

香港特別行政區政府  
The Government of the Hong Kong Special Administrative Region

運輸及房屋局

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Clerk to LegCo Panel on Housing  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central  
Hong Kong

(Attn: Ms Miranda Hon)

Dear Ms Hon,

**Legislative Council Panel on Housing**

**Meeting on 7 January 2013**

At the Panel on Housing meeting held on 7 January 2013, Members sought supplementary information on the total additional manpower resources required to cope with the workload arising from the implementation of the new HOS and other related housing initiatives; sites identified for the new HOS and their complexities in justifying the creation of additional posts; and the potential sites to be made available for the production of public housing in the future. Our reply is attached at the **Annex** for Members' reference.

Yours sincerely,

( Original Signed )

( Vincent TANG )

for Secretary for Transport and Housing

**Proposed Creation of Directorate Posts in the Housing Department for the  
Implementation of the New Home Ownership Scheme (HOS) and  
Other Housing Initiatives**

**Supplementary Information**

**Manpower requirements for the new HOS and other related housing initiatives**

In 2012-13, 194 (including six directorate posts and 188 non-directorate posts) posts have been created in Housing Department (HD) to kick-start the planning and design work relating to the new HOS. As the construction and development programme progresses, another 133 (including four directorate posts and 129 non-directorate posts) posts are planned to be created in HD in 2013-14 for implementation of the new HOS and other related housing initiatives. In other words, at this stage, a total of 327 posts (including ten directorate posts) are required by HD to take forward the public housing initiatives. This does not include the manpower required if any to implement the new target of 20 000 public rental housing units on average per year from 2018.

2. We will continue to closely monitor the manpower requirement to deliver the new housing production targets having regard to the actual progress in the construction and development programme. Further resources will be sought in accordance with the established mechanism as and when necessary. We will also review all the posts created for the new HOS in 2018-19 having regard to the target of delivering 17 000 new HOS units from 2016-17 to 2019-20.

**Public housing sites with complicated civil engineering constraints**

3. Civil engineering constraints include:

(a) Traffic and transport impacts;

- (b) Noise impacts from nearby noise sources including major roads, railway lines and industrial buildings;
- (c) Inadequate district sewage disposal facilities including foul sewers, pumping stations and sewage treatment works;
- (d) Air quality impact due to major roads or chimneys;
- (e) Risk imposed by hazardous installations; and
- (f) Need for site formation and infrastructure improvement works.

### **Traffic and transport impacts**

4. For public housing developments, the public and District Council (DC) members are very concerned with the inadequacy of the existing traffic and transport provisions. We have to carry out traffic impact assessments to assess the district traffic condition. If the existing district traffic condition is poor, it is necessary to carry out road improvement works prior to population intake. In addition, we have to identify the need for additional transport facilities such as public transport interchange and public transport services arising from public housing developments. Chief Civil Engineer (CCE) has to be actively involved in mapping out the implementation strategies and directions in resolving the traffic and transport issues with relevant government departments and to secure support from DC members and locals. The funding arrangement of the road improvement works has to be resolved with senior officers of concerned works departments. Some of the works need to be gazetted under the Roads (Works, Use and Compensation) Ordinance and CCE has to take the lead in resolving objections and make submission to the Executive Council to obtain the approval for works execution.

5. Examples of public housing developments with transport and traffic issues include Ex-Kwai Chung Married Quarters, Hung Shui Kiu Area 13, Kiu Cheong Road East, and Wo Sheung Tun Street (Fo Tan), etc.

## **Noise impacts from nearby noise sources including major roads, railway lines and industrial buildings**

6. As a lot of public housing sites are located in developed areas, they are seriously affected by road traffic noise, railway noise and fixed noise impacts. These noise impacts would impose many constraints to be resolved. In particular, the railway noise and industrial/commercial noise are controlled under Noise Control Ordinance. Environmental assessment studies are required to be carried out to identify the noise impact on the proposed developments. To optimize the development potential, we need to discuss with all relevant departments/parties the possible mitigation measures such as laying of low noise road surfacing materials on public roads, noise barrier along public road/railway tracks, etc. CCE has to negotiate with the Environmental Protection Department (EPD) at policy and strategic level and to take a leading role in exploring innovative mitigation measures like acoustic balcony and acoustic windows. He has to steer the negotiations with private building owners on issues like the implementation of at-source noise mitigation measures.

7. Examples of public housing developments affected by noise impacts include Sha Tsui Road, Tung Chung Area 56, San Po Kong, Sai Chuen Road, Yuen Shun Circuit (Sha Tin 14B), Wo Sheung Tun Street (Fo Tan) and Choi Hing Road (Choi Hung), etc.

