EX-CHANGE
A Celebration of the Carnegie Mellon University School of Architecture Studios Fall 2017
“EX-CHANGE was a really good opportunity for students to look at the work being done by our peers from across the studios and begin to examine and contrast some of the questions we are asking as a school about architecture and the discipline. The two visiting critics, Aaron and Trey, provided insightful observations and criticisms about the projects that we weren’t necessarily thinking about the during the design process.”

Adam Kor, 4th Year BA

“Do something ugly, something that doesn’t work, that’s kind of a mess, takes risks, and is just completely out there. Get destroyed in a crit. Make architecture like the music you listen to.”

Aaron Betsky

“Candidly, it took me years to find my voice. I would hope that the school sets you on a trajectory to find what’s deep within you.”

Trey Trahan

“I thought the event brought some great discourse to the table and set us up for more engaging conversations in the future.”

Chitika Vasudeva, 3rd Year B.Arch
At the end of the fall 2017 semester, the Carnegie Mellon University School of Architecture inaugurated the first EX-CHANGE.

EX-CHANGE is a celebration of the student work of the School of Architecture. Every semester, the SoA studios generate rich provocations, collaborations, and opportunities for both orchestrated and spontaneous exchange.

Beyond definitive answers, the projects and research of our studios grapple with an array of critical questions. These questions drove this inaugural end-of-semester exhibition and discussion with SoA faculty, students, and invited guests Aaron Betsky and Trey Trahan.

Moving forward, EX-CHANGE is an opportunity to shine new light on the SoA studio sequence and position the work within larger questions of research and practice.

This booklet is a compendium of thought, work, and discussion generated by EX-CHANGE. It includes studio work alongside excerpts from the moderated conversation between students and critics based on questions generated by studios, reflecting on how the work and research developed at the SoA relates to broader thought in academia and practice.

This booklet is a compendium of thought, work, and discussion generated by EX-CHANGE. It includes studio work alongside excerpts from the moderated conversation between students and critics based on questions generated by studios, reflecting on how the work and research developed at the SoA relates to broader thought in academia and practice.

Spike Wolff, Lecture Series Curator
Sarah Rafson, Editor & Ann Kalla Visiting Professor
Meredith Marsh, Marketing & Communications Manager
Kyle Wing, Identity concept & design
Jakob Uhlenhopp, Editorial Assistant
Photographs: Christina Brown, Joshua Brown & Stephen Lee

EX-CHANGE was organized by the Carnegie Mellon University School of Architecture on December 10, 2017.

Student & Faculty Moderators:
Kelly Li, inter-punct
Ernest Bellamy, NOMAS, MUD
Talia Perry, SoA faculty and alumna
Kyle Wing, inter-punct
Anthony Nitche, AIAS
Matt Huber, SoA faculty and alumnus

Special thanks to all of the faculty, staff, and students who helped with the EX-CHANGE event and booklet, particularly Mary-Lou Arscott, Kai Gutschow, Stefan Gruber, Alexis McCune Secosky, Diana Martin, David Kolitas, Kristen Frambes, Brian Staley, Robert Armitage, Adam Kor, Kelly Li, Christoph Eckrich, Cassandra Howard, Meghan Chin, Elizabeth Levy, Gargi Lagvankar, Zain Islam-Hashmi, Chitika Vasudeva, Alexander Wang, and Heather Holton. Thank you to Aaron Betsky & Trey Trahan for critically engaging with the work of the studios.

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Introduction
Stephen R. Lee, Professor and Head

Towards the end of my time as a student, the School of Architecture began a process called “Level Review.” At the end of each year, the students pinned their work on the walls and the professors examined it. They looked closely at the work to determine whether or not students could pass to the next year, or “level.” There were very unhappy campers who didn’t make it to the next level, but it’s the last time I can think of when the school afforded the space to look at the work of the studio sequence collectively.

This fall’s EX-CHANGE was totally different, intentionally. Our faculty have been discussing ways to share the great work that our students do in the School of Architecture. EX-CHANGE was—and, we hope, will continue to be—an opportunity to celebrate studio work, foster an understanding what each of the studios does, and share that work in a more public format. It was important to us to avoid singling out one or two students who had done exceptional work, but to celebrate the collective effort of studios beyond what we can do in a traditional final review.

