

MATERIAL LIBRARIES REPORT

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The University of Oregon Portland Library and Learning Commons began developing its architectural material collection in 2014, thanks to a large donation from a local architecture firm. Our Portland branch library serves about 170 upper-level undergraduate and graduate students in architecture, digital art, product design, sports product design, and other professional fields.



Material collections in academic libraries

This report is the product of research undertaken in 2014 - 2015 on best practices in establishing architectural material samples collections in academic libraries.

In 2014 and 2015 I was awarded funding from the University of Oregon Libraries to visit academic libraries with architectural material collections, photograph their collections and spaces, and interview their staff. In summer 2015 I was awarded a sabbatical to synthesize the interviews I conducted with a literature review, and author this report.

This is not intended to be an exhaustive review of materials collections in academic libraries, or even a thoroughly representative one. Its primary goal was to inform the development of the UO Portland Library's material samples collection, with secondary goals of helping build connections and community in the academic community charged with curating these collections, and providing a resource for others learning the trade.

I am grateful for funding for this research from the University of Oregon Libraries Solari Incentive Fund, a donor-funded award intended to promote and support innovation in the UO Libraries--and for the support and release time awarded by UO Libraries administration that permitted me to conduct the site visits and later synthesize the findings into this report.

The goals of this report are to:

- *assist academic librarians charged with establishing material samples collections in determining the space, financial, staffing, and other resources necessary to make these collections thrive;*
- *contribute to the already-established body of expertise on academic library material collections;*
- *help make this body of expertise more visible to librarians who are not experts in this field; and*
- *help cultivate creativity, idea-sharing, and vitality in academic material samples collections by surfacing some of the practices and workflows of six diverse collections.*

My research was limited by time and funding, as well as other competing priorities in our library. The libraries in this study were chosen from among the many other fine collections that exist according to the following criteria, some of them purely practical:

- Host institutions should be public research universities offering architecture degrees at at least the Master's level
- Collections should have relevance for architecture students, not only for interior architecture, interior design, or fashion/garment programs
- Ideally, collections should be managed by an academic library, preferably one with branch libraries
- Collections should be active (i.e. managed by professional staff, not a "room full of stuff"), ideally with complementary services and/or a digital presence
- Collections should be within general size scope of those at the UO Libraries (i.e. not a negligible size)
- Collections should not be managed by Material Connexion or another cost-prohibitive (for the UO) vendor
- Ideally, each research trip should encompass at least two individual site visits, to maximize budget and findings
- Sites must be logistically feasible (i.e., airfare and travel times not prohibitive from Portland OR; staff at host library are available at mutually convenient times, etc.)

It wasn't possible to meet all of these criteria in all, or even most, of the sites. In particular, it was extremely rare to find a material samples collection managed by an academic library, rather than by an academic department or research unit. Additionally, several of these case study collections are not at public research universities, although it's not clear what effect this has on the collections. I was initially concerned that visiting collections at private universities could skew the results, offering examples of projects too cost-prohibitive to be useful for our own collection. As I learned, it wasn't the case that the best-endowed universities or architecture programs were automatically linked to the largest and most costly material samples collections. In fact, I learned that that there are many different ways to curate a successful material collection, and that success is tied most directly to awareness of user needs and habits.

I transcribed staff interviews by laptop while we spoke, capturing the essence of what was said rather than direct quotes. I did not audio record, in order to keep technology to a minimum and to keep the interview process natural and easy for the participants. The following case study interviews are presented in Q&A format for ease of reading, but they don't precisely record these conversations. In most cases, conversation ranged widely and I have therefore rearranged some of the content to follow a more standard pattern, to highlight differences and similarities between the collections. Interview participants have had the opportunity to review and correct these transcripts. Any remaining errors are my own.

Introduction

Issues and highlights.

Academic material sample collections are not identical to material sample collections held by practising firms. Their users have different habits and expectations, their materials are sourced differently, and their overall needs and scope are different. Academic material sample collections are generally most useful in demonstrating the range of available products to students, and in providing hands-on experience with common construction materials.

Academic librarians without training or professional backgrounds in architecture and design face a considerable challenge in building and managing architectural sample collections. The nature of sample collections is very different from those of more traditional physical library collections. While librarians have developed standard, consistent, and often automated methods for discovering, evaluating, purchasing, processing, housing, and maintaining traditional collections, most of these methods do not apply to material samples. Material samples require knowledge of and familiarity with the properties of materials, as well as relationships with established and emerging vendors and the ability to catalog and organize the collection appropriately. Currently, almost all of these activities must be managed with local expertise and homegrown systems--unless the institution has a budget to subscribe to a high-cost, high-quality sample lending service such as Material Connexion.

For any academic material sample collection to be considered successful, it must be engaged with the curriculum and other professional and scholarly activities at its home institution and (ideally) beyond. The "room full of stuff" resource model is no more useful in the context of architectural study than the "building full of books" resource model is in the context of history, math, or literature. Librarians responsible for material sample collections must find ways to connect with and take direction from the students, faculty, and professionals who use the collection.

The case study collections in this report demonstrate a wide variety of approaches to the academic material sample collection. They include a collection that is definitively scoped and structured around sustainability education; one that has no circulation policy but encourages students to consume the collection in the course of their work; and one that offers students the opportunity to do paid, professional-level consulting materials research for architectural and other firms. They incorporate leased materials as well as donated ones. They exhibit art and craft work, and host events by vendors, architects, and others. They embrace messy spaces, meticulous organization, and robust digital environments.

Material sample collections enrich the academic environment in many ways. Architecture students are not the only ones who benefit from them--students in other disciplines use these same collections in innovative ways. Librarians, too, have the opportunity to expand their knowledge and experience if they are well-supported in building and maintaining a collection. Above all, a good material collection is constantly changing and challenging expectations.

The University of Texas at Austin Materials Laboratory

I visited the University of Texas at Austin Materials Laboratory in November 2014 and spoke with Jen Wong, Director and Curator of the collection. The Materials Laboratory was founded in 2001, and is managed through the School of Architecture.

What kind of materials does this collection include?

Mainly architectural materials, although we get interest from students in the School of Art and elsewhere. All of our materials must be available on the market. When we receive donations we check to see if the donated materials are still being manufactured.

How big is the collection? How many items, and how many square feet of space?

We have over 28,000 individual samples, each of them individually barcoded. We have an online database with a full catalog. Our square footage is about [need lookup from JW].

Who supervises the collection? How many staff do you have? Who runs the collection on a day-to-day basis?

I do, and I'm the only full-time staff person. I got my M.Arch in 2013 and learned to manage the collection on the job. We have eight student workers, a mix of graduates and undergraduates. We get a mix of students from different programs--right now most are from the architecture program, with one from the school of art. Each student works about 10 hours per week, and three

of our positions are TA positions. [clarify--who provides the funding, the School of Architecture?] We share day-to-day responsibilities for running the collection.

Does the collection have a particular focus, such as sustainable or cutting-edge materials?

Our collection is pretty comprehensive, and we've covered the basics. So now we're looking for striking materials. A lot are made from renewable resources, reused resources, or otherwise innovative source materials.

How do you acquire materials?

We have a small acquisitions budget but we don't often use it to buy materials. Mostly we use it to pay for shipping donations. Firms sometimes donate in bulk. When we request donations, we find we get about a 50% response rate from vendors. We use Sweets and Green Spec to find new materials that we might want to request--they both organize by CSI MasterFormat, so we can go through by category to see what's interesting. Student workers are empowered to make orders and decisions about what to take. They track what they order on a spreadsheet, and use an email template for requests. We can also look at our circulation statistics to see what's most checked out, and see what our students

are most interested in, what's worth requesting or taking from a donation. For instance, we know that students are really interested in building assemblies, and that they find them really useful to study in person.

How do you classify materials?

