



Spring is like a perhaps hand



COOPER'S GREEN SECRET

CHRISTOPHER HONG (EE '13)

During the spring break, Jody Grapes, the Director of Facilities Management, gave me a tour of the green secrets of the New Academic Building (NAB) and the Foundation Building (FB). Many people have claimed that the New Academic Building does not do much to save money, but there are many unknown technologies hidden on the roofs and bowels of both buildings that do much more than they think.

Have you ever wondered what was behind the door on the mezzanine (floor M) after taking the express elevator in the NAB? Behind that door are two 9 million BTU boilers, a steam boiler, primary and secondary water pumps, elevator hoist motors and access to the roof with even more energy saving technologies. Speaking of elevators, buildings and grounds have recently changed the elevators to "fleet mode", which means that all elevators are now synced to one switch, rather than two. Although this may make it more difficult to get on the service car elevator to move large objects, this mode would reduce the electricity wasted when people push both elevator switches and calls two elevators to the floor. Jody Grapes estimates that about \$10,000 to \$15,000 will be saved per year when elevators run in "fleet mode." "Every dollar is a dollar. A saved dollar is a dollar," said Mr. Grapes.

The roof of the NAB is home to a new 250KW co-generator provides electricity and thermal energy for water heating. This co-gen was recently installed in December, 2011. Electricity and waste thermal heat is produced from reciprocating an engine using purchased gas. The special thing about the co-generator is that not only does it produce electricity, but it harnesses the "waste"

thermal energy produced from the engine. This thermal energy is used to warm the water in the sinks throughout the NAB. This co-gen supports 35-40% of the NAB daily energy needs during the winter and 25-30% during the summer. Right next to the co-gen is a heat recovery chiller which uses this thermal energy in the summer to provide 80 tons of cooling. Thus, not only is this co-gen useful for electricity, it is useful for heating and cooling.

How much does this co-gen save? First of all, according to Mr. Grapes, it cost \$1.2 million, but it is estimated that it will save \$200,000 a year, meaning that the co-gen will pay for itself in about six years. But, how long do these co-gens last for? The engine for the co-gen lasts for 15 to 20 years and the chiller lasts for 25-30 years. A considerable amount of money could potentially be saved using this co-gen.

Also on the roof are three air handlers. These machines distribute air to the entire building and allow fresh air to enter Cooper. There are vents that can open or close depending on the weather to provide "free airside cooling." Of course, the air is filtered using a sophisticated filter system. According to Mr. Grapes, the majority of the NAB is provided with 100% fresh air at all times unlike standard buildings, which provides 20% fresh air at all times. In addition, all offices are provided with 100% fresh air and the NAB does not suffer from stagnant air, thus increasing the productivity

of occupants. Mr. Grapes stated, "Green doesn't just mean saving money. It also means providing a healthier environment for the building occupants."

Other things on the roof are cooling towers, which has cool water running through it. Large fans then blow cool wind throughout the building with this running water. This is referred to as "free waterside cooling." Lastly, the load bank

and the emergency generator lives on the roof. The emergency generator activates when it detects a dip in electricity from Con Edison and its 750 gallon tank of fuel can provide enough electricity for about 12 hours of operation.

A useful feature about the machinery on the roof is variable frequency drivers. This allows machines to operate at different intensities contrary to the

older, more binary machines, which can only switch on and off. This variable frequency feature allows machines to last longer and save energy.

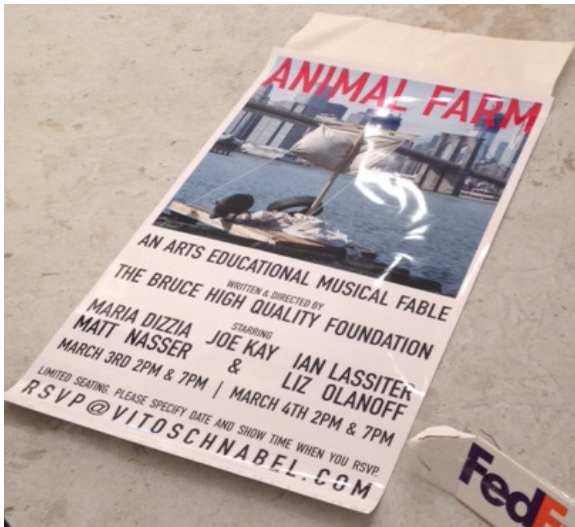
There is also a rainwater collection tank on the roof in addition to the one hidden above a few steps in the loading dock on the ground floor. Although Cooper does not pay for water (due to an education water act in NYC), rainwater is still collected and is used to supply water for toilets and urinals from the ground floor to LL2 (lower level 2). This

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PIGGIES, CHICKS, AND DOGS

JASMINE STEIN (ART '12)

The Bruce High Quality Foundation, the art-making collective whom you may remember at least from last year's "Teach 4 Amerika" tour of lectures with their limousine school bus, has included a musical in their 2nd festive *Brucennial* exhibition. The self-proclaimed arts education fable, titled "Animal Farm", was performed on March 3rd and 4th by Maria Dizzia, Joe Kay, Matt Nasser, Ian Lassiter, and Liz Olanoff. It delves into the nightmarish fears and ridiculed sense of justice Cooper students and alumni have gone through since President Bharucha's address in October 2011 if not earlier. The musical eats them whole and regurgitates something squeamishly optimistic about embodying alternative forms of art education. I felt spoken to, so for those of you who missed it or who have only heard distantly of Bruce High Quality, here are some thoughts on the musical and its aims in their words:



Animal Farm poster. Photo courtesy of BHQF.

1. Did any specific event or release of information around Cooper Union's dire financial situation prompt the idea for Animal Farm?

Animal Farm is actually an idea we've been kicking around for some time. We wanted to create a fable from our own experience in the art world. Something of a mission statement and a warning parable as a way of coming to terms with our own development and where they might lead. The situation at Cooper helped to give the more general idea something specific to pivot around.

2. a. - Why did you create a one-to-one relationship between Cooper Union and BHQF, instead of talking directly about it? Did it simply give you more freedom to charge ahead with the loosely appropriated and twisted metaphors from the original Animal Farm?

The piece is a fable. Whatever it is drawing from specifically, it's intention is to provide a tool for negotiating the future. Our interest in looking at Cooper's present situation is so that we can avoid a similar calamity with our own educational institution.

2. b. - The narrative went from past, to present, to future, although that progression was muddled by the use of a nightmare. This, the fact that it was a musical, along with the aesthetic of stand-ins, all contributed to its removal from the numb stress that has defined the Academic Year of '11-'12 of currently enrolled Cooper Union students. Then you come out at the end and declare it as non-fiction. What does this do?

On the one hand we wanted to make a wider audience aware of the situation. On the other hand we wanted to allow people to laugh in the face of disaster.

3. a. How much is this about Cooper Union, and how much about art education in general?

Institutions generally don't die fast enough. Assuming they are founded on a good idea for the time, they fail to adapt to the times a'changing. And when they do adapt, they leave behind the great aspects of their original missions. The New Museum is an example. And now Cooper seems on track to be another. The whole "change or die" rhetoric we hear now from Cooper's administration is unfortunately only dragged out when it finally suits conservative power structures.

3. b. You are rejecting the college/university model, in its lack of specificity to the arts. What model do you propose and is accreditation an obstacle to it?

We aren't rejecting anything. We are offering another option, one that is collaborative and non-professionalized, because that seems to better suit the reality of being an artist today. In curriculum, Cooper and many other art schools operate similarly. But administratively they operate like professional schools, or worse, like businesses that see students as customers.

We feel this inconsistency between the

administrative philosophy and the curricular philosophy has led to Cooper's current predicament. And that's a situation we are hoping to avoid in designing BHQFU.

4. You state that the premise of BHQFU is the conviction that artists can figure out - not just theoretically! - the problem of art education. Please explain how that problem is different for art than for higher education in general.

Art is more like a language than a professional practice. It's definition shifts according the concerns of those who choose to conduct their lives through it. There is not a fixed body of knowledge that makes art what it is. Perhaps we could say the same for all human knowledge, but it isn't nearly as easy to be convincing about that. The notion of "expertise" may still be a valuable tool in some fields. The 'hard' sciences, for instance. Whereas the field of art falls more under a persuasion-based value system.

5. How did your experiment in an open educational program run inside Bruce High Quality Foundation University headquarters change your idea of what "should be"- if at all?

The first iteration (18 months) was an extremely open ended venture. When we reopen this fall, this time as a 501-c3, there will be some minor tweaks to the structure. But the intent is the same. We want to create a space where artists can learn from each other.

This is the principle thing we learned from critiques at Cooper's art school: put talented people in the same room, ask them to talk, and sometimes something magical

happens. That's a pretty incredible thing.

It's unfortunate the administration and board has not sought such inspirational returns.

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For more information and sass, visit:
<http://thebrucehighqualityfoundation.com>
<http://bhqfu.org>

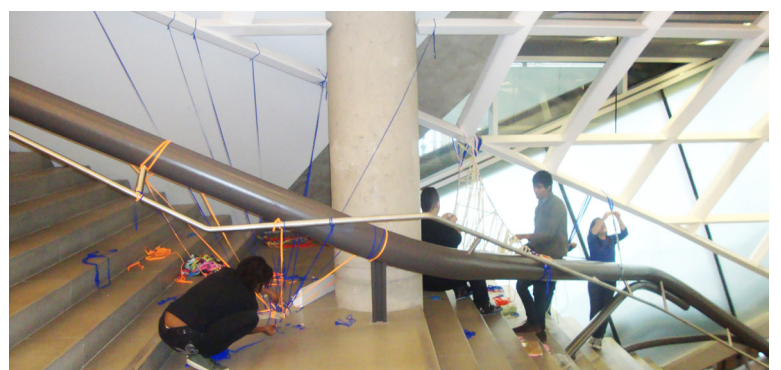
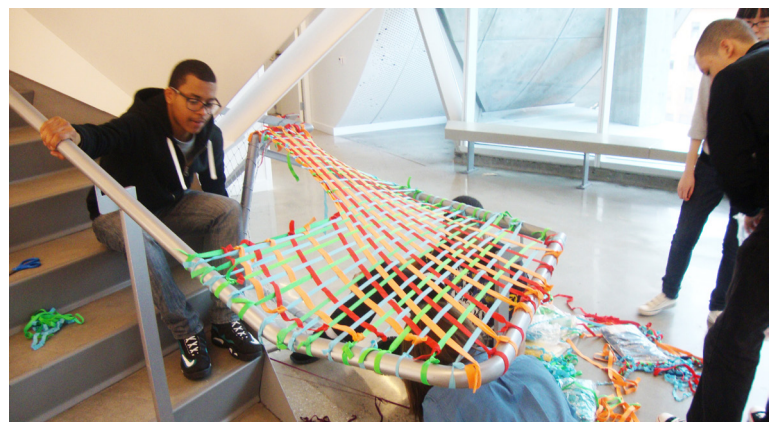
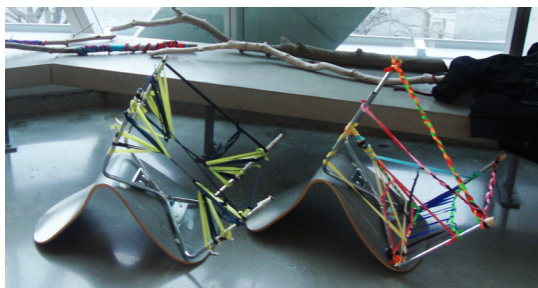
Cooper Union's Saturday Program

CHRISTOPHER HONG (EE '13)

On a sunny Saturday afternoon, I noticed colorful ribbons tied to several handrails around Cooper. I soon found out that this was an art project as part of Cooper Union's Saturday Program. The Saturday Program was started in the late 1960s by some undergraduate students who felt that the public education in New York City did not prepare the students in this diverse city to become strong college candidates. These undergraduate students recruited high school students and taught the lessons themselves. This program later expanded with summer sessions in 1985, which later became the Outreach Program in 1990. Due to tough financial times, the Saturday Program's budget has been cut from about \$215,000 to about \$150,000 (external funding only). With this reduction, one will wonder how much longer the program will survive.