This first iteration was a test. Considering how radically EX-CHANGE differed from what we’ve previously done in the school, I thought it was incredibly successful. It challenged SoA students and faculty to look at the school’s work anew. Younger students were able to look ahead and older students could reflect on the studio changes from year to year. The best part of the event for me was seeing students with smiles on their faces and pride in the work they’ve put together—as you’ll see in the pages that follow.

In their discussion, Aaron Betsky & Trey Trahan encouraged students to push boundaries and take risks. EX-CHANGE was itself a risk the school took this year. Like any new venture, we learned a lot that we will use to improve the formula, and I believe this bold attempt to change culture will benefit the SoA now, and in the years to come.

Guest Lecturers & Critics
Spike Wolff, Curator, SoA Lecture Series

TREY TRAHAN

“I am naturally excessive in everything.”
There is a provocative efficiency, not only in Trey’s manner of speaking, but also in his work. Trey pursues architecture as both idea and material reality; his work thriving in those paradoxical realms between the technical and the poetic, research and practice, the physical and the perceptual, the radical and the conservative. Radical and conservative, because Trey works within the tradition of the practice of architecture to challenge conventions and push forward towards a broader agenda—pursuing architecture as a speculative and experimental art form.

“You learn a little; you work really hard. You learn a little more and then you work harder.”
Trey is fiercely driven, always working, always percolating. And beating within the heart of this designer, is the passion of a conservationist. Driven to reconcile the ambition to build and the responsibility to preserve, the provocations dig deeper, dealing with stakes that are increasingly high. His practice dedicated to architecture, but also to research, experimentation, and investigations with more visionary and global concerns in mind.

“The journey itself is terribly exciting. We enjoy not knowing where the creative process is going to take us.”
Trey is a sensualist, the power of his work realizes architecture’s potential to impact us viscerally, through the power of its poetry, physicality of its presence, sensuality of its form and exquisite materiality. Trey is an architect’s architect—advancing his ideas through the practice of architecture. Trey is an architect who reveals the seduction of possibilities through building.

VICTOR F. “TREY” TRAHAN, III, FAIA, is Founder and CEO of Trahan Architects. Trey’s work is guided by a commitment to the value of conservation and the development of sustainable environments. Trahan Architects work locally and internationally, with projects including the Louisiana State Museum, receiving recognition for their poetic and innovative use of materials.

AARON BETSKY

“I have an addictive personality. Luckily, my main vice is architecture.”
These are the first two lines of Aaron’s latest book, Architecture Matters. Aaron is an intellectual, always thinking about architecture—questioning motives, strategies, values, theory; and a sensualist, realizing the potency of architecture to impact us viscerally through the power of the look, feel, and smell of a place. This immersion into the physicality of presence can allow for the experience of, as Aaron puts it, “the architecture of boundless nothingness revealed.”

“We must find architecture beyond buildings... buildings or architecture, buildings can be avoided.”
Aaron is a unique force, an architect who has forged his role as provocateur, inciting subversion of the passivity of reverence and rousing the radical questioning of all things. Aaron is an agitator for change who challenges us to push architecture beyond what we know towards that which we do not yet understand, so that architecture can excite us and begin to strike relevance between ourselves, how we live, and our culture.

AARON BETSKY is the president of the School of Architecture at Taliesin. Trained as an architect, he works as an educator, critic, and arts administrator. Aaron is the author of over a dozen books on art, architecture and design, including the most recent, Making It Modern; and Architecture Matters. In 2008, he curated the 11th Venice International Architecture Biennale.
Kelly Li: You’ve just seen a range of studios in which the relationship to place ranges from the generic—landscape, trees—to the specific in others that deal with particular areas of Pittsburgh, for example. What do you think might be gained or lost in our engagement with place in a global context?

Aaron Betsky: That’s an interesting question—it is so difficult in architecture in general, but especially in the school to make place real. I noticed how even the projects in the Urban Design Build Studio and the Master of Urban Design studio, which deal with a very concrete set of issues that are tied to specific places, how difficult it is to make those places real. The first-year studio’s projects are really spectacular because of their clarity and the focus. They started with a painting, they analyzed and extrapolated everything about it and then turned it into a work of architecture. Very beautifully done.

The more complex the problems, obviously, the more difficult it becomes to draw something. I think it would be interesting to look at those artists who are really trying to make information real. From a site—the smells, stories people have told, people who have lived there, died there, gotten sick there, fallen in love there. The most important qualities of a site are connected to a larger world, yet rooted in one specific place.

