Integrating an Ethos of Service into the Beginning Design Studio

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The skills of architects in service of global communities are more urgently needed than ever before as we face climate change and large scale urbanization. This paper discusses the work undertaken in a foundational design studio within a liberal arts college that aims to take a critical regionalism approach to design and validate an ethos of service in architectural practice.

INTRODUCTION

Since Boyer and Mitgang's challenge to the architecture community twenty years ago, the need for "the talents, skills, the broad vision and the ideals of the architecture profession"[1] is if anything, even more urgently needed.

Climate change, despite what some of our political leaders say, is well underway with increased incidence of extreme weather events, water shortages, and droughts brought on by a warming planet. The current civil war in Syria and the accompanying refugee crisis is due, in part, to a severe drought that began in 2006 forcing many farmers to abandon their ancestral properties and migrate to urban centers. This mass migration, leading to many unemployed people, fueled the beginning of the Civil War for which there is still no end in sight.[2] Syrian refugees who are seeking to make new homes around the world are not only political refugees but also climate refugees.

In 2007, the world reached a major demographic milestone in becoming more than 50% urbanized. Accompanying this rural to urban migration has been the growth of informal settlements, such as those around Nairobi, that are among the most densely settled places in the world. The inhabitants of these settlements are lacking in basic water, sanitation and power infrastructures that in such densely settled areas are a necessity for being able to live a dignified life. In the past twenty years, the impacts of climate change, and of our ever-increasing human population that has now topped 7 billion with attendant resource needs, make even more pressing the work of the broader architectural community. Sam Mockbee, in defining the purpose of The Rural Studio, told his students that it was "about being decent and trying to provide a decent community for all its citizens," adding, "It's about being democratic."[3] Today, Mockbee's words ring more true than ever and resonate deeply with our students.

The current generation of student that is interested in pursuing architecture, within the liberal arts colleges where I teach, is very socially engaged and feels that the architectural profession is a path for them to make a positive impact on their communities through meaningful design. This generation is also very aware of ongoing environmental challenges and sees the built environment as one way to address climate change in a substantive way. The question for the profession both in practice and in academia, is how to best contribute to our local and global communities now and in the decades to come.

There is no single answer and exhibitions such as *Small Scale Big Change – New Architectures of Social Engagement* exhibited at the Museum of Modern Art in 2010 highlighted eleven inspiring projects from all around the world. Alongside the METI-Handmade School in Bangladesh by Anna Heringer and a Primary School in Burkina Faso by Diébédo Francis Kéré were exhibited the Inner-City Arts in Los Angeles by Michael Maltzan Architecture and Transformation of Tour Bois-le-Prêtre in Paris, France by Frédéric Druot, Anne Lacaton and Jean Philippe Vassal. The message communicated by this exhibition is that architecture can be a positive agent for social change not only in the developing world but also in neighborhoods that are part of the wealthiest cities in the world. Alongside the message of a return to service being valued in the profession was the clear demonstration through these projects that work can be both socially uplifting and architecturally compelling. Beauty and poetry do not need to be compromised by challenging conditions and budgets but rather the messiness of life as it is lived, can contribute in a positive way to our built environment – for example the Metro Cable by Urban Think Tank, that was able to leave intact the surrounding neighborhood in Caracas, Venezuela.[4] Concurrently, academia has also answered the call with increasing numbers of public interest design centers, design/build studios serving local communities, and opportunities for students to engage in community charettes and workshops.[5]

Against this backdrop of greater need in both local and global communities for the skills of architects, and the increased attention from both the academy and recognized public platforms for architecture (such as the Architecture Department at MoMA) for socially engaged work, the question remains, how best to contribute in a meaningful way? Post-2016 election and the ensuing conversations that followed, triggered

Figure 1: Solar Clocks L to R - Crusta-Sun by Maya Gamble, Two Day Shadow Poem by Nicole De Araujo, Analemmatic Sundial by Rand Abu Al-Shar

by an open letter from Robert Ivy, executive vice president and CEO of the American Institute of Architects to President-elect Trump, have refocused the profession more than ever on the ideals and values of the profession.[6] For those of us who engage as both practitioners and educators, the question expands to ask how do we engage our students to encourage them in pursuing the type of socially meaningful work that excites them while also role modeling respectful and ethical professional conduct? The answer, I believe, must vary based on geographical location, the make-up of the student body, and the level of the students in question.

