

The Science and Communication of Energy-Efficient Indoor Environments

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1

Presentations (All)

- **EBC Overview by Prof Paul Ruysssevelt, EBC Executive Committee Vice Chair**
- EBC Annex 5: Air Infiltration and Ventilation Centre by Dr Peter Wouters
- EBC Annex 68: High Indoor Air Quality in Low Energy Buildings, Prof Carsten Rode
- EBC Annex 69: Adaptive Thermal Comfort by Prof Yingxin Zhu
- EBC Working Group on Cities and Communities by Helmut Strasser
- EBC Annex 72: Life Cycle Impacts by Rolf Frischknecht
- EBC Annex 74: Living Lab Platform by Prof Karsten Voss

2

2

Presentations

- **EBC Overview by Prof Paul Ruyssevelt, EBC Executive Committee Vice Chair**
 - Scope: energy in buildings and communities, 5 main themes
 - 27 participating countries, 86 Annexes+ 6 WGs, task shared
 - Current: 20 Annexes + 3 WGs
 - Project results: reports/factsheets/handbooks/guides/.....
 - www.iea-ebc.org
 - Target audiences: government/industry/academia

3

3

Presentations (Part 1-1)

- **EBC Annex 5: Air Infiltration and Ventilation Centre (AIVC) by Dr Peter Wouters**
 - Launched in 1979 as Annex 5, >40 yrs history
 - Events
 - Resources: website, info papers/tech reports/literature lists/newsletter
 - Focus fields and projects: smart ventilation, ventilative cooling, IAQ, airtightness
 - New: Covid-19 and ventilation**

4

4

Presentations (Part 1-2)

- EBC Annex 68: **High Indoor Air Quality** in **Low Energy Buildings**, Prof Carsten Rode
 - Goal: comfortable and healthy indoor environments in energy efficient buildings
 - Activities: definitions & indicators (IAQ and energy dashboard)/pollutant (VOC) load/modeling/control strategies/ 24 case studies (design/operation), including 7 low energy buildings from different countries
 - Project reports available

5

5

Presentations (Part 1-3)

- EBC Annex 69: **Adaptive Thermal Comfort** in **Low Energy Buildings** by Prof Yingxin Zhu
 - Appropriate indoor thermal environment – why adaptive thermal comfort: broader temp range – lower energy
 - Adaptive thermal comfort model with mechanisms and new database (from 6 continents, 22 countries).
 - Model application in mixed mode buildings
Reasonable building design – 4 examples in China, Australia, India
 - Personal comfort system – individual control of microclimate (heating cooling chair/desk fan/foot-warmer/wearable PCS, etc)
 - Energy saving potential

6

6

Presentations (Part 2-1)

- EBC Working Group on **Cities and Communities** by Helmut Strasser
 - Background and Scope: Carbon emissions in Cities (buildings and transport), cities are at the heart of the **decarbonation efforts**. Barriers and challenges. City needs.
 - 3 thematic priorities – technologies, strategies (planning), data+tools+methods.
 - Lessons learnt- questions need to be answered. Proposal for a new TCP on Decarbonation in cities and communities

7

7

Presentations (Part 2-2)

- EBC Annex 72: **Life Cycle Environmental Impacts Caused by Buildings** by Rolf Frischknecht
 - Net zero emissions by 2050, 40% by buildings
 - LCA: Material (embodied CO₂) – Construction – Maintenance – Demolition cycle
 - 5 Subtasks (methodology guideline, assessment workflow and tool, case studies, building LCA database, dissemination)
 - Typology of net-zero buildings approaches (energy demand and production)
 - The package for national buildings LCA

8

8

Presentations (Part 2-3)

- EBC Annex 74: **Competition and Living Lab**
Platform by Prof Karsten Voss
 - Experiences learnt from solar decathlon (university competition)
 - 3 subtasks (Science and technology, competitions and living labs, communication)
 - Design data analysis – max power 15 kWp- 10 kWp- 5kWp
 - Monitoring data (consumption and production)
 - How the competition linked to building science
 - Lessons learnt, impacts, performance

9

9

Please fill out the survey.

Thank you !

10

10