

Double Exposure: Aligning the Profession and the Discipline

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System is defined as “an organization forming a network especially for distributing something or serving a common purpose.”¹

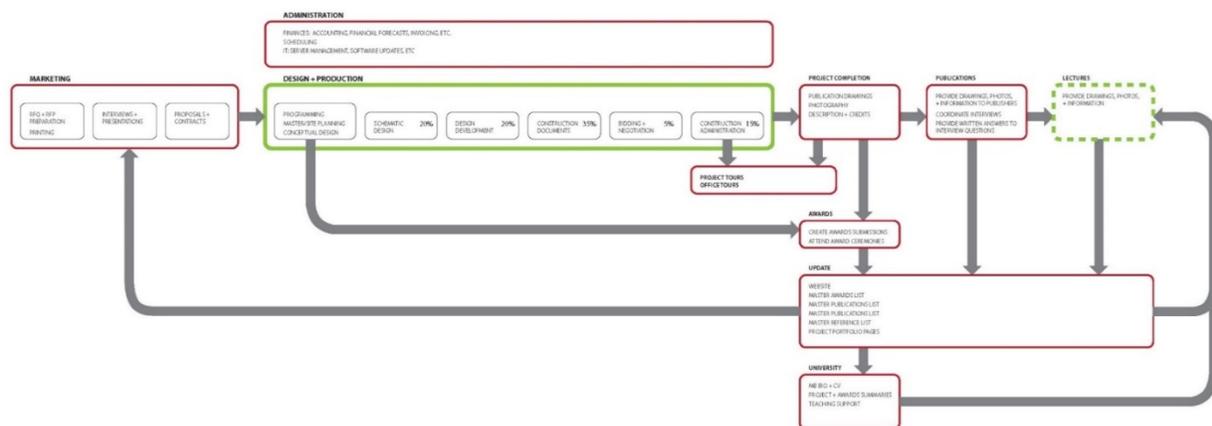


Figure 1 Firm Operation System Diagram, Boelkins. J.

The profession understandably exerts pressure on the academy to provide better-trained, more proficient graduates, but the limitations of architectural curricula (particularly at state universities) and corresponding National Architecture Accrediting Board (NAAB) requirements virtually ensure that no courses in business skills will become a required aspect of architectural education. This knowledge gap can cause students to become overwhelmed and requires a certain adaptability to overcome when inserted into the world of practice. Pressure from the profession to include such coursework is minor in comparison to the demand for improved technological training. Among the most prominent professional skills in demand is proficiency in Building Information Modeling (BIM), the leading production software in use by practicing architects. Students are keenly aware that they will need to be proficient in BIM to be employable, a need the academy increasingly recognizes and accommodates.

While better training in BIM does translate into better prospects for employment and early success, this approach risks deepening students' skills within the silo of Basic Services, and in some instances, allows digital tools to also control design decisions. However, as Phil Bernstein writes, "Practitioners who

¹ Merriam-Webster accessed April 5, 2018. <https://www.merriam-webster.com/dictionary/system>.

demand that the schools produce “little architects” ready to function perfectly in current practices won’t be prepared for their own practices to survive in the future.”² So, while improved technological training may improve short-term employment prospects and corresponding employer profitability, such emphasis does little to ensure long term success.

In response, two Professional Practice courses described here posit methods for addressing this disparity.

THE SEMINAR: PROJECT-FOCUSED METHODOLOGY

To further highlight the disparity between architectural education and skills required in practice and the importance of a pedagogical bridge between them, more than two thirds of the students surveyed in the Professional Practice courses considered here expressed interest in having their own practice. While unlikely that so many will in fact develop their own firm, the vast majority will still need the broad skill set required to advance in the profession, most of which are not directly developed in their architectural education. A focused and strategic combination of academic and professional experience has the potential to create graduates that are more adaptable and broadly capable than through academic experience alone. Professional Practice courses in particular become an obvious venue for discussing and exploring the disparity between the skills provided by the architectural academy and the skills required by the profession. Therefore, integrating professional experience and a broader comprehension of the skills required in practice into architectural education will be increasingly necessary as the skills required for creating and practicing architecture continue to broaden and deepen.

