

ETWB L/M to 55/07/72

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13 November 2004

(By Fax 2570-5838)

Hon. Ir. Dr. Raymond Ho Chung-tai,  
Chairman, Association of Engineers in Society Ltd

Dear Hon. Ir. Dr. Ho,

**The Views of the Association of Engineers in Society on  
The Harbour Area Treatment Scheme Stage 2**

Thank you for relating your views to us via your letter of 25 October 2004, and your support for the Harbour Area Treatment Scheme (HATS) and the phased implementation of Stage 2. The Government is fully committed to the entire package of HATS Stage 2. However, as you have rightly pointed out, we recommend that it should be taken forward in two phases so that we can accord more time to plan the more complicated and costly HATS Stage 2B while proceeding to implement HATS Stage 2A to bring further improvement to our harbour water quality as soon as possible.

On the specific points raised in your letter, we would like to offer the following responses -

**Item 4**

We have explored whether it would be possible to replace the deep tunnel system by expanding the eight existing preliminary treatment works (PTWs). A rough estimate indicated that each of the PTWs would need 3 hectares of land on average for incorporating proper sewage treatment systems. You may wish

to note that we have already been facing difficulties to gain the support of the District Councils (DCs) for making available a tiny piece of land of about 250 m<sup>2</sup> currently zoned as open space for accommodating a permanent drop shaft in Central. The DCs have also been very skeptical about our requests for temporary works areas. It would therefore be very difficult, if not impossible, to obtain additional pieces of land for expanding the PTWs along the highly urbanized northern and western coast of Hong Kong Island. Apart from the land constraints, the short term and long term impacts as a result of pursuing the above highly decentralized option, such as loss of sites for other popular community facilities, traffic impacts and the general public's perception against placing a STW in their neighbourhood are also bound to be highly controversial. In fact, our consultant had once explored the possibility of building a STW underneath the Victoria Park as you have proposed in your letter. However, the option was soon ruled out as a non-starter due to the anticipated strong local objections and other practical reasons.

In this connection, we would also like to take the opportunity to recap the background concerning the debate over centralization vis-a-vis decentralization. In fact, the International Review Panel (IRP), having regard to the preference for decentralization by some sectors of the community, did recommend four options with different degrees of decentralization for HATS Stage 2, which are the Option A – D set out in our consultation document. All the four options require the construction of deep tunnels to transfer the sewage collected to the STWs for treatment. These four options were studied in detail in the Environmental and Engineering Feasibility Study for HATS and the findings have been uploaded to the clean harbour website and summarized in the two papers “Way Forward for the HATS Stage 2” and “Findings of Trials and Studies Relating to the HATS Stage 2” submitted to the Legislative Council Panel on Environmental Affairs in June. The findings indicated that the centralized option, i.e. Option A, should be the most cost effective and should perform better than the decentralized options in most aspects.

**Item 5**

The proposed deep tunnel conveyance system under HATS Stage 2 comprises a series of deep shafts and tunnels operating principally as a series of “inverted siphons” in a surcharged condition. Flows will enter the tunnels through the scroll-type vortex inlets and drop shafts located at the existing PTWs and will be lifted to surface by pumping through the riser shaft at the Stonecutters Island for centralized treatment. Due to the siphoning action, it is only necessary to draw water out of the tunnel system at a level near the top, instead of the bottom, of the riser shaft with sufficient hydraulic head differences maintained between the shafts to drive the wastewater through the tunnels.

In order to minimize the pumping (and hence the power cost) at the downstream end, the water levels in the shafts at the upstream ends will be kept as high as possible whilst avoiding overflows during normal operation. This operation philosophy has been working well in the HATS Stage 1 system. At present, the pumping cost for the Stage 1 system is about \$39 million per year and represents some 13% of the operating cost for handling about 1.4 million m<sup>3</sup> of wastewater a day. We shall continue to fine-tune the operating levels in the shafts so as to maximize the hydraulic efficiency of the system. For a decentralized system, although a lower pumping cost may result due to less head loss from the shorter conveyance distances, it will however require a much higher operation cost to run several satellite treatment plants.

**Item 8**

The deep tunnel alignment for HATS Stage 2A is indeed still open. We note the Society’s suggestions and shall carry out detailed ground investigations and hydrogeological studies for the proposed tunneling works in the early design stage. We shall also design the tunnel alignments taking into account the suggestions received, the findings of the site investigations and hydrogeological studies, land related issues, risk assessment results, and other construction and environmental considerations.

**Item 9**

We will take into account the Society's concern about the local construction community in packaging the design and construction works for HATS Stage 2.

**Item 11**

The Public Private Partnership (PPP) can take different forms and each can have its own special application and merits/demerits. Generally speaking, under the PPP arrangement, the private sector involvement can be maximized so that their efficiency, skills and expertise can be more effectively mobilized in delivering public services. While pursuing the PPP, we concur with the need to closely monitor and control the performance of the private sector partners. We shall therefore carefully consider the long-term effect, public interest and social impacts in pursuing the use of any form of PPP for HATS Stage 2 in the next phase of the project development.

Once again, we would like to thank you for tendering so many useful views on HATS Stage 2 and offering your support to the Government.

Yours sincerely,

(Ms Doris CHEUNG)

for Secretary for the Environment, Transport and Works

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