We use CSI MasterFormat. Our barcodes show two numbers indicating which shelf the sample is on, six numbers for the CSI MasterFormat division, and four numbers to indicate accession order.

How do you get rid of materials?

When we get big donations, we automatically cull to get rid of duplicates. Anything that's not on the market, or that doesn't interest us because it's not new or innovative, we cull. We get rid of some unwanted materials by donating them to nonprofits, such as craft clubs or reuse centers. We also put out bins of unwanted materials for students to take.

How do materials circulate, if they do?

We circulate using barcodes on items, and patron records in an online system. We currently use a home-grown database that tracks both item and patron records, and uses PHP on the Zend framework. It was developed by the University of Texas IT department, but it's getting out of date and has some known bugs. I'm going to start looking at replacing it. We circulate not only to students but also to alums and professionals from firms. To borrow, patrons need an EID, a number that the University of Texas allows anyone to create temporarily. Our loan period is one week, with up to three renewals. Patrons can borrow up to 30 items at a time. There are no fines. The University doesn't want to impose more fines on students, and the Materials Laboratory isn't part of the Library system. But we can put a financial bar on a patron's record if absolutely necessary.

Do you offer an online catalog or other digital component of this library?

We have an online catalog that's part of the same homegrown system as our backend catalog, that tracks patron and item records for checkout. We don't have a point staff person for this. Student workers make entries as new materials are added, and I review as they go in.

How do you house and organize materials? What kind of furniture do you have?

We have ten full-height shelves, organized by CSI MasterFormat. We could organize them chronologically in order of accession, but it didn't make sense for our users. Instead, we have materials in bins on the shelves, organized by manufacturer and type of material. Within that there's usually some further organization--so, the wood samples are organized alphabetically by different species of wood.

We use three different sizes of bins, produced by Lewis Bins. The smallest ones are good for keeping small samples neatly in order, and we use a lot of those.



Do you offer any programming (events, exhibits, etc.)? How do you promote your programs and the collection?

Our primary target audience is students, and specifically architecture students. A few years ago we weren't very well known within the program or the university, so part of my job was to increase awareness.

I send weekly emails to the entire Architecture and Art schools, updating them on our activities each week. We started holding more events, hosting about two exhibition openings per semester. We started featuring more materials that were relevant to the seminars and studios being taught. I organized a hands-on carpooled field trip to a local stone carving studio, as well as to local architecture firms and sites. We show movies at lunchtime, including documentaries and feature films--the titles are listed on our website. We try to stay up to date with what faculty are doing that's relevant, such as one faculty member who was recently fabricating a bioplastic light fixture.

We get participation in all of our programming. We might start scaling back a bit, focusing on fewer and bigger events. We have to be mindful of the School of Architecture's own schedule of events.

Our secondary audience is the architecture and design firms and professionals in town, and the interested public. Our promotion to firms has been mainly word of mouth so far, and I'd like to work to increase their awareness and usage of the collection. We list our large events on the UT Austin daily events calendar, and have put notices in the free weekly, The Austin Chronicle. For some events, we also send informal emails out to peers and colleagues.

How useful do you think this collection is for your target audience(s)? How do you know?

Use varies, depending on faculty member interests and courses taught. Some instructors really use the collection as a reference that they refer to a lot. There's been a lot more chatter in the last year or two, which is great.

How do you assess the collection's value and success?

We track user numbers (physical visits to our location, hand-tallied by student workers.) We notice that visits spike around events--we recently had a big exhibition related to metal fabrication, and saw more visitors then.

Where do you see this collection going in the next five to ten years?

We're already large, but we'd like to continue adding exciting materials that patrons aren't aware of. We'd like to consider adding new spaces to facilitate student design work that's relevant to their studios.

There's a difference between products in the market and products that students can work with. For example, we recently used light polyester and linen fabrics in our exhibition space, and realized they were easier to manipulate than some of the end-product materials. We'd like to offer more of these materials to facilitate experimentation. We'd also like to collect more fasteners and hardware. They're not as important for design displays, but they're useful for design-build work.



The University of Houston Materials Research Collective

I visited the University of Houston Materials Research Collaborative (MRC) in November 2014 and spoke with Donna Kacmar, Director of the collection. The MRC was founded in 2010 by Kacmar, and is managed by her through her teaching appointment in the College of Architecture and Design. Though they originally rented samples from Material ConneXion the current collection of materials is sourced and acquired by Kacmar and her staff of students.

What kind of materials does this collection include?

Innovative building and design materials. We try to have things that other people don't know about. One example is Luccon, a kind of translucent concrete with carbon fibers.

How big is the collection? How many items, and how many square feet of space?

We have about 600 materials in our regular collection, and another 200 in our Material Connexion collection. We're changing from a subscription to a purchase model with Material Connexion. The samples from Material Connexion are updated semi-annually. The University of Houston also subscribes to the Material Connexion database.

Our space is about 700 square feet, in a single room off the main foyer in the College of Architecture and Design building. It was originally gallery space with a pin-up wall and some built-in cabinets with homasote-clad doors. We had a \$13,000 budget to start up. We spent \$5000 on cabinets, \$5000 on the design of the database, and the rest on our budget to pay student workers.

Who supervises the collection? How many staff do you have? Who runs the collection on a day-to-day basis?

I'm the Director, as well as associate professor in the College of Architecture and Design and a registered architect. My areas of expertise are materials, energy use in buildings, lighting, acoustics, LEED reviews, and building systems. I fundraise to support our annual budget for two student workers who each work ten hours per week. The College supports a graduate student who works another ten hours per week. And I am in the MRC 15 hours per week in addition to my teaching responsibilities. All staff, including me, rotate to keep the MRC open 1-5 Monday through Friday while classes are in session.

Who provides expertise and knowledge for this collection? How do you build staff knowledge and expertise?

I'm a registered architect with materials as an area of interest. We all learn by reading and doing. When a student asks a question it's an opportunity for all of us to learn. For instance, based on student questions we undertook a project where we looked at carbon footprint software to see how they were calculating carbon



<http://uh.edu/archmrc/>
*The Materials Research
Collective database catalogs
the MRC's holdings by
five categories: Metals,
Polymers, Ceramics, Natural
Materials, and Hybrids.*

footprint analyses. We looked at construction carbon costs, not operations carbon, over a two-year period.

We looked at the four biggest schedules of values for materials--concrete, precast, miscellaneous steel, and curtain wall. We consulted a database from the University of Bath for the embodied carbon for the materials, and found out where the materials were made. Then we tracked weight, routes, and method of transport. We found some surprising results. Domestic curtain walls, for example, may emit more carbon than Chinese ones, because the domestic walls are all transported on trucks (versus cargo ships for Chinese imports.) Our student workers called up subcontractors to get this kind of information, doing original research..

Who is your audience? What kinds of outreach do you do surrounding the collection?

Our primary audience is the College of Architecture and Design, which includes architecture, interior architecture, and industrial design. Students from the College of Art are welcome to browse but can't borrow material samples. We talk to all incoming freshmen and give tours of the MRC, as well as connecting through studios and other classes.

Our secondary audience are the local professionals working at architecture and design firms. We email them, invite them to events, and give talks at venues such as the Texas Society of Architects conference, materials research conferences, and the Association of Collegiate Schools of Architecture conference.

We focus not only on our student patrons but also on our connection to industry and the profession, especially here in Houston. We do things that will appeal to firms as well as to students and faculty.

We're developing a catalog that we send out to solicit money from firms, diagramming our services and activities. Some of these projects include the Made in Houston, H5H and Reuse in Houston projects. We also offer LEED v4 consulting, sustainability consulting, carbon footprint analysis, etc.

We offer the opportunity for local vendors to provide lunch and learn events--but the vendor provides the lunch, while I provide the educational content. The arrangement still appeals to vendors because the people who attend the events are the ones who spec and order at firms--as well as ours tudents. Professionals can get Green Building Certification Institute and American Institute of Architects continuing education credits.

