Approaches to a University Urban Design Curriculum for 21st century Cities

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Abstract
This paper examines approaches to a contemporary urban design curriculum. It considers such questions as: What general direction should a contemporary postgraduate urban design curriculum take? Should it be more focused on practice, more biased to historical and theoretical issues, or give greatest emphasis toward developing research-led policy and regulatory frameworks? How best to address the new scale and complexity of intertwined urban forces and values and the transdisciplinary knowledge required to respond to them? To begin to answer these questions, this paper undertakes a comparative survey of three approaches to a contemporary urban design curriculum. Focusing on program structure, key elements, and future challenges in the university education of urban design professionals, the paper contributes to scholarship on the practice and theory of urban design education and aligns with Congress theme Future.

Keywords: architecture, curriculum, university education, urban design

1. Introduction

At a global level, the critical importance of the built environment generally and the city specifically as the focus of sustainable planning, design, and development considerations was emphatically announced in the 1987 United Nations’ study Report of the World Commission on Environment and Development: Our Common Future. In the three decades since Our Common Future, efforts at policy formulation and implementation – whether in higher education, government, or industry and following the two general themes of natural and built ecologies and economies -, have moved into discipline-specific initiatives at a national and regional level. More recently, momentum for a carefully framed approach to university urban design curricula has been called for in international studies commissioned and published by public and private entities such as The Rockefeller Foundation. (Peirce, et al.; 100 Resilient Cities) In this ‘century of the city’ (Peirce, et al), one assumes that if settlement patterns follow ‘urban revolution’ trends as suggested in Our Common Future, then urbanisation will create significant challenges in coming decades. The training of future generations of urban
design professionals will as a consequence be an increasing priority for universities around the globe.

Urban design as a university concentration or program emerged in the 1960s as a reaction in part to the urbanistic shortcomings of town planning. Judged especially disastrous in terms of the city were the effects of segregated land use and continuous open space planning. (Hurtt; Middleton; Rowe and Middleton) What emerged as a largely architect-led and discipline-specific response to post World War Two reconstruction efforts in Western Europe in particular, and massive urban renewal projects undertaken in the 1950s and 1960s globally, a review of urban design as a university program has more recently received further priority. Approaches to urban design curricula, whether urban planning biased or urban design biased, assume that good city form can contribute to the health and well being of communities. Such traditional approaches to urban design curriculum have however been severely challenged by the new scale and complexity of intertwined forces and values at work in contemporary cities. In particular, the growing recognition of episteme-changing conditions supports the timeliness of revisiting the content and structure of university programs. Though other factors exist, those impacting conditions that seem most urgent now are a rise in environmental consciousness accompanying increasingly sharp climate change science, an unprecedented and increasingly fast-paced global surge in urbanization, and revolutionary advances in digital technologies which include evolving capacities in data capture and modelling. Within this context, it is more than timely for a sustained and coherent examination of a contemporary urban design curriculum and this paper is a preliminary step in that investigation.

To begin to develop an urban design curriculum to meet local, regional, and global challenges and educate future generations of urban designers and other built environment professionals, this paper surveys three approaches to, and identifies key elements of, a university urban design curriculum for contemporary cities. The following questions underlay the paper: I. What general direction should an urban design curriculum for 21st century cities take? Should it be more focused on urban design practice, more biased to historical and theoretical aspects, or more research-led and future policy focused? II. Should the urban design studio remain the core of the curriculum? If so, what kinds of studio problems are most effective and relevant today: should the focus be on normative institutions and urban scale problems (infill, grid completion, extension) or more focused on future infrastructures, transportation, open space planning, and regulatory controls and policy? III. In addition to studio, which other core courses might make up the balance of the curriculum? Alongside traditional topics such as history of city form, visualisation and modelling, methods of urban design practice, public policy, and urban economics, what other topics should be considered? Should they be delivered via case study or practice-based learning?

