Creative Accounting: Reward & Risk in Professional Practice

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Architects are simply not trained for the breadth of skills required in architectural practice and are especially ill-equipped to start a practice. The Professional Practice courses compared and contrasted in this paper entry address and resist this problem 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 reveal areas of practice that are unfortunately overlooked as opportunities for advancement and the skills they require.

Most architects can quickly identify financial exposure as the primary risk in starting an architectural practice and creative freedom as the main reward, and these are often misunderstood as being inexorably related. The perception of an inverse relationship between financial success and architectural design integrity results in a kind of martyr complex, one that sees financial struggle as validation. However, this dichotomy presents a false choice. Financial failure is more often the result of poor management and lack of financial acumen than it is a validation of design quality or dedication to the profession. Architectural curricula (particularly at state universities) and corresponding accreditation requirements ensure that no such courses in business skills will become a required aspect of architectural education.

However, Professional Practice courses are an obvious venue for discussing and exploring the broader skills required for success and advancement in architectural practice. In most curricula, only three to six credits are allocated to the development or even awareness of the vocabulary of practice. This inadequacy of professional development during architectural education is a missed opportunity when a distinct majority of students surveyed in the two Professional Practice courses in NAAB-accredited programs under consideration here wish to have their own office eventually. However, virtually none of the students have any formal training in any aspect of business – accounting, finance, human resources, strategic planning, marketing, etc. This deficiency is compounded by declining communication skills, especially regarding writing and public speaking, as exemplified in studio coursework and presentations as well.

THE SYSTEM OF PRACTICE

The practice of architecture could be viewed as a complex system of parts to whole. Meaning, the inner workings of a firm, much less a financially successful one, has an immense dedication to realms outside of design. There is an apparent lack of knowledge a student acquires through architectural education on architectural practice itself. This misunderstanding is evident as students are crafted and encouraged to develop a relatively narrow set of skills throughout their education on history, theory, and design. The systems of practice have potentials to expand a student's skillset to create a more prepared, more perceptive associate beyond the typical graduate.

System is defined as "an organization forming a network especially for distributing something or serving a common purpose."[1] When considered as a system, architectural practice requires an extensive series of activities and tasks to occur simultaneously in order to function successfully, with many, if not most, requiring skill sets outside the realm of architectural training. However, most new architectural associates (the updated title for 'interns') will be embedded in only the early phases of the design process, particularly Schematic Design and Design Development (known here as the 'production bubble') for good reason: architectural education provides substantial training in a relatively small area of practice, typically in these early phases. For firms, this means that their new employees may actually be able to generate revenue, although areas outside of the standard phases of Basic Services such as marketing, financial management, scheduling, IT, publication, etc. offer significantly more opportunity for advancement. This is not inherently a flaw in the studio-based architectural curriculum, but rather an important opportunity.

