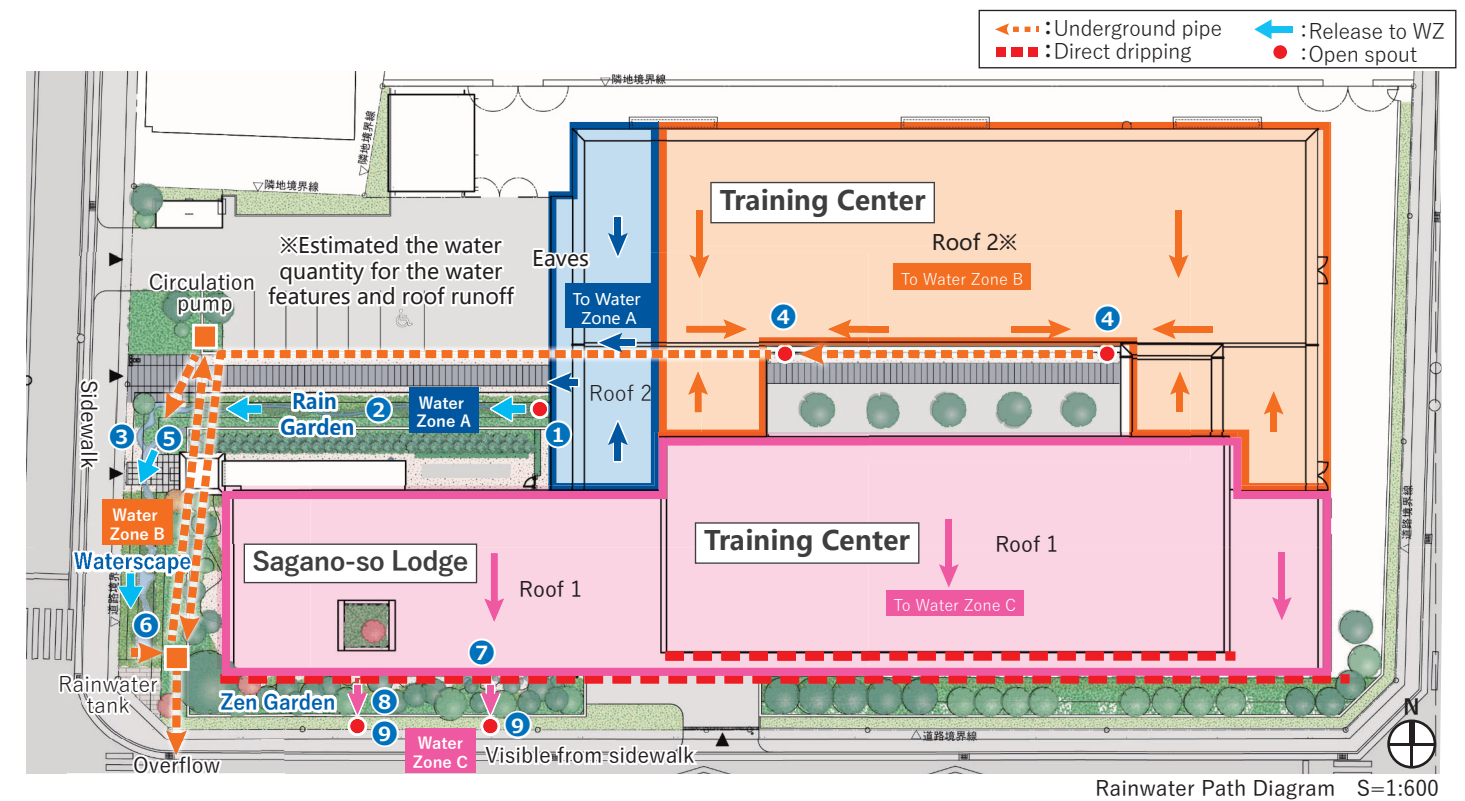
The project entailed the design of a training center and a retreat facility for Nissin Electric Co. Ltd, commemorating its 100th anniversary. Beyond imparting skills to employees, the project, envisioning the next century, aimed to enhance the environment and address local challenges, including:

1) The escalating risk of inland floods in Kyoto City due to frequent torrential rain and potential contamination of the Katsura River and ecosystem degradation from untreated stormwater and sewer system overflow in the project site vicinity.
2) Kyoto, with its historical significance, is home to various plants such as the fragrant Eupatorium, one of the seven autumn herbs, and Iris domestica used in the Gion Festival. These species, listed in the 2022 Red Databook of Kyoto Prefecture, inhabit the 3 mountains surrounding the urban area and are dwindling due to underuse of satoyama, damage by deers, and development activities. Urgent action is needed to preserve these species and cultural elements.