TEACHING IN A LIBERAL ARTS COLLEGE

This paper will describe the beginnings of work undertaken with undergraduate students enrolled in the Five Colleges Architectural Studies major, shared by Amherst College, Hampshire College, and Mt. Holyoke College. I will describe a studio project designed for second year students taking their second studio (an introductory foundations studio is a pre-requisite for the course) in which we have partnered with now two different not-for-profit organizations that are interested in design services. The course in discussion, ARCH 225: Intermediate Architecture: Environmental Principles, is offered each spring at Mt. Holyoke College and is open to all students within the Five Colleges consortium which also includes Smith College, which has its own architectural studies major, and the University of Massachusetts, Amherst which has a fully accredited professional degree granting program. Mt. Holyoke College, the oldest women's college in the United States, is unusual for having one of the largest percentages of international students of all liberal arts colleges in the country. While the total percentage of international students enrolled at the college is over 25%,[7] of those that choose architectural studies as their major, the percentage of international students and recent immigrants in the four years that I have been teaching is closer to 75%.[8] These students come from all over the world. In the past four years, I have had students from South Africa, Ethiopia, Ghana, Kenya, Syria, Jordan, India, Russia, Vietnam, China, the Philippines, Malaysia, Haiti, Mexico, Switzerland, and of course the United States. Most students that I have spoken with ultimately want to return to their home countries where they feel that their skills as an architect will enable them to contribute to increasing the quality of life for their communities.

In teaching architectural studies to undergraduate students at a liberal arts college,[9] I feel we have two overarching goals toward which everything else must build – we need to expose students to enough of the history, theory and design of architecture for them to decide whether it is something they want to pursue as their life's passion and if so, we need to give them the tools so that they can continue their studies at the graduate level – through the development of a strong design portfolio and writing samples. Overlaid on this goal is the need to provide the content and exposure that our students crave and that brought them to our classrooms to begin with. Generally speaking, this translates to more required courses in art and architectural history and courses that examine the impact of architecture on culture more broadly through philosophy, politics, and the environment. As liberal arts students have so many fewer required architecture courses than is typical in a pre-professional program, each course has to fulfill multiple roles. My course, ARCH 225: Intermediate Architecture: Environmental Principles, is a work in process as I attempt to provide students, among other things, with a glimpse at how their work as architects may enable them to contribute to a more socially just built environment.

ARCH 225: INTERMEDIATE ARCHITECTURE: ENVIRONMENTAL PRINCIPLES

This studio course addresses the goals of educating our students in the design of a more socially just built environment primarily through integrating environmental principles into a beginning design studio and secondarily through exposure to firms and practices that are doing work in the service of communities and then collaborating with non-profits ourselves and offering design ideas for their inspiration and consideration. As previously mentioned, students within a liberal arts, architectural studies major have much fewer required courses, and in the Five Colleges Architectural Studies major specifically, there are no required technical courses. As such, one goal of this studio is to integrate subject matter typically taught in the building sciences into the design studio through a hybrid model integrating lectures and problems work sessions as a component of several design projects over the course of the semester. The belief is that understanding climate and the potential of the sun for warmth and thermal comfort, for daylight and energy