We've hosted other types of events too, such as a roundtable on innovative materials and a fair on 3D panels. We invited students early in the day, and then had a wine and cheese event for professionals later on. It allowed them to compare products from multiple vendors in one location.

How do you acquire materials?

We have no budget for materials, although we pay for shipping occasionally. I source materials from vendors, identifying them in magazines and built projects, etc. One of my student workers assists with requesting samples.

There's also a regular, required building technology class in which students are required to turn in a material sample that the MRC doesn't already have. We then label and add it to the collection, using the information they provide on its properties to build our database. That course is the result of a relationship I've built with an adjunct faculty member who is also a principal at [architecture firm] Gensler.

I regularly meet with everyone who teaches materials classes at UH to share information about the MRC. I also give talks to many of these classes, and use them to model how faculty can interact with the MRC.

How do you get rid of materials?

I decide what to weed. We cull materials that won't fit in our shelves, which are a foot deep. We cull materials that get damaged or overhandled, and materials that no longer interest our users. We don't worry too much about running out of space--we haven't been around that long yet. We also put weeded materials out in a bin for students to take.

How do you classify your materials?

We have our own classification scheme that we developed, based on how most students use the collection. We group samples by material family: metals, polymers, ceramics, naturals, and hybrids. Within those broad categories we subcategorize in several ways. We provide QR codes on samples, which, when scanned, connect the user directly to the material property information in our database.

How do you physically organize the materials?

Our physical samples are housed in foot-deep cabinets with four-foot shelves, many of them in bins. We limit the number of fabric and carpet swatches we accept because we could fill up a huge amount of space with those, and because we want to center the conversation around factors besides decoration and pattern.

How do materials circulate, if they do?

We circulate materials to students as well as to profes-

sionals from our funding firms, but not to the general public. We sometimes take materials to our donors--we recently created a display at Gensler, and left samples there for a month.

We use a sign-in sheet for students to borrow samples, asking for their name and studio. Loan periods are a week. We haven't had to enforce with fines or fees.

How useful is the collection for your target audience? How do you know?

It's a lot more useful than it ever was. It was founded because students asked for it--it started as an independent study. Our students are using more materials now. Their instructors are requiring them to delve more deeply into specifying materials in their projects. And the industry is changing. Clients now ask us about VOC and embodied energy of materials. They used to be just concerned with appearance and cost.

How do you assess the collection's value and success?

I turn in an annual report to the Dean every year. We know we're keeping the doors open, building relationships with professional community, providing events, etc. We're also affecting the perception of the university by the professional architecture and design community, which is an bonus for us and the students. Anecdotally, usage is going up. It's cumulative--we're not yet sure which classes are making the impact, but it's happening.

Where do you see this collection going in the next five to ten years?

We'll do more research-based projects, such as updating locally-made materials because of LEED v4. We'd like to do more testing of materials. We'd like to see students acting on materials to test their response to heat, breakage, freezing, and so on. In addition we will soon need to update our database--a time-consuming and expensive endeavor.



The Made in Houston database lists fabricators by materials with which they work (wood, metal, ceramics, polymers, coatings, and hybrids) and their specific capabilities (casting, molding, forming, bending, 2D or 3D cutting/CNC, sculpting, carving) in the hope of connecting local designers with local makers.

[http://madeinhouston.](http://madeinhouston.uhmrc.com/)

[uhmrc.com/](http://madeinhouston.uhmrc.com/)

The California Polytechnic University Materials Collection

I visited the California Polytechnic University San Luis Obispo Materials Collection in November 2014 and spoke with Robert Arens, coordinator of the collection; Jesse Vestermark, librarian for the College of Architecture and Environmental Design; and Vicki Vaubourg, Director of the Neel Resource Center (NRC), which combines large-format printing services and other collections with material samples. This is an aggregated interview combined from all of their responses.

What kind of materials does this collection include?

Architectural materials, as well as digital images and a book and magazine collection. We can't have everything, so we look for materials that are sustainable in some way, which is hard to define. We tend to be selective. We look for current and new materials, because they can be design levers for students.

The original collection was mostly product binders and slides. A Construction Management student club created that version, and then Vicki moved in and built a small book and slide collection. Later we digitized the slides and moved out the physical versions, and used the space instead for the material samples.

The architecture department has always seen value in having its own small book and material collection for browsing, near to the department and studios. Students needed books that were out at the main library. We buy reference books and monographs on contemporary architects, building types, wall cladding, facades, etc. We leave architectural history to the main library. Magazines are a problem in the main library—students can't borrow current magazines there, and bound

magazines comprise several months of issues, so one student can monopolize quite a lot. At the NRC, there's no binding and students can check out current issues. We keep ten years' worth of issues, and have annual data on circulation for both books and magazines.

Our mission is to stimulate design sense in the students and also to develop an ethos of selectivity and awareness of materials and their life cycle. We'd like to educate students more about how to assess materials. We want them to think about questions like, will these materials still be in use when they graduate? We're trying to teach them a methodology for evaluating materials.

How big is the collection? How many items, and how many square feet of space?

We have about 3,000 samples.

Who supervises the collection? How many staff do you have? Who runs the collection on a day-to-day basis?

Vicki is our full-time staff supervisor. She manages both the material collection and the other resources in the NRC, such as slides, digital images, and large-format printing and scanning. We have one part-time staff



<http://www.caed.calpoly.edu/content/facilities/mrc-materials-collection>

member in addition to Vicki, and four student workers who change annually. Jesse, who is the librarian liaison to the College of Architecture and Environmental Design, also works part-time in the NRC.

Who provides expertise and knowledge for this collection? How do you build staff knowledge and expertise?

Robert is the materials coordinator for the NRC. He had the interest from the outset, and thought the school needed a collection. Using images of materials instead of samples flattens things. There's no opportunity to hold, smell, or touch. The collection is trying to expand that experience for students. Staff try to inculcate an attitude about research, looking closely at samples, at their physical nature as well as their internal character. Educating about materials is increasingly complex in the context of production, and a research capability is an important trait in architecture. But it was an uphill battle to find the space and generate a budget. We accomplished it with some internal grants, and built our argument until the college was willing to invest.

Who is your audience? What kinds of outreach do you do surrounding the collection?

We think the collection promotes itself, but that might not be true enough. We should [or do?] promote the collection at the new student orientation at the start of the year. We could do better at promoting it to other departments in the college--the College of Architecture and Environmental Design includes not just Architecture, but Architectural Engineering, Landscape Architecture, and City & Regional Planning. It also has a minor in Construction Management. We could also promote more in Kennedy Library.

We give our students tutorials on how to find manufacturers' specifications. Vicki gives classes where she assembles materials depending on what the faculty want to discuss, then teaches students about our own database and other databases. She also introduces them to the concept of spec sheets. Spec sheets have a regulated format, they're not a sales pitch. It's important for students to understand what they do, how they help explain a material's properties. And they need to know, for instance, that American and European countries don't use the same spec codes.

We have a great relationship with local manufacturers who share materials with the students, and we can also get out to see products being manufactured. Robert teaches a second-year architecture class that has a lecture component and a studio component, and can do field trips during class time. [Confirm this is correct interpretation of notes?] We've done trips to view concrete block manufacture and sawmilling in a local lumberyard. We talk with students about distribution, manufacturing, etc.

We could get the local architecture community involved in using the MRC, but our hours aren't great for them. We'd like to have this function more as a professional library as well as academic one. Smaller firms might find it useful, especially if they can't maintain their own space/collection. The financials can get tricky, though.

How do you acquire materials?

We rely on donations, but we've found that simply emailing vendors usually gets no response. So we started writing letters on letterhead, signed. We got a better response with those. Then we designed a letter from the College, with the Dean's signature on it, attaching a brochure that shows a photo of the collection and explaining how the material fits into the collection. This produces the best results of all.

