REHVA

Federation of European Heating, Ventilation and Air Conditioning Associations

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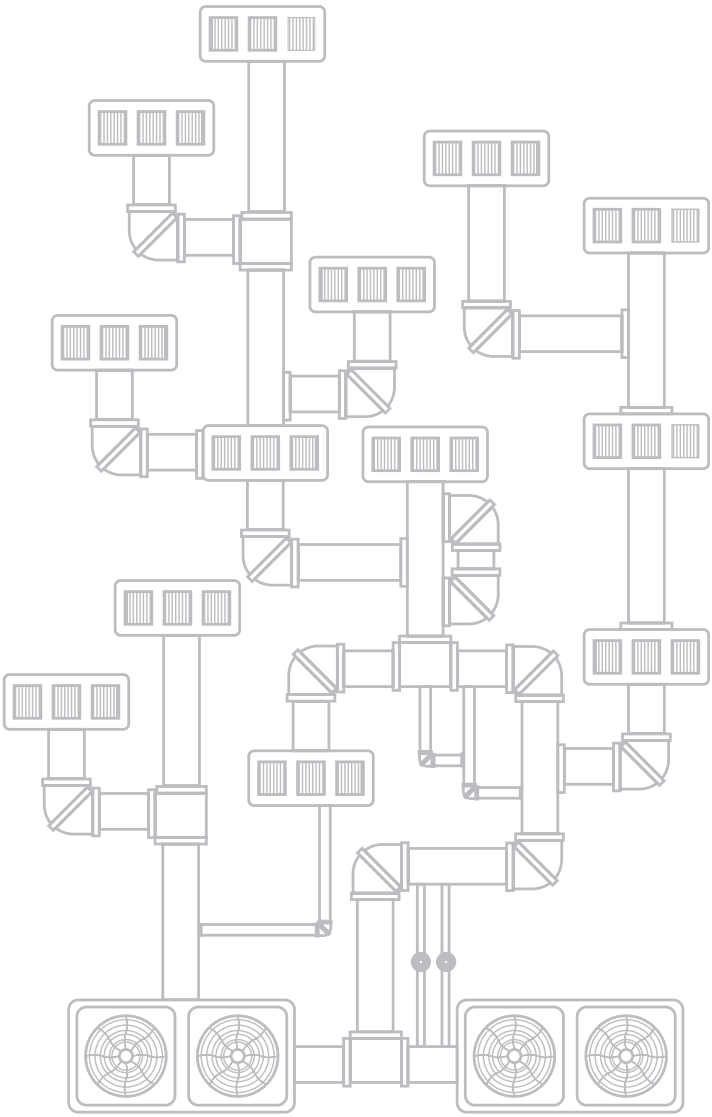
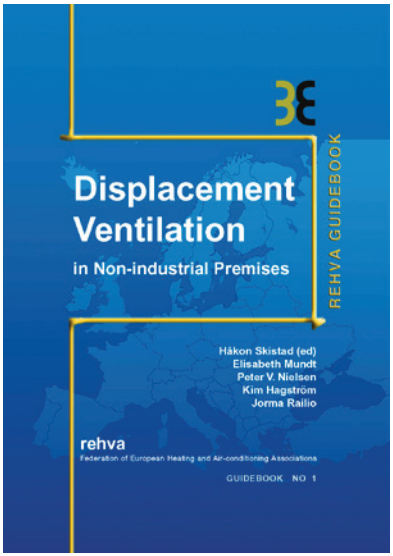


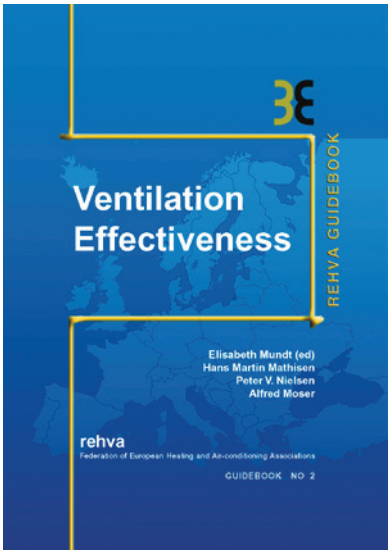


PDF

No.01: DISPLACEMENT VENTILATION IN NON-INDUSTRIAL PREMISES

The guidebook serves as a comprehensive and easy-to-understand design manual. The book explains the benefits and limitations of displacement in commercial ventilation and outlines where ventilation should be applied.

