

Keynote: Dr Anne Kemp OBE

Title: BIM and Geospatial to National Digital Twin. The way forward.

Date/Time: Tuesday 8th September, 10:30am

Session: [Applications of BIM and GIS Integration 1](#)

Abstract

For too long there has been far too much emphasis on delivery of technology – rather than on content and purpose. This keynote will describe the initiatives occurring across the built environment industry to focus on the decisions that are needed, and information requirements needed to support those decisions, to enable a better integrated and sustainable infrastructure to support our economy, communities and natural environment. In particular, the UK BIM Framework will be described. Within this context, the keynote will explore some of the challenges which need to be addressed by the BIM and GIS communities to assist the overall progression to what is being referred to in the UK as the “National Digital Twin”.

About Anne

Dr Anne Kemp OBE has 25 years of experience and is Fellow and Technical Director for Digital Engineering (DE) and BIM Strategy and Development, at Atkins, part of the SNC Lavalin Group, providing advice to some of the UK’s major infrastructure clients, including Crossrail, Eight2o, HS2 and Heathrow. She is Chair of the UK BIM Alliance (which hosts BuildingSMART UKI), and convenor of the International Standards Organisation committee for ISO19650, which has evolved out of the UK’s BIM Level 2, and the committee developing the strategy for global standards focused on managing information for the whole life cycle of infrastructure projects. She works closely with the Centre of Digital Built Britain, sitting on the Management Advisory Board and the Digital Framework Task Group which is developing the National Digital Framework for the UK. She was chair for ICE’s State of the Nation “Digital Transformation” Report 2017, and of the Association of Geographic Information from 2014 to 2016. She is one of the ICE’s Invisible Superheroes: Digital Dynamo, and was awarded the ICE’s President’s Medal 2017. In 2019, she was awarded an OBE for “Digital Construction Innovation” in the Queen’s birthday Honours.

Anne has recently completed a 258 mile walk across the Penine Way in aid of three charities - homeless and rough sleeper charity [CRASH](#), humanitarian mapping charity [MapAction](#) and mental health charity [Mates in Mind](#). [Find out more about Anne's doubly challenging walk and make a donation.](#)

Keynote: Polly Hudson

Title: Stocks as systems in motion; knowledge collation, spatiotemporal visualisation and open data generation

Date/Time: Tuesday 8th September, 10:30am

Session: [Users and Use Cases 2](#)

Abstract

The building stock is a city's largest capital asset and most significant socio-cultural and economic resource. It is also where the greatest potential for energy and waste reduction lies. To maximise stock resilience, reduce finite resource loss, and to minimise, quantify, and better predict energy and waste flows, detailed information on the characteristics of stocks, and their operation as dynamic systems, over long periods of time, are needed. However data, and knowledge relating to stocks remain highly fragmented. In this presentation examples of animations and visualisations generated within sustainability science, urban science, urban morphology, and community-led planning and the heritage sector, are presented to illustrate the current move towards a more multidisciplinary approach. The presentation also includes a description of Colouring Cities, an open data initiative specifically designed to advance research in this area.

About Polly

Polly is a Senior Research Fellow at UCL's Centre for Advanced Spatial Analysis (CASA), who has been involved in 2D/3D and 4D GIS projects since the 1990s. Initially working on the design of community GIS systems at the Building Exploratory charitable trust, which she founded in 1997, from 2000 she experimented with longitudinal animations, first collaborating with Steve Evans on testing [4D animations](#) of the stock and later with Flora Roumpani and Kiril Stanilov on the [animation of historical networks](#).

Since 2010 her academic research has focused on the use of microspatiotemporal data on buildings, and particularly age and demolition data, in forecasting vulnerability and resilience in urban stocks and in geolocating building typologies to support retrofit programmes. This has included the manual collection of the age of 20,000 buildings in London and the manual vectorisation of over 10,000 building footprints from historical maps. Owing to the lack of availability of open, spatial building attribute data at building level in the UK, necessary to understand the age and composition of stocks, and of demolition data required to track change and loss of finite reserves, in 2016 Polly set up [Colouring London](#), an open data/ knowledge exchange platform, working in collaboration with colleagues at UCL, Ordnance Survey, Historic England, the Greater London Authority - the platform code is available for testing by other cities as seen in [Colouring Beirut](#).

From 2020 to 2021 Colouring London will be hosted by [The Alan Turing Institute](#). This will allow experimental work to be undertaken on the computational generation of current attribute data, on the use of AI to accelerate automated extraction of data from historical maps, and for role of a range of advanced computational approaches in the analysis, modelling and forecasting of stock dynamics, and stock resilience, to be tested.

Keynote: Professor Jantien Stoter

Title: 3D Geoinformation: from research to practice

Date/Time: Tuesday 8th September, 10:30am

Session: [NMCA/EuroSDR 1](#)

Abstract

Developments in 3D Geoinformation technologies have made it relatively easy for practitioners to generate 3D models and use it in their urban applications. However, reuse of once collected 3D data is still difficult and results of research and pilots on the usage of 3D Geoinformation have still not always found their way to practice. For example, despite significant developments in the domain of 3D Geoinformation, National Mapping and Cadastral Agencies who produce 3D data (and often provide this as open data to the users) still observe an underuse of their 3D data.

This presentation will identify possible reasons for this underuse and will propose some solutions to increase the use of already available 3D data both quantitatively (to make more use of available 3D data) and qualitatively (to make better use of 3D data).

About Jantien

Prof Dr Jantien Stoter chairs the [3D Geoinformation](#) research group at the Delft university of technology, The Netherlands. She also works as innovations researcher at both Kadaster and Geonovum. Jantien did her PhD on 3D Cadastre (2004), received a personal grant from the Dutch Science Foundation on 5D modelling (2011) and was awarded a grant from the European Research Council for her current research on urban modelling in higher dimensions. She is initiator of the 3D Special Interest Group of EuroSDR (European Spatial Data Research group) in which research institutes and national mapping and cadastral agencies from all over Europe collaborate on 3D geoinformation-related innovations.