## Contents

Foreword                                      iii  
Introduction                                  ix  

**Chapter 1 Creating healthy homes**          1  
1.1 Air control                               2  
1.2 The comforts of home.                    6  
1.3 The art of noise protection               16  
1.4 Ventilation and noise                    17  
1.5 Light and beauty.                        18  
Summary                                      18  
References and further reading               18  

**Chapter 2 The thermal envelope**            21  
2.1 Airtightness layer                        25  
2.2 Insulation layer                          38  
2.3 Wind- and weathertightness layer.         44  
2.4 Let the sunshine in!                     46  
2.5 Thermal bypass                            51  
2.6 Thermal mass                              55  
Summary                                      56  
References and further reading               56  

**Chapter 3 Fresh air home delivery**         57  
3.1 Active ventilation with heat recovery     58  
3.2 What is important for designing a heat recovery ventilation system?  62  
3.3 Filters                                  64  
3.4 Ground heat exchanger                    65  
3.5 Ducting                                  66  
3.6 May the force be with you!               68  
3.7 Using the ventilation system for heating and cooling  71  
3.8 Fireplaces and balanced ventilation.     72  
3.9 Ventilation control and user interface   72  
3.10 Supply-only or extract-only mode         73  
3.11 Seasonal use                             74  
3.12 Performance requirements.                74  
3.13 Other mechanical ventilation options    75