

# 2019

## **REHVA ANNUAL AND FINANCIAL REPORT 2019**

From REHVA board of directors



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## REHVA MEMBERS



Our members in 2019 were:

**ABOK**, Russia  
**AHGWTEL/LATVAC**, Latvia  
**AiCARR**, Italy  
**AICVF**, France  
**AIIR and AGFR**, Romania  
**AIIRM**, Moldavia  
**ATECYR**, Spain  
**ATIC**, Belgium  
**CIBSE**, United Kingdom  
**DANVAK**, Denmark  
**EKVY**, Estonia  
**ÉTÉ and MMK**, Hungary  
**FINVAC**, Finland  
**HKIS**, Croatia  
**KGH**, Serbia  
**LITES**, Lithuania  
**NORVAC**, Norway  
**ORDEM DOS ENGENHEIROS**, Portugal  
**PZITS**, Poland  
**SITHOK**, Slovenia  
**SSTP**, Slovakia  
**STP**, Czech Republic  
**SWEDVAC**, Sweden  
**SWKI**, Switzerland  
**TTMD**, Turkey  
**TVVL**, the Netherlands  
**VDI**, Germany

In March 2019, the building services engineering society SWKI is heading in a completely different strategic direction and has got a brand-new look to boot. It will be strengthening and uniting the sector under the label « **Die Planer** – Swiss Society for Engineering, Energy and Environment ».

The membership fee was 2 850 € in 2019.

A detailed list of the members and their logos is in [Annex 1](#).

## REHVA SUPPORTERS



Our supporters in 2019 were:

**Aermec**, Italy  
**Baltimore Aircoil International**, Belgium  
**Belimo Automation**, Switzerland  
**Camfil**, Sweden  
**Daikin Europe**, Belgium  
**Dosetimpex**, Romania  
**Eneko**, Turkey  
**EPEE**, Belgium  
**ES-SO**, Belgium  
**Eurovent Certita Certification**, France  
**Evapco Europe**, Italy  
**FläktGroup**, Sweden  
**Friterm**, Turkey  
**Granlund**, Finland  
**Halton**, Finland  
**Haskoning DHV**, The Netherlands  
**LG Electronics**, France  
**Lindab**, Sweden  
**Rettig**, The Netherlands  
**Rhoss**, Italy  
**Skanska Commercial Development Nordic**, Sweden  
**Smay**, Poland  
**Smits van Burgst consulting engineers**, The Netherlands  
**Swegon**, Sweden  
**Systemair**, Sweden  
**Uponor Corporation**, Finland  
**Velux**, Denmark  
**Viega**, Germany - **NEW**

Rettig ICC Oy Ab has changed its business name to Purmo Group Oy Ab on 22 October 2019.

The fee paid by the supporters was 3 000 € in 2019.

A detailed list of the supporters with their activities and logos is in [Annex 2](#).

The REHVA Annual report year 2019 was approved by the REHVA board of directors on 25 March 2020.

The year 2019 was the 56th year since the founding of REHVA.

## REHVA BOARD OF DIRECTORS

REHVA board members after the General Assembly 2019 in Bucharest were the following:



**FRANK HOVORKA**  
**President**  
AICVF, France  
2013 – 2022



**CATALIN LUNGU**  
**Treasurer**  
**Vice-President**  
AIIR, Romania  
2017 – 2020



**KEMAL GANI BAYRAKTAR**  
**Vice-President**  
TTMD, Turkey  
2019 – 2022



**ATZE BOERSTRA**  
**Vice-President**  
TVVL, the Netherlands  
2016 – 2022



**MANUEL GAMEIRO DA SILVA**  
**Vice-President**  
Ordem dos Engenheiros,  
Portugal  
2013 – 2022



**IVO MARTINAC**  
**Vice-President**  
SWEDVAC, Sweden  
2019 – 2022



**JUAN TRAVESI**  
**Vice-President**  
ATECYR, Spain  
2019 – 2022

# PUBLICATIONS

## Guidebooks

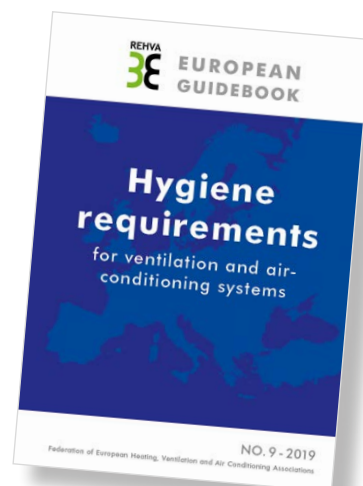
At the heart of the mission of the Federation, the REHVA Guidebooks are tools that can disseminate the latest knowledge and technologies to the members and all other professionals in the field of HVAC.

Guidebooks are written through REHVA Task Forces including top Europeans experts in relationship with the topics of the guides. It guarantees the best available information and the soundest judgment possible.

During 2019, five new Guidebooks were published. These are:

### **Hygiene requirements for ventilation and air-conditioning systems** (Guidebook No.9 – A completely revised 2nd edition)

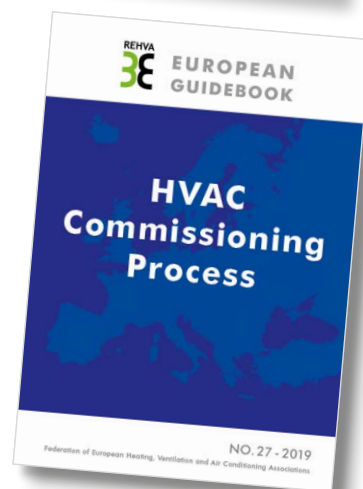
This Guidebook specifies hygiene requirements from an interdisciplinary perspective, taking into account constructional, technical and organisational factors in the fields of planning, manufacture, execution, operation and maintenance of ventilation and air-conditioning systems and air-handling units. These requirements primarily serve to protect human health.



### **HVAC Commissioning Process** (Guidebook No.27)

This Guidebook is the result of a fruitful cooperation between REHVA and ISHRAE. A special thanks to **Maija Virta** and **Ole Teisen** for their valuable work that was crucial in getting this Guidebook.

This Guidebook describes the HVAC Commissioning Process compatible with the routines in the building sector almost everywhere around the world. This is the first work that both describes the process in a very hands-on manner and details the commissioning activities for various types of systems, complete with theoretical background, guidance & checklists.



### **nZEB Design Strategies for Residential Buildings In Mediterranean Regions** (Guidebook No.28)

The aim of this Guidebook is to develop a basic framework of a design guideline for planners, designers and engineers involved in the passive/architectural design of buildings and the selection process of the HVAC systems to deliver the most appropriate and cost-effective solutions for NZEB in Mediterranean climates. This Guidebook is based on national experiences and the set of principles that drive the design approach for nZEB accounting for the specific climate.

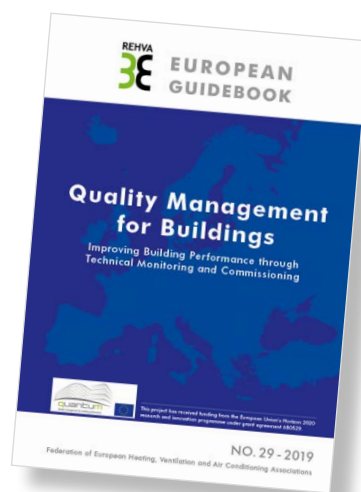


## Quality Management for Buildings

(Guidebook No.29 by Stefan Plesser, Ole Teisen and Cormac Ryan)

This Guidebook gives a brief overview on quality management services Technical Monitoring (TMon) and Commissioning (Cx) to building owners, developers and tenants. Avoiding technical details, it shows the tremendous economic potential, gives insights on the most important technical aspects and provides hands-on advice for application in projects.

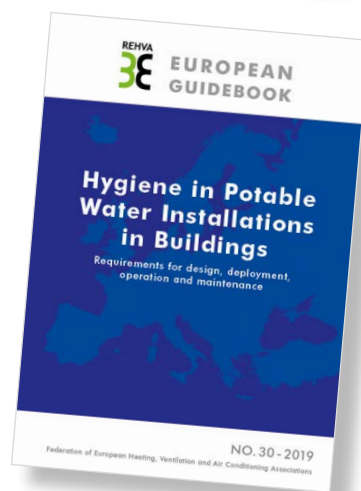
*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 680529 and is therefore for free by [subscribing](#) to the REHVA Newsletter.*



## Hygiene in Potable Water Installations in Buildings

(Guidebook No.30 by C. Schauer, K. Dinne, W. van der Schee, J. Mampaey, I. Gatto, J. Perackova, D. Petras and B. Bleys)

The interrelationships between water quality, health and the well-being of users require that all parties involved have a specific responsibility for aspects of hygiene in specifying the requirements for potable water installations in buildings. This Guidebook gives an overview about the fundamentals of hygiene and water quality and contains main information's on the design, installation, start-up, use, operation and maintenance of potable water installations in buildings. It gives also suggestions for the practical work (maintenance, effects on microbiology, potential causes and measures in practical work, checklists).



The stock of 8 177 paper copies of Guidebooks is stored in the REHVA office in Brussels, Belgium.

## Translations

During 2019, the Guidebook "Fire Safety in Buildings—Smoke Management Guidelines" (Guidebook No.24) has been translated in Portuguese and Turkish.

Moreover, the Guidebook "Hygiene in Potable Water Installations in Buildings" (Guidebook No. 30) has been translated in Czech, Spanish, French and Chinese.

A copy of all translated REHVA Guidebooks in different languages is stored in the REHVA office in Brussels, Belgium.

## Sales of Guidebooks

The price of the hard copies varies according to the year of publication and the number of copies in the stock between 9€ and 50€. Some of them are out of stock.

The price for the Guidebooks sold in digital version varies also from 9€ to 50€. They are all available for purchasing.

The Guidebooks are sold via the [e-Shop](#) on the website.

686 Guidebooks (hardcopies and PDF versions) were sold during the year 2019.



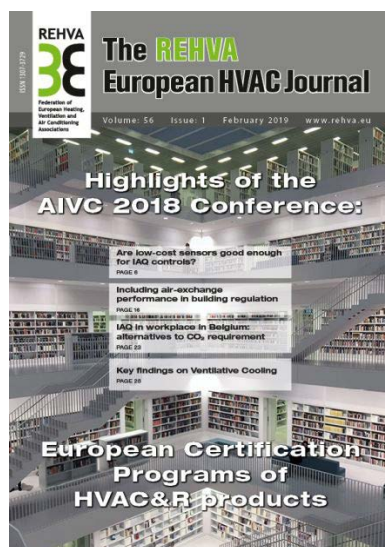
# REHVA European HVAC Journal

## Published journals

REHVA Journal is a technical, practical journal for the HVAC industry professionals. It is read by Designers, Consultants, Manufacturers, Investors, Mechanical Contractors, Sales and Representative Companies, Architects Energy sector's professionals, governmental institutions authorities, etc.

In 2019, the REHVA European HVAC Journal was published bi-monthly. The journal is still printed and published in Turkey by the Teknik Sektor Yayincilik company.

In 2019, REHVA published six regular issues and one special issue for ACREX 2019.





The current subscribers were offered for the cost of 60€ per year for members of REHVA Members or 70€ per year for others with the following services:

- The REHVA Journal hard copy
- The unlimited access to the restricted area that includes:
  - o 17 REHVA eGuidebooks
  - o CLIMA 2016 Courses and Workshops full videos
  - o Tailored EU Policy tracking
  - o Latest updates on EPBD standards

Each issue of the REHVA Journal is also available for free as digital version on the REHVA [website](#). Individual technical papers are available online as HTML or downloadable in PDF format, the entire journal issue is also downloadable as PDF document. The REHVA website is optimised for search engines, so the individual articles are easier to find online. Jarkko Narvanne, the Graphical Designer, provides the HTML and PDF versions. REHVA office uploads the technical papers of each issue on the REHVA website and promotes each new issue in a special newsletter and finally shares each technical paper on all REHVA social media (LinkedIn, Facebook).

REHVA Member Associations continued to receive 2 free copies of each issue of the REHVA Journal, while the REHVA Supporters received 1 free copy.