Trey Trahan: We also tend to think of context as immediate. We don’t think about how our decisions affect things far beyond the site, like watersheds. We spend so little time talking about issues of inclusiveness, the diversity of a place, issues of equality, and how architecture can address those issues. I challenge you to take more time to think about ecology—the critical zone from the bedrock to the canopy—and all of these other issues that are not the immediate built work.

AB: Yes. It seems like professors here are very interested in concerning students with landscape, which I fully applaud. But I would love to see more work that really does what you’re talking about—digs into the ground and figures out the geology, climate, smell of the vegetation, bite of the air.

Caroline Bos and Ben Van Berkel have this notion of “deep planning,” which explores the density of information from a site—the smells, stories people have told, people who have lived there, died there, gotten sick there, fallen in love there. The most important qualities of a site are connected to a larger world, yet rooted in one specific place.

TT: I found the work we looked at today that had not been assigned a specific program to be far more fascinating and interesting. Maybe that’s because it’s the unfamiliar that excites me. When we’re solving a problem, when we assign program, we immediately go to materials and systems that we’re familiar with and end up with similar responses. No matter where you go, it’s the same auto parts store, the same Walmart.

AB: The same Ace Hotel. Another issue there is that the focus is always on the inner city. The real problem is not in Pittsburgh, but twenty miles outside of Pittsburgh. That’s where the bad stuff is getting built and where huge amounts of money is being made. The real problem is trying to figure out how to make these ideas work in the sprawl.

Talia Perry: Both of you have spoken about the importance of communication in practice. How do we effectively teach those tools?

TT: In architecture school we’re pressured to create, draw, and build while we should spend more time learning to think differently and find unique approaches to problem solving. We should draw less, build fewer models, and spend more reflective time thinking about what resonates deep within us, motivates us, and creates something unique to us. For me, the problem is at the other end. All good architecture starts with looking really hard. Architecture education should start there—maybe not with a medieval painting, but with looking at the postmodern emasculation of the Hornbostel campus long enough that you can tell what’s wrong with the new buildings on campus and what makes Hornbostel work. What makes Donner Hall work? If you can look hard enough and articulate what you’re seeing, then you’re an architect.

TT: You’re making my point. I think architects are most successful at building. We love to build. But we don’t arrive at a client’s office with a finished product. We allow them to participate in the creative process. Whether we communicate through drawings, models, or sculpture, architects should be very comfortable and confident about the journey we take to solve a set of issues.

AB: I think we also have to be very conscious of the biases of any visual system. We all know the biases about the ocular perspective and how that became so tied up with masculinity in our culture. Those are sort of high-level discussions about how you choose to make an axonometric or perspective, but there are things that are fundamental. For instance, a lot of the images we saw today show a world inhabited by young people dressed well enough to be in a Prada commercial who are overwhelmingly white.
What is the value of limitations in the design process early in an architect’s education?

Architecture Design Studio: Foundation I

B.Arch, First Year

The Foundation I studio focuses on how to evaluate an architectural idea through analysis and representation. The semester consisted of four projects that introduced the timeless composition methods that artists and architects consider when creating an artwork or when designing a memorable piece of architecture. The cumulative project explored representation and the iterative study of a problem: a pavilion for a masterwork painting. Students learn how to work fluidly between media, tools, and methods, while developing a critical understanding of space making and spatial strategy.
How do lessons from small-scale, simple-component construction apply to the design of full-scale buildings?

Grow Collective: Architectural Interventions in Urban Agriculture
B.Arch, Second Year

Urban agriculture has garnered sustained interest and energy as a viable practice to supply residents with fresh produce and reclaim vacant property within communities. Grow Collective explores architectural responses to the increased presence of urban agriculture in post-industrial cities through the architectural fundamentals of enclosure, systems, making, and collaboration.

Instructors: Joshua Bard, Nicolas Azel, Lori Shaw, Jennifer Lucchino, Tonya Markiewicz, Brian Peters

How can methods of representation and figuration enable architecture as a part of a larger planetary ecology?

Integration Studio: Environment, Form, and Feedback

B.Arch, Third Year

Architecture is fundamentally part of a larger planetary ecosystem. Environment, Form and Feedback emphasizes systemic design thinking that links the development and organization of architectural forms in an extreme urban environment. By engaging environmental patterns and identifying micro-climatic behaviors such as airflow, daylight, and water flow early in the design process, this studio negotiates spatial relationships among the site, water infrastructure, local ecologies and proposes a tectonic logic for a housing system at the water’s edge.

