

新聞稿

香港工程師學會提交對交椅洲人工島意見

(香港，2023年4月12日) 交椅洲人工島公眾參與活動於上月底結束，香港工程師學會(下稱「學會」)於三月底向政府提交多項意見，包括人工島位處於戰略位置，有助解決香港的土地問題，學會歡迎政府推動交椅洲人工島發展，並期待政府考慮採納學會提出的相關建議。

交椅洲人工島可以強化與內地、北部都會區及香港島西部之間的戰略聯繫。人工島以「第三個核心商業區」為定位，可提供1,000公頃土地，成為未來本港土地供應的其中一個重要來源。香港現時面對的社會問題、以至未來可持續發展的關鍵，很大程度上與土地房屋供應問題有關，學會認為人工島項目不僅創造發展容量，亦可為未來發展建立土地儲備，例如提供土地供市區重建作調遷或安置之用。

作為一個集工作、居住及休閒娛樂的核心商業區，學會建議政府完善人工島上單車及行人道路網絡的規劃，並在人工島物色適當的地點，構建水上構築物，進一步增加綠化及公共休憩空間之比重。

從技術角度而言，學會認同採取三個島嶼的設計，緩減對水質及生態的影響，並減低熱島效應，亦支持多採用拆建廢料(即公眾填料)作為填海物料，以減少運輸流程造成的碳足跡。整個人工島應以在營運期達致碳中和及淨零廢料排放為發展目標。

交椅洲人工島項目不僅為社會帶來重大機遇，亦為工程界及建造業界帶來一定挑戰，學會期望相關部門理順各項基建的時間表，善用資源。學會樂意與政府當局分享專業意見，令交椅洲人工島成為一個更宜居的智慧社區。

附件一為學會[意見書](#)之全文(僅供英文版本)。

另外，市民其中一個關注點落在環境保護方面，就此，學會會長卜國明工程師早前亦撰文呼籲社會以科學客觀態度作分析及評論人工島發展項目相關事宜，並重點回應社會對填海設計和技術、全球暖化、城市規劃、環保及成本等的關注，歡迎參閱學會會長卜國明工程師[《回歸科學、理性討論交椅洲人工島》](#)一文及相關[重點](#)(見附件二)。

如欲垂詢，請與香港工程師學會傳訊統籌部聯絡。

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31 March 2023

Tung Chung Community Liaison Centre
13 Tung Chung Waterfront Road
Tung Chung

Dear Sir/Madam

**Views from The Hong Kong Institution of Engineers
On the Development of Kau Yi Chau Artificial Islands**

On behalf of the Institution, I am pleased to present to you our views and suggestions as set out in the enclosure for your consideration on the captioned subject.

With our expertise and experience, the Institution welcomes the opportunity to work with the Government on the area of concern if and when it is needed.

Thank you.

Yours faithfully



Ir Aaron BOK
President

AB/CKH/DW/SS

Enclosure

**Views from The Hong Kong Institution of Engineers on
the Development of Kau Yi Chau Artificial Islands**

Hong Kong is known for her competitiveness as a financial, commercial and trade centre. To continue to stay ahead in the ever-changing external environment, it is essential for the city to expand the scope and capacity of development. To this end, The Hong Kong Institution of Engineers (“HKIE”) welcomes the development of the Kau Yi Chau Artificial Islands (“KYCAI”) which is strategically positioned in the Harbour Metropolis to meet part of the land requirement of the city. The HKIE would like to put forward our views on the KYCAI for consideration of the Development Bureau and responsible departments and authorities.

2. The KYCAI Development will fuel future economic growth and about 300 out of the 1,000 hectares of land will serve as one of the supply sources of the 3,280 hectares of developable land in the coming 10 years. Positioned as a Central Business District (“CBD”), the KYCAI will encompass commercial activities, housing, culture, creative arts, fashion and entertainment, popular sports and facilities related to daily living as well as a large amount of quality public space.

3. The KYCAI can strengthen the strategic connection between the mainland, the Northern Metropolis, and Hong Kong Island West, facilitating connection with major developed areas without encumbering existing road networks especially in Kowloon. Meanwhile, to create a work-live-play CBD, it is worth studying a pedestrian or cycle network within the KYCAI to enhance walkability and liveability. Floating structures may also be considered at suitable locations to provide extra space for public enjoyment. Ultimately, one of the development targets should be to achieve carbon neutrality and zero waste discharge in the operation stage.

