CONSULASIA
CONSULTORES DE ENGENHARIA E GESTÃO, Lda.
GRUPO CONSULGAL
宏信亞洲工程及管理顧問公司

MACAO REFUSE INCINERATION PLANT

(technical assistance for the extension)

Client / Employer **Fichtner Engineering and Consulting**

Service Technical Assistance provided by CONSULASIA, LDA

Investment Approx. MOP 1,500 Million

Contract Price MOP 9,000,000

Time Schedule January 2005 to January 2009

Description of the Project

Commissioned in 1992, the Macao Refuse Incineration Plant ("MRIP") is designed for the burning of non-hazardous municipal waste. The Plant's nominal capacity is 864 tons per day (TPD), being composed of three Boiler Process Units of 288 TPD each. The heat released from the waste burning can nominally generate 84 metric tons of steam per hour, which in turn can be used to generate up to 12 MW-hr/hr of electricity from an installed steam-driven turbine generator.

Nevertheless, the rapid economic development and population growth in Macao have resulted in a large increase in refuse generated over the past decade. In 2003, the quantity of solid waste generated reached 249,255 tons, corresponding to 1.52 kg/day per capita. This figure has been gradually increasing. Domestic solid waste is the primary source of solid waste generation. The data showed that a considerable amount of the solid waste generated can be recycled and reutilized. Due to Macao's small geographic area and high cost of land, land filling has the lowest priority for waste disposal. Solid waste incineration has been given a top priority over other waste disposal methods although it is much more expensive. In the last decade, more than 80% of the total waste in Macao was incinerated. However, the incineration capacity of the Macao Incineration Plant is going to reach its saturation earlier than expected. Waste minimization, the establishment of an effective waste collection and disposal fee system, and alternate ways dealing with the limited capacity of waste treatment facilities are regarded to be major challenges in the future.

Therefore, on behalf of the Government of Macao with the collaboration of the Land, Public Works and Transport Bureau, FICHTNER Engineering and CONSULASIA, projected on building a new plant of about the same size with an incineration capacity of 3 x 288 tons per day (864 tons) and an electrical power rating of 14,7 MW is to be constructed directly adjacent to the existing one. Fichtner undertook preliminary planning and then, general planning, tendering, contract award and site supervision up to commissioning and trial operation of the extension. Additionally, Fichtner and ConsulAsia advised the client on rehabilitation of the existing plant, planned for after startup of the new incineration plant.