Beyond Competency. Disciplinary Efficacy

Peggy Deamer

Abstract

This paper argues that the architectural academy is guilty of producing architects who might be competent, but are not effective in putting their training into socially relevant use. It examines what follows then is a set of 7 nested and increasingly institutionally-scaled observations – formalism, design, analysis, curricula, pedagogy, academia, and administrative institutions – about architectural education that attempt to locate the various arenas which require re-thinking for a relevant and empowered discipline. It ends with a call to arms for architecture academics to unite to produce the radical change needed to address our current, crisis-driven world.

Affiliation:
Yale University, School of Architecture, Professor Emerita

Contacts:
peggy [dot] deamer [at] yale [dot] edu

Received:
5 November 2021

Accepted:
27 July 2022

DOI:
10.17454/ARDETH10-11.04

ARDETH #10 #11

It is a sad fact that architecture schools are producing aesthetically competent designers, but not effective architects. For too long – over 30 years – I have watched smart and talented students leave school to never be heard from again. If their work is published in trade magazines, it is generally of the small retail or domestic variety, their impact on the built environment almost nil; or they are lost in the hierarchy of large firms where their contribution remains unacknowledged. Such bright people, lost in the small world of architects-known-to-architects.

If we agree that this is a problem, we can probably agree that the cause is multi-dimensional: politically, a neoliberal economy that makes architectural design only available to the rich and our dependence on the rich to commission our work; institutionally, a profession regulated by states that have little understanding of what "competency" in architecture implies; educationally, schools that teach to an aesthetic imaginary; ideologically, a subjective image of cool heroicism.

The multi-dimensional nature of the problem results in a sense of impotence, a belief that pushing for change in one area of this tragedy will run up against another and that taking *those* on is doomed to failure. Nevertheless, an examination of academic competency is in order, less because the academy is the source of architecture's limited efficacy but because architectural education is central to the construction of the discipline and makes evident the complex weaving of architectural beliefs, behaviours, and practices that limit true architectural relevance. What follows then is a set of nested - but not necessarily linearly-related – observations about the academy that try to speculate on the various academy-to-profession stages in the hope of prompting change.[1]

This examination is based on architectural education in the US, and the assumed universality of the observations is, I know, a problematic rhetorical device. And here, "evidence" of modes of architectural education comes from experience – 35 years of teaching – not data. Nevertheless, hopefully, this "subjective" scrutiny will stimulate educators elsewhere to lodge additions/adjustments to this argument so that a more precise set of observations and recommendations can be put forward. And while my observations are probably over-zealous for my having helped organized,

It is a sad fact that architecture schools are producing aesthetically competent designers, but not effective architects.

1 - An earlier paper of mine captures many of these ideas but in a less direct fashion: Deamer, 2020.

with other members of the activist organization The Architecture Lobby, a summer school of architecture modelled on many of these observations, they are meant to elicit a reaction.

Formalism

Architectural education pays an inordinate amount of time teaching formal skills. Design studio, the traditional course in which formal training is lodged, takes up half of a student's course load if measured by required points, and three-quarters of her education if measured by time. When the architecture student quickly learns that sacrificing attention to non-design courses is forgiven if her formal work in studio is attention-getting, and that garnering kudos from fellow students and the faculty rests on design output, it is not the result of astutely uncovering a school's covert ideology but simply grasping the math in the catalogue and the unsubtle social messaging.

The hegemony of studio in which formal training is lodged is inherently problematic, but it also indicates a confusion over what constitutes this training. On the one hand, it implies spatial proficiency, something I personally believe is essential knowledge. Fundamentally abstract – spaces, elements, and walls constitute their own relational dance, one that, without reference to function, occupation, type, or material must be mastered at the get-go. But in an era in which critiques of modernism have simultaneously rejected formalism as politically and socially empty, studio instructors often avoid teaching form directly. In its stead, suggestions meant to improve spatial relationships are couched in terms of context, function, or precedent. As a result, what might be taught succinctly and emphatically in preliminary studios gets parsed over all the semesters in a sublimated fashion.[2] In my experience teaching design at Yale, Princeton, Barnard, and the University of Auckland at every level – undergraduate, 1st year, 2nd year and 3rd year in addition to PhD (Design) – I have come to recognize that when teaching advances studios – the last in a long series – my colleagues and I are still primarily focused on a project's formally elegance as opposed to, say, ensuring that the social, economic, material and environmental implications of the student's formal choices are understood by her.