The Professional Practice courses compared and contrasted in this paper entry embrace the broadening and deepening of the profession described in Eric Reinholdt’s thesis of 30x40 Workshop, which states “There’s no longer one model of design practice; you’re free to create your own. Embrace failure as an integral part of your process and as you pivot and try new things you’ll find the intersections of your talents and the world’s needs; that’s where you’ll find your business.”³ Although studio coursework is the predominant focus of architectural education, creating an interplay of engaged processes can address neglected areas of development. By offering focused, project-based assignments - one through an extensive series of hypothetical assignments, the other through a quick and intense design-build exercise – these courses consider areas of practice outside of production, areas of practice that are unfortunately overlooked as opportunities for advancement.

By developing a richer understanding of practice through these project foci, interns can gain more comprehensive experiences through exposure to the highly varied processes involved in firm operation. Rather than reinforcing a relatively narrow set of skills, professional practice coursework and structured internships thus reveal areas of deficiency which are, of course, also areas of significant prospect.

² Bernstein, P. (2018, January 22). Architectural Education is Changing: Let’s Hope the Profession Can Keep Up. Retrieved from <http://commonedge.org/architectural-education-is-changing-lets-hope-the-profession-can-keep-up/>.

³ Reinholdt, Eric 2015. *Architect + Entrepreneur, a Field Guide: Building, Branding, and Marketing Your Startup Design Business*, Eric W. Reinholdt, San Bernardino.

CASE STUDY A: AGENCY THROUGH FIRM ADOPTION

While gathering experience and developing skill in the 'production bubble' is important and completely valid, many young architects are unaware of the opportunities for advancement that exist in other areas of firm systems. In effect, the Professional Practice course in Case Study A, endeavors to meet students where they are, as fourth year undergraduates in an accredited Bachelor of Architecture program, and fast forward their lives over the next four years. This arc takes students through the process of pursuing employment to getting hired, exposing them broadly to the complexities of architectural practice, up to the point of completing their internship requirements, becoming licensed architects and considering the possibility of opening their own offices. As a requirement to the course, students enroll in the National Council of Architecture Registration Board's (NCARB) Architectural Experience Program (AXP) and are introduced into the process of gaining and recording experience towards licensure.

To begin, students are asked to consider the nature of the work they wish to do and identify what is most important to them in their ideal first job (Figure 2), identify firms that actually meet their criteria and then write specific (not 'to whom it may concern') cover letters. A primer on resumes and architectural portfolios is also provided during this section of the course. The goal of this initial series of assignments is to encourage students to think carefully about their upcoming career so that they may find meaningful work, representative of the commitment they have demonstrated in completing the intensely difficult demands of architectural education. Based on the location and size of the firm under consideration, research is conducted into appropriate compensation, both in terms of salary according to the AIA salary calculator and fringe benefits such as healthcare and investments (Figure 2).

JOB CRITERIA

	HIGHEST PRIORITY
WORKPLACE CHEMISTRY	I would only want to work for and with people that I have respect for on a personal level. I will not want to dedicate my time and efforts in a work environment I don't enjoy being within for a large portion of my day.
CONNECTION TO ACADEMIA	I have a lot of interest in teaching at some point in my career. A firm with strong ties to academia could assist with the search for a graduate program and/or networking for a future teaching position.
IMPACT	There isn't a specific type of work that interests me, however, I would hope for it to feel important. Whether that means the firm is invested in sustainability in a meaningful way, does humanitarian type projects, or is innovative in some regard.
LICENSURE	Although at this point I am leaning towards academia, licensure is still a goal of mine. A firm that is diligent and supportive in helping me pursue licensure would be ideal. I don't want to get held up waiting for something that is a secondary pursuit of mine.
SALARY	While not one of my top priorities I would want a salary that allowed for a comfortable, if modest, living situation and enough money to begin saving for the future.

