

**Practice Notes For Construction Managers**  
**PNCM 5: Environmental Management - First Issue, April 2004**  
(Index under: Environmental Management)

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## **PRACTICE NOTES FOR CONSTRUCTION MANAGERS**

### **PNCM 5: ENVIRONMENTAL MANAGEMENT**

#### **1. Relevant Environmental Ordinances, Regulations, Codes of Practice, Practice Notes and Guidance**

- Air Pollution Control Ordinance (Cap 311)
  1. Air Pollution Control (Furnaces, Ovens and Chimneys)(Installation and Alteration) Regulations
  2. Air Pollution Control (Dust and Grit Emission) Regulations
  3. Air Pollution Control (Smoke) Regulations
  4. Air Pollution Control (Appeal Board) Regulations
  5. Air Pollution Control (Specified Processes) Regulations
  6. Air Pollution Control (Fuel Restriction) Regulations
  7. Air Pollution Control (Vehicle Design Standards)(Emission) Regulations
  8. Air Pollution Control (Motor Vehicle Fuel) Regulation
  9. Air Pollution Control (Open Burning) Regulation
  10. Air Pollution Control (Asbestos)(Administration) Regulation
  11. Air Pollution Control (Construction Dust) Regulation
  12. Air Pollution Control (Petrol Filling Stations) (Vapour Recovery) Regulation
- Water Pollution Control Ordinance (Cap 358)
  1. Water Pollution Control (General) Regulations
  2. Water Pollution Control (Sewerage) Regulation
  3. Water Pollution Control (Appeal Board) Regulations
- Waste Disposal Ordinance (Cap 354)
  1. Waste Disposal (Chemical Waste)(General) Regulation
  2. Waste Disposal (Permits and Licences)(Forms and Fees) Regulation
  3. Waste Disposal (Appeal Board) Regulation
- Noise Control Ordinance (Cap 400)
  1. Noise Control (General) Regulations
  2. Noise Control (Appeal Board) Regulations
  3. Noise Control (Air Compressors) Regulations
  4. Noise Control (Hand Held Percussive Breakers) Regulations
  5. Noise Control (Construction Work) Regulation
  6. Noise Control (Construction Work Designated Areas) Notice
  7. Noise Control (Motor Vehicles) Regulation
- Ozone Layer Protection Ordinance (Cap. 403)
- Dumping at Sea Ordinance (Cap. 466)
- Environmental Impact Assessment Ordinance (Cap. 499)
- ISO 14001- Environmental Management System

- ProPECC Practical Notes from Environmental Protection Department (EPD)
  1. PN 1/ 93: Noise from Construction Activities – Statutory
  2. PN 2/ 93: Noise from Construction Activities - Non-statutory
  3. PN 3/ 93: Application of the Environmental Impact Assessment (EIA) Process to Major Development Projects
  4. PN 4/ 93: Planning and Designing Noise Sensitive Development
  5. PN 1/ 94: Construction Site Drainage
  6. PN 3/ 94: Contaminated Land Assessment and Remediation
  7. PN 4/ 94: Air Conditioning Refrigerants – A Time for Change
  8. PN 1/ 96: Use of Quiet Construction Equipment for Road Opening Works during Non-Sociable Hours
- Reference Regulatory Booklets and Guidelines
  1. Air
    - A Concise Guide to the Air Pollution Control Ordinance
    - Environmental Asbestos Control
    - A Concise Guide to the Ozone Layer Protection Ordinance
  2. Noise
    - A Concise Guide to the Noise Control Ordinance
    - Checklist to Explore the Feasibility of Daytime Roadwork
    - Construction noise permit for Prescribed Construction Work (PCW) within Designated Area (DA) and general construction work
    - Construction noise permit for percussive piling
    - How to Apply for a Construction Noise Permit (Booklet)
    - How to complete and submit Construction Noise Permit (CNP) application forms
    - Noise emission label for air compressor and hand held percussive breaker
    - A Guide to the Reduction of Ventilating System Noise
    - How to apply for a Construction Noise Permit
    - Technical Memorandum on Noise from Construction Work in Designated Areas
    - Technical Memorandum on Noise from Construction Work other than Percussive Piling
    - Technical Memorandum on Noise from Percussive Piling
    - Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites

