

2020

REHVA ANNUAL REPORT 2020

From REHVA board of directors

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WELCOME NOTES TO THE 2020 ANNUAL REPORT

The year 2020 was full of challenge, disruption, and sad losses in our association as well and we can only hope spotting the light at the end of the tunnel. The 2021 Annual Meeting, for which we prepare this annual report, still happens online.

When drafting and reviewing this report, comparing it to 2019, I felt the absence of a fundamental ingredient of REHVA burning through every page: the lack of physical interaction among REHVA "family" members. We have been missing you for more than a year now. Both the 2020 Annual Meeting and the Brussels Summit, two major events have passed without informal networking, celebration and handing out awards in a festive way or having a drink together. This has been way too long.

Yet, the COVID-19 crisis also showed the best side of REHVA: the commitment and excellence of our volunteer experts, who immediately mobilized when the implication of COVID-19 for indoor air quality management and for the HVAC sector became obvious. The REHVA COVID-19 response group developed organically in front of our eyes, from the emails between concerned REHVA experts who started to exchange information and new scientific evidence, collecting, sharing knowledge.

Thanks to this early reaction, REHVA was able to answer the urgent need for guidance probably as first in the world. We continued to guide based on scientific evidence, providing direct advice to individuals, organisations, and governments during the global public health crisis. It brought appreciation, gratitude, and enormous visibility to REHVA as you will read in the following pages.

On behalf of REHVA, I would like to express our sincere gratitude to all experts who have been contributing to this work. Despite the difficulties and disruption of last year, REHVA became stronger in the past year thanks to your invaluable efforts.

This crisis raised wide awareness of the importance of indoor air quality. If we use this wisely as leverage, it may shift the paradigm of how people view and value indoor environment quality and give a boost in pursuing our vision: "Improving health, comfort, safety and energy efficiency in all buildings and communities". The HVAC sector will likely thrive in the coming years and there is a lot of work to do: adapting technologies and developing new solutions, updating guidelines, improving engineering practice, educating practitioners and decision makers. REHVA has an important role to play in all these aspects.

We can't wait meeting you again in person and talk over a drink about the pandemic left behind and the tasks ahead us.

Anita Derjanecz
REHVA Managing Director

REHVA MEMBERS



Our members in 2020 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
- Die Planer, Switzerland
- EKVÜ, Estonia
- ÉTÉ and MMK, Hungary
- FINVAC, Finland
- KGH-SMEITS, Serbia
- LITES, Lithuania
- NORVAC, Norway
- ORDEM Dos ENGENHEIROS, Portugal
- PZITS, Poland
- SITHOK, Slovenia
- SSTP, Slovakia
- STP, Czech Republic
- SWEDVAC, Sweden
- TTMD, Turkey
- TVVL, the Netherlands
- VDI, Germany

The membership fee was 2 850 € in 2020.

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

REHVA SUPPORTERS



Our supporters in 2020 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
- Purmo Group, Finland
- RHOSS, Italy
- Smay, Poland
- Swegon, Sweden
- Systemair, Sweden
- Uponor Corporation, Finland
- Velux, Denmark
- Viega, Germany

The fee paid by the supporters was 3 000 € in 2020.

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

REHVA ASSOCIATE ORGANISATIONS



- Enerbrain

In 2020, REHVA opened the Associate Organisations status defined in the [articles](#) to micro enterprises and SMEs due to the interest of small consultancy companies to join the network expecting to have more practitioners joining from 2021. The annual fee differs, according to organisation type and company size from 500 € to 1 500 €. A list of Association organisations is in [Annex 3](#).

REHVA BOARD OF DIRECTORS

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

The year 2020 was the 57th year since the founding of REHVA.

REHVA board members after the online General Assembly 2020 were the following:



FRANK HOVORKA
President
AICVF, France
2013 - 2022



CATALIN LUNGU
Treasurer,
Vice-President
AIIR, Romania
2017 - 2023



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

REHVA COVID-19 RESPONSE AND GUIDANCE

The year 2020 was marked by the COVID-19 pandemic and the related activities took significant effort of the REHVA experts and staff alike during the entire year. We start our activity report with summarising the outcomes and achievement of this enormous amount of work. REHVA expresses its sincere gratitude to all involved experts and volunteers for their invaluable contribution and continued commitment.

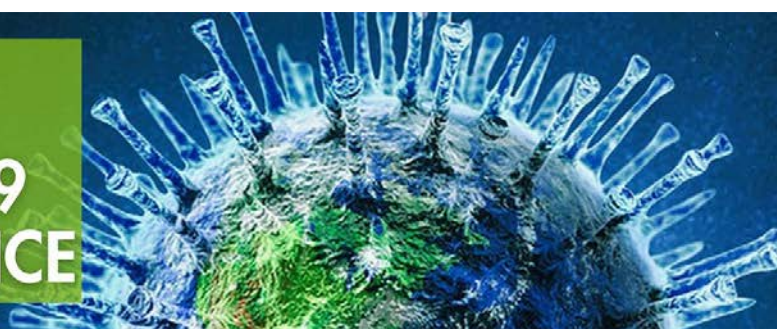
REHVA initiated an ad hoc COVID-19 response Task Force to reply to the urgent need for technical guidance regarding transmission and risk mitigation indoors. The group of international and global experts have been reviewing the scientific results from the very beginning about the airborne transmission of Sars-Cov-2 and developed adequate guidance on the operation of ventilation systems and safe use of buildings during the pandemic. Thanks to the work of Task Force chaired by Jarek Kurnitski, REHVA released very timely its first guidance document in mid-March 2020, well before any other guidance became available.

Expert members of the Task Force contributed also to the advocacy works towards WHO resulting in the acceptance of the airborne transmission as infection route by the organisation in June 2020.



www.rehva.eu

**REHVA
COVID19
GUIDANCE**



The Task Force, led by TRC chair Jarek Kurnitski, continued through 2020 and elaborated 3 guidance revisions based on incoming scientific evidence, developed additional specific guidance on certain technology issues or building types as annexes, as well as tools relying also to the national level guidance activities of the Task Force member countries.

The timely reaction of REHVA was very well received and appreciated by REHVA Member Associations, professional organisations and individual practitioners around the world. The first guidance documents were translated in 13 languages, the English versions were used and referenced by governments, professional organisations and published by dozens of professional journals and websites around the world resulting in a constant increase in outreach and awareness of the work and of the Task Force experts throughout the year. The online calculator tool published end of November was downloaded by almost 500 experts in only 1 month.

Guidance documents and tools published by REHVA in 2020:

- REHVA COVID-Guidance documents: first release [17 March 2020](#), revised on [3 April 2020](#), [3 August 2020](#) and [17 November 2020](#)
- "[Limiting internal air leakages across the rotary heat exchanger](#)"
- "[COVID-19 ventilation and building services guidance for school personnel](#)"
- "[Ventilation in patient rooms](#)"
- "[Calculator on the impact of ventilation on airborne transmission](#)"



REHVA COVID19 GUIDANCE



REHVA COVID-19 Ventilation Calculator



REHVA COVID-19 Multi-Room calculator



REHVA COVID19 COURSE



REHVA COVID19 WEBINAR

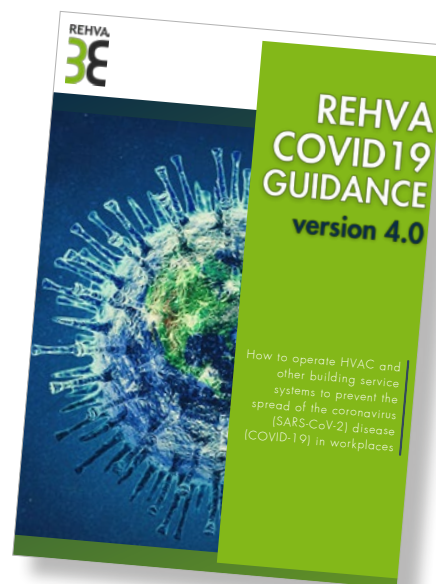


REHVA COVID19 FAQ

REHVA COVID-19 guidance page and online communication

To facilitate and coordinate the continuous information share and to promote the wide range of COVID-19 guidance activities, the REHVA staff developed a COVID-19 guidance directory on the website and implemented a specific online communication plan to raise awareness and maximise our outreach. REHVA sent 8 news alerts about every major updates and activities to 4 500 recipients and constantly shared information on our social media channels. This resulted in an exponential increase of both website visits and followers and engagement on social media as detailed in "REHVA Website and Online Services" on page 20.

The publication of the guidance resulted in a massive number of individual questions asking for clarifications and specific advice. These questions were answered by Prof. Jarek Kurnitski and published also as an [online FAQ section](#).






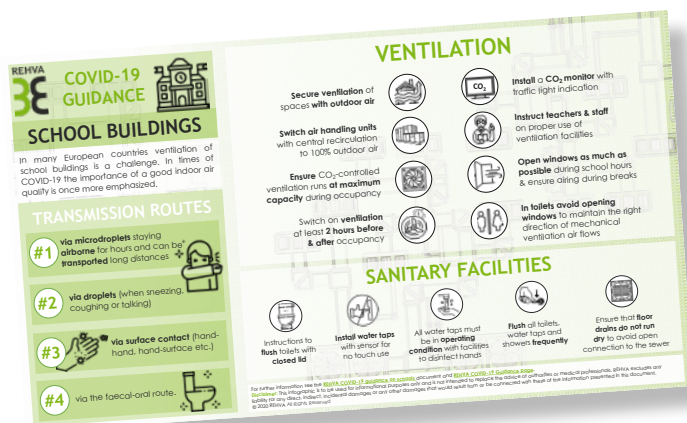
SCHOOL BUILDINGS

In many European countries ventilation of school buildings is a challenge. In times of COVID-19 the importance of a good indoor air quality is once more emphasized.

TRANSMISSION ROUTES

- #1** via **microdroplets** staying **airborne** for hours and can be **transported** long distances 
- #2** via **droplets** (when sneezing, coughing or talking) 
- #3** via **surface contact** (hand-hand, hand-surface etc.) 
- #4** via the **faecal-oral** route. 

The REHVA staff also designed an infographic of the school guidance targeted to the personnel of schools and handy to share online. It was very well accepted and generated a huge social media visibility and engagement.



VENTILATION

Secure ventilation of spaces **with outdoor air**



Switch air handling units with central recirculation to 100% outdoor air



Ensure CO₂-controlled ventilation runs **at maximum capacity** during occupancy



Switch on **ventilation** at least **2 hours before & after** occupancy



Install a CO₂ monitor with traffic light indication



Instruct teachers & staff on proper use of ventilation facilities



Open windows as much as possible during school hours & ensure airing during breaks



In toilets avoid opening windows to maintain the right direction of mechanical ventilation air flows

SANITARY FACILITIES



Instructions to flush toilets with **closed lid**



Install water taps with sensor for no touch use



All water taps must be in **operating condition** with facilities to disinfect hands



Flush all toilets, water taps and showers **frequently**



Ensure that **floor drains do not run dry** to avoid open connection to the sewer

For further information see the [REHVA COVID-19 guidance on schools](#) document and [REHVA COVID-19 Guidance page](#).

Disclaimer: This infographic is to be used for informational purposes only and is not intended to replace the advice of authorities or medical professionals. REHVA excludes any liability for any direct, indirect, incidental damages or any other damages that would result from or be connected with these of the information presented in this document.

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REHVA events on COVID-19

Very early into the pandemic, REHVA organised a webinar on "[How to operate and use building services during the COVID-19 crisis](#)" based on the first guidance, in collaboration with BuildUP platform watched by a record number of 7438 viewers.

COVID-19 was also the topic of the Technical Seminar: "[Impact of COVID-19 on HVAC and building operation](#)" of the Brussels Summit 2020 where Prof. Lidia Morawska, Director at the International Laboratory for Air Quality and Health, Queensland University of Technology held a keynote presentation, followed by the presentation of REHVA experts (see more details on page 43).

