

Dwelling on Earth by learning from Nature. Urban and building systems more sustainable and resilient through the use of Nature Based Solutions and Biomimicry

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**ID 018** *Dwelling on Earth by learning from Nature. Urban and building systems more sustainable and resilient through the use of Nature Based Solutions and Biomimicry*

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In the last two and a half centuries, an instant compared to the 4 billion years of the Earth's life, the human species has compromised every ecological niche on the planet, upsetting the delicate balances of homeostasis that regulate the biosphere. In 2020, the mass of all man-made artefacts made by humanity, over one trillion tonnes, exceeded the mass of all living organisms. The growing impact of the human footprint on the planet is accompanied by a strong increase in urbanisation even in the oldest economies, where population growth is almost zero. UN projections predict that by 2050 some 70 % of the world's population will live in urban areas. This will lead to an inevitable growth in the number and volume of new buildings. Globally, according to the Global Alliance for Building and Construction (GABC), there are about 245 billion square metres of buildings on earth today. Without corrective measures, another 230 billion will be built in the next forty years and 70 % of these will not be covered by mandatory and shared energy and environmental efficiency standards. One can therefore understand how cities and buildings constitute a strategic and necessary area for achieving the environmental and decarbonisation goals of Agendas 2030-2050. In relation to these goals, the contribution intends to explore the potential of Nature Based Solutions (NbS) and the biomimetic approach to regenerate and transform urban and built environments.