The book also points out the limitations of displacement ventilation. The technique is no marvel that can solve all ventilation problems, but a principle that has definite advantages when applied correctly.



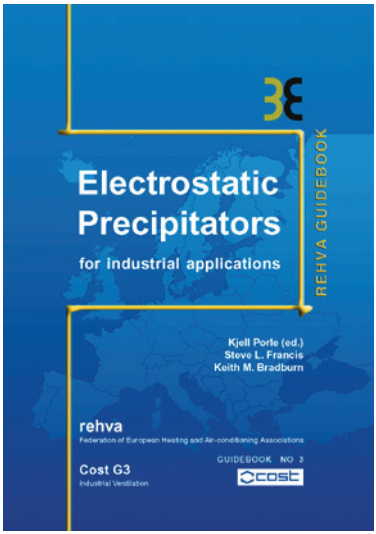
PDF

No.02: VENTILATION EFFECTIVENESS

Improving the ventilation effectiveness allows indoor air quality to be significantly enhanced without the need for higher air changes in the building, thereby avoiding the higher costs and energy consumption associated with increasing the ventilation rates. This Guidebook provides easy-to-understand descriptions of the indices used to measure the performance of a ventilation system and which indices to use in different cases.

No.03: ELECTROSTATIC PRECIPITATORS FOR INDUSTRIAL APPLICATIONS

This Guidebook provides basic knowledge of the physics and power supplies of electrostatic precipitators. It also deals with practical aspects of ESP design and gives examples of typical applications of ESPs.

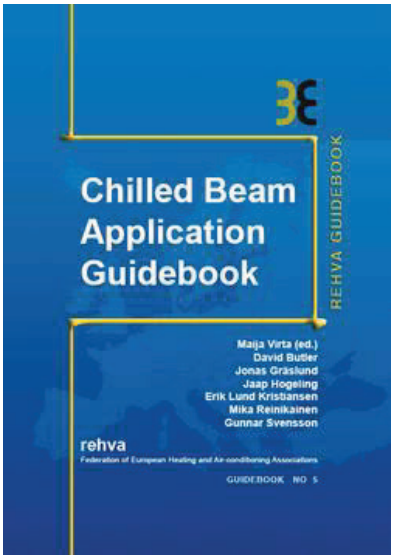


PDF

No.04: VENTILATION AND SMOKING

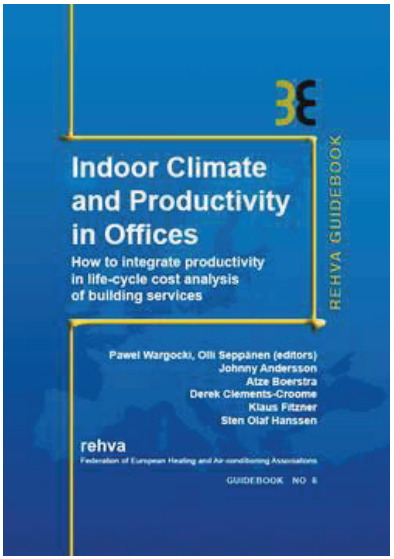
This publication describes how ventilation can reduce the risk of passive smoking. The authors point out that ventilation cannot completely safeguard against passive smoking but can considerably lower the risks associated with it. The book is aimed at all concerned with the subjects of air quality and tobacco smoke, primarily HVAC engineers, architects, occupational hygienists, facility managers, building owners, building users and policymakers in the public health sector.

PDF



No.05: CHILLED BEAM APPLICATION GUIDEBOOK

Chilled beam systems are primarily used for cooling and ventilation in spaces, which appreciate good indoor environmental quality and individual space control. Active chilled beams are connected to the ventilation ductwork, high temperature cold water, and when desired, low temperature hot water system. Primary air supply induces room air to be recirculated through the heat exchanger of the chilled beam. In order to cool or heat the room either cold or warm water is cycled through the heat exchanger.