REHVA COVID-19 course

Responding to the massive awareness and demand by professionals, REHVA developed the course "[Safe operation of buildings and HVAC systems during the COVID-19 pandemic](#)" capitalising on the valuable knowledge accumulated by REHVA Task Force. The 8h on demand course targets practitioners involved in the management of indoor environment quality, building operation and system maintenance and consists of four modules of recorded presentations by REHVA experts. Participants get access also to the latest REHVA guidebooks on air filtration and the hygiene requirements of ventilation systems. After successful completion of the exams, trainees obtain a certification. In 2020, more than 100 trainees registered to the course, which helped also to balance the decrease in guidebooks sales income 2020.

European and global outreach

Since March 2020, the main guidance document has been used and referenced by at least a dozen government in REHVA member countries and beyond, the guidance was translated into 13 languages. Several professional and mainstream journals published the guidance document in Europe and globally and the REHVA staff is aware of around 100 citations and referencing of the guidance documents in scientific articles.

REHVA experts also joined the action advocating airborne transmission to WHO and "[an open letter by 239 scientists](#)", including many REHVA experts. "[REHVA welcomed](#)" the somewhat late recognition of the emerging evidence on airborne transmission of COVID-19 by the organisation.

In October 2020, REHVA signed a cooperation agreement with the Brussels Operational Centre of the global medical humanitarian organisation "[Doctors Without Borders \(MSF OCB\)](#)", inviting several of their staff to attend the "[REHVA online course](#)".

REHVA participated in the coordination group of the IEQ-GA COVID-19 task force to exchange information with the global member of the alliance. Jarek Kurnitski represented the REHVA COVID-19 Task Force in this group along with Frank Hovorka, and the members shared regular updates.

Several renowned experts have been invited in the task force meetings to present their current research and discuss relevant topics with the task force members. Among them, Dr Shaun Fitzgerald (visiting Professor at the Royal Academy of Engineering from the University of Cambridge and member of the Environment

and Modelling Group of the UK Government's Scientific Advisory Group for Emergencies (SAGE)), Hansjörg Rotheudt and Anne Hartmann (Hermann Rietschel Institute (HRI) of TU Berlin) and Cliff Federspiel (President and CTO of Vigilent).

REHVA experts have participated in several webinars across the globe to share their experience and expertise on the transmission of COVID-19 in indoor environments (an indicative list can be found below):

- "[Webinar on Covid-19 pandemic organised by CCHVAC and REHVA](#)" on 8th of April 2020
- "[COVID-19 Ventilation related guidance by ASHRAE and REHVA](#)" - organised by AIVC
- "[Analysis of transmission modes of COVID-19](#)" - organised by FAIAR (Federation of Ibero-American Associations of Air Conditioning and Refrigeration)
- "[COVID-19 and buildings: the indoor climate and installations](#)" - organised by the Dutch Green Building Council
- "[COVID-19 and the built environment](#)" - organised by ISIAQ (International Society of Indoor Air Quality) and TVVL
- "[COVID-19 HVAC guidance and emerging trends](#)" - organised by EFRIAC (Portuguese Association of Industrial Cold and Air Conditioning Engineers)
- "[Building Energy Issues and the COVID-19 Response](#)" - organised by EBC (Energy in Buildings and Communities Programme)

Members of the REHVA COVID-19 Task Force:

- Prof. em. Francis Allard, La Rochelle University
- Dr. Kemal Gani Bayraktar, REHVA vice-president, President of TTMD
- Dr. Atze Boerstra, REHVA vice-president, managing director bba binnenmilieu
- Mikael Borjesson, Vice President of Eurovent Association, Competence Director Swegon Group
- Prof. Manuel Gameiro da Silva, REHVA vice-president, University of Coimbra
- Prof. Guangyu Cao, Norwegian University of Science and Technology (NTNU)
- Dr. Hywel Davies, Technical Director of CIBSE
- Ioan Silviu Dobosi, AIIR - Romanian Association of Building Services Engineers
- Dr. Francesco Franchimon, managing director Franchimon ICM
- Jaap Hogeling, manager International Projects at ISSO
- Frank Hovorka, REHVA president, director technology and innovation FPI, Paris
- Prof. Jarek Kurnitski, Chair of REHVA COVID-19 Task Force, Tallinn University of Technology, Chair of REHVA Technology and Research Committee
- Prof. Catalin Lungu, REHVA vice-president, vice-president of AIIR
- Prof. Ivo Martinac, REHVA vice-president, KTH Royal Institute of Technology
- Prof. Livio Mazzarella, Milan Polytechnic University
- Prof. Manuel Ruiz de Adana, ATECYR Technical Committee, University of Cordoba
- Francesco Scuderi, Deputy Secretary General at Eurovent Association
- Prof. em. Olli Seppänen, Aalto University
- Dr. Benoît Sicre, Lucerne School of Engineering and Architecture
- Igor Sikarczyk, Senior Technical and Regulatory Affairs Manager at Eurovent
- Prof. Cristina Tanasa, Politehnica University Timisoara
- Prof. Dr. Marija S. Todorovic, University of Belgrade Serbia
- Juan Travesi Cabetas, REHVA vice-president, vice-president of ATECYR
- Ir. Froukje van Dijken, healthy building specialist at bba binnenmilieu
- Prof. Pedro G. Vicente Quiles, Chair of ATECYR Technical Committee, Universidad Miguel Hernández de Elche

PUBLICATIONS, ONLINE TOOLS and DIGITAL MEDIA COMMUNICATION

Guidebooks

REHVA European Guidebooks are at the heart of our mission and aim to disseminate the latest knowledge and technical information to members and professionals in the field of HVAC and building services technologies.

In 2020, REHVA published one guidebook, the revision of GB 11.

Air Filtration in HVAC Systems (Guidebook No.11 – A revised 2nd edition)

The scope of this Air Filtration Guidebook is to increase the awareness of the role of air filtration in improving indoor air quality. It will help designers and users to understand the background and criteria for air filtration, how to select air filters and avoid problems associated with hygiene and other considerations in the operation of air filters. The Guidebook is mainly applicable to air filters in general ventilation systems. However, parts of it may also be applied to any kind of forced ventilation or when air filters are used as a part of a ventilation system in critical applications to protect people, products or the environment. This Guidebook combines several points of view on air filtration; the authors include filter manufacturers, academics, laboratory experts, salespeople and, with this variety, it has sometimes been challenging to identify a common voice.



Translations

During 2020, the guidebook "Hygiene in Potable Water Installations in Buildings" (Guidebook No. 30) has been translated in Dutch.

Sales of guidebooks

REHVA guidebooks have been an important REHVA income source. The price of guidebooks is 50€ (both pdf and hard copy). The Publishing and Marketing Committee may define lower prices depending on the year of publication and the market interest. Members and supporters are entitled to a discounted price. Guidebooks are available online in our [e-Shop](#).

In 2020, REHVA sold 335 guidebooks (hardcopies and PDF versions), which indicates a declining interest in hard copies of the guidebooks, but overall, in guidebooks in general.

In the past years, we see a negative trend in the sales of guidebooks with the 2020 figures being the lowest. In addition, we can observe that the share of PDF purchase is increasing, in 2020 digital editions significantly outnumbered the hard copies.

To address the issues of decreasing book sales and changing customer preferences, REHVA organised strategy meetings defining ideas to modernize and improve guidebooks by shifting towards complementary digital content. On the other hand, REHVA defined measures to improve the marketing of individual editions by tailored promotion of the individual editions and by reaching new target audiences. The increased outreach thanks to the REHVA COVID-19 guidance activities provides a very good basis for the latter.

To reply to the changing customer expectations, REHVA staff seeks also new ways of marketing and selling guidebooks in the digital age. Since 2018, REHVA has a contract with Knovel, and Elsevier digital knowledge platform that offers a subscription based on demand access to the guidebook content. REHVA earns royalty based on the reader traffic. **Figure 3** illustrates the share of income from this source within the total revenue.

GB sales by nr of copies, 2018-2020

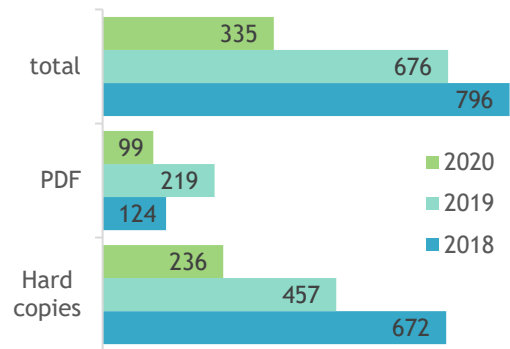


Figure 1. Evolution of guidebook sales in the past 3 years.

Share of hard copy & PDF in total sales, 2018-2020

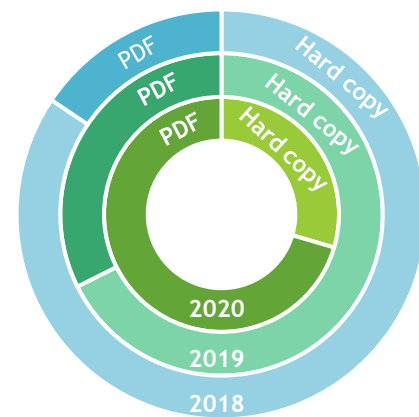


Figure 2. Total guidebook copies sold Hard copy vs PDF by year (2018-2020).

Share of REHVA eShop & Knovel royalty sales in total income (2019-2020)

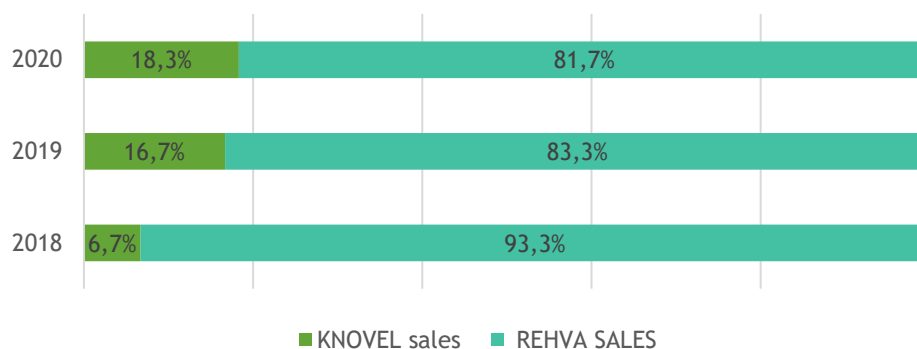


Figure 3. Total guidebooks income divided by sales done through the REHVA channels and the Knovel Elsevier platform.

Since 2019, REHVA also offers the e-book version of all guidebooks in the [REHVA expert area](#) for an annual subscription fee, providing also other content (EU policy tracking, recorded courses and webinars, etc.). This digital knowledge source will be in the focus of further product development of REHVA.

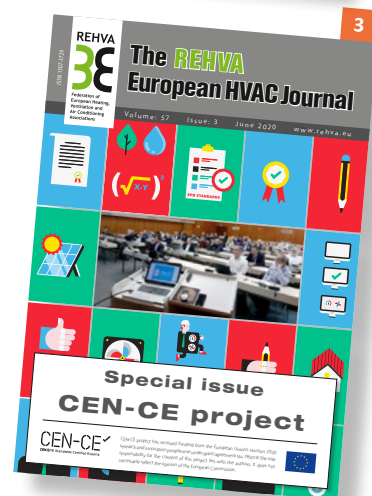
The TRC and PMC are working on further solutions to make guidebooks more attractive to practitioners and develop new digital knowledge products beside guidebooks.

REHVA European HVAC Journal

Published journals

The REHVA European HVAC Journal is a technical, practical journal for HVAC industry professionals published bi-monthly. It is read by designers, consultants, manufacturers, investors, mechanical contractors, sales and representative companies, architects energy sector's professionals, governmental institutions authorities, etc.

