



# 2024 ROOMVENT CONFERENCE

**Healthy air together - where scientific and industrial advances meet the needs of society**

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APRIL 22-25 2024, STOCKHOLM, SWEDEN

[roomvent2024.com](https://roomvent2024.com)

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## PROGRAM



# Welcome to RoomVent 2024

One of the world's most important conferences in ventilation and indoor climate takes place at the Nordbygg trade fair in Stockholm April 22 – 25, 2024.



Britta Permatz, Svensk Ventilation och Jaana Petherbielke, EMTF.

This year's conference is unique, due to the conscious choice to combine industry and science to create a meeting place for science as well as business and politics. RoomVent 2024 is a place where researchers, engineers and consultants, decision makers, property owners and designers, developers and property managers get in touch with each other to meet society's needs and new challenges together.

– This year we are gathering around 300 professionals from all over the world, who address a variety of current issues in indoor climate, ventilation, energy efficiency and thermal comfort. The topics deal with tasks such as preventing spread of infection and fire as well as ensuring good indoor environments in

schools and public buildings, says Jaana Petherbielke, CEO EMTF.

RoomVent provides an exclusive opportunity to share and disseminate technical information and new ideas, and to discuss the latest developments and future directions for HVAC, energy use, indoor climate and the built environment.

– RoomVent2024 is a good opportunity to raise crucial questions about the importance of ventilation, says Britta Permatz, CEO Svensk Ventilation.

It is about the importance of minimized environmental impact, resource savings, control and cost savings. Above all, a good indoor climate, which makes people healthier and lower spread of infection.

– There is a lot to be gained by taking a much closer look at ventilation systems when dealing with the urgent challenge of energy efficiency and cost savings, she says.

EMTF and Svensk Ventilation also have a stand together at the trade fair Nordbygg. There you find the Indoor Climate Scene, RoomVent Arena, with a solid program with industry experts as lecturers. Some lecturers from RoomVent will also spread the conference's message in short talks on the Indoor climate scene. There will be plenty of time and opportunities to visit the fair during lunch breaks.

## Scientific keynote speakers



**Professor Jarek Kurnitski**

TalTech - Tallin University of Technology, Estonia



**Professor Angui Li, PhD**

Xi'an University of Architecture and Technology, China



**Dr. Paula Olsiewski, PhD**

Johns Hopkins Center for Health Security



**Dr. Andrew Persily**

U.S. National Institute of Standards and Technology (NIST), USA



**Professor Runa T. Hellwig**

Aalborg University, Denmark



**Professor Chandra Sekhar**

National University of Singapore

## Industrial keynote speakers



**Dr. Lyad Al Attar**

Cranfield University



**Tobias Zimmer,**

VP Global Product Management and International Standards. Camfil



**Prof. Philomena Bluysen,**

Technical University Delft

## Sponsor statements



The decision to become one of the main sponsor for RoomVent is based on our principles of protecting "People, Processes, and our Planet." We believe that collaboration

between industry and research, promoting innovation and progress, is crucial. We aim to raise awareness about indoor air quality and promote development, says Ola Skoglund, Director of Marketing at Camfil.