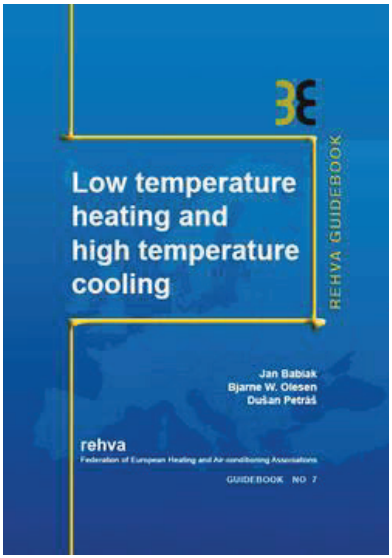


No.06: INDOOR CLIMATE AND PRODUCTIVITY IN OFFICES

Indoor Climate and Productivity in Offices Guidebook shows how to quantify the effects of indoor environment on office work and also how to include these effects in the calculation of building costs. Such calculations have not been performed previously, because very little data has been available. The quantitative relationships presented in this Guidebook can be used to calculate the costs and benefits of running and operating the building.

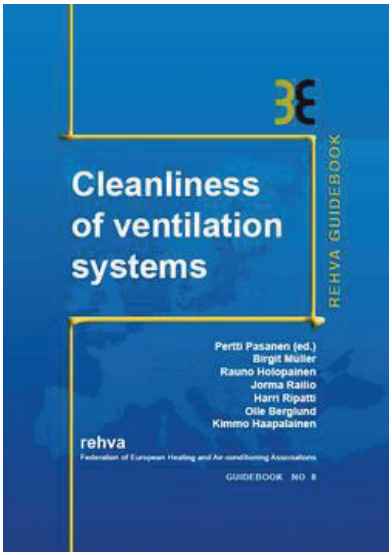
No.07: LOW TEMPERATURE HEATING AND HIGH TEMPERATURE COOLING

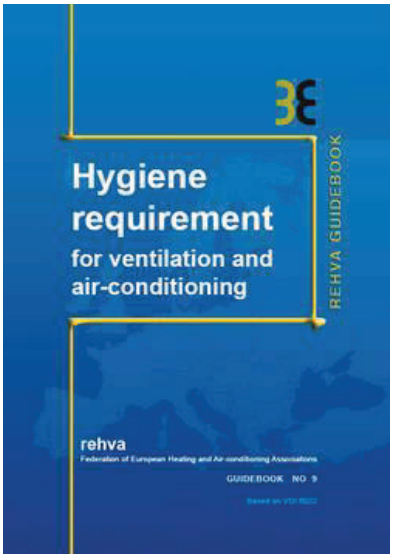
This Guidebook describes the systems that use water as heat-carrier and when the heat exchange within the conditioned space is more than 50% radiant. Embedded systems insulated from the main building structure (floor, wall and ceiling) are used in all types of buildings and work with heat carriers at low temperatures for heating and relatively high temperature for cooling.



No.08: CLEANLINESS OF VENTILATION SYSTEM

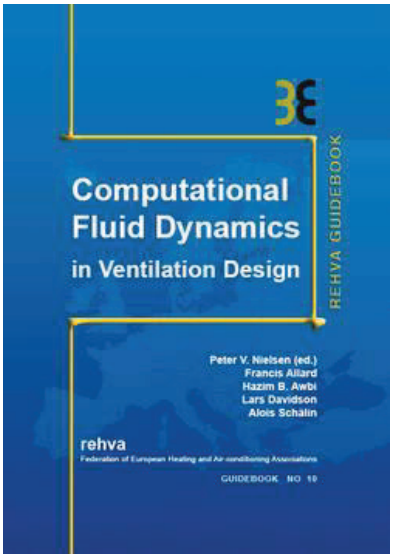
Cleanliness of ventilation systems Guidebook aims to show that indoor environmental conditions substantially influence health and productivity. This Guidebook presents criteria and methods on how to design, install and maintain clean air handling systems for better indoor air quality.





No.09: HYGIENE REQUIREMENT FOR VENTILATION AND AIR CONDITIONING

Hygiene requirement is intended to provide a holistic formulation of hygiene-related constructional, technical and organisational requirements to be observed in the planning, manufacture, execution, operation and maintenance of ventilating and air-conditioning systems. These requirements for ventilating and air-conditioning systems primarily serve to protect human health.