I have to admit, the art I saw that Saturday was indeed amazing and it's a shame

that not only the ribbons had to be taken down, but also this program is heading towards extinction. What can the Saturday Program do to stay alive? Teaching is one way; students are encouraged to apply at the office located on the second floor. The Saturday Program currently trains and employs about 20 Cooper undergraduate instructors. Donations of useable art materials or books are greatly appreciated. Monetary donations can also be made through the cooper website by selecting other and writing Saturday Program FY13 in the memo line or mailing checks directly to them.



Photos by Christopher Hong (EE '13). Saturday Program students creating artwork around Cooper Union on 02/25/12.

Revenue Task Force Update

SAIMON SHARIF (CE '15)

Sharang Phadke (EE'14) and I met to discuss the progress of the Revenue Task Force (RTF). Sharang, a member of Engineering Student Council (ESC), is the Engineering representative on the task force. The RTF itself has reached its midpoint. There have been six meetings so far, and there are seven to go. A mid-term report will soon be released by Tom Micchelli (A'75), convener of the RTF. This report will be a compilation of the minutes.

There are 14 hours of meetings left before the RTF issues its report to President Jamshed. It will be released during the first week of May. This date allows students and faculty to be aware of any possible changes, but also gives the task force enough time to thoroughly complete its report. President Jamshed met with the task force on February 28th to discuss the situation from a wider perspective and give feedback.

The RTF has been relatively complaint free for the most part with only one complaint. According to Sharang, "We got a complaint that our minutes hadn't gone up in a while about a week ago so there was no real information flowing out of the group to the community. This was simply a communication mistake, and the minutes were posted." For reference, the minutes are posted here: https://taskforce.cooper.edu/revenue_reports.

The task force has done a big picture discussion of the financial situation and discussed "what makes Cooper a special place." They have decided upon a set of criteria to evaluate ideas including its fit with Cooper, impact on constituent groups, and net revenue inclusive of costs. The full list is available here:

<https://taskforce.cooper.edu/assets/RTF%20report5.pdf>

A template for proposals based on ideas that fit these criteria will be available on the RTF website (<https://taskforce.cooper.edu/home>) soon.

About ten ideas have been received on the online forum, but more have arisen based on discussions. There have been a few student ideas, but most have come from alumni and professors. Furthermore, alumni are the most active group on the task force forums, but the forum itself is not being used as actively as the RTF had hoped for.

The idea of a fee-based masters and summer programs are being considered

but actual numbers have not yet been determined on projected costs and revenues. Another idea being considered is a full-tuition scholarship model, as we have now, but students would pledge to pay some portion of their incomes later.

One interesting idea proposed is to require all engineering students to write a patent as a graduation requirement. Most patents will go nowhere, but a few could turn into startups that provide revenue. One such example is Cooper Cooler which was originally a student project, and is now sold by Revolutionary Cooling Systems. Cooper Union receives a portion of the profits as royalty.

The RTF is far from an isolated group. It has met Maguire Associates, enrollment consultants hired by Cooper Union. It will meet with the Expense Reduction Task Force to discuss ideas between the two groups. The task force is also engaging with Friends of Cooper Union, a group started by alumni, to consolidate ideas between the two groups. Sharang attended a meeting to help ideas

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for Cooper, but it is also an opportunity to change a lot about Cooper for the better. Don't keep ideas to yourself - now is the time to share them."

Ideas can be emailed: revenue@cooper.edu or submitted to the forums:

<https://taskforce.cooper.edu/forum>

Follow

After several requests from our readers, we at the Pioneer interviewed Professor Brian Cusack to get more information on the online system being installed at Cooper. Professor Cusack responded in giving us some background.

A few years ago, an IT committee was formed to see what Cooper was lacking and what Cooper was doing really well at and this was a committee chosen by, I believe, President Campbell. Definitely during his time here and Professor Lent was on it and a whole bunch of people as well. One of the findings was that most schools use an ERP, massive enterprise platform that keeps track of all of the data at each of the given schools. All of the records come from one place, when five different offices are looking for your address, they get one answer rather than five different ones. That actually happened to me at one point of time and that happens when you have offices that don't really talk to each other. They recommended that we should get one of these systems and both President Campbell and TC

Westcott agreed that we should. A couple of people representing these types of systems were interviewed and Datatel was picked because it had the most up to date software and it was believed to fit Cooper the best. This decision, I believe, was officially made in January or February of 2011. We put in the hardware of March or April of last year. The business office live date was July 1st, which we more or less met and checks were being cut by the system since last summer. It was a very long rollout because each of these modules of the software has to be built and all of our separate

systems have to be migrated into it, which is quite a lot of work. It was about an 18 month to two year rollout since last summer, so we're about halfway done. Admissions office's part is basically done but we're going to be doing things differently because of the order things had to be done. We're going to have to wait a bit for it because one of the widgets that was needed was not going to be done by the time they needed to start admissions. Since you never want to change the way you do things halfway through, we did it differently. Currently kids are putting their information into the datatel system

You will be able to log onto a website at some time and click register with about 200 other students registering at the same time. You will have to beat people by microseconds to get the classes. There will be wait lists for classes that is automatically built into it. If you don't get your classes, you would do what you do now with the re-advising.

Up on Datatel

YARA ELBOROLOS (CE '14)

and when they get accepted, it will be through this system. One of the modules is the student modules and part of it is the ability to register and that is something we will be able to do, with a whole lot of options. You will be able to log onto a website at some time and click register with about 200 other students registering at the same time. You will have to beat people by microseconds to get the classes. There will be wait lists for classes that is automatically built into it. If you don't get your classes, you would do what you do now with the re-advising. We are not exactly sure how the advising would happen. There is a part of the system that does online advising and your advisor would see the classes you want to take and do their part of adding or subtracting. Once that occurs and you have the okay, you will be able to register. That is just one scenario, not exactly what will happen. Part of the uniqueness of Cooper is the way we do advising and the fact that you

don't pay for classes. The advisors are there to make sure you're taking the right amount and the right type. We lose money if you take five years to do a four year program so it is important to the institution even financially, that the advising takes place correctly. I am not sure about the exact amount but you can ask Professor Hopkins.

Cooper Pioneer: Would it have been cheaper to build our own system?

Brian Cusack: Well, it would have been different because is easy to say why don't we build our own system. We never would have built everything for instance, accounting or financial aid software. We're not going to be appraised by tax laws or financial aid laws and we don't want to touch that with a ten foot pole. We would have always bought those types of software, and even development software. Another reason we were looking at software was because the business office software was

antiquated and basically unsupportable going forward. The company who made the software had gone out of business a while ago and so it hasn't been getting any updates since then. That software for sure had to get replaced so the bare minimum was that at least. Then the students and faculty wanted one record for every student and to do that would be through a system. Could various systems have better communicated with each other? Yeah but it is what it is.

CP: Have there been suggestions ignored?

BC: Well, keep in mind, Bob, John Kibbe, and I did not make any decisions. We did not decide we are getting a software solution, we are implementing it. So if suggestions were ignored you would have to talk to someone because I feel like Bob and I and John Kibbe didn't ignore any suggestions because we didn't make any decisions. The committees

make suggestions not decisions. The final decision comes from the president and vice president.

CP: Any last words?

BC: This is a two year rollout system. There is going to be a lot of growing pains and unhappy people because of all the extra work that is put on top of them because of this. It is never easy to switch into a new system but that was expected from the get go. If they're not happy with the system, that's a different story. More or less, it has been good so far. You can talk to the individuals who are consumers of the product and probably get an honest answer. I am making sure the nuts and bolts are working behind the scenes and so far it has been. Datatel has been pretty supportive; we're on the phone with them about random IT questions throughout the week. I will be spending spring break out of town for another training session with them.

\$tudent-Driven Over\$pending

MARCUS MICHELEN (CE '14)

In the past month, JAC has received a lot of attention. A lot of students are surprised at the large amount of spending that occurs for major events and are, naturally, confused as to how so much money was allocated for these events. JAC is not the one to blame for overspending; as members of the student body, we have to blame ourselves.

Let's start with a quick example: the school's fraternity Zeta Psi has an annual end of year party. According to JAC's website, the club requested \$6,000 and received \$5,400. Zeta Psi's description of the event states that "Students will be charged for tickets." The budget indicates that "\$5,000-\$6,000 [is] for renting of services and venue" while "\$1,000 [is for] drinks." Now let's do some simple approximations: last year's DROM was

fairly successful. So let's take the approximation that our school has 1000 students and say that about a third of them attended DROM last year. So if we take \$6000 and divide by 350, we get \$17 per person. All of a sudden, an end of the year party doesn't sound so innocuous.

Taking a look at JAC's site reveals that last year, the breakdown for DROM was \$4,000 for the venue, \$1,000 for security and \$1,000 for food. I understand that this is an end of year event and is supposed to be a huge celebration for everyone that we're done with the piles of work and other stressful factors that bury us all at Cooper. I understand that it's nice to have an event of this kind at somewhere other than Cooper. But \$4,000? Yeah, that's how much it costs to rent out a venue

that can cater to this many people, but is it really worth that much? Wouldn't it just be cheaper to have it in the Great Hall like Feb Ceb?

After discovering the high price tags this event and others (i.e. The Culture Show), I spoke to student banker Andrew Crudge to hear more about how clubs obtain their funding. In order for a club to receive funding: "First [a club] need[s] to fill out a constitution which basically says what your club is and describe how your club is different. Then you give a list of club officers so we know who's accountable for things. Finally you go to request funding. If this were the beginning of the funding period you'd be able to request funding like this: pick an event, pick a date, and give a description and a budget." So every club applies for funding by giving a list

of events they plan to host and giving an approximate budget for them. Crudge continued, "The way JAC decides how much funding you get is based on several factors: first is how the club spends their money because the point of JAC and the way Cooper budgets work is that if you only spend half your budget, you have to give back the other half to Cooper...So one thing we look for is if clubs actually spends the money they request for."

Fair enough. JAC wants to make sure that their budget is spent on Cooper students as opposed to, say, a \$175,000 bonus for a president who may have permanently ruined our school. As a result, they give the most amount of money to those who request the most.

Now, I bring up former-

President Campbell's bonus not just for the sake of muckraking. Compared to the \$175,000 spent as a reward for lying about and covering up our financial troubles, \$6,000 is almost negligible. However, we, as students of Cooper Union, need to set an example for our administration. Instead of requesting for \$4,000 for a venue for a frat party, maybe Zeta Psi should try the great hall next year. If the students are visibly trying to make some sacrifices, maybe the library will be more willing to make some cuts. Maybe 30 Cooper will take a harder look at their expenses. If administration doesn't get the point right away, maybe they will when our school can no longer afford to stay open.

Speak and You Will Be Heard

YARA ELBOROLOS (CE '14)

We are still accepting surveys. Taking the time to answer the questions means a lot to us and helps us see how our faculty thinks concerning the situation. Even if you don't want to actually answer any of the questions, we ask that you at least return the blank survey. If you have any other concerns or comments, feel free to write or place a typed note attached to the survey. We thank everyone who took the time to complete the surveys (we appreciate it a great deal!) and we hope to have some more soon. Please submit the surveys to a collection box in the art office in the Foundation Building, The Pioneer's mailbox in the 2nd floor engineering dean's office, or The Pioneer's office, room 209, NAB.

“Never doubt that a small group of thoughtful committed citizens can change the world;

indeed, it's the only thing that ever does.” -Margaret Mead

To the right are the current results of the surveys. We have collected back 19 surveys. One survey taker added three of his/her own questions to the survey:

Question 7: What do you think about Cooper Union's recent administration?
Answer: It's terrible.

Question 8: What do you think about Cooper Union's current administration?
Answer: It could be better, it's bad.

Question 9: Why do you think Cooper is spending more money on administration and less on faculty/students?
Answer: Classic case of misplaced priorities.