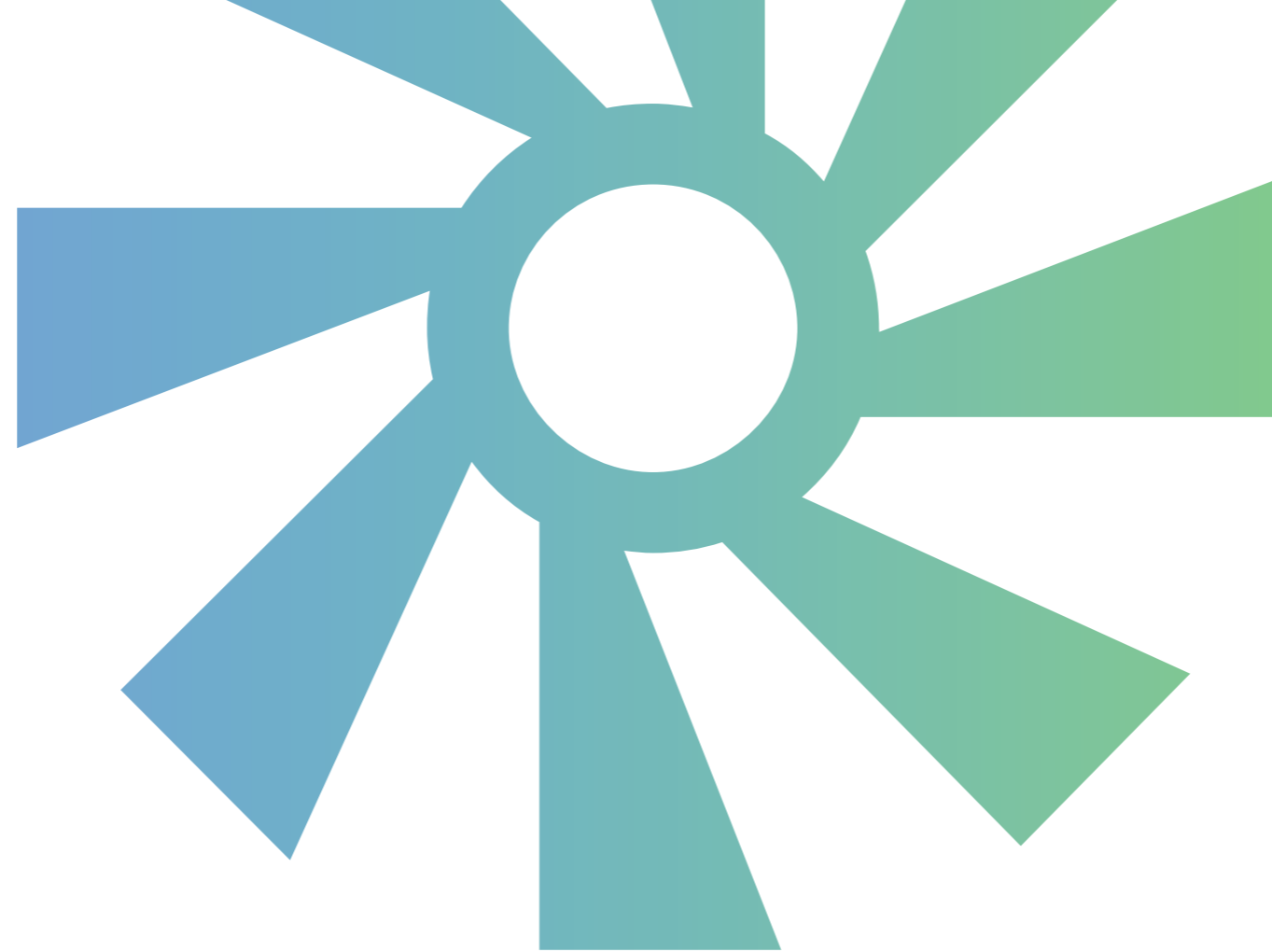
*Camfil was founded in 1963 and is today a global company in the field of filter technology for commercial and industrial air filtration systems and dust separation. Their vision, that clean air should be a human right, has guided the development of their products and services. With approximately 5600 employees worldwide, they have their headquarters in Stockholm.*



The importance of participating, according to Åsa Norén Lundh, lies in making the invisible visible. Although indoor climate may not always be visible, it is crucial for health and well-being. Swegon

aims to use their expertise to emphasize the importance of good IEQ, energy efficiency, and low environmental impact. They invest in energy efficient products that measure and visualize indoor climate quality, empowering individuals to take control of their environment and ensure its optimal condition.

*Swegon is one of the leading suppliers in the field of indoor environment. Their purpose is to enable healthy and comfortable indoor environments for people to be at their best, now and in the future. Swegon has a long history in the indoor environment, with roots dating back to 1932. Their commitment to quality and innovation has defined them since then. Over the years, they have experienced steady growth, expanding their range and reach.*



We are proud to be a main sponsor for RoomVent and believe that Nordbygg is an optimal venue for us to be represented, says Annika Ahlstrand, Director of Marketing and Communication at Systemair.

For us, RoomVent represents an opportunity to share our 50 years of experience and deep industry knowledge. We look forward to raising awareness about the importance of indoor climate and clean air. Gathering industry researchers for several days in one place provides us with an outstanding opportunity to exchange ideas, present new research, and promote innovations.

*Systemair is a prominent ventilation company with a global presence in over 50 countries. With approximately 6,600 dedicated employees, they strive to improve indoor climate by offering energy-efficient and sustainable products that reduce carbon dioxide emissions.*



Innovative ventilation solutions applicable in other countries is a key motivation for us, says Anders Freyschuss, CEO of Bevent Rasch. We are looking forward to engaging in the latest ventilation research and

actively participating in discussions about their technological innovations. Considering Sweden is a small country but with many significant international companies in the industry, we believe it is crucial to be visible in these research environments.

*Bevent Rasch is part of the family-owned conglomerate Hydria Group. With nearly 100 years of experience, the goal remains to actively contribute to and lead the development, providing solutions that enhance ventilation at every stage. They generate approximately 300 million in revenue within the ventilation sector in Sweden and Norway. The specialization lies primarily in fire ventilation, dampers, hoods, and ventilation systems for commercial kitchens.*

**EPD**  **NORDBYGG ROOMVENT STAND K02:21**

**MAINTAIN A WORLD-CLASS INDOOR CLIMATE AND SAVE ENERGY AT THE SAME TIME!**

Contact us today and we'll tell you more!  
[info@lindinvent.se](mailto:info@lindinvent.se)

**LINDINVENT**



### We operate in the area of indoor climate.

We always start from a holistic approach, where cooling, heating, ventilation and control and regulation technology work together and always with energy performance in focus both from a service and installation perspective.