Instructors: Dana Cupkova, Marantha Dawkins, Matthew Plecity, Nina Chase, Matthew Huber

Students: Ghalya Alsanea, Cotey Anderegg, Christina Brown, Dan Cascavai, Eric Chen, Heyang Chen, Xin Chen, Zhi Tao Chen, Jonathan Cheng, Yoon Seo Choi, Kornrat Euchukanonchai, Alessandra Fleck, Austin Garcia, Jamie Ho, Min Young Jeong, Kevin Jiang, Lingfan Jiang, Zhenting Jiang, Alison Katz, Harshvardhan Kedia, Hae Wann Kim, Alina Kramkova, Han Kyaw, Keon Ho Lee, Sangwon Lee, Yugeeong Lee, Alex Lin, Zhuoying Lin, Yi-Yu Lu, Benita Narrey, Jihoon Park, Rachel Park, Nicole Postnikov, Michael Powell, Hamza Qureshi, Shariwa Sharada, Ryan Smith, Scarlet Tong, Monica Toren, Ophelie Tousignant, Chitika Vasudeva, Shan Wang, Alvin Wong, Kai Zhang, Selena Zhen, Christine Zhu

Opposite: Housing proposals for Pittsburgh’s Strip District neighborhood by Blair Chen and Kai Zhang (top); Kornrat Euchukanonchai and Christine Zhu (lower left); Cotey Anderegg and Ryan Smith (lower right).
### Interrogate & Reflect, Part 2

A student and faculty discussion with Aaron Betsky and Trey Trahan, continued.

#### Ernest Bellamy:
Some of our advanced studios deal with engagement. The Urban Design Build Studio looks at new ways to develop affordably, for example, and the Master of Urban Design studio looks at bottom-up economies. How should architects adjust traditional planning and design methods to better engage with the communities they serve?

**AB:** The UDBS studio showed how everyone except the banks lose in the housing market. It’s clear that architects still haven’t figured out affordable to below-market rate housing. There is a very valiant effort to do it in the studios here, though I still scratch my head about how to create decent housing given the socioeconomic system in which we work and building practices we use. McDonald’s offers higher-quality spaces than what most people who wind up eating McDonald’s have to live and work in. Before UDBS students aggregate houses into sexy forms, I would urge them to spend more time thinking about what those spaces actually are.

#### TT:
I would challenge students to think about other business strategies that find innovative ways of tackling affordable housing. Why can’t major corporations get tax credits to contribute to low-income housing?

#### Ernest Bellamy:
In terms of engagement, I think it’s all about trust and likeability. If you don’t trust someone, you don’t engage them. In most communities, it’s about spending significant time there. When we worked with Brad Pitt on the Make It Right project in New Orleans, it was about spending an enormous amount of time with the family we were designing a home for. We reduced the family’s monthly utility bill by about two hundred dollars a month. It meant spending a Saturday afternoon barbecuing with them, drinking beer and talking about the impact of Katrina, and how we could create something that would benefit this small family that were trying to rebuild their lives.

**AB:** It’s very difficult to gain trust. We need to learn from thirty years of community development, from organizers like Saul Alinsky and others who help us think about the assets that already exist in a community.

I think it’s also urgent to think beyond the box. Urban-Think Tank, for example, understood that a neighborhood in Caracas did not need a big new road, but a cable car. The cable car can be a place that houses community services. Every student here at this beautiful school is learning representational skills that can contribute to that thinking, but as we heard today in the thesis presentation, we have to think about what architects can do other than design buildings. Architects can use their skills in communities in very different ways, whether for self-help communities, informal networks helping refugees fleeing Syria, hookup dating sites, or online faith-based communities—each of these communities has spatial qualities to them. AndreJacque is probably the architect closest to thinking about this. I challenge all of you to start working on using architecture in these realms.

#### Tamara Cartwright:
The recent US tax reform makes it clear that the state and market work hand in hand in governing acts in the name of the common good. In this context, the notion of what it means to act or design for the public interest needs scrutiny. How can we start to rethink the public-private opposition?

**TT:** If we’re waiting on government, we’re fools. I think we need to look at ourselves and think of public spaces at a different scale. I live in New Orleans. If you unhinged all the gates that line the edge of a block in the French Quarter and allowed people to penetrate these most glorious courtyards, the most incredible spaces could be made public. We should take it upon ourselves. Your generation ought to get really aggressive in pushing these approaches to creating public space at a far different scale to really help create a sense of community.

