

By post and by fax at 2147 3691

9 October 2015

Development Bureau
18/F, West Wing, Central Government Offices
2 Tim Mei Avenue, Tamar
Hong Kong

[Attn: Mr Allen FUNG, Political Assistant to Secretary for Development]

Dear Mr FUNG *Allen*

The HKIE's Views on Land Supply

Thank you for inviting the Institution to be one of the co-organisers of the Land Supply Forum to be held on 17 October 2015 and to put forth our views on the captioned subject.

In response to the subject, the Hong Kong Institution of Engineers is pleased to provide herewith our views and suggestions for your consideration.

Thank you for your attention.

Yours sincerely



Ir CHAN Chi Chiu
President
The Hong Kong Institution of Engineers

Enc

Enclosure

Views from the Hong Kong Institution of Engineers on Land Supply in Hong Kong

Introduction

The Hong Kong Institution of Engineers (HKIE) has always advocated strategic development of Hong Kong under the overriding aims of enhancing the living quality and livelihood of the citizens. We appreciate that as our economy prospers, there is a genuine aspiration among our fellow citizens for establishing Hong Kong as an ideal place for habitation and employment, as the Chinese saying for “安居樂業”. We believe that to persistently pursue such driving objective, Hong Kong will not just need more land, but we need land that locates within desirable environment at large, providing people with better living quality and facilitating more opportunities for further development.

2. The HKIE views that land supply is not a standalone issue, but it is one of the many actions embedded within the overall strategy for the wellness of people in Hong Kong, now and future.

Legitimate Concern on Environment

3. Initial guess can easily lead people to read that development, in particular land development, may damage the environment and yield no particular wellness to ecology. This may be correct, but is so only if land supply works are done under complete negligence from considering our environment.

4. The HKIE opines that the ultimate purpose of preserving or creating land in Hong Kong is for the people here. Never will land supply be sustainable if it may result in net negative impact to our community. Obviously no one will ever want to live and work in a piece of land located within the poorly damaged environment. Hence, we do share with the public opinion that our land creation should never be in the unrecoverable expense of our environment.

5. We are not blind to the fact that various land supply initiatives might affect ecology and environment. For instance, reclamation involves topographical and hydrological modifications, and might result in undesirable effects on the natural environment such as destruction of natural habitats and biodiversity, as well as degradation of environment quality leading to soil erosion with direct critical impact on marine organisms (especially coral reefs) and pollution. Coral reefs provide highly protective barriers for coastlines, such as beaches, from the continuous pounding of ocean waves. These species also provide an intricate and complex habitat for a variety of fish, mollusks, echinoderms and crustaceans. Land filling process over the reclamation might

alter coastal morphology, hydro-oceanography, landscape / seascape and scenery.

6. Physical removal of seabed during reclamation might also immediately cause injuries to natural marine communities. Clouds of suspended sediment could adversely affect marine life due to decrease in light penetration into water for photosynthesis of seaweed and phytoplankton. In addition, certain constituents of sediment may react with substances in the sea and lead to increase in water temperature. As a result, water might hold less oxygen and this could be detrimental to marine lives. Furthermore, congestion of marine traffic (due to the restriction of marine space) might cause critical disturbance, affecting marine eco-tourism and threatening marine mammals (i.e. dolphins) and sea turtles.

7. These concerns on our environment are genuine and legitimate. To trek forward positively, the HKIE believes that we should also genuinely come to appreciate how such concerns can be addressed with appropriate approaches and modern technologies in engineering.

Enabling Livable Environment

8. We understand that now in Hong Kong significant infrastructure developments require the comprehensive Environment Impact Assessment to address the following important issues and formulate mitigation measures accordingly to materialise the co-existence of development and preservation:

- Air Quality Assessment;
- Noise Assessment;
- Assessment of Water Pollution;
- Assessment of Waste Management Implications;
- Ecological Assessment, Fisheries Impact Assessment;
- Landscape and Visual Impact Assessment;
- Assessment of Impact on Sites of Cultural Heritage and other related impacts; and
- Assessment of Social and Economic Impacts
- Balancing the Aspirations of Different Stakeholders

9. Definitely, the Administration's due respect and adherence to the laid down process and procedures for environmental impact assessment; and high transparency to allow public inspection of the Administration's compliance to the necessary environmental protection and mitigation measures, would build up the public confidence that land supply works do not necessarily cause unrecoverable impact to the environment.

10. On the other hand, there are various plausible and sustainable engineering approaches to handle land creation for the sake of protecting our environment. In particular, a sustainable approach in land creation consists of non-dredging engineering design for reclamation. Non-dredge methodology is not a novelty but achievable in Hong Kong.

11. In fact, such approaches and methods would have undergone rigorous assessments, inter-departmental challenges from various Hong Kong Government agencies, and fine tuning to circumscribe and incorporate the various tangibles. The non-dredge technique applied to reclamation would probably marginally increase the project cost, yet it could offer significant water quality benefits in terms of reduction in sediment release and prevention of ocean morphology, habitat and sea life during the construction phase as compared to the conventional fully dredge method. For such a method in reclamation, it assures the provision of cellular cofferdam in lieu of the rock-fill seawall (zero waste approach). To complement the non-dredge initiative for the seawall, stone columns could be installed inside the cellular structure to improve the properties of the existing ground materials instead of excavation and replacement. The only component for sediment release would therefore be the filling activities for reclamation that could be further controlled by adopting an appropriate mix of public fill and sand fill.