OUR VISION ...

**Our customers have the most energy efficient properties.**

CALL 08-764 50 00 OR VISIT [INDOOR.SE](http://INDOOR.SE)

## Scientific program committee

Members of the Scientific Committee has the responsibility to monitor and coordinate the review process, and to review some full manuscripts. As well as organize all contributions that will lead to the program of the conference.

### Australia

Richard de Dear  
Zhenjun Ma  
Lidia Morawska

### Canada

Ali Bahloul  
Mark Bomberg  
Leon Wang

### China

Shijie Cao  
Jing Hou  
Angui Li  
Wei Liu  
Yuexia Sun  
Tengfei Zhang  
Lei Zhao

### Czech Republic

Karel Kabele

### Denmark

Alireza Afshari  
Runa T. Hellwig  
Per Kvols Heiselberg  
Arsen K. Melikov  
Peter V. Nielsen  
Pawel Wargocki

### Estonia

Jarek Kurnitski  
Martin Thalfeldt

### Finland

Risto Kosonen  
Panu Mustakallio  
Olli Seppänen  
Aimo Taipale

### France

Mohamed El Mankibi  
Romain Guichard  
Alexandre Jenft  
Francois-Xavier Keller  
Wenjuan Wei

### Germany

Sabine Hoffmann

### Hong Kong

Yuguo Li  
Zhang Lin  
Jianlei Niu

### India

Jyotirmay Mathur

### Italy

Laura Carnieletto  
Michele De Carli  
Gian Vincenzo Fracastoro  
Marco Perino

### Japan

Kazuhide Ito  
Shinsuke Kato  
Tomohiro Kobayashi  
Ryozo Ooka  
Shin-ichi Tanabe  
Toshio Yamanaka  
Hiroshi Yoshino

### Netherlands

Philomena M. Bluysen  
Atze Boerstra  
Lada Hensen Centnerová  
Chujie Lu

### Norway

Amar Aganovic  
Guangyu Cao  
Laurent Georges  
Sverre Bjørn Holøs  
Hans Martin Mathisen  
Bjørn Reidar Sørensen  
Aileen Yang

### Portugal

Guilherme Carrilho da Graça  
Eusébio Conceição  
Manuel Carlos Gameiro da Silva

### Romania

Cristiana Croitoru

### Singapore

Chandra Sekhar  
Kwok Tham

### Sweden

Chanachok Chokwitthaya  
Jan-Olof Dalenbäck  
Itai Danielski  
Lars Ekberg  
Tomas Fagergren  
Kailun Feng  
Linda Hägerhed  
Dennis Johansson  
Alan Kabanshi  
Per Kempe  
Sarka Langer  
Bokai Liu  
Weizhuo Lu  
Mari-Liis Maripuu  
Caroline Markusson  
Magnus Mattsson  
Gireesh Nair  
Truong Nguyen  
Thomas Olofsson  
Theofanis Psomas  
Svein Ruud  
Sasan Sadrizadeh  
Puneet Saini  
Mats Gunnar Sandberg  
Mohsen Soleimani-Mohseni  
Despoina Teli  
Torun Widström  
Hongxia Zhou

### United Kingdom

Bert Blocken  
Maria Kolokotroni  
Catherine Noakes  
Christopher John Saunders  
Xudong Zhao