SALARY

LTL ARCHITECTS, INC.
227 W. 29th Street 7th Floor
New York, NY 10001

ROLE

EMERGING PROFESSIONAL ON THE PATH TO LICENSURE 1

AVERAGE BASE PAY ESTIMATE

\$45,020

ADDITIONAL CASH COMPENSATION

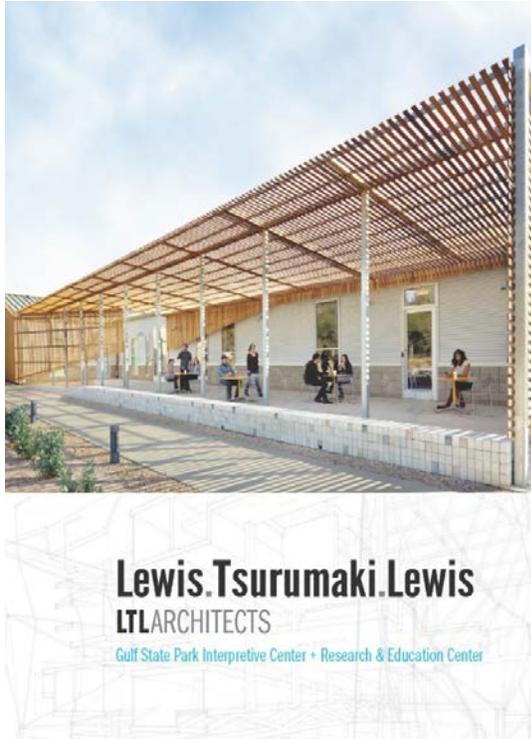
\$2,150

INSURANCE

LTL Architects would not be required to provide health insurance since they are well under 50 full time employees. They currently appear to have 13 people working in the office.

Figure 2 Job Criteria & Salary Exercises

At the end of this initial series of assignments, students are effectively 'hired' into their firm of choice and are required to adopt the graphic identity to complete their assignments. Rather than having their first assignment in their new job be a familiar one, students are immediately asked to help craft a response on behalf of their firm to a Request for Qualifications (RFQ). The RFQ is for a real project and outlines the submission requirements, which are broken into sequential assignments but require the assembly of a sophisticated, graphically sophisticated portfolio of information and images including a cover, cover letter, firm profile, project team structure, key personnel bios, featured projects, and other relevant information such as awards and recognition (Figure 3). While students don't have access to the original information they would if they were actually working in the firm, most find a trove of information online and are able to develop quite professional and convincing RFQ portfolios. Students are encouraged to contact the firms they study directly, though few do, unaware and unconvinced of how readily most firms will share information and resources. Regardless, students benefit indirectly by researching the firm as it helps to prepare them to actually apply and interview successfully.



GULF STATE PARK INTERPRETIVE CENTER + RESEARCH & EDUCATION CENTER

Architecture and Water. We celebrate the extraordinary design possibilities elicited in the coupling of these apparently contradictory entities. Architecture is typically understood as fixed and stable, while water is seen as fluid and dynamic. The tension between architecture and water can provide the constraints and limitations through which imaginative architecture occurs. We see an opportunity to negotiate this contradiction as the catalyst for architectural invention. Our vision would be to directly incorporate water as a critical component in the orchestration of the design rather than relegating it to its conventional role as an aesthetic feature. We are interested in engaging its multiple forms, as a functional, physical and transformative medium.

RFP CONTACT INFORMATION

CLARK MANNING, RA, LEED AP
STUDIO DIRECTOR

clark@ltdarchitects.com
212.505.5955x34

Lewis.Tsurumaki.Lewis
LTLARCHITECTS

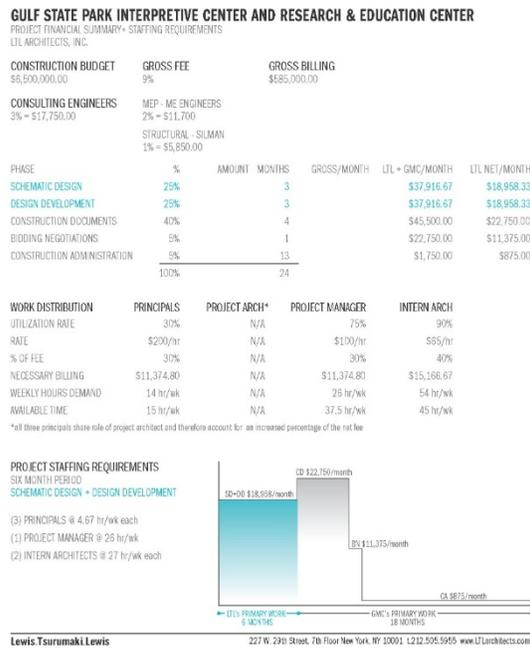
222 W. 20th Street, 20 Floor New York, NY 10011 212.543.3855 www.ltdarchitects.com

