The Shanghai Houtan Park was once an industrial site. The park became a permanent public waterfront park when it was first created for the 2010 Shanghai World Expo in order to demonstrate green technologies to visitors. The park is located at Pudong, Shibo Avenue Shanghai, and it extends along the Huangpu River. In order to transform a brownfield into something safe for the public, Turenscape designed a regenerative living organism. The park’s main purpose is to treat polluted river water, increases habitat and biodiversity, and mitigate urban flooding, but at the same time celebrate the regional culture and create an aesthetically pleasing riverfront space for the public.

The sustainable features of the park consist of wetlands, terraces, and reclaimed steel. The linear wetlands go through the center of the park, and it treats the polluted water from the Huangpu River. In order to successfully clean the water, there are a variety of cleaning stages that are done, which consist of “a 650-ft long stonewall waterfall, terraced fields and a “U” pipe connection that trap pollutants, an 850-ft long area of plants selected to absorb heavy metals, an 820-ft long area of plants selected for nutrient removal, an 820-ft long area of cascading terraces for aeration, and a 980-ft long water stability and sand filtration area” (Landscape Performance Series). The reclaimed steal is used to create a steel arbor and shade structure, and the hanging gardens. The terraces help solve the 18ft change in elevation from the road to the shoreline.

The park cleans about 634,000 gallons of contaminated water daily, which improved the water quality from a Grade V (unsuitable for human contact) to Grade II (suitable for landscape irrigation) through a biological process. It sequesters about 242 tons of carbon each year through the park’s wetlands, perennial planting, and trees. By using a biological process to clean the water, the value is estimated to be about $145,000 per year when it is compared to a typical cost of treating water in a Chinese treatment plant. About $17,300 in material cost was saved by using reclaimed steel and brick to build the hanging gardens, steel arbors and shade structures, architectural details, and paved areas.

Sources:

https://www.landscapeperformance.org/case-study-briefs/shanghai-houtan-park/#/cost-comparison

https://www.archdaily.com/131747/shanghai-houtan-park-turenscape