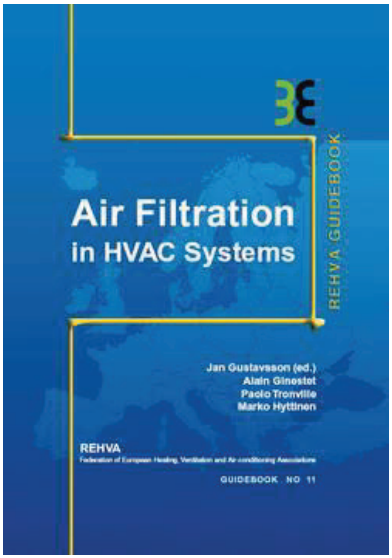


No.10: COMPUTATIONAL FLUID DYNAMICS IN VENTILATION DESIGN

CFD-calculations have been rapidly developed to a powerful tool for the analysis of air pollution distribution in various spaces. However, the user of CFD-calculation should be aware of the basic principles of calculations and specifically the boundary conditions. Computational Fluid Dynamics (CFD) – in Ventilation Design models is written by a working group of highly qualified international experts representing research, consulting and design.

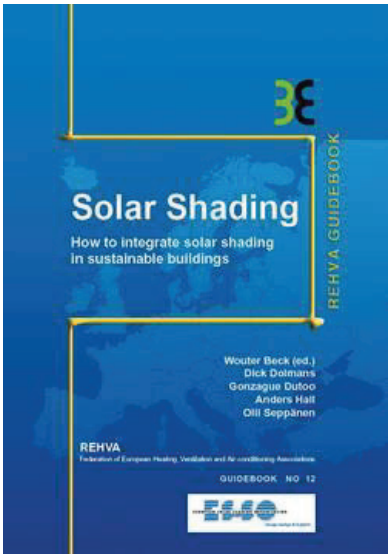
No.11: AIR FILTRATION IN HVAC SYSTEMS

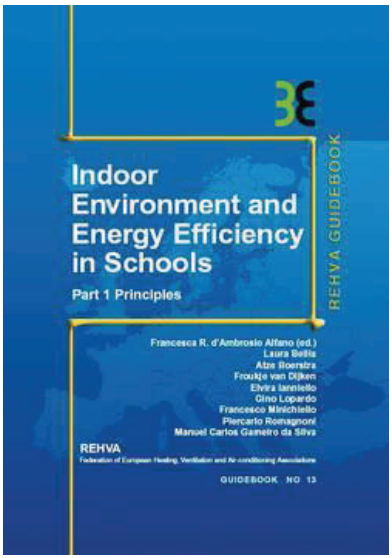
Air filtration Guidebook will help the designer and user to understand the background and criteria for air filtration, how to select air filters and avoid problems associated with hygienic and other conditions at operation of air filters. The selection of air filters is based on external conditions such as levels of existing pollutants, indoor air quality and energy efficiency requirements.



No.12: SOLAR SHADING

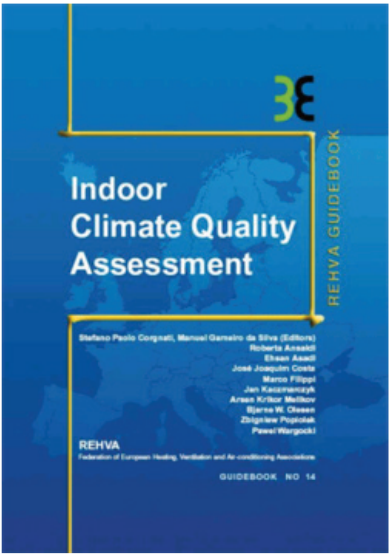
Solar Shading Guidebook gives a solid background on the physics of solar radiation and its behaviour in window with solar shading systems. Major focus of the Guidebook is on the effect of solar shading in the use of energy for cooling, heating and lighting. The book gives also practical guidance for selection, installation and operation of solar shading as well as future trends in integration of HVAC-systems with solar control.





No.13: INDOOR ENVIRONMENT AND ENERGY EFFICIENCY IN SCHOOLS

School buildings represent a significant part of the building stock and also a noteworthy part of the total energy use. Indoor and Energy Efficiency in Schools Guidebook describes the optimal design and operation of schools with respect to low energy cost and performance of the students. It focuses particularly on energy efficient systems for a healthy indoor environment.

