

*First Draft Program (Subject to changes)*

## ***Cooling Buildings in a Warming Climate***

Sophia Antipolis (Côte D'Azur), France

21-22 June 2004

### ***A Future Buildings Forum***

Co-hosted by ADEME and the International Energy Agency

DAY 1			
0800	<b>Registration</b>		
	<b>Session 1: Buildings, Cooling and Climate Change – Issues and State of Play (Plenary)</b> Session Chair: Egil Ofverholm (STEM)		
0900	<b>Welcome and Introductory Remarks</b>	François Moisan, ADEME	Invited
0910	<b>Welcome and Introductory Remarks</b>	Marianne Haug, IEA	Accepted
0920	<b>Climate Change – A Focus on Building Energy Use 2050</b> <ul style="list-style-type: none"> <li>Portugal as a case</li> </ul>	Eduardo Oliviera Fernandes	Invited
1010	<b>Climate Change and Buildings – A Focus on Cooling</b> <ul style="list-style-type: none"> <li>How much climate change is expected? What kinds of changes? What will it mean for buildings?</li> </ul>	Geoff Levermore, CIB	Invited
1030	<b>Keeping Your Cool – An Overview of Trends</b> <ul style="list-style-type: none"> <li>How much energy is used for cooling buildings? How is this changing over time? Why? What is the outlook?</li> </ul>	Paul Waide, IEA	Accepted
1050	<b>Coffee</b>		
	<b>Session 2: Cooling Buildings – The State of the Art (Plenary)</b> Session Chair: [??] The Chair will also facilitate the panel discussion.		
1110	<b>The Technology Dimension</b> <ul style="list-style-type: none"> <li>Overview of key cooling technologies (active and passive), their energy performance, trends, emerging technologies, challenges in reaching the market.</li> </ul>	Morad Atif, NRCAN	Invited
1140	<b>The Systems/Whole Building Approach</b> <ul style="list-style-type: none"> <li>To what extent can better design and construction avoid the need for active cooling (and heating)? Systems approaches, building management, challenges in the market.</li> </ul>	David Strong, BRE	Invited
1210	<b>Climate Change, Urban Heat Islands and Buildings – the Case of Japan</b> <ul style="list-style-type: none"> <li>Urban heat Islands as an illustration of early applications for global warming</li> </ul>	Dr Izumi, MLIT	Invited
1240	<b>Panel Discussion</b> (Speakers from Sessions 1 and 2)		
1255	<b>Instructions for Panel Sessions</b> (Chair to explain how the panel sessions will work)		
1300	<b>Lunch</b>		

	<b>Session 3: Getting in the Clinch with Solutions (Parallel Sessions)</b> These sessions will be informal, brainstorming discussions, facilitated by the Panel Chair, and with one, or a maximum of two, 10-minute presentations per panel. The presenters will be chosen by the Panel Chair. The Panel Chair will then report back on these sessions during Session 5.			
1430	<b>Panel A: System Design Issues</b> <b>Chair: Peter Lund</b>  <i>A1: What should we plan for? Climate change and the weather file</i> <ul style="list-style-type: none"> <li>Changes in maximum and minimum temperatures, diurnal range, comfort requirements</li> <li>Simulation and modelling issues</li> </ul>	<b>Panel B: HVAC, especially cooling</b> <b>Chair: Rune Aarli</b>  <i>B1: Low-energy cooling solutions: what is the outlook?</i> <ul style="list-style-type: none"> <li>High-performance heat pumps</li> <li>District cooling</li> <li>Solar cooling</li> <li>Passive and hybrid ventilation</li> <li>heat exchangers, etc</li> </ul>	<b>Panel C: Envelopes, Materials and Energy Storage</b> <b>Chair: Karney</b>  <i>C1: High-performance envelopes: how much cooling can we avoid?</i> <ul style="list-style-type: none"> <li>PCMs</li> <li>Superwindows</li> <li>Reducing internal loads</li> <li>Advanced insulation</li> <li>etc</li> </ul>	<b>Panel D: Markets and Policies</b> <b>Chair: Phil Harrington, IEA</b>  <i>D1: What is the cooling market?</i> <ul style="list-style-type: none"> <li>Whose problem is cooling?</li> <li>Trends and projections</li> <li>What is cooling worth?</li> <li>Getting tariff structures right</li> </ul>
1530	<i>A2: Cooling the urban heat island</i> <ul style="list-style-type: none"> <li>The scale of the urban heat island effect</li> <li>Climate change feedbacks</li> <li>Response strategies and case studies</li> </ul>	B2: Continued [Chair to specify]	C2: Continued [Chair to specify]	<i>D2: The role of standards and labelling</i> <ul style="list-style-type: none"> <li>Examples, case studies</li> <li>Outsmarting smart appliances: test procedures</li> <li>What is best practice?</li> </ul>
1630	Coffee			
1700	<i>A3: What do we do with existing buildings?</i> <ul style="list-style-type: none"> <li>Is this where the growth in cooling is?</li> <li>Options to limit air-conditioning</li> <li>Ventilation, fans and evaporative cooling</li> <li>Retrofit options for weather-proofing</li> </ul>	Continued B3 [Chair to specify]	Continued C3 [Chair to specify]	<i>D3: The role of building codes</i> <ul style="list-style-type: none"> <li>Their role in avoiding cooling</li> <li>Shading, glass area and performance</li> <li>Should cooling energy consumption be limited?</li> </ul>
1745	<b>Close Day 1</b>			
1930	<b>Reception.</b> Will begin with brief presentations of the seven building-related IEA Implementing Agreements, and their role in cooling issues.			
2015	<b>Dinner</b>			