A comparative analysis of three postgraduate programs will serve as case studies, providing base materials for this initial phase of research. The programs are Columbia University’s Master of Science in Architecture and Urban Design, the European Postgraduate Masters in Urbanism, and Melbourne University’s Master of Urban Design. These three were selected from a short list of some two dozen postgraduate urban design programs and will serve to identify differences and similarities in orientation, core studio focus, and degree structure. While other programs could have been added, given the relative brevity of this paper it was decided a more selective examination of a limited number of university programs, presenting diverse attributes, was the most productive and efficient approach at this stage.

2. Analysis

Based on a review of the structure and key study areas of some two-dozen programs, five factors have been identified and are used in the analysis of each of the programs. This limited set of factors, I believe, provide a matrix of terms sufficiently broad to allow one to identify important characteristics within each urban design program and allow for comparisons among the larger set. The five factors are: i. General pedagogical
orientation, whether toward practice, history, policy, or theory; ii. Program structure and duration; iii. Studio thematics; iv. Other core study areas; v. Scale of curriculum focus, whether the street, the block, the city, or the territory. Though terminologies vary nationally and regionally, for simplicity’s sake in what follows I use the term program to refer to the overall degree-granting framework; unit or course interchangeably to refer to the sub elements within the degree program; and points to designate the relative value of any one unit toward course completion.

2.1 Columbia University, Master of Science in Architecture and Urban Design (MSA&UD)

Columbia’s MSA&UD is a three semester program with a strong focus, according to program descriptors, on ‘the pedagogical potential of the design studio as a site of research, visionary speculation and critical inquiry.’ (Columbia) The idea of urban gradients at multiple scales is one way to characterise the program both organisationally and in terms of pedagogical ambition. Gradient is a way to describe the program’s focus on ‘networks’ as a set of ‘landscapes’, landscapes in the program’s terms that are inclusive of food, energy, resources, culture, transportation and culture. (Columbia)

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<tr>
<th>Table 1. Columbia University. Master of Science in Architecture and Urban Design (MSA&amp;UD), simplified study plan</th>
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<tbody>
<tr>
<td>Semester 1</td>
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<tr>
<td>Urban Design Studio I (New York) (9 pts)</td>
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<tr>
<td>Urban Design Seminar IA (3 pts)</td>
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<tr>
<td>Seminar IB (3 pts)</td>
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<tr>
<td>Digital Techniques for Urban Design (3 pts)</td>
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The studio sequence moves from using the city of New York as a laboratory for experimentation, to New York’s region - currently focusing on the Hudson Valley according to the program website -, to global cities and regions. Accompanying the general studio descriptions, the thematics of layering and flows persist. Studio I is about processes characterised as ‘biophysical infrastructures… and ongoing socio-spatial change.’ (Columbia) Studio II is about ‘interdependencies and interactions… [and] shifting … conditions’ – whether ecological, topographical, infrastructural or democratic, and taking the region as its field of experimentation. Studio III looks beyond the region into other settings of global urbanisation. Balancing the studio stream is a cycle of core units that bridge the histories of urban form and urban design movements, to urban analysis, to digital modelling and representation. Distinctly, there is a pairing of a specific seminar with each studio. Thus the second design studio (Urban Design Studio II on the city-region) is paired with Urban Design Seminar II with its focus on regional scale issues such as zoning and changing constructs that attempt to provisional frame contemporary complexities, such constructs including bio-urbanism, junk space, and chaos theory. Columbia’s emphasis on design over planning is further revealed in the program loading the first semester with a specific unit in digital techniques.