Question 2 - How comfortable do you feel talking about the financial situation with students?				
	Architecture	Art	Engineering	Humanities/WC
Comfortable	1	3	8	2
Indifferent	0	0	1	0
Uncomfortable	1	1	2	0
Totals:	2	4	11	2

Question 3 - How comfortable do you feel talking about the financial situation with fellow faculty members?				
	Architecture	Art	Engineering	Humanities/WC
Comfortable	1	2	10	1
Indifferent	0	0	0	0
Uncomfortable	1	2	1	1
Totals:	2	4	11	2

Question 4 - How comfortable do you feel talking about the financial situation with people outside of Cooper?				
	Architecture	Art	Engineering	Humanities/WC
Comfortable	2	4	9	2
Indifferent	0	0	0	0
Uncomfortable	0	0	2	0
Totals:	2	4	11	2

Question 5 - Do you think Cooper will be able to remain a tuition free school?				
	Architecture	Art	Engineering	Humanities/WC
Definitely	0	1	1	1
Probably will	0	0	2	0
Unsure	2	1	3	1
Probably Not	0	2	3	0
Definitely Not	0	0	1	0
I hope so*	0	0	1	0
Totals:	2	4	11	2

Question 6 - What do you think of Cooper's current financial situation?				
	Architecture	Art	Engineering	Humanities/WC
It's good	0	0	0	0
It's okay	0	0	0	0
It could be better	0	2	2	0
It's bad	1	0	6	2
It's terrible	1	2	3	0
Totals:	2	4	11	2

* Added by survey taker

Phonathon 2012

JASMINE AHUJA (EE '13)



Cooper Union's annual Phonathon took place during Spring break. Volunteers gathered in the Menschel Board Room (Room LL101) to call alumni and persuade them to donate money. As the pictures show, these volunteers were serious about raising as much money as possible. Cooper Union's new hires, Catlin Tramel and Joseph McDonald, were the organizers of this important event. Last year, \$409,722 was raised as a result of the Phonathon, exceeding the goal of \$400,000. Let's see if we can do even better this year! Results will be posted on www.cualumni.com.

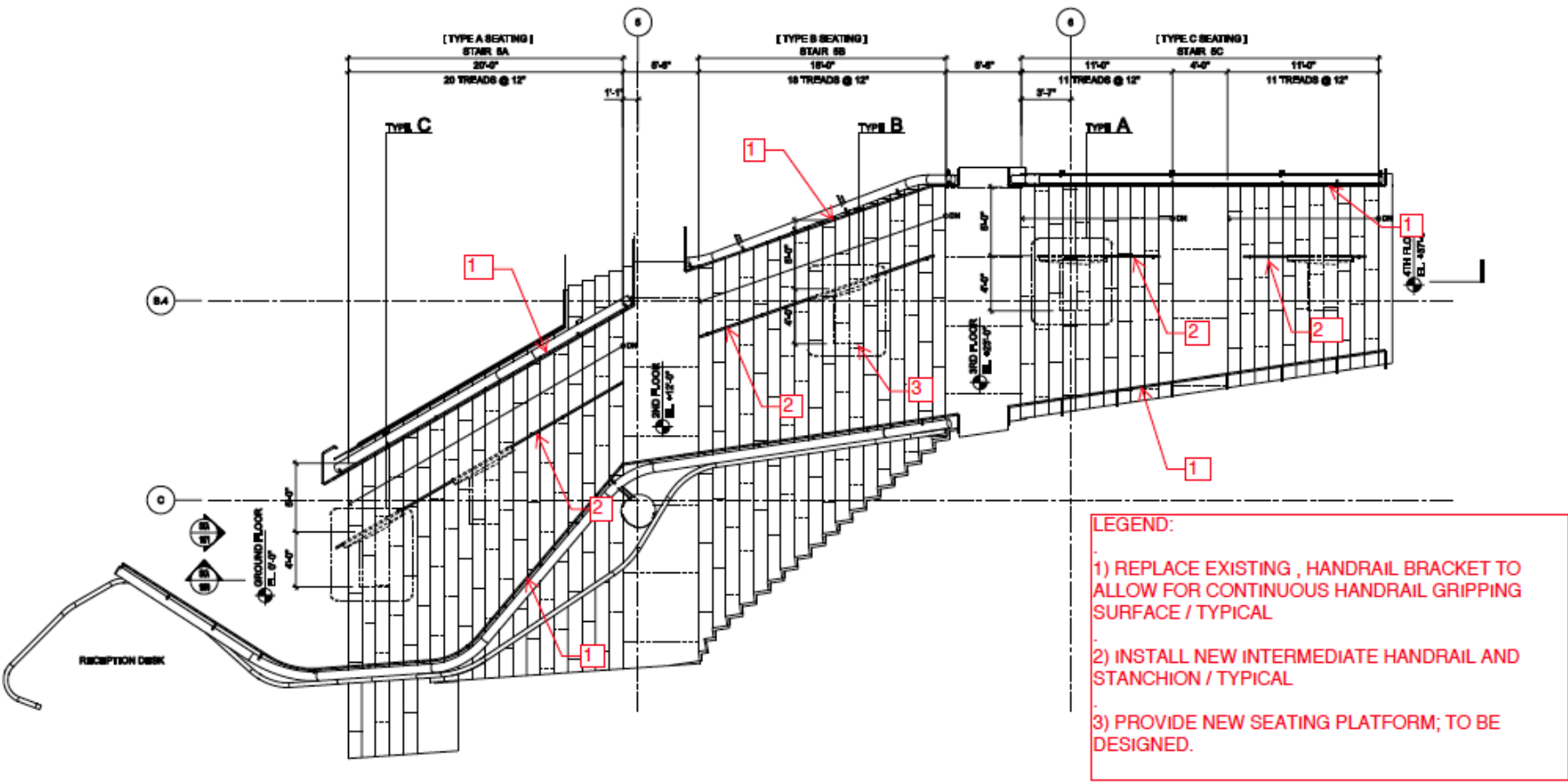


Photos by Christopher Hong (EE '13). (Left) Phonathon T-shirts. (Top) Volunteers making phone calls at the Phonathon on Tuesday, March 13, 2012. (Bottom) The organizers of the event. From left to right: Jennifer Durst, Cat Tramel, Maura Pine, and Joseph McDonald.

The *Official* Grand STAIRCASE HANDRAIL Design

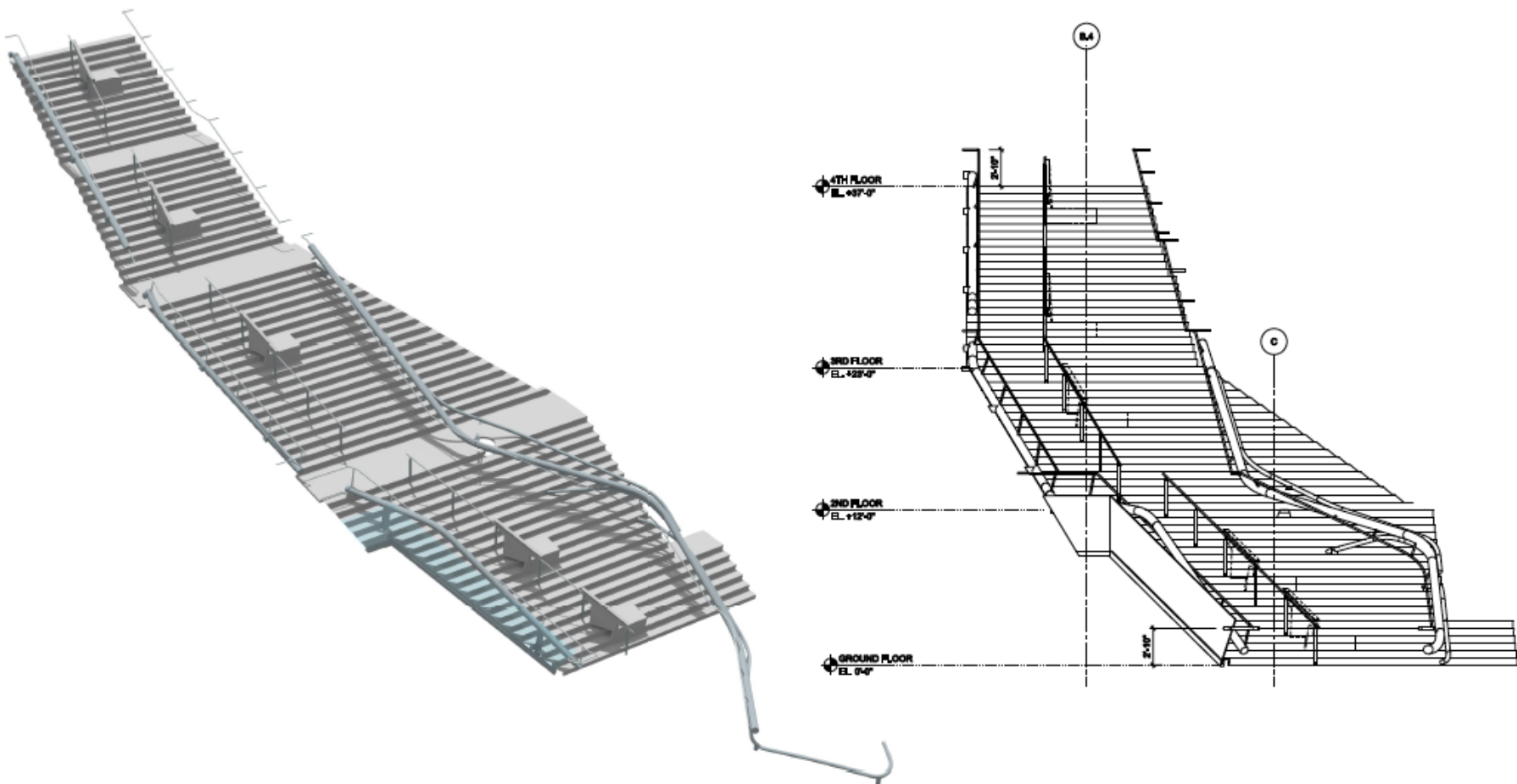
The following are the official blueprints for the grand staircase handrail from Morphosis, the architecture firm that built the New Academic Building at Cooper Union. As explained in the Valentine’s Issue, there were safety concerns with the slanted staircase and a handrail was requested by Cooper to be installed. The following blueprints are preliminary designs

that still need to be contracted. There may still be changes to the final design. What do you think of the design? E-mail us your thoughts at cooper-pioneer@gmail.com. Special thanks to Jody Grapes and T.C. Westcott for providing the handrail blueprints.



GRAND STAIR_PLAN

THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART
NEW ACADEMIC BUILDING
SCALE: 1/8"=1'-0" ISSUE: -
REF DWG: A-735.0 DATE: 02-28-2012
mOrphosis / SKA-1069.0



GRAND STAIR_SOUTH ELEVATION

THE COOPER UNION FOR THE ADVANCEMENT OF SCIENCE AND ART
NEW ACADEMIC BUILDING
SCALE: 1/8"=1'-0" ISSUE: -
REF DWG: A-735.0 DATE: 02-28-2012
mOrphosis / SKA-1071.0

Observing Translation

JENNA LEE (ME '15)

Observing Translation challenges the idea that exhibitions have to be limited to objects. The exhibition aims to demonstrate that art has its origins in humanity. Though small and only lasting for two hours in the lower level gallery of the Copper Union New Academic Building, this exhibition left a lasting resonance within the audience. Because the exhibition emphasizes the communication between the observers and the performers, Observing Translation is structured so that the audience starts to establish a visual and audio relationship with the exhibition.

The performers position themselves within picture frames and perform songs with a ritualistic and basic feel—demonstrating that the origins of art lie with humanity. The significance of these frames lie in the fact that they capture the transient and miniscule day-to-day emotions that people experience and help imagine a new form of creation that emerges from the relationship between the observer and the performers. Thus, Observing Translation returns the creative process to the domain of people and human relationships.

Exhibition Description from Program:

Observing Translation (2012), an exhibition of photography and live performances, marks the first work for which artists Tyler Gathro and Yarminiah Rosa have collaborated. The work aims to present a variety of emotions, from anger and apathy to compassion and joy through language and the human body. Use of vocal tone, staging, photography, and the written word provokes viewers to consider translation and human interaction as art. The artwork only exists because you are. How our thoughts, relations, and experiences are interpreted and translated is what defines life as performance, art object, and/or story.

(Right) Photos by Jenna Lee (ME '15) of the exhibition.

(Left) Script given to Jenna by an actor at the exhibition.

HEY!

I DON'T KNOW MUCH ABOUT YOU,
BUT I HAVE A CERTAIN THING
FOR THE WAY YOUR EYES AND
EARS FOUND THEIR WAY TO ME
YOU DON'T KNOW MUCH ABOUT
ME BUT I FIGURE THE MAIN
THING AT HAND IS WHO WE ARE
IN THIS MOMENT SO YOU SHOULD
KNOW I AM MY LUGGAGE
EVERYTHING ABOUT ME IS
NEITHER STOWED UP, PACKED
DOWN, THROWN, OR HAZARDOUSLY
SETTLED.
YOU SHOULD KNOW I CAME FROM
PALM BAY TO HAMPTON ROUTES
NORFOLK TO MELBOURNE
MELBOURNE TO INTERLOCHEN
INTERLOCHEN TO PALM BAY
FLORIDA TO NEW YORK
MANHATTAN TO BROOKLYN
BARCELONA TO S.F.