3. Water
  - A Guide to the Water Pollution Control Ordinance
  - Connections to Sewers under the Water Pollution Control Ordinance
  - Technical Memorandum - Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters
  
4. Waste
  - A Guide to the Chemical Waste Control Scheme
  - A Guide to the Registration of Chemical Waste Producers
  - Code of Practice on the Packaging, Labeling and Storage of Chemical Wastes
  - Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste
  
5. EIA
  - General Notes for Applications under Environmental Impact Assessment Ordinance (Chapter 499)
  - Guidance Notes on Advertisement and Public Inspection of Documents
  - A Guide to Environmental Impact Assessment Ordinance
  - A Guide to Environmental Impact Assessment (Appeal Board) Regulation
  - Assessment of Impact on Site of Cultural Heritage in Environmental Impact Assessment Studies
  - Guidance Notes for Investigation and Remediation of Contaminated Site of: Petrol Filling Stations, Boatyards and Car Repair/Dismantling Workshops

## **2. Basic Requirements for Environmental Management**

### **a. Licence and Permit**

- ✧ *Notification of Works - Air Pollution Control (Construction Dust) Regulation*

Upon possession of site, the Form NA for Notification of Notifiable Works shall be prepared and submitted to the EPD before commencement of works. The Notifiable Works include:

- (a) site formation;
- (b) reclamation;

- (c) demolition of a building;
- (d) work carried out in any part of a tunnel that is within 100 m of any exit to the open air;
- (e) construction of the foundation of a building;
- (f) construction of the superstructure of a building; or
- (g) road construction work.

✧ *Construction Noise Permit*

If works are to be conducted under the following conditions:

- (a) percussive piling,
- (b) construction works other than percussive piling using Powered Mechanical Equipment (PME) between the hours of 7 p.m. to 7 a.m. or at any time on general holidays, including Sundays; or
- (c) construction works other than percussive piling within a Designated Area involving the use of Specified Powered Mechanical Equipment (SPME) e.g. breaker, bulldozer, dumper, lorry concrete mixer, poker vibrator and/or carrying out of Prescribed Construction Work (PCW) e.g. formwork, scaffold erection, hammering, loading and unloading of rubble, wooden boards, steel bars, wood or scaffolding materials between the hours of 7 p.m. to 7 a.m. or at any time on general holidays, including Sundays.

A Construction Noise Permit (CNP) shall be required. Form 1 (general construction works) and Form 2 (percussive piling) are required to be submitted to EPD at least 14 days before commencement of such works.

✧ *Noise Emission Label*

Hand held percussive breaker has a mass of 10 kg or above and air compressor capable of supplying compressed air at 500 kPa pressure or above should fit with noise emission label issued by the EPD prior to use.

✧ *Effluent Discharge Licence*

If wastewater or effluent is to be discharged from the site, an Effluent Discharge Licence will be required. Complete and submit Form A to EPD 8 weeks before commencement of such discharge. EPD will either grant or reject the application within 60 days.

✧ *Chemical Waste Producer Registration*

If spent chemicals are to be abandoned or disposed of from a construction site, the registration as a Chemical Waste Producer will be required. Upon receipt of such applications, EPD will issue a Chemical Waste Producer Number to the site and will require specified handling

procedures for the chemical waste.

**b. Description of Environmental Legislations**

**i. Air Pollution Control Ordinance**

- ✧ Provides control of air pollution from stationary sources and motor vehicles that enables promulgation of regulations.
- ✧ Requires contractors to take dust reduction measures when construction works are carried out. Contractors shall notify EPD about the commencement of construction works.
- ✧ Prohibits open burning of construction waste, tyres and cables for metal salvage, and controls other open burning activities by a permit system.
- ✧ Restricts emission of dark smoke from stationary combustion sources.
- ✧ Provides administrative framework for the licensing of Specified Processes.
- ✧ Provides qualifications, requirements and fees for registration of asbestos consultants, contractors, supervisors and laboratories.