The hegemony of studio in which formal training is lodged is inherently problematic, but it also indicates a confusion over what constitutes this training.

2 - Professional architectural education in the US is divided between the 5-year Bachelors of Architecture (BArch) programs, which are usually entered directly from high school (and are increasingly rare), and the 3-year Masters of Architecture (March) programs which are entered after completion of an undergraduate college/university education. The common Anglo-Saxon education of the 3+2 – 3 years yielding a non-professional Bachelor of Science, 2 years of graduate work yielding a professional March – is rare in the US.

We need is a broader definition of design that transcends mere formalism.

On the other hand, “formal training” also implies learning representational skills, something that is different than spatial training – it deals with images – but often gets conflated with it. Confusion comes at the design initiation level when manipulating an image/representation is considered an *entré* into spatial insights, or when 2-dimesional representations of 3-dimensional relationships get analyzed only according to their 2-dimentional appeal. But it also comes at the post-design level when students employ a representational technique for final renderings and choose the au courant techniques with no understanding of its ideological, historical, or conceptual implications. I find it problematic, for example, when students in the US use the pastel colours of a resurgent (and a-political) post-modernism when their project advocates institutional critique. If teachers are doing their job, they would help the student identify the appropriate representational technique for a given concept. Unlike concentrating formal lessons in the early semesters, representational literacy, I suggest, would permeate all design operations, dispensing with its independent instruction.

Remedies to formal education are important but they do not address the more basic problem of an education that believes form is not just necessary but sufficient for future power/success in the profession. What we need is a broader definition of design that transcends mere formalism.

Design

A broader definition of design has the students consider what acts, if their hypothetical project were built, would be set in motion by their formal choices. This means, at the front end, imagining and designing the procurement process: who builds, with what materials, coming from what location, and by what means. It implies imagining the suppliers, fabricators, and laborers mobilized by the aesthetic choices being made. This suggests bringing experts from engineering, fabrication, and/or construction into the studio. It implies instigating the collaborative research necessary for students to grasp the supply chain pertinent to their projects. It invites faculty to develop student consciousness about the labour within the design process itself. And it demands a readjustment of archi-

tects' assumed design hegemony at the top of the AEC industry and the class prejudices that come with it. And at the back end, it means asking the students to imagine their project's occupation. This is different than learning how to manage the spatial "program" which generally doesn't foreground the social or power relations embedded in spatial distribution. Design needs to be seen through the eyes of the various subjects assumed to use the designed space: feminine/masculine, bourgeoise/ascetic, historically recognized/mute, western/eastern, northern/southern, etc. In lieu of depicting spatial distributions that make up the building object, students would depict the imagined scenarios of interaction. In emphasizing scenarios over objects, students are forced to consider the institutions and ideologies that create those identities, and which can play out in various ways. The design solution would be cognizant of and sympathetic to indeterminate actors and activities.

A particular American example of instituting "design" is offered by the National Architectural Accreditation Board (NAAB) Accreditation Review Forum (ARForum) report of 2019.[3] At the meeting that this document summarizes, all the institutions effecting the education of architects – the American Institute of Architects (AIA), the American Institute of Architecture Students (AIAS), and National Council of Architectural Registration Boards (NCARB), and the National Organization of Minority Architects (NOMA) – met for their legally mandated, every-five-year meeting to discuss accreditation criteria. Progressive in a number of ways, the meeting was administratively relatively open and its outcomes relatively enlightened. Procedurally, for the first time, NOMA was asked to attend, and unlike previous meetings in which each "collateral" (as they are called) arrived with its leaders' pre-digested claims to authority, this gathering invited multiple representatives from each organization to talk and debate. Substantively, the forum recognized that the standards by which NAAB had been measuring a school's accredibility were too rigid, too parochial, too standardized, and too ethics-light. The changes they made for assessing accreditation were two-fold: an emphasis on value-driven knowledge and a focus on student-specific design. In the US, these are constructive changes for architectural education. This is progress.