4. Much of Hong Kong’s societal problems and more importantly, the sustainable development of the city, are tied with the complication of land and housing supply. The KYCAI not only can create capacity, but also build land reserve for future development of Hong Kong. The HKIE supports the KYCAI Development which can offer solution spaces and spade-ready sites by which the Administration can kick off development at a much faster pace instead of spending time on seeking and forming suitable sites, which can in turn help solve various obstacles including urban redevelopment to cater for the ageing buildings in the downtown areas.

5. In terms of technicality of the KYCAI Development, the HKIE agrees to the “three-island” design to cope with the impact of reclamation on water quality and ecology while reducing urban heat island effect. With environmental impact being one of the major public concerns regarding the KYCAI, it is suggested that further elaboration on the coastal design and explanation of the possible enhancement to the bio-diversity and coastal resilience of the area be publicised to facilitate understanding on the benefits of such a design.

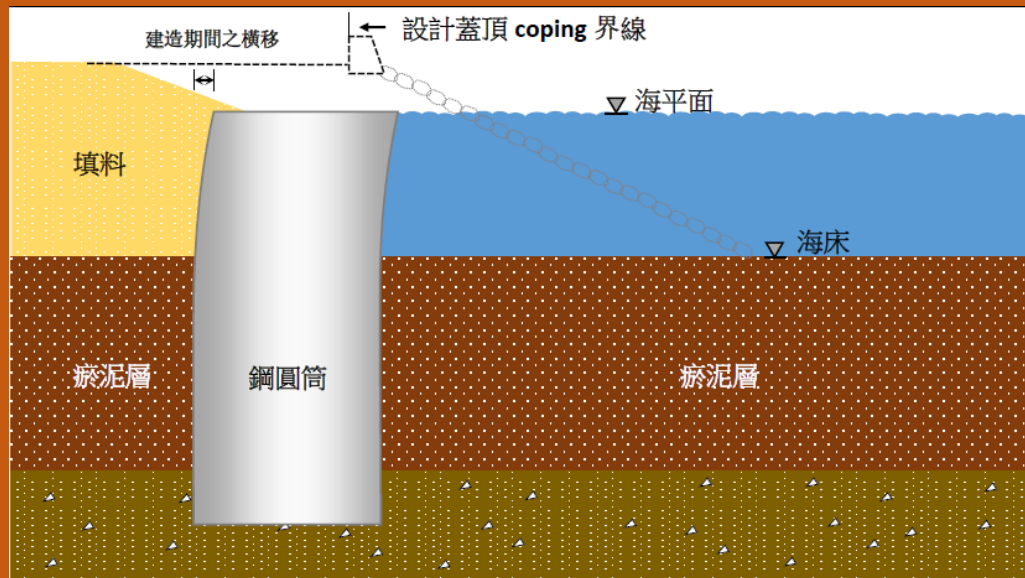
6. Furthermore, the HKIE suggests that the surplus public fill generated over the years can be used as construction materials for the reclamation of KYCAI, instead of delivered to Taishan in Guangdong Province for disposal. Such local usage of public fill not only removes the carbon footprint generated in the transporting process, but also create a new development cluster at a prime location.

7. The project cost is another widely raised concern of the public, whose purse, however, is not necessarily the only source of fund. The KYCAI offers foreseeable financial returns. The HKIE agrees to the suggestion of launching infrastructure financing securitisation products apart from the fiscal reserve, which can help promote Hong Kong as an international financial centre and infrastructure financing hub, and at the same time reduces the short-term financial burden of the Administration.