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

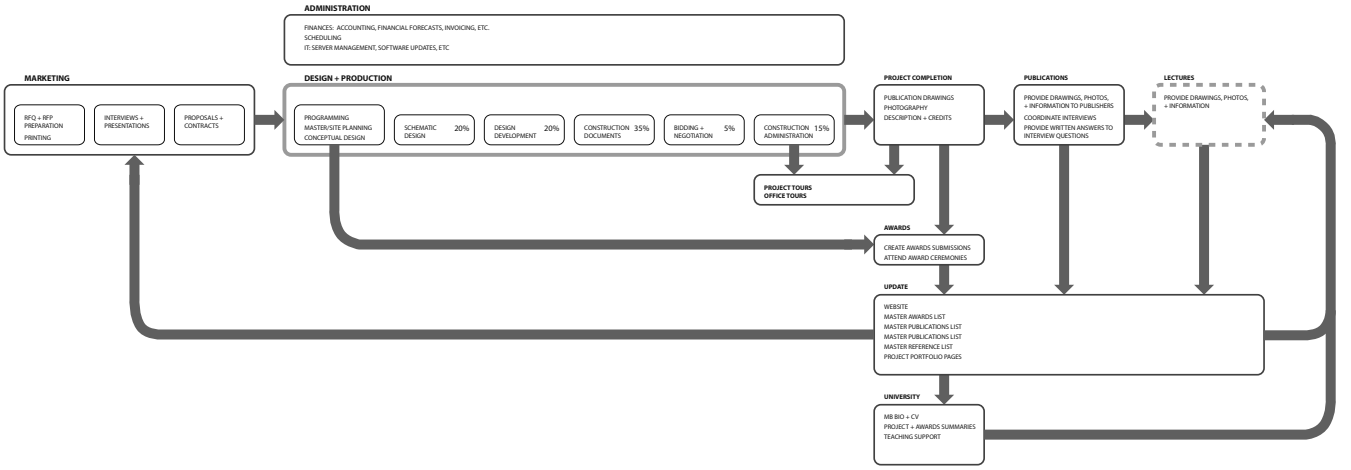


Figure 1: Firm Operation System Diagram, J. Boelkins.

practice. Technologist Phil Bernstein writes, "Practitioners who 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.

TEACHING PRACTICE: METHODOLOGY

To further highlight the important need for a pedagogical bridge between architectural education and skills required in practice, 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 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.

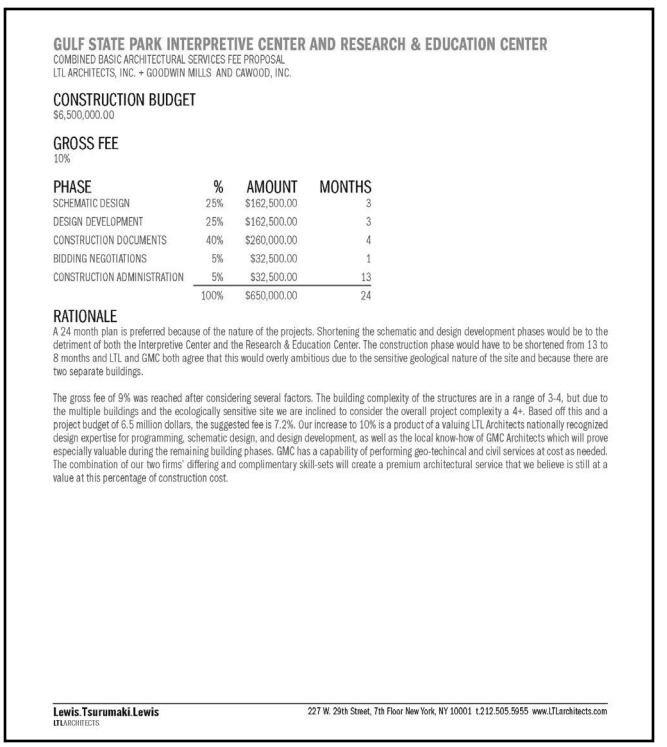
CASE STUDY A: FIRM ADOPTION

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.

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. 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.

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 2). 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



GULF STATE PARK INTERPRETIVE CENTER AND RESEARCH & EDUCATION CENTER
COMBINED BASIC ARCHITECTURAL SERVICES FEE PROPOSAL
LTL ARCHITECTS, INC. + GOODWIN MILLS AND CAWOOD, INC.

CONSTRUCTION BUDGET
$6,500,000.00

GROSS FEE
10%

PHASE	%	AMOUNT	MONTHS
SCHEMATIC DESIGN	25%	$162,500.00	3
DESIGN DEVELOPMENT	25%	$162,500.00	3
CONSTRUCTION DOCUMENTS	40%	$260,000.00	4
BIDDING NEGOTIATIONS	5%	$32,500.00	1
CONSTRUCTION ADMINISTRATION	5%	$32,500.00	13
	100%	$650,000.00	24

RATIONALE
A 24 month plan is preferred because of the nature of the projects. Shortening the schematic and design development phases would be to the detriment of both the Interpretive Center and the Research & Education Center. The construction phase would have to be shortened from 13 to 8 months and LTL and GMC both agree that this would overly ambitious due to the sensitive geological nature of the site and because there are two separate buildings.

