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Insider not Outsider; integrating environmental thinking in final design thesis

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ABSTRACT

This paper examines strategies evolved to support architecture students in developing sustainable thesis proposals during their final year of professional architectural education.

While in recent years we have had considerable success in establishing an integrated approach in encouraging sustainable thinking to become embedded within the third year of the undergraduate architecture programme, it has proved much more difficult to replicate the same outcome within the graduate programme.

In their fifth and final year students are expected to be able to undertake and sustain as a self-directed design project, the design of a thoroughly researched building of reasonable complexity and ambitious architectural intention, encapsulating a critical architectural position and maturity of judgment. Although offering a degree of freedom not present in earlier years, the final year is also where students demonstrate their ability to meet key criteria at the threshold of professional practice and approaching qualification. This paper explores strategies developed within the current fifth year studio, locating students within a series of European cities with differing environmental conditions, demanding the development of an understanding of appropriate sustainable responses while producing proposals which integrate context, programme and technology. Through a series of steps, including an analytical study, the building of large-scale model, an extended field trip and discussions with local practitioners, the structure aims to provide a working method that can be adapted and customized depending on the conditions encountered. The methodology also aims to encourage students to develop their powers of observation, awareness of the local, and although moving from familiar territory to develop an approach allowing them to operate as insiders rather than mere tourists.

INTRODUCTION

Contemporary architectural education requires architecture schools and educators to deal simultaneously with both consistency and radical change. On one hand the external context in which architects operate is changing dramatically particularly in responding appropriately to climate change, an issue that has grown exponentially in importance. New attitudes and responses are required both within the profession but more importantly in the minds of student architects, who face future careers where this issue becomes the key lens through which all development is examined. On the other hand despite acute financial pressures, the recognized processes of iteration and reflection that underpin studio education cannot be fast tracked, and few models have emerged that ultimately equip the architect on their journey to becoming a master of their craft.

While in recent years within the Mackintosh School of Architecture, we have had considerable success in establishing an integrated approach in encouraging sustainable thinking to become embedded within the third year of the undergraduate architecture programme, it has proved much more difficult to replicate the same outcome within the graduate programme. As in many schools the student population in fourth year is made up from continuing students and new comers in equal measure, diluting to an extent the impact of any expected knowledge or process carried on from earlier years. Therefore projects in fourth year demand a diagnostic element in relation to technology and climate change, as well as an agenda that places sustainability in all its contexts at the heart of discussion and design practice.

In their fifth and final year students are expected to be able to undertake and sustain as a self-directed design project, the design of a thoroughly researched building of reasonable complexity and ambitious architectural intention, encapsulating a critical architectural position and maturity of judgment. Although offering a degree of freedom not present in earlier years, the final year is also where students demonstrate their ability to meet key criteria at the threshold of professional practice and approaching qualification. This paper explores strategies being developed within the current fifth year studio, which through locating students within a series of European cities

with differing climatic conditions and agendas relating to climate change, demanding the development of an understanding of appropriate sustainable responses while producing proposals which integrate context, programme and technology with the goal of achieving sustainable final design thesis proposals.

I. MOVING FROM THE STATUS QUO

For many years the focus of the final year for architecture students within the Mackintosh school is the conventional thesis project sometimes known as a comprehensive design project. Working from an open starting point students develop a hypothesis that can be tested through the vehicle of the design of a building that addresses context, programme and technology. Conventionally the thesis project extended across the final year of study and delivered a parallel technical study demonstrating the key environmental, structural and tectonic decisions taken. The thesis starts from a combination of choices: that of the architectural issue or theme the student chooses to explore, and that of a building type and of a site that are vehicles to turn the topic into a project. A successful thesis integrates these aspects in a demonstration of design ideas, skills, imagination and ambition. One of the challenges of the thesis is that of developing and sustaining a line of architectural enquiry over the session, that links the intellectual development of the project with a growing architectural sensibility through encountering practice. It also marks the watershed between the academic education and the profession, highlighting skills gained, interests established and individual paths to be pursued now and in the future. As Richard Sennett distinguishes, "The modern era is often described as a skills economy, but what exactly is skill? The generic answer is that skill is a trained practice. In this, skill contrasts the *coup de foudre*, the sudden inspiration. The lure of inspiration lies in part in the conviction that raw talent can take the place of training." (Sennet 2008: 37) The thesis is seen as a self initiated piece of study, the culmination of the student's journey towards becoming an independent learner. At the threshold of the Part 2 of RIBA/ARB exemption there is an also an external professional expectation of what students should be able to achieve. "Projects will be more complex, design constraints more severe and set within an intellectual framework which establishes, tests and concludes a hypothesis with regard to the context in which it is made. Projects will incorporate wider contextual issues and address ethical design concerns. Including the needs and the safety of building users, constructors and the community." (RIBA: 39)

