

# Drill Pads.....

## Noise barriers along KCR East Rail

On several stretches of the railway line between Hong Kong's Kowloon Tong and Tai Po, noise barriers are being erected by Zen Pacific Civil Contractors Ltd under a HK\$97 million construction contract for the Kowloon-Canton Railway Corp. (KCRC). The project involves mini-piling, pile cap and footings construction and the installation of the steel structure and acoustic panels for the noise barriers as well as some electrical work for the emergency escape route.

Work on the project started in October 1999 and involves the erection of a total of 3.5 km of noise barrier in areas where the rail track runs close to building developments. The acoustic noise barriers, which range in height from 0.5 m to 5 m, will be erected at nine locations - five in Kowloon Tong and four in Tai Po.

The barriers will be supported on footings and mini-pile foundations currently under construction, for which up to five HD Engineering drill rigs are being used. The contractor is employing four HD90MkII crawler drills and one HD50 brought in from other projects because they are found to be well-suited to installing mini-piles to the depth required on this job.

Work is being carried out on four sites at the same time, with one or two rigs used on each site. The HD90MkII has been designed as a multi-purpose rig ideally suited to drilling holes for installing soil or rock anchors, micropiles, pipewall piles and soft nails. The self propelled all hydraulic rig is crawler mounted.

Overall, the project requires the installation of more than 500 mini-piles of 219 mm diameter to depths of up to 70 m. Several 273 mm diameter piles are also required.

The geology of Kowloon Tong and Tai Po differ quite signifi-

*Right: HD drill rig in action adjacent to the rail track in Hong Kong.*

*Below: Zen Pacific's new compressor is shown operating at Tai Po station.*



cantly - whereas the mini-piles can find bedrock at a depth of 10-50 m in Tai Po, in Kowloon Tong the contractor has to drill to a depth of up to 70 m.

The main difficulty encountered on this project is the need to work beside a live track. Working hours are restricted to 8.00 am to 6.00 pm for most work but where it has to be carried out particularly close to the track, this can only be done during brief night-time periods. Where there is no access to site at all, the contractor has built temporary platforms to facilitate work.

Fencing about 1.9 m from the live track ensures that the work will not disrupt the normal operation of the railway, but a distance of 2.75 m from live cables is maintained at all times.

The HD machines are reportedly achieving an average progress

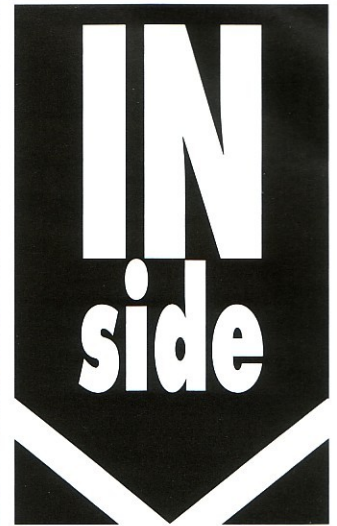
rate of 50-60 m per day per rig. Grouting is being carried out using HD CGP30 grout pumps to supply a high pressure cement grout. Piling is expected to take up about 40% of the contract period.

The project was divided into four phases by the client. Phase 2, 3 and 4 commenced at the same time whilst Phase 1 was required to commence 120 days later. Full completion is expected to be achieved in January 2001.

Providing airpower for the drill rigs and other equipment are a number of Atlas Copco portable compressors, including a recently delivered XRHS485, rated with an actual free air delivery of 28.8 m<sup>3</sup>/min at 20 bar. This compressor was purpose-delivered to Zen Pacific Civil Contractors Ltd for the contract.

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