In 2020, REHVA published six regular issues and one special issue for ACREX 2020. The issues 4 and 5 were dedicated to EU projects where REHVA was partner and co-financed by these.



[REHVA Journal issues](#) are also available for free in digital format 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. Beyond members, the printed journal is only available to paying subscribers for an annual fee. The REHVA Journal hard copy subscription is combined with a subscription to the online REHVA expert area.

Publishing information

In 2020, all international fairs and conferences were held online or cancelled due to the COVID situation, thus was not distributed at those events as planned. This, however, allowed to produce two special REHVA Journals in cooperation with the EU projects CEN-CE and ALDREN, these two issues counted for 900 printed copies distributed to the partners of the projects.

Issue	Theme	Events where the Journal was distributed
1/February	<ul style="list-style-type: none"> – HVAC technologies as drivers for future energy transition – Heat Pumps, Fuel cells – Comparing solutions for the residential sector – Overcoming obstacles to financing energy efficiency 	WSED, Wels, Austria, 27 February – 1 March
ACREX	<ul style="list-style-type: none"> – Special issue for ACREX India 2020 exhibition 	ACREX, Mumbai, India, 28 February – 2 March
2/April	<ul style="list-style-type: none"> – Real-life ventilation filter performance in a city environment – Particle filtration in energy efficient housing with MVHR – REHVA's COVID-19 Guidance document 	
3/June	<ul style="list-style-type: none"> – Special issue: CEN-CE project 	
4/August	<ul style="list-style-type: none"> – Special issue: ALDREN project – Focus on Eastern Europe – COVID-19: Ventilation systems to reduce the risks of contaminated aerosols 	
5/October	<ul style="list-style-type: none"> – Focus on the importance of ventilation in the COVID-19 context 	
6/December	<ul style="list-style-type: none"> – Heat pumps supporting decarbonisation – COVID-19 Guidance – Safe, conserving and energy recovering water technology – REHVA Brussels Summit 2020 highlights 	

Readers of the REHVA Journal in 2020

In 2020, more than 4 100 copies of the REHVA Journal were printed and distributed. On the REHVA website, the journal has reached almost 5500 unique page views with the most seen issue of the February issue on HVAC technologies as drivers for future energy transition.

From 2020, the REHVA staff is evaluating the readership of the online REHVA Journal based on the available data from the analytics tool used for the website. It is interesting to see that the almost 1/3 of the readers are between 25 and 35 years old and more than 60% of readers are younger than 44. The biggest share of readers comes from Europe, most of them from Italy, Belgium and the United Kingdom.

REHVA JOURNAL PAGE VIEW BY REGION IN 2020

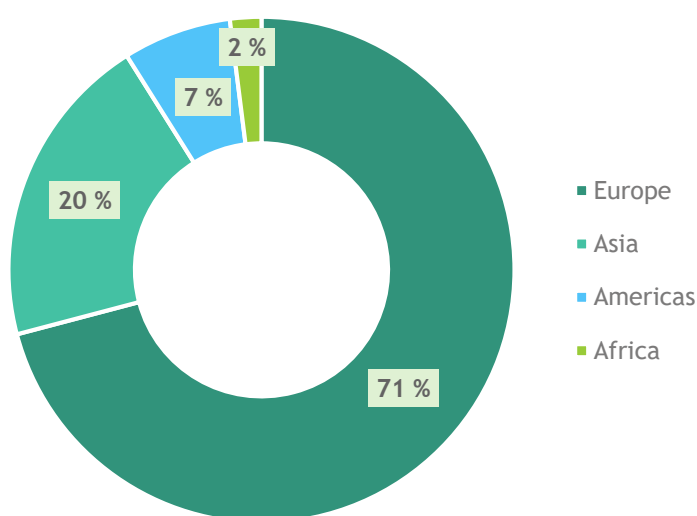


Figure 4. Geographical distribution of online REHVA Journal readers.

REHVA JOURNAL PAGE VIEW BY AGE GROUPS IN 2020

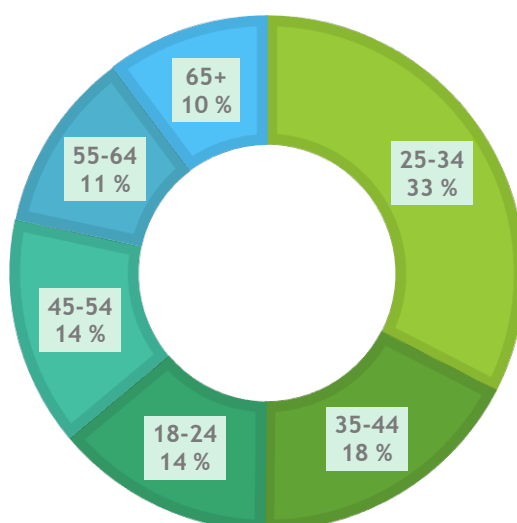


Figure 5. Age demographics of online REHVA Journal readers.

REHVA Journal Editorial Board 2020

- Francis Allard, France
- Ahmet Arisoy, Turkey
- Marianna Brodach, Russia
- Vincenc Butala, Slovenia
- Stefano P. Corgnati, Italy
- Francesca R. d'Ambrosio, Italy
- Ioan Silviu Dobosi, Romania
- Andy Ford, United Kingdom
- Jaap Hogeling, the Netherlands
- Karel Kabele, Czech Republic
- Jarek Kurnitski, Estonia
- Livio Mazzarella, Italy
- Renato Merati, Italy

- Birgit Müller, Germany
- Natasa Nord, Norway
- Branimir Pavkovic, Croatia
- Dusan Petras, Slovakia
- Olli Seppänen, Finland
- Branislav Todorovic, Serbia
- Peter Wouters, Belgium

REHVA Journal Staff

- Jaap Hogeling, Editor-in-chief
- Nicoll Marucciová, Editorial Assistant, Advertisements (RJ 05 and RJ 06)
- Giulia Marengi, Advertisements (RJ 01 - 04)
- Jarkko Narvanne, Graphical Designer

REHVA Newsletter

Six bi-monthly electronic newsletters were published in 2020. This newsletter is distributed electronically to a list of 4065 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.

Supporters' bulletin

Six issues of the Supporters' Bulletin were published in 2020. The Supporters' Bulletin is a bi-monthly electronic newsletter exclusively for REHVA Supporter companies to provide useful knowledge and tailored information about EU policy trends, REHVA community updates and events. They are also [downloadable](#) from the REHVA website.



REHVA Dictionary

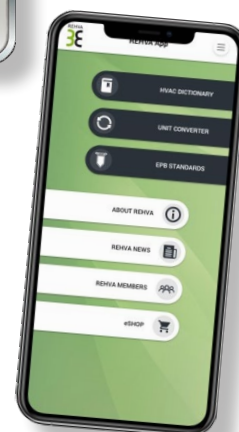
The "[REHVA Dictionary](#)" is available in the REHVA website as a free service containing technical words and terms used in the building services. The REHVA Dictionary is an online translation service, which provides technical words and terms frequently used in building services. The REHVA Dictionary 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.



REHVA App

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 2020, REHVA, together with the COP group, updated the dictionary into a REHVA app, adding new features to the app; unit metrics converter, interactive summary table of the new EPBD standards and links to the REHVA Members Association websites. The new REHVA app has been officially launched during the REHVA Brussels Summit 2020 conference.



REHVA Website and Online Services

After the make-over of the REHVA website in 2019, beside easier content management and improved user friendliness, we observed a massive increase in visitor numbers in 2020. The increase in users and visitors is partly due to the SEO implementation from 2019, but is mainly the result of the COVID-19 guidance related publications and activities. **Figure 6** shows that REHVA website visitors doubled in 2020 compared to the previous year and almost quadrupled since 2018.

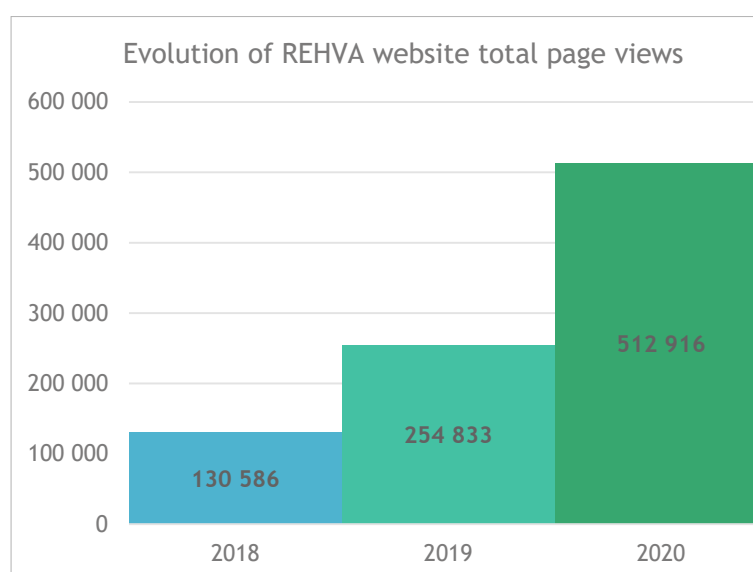


Figure 6. Increase of REHVA website page views in the past 3 years.

More than 43% of all page views on the REHVA website came from the COVID-19 related pages (see **Figure 7**).

Most visited website pages in 2020 (% of total)

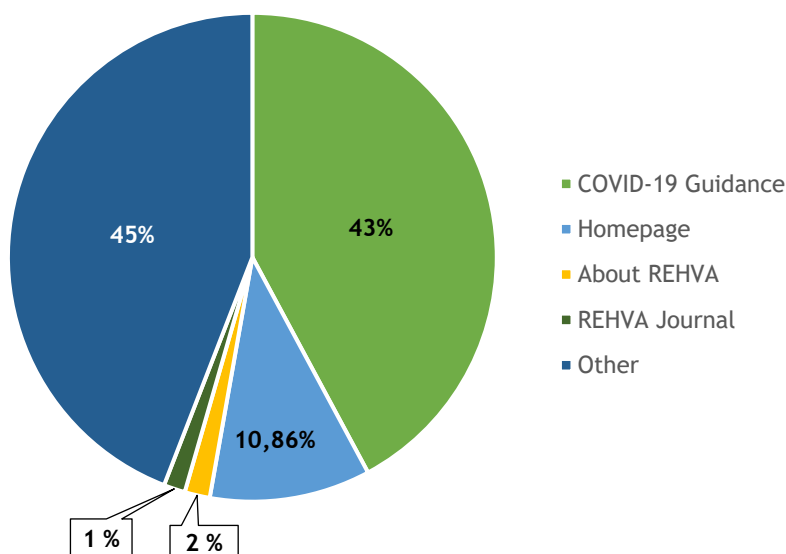


Figure 7. COVID-19 page views compared to the most popular website pages in 2020.

Besides the REHVA COVID directory page, the staff created 2 new sections:

- The [Webinar](#) section under the Knowledge Base collects the recording of all public events that where either organised by REHVA (e.g. EPB standards webinar series, EU project webinars) or where REHVA representatives had presentations recordings.
- With the creation of "[REHVA Community of Young Professionals](#)", (see page 41) the old "Next Generation" page turned into the REHVA Community of Young Professionals page, which will be the space where all the news and information concerning this new group can be shared, as well as sharing information regarding students and young professionals, like the students' competitions or the REHVA Young Scientist Award.

Expert area

With the 2019 website revamp, REHVA created as new digital knowledge service a subscription based Expert area starting with the following main content items:

- Repository of all REHVA guidebooks in an online e-format
- Policy issue tracking with updates and insider information on the EU policy issues followed by REHVA
- Recorded courses and workshops

THE REHVA EXPERTS AREA

Tailored EU Policy tracking

Workshops and Webinars

Access to eGuidebooks

Due to the increasing appetite for digital knowledge sources, the expert area is the focus of product development in the future.



Online Learning Management System

In 2020, REHVA invested also in the development of a Moodle based online learning management system which was first used and tested with the COVID-19 course. The infrastructure can be used to develop further courses.

