

**Confirmed Minutes of the 256th Meeting
of the Advisory Council on the Environment (ACE)
on 6 February 2023 at 2:30 p.m.**

Present:

Prof John CHAI, BBS, JP (Chairman)
Prof Kenneth LEUNG, JP (Deputy Chairman)
Ms Carmen CHAN, BBS, JP
Dr Sylvia CHAN, MH
Ms Ada FUNG, BBS
Mr Eric HO
Ms Linda HO
Mr Alex KWAN
Dr Theresa KWONG
Prof Alexis LAU, JP
Prof Dennis LEUNG
Mr Simon NG
Mr Daryl NG, SBS, JP
Mr Albert SU, MH, JP
Prof Dan TSANG
Prof WONG Kam-bo
Dr WONG Kwok-yan, MH
Dr William YU
Mr Alan LO, JP (Secretary)

Absent with Apologies:

Ms Christina TANG
Dr Raymond YAU

In Attendance:

Miss Janice TSE, JP	Permanent Secretary for Environment and Ecology (Environment)
Dr Jackie YIP	Assistant Director (Country and Marine Parks), Agriculture, Fisheries and Conservation Department (AFCD)
Ms Maggie CHIN	Assistant Director of Planning / Technical Services, Planning Department (PlanD)
Miss Mavis HUI	Chief Information Officer, Environment and Ecology Bureau (EEB)
Ms Karen CHEK	Chief Executive Officer (CBD), EEB

Miss Sally SHEK Executive Officer (CBD) 1, EEB
Miss Avynn WONG Executive Officer (CBD) 2, EEB

In Attendance for Item 3:

Mr Terence TSANG Assistant Director (Environmental Assessment),
Environmental Protection Department (EPD)
Miss Queenie NG Acting Principal Environmental Protection Officer
(Territory South), EPD
Mr Simon HO Senior Environmental Protection Officer (Territory South)
2, EPD
Ms Flora NG Environmental Protection Officer (Territory South) 21,
EPD

Project Team

*Civil Engineering and
Development Department (CEDD)* Mr Jacky WU, JP
Head of the Sustainable Lantau Office
Mr Raymond IP
Deputy Head of the Sustainable Lantau Office
(Works)
Ms Ellen CHENG
Chief Engineer / Lantau 4
Planning Department (PlanD) Ms Ginger KIANG, JP
Deputy Director of Planning / Territorial
Mr NG Kim-wai
Chief Town Planner / Studies and Research 2
*Ove Arup & Partners Hong Kong
Limited* Mr James SZE
Project Manager (P&E Study)
Mr Terence LEUNG
Deputy Project Manager (Engineering)
Mr Franki CHIU
Team Leader (Environmental)
Dr Bruce CHONG
Team Leader (Smart, Green and Resilient)
ERM-Hong Kong, Limited Mr Terence FONG
Partner

Action

The Chairman welcomed all to the meeting and informed Members that apologies of absence had been received from Ms Christina Tang and Dr Raymond Yau. As this was the first meeting of the ACE in the new term, at the invitation of the Chairman, all Members gave a brief introduction of themselves.

Item 1 : Matters arising (Closed-door session)

2. The draft minutes of the last meeting held on 7 November 2022 were confirmed by circulation on 19 December 2022 without amendments.
3. There were no matters arising from the minutes of the last meeting.

Item 2 : Election of Chairman/Deputy Chairman of the three subcommittees (Closed-door session)

4. The Chairman announced that 12 Members had signed up for the Environmental Impact Assessment Subcommittee (EIASC), six for the Nature Conservation Subcommittee (NCSC) and 14 for the Waste Management Subcommittee (WMSC) in the new term.
5. The Chairman advised Members that according to the ACE House Rules, the Chairmen of the three subcommittees (SC) as well as the Deputy Chairman of the EIASC would be elected amongst the respective SC members. Thus only those who had signed up for the SCs concerned could take part in the relevant nomination and election process.
6. Before the meeting, Members had been invited to submit nominations for the Chairmen and / or Deputy Chairman of their SCs concerned. At the time when the meeting was conducted, only one nomination was received for each position. With the support of all Members, the Chairman announced that the following Members would serve in the relevant positions in the new term and that the membership list in the ACE website would be updated accordingly.