We do a letter-writing campaign in the summer, hiring a student to help out. We have about a 50-60% success rate, depending on the economy. We've found European companies can be more responsive than domestic ones.

To identify materials, we use Building Green (subscribed to by our main library) and the materia.nl website (which is free online). Materia.nl arranges materials by qualities, such as porosity, which can be very helpful. We look at Material Connexion, as well as what's new at the University of Texas at Austin collection. We try to focus on architecture building products, rather than interior products and finishes.

We have a collection development policy, which is helpful when we get donations. We provide a letter that states up front that we can re-donate or discard materials that aren't useful for us.

Donor vendors will always send their literature binders as well, even if you ask them not to. We recycle or discard it, unless it's specifically useful in explaining something or providing context for a sample, such as bird-friendly glass. We check manufacturer websites for sections or drawings that are smaller than the binders but still useful.

We've sought sponsorships from manufacturers in some cases. For instance, in exchange for a financial sponsorship that we used to build staff, one manufacturer got a plaque, did a presentation to the school, and we brought them in multiple times for presentations on their products.

How do you classify your materials?

We use CSI MasterFormat. We chose it because we serve Construction Management and Architectural Engineering, in particular. It's not ideal for architecture but it's good for those students and ok for architecture. It doesn't make sense to all disciplines, particularly

outside of construction and architecture. We'd like a less restrictive system. We know we have Materials Engineering students don't know what to make of CSI MasterFormat.

How do you physically organize the materials?

We have browsing shelves, boxes, and bins.

How do materials circulate, if they do?

We have two systems: one is for books and magazines, and one is for material samples.

We use Library World to circulate books and magazines. We've had trouble getting any MRC items to show up in main library online catalog, so we use a separate system. It costs \$300-\$400 per year. It's also used by Princeton and other universities. We use a barcode reader to check materials in and out.

We use FileMaker Pro to circulate material samples. Students can browse our catalog by material or manufacturer. From our administrators side, we can also view patron and circulation records. It's only available from workstations in the MRC, there's no web version. Students can browse by some CSI classes, or can enter a search term of their own. Item records shows the manufacturing process, properties, applications, composition, description, image, and more information about a sample.

Non-architecture students can check out books and materials. We can send out overdue letters as needed. We take phone numbers, and if items don't come back we can put a hold on students' records, which prevents them registering for classes. We can't bill or charge fines.

We can't pull patron records from the university's central student database, in part due to privacy concerns. So we don't currently share patron records with our main library. We have to create borrower records as patrons arrive. We know we're duplicating some processes that are happening across campus..

Do you offer an online catalog or other digital component of the collection?

This is a real challenge. We have an online catalog with about 24,000 images, but it's a home-grown system and we need to upgrade. We've tried hiring computer science students, worked with campus IT, and looked at commercially available software. We would need to adapt anything that's currently on the market. According to the university we have to use a screen-readable Drupal front end. Right now campus is looking at purchasing Shared Shelf from Artstor, which is a tool that could incorporate this collection. Using student IDs to log in would take care of any licensing issues for copyrighted images of materials. Shared Shelf would

allow us to build our own fields, limit access to certain types of students, etc.

Much of our labor cost comes in photographing the materials. We do all our own photography. Most of the images provided by vendors are flat—they don't show the three-dimensionality of the piece.

We lack the software support to do a homegrown or support a complex software in MRC. We don't have anyone on staff with a database design specialty. We're hardware-oriented rather than software [in providing printing and scanning services.]

More connection between our main library and the MRC would be great. We'd like to plug into their infrastructure and also to connect with their instructional roles and outreach. The digital component is a struggle for MRC, but has been part of the mission from the beginning.

How useful is the collection for your target audience? How do you know?

In the ten years Robert has been the collection's coordinator, he's developed the culture of instructors bringing students in to discuss the collection. Usage of the collection is fair. Architecture is a large program, with a lot of large classes taught by lecturers (adjuncts), without close relationships to Robert, who provides most of the instructional outreach. There's no consistent thinking about the role of the collection in the pedagogy of those classes. Not every student gets the message about the collection and its role in the design process. The idea is that the collection is an active learning tool, but people have to use it as such. We'd guess that happens maybe 50% of the time.

Where do you see this collection going in the next five to ten years?

We're seeing a strong, increasing interest in digital fabrication developing, along with a research component to that. For good or bad, architects are trying to create new materials and uses for them. We're seeing lots of experimentation with materials, a lot of materials generated in classes. How can our collection include those things? We have to curate them, link digital fabrication and materials, and build the collection's appeal for students who want to work directly with the materials.

Similarly, how do we connect to the things that material and component developers are doing now? We'd like to draw from their information, not just duplicate it in our own databases. We'd like to set up networks with inventors around the world.

We'd also like to find a way to collate materials blogs and other digital sources of information for our users. We're working on the best ways to help our students



find resources online, and we'd like a more robust website, but that's a challenge. The university has very high standards and maintains control over all websites at the institution. We'd also like to include barcodes or QR codes on our samples, so students can scan them to find out more about the items. [check--is this a wish list item or is it already in place?] We'd like to find ways to share information across schools in our consortium, and even just across campus.

We'd like to build more connections to professionals, generate interest in the collection for their needs, and form more partnerships. It's a shame if the collection is just academic and not linked to the professional community. We'd like to see professionals and students mixing around the collection, around events like lunch & learns, and so on.

Our original idea was to have events, to host vendors doing presentations, and so on. But it's hard to schedule spaces for occasional events. We needed a dedicated space that's flexible enough to set up 20-25 people. Our own space filled up with shelves, and then with the plotter and scanner. Those weren't originally part of the plan but they bring in revenue, have taken over space and could continue to grow. We had to give up on dedicated space for vendor presentations. Without more staffing, it's hard to do more in terms of programming. We need more dedicated space and more staffing.

Speaking more broadly, we'd like to see a national standard for how to catalog material collections. The Library of Congress has the VRA Core for visual materials. We need something for material samples. Library of Congress could take this over, or a consortium of schools could provide leadership. The Visual Resources Association, the Association of Architecture School Librarians, and the Art Libraries Society of North America don't always understand that architecture objects can't be cataloged exactly like art works.



The California College of the Arts Materials Library

I visited the California College of the Arts (CCA) Materials Library in March 2015 and spoke with Lauren Macdonald, who managed the CCA Materials Library at the time and with Sheena Campbell, who served as an intern librarian. As of August 2015, Macdonald has transitioned to a new position at another university, and Campbell has taken over management of the collection at CCA. The Materials Library opened in the early 2000s, shortly after the launch of CCA's San Francisco campus where it is located.

What kind of materials does this collection include?

Our original goal was to collect architecture and interior architecture materials. We've since expanded to include other materials, such as wood samples used by our furniture design program, and fibers for our fashion and textile design students. Our interaction design students have been looking at plastics and innovative materials that aren't in the collection yet. So far, since we're relatively new to managing this collection, our focus has been to clean it up and document the items we'd like to add to the collection.

How big is the collection? How many items, and how many square feet of space?

We have fewer than 500 samples. We'd estimate about 470 to 480, not including fabric swatches. Our space is approximately 14 x 12 square feet. We have one computer workstation and a table where students can use their own laptops to work.

We generally keep materials only for about five years after their addition to our collection. After five years, we assess whether materials are still up to date and the best example of that type of material. We have no

intention of keeping an archive of outdated materials.

Who supervises the collection? How many staff do you have? Who runs the collection on a day-to-day basis?

Lauren manages the materials library, although she has no formal title in this role. (Her formal title is Instructional Services Librarian--managing the Materials Library is part of her set of responsibilities.). She supervises between two and five work study students, and manages a permanent part-time library assistant position that was added last summer and is currently open. Sheena has been helping to fill that gap as well as other library duties. We'd like the assistant position to become permanent full-time. Right now, the Materials Library's hours of operation are based on the hours the work-study students and Sheena can provide. This means the hours change each semester, and the Library is closed when no staff or student workers are around. It's currently not open on weekends, although Sheena is here some weeknights until 6:30. Sometimes student workers can be here later, but it depends.