With the trend of decreasing guidebooks sales, the above online services will be the main area of complementary product development in the coming years.

Social media



REHVA is active on the 3 main social media channels on a daily basis: Twitter, Facebook, LinkedIn. The REHVA Social Media accounts: [LinkedIn](#) REHVA Page, [REHVA Energy Group](#), "[REHVA Community of Young Professionals](#)", [Facebook](#) and [Twitter](#) highly increased the REHVA audience reach and knowledge spreading.

In 2020, REHVA counts a total of 8 135 followers and members in all social media channels that is continuously increasing (see **Figure 8**). 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.

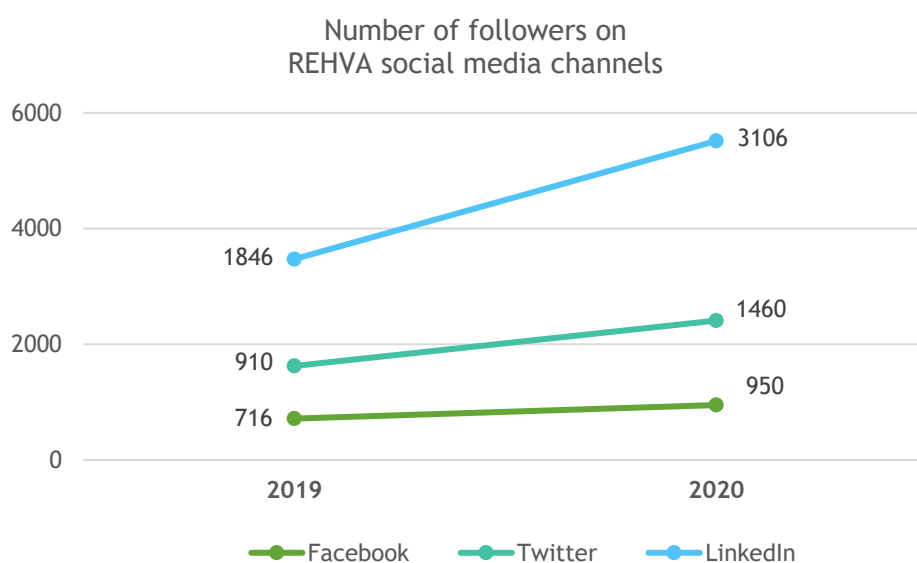


Figure 8. Increase of REHVA followers on social media from 2019 to 2020.

In 2020, REHVA staff significantly increased efforts to boost social media channels, especially on LinkedIn, which became, along with our website and newsletter, one of the main communication channels for sharing news and information. New REHVA staff invested in tools and skills to produce graphic design, infographics, videos, and other digital content in house, which resulted in significant impact on all digital communication channels.

The content calendar of the social media channels of REHVA includes the latest news, activities, and industry highlights, as well as promotion of publications, REHVA events and other events relevant to the industry, events and news from REHVA Member Associations or REHVA Supporters.

A highlight in 2020 was the live twitter coverage of the REHVA Brussels Summit Conference, with over 15 000 organic impressions only on Twitter. The coverage of REHVA webinars generates a very high reach as well. The infographic on the School specific COVID-19 guidance was a post with the most engagement on twitter, with nearly 11 000 organic impressions, and 2000 interactions by organisation and individual experts worldwide with many interesting discussions around the globe.

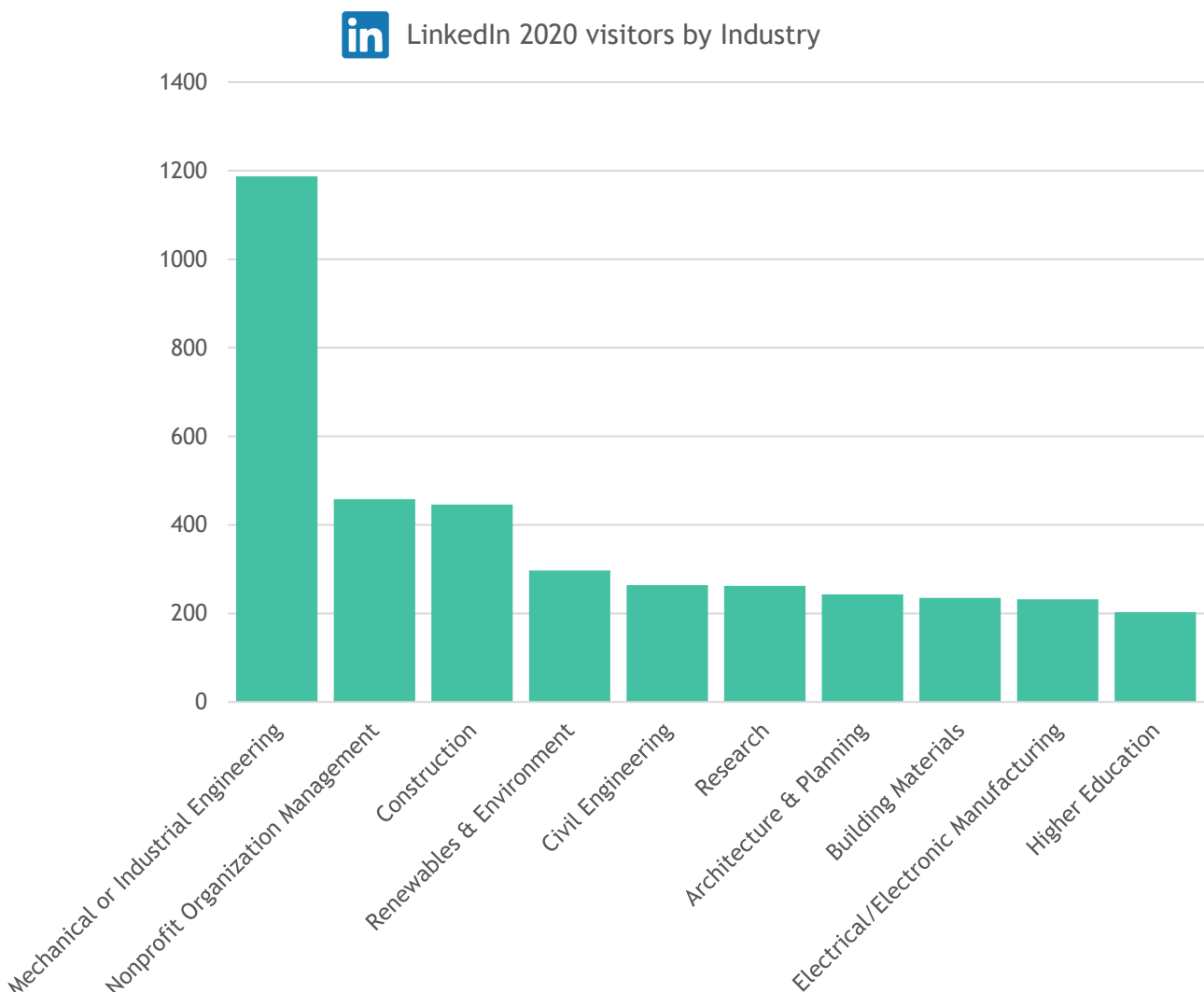


Figure 9. REHVA LinkedIn followers by industry.

As schools are thinking how to safely reopen after #COVID19 #pandemic, #REHVA comes with a school buildings guidance. Find the full guidance document here: rehva.eu/activities/cov... #Covid_19 #ventilation #schoolsreopening

4:51 pm. 24 Jul 2020. Twitter Web App




REHVA @REHVAHVAC · 5 Nov 2020

Here we go!

We kick off the #REHVA #BrusselsSummit2020 with an opening by REHVA President #FrankHovorka!

#IEQ #IAQ #Research #Innovation #EU #Renovation



4


REHVA @REHVAHVAC · 4 Nov 2020

The #online edition of the #REHVA #BrusselsSummit2020 is tomorrow! Don't miss out!

Get access now! bit.ly/3dXqxyd

Presented by top experts and high-level representatives

#IEQ #IAQ #EU #Policy #Renovation #Energy #Building #Crisis #Research #Innovations



1 2


REHVA @REHVAHVAC · 5 Nov 2020

#OliverRapf, Executive Director of @BPIE_eu gives us an in-depth vision of national #LTRS from #MemberStates.

"A lot more #Awarenessraising and #analyticalwork to #valorize the #benefits of #healthybuildings is needed."

bit.ly/38atFbr

#REHVA #BrusselsSummit2020




3

REHVA @REHVAHVAC · 5 Nov 2020

#AtzeBoerstra #REHVA Vice-President follows and adds to the discussion: Lengthy presence in indoor spaces, combined with low fresh air supply can considerably increase infection risk.

#BrusselsSummit2020



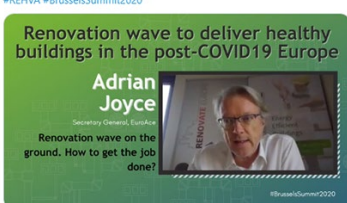
4 10

REHVA @REHVAHVAC · 5 Nov 2020

Our closing Speaker is #AdrianJoyce Secretary General @EuroACE. He expands on the ways to implement the #RenovationWave on the ground:

"#Mobilisation is the Key Word"

#REHVA #BrusselsSummit2020




1 8

REHVA @REHVAHVAC · 5 Nov 2020

Next speaker @TarjaTakki on how @GroupHaltan looked into #Sars #COVID19 #particle #size and how air-filters can entrap them. Only #high efficiency #filters can do the job.

#REHVA #BrusselsSummit2020



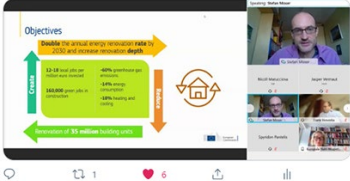
4

REHVA @REHVAHVAC · 5 Nov 2020

#StefanMoser @EU_Commission @Energy4Europe is presenting the #RenovationWave agenda: We need more in depth #building #renovation and decrease #Heating & #cooling #Energydemand by 18%.

Clear long-term objectives to reduce our impact on environment!

#REHVA #BrusselsSummit2020




1 6

REHVA @REHVAHVAC · 5 Nov 2020

We are now closing the Policy Conference with ? Q&A Discussions moderated by @AnitaDejanecz, REHVA Managing Director.

Speakers will answer questions from the audience.

#REHVA #BrusselsSummit2020



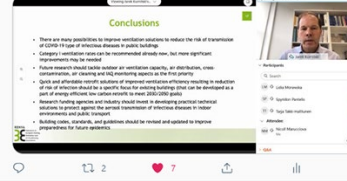
2

REHVA @REHVAHVAC · 5 Nov 2020

#JarekKuminski giving excellent insights on targeted ventilation solutions & research needs for virus protection.

#Covid19 reminds us at the urgent need to add #ventilation solutions to #buildings and the #renovationwave is our opportunity to do so.

#REHVA #BrusselsSummit2020

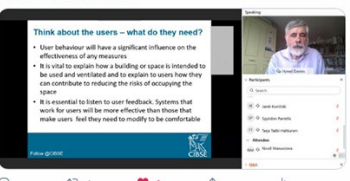


2 7

REHVA @REHVAHVAC · 5 Nov 2020

We totally agree with #HywelDavies @CIBSE that "measures to reduce infection risk should be user-centered if we want them to be effective".

#REHVA #BrusselsSummit2020



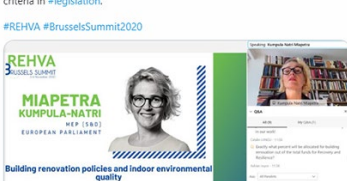
1 3

REHVA @REHVAHVAC · 5 Nov 2020

MEP @MiaPetraKumpulainen hopes that @EU_Commission will take into account the #Cuffe #report recommendations and that #MemberStates will implement.

@Europarl_EN wishes that the @EU_Commission defines minimum #IEQ criteria in #legislation.


