

Architectural Craft and Contemporary Labor

Peggy Deamer

Craft on Demand: The New Politics of the Handmade 2015

Eds: Anthea Black and Nicole Burisch

In 2005, I visited Zahner Metals in Kansas City. I wanted to know what the workers involved in building the rainscreen copper panels of Swiss architectural firm Herzog & de Meuron's San Francisco de Young Museum actually were doing. The museum design, radical in its flat, plane façade of dimpled copper panels that formed a screen to the museum itself, shook conservative San Francisco whose cultural institutions, especially in Golden Gate Park, were always polite and classical. For me, the interest was less its neo-modernism than its fearless expanse of a single material displaying intricate but subtle manipulation. How much control did the workers at Zahner Metals have over the design of the panels, none of which were identical? Who ran the CNC (computer numerical control) machines? How many people did it take to work on one panel and what was the division of labor? Was there an assembly line process that divided tasks and segmented information? During my visit, I was struck by the cleanliness of the work, the groups of workers dispersed in corners of the open workshop, the small number of workers, the strange mix of "blue-collar" workers manipulating digital inputs, and the ingenuity required to position the panels just to multiple hands at work. But I was most struck by what owner Bill Zahner himself told me about the workers there: they were the ones who had been interested in making the transition from mechanical to digital production, and the same ones who, before that transition had been the best workers, inherently interested in quality and innovation. Yes, the work was intrinsically different, but the attitude of curiosity was the same. Before the switch to CAD-CAM (computer aided design-to-computer aided manufacturing), Zahner knew who would survive the transition; it had nothing to do with training or age. Likewise, the "seamless" transition from drawing to fabrication that is part of the CAD-CAM rhetoric was anything but. While the architects' software gave intricate information about the formal parameters for the copper panels, it had no information about how those parameters related to assembly; how the panels were to be moved, held up, turned and made accessible to hammer and screw. Only the fabrication workers knew if the connections and support were sized properly, not just for installation but for the act of fabrication itself; assembly had its own logic and software. It was heartening to know that craft intelligence was not just alive and well but smarter than ever.

This inquiry was stimulated by my own confusion about the relationship between design and craft within architecture. On the one hand, I knew from my architectural practice that architects have/had great pride in being good "craftspeople", in knowing how to skillfully detail material connections and ornamental flourish for aesthetic effect, even as we ignore the input of the tradespeople who actually execute the directives of our drawings. On the other hand, I knew from my academic work that there was, in the 19th century, an antagonistic divide between "design" (controlled by the architect via drawings) and "craft" (executed by the makers/producers). What had happened to that discussion in our more oblivious contemporary times? On top

of this, new digital programs, principally CAD-CAM, were changing the nature of fabrication. Not only was there direct drawing-to-machine technology (by-passing shop drawings, themselves a kind of craft) but the capacity of the new machine production and its operator now needed to be known by the designer/architect up front in order to be drawn correctly.

For someone shocked by the disregard we architects had for our builders, tradespeople and fabricators, the changes brought about by the new kinds of production seemed healthy. Our 20th century way of working – giving kudos to architectural “craft” and absorbing it into our own, self-congratulatory rhetoric of “good design” – completely by-passes the producers’ contribution to and ownership of craft. Indeed, the new forms of collaboration required by digital processes seemed to finally address the suggestions of 19th century architectural theorists for overcoming the design/craft opposition: one thinks primarily of John Ruskin, whose “The Nature of Gothic,” in *The Stones of Venice* was a plea for the stone masons of his era to hold on to their freedom to ornament and detail in the face of mechanized building production; of William Morris, whose workshop aimed to integrate industrial technology with craft-based autonomy; and of Adolf Loos, who proudly claimed to not make working drawings and instead direct the builders on site. More than this, digital collaboration actually put the fabricators’ knowledge at the beginning, not the end of the process. Design and craft collapse.¹