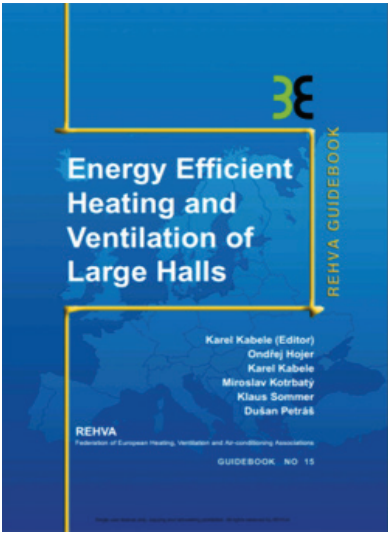


No.14: INDOOR CLIMATE QUALITY ASSESSMENT

This new REHVA Guidebook gives building professionals a useful support in the practical measurements and monitoring of the indoor climate in buildings. Wireless technologies for measurement and monitoring has allowed enlarging significantly number of possible applications, especially in existing buildings. The Guidebook illustrates with several cases the instrumentation for the monitoring and assessment of indoor climate.

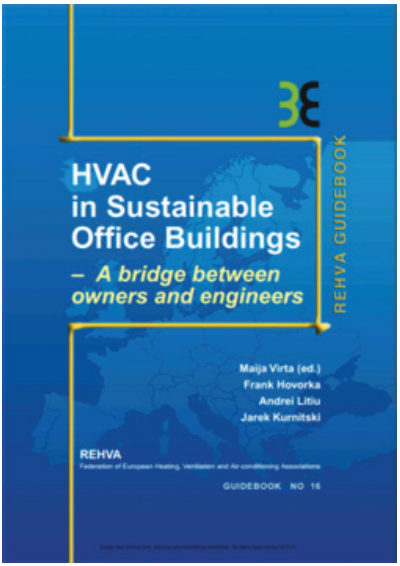
No.15: ENERGY EFFICIENT HEATING AND VENTILATION OF LARGE HALLS

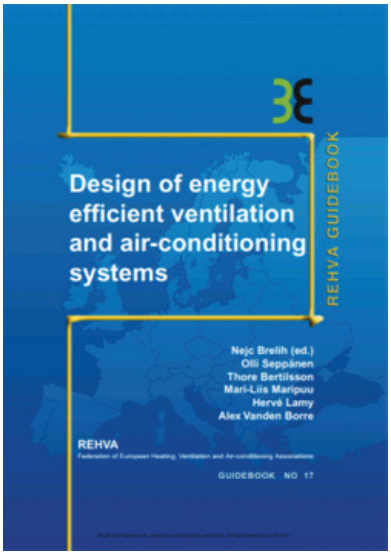
This guidebook is focused on modern methods for design, control and operation of energy efficient heating systems in large spaces and industrial halls. The book deals with thermal comfort, light and dark gas radiant heaters, panel radiant heating, floor heating and industrial air heating systems. Various heating systems are illustrated with case studies. Design principles, methods and modelling tools are presented for various systems.



No.16: HVAC IN SUSTAINABLE OFFICE BUILDINGS

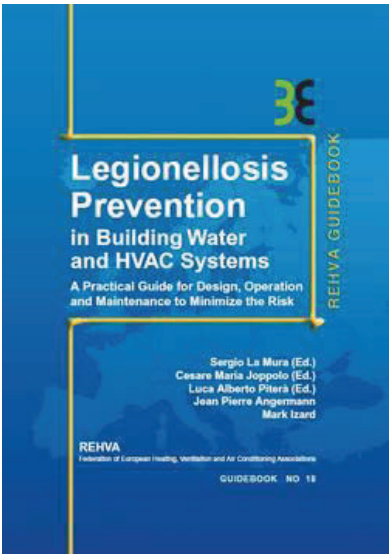
This guidebook aims to build a bridge between the real estate community and the engineering community. It explains the challenges of property valuation based on real data and how the sustainability and HVAC-technology can have an impact on value. It also gathers the latest HVAC- and other technologies used in sustainable buildings and gives some real case study examples.
This guidebook is aimed for the owners and architects as well as engineers. It doesn't require deep technical knowhow of HVAC-systems or real estate valuation.