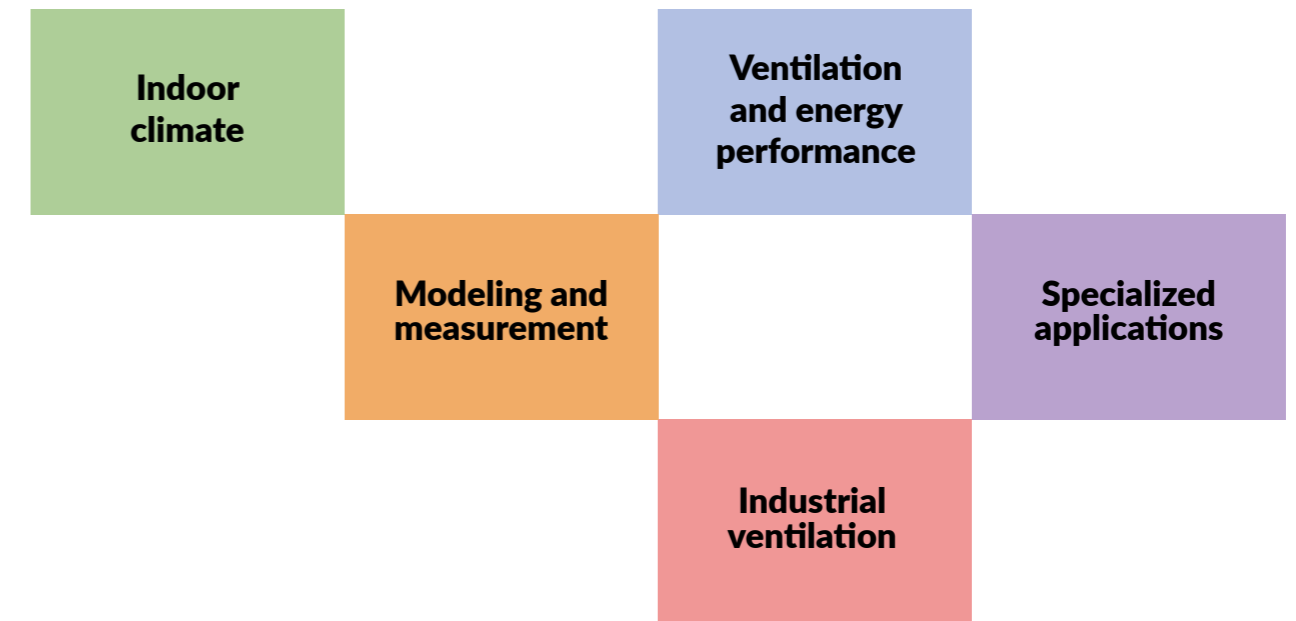
### United States

William W. Nazaroff  
Zhiqiang John Zhai

## Program overview

Five focus areas are on the agenda for the conference; indoor climate, ventilation and energy performance, modelling and measurement performance as well as industrial ventilation.

## Themes and session topics



**BEVENT RASCH**

## Visible Air System (VAS)

– Making the invisible visible

With our revolutionary Visible Air System, we take you to an entirely new level of air quality monitoring. Perfect for your restaurant kitchen or other commercial areas.

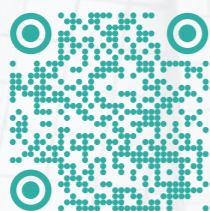
Visit us at RoomVent stand K02:25

# Making sustainability an easy choice

The well-being of our planet tomorrow depends on choosing sustainable solutions today.

Systemair's Green Ventilation product label is designed to guide you. To qualify, the products must meet clearly defined criteria for energy efficiency, indoor air quality, safety, global warming potential, and more.

Scan this code to see how this will benefit your projects!  
[systemair.com/greenventilation](https://systemair.com/greenventilation)



## Program

### Monday 22 April

17:00 - >> **Registration opens** (as in check-in, getting name tags - not signing up for the conference)

18:00 - 20.30 **Official opening of the conference and get-together with refreshments at Stockholmsmässan**

### Tuesday 23 April

**Room K1 | Room K2 | Room K11 | Room K16 | Room K12 | Room K15 | Room K13**

08:30 - >> *Continued registration, morning coffee*

09:00 - 09:30 **Introduction to the conference**

09:30 - 10:00 **Keynote speech, 1: Jarek Kurnitski: Post-COVID ventilation**

10:00 - 10:30 *Coffee break, chance to visit the conference exhibitors*

10:30 - 12:00	Session 1 <b>Indoor climate:</b> Health aspects 1	Session 2 <b>Indoor climate:</b> IAQ 1	Session 3 <b>Vent. &amp; Energy eff.:</b> Wind & natural vent. 1	Poster session 1	Workshop 1: Challenges related to Demand Controlled	Workshop 2: Understanding Requirements for Ventilation and IC
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12:00 - 13:20 *Lunch, poster viewing and chance to visit the exhibitors at Nordbygg as well*

13:20 - 13:50 **Keynote speech 2, Systemair, Iyad Al Attar: No one can expect extraordinary air quality from ordinary ventilation systems**

13:50 - 14:00 *Break*

14:00 - 14:40	Session 4 <b>Indoor climate:</b> Health aspects 2	Session 5 <b>Indoor climate:</b> IAQ 2	Workshop 3: Systemair	Session 6 <b>Vent. &amp; Energy eff.:</b> Wind & natural vent. 2	Session 7 <b>Modelling &amp; meas.:</b> Control & data usage	Students 1
14:50 - 15:30			Workshop 4: Bevent Rasch			

15:30 - 16:00 *Coffee break, chance to visit the conference exhibitors*

16:00 - 17:30	Session 8 <b>Indoor climate:</b> Health aspects 3	Session 9 <b>Indoor climate:</b> IAQ 3	Session 10 <b>Vent. &amp; Energy eff.:</b> Energy eff. 1	Session 11 <b>Modelling &amp; meas.:</b> Measuring	Workshop 5: Occupant Targeted Ventilation	Workshop 6: Ventilation and Air Distribution in Bedrooms	Students 2
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17:30 - 18:45 *Time off + transportation to the Vasa Museum, for those participating in the dinner*

18:45 - 21:30 **Special guided tour of the Vasa Museum + dinner there**



## We always aim higher to ensure clean indoor air.

Everything we do at Camfil is based on our vision that breathing clean air should be a human right. Ever since the start 60 years ago we base all our research and development on science and rigorous lab testing – this way we can guarantee the performance and compliance of our products, today and tomorrow.