**AB:** The proposal for shared kitchens I saw in the advanced housing studio is a simple approach to breaking down the barriers you mention—of course, barring the fact that regulations don’t allow it. You don’t cook just to survive. You cook as a social binder. The kitchen is obviously where the good stuff happens, where you gather. Designing everything around a shared kitchen is a very concrete way of bridging the public and private realms. The sharing economy will only keep growing, and architecture can certainly play a part in it.
What is the role of architecture in planning dynamic, technologically driven transportation systems?

MOBILITYstudio

B.Arch Advanced Synthesis Option Studio

MOBILITYstudio speculates on how developing technologies may inform new spatial patterns, mobility settings, and societal norms. Pittsburgh’s Baum-Centre Corridor has been transformed over time by the introduction of railroads, “Automobile Row” in the 1920s, and the nation’s first busway in the 1980s. Students have overlaid this rich history with population and growth projections for the corridor and identified network configurations, public realm design opportunities, and new architectural typologies that may develop in the next 20 to 30 years.
How can workplace architecture address the forces changing the nature and equity of employment and income?

Workspace: Industrial Architecture 4.0

B.Arch Advanced Synthesis Option Studio

The factory has a special hold on the American imagination—as a symbol of strength, hazard, and loss—and remains a frequent prop in political discourse. The Workspace: Industrial Architecture studio explores the future of work and the implications of technological change in manufacturing on built form and place-making. Student projects in this studio envision new spaces for advanced manufacturing in a post-industrial development, Hazelwood Green.

Instructor: Daniel Colvard

Students: Josh Kim, Gargi Lagvankar, Elizabeth Levy, Anthony Nitche, Matthew Radican, Jakob Uhlenhopp, Catherine Zanardi, Sally Sohn

Opposite: Collage of work by three studio groups; Josh Kim and Anthony Nitche (above); Gargi Lagvankar, Elizabeth Levy, and Matthew Radican (middle); Jakob Uhlenhopp, Catherine Zanardi, and Sally Sohn (below).
In our increasingly globalized world, how can a large infrastructural project like an airport create a sense of place?

Architecture of Movement: Hierarchy & Narrative in Complex Design—LaGuardia Airport New Central Terminal Complex

Airport terminals are among the largest and most complex structures built by human civilization. Some consider the airport terminal to be the seminal typology of the globalized economy and culture of the late 20th and 21st centuries, and it is rapidly evolving. This studio addresses the interrelated design issues of large complex structures in design proposals that parallel a real project underway, the complete replacement of New York LaGuardia Airport’s Central Terminal.

Instructor: Hal Hayes
Students: Victor Acevedo, Anirudh Anand, Meghan Chin, Irfan Haider, Timothy Khalifa, Nahyung Kim, Sophie Chaeyun Lee, Nicole Somi Lee-Park, Xin Hui Lim, Isadora Martins

Opposite: Designs for La Guardia Airport’s New Central Terminal Complex by Timothy Khalifa (above and top left), Sophie Chaeyun Lee (middle left), Nicole Somi Lee-Park (lower left), Meghan Chin (top right), Xin Hui Lim (middle right), Irfan Haider (lower right).
How do you balance aesthetics and affordability in the context of a housing crisis?

Housing Archipelago: New York Speculations on Density

B.Arch Advanced Synthesis Option Studio

The Housing Archipelago studio investigates the creation of everyday spaces of home and community within the increasingly inequitable urbanity of late capitalism. Through collective research paired with individual design projects, students explore architectural strategies for creating affordable housing in the hyper-commodified context of New York City on three sites in West Chelsea.

Opposite: Three of five affordability strategies developed to provide guidelines for student work (above). Not pictured here, 4) Household Expense Reduction and 5) Household Wealth Building. Affordable housing proposals by Xiaoyu Jiang (lower left) and Pam Pan (lower right).
Is the answer to an architect’s question necessarily a building?

Thesis/Independent Projects

B.Arch Advanced Synthesis Option Studio

The definition of “thesis” within the context of a professional architecture program depends a lot on who you ask. Students propose their own set of critical questions and methods of inquiry to engage and develop a wide range of interrelated capacities, including critical thinking, analytical writing and reflective design production. While projects are not expected to be buildings, they rigorously address spatial concerns including how space informs and intersects with other processes (social, ecological, historical) ranging in scale of consideration from bodies to territories.

