**Expansion of Hong Kong International Airport into a Three-Runway System**

**Contract 3101 Environmental Team Services**

**SITE INSPECTION CHECKLIST**

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| Inspection Date |  |  |  | Time |  |  |  | Inspected By | PM:  ET:  Contractor:  IEC: - |
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| Environmental Permit No.  Contract No. |  |  |  | Site Location |  | |  |  |
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| **Weather** |  |  |  |  |  |  |  |  |  |

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| *Condition:* |  | Fine |  | Sunny |  | Overcast |  | Drizzle |  | Rain |  | Storm |  | Hazy |

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| *Temperature:* |  |  | *Humidity:* |  | High |  | Moderate |  | Low |

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| *Wind:* |  | Calm |  | Light |  | Breeze |  | Strong |  | *Remarks:* |  |

**General Site Activities**

Please tick each item as ‘Yes’, ‘No’ or ‘N/A or not obs’ as appropriate.

| **\*EIA / ^EM&A / #EP ref:** | **Item** | **Close-out on last comments (Y/N)** | **Yes** | **No** | **N/A or**  **not obs** |  | **Remarks** |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***Air Quality – Construction Phase*** |  |  |  |  |  |  |
| \*5.2.6.2, ^2.1 | * Water spraying for 12 times a day or once every two hours for 24-hour working at all active works areas. |  |  |  |  |  |
| \*5.2.6.3, ^2.1 | * Covering of at least 80% of the stockpiling area by impervious sheets.   Water spraying of all dusty materials immediately prior to any loading transfer operation so as to keep the dusty material wet during material handling. |  |  |  |  |  |  |
| \*5.2.6.4, ^2.1 | **Good Site Management** |  |  |  |  |  |  |
| * The Contractor should maintain high standard of housekeeping to prevent emission of fugitive dust. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimising generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning. |  |  |  |  |  |
|  | * **Disturbed Parts of the Roads:** Each and every main temporary access should be paved with concrete, bituminous hardcore materials or metal plates and kept clear of dusty materials; or unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet. |  |  |  |  |  |  |
|  | * **Exposed Earth:** should be properly treated by compaction, hydroseeding, vegetation planting or seating with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies. |  |  |  |  |  |  |
|  | * **Loading, Unloading or Transfer of Dusty Materials:** All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet. |  |  |  |  |  |  |
|  | * **Transport of Dusty Materials:** Vehicle used for transporting dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards. |  |  |  |  |  |  |
|  | * **Debris Handling:** Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides. Before debris is dumped into a chute, water should be sprayed so that it remains wet when it is dumped. |  |  |  |  |  |  |
|  | * **Wheel Washing:** Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels. |  |  |  |  |  |  |
|  | * **Use of Vehicles:** The speed of trucks within the site should be controlled to about 10km/h in order to reduce adverse dust impacts and secure the safe movement around the site. |  |  |  |  |  |  |
|  | * **Site Hoarding:** Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit. |  |  |  |  |  |  |
|  | ***Noise Impact – Construction Phase*** |  |  |  |  |  |  |
| \*7.5.6, ^4.3 | **Good Site Practice** |  |  |  |  |  |  |
|  | * Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works; |  |
|  | * Machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum; |  |  |  |  |  |  |
|  | * Plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the noise sensitive receivers (NSRs); |  |  |  |  |  |  |
|  | * Mobile plant should be sited as far away from NSRs as possible; |  |  |  |  |  |  |
|  | * Material stockpiles and other structures (e.g. movable noise barriers, noise enclosure or acoustic shed) should be effectively utilised, where practicable, to screen noise from on-site construction activities. |  |  |  |  |  |  |
|  | ***Water Quality – Construction Phase*** |  |  |  |  |  |  |
| \*8.8.1.8, ^5.1 | **Construction Site Runoff and Drainage** | | |  |  |  |
