

# HEALTHY BUILDINGS DESIGN COMPETITION

# 20 25

Transforming  
Schools for a  
Sustainable  
Future



HEALTHY BUILDINGS  
design competition

# BRIEF

# Healthy Buildings Design Competition 2025

---

Initiated in 2022 by the Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA), the Healthy Buildings Design Competition (HBDC) is a university-level student competition for healthy, comfortable, energy-efficient, and resource-responsible architecture and engineering in the building sector.

In this 2025 edition the focus is on primary schools, particularly on the renovation of primary schools built during the baby boom of the 1960-1970s across Europe. While some have undergone renovations, many still lack the care and attention needed. It's time to reimagine and redesign these educational spaces to meet the evolving needs of users, create comfortable and sustainable environments, and ensure resilience in the face of future challenges.

HBDC objectives:

- Health, Comfort, Sustainability, and Resilience: Develop innovative solutions that prioritize health, comfort, sustainability, and resilience in building design, setting new standards for construction practices.
- Optimal Learning Conditions: Strive for optimal learning conditions by incorporating cutting-edge design elements that enhance the educational experience for both students and teachers.
- Quality of Life and Wellbeing: Prioritize the health and wellbeing of occupants, creating spaces that foster a positive environment for learning and personal growth.

The HBDC25 Organization aims to motivate university teams to engage in the HBDC25 and register before 14 October 2024. The challenge posed to teams participating in the HBDC25 is to design the renovation of a primary educational building skilfully in a cost-effective manner. The goal is to achieve an appealing result that prioritizes enhanced health and energy efficiency. All this is to be accomplished before 17 February 2025.



The official language for the HBDC25 Competition is English. The present document will be the basis for the competition.

A pivotal long-term objective of the Healthy Buildings Design Competition is to foster the creation of healthy, cost-effective, and highly energy-efficient buildings powered by renewable sources. In collaboration with the designated HBDC25 Host City, Milan, Italy, up to three projects will be nominated and invited to 15th REHVA HVAC World Congress in Milan (June 4th to 6th, 2025) to publicly present their proposals. The HBDC25 winner from the nominees' shortlist will be publicly announced in an award ceremony during the REHVA HVAC World Congress.

### Why participate?

- **Shape the Future:** As students, you have the power to shape the future of education and contribute to a sustainable world. Your ideas and innovations can transform schools into healthier, more inspiring spaces.
- **Be Agents of Change:** This competition provides a platform for you to be agents of change. Your creativity and vision can redefine how we approach building design, making a lasting impact on the lives of students and teachers.
- **Build a Legacy:** Imagine leaving a legacy that future generations will benefit from. Participating in this competition is an opportunity to leave your mark on the world by creating healthier, more environmentally friendly learning environments.
- **Develop Real-world Skills:** Engaging in this competition will not only allow you to express your creativity but also provide you with valuable real-world skills in architecture and engineering, design, and sustainable practices – skills that will be essential in your future careers.

**Join us in the Healthy Building Design Competition and be part of a movement that is committed to building a better, healthier, and more sustainable future for all.**





# Scope of the competition

---

The revitalisation of urban building stocks is the key focus of the HBDC25. The scope of the Competition centres around the value-added renovation of existing educational buildings, specifically primary schools. This creates a platform for high impact solutions in typical European contexts, and urban challenges in general. There will be a strong orientation toward viability and importance for the wider public. Linking the HBDC25 Competition to current architectural discussions, building research and social aspects of urban living is a key focus.

