

Nordic Chapter Newsletter

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Bergen's Enhanced Building Energy and Indoor Climate Regulations: A Technical Guide for HVAC Professionals

Government Affairs Committee

Bergen's maritime climate, characterized by high humidity and frequent precipitation, demands robust building standards that balance energy efficiency with indoor comfort and moisture control. In early 2025, Bergen Municipality ratified a set of local amendments to Norway's TEK17 building regulations, aiming to accelerate carbon neutrality goals, strengthen resilience against moisture damage, and promote healthy indoor environments. This technical overview decodes the key provisions, outlines HVAC design implications, and highlights opportunities for ASHRAE Nordic Chapter members to contribute expertise and influence future policy developments in Bergen.

1. Policy Context and Drivers

Norway's national climate strategy targets at least 50 percent emission reductions by 2030 and carbon neutrality by 2050. As a coastal city prone to heavy rainfall and wind-driven moisture, Bergen faces unique challenges in safeguarding building envelopes and mechanical systems.

Bergen's updated local regulations align with the EU's Energy Performance of Buildings Directive (EPBD) via the EEA agreement, while integrating insights from recent moisture-related building failures. The amendments support:

ASHRAE PRESIDENTIAL THEME 2025-2026

Bill McQuade has announced his presidential theme, workforce Healthy Buildings: Designing for life. As a part of this theme, ASHRAE has released an Indoor Environmental Quality (IEQ) video series looking at each of the challenges faced within each area under IEQ. These areas include indoor air quality, thermal comfort, water, Legionellosis, IAQ and decarbonization, acoustics, lighting, and measuring and assessing IAQ. See the link below to watch the videos! <https://www.ashrae.org/technical-resources/ieq-resources/ieq-resources-videos>

Exploring career opportunities with the ASHRAE job board

The ASHRAE Job Board is a premier platform for professionals in the fields of heating, ventilation, air conditioning, and refrigeration (HVAC&R). Whether you are an engineer seeking new opportunities or an employer looking for top talent, the ASHRAE Job Board offers a comprehensive and user-friendly experience.

Visit: <https://jobs.ashrae.org/>

- Municipal Climate Action Plan goals for 2030
- Industry consensus on near-zero energy buildings (NZE)
- Enhanced risk management for moisture ingress in façades and roofs

2. Scope and Applicability

Effective June 1, 2025, the amendments apply to:

- All new residential, commercial, and educational buildings
- Major renovations exceeding 30 percent of the gross heated floor area
- Building extensions that increase conditioned volume by more than 25 percent

Projects must demonstrate compliance at the design stage with preliminary energy and moisture control calculations, followed by a post-construction verification report.

3. Key Performance Metrics

Bergen's local thresholds mesh with TEK17 but impose stricter limits in critical areas:

Parameter	National TEK17	Bergen Amendment
Specific heating demand (kWh/m ² ·yr)	≤ 60	≤ 40
Primary energy demand (kWh/m ² ·yr)	≤ 95	≤ 75
Airtightness (n ₅₀ , h ⁻¹)	≤ 1.0	≤ 0.6
Heat recovery efficiency (%)	≥ 70	≥ 85
Ventilation rate, residential (L/s·m ²)	0.5	0.7
Roof and façade U-value (W/m ² ·K)	≤ 0.18	≤ 0.15

Design teams must verify airtightness via blower-door testing and heat recovery performance through laboratory certification.

4. HVAC and Ventilation Implications

Higher ventilation rates and heat recovery targets necessitate precise system engineering. Key considerations include:

- Selecting plate-and-frame or rotary enthalpy exchangers certified to ≥ 85 percent sensible and latent efficiency
- Designing ductwork with low pressure drop to minimize fan energy, while maintaining noise criteria below 25 dB(A) in occupied zones
- Implementing demand-controlled ventilation (DCV) based on CO₂, VOC, and humidity sensors to optimize airflow without over-ventilating

Early integration of dynamic energy and airflow simulation helps reconcile ventilation requirements with thermal loads and acoustic performance.

5. District Heating, Heat Pumps, and Renewables

Bergen Energy's district heating network, currently supplying 15 percent of the city's heat with waste heat and biomass, plays a central role in the amendment:

- Mandatory district heating connection for all new builds within network zones, contributing a 10 percent primary energy credit
- Incentivized ground-source heat pumps with minimum measured COP of 4.0, eligible for an additional 5 kWh/m²·yr reduction in primary energy reporting
- Voluntary solar thermal installations covering at least 8 percent of annual DHW load, recognized as on-site renewable contribution

This hybrid framework balances centralized low-carbon heat with decentralized renewables for network-outlying areas.