#REHVA #BrusselsSummit2020



3

REHVA @REHVAHVAC · 5 Nov 2020

We are excited to welcome professor #LidiaMorawska @OUT at the #REHVA #BrusselsSummit2020 explaining the lessons from the pandemic.



2 4

EUROPEAN PUBLIC AFFAIRS AND GLOBAL COOPERATION

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.

In 2020, REHVA focused especially on the national implementation of the EPBD, followed the SRI developments chairing semi-formal expert group, followed, and contributed to the EP Report on Maximising the energy efficiency potential of the EU building stock and promoted the EPB standards in cooperation with the EPB Center. The technical support of EU advocacy activities is detailed in the chapter "Technology and Research activities" on page 33.

EU Policy events organised by REHVA

REHVA event at the European Parliament showcasing ALDREN project results

On 22 January, REHVA organised an event at the European Parliament, hosted by Ljudmila Novak, MEP, to showcase the results of the ALDREN project, see page 38, funded by Horizon 2020 programme. The project was presented in the context of the current EU policy priorities in the field of buildings energy efficiency with special attention to EU Green Deal and the Renovation wave in a roundtable event with contribution by MEP Miapetra Kumpula-Natri, MEP (S&D); Pau Garcia Audi, DG ENER; moderated by Frank Hovorka, REHVA President, moderating the discussion. CSTB presented the developed building certification scheme to policy-makers and EU stakeholders. The recordings of the different sessions and presentations can be accessed through the [ALDREN website](#).





EUSEW 2020 online event "Energy transition: new business models to de-risk investments and kick start the EU building renovation wave"



The 2020 edition of EUSEW went also online hosted by the BUILD UP portal. [REHVA co-organised policy session](#) with the title "Energy transition: new business models to de-risk investments and kick start the EU building renovation wave", chaired by REHVA President Frank Hovorka. The webinar addressed key current challenges, such as mainstreaming energy efficiency finance through innovative mechanisms. The deployment of private investments for enhancing energy efficiency and renovation is a pivotal factor being addressed by EU policy makers that, in order to reach the Paris Agreement and 2050 targets, want to make green investments more attractive for private capital (e.g. via the taxonomy initiative setting up criteria for sustainable investments).

Brussels Summit Policy conference on the Renovation Wave strategy

The Renovation Wave strategy was the key topic of the Policy conference during the online REHVA Brussels Summit 2020 that attracted more than 300 participants online. The conference on "Renovation wave to deliver healthy buildings in the post COVID-19 Europe" brought together high-level representatives from



Figure 10. Speaker panel of the REHVA Brussels Summit Policy Conference.

the European Commission and the European Parliament, EuroAce and BPIE to introduce the Renovation wave strategy and share perspectives on its implementation.

Stefan Moser, Head of Unit - Energy Efficiency: Buildings and Products at DG ENER from the European Commission gave a detailed presentation of the Renovation Wave strategy, while MEP Miapetra Kumpula-Natri (S&D) introduces the ITRE report on Increasing the energy efficiency potential of the European building stock (Cuffe report) and emphasized the need to strive for healthy buildings. She called both Commission and Member State legislators to consider indoor climate quality issue when developing building renovation policies.

Oliver Rapf, executive director of Buildings Performance Institute Europe (BPIE) presented an analysis of national long-term renovation strategies performed by BPIE focusing on the question how they perform in tackling indoor environment quality. Adrian Joyce, Secretary General at EuroAce and Director of the Renovate Europe Campaign shared his views on the Renovation wave as a great opportunity and talked about the need to mobilize stakeholders at every level for the ambitious and high-quality implementation and the massive rollout of deep energy renovation of European buildings at such a large scale. The [presentations and recording](#) of the event are available online.

BUILD UP SKILLS event "Leveraging the skills of building professionals to deliver on the Green Deal"

REHVA Managing Director, Anita Derjanecz was invited as keynote speaker at the "[12th BUILD UP Skills European exchange meeting](#)" organised by EASME, European Commission. BUILD UP Skills is a strategic initiative with the main goal of increasing the number of skilled building professionals across Europe who can deliver building renovations with high-energy performance and new nearly zero-energy buildings. The event had to go online and was postponed to 8 December 2020. The topic of this year's event was "*Leveraging the skills of building professionals to deliver on the European Green Deal*", inviting EU stakeholders and coordinators of Build Up Skills projects. The "[Policy Panel discussion](#)" opened by Anita Derjanecz joined representatives of 4 different General Directorates involved in the skills development and the implementation of the European Green Deal:

- Silvia REZESSY, DG Energy
- Roman HORVATH, DG Grow
- Josefina LINDBLOM, DG Environment
- Felix ROHN, DG Employment



© shutterstock.com

Co-operation with EU-level professional organisations

REHVA cooperates with several Brussels-based EU-level professional and industry associations involved in the field of HVAC, building performance as well as health and indoor environmental quality. The level and scope of cooperation varies between the different organisations. With some, REHVA has MoUs, while with others the cooperation is less formal and includes the exchange of technical and policy related information, inviting each other as speaker at own events, coordinating select advocacy actions targeting the EU energy and climate policies and regulations. For example, in 2020, REHVA [co-signed a joint open letter](#) with industry association about the Renovation wave. A non-exhaustive list of these organisations: Eurovent Association, EVIA, EPEE, EHPA, eu.bac, EHI, EFA, EuroACE, SmartEN, Orgalime. Short summaries below highlight only the most important activities in 2020.

Eurovent Association: REHVA signed a Memorandum of Understanding (MoU) with Eurovent Association on 28 May 2015 that serves as basis of co-operation. Eurovent expert Igor Sikonczyk joined the REHVA COVID-19 Task Force and contributed to the writing of the Annex on leakages in rotary heat exchangers.



EPB Center: in 2019, REHVA became shareholder in the EPB Center founded by ISSO to pursue 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 plays a key role in disseminating the support tools, guidance documents, and webinars to help professionals applying the standards and connected tools.



Frank Hovorka and Catalin Lungu are the 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 33) 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 manages the LinkedIn group [EPB Standards Community \(#EPBstandards\)](#) dedicated to all information exchange on the standards and news about EPB Center's activities that gained 300 new members in 2020, resulting in 529 experts.

REHVA continued to organise the webinar series on the EPB Standards on the Build Up platform, all [recorded webinars](#) are also available on the REHVA website.

[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 Assembly and committee meetings organised by ECTP in 2020 to get information about the upcoming research topics in the field and maintain contact with potential partners for EU project proposals. The platform became also the key partner in the Built4People PPP initiative initiated by the European Commission.



EuroACE and the Renovate Europe campaign. REHVA is following the activities of [EuroACE](#) and the Renovate Europe Campaign run by the organisation. Adrian Joyce, General Director of EuroAce was invited as speaker to the 2020 Brussels Summit policy conference on the Renovation wave. Anita Derjanecz, was invited as speaker on the [EuroACE Webinar](#): "A Breeze of Fresh Air? Ensuring Improved Indoor Air Quality is delivered via the Renovation Wave?" talking about the role of IAQ and healthy building in the implementation of the renovation wave.



[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 and submitted a joint proposal to create and Erasmus+ Knowledge Alliance that was not approved. In 2020, REHVA continued to work on a new submission to foster new trends in engineering education and innovating engineering careers.



Co-operation with global MoU partners

REHVA cooperates with [sister associations](#) beyond Europe to facilitate knowledge exchange at a global scale, and to spread European engineering knowledge, HVAC technologies and standards in the world. REHVA has global partners in India, China, Korea, Japan, North and South America. The COVID-19 pandemic had a negative impact on the cooperation with MoU partners, as key events where we meet them were cancelled.

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



REHVA was represented by Frank Hovorka at ACREX India 2020 in New Delhi, India. REHVA representatives were also involved in several institutional meetings with ISHRAE, aiming to foster and to further strengthen the exchange of knowledge between Europe and India, by the set-up of new REHVA-ISHRAE initiatives and by the enhancement of the existing ones.

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 and published a joint guidebook on IAQ in schools. (see more details in the chapter "Seminars and conferences at trade shows and industry fairs" on page 44).

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

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.



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

A MoU was signed between FAIAR and REHVA on 26 September 2018.



Indoor Environmental Quality – Global Alliance (IEQ-GA)

In 2019, the IEQ-GA registered in Brussels an association (AISBL) to enable further development of the organisation in a formalised way. IEQ-GA has six founding full members (AIHA, AiCARR, AIVC, ASHRAE, IAQA, ISHRAE and REHVA). The founding members of the association represent professionals from various disciplines linked to indoor environment.



The current membership includes [10 full members](#) and [3 affiliate members](#) across the globe. They are committed to working together and promoting education, research and knowledge exchange at a global scale, developing standards, codes, guidelines, as well as advocating the well-being of the general public in indoor environments globally.

In 2020, the IEQ-GA created a COVID-19 task Force to exchange information about the COVID-19 response by the global partners.

REHVA continued to work as the secretariat of the association. REHVA office is taking care of the daily management of the IEQ-GA. Frank Hovorka is member of the IEQ-GA board, Jaap Hogeling serving the board as Secretary-Treasurer.

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.



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.



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



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



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



[IIR](#), International Institute of Refrigeration



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



TECHNOLOGY AND RESEARCH ACTIVITIES

The Technology and Research Committee (TRC) oversees activities related to the exchange of technical information, knowledge transfer and disseminating the latest technology developments, constituting the most important action field of REHVA.

In 2020, following the mandate termination of the TRC chairs, an election process was held online, where TRC core members voted for the re-election of Prof. Jarek Kurnitski as chair of the TRC, together with two new co-chairs: Ilinca Nastase (from Romania) and Guangyu Cao (from Norway). The newly elected co-chairs will have an active role on the developments of the committee in 2021 and assist on a closer coordination between TRC and PMC.

Development and dissemination of technical information: task forces, guidebooks and reports

In 2020, REHVA experts continued their voluntary work on several topics, even though particular attention was given to the developments on the COVID-19 guidance related activities that is detailed in the first chapter of this report. In 2020, the TRC coordinated the work of several Task Forces and published the updated "[GB11 - Air filtration in HVAC systems](#)" and four versions of its "[COVID-19 guidance document](#)" - along with other COVID-19 related outcomes. REHVA expresses its deepest gratitude to all the volunteers from its Member Associations and Supporter Companies for their indispensable contribution and support.

In 2020, REHVA had 8 Task Forces:

- REHVA COVID-19 response Task Force, chaired by Prof. Jarek Kurnitski
- Targeted Ventilation for Occupied Spaces (TVOS), chaired by Arsen Melikov
- nZEB Design Strategies for Residential Buildings in Mediterranean Regions Part II, chaired by Ahmet Arisoy
- Office buildings' EPC common scale, chaired by Martin Thalfeldt and Prof. Jarek Kurnitski
- REHVA - ISHRAE Indoor Environment and Energy Efficiency in Educational Buildings (GB 13), chaired by Livio Mazzarella
- Personalized Systems, chaired by Mariya Petrova Bivolarova and Ongun Berk Kazanci
- Indoor climate surveys and investigation procedures, chaired by Quan Jin
- Smart Buildings, chaired by Andrei Litiu and Ivo Martinac

In 2020, three New Task Forces were introduced in the TRC:

- Targeted Ventilation for Occupied Spaces (TVOS), chaired by Arsen Melikov
- REHVA COVID-19 response Task Force, chaired by Prof. Jarek Kurnitski
- Indoor climate surveys and investigation procedures, chaired by Quan Jin

EU policy monitoring, 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 and social media, 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 2020, REHVA monitored the following policy issues:

1. EPBD implementation with special focus on:
 - a. Promotion and dissemination of the new EPB standards
 - b. Smart Readiness Indicator
 - c. Renovation passport and building digital logbook
2. The EU Green deal with focus on:
 - a. The EU Green Recovery Plan
 - b. Renovation Wave Strategy
 - c. EU Taxonomy classification of sustainable investments
3. The European Parliament ITRE report on energy efficiency potential of the EU building stock (Cuffe report)
4. Eco-design and Energy labelling updates (including the EPREL database implementation)
5. Circular Economy
6. F-gas regulation implementation

In 2020, REHVA was focusing 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.