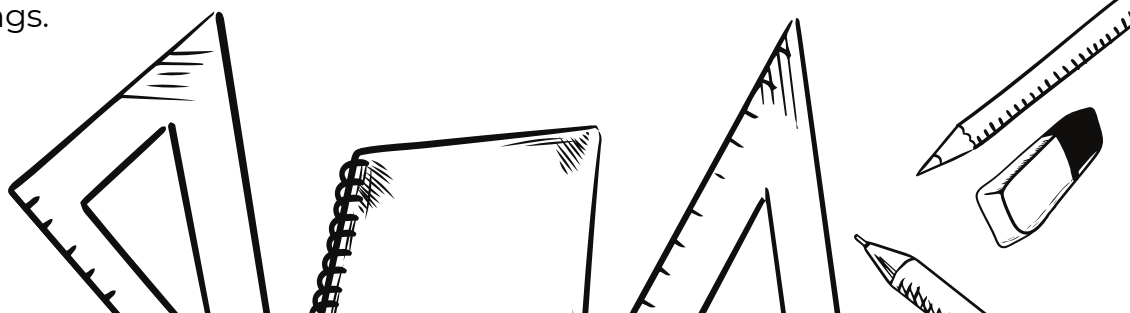
The building sector plays a pivotal role, contributing approximately 40% to global energy consumption and CO<sub>2</sub> emissions. This significant impact underscores the urgent need for a paradigm shift in the way we construct buildings. Our responsibility is clear – it's time to build a more sustainable healthier future for both people and the planet.

Teams are requested to focus on educational buildings, especially those primary schools constructed during the 1960-1970s baby boom across Europe. While a few have undergone renovations, a significant number still lack the necessary care and attention. Teams should articulate which health and sustainability challenges they are specifically addressing, while proposing creative project solutions. It is now imperative to envision and revamp these educational spaces to cater to the changing needs of users, establish comfortable and sustainable environments, and fortify resilience against future challenges.

The REHVA Healthy Buildings Design Competition 2025 wants to encourage and challenge students within the fields of building design, building physics, and building services to explore the theme of healthy & sustainable schools.

*Students will be given the task to imagine a desirable renovation scenario for an existing primary school, with focus on people's well-being as well as the well-being of our planet.*

Through this design project, they will improve their understanding of indoor environmental quality while exploring the impact of future climate changes and sustainable buildings. The competition celebrates the privilege of being a student by encouraging participants to use their curiosity and to think “out of the box” in their approach to the indoor environmental dimension of future sustainable buildings.





# Partners

---

The HBDC25 is hosted by REHVA, with the invaluable support of SMAY.

The HBDC25 is organised by a local partnership headed by the Italian Heating, Ventilation and Air Conditioning Association (AiCARR), federated in REHVA. The partnership includes the organisation of the 15th REHVA HVAC World Congress in Milan (Italy) from June 4th to 6th, 2025.

The theme of this Italian edition is:

**“Decarbonized, healthy, and energy-conscious buildings in future climates”,**

This topic highlights the fundamental importance of the HVAC sector in all its aspects.

In this perspective, CLIMA 2025 will offer a unique opportunity for teams participating in HBDC25 for international discussion about their proposals for transforming schools for a sustainable future. In addition, teams will be able to get in contact with European frontrunner professionals, academics, and companies in the HVAC sector.

# Process of the competition

---

The Healthy Buildings Design Competition offers students a unique opportunity for learning, taking theory and putting it into practice, and doing so through a real case study. Students working on the project will be challenged to use their innovation capacity, and their ability to design a healthy and high-performing renovation of an existing primary school. The projects shall be developed by multidisciplinary teams, giving the students the opportunity to learn not only about technical issues but also about teamwork, communication skills, health, sustainability, and socio-economic issues to ensure the viability of their project, and of their futures in the clean-energy workforce.

## ELIGIBILITY REQUIREMENTS

The competition is open to any team provided the following conditions are met:

- At least three students shall compose the team.
- At least one of the team members must be attending a university in a REHVA member country, see <https://www.rehva.eu/about-us/members>
- All team members must be enrolled at a post-secondary educational institution (e.g., college, university, etc.) at least during the competition period, September 2024 throughout February 2025.

HBDC25 encourages the participation of multi-disciplinary teams that consist of students of different backgrounds (e.g., architecture, building physics, HVAC technology, environmental sciences, etc.). Teams can include a maximum of 2 non-student supervisors who can only operate in an advisory or coaching capacity.

## CHALLENGES AND SCORING

The competition is organised into five juried challenges, with the overall winner determined based on the results of these contests. The Challenges highlight a commitment to cross-disciplinary academic education, showcasing a diverse range of disciplines from participating universities.

