

# UTRACON STRUCTURAL SYSTEMS PTE LTD

## BOON LAY MRT EXTENSION

Owner	: Land Transport Authority
Contractor	: Sato Kogyo (Singapore) Pte Ltd
Construction Period	: May 2006 – January 2008

### THE STRUCTURE

The project is an extension to the existing Singapore Mass Rapid Transit (SMRT) East-West Line. The total length of the elevated viaduct is 3.8km, with 2 new passenger stations serving this extension line.

The elevated viaduct is made up of cast-in-situ crossheads with precast prestressed beams supported on pot bearings. Typical spans are generally 25m and the maximum gradient is 2.5%.



### CONSTRUCTION METHOD

A total of 238 numbers of precast beams are to be installed, out of which 226 beams are to be launched by self-launching truss and the remaining 12 beams to be launched by cranes. The 60m self-launching truss uses the next-to-be-launched precast beam as counterweight behind the launcher when it is being launched forward.

At the precast yard, which is sited adjacent to the elevated viaduct, each PC beam is lifted onto the tracks using a pair of Utracon's strand lifting unit jacks which are mounted on top of 2 steel portal frames. It is then transported on a locomotive riding on temporary rails on the completed spans to the rear of the launcher which is parked at the adjacent span of the proposed launching site.

After anchoring the precast beam onto the launcher's auxiliary beam, the launcher will then be pushed forward to the next span by the locomotive with the PC beam acting as a counterweight. When the launcher is finally at its final position, the front leg support of the truss will be rested on to the next crosshead.

Once the launcher is braced against further movements and locked in position, the precast beam will be lifted from the locomotive by 4 strand lifting units and slide towards its final position. It will then be lowered down onto the crosshead, where it is supported by temporary sand jacks.

### UTRACON'S INVOLVEMENT

- Transportation and launching of precast beams
- Post-tensioning works for precast beams and cross heads.

