

Noise Control in the Built Environment

Editors John Roberts and Diane Fairhall

Gower Technical

Contents

	Contents	
Ag		
Lis	st of illustrations	vii
Int	roduction	xi
1	Some theoretical considerations	1
	M. L. Vuillermoz	
	Vibrating systems – the wave equation – characteristic impedance – sound intensity – sound radiation – influence of the enclosure – sound radiation into a room – absorption of sound in a room – sound decay and reverberation – sound transmission through barriers – working formulae and the decibel notation – further reading	
2	Units, instrumentation and measurement	23
	K. Scannell and P. Colgrave	
	Units and descriptors – acoustic measurements – instrumentation – references	
3	Environmental noise and vibration	47
	P.T. Freeborn and S.W. Turner	
	Noise rating – road traffic noise – aircraft noise – railway noise – construction noise – industrial noise – entertainment noise – references	

4	Sound insulation between dwellings	89
	Stephen Rintoul	
	Transmission paths and mechanics – assessing sound insulation – insulation by design – constructional techniques – remedial works – trouble shooting – legal considerations – references	
5	Noise control within the industrial environment	137
	John Roberts and Bridget Shield	
	Reasons for noise control – noise control at the design stage – remedial noise control – reduction of noise at source – reduction of noise by enclosures, partitions and screens – noise reduction by acoustic absorption – reduction of noise through good manage- ment – conclusions – references	
6	Hearing conservation programmes	168
	Roger Wills	
	Criteria – hearing conservation programmes – hearing protection – references	
7	Noise and vibration in building services	192
	Diane M. Fairhall	
	Noise in air distribution systems – noise in water distribution systems – references	
8	Applications for active attenuation	226
	H. G. Leventhall and John Roberts	
	The theory and applications of active attenuation – limitations of active control systems – loudspeakers for active attenuation – the prospects for active attenuation – where can active attenuation be used? – references	
Ar	Appendix	
Vi	broting systems the wave equation the velocity of sound sound	
int	ensity – sound radiation	
int In	ensity – sound radiation dex	247 -

vi Noise control in the built environment