Smart Readiness Indicator

In 2020, the [final deliverables](#) of the 2nd SRI technical support study have been published along with the SRI legal acts that were adopted by the European Commission. TRC members were regularly informed about the major steps of the process and the details can be followed in the REHVA website Expert area.

REHVA continued to co-chair the so called "SRI Topical Group C" in 2020, which is a semi-formal group of stakeholders that work on a future SRI assessment method based on measured data and in use building performance. The main outcome was a [recommendation report](#) prepared with the support of REHVA TRC members and the involved stakeholders. This report also promotes the need for EU level coordinated training and certification of SRI assessors which may be relevant for REHVA and its Member Associations in the future. Many of these recommendations have also been inserted as copy-paste in the final report by the study team.

The operation of the Topical Group C group will continue beyond the termination of the 2nd SRI technical study in 2020 as part of an SRI platform to be formed in 2021 commissioned by the EC's DG Energy. The platform aims to support Member States during the upcoming National Testing phase starting in 2021 and to ensure exchange of information and involvement of all ongoing initiatives on this topic e.g., H2020 projects, IEA EBC Annexes, participation in EU projects and tenders.

European Parliament report on Maximising the energy efficiency potential of the EU building stock

The European Parliament (EP) published a draft report on "[Maximising the energy efficiency potential of the EU building stock](#)". The aim of such EP report is to drive the legislation related actions of the European Commission, in this case, the report targets the "Renovation wave" and the EU Green Deal of the von der Leyen Commission.

TRC expert developed comments that were submitted to ITRE shadow rapporteur Miapetra Kumpula-Natri (S&D) focusing on 3 issues: Indoor environment quality and energy renovation, Digitalisation and EPB standards. The ENVI committee was contributing with an Opinion on the same issue and [REHVA submitted comments](#) to the draft document to shadow-rapporteur MEP Romana Jerkovic [RAO]), stressing - among others - the need for binding minimum indoor air and environment quality criteria.

The [final report](#) was approved by overwhelming support (75% of the votes) in the EP plenary on 17 September 2020 and contains a section on Standards, skills, and healthy buildings emphasising among others that building renovation projects should always lead to healthy, mould-free buildings and always take into account IEQ. The ENVI opinion seconds the points adding a calling to raise air quality standards in line with WHO guidelines, and emphasises that these should also contribute to improving indoor air quality as well as thermal and visual indoor environmental quality.

The detailed information with the submitted documents and further briefings are available in the Policy Tracking section of the REHVA Expert Area.

European 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 2020, REHVA has been involved in nine H2020 projects and one 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](#)".

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 ran throughout 2020 with direct (AiCARR, AIIR, ATECYR) and indirect (AICVF, EKVU, ETE, SWEDVAC) involvement of REHVA Member Associations. TalTech developed a proposal for new EPC indicators. REHVA with the technical support of the EPB Center coordinated the collection of national level EPC-s and the use of the set of EPB standards. REHVA co-organised 2 web events: "[EUSEW 2020 policy session](#)" moderated by REHVA President Frank Hovorka and "[BuildUp portal webinar](#)" moderated by REHVA Managing Director Anita Derjanecz. A key output of the EUSEW 2020 policy session was a "[letter advising EU leaders how to prepare buildings for the energy transition](#)".

Website: <https://u-certproject.eu/>

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

TRI-HP project aims to develop and validate flexible energy-efficient and affordable trigeneration systems, 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 and during 2020 undertook actions for implementing an effective dissemination strategy.

Website: <https://www.tri-hp.eu/>



U-CERT
User-Centred Energy Performance
Assessment and Certification



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. QUEST was presented in the "[EUSEW policy session](#)" co-organised by REHVA on 18 June 2020.

Website: <https://project-quest.eu/>



BIM-SPEED project (Harmonised building Information speedy for Energy-Efficient Renovation), 2018-2022

BIM-SPEED aims to facilitate the EU-wide adoption of BIM in renovation by developing an open, affordable and reliable cloud-based BIM platform with a set of BIM tools and interoperability solutions integrates in a BIM platform with validated and standardised procedures for BIM-based activities throughout the whole renovation process. These solutions are tested and demonstrated in real cases.

The platform will be tested and promoted by a BIM-SPEED competition coordinated. REHVA is coordinating setup and organisation of the competition and will explore synergies between the BIM-SPEED project and TRC BIM task force.

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



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

The overall aim of TripleA-reno is to make acceptance and decision making on deep and NZEB 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. TripleAreno was presented to TRC experts to comment about the IEQ labelling scheme developed by the project.

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



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



CEN-CE finished in 2020, and set up a EU-wide large-scale qualification and training scheme for HVAC professionals related to the set of CEN EPB Standards. REHVA was involved in the development of the online learning management system of the certification scheme, as well as the wide scale dissemination and stakeholder involvement. The final results are featured both on the CEN-CE website and promoted on the [REHVA website](#). REHVA dedicated a [REHVA Journal thematic issue](#) to the CEN-CE outcomes, and organised a "[webinar on BuildUp portal](#)".

REHVA will explore the commercial exploitation of the scheme in cooperation with the EPB Center, relying also on REHVA Member Associations as potential training organisation for the roll-out at national level.

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

ALDREN project (Alliance for Deep Renovation in buildings), 2017-2020



The project was extended until September 2020 which allowed the consortium to develop more in-depth training webinars and strengthen dissemination efforts. ALDREN promoted and demonstrated a possible European Common Voluntary Certification Scheme (EVCS) focusing on deep renovation of non-residential buildings. TRC experts contributed to the definition of the EVCS criteria and methodology and the TAIL indicator for IEQ was presented at the 2019 Brussels Summit conference and in the REHVA Journal. In 2020, REHVA organised an event at the European Parliament (see on page 25)

In 2020, ALDREN organised a webinar introducing the 6 core modules and online training webinars for building professionals on how to use the ALDREN-EVCS, TAIL-Index and Building Renovation Passport. These webinars are available in the [REHVA knowledge base](#) and are also [available on BuildUp](#).

REHVA dedicated the August issue of the REHVA Journal to ALDREN featuring many technical articles about the final outcomes of the project.

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

hybridGEOTABS project (Model Predictive Control and Innovative system Integration of GEOTABS in hybrid Low grade Thermal Energy systems), 2016-2021



hybridGEOTABS develops and promotes an integrated solution of geothermal heat pumps combined with thermally activated building systems that will provide a near

optimal design strategy for the MPC GEOTABS concept, with model predictive control integrated design. The project ends in early 2021 and REHVA disseminated results on many occasions. In 2020, REHVA organised two webinars, one of them was also showed at 51st International HVAC&R Congress and Exhibition in Serbia. The final outcome is a design manual "*Renewable and Storage-integrated Systems to Supply Comfort in Buildings - Pre-Design and Control for hybridGEOTABS projects*" published early 2021.

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

EPC RECAST project (Energy Performance Certificate Recast: New toolbox to assess building energy performance and retrofit needs), 2020-2023



EPC RECAST developed a process and toolbox supporting the development, implementation and validation of a new generation of Energy Performance Assessment and Certification, with focus on residential buildings undergoing energy renovation. It aims at enhancing EPCs usability, reliability, and comparability at linking them to renovation roadmaps and building digital notebooks.

REHVA is responsible for the project's communication and dissemination with minor roles in the technical tasks. The project started end of 2021, there are no outcomes to report.

Website: <http://epc-recast.eu/>

EPB Center service contract, 2018-2021

REHVA has a subcontract with ISSO to help the dissemination of the EPB Center that aims to support the uptake of the energy performance of buildings standards. The summaries of related activities are reported under the section:

- 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.

Website: <https://epb.center/>

EDUCATION

REHVA Student Competition

Each year, REHVA awards students from its Member Associations during the REHVA Student Competition. Bachelor or Master students nominated by each Member Association can compete presenting their thesis on indoor environmental quality, energy balance, heating/cooling/ventilation systems, building services or any other topic directly related with REHVA's activity.

Under the leadership of Manuel Gameiro da Silva, REHVA Vice-President, the REHVA Student Competition was held online due to the current situation on 11 January 2020. An impressive pool of talents presented their thesis to the Jury. They were congratulated for the overall quality of the works presented and the resilience of the students to present in such conditions.

REHVA thanks its sponsor [Eurovent Certita Certification](#) for their loyal support to this competition once again.

Sixteen candidates representing fourteen countries (Czech Republic, Denmark, Estonia, France, Italy, Latvia, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, The Netherlands and Turkey) were in competition; Denmark and Turkey being represented by a team of two students.

The Jury was composed by Manuel Gameiro da Silva (Portugal), Francis Allard (France), Murat Çakan (Turkey), Ivan Chmúrny (Slovakia), Robert Gavriluc (Romania), Karel Kabele (Czech Republic), Ivo Martinac (Sweden) and Jorma Säteri (Finland).

After intense deliberation, the jury declared **Maaïke Leichsenring** from The Netherlands as winner for her work on *"Flow Visualization of Ammonia inside a Corrugated Plate Heat Exchanger Condenser"*. The second prize was awarded to **David Stanek** from the Czech Republic for his work on *Reuse of waste heat from IT equipment* and the third prize was awarded to **Asur Pablo Menéndez Inchusta** from Spain for his work on *Experimental characterization of a transcritical CO₂ vapor compression system with thermoelectric subcooling*.



1st place:
Maaïke Leichsenring
The Netherlands



REHVA
STUDENT COMPETITION



2nd place:
David Stanek
Czech Republic



3rd place:
Asur Menéndez Inchusta
Spain

A new award was established, in the form of a Best Poster award, which was given also to **Maaïke Leichsenring** (The Netherlands).

Manuel Gameiro da Silva thanked all contributors for their excellent work, emphasized the high quality of the works presented and the members of the jury for their excellent task.

On Wednesday 21 April 2021, during the closing ceremony of "[Cold Climate HVAC & Energy 2021](#)", Manuel Gameiro da Silva, Chair of the REHVA Education and Training Committee and the jury, together with Erick Melquiond, the CEO of our sponsor, Eurovent Certita Certification, will organise a virtual ceremony where the winner will present her paper and all three awardees will receive a financial reward from our sponsor. All students have already received an electronic certificate of participation. The winner will also receive the trophy cup.



REHVA World Student Competition

Due to the COVID-19 pandemic, the HVAC World Student Competition is postponed till April 2021 and will be held online. REHVA expects to have our six MoU partners (ASHRAE, CAHVAC, FAIAR, ISHRAE, SAREK and SHASE) participating and delegating candidates to this competition. REHVA will delegate the winner of the 2020 REHVA Student Competition, **Maaïke Leichsenring** (Delft University of Technology, the Netherlands), who will represent Europe in the contest.

REHVA Community of Young Professionals

The REHVA Community of Young Professionals will be facilitating professional activities and knowledge exchange between young professionals (below 35 years) in the fields of indoor climate management, HVAC and building services. We reach out first to former participants of the REHVA student competition and invite them to join our initiative.

REHVA is committed to advancing its programs and services for young engineers, helping them build their professional foundations and carrier. REHVA organises courses for students and young professionals and promotes their participation in the REHVA network event by discounts. The CLIMA World Congresses are inviting young researchers to submit abstracts. If students team-up and purchase REHVA guidebooks, they receive a significant discount.

REHVA will support the joint activities defined later together with the community members and offer advantages relying on the existing REHVA knowledge sources and services, such as free or discounted access to REHVA guidebooks, events and trainings, publication possibility in the REHVA Journal, specific sessions at REHVA events for the community. Our aim is to create an online community and information hub tailored to the interest of community members.

REHVA EVENTS

The COVID-19 pandemic had its hard toll also on the events in 2020. Most industry fairs were cancelled and other events had to move online. REHVA invested in an online event tool that was used for the REHVA Brussels Summit conference. However, shifting to high quality digital events will need more investment and new skills.

