

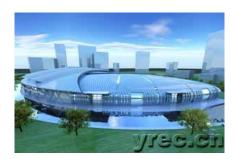
Yellow River Engineering Consulting Co., Ltd.

Yu XIAO July 17, 2023









Comprehensive Grade A Qualification Engineering Projects all over the world

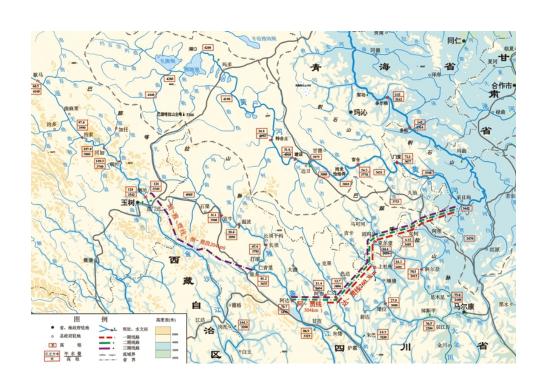




Yellow River Engineering Consulting Co., Ltd. (YREC) was founded in 1956. The scope of business covers a wide range of specialized fields: 1) planning of river basin and regional management and development, 2) study of major subjects in river management and development, and 3) investigation, designing, consulting, supervision, and construction, general contracting of water conservancy and hydropower projects, ecological and environmental improvements, buildings, highways, thermal power plants, public utilities and associated facilities. National key High-tech Enterprises, with National Enterprise Technology Center, with the first postdoctoral research workstation in the National Basin system.

YREC has accumulated rich experience in silt-laden river management and development; prepared hundreds of comprehensive and special plans oriented to harnessing and developing the Yellow River. It has undertaken a large number of large-scale engineering surveys and designs with domestic and international influence, such as the Yellow River Xiaolangdi Water Control Project, the Yellow River Guxian Water Control Project, the Middle Route Project of South-to-North Water Transfer, and the West Route of the South-to-North Water Transfer Project, Coca Codo Sinclair Hydropower Station etc. The projects cover more than 30 countries and regions in the country and the world.

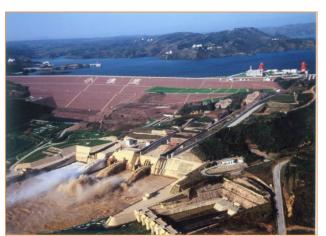
Project Case--Western Rout of South-North Water Transfer Project

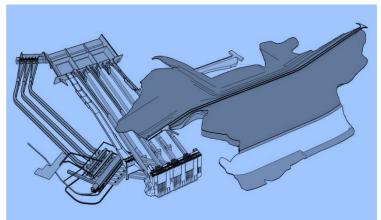


China•Sichuan Qinghai Gansu•Water Transfer Project

One of the major water network construction projects in China, the water is transferred from the upper reaches of the Yangtze River to the upper reaches of the Yellow River. The total length of the tunnel is about 730km, with a maximum burial depth of 2200m and a maximum single tunnel length of 131km, with tunnel diameters ranging from 7.2m to 10.5m.

Project Case--Xiaolangdi Multipurpose Dam Project









China•Henan•Water Control Project

The total installed capacity of the Yellow River Xiaolangdi Project is 1800MW, and the size of the underground powerhouse is $161.75 \text{m} \times 26.2 \text{m} \times 61.44 \text{m}$ (length×width×height), which is the largest underground powerhouse under the poor geological conditions of sand shale in China.

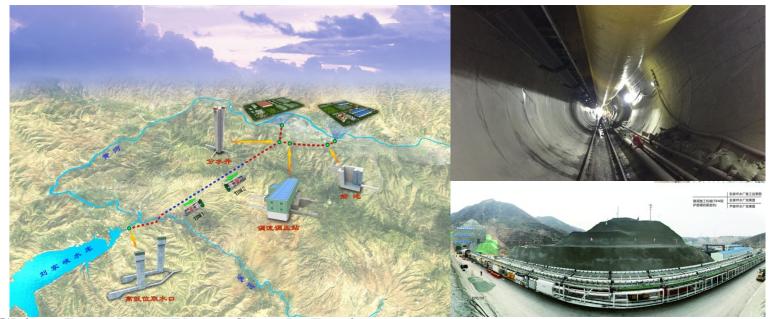
Project Case--Coca Codo Sinclair Hydropower Station



South America • Ecuador • Hydro Power Engineering

- The total installed capacity will reach 1,500 MW, annual generation capacity will be 8.8 billion kWh, which is the largest impulse-type water turbine installed capacity in the world. Main powerhouse size: 212.0m×27.5m×46.8m(length×width×height).
- ➤ With 616.74m high head and 537.8m high pressure shaft, 24.8km complex water diversion system.

Project Case—Lanzhou Water Supply Project



China•Lanzhou•Water Supply Project

Divert water from Liujiaxia Reservoir to Lanzhou City. The project include the water intake, the main water conveyance tunnel, the Lujiaping Water Plant, the Pengjiaping Water Plant, and the supporting pipe network. The main tunnel is 4.6m × 31567m (diameter × length). The TBM control construction section is 24430 meters, and it has pioneered the application of single-layer segments lining in the case of high water head.

Project Case—Jiangmen Underground Neutrino Observatory (JUNO)



China•Jiangmen•Infrastructure Project

At present, the civil engineering project has been basically completed, and the installation of experimental equipment is currently underway. It is expected to complete the installation of the detector core structure by 2023 and start operating data collection in 2024.

Underground works mainly include vertical shafts, inclined shafts, experimental halls, and auxiliary caverns. The upper excavation section of the experimental hall is 55.65m×48.4m×27.4m (length×width×height). It is the largest underground cavern in China's public data.

Project Case—Daya Bay Reactor Neutrino Experiment









China•Shenzhen•Infrastructure Project

The project has been completed, and the Neutrino experiment has been successful. The experimental results have been selected as one of the top ten scientific breakthroughs in the world in 2012 by Science magazine, evaluated as "the most important physics achievement in China by far", and won the "2016 Breakthrough Prize in Fundamental Physics".

The underground engineering mainly includes 5 underground experimental halls, tunnels, ground buildings and facilities. The main tunnel section is 2176m x 6.2m x 7.1m (length x width x height), and the size of the largest experiment hall(1#) is 42m x 19.30m x 25.15m (length x width x height).

Project Case—Hanjiang to Weihe River Project