Figure 3 RFQ Response Assignment

Upon completion of the RFQ, a Request for Proposals (RFP) is issued for the same project, requiring the development of a fee proposal and corresponding schedule, which is in turn translated into a staffing schedule broken down by phase based on varying utilization and billing rates for various staff levels (Figure 4). Corresponding lectures are provided on a number of related financial subjects that illustrate the relationship between individual salaries, fee structures and construction budgets and schedules. To conclude the RFQ/RFP assignment, students are notified that their firm/project team has been awarded the project and this naturally leads to a discussion about contracts and related legal matters. As design work begins, the first invoice is prepared along with a corresponding billing summary that provides a financial overview. This assignment is one of the more difficult aspects of the course as virtually none of the students have any financial education. While a distinct majority of students in the course indicated they wish to have their own practice, only 5% had ever even taken accounting and none had taken finance. Despite the lack of financial education or experience, discussions of financial issues were surprisingly one of the areas of greatest interest among students. In order to address this area of deficiency, several lectures were given on financial issues in order to help students complete the assignments. At this point, students have developed a broad understanding of the process of how architects acquire work, the underlying financial structure, and the implications for staffing and scheduling.

Finally, an opportunity for an independent project is presented, one that will deliberately require them to consider leaving their current job to complete as the budget and corresponding fees are known to be comparable to entry level annual salaries (Figure 5). The project program is translated into

reasonable assumptions of overall size and cost as the basis for a fee proposal. Essentially, students are asked to thoughtfully consider their personal criteria for going out on their own in practice, much like the beginning of the course when considering the nature of the work to which they aspire. This exercise concludes the course, having accelerated students from their current status as 4th year undergraduates to begin eligible for licensure and considering independent practice, while providing an in-depth and pragmatic tour of opportunities outside the 'production bubble.'



CASE STUDY B: AGENCY THROUGH COLLABORATIVE PRACTICE

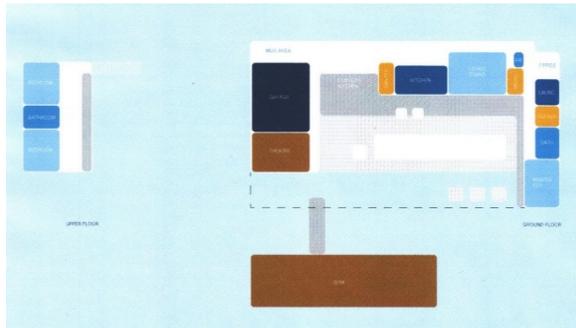
The coursework initiated in Case Study B began with discussions and considerations of what defines a 21st century architectural practice, and looks towards the futures of design practice – specifically, integrated / interdisciplinary models of interest. As stated by Ratti and Claudel, “visionary architecture for tomorrow”⁴ applies to the idea of an “open source” or “shared” knowledge of not only information, but the way in which practice is developing⁵. In 2016, the latest editions *Architectural Design* magazine challenges the traditional views of ownership versus authorship in “Digital Property: Open Source Architecture” and “Closing the Gap” issues. Authors Fok and Picon discuss, “even more than authorship, ownership is challenged by the rise of digital and computational methods of design and production. These challenges are simultaneously legal, ethical, and economic.”⁶ Pop-up entrepreneurial companies and start-ups are exploding internationally causing businesses, including architecture firms, to reconsider programming and functionality needs. As the diagram at the

⁴ Ratti, Carlo, Claudel, Matthew 2015, *Open Source Architecture*, Thames & Hudson Ltd, London.