6. Moisture Control and Indoor Climate

High humidity and driving rain in Bergen demand enhanced moisture management beyond typical Norwegian practice:

- External wall assemblies must demonstrate water tightness under a driving-rain pressure equivalent to 300 L/m²·h
- Continuous internal moisture monitoring via wall-embedded sensors with alarms for dew point excursions
- Indoor climate classification C2 (per NS-EN 15251), enforcing operative temperature ranges of 20 °C–24 °C and relative humidity between 30 percent–60 percent

Integrated building management systems (BMS) can automate humidity control through coordinated ventilation, dehumidification, and heat recovery modulation.

7. Financial Incentives and Support Programs

To drive rapid uptake, Bergen Municipality and Enova jointly offer:

- Zero-interest loans up to NOK 2 million for ultra-efficient heat pump and ventilation projects
- Grants covering 40 percent of incremental costs for certified high-efficiency heat recovery units
- Technical advisory vouchers valued at NOK 50 000 toward third-party moisture and energy auditing

These incentives aim to lower upfront costs and build local contractor capacity in specialized cold-climate HVAC solutions.

8. Compliance Timeline and Enforcement

Bergen's enforcement schedule rolls out in phases:

1. Phase I (Jun 2025–Dec 2025): Voluntary compliance pilot; simplified reporting for projects under 500 m²
2. Phase II (Jan 2026–Jun 2027): Mandatory design-stage submissions; minor non-conformities incur warnings
3. Phase III (Jul 2027 onward): Full enforcement with fines up to NOK 500 000 and potential building permit revocations

Project teams should engage the municipal Building Inspection Authority early, submitting preliminary HVAC schematics and moisture control plans to preempt delays.

9. Role of ASHRAE Nordic Chapter in Bergen

ASHRAE members can drive best practices and policy evolution by:

- Participating in Bergen's quarterly Sustainability and Building Standards Forum
- Contributing to local technical white papers on moisture-resilient HVAC design
- Organizing joint workshops with Western Norway University of Applied Sciences on cold-climate ventilation research

Such engagement ensures that the Chapter's technical expertise informs future amendments and supports consistent, high-quality implementation across Bergen projects.

10. Case Study: Sandviken Municipal Office Retrofit

The 1990s municipal office in Sandviken district served as a pilot retrofit:

- Upgraded to balanced mechanical ventilation with a rotary heat exchanger achieving 87 percent total recovery
- Retrofitted façades with rainscreen cladding and capillary-breaking

layers, validated under driving-rain testing

- Installed a borehole-based heat pump system coupled with a 50 m³ thermal storage tank, reducing peak electrical demand by 60 percent

The project achieved a 50 percent drop in primary energy use and eliminated monthly moisture alarms, setting a benchmark for future municipal projects.

11. Recommendations for HVAC

Practitioners

To excel under Bergen's updated framework, practitioners should:

- Integrate dynamic simulation (thermal, airflow, hygrothermal) from early design phases
- Partner with certified moisture consultants to validate envelope performance under driving rain
- Specify factory-tested modular HVAC units to ensure consistent heat recovery efficiency and simplify on-site commissioning

By adopting these strategies, HVAC professionals can deliver high-performance, resilient buildings that align with Bergen's climate goals and provide healthy indoor environments.

Bergen's enhanced building energy and moisture control regulations present both challenges and opportunities. ASHRAE Nordic Chapter members are uniquely positioned to pioneer innovative HVAC solutions, shape policy refinements, and lead the transformation toward sustainable, resilient buildings in Norway's dynamic coastal metropolis.

Promoting a Healthy and Sustainable Built Environment in Stockholm

Government Affairs Committee

Stockholm, the capital of Sweden, has long been a beacon of sustainability and innovation. As the city continues to grow, the provincial government is increasingly focused on ensuring that this growth is both healthy and sustainable for all its residents. This commitment is evident in various government affairs activities aimed at creating a built environment that promotes well-being, environmental stewardship, and inclusivity.

Government Initiatives and Policies

The provincial government of Stockholm has implemented several key initiatives to foster a healthy and sustainable built environment. One of the cornerstone policies is the Stockholm Environmental Program, which outlines ambitious goals for reducing greenhouse gas emissions, increasing energy efficiency, and promoting green building practices. This program is aligned with the broader national objectives of Sweden to achieve carbon neutrality by 2045¹. Another significant initiative is the Green Space Strategy, which aims to ensure that all residents have access to parks and natural areas. This strategy not only enhances the quality of life but also supports biodiversity and helps mitigate the urban heat island effect. The government is also investing in sustainable transportation options, such as expanding the network of bike lanes and improving public transit infrastructure².