## **Inadequate district sewage disposal facilities including foul sewers, pumping stations and sewage treatment works**

8. It is necessary to confirm the adequacy of district sewage disposal and treatment facilities at the early planning stage of public housing developments and this requires sewerage impact assessments. CCE has to resolve with concerned departments (such as Drainage Services Department (DSD) and EPD) regarding major sewage infrastructure inadequacies and work out the best engineering solutions such as upgrading of trunk sewers and provision of temporary sewage pumping stations. For instance, a temporary sewage pumping station has to be provided within the public housing site in Tung Chung Area 56.

He needs to liaise at high level with DSD concerning operational and maintenance responsibilities.

9. Examples of public housing developments encountered sewerage problems include Tung Chung Area 56, So Uk Estate Redevelopment, Shui Chuen O (Shatin Area 52), Chung Nga Road sites (Tai Po), and Wo Sheung Tun Street (Fo Tan), etc.

### **Air quality impact due to major roads or chimneys**

10. Many public housing sites require rezoning and we need to prove the environmental acceptability of the sites from the perspective of the air quality compliance. In particular, the latest air quality requirement (e.g. new Air Quality Objectives) would come into effect soon. Quantitative air quality assessments related to vehicular emission and/or chimney emission need to be carried out at the early planning stage of the developments to confirm suitability of sites for public housing developments. CCE needs to formulate the study methodology with EPD for sites close to major roads and/or buildings with chimneys. In addition, he needs to formulate mitigation proposals for agreement with EPD.

11. Examples of public housing developments affected by major roads or chimneys include Sha Tsui Road, Fanling Area 48, and Chung Nga Road Sites (Tai Po), etc.

### **Risk imposed by hazardous installations**

12. The presence of a Potential Hazardous Installation (PHI) like water treatment works would impose significant constraint on the development potential of public housing sites. The existence of PHI might impose a maximum ceiling on the designed population for a public housing development. For example, in Hin Tin Street housing development, specialized Quantitative Risk Assessment of Shatin Water Treatment Works is required. CCE has to formulate the study methodology for agreement with EPD and secure approval from the

Coordinating Committee on Land-use Planning and Control relating to Potential Hazardous Installations (CCPHI) for the population ceiling.

13. Examples of public housing developments affected by potential hazardous installations include Hin Tin Street (Sha Tin Area 31), and Ngan Kwong Wan Road East and West (formerly known as Mui Wo Lot 734), etc.

### **Need for site formation and infrastructure improvement works**

14. Arising from the technical assessments, there are many site formation and infrastructural works to be carried out. CCE has to take up with the senior management in the works departments for speedy works execution. The scope of works includes construction of district open space, community hall, footbridge, public transport interchange and site formation works. He has to make submissions to Legislative Council Panel on Housing, Public Works Sub-committee and Finance Committee to seek funding approval when the works are to be carried out under the Public Works Programme. In some cases, in order to meet with the development programme of public housing developments, some site formation and infrastructural improvement works identified from the aforesaid technical studies would be carried out under civil engineering contracts managed by CCE.

15. Examples of public housing developments with site formation and/or infrastructure improvement works include Anderson Road Quarry sites, Hung Shui Kiu, Shui Chuen O, Hin Tin Street (Sha Tin Area 31) and Chung Nga Road West (Tai Po), etc.

### **Public housing sites with complicated geotechnical constraints**

16. Geotechnical constraints include:

- (a) public housing sites on sloping ground;
- (b) existing man-made slopes outside public housing site boundary but affecting the public housing development;

- (c) public housing sites affected by natural terrain hazards;
- (d) public housing sites in Scheduled/Designated Areas with complex geology;
- (e) public housing developments on newly reclaimed sites; and
- (f) public housing developments with basement design.

### **Public housing sites on sloping ground**

17. Public housing development on existing sloping sites or sites with terrace platforms and slopes may require substantial site formation works to suit the proposed development layout. The site formation works include excavation and/or filling works, construction of slopes and retaining walls, upgrading of existing slopes by soil nailing, rock slope stabilization, etc. These site formation works will have impacts in terms of time and cost on the public housing development, which depend on the existing topography of the site and the proposed development layout. Moreover, the geotechnical features constructed will require maintenance by the relevant maintenance party. Chief Geotechnical Engineer (CGE)'s geotechnical input with a view to minimizing the extent of the site formation works is crucial in those public housing projects on sloping sites. Public housing projects with optimized geotechnical design will save time and cost during construction stage and save maintenance of those constructed geotechnical features in future.

18. Examples of public housing development with substantial site formation works include Anderson Road, Shui Chuen O (Shatin Area 52), So Uk Estate, Hin Tin Street (Shatin Area 31), Pik Tin Street (Shatin Area 4D), Wo Sheung Tun Street (Fo Tan), Sheung Lok Street, etc.