**Nissin Academy Training Center
Nissin Club Saganoso**

Location : 8-8, Umezuminamihiro-cho,
Ukyo-ku, Kyoto City, Kyoto

Main uses : training , retreat
Owner : Nissin Electric Co., Ltd.
Landscape design: Landscape Design Inc.
Architectural design: KAJIMA DESIGN
Construction: Kajima Corporation, Kansai Branch
Site area: approx. 5000m²
Completion: Feb. 4, 2019

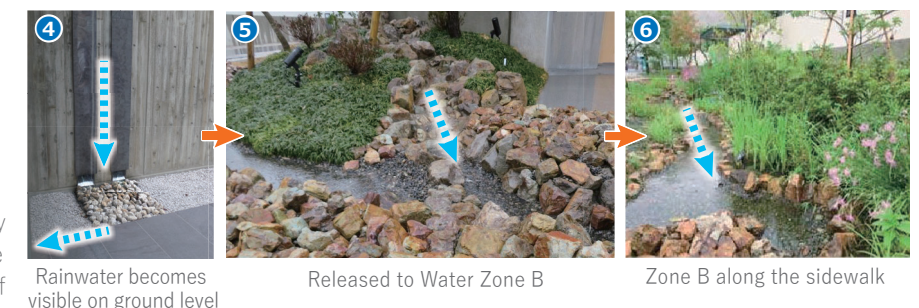
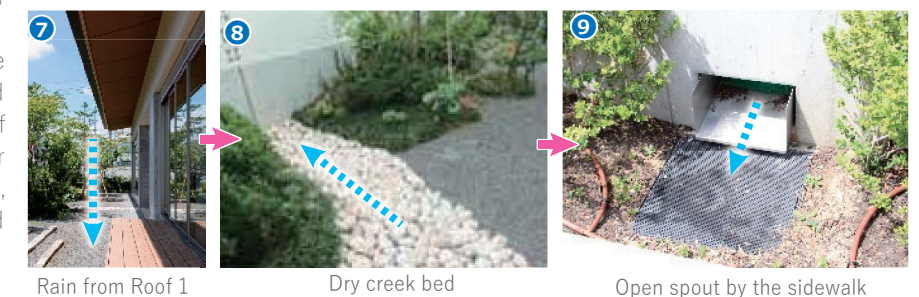
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Providing “Paths” for Rainwater

As a measure to solve the local issues, the entire site was designed to guide rainwater into three gardens and allow it to infiltrate and temporarily store, positioning the process as a 'water path'. Specifically, rainwater flowing on roofs and gutters, not limited to the gardens, is directed to the Rain Garden (Zone A), Waterscape (Zone B), and Dry Zen Garden (Zone C) shown in the diagram, visualizing the flow of water. Methods such as providing open gutters on the boundary walls of the site and signs implemented outside the Water Garden and Water feature walls, brings attention and awareness to both employees and the local community.

How “Rainwater Paths”
Prevent Overflow

Of the total site area of approximately 5,000m², only about 18% is permeable. According to the Engineering Standards for Rainwater Harvesting of the Architectural Institute of Japan, this calculates to a storage/infiltration capacity of about 35mm/day (rainwater retention of 174m³ for the whole site, or about 35% of the base retention of 500m³). After monitoring the Rain Garden for a year, we confirmed a storage rate of 100% at around 10mm/day of rainfall and 66% during heavy rain of around 128mm/day. The garden is designed for gradual rainwater permeation over about 48 hours, effectively storing/infiltrating rainwater and recharging underground water.

Water Zone A “Rain Garden” Brings Rainwater back to Nature**Water Zone B** “Waterscape” Accentuated by Moving Rainwater**Water Zone C** “Zen Garden” Visualization of Rainwater