I CAME WITH TWO BROKEN
SUITCASES AND A CRIPPLED
SHIP OF HOPE. RUGGED
BUT FULL OF INDEFINITE
BLESSINGS AND TREASURES
I HAVE BEEN MOVING TOWARDS
YOU
FOR MANY MANY YEARS
NOW.

BEFORE US I DID NOT KNOW
IT WAS POSSIBLE TO FEEL SPACE
WITHIN MOVEMENT. YOU
SHOULD KNOW I AM A NOMAD
MY ARRIVALS ARE INCIDENTAL
I DO WITH YOU THERE'S
A CERTAIN SOIL IN MY
VOICE. YOU ARE THE
HOME WHERE I DISPOSE MY
SPIRIT. WITH YOU I DON'T
NEED KEYS OR POORMATS.

THE IDEA OF INERTIA IS
THAT AN OBJECT KEEPS
MOVING UNTIL ACTED UPON
IT BY AN OUTSIDE FORCE.
YOU ARE MY EXTERNAL
FORCE!

YOU WILL LEARN THINGS
ABOUT ME THAT ARE
UNCERTAIN OR UNCLEAR
YOU WILL LEARN ABOUT
DAYS THAT I AM NOT
MOTHER ENOUGH TO RAISE
MY ARMS AND THAT THE
TURNS OF MY CHIPPED
NAILPOLISH ARE CONTINENTS
AND MY SALIVA TASTES
LIKE THE SEA
UNTIL I CAN BELIEVE IN
THE BODIES OF WATER

THAT ARE INSIDE OF ME

YOU SHOULD KNOW MY PRAYERS
SOUND LIKE:

GOD DON'T LET MY VOICE
FORGET ME
DON'T LET MY INSECURITIES
CONTROL THIS BODY
LET ME BE COURAGE AND
LIGHT
DON'T LET MY FOREARMS
WAIVER IN THE FACE OF
INJUSTICE
I DON'T WANT TO BE PAUSE
I WANT TO BE PREPARE

I WANT TO BE BIG WILLED AND
OPEN TOWARDS YOUR
PURPOSE

I WANT YOU TO BE
LION I WANT YOU
TO BE HERE! BE TENACIOUS
WITH YOUR HUMBLE, BE
THE 14 YEAR OLD WITH
QUESTIONS, BE INERTIA
BE THE CATALYST

BE THE FORCE THAT MADE
ME MOVE TOWARDS YOU
I CANNOT MOVE MY WORDS
IF YOU ARE NOT MY
FORCE

I CANNOT MOVE MY
WORDS IF I AM NOT
MY WORD!



Frankie's New Cola Vending Machine



Frankie and his new Coca-Cola machine. Each bottle of soda costs \$1.50.

CHRISTOPHER HONG (EE '13)

On March 13, 2012, Frankie received a large package. It was his brand new soda vending machine! "I'm very happy," Frankie said, "because we have the Foosball and the vending machine so you know make everybody just stay in this room. The Foosball came from I don't know, from somewhere. But the machine came from the Coca-Cola guys. But I have to buy the products."

Each bottle of soda sells for \$1.50 and Frankie said that he makes \$0.40 cents a bottle. The bottles of soda are a lot cheaper than vending machines in NYC where soda sells for \$1.75 or more.

When asked about buying a normal snacks vending machine, Frankie said, "No, I think it's difficult because in summer, there's a lot of creatures in the machine. But I'm planning to have another soda machine in the Foundation Building because kids are requesting." Students in the Foundation Building may soon see a brand new vending machine.

The Foosball table is already in Frankie's possession and will be put in a corner of Frankie's Kitchen. It should be set up soon.

GREEN SECRET
(continued from page 2)
saves about 250,000 gallons of water a year!

On LL1 (lower level 1), there are two main chillers which produces chilled water and cools the building. In addition, a 350 ton plate and frame heat exchanger is there to efficiently provide free waterside cooling of water. This cost \$100,000, but it saves \$50,000 a year, paying itself off after two years.

The next stop on this tour was the Foundation Building. We went to the deep bowels of the building and very similar technology exists in this 153 year old building. There are heating hot water pumps, dual source hot water heating, heat recovery chillers, a plate and frame heat exchanger, chilled water pumps, condenser water pumps, and variable frequency controllers. There are also machine shop tools for maintenance to cut and thread their own pipes for repairs rather than outsourcing to other companies.

On the roof, there are cooling towers and a 150 KW co-generator along with three 3-million BTU boilers. This co-gen was installed in 2009 and is a bit smaller, but still allows for major sav-

ings. The co-gen can potentially relieve the load of one of the boilers. With this technology, Cooper was freed from the clutches of Con Edison's steam system and saves about 28 million pounds of steam, which costs about \$1 million per year, just by using other utilities that are cheaper, such as electricity and gas, and newer technologies.

This year, buildings and grounds purchased 30% of Cooper's gas and electrical needs up front at a discounted rate, saving about \$70,000. Mr. Grapes hopes that after another few years of analysis, he can better estimate the returns of the co-gens in the NAB and the FB to increase the advance purchase of gas and electricity up to about 50%.

With the reduction from four major buildings on the Cooper campus (51 Astor Place, Hewitt Building, Foundation Building, Residence Hall) to three (Foundation Building, New Academic Building, Residence Hall) and the usage of new energy efficient technologies, the cost of operations decreased from \$1.8 million to \$1.3 million and it is estimated that the new co-gen in the NAB will save an additional \$200,000 as stated earlier, bring down the yearly operational costs of Cooper to about \$1.1 million. Now, that's a lot of green, especially in Cooper's current financial situation.



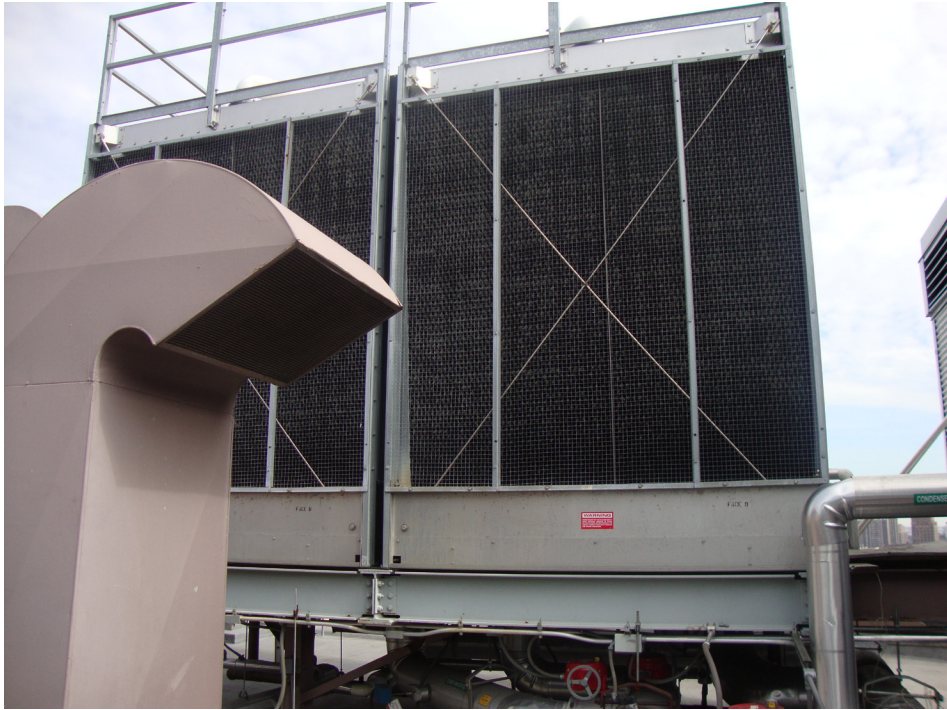
Photos by Christopher Hong (EE '13).

Page 2
Jody Grapes in front of the NAB co-generator and heat recovery chiller.

Page 10
(Top) NAB emergency generator.
(Middle-left) NAB cooling towers.
(Middle-right) NAB Rainwater collection tank..
(Bottom) Air handlers, which supplies most of the NAB with 100% fresh air.

Page 11
(Top-left) FB chilled water pumps and condense water pumps.
(Top-right) FB heat recovery chillers.
(Middle-left) NAB plate and frame heat exchanger.
(Middle-right) FB plate and frame heat exchanger.
(Bottom-left) FB co-generator.
(Bottom-right) FB cooling towers.

Note the similarities between a 153 year old building, the Foundation Building, and a 2 year old building, the New Academic Building.

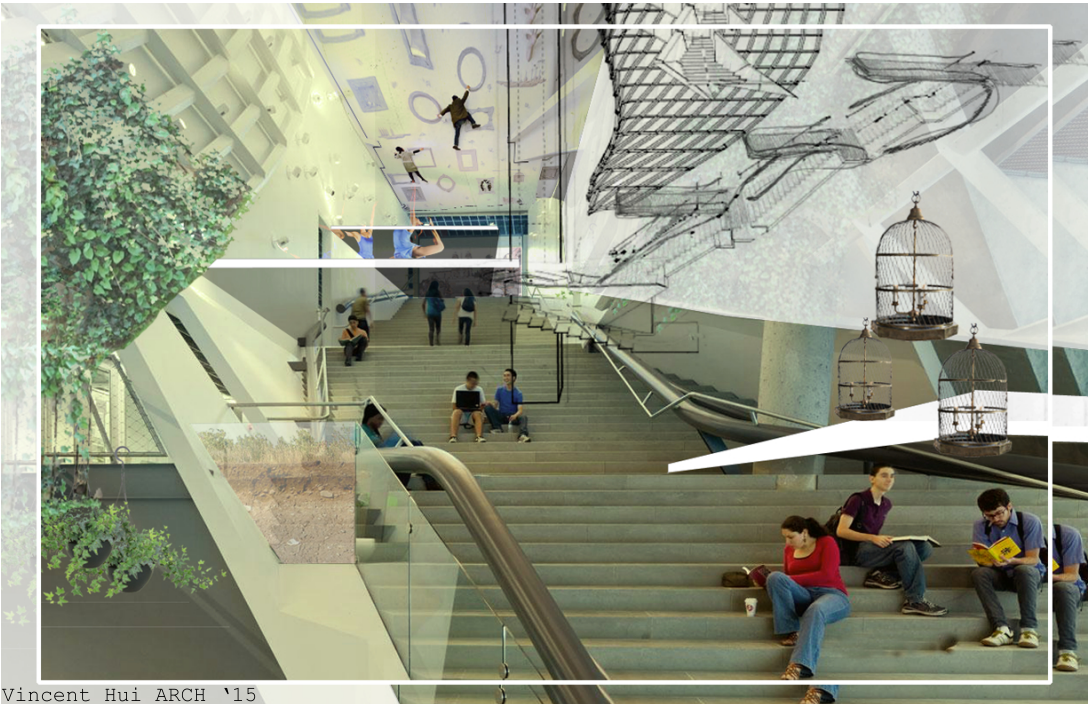


THE
STAIRCASE
HANDRAIL
DESIGN
Contest Winners



It was tough decision, but the winners have finally been chosen! Winners will be contacted shortly with information on how to claim your prize. Thank you for your participation!

