Urban drainage, sewage collection wastewater treatment & disposal

- **Study for the Development of a new Ro-Ro Quay at the Keramoti Port and Road Connection to the Provincial Road Network.** The hydraulic studies cover: stormwater drainage and surface water drainage works in the area of the at-grade junction and stormwater drainage and surface water drainage works in the port's land area. The drainage works include all the necessary hydraulic infrastructure required for the conveyance of stormwater runoff and, where necessary, the drainage of the proposed works. The study was assigned by the Region of Eastern Macedonia and Thrace (2025).
- **New cargo port in Patmos Island.** The study covers the drainage works required for the collection and conveyance of stormwater from the land area of the new cargo port at Merika Bay. The proposed works include the construction of a perimeter rectangular drainage channel around the quay, designed to collect and convey stormwater runoff from the upstream area of the quay. In addition, three rectangular drainage channels will be constructed within the port's land area to provide effective drainage of the quay surface. Finally, given that the cargo port will be connected to the village of Skala via an access road crossing two natural drainage channels, it is proposed that the stormwater runoff from these channels be conveyed through two box culverts, with dimensions of 1.0 × 1.0 m and 2.0 × 1.0 m, respectively. The study was assigned by Ministry of Infrastructure and Transport (2022).
- **Detailed design for flood control works and storm-water runoff handling in the aircrafts parking area at "Kapodistrias" Airport on Corfu Island.** Works include: a) expansion towards a nearby swamp and outlet structure of Kotsela channel (with a discharge 16m^3/sec) which forms the eastern boundary of the area, b) channels and storm-water sewers network for a service area of 30 ha. Due to the small level difference between the ground and the swamp the outflow is achieved through two large pipes (D=1000 mm) operating under pressure. The network was designed for the 5-years storm event and was checked for the 10-years storm event considering the level fluctuation at the swamp. Cost of works: 1,615,700 €. The study was assigned by the contractor of the works EDRASI and others, 2002.
- **Final design of the necessary works for the abolition of wastewater pumping station A1 in Drapetsona.** The objective of the project was to study the possibility of abolition of pumping station A1 (with a capacity of 125.00 l/sec and service area 37.00 ha) and transfer the wastewater to pumping station A2 (with a capacity of 342.00 l/sec and service area 56.00 ha) in Peiraias. Works included conveyance pipe (diameter D=600 mm, length L=300 m) and improvement of A2 pumping equipment. Four equivalent pumps (three for simultaneous operation and one stand by) were proposed with a capacity of 150 l/sec up to 22.00 m manometric height. The study was assigned by EYDAP S.A., 2004.
- **Final Design of sewer network in Patima area, Municipality of Chalandri.** The study area has a service area 141 ha and an estimated population of 19,000. Large storm sewers as well as some small sanitary sewers have been already installed in the area. Existing infrastructure has been incorporated to the new network. The total length of pipes is 24,331 km. Vitrified clay pipes were proposed. The study was assigned by EYDAP S.A., 2004.
- **Athens Concert Hall - Phase B, drainage system** for groundwater control carried out for the project contractor GEK SA. A high standards drainage system was designed to protect the building basement during construction as well as during operation. Constant pumping was applied to maintain the water

table below the excavation. Due to the monumental character of the building particularly high safety factors were selected (1998)

- **Design of hydraulic works for the transportation and disposal of the sanitary sewage of the municipality of Lidoriki.** The municipality of Lidoriki with an estimated future resident population of 3,200 actually disposes after biological treatment its sanitary sewage into the reservoir of Mornos that is used for the water supply of the city of Athens. The project involves the design of the necessary hydraulic works to convey treated sewage from the existing wastewater treatment plant outside the hydrological basin of the artificial reservoir of Mornos. Sewage transportation is achieved by pressure and free flow pipes of a total length of about 15-25 km. Alternative solutions have been studied for the layout of the conveyance works and the disposal of the sewage and were evaluated with technical, financial, hydrogeological and environmental criteria.

- **Inspection of existing wastewater treatment plant of the municipality of Amynteo and design of necessary extensions and rehabilitation works of the main sewer network and of wastewater treatment facilities.** The project includes inspection and evaluation of the condition (hydraulic, structural) and efficiency of the existing wastewater treatment plant and the main collection network of the municipality of Amyntaio (9,300 resident population) and design of the necessary extension and renovation works. Amyntaio disposes its effluents into Petra Lake which is a Special Environmental Protected Area. The aim of the project is to extend and upgrade wastewater collection system and biological treatment facilities in order to satisfy high quality environmental criteria. The project involves the design of 20 km of new sanitary conduits, the necessary hydraulic works to connect combined sewer system of the old city to the treatment plant and of modernisation and rehabilitation of wastewater treatment facilities.

- **Sanitary sewage network in East Coast of Varkiza.** Final Design and Tender Documents preparation. The network was designed for the coastal area of Varkiza where recreation and sport facilities are planned. Service area 113,000 m^2, population 2,000. Works included: a) pumping station with a capacity of 15 lt/sec and transfer pipe (650 m) to the main sewer b) pipelines of total length 979 m (Municipality of Vari, 2000).

- **Extension and completion of Thessaloniki Wastewater Treatment Facilities.** Design and preparation of tender documents for the extension of the existing primary treatment plant, to include biological treatment and nutrient removal. The installation has a capacity of 176,000 m^3/day serving a population of 1,100,000, with provision of extension to 260,000 m^3/day. The works include the disposal of the effluent to the sea, through a twin pipeline 10,350 m long and a twin see outfall 2,600 long (Ministry of Environment, Regional Planning and Public Works, 1989-93).

- **Infrastructure of Thessaloniki industrial area – Phase C.** Design and preparation of tender documents for the water supply, storm drainage and sewage systems of the extension (Phase C) of Thessaloniki industrial area of a surface of 250 ha (Hellenic Bank for Industrial Development, 1993-95).

- **Management of the liquid toxic industrial wastes and toxic sludges of Attica District.** Survey of the existing polluting industries in Attica District, processing and evaluation of data and proposals for a strategy for the treatment and final disposal of the toxic wastes and sludges with consideration of the environmental impacts. Alternative solutions for the treatment and disposal have been analysed and standards for the effluent have been established (Ministry of Environment, Regional Planning and Public Works, 1991-94).

- **Study of the installations of a wastewater treatment plant in the Vilia Municipality** for the consulting consortium Kolliniatis, Sofiou and Panagopoulos. The study included (i) assessment of

viable alternatives for the location of the plant (ii) preliminary design of the treatment plant and (iii) tender documents for the plant construction with a design-construction contract.

- **Drainage and sewage of the town of Florina.** Design of the storm drainage and sewage system, including sewage treatment plant for the town of Florina (13,500 inhabitants) (Ministry of Interior, 1980-81).
- **Infrastructure of Kilkis industrial area.** Design of the water supply, storm drainage and sewage system for Kilkis industrial area (100 hectares) (Hellenic Bank for Industrial Development, 1981-82).
- **Sewage treatment plant for greater Larissa area.** Design and preparation of tender documents for s sewage treatment plant for the greater area of the city of Larisa (projected population 230,000), with high level treatment requirements and effluent disposal in Peneos river (Municipal Enterprise for the Water Supply and Sewerage of Larisa, 1983-84).