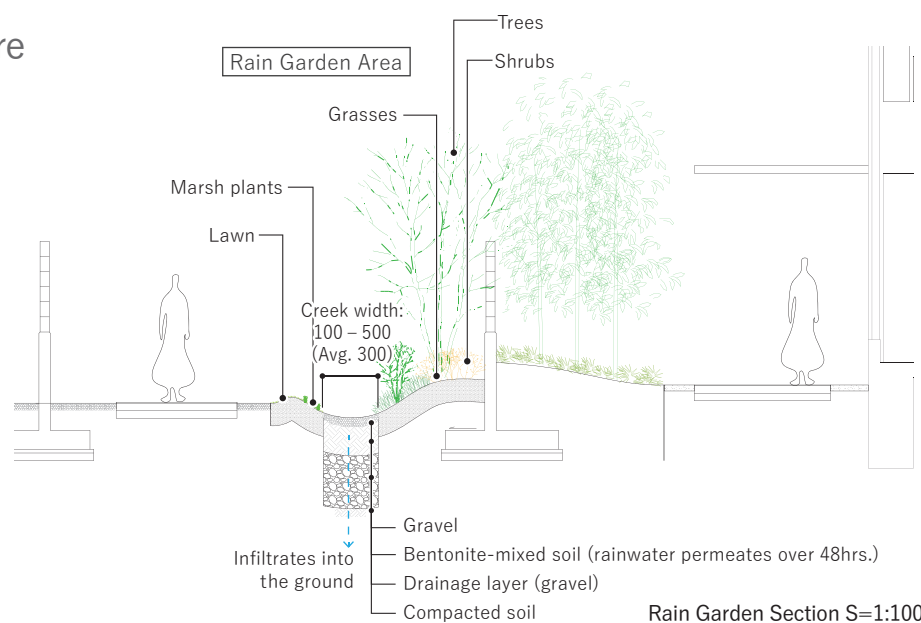
Water Zone A

Bringing Rainwater Back to Nature

The Rain Garden showcases a diverse assortment of flora, which includes rare species. Its purpose is to guide rainwater gently into the soil, alleviating the strain on the municipal sewer system. The vegetation not only captures and filters out impurities but also aids in recharging underground reservoirs with clean water, thereby enhancing the overall water quality of the Katsura River.



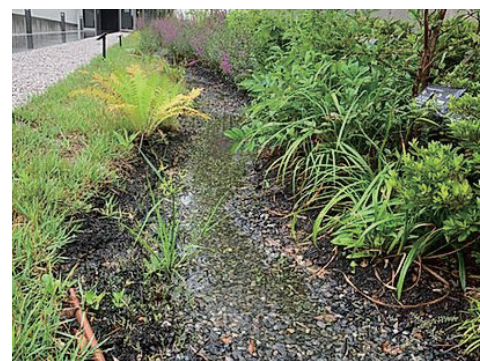
Grasses native to Kyoto that change colors with the season.



Rain Garden Section S=1:100



Rain Garden along the approach contributing to employee awareness enhancement.



Harvested rainwater becomes an important visual element of the Rain Garden.

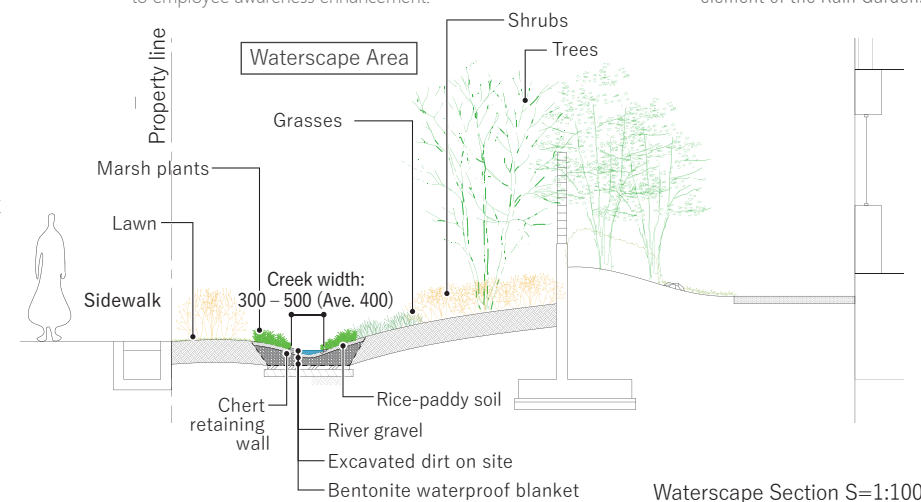
Water Zone B

Rain-Harvesting Waterscape

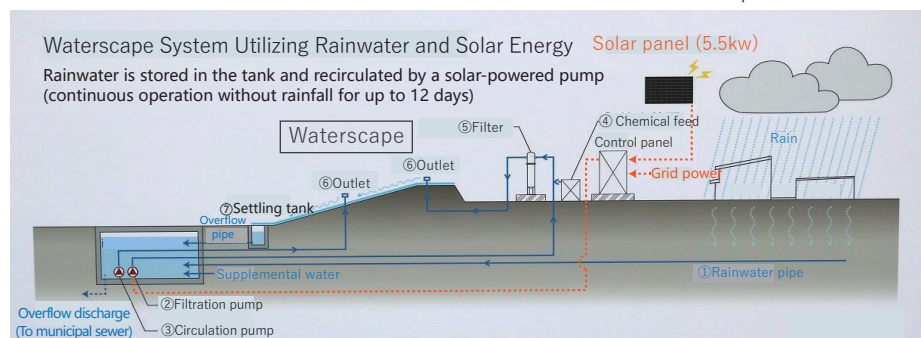
The Waterscape, adorned with lush greenery, is located alongside the sidewalk to enhance the neighborhood's landscape. Using a solar-powered pump, harvested rainwater is recirculated throughout the area. Based on historical weather data (with a maximum continuous no-rain period of 12 days), we have calculated the appropriate harvest area and storage tank size to collect and store enough rainwater to sustain the Waterscape without requiring additional water supply.



