1 Introduction

This Guideline (Part G) is intended to provide supporting guidance and recommendations on the acoustic design of new and refurbished healthcare buildings. It provided ready-to-use performance standards, sketches and diagrams for design and constructions aiming to offer and maintain a pleasant and comforting acoustic climate for the patients, visitors and the employees of the healthcare buildings.

Part G is a combination of prescriptive & performance-based requirements. Its provisions represent the design methods, criteria and minimum standard considered acceptable. Designers are encouraged to further develop these requirements and exceed the minimum standards.

1.1 General requirements

The acoustic requirements outlined in this part of the guidelines are provided as a guide for all type of healthcare facilities such as hospitals, clinics, primary care centres, outpatient facilities, diagnostic centres etc. These requirements should not override other more stringent mandatory requirements by the national, and local authorities and applicable legislations.

Acoustic requirements within Part G are in addition to any other non-acoustical requirements such as structural integrity, fire rating, material compatibility, etc.

1.2 Abbreviations and acronyms

Abbreviation	Meaning
ASHRAE	American Society of Heating, Refrigeration and Air - conditioning Engineers
ASTM	American Society for Testing and Materials
BRADE	British Regulations Approved Document E
BS EN	British Standards European Norm
CIBSE	Chartered Institution of Building Services Engineers
DM EN	Dubai Municipality Environmental Noise
GRDs	Grilles, Registers, and Diffusers
HTM	Health Technical Memorandum
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association

1.3 The scope of this Guideline

Acoustic criteria

- Establishing the acoustic criteria
- Pre design noise survey

Architectural acoustics

- Noise ingress
- Controlling background sound
- Outdoor noise generating events and factors
- Airborne sound insulation for rooms
- Long term accommodation
- Impact sound insulation for rooms
- Doors
- Openable windows
- Movable / folding partitions
- Structure – borne sound and lightweight constructions
- Weak construction configurations – flanking control
- Bathroom pods
- Room acoustics

- Access panels

Building services noise & vibration transmission control

- Noise egress
- Internal noise from building services
- Duct design
- Airflow velocities
- Flexible ductwork and diffusers / grilles
- Attenuators / duct lining / VAV units
- Duct noise breakout
- Cross talk attenuation
- Air outlets
- Dampers
- Fan system
- Lifts
- Pumps and motors
- Noise during emergency
- Materials
- Pneumatic tube system
- Nurse call systems
- Audio system for public announcements
- Private mode audibility
- Public mode audibility
- Sleeping area audibility
- Plantrooms
- Sound flanking paths
- Hydraulic noise transmission
- Risers
- Vibration criteria
- Continuous vibration
- Intermittent vibration
- Critical areas and building structure vibration
- Vibration isolation and material selection
- Air handling units
- Conduit isolation
- Duct and pipe isolation
- Fan coil units and VAVs
- Fan system
- Flexible pipe connectors
- Generators
- Boilers
- Motors and electrical equipment

- Piped services
- Plant without pumps and motors
- Pumps and inertia bases
- Vertical transportation systems
- Vibration for sensitive equipment

Acoustic design for electrical services

- Vertical transportation systems
- Vibration for sensitive equipment

Testing on completion

Construction noise and vibration

Temporary healthcare facilities

Refurbishment works

Inspection during construction stage