### **Existing man-made slopes outside public housing site boundary but affecting the public housing development**

19. There are cases that public housing developments are on fairly flat sites which require no site formation works, but being affected by existing adjoining man-made slopes downhill or uphill. As these existing slopes may affect the safety of the adjoining public housing

development, upgrading works on these slopes may be required if they are on government land. However, the maintenance party will usually be required to take up the maintenance responsibility for these upgraded slopes. On the other hand, if these slopes are on private lots, upgrading works on them may not be feasible. In this case, defensive works, e.g. protection barrier, may be a solution to the problem. CGE's advice on these issues will facilitate the project team to identify an economically and technically feasible design.

20. Examples of public housing development affected by surrounding existing man-made slopes include Fanling Area 49, Pik Tin Street (Shatin Area 4D), Wo Sheung Tun Street (Fo Tan), etc.

### **Public housing sites affected by natural terrain hazards**

21. Under the current Government policy, natural terrain requires detailed study and implementation of natural terrain hazard mitigation measures, e.g. debris flow barrier, boulder fence, etc, if a public housing development is affected by the natural terrain hazards, e.g. landslide, mud slide, boulder falls, etc. The development potential of a public housing site may be affected with these mitigation measures in place. Moreover, the introduction of Natural Terrain Clause<sup>Note 1</sup> may require the maintenance party of the public housing estate to take up extensive future responsibility of these adjoining natural terrain. CGE's involvements in liaison with Geotechnical Engineering Office (GEO) of Civil Engineering and Development Department (CEDD) in respect of the natural terrain hazards and future maintenance responsibility are crucial.

22. Examples of public housing sites affected by natural terrain hazards include Fanling Area 49, Lin Shing Road, Hin Tin Street (Shatin Area 31), Pik Tin Street (Shatin Area 4D), Wo Sheung Tun Street (Fo Tan), Ngan Kwong Wan East, etc.

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<sup>Note 1</sup> Natural Terrain Clause (NTC) stipulated in government land grant documents is to protect the Government from being claimed damage to adjacent properties, including public housing developments, due to natural terrain hazards. As such, the NTC requires the property owners to protect themselves against natural terrain hazards by designing, construction and maintenance of the necessary protection works.



## **Public housing sites in Scheduled/Designated Areas with complex geology**

23. Public housing developments on sites in the Scheduled Areas Numbers 2 and 4, and Designated Area in the Northshore Lantau may be affected by the complex geology underlying these areas. Scheduled Area Number 2 (north-western New Territories) covers Tin Shui Wai and Yuen Long areas, whereas Scheduled Area Number 4 covers Ma On Shan area. The geology in the Scheduled Area Numbers 2 and 4 are featured with marble surface karst and marble bedrock with cavities. On the other hand, the geology of the Designated Area in the Northshore Lantau is featured with deep or steeply inclined rockhead in igneous rocks. All these complex geological conditions require extensive ground investigation works, geological appraisal, careful geotechnical input in foundation option study and design. CGE's involvements in geological appraisal and foundation option study will facilitate a cost effective and optimum geotechnical design for the project. Moreover, during the construction works for foundation, site supervision by a Directorate Site Supervisor will likely be imposed by GEO of CEDD or Independent Checking Unit (ICU) of HD, in addition to the Cat. I / Technical Competent Person T5 quality site supervision.

24. Examples of public housing development in the Scheduled Area Number 2 include Ex-Yuen Long Estate, Tung Tau Yuen Long, etc.

## **Public housing developments on newly reclaimed sites**

25. Newly reclaimed sites will impose geotechnical constraints on foundation design, in particular the effect of negative skin friction on pile foundation and excavation subject to high water table. Moreover, the land of a newly reclaimed site will have a problem of long-term ground residual settlement which will adversely affect external area of the public housing development and the underground utilities. The effect of this residual ground settlement will usually take a very long time to stabilize. These long-term ground settlement problems have always been a sensitive issue in the previous public housing projects. In light of such

experience, CGE's advice on the ground settlement and associated precautionary measures in foundation and external works design for any potential public housing development on newly reclaimed sites are important.

26. Examples of public housing developments on newly reclaimed sites include Tung Chung Area 54 and Tseung Kwan O Area 65C2, etc.

### **Public housing developments with basement design**

27. In order to achieve Gross Floor Area exemption and hence to fully utilize the development potential of a public housing site, provision of basement for car park or other use may be required. The basement construction deeper than 4.5m or affecting the adjacent properties or utilities will be considered as building works with significant geotechnical content. Under the ICU's control, Excavation and Lateral Support (ELS) Plan and Supervision Plan (SP) are required to be submitted. CGE's involvement in geotechnical assessment of the effect of ELS works on the adjacent ground movement and ground water table are necessary to ensure the stability of the excavation, and adjacent road, buildings and structures, and the safety of workmen and public.

28. Examples of public housing development with basement design include Po Heung Street, Ex-Tai Wo Hau Factory Estate, etc.

### **Potential sites for the production of public housing**

29. Since the public housing projects beyond the next five years (i.e. beyond 2017-18) are still at an early planning and design stage, it is premature to make any announcement on relevant sites at the moment.