Camfil plays a leading role in the development of standards and guidelines for our industry and we fully support the WHO recommendations on healthy indoor air. Through our *Chief Aironomics Officer* initiative and our involvement in the *Healthy Indoors Alliance*, we help companies and organisations everywhere to improve indoor air quality.

Together we protect people, processes and our planet!

[camfil.com](https://www.camfil.com)



Camfil is one of the main sponsors of RoomVent 2024. Join us & let's talk about energy efficient indoor air quality!

## Program

### Wednesday 24 April

	Room K1	Room K2	Room K11	Room K16	Room K12	Room K15	Room K13
08:30 - >>	Morning coffee						
09:00 - 09:30	Keynote speech 3, Angui Li: Advances in Attachment Ventilation - Theory, Design and Applications						
09:30 - 10:00	Keynote speech 4, Paula Olsiewski: Using Model Law to Promote Indoor Air Quality						
10:00 - 10:30	Coffee break, chance to visit the conference exhibitors						
10:30 - 12:00	Session 12 Indoor climate: Health aspects 4	Session 13 Indoor climate: IAQ 4	Session 14 Vent. & Energy eff.: Energy eff. 2	Poster session 2	Workshop 7: Ventilation effectiveness in the infection risk control	Workshop 8: Performance gap for ventilation in buildings	
12:00 - 13:20	Lunch, poster viewing and chance to visit the exhibitors at Nordbygg as well						
13:20 - 13:50	Keynote speech 5, Camfil, Tobias Zimmer: Clean Air a human right? – New WHO air quality guidelines and its impact on new guidelines for ventilation and filtration						
13:50 - 14:00	Break						
14:00 - 14:40	Session 15 Indoor climate: Health aspects 5	Session 16 Modelling & meas.: Modelling 1	Workshop 9: Camfil	Session 17 Vent. & Energy eff.: Humidity aspects	Session 18 Special applications		
14:50 - 15:30			Workshop 10: Silver sponsors				
15:30 - 16:00	Coffee break, chance to visit the conference exhibitors						
16:00 - 17:30	Session 19 Indoor climate: Pollution	Session 20 Modelling & meas.: Modelling 2	Session 21 Vent. & Energy eff.: Heat exchangers	Session 22 Technical articles: 1	Poster session 3	Workshop 11: Debate	
17:30 - 18:45	Time off						
18:45 - 21:30	Gala dinner in the Victoria Hall, at Stockholmsmässan						



Reference project Nodi, Gothenburg

We firmly believe that a good indoor climate is essential for human well-being and performance. It has been proven that good air quality increases individual productivity and reduces sickness absence. Swegon offers products and systems that make this possible. Together with our partners, we create solutions that are energy-efficient with the least possible environmental impact - but always with the focus on human beings.

Swegon – a manufacturer of world-class indoor climate systems and products.

**Join us at our stand at RoomVent 2024.**



## Program

### Thursday 25 April

	Room K1	Room K2	Room K11	Room K16	Room K12	Room K15	Room K13
08:30 - >>	Morning coffee						
09:00 - 09:30	Keynote speech 6, <b>Andrew Persily</b> : Ventilation Requirements in Educational Buildings and How to Know they are Actually Happening						
09:30 - 10:00	Keynote speech 7, <b>Runa T. Hellwig</b> : Appropriate indoor environmental control - Where are we and where do we want to be on the scale from automatic to personal control?						
10:00 - 10:30	Coffee break, chance to visit the conference exhibitors						
10:30 - 12:00	Session 23 Indoor climate: Thermal comfort 1	Session 24 Modelling & meas.: Simulation 1	Session 25 Industrial vent.:1	Poster session 4	Workshop 12: New perspective to analyze ventilation		
12:00 - 13:20	Lunch, poster viewing and chance to visit the exhibitors at Nordbygg as well						
13:20 - 13:50	Keynote speech 8, <b>Swegon, Philomena Bluyssen</b> : Understanding of indoor environment, occupants, interactions, and effects						
13:50 - 14:00	Break						
14:00 - 14:40	Session 26 Indoor climate: Thermal comfort 1	Session 27 Modelling & meas.: Simulation 2	Workshop 13: Swegon Workshop 15: Rise	Session 28 Industrial vent.: 2	Session 29 Technical articles: 2	Workshop 14: Energy and IEQ Performance of PECS – IEA Annex 87	
15:30 - 16:00	Coffee break, chance to visit the conference exhibitors						
16:00 - 16:30	Keynote speech 9, <b>Chandra Sekhar</b> : HVAC Systems and Climate Change – A Paradigm Shift towards Well and Green Buildings						
16:30 - 17:00	Official closing of the conference, award ceremony and announcement of RoomVent 2026						