## Publishing information

In 2019, the REHVA Journal was distributed at several fairs and conferences to promote REHVA and European HVAC technology. The events were selected by the potential visibility and relevance of participants. The Journal has been an important asset to attract exhibitions to cooperate with REHVA. About 2525 printed copies of REHVA journals were distributed at 10 events.

Issue	Theme	Events where the Journal was distributed
1/February	– Highlights of the AIVC 2018 Conference and European Certification Programs of HVAC&R products In cooperation with AIVC-INIVE and Eurovent Certita Certification	– WSED, Wels, Austria, 27 February – 1 March – INIVE-DYNASTEE WS (IEA-EBC Annex 71), Bilbao, Spain, 10 – 11 April – Futurebuild, London, UK, 5 – 7 March – ISH Frankfurt, Frankfurt, Germany, 11 – 15 March
ACREX	– Special issue for ACREX India 2019 exhibition	– ACREX, Mumbai, India, 28 February – 2 March
2/April	– WELCOME to CLIMA 2019 HVAC World Congress Bucharest Romania	– CLIMA 2019, Bucharest, Romania, 26 – 29 May – EUSEW 2019 – EU Sustainable Energy Week, 17 – 21 June
3/June	– CLIMA 2019 highlights – REHVA high level policy session at EUSEW 2019	
4/August	– New health & comfort promoting standard EN 16798-1 published – Settlement approach for nearly zero energy communities – Analysis of DHW energy use profiles – AixOCAT – Introducing a Library for Building Automation and Control Systems – New standard prEN 17423 on Primary Energy	– Buildings Simulation Conference 2019, Rome, Italy, 1-4 September – AQVEC Conference, Bari, Italy, 5-7 September – 40th AIVC conference, Ghent, Belgium, 15-16 October – 100th Anniversary of PZITS, Warsaw, Poland, 3-4 October
5/October	– Use of EPB Standards – Ventilation standards supporting innovation – Demand controlled filtration for cleanrooms – Design of displacement ventilation	– REHVA Brussels Summit conference, Brussels, Belgium, 5 November
6/December	– Special issue Nordic Technology	– ASHRAE Winter Conference & AHR Expo, 1-5 February, Orlando

## REHVA Journal Editorial Board 2019

<b>Francis Allard</b> , France	<b>Jarek Kurnitski</b> , Estonia
<b>Ahmet Arisoy</b> , Turkey	<b>Livio Mazzarella</b> , Italy
<b>Marianna Brodach</b> , Russia	<b>Renato Merati</b> , Italy
<b>Vincenc Butala</b> , Slovenia	<b>Birgit Müller</b> , Germany
<b>Stefano P. Corgnati</b> , Italy	<b>Natasa Nord</b> , Norway
<b>Francesca R. d'Ambrosio</b> , Italy	<b>Branimir Pavkovic</b> , Croatia
<b>Ioan Silviu Dobosi</b> , Romania	<b>Dusan Petras</b> , Slovakia
<b>Andy Ford</b> , United Kingdom	<b>Olli Seppänen</b> , Finland
<b>Jaap Hogeling</b> , the Netherlands	<b>Branislav Todorovic</b> , Serbia
<b>Karel Kabele</b> , Czech Republic	<b>Peter Wouters</b> , Belgium

## REHVA Journal Staff

**Jaap Hogeling**, Editor-in-chief

**Rebeka Maršnjak**, (Issues 1 to 3) and  
**Fatima Ahmed** (Issues 4 to 6), Editorial Assistant

**Giulia Marengi**, Advertisements

**Jarkko Narvanne**, Graphical Designer

## E-Newsletters

Six electronic newsletters were published every two months in 2019. This newsletter is distributed electronically to a list of 2 965 subscribers. They are also [downloadable](#) from the REHVA website. This newsletter offers exclusive insights about major HVAC industry topics, policy coverage, EU projects news and worldwide HVAC events updates.


## Supporter's Bulletin


Six Supporter's Bulletin, dedicated to REHVA supporters, were published in 2019. The Supporters' Bulletin is an electronic newsletter to provide our supporters with useful knowledge and tailored information. Anita Derjanecz, Managing Director of REHVA, the Editor of the Bulletin, oversees the content that provides general information to the supporters. They are [downloadable](#) from the REHVA website.



Federation of European Heating,  
Ventilation and Air Conditioning Associations

### REHVA Newsletter 06/2019


 **REHVA Activities**



**Thank you for your active participation at the REHVA Brussels Summit**


REHVA wishes to express our high appreciation for this year's conference participants and speakers for their active involvement in the REHVA Brussels Summit 2019. The event was deeply insightful and full of strong and inspiring contribution with diverse sessions on our topic: 'Delivering healthy, zero-carbon buildings by 2050'. In this link, you can also find the pictures of the conference with some...

[Read More](#)



**Welcome Spyridon!**

[Read More](#)



**Elphi Nellissen receives REHVA professional award at TVVL's annual event**

[Read More](#)



Federation of European Heating,  
Ventilation and Air Conditioning Associations

### Supporter's Bulletin 5/2019

 **REHVA Activities**



**Welcome to the REHVA Brussels Summit 2019!**

Only a few days to go until the official REHVA Brussels Summit Conference held on the 5<sup>th</sup> November 2019.

**Tuesday, 5 November** will feature a REHVA Conference "Delivering healthy, zero-carbon buildings by 2050". A networking lunch is planned between the two sessions of the Conference. It will be held in the Sofitel Brussels Le Louise Hotel.

We hope you enjoy a very interactive and innovative event!



**REHVA proudly announces the creation of the Indoor Environment Global Alliance**

Ghent, 15.10. 2019  
REHVA and fellow 5 founding members (AiCARR, AIHA, AIVC, ASHRAE, ISHRAE)

# REHVA DICTIONARY

The REHVA Dictionary is available in the [REHVA website](#) as a free service containing technical words and terms used in the building services. The REHVA Dictionary is an online translation service, which provides technical words and terms frequently used in building services. The REHVA Dictionary offers a unique tool for HVAC professionals that allows to search and translate a word or term simultaneously in 20 languages. The dictionary search lists all related expressions and word combinations of the searched term.



Since 2017, REHVA has been transferring the popular online dictionary also into a user-friendly App for tablets and smart phones, downloadable on [App Store](#) and [Google Play](#). In 2019, two new languages were added to the HVAC terminology, which are Estonian and Arabic languages.

Since 2019 and the REHVA revamp, the COP committee was also working on update of REHVA Dictionary App, which was renamed into REHVA APP. The upgrade includes new content items, such as interactive summary table of the new EPBD standards, links to the REHVA Members Association websites and unit metrics converter. The Publishing and Marketing Committee also confirmed this new upgrade, together with the search engine optimization to increase app visibility by the major search engines.

## WEBSITE AND SOCIAL MEDIA



The year 2019 was an important year regarding the REHVA website with the complete revamping and restructuring of the official website. From 1 January 2019, REHVA became subject to VAT with obligatory adjustment that were delayed and resulted in the suspension of the eShop for almost 6 months.

The aim of revamp was a massive improvement of the website performances, to enable easier content management and user experience at the same time, to increase visibility by search engine optimisation, to improve responsiveness on smart phones and tablets and to increase the visibility of all REHVA Member Associations in several new features. The REHVA staff and the supplier developed an entirely new visual and functional design, updated texts and improved functionalities of the website. Some examples of the novelties:

1. New and simplified content structure that eases the navigation on the website to increase user friendliness. All REHVA publications and knowledge sources, like the dictionary, the REHVA Journal or the event presentations are now grouped under the main menu [Knowledge base](#).
2. [REHVA news](#) have new layout, along with the REHVA newsletters and bulletins. The news section can be filtered according to categories, including news linked to member associations.
3. The [Events' section](#) was improved by adding categories and a filter function. One category is the "Members' events" where REHVA aims to better promote the events organised by each member associations.
4. [REHVA blog](#) as a new section where all REHVA members, experts can publish their short articles or various topics to be shared within REHVA network.
5. [Guidebook repository](#): a searchable database of publications of the entire REHVA network that displays REHVA Guidebooks along with the publications of REHVA member associations to show the collective knowledge sources provided by the REHVA European HVAC associations, categorised in technology fields and topics.
6. [REHVA EU policy](#) section was updated incorporating the latest policy fields and regulations in 2019.
7. New and more user-friendly distribution of various information on the work of [REHVA task forces](#) and other services.

The latest news, activities, and industry highlights are shared on the REHVA social media channels on Twitter, Facebook, LinkedIn and YouTube. The REHVA Social Media accounts, such as [LinkedIn](#) REHVA Page and [Group](#), as well as [Facebook](#) and [Twitter](#) increased the REHVA potential regarding knowledge spreading and promotion. REHVA counts a total of 6429 followers & members in all social media channels that is continuously increasing. REHVA also links the social media groups of its EU projects to the REHVA channels to generate synergies. On the [Flickr](#) account we share event photos, while on [YouTube](#) we share videos about REHVA activities and events, and it is available as a promotional channel also for our supporters companies.

## EXTERNAL RELATIONS ACTIVITIES

The External Relations Committee oversees the REHVA public affairs strategy and the activities to liaise with stakeholders and professional organisations in Europe and globally. The external relation activities of REHVA have 3 main priorities:

1. **EU public affairs:** liaising with the EU institutions and the services of the European Commission. REHVA is advocating for indoor environment quality and buildings energy efficiency and aims at influencing the development of buildings related EU policies and at supporting their national level implementation in the field of HVAC.
2. **Networking and co-operation with EU level professional organisations** and bodies in the construction sector that are active in the field of buildings energy efficiency, indoor environment quality and sustainable energy: federations of architects, consulting engineers, contractors, HVAC manufacturers, facility managers, construction industry, as well as EU level technology platforms and initiatives. The objectives of REHVA in this field are the professional networking and the joint representation of interest at EU level as well as the knowledge exchange and the promotion and dissemination of innovation and knowledge in the sector.
3. **Co-operation with HVAC association outside Europe** that have a similar mission like REHVA: ABRAVA (Brazil), ASHRAE (United States), CAHVAC (China), FAIAR (Latin America), ISHRAE (India), SAREK (Korea) and SHASE (Japan) based on a memorandum of understanding (MoU). During the CLIMA 2019 Congress, three MoUs were renewed between CAHVAC (China), SAREK (Korea), SHASE (Japan) and REHVA. REHVA aims at exchanging knowledge and at promoting European HVAC technologies, standards and knowledge at international level.

In 2019 the REHVA Board decided to cease the External and Relation Committee and take the coordination of the external relation activities directly under the Board's competence. The REHVA Board will report about the external relation activities in the annual reports and discuss concrete issues at the plenary discussions with all Member Associations during the Annual Meeting and the Brussels Summit. The REHVA office continuously shares information about the news and updates in the usual printed and electronic communication channels as before.

# EU institutions and EU public affairs

REHVA keeps liaison with the European Union Institutions: European Commission Services, such as DG Energy, DG Enterprise, DG Environment, DG Research, and the Commissions' Executive Agencies EASME and INEA, as well as with the European Parliament's ITRE and ENVI Committees, and the Council of the EU. REHVA is acknowledged by DG Energy and DG Research as a European stakeholder organisation and regularly receives invitations to policy consultations and stakeholder meetings, as well as information about on-going policy making work. REHVA is registered in the EU Transparency Register and has access to the relevant Committee Meetings (ITRE, ENVI) of the European Parliament.

REHVA focused on the following main policy issues in 2019:

- 1) EPBD review and implementation with special focus on:
  - a) Disseminating information on the revised EPBD
  - b) EPBD guidance documents
  - c) Promotion and dissemination of the new EPB standards
  - d) Smart Readiness Indicator
- 2) Energy Union and the Clean Energy package (including the review of the EED, RED II, Governance of the energy Union)
- 3) The new European Parliament and European Commission (energy and climate policy related agendas and the new European Green Deal)
- 4) EU energy research roadmap (SET Plan, Horizon 2020, joint research initiatives, technology platforms)
- 5) Ecodesign and Energy labelling updates (including the EPREL database implementation)
- 6) Circular Economy
- 7) F-gas regulation implementation

In 2019, REHVA focused especially on the national implementation of the EPBD and the EPB standards, and followed the European Parliament elections, the set-up of a new European Commission and the launch of the European Green Deal that will remain in the focus also in 2020. The technical support of EU advocacy activities are detailed in the chapter "Technology and Research activities" on page 20.

