Conference Paper

Transformations: On Contingent Form in University Studio Teaching with Two Case Studies

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Abstract

This paper begins to ask by what means and in what form might the university studio function so that it contributes to inflecting the biases, limits, and reserves of architecture to allow it to better adapt to changing environmental and social challenges? More generally, the paper aims to contribute to debates concerned with the manner by which the university studio can be the site not just for training in design processes but for knowledge production as well. The paper frames an approach to these ambitions through a brief comparative analysis of a multi-year studio delivered by Peter Eisenman at the Harvard Graduate School of Design (1981-1985) and a limited cycle of studios completed under Colin Rowe in his Urban Design Studio, Cornell University, with a focus on urban-scale projects undertaken under Rowe's direction in those same years. Two hypotheses underlie the paper. The first is that the Eisenman and Rowe studios extend and transform ideas and composition devices treating the contingent over the abstract and that such teaching systems might aid in development of a practice that begins to address changing complexities and the call for new forms of knowledge. The second hypothesis is that contingent form is a potentially innovative composition strategy and conceptual tool, one awaiting theorisation and resuscitation. The paper adds to scholarship on architecture education, makes a modest contribution to Eisenman and Rowe studies, and addresses aspects of conference Theme 3 Education and Professional Practice Across Borders.

Keywords: abstract, architecture, composition, contingent, practice, theory

1. Introduction

In a 2018 talk, architect and educator Henry Cobb (b. 1926) states that a necessary imperative for architecture today and into the next quarter century is to sustain diversity in the natural world and in human culture. [1] Taking Cobb at his word, in the following I begin to frame elements of a larger study that will ask by what means and in what form might the university studio transform that which it is possible to think and thus design? Framed differently, how might the studio adopt an approach that contributes to sustaining diversity in the manner evoked by Cobb? In other words, how might the studio function so that it contributes to inflecting the biases, limits, and reserves of architecture

as discipline and practice to allow it to better adapt to changing complexities emerging from our awareness of the larger environmental and social challenges of our time? More narrowly, in what manner can the university studio be the site not just for training in design processes but for knowledge production as well?

This paper begins to explore these questions through a comparative analysis of two university studios. The first is a three-year studio delivered by architect and educator Peter Eisenman (b. 1932) under Cobb while the later was Chair of Architecture at the Harvard Graduate School of Design (1981-1985). Eisenman's cycle of experimental studios were organized around a series of specific problems and conditions that proposed to engage ideas, compositional operations, and architectural-urbanistic forms in the broadest and most ambitious sense. The paper also briefly explores Colin Rowe's (1920-1999) Urban Design Studio, Cornell University, with a focus on the urban-scale projects undertaken under Rowe's direction in the same years that Eisenman's studio was being delivered.

Two broad hypotheses underlie the paper. The first is that both the Eisenman and Rowe studios extend and transform architectural-urban concepts and form generation devices that treat the contingent over the abstract and by extension that such teaching systems might aid in development of a contemporary practice that begins to address the ambition of sustaining natural and cultural diversity as formulated by Cobb. This turn to what can be characterised as part of a more complex shift toward the conditional is intended to counter the dominance of the autonomous. If one accepts that the autonomous object has contributed to setting the conditions of possibility for architectural-urban built form over much of the last seventy-five years, then the contingent is offered as a short hand for an alternative sensibility. This alternative sensibility is one that responds to impure states, acknowledges the accidental, and formally inflects in response to a known possible future condition or multiple unknown possibilities thus embedding something of chance, something of the unpredicted within the form itself. This state or idea of inclusion and diversity, to return to Cobb and the first hypothesis, is at least one posture that sustains diversity. It is worth noting that my use of the term contingency as interpretive lens and strategy in form making is very much at a preliminary plane and subsequent work will be called on to further justify and explicate this use.

The second hypothesis: untheorised at the time, I speculate that contingent form can be extrapolated into an innovative composition strategy and conceptual tool, one latent in modern movement architecture and thus awaiting resuscitation and exploitation.

