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Redefining Professional Practice Education: Speculations and Challenges

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University of Michigan's Taubman College Assistant Chair of Architecture Irene Hwang shares anecdotes that provoke speculation and challenges educators and practitioners of architecture to move in new directions.

As the practice of architecture has radically changed over the past decade, our teaching of professional practice in the academy has remained largely static for decades. To better prepare future practitioners, I share three new directions, instituted through changes to the core, professional practice curriculum at the University of Michigan's Taubman College of Architecture and Urban Planning. Consider these challenges with urgency and responsibility to the discipline and to the new generations of graduates entering the field.

A LEGACY OF GAPS

McKim would indicate to the draftsman where to draw lines and correct them: 'He looked at them for a long time and then said, "Just take out that middle line and move it up a little…No, put it back where it was—perhaps a little lower"… it was quite a job to erase and remake the lines smeared in the process, and to repeat that sort of thing for hours on end was hard on the nerves of anyone.
—H. Van Buren Magonigle, Pencil Points, 1934[1]

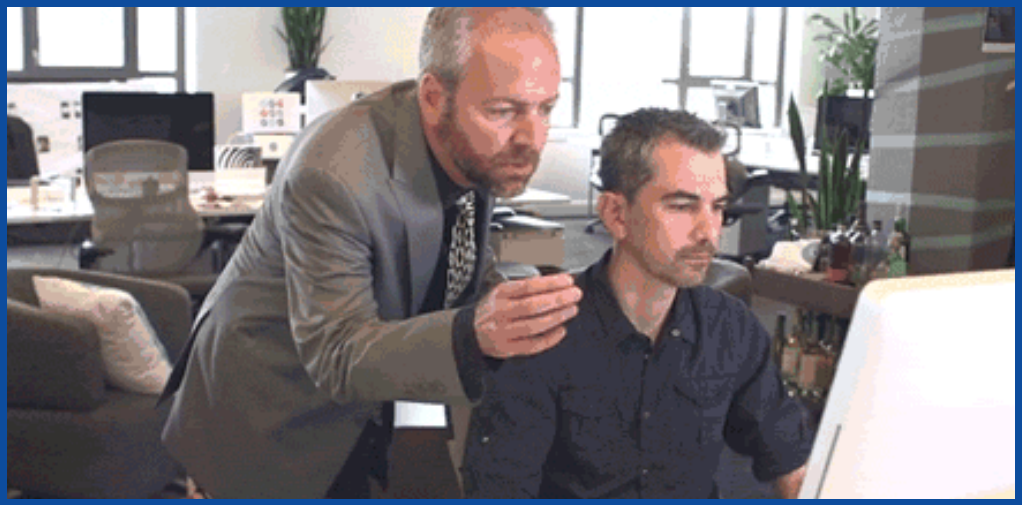
Though H. Van Buren's experience in the office of McKim, Mead and White is near a century old, such over-the-shoulder interactions remain commonplace today. In our primary, core professional practice course, ARCH 583, we show a GIF[2] to our students on the first day. In the GIF, a young professional sits at his computer while his boss stands and directs from behind. As the

[1] *Pencil Points. East Stroudsburg, Pa.: Reinhold, vol. 15, 1934.*
[2] *GIF link: https://media.giphy.com/media/CbSGut2wzWKZy/giphy.gif*

GIF cuts to the CAD drawing on the monitor, we see a toilet slide to the left. Cut back to the boss, who gestures to the right, and we see the toilet slide back to the right. The GIF refreshes, and the sequence begins again. This interaction is so familiar and ubiquitous, that one only need Google "architect" + "GIF" to find the image; no further descriptors are needed or click here. Nicknamed "Robot Arms" by us, the GIF gets a laugh from our students and is the introduction to Practice, our first course module.

As the discipline and profession diversify through globalization and technological advances, educators face a critical demand for a new mindset in architectural education, one that looks to revise and update inherited leadership and working structures. Increasingly, the primary challenge for design professionals is figuring out how to collaborate on projects over larger and larger distances. Managing these distances is complex and demanding. We find ourselves having to bridge huge gaps in language, time, culture, traditions, preferences, climates, supply chains, technology, and building methods, among many others.

The behavior and mindset embodied in the Robot Arms GIF continues to be a legacy of Beaux-Arts[3] teaching. For generations, the rigidly hierarchical atelier provided an effective model to nurture the best work from groups composed of individuals with the same training and from the same backgrounds. In these more homogenous, less diverse contexts, the best solution was also the right solution—for everyone.