No.17: DESIGN OF ENERGY EFFICIENT VENTILATION AND AIR-CONDITIONING SYSTEMS

This guidebook covers numerous system components of ventilation and air-conditioning systems and shows how they can be improved by applying the latest technology products. Special attention is paid to details, which are often overlooked in the daily design practice, resulting in poor performance of high quality products once they are installed in the building system.

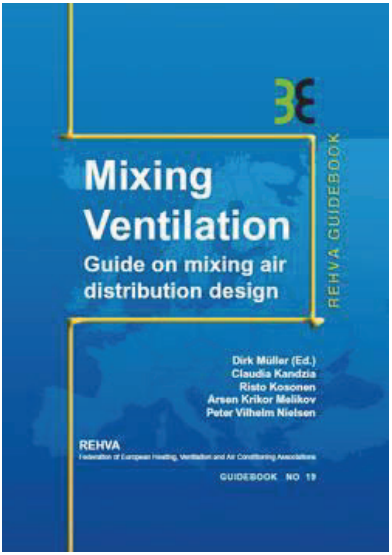


NO.18: LEGIONELLOSIS PREVENTION IN BUILDING WATER AND HVAC SYSTEMS

This Guidebook is a practical guide for design, operation and maintenance to minimize the risk of legionellosis in building water and HVAC systems. It is divided into several themes such as: Air conditioning of the air (by water – humidification), Production of hot water for washing (fundamentally but not only hot water for washing) and Evaporative cooling tower.

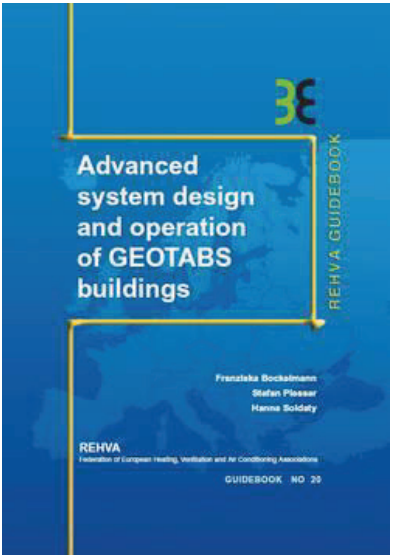
NO.19: MIXING VENTILATION

In this guidebook most of the known and used in practice methods for achieving mixing air distribution are discussed. Mixing ventilation has been applied to many different spaces providing fresh air and thermal comfort to the occupants. Today, a design engineer can choose from large selection of air diffusers and exhaust openings.



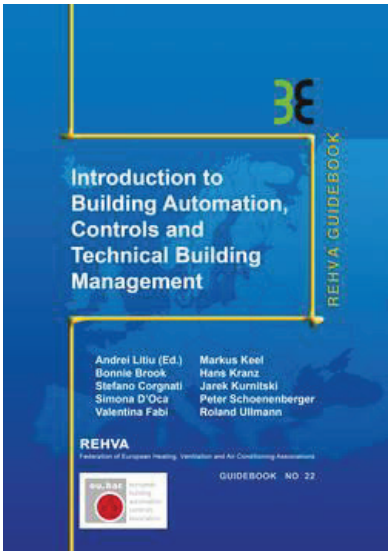
NO.20: ADVANCED SYSTEM DESIGN AND OPERATION OF GEOTABS BUILDINGS

This guidebook provides comprehensive information on GEOTABS systems. It is intended to support building owners, architects and engineers in an early design stage showing how GEOTABS can be integrated into their building concepts. It also gives many helpful advices from experienced engineers that have designed, built and run GEOTABS systems.



NO.21: ACTIVE AND PASSIVE BEAM APPLICATION DESIGN GUIDE

The Active and Passive Beam Application Design Guide is the result of collaboration by worldwide experts to give system designers a current, authoritative guide on successfully applying active and passive beam technology. Active and Passive Beam Application Design Guide provide energy-efficient methods of cooling, heating, and ventilating indoor areas, especially spaces that require individual zone control and where internal moisture loads are moderate.

