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*Congratulations to the Kowloon-Canton Railway Corporation on the completion of Phase 1 of the Light Rail Transit System from the Consulting Engineers to the KCRC-Light Rail Division*

- |                                     |  |
|-------------------------------------|--|
| Transurb-Freeman Fox                | Engineer & Project Manager                           |
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We are proud to have been involved in the implementation of the Tuen Mun — Yuen Long Light Rail Transit System



New home ownership estates are served by the LRT.

**W**hen the original proposals for the Light Rail Transit System were made in 1972, Tuen Mun was a small rural community with a population of 40,000. A ten-year development plan for the area, however, was to lead to the birth of a New Town of 500,000 people.

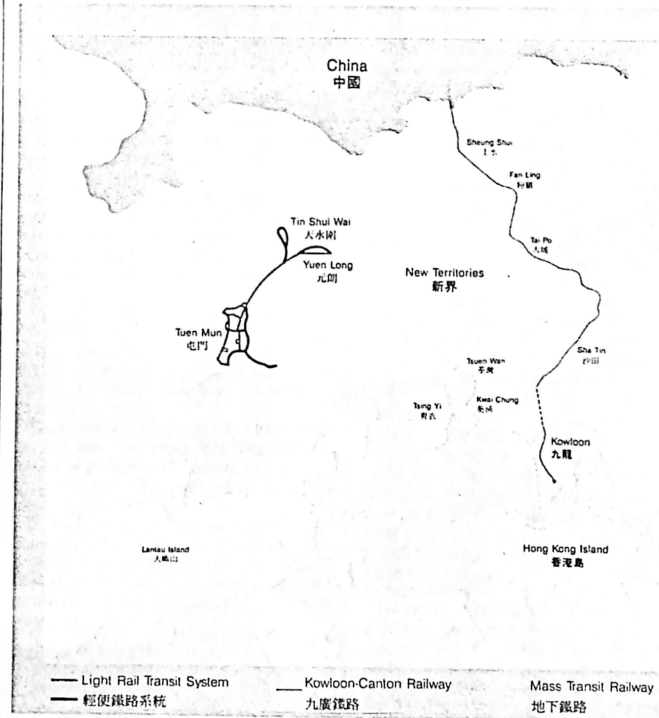
It was not until five years after the original proposals that Scott Wilson Kirkpatrick & Partners (SWK) was appointed as consultant to carry out the Tuen Mun New Town Transport Study. It was then, in 1977, the LRT saga really began.

The first objective of the study was to investigate various modes of public transport, including buses, trams and light rail systems, monorails and metros. An "Exclusive Public Transport Right-of-Way" (EPTROW) had already been included in the Tuen Mun outline development plan and was further developed in the study.

The choice of systems was narrowed down to buses or an LRT, with the latter emerging as a better long term investment in economic and financial terms. The study also pinpointed other potential advantages including an independence from oil as a fuel and a better quality of service, as well as several environmental benefits. It was also anticipated that the resultant LRT system would help promote the image of the New Town.

In line with Hong Kong Island's famous tram system, a double-decker tram was proposed for the LRT system though it was to be more technologically advanced.

# New 'Trams' for a New Town



The planned link from Tuen Mun to Yuen Long has become reality.

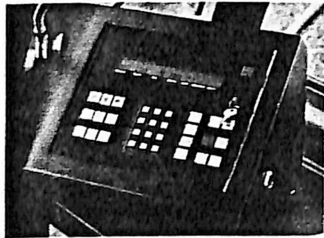
SWK reported its findings in April 1978 and its plan was basically accepted by the Hong Kong Government one month later. Discussions were held with Hong Kong Tramways and, by the end of September that year, it also concluded that an LRT system would provide a better and cheaper transport service than buses alone. At that time Tramways declared its interest in building and operating an LRT service for the area.

Following the SWK report a Transport Plan Implementation Group (TRAPIG) was formed to take steps to implement the LRT System.

The Executive Council agreed that negotiations should begin with the Kowloon Wharf and Godown Company (Wharf), the parent company of Hong Kong Tramways. TRAPIG entered discussions with all interested parties, including Wharf and its consultants, to

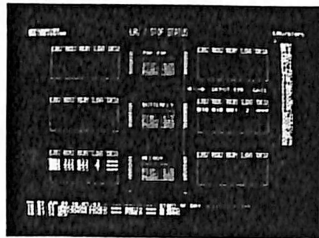
# PLESSEY - The height of high technology

Plessey - suppliers of the vehicle information system and the road traffic controllers for the integrated management of light rail and road traffic at the street level intersections in the Tuen Mun Light Rail Transit Project.