However the freedom of the thesis also entails substantial drawbacks and can provoke considerable anxiety and confusion in students. In a programme where considerable effort in earlier years goes into the honing of project briefs and the selection of associated sites, the student has few opportunities to choose these for themselves and subsequently becomes reliant of staff to filter these variables on their behalf. While this might focus the design parameters of a given project, it also means that student find themselves novices in this selection at a point where a full session's work is reliant the project they construct for themselves. The place of technology – actually a composite of many very different elements – environmental science, construction, materiality, structures, results in the need for a range of different research questions, but one threshold idea - the need for a low carbon brief. The technological context student must navigate is also far more complex that even 10 years ago – then awareness of simple HVAC principles and services might prove sufficient Now there are burgeoning technologies, technique and systems. This means that the required knowledge systems are different – students need to know how to discover, sort, evaluate and analyse information to identify and develop appropriate knowledge and to a evaluate performance. Although considering feasibility of the project is a significant study in its early weeks, this often led to a sense within the student that the project is less than perfect, not what they have encountered before, rather than giving confidence to embark on the scheme and detailed phases.

Donald Schon characterises the architect as one engage in a process of reflection, "Practitioners are also makers in the more general constructionist sense... They frame problems and shape situations to match their professional understanding and methods, they construct situations suited to the roles they frame, and they shape the very practice worlds in which they live out their professional lives." (Schon 1987: 43) If we therefore wish to produce reflective practitioner within your student group we must think how they can take control of their thesis, as an example of future practice.

II. WORKING WITH CITIES

Within our Diploma programme we aim to continue the threads woven through the Undergraduate years, an interest and engagement with architectural history and the sociological factors shaping the built environment, development of an approach and knowledge of architectural technology that informs and underpins design decisions, and the ability to support ideas through research. While fourth year work explores Glasgow as its urban laboratory, using the city as its three dimensional textbook, fifth year students have had the opportunity to locate

their work in any context they wished providing they can substantiate their choice. Given this freedom, many students still chose to work in the immediate area, sometimes driven by assumed familiarity though more often or not by the availability of information and local insights. The challenge was made more difficult by the anxiety presented by perception of having to present an airtight case for a thesis and project which might only be understood or formed in outline, and without specific supporting expertise.

In order to encourage and kick start the process of looking more widely, beyond familiar territory, a new strategy has been deployed over the last two sessions. The strategy aims to support students in identifying a thesis and working towards producing a built response, by offering the possibility of exploration beyond the city and Scotland, supported by collaboration with peers and possibly students, staff and practitioners.

Given the situation of fifth year as the threshold between their formal education and the profession, the project also acts as a stepping stone between supported and independent learner. In this finding the balance between the new and the familiar is key, working beyond the comfort zone but in an informed and confident manner. "When the practitioner takes seriously the uniqueness of the present situation, how does he make use of the experience he has accumulated in his earlier practice? When he cannot apply familiar categories of theory or technique, how does he bring prior knowledge to bear on the invention of new frames, theories, and strategies of action?" (Schon: 65)