On reflection, it became apparent that the 20th century architectural pride in being good “craftspeople” was the erasure of *labor* from the craft discussion. Yes, we architects might have cared about material joinery and expression (ornamental or otherwise), but we really didn’t know or care how it was done or who did it under what conditions. What is so remarkable about the current period of digital fabrication is that labor is once again foregrounded. That this labor is less “manual” is obvious, but the actual capabilities of those skilled workers managing the information and output is paramount. Indeed, one could also say that material consideration falls by the wayside in this process, given that the machines – largely laser-cutters, routers, and

¹ The historical, economic, and conceptual change that occurred between the 19th century architectural concern for the worker to 20th century modernism’s dismissal of this concern is the subject of a number of my essays, including “Detail: The Subject of the Object,” in *Praxis: Detail*, issue 1; “Work,” in *Persepecta 47: Money* and reprinted in *The Architect as Worker: Immaterial Labor, the Creative Class, and the Politics of Design* (Deamer, ed., Bloomsbury, 2015); and “Architectural Work::Immaterial Labor,” *Industries of Architecture*, Lloyd Thomas, Amhoff, and Beech, eds. Bloomsbury Press). Most of these observations are made by Ed Ford in his *Details of Modern Architecture*, in which he says:

“Insofar as twentieth-century architects have concerned themselves with the social consequences of their work, they have focused on the way in which buildings affect the behavior of their occupants. Insofar as 19th century architects concerned themselves with the social consequence of their work, they focused on the way in which buildings (and particularly their ornaments) affect those who build them. There is perhaps no greater difference between the architects of the 19th century and those of the 20th than that each group was so indifferent to the social concerns of the other.” Edward R. Ford, *The Details of Modern Architecture*, vol. 1 (Cambridge, MA: The MIT Press, 1990), 9. My essay, “Architectural Work::Immaterial Labor,” connects this observation to the change in capitalism from a production-based economy to a service-based economy, bringing with it the change of concern from the producer (the builder/craftsman) to the consumer (the client/owner).

drills – are materially neutral in contrast to the specific tools of, say, the wood carver or the stone mason.² That is to say, the work performed, rather than the tools themselves, had to adjust to the various material demands.

The healthy reintroduction of labor into the design/craft dispute by way of new forms of digital labor does not imply the reintroduction of the hand or handicraft in the traditional sense. When Richard Sennett argues in *The Craftsman* that craft relies on the body, the hand, and tactile affect to convey the special meaning it brings to objects,³ he overlooks the contribution the contemporary digital craftsman makes through her procedural knowhow. Craft moves from the manipulation of the object to the management of the fabrication process. Indeed, even digital craft theorist Malcolm McCullough's insistence that contemporary craft *is* craft - because, he says, even in computer work our hands and eyes are actively engaged - is unnecessarily nostalgic. Rather, digital labor reconnects with the craft discourse because of the aesthetic risk that both designer and producer take on. As McCullough rightly points out, "In digital production, craft refers to the condition where [we] apply standard technological means to unanticipated or indescribable ends."⁴ Because parameters and equations are configured in lieu of descriptions of shape, neither designer nor fabricator can predict the outcome; both share the risk of formal indeterminacy. When Herzog and de Meuron spent days at the factory experimenting iteratively with the embossed dots and circular cutouts on the copper panels to determine the final double patterning approach, they could only set the parameters for design permutations. When the Swiss architects left, they knew the approach, but they didn't know what any of the 7,000 panels would actually look like; this was indefinite until they were actually produced. The task and the risk were equally shared by those there to execute and those who had left with only parameters identified.

And yet, one can't overlook that there is a difference between Jacques Herzog and Pierre de Meuron and the men (yup, there were no women) working on the factory floor at Zahner's. It is not a distinction between blue and white collar, material or immaterial work: these "social" distinctions fall away as mutual dependency and respect reconfigure these divisions. The distinction, rather, is the manner in which both, with computer technology, have had to deskilling and reskill. In an illuminating piece by John Roberts entitled, "Art after Deskilling," in which he describes the change in art when modern artists such as Monet and Duchamp no longer made their work, he argues, first, that the "artist's" shift from artisanal to executive is the point where

² Of course, this is only true at the general level. The use of these computer-directed machines requires knowledge of the material's capacity to be cut, bent, etc.

