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Smart and Healthy within the 2-degree Limit

Research pro-design in environmental architecture, pedagogical approaches for quality and performance: the case of the Latitudes Global Studio Project

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ABSTRACT: Engaging students with research is a prime concern within the current higher education's strategic agenda. In this context, the Latitudes Network (2014) is a global educational network that puts design of buildings and urban spaces at the heart of mitigation and adaptation to global climate change. The network has been set up by the Faculty of Architecture and the Built Environment at University of Westminster. The Latitudes Global Studio (LGS) was created with the objective of promoting environmental design exercises in cities of different climates. As part of it the partnership London - São Paulo brought together students from the Architecture and Environmental Design MSc course at FABE, University of Westminster, London and from the Faculty of Architecture and Urbanism of the University of São Paulo. The feedback from the students involved in the LGS showed an increase from 86% overall satisfaction in the academic year preceding the LGS to 92%.

KEYWORDS: Design, Environment, Buildings, Local Knowledge, Pedagogy.

1. INTRODUCTION

Engaging students with research is a prime concern within the current higher education's strategic agenda (Healey and Jenkins 2009). In this context, the Latitudes Network (2014) is a global educational network that puts design of buildings and urban spaces at the heart of mitigation and adaptation to global climate change. Through a series of complementary activities, the Latitudes Network (LN) connects researchers and students in different climatic regions, enabling cross-cultural and inter-disciplinary innovation for design in an age of unpredictable environmental shifts.

The network has been set up by the Faculty of Architecture and the Built Environment (FABE) at University of Westminster to inspire today's young designers to exchange knowledge, ideas and experience. Within the Latitudes Network, the Latitudes Global Studio (LGS) was created with the objective of promoting environmental design exercises in cities of different climates, benefiting from local knowledge. The LGS involved students from FABE and paired them with corresponding Latitudes Network member institutions from around the world. This paper refers to the experience of one of such partnerships.

2. RESEARCH AND THEORETICAL BACKGROUND

As a vehicle to teaching and learning of Environmental Design, the use of the Evidence Based Design approach, the Integrated Studio and the Live Projects have been debated by a number of scholars in the last 30 years

(Marco *et al.*, 2013; Yannas, 1989, Szokoloy, 2004). These approaches are recently gaining significant popularity across HE institutions and are discussed in several publications (Harriss, Widder, 2014). In addition to that, the so called Live Projects (whereby students are involved with external communities) embed the principles of experiential learning theories (Kolb, 1984; Morrow 2014), providing real-life experiences and opportunities to learn through direct engagement with fieldwork of buildings and with building occupants.

The Evidence-Based approach, coupled with Life Project Experiments, is intrinsic to the ethos of the Latitudes Global Studio (LGS) project, implemented between the partnerships. The project was based on a methodological path which allows design decisions to be questioned based on the gathering of data substantiating it and justifying the design process with a logical argument underpinned by the climatic, social and analytical studies that students were trained to perform. In the case of the LGS, the support of the LN allowed design ideas to be tested against the local knowledge of experts in the field of environmental design, through video conferences and field trips.

3. THE EXPERIMENT: LATITUDES GLOBAL STUDIO LONDON-SÃO PAULO

As part of the LGS Project the partnership London (LAT 52°N) - São Paulo (LAT 23°S) brought together students from the Architecture and Environmental Design MSc course at FABE, University of Westminster, London and

from the Faculty of Architecture and Urbanism of the University of São Paulo (FAUUSP). The theme of the LGS for two consecutive academic years (2016-18) was the 'Environmental Performance of Brazilian and British Modernist Architecture'. This translated into a common brief where lessons learnt from fieldwork on iconic modernist buildings in São Paulo and London were transferred to studio-based design projects informed by analytic studies. Brazilian students investigated Brazilian buildings and informed results to the UK partners and vice-versa, via video-conferences.

In a second phase, UK students had a design brief for an environmentally responsive architectural proposal in São Paulo (Koppen classification: tropical), whilst the Brazilian students designed for London (Koppen classification: temperate). The design exercise was supported by field trips to São Paulo and London, characterising intense periods of academic exchange including building visits and design workshops. The identification of climatic-responsive attributes of examples of modernist architecture was rendered more effective by the opportunity to compare architectural responses from two different contexts (Figs. 1, 2).



Figure 1 – Design project developed by UK students to a site in São Paulo, in Republic Square (LGS 2017-18).

Figure 2 – Design project developed by Brazilian students to a site in London, Paddington (LGS 2016-17).

Moreover, the identification of further opportunities for environmental improvement, based on performative shortfalls and advancement in technology, informed the design agenda. This particularly focussed on the contemporary re-interpretation of the Tropical Bioclimatic Modernism in the São Paulo and Brutalist and Pre-Brutalist Architecture in London. The students' final outcomes

showed considerable potential for improvement of comfort conditions and energy demand reduction.

4. FINAL CONSIDERATIONS

The exposure to a variety of learning methods within the subject area of environmental design experimented in the LGS project London-São Paulo for two consecutive years, was enriched by the exchange between students and local experts as well as the real-life experience provided by the field trips. This widened the context of students experience and improved their outcomes and level of satisfaction. The feedback from the students involved in the LGS showed an increase from 86% to 92% of the overall satisfaction with the learning experience (University of Westminster, 2018). This positive outcome signals the enhanced learning potential of a multilevel pedagogical approach combining, on an international platform, Integrated Studios, Live Projects and Evidence-based methods for improving the teaching, learning and practice of environmental design in the 21st century.

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