

CONTENTS

FOREWORD	CONNY NILSSON, DIRECTOR, SWEGON AIR ACADEMY	4
PART A	VENTILARE NECESSE EST... CONNY NILSSON	8
CHAPTER 1	Human health and well-being in indoor environments	
	JAN VILHELM BAKKE, M.D.	14
2	Indoor environment and productivity in offices	
	PROFESSOR OLLI SEPPÄNEN	48
	COMMENT CONNY NILSSON	72
PART B	ECONOMIC AND SOCIAL RESPONSIBILITY CONNY NILSSON	74
CHAPTER 3	Economic considerations in new building and renovation projects CONNY NILSSON AND PROFESSOR EMERITUS ENNO ABEL	76
4	Sub-optimization or a holistic approach	
	CONNY NILSSON	92
5	Legislation, standards and established practice	
	ASSOCIATE PROFESSOR LARS E. EKBERG	100
	COMMENT CONNY NILSSON	113
PART C	ENERGY AND THE OUTDOOR ENVIRONMENT CONNY NILSSON	116
CHAPTER 6	Fossil fuels – a finite resource	
	PROFESSOR KJELL ALEKLETT	118
7	The European Union – Energy Directives	
	ASSOCIATE PROFESSOR PER-ERIK NILSSON	126
8	The changing climate	
	MARTIN HEDBERG, METEOROLOGIST	138
	COMMENT CONNY NILSSON	163
PART D	THE INDOOR ENVIRONMENT - IN A WIDER SENSE CONNY NILSSON	166
CHAPTER 9	The history of air	
	ARCHITECTS RASMUS WAERN AND GERT WINGÅRDH	170
10	Thermal climate	
	ASSOCIATE PROFESSOR LARS E. EKBERG	182
11	Building Acoustics	
	JOHNNY ANDERSSON, TECHNICAL DIRECTOR	192
12	Airtightness – for energy efficiency and moisture protection	
	PROFESSOR EMERITUS ARNE ELMROTH	214
13	People and buildings – both need light	
	HANS ARVIDSSON, SENIOR SPECIALIST AND PROFESSOR LARS R. BYLUND	232
	COMMENT CONNY NILSSON	246





PART E	AIR TREATMENT AND INDOOR CLIMATE	CONNY NILSSON	248
CHAPTER 14	The client and the building process	PROFESSOR EMERITUS ENNO ABEL	250
15	Air quality	ASSOCIATE PROFESSOR LARS E. EKBERG	272
16	Air change and air flow	ASSOCIATE PROFESSOR LARS E. EKBERG	282
17	Demand-controlled ventilation	ADJUNCT PROFESSOR ANDERS SVENSSON	292
18	Outdoor air intakes – location, design, inspection and cleaning	PROFESSOR STEN OLAF HANSEN	312
19	Ducting Systems – location, design, inspection and cleaning	JOHNNY ANDERSSON, TECHNICAL DIRECTOR	336
20	Air filters and air filtration	THORE BERTILSSON, TRAINING MANAGER	366
21	Energy recovery	ASSOCIATE PROFESSOR PER-ERIK NILSSON	386
22	Heating supply air	ASSOCIATE PROFESSOR LENNART JAGEMAR	402
23	Cooling supply air	ASSOCIATE PROFESSOR LENNART JAGEMAR	426
24	Humidification and dehumidification	ASSOCIATE PROFESSOR LARS E. EKBERG	448
25	Fans and SFP, specific fan power	GUNNAR BERG, DEVELOPMENT ENGINEER	464
26	Sound and sound attenuation	JOHNNY ANDERSSON, TECHNICAL DIRECTOR	478
27	Airborne indoor climate systems	MATS BERGLUND, PRODUCT COORDINATOR	502
28	Waterborne indoor climate systems	GUNNAR SVENSSON, REGIONAL MANAGER	536
29	Balancing ventilation systems	ADJUNCT PROFESSOR ANDERS SVENSSON	556
30	Efficient control of air handling equipment	NILS SPETZ, PRODUCT MANAGER	580
31	The intelligent building – a matter of choice	HENRIK EBELINT, MANAGING DIRECTOR	592
32	Quality assurance for a good indoor environment	EVA SIKANDER, M.SC.	604
	IMAGE CREDITS		616
	EPILOGUE	CONNY NILSSON	620
	COLOPHON		622