**ii. Noise Control Ordinance**

- ✧ Control construction noise from the use of power mechanical equipment (PME) and controls certain noisy works in designated areas, between 7 p.m. and 7 a.m. and any time on general holidays, including Sundays, by construction noise permits (CNP).
- ✧ Director of Environmental Protection (DEP) issues permits in accordance with two relevant statutory Technical Memoranda.
- ✧ Prohibits percussive piling between 7 p.m. and 7 a.m. and any time on general holidays, including Sundays; and restricts the working hours of percussive piling at other times by CNP.
- ✧ DEP issues permits in accordance with relevant statutory Technical Memoranda.
- ✧ Controls the import, manufacture, supply and use of hand held percussive breakers (with mass of above 10kg) and portable air compressors (supply air at 500 kPa or above). The noise level of such PME shall comply with a stringent noise emission standard and a noise emission label shall be obtained from the DEP before use.

### **iii. Waste Disposal Ordinance**

- ✧ Provides steps for the licensing of collection services and disposal facilities for all types of waste, control scheme for chemical wastes, and the control of illegal dumping of wastes.
- ✧ Provides control of chemical wastes with respect to packaging, labeling, storage, collection, disposal, import and export activities.
- ✧ Expands the authority in making regulations for the implementation of various waste disposal charging schemes.
- ✧ Provides control of all aspects of chemical waste disposal, including storage, collection, transport, treatment and final disposal.
- ✧ Establishes payment schemes for solid waste disposal at landfills thus creating an economic incentive towards waste minimization.

### **iv. Dumping at Sea Ordinance**

- ✧ Provides control of marine dumping, extends controls of marine pollution, enhances the legal effect of the Marine Dumping Action Plan.
- ✧ Empowers EPD to issue permits for necessary marine dumping work by contractors.

### **v. Water Pollution Control Ordinance**

- ✧ Provides designation of control zones where discharges of effluents other than domestic sewage into a foul sewer must be licensed.
- ✧ Controls property owners to connect wastewater to the public foul sewerage system; ensures private communal sewage treatment plants are operated properly and allows the government to carry out necessary works on a cost recovery basis when the government requirements are not upheld.

### **vi. Ozone Layer Protection Ordinance**

- ✧ Controls the production, import and export of products containing ozone-depleting substances, and the recycling of ozone-depleting substances.

### **vii. Environmental Impact Assessment Ordinance**

- ✧ The main objectives of the ordinance are to avoid, minimize and control of adverse impact on the environment by designated projects through the application of the environmental impact assessment

(EIA) process and the environmental permit (EP) system.

- ✧ Governs designated projects, unless exempted, to follow the statutory EIA process and the requirement of an EP for the construction and operation of such projects.
- ✧ The EP will specify the environmental monitoring and audit requirements if necessary.

**c. Planning**

The management of the subject organization shall

- ✧ consider different environmental protection measures during planning stage in order to complete a project in an environmentally friendly manner.
- ✧ establish procedures to identify significant environmental aspects and impacts from both the site and office activities.
- ✧ allocate budget for the implementation of environmental protection on site.
- ✧ develop a programme that includes the sequencing of construction activities to minimize environmental impacts and setting up environmental mitigation measures and controls, e.g. apply for permit / licence.

**d. Development**

The management of the subject organization shall

- ✧ establish an environmental policy to commit top management to preserving and preventing pollution of the environment in the process of its operations and activities.
- ✧ establish Objectives, Targets and Environmental Management Programmes for the items that concern environment preservation and pollution prevention.
- ✧ establish an Environmental Management System (EMS).
- ✧ before commencing a project, it is expected that environmental protective measures should be implemented with consideration of the followings:
  - i. Site planning to identify potential environmental impacts and initial control measures.
  - ii. Environmental Management Plan (EMP) should be prepared to address the potential environmental impacts, appropriate mitigation measures and inspection schedule.