3 - The description of the ARForum gathering was told to me by Michaele Pride in a meeting on October 12. She was the one who also directed me to the paper it produced – the Accreditation Review Forum (ARForum19).

A broader definition of design has the students consider what acts, if their hypothetical project were built, would be set in motion by their formal choices.

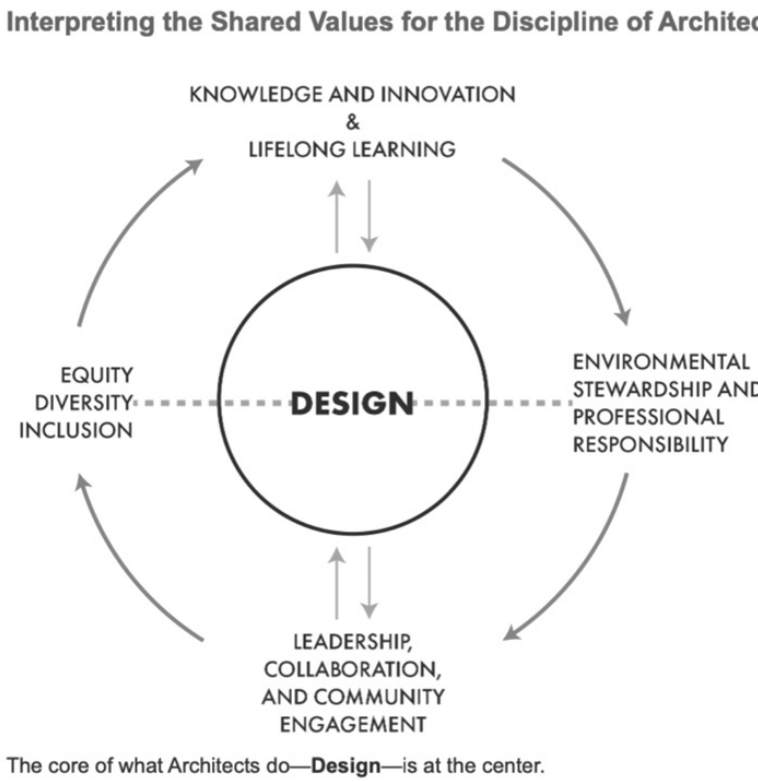


Fig. 1 - NAAB's "Interpreting the Shared Values for the Discipline of Architecture".

But percolating up from this meeting was the almost undiscussed but nevertheless assumed foregrounding of "design" as the locus of architectural identity. As the above diagram shows and the document states, "Through design, you achieve Knowledge and Innovation, promote Lifelong Learning, and practice Leadership, Collaboration, and Community Engagement. Design supports them; they support and inform Design" (Accreditation Review Forum, 2019). Design is now set in reference to "environmental stewardship and professional responsibility" on the one side and "equity, diversity, and inclusion" on the other. Progress! But the definition of design itself and how precisely it instills stewardship and diversity is not digested, nor is the more fundamental lesson that unless design methods and pedagogies are changed, they will continue to operate in the context of commodification and cultural consumption. Indeed, in the hazily objectified aura of design, we latch onto the most familiar imago we have – that of the cool, hip, cultured "designer".
Why do we wrap our subjectivity around the glow of design?