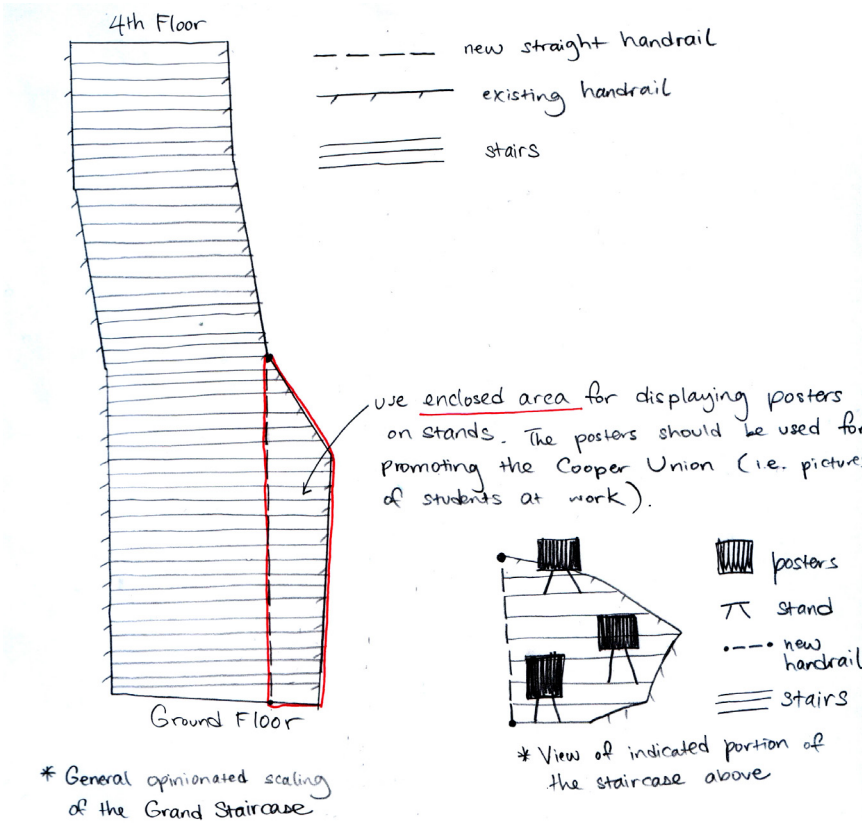
1st Place:



Vincent Hui ARCH '15

The proposal is to create sub-platform above the staircase while still allowing circulation. In another word, to resize the staircase to a more human scale. There is already handrail, we just need to reconfigure the space to make it safe make it useful. To me, in order to activate the space, a handrail is just not the solution.
- Vincent Hui

2nd Place:



The idea is to get rid of the existing handrail on the right side of the Grand Staircase (point of view from lobby up to the staircase) up to the indicated dot where the new handrail is indicated by the dashed lines. The existing handrail from the fourth floor will extend to the new handrail. The "old" handrail will be removed and the space will be filled with posters on stands promoting The Cooper Union in any way.

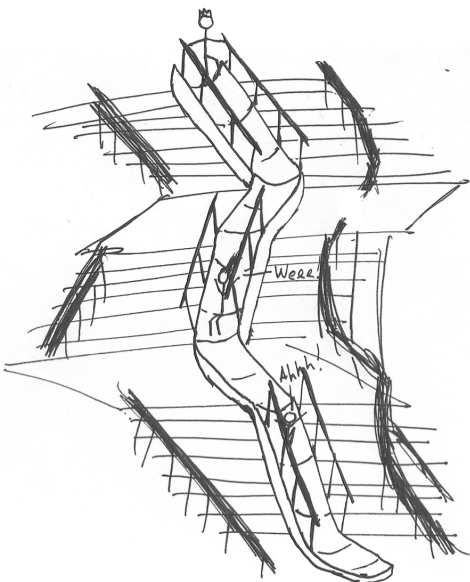
- Mina Min



Honorable Mentions:



- Ramon Sandoval



Why settle for handrail when you can have
GIANT SLIPPERY SLIDE?!

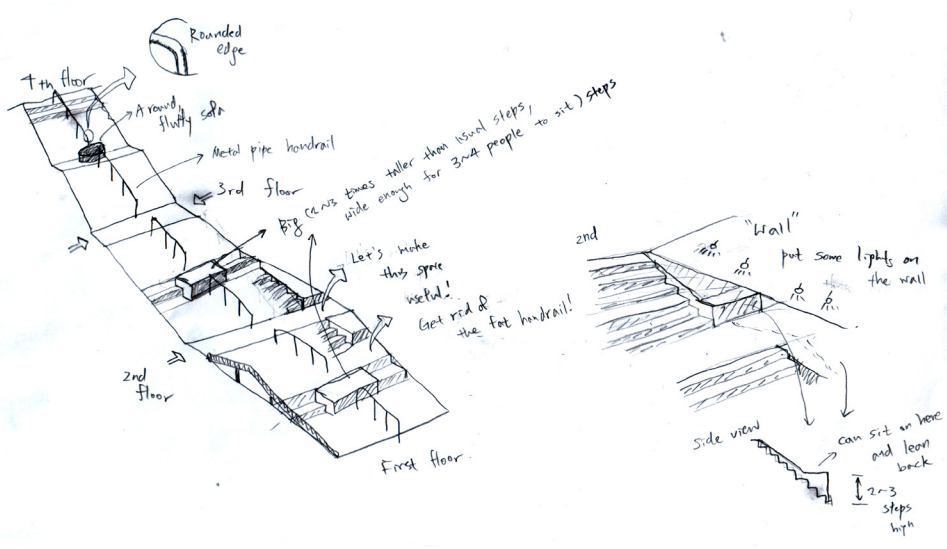
- Uyen Nguyen

3rd Place:



- Taylor Knoblock

3rd Place:



- Kanghwan Kim



"...a set of two rails spaced approximately 3 feet apart will run through the center of the Grand Staircase. These rails will frame a red half-tubular slide that will provide "express" service between the fourth and ground floors."

- Nick Wong



Faces of Cooper

Who's who in Cooper. Find out.

*Photos by
Christopher Hong (EE '13)
Sara Jane provided her own photo
Robert Uglesich provided his own photo*

- Alumni
- Tech
- Chef
- Teacher
- Staff
- Security



MARINA GUTERREZ

Director of Saturday Program and co-director of the Saturday Outreach programs

30 cooper square, 2nd floor

Cooper Pioneer: Where are you from?

Marina Guterrez: New York City. I went to New York City schools and I am a graduate of the Cooper Union School of Art. As a student here, I began to work with the Saturday program as an undergraduate staff and upon graduation, began working as staff.

Victoria Febrer: I am from New York City and I went to Cooper Union. I was in the Saturday program as a high school student and I worked as a teacher while I was at Cooper Union, and now I am here again.

CP: Can you tell me about your educational and professional background?

MG: Well let me tell you a little about the Saturday program since not everyone knows. Even in a small school, it is hard to communicate and get things across. The Saturday program was started by a group of undergraduates in 1968 and continues to be taught by teams of undergraduates who are actual instructors. We guide and help them with professional guidance but the students get a direct contact with teaching and everything involved in it. The students who attend are New York City public high students. There are about 230 students who attend and the program lasts the full academic year, from October to April, from 10 a.m. to 5 p.m. It is a very intensive program which gives enough time to do exploration. A number of our graduates have come to Cooper and many other places in the arts and many are working in the arts today. In a sense, that is our first step in sustainability, sustaining the community and continuing Peter Cooper's mission. The students in 1968 really re-envisioned Peter Cooper's missions and were inspired by his visionary ideas. They decided to put their hands where their hearts are and extended the programming to a high school level.

It is not just the issue of money but the idea of ideas being free, of building a civil society rather than a consumer society, and an educated social network throughout the city.

CP: When did you first learn about Cooper Union?

MG: When I was in high school. I hadn't heard about the Saturday Program, else I would have come since it is free and accessible. I was encouraged later to apply and after a second application, I came here.

VF: In high school as well.

CP: What brought you to Cooper Union? When did you start working at Cooper?

VF: After I finished high school, I was taking classes at the Art Student's League and wanted to do something more meaningful. I heard about the Saturday Program, I believe on the website, and I called and asked if I could work as a volunteer in the office. I started attending classes as well and then I was accepted to Cooper the following year.

CP: What is your role in Cooper? What is your department's role in Cooper?

MG: Well, I think, Peter Cooper's spirit lives here and another part of his legacy as well. Our role is to keep Cooper connected to the city, which was part of Peter Cooper's dream as well, to provide education free as air and water, which unfortunately is a big issue at the moment, to the immigrant population of New York city. The kids who attend the Saturday program right now represent the population of city, the children of the working and immigrant class. We have a very diverse group; I couldn't tell you how many languages or cultures are represented and a huge range of economic level. Even though the mission is wonderful, sometimes the nature of schools is to become more and more elite and the Great Hall keeps the school on its mission, and so does, in some way, the Saturday Program. The other side would be providing exposure and training to students in the area of teaching. We have art and architecture, the art



VICTORIA FEBRER

Portfolio Prep Instructor and Office Manager

30 cooper square, 2nd floor

classes are graphic design, painting, sculpture, drawing, and sound composition. Plus we have architecture and portfolio prep. Within each of those disciplines, students learn how to create curriculum, manage classrooms, and learn to express themselves. I once got a great fortune cookie and it said "to teach is to learn twice." I really think it is a way to learn on a much deeper level what you are studying if you can articulate it and teach it to others. That has been the experience for many of the teachers and many have gone on in their lives to teach as either professionally or an adjunct, part time, or visiting artist. It is a great introduction and a really hardcore preparation for the teaching world.

VF: To be able to teach as an undergraduate really is a wonderful experience. It is a great opportunity to learn how to manage the classroom and also an opportunity to learn the material which you are studying at Cooper in a more thorough way. It is a completely different experience to learn to articulate what you've learned to someone else. I now help the Cooper Union students who are teaching for Saturday Program become better teachers for the students from New York City Public Schools.

CP: How much do you like your job at Cooper?

MG: Oh, I love my job at Cooper and I love Cooper Union. I have been here for many, many years and the longer I am here, the more I understand how incredibly unique and how much of a visionary Peter Cooper really was. It is not just the issue of money but the idea of ideas being free, of building a civil society rather than a consumer society, and an educated social network throughout the city. It is an incredible asset. We have the statue of liberty but we also have the Cooper Union as one of the monuments of the striving of people for education, in building this incredible place.

VF: I love my job here. To be able to witness the transfer of ideas, witness how we're exposing all of these students to the arts, many of them for the first time is an amazing opportunity. It is a great community of people.

Seeing the students year after year, and getting in touch with Alumni of the program, everyone has great memories of the Saturday Program and the Cooper Union.

MG: I could also say as an artist, I think of this as part of my art's practice. Seeing the curricula creative, constantly influx and innovation, the responding of the students and changes in the world, as an artist it really is wonderful.

CP: What advice would you give to Cooper students?

MG: Appreciate the opportunity. Take as many classes as you can. Audit the ones you can't. You have incredible faculty and peer group, not just in your own school, but in the other schools as well. There really are wonderful people to be found. You should also come and work with us. It is a wonderful way to learn what you are doing and we even hire engineers.

VF: Take advantage of everything the school has to offer. Really interact with people from all the schools because one of the most enriching things for me was attending the architecture critiques, even though I was an art student and seeing what they were doing. I learned a lot just from being there. Try to teach for the Saturday program because it was a very enriching experience for me and for my art practice. The inspiration that came from the students was unbelievable.

CP: Who is your favorite professor at Cooper? Why?

MG: I think Hans Haacke was my favorite. He was a conceptual artist and I tell him that and he looks at me in bewilderment because our work doesn't appear to be the same but what he taught me was ideas, the ways of approaching and analysis.

VF: My favorite professor is Lorenzo Clayton and he taught me that there is no problem you can't solve when you are trying to create work and get ideas across. He really pushed me to try new ideas, materials, ways of thinking, concepts and just ways to get your ideas across.

MG: I should also add that someone who really kept me going through trials of student life was Day Gleeson, who always had encouragement to give.

VF: Day Gleeson was also an inspiration for me.

CP: What do you and your family do to help the environment (recycle, use an eco-friendly car, clean parks, bring your own shopping bags to the grocery store, etc.)?

MG: I am really committed to our environment. I try to be as active as possible. I work against the hydrofracking of New York. I turn off the lights when I am not in the room and I do a cold shut down on all of my equipment. I recycle my cans and yell at everyone who isn't because it seems such a little thing to do. We could at least do that much.

VF: I have my own garden where I grow veg-

etables. I compost all of my organic waste. I also recycle everything I can. I try to be local products whenever I can like food, goods, and accessories.

CP: What do you do for Earth Day?

MG: Not a lot. I remember the first Earth Day but Earth Day should be every day.

VF: I'm afraid I don't do anything either.

CP: Do you think the New Academic Building is green? Do you think it deserved the platinum LEED certification?

MG: I am afraid I am not knowledgeable in what that actually certifies but I don't think I fully understand it to make this judgment.

VF: I am not familiar with those official standards.

MG: I think it's a shame that they don't have bike storage somewhere there.