12. Many advantages are associated with the non-dredge method - e.g. minimisation of dredging the existing seabed; mitigation of the burden on existing or new dump pits; and reduction of consumption of marine sandfill that could significantly contribute to maintaining the stability of marine hydrology with less impact on coastal biodiversity etc. Therefore, dredging-less method would ensure the seabed and its ecology intact and hence better water quality; as well as lesser consumption and degradation of the natural resources. The success of implementing such innovative and safe design under the realm of sustainability could set the guiding framework for all further reclamations and rock cavern works in Hong Kong for the sake of protecting the environment.

Co-existence of Improving Living Quality and Protecting Environment

13. Hong Kong has had a long development pattern of constructing new towns every 5 to 15 years in 1960s to 1990s. These early endeavours have enabled many new towns then such as Sha Tin, Tung Chung and Tseung Kwan O to become essential hubs now for accommodation and other community / business activities.

14. Yet, there has not been any major new town development within previous 15 years. There is no dispute that land is now insufficient to meet the increasing housing and business needs. As for the housing issue, it is definitely related to the living quality of our Hong Kong citizens.

15. The HKIE shares the objectives that optimal land supply should be ready to meet the public demand on improving living quality, accommodate the healthy growth of local population, and sustain and enhance the economic activities of Hong Kong. By having an optimal level of land reserve, Hong Kong can have more instrumental means for meeting our future demand of our future generations. At best, the land created can and should be open for public deliberation for its use in response to the circumstances and community needs in different points of time in future.

16. The HKIE believes that when environment can be suitably protected, Hong Kong should adopt a flexible and multi-pronged strategy for sustainable new land creation.

Mid- and Long-term Land Supply

Rezoning Land Use

17. We do not object the idea that rezoning, as a means to reassign the land use, may be a suitable short-term tool for mitigating the current urgent situation of shortage in land supply, provided that a well-kept balance between development and conservation can be maintained.

18. We recognise the limitation of redeveloping the existing developed areas due to the effect to those current residents and the living conditions of the vicinity. It is also of importance to maintain our well-kept balance of the natural areas in the territory for keeping Hong Kong a green city. With such awareness, the HKIE does not suggest Hong Kong to target on piecemeal and non-sustainable way of releasing land for construction. For example, we do not agree to locate piecemeal sites in the current developed areas (such as converting small community facilities site for constructing single block of housing), as this would affect living quality of people and even cause nuisance to the community. As for the initiative of locating fringe of country parks for new land supply, we opine that there should be careful and proper planning, and comprehensive environmental impact assessment studies should be conducted, while only the tiny portion of land bordering the country parks with low ecological values should be considered as long as the areas are sparsely vegetated and are close to other developed areas and existing transport networks.

Urban Underground Space

19. Limited land resources of older urban areas are imposing constraints on improving their built environment and hindering future development. The use of underground space can offer good opportunities for creation of space, enhancement of connectivity and improvement of the congested urban environment.

20. Underground space can also be used for developing new facilities or relocating existing above-ground facilities that are incompatible with the urban setting. Land so released is a valuable resource for other beneficial and compatible land uses.

Developing Rock Cavern

21. Developing rock cavern may relatively bring less negative impact to the neighborhood as caverns are mostly located at the urban fringes. Also, developing rock cavern can provide a gradual supply of land and release valuable land zones in the developed areas for other more essential residential and commercial uses.

22. Developing rock cavern can have multi-fold values. Though less suitable for residential purposes, the rock cavern will be appropriate for housing facilities such as swimming pools, sports grounds and performance venues. Public facilities could also be constructed in rock caverns. Development of cavern can also provide the opportunities in relocating unwelcomed infrastructures (e.g. waste water treatment plants) in the community neighbourhood.

23. Rock cavern development would also bring tangible benefits rather than creating wastes. In fact, the excavated debris from the rock cavern would provide valuable sources of industrial and construction materials. Certainly, this would hinge on the Administration's proper planning to store and schedule the use of such materials for other projects.

Reclamation

24. The HKIE considers that reclamation and creating artificial islands are relatively efficient methods to obtain a significant piece of new land source to facilitate long-term and comprehensive development on it.

25. With the citizens' convenience and living quality in mind, obtaining new land through reclamation would also avoid affecting the living condition of the people and minimise the need of relocation in the existing developed zones in the city.

26. As elaborated earlier, reclamation may also bring positive impact to environment. With suitable sorting and usage of the construction and demolition materials and those from rock caverns, the time and cost for disposal of them could be saved by converting them as the filling materials for reclamation. Also, the seawall that would be constructed for forming the artificial islands or linking islands by reclamation could also produce beneficial effects to the marine ecosystems. With suitable enhancement measures and with time, the rifts among the cobbles and stones within the seawall and the rough seawall surface might be able to foster the growth of marine organisms, and thus facilitating the provision of food sources for other marine lives in long run.