A creek and vegetation emulating the Katsura River Basin



Waterscape Section S=1:100



Signboard explaining how the waterscape system works



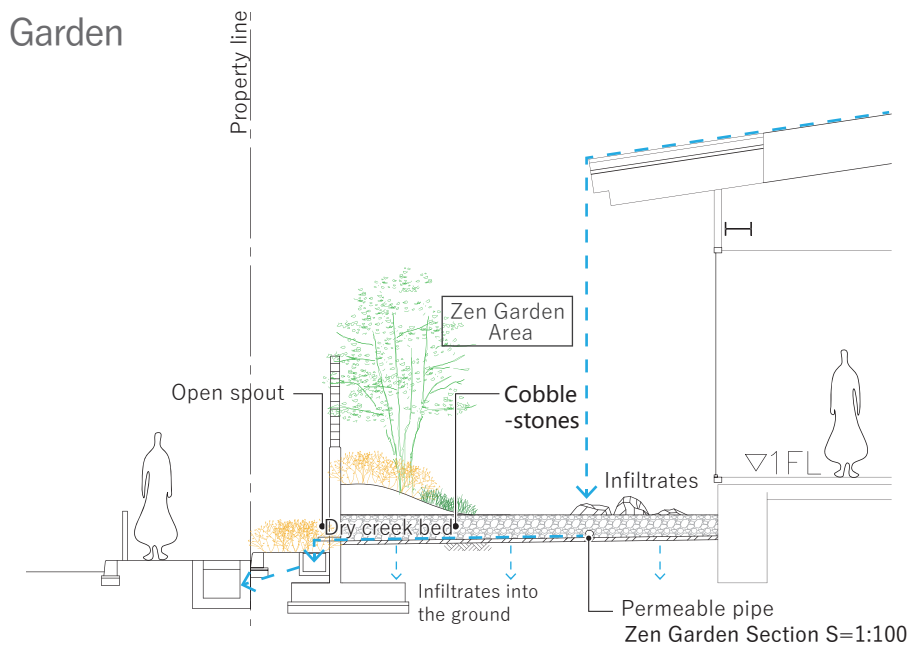
Water Zone C

Rain Becomes Visible in the "Dry" Garden

Kyoto has a long-standing tradition of using gardens to prevent rainwater from entering houses. We have created a Zen Garden for the Sagano-so Lodge. In this garden, rainwater that discharge from the eaves is partially absorbed into the ground. The runoff then flows over a dry creek bed and is discharged through an open spout outside the fence, allowing locals to witness part of the rainwater's journey.



Rain seeping into the ground of the Zen Garden



Zen Garden Section S=1:100



A dry creek bed covered with cobblestones



An open spout discharging runoff to the sidewalk

Prioritizing Locally Grown Plants and Conserving Rare Species

The Rain Garden and Waterscape at the Sagano-so Lodge showcase native plants from Kyoto, creating a picturesque landscape reminiscent of the satoyama in the Katsura River basin. In collaboration with various community groups, this project serves as a sanctuary for cultivating rare species such as *Asarum caulescens*, *Iris domestica*, and fragrant eupatorium. The grown *Asarum caulescens* is dedicated to an annual ceremony in Kyoto, while other precious plants are divided and replanted in specific areas, contributing to the preservation of local culture, promotion of biodiversity, and conservation/expansion of the local ecosystem network.

Asarum caulescens
(Divided from the mother plant in Kamigamo Shrine)

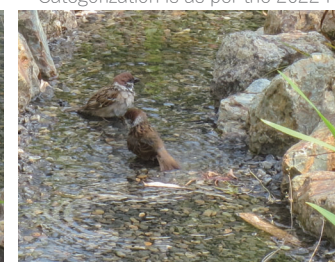
Fragrant eupatorium (critically-endangered sp.)*



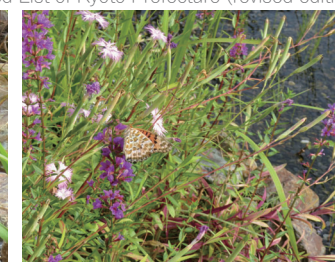
Golden lace (near-threatened sp.)*

Neighborhood children
interacting with plants

A greenfinch drinking water



Sparrows bathing in the creek

Brenthis daphne (butterfly)
visiting the garden

Golden lace and a mantis