CP: What tips do you have for being "green" or environmentally friendly?

MG: Our green inspiration is in part because we're both environmentally conscious and economically thrifty. The program has always recycled materials. At the end of the year, we put out a barrel asking people to donate useable materials that are no longer wanted but we want them. We will use them for the students in the program. We also do scavenging when things are

leftover in coordination with the art, architecture, and painting offices. We also have a longtime membership with materials for the arts donations warehouse where we get a lot of materials. It is a huge recycling program for the arts in the city. I don't know the percentage but it is a lot of materials that we use in classes that are recycled. The portfolio class we teach makes sketchbooks out of recycled materials, such as newspaper or advertisements or using old drawings to draw on the back or the front. It is not only helpful in that we're recycling materials but in the inspiration they draw from the old artwork.

VF: I have seen really exciting lesson plans born out of inspiration from donated materials. Sometimes seeing the materials that can be reused can lead to really dynamic ideas for expression.

CP: What do you think about Cooper's financial situation?

MG: I think it is really essential that Cooper continues as a free institution because it is a symbol globally of a different way of thinking, in a time where intellectual material is

thought of propriety or copyrightable. The exchange of ideas in all the disciplines is essential to us growing as a culture and humanity. Cooper is really a symbol of that, by combining different disciplines and schools and that it is representing this idea of education being almost a right as people. Especially in these days when we are looking at the public education system and seeing Bloomberg closing schools down. Let's fix the public education system and do more of an investment in the public sphere because that's where everyone will benefit from. Cooper is a very important emblem of that. Instead of restricting things further and further by quantifying it on money and treating it as corporate entity, Cooper goes past all of that and succeeds.

VF: I think it is vital for Cooper

to maintain its full tuition scholarships because it levels the playing field, making talent and hard work the determining factors receiving this high class education and working hard to continue your education as you stay in school. It is just so important to have Cooper as the symbol and the leader in this form of education.

CP: What do you think about the student body trying to help resolve the financial situation?

MG: I think that the power of students is underestimated. I think right now we have student involvement but usually we don't have that. I think a form of sustainability is to continue the student involvement since they really are concerned about the school since the school is essential to their future. I think it would make sense to have a social service credit or credits. Not so much that it would be onerous on someone but in a way that someone would complete it by working in one of the offices at Cooper. That would be a way to structure ongoing involvement of students, so there are always students in the conversation

VF: I think it is wonderful that the students are getting involved, even more when the Alumni are involved.

CP: Do you have any closing remarks?

MG: Peter Cooper's spirit lives in various offices throughout Cooper and I think we should really celebrate what we have and make sure it continues for the future.



Art by Celeste Pfau

BOB HOPKINS

Chief Technology Officer,
Associate Professor of
Computer Science

Room 813 NAB



Cooper Pioneer: Where are you from?

Bob Hopkins: I was born in Chicago, Illinois, but for most of my adult life, I have lived in Edison, NJ. Between Chicago and Edison I've lived in Florida and California.

CP: Can you tell me about your educational and professional background?

BH: Educationally, I have degrees from St. Joseph's College (BS Mathematics/Computer Science) and Fordham University (MBA). While an undergraduate, I was employed as a student employee of the Computer Center. I found this experience to be so rewarding and helpful, I continue to employ this practice today.

After graduation, I was offered a job at Fordham University. The job was to establish a computer facility in the Lincoln Center campus, and to provide technical support to the community located at that site. Two years into that job, I was contacted by The Cooper Union, and the rest is history! Over the years I have had the opportunity to consult in various industries including telecommunications, health care, other academic settings, and commerce. Recently, my time has been pretty much focused on the many new initiatives

facing our institution.

CP: When did you first learn about Cooper Union?

BH: I learned about Cooper in 1971 while employed at Fordham. It seems that Cooper had acquired a software package from IBM for use on the their computer system. This package happened to be one that I had a great deal of experience with while I was in college. I provided some technical assistance and support. Resulting in an offer to apply as Manager of the Computer Center.

CP: What brought you to Cooper Union? When did you start working at Cooper?

BH: The opportunity at a very early part of my career to essentially put together "from the ground up" an IT facility, was what initially attracted me to Cooper. I was hired in October of 1972, and it took me a very short

time to realize the true attraction for me to Cooper was the energy and enthusiasm of the students, the programs offered, and the faculty.

CP: What is your role in Cooper? What is your department's role in Cooper?

BH: The title of Chief Technology Officer kind of explains what I do in the broad sense. I jokingly refer to the statement "...if it has wires and is not working, it is my problem..." I view my role to be one that manages and plans technology and the growth of technology for the institution. Additionally I have the opportunity to serve as a professor teaching computer science in the School of Engineering.

CP: How much do you like your job at Cooper?

BH: I think the job defines me and I do like it a lot. It's a worthy career.

CP: What advice would you give to Cooper students?

BH: To continue to communicate well. Be open to change and growth. The ability to communicate well is critical to all our students. Since I've been at Cooper, the talent and drive of our students have been astounding! The best ideas can be lost if we lack the ability to share them with others. Students must be able to articulate their dreams and ideas in a way worthy of their education.

CP: Who is your favorite professor at Cooper? Why?

BH: One of the greatest things to happen to me while at Cooper was to be appointed to



SARA JANE STONER



Senior Writing Associate

Cooper Union Writing Center - 306 NAB

Cooper Pioneer: Where are you from?

Sara Jane Stoner: I was born and raised in Fort Collins, Colorado.

CP: Can you tell me about your educational and professional background?

SJS: I have a BA cum laude in English from Smith College, an MFA in Fiction from Indiana University (though I ended up studying something more along the lines of prose poetics), and I am now studying for a PhD in contemporary literature and queer theory at the CUNY Graduate Center. In addition to my work at Cooper Union, I currently teach composition, creative writing, and theories and practices of writing pedagogy at Brooklyn College. This summer I'll be teaching 20th Century American Literature.

CP: When did you first learn about Cooper Union?

SJS: When I first lived in the city, in the fall of 2001, I spent some time spinning the Alamo in Astor Place. It was a vulnerable time for the city, and maybe there was something about my face that seemed to spontaneously invite people to tell me their survival stories. The Cooper students who spoke to me were so full of great prophetic fires. I love a Cassandra.

CP: What brought you to Cooper Union? When did you start working at Cooper?

SJS: I began work at the Cooper Union Writing Center in 2006, after exactly one year of work in publishing. I actually quit my edito-

rial job before I'd found other work. It was instinctual. My bosses called me in to offer me a 2% raise on my anniversary, which my antic brain rapidly and roughly translated into a difference of one extra beer or two additional fancy ramen packets per week. I had just finished clearing legal permissions for a pop star's confected diary at a cost of about double my salary. I quit on the spot, and a week or so after leaving miraculously found myself in Professor Gwen Hyman's office, talking about what I love most in the world: teaching writing. I could already feel the blood returning to my mind.

CP: What is your role in Cooper? What is your department's role in Cooper?

SJS: As a Senior Writing Associate I work one-on-one with Cooper Union students on all kinds of essays, statements, and writing projects, both in and out of coursework. I help students work on fellowship and grant applications (like Fulbright and the Menschel), as well as graduate applications. I am honored to work with students from all three schools who are active "creative" writers, particularly artists for whom writing is a key part of their practice and their productions, who desire close, textual feedback and invitations to experiment with the role of text in their art. The Writing Center is a place that indisputably serves everyone in the community by providing students with the opportunity for sustained thinking and practice in writing, a process that aids learning and communica-

the Faculty of the School of Engineering. It is difficult to say who is my favorite. It is nice to be in a community of people where we share similar goals and ambitions for our students. This spirit is prevalent on campus.

CP: If you can say something to Peter Cooper, what would you say?

BH: Thank You! I would say thank you because his vision resulted in the place where I have worked for a long time. When I was recognized for 30 years of service to Cooper, one of my comments to the people in the room was “I’ve been at Cooper longer than haven’t!” it remains something of a home for me.

CP: What do you and your family do to help the environment (recycle, use an eco-friendly car, clean parks, bring your own shopping bags to the grocery store, etc.)?

BH: There are six of us in my immediate family and we’re all socially minded and concerned about the environment. First of all, all my children are adults now, but all four of them when they were younger were involved in the Scouting movement. Scouting (for boys and girls) teaches many things such as good citizenship, service to others, the value of character, and self reliance. Scouting in general emphasizes stewardship for the planet. Two of my three sons are Eagle Scouts, my

I am very proud of our students and their demonstration of support and concern in a positive way is admirable.

daughter was a Leader in the Girl Scouts. When it comes down to it, education is what I do, and as an educator, one can get the message out strongly about the good stewardship for our planet and its environment.

CP: Do you think the New Academic Building is green? Do you think it deserved the platinum LEED certification?

BH: I assume that the building is ‘green’, but it does certainly have a great deal of unusable space. As far as the LEED certification is concerned, I believe that there is a formula requiring that certain items be incorporated into the design and construction of the building to earn a certification. It is a point system, we got enough points, and applied for the certification.

CP: What tips do you have for being “green” or environmentally friendly?

BH: Turn off your computers! We live in a world now where many of us feel that it is absolutely necessary to our personal computing systems up and running constantly. It is a significant consumer of energy. Sometimes it is a necessary evil. Technology evolves so quickly that often we find ourselves disposing of perfectly functional equipment only because it is a few years old. We need to recycle and reuse better.

CP: What do you think about Cooper’s financial situation?

BH: I think it is sad. As I said, when I first came here, I couldn’t understand how we were able to stay in business. The real sadness is four or five years ago, we were told that were in the best financial shape the institution has ever been in. To discover that we are not, may be a symptom of why we’re in the position we’re in. I am optimistic that our leadership will put together a plan to sustain our great school.

CP: What do you think about the student body trying to help resolve the financial situation?

BH: I am very proud of our students and their demonstration of support and concern in a positive way is admirable. This is not surprising, because I know the character of the Student Body. The students here are very giving and are the institution’s greatest asset. While the financial effect of the students work may be smaller than perhaps the Alumni, developing a habit of giving will have a profound effect in the future.

CP: Do you have any closing remarks?

BH: Peter Cooper’s ideas are still amazing and current today. I know I have truly benefited from my association with the faculty, staff, and students. We all grow together. That’s what makes coming to Cooper everyday interesting and fun. Cooper continues to be a Garden of Excellence.

BY CHRISTOPHER HONG (EE ’13)

tion in every field and subject.

CP: How much do you like your job at Cooper?

SJS: I love my job. Over the past six years, I have been constantly inspired and challenged by the commitment, creativity, resilience, ethics, and effort of Cooper Union students. I find that the dialogues I have with my students have made me a better teacher, student, and writer. And the opportunity to work with students for multiple years has allowed me to powerfully witness their growth as writers and their coming to a consciousness of their powers as engineers, artists, and architects.

CP: What advice would you give to Cooper students?

SJS: Read promiscuously and purposefully, write playfully and seriously, and remember that you and your works are the best barometer for future intellectual weather.

CP: Who is your favorite professor at Cooper? Why?

SJS: My students. They know why.

CP: What do you and your family do to help the environment (recycle, use an eco-friendly car, clean parks, bring your own shopping bags to the grocery store, etc.)?

SJS: I am a committed recycler, though I’m always perturbed by the amount of plastic deemed unrecyclable by the city system. I love that I know I can chat with James while

The Cooper students who spoke to me were so full of great prophetic fires. I love a Cassandra.

I think my used batteries into the jar. I’m known to randomly pick up trash in my neighborhood, and to give litterers the crazy stink-eye. Some of my favorite experiences have involved visiting and working in places that are committed to minimizing waste.

CP: What do you do for Earth Day?

SJS: I usually pick up trash, a habit I started in junior high school.

CP: Do you think the New Academic Building is green? Do you think it deserved the platinum LEED certification?

SJS: I don’t know enough about the criteria for LEED certification, but I sometimes worry that the recycling bins on each floor aren’t accessible enough or adequately marked and maintained.

CP: What tips do you have for being “green” or environmentally friendly?

SJS: I’m aspiring to get take-out restaurant food less, because it involves so much waste and I don’t have control over the continued use of styrofoam. Also: Just Say No to plastic bags wherever you go.

CP: What do you think about Cooper’s financial situation?