Community Engagement and Collaboration

A key aspect of Stockholm's approach to sustainability is the emphasis on community engagement and collaboration. The provincial government actively involves residents, businesses, and other stakeholders in the planning and implementation of sustainability projects. Public consultations and workshops are regularly held to gather input and foster a sense of ownership among the community. One notable example is the Stockholm Royal Seaport project, a large-scale urban development initiative that aims to create one of the world's most sustainable urban districts. This project is a collaborative effort involving the government, private sector, and local residents. It features energy-efficient buildings, renewable energy sources, and extensive green spaces³.

Challenges and Opportunities

Despite the progress, Stockholm faces several challenges in its quest for a healthy and sustainable built environment. One of the primary challenges is balancing urban growth with the preservation of natural areas. As the city expands, there is a risk of encroaching on green spaces and disrupting local ecosystems. The government is addressing this issue by implementing strict land-use regulations and promoting vertical growth to minimize the urban footprint¹. Another challenge is ensuring that sustainability efforts are inclusive and benefit all residents, regardless of socioeconomic status. The provincial government is committed to addressing this by incorporating social equity considerations into its policies and programs. For instance, affordable housing projects are being designed with sustainability features to ensure that low-income residents also benefit from a healthy living environment².

Future Outlook

Looking ahead, the provincial government of Stockholm is poised to continue its

leadership in sustainability. Upcoming projects include the expansion of the Eco-Districts initiative, which aims to create neighborhoods that are self-sufficient in energy and resources. Additionally, the government plans to enhance its climate resilience efforts by investing in infrastructure that can withstand extreme weather events³.

In conclusion, Stockholm's provincial government is making significant strides in promoting a healthy and sustainable built environment for all. Through a combination of innovative policies, community engagement, and a commitment to inclusivity, Stockholm is setting a benchmark for other cities to follow. As these efforts continue to evolve, the city is well on its way to achieving its vision of a sustainable future.

1: Stockholm+50 issues call for urgent environmental and economic transformation.

2: Stockholm+50 opens with calls to accelerate action for a healthy planet and prosperity for all.

3: As Humanity's Environment Footprint Becomes Increasingly Unsustainable, Global Leaders Recommit to Joint Climate Action, at Opening of Stockholm Summit.

November Chapter Meeting

On the 27th of November, the Nordic Chapter had an on-line chapter meeting where Joshua Vasudevan (UK Chapter) presented Young Engineers in ASHRAE. Thirteen members attended the meeting and after Joshua's presentation we had the opportunity to present ourselves then we discussed some themes for the next Chapter meeting.

Joshua's presentation will be available in the future to members on our homepage.

Upcoming Events

Date	Type of Event	Location	Event
Jan 2025	Chapter Meeting	Virtual	Chapter Meeting, will discuss the Presidential visit in April and the Chapter Event in Copenhagen, Webex link TBA
Prel. March 31-April 2 2026	Presidential Visit	TBA	ASHRAE President Bill McQuade will visit the Nordic Chapter in Lund, Sweden
16-17 April, 2026	Chapter Event	Copenhagen	Social Event, Chapter Meeting, Technical Seminars

ASHRAE Nordic Chapter Summary

ASHRAE Nordic Chapter is a local branch of ASHRAE, a global society founded in 1894. ASHRAE's mission is to advance human well-being through sustainable technology for the built environment. With more than 50,000 members from over 132 nations, ASHRAE is an engineering organization dedicated to advancing the arts and sciences of heating, ventilation, air conditioning and refrigeration to serve humanity and promote a sustainable world. The organization contributes to shaping tomorrow's built environment through research, standards writing, publishing, certification, and continuing education. The geographic area covered by ASHRAE Nordic Chapter is Denmark (Faroe Islands and Greenland), Iceland, Norway, Finland (Åland), and Sweden.

PAOE Report Nov. 2025

Expanded

Achievements

Updated Daily

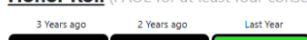
PAOE (To make PAOE must reach minimum in 6 of the 7 Grassroots categories)



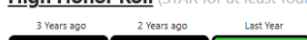
STAR (PAR in all categories)



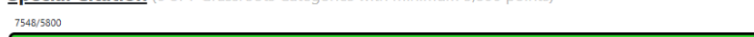
Honor Roll (PAOE for at least four consecutive years)



High Honor Roll (STAR for at least four consecutive years)



Special Citation (6 of 7 Grassroots Categories with minimum 5,800 points)





Information from ASHRAE

Buildings XVI Conference

December 8-11, 2025

Clearwater Beach, FL

Thermal Performance of the Exterior Envelopes of Whole Buildings.

