BIM and Contemporary Labor - Pidgin 15[1]

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2012

Architectural practice has often ignored the fact that it is a site of structured production analogous to other forms of production. This ignorance is partly the result of the schizophrenia regarding the type of production architecture actually is. Architects tend to think of themselves as "piece" laborers who rely on the sale of individual goods despite the growing recognition of their participation in a service-based economy. Feeling equally in and out of place in either mode, the question of how architectural labor is structured is often neglected altogether. For those trained in ascribing singular value to the aesthetics of the object, it is a difficult adjustment to assign creative thought to the efficacy of one's processes of production. Likewise, while the cost of procuring and managing labor may seize up to fifty percent of an office's budget, its implications are rarely discussed.[2] The result is an inability to grasp and control the mechanics of an architectural organization, whether it is at the level of the AIA or an architectural office, and an incapacity to determine fair wages for fair work.

BIM is at the center of unhinging architectural practice as we know it. The introduction of digital modeling capabilities has allowed building actors to see the effects of their decisions in terms of costs, energy efficiency, material availability and other project expenditures. It has placed architecture in the center, rather than the periphery, of the AECO industries by offering architects the tools to sit at the table of power and financial consequence. Beyond bringing buildings in on time and within budget (two of BIM's most toted characteristics), it has stimulated a new culture of design and a rethinking of architecture's place in the labor market. The effects of BIM cause us to question architecture's protocols and politics on professional, disciplinary and aesthetic levels.

Professionally, the salient stimulus provided by BIM is the rejection of object-production.

The concept that architectural professionals make objects allows us to indulge in the false reward of “art work” kudos and ignore the non-existence of actual monetary reward. When these kudos link architecture to one-off object production instead of on-going, cumulative material, spatial and organizational expertise, they not only guarantee that architects will be paid by the piece but also preclude our self-recognition that our greatest contribution is knowledge production. Architects should be positioned alongside other innovators such as dot-commers, scientists, gamers, or creative financiers that reap value from their risks, ingenuity and experimentation. Payment should not be determined by the percentage of construction or the hourly wages that are ultimately based on the percentage of construction (piece-work), but like other innovators, architects should share the financial, legal rewards and risks with the owner-cum-venture capitalist. Architecture would thus be squarely placed in the post-Fordist knowledge economy.[3]

The socially disconnected, adversarial, paranoid and under-paid profession that comes with traditional Fordist paradigms of work and office organization has also been exposed by BIM to be unnecessary and avoidable. Whether it is structurally and formally acknowledged or not, we are witnessing the reworking of old hierarchies in many firms. Rather than fleshing out the uninteresting aspects of a project in larger firms, a younger generation has become responsible for producing the parameters of the design process. Principles may pretend that this is merely technical and supportive, but the reality is that emerging practitioners are often framing the context of design and production. Although this contribution may not be reflected in their wages, authority in the workplace has become redistributed on a horizontal axis to include a wider variety of agents. A similar “leveling” has also occurred in smaller practices: small firms are often able to make ad hoc and project-specific alliances with owners and experts enabling them to work on large-scale projects. As a result, young firms are no longer required to move up the food chain—from bathroom renovation, to kitchen renovation, to apartment renovation, to ground-up residential commissions, to the holy grail of institutional work; they can begin with multi-million dollar developments.

And so, too, are disciplinary boundaries becoming contaminated. The building process does not merely entail the owner, architect and contractor triad, and the design process within that does not rest solely with the architect. Eschewing conventional “professional” distinctions that separate architects from engineers, fabricators, component suppliers and tradesmen, BIM-led protocols encourage an important *horizontal* dimension to the processes of design development and design production.

Collaboration should not be seen as a casual blurring of disciplinary boundaries, whereby architects become engineers and vice versa. On the contrary, each discipline should become more skilled at what they do and, most importantly, respect and value the contribution of each other in the production of knowledge. The emerging structure(s) of “flexible specialization” can be represented as clusters of specialized units, each contributing to one aspect of the product, engaged in intense direct communication and embedded in a dense social network. These units have the market advantages that productive cooperation brings. Not only is the field of architecture un-siloed and deaestheticized but it also places the profession within the context of a workforce and makes the nature of our architectural labor more concrete.