The five HBDC25 challenges are as follows:

CHALLENGE	MAXIMUM POINTS
Architecture, engineering, and construction	25
IEQ and Health	35
Energy performance	25
Economic viability	10
Innovation	5
TOTAL	100

# Timeline



**18 May 2024**

First public announcement  
(During the General Assembly of the  
REHVA Annual Meeting 2024)

**30 May 2024**

Registration opens

**14 October 2024**

Deadline for Team  
Registration

**30 October 2024**

Submission period  
opens

**17 February 2025**

Deadline for  
Submission

**February to April  
2025**

Jury meeting –  
evaluation of all  
submitted projects

**28 April 2025**

Announcement of finalists

**4-5 June 2025**

Presentations by  
nominee teams  
at CLIMA 2025

**6 June 2025**

Winners announcement  
at CLIMA 2025

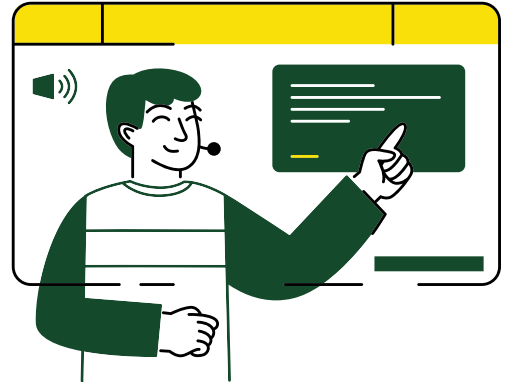
# Unfolding of the HBDC25

---

## WEBINAR

An online Webinar will be held by 25 October 2024. The details of the competition will be further explained (e.g., challenges, assessment criteria, etc.) Teams will be welcome to pose any question they may have.

The webinar will be recorded and made available at HBDC25 website. In addition, the questions addressed will be included in the [FAQ section](#) HBDC25 website for asynchronous consult.



## SUBMISSION OF APPLICATION

HBDC25 Application submissions must adhere to the HBDC25 Application Content and requirements.

Ineligible applications will be promptly rejected by REHVA, and such submissions will not undergo review or consideration. The Contact Person specified in the Registration will receive a notification letter via email, clearly outlining the grounds for the application's rejection.

## NOMINEE SHORTLIST SELECTION

A shortlist of nominated Teams will be selected by a jury appointed by the HBDC25 Organisation before 28 April 2025. A delegation of each nominated Team is invited to attend in-person the 15th REHVA HVAC World Congress in Milan (Italy) from June 4th to 6th, 2025 to defend their proposal. The same jury will appoint the winning Team, who will be publicly announced during the REHVA HVAC World Congress.

The HBDC25 Organisation will cover the cost of a maximum of two team members from the nominated Teams to 15th REHVA HVAC World Congress, as well as up to three nights of hotel accommodation. Travel costs to and from Milan are not covered.



# AWARDS

During the final phase of the Competition, the following awards will be given to Teams:

- The winning team will receive € 5000;
- 2nd place € 3000;
- 3rd place € 1500.

The HBDC25 Organisation entities are not liable for tax payments etc. in the participant's local country. The nominee teams will earn a chance of seeing their project featured in the REHVA Journal.



## Contacts

### DESIGNATED LEAD PERSON(S) & CONTACT INFORMATION

Each Team must provide contact information for the Designated Lead Person(s) and must keep the contact information updated through the duration of the project. If a Team changes the Designated Lead Person(s), the Team shall ensure that updated contact information is provided to the HBDC25 Organisation via email.

The HBDC25 is intended to be a primarily student-run project. It is highly recommended to fill the Designated Lead Person(s) positions with students.

### CONDUCT

Unacceptable behaviour will not be tolerated. This encompasses, but is not restricted to, inappropriate language, unsportsmanlike conduct, unsafe behaviour, the dissemination of inappropriate media, plagiarism, or cheating.