Diagramming/analysis

Capitalist ideology is certainly partly to blame. At the base level, architects stripped of any power beyond shaping the space of owners/developers reduces friction to the financial gain of the capitalist. At the superstructure level, architects are infused ideologically with a subjectivity dominated by aesthetic/design virtuosity which convinces us not to protest our limited cultural assignment.[4]

In lieu of this, prioritizing analysis – of power, of systemic networks of exchange, of hegemonic spatial distributions – replaces ethereal "imagination" with diagnoses of the mechanisms directing our client-driven designs and their design scenarios. What is the chain of decision making that made a given project be the "desired" one? Who are the decision makers influencing programmatic choices, and how did they get financing? Who, in other words, might architects need to talk to in order to not just get the job but influence the program's appropriateness and procurement sustainability? What community is being reconceived, and by what spatial moves? To address this, skills in influence and strategies of persuasion need to be taught in addition to – or utilizing – architects' spatial capacities.

Power mapping, a skill used by activist groups to identify the actors/stakeholders relevant to a change campaign, provides a powerful analytic tool. Sitting at the intersection of design, analysis, and diagramming, power mapping provides the visual framework for identifying who needs to be influenced, how they can be influenced, and who can do the influencing in order to reach social (and therefore spatial) goals.[5] Because effecting social change is (I assume we can agree) a goal of architects, designers must be aware of the political and social power structures both design initiative and their implementation; our solutions need to be effective, not just good looking.

Power mapping is generally depicted in one of two basic forms: a Matrix Tool which maps players in quadrants related to an x-axis of support for the anticipated change (little to a great deal) and a y-axis of influence (little to a great deal) – and a Network Tool which delineates the relationships between organizations and their various actors. The power maps shown here – developed for The Architecture

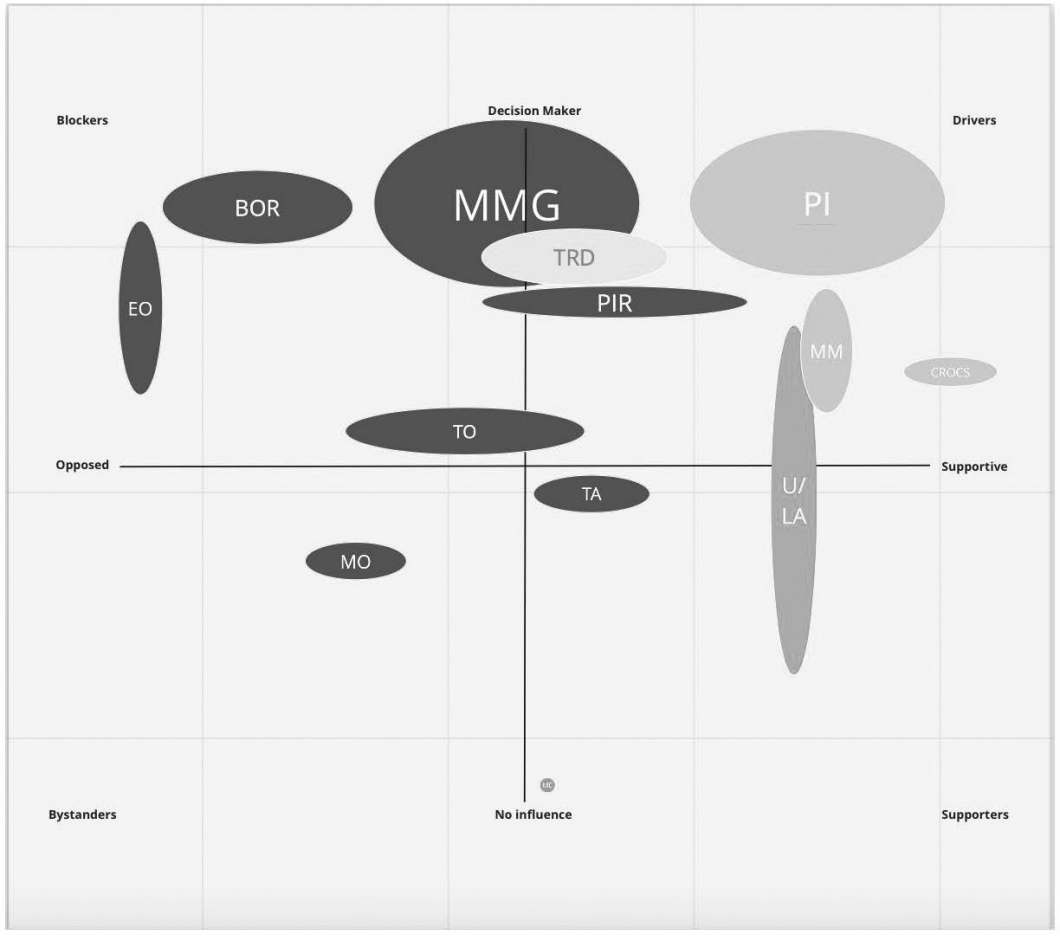
4 - I wonder how this contemporary "design" subject came to be. Might it have to do with a struggle to determine architecture's position vis-à-vis modernism? Does striving to be as radical, socially powerful, and formally innovative as the 1930's modernists we so admire – while also coming to grips with its social failures and aesthetic marginalization – urge us to invent new forms of supposed success, "design innovation" being the current and easiest option? Or, as both the 60's turn to the social and natural sciences and the 70's turn to post-modern historicism rejected the "serious" design of modernism, do we architects insist, in a reductive binary, that design is the essential arena of essential contestation?

