Editorial

Special section: COBRA 2015

This part of the journal features three selected papers from the 2015 RICS COBRA conference hosted at UTS in Sydney Australia. The papers featured highlight: the issues around delivering new standards in UK housing to reduce greenhouse gas emissions and the impacts of occupant behaviour; adaptive reuse of heritage in rapidly expanding Chinese mega-cities; and finally the adoption and integration of Building Information Modeling (BIM) into built environment education. As such these papers collectively highlight some of the major issues confronting society in the early twenty-first century. Climate change and adaption to mitigate the impacts in the built environment are crucial if our built environment is to remain liveable. Not only does the built environment collectively contribute 40 per cent of greenhouse gas emissions, but as a 2015 report commissioned by RICS shows, we face rising costs and growing inequality through distribution of wealth (RICS 2015). Building energy costs and improvements to indoor environment not only reduce greenhouse gas emissions and energy costs, but also add to improved health of occupants. Rapid urbanisation was also identified in the RICS report "Our Changing World; Lets be Ready" (2015) and the pressures this growth places on infrastructure, as well as new and existing buildings. The need to retain and acknowledge heritage attributes in buildings and the stories they tell of bygone development is important. There is a danger in the rush to deliver much needed accommodation, important stock is vulnerable. Jie Chen's paper explores these issues in a country experiencing some of the world most rapid expansion of cities on a scale previously unknown. Digital technologies and the pace of change is also rapid in respect of software and its application. Taija Puolitaival of Unitec New Zealand and Professor Perry Forsythe of UTS Sydney explore the challenges between the use of BIM in the classroom and applications and variations to the technology in the workplace as BIM becomes more embedded in the workplace.

Della Madgwick and Hannah Wood from the University of Brighton, note that the rising UK population and change in demographics mean there is a need to deliver an additional three million homes by 2020. UK homes use over 40 per cent of UK energy and emit a quarter of the nation's carbon dioxide. UK government legislation aims to reduce emissions by 80 per cent by 2050 compared to 1990 levels and new standards for home building such as the Code for sustainable homes exist. Many houses are built within the structure to minimise energy and water use, however these changes have caused unintended issues to arise. All householders try to make their homes comfortable, in terms of temperature; the notion of the "right" temperature is highly individualised. A further significant issue arising is that of occupant behaviour. Whilst much progress has been made in energy efficiency; the way people "behave" and "use" energy needs to be fully researched and understood if targets are to be met.

This paper, is part of a larger study of behaviour in new homes, explores how people behave with regards to laundry in new homes which are built highly insulated and air-tight; in particular it considers clothes drying; a seemingly ubiquitous task which will actually impact on every single new home which is currently under construction.

Jie Chen is focussed on the dramatic transformation of China's industrial landscape. Since the late 1990s, adaptive reuse of industrial heritage for cultural purposes has become a widely occurring phenomenon in major Chinese cities. The purpose of this paper is to examine the differences in adaptive reuse outcomes between different Chinese mega-cities. A comparison of selected industrial-heritage cultural precincts in Beijing, Shanghai and Chongqing, illustrate the local intervening factors influencing differences in their reuse patterns, including the history of industrial development, remaining industrial urban heritage types, specific cultural context and local government policy. Chen concludes heritage reuse in the three cities is very different. In Beijing, adaptation of industrial heritage has resulted from the activities of large-scale artist communities and the local government's promotion of the city's cultural influence; while in Shanghai, successful and more commercially oriented "sea cultural" artists, private developers in creative industries and the "Creative Industry Cluster" policy make important contributions. Chongqing in contrast, is at the early stage of heritage conservation, as demonstrated by adaptive reuse outcomes. The paper reveals that industrial-heritage reuse in Chinese mega-cities is highly regional and suggests that heritage conservation requires the government's appreciation of heritage value and support for developing the cultural industries sector.

According to Taija Puolitaival and Perry Forsythe BIM is becoming the new norm in the Architecture Engineering and Construction (AEC) industry and also features in many construction project management (CPM) programmes. In teaching BIM, specific resources explaining theoretical principles of BIM are necessary, as well as BIM tools (authoring, audit and analysis). Theoretical resources available for education such as books, articles and websites are easy and straightforward to locate. Furthermore various tools exist for education providers. On the other hand, they contend that actual building models represent a challenge in terms of preparing and optimising usage of the model for high quality educational purposes. Their paper addresses a perennial educational challenge; the difficulty in walking the thin line between an industry ready BIM vs a BIM that is good for student learning and offers a realistic and practical, but simultaneously achievable learning environment. Their Australian and New Zealand study of undergraduate CPM education concludes a combination of internally developed models for early exposure and industry models for later courses is the best way to move forward.

These papers reflect not only the breadth and depth of the COBRA conference, but also the topical issues actively researched in academia which attempt to develop understanding of knowledge of topical real world problems.

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