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Living and Sustainability: An Environmental Critique of Design and Building Practices, Locally and Globally

1. Paper / Proposal Title:

A Window to the World: Examining the economic, psychological and physiological benefits of retrofitting holistic sustainable and biophilic design strategies, for the indoor environment.

2. Format:

Written paper and verbal presentation

3. Author(s) Name:

Stephen Edge and Dr Carolyn Hayles

4. University or Company Affiliation:

University of Gloucestershire, and University of Wales, Trinity St Davids, both UK

5. Abstract (300 words):

"for 50 years, we made cities in such a way that people are almost forced to sit down all day in their cars, in their offices, or in their homes. This has led to serious situations health-wise." Jan Gehl

In 1800 London's population was 1 million, in 2015 it was over 8.5 million, the population growth, will continue to put an unbearable stress and strain on living and commuting in today's overcrowded cities. So what could the retrofitting of a Biophilic design strategy

do, to provide an effective solution to help built environment professionals combat some of these problems?

The 'biophilia hypothesis', proposes that humans share a deep seated propensity to be with nature (Wilson, 1984), and that exposure to the natural world is therefore important for human wellbeing. It is becoming increasingly clear that biophilia has a real and measurable impact on human performance metrics such as productivity, emotional wellbeing, stress reduction, learning and healing (Kellert, Heerwagen and Mador, 2008).

Up to now there has been limited research that examines the benefits that retrofitting sustainable and biophilic design could have, on enhancing the outcomes of commercial interior design practice. The need therefore, to understand more about the specific contribution of this biophilic design philosophy to the design process, is now paramount. Not only in terms of wellbeing but also in terms of sustainability, and a better understanding of what holistic sustainable and biophilic design strategies can create, to optimise building performance.

This paper therefore questions whether or not it's possible to yield a greater understanding of the mechanisms and potential for retrofitting holistic sustainable and biophilic design strategies, to provide the greatest benefits to building occupants. With a view to measuring the results using a BIM model, and perhaps ultimately influencing UK environmental assessment method policy in the future.

Word count 300

6. Author(s) Biography (200 words each):

Dr Carolyn Hayles is a practitioner, researcher and educator, with 20 years of experience working in environmental and sustainable design and construction. Carolyn has worked in the UK, USA, Australia, Hong Kong and Singapore. She is a Fellow of the Royal Society for the Encouragement of Arts, Manufactures and Commerce and a Fellow of the Higher Education Academy.

Carolyn graduated with a First Class BSc (Hons) degree in Geography and Geology in 1992. After completing a PhD in Applied Geology (the weathering and conservation of historic building stone) at the University of Glasgow, she worked as a Materials Scientist and Senior Consultant at the Building Research Establishment (BRE) for eight years before returning to academia.

Carolyn's academic posts have included a Senior Lectureship in Sustainable Construction and Green Building in the School of Property, Construction and Project Management at RMIT University, Melbourne; a Lectureship in Sustainable Design in the School of Planning, Architecture and Civil Engineering at Queen's University Belfast and a Lectureship in Sustainable Construction in the Department of Architecture and Civil

Engineering at the University of Bath. Carolyn joined UWTSD as a Senior Lecturer and Academic Lead for the Institute of Sustainable Practice, Innovation and Resource Effectiveness (INSPIRE) in January 2015.

Stephen Edge has been Course Leader for BA (Hons) Interior Design at the University of Gloucestershire, in Cheltenham since September 2015. Over the last 25 years he has held similar undergrad and postgrad positions at Birmingham City University, Bournemouth University and Leeds College of Art. He is a Fellow of the Royal Society of Arts and a Fellow of the Chartered Society of Designers.

Stephen gained a Dip AD in Interior Design from Kingston University in 1973. After graduation he helped environmental artists Christo and Jeanne Claude construct *Running Fence* in Northern California. Then in 1980 he formed a London based multidisciplinary design partnership Deacon Edge providing workplace design solutions for e.g. Citibank, Conoco, Canon, Kuwait Petroleum, and Lloyds Register of Shipping.

Stephens interest in sustainable design started in the late 1960s working as a draughtsman on the conservation of the mediaeval buildings in his home town of York. After a long and varied career in 2006 he gained a Masters in Interdisciplinary Design for the Built Environment from the University of Cambridge. Then in 2007 he retrained as a BREEAM assessor for offices, and more recently his research interests have been in testing biophilic theories for improving internal environments, using Building Information Modelling.