DAY 2			
	<b>Session 4: Integrating the Solutions (Parallel Sessions)</b>		
0900	<b>A4: <i>Solar passive design – what’s holding it back?</i></b> <ul style="list-style-type: none"> <li>• Where is the problem? - designers, builders, planners, customers?</li> <li>• Should we all be living in a Passivhaus?</li> <li>• Scope for zero net energy buildings</li> <li>• The role of renewables</li> </ul>	<b>B4+C4: <i>Case studies – Integrated solutions, whole building approaches</i></b> <b>Co-Chairs: Karney and Rune Aarlien</b> <ul style="list-style-type: none"> <li>• [each presentation followed by proposals for changes based on first days component discussions]</li> <li>• [co-chairs to specify structure of these sessions]</li> <li>• Case study 1; example: the Lund building with energy storage</li> <li>• others</li> </ul>	<b>D4: <i>Market transformation strategies - components and whole buildings</i></b> <ul style="list-style-type: none"> <li>• Case studies</li> <li>• What works, what doesn’t, and why?</li> <li>• Playing catch-up – how can we all reach best-practice, and quickly?</li> </ul>
1000	<b>A5: <i>The user’s perspective: living and working in low-energy buildings</i></b> <ul style="list-style-type: none"> <li>• How user-friendly are low-energy buildings?</li> <li>• Comfort issues</li> <li>• The behavioural dimension</li> </ul>	<b>B5+C5: Case study 2</b> Etc	<b>D5: <i>Road map for Deployment</i></b> <ul style="list-style-type: none"> <li>• [?]</li> </ul>
1100	Coffee		
1130	<b>A6: <i>Discussion and brainstorming</i></b> <ul style="list-style-type: none"> <li>• Do we have a clear way forward?</li> <li>• What are the priorities for the short term?</li> <li>• Which issues need more work over the longer term?</li> <li>• Chair’s summary of sessions 3 and 4</li> </ul>	<b>B6+C6: <i>Discussion and brainstorming</i></b> <ul style="list-style-type: none"> <li>• Do we have a clear way forward?</li> <li>• What are the priorities for the short term?</li> <li>• Which issues need more work over the longer term?</li> <li>• Co-Chairs’ summary of sessions 3 and 4</li> </ul>	<b>D6: <i>Discussion and brainstorming</i></b> <ul style="list-style-type: none"> <li>• Do we have a clear way forward?</li> <li>• What are the priorities for the short term?</li> <li>• Which issues need more work over the longer term?</li> <li>• Chair’s summary of sessions 3 and 4</li> </ul>
1230	<b>Lunch</b>		

	<b>Session 5: The Way Forward– Policy development and Technology deployment (Plenary)</b>	
1400	<b>Getting it All Together</b> <ul style="list-style-type: none"> <li>• Reporting back from and interrogation of the Panel Chairs</li> <li>• Audience Q&amp;A session with all Panel Chairs, facilitated by the Session Chair</li> <li>• Key issues for discussion: <ul style="list-style-type: none"> <li>• "What are the most effective options for reducing cooling energy demand?"</li> <li>• "What technical developments (of equipment, systems, building design and planning) are likely to make a significant difference?"</li> <li>• "Which are most feasible?"</li> <li>• "What are the priorities for research and policy?"</li> </ul> </li> <li>• From here on - how can each implementing agreement take care of the conclusions</li> </ul>	
1600	<b>The Last Word</b>	
1615	<b>Close</b>	