[http://libraries.cca.edu/
new-materials-lib](http://libraries.cca.edu/new-materials-lib)

Who provides expertise and knowledge for this collection? How do you build staff knowledge and expertise?

Before Lauren became the Instructional Librarian, her title was Architecture and Design Librarian. She does all the collection development for our architecture and design programs. With that responsibility came the materials library, because of Lauren's background in architecture and her existing expertise. [Lauren holds an M.A. in Architectural History from the University of Virginia, and a B.A. in Art History and History from Dominican University of California.] [Associate Director of Libraries] Teri Dowling oversees materials cataloging and Lauren listens in and participates. Lauren helped to develop our classification system.

Does this library have a particular focus? I.e., sustainable materials, cutting-edge materials, etc.?

We're interested in sustainable and innovative materials. We consider all of CCA's disciplines and how they're represented in the collection. The material library's most frequent users are students and faculty in architecture, interior design, fashion design, interaction design, sculpture, industrial design, graphic design, and some painting. Textiles users are also requesting more presence.

We know there are some gaps, though, and want to start recognizing them. We have semi-casual conversations with faculty in their studios. We know our sculpture faculty are interested in flocking, for instance. Our graphic design users have been interested in paper samples, and painting students in paint samples. Our industrial design users wanted to see a collection of different types of screws, bolts, and fasteners. For fashion users, we've started acquiring different types of swatches so students can feel the differences between silk, cotton blend, tweed, houndstooth, herringbone, etc. Lauren is going with fashion students to North Carolina on a field trip to cotton mills to see how the materials are designed and fabricated.

Faculty want their students to look at something and touch it, rather than interact with it only on a screen. The question is, how do we support that in an academic environment? The known gaps in our collection are forcing us to look beyond our architecture and interiors disciplines.

How do you acquire materials?

When we first started working with the collection, we asked for donations from vendors and had some luck with that in getting new materials. We backed off when we realized we needed time to assess what we already had, organize it, and clean it up.

We do get some donations from architecture firms that

are cleaning out their collections. Some are useful, some we can't use. We look at ads in professional architecture journals to see what's out there. We review blogs and journals and ask students as well.

In the past we had no collection budget, and acquired materials only by donation. Lauren tried doing some approaches to vendors via email, explaining the Materials Library and asking for samples. We got about a 50% return rate using that method.

For more innovative materials that are costly to create, there is usually some cost to acquire them. We're allocating a small budget so that we can purchase things that we really want that we know won't be donated.

We receive gifts from manufacturers and donations from firms. European firms have been some of the most responsive, maybe because they're interested in representation in the US market.

Most faculty at CCA are practicing designers and many are adjunct faculty. Lauren has reached out to Gensler, an architectural firm that has invested heavily in its own materials library, and has a materials librarian. CCA and Gensler are already well connected to each other.

How do you get rid of materials?

We give some donated materials that we don't need to students. We periodically put out a bin with free materials for students to take. We don't want unsightly discards lying around, so we don't let them pile up.

We make decisions about donations on a case by case basis. Our librarians have subject expertise. [Associate Director of Libraries] Terry Dowling and Lauren do collection development for our collections overall.

How do materials circulate, if they do?

We recently added the collection to our Millennium ILS for circulation. Originally we used FileMaker Pro, and circulated using pencil, paper, and trust.

The system is a bit quirky, so we're currently waiving fines for our loans. Students can check out three materials at a time for two days. They can drop returns off when the materials library is open, or take them to the main library when it's closed. We'd like to get a slot for returns when we're closed.

We have a public website with a searchable interface, running on Drupal.

How do you promote this collection?

We visit classroom to pitch the collection and do orientations. We've created posters to promote it. We feature student work in our exhibit cases outside the Materials

Library. In future we'd like each shelf in the exhibit cases to be devoted to one of our academic programs. We have a chalkboard sign outside our door, and we'd like more visible signage but there are design restrictions in the building. We don't do any promotion outside of the school to vendors and firms—we don't want to encourage too much right now while we're still figuring out the collection and our system's quirks.

There's great promise for growth in material libraries in academic settings. These collections may disappear in big firms, but not in academic settings. Small firms will sometimes contact CCA and ask to visit the collection. They can't check materials out but they're welcome to use the collection here.

It's easy to find vendors in our immediate neighborhood who are interested in doing lunch and learn presentations, but we're not sure if the lunch-and-learn model would work. Students don't have much free time, and we're not sure we'd want a vendor to bring food. We'd also need a separate space—the Materials Library is too small. If we do experiment with this, we might target certain departments, such as interior architecture. We'd want to be cautious about which vendors we work with, to make sure the event is appropriate for students. Vendors know that many of our faculty are practicing designers, and that our students will go into the field when they graduate, so there's a real benefit for them. If a vendor comes with a genuine educational component in place, then it may fit.

CCA has a tight bond with the architecture community in San Francisco, so in some ways the marketing is done for us. We did hold a local ARLIS chapter meeting at the Materials Library, to share space and show the members the collection. There are no other academic material libraries in the Bay Area.

The collection was called the New Materials Library for a while, but nobody used that terminology. It's now just called the Materials Library. We've seen more visits this year from our Oakland campus. Students take the shuttle over to San Francisco as a combined visit to the Materials Library and the fabrication shop.

How do you classify these materials?

We use a homegrown taxonomy, and we have room to change it as we add different types of materials. For instance, we could add a new range for innovative materials. (Some of these present storage issues, like a new plastic that's almost liquid.)

Teri Dowling, Associate Directory of the CCA Library, supervises cataloging for all CCA libraries. She created a taxonomy (with scope notes and descriptions) for catalog records.



In our catalog we have a subject heading for sustainability resources, which helps students browse. We include additional subject headings for recycled content, biodegradability, or materials that are part of a chain of recyclable materials (like polar fleece made from pop bottles that is in turn recyclable.) We'll be able to put more facets like this in to the records when we transfer info from our older files. That information goes into both our Millennium and Drupal records.

We use green stickers for visual identification of sustainable materials in the physical collection. Our curriculum often requires students to use a certain percentage of sustainable materials, just as LEED does in real-world projects.

Do you offer any programming (events, exhibits, etc.) in connection with this library?

Lauren is talking to vendor representatives who would like to come in and do presentations. We'll get into that after we finish weeding and cleaning the collection. We'd like to host parties to introduce innovative materials. We know that some disciplines use our space more, and some don't know it exists. Some classes just schedule a visit to the Materials Library [is this a positive or negative thing?].

Lauren also cultivates relationships with particular classes, such as Material & Space. Part of the students' assignment is to incorporate materials and make a palette for a project. For those types of classes, Lauren will do a presentation about the Materials Library.

Students sometimes ask Lauren if she can find a material they want, and source it for them. She tells them, "No, but here's how to do it yourself."

Lauren is finishing a LibGuide for materials research which helps to integrate the traditional (book, journal) library and the material library. She does all the library classroom instruction for both campuses. Students know her name and face, and so they approach her with their questions.

Sometimes we'll do regular classes on information literacy and will just mention the Materials Library as part of the class. We introduce it at new student orientations, too. We plan to start incorporating it as inspiration into research methods classes.

Students like to come in and do homework and also hang out—there's not a lot of other places to do it in this building. The material library provides social space as well as space for research and learning. We're fostering a living room space or "third space" on an urban campus where there aren't a lot of those spaces.



Do you offer an online catalog or other digital component of this library?

We use Millennium for back-end circulation and Drupal for our front-end. We've been photographing of all our samples because the previous photos we inherited were too small (thumbnails).

