The Hiriya landfill served as the Tel Aviv Metropolitan Area’s main disposal facility for municipal solid waste from 1954 to 1986. Its ongoing restoration consists of an 800-hectare public park, which includes a recycling facility and constructed wetlands for treating contaminated effluent onsite. The recycling facility processes municipal, construction, and yard waste and produces biosolids. There are several sources of contaminated effluent at Hiriya, including landfill leachate, runoff from daily washing of garbage trucks, and effluent from the waste transfer’s AnnexB/Biotype separation process, which accounts for 70,000 tons per year of separated organic and inorganic waste (Finstein, 2003). The 2004 winning masterplan for the Hiriya Park by Latz + Partners (with Weinstein Vaadia and Ayala Water & Ecology) includes the design of 570 m² of constructed wetlands gardens with horizontal subsurface flow (SWF), designed to treat 40 m³ of effluent daily. Extending out from the visitors’ center, the wetland garden serves as an emblem for Hiriya’s Environmental Education Center.

Constructed wetlands (CW) are engineered systems that have been designed to utilize natural processes involving wetland vegetation, soil, and associated microbial assemblages to treat wastewater. These systems have been used for municipal or domestic wastewater treatment for more than 30 years. Today, municipal SWF systems also treat effluents from pharmaceuticals, oil refining, chemical production, pulp and paper production, tanneries, textile manufacturing, abattoirs, food processing, and runoff from agriculture, airports, highways, and greenhouses, as well as landfill leachate (Vymazal, 2000).

SWF systems are particularly well suited for small to moderately-sized installations (Bulc, 2005). For example, in a domestic pilot project in central Mexico, treated water was suitable for irrigation purposes, alleviating local water scarcity (Belmont, et al., 2004). SWF systems can accommodate moderately-sized installations (Bulc, 2006). For example, in a domestic pilot project in central Mexico, treated water was suitable for irrigation purposes, alleviating local water scarcity (Belmont, et al., 2004). SWF systems can accommodate moderately-sized installations (Bulc, 2006). For example, in a domestic pilot project in central Mexico, treated water was suitable for irrigation purposes, alleviating local water scarcity (Belmont, et al., 2004). SWF systems can accommodate moderately-sized installations (Bulc, 2006). For example, in a domestic pilot project in central Mexico, treated water was suitable for irrigation purposes, alleviating local water scarcity (Belmont, et al., 2004). SWF systems can accommodate moderately-sized installations (Bulc, 2006). For example, in a domestic pilot project in central Mexico, treated water was suitable for irrigation purposes, alleviating local water scarcity (Belmont, et al., 2004). SWF systems can accommodate moderately-sized installations (Bulc, 2006). For example, in a domestic pilot project in central Mexico, treated water was suitable for irrigation purposes, alleviating local water scarcity (Belmont, et al., 2004).
PLAN - 3 SOURCES OF EFFLUENT

- landfill leachate
- truck washing
- ArrowBio effluent

LEGEND
1. reservoir
2. monitoring wells
3. gravitational subsurface wetlands
4. waste transfer station effluent

GRAVITATIONAL SUB-SURFACE TREATMENT WETLAND AXONOMETRIC

- mixing tank containing 3 effluent sources
- landfill leachate
- truck washing
- ArrowBio effluent

LEGEND
1. reservoir
2. lawn
3. trees
4. concrete pathway
5. gravel
6. wood deck

SECTION A-A

- polishing pond 100 m²
- gravitational subsurface wetlands 570 m²
- gravel and sediments are from local quarries
- Cyperus papyrus
- Cyperus pumilio
- Cyperus difformis
- Eleocharis geniculata
- Cyperus gimnocaulus
- Zanxirri

LEGEND
a. solid waste processing center
b. visitor center
c. regulated area
d. trees

SECTION B-B

- concrete frame
- concrete frame
- monitoring well
- mixing tank containing 3 effluent sources
- landfill leachate
- truck washing
- ArrowBio effluent

- waste transfer station effluent
- subsurface bioremediation cells