

# Theme 1: Resilient Development

## Abstract:

The current notion of resilience frames a variety of ethical approaches in areas as diverse as ecology, architecture, urban planning, engineering, and human geography. Even though obvious differences exist between some of these approaches, most of them rhetorically assume that a resilient individual, agent or system has the ability to anticipate an event and its effects, proactively react, manage risks, cooperate, respond after the event to mitigate effects, and transform and/or adapt.

The aim of this session is to unpack the idea of resilient development and stimulate a discussion on how the development - as a constant ever-changing process - can be resilience (whatever resilience means). Here we are going to focus on four prominent themes in which the discourse of resilience development is playing a critical role (as emphasised by policy, media, industry and academia). These themes are intertwined as the role of technology, the context of climate change, the process of decision making and stakeholders' engagement - pre-and post-disaster - affect the resilient development of the built environment; therefore, a holistic approach is required if we want to understand how to enhance built-in resilience and ensure sustainable development for all.

## Session Co-Chairs:



**Dr Ksenia Chmutina** is a Lecturer in Sustainable and Resilient urbanism at Loughborough University. Her main research interest is in synergies of resilience and sustainability in the built environment, including holistic approaches to enhancing resilience to natural and human-induced threats, and a better understanding of the systemic implications of sustainability and resilience under the pressures of urbanisation and climate change. She is also interested in multi-hazard multi-stakeholder approaches to disaster risk reduction. She has an extensive experience of working on RCUK and EU-funded projects that focused resilience and sustainability of urban spaces in Europe, China and the Caribbean.

**Dr Yewande Akinola** is a Design Engineer. Her engineering experience and responsibilities include the design of sustainable water supply systems and the engineering design coordination of large projects in the built environment. She has worked on projects in the U.K., Africa, Middle East and in East Asia. Yewande has won several awards including the UK Young Woman Engineer of the year (Institute of Engineering and Technology 2012), UK 35 Under 35 (Management Today's 35 Women Under 35 2013) and UK Outstanding Woman in STEM (PRECIOUS Award 2014.) Her professional specialties are water, design for manufacture and assembly project engineering and innovation management.

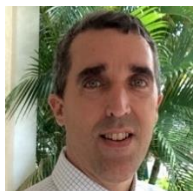


## Speakers:



**Sesanam Dagadu, tinyDAVID ltd:** Sesanam believes we are all here to solve problems and make new things possible, and increasingly sees that the problems that engineers solve are rarely ever just about engineering and technology. Rather, they are about understanding people's the fears, hopes and aspirations. He dedicates his life to find the appropriate techniques, technologies and approaches to sustainably solve problems that people face every day.

**Gonzalo Lizarralde, University of Montreal:** A specialist in planning, management and evaluation of urban and international architecture projects, Gonzalo is a professor at the School of Architecture at Université de Montréal, director of the IF Research Group (grif), and the leader of the Disaster Resilience and Sustainable Reconstruction Research Alliance. He is a founding member of i-Rec, an international network of specialists in Disaster Risk Reduction.



**Thomas Rogers, University of West Indies:** Tom is a lecturer in renewable energy at The University of the West Indies, Cave Hill Campus, Barbados. He is involved with helping to increase the sustainable energy teaching and research capacity in the Caribbean region. His research explores transitioning small island states towards 100% clean energy systems.

**Jo Rose, University of York:** Jo has worked intensively in Complex Political Emergencies including Liberia, Somalia and South Sudan. Throughout her career she has worked within and between academia and policy and practice in disasters, conflicts and uneven development. Her ongoing work focuses on the collaboration between communities and humanitarian agencies to promote resilient and sustainable interventions in disasters and conflicts.



## Presentation Abstracts:

### ***THE INVISIBLE CITY: ACHIEVING RESILIENCE IN INFORMAL SETTINGS IN DEVELOPING COUNTRIES, Gonzalo Lizarralde***

Informal settlements in developing countries can be seen as both a cause and a consequence of structural vulnerabilities - including poverty, exclusion, marginalization and other social injustices. In this presentation, Gonzalo Lizarralde takes us on a journey through the slums and informal settlements of Colombia, Honduras, El Salvador, Cuba, Haiti and other countries of the global south, revealing the challenges of, and opportunities for, improving the fate of millions of poor families. This journey shows that, in some cases, resilience is achieved through **effective and sophisticated informal strategies that are invisible to the majority of professionals, policy and decision makers**. However, lack of knowledge, institutional disengagement from urban problems, concentration of decision-making power and focus on a limited number of technical aspects have led to urban policies, programs and projects which have failed to respond to the real needs and aspirations of the poor.

Stressing the limitations of current approaches to resilience enhancement, Dr. Lizarralde proposes a framework to consider the short-, mid- and long-term consequences of interventions in housing, infrastructure and services aimed at reducing vulnerabilities. Echoing the main results exposed in his recent book "The Invisible Houses", Dr. Lizarralde argues that "the housing problem" is not, in fact, a problem of absent dwellings and that its solution goes beyond the mere provision of technical outputs. Examples of bottom-up interventions in informal settlements and settings reveal the opportunities that exist for engineers to create sustainable and resilient human settlements.

By pointing out common mistakes in design and planning, Dr. Lizarralde presents us with a demanding challenge, that of embracing a sustained engagement with the complexity of processes that are generally invisible.

## ***HOW SMALL ISLAND STATES COULD LEAD THE WAY IN TRANSITIONING TOWARDS 100% CLEAN ENERGY SYSTEMS, Thomas Rogers***

Due to geographic constraints, historical factors and a reliance on imported fossil fuels, the economies of tropical island states are often burdened by high energy costs. With island states making up one-fifth of the countries on the DAC list of ODA recipients, these high energy costs provide a substantial barrier to their economic development. In addition, tropical islands tend to be sensitive to the impacts of climate disruption, and its perhaps not surprising that 13 of the 15 countries to fully ratify the Paris climate agreement on the day that it was signed were small island states.

These same countries often have attractive renewable energy resources (wind, solar, geothermal, bioenergy and marine energy). As global renewable energy generation costs continue to fall, grid parity has already been achieved for many of these islands (even with oil prices hovering around their 10-year low). What's more, the flexible nature of their existing energy systems may actually help them transition towards using these renewable energy resources, with breakthroughs in power system management, storage options and electric vehicles providing real potential to streamline this process.

With many small island states now looking to transition their energy systems towards high levels of renewable energy generation, it is imperative that the resilience of these future energy systems to climate change is considered. This is particularly important given that these areas have a high exposure to the impacts of climate change.

This presentation will briefly explain the typical structure of a small island state's existing energy system and identify some of the different clean energy technology options that are available to help them transition towards 100% clean energy systems. The presentation will then discuss the expected impacts of climate change on these renewable technology options, *and the anticipated impact of climate change on the energy demand in these countries.*