REHVA Brussels Summit 2020

Due to the COVID-19 pandemic, the 2020 edition of the Brussels Summit moved online and adapted its structure. This exceptional online event brought together HVAC experts from REHVA Member Associations, Supporter Companies and global MoU Partners with EU stakeholders involved in the building sector. The internal meetings along the whole week were complemented by [2 online conference sessions](#): a technical seminar on COVID-19 and an EU policy session on the Renovation wave that attracted together a record number of over 500 participants.



REHVA Committee Meetings

The REHVA committee meetings and the plenary meeting of Member Associations took place online along the whole week. They discussed the COVID-19 guidance and a range of ideas on future activities, including new Task Forces and how to develop knowledge dissemination and REHVA products to increase the visibility of REHVA. The Technology & Research Committee re-elected Jarek Kurnitski as Chair, and elected 2 co-chairs: Guangyu Cao (NORVAC, Norway) and Ilinca Nastase (AIIR, Romania). The Publishing and Marketing Committee meeting discussed new publications and how to boost digital knowledge dissemination, followed by presentations by the staff on sales and online marketing performance. In the Education Committee meeting, participants shared ideas on how to organise the REHVA Student Competition, which has to be organised online in January 2021 due to the pandemic. Participants learned also about the first experiences and future development of the REHVA COVID-19 Course.

To adapt the traditional full-day conference to a digital event, the Brussels Summit Conference was shortened and split in two separate online sessions: a technical seminar on COVID-19 and a high-level EU policy session about the Renovation wave, which is detailed in the European public affairs section on page 27 .

Technical Seminar on "Impact of COVID-19 on HVAC and building operation"



Figure 11. Speaker panel of the Technical Seminar, REHVA Brussels Summit 2020.

The Technical Seminar focused on the impact of COVID-19 on the building operations with an excellent line-up of speakers. After the opening by REHVA President, Frank Hovorka, the speakers discussed solutions in the HVAC and building sector facing the unprecedented challenge of the current pandemic. Experienced speakers covered research, good practices and innovations that emerged from the crisis with a focus on practical implementation.

Lidia Morawska, director of the International Laboratory for Air Quality and Health in Queensland University of Technology and director of the WHO Collaborating Centre for Air Pollution and Health gave a keynote lecture with the title *"Buildings and Us: what we learned from COVID-19 and what will change"*. Prof. Morawska presented case studies on airborne transmission from scientific papers showing the importance of ventilation in the case of Sars-Cov-2.

Professor Jarek Kurnitski, chair of the REHVA TRC and the COVID-19 Task Force talked about *"HVAC research & technology trends emerging after the COVID-19 pandemic"*, presenting parameter to assess infection risk in buildings with insights on the REHVA calculation tool, and covered some technologies that are particularly relevant in handling the pandemic, like targeted ventilation solutions highlighting future research needs.

Hywel Davies, Technical Director at CIBSE presented the CIBSE guidance on how to re-occupy and use buildings safely during the pandemic, introducing some necessary actions and measures to consider before buildings are occupied again after a longer lockdown and in the pandemic.

Atze Boerstra, REHVA Vice President focused on COVID-19 guidance based on case studies from specific space types, introducing common findings from viral infection cases in different indoor spaces without adequate ventilation and higher infection risk.

Tarja Takki-Halttunen, Co-owner and Vice Chair of Halton Group rounded up the seminar with her presentation on *"HVAC solutions & innovation for safe indoor environment in a pandemic"* covering risk assessment using case study examples and gave an overview of existing tailored ventilation, air distribution and air treatment solutions that became important in the pandemic.

Seminars and conferences at trade shows and industry fairs

REHVA participated in AIRVent, 12 February 2020, Moscow, Russia

On 12 February, the International Ventilation Congress AirVent ran successfully already in the third time within the Aquatherm Moscow exhibition. The event brought together designers and business professionals, engineers and architects on the one platform, which allowed to exchange technical information, new ideas and discuss the latest achievements in the field of engineering equipment of buildings of the future.

The Congress was supported by the largest professional associations and organisations: Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA), Eurovent, CCHVAC.

Frank Hovorka, President of REHVA gave the speech *"Improving the reliability of buildings' sustainability data and their integration in financial risk analysis and decision-making"*.



REHVA-ISHRAE Joint Seminar, 28 February 2020, ACREX 2020, New Delhi, India

The only event that happened as usual with physical presence was ACREX 2020. On the second day of the ACREX show, REHVA and ISHRAE organised a joint seminar on "*Low Energy Cooling and Occupants Health*". The seminar shed light on different aspects of low energy cooling technologies, including passive cooling, radiant cooling and filtration technologies for health and well-being, presenting both design principles and applicative examples from the design and operational perspective. A rich panel of Indian and international experts from various professional and academic backgrounds have shared with the ACREX 2020 audience the latest findings on the topic. Speakers from ISHRAE and REHVA (Nivedita Jadhav, Frank Hovorka and Jaap Hogeling) provided the seminar attendees with interesting insights on efficient cooling technologies and the balance with the high performances in energy use and building occupants well-being.



REHVA and ISHRAE delegation meeting at ACREX 2020 in Delhi.

EPB Center at ACREX 2020, 29 February 2020, New Delhi, India

On request of ISHRAE and IIBEEPS, a one-day seminar on "*The set of EN and EN ISO Energy Performance Buildings standards: basis for the EP assessment and certification of buildings*", was organised and moderated by EPB CENTER (Jaap Hogeling) to discuss and share the content of the set of EPB standards and to demonstrate the performance based approach and connected holistic approach of these European standards.

REHVA representation at Members' events

- Virtual 14th TTMD Symposium, 1-3 June. *REHVA was represented by Frank Hovorka, Catalin Lungu, Jaap Hogeling and Jarek Kurnitski*
- Virtual AIIR Webinar, 29 July. *REHVA was represented by Catalin Lungu and Manuel Gameiro da Silva*
- CIBSE Technical Symposium 2020, 14-15 September. *REHVA was represented by Atze Boerstra*
- 37th AICVF General Assembly, La Rochelle, France, 25 September. *REHVA was represented by Frank Hovorka*
- Virtual KGH 51st International HVAC&R Congress and Exhibition: the Serbian HVAC&R Virtual Congress, 2-4 December. *REHVA was represented by Frank Hovorka*

Exhibitions

REHVA is endorsing international fairs and exhibitions of the HVAC and construction sector each year, to promote our publications and expertise. During the year 2020, many events were cancelled, postponed, or organised virtually or hybrid according to the current situation of the pandemic:

- AHR Expo, Orlando, USA, 1-5 February
- Aquatherm Moscow 2020, Moscow, Russia, 11-14 February
- ACREX 2020, New Delhi, India, 27-29 February
- WSED, Wels, Austria, 27 February - 1 March
- NSB 2020 Building Physics Conference, Tallinn, Estonia, 7-9 September
- BuildSim Nordic 2020, Oslo, Norway, 13-14 October
- Indoor Air 2020, online, from 1 November

COOPERATION WITH SUPPORTER COMPANIES

In 2020, REHVA launched a survey among supporters to evaluate overall satisfaction and define new ways of cooperation and communication. Anita Derjanecz, REHVA Managing Director, had also round calls with supporter companies early in the pandemic to collect their first insights about the impact on the HVAC sector and expectation on future business and technology trends as a result of the pandemic. The outcomes of both surveys were presented at the Supporters Committee of the Annual Meeting on 11 May. At the Supporter Reunion in November, we identified the topic resource efficiency and circularity in the HVAC sector of common interest to follow in 2021.

In 2020, REHVA commemorated the 20th anniversary of EPEE and the 60th anniversary of Granlund. This happened unfortunately only virtually at the Annual Meeting's Supporter Reunion and with executive interviews featuring [Andrea Voigt, Director General and Juergen Fischer, Chair of EPEE](#) and [Jukka Vasara, Granlund Vice-president](#) and dedicated to the two organisations in the REHVA Journal.

Smay had an interview with Juan Travesi, REHVA Vice-President and Supporters Committee Chair about the health and IAQ in buildings in light of the pandemic and the resulting trends in the HVAC sector. The interview was [published in Polish](#) in a feature magazine of Smay.

Anita Derjanecz was invited as speaker at the "[2020 LG Innovation Days](#)" to talk about the importance of IAQ, policy and business trends around healthy buildings.



Figure 12. word cloud, 3 most appreciated REHVA activities & values, Supporter survey 2020.

The cancellation of key industry fairs that are usual meeting opportunities with supporters had a negative impact on the interaction with them. Therefore, REHVA launched bilateral meetings to discuss about the impact of COVID-19 crisis and how to improve cooperation in the future. The first meetings with FläktGroup, Granlund started in 2020 and will continue in 2021.

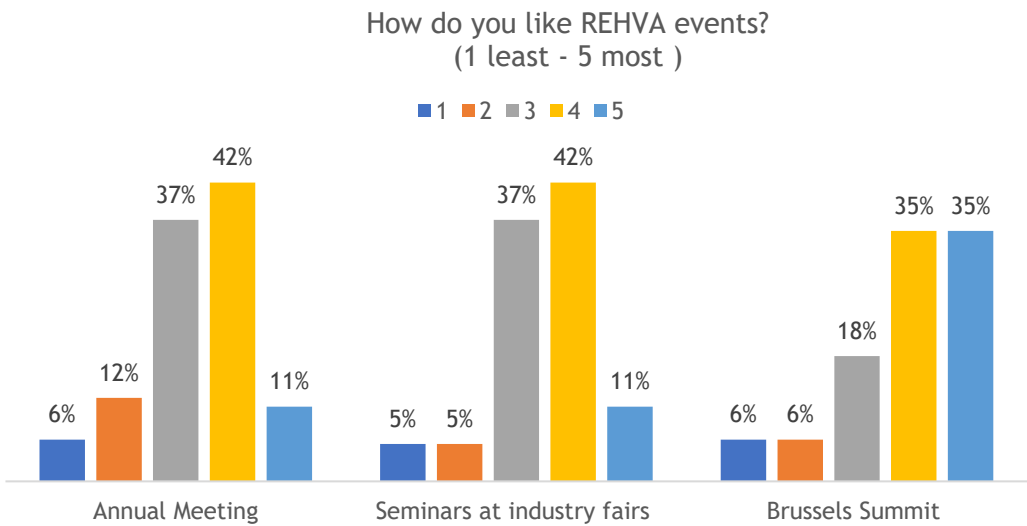


Figure 13. Satisfaction with REHVA events, Supporter survey 2020.

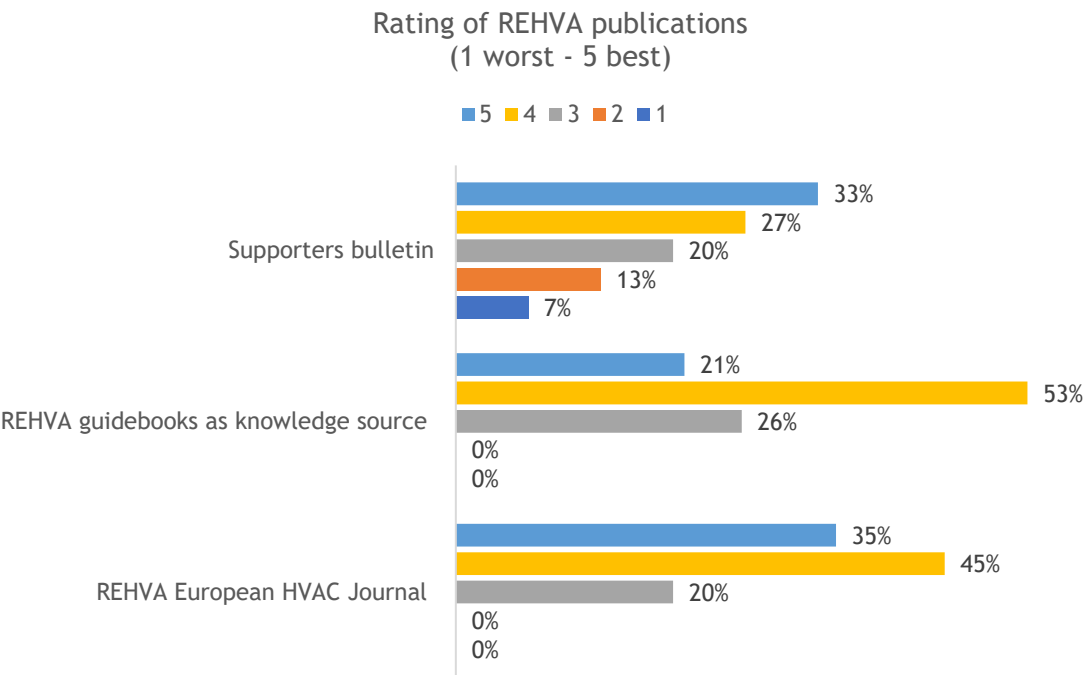


Figure 14. Satisfaction with REHVA publications, Supporter survey 2020.