REHVA organised a successful **high-level policy session** with eu.bac and smartEN during the European Sustainable Energy Week Policy Conference on 19 June in Brussels with the title **New EPBD: the value of actual performance and digitalisation**. The session focus on how to boost investor confidence in smart buildings to ensure the massive need for financing if Europe wants to deliver on the goal of a decarbonised building stock by 2050. REHVA President, Frank Hovorka, opened the event, highlighting that investors need to trust the data on predicted and actual building performance and translate the output in terms of energy into cost and provide reliable calculation tools on decreased risk in the language of the bank sector.



Sylvain Roberts from DG Energy summarized in his opening presentation the relevant points of the revised EPBD: the role of EPB standards, the problem of finance gap, the Smart Readiness Indicator as a tool to foster the deployment of smart buildings and how the Commission can help in boosting private investment.

Johan Zirngibl (CSTB) introduced the ALDREN voluntary certification scheme to foster energy renovation investments with a tool that enables a common language between building professionals, investors and building owners. The certification considers indoor comfort beside energy efficiency moving toward operational performance aiming to monetize non-energy related benefits to convince investors and owners. A discussion session moderated by Michael Villa (smartEn) closed the presentations followed by a panel of Dick van Dijk (EPB Center), Bonnie Brook (eu.bac/Siemens), Caroline Milne (Joule Assets Europe) and Stefan Plesser (synavision/QUEST project) discussing the role of EPB standards, how to move towards in-use building performance by digitalization and technical monitoring, how to increase investors' confidence and the role of the SRI in the transition towards smart buildings.

**The 2019 edition of the REHVA Brussels Summit** continued to increase REHVA's visibility at EU level attracting many Brussels based stakeholders and sister organisations. The conference "Delivering healthy, zero-carbon buildings by 2050?" was divided in 3 sections attended by around 100 participants. Speakers from the European Commission presented the energy and climate policy framework towards 2030 and gave updates on the SRI. Pawel Wargocki presented the pragmatic IEQ indicator called TAIL developed by the ALDREN project. The section Building performance certification to bridge the finance gap, chaired by Jarek Kurnitski brought engineers, building certification organisations and investors to the table to share perspectives, followed by a moderated panel discussion. The final section on Sustainability, product efficiency & drinking water systems focused on Ecodesign updates, sustainability of buildings and HVAC components and introduced the REHVA Guidebook No.30 on Hygiene in potable water installations in buildings.



**REHVA high level policy session at EUSEW 2019, Sylvain Roberts (DG ENER) on the left presenting the revised EPBD.**



**Panel debate, Dick van Dijk (EPB Center), second of the left, highlighting the role of EPB standards.**



**Paula Rey-Garcia, DG Energy, REHVA Brussels Summit conference 2019.**

# Co-operation with EU level professional organisations

**Eurovent Association:** REHVA signed a Memorandum of Understanding (MoU) with Eurovent Association on 28 May 2015 that serves as basis of co-operation. The MoU between the two associations was renewed in 2019. Eurovent Association informed the members of its Air Filters product group about the upcoming review of Guidebook No.11 done by the PG leader, Jan Andersson (Camfil) who is member of the REHVA Task Force working on the revision. Eurovent Association representatives attended the REHVA Brussels Summit Conference, the REHVA Technology and Research Committee and Supporters Committee meetings in Brussels on 4-5 November 2019.



**EPB Center:** REHVA has decided to become shareholder in the EPB Center founded by ISSO in 2017 to follow the shared objective of supporting the adaptation and proper use of the new set of EPB standards at national level. The aim of the EPB Center is to disseminate, promote, and provide guidance on the application of EPB standards. REHVA is committed to play a key role by disseminating support tools, guidance documents, educational units for courses and webinars to help professionals applying the standards and connected tools.



In 2019, REHVA became formally a shareholder of the EPB Center. Frank Hovorka and Catalin Lungu are REHVA representatives and members of the Board of the company. REHVA and the EPB Center implements a 3-years tender from DG Energy (see more details in the chapter "Technology and Research activities" on page 20) with REHVA promoting its services and coordinating trainings and knowledge dissemination activities targeting professionals, regulators and all EPB standards stakeholders. REHVA uses synergies with its linked EU projects (CEN/CE, ALDREN, U-CERT, see in the Technology and Research activities chapter) to organise joint events and activities.

REHVA created and manages the [LinkedIn group EPB Standards Community \(#EPBstandards\)](#) dedicated to all information exchange on the standards and news about EPB Center's activities. At the end of 2019, the group has 280 members. Since May 2019, REHVA is also managing EPB Center's twitter account ([@EPB\\_Center](#)).

REHVA dedicated a [Journal issue](#) to the use of EPB standards at national level, with each individual article being promoted via REHVA's and EPB Center's dissemination channels (LinkedIn, Twitter, Facebook, Build Up portal).



EPB Center organised a joint [workshop at CLIMA 2019](#) in Bucharest with [EVIA](#) and [EPEE](#) on Supporting dissemination and roll-out of the set of Energy Performance of Building (EPB) Standards and invited a speaker from DG Energy and representatives from Romanian standardisation bodies. A summary about the workshop was published in the CLIMA 2019 report ([REHVA Report no 7](#)) and the recordings published on the [EPB Center website](#).



REHVA promoted the EPB Center as co-organiser of the EUSEW 2019 joint session "New EPBD: the Value of Actual Performance and Digitalisation" (see more details in the chapter "EU institutions and EU public affairs" on page 13).

REHVA has been promoting EPB standards also in personal meetings with EU level stakeholders. The gained experience will be relevant for developing the EPB Center to a self-sustaining service company.

**European Construction Technology Platform (ECTP):** REHVA is member of the European Construction Technology Platform since 2013. ECTP is involved in the definition of the EU research agenda (SET Plan) influencing Horizon 2020 call topics. REHVA attended the General Assemblies and committee meetings organised by ECTP in 2019 to get information about the upcoming research topics in the field and maintain contact with potential partners for EU project proposals.



EU level industry associations and initiatives: REHVA kept liaison with the Brussels based EU level professional associations in the field of HVAC and building energy efficiency, health and IEQ. We exchanged views and participated at several meetings and events about the revised EPBD, and other energy and climate policies - among others - with EVIA, EPEE, EHPA, eu.bac, EHI, EFA, Eurovent Association and EuroACE.

#### **Major activities in 2019 are summarised below:**

EuroACE and the Renovate Europe campaign. REHVA is following the activities of [EuroACE](#) and the Renovate Europe Campaign run by the organisation. REHVA attended and reported about the annual Renovate Europe Day in 2019. These 1-day congresses became a meeting point with EU policy makers and EU level stakeholders in Brussels. EuroACE published a practical guide on the revised EPBD and organised a webinar series on the Build Up platform about the main chapters. REHVA Managing Director, Anita Derjanecz, was invited as speaker in the [webinar on Smart and Technology Equipped Buildings – new features from the amended EPBD](#) presenting HVAC engineers' perspective regarding the revised directive.



[European Federation of Engineers, FEANI](#). In 2019 REHVA started a cooperation with FEANI, a federation that joins engineering associations from 32 countries, representing 6 Million engineers. REHVA joined the [Engineers Europe Advisory Group](#) signing a Lol along with 26 other signatories at a ceremony on 11 September 2019 in Brussels. REHVA Managing Director, Anita Derjanecz had a meeting with FEANI director Dirk Bochar and attended a Management Meeting & Expert Hearing organised by FEANI on 28 November to discuss cooperation between the two organisations, including a joint proposal for the Erasmus+ Knowledge Alliance to foster new trends in engineering education and innovating engineering careers.





# Co-operation with global organisations and stakeholders



## **Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE)**

REHVA was represented by Frank Hovorka, and Livio Mazzarella at ACREX India 2019 in Mumbai, India. REHVA issued a special edition of the REHVA Journal in co-operation with Eurovent Certita Certification for the event. Both, REHVA and ISHRAE associations organised a successful joint seminar (see more details in the chapter “Seminars and conferences at trade shows and industry fairs” on page 31). A REHVA Partner Organisation Award was awarded to ISHRAE during ACREX and handed out by President-elect Frank Hovorka to the ISHRAE President, Mr. Chandrasekaran Subramaniam and to Mr. Vishal Kapur, ISHRAE Immediate Past President, during the ACREX Award of Excellence ceremony. The Award was bestowed in reason of the establishment of continuing professional cooperation in the HVAC Sector.



## **China Innovation Alliance for Heating, Ventilation and Air-conditioning (CAHVAC)**

In 28 October 2011, the first MoU was signed between CAHVAC (CCHVAC changed name in 2019) and REHVA. In the framework of the relationships between the two organisations, a delegation with more than 50 persons came from China to participate in CLIMA 2019 conference. A CAHVAC-REHVA workshop on Energy in Buildings-Paths in Europe and China-Two Zooming Experiences was organised during the CLIMA 2019.

After the workshop, a new MoU was signed by Wei Xu, the President CAHVAC and Frank Hovorka, the President of REHVA. The purpose of this Memorandum of Understanding is to strengthen the relationship between REHVA and CAHVAC and to promote substantial and tangible actions to increase co-operation between the two associations.



**The ceremony of signing the MoU between CAHVAC-REHVA. Professor Xu Wei, Chairman of CAHVAC, with Frank Hovorka.**



## ***Federation of Ibero-American Associations in Air-conditioning and refrigeration (FAIAR)***

Manuel Gameiro da Silva, in the sequence of an invitation in the framework of the MoU signed between FAIAR and REHVA on 26 September 2018, has represented REHVA in the CIAR 2019, the "XV Congreso Iberoamericano de Aire Acondicionado y Refrigeración", which was held from 8 to 10 May in Chile. During the General Assembly of FAIAR, Manuel Gameiro da Silva has been invited to deliver an institutional presentation of REHVA. In the sequence of his presentation, the launch of a joint task force between REHVA and FAIAR, with the objective of reviewing the REHVA Guidebook No.14 about Indoor Climate Quality Assessment has been addressed. There is a common interest of both federations in this topic. The conference gala dinner provided very good opportunities to establish new connections with the delegates from all the Latin American countries present in the conference. Manuel Gameiro da Silva has also participated, in the framework of this collaboration, as Invited Speaker, in the V Congreso Internacional de Climatización, Refrigeración Comercial e Industrial, organised by ACAIRE, the Colombian Society of Indoor Air Quality, in Barranquilla, from 28 to 30 August. He made a presentation in a technical session and gave a lecture in a course about Indoor Air Quality, where colleagues from ATECYR and ACAIRE were also lecturers. The course was quite successful with a very good number of participants.



***Course organised during ACAIRE Conference, in Colombia.***



## ***Indoor Environmental Quality – Global Alliance (IEQ-GA)***

The IEQ-GA operated since 2014 based on a Memorandum of Understanding informal platform. In 2019, the IEQ-GA registered in Brussels an association (AISBL) to enable further development of the organisation in a formalised way. There are six founding full members (AIHA, AIVC, AiCARR, ASHRAE, IAQA, ISHRAE and REHVA). The founding members of the association represent professionals from various disciplines linked to indoor environment. They are committed to work together and promote education, research and knowledge exchange at a global scale, to develop standards, codes, guidelines and advocate the well-being of the general public in indoor environments over the globe. The first year of the IEQ-GA secretariat has been managed by the REHVA Office. The first President is Donald Weekes (Canada) and the association has 2 Vice-presidents: Bill Bahnfleet (ASHRAE, USA) and Vishal Kapur (ISHRAE, India). The Secretary and Treasurer is Jaap Hogeling. The announcement of the IEQ-GA AISBL happened at a festive ceremony during the 40th AIVC conference "From energy crisis to sustainable indoor climate" which took place in Ghent on 15-16 October 2019.





### **The Society of Heating, Air-Conditioning and Sanitary Engineers of Japan ([SHASE](#))**

REHVA renewed its MoU agreement with the Society of Heating, Air-Conditioning and Sanitary Engineers of Japan (SHASE) during CLIMA 2019 congress in Bucharest, Romania.



