







#### 50 years ago (...1973...)

- Most countries: limited interest and almost no knowledge on ventilation, air infiltration and indoor air quality, summer comfort, ...
- Few countries were ahead: Sweden, Canada, Netherlands, ...
- In 1977 start of IEA implementing agreement **ECBCS**: Energy conservation in Buildings and Community Systems
- Since then, almost 90 projects ("annexes") have been started with a typical duration of 4...5 years

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• AIC (Air Infiltration Centre) was created in 1979 as annex 5



























# Agenda

- Welcome
- Short history & collaborations (Peter Wouters)
- Challenges and opportunities (Hilde Breesch)
- Major outcomes: 2012-today (Maria Kapsalaki)
- Envisaged Platform activities (Hilde Breesch)
- Impact (Hilde Breesch)
- Q&A and suggestions





# **Challenges and opportunities**

- **Building market**: Increased share dwelling market build by promotors how to make clear the importance of resilient cooling
- Renovation market is growing, including major renovations
- EPBD: growing impact in new and existing buildings (e.g. hourly calculations)
- Heat pumps: Reversible heat pumps more and more common
- **Renewable energy**: Peak power management more and more important (less kW need at night but free kW during sunny days during the day)









exploring the links between climate change mitigation and adaptation, and their social impacts







#### Key messages - 2

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- 6. Key elements of sustainable cooling strategy: tailoring to local contexts, promoting urban cooling solutions, prioritizing investment passive cooling, using active cooling systems rationally and moderately, and developing low-energy cooling systems suited to future warmer climates
- 7. Current EU policy landscape (EU renovation wave, fit for 55 package, EU climate adaptation strategy and the Mission on Adaptation to Climate Change) = key opportunities ensure sustainable cooling solutions, social justice and greater resilience

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### SWOT passive cooling technologies

#### STRENGHTS

- · Well developed technologies
- Smart control systems available
- · Reduce cooling energy use
- Close link to outside
- Combined with architectural design
- · Ventilative cooling can also guarantee good IAQ and applied in pandemic

#### WEAKNESSESS

- · Probably not sufficient to guarantee comfort in severe conditions
- Design and predictability not yet optimal
- Without automation not so easy to use
- Control of airflows not easy -> draught risk



### SWOT passive cooling technologies

#### OPPORTUNITIES

- Climate change
- Growing interest in overheating issues
- Better integration in standards and regulations (?)
- Renewable Energy Directive considers intensive ventilation as "renewable energy source"
- Fit in urban heat island mitigation strategies
- Synergies between various measures
- Hybrid combination of ventilation for IAQ and summer comfort
- · Increased attention to whole life cycle assessment

#### • THREADS

- Climate change
- Reversible heat pumps becoming mainstream and more efficient
- Total cost for active and passive measures can be very substantial

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/ek	Scientists, standard writers, (front-runners), policy m industry and end use
1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	Use of Super Cool Materials for Efficient Building Ventilation and Heat Mitigation, 29 November 2022 Dumb buildings with smart users? Linking building performance & human well being, 15 November 2022 Resilient cooling of buildings. Case studies and policy recommendations, 20 September 2022 Examples of resilient cooling solutions, 13 September 2022 Future weather data and heatwaves, 31 May 2022 Indicators to Assess Resilience of Cooling in Buildings, 10 May 2022 Resilient Ventilative Cooling in practice, 1 June 2021 Resilient Ventilative Cooling in practice, 9 December 2020 Ventilative cooling and examples, 26 March 2020 Ventilative cooling and summer comfort: Freevent project in France, 25 April 2018
11. 12. 13.	Surventilation & confort d'été, 24 April, 2018 Ventilative cooling potential and compliance in Energy Performance regulations — Status and perspectives in Belgium, Estonia, Greece, 17 December 2015 Assessing ventilative cooling potential in Energy Performance regulations Status and perspectives in Austria, Denmark, France, 8 December 2015 BUIL DU webinar: "Ventilative cooling: Keep cool and lower peak energy demand" 6 June 2014







Newsletters	Target group	Scientists, standard writers, designers (front-runners), policy makers, industry and end-users
		venticool the platform for resilient ventilative cooling





Advisory Board of Practitioners for Annex 80 & venticool & AIVC						
<ul> <li>✓ A link between research &amp; practical application</li> <li>✓ A meeting point for those willing to discuss their views and promote their knowledge on resilient ventilative cooling</li> </ul>						
Meeting #7: May 31 <sup>st</sup> , 2023	Resilient Cooling Design Guideline     20 participants					
Meeting #6: November 23 <sup>rd</sup> , 2022	<ul> <li>Advances of cooling technologies (pt2)</li> <li>20 participants</li> </ul>					
Meeting #5: March 30 <sup>th</sup> , 2022	<ul> <li>Advances of cooling technologies (pt1)</li> <li>20 participants</li> </ul>					
Meeting #4: December 15 <sup>th</sup> , 2021	<ul> <li>Future weather data for building simulation</li> <li>20 participants</li> </ul>					
Meeting #3: October 27 <sup>th</sup> , 2021	Key Performance Indicators (KPI) of resilient cooling     20 participants					
Meeting #2: June 9 <sup>th</sup> , 2021	Resilience as regards cooling (definition and application)     20 participants					
Meeting #1: March 24 <sup>th</sup> , 2021	Kick off meeting     40 participants	the platform for resilient ventilative cooling				

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