5 - For more information on power mapping, see *Power Mapping and Analysis* (Tang), and also the handbooks and tutorials that The Architecture Lobby's Green New Deal (GND) working group put together for its activist work for more sustainable construction and design labor (*The Architecture Lobby*, 2022).

Fig. 2 - Power-mapping the production of Crocs – matrit – from the Architecture Lobby's ABC Summer School 2021. Authors: Aamna Muzaffar and Thomas Wensing.

Beyond Capitalism (ABC) summer school organized by the Architecture Lobby (the one I helped organized) – were from an assignment in which participants were asked to diagram the coming-into-being of a favorite product.[6] The double analysis of Crocs – both network and matrix – below was one of an amazing array of charts that were as much a visual design problem as they were insights about the conditions shaping the chosen objects.

The goal isn't to teach architects to operate more smoothly in the existing system; rather, it is to be able to persuade developers to consider the long-term care for the environment over short-term profits. Architects should be doing more than decorating developers' pre-conceived programs; they should participate in the development of those programs, and be able to argue the full merits of their proposals.



Curricula

The above suggests that design studios should interrogate present-day production realities to rehearse a positive future for the built environment. The traditional idealized "generic" programs (which invariably translate into Western elite institutions, e.g. libraries, museums, innovation hubs) should now be seen as tropes that incite false consciousness about what the world desires and what architects are expected to provide. It is wrong to think that reality limits the imagination; nothing is more interesting than reality's rhizomatic complexity.

Non-studio material must infiltrate the studio and live up to the responsibility that this rehearsal of real-world scenarios implies. Theory should come to the fore. Already drawing connections between studio and colonialism, Eurocentrism, racism, and gender inequity, theory now must address other urgent themes such as property, labour, alienation, and displaced bodies. Structures in studio should open up information about new materials and techniques. It and environmental systems should be the topics that studios foreground in the semesters that follow the teaching of formalism.[7] Technology – BIM, artificial intelligence (AI), virtual reality (VR), and augmented reality (AR) – should be taught as potential techniques of empowerment in lieu of aesthetic virtuosity, production efficiency, or labor cost-cutting.[8] Professional practice courses, traditionally the hinge between academic speculation and professional realities, and usually offered in last semester of a professional program, would be dispersed across all studio semesters; indeed, it could disappear as an special topic.