We have Material Connexion's online database, and we find it useful. For instance, students who are looking at bioplastics and cornstarch plastics—they're not in our collection yet, but they can see and download images, for their display boards from Material Connexion. The database provides good search filtering, so it's good for a specific class prompt. They also send a Matter subscription (sometimes), which can be good for collection development prompts..

Where do you see this collection going in the next five to ten years?

We'd like to offer more programming through the Materials Library. We'd like to focus on adding more new materials to the collection regularly, so it's more dynamic. We're considering sending out a newsletter at start of every semester, sharing new materials we've added. We'd like to tie the collection in with the materials science program and its research component, and link it to the broader information literacy picture.

We want students to come in and get the materials, but also to understand how they fit into the school's visual and information literacy goals. We want to go beyond the visual and tactile, to the research component.

We'd like to do more classroom instruction, more programming, and more direct marketing to highlight new materials for students and faculty. We put a big orange "search" button on main library home page, because students didn't know you could search the material library online.

[Note: A student user, Amy, joined our conversation in passing]

Amy: I wish that the material library was closer to the school's maker space and woodshop. If it was, that moment of excitement and inspiration would be more seamless. It would dovetail with our fashion program too. Students can get donated fabric from the making shop, where there's a sewing machine and a "soft lab" nook. That would be great to have next door to the material library. The material library is in the center of the classrooms, right off the Nave (the building's central hallway) but it can still feel forgotten and tucked away, without natural allies right next door. Shops and labs would be ideal to collocate with it.

Having Lauren visit classes is great. She's done instruction about the materials, about how to search Material Connexion and the online material library database. She tries to reach all students in their first year, but some juniors still don't know about the collection.



The New York School of Interior Design Materials Library

I visited the New York School of Interior Design (NYSID) Materials Libraries in May 2015 and spoke with Meg Donabedian, Librarian, and Billy Kwan, Director of the Library. NYSID maintains two separate materials libraries, The Mario Buatta Materials Atelier and The Ruth and C.J. Trimble Materials Collection. The Mario Buatta Materials Atelier is located in the NYSID main campus on New York's Upper East Side, and serves primarily undergraduate students. The Ruth and C.J. Trimble Materials Collection is located in the Graduate Center in the Flatiron district, serving graduate students.

What kind of materials does this collection include?

We collect architecture and interior architecture materials, including both residential and contract samples. Our undergraduates are more focused on residential design. Our graduate center is smaller and more focused on contract samples. Contract samples are commercially graded, observing certain specifications for a commercial design environment. They have their specs on the back of the sample, depending on their purpose—the amount of contact rubs, whether they're fireproof, etc.

We only retain samples of materials for three years after acquisition. Samples must be memo size, or no bigger than 8x8" or 6x6" for hard surfaces. We collect textiles, wood, glass, plastic, metal, engineered stone, natural stone, and other materials. We don't collect paint chips because we're near a supplier.

Students use boards to present their work, so samples have to be able to wrap around a sample box. Students sometimes scan materials and use the images in their boards, but faculty still require a tactile/texture element.

At our graduate center we offer specialized one-year

Master's of Professional Studies programs in healthcare environment, lighting, and sustainability. For these programs, we collect materials at a very specialized and advanced level.

We're finalizing our collection policy, donation policy, and processing policy—you can see much of it on our website already. We also track on donors who provide gifts in-kind.

Who supervises the collection? How many staff do you have? Who runs the collection on a day-to-day basis?

Meg Donabedian manages the materials libraries, with direct in-person oversight of the undergraduate collection. We have no staff supervising the Graduate Center material library full-time, so a student worker goes regularly and staff check it occasionally.

Who provides expertise and knowledge for this collection? How do you build staff knowledge and expertise?

Meg trains some graduate student workers as lead students to pair with new students, teaching them to sort and evaluate materials. Student workers essentially



train each other, with some input from her. They learn by doing and by working with other students who are good at it. Meg is the most knowledgeable staff member in the library.

Some of the evaluations that student workers have to make are subjective, because of the aesthetic component of the collection. Some people are inevitably better at it than others. Meg has an art background and an architect in the family, and previously worked in an administrative position at Gensler [an international architecture firm] for several years.

We don't have specific materials expertise in our library staff, and we don't have a database of materials like some other schools.

We rely on student workers who are particularly good with materials to help us out, because they're taking the relevant courses and have the best idea of what students really want to use.

How do you acquire materials? If you have a collections budget, how much do you spend annually?

Our collection is entirely by donation; we buy nothing. We have a small budget, about \$4000, for a messenger service to pick up donations from firms. We also use it to send materials between our graduate and undergrad centers, and to subscribe to the Material Connexion database.

Students interning at small design and architecture firms will secure some donations, and we have longstanding relationships with larger firms. We actually have to turn down many donations, and we've got a collection policy to help donors weed before they donate.

We also participate in the "Save a Sample" program, partnering with firms and vendors. Schools can sign up and select the types of materials they want and be paired with local architecture and material firms. Gensler is a donor, for instance. The firms donate superseded materials and literature about them, as well as some funds to help with processing the donations. The program also holds drawing competitions for students, with \$1000 for student who wins, and \$500 to the school of the winning student.

How do you get rid of materials?

Storage is a challenge. Our student workers constantly weed what we have, only keeping the best. Student workers open donations and are trained to do an initial weed. They can separate undergraduate materials from graduate materials. They do inventories at both of our centers to know which location is getting what, and what to send where.



How do materials circulate, if they do?

This is a consumable collection, not a research collection. Students don't return materials, they just take them and use them. There's no checkout process.

Sometimes there are hoarding problems with graduate students taking materials competitively and not returning them until the end of the semester or year. We've considered creating a code of conduct, and we sometimes send emails to students asking them to return materials.

How do you classify these materials?

We classify mostly by type of material and then color or pattern. The collection must be organized enough to be browsable, and we have to be able to maintain it. There's been lots of trial and error. We've changed some terminology along the way—for instance, it's sometimes too general to simply say "pattern," so we change our term to "multi" or something similar, to make it more specific for users.

How do you physically organize these materials?

We have two separate collections. The undergraduate collection is mostly housed in small bins and binders on wall-mounted shelves, in our Upper East Side location. The graduate collection is housed in a custom-fabricated lockable set of shelves and drawers in the graduate center, in the Flatiron district. Students also have access to the Material Connexion material collection if they visit it on site, at the company's Manhattan location.

Do you offer any programming (events, exhibits, etc.) in connection with this library? If so, who are your partners in these programs?

We do instruction in classes on how to do research. We could promote the materials library more in the general orientations we offer. Materials are worth only 15-20% of students' projects, because the rest is ideas, structure, concepts, etc. They get critiqued on their ideas more than on their use of materials.

Do you offer an online catalog or other digital component of this library?

We subscribe to the Material Connexion database. Subscribers can get into the database more deeply than non-subscribers, can see contact information and specs, as well as related articles and more.

How useful do you think this collection is for your target audience?

We know that a textiles class and a design process class are both big users, as well as students working on thesis projects for their BFA, Master's, and MFA. There's also a materials and methods class that studies material properties, and is a big user.

We don't really interact much with students about material properties, but we display materials in ways that demonstrate the distinctions between engineered materials and natural, and so on. Students seem to know what they need and want. They don't seem to need us to help them evaluate materials.

Where do you see this collection going in the next five to ten years?

We'd like to make the storage space more high-value. We'd like to see the collection more integrated with student activities. We think we should have a messy space in order to help incorporate student learning and more interactivity. We'd like an active area where students can scan materials and bring them into our book collection, merging the material collection with work space and traditional library materials. We'd like to integrate food into it, so students can eat in the same space where they study and use the materials.

Right now the space is very compartmentalized. It would be great to all be in one space (books, journals, materials, etc.) and have essentially one collection. We'd like to subscribe to Material Connexion with a display area to teach students about materials with a research focus. We'd keep our current collection, which is entirely consumable, but have a separate display area as well, offering a more professional, research-oriented set of materials.