| The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended: |  |  | | | |
|  | * Effluent discharge licence shall be obtained for the Project. Effluent shall be discharged in accordance with discharge licence. Discharge of turbid water shall be avoided. |  |  |  |  |  |  |
|  | * Install perimeter cut-off drains to direct off-site water around the site and implement internal drainage, erosion and sedimentation control facilities. Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. |  |  |  |  |  |  |
|  | * Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM-DSS standards under the WPCO. |  |  |  |  |  |  |
|  | * All drainage facilities and erosion and sediment control structures should be regularly inspected and maintained to ensure proper and efficient operation at all times and particularly during rainstorms. Deposited silt and grit should be regularly removed, at the onset of and after each rainstorm to ensure that these facilities are functioning properly. |  |  |  |  |  |  |
|  | * Measures should be taken to minimize the ingress of site drainage into excavations. If excavation of trenches in wet periods is necessary, they should be dug and backfilled in short sections wherever practicable. Water pumped out from foundation excavations should be discharged into storm drains via silt removal facilities. |  |  |  |  |  |  |
|  | * All vehicles and plant should be cleaned before leaving a construction site to ensure no earth, mud, debris and the like is deposited by them on roads. The section of access road leading to, and exiting from, the wheel-wash bay to the public road should be paved with sufficient backfall toward the wheel-wash bay to prevent vehicle tracking of soil and silty water to public roads and drains. All washwater should be treated according to the requirements of the TM-DSS standards under the WPCO prior to discharge. |  |  |  |  |  |  |
|  | * Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms or when not in use. Measures should be taken to prevent the construction materials, soil, silt or debris from washing away into the drainage system. |  |  |  |  |  |  |
|  | * Manholes (including newly constructed ones) should be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris being washed into the drainage system and to prevent stormwater runoff being directed into foul sewers. |  |  |  |  |  |  |
|  | * Precautionary measures should be taken at any time of the year when rainstorms are likely. Actions to be taken when a rainstorm is imminent or forecasted are summarized in Appendix A2 of ProPECC Note PN 1/94. This includes actions to be taken during and/or after rainstorms. Particular attention should be paid to the control of silty surface runoff during storm events. |  |  |  |  |  |  |
| \*8.8.1.9, ^5.1 | **Sewage Effluent from Construction Workforce** |  |  |  |  |  |  |
| * Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce. A licensed contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance. |  |  |  |  |  |
| \*8.8.1.10 & 8.8.1.11, ^5.1 | **General Construction Activities** |  |  |  |  |  |  |
| * Construction solid waste, debris and refuse generated on-site should be collected, handled and disposed of properly to avoid entering any nearby storm water drain. Stockpiles of cement and other construction materials should be kept covered when not being used. |  |  |  |  |  |
|  | * Oils and fuels should only be stored in designated areas which have pollution prevention facilities. To prevent spillage of fuels and solvents to any nearby storm water drain, all fuel tanks and storage areas should be provided with locks and be sited on sealed areas, within bunds of a capacity equal to 110% of the storage capacity of the largest tank. The bund should be drained of rainwater after a rain event. |  |  |  |  |  |  |
| \*8.8.1.4; ^5.1; #2.15, 2.29 | **Modification of the Existing Seawall** |  |  |  |  |  |  |
| * Silt curtains shall be deployed around the seawall modification activities to completely enclose the active works areas, and care should be taken to avoid splashing of rockfill / rock armour into the surrounding marine environment. For the connecting sections with the existing outfalls, works for these connection areas should be undertaken during the dry season in order that individual drainage culvert cells may be isolated for interconnection works. |  |  |  |  |  |