**Official signature of the MoU between Frank Hovorka, REHVA President and Professor Shin-ichi Tanabe, President of SHASE.**



### **Society of Air-conditioning and Refrigerating Engineers of Korea ([SAREK](#))**

REHVA renewed its MoU agreement with Society of Air-conditioning and Refrigerating Engineers of Korea (SAREK) during CLIMA 2019 congress in Bucharest, Romania.



**Official signature of the MoU between Frank Hovorka, REHVA President and, Jin Chul Park, President-Elect of SAREK.**

## **REHVA has MoUs also with the following associations**



**[ABRAVA](#)**, Brazilian Association of Refrigeration, Air Conditioning and Heating



**[AIVC](#)**, Air Infiltration and Ventilation Centre of International Energy Agency



**[ASHRAE](#)**, the American Society of Heating, Refrigerating and Air-Conditioning Engineers



**[EUROVENT](#)**, the European Committee of HVAC & R Manufacturers



**[IBPSA](#)**, International Building Performance Simulation Association



**[IIR](#)**, International Institute of Refrigeration



**[KIAEBS](#)**, Korean Institute of Architectural Sustainable Environment and Building Systems



**[Venticool](#)**, The international platform for ventilative cooling

# TECHNOLOGY AND RESEARCH ACTIVITIES

Exchanging technical information, transferring knowledge and disseminating the latest technology developments belong to the most important action field of REHVA. The Technology and Research Committee (TRC) oversees the related activities and in 2019 was chaired by Prof. Jarek Kurnitski, Lars Gunnarsen and Prof. Livio Mazzarella (who resigned from this duty in May 2019).

## Development and dissemination of technical information: task forces, Guidebooks and reports

In 2019, REHVA experts continued their voluntary work on many topics, the TRC coordinated the work of several Task Forces and published 5 new Guidebooks, including the revision of GB9, with 4 more books ready for publication in 2020. At the end of 2019, REHVA has 30 Guidebooks in total. REHVA expresses its deepest gratitude to all the volunteers from its Member Associations and Supporter Companies for their indispensable contribution to these achievements.

In 2019, REHVA had 13 active Task Forces:

1. REHVA-ISHRAE Building Commissioning Guidelines (GB 27), chaired by Ole Teisen
2. nZEB Design Strategies for Residential Buildings in Mediterranean Regions Part II, chaired by Ahmet Arisoy
3. Quality Management for Buildings (GB 29), chaired by Ole Teisen and Stefan Plesser
4. Hygiene in air-conditioning systems (GB 9 update), chaired by Frank Jansen
5. Hygiene in drinking-water supply systems (GB 30), chaired by Christian Schauer
6. Air filtration in HVAC systems (GB 11 update), chaired by Riccardo Romano
7. REHVA-ASHRAE Guidebook Towards Zero Energy Hospital Buildings, chaired by Wim Maassen
8. Smart Buildings, chaired by Andrei Litiu and Ivo Martinac
9. Office buildings' EPC common scale, chaired by Martin Thalfeldt and Jarek Kurnitski
10. REHVA - ISHRAE Indoor Environment and Energy Efficiency in Educational Buildings (GB 13), chaired by Livio Mazzarella
11. REHVA - SHASE energy requirements comparison, chaired by Jarek Kurnitski and Gyuyoung Yoon
12. Indoor Climate Quality Assessment (GB14 update)
13. nZEB Design Strategies for Residential Buildings in Mediterranean Regions Part I (GB 28), chaired by Ahmet Arisoy

In 2019, 5 new Guidebooks were published as outcome:

- GB9 (update): Hygiene Requirement for Ventilation and Air Conditioning
- GB27: HVAC Commissioning Process
- GB28: nZEB Design Strategies for Residential Buildings in Mediterranean Regions (pdf version only)
- GB29: Quality Management for Buildings
- GB30: Hygiene in Potable Water Installations in Buildings

REHVA Task Forces work on 4 further Guidebooks with possible publication in 2020–2021:

- REHVA-ASHRAE Guidebook: Towards Zero Energy Hospital Buildings
- Air filtration in HVAC systems (GB 11 update)
- nZEB Design Strategies for Residential Buildings in Mediterranean Regions Part II
- REHVA - ISHRAE Indoor Environment and Energy Efficiency in Educational Buildings (GB 13 update)

Three New Task Forces were approved by the TRC in 2019:

- Healthy homes design, chaired by Peter Fojdberg (idea approved)
- Personalized Systems, chaired by Mariya Petrova Bivolarova and Ongun Berk Kazanci (idea approved)
- Technical systems of greenhouses (idea approved)

## EU advocacy, position papers and policy implementation

REHVA follows European policy developments linked to buildings energy efficiency, especially the review of the EPBD and other relevant EU policies (Ecodesign, Ecolabel, Energy Efficiency Directive, F-gas regulation, Clean energy Package and the upcoming EU Green Deal). Updates about EU policy developments are regularly published in the REHVA Journal, Website, Newsletter and Supporters' Bulletin. This activity is supported by the TRC that coordinates the development of position papers and technical comments supporting evidence based European policy development.

In 2019, REHVA was focusing on disseminating information on the revised EPBD to help and monitor its national implementation, as well as on promoting the harmonised application of EPB standards at national level in cooperation with the EPB Center. REHVA continued to follow the Smart Readiness Indicator study and volunteered to co-chair a semi-formal Topical Group on the performance-based SRI, which is highly appreciated by DG Energy. REHVA was involved also in the feasibility study on the inspection of standalone ventilation systems according to article 19a of the revised EPBD in the framework of a service contract with DG Energy.

### Revised EPBD and its implementation

The focus of REHVA has been shifting to support the implementation and disseminating information about the legislation. REHVA reported about the new aspects of the revised EPBD in REHVA Journal articles, newsletters and social media and organised workshops and seminars about the EPB standards during the World Sustainable Energy Weeks, CLIMA 2019 and ISH 2019 focusing on the aspects of digitalisation, smart buildings and the smart readiness indicator.

Another strategic priority is supporting the application and deployment of the EPB related standards, for which reason REHVA joined the EPB Center as shareholder and is involved in a service contract supporting its activities (see more details in the following). REHVA, with 7 REHVA Member Associations, started a strategic Horizon2020 project to work on the promotion and dissemination of the EPB standards and develop future tools and concept using performance calculation based on EPB standards (U-CERT, see below).

### Smart Readiness Indicator

REHVA has been closely following and engaged in the development of the SRI methodology and its implementation pathways. The REHVA Board set up a REHVA SRI technical advocacy group from REHVA Board members, REHVA Supporters and TRC experts to elaborate REHVA positions and contribution during the [2nd SRI study](#).

REHVA Office and TRC experts inform continuously in the REHVA Journal, Newsletter and Website about updates and developments of the study preparation during 2019 and presented the SRI at several REHVA events and seminars.

REHVA representatives have participated in all [stakeholder meetings](#) and [Topical Groups](#) meetings organised by the study team throughout 2019. REHVA is represented in both topical groups managed by the SRI study team, by Anita Derjanecz in Topical Group A on the SRI Value Proposition Implementation and by Jarek Kurnitski in Topical Group B on the SRI Calculation Methodology.

In the 4th quarter of 2019, the SRI study team and European Commission services announced the creation of a 3rd (self-managed) Topical Group C looking at future-proofing the methodology, which is a critical element of the SRI. TRC members decided during the meeting in November 2019 to volunteer for chairing this group as a REHVA strategic action. On 2 December 2019, during the Topical Group C inception/handover meeting, the SRI study team, European Commission services and involved stakeholders unanimously approved REHVA as chair during the remaining period of the study (until July 2020) and afterwards.

REHVA experts provided qualitative inputs and organised bilateral meetings in June 2019 with the SRI study team and European Commission services. Furthermore, TRC members provided inputs in the stakeholders' open consultation process that took place during August-October 2019. Lastly, TRC members participated in the [public beta testing](#) (October-November 2019) providing relevant feedback to the SRI study team by mainly leveraging the case studies of [U-CERT project](#).

## Participation in EU projects and tenders

REHVA joins European projects aiming at the development and market deployment of innovative technologies, as well as capacity development and training of professionals related to buildings energy efficiency and indoor environment quality. In 2019, REHVA has been involved in nine H2020 projects and two DG ENER tenders detailed below. REHVA continuously inform about the latest updates and news on these activities in the Newsletter and on the [EU project sections of the REHVA website](#).

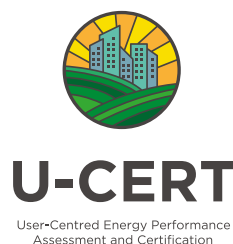
### H2020 projects

#### 1. U-CERT project (Towards a new generation of user-centred Energy Performance Assessment and Certification), 2019-2022

U-CERT aims to [introduce a next generation of user-centred Energy Performance Assessment and Certification Scheme](#) to value buildings in a holistic and cost-effective manner. U-CERT has a focus on strengthening actual implementation of the EPBD by providing and applying insights from a user perspective and creating a level playing field for sharing implementation experience to all involved stakeholders, facilitated and empowered by the EPB Center.

U-CERT activities kicked-off in September 2019 with direct (AiCARR, AIIR, Atecyr) and indirect (AICVF, EKVU, ETE, Swedvac) involvement of REHVA Member Associations in the [consortium](#). Before the end of 2019, REHVA and EPB Center mainly set up the communication and dissemination tools for U-CERT project and started already promotion activities by using existing ones (e.g. [REHVA Journal issue dedicate to the use of EPB standards](#)). On the technical side, U-CERT's entire consortium participated in the [Smart Readiness Indicator public beta testing](#) leveraging all 15 case studies and providing valuable feedback to the SRI study team and Commission Services on the SRI calculation methodology.

Website: [www.u-certproject.eu](http://www.u-certproject.eu)



## 2. TRI-HP (Trigeneration systems based on heat pumps with natural refrigerants and multiple renewable sources), 2019-2023

The overall goal of the TRI-HP project is to develop and validate flexible energy-efficient and affordable trigeneration systems. The systems will be based on electrically driven natural refrigerant (propane and carbon dioxide) heat pumps coupled with renewable electricity generators (PV), using cold (ice slurry), warm and electricity storages to provide heating, cooling and electricity to multi-family residential buildings with a renewable share of 80%. In TRI-HP project, REHVA is leading the dissemination and communication activities.

Website: [www.tri-hp.eu](http://www.tri-hp.eu)



## 3. QUEST project (Quality Management Investments for Energy Efficiency), 2019-2022

QUEST promotes investments in sustainability and energy efficiency by identifying and empirically risk-grading factors that influence energy performance of buildings. QUEST will develop a toolkit to evaluate the energy performances of these investments and thus the connected financial risk related to the energy performance results.

Financial institutions applying the QUEST toolkit will be able to reduce risk related to wrong assessment of buildings energy performance: this will allow significant increases in return on investment for the sustainable buildings sector.

The QUEST project has been launched at EUSEW 2019, in a joint session organised in collaboration with project ALDREN and CEN-CE on 19 June in Brussels.

QUEST has been presented to the REHVA Members and stakeholders during the REHVA Brussels Summit Conference "Delivering healthy, zero-carbon buildings by 2050" held on 5 November in Brussels.

Website: [www.project-quest.eu](http://www.project-quest.eu)



## 4. BIM-SPEED project (Harmonised Building Information Speedway for Energy-Efficient Renovation), 2018-2022

BIM-SPEED will facilitate the EU-wide adoption of BIM in the housing renovation by providing all stakeholders with a set of holistic solutions consisting of:

- an open, affordable and reliable cloud-based BIM platform;
- a set of BIM tools and interoperability solutions between different tools and the BIM platform;
- validated and standardised procedures for BIM-based activities throughout the whole renovation process.

BIM-SPEED solutions will be supported with evidence from real demonstration cases during the project, as well as extending and sharing the best practices across the EU. REHVA is involved in the promotion of BIM-SPEED platform through the organisation of a BIM-SPEED competition.

Website: <https://www.bim-speed.eu/en>





**5. TripleA-reno project (Attractive, Acceptable and Affordable deep Renovation by a consumer oriented and performance evidence-based approach) 2018-2021**



The overall aim of TripleA-reno is to make acceptance and decision making on deep and nZE renovation attractive for consumers and end-users through clear and meaningful information and communication on proven performances on energy, Indoor Environmental Quality and personal health. TRC experts have been consulted for the elaboration of a labelling scheme considering jointly these parameters.