We'd like more interactive space integrated with our reference materials, Material Connexion, a work station for a reference librarian, studio space with scanning equipment, books, etc.

We know about Designer Page and To The Trade—both software for students to gather materials and manage them online. The question is, how can we facilitate that process? We imagine a role for the library in integrating messy working space, books and research, small group meeting and presentation spaces, critique spaces, materials, events like lunch & learns, and more. We'd be involved in the whole cycle of knowledge production.



*[http://library.nysid.edu/
library/about-the-library/
materials-libraries/](http://library.nysid.edu/library/about-the-library/materials-libraries/)*

The Pratt University Center for Sustainable Design Strategies Materials Reference Library

I visited the Pratt University Center for Sustainable Design Strategies (CSDS) Materials Reference Library in May 2015 and spoke with Carolyn Schaeberle, Assistant Director. The CSDS Materials Reference Library is part of the Resource Center, an independent research center and collection of academic support materials and services for students in multiple programs at Pratt University.

What kind of materials does this collection include?

We focus on materials that are of interest to faculty and students working in industrial and product design, communication design, fashion, and interior design. We also have a textile collection at our Brooklyn Accelerator, which is mainly used by fashion students and faculty. That's very new—we haven't even got photos of it yet.

What is the size of this collection? How many items does it contain, and what is its square footage?

We have exactly 100 material samples at any given time. This is an intentional decision on our part, to keep a streamlined and manageable collection that we can use to teach students about sustainability. Our physical space is small, maybe 30' x 25'.

Who runs this library? How many staff are there?

I'm the Director, providing supervision for the Materials Reference Library. Debera Johnson is my boss. Debera is a full-time faculty member in industrial design, and a former chair of the department. She's now the Executive Director of CSDS. Debera also started a related project, the Brooklyn Fashion Design Accelerator, which

provides workspace for fashion students in South Williamsburg. She's passionate around sustainability and has a vision for the collection, but hired me for my materials knowledge.

I was initially hired as a contractor for a year, in an Assistant Director position, to help figure out the collection. We received a large FIPSE grant, which provided funds to faculty for course development, as well as funding my full-time position, paying for part of the collection and the space. My position is now a Director position, funded on a renewable budget.

Depending on the time of year and what's going on, I manage between five and 12 student workers. I also support some other sustainability initiatives around campus and manage the intern budget for other projects. We have about \$40,000 annually for our total student worker budget for all these projects, and about 60% of that is for the Materials Reference Library.

Who handles the day-to-day operations of the collection?

I do, along with my student workers. I teach classes on sustainable materials and how to research them, as well



as consulting with students who drop in for information and help using the collection.

In addition to our regular open hours and classroom instruction, we offer a weeklong series of events called Green Week, along with the Sustainability Crash Course, which I run. It's a day-long series of workshops with Pratt faculty and other sustainability experts, in spring. We bring in different industry presenters to talk about many different aspects of sustainability. In Spring 2015, our fifth year doing it, we had 250 people participate.

A lot of my job is to "infiltrate" the rest of the sustainability community, forming relationships and learning about materials and sustainability trends.

Who provides materials knowledge and expertise in this library? How do you build this expertise in library staff?

I was a graduate student in industrial design and mechanical engineering. I finished in 2008, which is when I started here. My work explores design with a social lens, such as water purification systems in the developing world.

When I hire new student workers, I give them the same overview as I would give to a class. I prefer to hire juniors because then we have minimal staff turnover, and so we can have student workers help train each other. We hire students from different disciplines because they each have their own interest areas. We don't require student workers to have materials knowledge at the outset. Students from writing, graphic design, and other programs would all be good candidates. We want to create a cross-disciplinary learning atmosphere. Student workers ask each other and us questions, and do peer reviews.

Student workers help us conduct summertime audits of the collection, which helps teach them the terminology as well as the landscape of what's out there. We also work with high schools to have their students come in and shadow our work study students as they do the audit.

We don't use a lot of documentation for training; we do it more with discussion and regular meetings. We stagger student workers' hours so there are at least two working together at any given time.

In terms of building expertise about users' needs, there's a sustainability student group that has weekly meetings in our space so I stay informed about their concerns, course plans, etc.

During the year, we undertake projects like life cycle assessments for companies like Starbucks. It provides an income stream for the center and the students. It's



also good experience for students to work with a real client, on a real job. It gives all our training and the collection itself an application.

How do you acquire materials?

We sometimes find out about new materials through students working on a project and telling us about them. Or we look at what other designers are using in the profession--reclaimed building materials, etc. New York City park and subway benches in were made of ipe wood [a high-quality, weather-resistant, expensive tropical wood] in the 1950s, so Build it Green, a non-profit architectural salvage retail outlet, is now reclaiming that wood.

We also find them through the Material Connexion database (which we have access to through the Pratt University Library's subscription.) We don't always trust Material Connexion's search categories, though, because some of their information is provided by vendors. We tend to do a deeper dive into the manufacturer's claims. For instance, saying that a material is 100% recyclable isn't meaningful if there are no facilities to recycle it.

We make selections in part based on what's visually interesting—we use certain materials as “bait” to get people in the door. Samples also have to be practical, things students could actually use in a project. Overall, students' interests drive the collection. We do an annual summer audit and weed items that are no longer available or not as sustainable.

We don't aspire to have an exhaustive collection. We hope to have samples that inspire and help students learn how to do this research.

Most materials are donated; we've only paid for a handful of samples. Many of our design faculty are adjuncts, which is appealing to vendors because they know adjunct faculty are working in firms, and can specify and order materials for projects. We're also highly selective--we only have 100 samples--and vendors are often interested in that.

To get materials, our student workers usually email the vendor first, with coaching from me. Part of the job experience is for the students to get comfortable communicating with strangers professionally.

How do materials circulate, if they do?

We classify mostly by type of material and then color. This is a reference collection, not a circulating collection. Materials don't leave, but we provide notebooks for students to take notes about what they're learning and resources they need to follow up on. The notebooks [produced by Scout Books, a Portland, OR-based small book bindery] have our website URL printed on the back.

Who is your primary target audience? How do you get the word out to them?

All 600 undergraduate foundation-year students going into Pratt's design or fine arts programs get exposure to us. Apart from that, we primarily serve faculty and students working in industrial and product design, communication design, fashion, and interior design. We also serve some fine art and sculpture students. All of these programs offer both undergraduate and graduate programs except fashion, which is only undergraduate.

The architecture department has its own building with a lighting lab, and those users tend to stay away. We don't focus on architecture materials here, and they have no materials collection in their department.

CSDS is its own research unit, it's not affiliated administratively with any school or college. All good design includes sustainability, so this makes sense. .

How do you promote this collection?

At the beginning we went to chairs and departmental meetings to promote the collection. Finding champions has been our most successful strategy. We work with faculty across departments who will bring students in for an hour at start of a new project. We provide an overview of the materials and how to do material research, with sustainability in mind. We use different lenses for different disciplines. Many faculty bring us back in for mid-term and final critiques to reflect back on the sustainability piece.

Helping to develop our new sustainability minor has been helpful too, because that has also had to promote itself. We were able to piggyback our promotion efforts onto what they did. We organize the annual spring “Crash Course” even, which is also great for our walk-in recognition.

We're one of the stops during new student orientation, when students get a map and have to check off all the spaces to get a major prize like free room and board for a semester. Most new students come in for a few minutes. It was easy to get included on that. Student activities is a good supporter of the CSDS.

We also work with firms—our alums go work with cool people, and share what they know about the CSDS. Sometimes we hear from firms out of the blue because they saw us at the Crash Course or heard about us from their student workers. We definitely benefit from being in NYC where there's critical mass and longevity for sustainability and design.