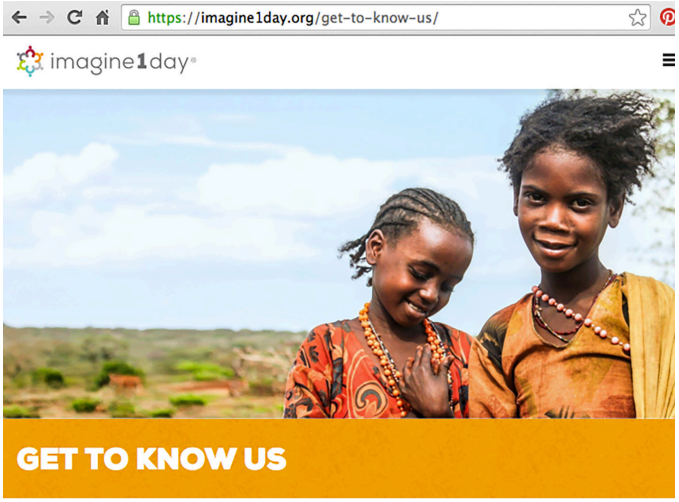

Figure 2: Screenshot of Imagine 1 Day website

generation, are today in this era of climate change, as important to the beginning design student as learning to draw. After a first assignment in which students design, and build at full scale, a functioning solar clock, the studio takes a critical regionalism approach to design a given program for two distinct climate regions. In Frampton's 1983 essay, "Towards a Critical Regionalism: Six points for an Architecture of Resistance," he calls for an architecture that is once again rooted in understanding how climate, topology, ecology, and culture can serve to shape our built environment.[10] ARCH 225: Intermediate Architecture: Environmental Principles premises that by focusing on achieving the thermal comfort of the occupants with minimal energy input over its life cycle in both building and operation (thus optimizing environmental performance) is a way of achieving a critical regionalism that will also achieve the visual and aesthetic specificity to place that Frampton is espousing. As a beginning design studio, this means focusing on passive means of achieving comfort.

The first solar clock problem requires that students gain a deep understanding of the sun's movement in the sky relative to one's latitude on earth over the course of a day and over the course of a year. Sun path diagrams are introduced through a lecture and an in class problem set to ensure that students know how to read and interpret them. Needing to translate this knowledge into designing a solar clock that functions pushes their understanding beyond mere reading of the chart to using the chart as an integral partner in design. Finally, the requirement to build the solar clock at full scale enables the students to test and develop their designs through modeling, prototyping and final construction of their projects at full scale. For many students, this is the first time in which they have worked in a wood shop or fabricated a project using materials other than chip board and paper and so this adds another dimension of making and educating about the use and choice of materials. (Figure 1)

The second portion of the semester focuses on climate, psychrometry and thermal comfort. Psychrometric charts are introduced as a way to read different climate zones and understand the thermal challenges of each region. Different modes of heat transfer and variables determined by climate (for example humidity, temperature) versus those variables that are determined by design (window placement, ceiling height) and material selection (R-value, reflectivity) are discussed. Initially, the students are asked to all design a simple passive structure for the same climate region and then they are asked to adapt their design to another of the world's climate regions keeping the same motivating idea. This forces the beginning design student to have a clear design concept and then very clearly understand how climate differences impact design decisions with the goal of minimal energy input to achieve thermal comfort and an architecture that is sensitive to regional differences.

COLLABORATION WITH IMAGINE 1 DAY

For the past three years, the program for the passive structure that I have assigned has been provided by a not-for-profit organization that was interested in exploring design potential. For the first two years, we partnered with Imagine 1 Day, a Vancouver based International Organization whose stated goal is "to ensure that all Ethiopians have access to quality education funded free of foreign aid by 2030."[11] (Figure 2) Along with the goal of providing access to education for all children is the goal that by developing leaders within Ethiopia today, by 2030, Imagine 1 Day's role will be obsolete, as the communities gain the tools to continue to develop their educational system forward.[12] As part of a broader effort in collaboration with the Ethiopian Ministry of Education, Imagine 1 Day seeks to enroll more students, decrease the drop-out rate, and increase the gender equality of students. Imagine 1 Day has been operating in primarily two regions of Ethiopia – the Tigray region and the Bale Zone in the Oromia region – where many students are still studying in open air classrooms. A portion of Imagine 1 Day's efforts go into building new schools where they have been building the standard government designed school building. Partnering with an organization already on the ground in Ethiopia with strong local collaborations was very important and their stated goals of building capacity and empowering the local communities is an admirable model for international development.

Sapna Dayal, at the time the Executive Director of Imagine 1 Day, was our contact at the organization and she was able to share with the studio the government specifications for school buildings as well as the broader context in which Imagine 1 Day was working. The students had the benefit of communicating, via Skype, with a "client" and for their first site, all of the students were required to design an early education classroom building for the Oromia region of Ethiopia. While the government standard for a detached classroom building is for a 22ft x 26ft x 9.5ft structure, the students were only required to maintain the volume requirements. In addition, the classrooms were intended to serve 50 children, ages 5 and 6, per classroom with one teacher – these requirements were kept the same.[13] Sapna was interested in

Figure 3: Rand Abu Al-Shar - Model Photo of Arts Complex in Tanzania for the Tanzania School Foundation photoshopped into the site

collaborating with our studio to see what types of creative solutions would emerge that she could then take to the Ethiopian Ministry of Education as they developed a new typology of school for early childhood education. She hoped that by presenting many possibilities, the Ministry might see possibilities beyond their current building standard.