Our strategy has been to identify a series of cities that offer interesting and varied contexts in which to locate thesis projects. If this alone was the extent of the shift it could be argued we were only revisiting typical situations and projects, albeit relocating them to a new location. However in selecting locations we looked towards cities where we had existing well established relationships with schools of architecture through exchange partnerships or long term connections with recognised practices. This has allowed us tap into local knowledge and practical experience as well as a considered and well tuned understanding of the social and cultural context in which the work might be located. In the first year projects were based in Porto and Barcelona, with Glasgow offered as an option providing a level of comparison. In this session Beijing and Venice have been added to the possible destinations and locations for projects. Each city offers and particular environmental situation and well as topography and urban form. In each location an area of the city is identified in discussion with staff from the local school of architecture, an area providing particular urban challenges and of a scale that is practicable to study as a group. Students are asked to select one of the cities in the knowledge that their thesis project will be located there. They are also aware that although the work may be group based to begin with, ultimately they will move to finding an individual response to the circumstances on the ground. In this the aim is not to import the idea of a programme but to develop an understanding of what might be needed, sustainable, justified from a reading of the unfamiliar place. Through a series of steps including a detailed analytical study, the building of large-scale model, an extended field trip and discussions with local practitioners, the structure aims to provide a working method that can be adapted and customized depending on the conditions encountered. The methodology also aims to encourage students to develop their powers of observation, awareness of the local, and although moving from familiar territory to develop an approach allowing them to operate as insiders rather than mere tourists.

III. STRATEGIES ON THE GROUND

While the choice of significant cities offers a focus to the thesis, the detailed investigation of a quarter or area provides the assessment of what might enhance the existing amenities or repair fragmented communities. Key to this is a careful and systematic observation of the current situation carried out on site as a group, augmented with simultaneous conversations with local practitioner as to the accuracy the findings and possibilities for development that the areas might provoke. Rather than act unilaterally, student are encouraged to work together to form small scale master-plans that have the advantage of greater effectiveness and cohesion, as well as producing working relationships and dialogue between adjacent sites and neighbouring students. The master plans begin to develop during the field trip when possibilities can be discussed with local practitioners, allowing early reactions to be gauged and possible options to be teased out. This requires encouragement and can seem antithetical to the bigger thesis idea where one building can offer the big fix. However within masterplans students soon find a balance of interests and programmatic interests that is often difficult to achieve otherwise.

In Barcelona the high density and social mix within the Poble Sec district persuaded student working there that their efforts should be targeted at increasing the amenity while creating areas of public realm currently not present.

Across cities there are also very different issues that come to the fore, key to building fluently in that place, particular to local circumstances and yet linked wider economic, social, cultural and environmental questions. These can become the starting point for the detailed investigations required to support the thesis. In Venice for

example, understanding how to build in water becomes an obvious given, but equally so is an understanding of how scale, materials and language impact the design of the façade, the street, the alley, the campo, all which requires insight if aiming to act as an insider. When this information has been assimilated and becomes the starting point for framing a design project, it leads to quite different choices as projects emerging as legitimate and sustainable additions to the urban mix. Within Venice the emergence of the overwhelming imbalance between tourists and residents led to an interest in the trades and guilds that can trace their existence back to renaissance times. This in turn led to projects examining how a specialist trade or historic practice such as boat building or annual regattas can support and provoke the regeneration of the locality.

Developing large-scale models (1:500) of the areas in question has also allowed a greater appreciate of the grain and determining characteristics of the urban fabric. Although these have required considerable time and resources their regular use at tutorials and reviews has allowed complexity and diversity of each situation to be readily assimilated. The models, through their scale, accuracy and careful manufacture act as proxies for the context when working back in the studio and offer a greater opportunity for objective evaluation of the impact of a proposal and its contribution to the area rather than a too narrow focus on the individual proposal through lack of compelling context.

IV. CONCLUSIONS

Working consistently on a series of cities over the two year period has also allowed the chance to explore radically differing but adjacent areas, such as Poble Sec and Eixample in Barcelona, which a less sustained engagement would not have allowed. This has also allowed student to reference and build on previous student proposals in a way that was not possible in the past. Small groups working in each city has also allowed more peer discussion and support which was not possible previously when few projects shared contextual, environmental or community based drivers.

Our strategy, while already offering a more positive structure for the development of thesis schemes still requires further development. While discussion of the key technical challenge within each project begins at an early stage it is often only at an advanced stage that this is recognized as a potent driver of the design alongside contexts and programme. Climate change still remains an issue to be kept alive at the early stages of the project development if it is to impact the final proposals in any significant way. In many ways these are questions that the teaching team must to address be able to make the thesis design a sustainable, compelling and attractive element within an architectural education.

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