[3] *This autocratic, master-led structure has its origins in the widespread emulation and adoption of the French École des Beaux-Arts teaching model throughout American architectural education. Of the ten original programs of architecture in American universities founded in the 19th century, nine were led by American alumni or teachers from the École.*

Above: University of Michigan, Taubman College, Student cohorts in 1914 courtesy of Taubman College and University of Michigan Bentley Historical Library

Above: University of Michigan, Taubman College, Student cohorts 2019 courtesy of Taubman College and University of Michigan Bentley Historical Library

The Beaux-Arts atelier model still shapes our discipline, even while culture and society have drastically changed. Just as 19th-century students were indoctrinated to be unquestioning of their master academicians, architecture students today still refer to their teachers as "critics" and have their schoolwork reviewed by a "final jury" at the close of each project. This master-led mentality, first instituted in school, persists in the workplace. Why? We continue to celebrate starchitects and endorse top-down leadership models. We continue to elevate "leadership" as a distinct group held above the rest of the organization. We continue to treat our young colleagues as fungible, interchangeable units of labor. The unanticipated outcome is another gap: one in which our working and organizational structures are falling short. We have much to lose if we continue such practices. By failing to embrace and implement advancements in organizational thinking, which prioritize inclusive leadership through new managerial styles, we remain tethered to the status quo and forgo the benefits of diversity.

We have a long way to go to achieve representative levels of diversity in the field[4]:

- 91% percent of registered (licensed) architects in the US are white (2015, NCARB statistics);
- 2% are Black American (2015 NCARB); 0.4% are Black-American women, or only 477 of ~115,00 total US licensed architects;
- 81% percent of registered (licensed) architects in the US are men (AIA, 2020)[5];
- Until 2020, 95% of Pritzker Prize winners (i.e., architecture's highest, global prize) were men; With their most recent win, Shelley McNamara and Yvonne Farrell nearly doubled the number of women prize winners in forty-one years, from three (3) to five (5).
- Of the top 100 architecture firms in the world (2018), only three (3) are headed by women[6];
- Of graduates who initially begin the path to licensure, the attrition rate (those who never attain licensure) remains highest among women and non-white candidates. (NCARB, 2018)

Like medicine and law, architecture is a learned profession (not a trade): our education is both extensive and expensive. Unlike medicine and law, the architectural profession has significantly lower compensation models across the board. With the continuance of low salaries, long working hours, and repetitive, production-based tasks in autocratic working environments, our young graduates continue to become disillusioned, fatigued, and frustrated with architecture. While some bear it for a few years, many talented and motivated graduates end up leaving the profession altogether.

THE CHALLENGE:

To stem such loss, in our professional practice teaching at Michigan, we asked: what next generation of skills, expertise, and intellectual frameworks are necessary to help graduates stay and thrive in our industry? How do we counteract the "invisible" curriculum of outdated values, biases, and assumptions that stand to regress the discipline?

For us, we believe our primary responsibility is to help increase diversity in the field and in our profession. We've learned from studies that show how diverse teams outperform homogenous teams.[7] Social psychologists discovered that in homogenous team dynamics, individual team members conform more easily: they are quicker to accept their teammates have the right answer—even when wrong—leading to poorer group decision-making and mistakes. On the other hand, diverse teams with individuals from a mix of race, cultures, and genders, tended to be more objective and rigorous, with more accurate solutions and better decisions overall. Increasing diversity is not just a matter of race or gender. It's also a matter of increasing cognitive diversity.

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[4] *Statistics drawn from AIA, NCARB, and ACSA: Visit website here*
[5] *https://www.aia.org/articles/6252982-women-in-architecture*
[6] *Dezeen, https://www.dezeen.com/2017/11/16/survey-leading-architecture-firms-reveals-shocking-lack-gender-diversity-senior-levels/*
[7] *Mangelsdorf, Martha E. "The Trouble With Homogeneous Teams." MIT Sloan Management Review 59, no. 2 (1/1/2018): 43–47.*

THE CHANGE:

Our first step was to rethink the timing and structure of the course. Instead of taking it for granted that professional practice is the last required course that students must complete to graduate, we made ARCH 583 an introductory course at Taubman College. By moving the course earlier in the curriculum, students now start to think about professional practice from the outset, rather than as an afterthought a few months before graduation. The very nature of professional practice—and how to reshape it for the better—becomes one of the first things students think about when they start architecture school.