### Friday 26 April

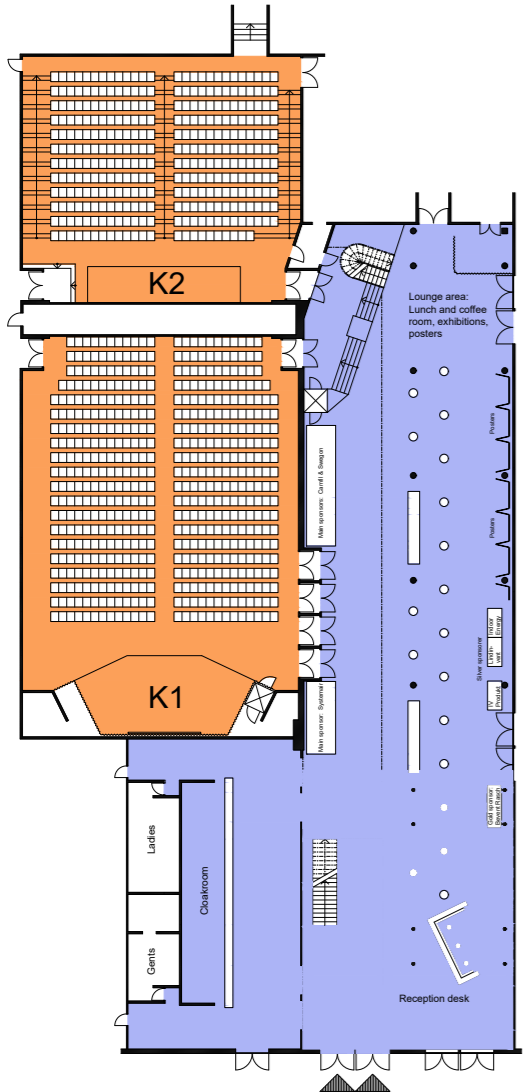
All day

Opportunity to spend time at the Nordbygg exhibition

## K-foyer/conference area

**First floor** - Entrance at the arrows

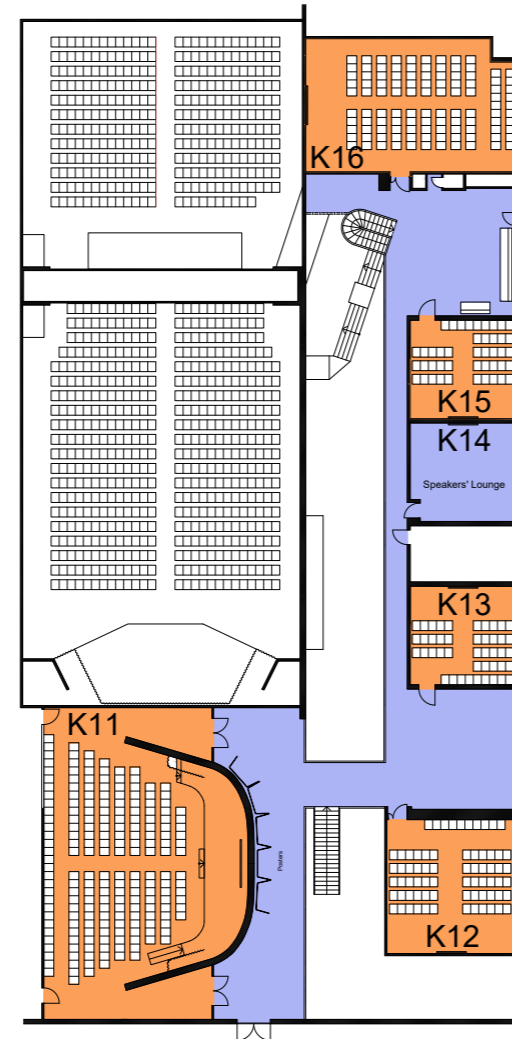
Room K1  
Room K2



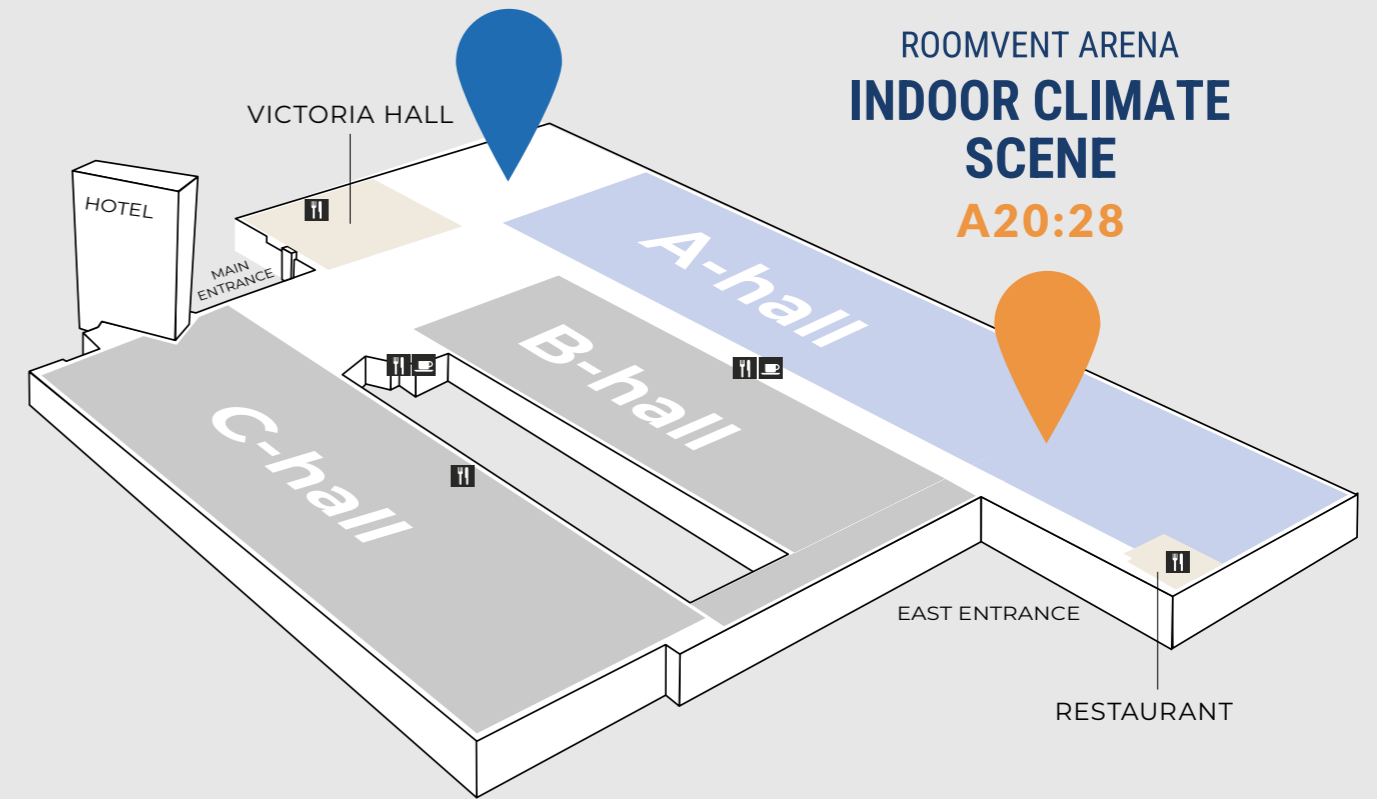
<b>Swegon Sverige AB</b>	K01:01
<b>Camfil Svenska AB</b>	K01:02
<b>Systemair Sverige AB</b>	K01:03
<b>Indoor Energy Services</b>	K02:19
<b>Lindinvent AB</b>	K02:21
<b>IV Produkt AB</b>	K02:23
<b>Bevent Rasch</b>	K02:25

**Upper floor**

Room K11 - K16  
Speakers lounge (K14)



## A-hall



<b>RISE Research Institutes of Sweden</b>	AG:08
<b>IWT's Sverige AB</b>	A09:29
<b>Bevent Rasch</b>	A14:30
<b>IV Produkt AB</b>	A15:20
<b>Systemair Sverige AB</b>	A16:20
<b>Lindinvent AB</b>	A17:02
<b>Camfil Svenska AB</b>	A19:24
<b>Indoor Climate Scene</b>	
<b>RoomVent Arena</b>	
<b>EMTF, Energi&amp;Miljö, Svensk Ventilation</b>	A20:28

Scan the QR code to view a more detailed map of all the exhibitors.





# Program on the Indoor Climate Scene in RoomVent Arena

Here you will find some of the program sessions with lecturers from RoomVent 2024. They will spread the conference's message in short talks on the Indoor climate scene. There will be plenty of time and opportunities to visit the fair during lunch breaks.

## Tuesday 23 April

### 12:00-12:20

Are buildings with low humidity really healthy buildings?