Different from other programs as discussed below, MSA&UD only allocates 7% of the program to electives, the remaining 93% being program core. The program structure and core elements, with course names and topics is set out in Table 1. As in most programs, studio units are weighted three times the credit point value of other seminar or elective units toward degree completion. Thus a studio unit is worth 9 points in Columbia University’s MSA&UD, and an elective unit 3 points. Consistent with other programs, studio constitutes 50% of the program. In terms of scale, MSA&UD is emphatic about the city as its field of investigation, with the ability to scale up to the territory and back. The program’s specific city – as ‘an agent of resilient change’ (Columbia) – may be taken as shorthand for the underlying approach.
2.2 European Postgraduate Masters in Urbanism (EMU)

The EMU is distinguished by a geographical and institutional hybridity overlain by a strong thematic focus. Four EU universities have joined in a consortium to deliver the degree with students having a home university at which they must complete 50% to 75% of the four-semester degree – including the final thesis semester –, with the remaining percentage completed at one of the other host universities. The four universities are Universitat Politècnica de Catalunya, Barcelona, Spain; Delft University of Technology, Delft, The Netherlands; Katholieke Universiteit Leuven, Leuven, Belgium; and Università IUAV di Venezia, Venezia, Italy.

In the EMU program launch brochure, a clear orientation along specific urban challenges translated as studio problems is set out. The EMU organises itself around a set of local urban scale challenges confronting the European city and territory, with discursive frameworks in theory, method and technique of a more generalizable and global nature. The key challenges appear to be aligned more or less with the four university settings at the time of forming the consortium and were synthesized in the following themes: territories of dispersion, or extended settlement types; post-industrial sites, including marginal or peripheral urban areas or obsolete industrial sites; mobility and network cities, such as new kinds of urban agglomerations and airport cities; cultural landscapes, including urban-scale heritage and conservation issues. (European Postgraduate Masters in Urban Design)

In order to minimise the complexities of possible study plan combinations, in what follows I briefly focus on the program as currently delivered at Delft University of Technology. Table 2 sets out the typical study plan.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3 - Exchange</th>
<th>Semester 4</th>
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<tbody>
<tr>
<td>Studio: Urban Regional Networks (15 points)</td>
<td>Studio: Constructing the Sustainable Delta City (15 points)</td>
<td>Courses taken at one of the other consortium host universities (30 points)</td>
<td>Graduation Thesis (30 points)</td>
</tr>
<tr>
<td>Theory: Theories of Urbanisation, Regionalisation and Networks (5 points)</td>
<td>Theory: The Sustainable City (5 points)</td>
<td></td>
<td></td>
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<tr>
<td>Methodology: Regional Strategies and Territorial Governance (5 points)</td>
<td>Methodology: Research and Design (5 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology: Design and Planning Support Tools (5 points)</td>
<td>Technology: Urban Design and Engineering (5 points)</td>
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In terms of studio thematics, Delft’s EMU program is organized around a set of key issues that are intended, according to program information, to ‘reflect contemporary challenges within cities and territories.’ (Delft) Within the Delft program, there is a studio that explicitly addresses a local condition characterised as the Delta City. The program balances this specific urban-scale problem with a semester taken at one of the other consortium universities – Barcelona, Venezia or Leuven – and a systematic coverage of theory, methodology, and technology sub areas. These core program units appear to provide a broad conceptual and technical grounding, with content ranging from urban form theories, governance at regional and territorial levels, research methodologies, infrastructure technologies, and representation and modelling tools. A full semester or 25% of the program is devoted to individual student-led research topics.

2.3 Melbourne University, Master of Urban Design (MUD)

In Melbourne University’s MUD, students learn ‘the art of making places’ according to the program web page. (Melbourne) This seemingly narrow, opening remark is quickly expanded to reveal a broad and clear pedagogical approach to the curriculum. Analysis of the program structure and detailed unit content reveals a
focus within the degree on framing urban design as a distinct discipline – with specific urban design issues, concepts, models, and design approaches – from the scale of the street up to the multiple-block city precinct or larger building group. See Table 4 for the program plan.