	<u>Chairman</u>	<u>Deputy Chairman</u>
EIASC	Prof Kenneth Leung	Mr Alex Kwan
NCSC	Dr Theresa Kwong	[Not applicable]
WMSC	Prof Dan Tsang	[Not applicable]

(Post-meeting note: A Member signed up to join the NCSC on 10 February 2023.)

Item 3 : Kau Yi Chau Artificial Islands (ACE Papers 1/2023 and 2/2023)

7. The Chairman referred Members to *ACE Paper 1/2023* which provided an update on the preliminary proposals of the Kau Yi Chau Artificial Islands (KYCAI). In November 2021, CEDD and PlanD briefed the ACE on the scope of the KYCAI project including the statutory environmental impact assessment (EIA) under the Environmental Impact Assessment Ordinance (EIAO), and agreed that the ACE would be briefed further on the project progress. A background note (*ACE Paper 2/2023*) had been circulated to Members before the meeting.

8. A Member declared that he was a consultant for CEDD on issues related to ecological shorelines. He was also a member of an advisory group for the KYCAI project where he provided professional advice on biodiversity enhancement. Another Member declared that he was a member of a focus group for the same project where he provided advice on carbon reduction measures. Given that the purpose of the current agenda item was to collect views on the preliminary proposals of the project, the Chairman agreed that the two Members could stay and participate in the discussion.

(Two Members, the presentation team and EPD representatives joined the meeting at this juncture.)

9. With reference to the two letters addressed to the ACE by Peng Chau Reclamation Concern Group and Save Lantau Alliance, which had been circulated to Members and copied to the Project Team before the meeting, the Chairman invited the Project Team to address the relevant issues raised in the letters.

Presentation cum Question-and-Answer Session (Open session)

10. With the aid of a PowerPoint presentation, Ms Ellen Cheng and Mr Ng Kim-wai briefed Members on the preliminary proposals on four aspects of the KYCAI project, namely reclamation extent, broad land use, strategic transport infrastructure as well as possible financing options.

Urban Planning and Design

11. Five Members welcomed the KYCAI project and considered that it could help alleviate the congested conditions in the old urban districts and enhance the livelihood of people. One of the five Members shared that the KYCAI project could benefit the society as a whole if the initiatives and highlights proposed in the project could also be applied in other parts of Hong Kong. One of the above Members commended the “Three-island” design which offered opportunity to separate utility infrastructures such as food waste treatment facilities from residential areas.

12. Given that the KYCAI will unavoidably give rise to permanent loss of marine habitat, a Member questioned whether it could be justified to utilise the new land for open spaces and recreational facilities such as parks. The Member suggested that the water bodies of the proposed blue-green corridors and features amongst the three islands could also serve as open spaces so that more land would be used for other purposes like housing. She added that the Project Team should fully utilise the reclaimed land by reviewing the building heights and development intensities, and exploring the idea of placing supporting facilities (such as car parks) underground.

13. Ms Ginger Kiang responded that the water channels along the blue-green corridors proposed between the living communities would be counted in the calculation of the land for open space under the Study. The building heights and intensities of the proposed developments would be determined at a later stage of the Study taking into consideration a host of factors including planning, urban design, environmental and infrastructure considerations.

14. A Member enquired about the public to private housing ratio and suggested that there should be appropriate measures to ensure healthy development of the private housing market on the artificial islands. Ms Ginger Kiang advised that the proposed public to private housing ratio of 70:30 was an assumption based on the prevailing government policy for the purpose of estimating the residential land required in the project. There would be flexibility to adjust the ratio in future if needed. In response to a question raised by another Member, Ms Kiang said that about 300 hectares (ha) out of the 1,000-ha artificial islands were included as part of the estimated 3,280 ha developable land supply in the entire territory in the coming 10 years.