Practical Concerns

27. We note that the present guidelines on Environmental Impact Assessment (EIA) under the Environmental Impact Assessment Ordinance (EIAO) are not sufficiently clear to guide practitioners on what needs to be included, and so lead to a complex and long process for land supply. Lacking of baseline data for comparison / benchmarking, most notably in certain ecological assessments, it takes time to set up credible data to justify the EIA as well, possibly including further court challenges and resulting in further delay. At the same time, carrying out a cumulative EIA cannot be assigned to any individual consultancy agreement. The Administration must coordinate the overall

programme and may need to work with cross-boundary parties in China.

28. Meanwhile, we need to point out the proposed approaches for land supply require engineering and construction skills which are not commonly available in Hong Kong. We need to have a well laid-down action plan to address these issues and ensure that there are sufficient skills sets, labours and supportive policies for carrying out the land supply projects.

Land Supply Strategy – Within the Overall Strategy for Hong Kong

29. We must stress that land supply is not a standalone issue. New land is for people to find accommodation; and residing citizens there need employment opportunities and community services. Hence, the land supply strategy should always link with and be embedded in the overall strategy of developing Hong Kong for the citizens' livelihood.

30. For newly created land, noting that many isolated proposed projects, such as Tung Chung development, Siu Ho Wan reclamation and Yam-O reclamation, are inter-linked, the HKIE is of strong concern of the potential for connectivity with the existing developed zones as well as meeting the long-term development plan of the territory with assessing the cumulative environmental impacts of all these initiatives. Moreover, we are of the view that rather than conducting scattered and piecemeal reclamation works around the territory, it would be more desirable to identify a larger zone, either a single site or a few adjacent ones, for reclamation and development to allow more economical and synergetic advantages. This would also facilitate a more integrated strategy for handling pertaining assessment, town planning, infrastructural planning and land use design. Hence, reclamation to form large artificial islands in suitable waters' locations would seem to be the most appropriate land supply option in the long run.

From Creating Land to Enabling a Green and Smart City

31. From creating land, Hong Kong can also make good use of the new land for enhancing the livelihood of the people. We believe that with the new development area constructed with the new land supply, Hong Kong can enhance the infrastructures there to push Hong Kong forward to be a smarter and greener city.

Green Infrastructures

32. Hong Kong has been facing two major environmental challenges, namely, waste management and air quality. With this in mind, proper separation, collection and recycling of municipal solid waste including food waste should be carefully considered in the new development areas. The HKIE supports the preferred technologies such as waste to energy facilities outlined by the Administration to deal with the waste problems. On the other hand, we need community green stations aiming at strengthening education in the new development areas and providing collection services for recyclables of low economic value, so as to enable more residents to take part

in waste reduction and recycling, and promote green living at the community level. Furthermore, the HKIE supports the wide use of electric vehicles to reduce road side air pollution problem. However, it cannot be materialised without adequate relevant charging stations. It would be an excellent opportunity to install the above mentioned green infrastructures into the new development areas during their planning and design stage as according to the blue prints “Clean Air Plan” and “the Food Waste and Yard Waste Plan for Hong Kong” issued by the Environment Bureau.

Smart City

33. Following the wide applications of information and communication technologies (ICT) in a digital era, the HKIE is of the view that the Administration could take this golden opportunity to bring innovations to the new development areas from new land supply. Full advantages of ICT can be realised with the assistance of the big data analytics to integrate the demand side related to energy including electricity and gas, and water consumption, rainwater collection and recycling, municipal solid waste management, green transport/ network and application of electric vehicles into a comprehensive system which targets to fully enhance the efficiency, effectiveness and optimisation of the individual systems. The smart system applied to the new land spaces can help achieve multiple targets such as optimisation of economic benefits, effective transportation network, and potentials for green growth, excellent water networks/ resources and significant minimisation of resource consumption and reduced carbon footprint. Its successful implementation will set a role model for other districts to follow and finally help usher the overall territory into a smart city.

The Role of the Administration and Public Expectation

34. Major infrastructure projects would require considerable planning and public consensus. As the subject of land supply involves the interest of every person in the community, the Administration should take the lead in driving for consensus in the community in the first place, so that further constructive discussion and compromise among stakeholders can be carried out effectively.

35. Land acquisition process is, undoubtedly, considered as one of the most important infrastructure development projects in Hong Kong. The HKIE hopes that the Administration should be more proactive in handling the expectations of the public, providing the public with realistic information and data for them to form practical and feasible opinions in enhancing land supply for Hong Kong. The Administration should also conduct sooner some detailed and realistic economic analyses, and make the study results available and transparent to the public. Moreover, necessary adjustment in the land supply planning will have to be made immediately in case the economic situation may significantly deviate from assumptions. Furthermore, a strict project management system with public participation in monitoring has to be in place to ensure that controlled project cost and the target project completion date for various land supply initiatives.