At the same time, other academic categories should not be seen as mere handmaids to studio. They need to reflect on their own histories and the role they have played in producing an ideologically constrained architectural subject. For example, structures has historically reinforced traditional construction systems and could instead teach new methods that utilize local labor and local materials and are less wasteful. Environmental systems courses have allowed themselves to be consigned to technical, scientific, and empirical discourses, marginalizing their role in design, culture, and economics, and instead could be taught as a historical and theoretical condition central to the

6 - For more information on the ABC summer school 2021, see http://architecture-lobby.org/project/2021-architecture-beyond-capitalism-school/. There will be another summer school in the summer of 2022. For information, see http://architecture-lobby.org/project/2022-architecture-beyond-capitalism-summer-school/.

7 - I describe my ideal studio sequence in my introduction to *BIM in Academia* (Deamer, 2011).

8 - For thoughts on the positive, collaborative aspects of BIM, see Deamer, 2014.

Non-studio material must infiltrate the studio and live up to the responsibility that this rehearsal of real-world scenarios implies.

concept of architecture. Professional practice courses have served the production of compliant architectural workers when in fact they could dissect not architectural practice as it exists, but what it could be. History courses have been the main intellectual area other than studio to project the white male hero as the "typical" architect and the Global North as the locus of all important cultural events and these biases now need recalibration. Each of these subjects, in other words, requires new forms of self-reflexive instruction.

Pedagogy

Or is a more radical rethinking of standard pedagogical categories in order? The typical pedagogical categories are useful for administrative clarity but bad for relevance. Prioritizing students' intellectual needs instead of institutional bureaucracy might produce a stronger army of student researchers and effective players. If courses were referenced according to the knowledge threads students care about, they could weave an interdisciplinary education that arms them with a vaster array of information and tested strategies for participation in the real world. Finance, activism, climate change, housing, immigration, construction, aesthetics, globalism, race/gender/identity, fashion, cultural hegemony, industrialization, modernism, infrastructure, landscape, decolonization, slavery, the human/post-human, the Anthropocene, and politics – these are topics that too often remain hidden in standard academic categories, but which nevertheless can galvanize a student's intellectual trajectory. At the same time, faculty members could engage in these same threads and, regardless of being historians or techies or designers, share their syllabi (probably for the first time) and together develop complementary approaches to a thread. Subdivided semester/quarters might appear, making each course not just shorter but more focused and more flexible. Surely this rhizomatic individuation becomes an administrative headache. The standard formula for faculty loads and hiring needs get scrambled and the normal criteria for assessing student degree-worthy competence are compromised. But the advantage of this student-centric individuation for a school might outweigh these sticky administrative issues: namely, it would lead schools to more clearly identify their chosen stakes in producing architects that can make a better world.

History courses have been the main intellectual area other than studio to project the white male hero as the "typical" architect and the Global North as the locus of all important cultural events and these biases now need recalibration.

Academia

Schools currently compete with each other for the same students with the same rhetorical branding. Each school is a "leader in design innovation," has "the most up-to-date fabrication lab," prioritizes conceptual thinking, embraces new representational technology/apps, is dedicated to environmentalism, and hires the hippest leaders in our profession (now showcasing instructors of color). What if every school didn't try to be everything to every student? The advantage for the student would be two-fold: transparency (they wouldn't need to read between the lines to identify where a school excels) and knowledge-beyond-competency (they could choose a school that specializes in areas in which they want to be effective players). The advantage for the architecture school would also be two-fold: it allows for streamlining (they wouldn't have to cover absolutely everything, especially as the amount of knowledge to be an effective architect keeps increasing) and supports university interdisciplinarity (they could base their "specialization" on the strength of its university's other departments and tap into the typical university's financial assistance for interdisciplinary programs). The goal is not silo-ing knowledge in different programs/universities as much as focusing intelligence on particular problems prioritized in different localities.[9] Architecture schools individuating according to their university context doesn't just make sense for the informational focus it offers to architecture students and a school's pedagogical identity; it also sets in motion a rethinking of the university's role in general. Just as architectural academics have traditionally thought studio should be free of "real world" conditions that impinge on creativity, most also see the university as an ideal bubble divorced from what came earlier in a student's life (intellectually naive, saturated with the quotidian) or will come later (instrumentalized in limited careers). This view of academia as the ideal middle – uncompromised, speculative, utopian – should itself be jettisoned because it is false for both negative reasons (universities are themselves guided by economic power plays) and for positive reasons (the impurity of intellectual complexity *is* the real world); and because universities should be making stronger and more dedicated commitments to