Some project results (WP5) have been presented to the REHVA TRC during the REHVA Brussels Summit 2019.

Website: <https://triplea-reno.eu/>

**6. CEN-CE project (CEN Standards Certified Experts EU-wide certification and training scheme based on EPBD mandated CEN standards), 2018-2020**



The [main objective](#) is to set up a EU-wide large-scale qualification and training scheme for HVAC professionals related to the set of CEN EPB Standards (EPBD, [EC mandate M480](#)). REHVA experts were involved to evaluate the quality and provide feedback on the potential deployment of the project results during the [2nd CEN-CE Stakeholders Workshop](#) (REHVA Brussels Summit in November 2019). The recordings are available on [REHVA's YouTube channel](#) and [CEN-CE website](#). Since April 2019, REHVA has been promoting CEN-CE scheme to relevant stakeholders also directly during "in person" exchanges before the Summer 2019 break and even more, so during Autumn and Winter 2019. This resulted in a valuable input to the CEN-CE scheme business plan development process, which relies as prerequisite on REHVA's strong network specifically its Member Associations for rolling out the training and certification at national level.

Website: <https://www.cen-ce.eu/>

**7. ALDREN project (Alliance for Deep Renovation in Buildings), 2017-2020**



The consortium aims at promoting the European Common Voluntary Certification Scheme (EVCS) as backbone along the whole deep renovation process of non-residential buildings. TRC experts will contribute to the definition of the EVCS-based language (energy, health, financial performances).

ALDREN held a joint workshop with the hybridGEOTABS project on 27 March in Copenhagen, hosted by DTU. ALDREN results were also showcased at EUSEW 2019, in a joint session organised in collaboration with project QUEST and CEN-CE on 19 June in Brussels.

The ALDREN methodology has been presented to the REHVA Members and stakeholders during the REHVA Brussels Summit Conference "Delivering healthy, zero-carbon buildings by 2050" held on 5 November 2019 in Brussels. Prof. Pawel Wargocki (DTU) presented the TAIL indicator and project coordinator Johann Zirngbil (CSTB) presented the liaison between the financial evaluation aspect developed in the framework of the ALDREN methodology.

ALDREN consortium has also published an article on the [REHVA Journal issue 4/2019](#) on IEQ in offices and hotels undergoing deep energy renovation with insights from the ALDREN methodology.

Website: <https://aldren.eu/>

## 8. hybridGEOTABS project (Model Predictive Control and Innovative System Integration of GEOTABS in hybrid Low Grade Thermal Energy Systems), 2016-2020

The MPC-GT project brings together a transdisciplinary team of SMEs, large industry, and research institutes, experienced in research and application of design and control systems in the combined building and energy world. Based on prior research and practical experience, the bottlenecks were identified that prevent a breakthrough of geothermal heat pumps (GEO-HP) combined with thermally activated building systems (TABS) - GEOTABS. The MPC-GT consortium has identified a potential integrated solution that will provide a near optimal design strategy for the MPC GEOTABS concept, using control integrated design. REHVA organised a hybridGEOTABS workshop during the World Sustainable Energy Days on 28 February at the European Energy Efficiency Conference, in Wels, Austria.

During CLIMA 2019, REHVA and its partners organised a [training course](#) and a [workshop](#) to disseminate project's results. In the last year of the project, REHVA will contribute to the publication of a technical manual with practical information on how to design and operate such systems.

Website: <http://www.hybridgeotabs.eu/>



## 9. QUANTUM project (Quality management for building performance – improving energy performance by life cycle quality management) 2016-2019

The goal of this project is to develop and demonstrate pragmatic services and appropriate tools with high replication potential supporting quality management (QM) for building performance in the design, construction, commissioning and operation phase to close the gap between predicted and actual energy performance in European buildings. 2019 is the closing year of the project with key outcomes for REHVA:

- REHVA used QUANTUM/AMEV guidelines and the project outcomes as evidence in its EU policy advocacy actions, including in the development of position papers for the EPBD review process and in the EPBD guidance documents of the European Commission.
- A REHVA-QUANTUM Guidebook, GB29 Improving Building Performance through Technical Monitoring and Commissioning was published and launched during CLIMA 2019 and distributed in cc 700 (printed and digital) copies for free to Member Associations and our professional network.
- REHVA and the project partner synavision joined both COPILOT as shareholders and developed the certification scheme using QUANTUM results. Synavision, REHVA and COPILOT jointly developed the QUEST project which was approved for funding.

Website: <https://www.quantum-project.eu/home/>



## DG ENER tenders

### 1. EPBD19a Service contract: feasibility study about the inspection of standalone ventilation systems

The European Commission launched a service tender in 2018 to elaborate a feasibility study on the inspection of standalone ventilation systems and an optional building passport where REHVA has joined as subcontractor the winning consortium led by INIVE and BPIE. The objective of the service contract is twofold:

- Conducting a feasibility study on the possible introduction of the inspection of stand-alone ventilation systems
- Conducting a feasibility study on an optional building renovation passport in the energy performance of buildings directive

REHVA is involved in the first part of the tender with the tasks to conduct a survey among its Member Associations, review of existing regulations, guidelines, standards and other initiatives on the inspection of stand-alone ventilation system, assess the development of the stock of ventilation systems in EU buildings till 2050 and analyse the relevance, feasibility and scope of possible measures for inspection. The service contract ran 12 months, until December 2019.

### 2. EPB Center service contract, 2018-2021

The purpose of the Service contract is to support the uptake of the energy performance of buildings standards by:

- Supporting Member States and National Standardisation bodies that wish to complete the national annexes of the overarching standards
- Setting up a public frequently asked questions database on filling in annexes, practical application of the standards, etc.
- Preparing practical case studies to support the use of standards
- Disseminating and developing calculation tools for individual standards
- Setting up a large network of current practitioners and future practitioners (i.e. building physics students) and support the uptake of standards by organising regular hands-on workshops, training sessions, etc.

TRC experts are informed about the outcomes and involved in project activities as technical expert if needed.

REHVA dedicated a [Journal issue to the use of EPB standards](#) at national level.

# EDUCATION

## REHVA Student Competition

During CLIMA 2019 in Bucharest (Romania), REHVA organised its yearly student competition which took place on 27 May. Seventeen candidates representing fifteen countries (Belgium, Czech Republic, Estonia, Finland, France, Germany, Italy, Portugal, Romania, Serbia, Slovakia, Spain and The Netherlands) were in competition; Denmark and Switzerland being represented by a team of two students.

The jury was chaired by, Manuel Gameiro da Silva from Portugal, the chair of the Education and Training Committee. The jury was composed of Murat Çakan from Turkey (TTMD), Robert Gavriluc from Romania (AIIR), prof. Ing. Jiri Hirs, CSc from Czech Republic (STP), Birgit Müller from Germany (VDI), Jorma Säteri from Finland (FINVAC), Uwe Schulz from Switzerland (SWKI), Pedro Vicente Quiles from Spain (Atecyr).

After very intense deliberation, the jury declared as winner **Jannis Müller** from Germany for his work on "Development of an adaptive aerofoil contour for use as a fan blade".

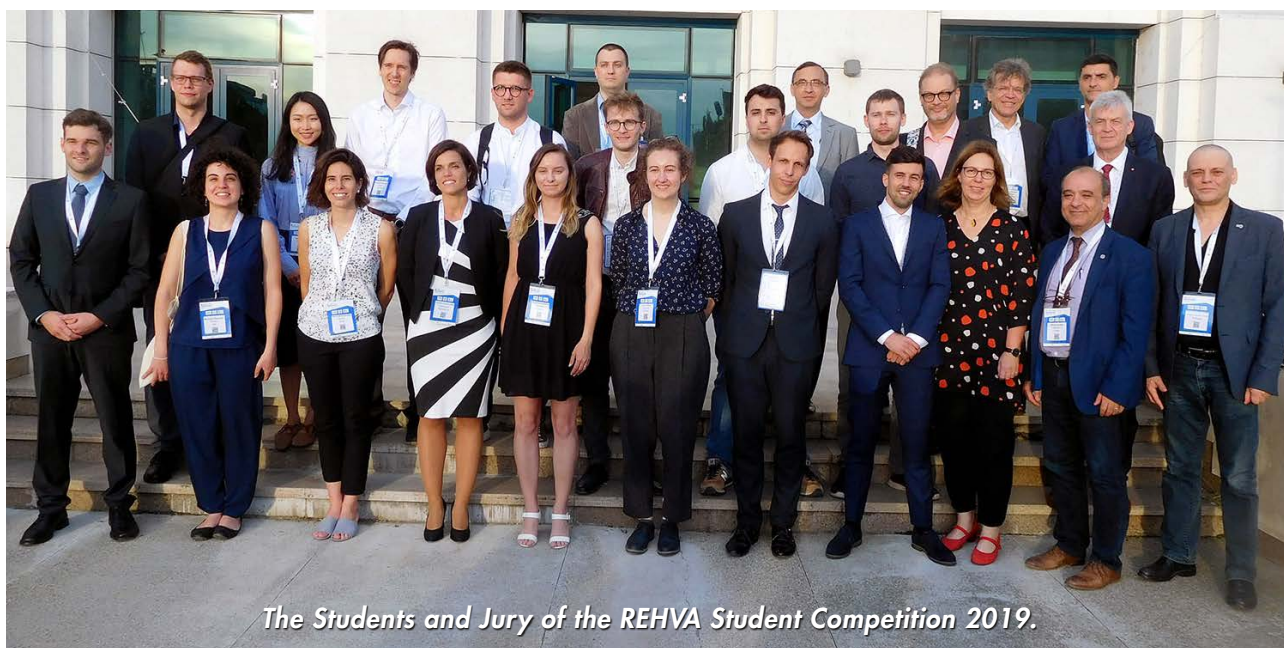


*From left: Frank Hovorka, REHVA's President, the winner of Student Competition Jannis Müller and Manuel Gameiro da Silva, chair of the jury.*

The second prize was awarded to **Laura Nebot Andrés** from Spain and finally the third prize was awarded to the Danish team of **Michael Rosenlund** and **Yanting Li**.

Manuel Gameiro da Silva congratulated all contributors for their excellent work and emphasized the high quality of their presentations.

On Wednesday 29 May, during the closing ceremony of CLIMA 2019, Manuel Gameiro da Silva, the chair of the REHVA Education and Training Committee and the jury together with Erick Melquiond, the CEO of Eurovent Certita Certification handed out the Trophy Cup to the winner and a financial reward to all three awardees sponsored by Eurovent Certita Certification. The winner presented his paper at the closing ceremony of CLIMA 2019.



*The Students and Jury of the REHVA Student Competition 2019.*



## The REHVA World student competition

The REHVA World Student Competition is organised in Europe in the year of CLIMA congress. The competition took place on 28 May in Bucharest, Romania during CLIMA 2019 congress.