15. While commending the design of blue-green corridors, a Member suggested that innovative elements should be incorporated to make the artificial islands an international exemplar. People-oriented design such as co-sharing of open spaces and urban farming should be explored. Another Member added that the blue-green features should integrate with the built environment to enhance vibrancy. A third Member reminded that considerations should be given to facilitate wind flow and air ventilation with a view to reducing urban heat island effect. Mr Jacky Wu agreed to consider Members' suggestions in the future planning and design. Mr Ng Kim-wai added that a Task Force involving representatives from relevant professional institutes was being formed with a view to collecting views and ideas to make KYCAI an international exemplar.

16. In response to a Member's enquiry on successful examples of outlying islands being transformed into Central Business Districts (CBDs) in other places, Ms Ginger Kiang advised that the KYCAI was situated at a strategic location and planned as part of the expanded Harbour Metropolis. The proposed Third Central Business District (CBD3) on Island A to be supported by strategic transport infrastructure would have synergy with the existing CBD at Central, which was about 10km away.

17. While appreciating the green pedestrian and cycling network, three Members opined that their design should be suitable for the future residents bearing in mind the ageing population in Hong Kong. One of the above Members further enquired on the possible opportunities for the young people on the artificial islands. Ms Ginger Kiang responded that the KYCAI would be designed with the flexibility to accommodate people of different age cohorts. She supplemented that the increase in land ratios for open space and community facilities to 3.5 m² per person would provide room for addressing the needs of different age cohorts such as the

increasing demand for medical and healthcare facilities from the elderly. Mr Ng Kim-wai added that economic land with a total commercial floor area of 1 million m² would be planned in the living communities outside CBD3 with a view to providing diversified employment opportunities on the artificial islands especially those for the young people.

18. Two Members considered that appropriate measures should be put in place to sustain and support the fisheries industry, such as including a fisherman's wharf to integrate with the future commercial and / or water sports facilities at the waterfront promenades. Mr Ng Kim-wai revealed that based on the initiative to promote the upgrading, transformation, modernisation and sustainable development of the fisheries industry announced in the 2022 Policy Address, the Project Team was considering reserving land for facilities such as a fisherman's wharf on the KYCAI.

Climate Change Impacts

19. In view of the potential coastal hazards brought by climate change, rising sea level and extreme weather events, two Members enquired about the corresponding coastal protection measures. Mr Jacky Wu advised Members that the coastal risks of KYCAI had been assessed based on the design standard and with reference to the latest climate change forecast released by the Intergovernmental Panel on Climate Change of the United Nation. Given the uncertainty of future climate, a preliminary proposal has been formulated using progressive adaptive approach. Under the preliminary proposal, the site formation level of KYCAI was designed to 7.5m above the Principal Datum (mPD) on average and the highest level was 9mPD for the exposed area at the east, south-east and south of KYCAI. Regarding the coastal defence infrastructure (e.g. seawall), design allowance would be given such that the coastal resilience could be enhanced as and when required (say by increasing the height of the seawall). To minimise the coastal risk to the public, building developments were proposed to be set back by 20m to 30m away from the shoreline. Mr Wu supplemented that an expert panel had advised that the preliminary proposal had duly considered hydraulic, environmental and climate change factors. Mr James Sze supplemented that the Hong Kong Observatory and the Port Works Division of CEDD had been consulted on the modelling simulations for extreme weather conditions.

20. A Member was concerned about the impact of surface runoff on water quality and enquired about the storage and infiltration of stormwater before discharge. With reference to examples of European countries, another Member suggested that artificial wetlands should be constructed for coastal defence and enhancement of ecological habitats. Mr Jacky Wu indicated that to adapt to climate change, the "Sponge City" concept embedded with a sustainable urban drainage system would be adopted for the absorption, storage, infiltration and reuse of stormwater. Measures including artificial wetlands, flood retention lakes and porous pavement would be considered to enhance urban resilience against extreme heavy rainfalls. In response to a third Member's enquiry on whether the

topography of the KYCAI could facilitate the discharge of stormwater, Mr Wu said that the formation levels of the islands would be designed to enable stormwater flowing by gravity.

