



## Bailonggang Wastewater Treatment Plant Shanghai, China



Owner  
**SHANGHAI MUNICIPAL  
SEWERAGE COMPANY**

Construction & Engineering  
**BEIJING GENERAL MUNICIPAL  
ENGINEERING DESIGN  
& RESEARCH INSTITUTE**

**SHANGHAI GENERAL  
MUNICIPAL ENGINEERING  
DESIGN & RESEARCH  
INSTITUTE**

**SHANGHAI NO. SEVEN  
CONSTRUCTION CO. LTD.**

**SHANGHAI NO. ONE  
MUNICIPAL ENGINEER CO. LTD.**

**CHINA NUCLEAR INDUSTRY  
HUAXING CONSTRUCTION  
CO. LTD.**



The Bailonggang WWTP is recognized as the largest plant of its type in Asia. This plant, located in Shanghai's southern suburbs close to the estuary of the Yangtze River, began operating in 1999. In 2008 it was upgraded and expanded, and a further expansion in 2012 increased the plant's capacity to 740 million gallons or 3.36 billion litres per day. The facility now processes more than half of the wastewater from Shanghai, China's most populous city.

The Recent Plant Upgrades and Additions Included:

### **Eight Anaerobic Sludge Digesters and a Sludge Drying and Disposal Facility and Disposal Facility**

Each of these eight new pre-stressed concrete sludge digesters has a maximum diameter of 25 metres, a height of 44 metres (32 metres above ground and 12 metres underground), and a volume of 12,400 m<sup>3</sup>.

### **Process Upgrade**

The digestion process reduces the volume of raw sludge over a period of approximately 24

days, with the residual sludge then being de-watered and thermal dried. Approximately 44,500 m<sup>3</sup> of biogas from the digestion process is generated each day and used to operate the sludge drying plant. The dried and deodorized residue is then disposed of, either to landfill or to non-crop applications.

### **Xypex to Enhance Durability (24,000 m<sup>2</sup> treated with Xypex Concentrate)**

After a comprehensive survey of many options, Xypex was selected by the construction project group to waterproof, protect and enhance the durability of these critical structures. All internal concrete faces of the eight digesters were treated with Xypex Concentrate. In areas where anaerobic activity and a highly aggressive chemical environment were anticipated, an acid-resistant lining was applied. However, the designers specified that Xypex also be applied to these specific areas as well, not only to provide secondary protection for the concrete but also to enhance the performance and durability of the primary acid-resistant lining.