Aesthetically, the place of BIM in *any* of the AECO disciplines, falling under current definitions of technology, overlooks its potential for more radical conceptual shifts affecting the nature of design and building production. This is particularly problematic in architecture where the stakes are the highest given our supposed professional “ownership” of the design process. The proper repositioning of our thinking about architecture caused by BIM/IPD is dependent on two seemingly contradictory changes in our attitude about design: The first is to embrace design more explicitly as the real nexus of BIM’s value. BIM should no longer be merely associated with efficiency and cost-effectiveness, but with design savvy and design risk-taking. The types of issues that BIM allows the architect to negotiate—material procurement, labor assessment,

scheduling, maintenance and financing—put our design ingenuity to the test by expanding the palette of a project's parameters and the architect's comfort-zone. The second change required is a replacement of the centrality of physical design with that of process design. We must go beyond our current interest in two-dimensional design (image) and three-dimensional design (space) to that of four-dimensional design (time). Architectural aspirations should no longer be organized primarily around physical elegance; rather, it should be organized around the elegance of resource deployment. In lieu of the barely-modified Beaux-Arts model of aesthetic design excellence that exists today, a new model must celebrate skills in judgment, teamwork, technique, building procurement, data collection and the fluidity with which information can be translated to design.

This call to move beyond the concept of object delivery and piece work, to move beyond professional boundaries in which architecture singularly lays claim to design and to appreciate BIM not primarily as a tool of efficiency but one of design risk/ expansion is a challenge to restructure architectural work and its financial rewards. And in this, BIM, while instrumental in forcing a re-examination of architectural work, is merely a mechanism that exposes rather than cures the conceptual dysfunctionality of the existing profession. While the AIA has felt the pressures of BIM's and IPD's realignment of professional boundaries with new families of contracts,[4] the more profound change will not come from the institution that has traditionally played catch-up at its best, an institution that has neither the will to examine architecture's place in culture nor the desire to address fair practice in architectural offices. The recent appearance of the "BIM manager" who is usually trained in a vocational institution and wields enormous power in organizing the priorities of design production remains institutionally unanalyzed. Because of institutional inertia, our infatuation with diagrams of organizational contamination showing architects as one agent amongst many AECO players[5] leaves an office structure based on single-authorship and staff exploitation untouched.The office experience has, for the most part, for most of us, not budged in the least.

It is up to a younger generation of architects and graduates to insist on retooling architectural work and compensation. At this transitional moment in the profession, when design responsibility and financial savvy can be shared amongst various players, the constitution of a new model for architectural practice is entirely up for grabs. Now is the time for this new generation to think expansively about what it wants this new practice to look like and how its organization might be linked to larger social, political and economic formations. As new players in the expanded field of architecture, they are free to move directly toward an imagined ideal.

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[1] I am indebted to Paolo Tombesi, with whom I have collaborated on issues related to BIM and BIM education, for the formulation of many of these ideas.

[2] See Paolo Tombesi in *Take 5: Looking Ahead: Defining the Terms of a Sustainable Architectural Profession*, ed. Paolo Tombesi, Blair Gardiner, Tony Mussen (Manuka, Australia: Royal Australian Institute of Architects, 2009) for an excellent discussion on architecture's confusion over its labor practices.

[3] "Knowledge Work" and the knowledge economy are terms formulated by the corporate management guru, Peter F. Drucker. In his *Post-Capitalist Society* (New York: HarperBusiness,1993) as well as other texts. Drucker forecast late capitalism's decentralization, privatization and marketing. In the eighteenth century, he says, the worker's knowledge was applied to tools; in the nineteenth and early twentieth centuries, it was applied to productivity (Taylorization); today, he said, it is being applied to knowledge itself. Today, the new breed of "knowledge workers" *owns* the means of production: that is, knowledge. Because the skills held by these workers—research, product design, fabrication, marketing, advertising, customer consulting, financing, contracting—allow technical insights to be linked to marketing strategy and financial acumen, the traditional distinction between goods and services breaks down. Emphasizing that organizations have been "too thing focused," he advocates instead the need to adjust to today's knowledge-driven market. More recent formulations on the knowledge economy are provided by Thomas H. Davenport, *Thinking for a Living: How to Get Better Performances And Results from Knowledge Workers* (Cambridge: Harvard Business Review Press, 2005).

[4] The AIA is the process of reformulating the standard contracts to embrace the process of collaboration spurred on by IPD and BIM, bringing the supposed back-end, non-professional designers and the owner into the design realm. The A-295 family of agreements will preserve the owner-architect contract and the owner-contractor contract, but within these agreements, the duties of each profession are integrated together and the design phase will be renamed and reconfigured through a series of stages: "conceptual phase," "criteria phase," detailed phase," and "implementation," which integrates constructors into the design process from the onset. The Special Purpose Entity, the ultimate integration in which the architect is brought into the financial reward realm, uses the limited liability company, in which the owner, architect, CM and any others agreed to are members. In this scheme, the owner in discussion with the architect and constructors, must put aside an agreed upon amount of finances determined to be the project's worth, and the architect and the contractors must provide services at cost so they will never lose

money. If and when the cost works are lower than the target cost, there is a three way split of the surplus. It is agreed that there can be no lawsuits.

[5] Some examples are ONL, Kieran Timberlake, SHoP and Gehry Technologies.