

open space system are the proposed waterfront promenade and Metropolitan Park. The configuration of the Metropolitan Park abuts the waterfront and is intended to maximise frontage to adjacent residential development. View corridors extend through the development site to Lion Rock and Fei Ngo Shan. Other open spaces have been located so as to provide a community focus within each of the residential districts and to provide pedestrian-only linkages.

- 1.4.9** A typhoon shelter is located in the southern part of the existing Kai Tak Approach Channel. A refuse transfer station (RTS), public filling barging point (PFBP), vehicular ferry pier, and marine refuse collection point are located in the south of the scheme. These facilities have been located at the previous vehicular ferry pier, remote from residential development and allowing routing of vehicles through an industrial area. Mitigation measures for possible visual impact could be adopted to shield off the RTS/PFBP from the view at the Tourist Node.

## 2. SUMMARY OF ENVIRONMENTAL OUTCOMES

- 2.1.1** The concept of ‘green’ development permeates the whole of SEKD. Landuse and transport planning has provided a proactive approach in minimizing the likely environmental impacts from road traffic, potential noisy uses namely stadium, public cargo working area (PCWA), and facilities with potential hazard to life including chlorine dock and dangerous goods (DG) godown. Besides, other ‘green’ initiatives like the application of solar energy, automated refuse collection system, and centralised district cooling system have been explored for SEKD (see **Figure C**).

- 2.1.2** Environmental friendly transport system will serve as the backbone of SEKD connecting the future Shatin to Central Link and the three SEKD transportation hubs. It is estimated that the total daily car trips and bus trips to and from SEKD would thus be reduced by 20,000 veh-km and 22,000 veh-km respectively. This would accordingly reduce the daily nitrogen oxides and RSP emissions from SEKD by about 160 kg and 16 kg respectively based on 2011 vehicle emission factors. Major vehicular traffic will go through tunnels and depressed roads. The design of the road network also aim at reducing vehicular and noise emissions from internal traffic by discouraging through flow traffic across SEKD (see **Figure D**). The amount of vehicular traffic in SEKD has been much reduced with peak hour traffic flow on most of the planned distributor roads being less than 1,000 vehicles per hour in each direction. Including the existing Airport Tunnel, a total of 7.4 km of tunnel has been planned within SEKD to remove potential traffic noise and air quality impacts on about 80,000 future SEKD population alongside these tunnels.

- 2.1.3** To minimize the residual traffic noise impacts on future development within SEKD, more than 7 km of vertical barriers, cantilever barriers, and semi-enclosures have been planned for the new roads to protect an additional 25,000 SEKD population. However, the SEKD would still be bounded by heavily trafficked existing trunks roads namely Prince Edward Road East and Kwun Tong Bypass which contribute to elevated traffic noise and air quality impacts at the peripheral of SEKD. Mitigation measures have been recommended in the current scheme to protect future SEKD population. The recommended measures include resurfacing of existing roads with low-noise surface, retrofitting additional noise panels on Kwun Tong Bypass, provision of buffer strips between existing trunk roads and future SEKD residential development, and noise-tolerant building design. With the above environmental transport design and mitigation measures, the current Outline Master Development Plan complies with the relevant air quality and noise standards.

- 2.1.4** The planned stadium, a landmark facility, is also a potential noise source especially when using to hold multi purpose functions including concerts. The current scheme does not only provide about 200m buffer distance from the Stadium to future residential development, it also incorporates retractable roof design for the Stadium to eliminate any potential noise

problem. The retractable roof design is currently used for a stadium overseas and has been examined to be working effectively in abating noise from rock concert. An estimated 80,000 of SEKD population around the stadium would be protected by this environmental friendly design.

