

City Talk

SHENZHEN LRT SYSTEM MAY FIT KOWLOON NEEDS

For any city, a system of commuter transport is vital. From intercity trains to metro railways, it covers the need for trunk transport for the masses, hence the reference to it as a mass transit system.

But to reach satellite towns and districts not in city centers, mainline railways are too cumbersome and need too much space, so coaches and minibuses are their traditional means of transport. They offer flexibility, as routes and schedules can be adjusted as needs arise.

Many parts of our city have survived for years with double-deckers and minibuses, and even today, they still cover about half of our public transport needs.

Their disadvantage is that they often cause jams during rush hours by competing with other vehicles for space.

The light rail transit system being used in Tuen Mun was designed to provide convenient transport for new towns.

It has become less efficient as its tracks and level crossings impose too many restrictions on the road network, which has become congested as the new town develop.

A new mode of overhead transport was soon developed.

For some cities, monorail systems were built that had elegant designs and did not encroach on road space.

Unfortunately, as they were proprietary designed systems, manufacturers often ceased to stay in business as time passed and spare parts and maintenance support became hard to source.

Their carrying capacity were also much smaller and the cities that used them often found they could not cope with the growing commuter traffic.

Eventually, most monorail systems had to be taken out of service, much to the embarrassment of city transport organizations.



Fortunately, a new system of overhead transport has started to replace them.

One example is the “Cloud bus” system that I visited in Pingshan, Shenzhen.

This LRT alternative can take some 9,000 passengers per hour each way.

It consists of an overhead viaduct system, but instead of steel wheels on tracks and an overhead electric power supply, its four car trains are powered by battery-driven motors.

The first advantage is that there are no steel rails and overhead catenary for power supply, significantly reducing the visual impact as the viaducts for the lighter system can be supported by slender columns that do not demand too much in the way of congested road space.

Its rubber tires run on concrete tracks, and are therefore a lot quieter.

Second, when its rolling stock needs to be replaced, any new system that runs on battery or hydrogen power can be used as long as the track width (distance between the running wheels) is the same, providing good flexibility.

Costs will be lower as the concrete structure needs very little maintenance, and all moving parts of the rolling stock can be upkept like with a bus fleet.

I can see great potential of such a system being adapted for our Kai Tak runway development and the east Kowloon Choi Hung to Po Tat planned extension.

Similar systems are already in use in the mainland, including a “virtual track” bus system that runs on roads, using an automated driverless control system.

Admittedly, such an application will require adjustments to the road system and the Road Traffic Ordinance as well as adaptations, but the potential for increasing traffic volume is tremendous.

With advances in battery capacity or hydrogen power applications, I would not be surprised to see such a system run in Hong Kong over the next decade.

Veteran engineer Edmund Leung Kwong-ho casts an expert eye over features of modern life

