

BECWG NEWS

EBC Building Energy Codes Working Group E-Newsletter

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Welcome to the first e-newsletter of the EBC BECWG!

Hello EBC Family! This newsletter will be published on a quarterly basis to communicate items of general interest and is part of a broader working group goal to encourage improvements and innovation in practices in building energy codes worldwide. In this issue, we highlight recent working group activities, emerging research, and opportunities to contribute.

BECWG Webpage Launch

In April 2020, the BECWG launched its webpage on the EBC website:
www.iea-ebc.org/working-group/building-energy-codes

In addition to general information on the Working Group, visitors will be able to find information on upcoming meetings and webinars, as well as slides and recordings from previous webinars, and Working Group published reports. We invite you to check out the webpage regularly for updated information.

Working Group Activity Updates & Emerging Research

Building Energy Issues and the COVID-19 Response

The COVID-19 pandemic has touched every aspect of our lives and has disrupted many of our traditional approaches to building construction and building energy management. The need for virtual code inspection methods, for instance, has been greatly amplified by the pandemic. Many traditional in-person operations are no longer feasible and much of the energy efficiency workforce has been brought to a standstill. In response to this issue, the BECWG hosted a webinar on [Building Energy Issues and the COVID-19 Response](#) on 5 May 2020. The webinar explored key questions such as the impacts of COVID-19 on building operations and construction across the EBC countries; opportunities and challenges for the building energy efficiency community of the current situation; and specific research questions that are emerging as countries are trying to address COVID-19 in the building energy space. William Bahnfleth (ASHRAE Epidemic Task Force Chair) and Jarek Kurnitski (REHVA Technology & Research Committee Chair) discussed the safe operation of buildings and strategies to maintain healthy indoor air quality. Drawing from examples in the U.K. and the U.S., Paul Ruysssevelt (University College London) and Jeremy Williams (U.S. Department of Energy) also discussed broader issues facing the design and construction industry, including compliance checking and leveraging opportunities for virtual code assessments. The webinar attracted 95 participants from 17 countries and various international organizations, including ASHRAE, REHVA, EPB Center and OECD.

What's next? Given wide interest in this topic, the BECWG is planning a follow up webinar in September 2020 which will provide a deeper dive on opportunities for doing more virtual diagnostics and remote code inspections in response to the pandemic, including the potential costs savings and other benefits of remote inspections worldwide.

Towards Net or Nearly Zero Energy Buildings

Zero Energy Buildings (ZEB) is easy to say, but hard to do. Even the definition of ZEB is not simple. In a BECWG [webinar](#) on 18 May 2020, participants heard about the range of ZEB parameters, boundaries, and international ambitions, as well as the experiences of EBC member countries

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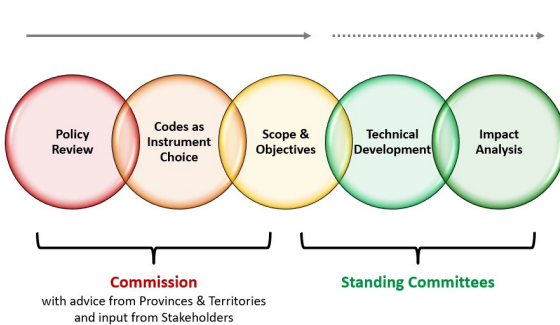
such as Australia, Italy and Canada that have begun introducing net or nearly zero energy buildings into their respective national building codes. Participants learned about challenges encountered and solutions employed to achieve agreement on and begin implementation of ZEB codes which will help drive the best outcomes for our countries and respective climates.

The webinar featured speakers from Australia, Canada, Italy, and the United States. Australia led the webinar in collaboration with the United States with 74 participants from twelve countries.

Energy Codes for Existing Buildings

It is estimated that in Organisation for Economic Co-operation and Development (OECD) countries, roughly 65% of the 2060 building stock already exists today. Many of these buildings were constructed and perform at significantly lower levels than the ones stipulated by codes and standards currently in force for new construction. A number of jurisdictions consider codes for existing buildings as one of the main approaches to achieving sustainability in the built environment.

