

# NEW METROPOLITAN PERSPECTIVES 2020

## THEMATIC SESSIONS - TS

### TS-12

#### VALUATIONS SUPPORT POST CARBON CITY AND GREEN BUILDING STRATEGIES

*Keywords: Post Carbon City; Post Carbon Building; Green Building Real Estate Market; Multi Dimensional Valuation; Urban Appraisal in Climate Change Mitigation.*

Session is devoted to present researches supporting transition from energy demanding settlement TO natura based post carbon cities, districts, buildings, all them adopting the cheapest and most efficient energy: THE NOT CONSUMED ONE. Passivation of post carbon cities, districts, buildings is performed insulating constructions by the mean of natural products collected from local, regional and Med wood resources. A Circular Economy framework is introduced to face Climate Change challenge shifting it in a technological innovation and increasing the natural stock of territories, regions, Countries. The latter increase the Oxygen production as well as their CO2 sequestration making an important difference in Global Warming mitigation. States and international organizations are aware of Earth environmental emergency, as well as of urban ecological and energy crisis. One causal factor among several is the disinvestment of existing old settlements and the migration of a high percentage of rural population to metropolis. A dramatic consequence is the wild urbanization of all available rural agricultural land surrounding original built areas in large cities and the increase of urban congestion which causes, among others effects, artificial mobility, private cars over-use, energy over-consumption, air over-pollution. Communities and territories are addressed by leading organizations to treasure and re-use the consolidated old settlements, not to abandon them, and therefore to save the open and arable land surrounding cities and metropolis, by means of: revitalization of economy in historic towns and old villages; physical rehabilitation following their economic revamping. For more dense settlements already existing "Green Urban Conservation" actions are introduced and addressed such as: restoration and retrofitting interventions, characterized by both bio-ecological and cultural sustainability, over the wide heritage; energy rehabilitation of buildings for dramatic consumption reduction; adoption of renewable energy sources; diffusion of zero mile decentralized energy production (with no transport) aiming to make local communities energy independent and, as much as possible, self-sufficient. Analysts and policy makers, worldwide, have a growing strong interest in energy and environmental performance of the construction industry and the improvement of the energy performance of both new built and existing building stock is a physical and economic challenge for the future of urbanization. The ecological collapse hanging over Earth has stimulated to research the causes of the increasing and widespread environmental decay and to set-up shared strategies to over-come the criticalities burst-out in recent years. The construction sector and, specifically, the energy operating management of existing buildings, according to international assessments, is responsible for over 40% of the total energy consumed on Earth. They are among others the major causes of: waste of resources; demand for fossil fuels and resources; CO2 emissions; planet's pollution. Pollutant emissions, consequent of combustion and one of the final outputs of the settlement process, are among the major causes of Global Warming (GW) on the planet according to the Intergovernmental Panel on Climate Change, IPCC (2007, 2013, 2014). Sustainable cities are those cities that are more attentive to citizens' needs, in which energy and environmental issues and socio-economic interests are integrated in a harmonious way (co-evolution), forward-looking about the role of the private sector and focused on economic growth of the local market. However, while the tools to evaluate buildings energy - environmental efficiency have increased, also due to the issue of European standards on energy consumption reduction, the sustainability evaluation made using analytics model has been less investigated. Research tries to overcome the lack of a shared and common methodology that allows an objective assessment of sustainability at urban level and impacts of ecological investment in pollution mitigating.

#### CHAIR

##### **Domenico Enrico Massimo – UNIRC**

ASSOCIATE PROFESSOR of Urban Appraisal and Economics, at Mediterranea University in Reggio Calabria, Italy; - vice director of PAU [P(atrimony) A(rchitecture) U(rbanism)] Department, at Mediterranea; -founder and director, of Geomatic Valuation University Laboratory (GeVaUL), devoted to spatial valuation focused on bio ecological mitigation of Climate Change; -1989-1991 fellow and 2008-2011 research affiliate at Massachusetts Institute of Technology, MIT (Cambridge, Usa), Department of Urban Studies and Planning; - MIT Spurs Community member since 1990. One focus of his recent research is the bio ecological mitigation of Climate Change and Global Warming phenomena, by experimenting in real world Green Post Carbon City Strategy, with projects like: -REDUCER Research Project for Post Carbon Cities and emission reduction, with MIT, Department of Architecture, and Tsinghua University (Beijing, PRC), Center for Clean Energy; co – director. He authored over one hundred and fifty scientific publications: Indexed scientific review articles; book chapters; peer reviewed meeting proceedings; research reports.

