

NOTE FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

Supplementary information on 5660CL - Site formation, construction of associated infrastructures and provision of Government, institution and community facilities for an international theme park on Lantau Island

INTRODUCTION

When considering PWSC(1999-2000)70 at the Public Works Subcommittee meeting held on 17 November 1999, Members have queried the cost and timing of alternative methods of reclamation for Penny's Bay Development.

THE ADMINISTRATION'S RESPONSE

Factors Affecting Cost

2. The cost of reclamation depends on a number of factors, including -
 - (a) reclamation method;
 - (b) type and source of fill;
 - (c) water depth;
 - (d) soil condition;
 - (e) type of sea wall;
 - (f) reclamation configuration (i.e. length of sea wall to contain the reclamation compared to its size); and
 - (g) programming constraints.

There are two basic methods of carrying out reclamation and two broad types of fill. We will use a combination of these methods and types of fill for the Penny's Bay reclamation.

/ Reclamation

Reclamation Methods

3. In the particular circumstances of Penny's Bay, where there is a large amount of marine mud on the seabed, reclamation can be carried out either after removing the mud or by leaving the mud in situ and compressing it with fill material. The disadvantage of the first method is that removing the mud is an extra step which takes time and costs money. However the reclamation on top of it settles more readily and more reliably. Therefore there is less overall settlement and less differential settlement (i.e. the settlement is more even) and the overall programme time is shorter. The disadvantage of the second method is that special drains have to be built to reduce the water content of the mud, the reclamation takes much longer to settle and the risk of differential settlement is high. If time is not a consideration, the second method is cheaper. For the critical part of the Penny's Bay reclamation (i.e. site of Hong Kong Disneyland Phase 1¹) we will use the "dredge and fill" method. For the balance of the reclamation works, where the programming constraints are less severe, we will compress and drain the mud.

Types of Fill

4. Actual fill material can either be natural (i.e. earth or sand imported to the site for the purpose) or inert construction and demolition materials (public fill). The advantage of the former is that it is more reliable and readily available in the quantities required, but only at a price. The advantage of the latter is that it is cheap (in effect, virtually free) and it addresses the problem of a shortage of disposal capacity. The disadvantage of public fill is that the total amount of supply in Hong Kong is only about 5 million cubic metres per annum according to the latest forecast whereas the Penny's Bay Stage 1 reclamation alone requires 60 million cubic metres i.e. it would take over 10 years to complete the reclamation with consequential delay to construction of the theme park itself.

5. Taking all factors into account, we will use mainly imported natural fill for the Penny's Bay stage 1 reclamation plus about two million cubic metres of public fill. For the stage 2 reclamation works where we have less stringent programming constraints more public fill will be used.

/ Conclusion

¹ The Hong Kong Disneyland Phase 1 footprint covers some 126 ha. A further 74 ha will be required to complete the Penny's Bay Stage 1 reclamation works, which cover 200 ha of land.

Conclusion

6. The “dredge and fill” method with imported natural fill materials is the optimum construction method in view of the programming constraints. The alternative (relying solely on public fill) would mean the first theme park coming on stream in about 2020, instead of 2005. The cost saving of the other cheaper options would be more than offset by the delay in capturing the economic benefits. Moreover, the higher cost of the actual method chosen is reflected in the land premium being charged.

Tourism Commission
Economic Services Bureau
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