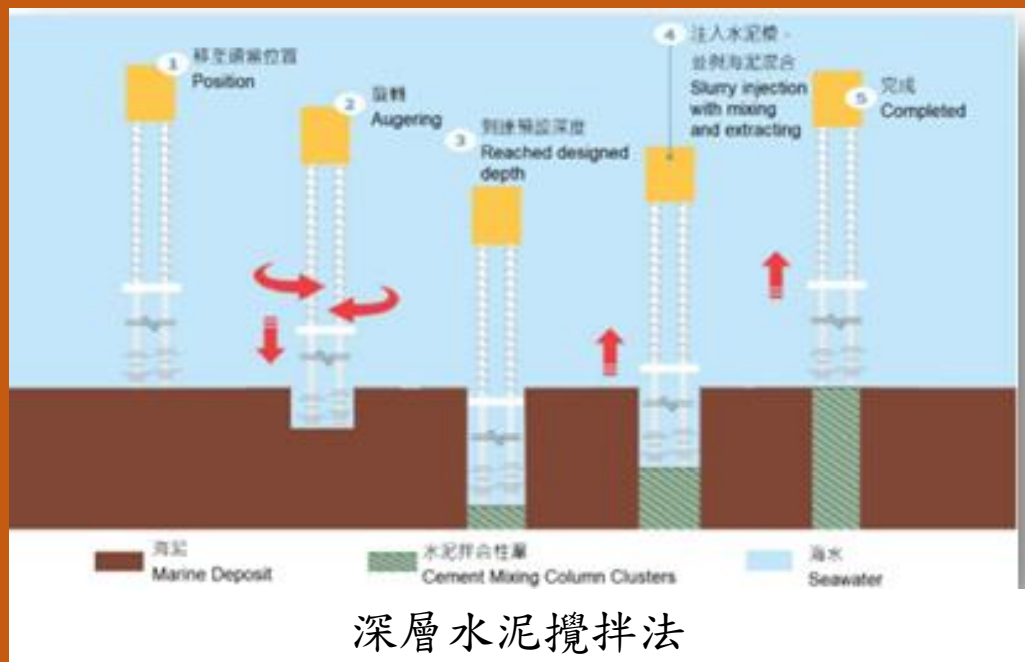
8. On the other hand, investment in infrastructure is an effective means to boost the economy and provide job opportunities for the community. The reclamation of KYCAI and the associated large-scale infrastructures such as major roads and railways to be carried out will bring opportunities of development, but the challenges to the engineering and construction industry shall not be overlooked. It is also essential that relevant authorities coordinate and prioritise the projects according to cost-effectiveness, demand, and capability to address existing societal issues etc. to best allocate and utilise the available resources.

9. The Institution understands the public concern over the schedule, cost and environmental issues arising from the KYCAI Development. However, we believe such concerns can be properly addressed, and the social and economic benefits brought by the development will outweigh the costs so arising. The HKIE is ready to work with other professional institutes to engage professionals and the younger generation, and share views and ideas on development of the KYCAI into a liveable and smart city.