FELLOWS AND AWARDS

Fellows

REHVA has granted the status of REHVA fellow in the year 2020 to **Tuba Bingöl Altıok** (TTMD - Turkey) and **Ole Teisen** (Danvak - Denmark).

During the online General Assembly, Frank Hovorka congratulated them and they have received electronically a memorial certificate. They have now 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.



**Tuba Bingöl
ALTIOK**
TTMD
Turkey



Ole TEISEN
Danvak
Denmark



Awards

The awardees were invited to join the online General Assembly and Frank Hovorka congratulated them individually.

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 an electronic REHVA Award.

Adileno Boeche (AiCARR - Italy) and **Akdeniz Hiçsönmez** (TTMD - Turkey) received a *REHVA professional award in design* and were recognized for their outstanding achievements in the design of HVAC systems and for their contributions to improve energy efficiency and the indoor environment of buildings.

Jana Peráčková (SSTP- Slovakia) received a *REHVA professional award in education* and was recognized for her outstanding academic achievements and for her contribution to improve energy efficiency and the indoor environment of buildings.

Alberto Cavallini (AiCARR - Italy) received a *REHVA professional award in science* and was recognized for his outstanding achievements in science and for his contribution to improve energy efficiency and the indoor environment of buildings.

Francesco Franchimon received a *REHVA recognition award* and was recognized for his substantial contribution and commitment to the REHVA COVID-19 Task Force providing crucial guidance to HVAC professional and public health officials on the safe operation of buildings during the pandemic.

Danvak handed out two REHVA Awards at the occasion of their Danvak Dagen 2020 which took place on 1 September in Copenhagen, Denmark.

Ole Teisen received a *REHVA professional award in education* and was recognized for his outstanding academic achievements and for his contribution to improve energy efficiency and the indoor environment of buildings.

Hicham Johra from Aalborg University received a *REHVA Young Scientist Award* and was recognized for his outstanding scientific achievements and for his contribution to improve energy efficiency and the indoor environment of buildings.

Frank Hovorka handed over to French colleagues of AICVF two REHVA Awards on the occasion of their General Assembly which was held on 25 September in La Rochelle, France.

Christian Feldmann received a *REHVA professional award in technology* and was recognized for his outstanding achievements in technology and for his contributions to improve energy efficiency and the indoor environment of buildings.

Julien Berger received a *REHVA Young Scientist Award* and was recognized for his outstanding scientific achievements and for his contribution to improve energy efficiency and the indoor environment of buildings.



From left: Michel Duclos, President of AICVF, Francis Allard, Christian Feldmann, Julien Berger and Frank Hovorka

SUMMARY OF REHVA AWARDS IN 2020

Professional Award in DESIGN



Adileno BOECHE
AiCARR
Italy



Akdeniz HIÇSÖNMEZ
TTMD
Turkey



Professional Award in EDUCATION



Jana PERÁČKOVÁ
SSTP
Slovakia



Ole TEISEN
Danvak
Denmark



Professional Award in SCIENCES



Alberto CAVALLINI
AiCARR
Italy



Professional Award in TECHNOLOGY



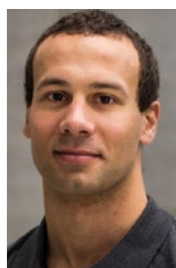
Christian FELDMANN
AICVF
France



YOUNG SCIENTIST Award



Julien BERGER
AICVF
France



Hicham JOHRA
Danvak
Denmark



Award of RECOGNITION



Francesco FRANCHIMON
the Netherlands

REHVA ADMINISTRATION

General Assembly

The 64th General Assembly was exceptionally held online on 18 May 2020.

Frank Hovorka opened the REHVA General Assembly thanking all for being so numerous online. That was probably the first time in the history of REHVA when we didn't meet face-to-face.

The General Assembly approved the annual report and the accounts of the year 2019 as well as the budget for 2020 and the preliminary 2021 budget. 25 out of the 27 Member Associations were present at the 64th General Assembly. The quorum needed to vote (half of the Members present or represented) was met. One Member Association was excused. One Member Association was neither present, nor represented. 44 representing these 25 Member Associations attended the General Assembly.

The President, Frank Hovorka, asked the General Assembly if they accepted the resignation of the Croatian Member, HKIS. The reason why they will no longer be a Member of REHVA is that the field of HVAC is only one of many areas where HKIS (Croatian Chamber of Mechanical Engineers) is involved and that the specific domain of HVAC would be better represented by an organisation that focuses on this subject area. The General Assembly accepted with unanimity of votes cast the resignation of HKIS.

Board Meetings

Seven board meetings were held in 2020. All were organised via WebEx because of the pandemic on 21 January, 25 March, 15 May, 9 and 17 July, 9 September and 6 November.

Standing Committee Members

In 2020, 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 31/12/2020):

Awards Committee

- **Chair:** Frank Hovorka, France
- Francis Allard, France
- 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
- Francis Allard, France
- Edith Barna, Hungary
- Marianna Brodach, Russia
- Murat Cakan, Turkey
- Tiberiu Catalina, Romania
- Ivan Chmurny, Slovakia
- Francesca R. d'Ambrosio, Italy
- Egils Dzelzitis, Latvia
- Robert Gavriluc, Romania
- Frank Hovorka, France
- Karel Kabele, Czech Republic
- Targo Kalamees, Estonia
- Risto Kosonen, Finland
- Catalin Lungu, Romania
- Zoltan Magyar, Hungary
- Joris Mampaey, Belgium
- Saso Medved, Slovenia
- Birgit Müller, Germany
- Uwe W. Schulz, Switzerland
- Marija Todorovic, Serbia
- Juan Travesi, Spain
- Rafael Vazquez, Spain
- Cas Wegman, The Netherlands
- **Secretary:** Nathalie Wouters

Publishing and Marketing Committee

- **Chair:** Francesca R. d'Ambrosio, Italy
- **Co-Chair:** Kemal Gani Bayraktar, Turkey
- Anna Bogdan, Poland
- Marianna Brodach, Russia
- Tiberiu Catalina, Romania
- Christian Feldmann, France
- Jaap Hogeling, the Netherlands
- Frank Hovorka, France
- Karel Kabele, Czech Republic
- John Lens, the Netherlands
- Siru Lonnqvist, Finland
- Birgit Müller, Germany
- Olaf Oosting, the Netherlands
- Rafael Vasquez, Spain
- **Secretary:** Nicoll Marucciova

Supporters Committee

- **Chair:** Juan Travesi, Spain
- Ilari Aho, Finland
- Mikael Börjesson, Sweden
- Ioan Silviu Dobosi, Romania
- Jaap Hogeling, the Netherlands
- Frank Hovorka, France
- Bengt Johanssen, Finland
- Henk Kranenberg, the Netherlands
- John Lens, the Netherlands
- Monica Marza, France
- Livio Mazzarella, Italy
- Erick Melquiond, France
- Michael Mieszczanski, Belgium
- Panu Mustakallio, Finland
- Olaf Oosting, the Netherlands
- Leonardo Prendin, Italy
- Naci Sahin, Turkey
- Christian Schauer, Germany
- Morten Schmelzer, Czech Republic
- Marc Thuillard, Switzerland
- Andrea Voigt, Belgium
- **Secretary:** Anita Derjanecz

Technology & Research Committee

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

In Memoriam



Donald Leeper, Vice-president 2008-2011, passed away in April 2020, a victim of COVID-19. His career spanned half a century, as did his service to CIBSE, BSRIA, the Construction Industry Council and REHVA.

Donald served on the board of REHVA from 2008 to 2011. He was particularly involved in the elaboration of REHVA's 5-year strategic plan presented at CLIMA 2011 in Antalya. We keep in mind a strong member of the board, who really contributed to REHVA's goals, aims and objectives with a great professionalism and a very strong ethical approach.

We shall remember Donald as a highly skilled professional, promoting our domain with a strong conviction, one of the personalities we only had a chance to meet via REHVA and whom we all benefitted from.



Prof. Ștefan Stănescu passed away at the end of October. REHVA and its members remember him not only for his professionalism but most importantly for his kind heart and friendliness. He had received a REHVA Professional Award in Design in 2019.



Celal Okutan has passed away late December. He was the founding president of TTMD, Honorary President and he had received a REHVA Professional Award in Design in 2007.

REHVA Office

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

In 2020, REHVA said farewell to some colleagues and welcomed new ones.

Camilla Bordin, Junior Marketing and Promotion Assistant (from October)

Anita Derjanecz, Managing Director

Alexandre Dziergwa, Junior Communication Assistant (from October)

Giulia Marengi, Project Communication Officer (till September)

Nicoll Marucciová, Marketing & Knowledge Dissemination Officer (since January)

Rebeka Marsnjak, EU Policy & International Relations Officer (till February)

Spyridon Pantelis, Assistant Project Engineer

Jasper Vermaut, Project Communication and Promotion Officer (from October)

Nathalie Wouters, Office and Membership Manager



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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 Ventilatingsnijverheid 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



[EKVÜ](#), the Estonian Society of Heating and Ventilation Engineers, ESTONIA



[ETE](#), complex society of building experts with a special section for heating, ventilating, air-conditioning, HUNGARY



[MMK](#), Magyar Mérnöki Kamara (Hungarian Chamber of Engineers), HUNGARY



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



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, Norwegian Society of HVAC Engineers, NORWAY



ORDEM
DOS
ENGENHEIROS

ORDEM DOS ENGENHEIROS, Portuguese Association of Engineers, PORTUGAL



PZITS, Polskie Zrzeszenie Inżynierów i Techników Sanitarnych, POLAND



SITHOK, Slovenian Association of Engineers for Cooling, Heating and Air Conditioning Technologies, 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 Organisation, 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



[Purmo Group](#), Finland - Sustainable indoor climate comfort solutions, specialised in heating and cooling solutions



[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



[Smay](#), Poland - Consulting and production company who provides the solutions and devices in the range of ventilation



[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



[Velux](#), Denmark - Producers of installation technology for the sanitation and heating sector



[Viega](#), Germany - Internationally operating market leader of products covering the entire installation technology sector.

ANNEX 3: REHVA ASSOCIATE ORGANISATIONS



[Enerbrain](#), Italy - Improvement of financial performance, indoor comfort and environmental sustainability of buildings.



REHVA

Federation of European Heating, Ventilation
and Air Conditioning Associations

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REHVA is The Federation of European Heating, Ventilation and Air Conditioning associations founded in 1963. We are an umbrella organisation that represent over 120 000 HVAC designers, building services engineers, technicians and experts across 26 European countries.

REHVA provides its members with a strong platform for international professional networking and knowledge exchange, pursuing the vision of improving health, comfort, safety and energy efficiency in all buildings and communities. REHVA contributes to technical and professional development, follows EU policy developments and represents the interest of its members at EU level and globally.

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

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