Within the limits of this conference paper, these hypotheses will only begin to be framed.

2. Background

Over his long career, Eisenman has investigated architectural notions that emphatically seek to operate differently or away from the limits perceived in part to whole biases. For Eisenman, such concepts as partial figuration, excavation, overlay, and non figure/ground condition are aspects or characteristics of this effort. In a 2007 talk, for example, Eisenman's description of the approach to the site planning for the City of Culture, Galicia, provides an emphatic alternative. [2] He claims for example that the design for Galicia blurs conventional part to whole logics as shown in the project's desire to evade pure figure/ground conditions.

For Rowe, contextualism, collage and collision can be taken as architectural-urban notions characterising an equally alternative manner of thinking and design. Collision is given priority in the following as it has been less examined compared to the too easily abused notion of context. All three terms – contextualism, collage, collision – suggest the sensibility at work which does not rely on a singular or totalising whole nor generative part at the level of project. When one examines Rowe's practice, one sees an indication of this thinking. This is illustrated for example in Rowe's entry to the 1978 Roma Interotta international competition in which twelve architects where each assigned a section of Giambattista Nolli's (1701-1756) well known 18th century plan for Rome for which each of the twelve would develop a fictional architectural-urban project. [3] Compositional strategies, hierarchy, and such devices as cross-axial planning are at work but never in a full or single state.

While it can be argued that there is suggestion of this sensibility in their practice as alluded to above, I will focus in the below on Eisenman and Rowe's teaching and seek to demonstrate that a close reading of their university studio teaching provides instances of this alternative mode of thought that I am provisionally gathering under the index of the contingent.

This leads to a preliminary and necessarily cursory consideration of the questions raised above. As case studies I take Eisenman's cycle of experimental studios undertaken at Harvard University's Graduate School of Design (GSD 1983-1985), and select material from Rowe's Cornell University Urban Design Studio (1963-1988). A review of aspects of the Eisenman and Rowe studios reveals two highly charged and differentiated models of architectural education investigated through the university studio. Adopting a

comparative methodology, studio structure and elements of alignment and divergence within and between studios are considered. Student work is used to illustrate studio character, project type, and research problem, and observations on the general workings and reach of the architecture studio proposed. Suggestions for further lines of inquiry are provided as a form of conclusion.

The Eisenman and Rowe studios provide a particularly apt beginning to a larger examination of the university architecture studio as site of critical experimentation and research on the limits and potential of architecture education. This is due not only to the depth of studio data and quantity of student work available over multi-year periods, but also because the two represent a range of emphasis, problem, project type, and process. An intentional effort is made in each on how to think architecture as a form of open-ended enquiry. In each, the life of the studio project is a contained, finite phase in a larger, continuous pursuit with findings and outcomes to be generalized as a provisional outcome awaiting further refinement. In this regard, the studio process itself could be taken as another manifestation of that different style of thinking which this paper seeks to clarify.

3. Comparative Analysis

I believe there's a need [in architecture] to return to figuration, not icon but figuration. But not full blown figuration but partial figures. Figures that can be misunderstood as aspects of ground or aspects of other figures but that do not in fact lead to necessary whole objects.

Peter Eisenman, 2007 [2, 10:50-11:20 min]

3.1. Experimenting with forms and ideas

Eisenman's multi-year GSD studio was organized around a series of specific problems and conditions and proposed to engage ideas, compositional operations and architectural-urbanistic forms in the broadest and most ambitious sense. Select materials from the Eisenman GSD studios were the object of a May 1986 exhibition and catalogue. [4] In each year's studio, the city was taken as object of study. A close reading of studio materials suggests that three elements structure each year's efforts: – an exemplary architectural-urban situation to be interrogated; – a concept, idea, or theoretical condition; – a limited set of transformative operations, their generative possibilities to be trialled on architectural forms and ideas. Together, these elements

informed drawing and modelling techniques and together suggest a critical reappraisal of how architectural-urban form is generated. The following surveys studio problems from two of the three years.
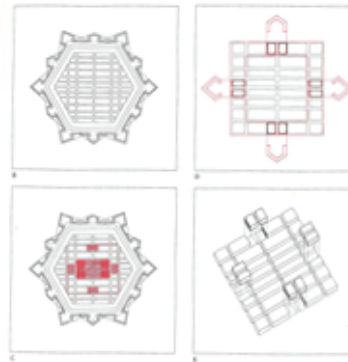