| \*8.8.1.5, ^5.1 | **Construction of New Stormwater Outfalls and Modifications to Existing Outfalls** |  |  |  |  |  |  |
|  | * During operation of the temporary drainage channel, runoff control measures such as bunding or silt fence shall be provided on both sides of the channel to prevent accumulation and release of SS via the temporary channel. Measures should also be taken to minimise the ingress of site drainage into the culvert excavations. |  |  |  |  |  |
|  | ***Waste Management Implications – Construction Phase*** |  | |  |  |  |  |
| \*10.5.1.2, ^7.1 | Good site practices should be performed during the construction activities including: |  |  |  |  |  |  |
| * Provision of sufficient waste disposal points and regular collection for disposal. |  |  |  |  |  |  |
|  | * Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks by tarpaulin/ similar material or by transporting wastes in enclosed containers. The cover should be extended over the edges of the sides and tailboards. |  |  |  |  |  |  |
|  | * C&D materials to be delivered to and from the project site by barges or by trucks should be kept wet or covered to avoid wind-blown dust. |  |  |  |  |  |  |
| \*10.5.1.3, ^7.1 | The following practices should be performed to achieve waste reduction include: |  |  |  |  |  |  |
| * Use of steel or aluminium formworks and falseworks for temporary works as far as practicable. |  |  |  |  |  |
|  | * Reuse of formworks as far as practicable. |  |  |  |  |  |  |
|  | * Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. |  |  |  |  |  |  |
|  | * Encourage collection of aluminium cans, PET bottles and paper by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the work force. |  |  |  |  |  |  |
|  | * Any unused chemicals or those with remaining functional capacity should be collected for reused as far as practicable. |  |  |  |  |  |  |
|  | * Proper storage and site practices to minimise the potential for damage or contamination of construction materials. |  |  |  |  |  |  |
|  | * Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste. |  |  |  |  |  |  |
| \*10.5.1.5, ^7.1; WMP 3.2.4 | Inert and non-inert C&D materials should be handled and stored separately to avoid mixing the two types of materials. |  |  |  |  |  |  |
| \*10.5.1.5, ^7.1; WMP 3.2.4 | Any recyclable materials should be segregated from the non-inert C&D materials for collection by reputable licensed recyclers whereas the non-recyclable waste materials should be disposed of at the designated landfill site by a reputable licensed waste collector. |  |  |  |  |  |  |
| \*10.5.1.6, ^7.1 | A trip-ticket system promulgated shall be developed in order to monitor the off-site delivery of surplus inert C&D materials that could not be reused on-site for the proposed land formation work at the PFRF and to control fly tipping. |  |  |  |  |  |  |
| \*10.5.1.19, ^7.1; WMP 5.2, 5.3 | Contractor should register with the EPD as a chemical waste producer and to follow the relevant guidelines. The following measures should be implemented: |  |  |  |  |  |  |
| * Good quality containers compatible with the chemical wastes should be used; |  |  |  |  |  |
|  | * Incompatible chemicals should be stored separately; |  |  |  |  |  |  |
|  | * Appropriate labels must be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidizing, irritant, toxic, harmful, corrosive, etc; |  |  |  |  |  |  |
|  | * The Contractor will use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation. |  |  |  |  |  |  |
| \*10.5.1.20, ^7.1; WMP 6.4 | General refuse should be stored in enclosed bins or compaction units separated from inert C&D material. A reputable waste collector should be employed by the contractor to remove general refuse from the site for disposal at designated landfill sites. An enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material. |  |  |  |  |  |  |
| \*10.5.1.21, ^7.1; WMP 7.4 | Any refuse trapped or accumulated along the newly constructed seawall shall be checked and cleaned, then stored and disposed of together with the general refuse. |  |  |  |  |  |  |