This portion of the studio started with research to acquaint students with Ethiopia. Ideally, there would have been an opportunity to travel to the site but given the constraints of time and budget, and the fact that we were generating ideas as opposed to actually building a project, we contented ourselves with research. Students were asked to research topics such as agriculture and food, water, economics, social structures, energy, education, etc and share their research with the studio. All students were also asked to research school precedent projects including projects by MASS Design Group Ltd., several of Diébédo Francis Kéré's projects in his hometown of Gando, Burkina Faso, and projects developed by the Rural Studio and Architecture for Humanity. Although the specific list of precedent projects has evolved with time, the intent has been to expose students to different modes of architectural practice and production and to both normalize and validate the idea of service in architecture – this has proven to be of interest and has both inspired students and initiated some important conversations about the ethics of architects practicing in cultures that are "far away." The Skype call with the director of Imagine 1 Day was scheduled after the initial research had been completed and early design was underway as this is when there were the most questions.

REFLECTION ON COLLABORATION WITH IMAGINE 1 DAY

Introducing a project in Ethiopia raised many challenging issues about the role and ethics of architects working in cultures not our own. With the globalization of the architecture profession, it is likely that many of today's students who continue in architecture will work internationally. It is therefore beneficial to have these conversations early in one's architectural education. Lewis Hyde, in 1979, wrote about the "poisonous gifts" that must be refused.[14] Applying this thinking to architecture, we need to be aware that buildings are difficult gifts to return – although our intentions are good, we must ask if there are any negative long term impacts of the built structures on the local communities.[15] Working internationally may give us, as architects, opportunities in terms of the size and scale that are not available to us in our home countries – we need to be certain that the benefits to the communities are embraced and long-lasting. In addition, Thomas Fisher has written poignantly that we cannot "experiment" with other people's spaces and lives – that international work is not an appropriate space for architectural experimentation because sometimes experiments fail and it is not ethical to leave behind a failed experiment/project.[16] In our case, we were not actually building our design – we were providing ideas to our partner Imagine 1 Day, and so this process allowed us to think through many of these issues without the potential long-term impacts and also gave the beginning design students the opportunities for architectural and material exploration that is so critical in foundational studios. The first year of our collaboration with Imagine 1 Day, there were no students from Africa enrolled in the studio (there were students from Asia, the Middle East and the United States). The second year of our collaboration, my teaching assistant was a fourth year architecture student from Ethiopia and so we had the benefit of a local expert who

