



Reconstructing the Future for People and Planet



The Pontifical Academy of Sciences (PAS) has a track record of eminent events addressing anthropogenic global warming, biodiversity loss, social inequality, forced migration and other burning issues related to the imminent sustainability crisis of our civilization. PAS also supports the worldwide discourse initiated by *Laudato si'*, Pope Francis' game-changing encyclical on the “care for our common home”. In that document, the Holy Father addresses, *inter alia*, the deplorable state of the contemporary built environment: “Nowadays, (...) we are conscious of the disproportionate and unruly growth of many cities, which have become unhealthy to live in (...), huge, inefficient structures, excessively wasteful of energy and water. Neighbourhoods, even those recently built, are congested, chaotic and lacking in sufficient green space. We were not meant to be inundated by cement, asphalt, glass and metal, and deprived of physical contact with nature.” (44)

The built environment is also a crucial factor in the climate equation: Buildings and infrastructures are directly responsible for roughly 40% of the global greenhouse gas emissions, if one adds up the effects of construction, operation, and demolition. The dysfunctional distribution of cities and villages in space causes significant further emissions, especially by forcing people to commute over long distances using vehicles powered by fossil fuels. Beyond the environmental dimensions, contemporary settlements often divide, rather than unite, social strata and leave the “bottom billions” of human beings behind in slums and favelas.

In spite of these disturbing facts and the decisive role cities and villages will play in the global transition to a sustainable near-circular bioeconomy, insufficient attention is being paid to this

critical Anthropocene challenge. Recently, in her state-of-the-European-Union speech held on 16 September 2020, Commission President Ursula von der Leyen announced an exciting initiative entitled “New European Bauhaus” (NEB). She referred explicitly to the legendary *Bauhaus* design school, which was founded by Walter Gropius in Weimar in 1919, i.e. in the post-World War I time that also required deep socioeconomic and technological transformations.

The proposed conference intends to pick up and amplify that momentum by

- (i) reviewing the scientific evidence and the emerging concepts for sustainable construction, urban design and spatial planning;
- (ii) assessing what has been accomplished so far with NEB-type initiatives internationally; and
- (iii) outlining the agenda for research, innovation and implementation in the relevant fields during the next decade.

This shall be achieved by bringing together cultural leaders, decision makers, scientists, architects, designers, experts and practitioners at the highest possible level.

AIMS & SCOPE

Similar to the intentions of NEB and related recent initiatives (such as the “Bauhaus der Erde”), the conference will take an *integrated approach* towards the built environment, guided by the key criteria *sustainable, inclusive and beautiful*. Moreover, it will explicitly adopt an *international perspective* that respects the rich *cultural diversity of settlement planning & construction* around the world. Last, but not least, it will address the predicament of *informal urbanization* that calls for novel attitudes and practices.

Constructing – in the true sense of the word – a future within the planetary boundaries for some 10 billion people is a breathtaking challenge. Fortunately, many novel options for “building better” are becoming available now, such as timber-based high-rise construction, AI-assisted design, serial pre-fabrication of components, smart recycling technology, multi-functional land use, integrated regional resource management, community-based urban development, and so on. From the climate point of view, a thoroughly concerted forestry-construction strategy could stop the degradation of natural ecosystems worldwide, while turning cities into major carbon sinks.

The first part of the conference will focus on the built environment as a critical part of the anthroposphere to be transformed. Scientist, architects, planners and decision makers will present the most advanced thinking in their respective fields and remits.

The second part of the conference will widen the lens to address the whole-systems context in which the settlements of the post-fossil era shall develop. Humankind has finally recognized that its long-term future will not be secured by the total enslavement of the biosphere, but rather by coexistence and collaboration with other life forms on Earth. This means, in particular, that our

economic system should not only be decarbonized, but largely *demineralized* too. The resulting bioeconomy, characterized by region-specific value chains, almost-closed material cycles and completely-renewable energy sources, must also capitalize on neglected traditional and indigenous knowledge.

This does in no way exclude to harness the most advanced cognitive tools currently developed by our civilization, ranging from genome editing to artificial intelligence. Most of this is subsumed under the notion “digitalization”, although the incipient rise of quantum computing may render this label obsolete. The meeting should at least touch upon the successful marriage of disruptive innovations with evolutionary solutions: hi-tech meets no-tech!