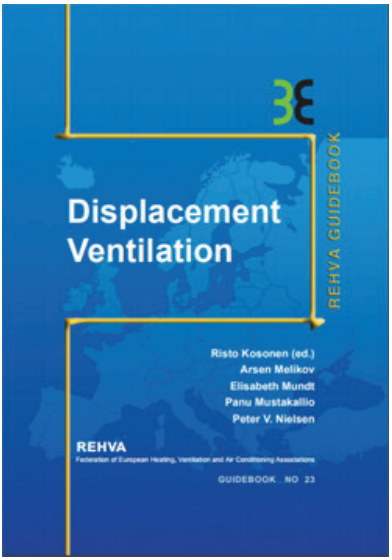


NO.22: INTRODUCTION TO BUILDING AUTOMATION, CONTROLS AND TECHNICAL BUILDING MANAGEMENT

This guidebook aims to provide an overview on the different aspects of building automation, controls and technical building management and steer the direction to further in-depth information on specific issues, thus increasing the readers' awareness and knowledge on this essential piece of the construction sector puzzle.

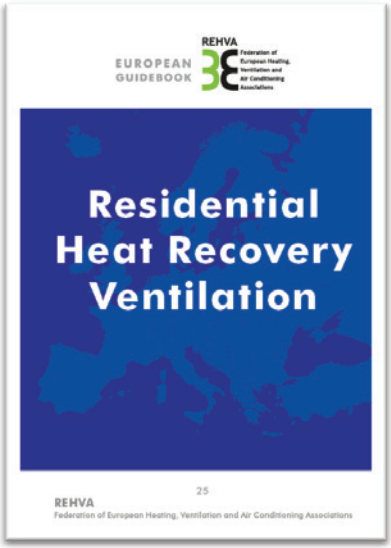
NO.23: DISPLACEMENT VENTILATION

The aim of this Guidebook is to give the state-of-the art knowledge of the displacement ventilation technology, and to simplify and improve the practical design procedure. The Guidebook discusses methods of total volume ventilation by mixing ventilation and displacement ventilation and it gives insights of the performance of the displacement ventilation. It also shows practical case studies in some typical applications and the latest research findings to create good local micro-climatic conditions.



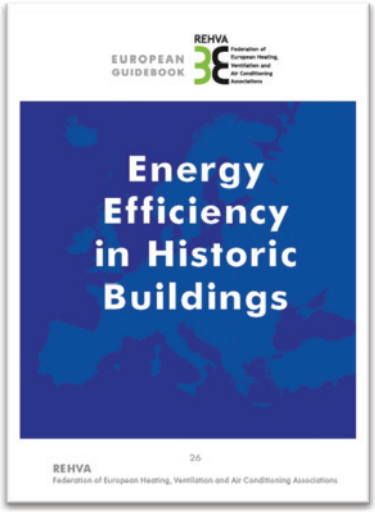
No.24: FIRE SAFETY IN BUILDINGS

This guidebook describes the different principles of smoke prevention and their practical implementation by way of natural and mechanical smoke extraction systems, smoke control by pressurization systems and appropriate partition measures. In the event of fire, smoke can spread through ventilation systems, but these systems can play an active support role in smoke prevention.



No.25: RESIDENTIAL HEAT RECOVERY VENTILATION

Heat recovery ventilation is expected to be a major ventilation solution while energy performance of buildings is improved in Europe. This European guidebook prepared by REHVA and EUROVENT experts includes the latest ventilation technology and knowledge about the ventilation system performance, intended to be used by HVAC designers, consultants, contractors, and other practitioners. The authors of this guidebook have tried to include all information and calculation bases needed to design, size, install, commission and maintain heat recovery ventilation properly.



No.26: ENERGY EFFICIENCY IN HISTORIC BUILDINGS

These guidelines provide information to evaluate and improve the energy performance of historic buildings, fully respecting their significance as well as their cultural heritage and aesthetic qualities. The guidelines are intended for both design engineers and government agencies. They provide design engineers with a tool for energy auditing the historic building and offer a framework for the design of possible energy upgrades, which are conceptually similar to those provided for non-protected buildings, but appropriately tailored to the needs and peculiarities of cultural heritage.