9 - Attending the "Intelligent Environments and Entrepreneurship" conference at Georgia Tech's School of Architecture, October 25-26 2018, made me acutely aware of the fact that as a school, they could test technology in a way that Yale School of Architecture, for example, never could. On the other hand, technology there was missing a discourse on the social or historical relevance of technology to labor, progress, or the environment, issues being taught at Yale. These concerns clearly needed to be thought together, but not in equal measures in both places.

solving our critical real-world problems. Universities, compromised as they are, are in better positions to address climate, health, housing, immigration, and decolonization than profit driven private firms or state governments interested primarily in their own survival.

Disciplinary institutions: Accreditation and licensing

The goal of academic specialization is not ultimately efficiency or consumer choice; it is concentrating spatial and organizational intelligence on specific global problems. But the specificity only has value if shared and synthesized with other schools and knowledge sectors. An architecture school specializing in new technologies must, for example, have access to the work of schools concentrating on architectural labor; those concentrating on environmentalism must share knowledge with those concentrating on decolonization; those specializing in community design should exchange knowledge with those emphasizing construction labor; etc.

How would that approach to education be organized and monitored, especially when important knowledge resides universities in different countries? Heads begin to spin when thinking about the capacity of national accreditation boards to monitor the adequacy of a student's education. For example, in the US, the NAAB would have to not only determine the quality of a school's thematically varied research in lieu of a standardized notion of design but also cross-evaluate a school's commitment to extra-school relationships.[10] Heads spins again when recognizing that education of this type cannot depend on in situ learning and hence in situ accreditation visits. And spin still more when the knowledge that warrants valorization goes beyond the boundaries of the discipline. It makes one think that accreditation might not be for a specific architecture school/program but, rather, like the PhD, has the university confer the appropriate degrees. Or, maybe it just doesn't matter. Accreditation "from above" may no longer be the guarantee of competency. But once disciplinary-specific accreditation is lost, how would licensing work absent school accreditization? This might be a moot question since what is being advocated here – research across many disciplines – is antithetical to the boundaries that licensing

Universities, are in better positions to address climate, health, housing, immigration, and decolonization than profit driven private firms or state governments interested primarily in their own survival.

10 - NAAB was created after the general acknowledgement of an architecture school's membership in the ACSA was no longer seen as either comprehensive or specific enough to ensure a proficient professional education. When the ACSA, American Institute of Architects (AIA), and National Council of Architectural Registration Boards (NCARB) established the NAAB in 1940, they gave it the authority to accredit schools of architecture nationally and the NAAB's declared its intention to create an integrated system of architecture education. 90% of NAAB's budget comes from the other collaterals. In other words, for all of its seeming authority over architectural education, it is a surprisingly weak and contingent organization.

is meant to uphold. Regardless, in the US, NCARB is currently concerned with the fact that fewer and fewer people trained in architecture are getting licensed; it wants the pathway to the profession opened via less rigid and restrictive protocols that currently are barriers to professional qualification. It could be that NCARB, as the professional entity that recommends qualification criteria to the state boards in the US (which grant and regulate licenses) dispense with building/design expertise and in its stead measure relational expertise, evidence that the "architect" knows how to work with at least two other industries in addition to basics of AEC organizational protocols. Or, licensure is dispensed with altogether, a proposition that might shock since state licensing guarantees that architects are well trained; it seems necessary for public confidence in architects and essential to the pride we take in our competency. But it also might mean that potential clients no longer assume the stereotype of the architect as expensive, privileged, lacking construction expertise, obsessed with a personal aesthetic vision and actually ask about the specifics of one's background, training, and experience. And it also might force a certain humility on architects who might stop thinking of themselves as bestowers of aesthetic gifts to an otherwise dreary built landscape. And then there are the real financial benefits – being able to take advantage of the minimum wage and overtime pay excluded to those in the "learned professions." In Sweden, architects aren't licensed – anyone can call themselves an architect – and they are paid higher than their counterparts in other European countries.[11]