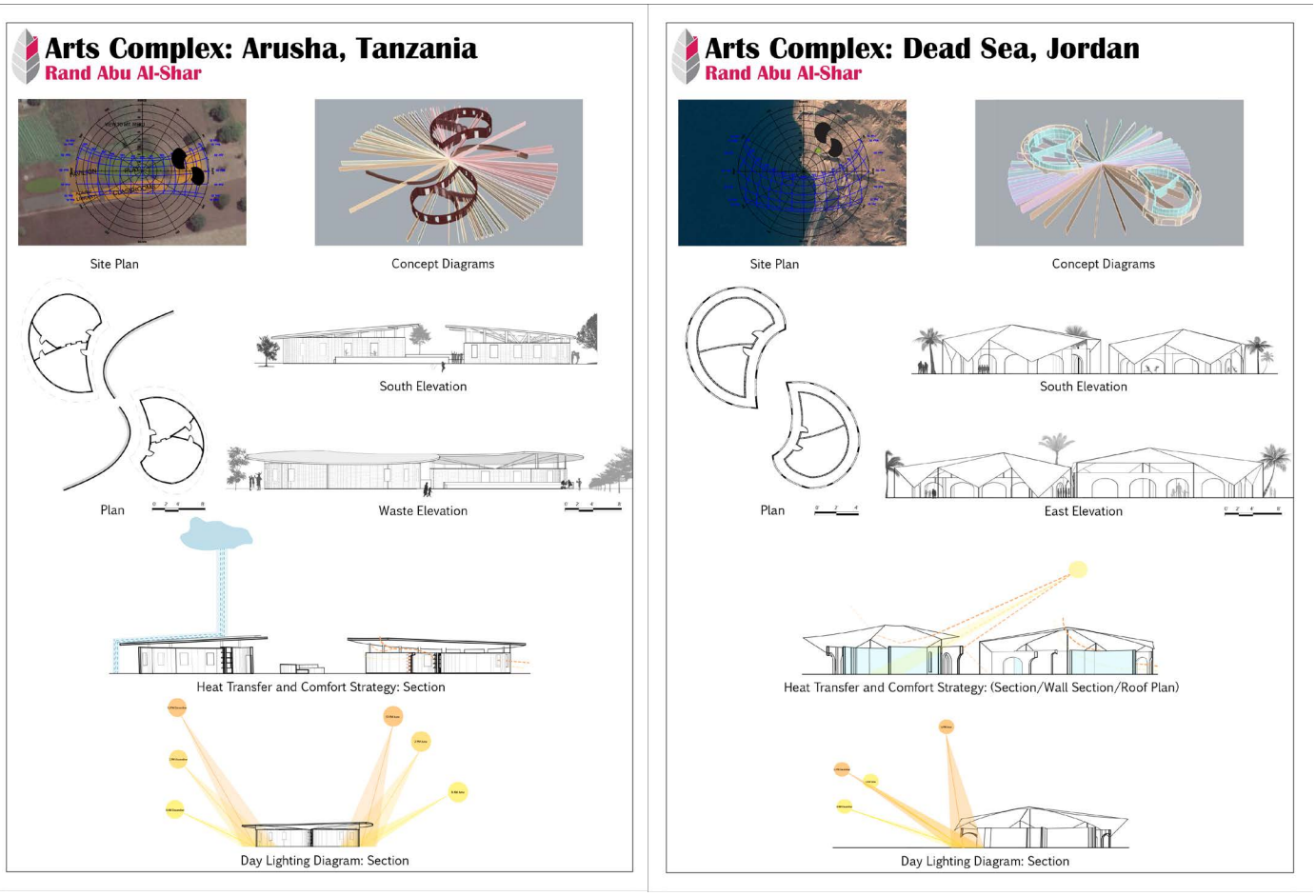

Figure 4: Rand Abu Al-Shar - boards comparing the projects in Tanzania and Jordan, Rand's home country.

could answer questions about the social culture of school, the climate, materials, etc, that was invaluable. Both years, the studio produced interesting work at the beginning design student level that was forwarded on to Imagine 1 Day where it was shared with their Ethiopian collaborators but did not have, as far as I know, any immediate impact on the design of future schools. The project did provide a platform for the students to design for a client in a specific place in the world with a unique climate and material culture and wrestle with the ethics surrounding the challenges of international development work. In keeping with the larger overarching goals of the studio, the students all had to then locate their projects in a second climate after the Oromia region and make the spatial and material changes needed for maximum thermal comfort.

COLLABORATION WITH THE TANZANIA SCHOOL FOUNDATION

This past spring, the studio collaborated with the Tanzania School Foundation, a not-for-profit organization that has started a private school in Arusha, Tanzania, in a neighborhood where a primary school did not exist. The Tanzania School Foundation is a much newer and smaller organization that was founded by an alumni from the University of Massachusetts, Amherst. When not in Tanzania, Christine Lott lives locally to our campus, and therefore one of the reasons in making the change was to be able to work with someone face to face rather than solely via phone and Skype. The school has recently acquired a property and is currently building its first school building. The founder, Christine, has dreams of ultimately adding one grade each year so that the school can operate through secondary school. She also has dreams of integrating the visual and performing arts in a meaningful way into the curriculum for all children and so the program provided to the studio was to make proposals for this future arts complex which included a dance studio, music classroom, visual arts classroom and mixed media classroom that can accommodate film, photo and video. (Figures 3-5)

As in previous years, the students started with general research about Tanzania, and Arusha including the local educational system, role of genders, politics, ecology, materials, etc. The more complex arts program proved to be very inspiring to the students and a newly acquired laser cutter enabled the students to make more detailed models. Although the project was clearly a hypothetical one in a given climate, the collaboration posed more questions about the role of not just architecture but of international development work more generally and the challenges of "outsiders" working in places and ensuring that the gifts are both wanted and lead to desired outcomes in the host communities . Although we had the opportunity to speak with Christine, questions remained as to the sustainability of the Tanzania School Foundation model that is so reliant on one person and the long-term impact of the school on the lives of the children and families that it is serving. As a relatively new non-profit without the deep collaborations with the local government and Ministry of Education,

Figure 5: Rand Abu Al-Shar - Model Photo of Arts Complex adapted to the climate in Jordan and photoshopped into a hypothetical site

there were concerns expressed about the future of the non-profit without a shift toward more empowerment of the local community and vision.