香港有豐富填海經驗



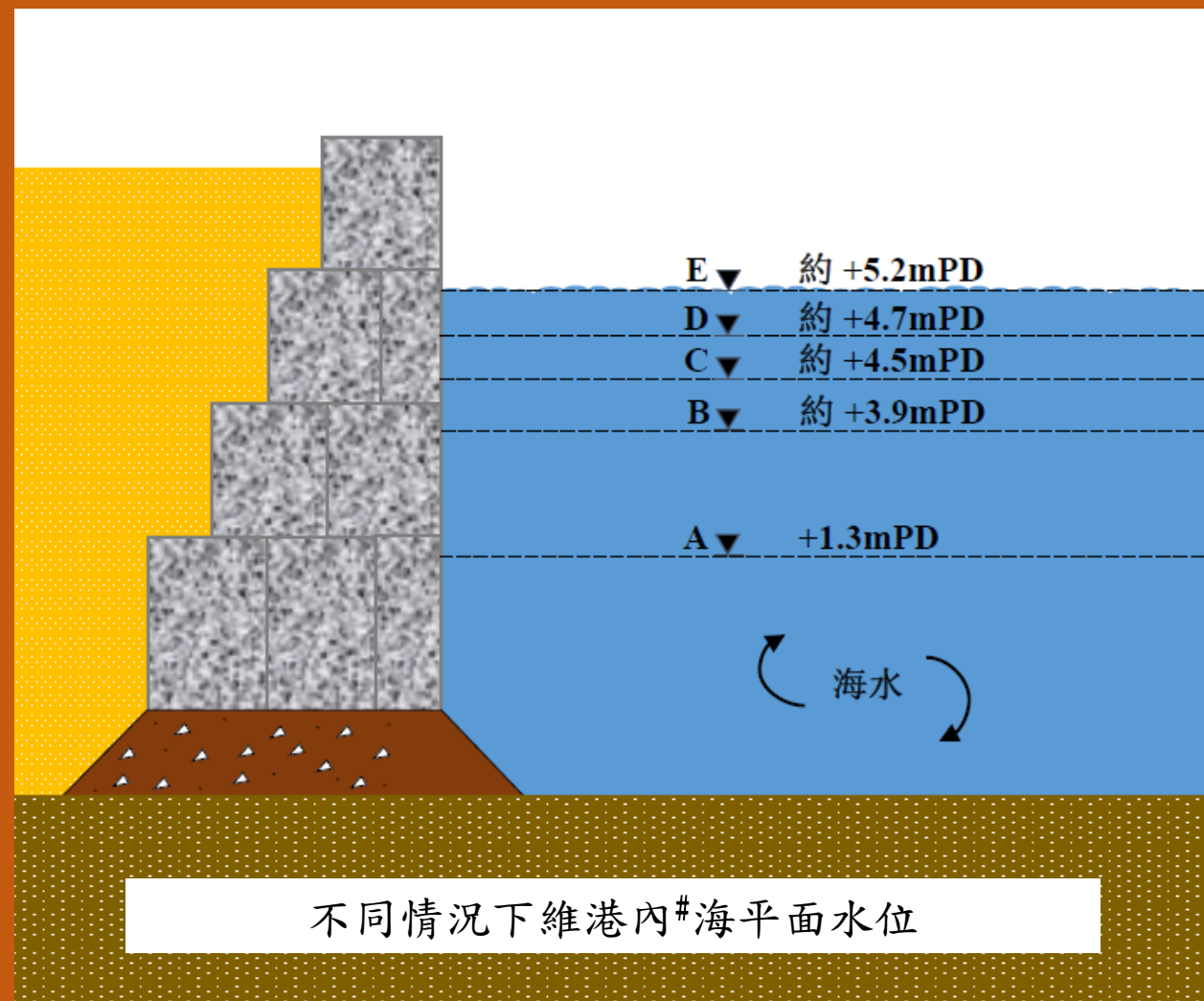
口岸人工島填海建造期間大圓桶情況



深層水泥攪拌法

- 過去已有7,000公頃填海，包括人工島
- 建造期間沉降或移動是泥土固結/物理受壓移動的正常過程
- 填海完成後的少量剩餘沉降可以在設計上照顧
- 填海工序在隔泥幕中進行，確保工地外水質不受影響
- 不浚挖填海方法（大鐵桶或深層水泥攪拌法）均是環保及效果良好（口岸人工島省回2,200萬立方米（約9,600個泳池）淤泥挖掘、傾倒及回填）
- 關西機場土質跟香港根本上不同（400米表土沉積層 Vs 50米），不可相提並論

全球暖化水位上升



#參考鯪魚涌潮汐站

- 今天平均海平面1.3mPD
- 百年一遇颱風及天文潮汐可引致水位上升約2.6米
- 根據聯合國IPCC報告估算香港至2100年水位上升約0.6米
- 變暖海水引致「新」的超強颱風可額外升0.2米
- 加入「應變設計容量」0.5米兼顧氣候暖化不確定性
- 海堤設計（斜面、弱波石及反射式檔浪牆）可有效減低越堤浪威脅。沿岸可設約20米緩跑徑作緩衝區
- 不少發達國家（美國、荷蘭、丹麥）均擬以填海來應付水位上升威脅