The course is now designed to introduce new concepts, changing values, and future directions for professional development. We discuss and explore these over three modules: Practice, Service, and Entrepreneurship.

MODULE 1 - PRACTICE:

From day one, we address the historical professional practice curriculum as a baseline and as a point of departure. For us, it's imperative that students understand architectural practice within the US, by first learning the fundamental principles for the delivery of building design through construction. Students gain a working knowledge of professionalism, ethics, contracts, and business practices. Concurrently, we get to know the students and learn about their unique priorities and ambitions. The heart of their learning is the pivot toward understanding and reshaping what architects do and how they do it.

The course starts with an invitation to students to imagine new means and methods for the discipline and for the profession. The Practice module is capped with the completion and presentation of the Firm Audit project. In the Firm Audit, student teams identify a practice that they admire and then study in depth—a familiar approach based on the case-study method. Where the project departs from tradition, is in the nature of the study. Students look beyond firm anatomy (e.g., number of partners, ownership structure, yearly revenue, types of projects, market sectors, fee structure, etc.) to seek insights on:

- **Decision-Making:** Which partner owns the majority stake? Is the stake evenly split, or do some partners have larger shares with larger influence?
- **Office Culture:** Are there strong relationships running vertically through the firm, or just horizontally at the top and at the bottom?
- **Office Operations:** How are projects staffed? Are junior employees considered for their individual strengths and professional development, or are they interchangeable?
- **Values:** Does the firm support adaptive, on-the-job learning and innovative experimental thinking? Or, do they prefer routine and rote execution?[8]
- **Communication:** Is there smooth and easy communication at and between all levels of firm personnel? Do colleagues feel comfortable asking or help and speaking up? Or, are they made to feel embarrassed if they don't know the answer and discouraged from sharing a different view? [9]

[8] *Edmondson, Amy C., Teaming How Organizations Learn, Innovate, and Compete in the Knowledge Economy. 1st ed., Jossey-Bass, 2012.*
[9] *Baker, Wayne E., All You Have to Do Is Ask: How to Master the Most Important Skill for Success. First edition., Currency, 2020.*

- **Diversity:** Are different backgrounds and perspectives welcome at the firm? Or, is there an adherence to the status quo and an emphasis on: "This is the way we do things here?"

While it's rare for students to find all the answers, in working through the Firm Audit project, they learn to consider aspects of professional practice that would otherwise remain out of their view. In so doing, students are empowered to reassess their assumptions about practice: they realize that it's possible to move beyond the standard path. For many, this realization brings new meaning to their professional journeys by instilling confidence to forge new professional directions for themselves and for architectural practice. At the close of the Firm Audit, students present their findings to each other, in a horizontal review format, exchanging new visions and new insights into contemporary practice.

PUBLIC ENGAGEMENT AND ARCHITECTURAL SERVICE

Have you ever caught yourself watching the Home and Garden Television Channel (HGTV) and found it rather enjoyable? Last year, when I suffered a sports injury, I visited many waiting rooms during my recovery. In every single one there was a DIY, home improvement show playing in the background. To satisfy my curiosity, on one visit I asked the receptionist about the programming choice. Relieved I hadn't come over to complain, she lit up, and replied, "Oh! HGTV! Everyone loves it. Before, with anything else, we'd see complete strangers come nearly to blows about something that had flashed on the screen, especially when it had to do with football or politics. No one argues when HGTV is on!"

With the rise of the internet, social

media, and streaming content, the public's exposure to design of our built environment is now more plentiful and accessible than ever. Programs like Property Brothers or Good Bones, along with their hosts (twin brothers Jonathan and Drew and mother-daughter team Mina and Karen) draw millions of weekly viewers, elevating HGTV to the fourth-highest-rated cable network in the United States.[10] By many estimates, the global home décor industry accounted for between $600-700 billion USD in 2019, with the North America representing one of the largest segments, of nearly 40 percent of the worldwide market in 2018.[11] With such a large audience, home improvement media hosts are now the primary role models that most people look to for guidance and instruction about the built environment. Not architects.

