

PART VIII
Appendix G

Checklist for Acoustical Planning, Design and Post-occupancy Assessments

Form G: Checklist - Acoustical Planning, Design and Post-occupancy Assessments

Instructions:

- a) A separate form should be filled in for each space/room/building
b) Fill in with text or put tick mark, as applicable
c) After filling in and signing **Expected Result in Planning Design Phase**, submit the form to the project owner/ client
d) A photocopy of the submitted Form (as mentioned above) shall be filled in and signed for **Post- occupancy Findings**

1. Name of the space/room/building for Acoustical Planning and Design:
2. Project name :
3. Location :
4. Owner/Client :
5. Lead Consultant :
6. Acoustical Consultant :
7. Type of acoustics involved in the space: ☐ Speech ☐ Music ☐ Multipurpose
8. Noise Survey on Site and Surroundings: ☐ Conducted ☐ Not Conducted
9. Noise Map: ☐ Prepared ☐ Not prepared
10. Design Parameters of the Space/Room/ Building:

Sl. No.	Design Parameters	Expected Results in Planning and Design Phase	Post-occupancy Findings
a)	Method Adopted:	☐ Assumptions ☐ Only Manual Calculations ☐ Computational Analysis, Simulation and Prediction	☐ Instrumental Survey ☐ Opinion Survey ☐ Both of above
b)	Ambient/Background level: i) L_{10} ii) L_{eq}	i) dBA ii) dBA	i) dBA ii) dBA
c)	Reverberation Time: i) At 1 kHz ii) Average of all applicable frequencies	i) s ii) s	i) s ii) s

Sl. No.	Design Parameters	Expected Results in Planning and Design Phase	Post-occupancy Findings
d)	Sound level in audience area (Average)	 dBA	 dBA
e)	Diffusion in audience area - Difference between max. and min. sound level:	 dBA	 dBA
f)	Signal-to-Noise Ratio (SNR)	 dBA	 dBA
g)	Intelligibility:		
	i) PSA	i) %	i) %
	ii) AI	ii) %	ii) %
	iii) STI	iii) %	iii) %
h)	Reverberance: Based on average absorption coefficient $\bar{\alpha}$: <0.2 = Live, 0.2 - 0.4 = Average, >0.4 = Dead	☐ Live ☐ Average ☐ Dead	☐ Live ☐ Average ☐ Dead
i)	Speech Privacy Rating:		
J)	Overall quality (perceptual evaluation):	☐ Excellent ☐ Good ☐ Average ☐ Poor	☐ Excellent ☐ Good ☐ Average ☐ Poor
Signature of the Acoustical Consultant:		 Date:	 Date:

PART VIII
Appendix H

Noise Levels and Subjective Evaluation

Table 8.H.1: Allowable upper limit of Outdoor Noise Levels

Source: *Noise Pollution (Control) Rules 2006*, the Government of the People's Republic of Bangladesh

Sl. No.	Category of Zones	Upper Limit of Noise Level in dBA $L_{Aeq,T}$	
		Day Time (06:00 AM - 09:00 PM)	Night Time (09:00 PM - 06:00 AM)
01	Quiet Zone	50	40
02	Residential Zone	55	45
03	Mixed Use Zone	60	50
04	Commercial Zone	70	60
05	Industrial Zone	75	70

Table 8.H.2: Typical Noise Levels Generated by Aircrafts

Source: *Noise Levels for U.S. Certified and Foreign Aircraft, Advisory Circular-AC No: 36-1H*, U.S. Department of Transportation, Federal Aviation Administration, 2012

Sl. No.	Aircraft Manufacturer and Model (Arranged in an alphabetical order)	Flyover Noise Levels with Take-off Thrust (EPN dBA) ^a
01	Airbus A300	103.1
02	Airbus A380	98.1
03	Boeing 707	108.3
04	Boeing 717	92.1
05	Boeing 727	105.8
06	Boeing 737	105.3
07	Boeing 747	107.8
08	Boeing 757	100.3
09	Boeing 767	103.0
10	Boeing 777	101.3
11	Boeing 787	99.6
12	Lockheed L-1011	103.3
13	McDonnell Douglas DC-08	102.7
14	McDonnell Douglas DC-10	106.6

^a Noise is measured at 1.2 m above the ground for aircrafts flying overhead at a height of 450 m from the ground with takeoff thrust. The highest noise level among different variations in the same model is listed.