Y型水道/熱島效應

僅供參考 For Indicative Purpose Only

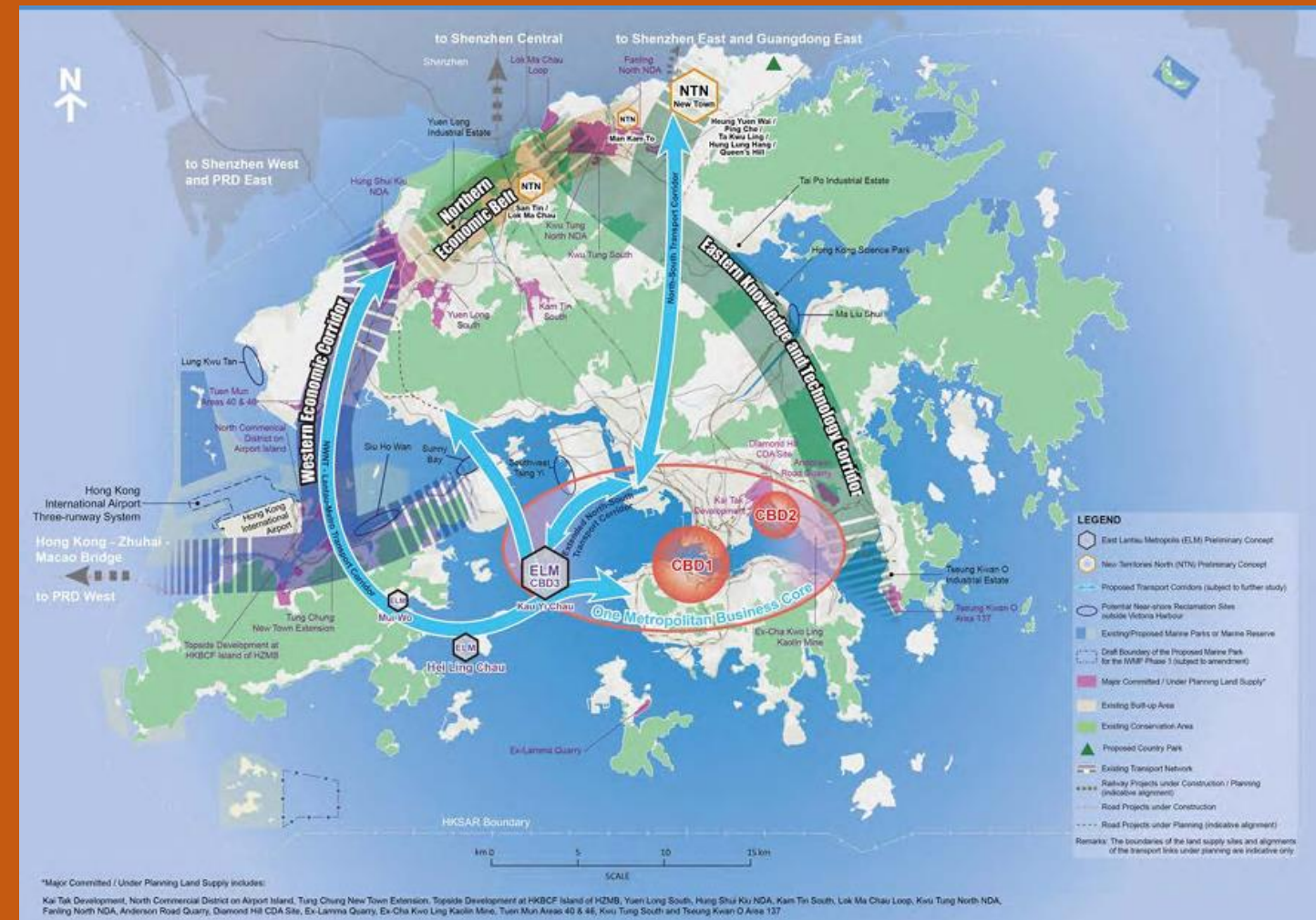
人工島形狀呼應周遭自然環境
CONTEXT RESPONSIVE GEOMETRY
OF KYCAI



- 政府選擇人工島填海是要保護具生態價值石珊瑚群落
- Y型設計是要確保水流，維持良好水質，不引致過度淤泥沉積
- 200米闊水道提供優美，海濱環境或作水上活動
- 約250米通風廊提供良好的通風，降低熱島效應

發展新界 Vs 交椅洲

- 從來都是地少人多，可供發展土地不足（除房屋外，還有其他土地需要）
- 發展新界同樣需時，且易受反對挑戰
- 新界發展往往涉及收回私人土地，補償金額並不便宜
- 收回新界土地，香港並無新增可用土地
- 支持多條腿走路：— 填海、發展新界及少部份郊野公園邊陲地。那個方案走得到走得快，就是好方案，為市民早日提供土地