Instructor: Mary-Lou Arscott
Students: Nickie Cheung, Sinan Goral, Nadia Islam, Kelli Mijares, Cesar Neri, Trent Wimbiscus, Kyle Wing, Francis Yang, Elle Yihan Bai, Erica Frank, Delaney Lam

Opposite: Images of thesis work and research by Nickie Cheung (top left), Sinan Goral (middle left), Kelli Mijares (lower left), Nadia Islam (top right), Kyle Wing (middle right), Cesar Neri (lower right).
Interrogate & Reflect, Part 3
A student and faculty discussion with Aaron Betsky and Trey Trahan, continued.

Kelly Li: How can architecture become more responsive to technological change?
ABB: Architects either think that technology means Rhino, Grasshopper, or any other animal you can possibly imagine, or they think it’s about robotic production. The real technology is what’s on your phone. That’s what’s making massive social change and creating new kinds of completely incomprehensible—to us—forms of space. We need to get rid of the myth of permanence in architecture, that you should build for the ages. We all know that even in the design process, everything changes. A very concrete way to respond to that, in Rem Koolhaas’ words, is “no money, no details.” Invest only as little as absolutely necessary, and then add more as you go along. I’ll give you a very concrete example.

Two huge campuses have just been built in Silicon Valley. One is Apple, which is the ultimate “Dilbert Land,” designed within an inch of its life, completely inflexible. A lot of employees hate it. Some have even quit, because everything is completely rigid and set. At the other end is Facebook, which is now growing to be what seems like three to four million square feet of Frank Gehry’s office. Zuckerberg is excited about what’s new and fresh. We need to recognize that technology contributes for the same thing when it comes to technology: where do we invest our time so that the beautiful things we create contribute to society? In the Louisiana State Museum project, we created a building out of 1,100 cast stone shapes that required 1,100 Styrofoam molds. I’m well aware of how Styrofoam breaks down and becomes little pellets that fish eat. Its ecological impact is devastating. We need to recognize that technology contributes in some ways and devastates in others. I’m not sure we’re willing to confront that reality because we’re so excited about what’s new and fresh.

MH: The SoA is an interesting institution in that it hybridizes the two dominant educational models that came out of the nineteenth century, the École des Beaux-Arts, and the Polytechnic. Henry Hornbostel established the College of Fine Arts as a Beaux-Arts rampart within a very technical institution. What is the place of this model today?

ABB: I would say the school is exactly where it should be, in the fine arts world. Architecture is a cultural endeavor. Building is of course a technical pursuit—and I know you have a program to study building sciences—but making architecture is a completely different endeavor. I hate when colleges of architecture get aligned with business or engineering.

TT: I’m going to take a slightly different approach: I think this school is asking all the right questions in terms of social, environmental, and urban issues. But if it was up to me, I would turn things upside down. How many of you will really use what you’re learning here when you go to work? I’m sure the faculty want to keep their jobs, and I’m sure you all want to get jobs when you’re out, but I wonder whether we’re educating students for 1% of firms. I’m not suggesting you stop teaching this material, I’m suggesting you go even further—that you learn to think in such unique ways that you make a tremendous impact in an office.

You also better become very business savvy. You should focus on understanding relationships, and that you better have conviction in your decisions, or else contractors are going to find ways to value engineer it out and give the client back money. You make less on the project, and you run the risk of not getting something great.

Anthony Nitche: You mentioned the Matter Matters advanced studio. Students in that studio critiqued the idea of a given program, raising a fundamental pedagogical question: is it relevant for the university to retain a top-down approach to assigning projects with particular biases, as opposed to giving students agency to generate their own programs?

TT: I think it’s incumbent upon each of you to push back against your professors. The worst thing you can do is graduate with a portfolio that reflects the voices of your professors. I hope that the professors here really push you, and push their own agendas, but invite you to really push back. We do this in my practice. Do we throw a lot of stuff away? Do we fail a lot? Absolutely. But the risk is worth it. Candidly, it took me years to find my voice. I would hope that the school sets you on a trajectory to find what’s deep within you.

ABB: If I have any broad criticism of the school, it’s that you’re all much too polite. All your drawings and designs are much too polite. I just came from Art Basel in Miami, and for the last ten years or so, the art world is all about the recuperation of the ugly. Usually architects learn by looking at artists, but I don’t see a lot of this in architecture yet. The closest I’ve seen come to it is Rafael De Cardenas, who has worked for Greg Lynn and Imaginary Forces. I hadn’t heard of him until recently, but he has a hugely successful practice. He’s doing stores for the sneaker brands that you and I don’t know about, and can’t afford by the time we find out about them. He’s working with a completely different aesthetic and a different approach, trained by, as he was careful to point out to me, not Gucci! Mane but the really classic rap stuff.