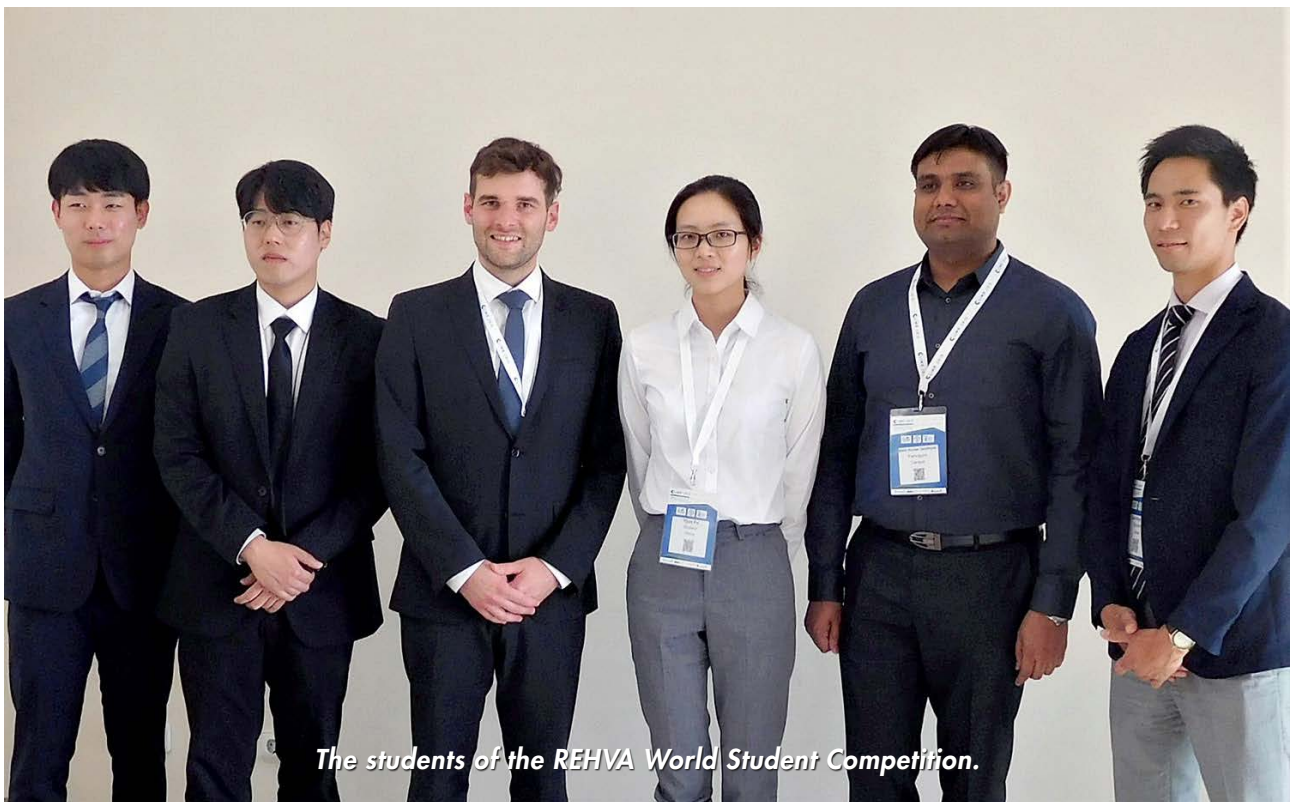
Four of the total six MoU partners that participate in this initiative have delegated candidates to this competition: ASHRAE, CCHVAC, SHASE and SAREK, latter represented by a team of two students. REHVA delegated the winner of the 2019 REHVA Student Competition, **Jannis Müller** (University of Applied Sciences of Erfurt, Germany), who represented Europe in the contest.

After deliberation, the jury declared **Yijun Fu** from University of Shanghai for Science and Technology (China) as winner for her work on "Research on Heat Transfer Characteristics of Carbon Dioxide in Microchannel Evaporator". The second place was awarded to **Jannis Müller** from Europe. The third place was awarded to the Canadian **Rohit Upadhyay** from The British Columbia Institute of Technology, of Vancouver (Canada).

**Manuel Gameiro da Silva** handed out the certificates with a financial award to each participant sponsored by Eurovent Certita Certification represented on site by **Erick Melquiond**.



*The winner of the REHVA World Student Competition Yijun Fu.*



*The students of the REHVA World Student Competition.*



# REHVA EVENTS

## CLIMA 2019 – 13th REHVA World Congress on “Build Environment Facing Climate Change”

The CLIMA Congress was held on 26-29 May in Bucharest, hosted by AIR and the Technical University of Romania. The topics focussed on advanced HVAC&R&S Technology and Indoor Environment Quality, High Energy Performance and Sustainable Buildings, Information and Communication Technologies (ICT) for the Intelligent Building Management and Sustainable Urbanization and Energy System Integration.

The 3-days congress attracted around 900 participants from 40 countries with 22 exhibitors and 12 international institutional partners endorsing and contributing to the event. Throughout the 3 days, the programme was packed with several sessions and workshops in which all participants were welcome to join in and contribute to, as well as the two REHVA courses for projects hybridGEOTABS and nZEB design strategies that were taught in the first two days of the event.

During the closing ceremony of CLIMA 2019, the next 14th REHVA World Congress - CLIMA 2022 was announced. Our host will be TVVL, our Dutch Member. The congress will be held on 15-18 May 2022 in Rotterdam, The Netherlands. More information on the [website](#).

### CLIMA workshops

CLIMA organised [17 workshops](#) to offer several practical, interactive events beside the plenary paper sessions. The workshops were organised by REHVA and its international sister associations, European research and innovation projects, as well as REHVA supporter companies representing leading HVAC manufactures and service providers. On the side of the active participation in European projects, REHVA joined with partners from: ALDREN, CEN-CE, QUANTUM, hybridGEOTABS, TripleA-Reno and Mobistyle showcasing the on-going developments of each project and addressing future goals. During the three days of conferences and parallel plenary sessions, REHVA staged as well joint workshops with different international and EU level institutions and associations: EPB Center, EPEE, EVIA, SHASE, eu.bac, ISIAQ and CCHVAC. REHVA published the outcomes in its Report no 7 available for free [download](#).



*Jaap Hogeling at Workshop Supporting Dissemination and Roll-Out of the set of Energy Performance of Building (EPB) Standards.*

## REHVA courses

CLIMA 2019 was also a great opportunity to launch two training courses, organised by REHVA, that deepened the nZEB design in the first day of congress and the hybridGEOTABS one (European project in which REHVA is active in the dissemination and communication activities) in the second day.

Stefano Paolo Corgnati and Cristina Becchio from Politecnico di Torino and Catalin Lungu from Bucharest Technical University introduced the nZEB training course, where the design principles for an nZEB were not only introduced and discussed, but also their application examined by analysing successful case studies. The selection of the proper mix of energy technologies is the crucial issue in the design phase, and the cost optimal approach can be a powerful tool to compare solutions and select the best one. Indeed, in nZEB designing it is fundamental considering both the energy and the financial perspective right from the preliminary phases of the project. Success in realizing nZEBs lies in finding the right balance between energy performances, architectural quality and costs, which include investment, maintenance and running costs, incurred by the project owner during a defined period.

hybridGEOTABS refers to the efficient integration of the combination of GEOTABS (GEOthermal heat pumps in combination with Thermally Activated Building Systems (TABS)) and secondary heating and cooling systems in a building. Teachers Lieve Helsen from KU Leuven, Qian Wang from UPONOR, Pieter Brepoels from Viessman and Hector Cano Esteban from GEOTER illustrated the key aspects of borehole design, heat pump requirements, distribution systems related to TABS and the potential of MPC in this new approach. The aim was to introduce to the attendees the design and optimization of the borefield from an economical and security of thermal supply point of view, the construction and system integration of TABS, the advantages of TABS and its suitable application in the respective building type and energy systems. And how an MPC approach works, which benefits it can create and why it has especially advantages when applied in hybridGEOTABS buildings.



REHVA course 2: How to design hybridGEOTABS buildings' components.



# Seminars and conferences at trade shows and industry fairs

During the year 2019, REHVA organised two seminars on:

## **“High Performance Educational Buildings and their Indoor Environmental Quality”, 28 February 2019, ACREX 2019, Mumbai, India**

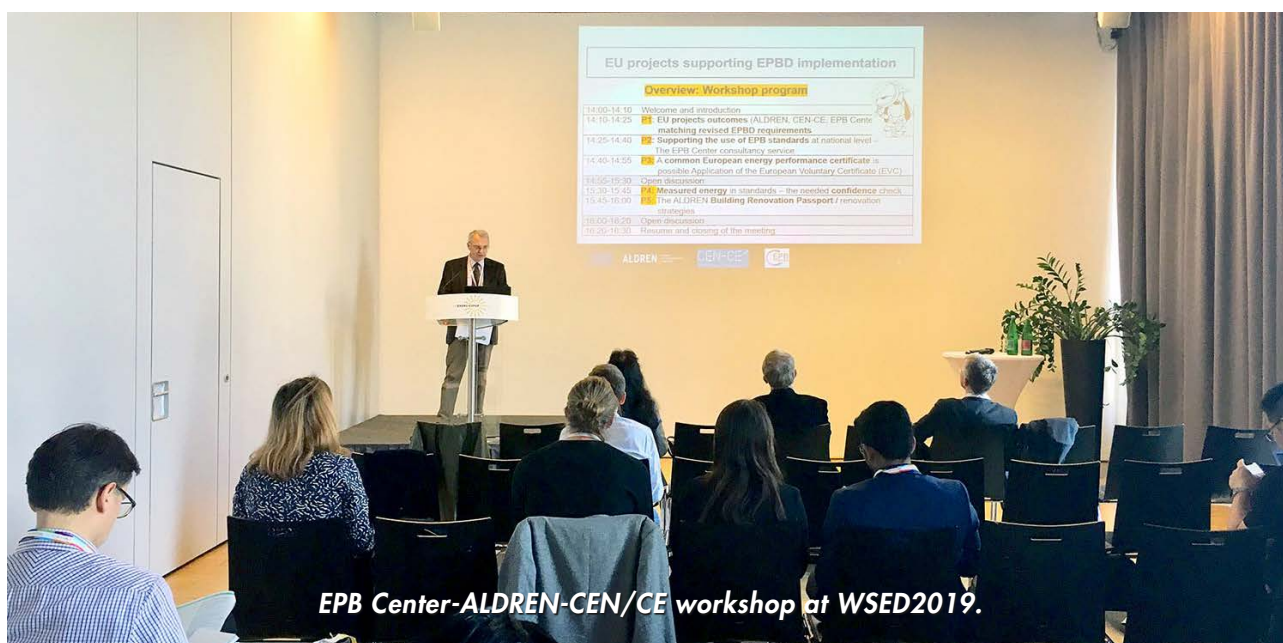
On the opening day of the ACREX show, 28 February 2019, REHVA and ISHRAE organised a joint seminar about “High Performance Educational Buildings and their Indoor Environmental Quality”. Speakers from ISHRAE and REHVA (Frank Hovorka, Livio Mazzarella, Maija Virta) provided the around 100 seminar attendants with interesting insights about the current situation of Indian and European schools in terms of thermal comfort and IEQ, the most suitable technologies to improve these conditions and how to manage the energy implications of an IEQ-oriented design.



## **World Sustainable Energy Days 2019, ALDREN, CEN-CE and EPB Center joint Workshop**

More than 660 experts from 60 countries attended the World Sustainable Energy Days 2019, which took place from 27 February – 1 March in Wels/Austria. REHVA was present with a booth showcasing six Horizon 2020 projects, a poster presentation and organised two workshops representing hybridGEOTABS, ALDREN, CEN-CE, and the EPB Center during the afternoon workshops sessions.

REHVA, the EPB Center and two complementary EU projects CEN-CE and ALDREN organised a workshop at the World Sustainable Energy Days 2019 dedicated to EU projects supporting EPBD implementation. The aim of this workshop was to give an insight in initiatives promoting the use and deployment of EPB Standards. Around 20 participants (building professionals, designers, installers, European organisations, public authorities, industrial, students) attended the workshop engaging in a fruitful exchanges and discussion after the presentations, which were appreciated by the workshop.





## REHVA-DAY at ISH, 14 March 2019, ISH 2019, Frankfurt, Germany

REHVA was presented at the ISH 2019 in a new format by having a REHVA Forum space for a full-day event on 14 March at exhibition hall 11 featuring building automation technologies and digital engineering services. This new setting enabled us to have two successful seminar sessions with a networking lunch between the morning and the afternoon part, closed by a reHVAClub cocktail after the seminar next to the exhibitors, which gave a great opportunity for professional networking.

After a seminar session about the QUANTUM project, REHVA invited ISH visitors to a seminar dedicated to the topic of smart buildings and digitalisation and the Smart Readiness Indicator. The well-attended seminar discussed key aspects of the revised EPBD, such as the new requirements about BACs and digital monitoring and the newly introduced Smart Readiness Indicator (SRI). REHVA experts presented different aspects linked to the digitalization of our industry: the technical aspects of smart buildings, user-centred smart building technologies, BIM standardization and the digitalization of HVAC products and IoT and HVAC systems. REHVA President-elect, Frank Hovorka, opened the seminar with a presentation about the Smart Readiness Indicator, followed by an introductory presentation of REHVA Managing Director, Anita Derjanecz, about the digitalisation and smart technologies related aspects of the revised EPBD and how digitalisation is changing the entire HVAC sector.