SJS: I believe that charging tuition will destroy what makes Cooper Union what it is. I believe that the financial situation has

revealed deep and troubling divides in Cooper. Between action and rhetoric, between versions of history and visions of the future. The very clear role of need-blind full-tuition scholarships as a prime force for the ethics of the intellectual and material world of the students seems clouded by condescension and obfuscatory financial language. I think, in the world at large, that there is a belief that Cooper, a dinosaur, will with the advent of inflated tuition finally come into the now of corporatized educational models, and that this pressure from the outside is enormous. I think that the only thing that will adequately answer this pressure is a top-to-bottom belief in what makes Cooper different, and a commitment to protect this difference.

CP: What do you think about the student body trying to help resolve the financial situation?

SJS: I think the students have responded with great passion, curiosity, and commitment, the kind of passion, curiosity, and commitment that is rare among student bodies. In fact, I think that it is the unique character and quality of the Cooper Union education that has generated this response. The students, when not devastated by the threat of tuition, have manifested the same inspired pragmatism that motivates their study to operate at such exceptional levels.

BY CHRISTOPHER HONG (EE ’13)



SHARLA SAVA

Associate Director, Center for Writing

Cooper Union Writing Center - 306 NAB

Cooper Pioneer: Where are you from?

Sharla Sava: Toronto, originally. I graduated from the University of Toronto. Then I moved out west for grad school, so I've also spent some time in Berkeley and Vancouver. I guess I'd say I feel at home on the east / west coasts.

CP: Can you tell me about your educational and professional background?

SS: I am a writer and university educator, and my work combines art history (my M.A.) and media studies (my PhD). At the moment I would say that my scholarly research is concerned with tracing the role and status of the image in the environment of digital culture. I'm interested in photography, in particular, because since its invention during the 19th century it has played a central role in modernization, also becoming a battleground for

debates between artistic and popular culture. While under-represented in media studies scholarship, the photo-based work of contemporary artists (including Jeff Wall, Cindy Sherman, Thomas Demand and others) has, I think, made meaningful contributions to the definition and theorization of visual culture. My current book manuscript, *Cinematic Pictures: The Art of Jeff Wall*, is about the growing popularity of staged or cinematic photography.

CP: When did you first learn about Cooper Union?

SS: I have to say that Cooper Union always held a mythical status for me – a commitment to free education, combined with a campus located in central Manhattan. I heard about the school many years ago, although I can't recall precisely when. Cooper Union has an exchange program with Emily Carr, an art school out west, in Vancouver, so maybe one of my students told me about it. Or maybe it was Ken Lum who first told me about it, when I studied with him. Ken spent some time living in New York when he was an art student himself, and I think he had some friends or spent some time here.

CP: What brought you to Cooper Union? When did you start working at Cooper?

SS: The day the new building opened was also my first day at Cooper Union – the beginning of September, in 2009. I began as a Senior Writing Associate in the Center for Writing. I had been in touch with the Director, Gwen Hyman, and she was the one that hired me. I recall being absolutely gobsmacked by the energy and productivity of the Center for Writing. It's a very stimulating place to be: on any afternoon you can find yourself talking about *The Tempest*, eco-friendly garbage disposal, or continental philosophy, or maybe all three during the same session! The students are inspiring to work with because they are willing to be chal-

lenged and take real risks with their thinking and writing. I also find the staff at the Center for Writing inspiring because they are really gifted at what they do. I immediately felt that it was the best job I've ever had – and I'd say the same today, several years later.

CP: What is your role in Cooper? What is your department's role in Cooper?

SS: I became the Associate Director at the Center for Writing last fall. My job is to assist the Director to keep everything running. That means that in addition to meeting with individual students I help with things like scheduling, website maintenance, outreach, professional development, reporting and record-keeping. I know that scheduling etc. might sound boring, but I have discovered that I find it rewarding to participate in administrative initiatives that measurably improve student learning at the university level. We maintain a very busy writing center, managing ten to thirteen Writing Associates and about 150 weekly hour-long sessions for students at all levels of study (e.g. freshmen to master's). My passion for, and commitment to, teaching communication skills (written, spoken, and digital) in the classroom have been stimulated and rewarded by the writing center environment. I believe that individual student learning opportunities, such as we offer here at the Center for Writing, provide an essential foundation for successful college and professional life.

CP: What advice would you give to Cooper students?

SS: I'd say that it's important to remember to think in the long-term, about what you'd like to do after graduation. I would also say that technology is really important these days, regardless of your major... I think how we learn and communicate with one another is being reshaped by the digital world and it's really important to pay close attention to that shift.

BY CHRISTOPHER HONG (EE '13)



LILLIAN MINTON

Database Manager

5th floor, 30 Cooper

Cooper Pioneer: Where are you from?

Lillian Minton: I am a native New Yorker.

CP: Can you tell me about your educational and professional background?

LM: I got my master's degree from NYU in interpersonal communications. I got my undergraduate degree from Hunter College in human communications. I have been here long enough that I don't have to mention anywhere else. I have been here since 1981.

CP: When did you first learn about Cooper Union? What brought you to Cooper Union? When did you start working at Cooper?

LM: I was actually working for the New York Blood Center. Someone who was temping at the blood center was also working at Cooper Union. She was leaving Cooper Union and as she was leaving, she recommended me for the job. I accepted and the rest is history.

CP: What is your role in Cooper? What

is your department's role in Cooper?

LM: We are back office. We help support for the fundraisers, for development, and alumni relations. I have two people who work in my department. Sue McCoy is systems and she is over me. We have two people who work for us. I do all of the ad hoc reporting for the school, throughout the school for various departments and many other various things.

CP: How much do you like your job at Cooper?

LM: I do, I really do. I like it here. It is interesting, very, very interesting and challenging. One thing is I used to work under the Alumni relations and work with the students. I miss that, I used to come in contact with them a lot but here I don't. I could get to them know and know who they are when they graduate so that I miss.

CP: What advice would you give to Cooper students?

ALAN WOLF

Professor and Chairman of
Physics, Campus-wide Safety
Coordinator
515 NAB



Cooper Pioneer: Where are you from?

Alan Wolf: I was born in NYC (okay, really Queens – does that count?) but conceptually I consider myself to be from Austin, Texas.

CP: Can you tell me about your educational and professional background?

AW: I was a Physics major at Cooper, back when we still had those. Once the degree program ended, I completed my bachelor's degree at Stony Brook in 1978. I received my masters from the University of Texas, Austin in 1980 and my Ph.D in 1983. More recently, I went to the Benjamin Cardozo School of Law (Yeshiva University) and received my J.D. in 1994. I became a lawyer in 1995, and a patent lawyer in 2001.

I started teaching at Cooper in 1984. I was also an adjunct professor of law at Cardozo Law School from 1997 to 2008, teaching courses in patent law and the law of scientific evidence. I teach law at Cooper occasionally as well. Currently, I am Professor and Chairman of Physics and the Campus-wide Safety Coordinator.

CP: When did you first learn about Cooper Union?

AW: I was a high school senior. I overheard someone say that Cooper Union was free and, very important, no essay was required for the application! Growing up in NY, I had never heard of Cooper...

CP: What brought you to Cooper Union? When did you start working at Cooper?

AW: After receiving my doctorate, I returned to New York from Texas. I decided that I wouldn't look for a job until I recovered from the ordeal of my graduate work, or my bank account was exhausted -- whichever came first. That week, a friend moved out of his incredibly inexpensive rent-controlled apartment and turned it over to me. I spent my days doing distance running in Central Park – this was before my knees and ankles gave out. One day, running back to my SoHo apartment, I needed a bathroom. I was running past the American Physical Society

building and thought that they might let me use their bathroom because I was a student member. The guard at the front desk wasn't impressed with this character in running shorts – I needed to have 'serious business' with them to get in. I saw a sign at the front desk for the 'manpower placement division' so I told the guard that I was looking for a job. It didn't work – he called that office and they sent someone down with a list of physics jobs in Manhattan. We stood in the lobby, going through the list, and there on the last page was a listing for "Assistant Professor of Physics – The Cooper Union" – my alma mater!

We stood in the lobby, going through the list, and there on the last page was a listing for "Assistant Professor of Physics – The Cooper Union" – my alma mater! The deadline for applying was that very day!

The deadline for applying was that very day! They let me call Cooper from the front desk. (Still no opportunity to use the bathroom.) One of my former Cooper professors answered the phone, and agreed to interview me, as a 'courtesy,' even though they had

already finished the interview process – provided I could get to his office in one hour. So I ran another 30 blocks to my apartment, showered, put on a suit, and got to Cooper just as he was about to leave. That was 1984. I started as an Assistant Professor.

CP: What is your role at Cooper?

AW: As a professor of physics, my job is to teach engineering students how the physical world works -- plus or minus a few engineering approximations and mathematical simplifications. How many pages can I have to answer this question? As safety coordinator, I have numerous and diverse responsibilities, ranging from overseeing lab safety and hazardous waste management, to coordinating First Aid/CPR training, to being a member of the Cooper's Emergency Management Team.

CP: How much do you like your job at Cooper?

AW: I love my job. I thrive on challenges – and teaching physics may be one of the biggest challenges...

CP: What advice would you give to Cooper students?

AW: That's easy. Study more, play less. Your brain will never be as receptive to learning as



it is during your college years. (How scary is that?)

CP: If you can say something to Peter Cooper, what would you say?

AW: Good job! But can you explain the financial model to me again?

CP: What do you and your family do to help the environment (recycle, use an eco-friendly car, clean parks, bring your own shopping bags to the grocery store, etc.)?

AW: I'm doing my part to delay the start of the next ice age by having as large a carbon footprint as possible. Sorry Toby.

CP: What tips do you have for being "green" or environmentally friendly?

AW: I have two cats. I pet them at every opportunity. I support PETA and encourage others to do the same.

CP: What do you think about Cooper's financial situation?

AW: I'm furious that those charged with the responsibility for overseeing our finances didn't take decisive action before now. If they saw it coming, and they claim that they did...

CP: What do you think about the student body trying to help resolve the financial situation?

AW: Our incredible student body could be a large part of the solution. I'd like to see every student in the engineering school attempt to patent an invention as a graduation requirement. Some number of those inventions would be commercially valuable. Very much in the spirit of our founder. Good for our students, good for the institution. I'm working on a proposal.

CP: Do you have any closing remarks?

AW: Did I mention more study and less play?

BY CHRISTOPHER HONG (EE '13)

LM: You are very fortunate to be students here at an excellent institution and don't forget it when you leave. As you can see, what can happen when you do. It is wonderful places so don't forget it. Always reach back, that is my advice, to give someone else the opportunity you have.

CP: Who is your favorite professor at Cooper? Why?

LM: I really can't honestly say because I only know a few of them. I know Rod Knox, and Elizabeth O'Donnell. I think she is wonder-

ful; I come in contact with her every now and then. There is a professor in the humanities department whose name I can't remember but I love her. We get along very well. I also get in contact with Bob Hopkins and I think he is wonderful. He has been here 100 years like me so I would say he is excellent and very caring. Dean Baker, I know he is not a professor but I think he's great with the students and he's doing a wonderful job. Yash Risbud.

CP: What do you and your family do to help

the environment (recycle, use an eco-friendly car, clean parks, bring your own shopping bags to the grocery store, etc.)?

LM: You are asking the wrong person about that. What I do is all of my bills and banking is done online. I don't receive any of my bills in paper.

CP: What do you do for Earth Day?

LM: No. I used to work for a woman who was in charge of a program in NYC regarding Earth Day but I don't really do anything.

ROBERT UGLESICH

Assistant Professor of Physics

511 NAB



Cooper Pioneer: Where are you from?

Robert Uglesich: I primarily grew up in Los Angeles. My parents are both from small fishing villages in Croatia and they settled in a part of the city which had a large expatriate community from Dalmatia. When I was a teenager, my dad’s work took us to Puerto Rico. We lived on the west coast in a town called Mayaguez and I finished high school while we were there.

CP: Can you tell me about your educational and professional background?

RU: I studied applied physics at Caltech. During that time, I got involved with an astronomy research project, which I found really fascinating and decided to further pursue this interest, eventually graduating from Columbia with a PhD in astrophysics. At that point, I switched fields and joined a neuroscience research lab at The Mount Sinal School of Medicine as a postdoctoral fellow. I spent five years at Mount Sinai working my up to a professorship in biomathematics and neuroscience.

CP: When did you first learn about Cooper Union?