Figure 1: Analytic mappings and operations on Sabbioneta's ideal city. Ben Ledbetter, Eisenman Sabbioneta studio 1983, Harvard GSD.
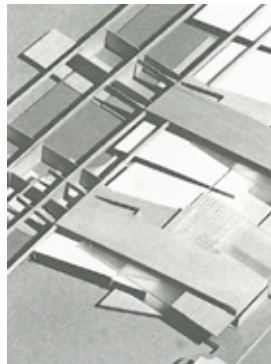

Figure 2: Three-dimensional reading of Burnham's Plan for Chicago. Antonio Sanmartin, Eisenman Chicago studio 1984, Harvard GSD.

The first studio took the form-concepts of ideal, non-ideal, and double occupancy as opening conditions to be interrogated. The nature and potential of these form-concepts to inform contemporary design processes was to be examined through work on two 16[th]c ideal city plans, that of Vespasiano Gonzaga's Sabbioneta and Cataneo's ideal city from I Primi Quattro Libri di Architettura. According to studio assistant Andrea Brown, 'participants worked through a series of three-dimensional operations and procedural explorations on and in the town plans'. [5] These operations created more studio material, which was then re-interrogated in the development of final submissions. Operations in three dimensions including 'helical progression, serial movement, displacement, extrusion, and stacking'. Other composition devices included 'techniques of trace, erasure, graft, layering, scaffolding, marking, and delay'. [5, p. 15] See Figure 1.

The exemplary urban situation and base material in Eisenman's second studio was Daniel Burnham's plan for Chicago, the underlying conceptual protagonist the notion

of building as text, and the primary operation, grafting. There was, according to studio assistant Marc Hacker, a three-tiered ambition: to make architecture as text, to find a new topos of invention, and to find the means to record or express the new topos of invention. [6] As recorded in a contemporary essay and in partial transcripts of studio talks, perhaps Eisenman's overarching ambition at the time was to release the conditions of possibility for what he called a non classical architecture, code within Eisenman's rhetoric for a search for a non anthropocentric mode of design: and another formula for a shift from abstraction to the contingent. [6, p. 32,7] Student work, resulting from two different phases of studio interrogation, is seen in Figure 2.

An attempt to draw principles or conclusions with further application, to generalize lessons out of Eisenman's GSD studios, naturally meets resistance. And that is perhaps the first sign of an intentional ambiguity at work, one which embraces the contingent and the plural, constantly open to elisions and – to take Eisenman at his word – standing as a practice which resists single readings. [2]

That said, an accounting of certain ambitions, if not hypotheses, can be tried. The three term structure – an idea or concept (origin, presence, text), a precedent architectural site or condition (Cataneo, Burnham), transformative operations (scaling, grafting, extrusion) -, are proposed to prompt studio members to try via formal means to locate possible architectural capacities in the space between these terms with an overarching ambition of interrogating relations between morphological qualities and ideas that challenge classical models. [8]

In the Eisenman studio, to formulate it differently, a confrontation of forms and ideas generates different and unknown relations that allow the new to appear amid a confluence across historic periods, places, and practices. This is one way to describe the research hypotheses then tested in studio projects: not so much a 'what is' the space between the three terms, but how might one formulate the architectural question such that something new, some further potential or architectural possibility, is considered.

3.2. Speculations on the city

… that collision of palaces, *piazza* and villas.. that inextricable fusion of imposition and accommodation, that highly successful and resilient traffic jam of intentions… And Imperial Rome is, of course, far the more dramatic statement… with its more abrupt collisions, more acute disjunctions, its more expansive set pieces, its more radically discriminated matrix and general lack

of 'sensitive' inhibition... [it] illustrates something of the 'bricolage' mentality at its most lavish...

