

Task Force on Harbourfront Developments on Hong Kong Island

For reference
on 29 February 2016

TFHK/07/2016

Ground Decontamination Works at the Site of Ex-Kennedy Town Incineration Plant/Abattoir and Adjoining Area

PURPOSE

The purpose of this paper is to provide Members with information on the level of contamination at the Cadogan Street Temporary Garden and the need to remove all the trees, further to the previous paper on the decontamination works including the decontamination methods and programme which was provided to the Members in September 2015.

BACKGROUND

2. Following the re-circulation of the previous paper in September 2015 on decontamination works to Members in response to the concerns raised at the Harbourfront Commission (HC) meeting on 21 December 2015, HC Chairman enquired on the contamination level of Cadogan Street Temporary Garden and the need to remove all the trees.

KEY FINDINGS OF EIA AND SITE INVESTIGATION

3. The ex-Kennedy Town Incineration Plant (KTIP) ceased to operate in 1993. The ex-Kennedy Town Abattoir (KTA) adjoining the KTIP was closed in 1999. Decision was made by the Government in 1999 to re-develop the sites of the ex-KTIP and ex-KTA and the adjoining area, where the Cadogan Street Temporary Garden is situated which was put in place at the request of the Central and Western District Council pending the decontamination works and long-term development. The Civil Engineering and Development Department (CEDD) was tasked to undertake the decommissioning project for these facilities, which is a designated project under Schedule 2 to the Environmental Impact Assessment Ordinance (Cap. 499). An EIA and site investigation were carried out on the ex-KTIP and ex-KTA sites and the adjoining area in 2000 and 2003 to identify the types, extent and concentrations of contaminants in the underground soil. The EIA reports and site investigation indicate that the underground soil within the sites of the ex-KTIP and ex-KTA, and the adjoining area (including the Cadogan Street Temporary Garden) has been

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contaminated. The following tables summarise the key findings of the EIA reports and site investigation for the whole site, including the Cadogan Street Temporary Garden.

Major contaminants in the soil of the whole site:

| Types of Major Contaminants in Underground Soil | Maximum Concentration (mg/kg) | Threshold Concentration (mg/kg)¹ |
|--|---|---|
| Heavy Metals (HM) | | |
| Lead | 13600 | 255 |
| Zinc | 30510 | 10000 |
| Arsenic | 600 | 21.8 |
| Mercury | 317 | 6.52 |
| Copper | 6502 | 2910 |
| Hydrocarbons (HC) | | |
| Benzo(a)pyrene | 110 | 1.14 |
| Benzo(a)anthracene | 63 | 11.4 |
| Benzo(b)fluoranthene | 44 | 9.88 |
| Benzo(b)fluoranthene + Benzo(k)fluoranthene | 160 | 9.88 (Benzo(b)-fluoranthene) or 114 (Benzo(k)-fluoranthene) |
| Dibenzo(a,h)anthracene | 12 | 1.14 |
| Indeno(1,2,3-cd)pyrene | 32 | 11.4 |
| Number of boreholes | 189 | |
| Extent of contaminated soil | Present at various depths down to maximum 12 metres (m) | |
| Quantity of soil contaminated with HM only | About 57,000 cubic metres (m ³) | |
| Quantity of soil contaminated with HC only | About 17,000 m ³ | |

¹ If concentrations of contaminants is below the threshold contaminant concentrations, hazards or risks to human health arising from exposure to soil are considered minimal; otherwise, clean up of contaminants is required. (Source: Environmental Protection Department (EPD)'s "Guidance Manual for Use of Risk-Based Remediation Goals for Contaminated Land Management")

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|--|-----------------------------|
| Quantity of soil contaminated with both HM and HC | About 38,000 m ³ |
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Major contaminants in the soil of the Cadogan Street Temporary Garden:

| Types of Major Contaminants in Underground Soil | Maximum Concentration (mg/kg) | Threshold Concentration (mg/kg) |
|--|--|---------------------------------|
| Heavy Metals (HM) | | |
| Lead | 2400 | 255 |
| Arsenic | 50 | 21.8 |
| Mercury | 300 | 6.52 |
| Hydrocarbons (HC) | | |
| Benzo(a)pyrene | 9.6 | 1.14 |
| Benzo(b)fluoranthene | 12 | 9.88 |
| Dibenzo(a,h)anthracene | 2.9 | 1.14 |
| Number of boreholes | 18 | |
| Extent of contaminated soil | Present at various depths down to maximum 9m | |
| Quantity of soil contaminated with HM only | About 7,000 m ³ | |
| Quantity of soil contaminated with HC only | About 5,500 m ³ | |
| Quantity of soil contaminated with both HM and HC | About 9,400 m ³ | |

4. The total quantity of contaminated soil that requires decontamination is about 112,000m³ of which 21,900m³ are located in the Cadogan Street Temporary Garden. According to the approved EIA reports and the Environmental Permit conditions, all contaminated underground soil at the ex-KTIP and ex-KTA site and the adjoining area are required to be dug up, sorted and treated on-site.

5. The proposed works will involve removal of 195 trees, none of

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which are in the Register of Old and Valuable Trees. Among the 195 trees, five belong to species (including three *Aquilaria sinensis* (土沉香) and two *Ailanthus fordii* (常綠臭椿)) listed in the Rare and Precious Plants of Hong Kong and are commonly planted in Hong Kong. Those five trees are of poor amenity value, form, health and structural condition. The EIA reports recommend removal of all the trees on site as the roots are adhering to the disused structures or are contaminated; neither tree preservation nor transplantation is feasible, whereas the former defeats the purpose of decontamination as the contaminated soil around the tree roots will remain on site, and the latter results in an extremely low survival rate as the soil in the rootballs will have to be thoroughly washed away before transplantation. To compensate for the tree removal, CEDD will plant about 195 trees (including the species of the above-mentioned five trees) at appropriate locations in the vicinity.

6. The EIA reports for the decommissioning project of the sites of the ex-KTIP and ex-KTA and the adjoining area are available at the EPD website².

**Civil Engineering and Development Department
January 2016**

² Register No. AEIAR-058/2002:
http://www.epd.gov.hk/eia/register/report/eiareport/eia_0642001/index.htm, and
Register No. AEIAR-188/2015:
http://www.epd.gov.hk/eia/register/report/eiareport/eia_2262014/HTML/index.htm.