The gross fee of 9% was reached after considering several factors. The building complexity of the structures are in a range of 3-4, but due to the multiple buildings and the ecologically sensitive site we are inclined to consider the overall project complexity a 4+. Based off this and a project budget of 6.5 million dollars, the suggested fee is 7.2%. Our increase to 10% is a product of a valuing LTL Architects nationally recognized design expertise for programming, schematic design, and design development, as well as the local know-how of GMC Architects which will prove especially valuable during the remaining building phases. GMC has a capability of performing geo-techincal and civil services at cost as needed. The combination of our two firms' differing and complimentary skill-sets will create a premium architectural service that we believe is still at a value at this percentage of construction cost.

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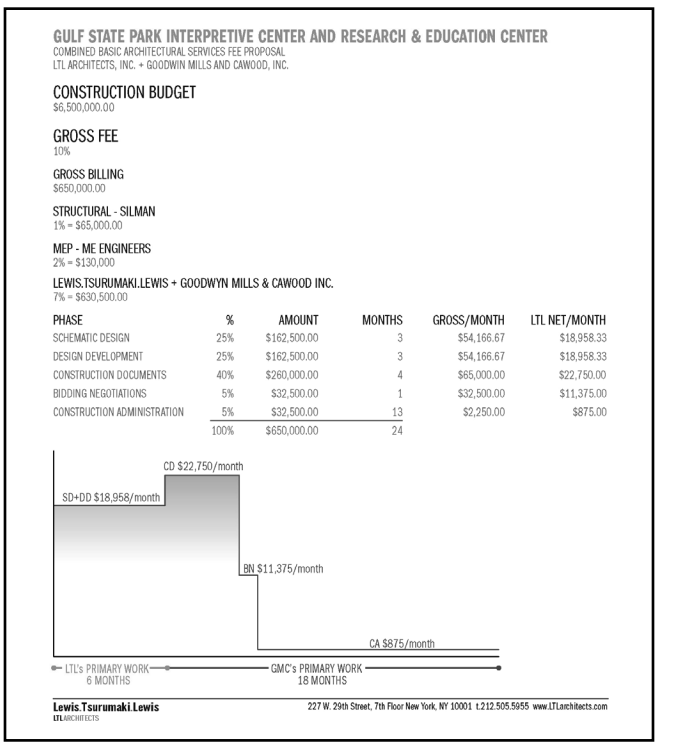
Figure 2: Case Study A, Request for Proposals Assignment.



GULF STATE PARK INTERPRETIVE CENTER AND RESEARCH & EDUCATION CENTER
COMBINED BASIC ARCHITECTURAL SERVICES FEE PROPOSAL
LTL ARCHITECTS, INC. + GOODWIN MILLS AND CAWOOD, INC.

CONSTRUCTION BUDGET
$6,500,000.00

GROSS FEE
10%

GROSS BILLING
$650,000.00

STRUCTURAL - SILMAN
1% = $65,000.00

MEP - ME ENGINEERS
2% = $130,000

LEWIS.TSURUMAKI.LEWIS + GOODWYN MILLS & CAWOOD INC.
7% = $630,500.00

PHASE	%	AMOUNT	MONTHS	GROSS/MONTH	LTL NET/MONTH
SCHEMATIC DESIGN	25%	$162,500.00	3	$54,166.67	$18,958.33
DESIGN DEVELOPMENT	25%	$162,500.00	3	$54,166.67	$18,958.33
CONSTRUCTION DOCUMENTS	40%	$260,000.00	4	$65,000.00	$22,750.00
BIDDING NEGOTIATIONS	5%	$32,500.00	1	$32,500.00	$11,375.00
CONSTRUCTION ADMINISTRATION	5%	$32,500.00	13	$2,250.00	$875.00
	100%	$650,000.00	24		

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Figure 3: Case Study A, Fee Proposal.

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 3). 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: COLLABORATIVE PRACTICE

The coursework initiated in Case Study B began with discussions and considerations of what defines an integrated and interdisciplinary model of practice. As stated by Ratti and Claudel, "visionary architecture for tomorrow" applies to the idea of an "open source" or "shared" knowledge of not only information, but the way in which practice is developing.[4] 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."[5] Architectural practice also faces these same outlined challenges.

