Project

Location: Studio and Workshop, University of Brighton SoAD. Circus Street Market Space, Brighton.
Dates: 2014 / 15 academic year
Participating Organisations: University of Brighton SoAD – First Year Technologies Studio. Hanson Building Products. Catherdral: Developer of the Circus Street Market site Brighton. Cultural Geometries
Participating Disciplines: Architecture
Project Leaders: Michael Howe – First Year Coordinator and Technology
Tutor Names: K. Cheyne – A. Krumins – P. Marsh –.A. Priestman – N. Green
Student Names: 2014-15 Cohort First Year Architecture BA

Description

Brighton is a singular sort of place. It is the only Borough to return a member of the Green Party as their MP. Many of our students are aware of this when they apply to join our First Year of Study; in some cases this has influenced their choice of University.
This case study should be seen as very much part of the "Brighton Way" of Co-operative Endeavour and Inclusive Pedagogy. The First Year Technologies Module aims to allow students to "earn and own" their technological knowledge.
The One to One Project takes place in the second Term of the Academic Year. This is preceded by a series of "Introduction To Technologies" lectures, which run through out the First Term. These cover topics such as Energy Efficient Design, Structural Stability and Strength, and Building Precedent Studies in Historical Context.
The Cohort is posed a construction question at the commencement of the Module. For the last four years these have been related under the banner "More with Less". Generally these fall into two constructional families. "Heavy", usually masonry construction and "Light" Inflatable and tension structures. The thinking behind this is simple. Following the First Year, our students join Vertical Design Studios for their Second and Third Year of Study. It is our experience that the depth of knowledge, developed by the cohort of one or the other is transferred pier to pier with in the close-knit vertical studio environment.
For the 2014-15 One to One Project, our Students worked in groups to design, construct and record the development of a number of brick components and structures, Roman Arch – Catalan Vault – Deformed Wall.
Highly skilled crafts people or robotic construction arms usually produce these. Often these structures are reinforced using expensive and fallible metal components.

Our students were asked to question these conditions of production, through a design process leading to the construction of non-reinforced masonry structures, which might have global application. They were tasked to produce formwork, which could be delivered as pdf files, to any part of the world. The formwork was designed be realised using ubiquitous and cheep materials such as packing cardboard. These locally fabricated formworks should in tern, guide semi-skilled builders to produce high performance brick building components with the minimum of craft training. All masonry building materials were donated by Hanson Building Products.

Formworks were tested over the last weeks of the second term at our "building site" at Circus Street Brighton. Each student group produced an accompanying reflective document, describing the process of design and construction, with reference to technological insights, working methodology, human resourcing and project timetabling. The Contents of this document is design to mimic the contents of reports produced with in Architecture and Construction Professional offices.

Evaluation

Aims: Through development of a "critically engaged" building element, It is the aim of the First Year Technologies Studio to foster an understanding of the vital part that Architects and Constructors play in the preservation of the health of the planet and the wellbeing of our clients as individuals and as members of a broader society.
Methodology: No one in the building industry works alone. A key method employed for the First Year Technologies module of study is Group Work Practice. This includes study of construction precedent. Followed by Co-operative Design Development, Group Construction and Analysis of Component Performance, Pier Review followed by Individual Reflection. This process is captured in a Group Technical Document.
Findings: Student experience of group endeavor up to the time that they join the BA would appear to be confined to sporting activity, Academic and Arts education being experienced as a single minded, highly iterative pursuit of personal grades. Finding: The inclusion of group meeting protocols, assigned project roles and responsibilities allows students to gain insights into formal management methods.
The Groups were their own Guinea Pigs for testing the effectiveness of their design work. Few of them had ever used hand tools, and none of them had ever built a masonry structure. Finding: This allowed them to reflect upon the responsibilities Professional Designers have towards the people who are tasked to construct their designs.
Outcomes: Student: The One to One Technologies Module is, I believe, broadly successful in giving Students an understanding of the Environmental underpinnings of Construction Technology Deployment. They have begun the process of developing knowledge of Critical Design Method in a Professional Group Context.
By Empirical Practice and Critical Reflection they can say that they "own" at least one aspect of Construction Technology knowledge. Thus giving them the confidence to tackle other areas of design research and development in the future.
Personal: My participation with Cultural Geometries has lead to the construction of prototype Catalan Vaulted non-reinforced Marble Pavilion in Alantejo, Portugal.
Impact: Local, University and the City of Brighton: The use of Circus Street Market as a construction site, was possible because the University had negotiated with Site Developers Cathedral, to activate the empty site buildings during the Planning and Design period of their development as Housing. The site was used during this period by local small business, such as bicycle repair stops, salvage stores, coffee outlets, and Local community Groups and Arts Organisations. Giving a window onto the activities of the Brighton Students.
Academic: Part of The "Brighton Way" of developing Live Projects (Anderson and Priest 2014. p.13).
Industry: Paul Rogatzki the Head of Design and Technical Services at Hanson Building Products support for the **project** was as a result of Hanson's own Engagement Policy. The Collaboration with University of Brighton First Year Technology Students being disseminated with-in their Europe wide organisation.

An Introduction to construction technology for First Year Architecure Students

One to One

"Architecture Connects" association of architectural educators conference,
6-9 September 2017, Oxford Brookes University, UK

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