That would be great to see more around here. I mean, it was amazing to walk into the gallery and see that first-year project that was so well taught with such beautiful objects coming out of it. You are obviously really well trained here. This would be my message: don’t follow your teachers, shock them. Do something ugly, something that doesn’t work, that’s kind of a mess, takes risks, and is just completely out there. Get destroyed in a crit. Make architecture like the music you listen to.
How can a focus on materiality enrich the design process and architectural result?

Matter Matters: On Architecture’s Completion

B.Arch Advanced Synthesis Option Studio & Master of Advanced Architectural Design

Any act of construction must confront considerations of time. Matter Matters explores architecture’s temporality rendered through material and form. The studio leverages the program for a Freshwater Education Center on Brunot Island in the Ohio River to consider architectural temporality and material presence on a site shaped by water and industry.

Instructor: Jeremy Ficca

Students: Ryan Auld, Gunn Chaiyapatranun, Zain Islam-Hashimi, Adam Shong Jing Kor, Yushan Liu, Stephanie Smid and Hang Wang

Opposite: Views of Matter Matters material explorations on display at EX-CHANGE.
What is the role of design in promoting self-esteem and individual agency?

Urban Design Build Studio: HOME RE_CONSIDERED

B.Arch Advanced Synthesis Option Studio & Master of Architecture

The 2017-18 Urban Design Build Studio, HOME RE_CONSIDERED, addresses the challenges and opportunities of affordable housing policy, funding, and construction practices through a year-long design-build sequence. The sequence will result in the construction of a prototype house, RE_CON01, and an experiential design tool, the HOME Inc.UBATOR, which uses advanced virtual reality visualization to enhance the efficacy of community engagement practices.

Instructor: John Folan
Students: Zane Birenbaum, Mounica Guturu, Sophie Nahrmann, Yoonho Oh, Ethan Young, Chaz Barry, Jacob Clare, Yash Khemka, Anthony Kosec, Cassidy Rush, Gautam Thakkar, Jay Tyan, Yingyang Zhou

Opposite: Socio-economic housing analysis by UDBS (above). Early schematic rendered views of the HOME Inc.UBATOR illustrating its use of various AR and VR interfaces to facilitate targeted community engagement and education (bottom left). Image depicting an Augmented Reality tool being developed by the studio in collaboration with students from Carnegie Mellon’s IDaATe Reality Computing course; the tool utilizes the smartphone as a low-barrier platform for visualizing and assessing housing proposals with the public (bottom right).
Can architecture serve as naturalized infrastructure that mitigates tensions between social and ecological systems?

Integration Studio: Environment, Form, and Feedback

Master of Architecture

Architecture is fundamentally part of a larger planetary ecosystem. Environment, Form and Feedback emphasizes systemic design thinking that links the development and organization of architectural forms in an extreme urban environment. By engaging environmental patterns and identifying micro-climatic behaviors such as airflow, daylight, and water flow early in the design process, this studio negotiates spatial relationships among the site, water infrastructure, local ecologies and proposes a tectonic logic for a housing system at the water’s edge.

Opposite: Housing proposals for Pittsburgh’s Strip District neighborhood by Mariana Alberola Rezza (top), Runchang Kang (middle), Maddi Johnson (lower right).

Instructors: Dana Cupkova, Eddy Man Kim

How might urban designers rejuvenate urban spaces while protecting their openness and accessibility through time?

Urban Design Studio: Urban Places

Master of Urban Design

The Urban Placemaking Studio informs students’ understanding of the public realm, including the built form, natural environment, and the processes that define it, all in relation to existing contexts. Working closely with a community development organization, students explore the potential of a key gateway site to help revitalize a downtown district, encountering the complexities of cities at multiple scales, from the local place to the regional context.

Opposite: “Aqua Culture” by Deepanshi Sheth and Chi Zhang (above), “Boulevard to the River” by Sujan Das Shreshta, Chase Kea, and Jianxiao Ge (middle), and “Social Corners” by Rebecca Lefkowitz and Sai Narayan (below).
What is the potential in redefining architecture beyond market logics, focusing on use value instead of exchange value?