- 2.1.5** Another noise source of concern is the existing 1.8 km long Public Cargo Working Area (PCWA) in Kwun Tong and Cha Kwo Ling areas. The existing PCWA poses significant visual and operational noise impacts on existing residential uses, namely Laguna City and planned residential development including Cha Kwo Ling housing development. The relocation of PCWA outside SEKD does not only facilitate better town planning, it also protects an estimated 60,000 of existing and future population from visual and noise impacts of PCWA.
- 2.1.6** Furthermore, in order to formulate a more compatible and environmental friendly scheme of SEKD, the current scheme has recommended the relocation of two existing uses that might pose potential hazard to human. These two uses namely the Chlorine Loading/Unloading Point and the Kerry DG godown, both currently located at the mouth of Kai Tak Approach Channel, are away from existing residential uses. These existing uses would pose significant hazard to the future SEKD population in the area. The current scheme with the relocation of these existing uses, would eliminate the associated potential risk on an estimated 90,000 future SEKD population.
- 2.1.7** One of the ‘green’ initiatives introduced in SEKD is the application of solar energy. The use of solar energy will be suitable for commercial building as well as G/IC facilities, in view of the relatively large façade or roof area. Currently, the financial return is not too attractive but with the capital cost of solar panel possibly dropping from technological improvement, there will be better incentive to the application of solar energy in the long term.
- 2.1.8** The Feasibility Study has also outlined the possibility of the application of Centralised Water Air-conditioning System (WACS), which is a more energy-efficient method compared with conventional air-cooled method. To further develop this, a consultancy has recently been awarded by Electrical and Mechanical Services Department to refine and to formulate the implementation strategy of the WACS at SEKD.
- 2.1.9** Another environmental friendly initiative explore for SEKD is the use of Automated Refuse Collection System (ARCS). The system collects and handles refuse in a totally concealed manner. Residents/users deliver waste to disposal inlets in designated areas, after which the refuse is automatically sucked by vacuum at a pressure and transported through underground ducting to a collection station. At the collection station, refuse is compacted into containers and loaded onto trucks, without ever being handled by human hands.
- 2.1.10** The use of ARCS to public housing will follow the current policy, which was established in 1998, of installing this system to public estates with over 2,400 flats. The possibility of further expansion in the scale of the system to apply to over one estate has been suggested. For a wider application to different private sites involving different lot owners, a number of issues related to institutional framework have to be investigated further in a separate study, noting that the possibility of granting bonus GFA to private development is being considered.
- 2.1.11** For the construction of SEKD, reclamation will be carried out in Kowloon Bay, Kai Tak Approach Channel (KTAC), and Kwun Tong Typhoon Shelter (KTTS). The existing water quality conditions in KTAC and KTTS are poor due to low flushing rate. After the reclamation, KTAC will be reclaimed and Kai Tak Nullah will be diverted away from KTTS. The existing odour nuisance from KTAC and KTTS will be rectified and an estimated 80,000 of future SEKD population will be protected. However, without proper treatment, the SEKD reclamation that will involve contaminated marine sediment might pose biogas risk on future development on top. The current scheme recommends a number of treatment methods

including the preferred in-situ treatment approach with minimum or no dredging. With the implementation of contaminated sediment treatment, an estimated 70,000 future SEKD population would be protected from potential biogas risk. Moreover, in order to reduce the volume of up to 2 million cubic metre of sediment for dumping, testing of Deep Cement method or other ground stabilization techniques will be explored as part of the reclamation to minimize dredging normally required for marine works such as seawall construction.

- 2.1.12** Cultural heritage is another important consideration in designing SEKD. The Sung Wong Toi Inscription Rock was relocated in early days for construction of the airport. A pocket park is planned near the former Far East Flying School to reinstate the Sung Wong Toi in its original location together with a through view to Lei Yue Mun as memorial to the Chinese history. Besides, in order to retain the historical significance of the Fishtail Rock in the existing Hoi Sham Park, a view corridor is incorporated into the current layout plan to provide an unobstructed view from the Fishtail Rock to the Victoria Harbour. Pedestrian linkage between the park and SEKD will also be planned to make this heritage site more effective than it is now.

### 3. AIR QUALITY

- 3.1.1** Landuse and transport planning has provided a proactive approach in minimising the likely air quality impacts from road traffic and other sources. The approach included:

- Environmentally friendly public transportation;
- Environmental friendly shuttle service;
- Discouraging through traffic movements;
- Reducing traffic at local levels;
- Reducing demand for through traffic;
- Underground road design; and
- Planning design.

- 3.1.2** Traffic flow on most of the planned distributor roads being less than 1000 vehicles per hour in one direction. With the introduction of the environmentally friendly shuttle service, it is estimated that the total daily car trips and bus trips to and from SEKD would be reduced by 20,000 veh-km and 22,000 veh-km respectively. This would accordingly reduce the daily nitrogen oxides and RSP emissions from SEKD by about 160 kg and 16 kg respectively based on 2011 vehicle emission factors. However, the SEKD would still be bounded by heavily trafficked existing main roads namely Prince Edward Road East and Kwun Tong Bypass which contribute to the poorer air quality at the periphery of SEKD.

- 3.1.3** The main impact would be from traffic emissions of open roads and vent shafts of vehicle tunnels. The modelling results showed that the levels of impact within SEKD were generally within the respective Air Quality Objectives (AQOs). However, exceedances were predicted immediately adjacent to tunnel vent shafts. Mitigation measures, in the form of environmental setback and higher vent shaft exhaust height, have been incorporated in the Outline Master Development Plan to avoid adverse air quality impact at nearby sensitive receivers. With the implementation of the recommended mitigation measures, the air quality impact will be acceptable at all sensitive uses.

### 4. NOISE

- 4.1.1** Similar to the air quality aspect, the landuse and transport planning has provided a proactive approach in minimising the likely noise impacts from road traffic and other sources. The approach included:

- Environmentally friendly public transportation;