- iii. Waste Management Plan (WMP) should be prepared to reduce waste generation, and provide proper control of waste disposal.
- iv. Training shall be provided to the project team to raise the environmental awareness, knowledge and skills of team members.
- ✧ establish procedures to identify potential for and response to emergency situations, which may have an effect to the environment. These include, but are not limited to:
  - fire or explosions;
  - flooding;
  - gas leakage; and
  - major chemical/oil spillage.

**e. Organizing and Implementation**

- ✧ Allocate to a person at the top management level the responsibility to ensuring the development, implementation and maintenance of the environmental management system.
- ✧ Allocate suitable resources for developing, implementing and maintaining the environmental management system.
- ✧ Implement the EMP and WMP.
- ✧ Develop a plan to establish and maintain good relationships with neighbours and the general public to ensure that the nuisance related to construction works is explained and promptly addressed. Through good communications with neighbours and the local public, complaints related to construction works would be minimized.
- ✧ Notification submission and Permit / Licence application
  - i. Notify EPD the commencement of construction works in relation to construction dust;
  - ii. Apply for relevant licence / permit, e.g. effluent discharge, construction noise permit, etc.;
  - iii. Register as a chemical waste producer;
  - iv. Apply for a construction Noise Permit if necessary;
  - v. Apply for further environmental permits if necessary.
- ✧ Ensure environmental awareness training is provided to all employees, that includes the importance of the compliance of the policy and the understanding of the EMS. On-the-job training should also be provided to all relevant personnel whose operations and activities may cause significant impact to the environment.
- ✧ Supervise and monitor to ensure the EMS is effectively implemented.

**f. Measuring**

- ✧ The performance related to environment shall be checked by routine inspection or internal audit at regular intervals. The aims of the inspection or internal audit are:
  - to ensure all environmental aspects are properly implemented;
  - to ensure all legislative requirements are met; and
  - to check the progress of implementation in meeting with objectives and targets of the environmental management plan.

**g. Review**

- ✧ The environment management review assists the top management to achieve continual improvement and to assess the suitability and effectiveness of the EMS. The review shall be conducted by means of either an environmental annual report or an environmental review meeting.
- ✧ The review shall include the followings:
  - environmental objectives, targets, environmental management programmes and evaluation in terms of overall progress and achievement;
  - legal compliance;
  - an evaluation of the effectiveness of the EMS and environmental performance;
  - an evaluation of the suitability of the Environmental Policy and the need for change.

**3. Responsibility**

**a. Director/ Contracts Manager shall:**

- ✧ Ensure effective implementation of the environmental management system under his/her supervision.
- ✧ Monitor the environmental performance in the company.
- ✧ Provide adequate resources for implementation of the environmental management system.
- ✧ Approve all the environmental management system documentation.

**b. Project Manager shall:**

- ✧ Ensure the environmental procedures are effectively implemented.

- ✧ Monitor the progress of environmental objectives, targets and the plans at site level.
- ✧ Apply all necessary licence / permit and submit notification if necessary.
- ✧ Monitor the environmental performance at site level.
- ✧ Ensure the compliance with legal and other requirements related to construction activities.
- ✧ Ensure proper implementations of the EMP and WMP.
- ✧ Assist in identifying training needs for his / her subordinates and subcontractors.
- ✧ Maintain relevant environmental documentation control and records at site level.
- ✧ Handle environmental complaints, if any.
- ✧ Identify non-conformity incidents and initiate corrective and preventive actions at site level.

**c. Site Agent shall:**

- ✧ Understand the requirements of the environmental regulations.
- ✧ Familiar with and to understand the environmental policy, procedures and practices.
- ✧ Carry out all duties stated in all relevant environmental management system documentations.
- ✧ Ensure all forms/records/receipts are prepared and maintained as required in the EMP, WMP and all relevant environmental management system documentations.
- ✧ Assist the Project Manager on the overall implementation of the environmental management system at site level.
- ✧ Responsible for monitoring and supervision on the performance and effectiveness of the environmental management system implemented at site level.