⁵ Ibid.

⁶ Fok and Picon 2016, “Closing the Gap,” *Architectural Design*, John Wiley & Sons Inc., New York.

introduction of this paper suggests, the encompassing list of items hidden in plain sight now has the potential to expand even further. Yet, with this exciting trajectory, the viewpoint of the 'architect' is still narrowly stereotyped into a strict conformance of only creating / designing buildings. The 'production bubble' can also insinuate that the act of building doesn't fall within these early stages of Basic Services, where technology still remains in the forefront of interests and demands of the profession.



RESIDENCE + GYM & APARTMENT PROPOSAL

BENTONVILLE, ARKANSAS
SITE = 33 ACRES

PROGRAM AND SCOPE

1. GYM + APARTMENT PHASE
2. RESIDENCE PHASE

1. GYM + APARTMENT
INDOOR CONDITIONED SPACE (GIVEN PROGRAM + MECHANICAL & CIRCULATION) 2000 SF
POOL 500 SF
ESTIMATED COST OF PHASE* \$300,000

2. RESIDENCE
INDOOR CONDITIONED SPACE (GIVEN PROGRAM + MECHANICAL & CIRCULATION) 2400 SF
COVERED EXTERIOR SPACES 500 SF
ESTIMATED COST OF PHASE* \$460,000

BASIC SERVICES FEE PROPOSAL
12.5% OF CONSTRUCTION COST OF BOTH PHASES

1. GYM + APARTMENT			2. RESIDENCE		
PHASE	%	AMOUNT	PHASE	%	AMOUNT
SCHEMATIC DESIGN	25%	\$9,375	SCHEMATIC DESIGN	25%	\$14,375
DESIGN DEVELOPMENT	25%	\$9,375	DESIGN DEVELOPMENT	25%	\$14,375
CONSTRUCTION DOCUMENTS	40%	\$15,000	CONSTRUCTION DOCUMENTS	40%	\$23,000
BIDDING NEGOTIATIONS	5%	\$1,875	BIDDING NEGOTIATIONS	5%	\$2,875
CONSTRUCTION ADMINISTRATION	5%	\$1,875	CONSTRUCTION ADMINISTRATION	5%	\$2,875
		\$37,500			\$57,500
TOTAL BASIC SERVICES PHASES 1+2: \$95,000					

NOTE: THE NET FEE FOR THIS PROJECT WOULD BE \$72,200. MY STARTING SALARY AT LTL ARCHITECTS WAS \$45,000. IF THIS TWO-PHASE PROJECT COULD BE COMPLETED IN 10 OR LESS MONTHS I WOULD EARN AN AVERAGE MONTHLY SALARY COMMENSURATE WITH MY CURRENT LTL PRACTICE. COMPLETION IN LESS TIME WOULD ALLOW FOR INVESTMENT INTO GROWING AND LEARNING WITH THE FIRM WITH A PHYSICAL SPACE WITH EQUIPMENT AND PROGRAMS. THIS ONE PROJECT COULD BE THE START TO A FIRM AS LONG AS OTHER WORK WAS FOUND IN A TIMELY MANNER. IF THIS FEE IS TOO HIGH OR THE PROJECT SEEMS LIKE IT COULD TAKE 18+ MONTHS I WOULDN'T BE INTERESTED IN LEAVING LTL.

Figure 4 Moonlighting Assignment

Building upon delineating current models of practice, the course maintains all lectures necessary to meet NAAB accreditation requirements in areas such as Practice Development, Managing a Practice, Project Delivery, Legal Dimensions, etc. – the leading components to running an architectural firm). The application of these subjects, outside of the typical exams and quizzes, presents an opportunity for a directed, project-based assignment. Within a three-credit course it can become difficult to expect further projects outside of classroom time. However, in this case, an intense, quick (10-week long), design-build set design project materialized alongside the required lecture content.