Against this backdrop, the BECWG held a webinar, led by Canada, on [Codes for Existing Buildings](#) on 8 June 2020. The webinar reviewed activities in Canada and New York City related to the development and implementation of energy codes for existing buildings. Sarah Gibb and Greg Fairthorne from the National Research Council Canada discussed activities underway to develop Canada's first code for existing buildings. They stressed the importance of closing the performance gap between new



[Canada's code for existing buildings development assessment process](#) (Source: Sarah Gibb and Greg Fairthorne. 2020. "Alterations to Existing Buildings." IEA EBC Building Energy Codes Working Group Webinar on Codes for Existing Buildings (June 8, 2020).

buildings (current code) and the existing building stock; maintaining or increasing the life safety and overall building performance level; avoiding negative unintended consequences or unrealistic expectations (e.g., undertaking changes to interior walls without considering asbestos remediation);

and ensuring that when a repair, maintenance or alteration is in progress, the building cannot be left in an unsafe state. Gina Bocra from the New York City Department of Buildings described the policies that New York City has recently enacted requiring upgrades for existing buildings. Its 2022 energy code will be based on the next *NYStretch Energy Code* which calls for higher efficiency standards in new and renovated building construction projects. The city's 2025 energy code will also require new buildings greater than 25,000 GSF to meet absolute energy performance metrics.

What's next? A report on energy codes for existing buildings is underway. Led by Australia in collaboration with other countries, the report will draw on examples of energy codes/standards for existing buildings in selected countries. The paper will look at how countries are addressing common hurdles, such as estimating energy savings from the codes and evaluating code compliance post construction. If you would like to contribute to the paper, please contact [David Nemtsov, U.S. Department of Energy](#) (BECWG Chair) and [Michael Donn, Victoria University of Wellington](#) (BECWG Co-Chair).

If you would like to learn more about any of these webinars, you can access the webinar links and listen to the full recording on the EBC BECWG webpage at www.iea-ebc.org/working-group/building-energy-codes.

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ACEEE Summer Study Paper on “Codes Around the Globe: A Cross-National Comparison of Building Energy Codes”

The American Council for an Energy-Efficient Economy (ACEEE) is holding its 21st biennial Summer Study on Energy Efficiency in Buildings on 17-21 August 2020 with a theme on *Efficiency: The Core of a Clean Energy Future*. As part of this, the BECWG developed a proceedings paper on “Codes Around the Globe: A Cross-National Comparison of Building Energy Codes” which further explores some of the emerging issues in building energy codes highlighted earlier in this newsletter, in addition to other areas such as code compliance best practices, adapting codes for hot and warm climates, and integration of new technologies in codes. The paper will be featured under the Summer Study panel on *New Construction: From Codes to Net Zero*.

Call for Papers | Special Issue of *Atmosphere* on “Building Energy Codes and Greenhouse Gas Mitigation”

Meredydd Evans (BECWG Operating Agent / Pacific Northwest National Laboratory) and Michael Donn (EBC BECWG Co-Chair / Victoria University of Wellington) are serving as Guest Editors for the special issue of the journal *Atmosphere* on “Building Energy Codes and Greenhouse Gas Mitigation.” They invite researchers to contribute original research articles, as well as review articles, dealing with building energy codes and how they can help to mitigate greenhouse gas emissions. Topics of interest include but are not limited to:

- Modeling to assess the impact of building energy codes on greenhouse gas mitigation;
- Analysis of what makes codes effective in mitigation, including assessments of code impacts post-construction;
- Implementation and compliance case studies and analysis;
- Nearly zero carbon and similar aggressive “stretch” codes;
- Building energy codes for existing buildings

“Countries around the world are increasingly adopting and implementing comprehensive building energy codes to improve the energy efficiency of buildings and reduce greenhouse gas emissions. Their reasoning is that buildings account for some 39% of global CO₂ emissions and are typically in place for decades, if not centuries. Building codes are seen as key tools for achieving a reduction in this total. We are interested in contributions from multiple disciplines and parts of the world.”

—Meredydd Evans, EBC BECWG
Operating Agent

Deadline for manuscript submissions: 15 January 2021

For more information, including how to submit a manuscript, please visit: https://www.mdpi.com/journal/atmosphere/special_issues/building_energy_GHG

Working Group Leadership |

David Nemetzow, U.S Department of Energy, United States (Chair)
Michael Donn, Victoria University of Wellington, New Zealand (Co-Chair)
Meredydd Evans, U.S. Pacific Northwest National Lab, US (Operating Agent)

Participating Countries |

Australia, Brazil, Canada, China, Ireland, Italy, Japan, New Zealand, Portugal, Singapore, Sweden, United Kingdom, United States

Further information | www.iea-ebc.org/working-group/building-energy-codes