RU: Probably around 1995. In grad school, my friends and I would trek down to the E. Village and I remember passing by Astor Place and being curious about this school that I had never heard of. I did some research on my own and was surprised to find out that it was a full-scholarship institution with a fairly illustrious history.

CP: What brought you to Cooper Union? When did you start working at Cooper?

RU: My position at Mount Sinai was primarily research-oriented and teaching opportunities were limited. I was missing the teaching aspect of my career and in 2002 I managed to obtain a position as an adjunct instructor in the School of Art. I started out offering a regular course in optics and then a few years later I developed a new course pattern formation. It wasn’t until 2006 that I moved over to the engineering school.

CP: What is your role in Cooper? What is your department’s role in Cooper?

RU: I am a full-time professor in the Physics department and I have



also developed a small research program in neuroscience. Physics is the foundation of all natural sciences and the physics department teaches courses, which are part of the core requirements for students in the Engineering and Architecture schools.

CP: How much do you like your job at Cooper?

RU: I feel fortunate that someone actually pays me to do something that I would happily do for free. There are of course frustrations associated with any bureaucracy but the pleasure of working with Cooper students far outweighs the negatives.

CP: What advice would you give to Cooper students?

RU: College should be a time to explore and immerse yourself in learning. Take advantage of as many opportunities (social and educational) as you can. None of us can predict exactly what it is that we might be doing in ten years time so my opinion is that in college your goal should be to develop the lifelong habits of mind that will allow you to continually learn and reinvent yourself.

CP: Who is your favorite professor at Cooper? Why?

RU: Cooper is primarily a teaching institution and I have a lot of respect for those colleagues who go out of their way to offer more to their students.

CP: What do you and your family do to help the environment (recycle, use an eco-friendly car, clean parks, bring your own shopping bags to the grocery store, etc.)?

RU: We recycle, we use public transportation as much as possible, we bring our own reusable bags to the store, we only use air conditioning when absolutely necessary, etc. I think a lot of these things come naturally when you live in NYC. This year we are doing something

LEILAN MINTON (continued)

CP: Do you think the New Academic Building is green? Do you think it deserved the platinum LEED certification?

LM: As far as I know, yes. I like the building, especially the interior. I like the interior more than the exterior. I attend more event snow because of it.

CP: What tips do you have for being “green” or environmentally friendly?

LM: I am not a good candidate for this. I really can’t answer this question. I don’t think I’ve been very productive in being green.

CP: What do you think about Cooper’s financial situation?

LM: I think I was a little surprised like everyone else. I did not know the situation was as bleak as it was but I am very optimistic. I think that if the alumni step up to the plate and students too after they graduate. Just remember that Cooper was there for you to get you through those four years with a full scholarship. I think we can come out of this, if we think positive and just remember Peter Cooper’s dream. I mean it was a wonderful dream, to get a full tuition scholarship. This

is rare and rather than fight about it and wonder what happened, let us try to get out of this mess, rather than lamenting how we got here. We are here so let us roll up our sleeves and do something about this. Let us give until it hurts, that is my philosophy. We can’t change what’s happening if we keep lamenting about the past. Let us move forward. If during the time that Peter Cooper started the dream, could you imagine what would happen if we all got together and fulfilled this dream? It will work. He never gave up, he had obstacles and he stayed with it until he overcame them and that’s what we need to do too. We have an obstacle in front of us and let us try to overcome it rather than do the blame game. The blame game is not going to get us out of this.

CP: What do you think about the student body trying to help resolve the financial situation?

LM: I love it because we process those gifts when they come through. When we were counting all the nickels, dimes, quarters, and dollars, it was laid out on this desk and I thought we should take a picture of it and use it as a postcard mailing. We could mail

it out to our constituents to show that our students are doing what they can to get us out of the situation. I love it, I love Cooper Union students. They are great and I don’t want them to despair or lose hope. We have been in crisis before and we overcame them and we can overcome this one too.

CP: Do you have any closing remarks?

LM: I am also going to say what Jesse Jackson says, “Keep hope alive.” That’s all, just be hopeful. Don’t give up, we have been in crisis before, so don’t give up. Keep preserving. Continue with the contributions. You could start up a grassroots organization to raise money for Cooper if anything. I do it with my church to raise money for a school in Texas and every year, we donate about \$30,000. Get your parents to contribute. I don’t think most parents appreciate that their child is getting four years of scholarship. If we can get parents to contribute, we can overcome this. We are a rare school, to have four years of a scholarship. We are blessed, the students are blessed.

new and joining a CSA in our neighborhood. One thing that I still do which was ingrained from childhood is to try to conserve water. In the northeast, we are a little spoiled with abundant water resources but access to sufficient clean water supplies is a problem in many parts of the world. Growing up in an arid part of the country I developed somewhat of an appreciation for this.

CP: What do you do for Earth Day?

RU: Nothing special. I hope that some of the environmentally conscious things that make a difference are already part of my daily routine.

CP: Do you think the New Academic Building is green? Do you think it deserved the platinum LEED certification?

RU: There are certainly features in the building (co-gen plant, light sensors, HVACs, water restrictors, etc...) which were designed to limit natural resource consumption and improve efficiency but, like with many things, the design vision and the practical implementation are not the same. We are all aware of deficiencies in the building and I hope that these are just part of the growing pains associated with occupying a new building rather than significant engineering or design failures.

As for the LEED certification, I am not an expert on the process so I can't comment directly on whether or not we 'deserved' the certification. My personal opinion is that simply intending to be 'green' is not sufficient. If we actually care about running an environmentally conscious physical plant we have to quantitatively demonstrate that we are meeting our targets.

CP: What tips do you have for being "green" or environmentally friendly?

RU: Be aware of your consumption. Places where I think it's relatively easy to change your behavior and be 'green' is with regards to energy consumption. For example, setting your thermostat a little higher in the summer and a little cooler in the winter to save on heating and cooling costs.

CP: What do you think about Cooper's financial situation?

RU: I think that we find ourselves in a very unfortunate situation, which seems to have been developing over a long period of time. It is human nature to try to apportion blame but I think that some of

these efforts have been unproductive. My hope is that we will be able to find a fiscal solution, which preserves the ideal of Cooper Union as a place that provides an outstanding educational opportunity to those who might otherwise not be able to afford it.

CP: What do you think about the student body trying to help resolve the financial situation?

RU: It's encouraging to see that the students care about the future of Cooper. They are a transient population but I hope that this involvement on their part represents a lifelong commitment to the institution.

BY ROBIN KUTNER (CHE '13)



Art by Celeste Pfau

COMICS

EARTH DAY BY RAMON SANDOVAL (EE '12)



Ramon Sandoval



KENKEN

MARCUS MICHELEN (CE '14)

KenKen is a Japanese paper puzzle by Tetsuya Miyamoto much like Sudoku, only it involves both math and logic. It roughly translates to “cleverness-cleverness.”

Instructions: Like Sudoku, each row and column must contain the numbers from 1 to 5. The number in the upper-left corner of the bold-ed shape made up of squares is the number you need to get by using the operation next to the number. For example, the “20x” rectangle in the top right corner can be filled in with a 4,5 or a 5,4.

The solution to this puzzle will be released next week. The solution to the KenKen from Mini-Issue #10 is to the right.

20x		1-	2÷	
5+	3-		6+	1-
		6+		
12x			11+	
	6x			

1	3	5	4	2
4	5	1	2	3
5	2	3	1	4
2	1	4	3	5
3	4	2	5	1

CRYPTOQUOTE

MARCUS MICHELEN (CE '14)

A Cryptoquote is an encoded quote. It is encoded such that each and every occurrence of a letter is substituted with a different letter of the alphabet. Using clues such as frequency of occurrence and placement, the original quote can be found. For instance, the word XBDIKCXXBZ could be deciphered to reveal the word LONGFELLOW.

BHG LHUKTTLOKHU EJJT WBH

FBAK UILHON ZLOOKQ BHC

FJQK WJFRTKV ... LU UBAKN B

UJXWI JE OKHLXN – BHC B TJU

JE WJXQBOK - UJ FJSK LH UIK

JRRJNLUK CLQKWULJH.

-KQU KLHNUKLH

MORE COMICS

CHORE BY RAMON SANDOVAL (EE '12)



Ramon Sandoval

EARTH DAY COMIC BY UYEN NGUYEN (ME '14)



A Note on the Spring Issue’s Title:

The title may look familiar to some of you. It is the title of E. E. Cummings poem, Spring is like a perhaps hand, which is also the first line of the poem. It is from The Complete Poems: 1904-1962 by E. E. Cummings. The phrase “perhaps hand” gives Spring a very spiritual, invisible power. Hands are humans’ tools to create and invent, not only to help other humans, but the world and its life as well.

FOCUS

(FRIENDS OF COOPER UNION STRATEGIES)

3/21

(NAB ROOM LL101 @ 7 PM)



TIME TO FOCUS. WE'VE GENERATED HUNDREDS OF PROPOSALS TO SAVE COOPER UNION, PROTECT THE MISSION STATEMENT AND CLOSE THE DEFICIT. JOIN US AS WE TAKE A CLOSER LOOK AT THESE PROPOSALS, REFINE THEM AND START TO BUILD A WAY FORWARD.

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GREEN BY UYEN NGUYEN (ME '14)



Did someone say green building?



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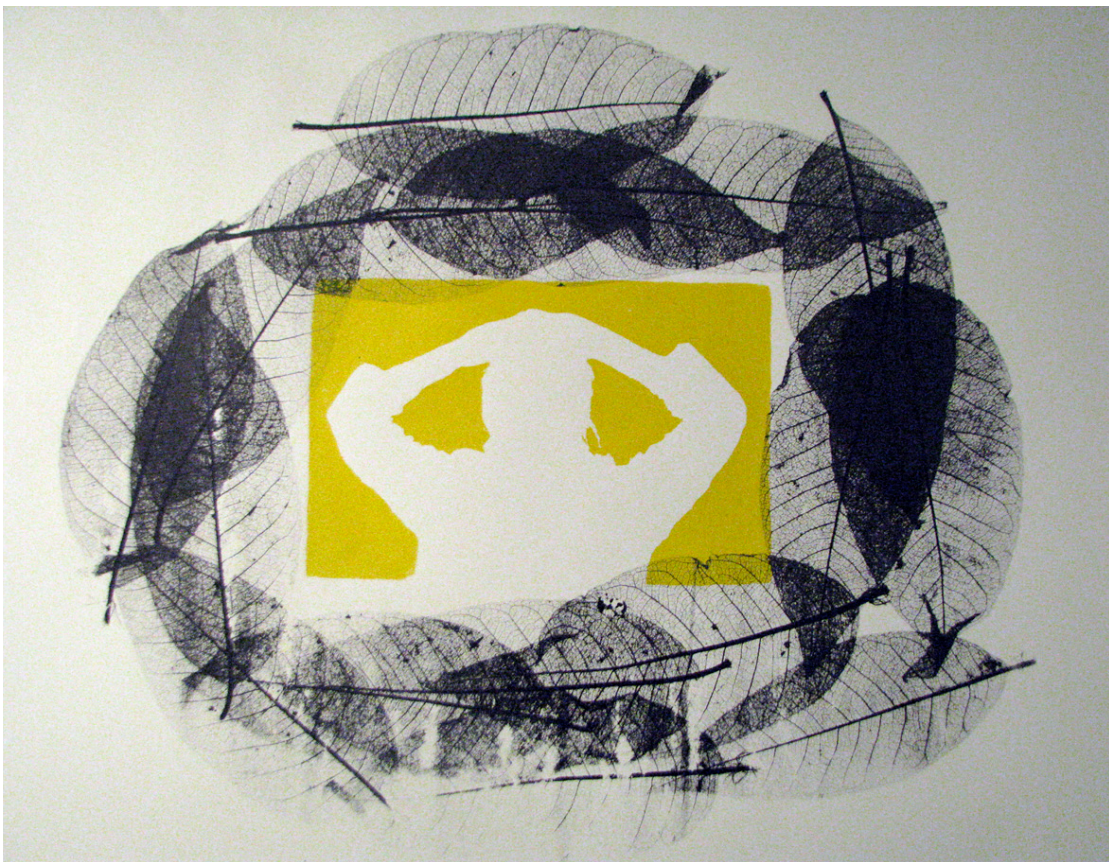


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Front and back cover art by Celeste Pfau (Art '12)

'Spring is like a perhaps hand' is a title of a poem by e.e. cummings