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|  | ***Marine Ecological / Fisheries Impact – Construction Phase*** |  |  | | |  |
| \*13.11.1.7-13.11.1.10, 14.9.1.6; #2.31 | **Use of Construction Methods with Minimal Risk/Disturbance** |  |  |  |  |  |
| Implementation of applicable construction methods and measures listed in EP Condition 2.31 to mitigate marine ecology / fisheries impacts: |  |  |  |  |  |
| * Use of non-dredged method for land formation and ancillary works including the diversion of the aviation fuel pipeline to the Aviation Fuel Receiving Facility (AFRF). * Use of DCM method for ground improvement at Contaminated Mud Pit (CMP) areas instead of conventional seabed dredging for land formation works. * Use of bored piling to form the new approach lights and marker beacons for the new runway. * Prohibition of underwater percussive piling. * Prohibition of underwater bored piling during CWD peak calving season (March to June). * Use of Horizontal Direct Drilling (HDD) method and water jetting methods for the placement of pipelines and submarine cables respectively. * Implementation of acoustic decoupling for noisy equipment on marine vessels. * Establishment of 24-hour dolphin exclusion zone with a 250m radius for marine works. * Implementation of Marine Ecology Conservation Plan. * Implementation of Marine Travel Routes and Management Plan for Construction and Associated Vessels . * Implementation of the Marine Travel Routes and Management Plan for High Speed Ferries of SkyPier. * Implementation of the Coral Translocation Plan. |  |  |  |  |  |  |
| #2.13, 2.32 | **Fisheries Management Plan** |  |  |  |  |  |  |
|  | * Fisheries Management Plan shall be implemented. |  |  |  |  |  |
| \*13.11.1.12, 14.9.1.11 | **Strict Enforcement of No-Dumping Policy** |  |  |  |  |  |  |
| * A policy prohibiting dumping of wastes, chemicals, oil, trash, plastic, or any other substance that would potentially be harmful to dolphins and/or their habitat in the work area. |  |  |  |  |  |
| \*13.11.1.13, 14.9.1.12; #2.9, 2.11, 2.15, 2.29 | **Good Construction Site Practices** |  |  |  |  |  |  |
| * Regular inspection of the integrity and effectiveness of all silt curtains and monitoring of effluents to ensure that any discharge meets effluent discharge guidelines. |  |  |  |  |  |
| \*13.11.5.19, ^10.3.1, #2.31 | **Acoustic Decoupling of Construction Equipment** |  |  |  |  |  |  |
| * Air compressors and other noisy equipment that must be mounted on steel barges should be acoustically-decoupled to the greatest extent feasible, for instance by using rubber or air-filled tyres. |  |  |  |  |  |
| #2.29 | **Spill Response Plan** |  |  |  |  |  |  |
| * Spill Response Plan shall be implemented. |  |  |  |  |  |
|  | ***Landscape and Visual Impact – Construction Phase*** |  |  |  |  |  |  |
|  | **Landscape and Visual Plan** |  |  |  |  |  |  |
| #2.32 | * Landscape and Visual Plan shall be implemented. |  |  |  |  |  |
|  | **Mitigation Measures** | | | | | |  |
| \*Table 15.6, ^12.3 | * **CM1 -** The construction area and contractor’s temporary works areas should be minimised to avoid impacts on adjacent landscape. |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM2 -** Reduction of construction period to practical minimum. |  |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM3 -** Phasing of the construction stage to reduce visual impacts during the construction phase. |  |  |  |  |  |  |
| \*Table 15.6, ^12.3, #2.9 | * **CM4 -** Construction traffic (land and sea) including construction plants, construction vessels and barges should be kept to a practical minimum. |  |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM5 -** Erection of decorative mesh screens or construction hoardings around works areas in visually unobtrusive colours. |  |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM6 -** Avoidance of excessive height and bulk of site buildings and structures (new passenger concourse, terminal 2 expansion and other proposed airport related buildings and structures under the project). |  |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM7** - Control of night-time lighting by hooding all lights and through minimisation of night working periods. |  |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM8 -** All existing trees shall be carefully protected during construction.  Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in contractor’s works areas. |  |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM9 -** Trees unavoidably affected by the works shall be transplanted where practical.   A detailed Tree Transplanting Specification shall be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. |  |  |  |  |  |  |
| \*Table 15.6, ^12.3 | * **CM10 -** Land formation works shall be followed with advanced hydroseeding around taxiways and runways as soon as practical. |  |  |  |  |  |  |
|  | ***OTHERS*** |  |  |  |  |  |  |
| #1.5 | A copy of the valid Environmental Permit shall be displayed conspicuously on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public’s information at all times. The most updated information about the Permit, including any amended Permit, shall be displayed at such locations.  If the Permit Holder surrenders a part or whole of the Permit, the notice he send to the Director shall also be displayed at the same locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s). |  |  |  |  |  |
| - | The required licences should be obtained by the Contractor (including CNP (if any), WPCO license, etc.) |  |  |  |  |  |  |

**FOLLOW UP ACTIONS BY CONTRACTOR**

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| **OTHER OBSERVATION** |
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|  | Project Manager (PM) /  PM’s Representative |  | Contractor’s  Representative | | ET Leader /  ET’s Representative |  | IEC /  IEC’s Representative |
| Signature: |  |  |  |  |  |  |  |
| Name: | ( ) |  | ( ) |  | ( ) |  | ( ) |
| Date: |