

Drill Pads.....

Taiwan prepares for more dam power

Groundwork preparation for the construction of the dam for Taiwan Power Company's new 80 MW hydroelectric power station is well underway, with two HD120S-A drilling rigs set to bore 300 holes for curtain and consolidation grout injection.

Some 150 km to the south of Taipei, in the Shi Lin Valley, Tong Shi, Taiwanese groundwork specialist Hau Yung Boong Co. is busy preparing the foundations for the construction of a dam. Scheduled for completion in September 1998, subject to no adverse ground conditions, the Shi Lin Dam will create a reservoir that will supply a new 80 MW hydroelectric power station belonging to the state-owned Taiwan Power Corporation.

The dam will be a twin-walled concrete box structure, constructed from a series of reinforced concrete box sections, cast on site. Hau Yung Boong started work on site in May 1995, excavating 60,000 m³ of soil. This was followed by the start of the grouting operation, for which the company will drill 300 holes to depths of 40 m into the underlying sand and stone.

For the drilling work Hau Yung Boong is using two HD Engineering HD120S-A drilling

rigs. Designed specifically for companies specialising in foundation drilling, the HD120S-A rig is ideally suited to overburden drilling systems using down the hole hammers, and air or mud flushing with either direct or reverse circulation techniques. The self-propelled rig is mounted on crawlers and features the unique HD 'Jack step' movement

enabling it to turn in a space no more than its own length using two rear jacks and the mast shift ram. The rear jacks also provide exceptional stability during drilling.

The HD120S-A can be equipped with an HD Engineering variable speed rotator head, double

HD120S-A in action at the Shi Lin dam site, Taiwan.



head combinations, or the powerful HD80/160 hydraulic drifter with 16,000 Nm torque and high blow energy of 650 Nm.

It is powered by a Caterpillar 3056 TA water-cooled diesel engine rated at 129 kW at 2,300 rev/min, which is fed from a 180 litre fuel tank, allowing for continuous 8-h shift operation.

A twin hydraulic cylinder activated turntable enables the upper structure to slew through 182°, 91° each side, allowing the operator to drill a row of parallel holes either side of the crawler tracks. And the heavy duty 5,700 mm mast provides 78,480 N (8 t) pullback force and 5,490 N feed force. Operating up to six h/d, five-and-a-half days, the rigs are drilling at a rate of 10 m/h.

For the curtain grouting operations, the units are equipped with a 114 mm diameter overburden drilling seamless steel casing tube and the cement is injected at a pressure of up to 30 kg/m²; while for the high pressure consolidation grouting the casing OD is 200 mm and the injection pressure 400 kg/m². Each hole takes some 12 h to complete: 4 h for the drilling operation and 8 h for the cement injection. Hau Yung Boong has 150 employees at the Shi Liu Dam project.