Rowe and Koetter, *Collage City* [9, p. 106]

Rowe announces in *Collage City* the concept of collision in the middle of what can only usefully be read as a triptych of chapters dealing with conceptual and aesthetic operations: disappearance of the object to be replaced by texture, and the deployment of collision and collage to allow a coupling of the traditional and the modern city. Written with his former student Fred Koetter and published in 1978, *Collage City* should be seen in part as a divulgation of the proceeding fourteen years of studio work on the topics and architectural-urban problems which find their expression in prose unique to Rowe and an iconographic apparatus which continues to resonate today.

Under Rowe, the postgraduate Urban Design Studio at Cornell University took urban scale elements as the site of invention and of intervention as he sought to explore alternatives to single-minded thinking in favour of the messy, the contingent, the plural. Key publications on Rowe's studio work include Cooper [10], Hurtt [11], Middleton [12], Rowe and Middleton [13], and Rowe [14]. The formal development of the city was its field of investigation. A founding hypothesis informed at a basic level all of the studio work, that of the integration – dynamic, antagonistic, dialectical - of the traditional city and the modern city, the city of solids and that of voids. Rowe's studio was distinguished by a series of relevant problems and an attitude that has been 'loosely defined as contextualism'. [12, p. 47]

While contextualism was and continues to be embraced as a catch-all for one of Rowe's most important contributions to architectural knowledge, other concepts and operational devices were at work in the studios and deserve noting. The notions and operations of collage and collision in particular should be highlighted. [11] It is this later concept which I wish to foreground in the below overview as emphatically promulgating a desire to begin to find alternatives to classical-modernist models of part-whole thinking and more nuanced consideration of object fixation: a short hand for the modernist ideal of the autonomous object in favour of the contingent and what Rowe and Koetter call the composite.

As noted above, I take the device and concept of collision as an index of the transformative thinking Rowe worked to elaborate via the design and delivery of the Urban Design studio. A survey of student work suggests a limited range of project types including waterfront sites, impacted grid collisions, field/edge ambivalences. These produced architectural-urbanistic responses that included linear buildings, towers, and

perimeter blocks. Open space, shaped or otherwise given figure, became a response in certain studios. Three recurrent kinds of projects can be identified: grid and fragment studies explored at the scale of the street and block plan; infill, connection, or completion problems at the scale of the group plan or composite building; overall city-wide projects. Given the space limits of this paper, an indicative selection of projects follows from the first two types recognizing that the Rowe studio blurred the boundaries of these artificial categories.

Figure 3: Infill and completion, open space as figure and ground. Blake Middleton, Proposed plan, Rowe Providence Capital District Studio 1980, Cornell University.

Figure 4: Composite building generated from field and edge conditions. Steven Fong, Perspective view, Rowe Regent's Park London Studio 1979, Cornell University.

In the Rowe studios, the figure/ground plan - a reduction of the complexities of the physical city to black and white drawings delineating mass and space -, summarize a base ideal (the city as formal gestalt), an analytic tool, and a representation device. It is a constant resource and beginning point over the decades. Hurtt notes that the figure/ground can be taken as a sign for studio efforts to reconcile the traditional, predominantly solid city and the modern city of continuous, open spaces with object buildings dispersed. [11, p. 56] See Figure 3.

The Buffalo Waterfront studio deploys the figure/ground plan in an exemplary manner to postulate a future Buffalo, extended and completed. According to Rowe, Buffalo 'appears to be the best, the most extensive, the most conclusive' of the studio projects. [13, p. 11] A close reading of drawings reveal the following elements: areas of grid collision

to be exploited; a strategy of restoration and correction of unresolved and incomplete conditions; a latent park system, overlain with two formal models (the naturalistic and the rectilinear); the idea of city texture; and the idea and use of urban *poché*. [9, pp. 78-79]