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<th>Table 3. University of Melbourne, Master of Urban Design (MUD), simplified program plan</th>
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<tr>
<td>Semester 1</td>
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<tr>
<td>Shaping Urban Design (12.5 pts)</td>
</tr>
<tr>
<td>Defining Urban Design (12.5 pts)</td>
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In terms of other core study areas, the MUD program is distinguished by specific topics delivered in core study areas that might in other programs be offered as electives. One such topic is urban economics, with students taking a unit ‘investigating the economic drivers, activities, and interrelationships... [and] the competing demands of economic development and social needs’ in specific urban contexts. (Melbourne) Another strand is governance. Two core units are devoted to built environment governance, and to planning and development law with a focus on the local jurisdiction – in this case the Australian state of Victoria - as a foil for comparative discussions/analysis of other jurisdictions.

3. Conclusion

Having briefly surveyed three postgraduate urban design programs, it is now possible, first, to make some comparative observations on similarities and differences between programs, second, to form preliminary responses to the questions underlying the paper, and, third, to propose key future lines of the next phase of research.

Perhaps not surprisingly, the pedagogical orientations of the programs considered reveal a mix of priorities. Programs swing variously from history of urban form, to theories of urban form, to governance to a more or less systematic engagement with practice through increasingly diverse studios, conceptually, geographically, and technically. The studio-based structure is similar among the three programs, with studios claiming 50% of content. Duration ranges from 3 semesters in the case of Columbia University’s MSA&UD to 4 semesters for Melbourne and EMU with the latter devoting the final semester to a single thesis project. Studio thematics provide the most visible key to differentiating program character. In all cases constituting the largest percentage of program content, it is not surprising that in interrogating the studio focus more than in other areas can one distinguish significant program differences. In addition to studio biases, the other core units provide specific program character. Columbia’s MSA&UD includes an orientation to digital techniques for modelling balanced with a strong history/theory stream; EMU has a broad spread of core units across theory, design methodology, and urban scale tools and techniques; and Melbourne’s MUD reveals a strong priority on skills for an urban design profession as aligned with economics and governance. Scale – and no doubt a wider survey with greater access to unit details at the syllabus and assessment item level would have addressed this – tends to logically track multiple scales from the street to the block, from the city to the territory and back. Melbourne’s MUD, at least according to available program descriptions and unit outlines, is perhaps the most focused, generally not going beyond a multi-block or building group scale. For other programs, the primary object of focus is the city – though which form of city needs to be clarified – with studios expanding to include the region or territory.

In what follows, I return to the questions underlying the study and provide preliminary responses. As to what general direction should an urban design curriculum for 21st century cities take? The above survey suggests
that the complexities and challenges confronting urban design professionals are so vast that university programs must address several overlapping study strands including history of urban form, theory, modes of practice, modes of data and design representation, analysis and communication. The open ended, research-driven nature of urban design agendas has a necessary plurality: a both/and emphasis. The question of whether the urban design studio remain the core of the curriculum and if so which studio problems are called for? From the programs surveyed, it is clear the studio continues to be the most appropriate vehicle for organizing and delivering a large part of program content. Even more, the studio platform functions as means to speculate and drive design-based research forward in a collaborative environment. In relation to the question about which other core courses might make up the balance of the curriculum? There is no single answer to this question but certain differences are now more clearly visible. In programs like Melbourne’s MUD, urban economics and governance have a visible role; in Delft’s EMU overlapping units in theory, method, and technology – whether infrastructural or digital – are clear protagonists in the debate. Of equal relevance to the ideas and tools bias, there is the nature of specific local urban-scale problems – for example the heritage/conservation debate or post-industrial site question.

In terms of next steps, the research should be extended and two future lines among many stand out as having greatest immediate benefit. First, the survey base should be expanded to include additional postgraduate urban design programs. Greater regional diversity should be pursued. A review of programs located in near or adjacent academic disciplines such as landscape architecture and planning included to see if there are lessons or trends or even specific study areas that might be added to the curriculum models. Second, samples of teaching materials and student work – especially student materials resulting from studio units - should be included in the analysis. This will allow for more fine-grained and concrete illustration of differences and similarities as well as limits – conceptual and technical - in orientation and outcome. The urgency announced thirty years ago in Our Common Future is now palpable and in this ‘century of the city’, it is timely for an in-depth consideration of urban design education to progress.

References