The Buildings XVI Conference brings together product manufacturers, research organizations, academia, builders, designers, architects and consultants to discuss their work achievements, interest and awareness of buildings issues, and to provide solutions and insight into some of our major building envelope problems. The conference includes three tracks focused on Principles (research and development), Practices (applications and case studies) and Residential Buildings. The conference is organized by ASHRAE along with Oak Ridge National Laboratory.

To register or view the conference program click [HERE!](#)

Save the Date! 2026 Topical Conference:

Women in ASHRAE Leadership Symposium,

April 13-14, 2026 Los Angeles, CA

[**Registration is Now Open!**](#)

After a sold-out debut, the Women in ASHRAE Leadership Symposium returns bigger, bolder, and more empowering than ever!

Join us for two full days of connection, inspiration, and leadership growth with women from across the HVACR industry from students and early-career professionals to seasoned veterans. This isn't just for engineers it's for every woman making an impact on the built environment. Whether you're here to build your network, develop your leadership skills, or cheer on the next generation through the Young Women in ASHRAE EmpowerHERment Award competition YOU BELONG HERE! **2026 ASHRAE Building Decarbonization Conference, September 23-25, 2026 Seattle, WA**

Women in ASHRAE Leadership Symposium

Student Travel Grant

Application Deadline: December 2, 2025

ASHRAE invites students to join us for two days of connection, inspiration, and leadership development at the 2026 **Women in ASHRAE Leadership Symposium**, held at the **Omni Los Angeles, April 13-14, 2026**. This event brings together women from across the HVACR industry students, early-career professionals, and seasoned experts to learn, network, and grow.

To support student participation, ASHRAE is offering a **\$500 Student Travel Grant**, which includes **Student Conference Registration (\$200) and up to \$300 in travel reimbursement**.



Eligibility

Applicants must be:

- **A full-time undergraduate or graduate student** enrolled at an accredited college or university during the **Spring 2026** term.

What's Covered

- Student conference registration
- Up to \$300 to help offset travel expenses

How to Apply

Complete the [Application Form](#).

You will be asked to provide:

- ASHRAE membership number (if applicable; membership not required)
- A one-page letter describing your background and motivation for attending
- A current CV or résumé

Note: Earlier submissions will receive priority.

If You Are Selected

- Award notifications will be sent by **December 19, 2025**.
- Awardees are expected to attend the full conference.

Key Dates

- **December 2, 2025:** Applications due (11:59 PM PDT)
- **December 19, 2025:** Award announcements
- **April 13–14, 2026:** Conference dates

Questions? Contact Ragan McHan at rmchan@ashrae.org

CxEnergy 2026 Rising Professional Scholarship

Applications Now Open

The **AABC Commissioning Group (ACG)** is offering scholarship opportunities for engineering students to attend **CxEnergy 2026**, held **April 21-24, 2026**, in **Chicago, IL**.

CxEnergy is the premier conference for building commissioning, energy management, and building technology. Scholarship recipients will receive:

- **Complimentary conference registration**
- **Round-trip coach airfare reimbursement**
- **Two complimentary nights at a host hotel**
- **Access to exclusive ACG training resources**

This scholarship provides an excellent opportunity to learn from industry experts, build professional connections, and explore the latest innovations in commissioning and energy management.

Important Dates

- Applications Open: **November 12, 2025**.



- Final Deadline: **January 2, 2026.**

Learn More

- Primary Contact: William Thomas, meetings@commissioning.org
 - [Video](#)
 - [Learn more & apply](#)
-

2026 Design Competitions

2026 Setty Family Foundation Applied Engineering Challenge

- Website has been updated with the guidelines for the 2026 Challenge.
- Click [here](#) for more information.

2025-26 ASHRAE High School Design Competition

- Website has been updated with the guidelines for the 2026 Competition.
- Deadline: **December 30, 2025.**
- Click [here](#) for more information.

2026 Building EQ (Building Energy Quotient) Competition

- Website has been updated with the guidelines for the 2026 Competition.
 - Click [here](#) for more information.
-

Youth Outreach Award

- Deadline: **December 31, 2025.**
 - Click [here](#) for more information.
-

Student Activities Achievement Award

- Deadline: **December 31, 2025.**
 - Click [here](#) for more information.
-

YEA Developing Leader Award

- Nominations accepted until **May 1, 2026.**
- Click [here](#) to learn more and apply.