Infill, hinge or connection conditions were favourite studio problems. In these, Rowe and his students developed over time a move from linear buildings – dominant in early studios - to what he called composite buildings. [9, pp. 168-171] These function to define edges, enclose space, and simultaneously work as objects of focus. In a certain light, Rowe's composite building functions as Eisenman's partial figure. In projects for the Providence Capital District, one sees a range of urban scale problems including absence of spatial definition and foreground/background ambiguities. Middleton's response reveals key studio elements: shaped enclosure of a figural building (the Capital), use of open space – here a body of water and a circus-shaped formal garden – to organise city form, a composite building which define and simultaneously punctuates. See Figure 3. Fong's solution to the Marlybone studio is another example of the composite building strategy, here in a low-rise urban fabric. One also sees suggestion of an emerging reliance on the garden as model for urban open space. See Figure 4.

From the above too brief survey, a number of constants can be claimed to distinguish Rowe's studio. This includes conceptualizing the city as an always-incomplete gestalt, one whose stability is never traceable to a single figure or diagram that in fact is emphatically loose, open to simultaneous overlays, whether formal, spatial, or temporal. A limited range of project types is used but never pure, always hybrid. An engagement with a corpus of architectural-urbanistic precedents is constant but they are precedents in constant transformation. Another constant is the use of collage and collision as primary techniques. This is complimented by a reliance on figure/ground but, again, never in a stable sense. The figure/ground conditions Rowe advocates are always ambiguous, reading as simultaneously figure-figure, or ground-ground thus challenging any single figure/ground dichotomy, a result of his decades long advocacy of collision and collage.

4. Discussion and Findings

Inaugurating a new investigation into the dichotomy of contingent versus autonomous form, and within the context of a multi-year study of the university architecture studio as a realm of investigation into alternate modes of thinking that might contribute to more sustainable design practices, two approaches have been briefly surveyed. What,

if anything, do they share? What are the important differences? Which future lines of inquiry should be followed to further test the opening questions and conference propositions?

Both Eisenman and Rowe's studios, to state the most basic, can be read as investigations of specific architectural problems, whether work on contemporary ideas, form precedents, the traditional/modern city dialogue, or the design process and architecture's potential itself and more generally.

Looking first at general characteristics, five elements seem to be in common. First, there is an emphasis on precedent, whether of architectural problems (Eisenman) or as formal responses to be collaged onto specific project sites in a spirit of conjecture (Rowe). Second is repetition: studio problems are repeated over several years with subtle variations and refinements. In the case of Eisenman's GSD studios, a framework is adopted and replacement terms - of concept, operation device, and site - introduced. Third, there is an explicit effort to remain open to the new, and to renewal generally. In the case of Eisenman, it's through an engagement with contemporary thought supported by a deep engagement with architecture's history. For Rowe, renewal occurs around the endless refinements which result from manipulating architectural-urbanistic materials in favour of the city. Fourth, reliance on a limited number of composition devices and operations. Fifth, the functional brief and use generally is absent or not emphasized. Rowe downplays function over a privileging of the city as an eclectic and coherent whole. There is another aspect, related to transmission: studio findings are documented and disseminated. For both, documentation of the studio process, exhibitions, and publication ensured registration of the work.

Figure 5: Use model: farm. Anne Mock, Eisenman Ohio studio 1985, Harvard GSD.

The differences between the two studio responses are at the same time apparent and subtle. The research problem in Eisenman's GSD studios might be characterized as form research using operative frameworks delimited by ideas used to read projects from

Figure 6: Mapping and analysis study of Dusseldorf, figure/ground plan. Wayne Cooper, Rowe urban design studio 1967, Cornell University.

the history of the discipline in order to generate new conditions. A parallel and self-complicating dialectic with multiple contexts (historical, real, theoretical) and internal conditions of any architecture. For Rowe, the research problem is emphatically that of reconciling traditional city form and modern architecture. Here, form research is at an urban scale and conclusions, however provisional, do result. Think of the linear building, or that of composite buildings, the discovery of the figure/ground drawing as tool to form ambiguous buildings and site conditions which blur any single figure or ground registration.