Environmental and Ecological Impacts

21. In response to a Member's question on dredging, Mr Jacky Wu replied that non-dredged reclamation method with deep cement mixing technology would be adopted. This method would not involve the removal of marine deposit, thereby minimising adverse impact on water quality. The same technology had been proved in reclamation works under the Three-Runway System project as well as the Tung Chung New Town Extension project.

22. A Member enquired about the compensation plan for the loss of marine ecological habitats due to reclamation. Mr Jacky Wu responded that as the EIA process was ongoing, details of the mitigation measures would be proposed in the next stage. As for the idea of coral translocation, Mr Wu indicated that the proposed reclamation extent had already kept the artificial islands away from coral communities with ecological value. In considering any coral translocation in the next stage, mortality rate and cost-effectiveness etc. would be duly assessed. On another Member's enquiry on aircraft noise, Mr Wu indicated that the noise level would be assessed under the Study.

23. A Member further enquired about the environmental and ecological impacts arising from the construction of immersed marine tunnel as well as roads and railways in this project. Mr Terence Fong responded that the 12-month ecological surveys had been conducted to collect baseline information for impact evaluation. In designing the road alignment, considerations had been taken to minimise adverse impact on habitats and species of conservation significance, such as woodland and Romer's Tree Frog. Wherever necessary, appropriate mitigation measures would be proposed in accordance with the priority of "avoidance-minimisation-compensation" under the EIAO.

24. A Member suggested that the Project Team should consider the potential ecological impacts on the surroundings induced by human activities (including water sports) at and near the artificial islands. To address another Member's concern on sewage discharge, Mr Jacky Wu noted one of the above Members' suggestion and supplemented that sewage treatment works of secondary plus treatment level would be set up on Island C for discharge to waters with sufficient water depth and flow rate.

25. A Member enquired about the possibility of using residential food waste grinders for direct discharge of food waste to treatment facilities on the artificial islands, though the presence of high-rise and high density buildings might pose technical issues. Mr James Sze advised that some researches on overseas cases were being carried out and the various considerations of using residential food waste

grinders on the KYCAI would be consolidated under the Study. Mr Terence Tsang supplemented that there were few trial projects of residential food waste grinders in some public housing estates. The Government would continue to explore the idea taking into account the results of the trial.

Carbon Neutrality

26. Two Members highlighted the importance of advance planning in the design stage in order to achieve carbon neutrality. One of the above Members suggested that the district cooling system (DCS) should be extended to residential buildings on the KYCAI. Another Member added that smart mobility like autonomous vehicles should be encouraged.

27. A Member suggested that the Project Team should explore resources utilisation and other alternatives to enhance carbon sequestration and promote circular economy. He was also concerned about the carbon emissions in connection with the deep cement mixing method for reclamation. He suggested the Project Team to consider reusing locally available waste materials such as inert construction and demolition (C & D) materials and bottom ash from waste treatment facilities as filling materials for reclamation. In addition, the Government should explore new technology to speed up the solidification of cement in order to minimise water quality impact. Mr Jacky Wu expected that at least half of the filling materials would be the reuse of local inert C & D materials. In any case, the Project Team would continue to gauge views from relevant experts so as to minimise carbon emissions arising from reclamation.

28. Mr Raymond Ip indicated that the Project Team would incorporate various initiatives on KYCAI with reference to the four major decarbonisation strategies set out in the Hong Kong's Climate Action Plan 2050. The initiatives being explored included the adoption of renewable energy, construction of food waste / sewage sludge anaerobic co-digestion facilities, green building design, etc. The idea to adopt DCS in residential buildings would be subject to further studies. On green transport, comprehensive pedestrian and cycling networks with supporting facilities for new energy and autonomous vehicles would be provided. Mr Jacky Wu added that relevant experts and stakeholders had been engaged to form the Urban Forestry and Biodiversity Focus Group and Carbon Neutrality Focus Group under the Study. The two focus groups were tasked to formulate the strategies and initiatives on the relevant fronts.