## REHVA representations at Members' events

During the year 2019, REHVA was represented in the following events organised by Member Associations:

### **Indoor AirQuality, Ventilation and Energy Conservation in Buildings AirVent, Moscow, Russia, 12-15 February**

REHVA was represented by Frank Hovorka and Stefano P. Corgnati

### **CIBSE Technical Symposium 2019, Sheffield, UK, 25-26 April**

REHVA was represented by Atze Boerstra

### **Annual Meeting of VDI-Society for Civil Engineering and Building Services, Dresden, Germany, 26-28 September**

REHVA was represented by Ivo Martinac

### **100th Anniversary of PZITS, Warsaw, Poland, 3-4 October**

REHVA was represented by Atze Boerstra, Stefano P. Corgnati and Jarek Kurnitski

### **19th Climatization Days of Ordem dos Engenheiros, Lisbon, Portugal, 24 October**

REHVA was represented by Juan Travesi Cabetas

### **50th International HVAC&R Congress and Exhibition, Belgrade, Serbia, 4-6 December**

REHVA was represented by Kemal Gani Bayraktar, Jaap Hogeling, Frank Hovorka and Catalin Lungu

## Exhibitions

REHVA is represented or is endorsing international fairs and exhibitions of the HVAC and construction sector each year, to promote our publications and expertise. During the year 2019, REHVA was present at the following fairs:

- AHR Expo 2019, 14-16 January, Atlanta, USA
- ACIEQ - Conference on IEQ, 1-2 February, New Delhi, India
- Aquatherm Moscow, 12-15 February, Moscow, Russia
- WSED 2019, 27 February - 1 March, Wels, Austria
- ACREX 2019, 28 February - 2 March, Mumbai, India
- Futurebuild, 5-7 March, London, UK
- ISH Frankfurt, 11-15 March, Frankfurt, Germany
- AIVC workshop, 27-28 March, Dublin, Ireland
- BET - Building Energy Technologies 2019, 4-5 April, Hannover, Germany
- teskon+Sodex, 17-20 April, Izmir, Turkey
- CIBSE Technical Symposium 2019, 25-26 April, Sheffield, UK
- CIAR Chile 2019, 8-10 May, Santiago de Chile, Chile
- EUSEW, 17-21 June, Brussels, Belgium
- Annual Meeting ASHRAE, 22-26 June, Kansas City, USA
- ISIAQ, 18-22 August, Kaunas, Lithuania
- ICR 2019 - 25th IIR International Congress of Refrigeration, 24-30 August, Montréal, Canada
- Buildings Simulation Conference 2019, 1-4 September, Rome, Italy
- IAQVEC 2019, 5-7 September, Bari, Italy
- First Congress of Fire Safety of Structures, 20-21 September, Athens, Greece
- Annual Meeting of VDI-Society for Civil Engineering and Building Services, 26-28 September, Dresden, Germany
- ISK Sodex 2019, 2-5 October, Istanbul, Turkey
- 100th Anniversary of PZITS, 3-4 October, Warsaw, Poland
- Joint Conference 40th AIVC- 8th TightVent- 6th venticool – From energy crisis to sustainable indoor climate, 15-16 October, Ghent, Belgium
- 19th Climatization Days of Ordem dos Engenheiros, 24 October, Lisbon, Portugal
- REFCOLD, 21-23 November, Hyderabad, India
- Fire Safety Symposium and Exhibition, 4-5 December, Istanbul, Turkey
- 50th International HVAC&R Congress and Exhibition, 4-6 December, Belgrade, Serbia



# FELLOWS AND AWARDS

## Fellows

REHVA has granted the status of REHVA fellow in the year 2019 to **Serafin Grana** (Ordem dos Engenheiros, Portugal) and **Juan Travesi Cabetas** (Atecyr, Spain).

Stefano P. Corgnati with the help of Manuel Gameiro da Silva handed over, during the General Assembly, a memorial certificate, a pin and the right to state "REHVA Fellow" under their name.

REHVA grants the status of "REHVA Fellow" for significant contributions to REHVA, the board, the committees and to the task forces.

## Awards

The REHVA Awards were handed over at the REHVA Dinner held on Saturday 25 May during the Annual Meeting 2019 in Bucharest, Romania.

The following members of REHVA Member Associations were recognised for their outstanding achievements in different activities within the HVAC fields or for their special contribution to REHVA and received a REHVA Award handed over by Frank Hovorka, the REHVA President and Stefano P. Corgnati, Past President.

**Stefan Stanescu** (AIIR- Romania) received a **REHVA professional award in design** and was recognized for his outstanding achievements in the design of HVAC systems and for his contributions to improve energy efficiency and the indoor environment of buildings.

**Ana Maria Bianchi** (AIIR-Romania) received a **REHVA professional award in education** and was recognized for her outstanding academic achievements and for her contributions to improve energy efficiency and the indoor environment of buildings.



**REHVA Fellows 2019 on the left: Juan Travesi Cabetas and Serafin Grana with Stefano P. Corgnati and Manuel Gameiro da Silva.**



**Stefan Stanescu (AIIR- Romania) received a REHVA professional award in design.**



**Ana Maria Bianchi (AIIR- Romania) received a REHVA professional award in education.**



**Martin Thalfeldt** (EKVU/Estonia) and **Mariya Bivolarova** (DANVAK-Denmark) received a **REHVA Young Scientist award** and were recognized for their outstanding scientific achievements and for their contributions to improve energy efficiency and the indoor environment of buildings.

**Renato Merati** (Italy) received a **REHVA recognition award** in recognition of his constant and fruitful contribution in support of REHVA for the last 20 years, specifically addressed to the development of his continuous affiliation with HVAC companies and being our liaison with supporters' companies.

The **REHVA Gold Medal**, the highest REHVA recognition, was handed by REHVA President Frank Hovorka and REHVA Past President Stefano P. Corgnati to **Jaap Hogeling** (TVVL-The Netherlands) in recognition of his outstanding services to REHVA and for his excellent contributions to science and engineering in heating, ventilation and air-conditioning.



**Martin Thalfeldt (EKVU/Estonia)** received a **REHVA Young Scientist award**.



**Mariya Bivolarova (DANVAK-Denmark)** received a **REHVA Young Scientist award**.



**Renato Merati (Italy)** received a **REHVA recognition award**.



**Jaap Hogeling (ISSO)** received the **REHVA Gold Medal**.



**PZITS** received a REHVA award in occasion of its 100th anniversary.

**ASHRAE** received a REHVA award in occasion of its 125th anniversary.

REHVA extended their heartfelt congratulations to **AIIR**, the Romanian Association for Installations Engineers, for their active and substantial contribution at the CLIMA Congress 2019.



*Anna Bogdan received a REHVA award in occasion of the 100th anniversary of PZITS.*



*AIIR received a REHVA award for their active and substantial contribution at the CLIMA Congress 2019.*



*Delegates of ASHRAE received a REHVA award in occasion of its 125th anniversary.*



Furthermore, two Special REHVA Supporters' awards were handed over. REHVA congratulated **Halton** for its 50th anniversary and expressed its heartfelt gratitude to Halton for being a true REHVA supporter for almost fifteen years. **Eurovent Certita Certification** also received an award as REHVA expressed its heartfelt gratitude to Eurovent Certita Certification for being a true REHVA supporter for almost fifteen years. REHVA sincerely looks forward to continuing their strong collaboration with both organisations.



*Erick Melquiond, CEO, from Eurovent Certita Certification received a Special REHVA Supporters' award.*



*Halton Group received a Special REHVA Supporters' award.*

**Maija Virta**, REHVA Fellow and ISHRAE Member, has received a Professional Award: after her presentation at the REHVA-ISHRAE Seminar during ACREX 2019, the REHVA President-elect, Frank Hovorka, has conferred her an award in Technology in recognition of her outstanding achievements in technology and for her contributions to improve energy efficiency and the indoor environment of buildings.



*Maija Virta, REHVA Fellow and ISHRAE Member, received a Professional Award.*



A second award was addressed to the ACREX organisers themselves: a REHVA Partner Organisation Award was awarded to ISHRAE and handed out by President-elect Frank Hovorka to the ISHRAE President, Mr. **Chandrasekaran Subramaniam** and to Mr. **Vishal Kapur**, ISHRAE Immediate Past President, during the ACREX Award of Excellence ceremony. The Award was bestowed in reason of the establishment of continuing professional cooperation in the HVAC Sector.

**Remo Massacesi** and **Ubaldo Nocera** from AiCARR (Italy) were honoured by Francesca d'Ambrosio, President of AiCARR on 15 June during the National Conference which was held in Cagliari, Italy. They received a **REHVA Professional award in Design**. They were recognised for their outstanding achievements in the design of HVAC systems and for their contributions to improve energy efficiency and the indoor environment of buildings.

**Elphi Nelissen** (TVVL-the Netherlands), received a **REHVA professional award in Education** and was recognized for her outstanding academic achievements and for her contributions to improve energy efficiency and the indoor environment of buildings. She received it during TVVL Techniekdag in Putten on 13 November from Atze Boerstra.

REHVA President Frank Hovorka congratulated and handed over a REHVA award to **Branko Todorovic**, President of KGH at the occasion of the organisation of the 50th International HVAC&R Congress and exhibition on 4 December in Belgrade.



**ISHRAE's Past President Mr. Vishal Kapur (Left) and President in 2019 Mr. Chandrasekaran Subramaniam (right) received a REHVA Partner Organisation Award.**



**Elphi Nelissen (TVVL-the Netherlands), received a REHVA professional award in Education. Atze Boerstra on the right.**



**Branko Todorovic (President of KGH) received a REHVA award.**



# REHVA ADMINISTRATION

## General Assembly

The 63rd General Assembly was hosted by AIIR, Romanian Association for Building Services Engineers, on 25 May 2019.

After a welcoming address from the host, AIIR President Sorin Burchiu, Stefano P. Corgnati opened the REHVA General Assembly with the report on his mandate as a President of REHVA. He thanked all the members of the board having contributed to his presidential term and left the stage to the new REHVA president Frank Hovorka who got elected for the mandate 2019–2022. With a new presidential leadership, REHVA got a new Board of Directors that joint Frank Hovorka in this presidential term.

The new REHVA Board members that got elected are the following: **Manuel Gameiro da Silva**, **Kemal Gani Bayraktar**, **Juan Travesi**, **Ivo Martinac** and **Atze Boerstra**.

The General Assembly approved the annual report and the accounts of the year 2018 as well as the budget for 2019 and the preliminary 2020 budget. 23 out of the 27 Member Associations were present or represented at this 63rd General Assembly. 1 out of the 27 Member Associations was excused and represented. 2 Member Associations were excused. 2 Member Associations were neither present, nor represented. 58 representing these 23 Member Associations attended the General Assembly.



*The new board after the elections. From the left: Manuel Gameiro da Silva, Kemal Gani Bayraktar, Juan Travesi, REHVA president Frank Hovorka, Ivo Martinac, Catalin Lungu and Atze Boerstra.*



## Board meetings

Six board meetings were held in 2019, namely in Amsterdam, the Netherlands (25 March), Bucharest, Romania (25 May), Brussels, Belgium (4 November). Also, three WebEx meetings were organised on 28 January, 3 July and 11 December.

## Standing Committee's members

In 2019, REHVA activities have been organised under five Standing Committees in order to have an active core of colleagues strongly involved in their activities. The core members of the Standing Committees participated actively in the committee meetings and activities.

