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ASHRAE Hellenic Chapter

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Presentation title:	**Assessing Resilience and Preparing Our Buildings and Cities to be Climate Change Ready**

There is growing scientific evidence that human activities have been and continue to impact climate change resulting to long-term shifts in temperatures and weather patterns. Buildings and the built environments of our cities have been part of the problem by using large amounts of energy and other natural resources, with major contributions to carbon and greenhouse gas emissions. They are now transforming to become part of the solution by decarbonizing buildings and placing more emphasis on reducing energy use and operational emissions. However, climate change has triggered different adverse and extreme weather events that can affect our buildings and cities, with near- and long-term implications that have to overcome.

In this direction, a new European project is underway for developing innovative methods and tools for supporting public and local authorities to assess the current state and develop, implement and monitor different adaptation measures to the climate change impacts, at building and urban scale. This paper provides an overview of relevant knowhow reported in the literature to assess climate change impacts and risks on the built environment. In addition, the paper outlines the methodological approach and structure of the overall effort and upcoming work.

Short CV:

Dr. Balaras is a Mechanical Engineer. Research Director with the Group Energy Conservation at the Institute for Environmental Research & Sustainable Development -NOA, Athens, Greece. He has over 35 years of experience in research, development and demonstration in the areas of energy conservation, sustainability and resilience assessments of the built environment, and energy audits. He is an ASHRAE Fellow and currently serves as a voting member on ASHRAE Standard 240P Evaluating Greenhouse Gas (GHG) and Carbon Emissions in Building Design, Construction and Operation, TC 6.7 Solar Energy & Other Renewables, and as a NVM of SSPC 189.1 Design of High Performance, Green Buildings.

CV:	

Dr. Balaras is a Research Director with the Group Energy Conservation at the Institute for Environmental Research & Sustainable Development, NOA, Athens, Greece. He has over 35 years of experience in R&DD in the areas of energy conservation, high performing buildings and decarbonization, thermal and solar building applications, climate resilience and sustainability assessments, and energy audits. He holds a PhD and MSc in Mechanical Engineering from Georgia Institute of Technology and a BSc in Mechanical Engineering from Michigan Technological University. He is a registered EUR ING and Chartered Mechanical Engineer, member of the Technical Chamber of Greece, Fellow ASME, Fellow ASHRAE. Dr. Balaras has over 350 scientific articles published in international journals, books and conference proceedings. Past ASHRAE service: Society Vice President (2011-13), past DRC Region XIV (2017-20), past DAL (20017-10). Recipient of several ASHRAE Awards including DSA, ESA, John F. James International Award, and Andrew T. Boggs Service Award.

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