29. Mr Raymond Ip indicated that Modular Integrated Construction method would be adopted and low-carbon construction materials would be used to reduce embodied carbon during construction phase. A Member opined that the use of eco-friendly construction materials should be set as a mandatory requirement. Mr Ip responded that proposal on carbon reduction measures would be one of the assessment criteria for tender evaluation.

30. To facilitate the evaluation of carbon performances, a Member suggested that the Government should establish a data collection plan and a baseline of carbon emissions of the KYCAI project at the early stage. Mr Bruce Chong advised that in designing the KYCAI project, operational carbon emissions from the infrastructures and buildings had been fully considered in the carbon appraisal while the collection of actual carbon emissions data would require further studies as different parties including private entities would be involved.

Transport Network

31. On transport, Mr Raymond Ip replied that it would take less than 10 minutes to reach CBD in the Central and less than 15 minutes to reach the airport and Hong Kong - Zhuhai - Macao Bridge Hong Kong Port by the strategic road; about 5 minutes to reach the proposed HKU Station and about 20 minutes to reach the proposed Hung Shui Kiu Station by the strategic rail. He explained that while there would be changes to the existing fairways and anchorage areas, the Project Team would liaise with the Marine Department and the relevant stakeholders on the re-provisioning proposal so as to maintain port operations. Any dredging of seabed as a result and its impact would be duly assessed under the EIA process. Given its proximity to the airport, a Member suggested the Project Team to consider creating synergy between the development of KYCAI and that of the Airport City.

32. A Member enquired about the cost effectiveness for the construction of the strategic transport networks and whether the transportation costs would be affordable by ordinary residents. Mr Raymond Ip replied that a more concrete estimate of construction cost would be provided at the next stage.

33. Four Members were concerned about the potential impacts to the neighbouring islands particularly Peng Chau. One of the four Members enquired whether there would be any connecting roads to Peng Chau. My Jacky Wu advised that there would be no connecting roads to those uninhabited neighbouring islands, i.e. Kau Yi Chau, Siu Kau Yi Chau and Sunshine Island, so as to preserve their existing natural environment. The Project Team received mixed views from the public on the provision of road access to Peng Chau, and the Government remained open-minded at this stage. The Project Team would further consider the proposal when planning the local road network taking into account factors such as traffic demand, environmental impact and cost.

Financial Analysis

34. In response to a Member's questions, Mr Jacky Wu explained that about 30% of the total estimated cost of \$580 billion would be for reclamation, 20% for the local infrastructure of KYCAI such as sewage treatment facilities and roads while the remaining 50% would be for the proposed strategic road and rail links. The cost estimate of \$580 billion did not cover the cost of housing development. Based on the assumption of 270 000 employment opportunities brought about by this project,

Mr Wu said that the associated economic activities were estimated to generate around \$200 billion of value-added each year upon the full development of the KYCAI. Another Member suggested that the Government should disclose the cost estimates.

Conclusion

35. The Chairman concluded the discussion and thanked the Project Team for their presentation and explanations.

(Four Members left the meeting during the Question-and-Answer Session while the presentation team left at the end of this session.)

Internal Discussion Session (Closed-door)

36. Highlighting the similarity of their planning concepts, two Members suggested that the strategic positioning of Northern Metropolis Development (NMD) project and the KYCAI project should be set out clearly to facilitate suitable planning direction including design and costing. Mr Terence Tsang explained that while both the NMD project and the KYCAI project would supply land for housing development, they were two projects serving different purposes. The KYCAI project was planned to be an extension of the Victoria Harbour Metropolis to enhance Hong Kong's economic competitiveness through the development of a third CBD, whereas the NMD project was envisaged to be an international innovation and technology hub.