The assignment began with a self-assessment exercise, allowing each student's own evaluation of strengths from a list of four skillsets: design (schematic design, design development and graphics); construction documentation (working drawings and estimating); hands-on building and making; information management (project scheduling and communication). This data was collected and organized to create group collectives where each student has a committed role which, in turn, served as an active way to increase student moral, agency, and engaged group dynamics. Each group or 'co-labs', act as sub-studios within a larger, hypothetical, design-build firm; acting as collaborative groups within the larger context of the 'firm'. The co-labs were then required to respond to a Request for Proposals (RFP) (Figure 6) involving a set design piece for a dance performance work, entitled "Fragments" at State of La Danse. The RFP outlines the need for the project to not only be designed but also provide a full-scale, final product, construct.



Figure 5 RFQ Response Assignment



Figure 6 CoLab Collaboration Meeting No.1

The first collaboration (Figure 7) between the dance choreographer, dance students, and the co-labs initiated the discussion of intersecting the realms of dance and architecture; thinking about the field of architecture more loosely as the world of design for the human body, in motion, versus the standard 'architect as master-builder' mentality. The intention of the dance piece began as a series of questions, therefore, the set design project and choreography of the dance was a live creative process – both being created simultaneously, in real time. After initial meetings, the co-labs were asked to craft specific letters of intent (Figure 8), team biographies, team value assessments, and qualifications to the client (Figure 8) as a response to the RFP. Each co-lab was then 'approved' by the client, where each team initiated an AIA document A-141: Standard Form of Agreement Between an Owner and Designer-Builder, and Schematic Design commenced.



Dear Ms. Clare Cook,

Thank you for considering us as an integral part of the collaboration for State of LA Dance. We were excited to learn of the project from Naïlle Latiolais with the U. Lafayette Architecture Department, as the position fits our talents, skills, and background. After reviewing the job description, it would be a privilege to work with you and your team.

We are recent graduates of the Architecture and Urban program at U. of Lafayette, and currently pursuing Master's degrees in Architecture & Design, as well as the historic preservation certificate. As designers, we have gained valuable experience including: designing board layouts, renderings, and writing project descriptions. We are proficient with software: Adobe (Photoshop, Illustrator, InDesign), Microsoft (Word, Excel, and Power Point), and visual presentations.

Further, we take great pride in the design work we create and always strive to deliver an effective, focused, and on-target product that fits the client's needs and goals. We are creative, reliable, hardworking designers who work well in a collaborative team environment or individually. We work well with clients and consider ourselves strong communicators, presenters, and listeners. Our career goals are to continue to learn and grow as designers while utilizing our creativity, knowledge, education, and people skills to benefit our future employer.

We look forward to meeting with you to further discuss design concepts, schematic drawings, and mock-up models for the State of LA Dance project.

Thank you for your time and consideration in advance.

Sincerely,

 The STUDS Team



Figure 7 "STUDS" CoLab Cover Letter & Qualification

A series of exchanges between the client and co-labs (which were now integrated and paired with individual dancers) spanned from dance rehearsals, studio critiques, and full-scale mock-up modeling. Each meeting was required to be documented as Meeting Minutes formulating the start of a body of (paper) work in addition to the evolving designs. Project Managers assigned to each co-lab was responsible for conveyed the information between the client and the groups. Through this role the other co-labs members supported the framework by provided the material presented.

Interactions between the client and co-labs wasn't always a seamless process, several derailing discussions occurred, especially involving platforms such as Pinterest and others of the like (Figure 9). The students quickly realized that these design projects were not for themselves, or to be designed in a vacuum, but instead must be communicated and document for real-time performance and actual bodies to interact with the constructs, causing them to respond directly to the varied perspectives.



Figure 8 Set Design Process Work, ARCH 540 Professional Practice, Fall 2016

Each of the co-lab projects developed individually, while collaboratively, Work-Flow Budgets of each group and Material Cost-Estimates were also required. Students understanding the planning and

coordination to maintain appropriate work-flow and producing follow-up paperwork required for a simple task provides not only an awareness, but also a broader skillset to bring into internship. Once the final constructs (Figure 11) were developed, after a series of full-scale testing, site visits to the theater space for technology rehearsals launched (Figure 10). The students worked directly with lighting designers for the performance where the co-labs began to manage and coordinate between the client, users (dancers), and technical crews while Field Reports and Change Orders began to initiate as minor modifications were needed to the set pieces.



