

TEDx: 3 ideas to save our urban habitat (and the planet)

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It is not everyday that one gets asked to give a lecture as part of a global phenomenon that, since 2011, has been watched by over 500 million people. I am talking about the TED talks: an acronym for Technology, Entertainment and Design that are a global series of conferences that promote "ideas worth spreading".

And so it started - an invitation that allowed me to rub virtual shoulders with the great and the good in the common understanding of sharing information and visions for the future. The glimmer of such an opportunity saw me compile 158 slides in break neck speed that would be soon be whittled down to a more humble 58 slides in order to be delivered in 15 minutes flat. Embarrassingly, I was a TED virgin up until the invitation, but it soon became apparent what all the fuss was about. My virtual hunt for TED awoke my inner child's natural line of inquiry to a cacophony of information bites that were packaged into succinct recordings by pioneers likes Bill Gates and Steve Jobs. Each begged to be played in order to release the nuggets of ideas, lateral thinking and mind bending visions of what is now and what could be in the future.

So, what of my subject matter? I wished to impart '3 ideas to save the urban habitat', that also represented the 3 particular research avenues that my design and research studio undertake: 1) a move towards zero energy development, 2) greening the urban habitat, and 3) a vertical urban theory for the 21st century. Let me give you an outline as to why these 3 ideas will go some way to safeguarding our built environment for future generations:

1. Towards a zero energy development

We are consuming 86 million barrels of oil on a daily basis – enough to fill and empty 5 pyramids of Giza! That's a lot of consumption. Much of the fossil fuels is channeled into sustaining our built environment, which also sees the release of noxious pollutants that contributes to climate change. In fact, the built environment contributes almost 50% of global carbon emissions. Steps to curb climate change have resulted in global protocols to reduce green house gas emissions through legislation, and an increasing advocacy for green design practices to create more sustainable developments. 'Zero energy development' has become increasingly popular in Europe and the US, given the escalating costs of traditional fossil fuels and their negative impact on the planet's climate and ecological balance.

'Zero energy' means that the 'developments' consume zero net energy and have zero carbon emissions annually. This can be achieved by ensuring the energy consumed on site is replenished using renewable energy sources (such as wind or solar), while reducing the overall energy consumption by a highly efficient design that is environmentally responsive. Our knowledge of passive environmental design principles balances lessons learned from past cultural and architectural practices with new technologies and techniques to create innovative developments that move towards zero energy. I was previously fortunate enough to collaborate with a green property developer, Sime Darby, to create its 'Idea House' -a project that embraces such ideals, and is the first zero carbon house in Asia that sets a benchmark for future tropical living today.

2. Greening the urban habitat

The intensive development of our cities increases the risk of existing urban greenery being depleted, which unless otherwise planned for its retention and enhancement, can lead to negative environmental impacts such as temperature rise or increased flood risk. The challenge therefore lies in looking at alternative means to green the urban habitat that explores diagonal and vertical planted planes in addition to the horizontal plane of the ground, podium or rooftop in



order to combat such negative environmental effects. One way is to conceive different types of greenery and their installation within the city as a giant Lego kit-of-parts that can be clipped into place, with each piece having its own aesthetic, spatial and environmental properties based on the surface area of greenery. This can be achieved by adapting the Leaf Area Index - a biological parameter which is used to monitor the ecological health of natural ecosystems and to mathematically model and predict metabolic processes. As such, it can be used to quantify the planning and design of urban landscaping in biological terms and ensure a balance of leaf area can be retained on the site for its health and wellbeing, environmental and aesthetic benefits. Our further research in this field allows us to also understand the properties that greenery brings to the urban habitat, such as carbon / temperature reduction and water retention that can be correlated to particular species, as well as the social behaviour of people in and around planting.

3. A vertical urban theory

With half the World's population living in increasingly dense urban habitats, Space is a commodity in need of preservation and replenishment. Nowhere does one feel more conscious of this than in Hong Kong – whether it is within the confines of a micro-apartment or even simply sharing a table in a restaurant that has been ergonomically attuned like a spatial tuning fork. Space and society are intrinsically linked, as one cannot have a discourse about society and the way people interact without also discussing the space in which they can do this. The ability to consider a spatial sustainability as a counter point to social sustainability seems key to the success of our high-density vertical urban habitats in the 21st century if we are to foster a greater sense of community and thus turn space into place. Alternative social spaces, such as sky courts and sky gardens, help reduce perceived densities, provide natural light and ventilation, and facilitate opportunities for vertical urban greenery. Collectively, these parameters can create a new forum for social interaction and in so doing reinterpret those urban qualities of the street and the square by lifting them to loftier climbs - for the betterment of society, the urban and natural environment. Our Studio is a pioneer in the design and research of sky courts and sky gardens as alternative social spaces for the 21st century and are currently involved in a study that looks at the correlation between social behavior and the spatial form in sky courts.

So, how do these 3 ideas save our urban habitat? Post-global financial crisis, we have entered an age of authenticity. Never has it been so important to account and justify our social, economic and environmental actions in the interests of preservation of our natural and urban habitat for future generations.

It is at the juncture of reaching for fact and reason through an academic rigour, and the need for innovative design that embodies a creative vigour, that I would like to imagine our work lies - allowing us to be designers and thought leader in the field of sustainable design for the built environment in the same instance. This is made possible by a process we call Evidence-Based Interdisciplinary Sustainable Design (E-BISD). This enables us to unlock the latent value of spaces in our urban habitat in order to create people centred *places*, from the micro scale of a dwelling to the macro scale of the city, that give back to society, the economy, the natural and built environment.

Still missing it? Seek out TED.

Biography

Prof. Jason Pomeroy is an award winning architect, masterplanner and academic at the forefront of the sustainable built environment agenda. He graduated with distinction from the Canterbury School of Architecture and Cambridge University. He is the founder and Principal of Pomeroy Studio. In addition to leading Pomeroy Studio, he lectures and publishes widely, and is the author of *Idea House: Future tropical living today* and *Skycourts and skygardens: greening the urban habitat*. He is an adjunct professor at the University of Nottingham, and Mapua Institute of Technology. He also sits on the editorial board of the Council for Tall Buildings and Urban Habitat.