Urban Design Studio: Commoning the City

Instructor: Stefan Gruber
Students: Ernest Bellamy, Tamara Cartwright, Yidan Gong, Paul Moscoso Riofrío, Chun Zheng and Lu Zhu

Commoning the City is a year-long project that investigates urban design's agency in the bottom-up transformation of cities—in which citizens take matters into their own hands to shape an alternative urban future. This positioning unfolds through case study research and the articulation of hypotheses, culminating in individual design projects that acknowledges the balancing act of negotiating top-down planning and the self-organizing behavior of cities.

Opposite: Posters of case studies by 2nd-year Master of Urban Design students which investigate urban design's agency in relation to the bottom-up transformation of cities. The case study research will contribute to an exhibition and accompanying catalog, An Atlas of Commoning.
Can excess data become a tool to create bespoke architecture at no extra cost?

MAAD THESIS
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Digital technology has already started to use excess data and computation to design and fabricate reality as it appears. The resolution of detail is closer to nature than ever, with all of its apparent randomness and irregularity. The standardization of the Industrial Revolution is obsolete—additive technology now allows us to individually design, calculate, and fabricate each voxel.

As each voxel is individually 3D printed, there is no need to make any voxel-generated volume identical to any other. Just as 20 years ago we learned that we could laser print one thousand different pages, or one thousand identical copies at the same unit cost, today we can 3D print any given volume of a given material at the same volumetric cost, based on its resolution, not on geometry or configuration.

This thesis aims to develop the concept of an “arxel”—a digital architecture unit—and its implementation in construction technology. Through a holistic process compounded by input parameters, geometry generation, topology optimization, FEM analysis, feedback loops, and robotic fabrication, this procedure intends to democratize the fabrication industry and implement bespoke design and manufacturing in emerging markets.

Opposite: Mass instantiations of a particular typology corresponding to an informed “potential territory” (top); 3D printed test with 3D pen (lower left); Different instantiations of the geometry of an arxel. An arxel is an intelligent architectural unit that overlaps information, geometry, and material (lower right).
The discussion was a great opportunity to critically engage with how the SoA situates itself within the discipline of architecture.

Kelly Li, 4th Year B.Arch

“In architecture school we’re pressured to create, draw, and build, but we should spend more time learning to think differently and find our unique approaches to problem solving.”

Trey Trahan

“Architecture is a form of creative knowledge that emerges from twinned poles of art and science, producing acute ambivalence between the determinacy of the known and ineffability of the sublime. It is right within this gap that the history of architectural education found the most effective and creative way of evolving. EX-CHANGE is an event that has a potential to serve as an inquisitive platform to discuss pedagogy and design frameworks in depth, to project possible futures for the design of the built environment, and to give our students agency to grow and engage with the world beyond our current abilities.”

Dana Cupkova, Assistant Professor
“EX-CHANGE was a fantastic first step at fostering a celebration of the design labor of the students and to engage an intersectional conversation about what we do here.”

Anthony Nitche, 5th Year B.Arch

“I think it’s incumbent upon each of you to push back against your professors.”

Trey Trahan

“Don’t follow your teachers, shock them.”

Aaron Betsky

“As we are confronted with an increasing diversity of simultaneous, often contradictory ideas and methodologies about what architecture is or should be. I believe, if architecture education should do one thing, it is to equip students with the ability to distinguish between these options, and arrive at a personal position that is historically informed, theoretically acute and politically engaged. Such ability will make us at once more ambitious in terms of the change we aspire to, and simultaneously more humble in how we approach and implement our visions. In my eyes, EX-CHANGE is a fantastic opportunity to further nurture a culture in which the diverse mindsets and practices of the SoA are rendered more explicit and celebrated.”

Stefan Gruber, Lucian & Rita Caste Assistant Professor
“EX-CHANGE was the first time since I’ve been here that all the hard work of each individual student has been put forward as a part of the collective work of the SoA, all in one place. The moderated conversation with Trey and Aaron allowed me to represent the voices of our community in a stimulating conversation with professionals from very different backgrounds.”

Ernest Bellamy, MUD

“If you can look hard enough and articulate what you’re seeing, you’re an architect.”

Aaron Betsky

“We have to think about what architects can do other than design buildings.”

Aaron Betsky

“Something that really stood out to me is the affirmation I was rewarded in the discussion with Trey Trahan—that there are practicing architects out there that are seeding communities rather than just creating spaces. They provide value over functionality and work to break down the silos that separate architects, designers, and developers. As a student preparing to enter the field with dual masters in architecture and urban design, it is comforting to know that others are working to break the divides between disciplines in order to truly redefine the role of the designer.”

Tamara Cartwright, MUD