Even as the massive rise of interest and participation in design and the built environment takes hold of the American imagination, we continue to see flat attendance in architecture degree programs. Starting in 2008, new-student enrollment steadily declined, only to rebound by a few hundred students annually during the last five years. (Fewer than 7000 new students enrolled nationally in 2014.[12]) If we compare that to other learned professions such as law or medicine, where yearly enrollment is in the tens of thousands, the cumulative impact to the number of professionals in each discipline is staggering: in 2020 there are approximately 100,000 registered architects in the United States; 1.33 million licensed lawyers; and 1 million licensed physicians.[13] It could be argued that our capacity to serve society through the built environment (architecture) is one-twelfth our capacity through social justice (law) or one-tenth of our capacity to serve its physical health (medicine).

What does this mean for architecture's position within society? What does this say about architects' contribution to a just and healthy world?

THE CHALLENGE:

If we take the cause of promoting equity as a primary mission of the 21st century, then what is the role of architecture in informing the public's priorities and conduct towards the built environment: what we build; how we build; why we build? How will architects seize the opportunity to bring the benefits of their work to the general public? In the face of dwindling resources, population growth, wealth inequality, and overcrowding, how can we increase our ability to make better, more intelligent, societal-level decisions about the built environment?

MODULE 2 - SERVICE:

There is little doubt that home improvement media is highly entertaining. Millions are tuning in. Why then has the enrollment rate of new students at architecture schools not risen? My speculation is this: the general public doesn't know about architecture because the majority of people have had little—if any—exposure to its benefits and value. Returning to our previous

[10] https://www.multichannel.com/news/weekly-cable-ratings-fox-news-cable-news-networks-continue-to-sizzle
[11] https://www.grandviewresearch.com/industry-analysis/home-decor-market
[12] NCARB, https://www.ncarb.org/nbtn2019/education
[13] Law: https://data.lawschooltransparency.com/enrollment/all/, https://www.americanbar.org/news/abanews/aba-news-archives/2018/05/new_aba_data_reveals/

For us, the Public Engagement project is the means for students to start shifting the public's impression of architecture as rarefied and inappreciable into a necessary and ubiquitous aspect of daily life.

comparison: with 100,000 architects serving 320 million Americans, some simple arithmetic yields one architect per every 3,200 citizens; one doctor for every 320; one lawyer for every 240; one engineer for every 190. The average person's exposure to architecture is a small fraction of that in other learned professions. Conversely, one's exposure to the construction industry (with 7 million employees[14]) is much higher; wit h one member of the trade for every 45 citizens. For ARCH 583's second module, Service, we begin by asking our students how they increase stewardship and advocacy for the built environment. We propose to them an expanded understanding of "service," one in which architecture connects with people in the everyday, and not only in special instances.

THE CHANGE:

After our students learn about existing standards and methods of professional service in the architecture industry, we ask them to redefine "service" through a public engagement lens. They complete a four-week assignment where they research, design, structure, and present a public-engagement project for their hometowns. They begin by reflecting on their home communities. They identify a place where they can use architecture (e.g., spatial and systems thinking, visual representation, plus generative and analytical problem-solving) to create sustained benefit for their communities. For the final presentation of a two-minute video, which shares their inspirations, ideas, and approach, we invite community activists and public engagement experts to share a discussion of the work. The resultant conversation is filled with insights into how architecture can serve a larger constituency of people and purposes. For us, the Public Engagement project is the means for students to start shifting the public's impression of architecture as rarefied and inappreciable into a necessary and ubiquitous aspect of daily life.

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[14] https://www.agc.org/learn/construction-data

A BUILDING IS NOT ARCHITECTURE

Two years out of architecture school, my father excitedly pulled me aside one night after dinner. I had just flown home to New Jersey for a week-long visit. At the time, I was an intern designer in a well-known architecture firm located in Madrid, Spain. My dad is low key, but he excitedly shared a proposal with me that night. Dad wanted to invest in the design and construction of a new addition to our house. In the previous ten years of living in our 1967, split-level house my parents, who are avid karaoke enthusiasts, had grown frustrated with the layout, particularly on nights their friends were over. Dad was frustrated that the whole group couldn't sing, snack, and socialize together. "The space was too small," he told me. Without the addition, the group would continue to be splintered: people moving from the over-crowded family room, through the narrow half-stair, up to the kitchen to grab a snack, and back down again.

My dad had it all figured out: I would create a bigger family room and wider stair, reposition the deck, and add on more space to the garage. After considering his proposal, I asked, "Why don't you test-move the karaoke machine, upstairs to the formal living room? You will have an open singing space directly adjacent to the kitchen and the snacks, which you guys can set up, buffet style, in the adjoining dining room."