Architectural efficacy depends on specific knowledge found outside of "architecture," and as such, the requirements for disciplinary proficiency might be lowered as the need for extra-architectural knowledge gets raised. The lower disciplinary bar – which would probably include formal, organizational, and system-thinking skills – would form the assessable base upon which non-assessable but necessary extra-architectural knowledge builds. One might think that this would lower public respect for the architect, but the Swedish model indicates the opposite: trained architects are hired in lieu of plumbers claiming to be architects because they can prove their expertise for

11 - Told to me by Tobias Olsson, Director of Swedish Association of Architects (SAA) in an interview on May 26, 2016.

Architectural efficacy depends on specific knowledge found outside of "architecture," and as such, the requirements for disciplinary proficiency might be lowered as the need for extra-architectural knowledge gets raised.

a given project at the multiple levels required to get it built in the right way with the right community buy-in and with construction union support. In this new, unprofessionalized but savvy form of practice, architects would be assessed for skills beyond aesthetic virtuosity or technical proficiency.

Call to arms

This paper has argued for a shift away from a standardized and inward-looking architectural education toward one which engages with the real, rhizomatic world. In following a trajectory that goes from rethinking intimate formal skills to reassessing the institutional conditions preparing students for practice, this paper aspires to provoke the reader to reconsider conditions that many of us architectural educators assume are God-given. More than that, it also aims to gather a set of educators who are not just activists in educational reform, but teachers of activists in their schools. To be clear: the real value of educating an engaged architect is building an army of talented designers capable of addressing at least one of our current global crises: climate change and sea level rise; access to affordable housing; the exclusion of certain classes from (a safe) public life; unhealthy living conditions; the ongoing colonization of indigenous territories. This call-to-arms then is not a conclusion to the paper's thesis but hopefully the start of a new radically efficacious discipline.

The real value of educating an engaged architect is building an army of talented designers capable of addressing at least one of our current global crises.

References

Deamer, P. (2014), *Marx, BIM, and Contemporary Labor*, in K. Kemsek, D. Noble (eds), *Building Information Modelling: BIM in Current and Future Practice,* Hoboken (NJ), Wiley Press, pp. 313-319.

Deamer, P. (2011), *Introduction*, in P. Deamer, P. Bernstein (eds), *BIM in Academia*, New Haven, Yale School of Architecture, pp. 11-12.

Deamer, P. (2020), *Design Pedagogy: The New Architectural Studio and Its Consequences*, "Architecture_MPS (AMPS)", vol. 18, n. 1, p. 2, DOI: https://doi.org/10.14324/111.444.amps.2020v18i1.002.

Intersol Group for the National Architectural Accrediting Board (2019), *Accreditation Review Forum, 2019: Final Report* [Online]. Available at: https://www.naab.org/wp-content/uploads/NAAB-ARForum19-Final-Report.pdf [Accessed: 5 November 2021].

Tang, A., *Power Mapping and Analysis* [Online]. Available at: https://commonslibrary.org/guide-power-mapping-and-analysis/ [Accessed: 5 November 2021].

The Architecture Lobby (2022), *Guide to Power Mapping: Achieving Our Political Goals* [Online]. Available at: https://docs.google.com/document/d/1ExnziPiUxmUzvq6-C4n-4pUwQUglQLjnKv9XjID3TjeE/edit#heading=h.gjdgxs [Accessed: 31 May 2022].