CIVIL DIVISION

21 December 2001

Ms Anita Sit
Clerk to Panel
Legislation Council Secretarial
3rd Floor, Citibank Tower
3 Garden Road
Hong Kong

By Fax & By Post
(2121-0420)

Dear Ms Sit,

Proposed Drainage Tunnel Schemes for Flood Prevention

Thank you for your letter dated 10 December 2001 and your invitation to attend the LegCo Panel meeting on 4 January 2002.

On behalf of the Civil Division of the HKIE, we wish to express our support that the proposed drainage tunnel scheme is engineering sound in order to alleviate the flooding problem in the three respective urban areas in Kowloon and Hong Kong Island. It is our understanding that tunnelling scheme is the preferred solution to minimize the social impact which would otherwise be insurmountable by opening up roads in densely populated areas.

Tunnelling in Hong Kong has been adopted since the fifties, with a network of water tunnels bringing water to the urban areas followed by road tunnels in the past twenty years. With an aggregate of some 200 km in length of tunnel in Hong Kong, it is a proven method of construction both in soft and hard ground. On review of the submission, it seems apparent that the three respective tunnels would inevitably driven in rock as such either tunnelling by "drill and blast" or by "tunnelling-boring-machine" are equally applicable, although the latter would probably be the chosen method given it's speed and economy.

The proposed tunnel scheme takes the advantage of the hilly terrain and the development pattern of Hong Kong such that stormwater can be intercepted in the middle of the hill. By intercepting rainwater along the peripheral of the urban area, it can reduce the amount of stormwater entering the urban area, thus raising the flood protection standard of the urban area. Since the tunnels are bored underground and away from the urbanized town centers, we can avoid road closure and traffic diversion, which are likely to cause congestion and prolongation of traveling time. In particular, the economic and social losses of road opening will be significant in our already highly trafficked commercial areas such as Central, Wan Chai and Causeway Bay.

In addition, the tunnel scheme is considered as one of the most environmental friendly ways to improving the drainage system. Technology allows the boring of the tunnels and the vertical intake shafts to be carried out underground with minimal impact on the ground surface. This contrasts with the traditional way of digging up busy roads and construction of huge concrete box culverts, which will unavoidably induce noise and dust problems.

Being an international city, it is imperative that our town centers such as Central, Causeway Bay, Tsuen Wan, etc. will not be subjected to high flood risk. Flooding not only affects the life and well being of the community, it may also tarnish Hong Kong's international image. The present tunnel scheme presents a very effective solution of reducing their flood risk without the need of carrying out major road opening and excavation works in the urban area.

With the current technology, the construction of the tunnels can be completed within four to five years. Whereas for traditional enlargement of drains, works have to be carried in phases to maintain traffic flow. Experience shows that plenty of time would be required for diverting existing utilities, and a much longer time is required than that for the construction of tunnel.

The use of large diameter tunnels to collect rainwater has also been adopted in other countries. However, pumping is often required in such tunnel schemes. In the present proposed tunnel scheme, water can flow to the sea by gravity without the need for pumping facilities. This gives much more reliable and effective solution in solving the flooding problem in urban areas.

Lastly, I confirm that I would like to attend the LegCo Panel meeting on 4 January 2002. Please make necessary arrangement.

Yours sincerely

Henry Liu
Chairman
HKIE – Civil Division

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