## Vehicle Facilities

- LRV identification
- Automatic route selection
- Voice and data radio communications
- Schedule deviation display
- Load status monitoring
- Priority at traffic controls



## Operations Centre Facilities

- Route and vehicle display
- Power system monitoring
- Talk through to vehicles
- Radio system monitoring
- Operational statistics
- Schedule preparation



## Traffic Management

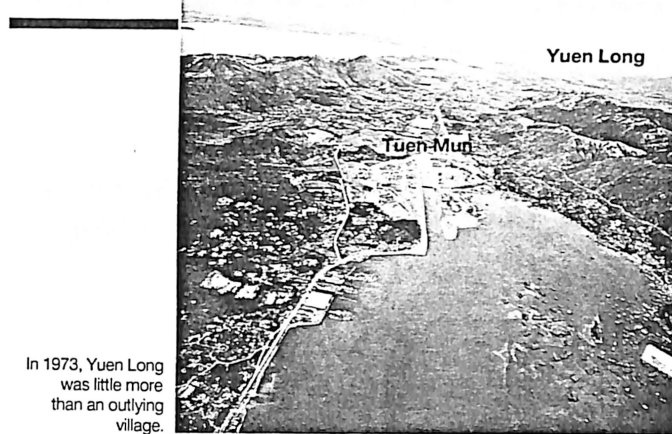
- Road Traffic Controllers
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## HISTORY



In 1973, Yuen Long was little more than an outlying village.

develop parameters to define the reserve, the vehicles and the system requirements.

Negotiations continued for almost four years to the end of 1983. During this time much of the infrastructure development for the New Town had been undertaken on the basis that the proposed LRT System would become a reality. This period also saw the evolution of some significant extensions to the original system.

The system for Tuen Mun was extended along the Castle Peak Road to Yuen Long and an extension to the proposed New Town of Tin Shui Wai was recommended. Major property developments at Tuen Mun Pier Head, Yuen Long Termini and the depot were proposed in order to increase the revenue potential of the completed project.

While this was going on, Wharf won a debate on their proposal to use single-decker vehicles instead of the originally proposed double-deckers. However, it was agreed that nothing should be built on the system to frustrate the use of double-decker trams in the future.

Finance was the major topic of discus-

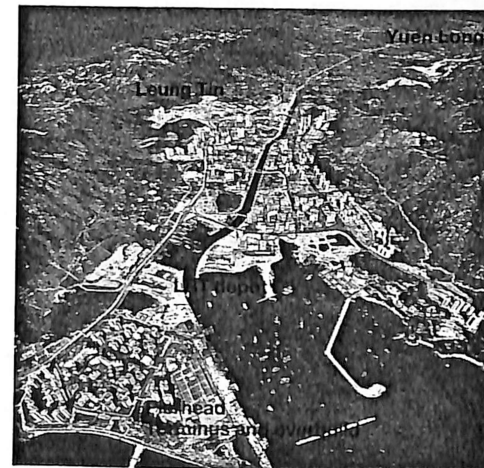
sion at this time as revised patronage forecasts made the revenue less appealing and declining property prices also made development economics less attractive.

Debates centring around peak-hour factors and levels of service were never really resolved and it became clear that Wharf was as concerned about the project's viability and resultant profits as government was about getting the LRT project underway.

In August 1982 Wharf undertook a pre-qualifications exercise involving six consortia. These were led by a host of well known firms from Britain, West Germany, Belgium, Australia, Japan and Canada.

These consortia made their submissions in October that year, but negotiations with the government reached an impasse and Wharf effectively withdrew in January 1983.

In May the same year, Government invited the consortia to re-submit their proposals. This time they were to include financing in order to implement the LRT project without Government involvement.



Today, a New Town necessitates a major transport system.

In the meantime the Transport Department carried out a revision to the patronage forecasts for the system and studied a proposal to use the EPTROW as a 'busway.'

The consortia responded in July that year and two of them - Metro Camell and Mitsubishi - tendered the possibility of the Kowloon Canton Railway Corporation (KCRC) being involved in operating the LRT System. Discussions with the consortia, and further presentations by them, continued until October, but it became more and more apparent that the submissions were incompatible with Government's needs, as well as with each other, due to the different assumptions being made.

Government realised that it would not be possible to select an optimum proposal from the submissions they had received so, in November 1983 the Executive Council agreed that the KCRC should be invited to undertake the implementation and operation of the LRT System. This decision was made subject to the KCRC's own viability assessment and without any government guarantee or equity participation. In January 1984 the project turned full cycle as the KCRC appointed SWK to undertake a viability study.

Three months later the study reported that, given certain conditions, the LRT could be viable on a 'stand-alone' basis. The key assumptions were related to the patronage forecasts and costs. To this end, the study tested the sensitivity of the conclusions to quite significant variations in the forecast patronage and costs.

The KCRC concluded, that given support by Government in terms of operating franchise conditions within the Transit Service Area (TSA), it was prepared to embark on the project and it would be a viable public transport investment, albeit over a longer time span than 'commercial' investors in Hong Kong are used to.

Following the KCRC decision to go ahead, progress was rapid.

In July 1984, SWK and Electrowatt Engineering Services were appointed to take the project to tender stage. In November, the KCRC decided to proceed on the basis of a single turnkey contract for Phase 1 and a prequalification exercise resulted in five consortia being shortlisted for the project.

Tender documents for Phase 1, together with options for Phase 2, were issued in January 1985. These were returned on April 22, 1985 and their evaluation, together with subsequent negotiations, led to the award of the Phase 1 contract.

The three year contract began in August 1985 and is scheduled for completion on August 8, 1988 - an extremely propitious date as the number eight is associated with prosperity by the Chinese.