**Prof. Pawel Wargocki**

Technical University of Denmark

### 12:20-12:40

IHBI-Lab – Using physical and virtual reality to identify sustainable technology in buildings.

**Prof. Thomas Olofsson,**

Umeå University

### 12:40-13:00

What IAQ do we want to achieve in buildings? What is realistic and what is ideal?

**Prof. Pawel Wargocki**

Technical University of Denmark

### 13:00-13:20

Interview with Keynote Speakers of Roomvent 2024:

**Dr Paula Olsiewski, PhD and Angui Li, PhD**

### 15.20-15:40

The importance of commissioning process in complex hybrid systems

**Dr Simo Kilpeläinen**

Aalto University School of Engineering

## Wednesday 24 April

### 12:00-12:20

Ventilation in historic buildings

**Torun Widström**

KTH Royal Institute of Technology

### 12:20-12:40

Comfort and energy performance of radiant heating/cooling systems

**Prof. Bjarne W Olsen**

Technical University of Denmark

### 12:40-13:00

Future room ventilation: focus on controlled clean air distribution

**Prof. Arsen K. Melikov**

Technical University of Denmark

### 13:00-13:20

Interview with Keynote Speakers of Roomvent 2024:

**Prof. Runa T. Hellwig and Dr Andrew Persily**

## Thursday 25 April

### 12:00-12:20

Ventilation in the healthcare facilities of the future

**Prof. Lars Ekberg**

Chalmers University of Technology

### 12:20-12:40

IEQ in the EPBD – How to set national requirements in line with revised EPBD?

