# D NEWS LETTER

vol.5 2020.04 **REVITALIZATION OF WATERWAY**  Restoration of waterside environment where people can enjoy the interaction with water. Yume-suiro Waterway, Osonoi-River

Waterside Recreational Area, Suginami Ward



### LD NEWS LETTER





Green bank

Local seeds and seedlings planted in and around the stream bank have grown to increase the diversity of fauna and flora, 5 months later transforming the area into a public space where children can enjoy playing with water.

#### **KEYWORD OF LANDSCAPE DESIGN**

## **Renovation of** concrete-lined canal

This project was to renovate a 160m-long, 4m-wide concrete-lined waterway (managed by Suginami Ward) that connects the Upper Pond and the Lower Pond of Zenpukuji Park of Tokyo Prefecture. The project named "Yume-suiro Waterway" was initiated by local school children who made a direct appeal to the Mayor "to make Zenpukuji River more accessible and enjoyable." This area, where the view have been blocked by fences and overgrown vegetation with very low biodiversity, was renovated into a space where children can interact with water freely.

Ť



Location map Seedling planting workshop for elementary school children (during construction

#### Yume-suiro Waterway, Osonoi-River Waterside Recreational Area, Suginami Ward

Address: 2-31 Zenpukuji, Suginami-ku, Tokyo (within Zenpukuji Park of Tokyo Prefecture) Principal use: water canal (recreational area) Client: Civil Planning Div., Urban Development Dept., Suginami Ward Design: Landscape Design Inc. Design collaboration: Regional Environmental Planning Inc. Keiiki Corporation Construction: Tobu Ryokuchi Corporation Canal length: approx. 160m



Footpath toward Waterside Terrace

A footpath situated along a gently flowing stream, allowing visitors to appreciate the natural view of the relaxing waterway, which was unknown to many before the renovation.

## Environmentally-sensitive design & integrated development with Zenpukuji Park

Integrated development of the waterway area and the adjacent Zenpukuji Park was made possible based on agreement with the Park Administration Office of Tokyo Prefecture that manages the park. This allowed us to remove concrete lining on one side of the waterway and create a connection with the green bank and the park, as well as a footpath that provides access to the water edge Site plan for those in wheelchairs and with baby strollers, a Waterside Terrace to rest, and other spots where visitors can feel and hear the flow of water as part of their daily lives. The design is centered on environmental stewardship through the use of locally available materials, such as Tama lumber to make the benches, river stones for natural bank protection, and the reuse of crushed concrete lining that was removed to build gabions.







Cross section





ENVIRONMENTAL SYMBIOSIS



#### Malleable stream bank

One side of the canal is lined with gravel and river stones (from the same basin) instead of mortar, During the supervision phase, we verified the sources of seeds and seedlings so that children can enjoy changing the water flow and the bank shape freely.

Bank protection with local seeds and seedlings

and provided guidance on how to plant them optimally according to their growing environment to realize bank vegetation with high biodiversity.

ground level) during concrete removal for replanting.



Assessed the water balance of the whole Zenpukuji Park by visually depicting the relation between Upper and Lower Ponds linked by the waterway.

## Waterside Environment Design Based on Quantitative Data 🛄 EVIDENCE EASED DESIGN

For the bank vegetation, we tried to genetically restore the local ecosystem by selecting approx. 40 species of local seeds and seedlings by setting an environmental target index for each zone based on the survey results on the natural habitats (plants, insects, terrestrial animals, aquatic organisms, etc.) and changes in the light environment resulting from cutting of trees. In the design, we created charts and graphs to display the relations between the Upper/Lower Ponds and the waterway, fixed-point observation data (water quality, temperature, level), water-level fluctuation over the past 6 years of Upper Pond that feeds into the waterway, and other quantitative data with which to develope a water-balance model and simulate the water-level during peak rainfall, to determine the optimum structure (weir heights, canal width, water depth, etc.).



Observation deck



Photos of the canal taken from the same point

## Design process in collaboration with diverse stakeholders

Based on the images and ideas presented by local school children, we refined the project contents in workshops participated by local residents and other stakeholders to draw up a detailed renovation plan. During construction, we invited volunteers to collect buried seeds, and school children to plant the seeds and seedlings. After renovation, an administration body comprised mostly of workshop participants was formed to take charge of the canal operation and management (under an agreement with Suginami Ward). Adopting a participatory process involving diverse stakeholders early on, was key to realizing the children's dreams while ensuring high quality.

The whole canal view can be appreciated from the protruding deck, which provides an excellent spot for observing wild birds in early morning.



The canal, which used to be dark and covered with Japanese sweet flags, was reborn as a bright waterside space safely accessible to even small children.