

THE 10TH INTERNATIONAL SYMPOSIUM ON SOUTH EAST ASIAN WATER ENVIRONMENT

ACTIVITY DAY 1 (Thursday, November 8th, 2012)

FIELD TRIP TO WATER AND WASTEWATER TREATMENT FACILITIES

Planned itinerary includes stops at Yen So Pumping Station, Yen So Wastewater treatment plant (the largest and newly operated WWTP in Vietnam) and ends with a boat-trip around West Lake.

- 8:00 AM Meeting at Hilton Hanoi Opera Hotel**
- 8:30 AM Yen So Pumping Station (1 hour)**
- 9:30 AM Yen So Wastewater Treatment Plant (2-3 hours)**
- 1:00 PM Lunch and Boat Tour at West Lake, Hanoi (3 hours)**
- 4:00 PM Hilton Hanoi Opera Hotel**

Yen So Drainage Pumping Station

Main function of Yen So pump station is to control the water level in drainage canals in 4 rivers (Kim Nguu – Lu - Set - To Lich) as a key precautionary flooding measure in Hanoi. The complex works of Yen So pump station are the pump station, 7 regulation gates (West Lake A-B; Nghia Do, Dong Chi, Van Dien, Lu-Set, Thanh Liet), 3 spillways (A,B,C) in Yen So regular lakes and discharge channels to Red Rivers. The pump station has a total capacity of 90m³/s (after April 2011), consists of 5 normal pumps x 3m³/s and 15 emergency pumps x 5m³/s. The 5 regular lakes in Yen So has a total area of 136.9 ha, corresponding to a capacity of 4.12 mil m³ of water.



Yen So Wastewater Treatment Plant (WWTP)

Yen So WWTP has a maximum capacity of 200 000 m³/day (~ 890000pe) and started operating since early 2012. The collection system is currently open canals in Kim Nguu River, Set River and Yen So new development area. The preliminary treatment works consist of coarse and fine screens and combined aerated grit-grease removal. The biological treatment works are

Sequencing Batch Reactors (SBR). The main effluent after SBR discharges to Kim Nguu River. Part of effluent is post-treated by UV (In-Channel system for discharge to a recreation lake in Yen So Park) and UF membrane system for reuse as service water inside the plant. The waste activated sludge is thickened, anaerobic digested and dewatered. The total area of the WWTP is 3 ha, located between Kim Nguu River and Yen So Lakes.



West Lake, Hanoi

West Lake is the biggest lake in central Hanoi, covering about 526 ha in Tay Ho district. The Vietnamese have several legends surrounding the creation West Lake, including a story of an evil, nine-tailed fox who wanted to harm local residents, and a giant whose bronze bell brought a rampaging golden buffalo to the area. In actuality, however, the lake was formed when the red river changed its course.



The lake is one of the main attraction of Hanoi City. In the ancient time, this place used to be a famous resort reserved for king and mandarins. It is bordered with many significant places in history of Hanoi such as Tran Quoc Pagoda, the oldest pagoda in Vietnam, built in 6th century and located on a small island in the middle of the lake, plus Quan Thanh Temple, one of the Four Sacred Temples of ancient Hanoi.

The main function of the lake is to make the rainfall equable, improving the local microclimate and entertainment. It can be considered as a valuable freshwater gene pool, because of its valuable freshwater genetic resource of flora and fauna.