Hong Kong Institute of Qualified Environmental Professionals (HKIQEP)
香港合資格環保專業人員學會(香港環專會)

Environmental Integrity & Excellence

SYLLABUS FOR CERTIFIED NOISE MODELLING PROFESSIONALS

SCHEME REQUIREMENTS

Noise modelling professionals are expected to be experienced and well versed in typical environmental noise components and attributes for road traffic noise, construction noise, and different types of fixed noise sources. They must be knowledgeable in noise emission and propagation concepts and noise mitigation measures.

The requirements are split into 2 areas – Core and Others. Persons interested in applying for certification must have experience in ALL of the four Core Areas and be knowledgeable in at least ONE of the four Other Areas.

Data analysis knowledge and experience, regardless of noise models, must include the following:

- Data preparation / input
- Validation of input data
- Review output data / results
- Mitigation measures selection / inputs
- Presentation of results / data
- Understanding limitation of computation software

I. CORE AREAS

1. Noise Modelling Knowledge

- Noise Descriptors
- Typical environmental noise component and attributes: Road Traffic Noise; Different types of Construction Noise Sources; Different types of Fixed Noise Sources; (Elective areas: Component of Railway Noise; Component of Aircraft Noise; Component of Helicopter Noise
- Typical noise emission and propagation concept
- Noise mitigation measures: application approaches, alternative consideration, design, implementation and verification
- Understanding of engineering drawings

2. Road Traffic Noise Model

a. *Methodology*
   - Calculation of Road Traffic Noise

b. *Computation software*
   - Familiar with one of: RoadNoise, NoiseMap, LimA, SoundPLAN, CadnaA, etc.

c. *Acceptable Criteria*
   - Technical Memorandum on Environmental Impact Assessment Process
   - EIAO Guidance Note No. 12/2010 – Road Traffic Noise Impact Assessment Under the Environmental Impact Assessment Ordinance
   - Hong Kong Planning Standards and Guidelines
   - ETWB TCW No. 13/2003 – Guidelines and Procedures for Environmental Impact Assessment of Government Projects and Proposals

3. Construction Noise Model

a. *Methodology*
   - Basic acoustic principles
   - ISO 9613
   - BS 5228
   - Technical Memorandum on Noise from Percussive Piling
   - The Transit Noise and Vibration Impact Assessment published by U.S. Department of Transportation Federal Transit Administration

b. *Computation software*
   - Familiar with one of: Spreadsheets, LimA, CadnaA, etc.

c. *Acceptable Criteria*
   - Technical Memorandum on Environmental Impact Assessment Process
   - Technical Memorandum on Noise from Percussive Piling
   - Technical Memorandum on Noise from Construction Work other than Percussive Piling
   - Technical Memorandum on Noise from Construction Work in Designated Areas
   - Hong Kong Planning Standards and Guidelines
   - ProPECC PN 1/93: Noise from Construction Activities – Statutory
   - ProPECC PN 2/93: Noise from Construction Activities – Non-statutory Controls
   - ProPECC PN 1/96: Use of Quiet Construction Equipment for Road Opening Works during Non-Sociable Hours

4. Fixed Noise Source Model

a. *Methodology*
   - Basic acoustic principles
   - ISO 9613
   - Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites

b. *Computation software*
   - Familiar with one of: Spreadsheets, LimA, CadnaA, etc.

c. *Acceptable Criteria*
   - Technical Memorandum on Environmental Impact Assessment Process
   - Technical Memorandum for the Assessment of Noise from Places Other Than Domestic Premises, Public Places or Construction Sites
   - Hong Kong Planning Standards and Guidelines
   - Noise Control Guidelines for Music, Singing and Instrument Performing Activities

II. OTHER AREAS

5. Railway Noise Model

a. *Methodology*
- Calculation of Railway Noise
- CNOSSOS-EU
- Railway Traffic Noise – The Nordic Prediction Method published by Nordic Countries
- SRM II – Dutch national computation method 2002
- Transit Noise and Vibration Impact Assessment published by U.S. Department of Transportation Federal Transit Administration

b. *Computation software*
- Familiar with one of: RailNoise, NoiseMap, LimA, SoundPLAN, CadnaA, etc.

c. *Acceptable Criteria*
- Technical Memorandum on Environmental Impact Assessment Process
- Hong Kong Planning Standards and Guidelines
- Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites

6. Aircraft Noise Model

a. *Methodology*
- Recommended Method for Computing Noise Contours Around Airports – ICAO 9911
- Standard Method of Computing Noise Contours around Civil Airports – European Civil Aviation Conference (ECAC) Doc 29

b. *Computation software*
- Aviation Environmental Design Tool (AEDT) by US Federal Aviation Administration (FAA), etc.

c. *Acceptable Criteria*
- Technical Memorandum on Environmental Impact Assessment Process
- Hong Kong Planning Standards and Guidelines

7. Helicopter Noise Model

a. *Methodology*
- ISO 9613
- Transportation Noise Reference Book of Paul Nelson

b. *Computation software*
- Familiar with one of: Spreadsheets, AEDT, CadnaA, LimA, SoundPLAN, etc.

c. *Acceptable Criteria*
- Technical Memorandum on Environmental Impact Assessment Process
- Hong Kong Planning Standards and Guidelines
- Acceptable Criteria adopted in previous approved EIA report (i.e., two tier noise criteria [65 dB(A) Leq (4hr) and 85 dB(A) Lmax at 1900 – 2300 hrs])

8. Noise Mapping

a. *Methodology*
- CNOSSOS-EU
- GBTT/ISO 9613
- Calculation of Road Traffic Noise

b. *Computation software*
- Familiar with one of: LimA, CadnaA, SoundPLAN, etc.

c. *Acceptable Criteria*
- Hong Kong Planning Standards and Guidelines