My response wasn't what Dad hoped to hear. He was confused. Why hadn't I jumped at the chance to work on my first commission? Moreover, in our house, the formal living room

was off limits to parties and fun. It was the place for the nice stuff, where family heirlooms and expensive furniture stood safe from spills and accidents.

Pretty quickly Dad started to see the benefits of my suggestion. By only moving the karaoke machine (i.e., reprogramming the "living room"), he would have the ideal party spot and save himself from an extensive, costly, and time-intensive renovation. Months later, after a few parties in the new configuration, Dad, a biostatistician, shared that he finally understood the value of what I had learned in architecture school.

THE CHALLENGE:

The architecture industry is extraordinarily undersized in the face of potential demand and utility. Taking a cue from the new business models that emerged in the Dot-Com Revolution, how can our discipline devise new ways of becoming scalable enterprises? Not just in the case where we inject our business models with "tech" and "data," but where architecture itself can sustain scalar growth and impact?

There is a difference between buildings and architecture. While a building is a built structure that provides shelter for the basic activities of daily life, architecture is more layered, performative, and enduring. Think of a window: in my single-family house (a building), a window need only do two things: allow the passage of light and air. Conversely, in a structure designed and delivered by an architect (architecture), a window is the result of a multitude of layered considerations, far more performative in that the architect will have thought through how that window lets in light and air (circulation, passive or active HVAC, east, north, south, or west facing); its materiality, finish, and detail (culture, craft, and history); its proportion and position (spatial efficiency, composition, and symbolism), as well as its technical and material construction (smart window, low-e glass), among so many others. Simply put: while buildings and the built environment are an integral and ubiquitous component of the human experience, architecture is not. In our current models, where the majority of architecture firms are small businesses, focused on the design and delivery of buildings, we may have reached a saturation point. How then, can we redeploy architectural expertise (a superior built environment) as a scalable business?

MODULE 3 - ENTREPRENEURSHIP:

Most people understand a business to be the selling of goods or services for profit. Yet, most students arrive to our class without ever considering that the practice of architecture is actually a business enterprise. Like any business, architecture practice involves profit, loss, risk, management, customers, sales, planning, strategy, and a concept/value proposition. For Entrepreneurship, the course's third module, we challenge the students to rethink the term "successful architecture."

THE CHANGE:

During most of their studio education, our students are not thinking about the business of architecture. Even if their design work involves large-scale issues, their ideas get drilled down and end up

hyper-localized in the design of a single building. While some large buildings can serve up to 30,000 people a day, that pales to the impact of large business enterprises like Google, where a single change to the user experience can affect upwards of one billion people.

To expand their view, our students' third project is to devise a startup idea for the AEC industry. During this process, students put together a basic business plan, devise a marketing pitch, and learn about the AEC industry's capacities and structures. They also explore how to apply their architectural expertise to the creation of new value propositions. These value propositions are assessed not solely for their intellectual merit, but also for their market viability, profitability, and potential to transform the industry, at scale.

After five weeks of brainstorming, research, and conceptual prototyping, the students deliver their ideas in a Shark-Tank-style pitch to entrepreneurship experts and real-world investors. Some projects are advancements on existing business ideas. Others create new services that fill in gaps or take advantages of voids in the industry. In a good number of projects, our invited experts have said, "I can imagine this as a new business idea that would secure a first round of seed funding." At the end of the presentation day, top pitches are recognized, and students, faculty, and guests have exchanged ideas and suggestions.

As they move forward, our students no longer think of their architectural practices as isolated creative endeavors. Rather, they have begun to view their work as interwoven with society—through the multiple lenses of practice, service, and entrepreneurship.

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OPTIMISM AND SHARED INSIGHTS

In the two years we have worked to revamp the professional practice curriculum at Taubman College, I have become ever more optimistic about the near and far future of the discipline. Working with co-teacher Daniel Jacobs on the curriculum, and collaborating with graduate research assistants Akima Brackeen and Olivia Raisanen on the supporting research into public understanding of architecture and design-specific leadership, has helped us to create new pedagogy that builds upon the enthusiasm and passion that we all have for architectural education and practice. As we continue forward, my hope is for our colleagues outside of the academy to reach out to us with ideas and suggestions that will further enrich the work of redefining professional practice education.

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