37. With reference to overseas experience, a Member suggested the Government to conduct trial projects of floating structures to explore the possibility of deploying them to serve as ecological habitats of the KYCAI. Another Member concurred with the Member and suggested that the Project Team should consider accommodating open spaces such as regional parks and water sports facilities at Enclosure 9 of ACE Paper 1/2023 on floating structures. Mr Terence Tsang indicated that the Project Team had been exploring the possibility to incorporate floating structures on the KYCAI.

38. To achieve carbon neutrality, a Member shared that there were innovative technologies to deploy solar brick as the material for constructing pavements or breakwaters, which could also absorb air humidity for irrigation purpose. The Member indicated that the implementation of artificial wetlands and mangroves would help mitigate coastal hazards, enhance biodiversity as well as capture and store carbon emissions. Mr Terence Tsang thanked the Member for his suggestions and said that EPD would approach him separately for more information.

39. Two Members suggested that photomontage and drone videos be provided to facilitate Members to visualise the project design as well as to illustrate the visual and landscape impacts. Mr Terence Tsang shared that EPD had launched the EPD and Project Team

Centralised Environmental Database with applications of geographic information system and a mapping system platform, which could help provide three-dimensional visualisation of a project. EPD would liaise with the Project Team for better presentation in future submission.

40. A Member enquired about the follow-up actions on the letters from the concern groups and considered that it was necessary for the Project Team to respond to the points raised. Members noted that the letters had already been passed to the Project Team before the meeting. With reference to the Chairman's enquiry on whether the two concern groups had issued letters to other advisory bodies or Government departments, Mr Terence Tsang responded that concern groups usually issued letters to multiple parties according to the subject of concerns. The letters in this case were environment-related and addressed to the ACE. The Chairman invited Members to set out in writing any further specific concerns or questions after noting the contents of the letters. The Secretariat could collect and relay such further specific concerns or questions to the Project Team.

(Post-meeting notes: The Secretariat sent out on 6 February 2023 an email after the meeting to invite Members to submit any comments regarding the letters from the concern groups. No comments were received. The Project Team subsequently informed the ACE Secretariat that they would follow CEDD's consistent approach in handling public comments received for various projects, namely CEDD would holistically consider all comments / letters received during the public engagement, but no separate reply / acknowledgement would be served to individual concern groups.)

41. In response to the Chairman's enquiry, Mr Terence Tsang shared that the Project Team targeted to submit the EIA report for the ACE's consideration in Q3 or Q4 of 2023. EPD would liaise with the Project Team and the Secretariat.

EPD and Project Team

42. To facilitate discussion in a more focused manner in future meetings, the Chairman suggested and Mr Terence Tsang concurred that the Project Team and EPD should set out which issues were under the purview of EIAO. Notwithstanding that some issues such as carbon neutrality might be beyond the scope of existing EIAO, a Member suggested and echoed by the Chairman that it would be beneficial for the Project Team to take ACE Members' suggestions into consideration. Another Members further suggested that the Project Team might organise and present the subject matters in relation to the work of the three SCs of the ACE to facilitate Members' discussion in a more structured and focused manner.

EPD and Project Team

43. The Chairman suggested that Members' salient views should be set out in a table for the Project Team to follow up and report progress in future meeting(s). The action party involved should also be set out in the minutes as appropriate. Mr Terence Tsang agreed that EPD would liaise with the Secretariat on compiling such a summary table.

EPD and the Secretariat

(Post-meeting notes: A summary of Members' salient views including the required responses to the two letters from concern groups was sent to the Project Team on 21 March 2023 for their follow up.)

(A Member left the meeting during the Internal Discussion Session.)

Item 4 : Any other business (Closed-door session)

44. Members noted that a briefing on declaration of interests by the Independent Commission Against Corruption would be arranged on the day of the next ACE meeting.

Item 5 : Date of next meeting (Closed-door session)

45. The next ACE meeting was scheduled for 20 March 2023. Members would be advised on the agenda in due course.

46. There being no other business, the meeting was adjourned at 5:25 p.m.

**ACE Secretariat
March 2023**