### USE OF TEAM'S INFORMATION

Team members hereby consent to the utilization of their data (i.e., names, likenesses, documents, and/or graphics, etc) in any communication materials issued by the HBDC25 Organization's partners, supporting institutions, and event sponsors. For the purpose of competition dissemination, the HBDC25 Organisation, along with event supporting institutions and sponsors, may employ Teams' information, including content and images.

The HBDC25 Organisation and event sponsors will exert reasonable efforts to give credit to the sources of content and images, although publication without credit may occur.

All materials furnished by Teams to the HBDC25 Organisation, encompassing HBDC25 Application, must either be owned by the participating Teams, or be used with authorization from the owners, adhering to intellectual property regulations, such as third-party images.

Teams requesting confidentiality for specific content or images must submit a written request with a motivated explanation to the HBDC Competition. Every attempt will be made to respect confidentiality requests, which expire at the conclusion of the HBDC25 Competition.

## WITHDRAWAL

If, at any point during project development, a participating Team contemplates withdrawing from the Competition for any reason, they are required to communicate this intention to the HBDC25 Organization before reaching a final decision.

The HBDC25 Organisation will make efforts to assist the Team in addressing any challenges. However, should the Team proceed with the decision to withdraw, they must formally notify the HBDC25 Organisation through a letter signed by the Designated Lead Person(s). All withdrawals adhering to the aforementioned conditions are considered irrevocable.

## QUESTIONS

Questions can be sent to: [info@healthybuildingsdesigncompetition.com](mailto:info@healthybuildingsdesigncompetition.com). Answers to received questions will be published on the FAQ section HBDC25 website.



# Challenges and evaluation

## GENERAL COMPETITION CRITERIA

The Healthy Building Design Competition consists of five separately scored Challenges based on different assessment criteria. The Team with the highest total points at the end of the Competition is the winner. The Challenges of the HBDC25 are as follows:

CHALLENGE	MAXIMUM POINTS
Architecture, engineering, and construction	25
Energy performance	25
IEQ and health	35
Thermal comfort - 30%	
IAQ - 30%	
Lighting - 30%	
Acoustics-Noise - 10%	
Affordability and viability	10
Innovation	5
<b>TOTAL</b>	<b>100</b>

The points per Challenge are awarded based on the assessment made by the HBDC25 Jury according to each team's HBDC25 Application.

Teams shall develop a comprehensive and well-structured HBDC25 Application in which the IEQ and energy concepts supporting the renovation design of the primary school are clearly described. For that purpose, conceptual architecture and engineering sketches and schematics are to be prominently described. As a proof of the concept, IEQ and energy performance calculations shall be also included.

## JURY ASSESSMENT

A diverse panel of experts, recognized internationally in their respective fields, will constitute the multidisciplinary Jury. They will leverage their extensive experience and knowledge to assess each team's HBDC25 Application. The evaluation will adhere to predefined criteria and guidelines set forth by the HBDC25 Organisation.

The composition of the Jury will be carefully chosen by the HBDC25 Organisation, considering the academic and professional backgrounds relevant to the specific Challenges under evaluation .

# Contact information

---

## REHVA

Federation of European Heating, Ventilation and  
Air Conditioning Associations

40 Rue Washington 1050 Brussels,  
Belgium  
+32-2-5141171  
[info@rehva.eu](mailto:info@rehva.eu)

For general questions, refer to the [FAQ section](#)  
[HBDC25 website](#).

For all other enquires, refer to  
[info@healthybuildingsdesigncompetition.com](mailto:info@healthybuildingsdesigncompetition.com)



## Thank you to our sponsor

---



Smay  
Ventilation  
Systems

Ventilation safety  
of tomorrow.  
Today.

REHVA is thrilled to extend its heartfelt appreciation to SMAY for their generous support of the REHVA Healthy Buildings Design Competition!

Learn more about SMAY: <https://www.smay.pl/en/>



# Good luck!



## HEALTHY BUILDINGS design competition

<https://www.healthybuildingsdesigncompetition.com/>

ORGANISER



MAIN PARTNER



© 2024 REHVA, Rights Reserved