Building upon delineating current models of practice, Case Study B 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 project requirements outside of classroom time. However, in this case, an intensive, 10-week long, design-build set design project transpired in tandem to the required lecture content.

The students took on the responsibility of a real-time, course generated, Request for Proposals (RFP) as a hypothetical design-build firm, with small sub-studios, or 'co-labs', acting within the larger arts community project. The structure of the co-labs were defined from a student self-assessment to determine strength and weaknesses of their skillsets. This assessment was crucial to the creation of the team dynamics as they began to understand the role of dynamics within the 'firm'. The RFP was the vehicle by which the course was structured, integrating writing about the student's qualifications and value to the client. The RFQ involved a set design for a dance performance work, entitled "Fragments" at State of La Danse. The RFP outlined the need for the project to not only be designed but also provide a full-scale, final product, construct.

The project seeked to also unpack 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 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. Each co-lab was then 'approved' by the client, where each team executed an AIA document A-141: Standard Form of Agreement Between an Owner and Designer-Builder.

A series of exchanges between the client and co-labs ranged from dance rehearsals and studio critiques, to full-scale mock-up constructs. Each meeting was required to be documented as Meeting Minutes (Figure 4) in addition to the evolving designs to create a true documentation of each process of the design. Project Managers assigned to each co-lab was responsible for conveyed the information between the client and the groups. Through this role, students began to understand the dynamics of managing clients, team members, and the design over the course of the project.

Each of the co-lab projects developed individually, while collaboratively, and Work-Flow Budgets (Figure 5) of each group and Material Cost-Estimates became crucial to the student's understanding beyond the 'production bubble'. 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, a skillset often overlooked by architectural education. Once the final constructs were developed, after a series of full-scale testing, site visits to the theater space for technology rehearsals launched. The students worked directly with lighting designers for the performance where the co-labs began to manage and coordinate

Meeting Notes

STUDS

Architecture & Design
Tuesday, September 13, 2016
@ BASIN Arts, Lafayette, LA

Purpose

The first meeting was held at Basin Arts to present the schematic designs to Clare Cook and selected dancers.

The five groups, architectural wall components, further explained their ideas for the design to be built and interract with the dancers during the performance.

The notes are a visual dialogue between the client and the designers.

Attendees:

Brooke LeBlanc
Wendy Meche
Caleb Boulet
Thomas Mouton
Clare Cook
Ashlie Latiolais
Dancers

Meeting Minutes

Notes by: Wendy Meche
Lead Designer
wnm4997@louisiana.edu

The schematic design meeting began with:
Group: 01 Support
They presented a conceptual idea of transitional landscape pieces in the shape of triangles. The triangles could expand and retract, as well as turn on the base or side (depending on the orientation the dancer needed).

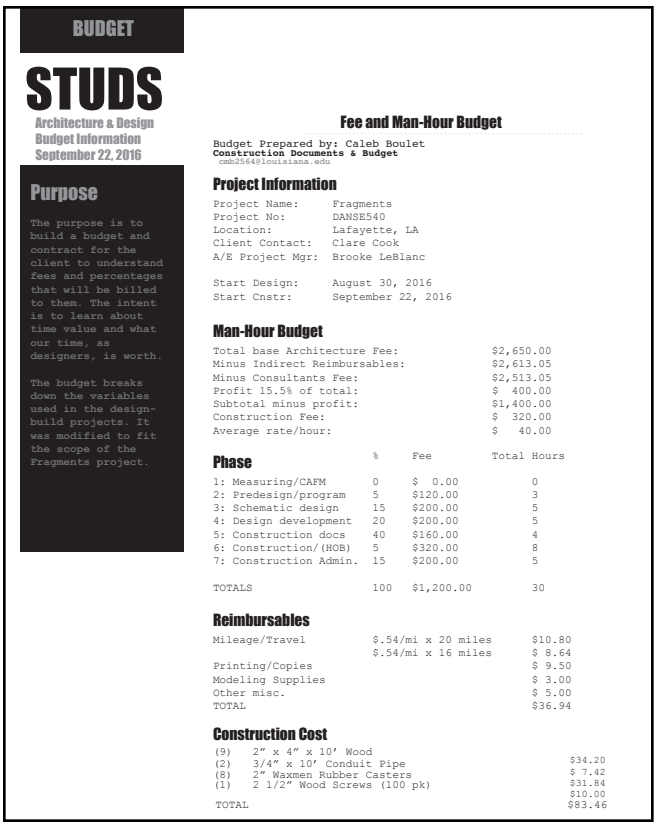
Group: 02 Base
They presented a conceptual idea of the base being the "mediator". The idea led to the discussion of flexible/bendable pieces such as elastic bands or fabric.