Please find the list of the core members of all the Standing Committees (as per 31/12/2019) on the following page:



*The REHVA delegates at the General Assembly.*

### **Awards Committee**

- **Chair:** Frank Hovorka
- Stefano P. Corgnati, Italy
- Karel Kabele, Czech Republic
- Livio Mazzarella, Italy
- Bjarne W. Olesen, Denmark
- **Secretary:** Nathalie Wouters

### **Education and Training Committee**

- **Chair:** Manuel Gameiro da Silva, Portugal
- **Co-Chair:** Ivo Martinac, Sweden
- Edith Barna, Hungary
- Marianna Brodach, Russia
- Murat Cakan, Turkey
- Stefano P.Corgnati, Italy
- Francesca R. d'Ambrosio, Italy
- Liviu Drughean, Romania
- Egils Dzelzitis, Latvia
- Robert Gavriluc, Romania
- Frank Hovorka, France
- Karel Kabele, Czech Republic
- Targo Kalamees, Estonia
- Risto Kosonen, Finland
- Birol Kilkis, Turkey
- Risto Kosonen, Finland
- Catalin Lungu, Romania
- Zoltan Magyar, Hungary
- Joris Mampaey, Belgium
- Dusan Petras, Slovakia
- Uwe W. Schulz, Switzerland
- Juan Travesi, Spain
- Marija Todorovic, Serbia
- **Secretary:** Nathalie Wouters

### **Publishing and Marketing Committee**

- **Chair:** Francesco R. d'Ambrosio, Italy
- **Co-Chair:** Kemal Gani Bayraktar, Turkey
- Marianna Brodach, Russia
- Murat Cakan, Turkey
- Christian Feldmann, France
- Andy Ford, United Kingdom
- Karel Kabele, Czech Republic
- Renato Merati, Italy
- Birgit Müller, Germany
- Rafael Vasquez, Spain
- Maija Virta, Finland
- **Secretary:** Rebeka Maršňjak

### **Supporters Committee**

- **Chair:** Juan Travesi, Spain
- Ilari Aho, Finland
- Ioan Silviu Dobosi, Romania
- Jaap Hogeling, the Netherlands
- Frank Hovorka, France
- Henk Kranenberg, the Netherlands
- Monica Marza, France
- Livio Mazzarella, Italy
- Renato Merati, Italy
- Panu Mustakallio, Finland
- Leonardo Prendin, Italy
- Jan Risen, Sweden
- Olli Seppänen, Finland
- Christian Schauer, Germany
- **Secretary:** Anita Derjanecz

### **Technology & Research Committee**

- **Chair:** Jarek Kurnitski, Estonia
- **Co-Chair:** Lars Gunnarsen, Denmark
- Francis Allard, France
- Ahmet Arisoy, Turkey
- Edith Barna, Hungary
- Hans Besselink, The Netherlands
- Anatolijs Borodinecs, Latvia
- Murat Cakan, Turkey
- Guangyu Cao, Norway
- Hywel Davies, United Kingdom
- Ioan Silviu Dobosi, Romania
- Christian Feldmann, France
- Serafin Grana, Portugal
- Jaap Hogeling, The Netherlands
- Frank Hovorka, France
- Quan Jin, Sweden
- Karel Kabele, Czech Republic
- Ongun Berk Kazanci, Denmark
- Risto Kosonen, Finland
- Michal Krajčík, Slovakia
- Catalin Lungu, Romania
- Zoltan Magyar, Hungary
- Ivo Martinac, Sweden
- Gabrielle Masy, Belgium
- Livio Mazzarella, Italy
- Birgit Muller, Germany
- Jorma Railio, Finland
- Olli Seppänen, Finland
- Igor Sikonczyk, Belgium
- Martin Thalfeldt, Estonia
- Branislav Todorovic, Serbia
- Pedro Vicente Quiles, Spain
- Andreas Wagner, Germany
- **Secretary:** Anita Derjanecz



## REHVA Office

The REHVA registered seat is in rue Washington 40, 1050 Brussels, Belgium.

### Changes in the REHVA Office staff in 2019

In 2019 the REHVA team grew and the responsibilities of the team have changed as listed in the summary below.

***In 2019, REHVA said farewell to some colleagues and welcomed new ones. The responsibilities of our colleagues also changed. See below a summary of changes in our task and activities.***

**MATTEO URBANI** – Assistant Project Engineer

- EU project implementation and management
- EU proposal writing
- Supporting REHVA technical seminars
- Technology and Research Committee (TRC) secretary, support of Task Forces, and technical publications

**GIULIA MARENGHI** – Project Communication Officer

- Financial and administrative management of EU projects
- EU project implementation - communication activities
- Events management
- Advertisements (phased out by 06/2019)
- REHVA promotional services (phased out by 06/2019)
- Secretarial support

**FATIMA AHMED** – Publications, Marketing & Communication Officer

- REHVA website development, content and & social media management
- Events management and promotion
- REHVA Journal and publications - editorial assistance, production and marketing
- REHVA visual identity development and communication



**ANITA DERJANECZ**

– Managing Director

- REHVA office executive management
- REHVA legal representative
- Business development
- EU public affairs and advocacy
- REHVA Supporters' Liaison
- EU project development and implementation
- Supporters Committee (SC) secretary

**REBEKA MARŠNJAK**

– EU Policy and International Relations Officer

- EU policy monitoring and analysis
- REHVA membership activities
- REHVA international relations, IEQ-GA secretariat
- MoUs follow-up coordination
- Publishing and Marketing Committee (PMC), Cooperation Group (COP) secretary

**NATHALIE WOUTERS**

– Office and Membership Manager

- Office management, HR
- Membership liaison
- REHVA Student competition
- REHVA Awards
- REHVA Board meetings' secretary
- REHVA Annual meetings, General Assembly secretary
- Education and Training Committee (EC), REHVA Awards Committee secretary

# ANNEX 1: REHVA MEMBERS

**ABOK**, Association of Engineers in Heating, Ventilation, Air-conditioning, Heat Supply & Building Thermal Physics, RUSSIA



**AHGWTEL / LATVAC**, Association of Heat, Gas and Water Technology Engineers of Latvia, LATVIA



**AiCARR**, Associazione Italiana Condizionamento dell'aria, Riscaldamento Refrigerazione, ITALY



**AICVF**, Association des Ingénieurs en Climatique, Ventilation et Froid, FRANCE



**AIIR-AGFR**, Romanian Association of Building Services Engineers (AIIR) and Romanian General Association of Refrigeration (AGFR), ROMANIA



**AIIRM**, Installation Engineers Association from Moldova, MOLDAVIA



**ATECYR**, Asociación, Técnica Española de Climatización y Refrigeración, SPAIN



**ATIC**, Association Royale Technique de l'Industrie du Chauffage, de la Ventilation et des Branches Connexes, Koninklijke Technische Vereniging van de Verwarmings en Verluchtingsnijverheid en der Aanverwante Takken, BELGIUM



**CIBSE**, Chartered Institution of Building Services Engineers, UNITED KINGDOM



**Danvak**, Danish Society of Heating, Ventilating and Air conditioning Engineers, DENMARK



**DIE PLANER**, Swiss Society for Engineering, Energy and Environment



**EKVU**, the Estonian Society of Heating and Ventilation Engineers, ESTONIA



**ÈTE**, Scientific Society for Building, Hungarian Coordinating Association of Building Engineering, HUNGARY



**FINVAC**, joint organisation in which 4 national societies of HVAC organisations (SuLVI, VSF, SIY, LIVI), FINLAND





**HKIS**, Hrvatska Komora Inženjera Strojarsstva (Croatian Chamber of Mechanical Engineers), CROATIA



**KGH**, Serbian HVAC-R Society c/o Union of Mechanical and Electrical Engineers of Serbia (SMEITS), SERBIA



**LITES**, Lietuvos siluminės technikos inžinierių asociacija (Lithuanian Thermotechnical Engineer's Society), LITHUANIA



**NORVAK**, Norsk VVS Energi- og Miljøteknisk Forening (Norwegian Society of HVAC Engineers, NORVAC), NORWAY



**MMK**, Magyar Mérnöki Kamara (Hungarian Chamber of Engineers), HUNGARY



**ORDEM DOS ENGENHEIROS**, PORTUGAL



ORDEM  
DOS  
ENGENHEIROS

**PZITS**, Polskie Zrzeszenie Inżynierów i Techników Sanitarnych, POLAND



**SITHOK**, Slovenian Society for Heating, Refrigerating and Air-conditioning Engineers, SLOVENIA



**SSTP**, Slovenska spoločnosť pretechniku prostredia (Slovak Society for Environmental Technology), SLOVAKIA



**STP**, Společnost pro techniku prostředí (Society of Environmental Engineering), CZECH REPUBLIC



**SWEDVAC**, Energi- och Miljötekniska Föreningen (Swedish HVAC Society - Society of Energy and Environmental Technology), SWEDEN



**TTMD**, Türk Tesisat Mühendisleri Derneği (Turkish Society of HVAC and Sanitary Engineers), TURKEY



**TVVL**, Nederlandse Technische Vereniging voor Installaties in Gebouwen (Dutch Society for Building Services), THE NETHERLANDS



**VDI**, Verein Deutscher Ingenieure e.V. (Association of German Engineers) - Fachbereich Technische Gebäudeausrüstung der VDI-Gesellschaft Bauen und Gebäudetechnik – VDI/GBG (Division Building Services of VDI- Society for Civil Engineering and Building Services), GERMANY



## ANNEX 2: REHVA SUPPORTERS

**Aermec, Italy** – Air-conditioning



**Baltimore Aircoil International, Belgium** – Global leader in developing, manufacturing and distributing evaporative or hybrid cooling and ice thermal storage products



**Belimo Automation, Switzerland**  
– Developer, manufacturer and distributor of electric actuators for air dampers and valve technology for heating, ventilation and air conditioning systems (HVAC)



**Camfil, Sweden** – Manufacturer of filters and clean air solutions



**Daikin Europe, Belgium** – Air-conditioning, heating and refrigeration solution provider



**Dosetimpex, Romania**  
– Designing, executing and delivering installation equipment for constructions



**Eneko, Turkey** – Ventilation and heat/energy recovery systems



**EPEE (European Partnership for Energy and the Environment), Belgium** – Expert Association in the field of refrigeration and air comfort



### **ES-SO, European Solar-Shading**

**Organization, Belgium** – Promotion of solar shading and energy savings and comfort



**Eurovent Certita Certification, France** – Certification of the performance ratings of air-conditioning and refrigeration products according to European and international standards



**Evapco Europe, Italy** – Specialists in heat transfer products & services



**Fläkt Group, Sweden** – European market leader for energy efficient Indoor Air Technology Solutions, providing the highest quality standards for improved Air Comfort and well-being



**FRITERM Teknik Cihazlar Sanayi ve Ticaret, Turkey** – Manufacturer of finned type heat exchangers and focused on the production of Air Cooled Condensers, Air Coolers, Dry Coolers, Water/Steam Air Heaters and Coolers, Oil Coolers and Heat Recovery Coils



**Grandlund, Finland** – A building services consulting firm



**Halton, Finland** – Products for ventilation and air handling systems, commercial kitchen ventilation, marine air conditioning



**LG Electronics, France** – Improvement of customer's life and business with leading products and world-class technology



**Lindab, Denmark** – Developer, manufacturer and distributor of products and system solutions primarily in steel for simplified construction and improved indoor climate



**RETTIG ICC (Indoor Climate Comfort), Netherlands** – Manufacturer of radiators, underfloor heating, valves and controls



**RHOSS, Italy** – Specialised in the design and production of air conditioning and air handling products and systems



**Royal Haskoning DHV, The Netherlands** – Independent international engineering and project management consultancy



**Skanska Commercial Development Nordic, Sweden** – Project development and construction company, developing offices, homes and infrastructure projects



**Smay, Poland** – Consulting and production company who provides the solutions and devices in the range of ventilation



**Smits van Burgst consulting engineers, Netherlands** – Engineering consultants in the field of building services, telecommunication, building security, building physics, energy management, information technology in buildings, internal transport, as well as maintenance management



**Swegon, Sweden** – Indoor climate for people and environment specialising in ventilation and air handling equipment



**Systemair, Sweden** – Manufacturer of air handling and ventilation products and fans



**Uponor Corporation, Finland** – Heating systems for all building types



**Viega, Germany** – **New** – Producers of installation technology for the sanitation and heating sector



**Velux, Denmark** – Producers of installation technology for the sanitation and heating sector





# REHVA

Federation of European Heating, Ventilation and Air Conditioning Associations

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Founded in 1963, REHVA, The Federation of European Heating, Ventilation and Air Conditioning Associations represents a network of more than 100.000 engineers from 27 European countries.

REHVA is the leading European professional organisation whose main activity is to develop and disseminate technology and information for mechanical services of buildings.

REHVA is committed to advancing its programs and services for young engineers, through helping them build their professional foundations.

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