**Prof. Jarek Kurnitski**

Tallinn University of Technology, Estonia,

### 12:40-13:00

Challenges of Demand-Controlled Ventilation

**Prof. Risto Kosonen**

Aalto University, Finland

### 13:00-13:20

Interview with Keynote Speakers of Roomvent 2024:

**Prof. Jarek Kurnitski and Prof. Chandra Sekhar**

# Social program

## Dinner at the Vasa Museum

**Tuesday 23 April**

One of our social events is a dinner at the Vasa museum – including a tour of the museum before the dining.

At the Vasa museum it is possible to see, up close, the majestic warship that sank on its maiden voyage in 1628, and learn about the disastrous end of its short journey, as well as about the life on board. It will also be an opportunity to mingle and have a great evening!

About the indoor climate in the hall where the unique Vasa ship is located

With almost 400 years behind her and up on dry land, the Vasa ship has great demands on the indoor climate she is exposed to! In two small presentations, we talk about how they worked to create the indoor climate that prevails, and how extremely accurate measurements monitor how the ship moves over time, with changes in temperature and humidity

### Program:

18:45 Guided -tour

19:15 Music, mingel & sparkling drinks beside the ship.

19:50 Dinner & speeches

23:00 Ends

## Gala dinner in the Victoria Hall

**Wednesday 24 April**

### Sparkling gala dinner

It is a bit of a secret what will happen during the gala dinner - but a crackling entertainment is promised, as well as other things that belong to a real gala dinner.

Formal award ceremony (of the Rydberg prize, among others), entertainment, music and dancing!

And we can reveal that it is the Promenadorquestern from KTH that provides the music, completely live!

Victoria Hall - Since 1942

1942 marks the beginning of Stockholm Exhibition (Stockholmsmässan). The brothers Börje and Folke Claeson had traveled to the continent to visit various fairs and were inspired to establish an exhibition in Stockholm. The Royal Tennis Stadium was rented for exhibition activities.

### Program:

18:45 Sparkling drinks & music

19:15 Intro & dinner, speeches & show

21:45 Music & dance

24:00 Ends

(Dress code: Business Casual)



ROOMVENT ARENA  
**INDOOR CLIMATE SCENE**  
A20:28

**emtf**  
GÖR BRA TEKNIKER BÄTTRE

**Energi&miljö**

**Svensk Ventilation**





## How to find us

Both buses and commuter trains stop at Älvsjö Station, which is right next to Stockholmsmässan. The journey by commuter train from Stockholm Central Station to Stockholmsmässan takes just ten minutes. Fast and environmentally friendly, now that's an unbeatable combination!

**Address:** Mässvägen 1, Älvsjö, Sweden

### By SL (Public Transportation)

There are 8-14 commuter train departures every hour from Stockholm Central Station to Älvsjö Station, which is only a 200 meter walk from Stockholmsmässan's Main entrance. The journey takes just ten minutes.

The commuter train from Arlanda Airport also stops at Älvsjö station. The train departs two times an hour and the journey takes 47 minutes. The train departs from Sky City, between terminals 4 and 5.

### By car

Take the E4/E20 and follow the signs for Mässan/Älvsjö.

### By taxi

Taxi Stockholm +46 88-15 00 00  
Taxi Kurir + 46 88-30 00 00  
Taxi 020 + 46 20-20 20 20  
Sverige Taxi + 46 20-35 00 00  
TopCab +46 8 33 33 33



## The Conference platform/app

All registered participants at RoomVent 2024 have access to the conference platform powered by InvitePeople.

In this platform you will find everything for your conference planning:

### Program

Filter by days and themes. Create your personal daily schedule by clicking "Add" next to the program item you want to save to your schedule. Perfect when choosing between parallel sessions.

### Networking

You can see who else is participating at RoomVent 2024. You can send a message to other participants.

### Sponsors

Read about the sponsors

You can access the platform via the personal link that has been sent to you. If you did not receive your personal link, please contact staff on site at the reception desk just beside the main entrance to the K-foyer.



# RI. SE



Since **1969**, we create a **good indoor climate** and **save energy**

Warm welcome to our stand

## A15:20



# 2024 ROOMVENT CONFERENCE

## Main sponsors



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## Gold sponsor



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## Silver sponsors



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## Bronze sponsors



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## Organisers



UMEÅ UNIVERSITY



CHALMERS  
UNIVERSITY OF TECHNOLOGY

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## Endorsing organisations