³ Richard Sennett, *The Craftsman* (New Haven: Yale University Press, 2008)

⁴ Malcolm McCullough, *Abstracting Craft: The Practiced Digital Hand*, (Boston: MIT Press, 1998) McCullough here harkens back to David Pye who in 1978 provided a definition of craftsmanship that also centers on risk: "Craftsmanship ... means simply workmanship using any kind of technique or apparatus, in which the quality of the result is not predetermined, but depends on the judgment, dexterity and care which the maker exercises as he works. The essential idea is that the quality of the result is continually at risk during the process of making." For two excellent essays on risk and digital design, see both Branko Kolarevic's and Scott Marble's essays in *Building in the Future: Recasting Architectural Labor*, (New York: Princeton Architectural Press, 2010).

the distinction between artistic creativity and craft-skill is finally destroyed; second, that both executor/artist and producer/craftsman experience a process of deskilling; and third, that the artist confronted with deskilling in modern culture does not suffer the same creative denigration as the productive labor because, as Marx insists, the artist, designing one-offs, is not subject to the real subsumption of labor associated with mass-production in the way the factory/office worker is.⁵ In other words, in our Zahner/Herzog & de Meuron example, Zahner workers are more vulnerable to economic forces resulting from the changes they experience than are the architects and their staff. As previously “unskilled” laborers upskill with computer knowledge and those who do not catch up fall away, “unskilled” becomes “unemployed” and as fewer workers in total are employed, factory precarity is highly charged. The architectural workers in their offices have learned new computer skills, but they have not shifted their value proposition or taken on an industry-shaking realignment. They have not, in other words, been forced to shift their behavior despite a clear paradigm shift. If both architect and producer, as we have argued, have assumed creative risk in sharing the new design/craft confluence, the financial risk is felt much more directly at present by the factory workers. But my assumption is that architectural workers are merely staving off an inevitable change just more blatantly apparent now on the factory floor.

There are a number of secondary observations that can be made at this point. One is that the fabricators’ economic vulnerability filters back into the class distinctions that conceptually have been eradicated: the factory worker stays “blue” because of that vulnerability, not because they work with their hands. Another is that the factory worker should be held in greater esteem in this deskilling/reskilling scenario for taking on more risk – not just in aesthetic output but in self-identification and income. A third is that the architectural profession is, in the long term, worse off for not having organizationally adjusted to the full implications of digital technology and clinging to a dysfunctional, 19th century (gentleman’s) professional model. All of these conditions need to be explored. It suffers for not thinking through the new attachments architects have to fabricators and construction workers, making us unable to appreciate the common bond we share with the makers of our designs. Architecture’s disgraceful attitude to construction workers in the Gulf is an example of an outmoded “professional” attitude of superiority. It suffers as well for not addressing the reconfigured production relations in the architectural office where there are no longer “draftsmen” sitting below the master designer but, in its place, a more horizontal skill structure.⁶

But the larger points – that the hand is no longer the mark of craft and in its stead, risk-taking in aesthetic outcome and organizational realignment define “craft;” that craft and design are no longer oppositional but share labor knowledge and mutual respect; and that deskilling and reskilling should be not just technically

⁵ See John Roberts, “Art After Deskilling,” *Historical Materialism* 18, (2010), 77-96.

⁶ The Architecture Lobby, to which I belong, is working to address both of these lapses in the profession, (architecture-lobby.org)

determined but economically and organizationally consequential – are issues that architecture needs to address immediately. As long as we do not appreciate the fundamental shift that has occurred in our design/craft capacity and downplay our dependence on fabricators and other industry specialists, we will fail to capitalize on the knowledge essential to innovation, especially when we equate "innovation" not with angel investments to dubious social media monetization but with technical, material dexterity . We tend to admire the work of Herzog & de Meuron for their introduction of new materials to our architectural palette, but their real contribution of collaboration with those who know how the materials are manipulated is unacknowledged. This needs to be rectified.