Group: 03 Studs
We presented ideas of space that could be transformed to represent (3) different space configurations: the solid vs. void wall, the corner, and separated wall conditions. The architecture set piece would be designed to allow for visibility on the lower and upper portion of the piece; allowing for a play on hiding and revealing the dancer.

Group: 04 Connector
They presented ideas based off of light and shadow. Explained the importance that light and shadow play in dance and architecture.

Group: 05 Sky
They presented a conceptual idea of a "cloud" that will interact and allow itself to be moldable or transform with the interaction of the dancers.

Figure 4: Case Study B, Meeting Minutes.



BUDGET

STUDS

Architecture & Design
Budget Information
September 22, 2016

Purpose

The purpose is to build a budget and contract for the client to understand fees and percentages that will be billed to them. The intent is to learn about time value and what our time, as designers, is worth.

The budget breaks down the variables used in the design-build projects. It was modified to fit the scope of the Fragments project.

Fee and Man-Hour Budget

Budget Prepared by: Caleb Boulet
Construction Documents & Budget
cmb2564@louisiana.edu

Project Information

Project Name:	Fragments
Project No:	DANSE540
Location:	Lafayette, LA
Client Contact:	Clare Cook
A/E Project Mgr:	Brooke LeBlanc
Start Design:	August 30, 2016
Start Cnstr:	September 22, 2016

Man-Hour Budget

Total base Architecture Fee:	$2,650.00
Minus Indirect Reimbursables:	$2,613.05
Minus Consultants Fee:	$2,513.05
Profit 15.5% of total:	$ 400.00
Subtotal minus profit:	$1,400.00
Construction Fee:	$ 320.00
Average rate/hour:	$ 40.00

Phase	%	Fee	Total Hours
1: Measuring/CAFM	0	$ 0.00	0
2: Predesign/program	5	$120.00	3
3: Schematic design	15	$200.00	5
4: Design development	20	$200.00	5
5: Construction docs	40	$160.00	4
6: Construction/(HOB)	5	$320.00	8
7: Construction Admin.	15	$200.00	5
TOTALS	100	$1,200.00	30

Reimbursables

Mileage/Travel	$.54/mi x 20 miles	$10.80
	$.54/mi x 16 miles	$ 8.64
Printing/Copies		$ 9.50
Modeling Supplies		$ 3.00
Other misc.		$ 5.00
TOTAL		$36.94

Construction Cost

(9)	2" x 4" x 10' Wood	$34.20
(2)	3/4" x 10' Conduit Pipe	$ 7.42
(8)	2" Waxmen Rubber Casters	$31.84
(1)	2 1/2" Wood Screws (100 pk)	$10.00
TOTAL		$83.46

Figure 5: Case Study B, Budget Assignment.

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.

In addition to the project-based assignment having the satisfaction to students with the hands-on building experience, it further allowed for students to understand the inter workings of firm logistics. These series of exercises fueled by the design-build work, are typically hidden in plain sight, as an educational opportunity to expose other realms to the design and construction process.

OPPORTUNITIES FOR ADVANCEMENT

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. One, from the outside, looking in (Case Study A) and the latter, inside, looking out (Case Study B). 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, and in turn, developing valuable areas of expertise.

This process initially improves prospects for employment and advancement, but also to helps to ensure adaptability and in turn, longevity in the profession. Phil Bernstein continues by recognizing 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."[6] But more than just a recognition of technological implications, understanding and 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. s the 'production bubble' deepens and 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 to internship. In

doing so, these courses help clarify the risks and rewards of architectural practice as new paths are emerging, ones that offer the wider scope offered by intersecting disciplines.

ENDNOTES

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