CONCLUSION - MOVING FORWARD

As I reflect back on the previous three years of teaching this studio, there are clear benefits to continuing to introduce a project from a country such as Ethiopia or Tanzania despite the fact that I, as the educator, have no direct experience. One advantage of presenting the project in Africa is that the structures must in fact be designed passively – as this is how they will ultimately be built – and therefore the design parameters are more fitting to the program for a beginning design studio where HVAC systems are beyond the scope of the course. While students are excited by work that is seen to serve a larger global community, as our projects have remained purely hypothetical the work is serving these not-for-profit only in providing big ideas of what is possible. This gives us a certain amount of freedom in design that is essential for a foundational design studio and also provides a platform for important conversations about international development work and public interest design. Another advantage of a studio project in Africa is that there are many examples of firms and projects that can serve as precedents to further inspire our students and normalize the service side of our profession. The collaborations with the not-for-profit organizations working in Africa were able to provide a platform for us to be able to discuss some of the challenges of serving an international community and cultures not our own – an important consideration for a profession that is increasingly globalized.

In lieu of assigning a project in Africa, I have often wondered if the more natural project location would be something local to South Hadley where Mt. Holyoke College is located. The saying may go, think globally; act locally, but what is "local" at a college where students come for 4 years from all over the world to a place they don't necessarily know outside the gates of the campus? In fact, for the majority of my Mt. Holyoke College students, working in the United States is equally foreign. Choosing a project location in Africa has brought the issues of culture and international practice to the forefront for all students, including those from the other campuses, in a way that I believe a site location in Massachusetts could not.

Perhaps the most interesting aspect of the studio as I have taught it with my specific student body is that for their second climate, students

have often chosen their home countries where they do have a deep knowledge of the social and cultural fabric that inevitably surrounds all building projects. This has allowed students to overlay specificity of local cultural knowledge on top of the climate and passive comfort requirements of the studio to produce projects that address a critical regionalism and embody a public service ethos within a beginning design studio.

ENDNOTES

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2. Joshua Hammer. "Is a Lack of Water to Blame for the Conflict in Syria? A 2006 drought pushed Syrian farmers to migrate to urban centers, setting the stage for massive uprisings." *Smithsonian Magazine*, June 2013.
3. Julie V. Iovine. "Samuel Mockbee, 57, Architect to Alabama Poor", *The New York Times*, Jan. 6, 2002.
4. Andres Lepik. *Small Scale Big Change: New Architectures for Social Engagement.* (New York: The Museum of Modern Art, 2010).
5. Carey Clouse and Zachary Lamb. "Post-Crisis: Embracing Public-Interest Architecture with Humility." *Journal of Architectural Education*, 67:2 (July 2013): 186-194.
6. "AIA Code of Ethics," https://www.aia.org/pages/3296-code-of-ethics--professional-conduct. Specifically relevant for this article: E.S. 1.3 Natural and Cultural Heritage: Members should respect and help conserve their natural and cultural heritage while striving to improve the environment and the quality of life within it. E.S. 2.2 Public Interest Services: Members should render public interest professional services, including pro bono services, and encourage their employees to render such services. Pro bono services are those rendered without expecting compensation, including those rendered for indigent persons, after disasters, or in other emergencies. E.S. 2.3 Civic Responsibility: Members should be involved in civic activities as citizens and professionals, and should strive to improve public appreciation and understanding of architecture and the functions and responsibilities of architects.
7. "Mt Holyoke College International Students," https://www.mtholyoke.edu/admission/international
8. Note that this is a higher percentage than is seen in even some of our most well established graduate programs that draw foreign students in part with international name recognition – Harvard's GSD has 36% and MIT has 43% international students. Jay Wickersham. "Code of Context: the Uneasy Excitement of Global Practice," *Architecture Boston*, vol 17, no. 4 (Winter 2014): 34.
9. Note that others have also written about the distinct challenges of teaching architectural design within the liberal arts context, recently: Middlebrook, James and K. Maines. "The Introductory Architecture Studio Revisted: Exploring the Educational Potential of Design-Build Within a Liberal Arts Context." *Journal of Architectural Education*, 70:1 (March 2016): 154-164.
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16. Fisher, Thomas. *Designing to Avoid Disaster: The Nature of Fracture-critical Design.* (New York: Routledge, 2013): 170.