The attitude toward context varies, as does the underlying assumption about autonomy. At a different scale and in a different realm – that of the city – Rowe's deployment of figure/field relationships passes through a filter or is indexed against cubistic composition devices not only in plan but spatially. This distinguishes his approach from the devices at work in Eisenman studio projects. These devices include scaling, graft, tracing, overlay, and inversion. Mock's response to Eisenman's Ohio studio compared with Cooper's Dusseldorf analysis provides support to this argument and suggests consideration of the differences and similarities sketched above worth greater elaboration. See Figures 5, 6.

Along side the above characteristics, the analysis of studio work also reveals at least four shared aspects in relation to the specific part to whole problematic, returning to the opening propositions.

First, there is sympathy for continuity. This is manifest in efforts to reveal traces of palimpsest sites for Eisenman or for Rowe in the insistence on the continuity of the urban form. Thus the building project is only ever an event in a longer and always already underway continuum composed of many systems. Both I believe share a commitment to the notion and device of urban stabilizers. This is the case whether a virtual stabilizer of the Cartesian grid and Banham plan in the Chicago studio for Eisenman; or a real stabilizer in Rowe's Regent Park studio. [9, pp. 56-59] A third commonality: both studios

rely on similar operations for the generation of form. Interchangeable I believe are the operations of collision (more resolutely used in the Rowe studios) and overly (those of Eisenman). Both Rowe and Eisenman - to take a final example – accept the contingent. Both, that is, allow for and embrace impure conditions.

Taken together - and there are other terms that would be revealed in a longer study - these four aspects offer one model which differs from a system of abstraction grounded in part to whole dynamics in favour of a part and part problematic or a ground and partial figure (as different from a figure to ground) coupling.

Thus the Eisenman and Rowe studios can be interpreted as investigations into approaches which depart from part to whole problematic and, to return to the opening hypotheses, can be read to propose an alternative to pure models of either contingent or abstract urban form generation.

5. Next Stages of Research

Returning to the opening hypotheses, from the survey it can be seen that both studio systems engage the contingent of the abstract. Formulated differently, the studios too briefly analysed can be argued to emphasise impure forms, composite shapes, and a logic of superposition over simple profile and a pattern of autonomous repetition. The second hypothesis, concerning the performative capacity of contingency to contribute to innovative responses to the challenges of our time as suggested by Cobb has only been indirectly touched. It will need subsequent research to explore.

In the next phases of research, systematic consideration of the range of architectural-urbanistic problems and their spatial conditions and formal characteristics should also be attempted, other university programs examined, and additional close reading of studio materials from Eisenman and Rowe undertaken to further expand the opening propositions. It will be essential to examine in addition contemporary examples of university studio models including from Asia and South American.

This narrow survey of their studio teaching would also be invigorated if considered within the context of Eisenman and Rowe's larger practice and historical-theoretical projects. Such a move would reveal compounding influences between their various activities and provide further support to an interpretation of the university studio as site of knowledge production, to return to the conference questions.

Subsequent work should also extend beyond what might be considered a concern solely with the composition of form, one thus apparently not considering aspects such as the social, cultural, stylistic, technical and environmental. A future reading of teaching

material and student outcomes may discover a methodological approach that can expand to incorporate these other considerations.

The Eisenman and Rowe studios, in conclusion, can be seen as efforts to interrogate architecture and its possibilities through the university studio as a field of constant renewal. In that sense, studio work does not lead to conclusions. Perhaps it is more accurate to say that conclusions are endlessly deferred except in a provisional sense, the activities of the university studio creating conditions of possibility for new architectural categories, new forms, and new problematics to emerge and which resist returning to a part to whole bias in favour of an endlessly open and positively ambiguous mode of thought and practice characterised by such notions as partial figuration and the device of collision. In this sense the studio mimics a kind of contingency. This inconclusive nature of research on the university can be given a closing word by Harry Cobb. For the university architecture studio, he notes, 'conclusive results are scarcely to be expected... what emerges is an array of new questions together with new strategies for pursuing them.' [15, p. 5]

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Conflict of Interest

The author has no conflict of interest to declare.

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