Figure 9 Technical Rehearsal.

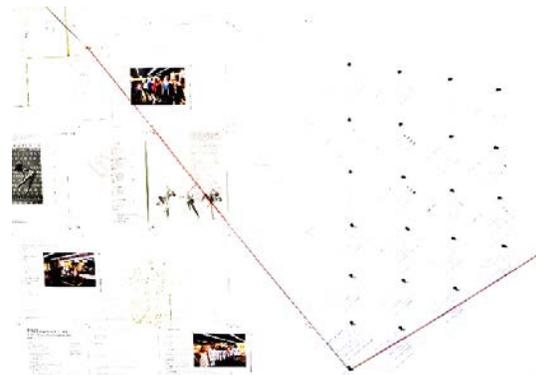


Figure 10 State of La Danse, Final Performance.

As the performance was well-received, the students were then asked to design a complete exhibition of this work in a public art gallery as part of the final exam for the course (Figure 12). All assignments created, two-dimensional drawings and documents, as well as, three-dimensional work was placed into the defined space. This project not only served a broader understanding to the students outside of the production bubble, but also served as a vehicle to educate the general public in the two-month long exhibition entitled, "Fragments: The Creative Process." The opening night reached approximately 75 people and engaged conversations reflecting on the integrated process between the disciplines.



Figure 11. Basin Arts Gallery Exhibition, December – January 2016/17.



HIDDEN IN PLAIN SIGHT

The skills offered in both Case Studies aimed to develop areas outside of customary architectural education training. When assessing the coursework discussed here, both attempted to engage professional practice seminars from a common perspective, immersed in focused, project-based tasks. The pragmatic components necessary for firm operation are brought to the forefront of the assignments instead of only assessing design intention and craft; reluctant to deepen the skills of basic services, and instead, develop the more pragmatic skills of practice. A balance between the technical and speculative is necessary to foster a diverse architectural education curriculum, however, revealing pragmatic opportunities hidden in plain sight develops valuable areas of expertise. Although the National Council of Architectural Registration Boards (NCARB) envision 'internship' or Architectural Experience Program (AXP), as a continuation of education, the graduates regularly find the experience of transition from their education to the workplace jarring and utterly foreign, inevitably leading to questions about existing curricula and the possibility of a more seamless alignment between the academy and practice.

The Profession craves graduates that are more capable and eager than ever, especially in regard to technical and software competency. The Academy openly recognizes this phenomenon, but only addresses the technology component. Therefore, if an apparent shift in focus becomes apparent, the items easily attainable, or in plain sight, may in fact produce more adaptable and prepared graduates entering internship. As the 'production bubble' deepens as students advance in an architectural program, the need for professional practice to be integrated into a curriculum becomes exceedingly necessary. The typical placement of professional practice is during the final semesters approaching graduation, but the appropriate time to integrate this coursework could be much earlier, embedded into second or third year curricula. The vocabulary of practice and project-based assignments linked between studios and professional practice seminars could serve as a vehicle to overcome the gap existing in the transition of internship.

In some sense, all aspects of architectural education could be considered as 'beginning design' as students are sequentially introduced to a highly complex and evolving world. Fundamentally, these courses encourage students to develop a broad understanding of not only the practice of architecture, but of their architectural education as well, seeing it not as having been completed, but only begun. This process initially improves prospects for employment and advancement, but also helps to ensure adaptability and in turn, longevity in the profession. Phil Bernstein recognizes the importance of this pedagogical approach by saying "real-world classroom experience yields a generation of graduates who can connect their understanding of design and technology with the transforming role of the architect."⁷ But more than just a recognition of technological implications, understanding and

⁷ Bernstein, P. (2018, January 22). Architectural Education is Changing: Let's Hope the Profession Can Keep Up. Retrieved from <http://commonedge.org/architectural-education-is-changing-lets-hope-the-profession-can-keep-up/>.

embracing the breadth and complexity of the system of architectural practice is essential for developing architects who will advance in the profession and continue to define and redefine the nature, importance and relevance of architectural practice.