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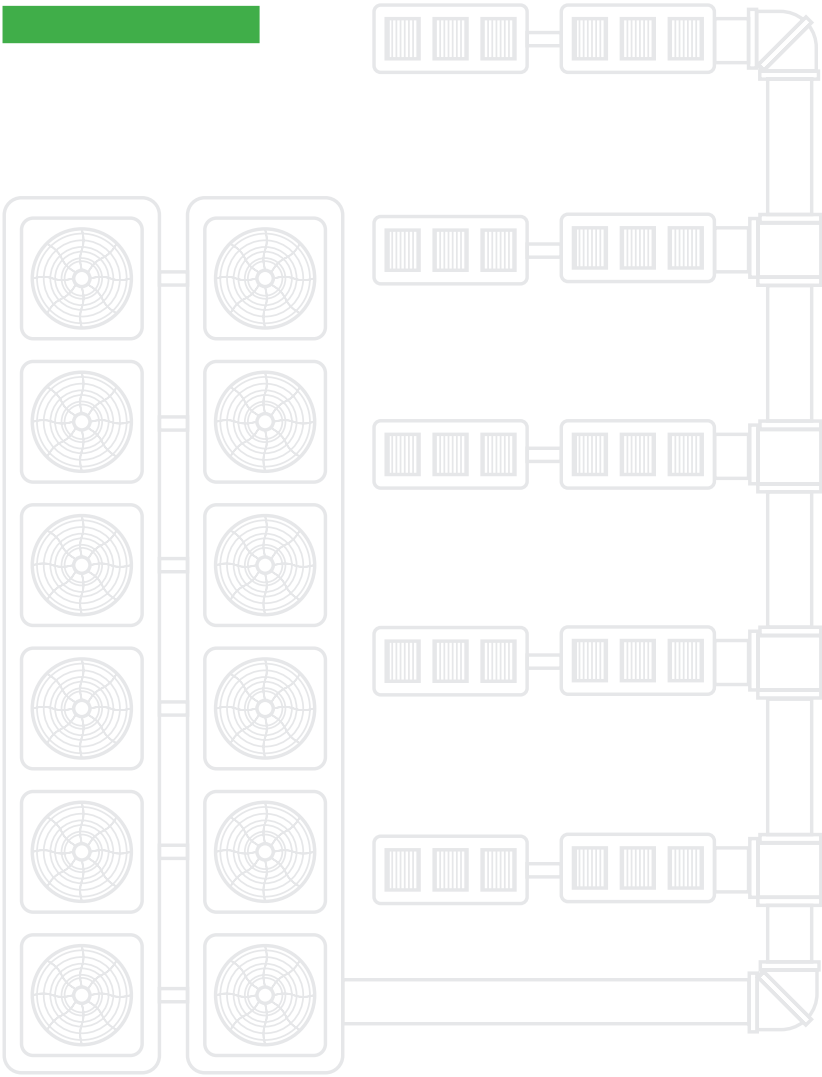
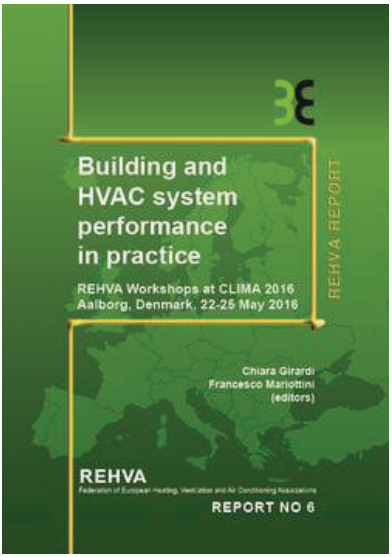


REPORT NO. 4: REHVA NZEB TECHNICAL DEFINITION AND SYSTEM BOUNDARIES FOR NEARLY ZERO ENERGY BUILDINGS

In this REHVA Report in cooperation with CEN, technical definitions and energy calculation principles for nearly zero energy buildings required in the implementation of the Energy performance of buildings directive recast are presented. This 2013 revision replaces 2011 version. These technical definitions and specifications were prepared in the level of detail to be suitable for the implementation in national building codes.

REPORT NO.6: REHVA WORKSHOPS AT CLIMA 2016

The 6th REHVA Report includes the outcomes of the technical workshops organised during our triennial flagship event, the CLIMA2016 REHVA World Congress.



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