填料



Asphalt



Stones and earth



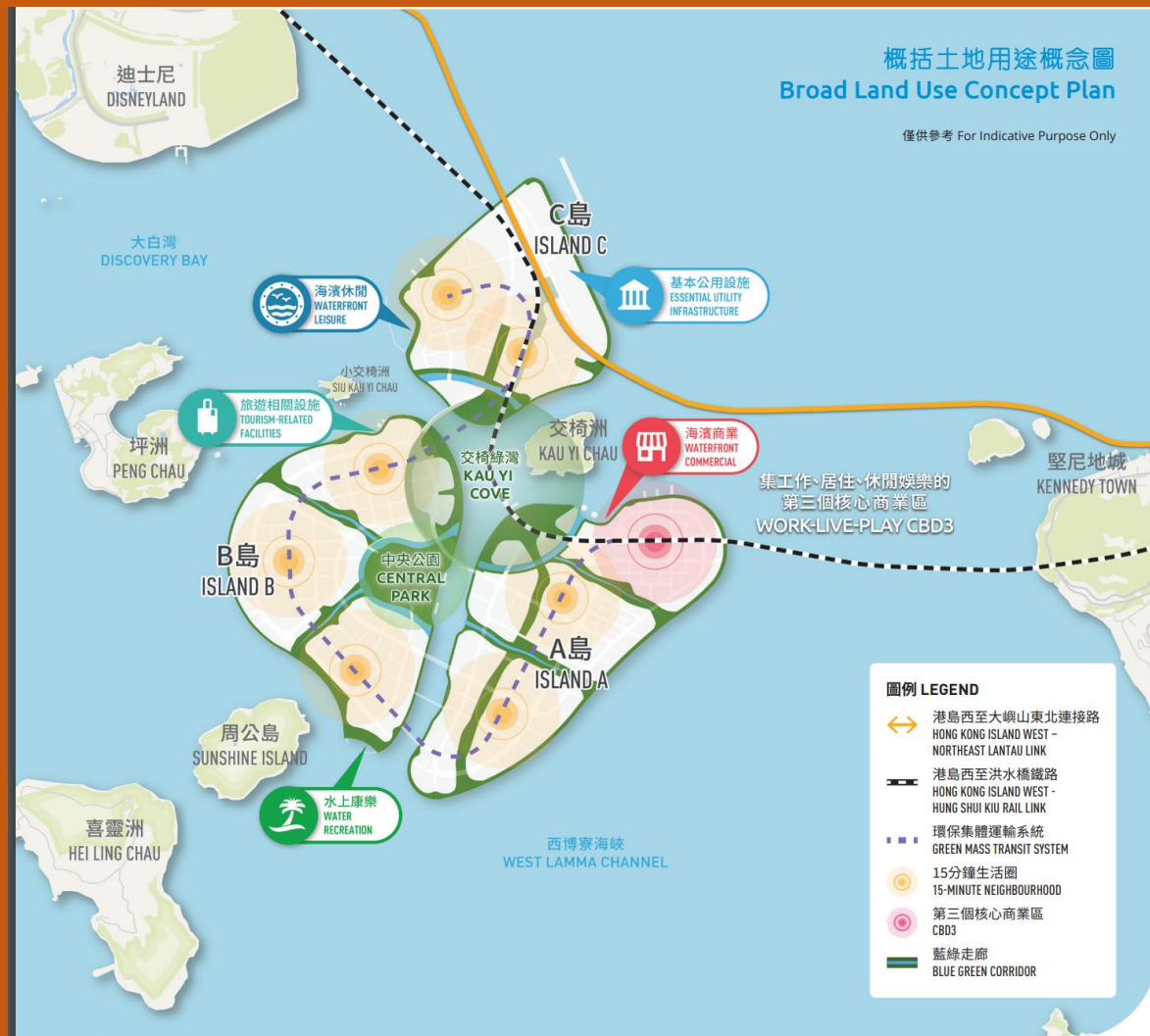
Concrete and bricks



Rocks

- 填料可選公眾填料、機砂、海砂
- 香港平均每年生產1,500萬噸公眾填料，經簡單工序大部份適合填海
- 估算未來更多
- 交椅洲填海超過10年才完成，香港生產的公眾填料可為人工島提供約一半填料
- 建議政府在填料上尋求多重供應鏈
- 申請人工島為國家重點工程項目

城市規劃/孤島安保問題



- 人工島距離港島4至5公里
- 全新1,000公頃新發展區城市規劃可塑性甚高
- 隨着國家發展，能發展成CBD3，進一步提升香港經濟競爭力
- 建議發展成就業自給自足、以碳中和營運為目標的智慧型藍綠海綿城市
- 市民上下班以「15分鐘生活圈」來規劃，創做宜居社區
- 有助支援市區重建之連鎖搬遷流動
- 有策略性鐵路及幹道連接港島及大嶼山，交通方便

超支/掏空庫房



- 過往10年超支項目只有5%。在500至600項工程，最終總費用支出是總預算批核約9成
- 公眾須看超支的原因，詳細分析其理據
- 交椅洲整個項目橫跨20年，即平均每年庫房增加3、400億的開支
- 香港政府財政儲備超7,000億，負債不多，每年收入/支出在7,000億以上，每年額外增加3、400億應可應付
- 5,800億中7成是陸上基建及公共設施，放在香港那區仍然要支出
- 土地開發、基建是長遠投資
- 香港應建立土地庫，並制定最少平均居住面積，讓市民住好啲