We use striking materials and our visually appealing display as “bait” to get people to walk in the door and

New Leaf Paper PAPER

D New Leaf Paper is a paper merchant that sells only environmentally friendly coated, uncoated, and board papers. New Leaf works with mills to develop sustainable papers that are made of 100% recycled fiber.

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<http://csds.pratt.edu/wp-content/uploads/2013/02/materials24.jpg>

have conversations about sustainability. Materials are important but just having a bunch of samples is limiting. Something that is sustainable in one context may not be in another. For instance, we talk with students about traditional PET plastic vs bioplastics (corn, etc.) Bioplastics are great if you have large-scale municipal composting, as you do on the West coast. In the east we don't have that, just small-scale grassroots composters which don't have enough heat to break down these types of materials. On the other hand, PET plastics are recycleable if facilities exist. It's hard to have those kinds of in-depth, meaningful conversations until someone walks in the door and says they need to include sustainable materials in their project.

How do you classify these materials?

We chose not to use CSI MasterFormat, because it wasn't relevant to the types of material we collect or to our users' interests. Instead we classify via a life cycle assessment, taking into account factors like water withdrawal, impact on resources, human health, ecosystem quality, and climate change. We wanted to break this down into a simplistic form while still being useful.

We played around with this approach, did research on some initial material samples, and developed a balancing act of how detailed to get. We need to take into account what our audience will understand. We serve design and art students with little to no knowledge of material science or classification. So, for instance, we'll classify a material as "rubber," instead of something more technical about how it's composed, to make sure our users understand the language we're using.

How do you physically organize these materials??

We have a wall of samples. We use bookshelves with metal facings, with recycled acrylic sliders on rubber inserts, and Material Connexion-style samples affixed to the front and cards explaining their properties. We also have some storage drawers for materials we've received and haven't had time to research yet.

We have 100 materials on display at any time; stone, ceramic, glass, paint, coverings, metals, paper, plastic, composites, wood, rubber, textiles. We started with just the samples and some information about them, but found that we needed more reference points to contextualize the materials and make them meaningful. We've created infographics to explore the life cycle of different categories of materials and what their impacts are. We discuss usage of resources, environmental impacts, human health and toxicity, and social equity. So students see if they're looking for wood, here are some common issues for wood, here are some things to improve upon, etc.

We're not trying to offer a comprehensive collection of all sustainable materials—more of a model of how to

ask questions and how to research true sustainability. CSDS has a methodology for how to do this research, and shares how to do it

Do you offer any programming (events, exhibits, etc.) in connection with this library? If so, who are your partners in these programs??

About six years ago we founded the Sustainability Resource Center. Three years ago, the sustainability minor for undergraduates was introduced. We work closely with the coordinator for that program.

Do you offer an online catalog or other digital component of this library?

Our site, csds.pratt.edu, has a list of some of our materials. We're going to update the site this summer. The CSDS site is migrating to Pratt's site soon, which has just been revamped, and now has a structure that's a little better for CSDS.

How useful do you think this collection is for your target audience? How do you know? How do you assess the collection's value and success?

We keep a sign-in sheet and we record everyone who comes in, adding them to our email newsletter and events listing. We track how many classes I see every year, as well as how many are repeat classes and which are new. We track on the number of new faculty I see, as well as which departments are heavy users and which don't use the collection.

Most students who walk in by themselves are coming in because they're looking for a material specifically for a project. We use those opportunities to get into a larger conversation with them about how to evaluate and research sustainable materials.

Where do you see this collection going in the next five to ten years?

We're happy with the size of the collection. Our biggest goal is for students to understand the consequences of their decisions as designers. Limiting the size of the collection and having the resources to support it allows us to keep our focus on meaningful education about sustainability. Having thousands of materials would confuse this.

We'd like to see more departments embed research strategies and materials research into every project they assign.

Everything is changing so quickly in terms of the environmental impact of what we're doing—we feel we're barely scratching the surface. I'm doing my own continuing education just to keep up. I'm teaching a course on life-cycle assessment. We're using some

software tools for this—Quantus Suite is an example of one. We have educational licenses for some software, or we're using the web-based, free version. I teach students how to use it, then help them get the full version on their own machines.

***[http://csds.pratt.edu/
category/materials/](http://csds.pratt.edu/category/materials/)***

Lessons learned

The following recommendations are drawn from the case study interviews and literature review, and intended to help academic librarians charged with developing materials samples libraries.

Clearly articulate your goals

Write clear goals for your collection. In order to shape the collection appropriately for your users, you must tie it to your users' needs as well as your parent institution's mission and goals. These might include elements of the curriculum, learning, student success, building a connection to industry and innovation, etc. **For example:** Mark Pompelia, Visual Resources Librarian at The Rhode Island School of Design Materials Library, outlines the goals of his collection: "to help students from across every department to rethink traditional materials and their purposes."⁺

Clearly articulate your collection development policy.

Write a clear statement of what you collect. Consider size, type, and component materials of the samples you can take. Base your collection development policy on your overall goals for the collection. Consider not only what's appropriate to your goals, but what's feasible for your staffing and resources. Consider whether your collection will circulate, be consumable, or be for in-library viewing only. Consider how you'll acquire materials, and whether you're willing to pay for shipping or storage of donations. Know your audience; don't try to be all things to all people. Have a plan and schedule for culling materials. Make clear to donors how you will handle donations you don't add to the collection, such as materials binders and catalogs.

For example: Consider limiting your collection intentionally to a certain number of samples in an area that interest your users, as the Pratt CSDS Materials Library does.

Standardize your collection methods.

Create a plan for soliciting donations. Ask thoughtfully for donations, targeting the firms and vendors that make most sense for your goals. Be prepared to ask more than once, and to escalate your request from an initial email to a letter or phone call. Be prepared to make the case for the benefits of donating to the vendor.

For example: The California Polytechnic Materials Collection uses a letter on college letterhead signed by the Dean.

Keep your classification scheme simple.

Control your urge to classify. Original cataloging takes staff time, expertise, and attention. Most academic users don't approach materials collections by drilling down through a classification scheme, but by browsing. While some classification is needed to keep materials organized and discoverable, you may need less than you think (especially if you rotate materials regularly.) Consider whether a simple homegrown scheme will serve your users as well as an established professional scheme such as CSI MasterFormat.

For example: Mark Pompelia comments, "students come in and don't just say, 'I need wood,' they say, 'I need something hard' or 'something to attach zippers to.'"⁺

⁺ <http://www.core77.com/posts/20018/introducing-the-risd-materials-library-20018>

Consciously develop expertise.

Create a plan for building staff and student worker expertise. Most librarians don't have expertise with handling materials samples, and most MLIS degrees don't cover this type of collection. Develop a plan for building familiarity with the terms and concerns of materials design. Consider not only expertise in handling and assessing materials, but other areas that will benefit student workers, such as professional communication. Documenting these skills can help make the case that the collection benefits student workers as well as users.

For example: The Pratt CSCS Materials Reference Library specifically assigns student workers to contact vendors for donations, with oversight from Carolyn Schaeberle, in order to help them build professional communication skills.

Build relationships.

Infiltrate your users' field of study. One of the most valuable things a librarian can bring to a material sample collection is access to the design professions. Librarians without subject area expertise can use relationships to build their knowledge base. Relationships with firms and vendors can help establish the librarian's and collection's credibility with users, in turn helping to establish relationships with "champions" in the department or college. They can create opportunities for valuable programming and teaching events, and can help provide context and relevance, keeping the collection from becoming simply "a collection of stuff."

For example: The University of Houston Materials Research Collaborative is judiciously named--it is heavily oriented toward partnership with the architecture profession. Donna Kacmar and her student workers regularly do professional-level consultation work for firms. At Pratt's CSDS Materials Library, Carolyn Schaeberle consciously and intentionally "infiltrates" sustainability professions in order to keep up to date on the field and boost value to her collection's users.

Weigh the costs of digital.

Scale your digital presence to your users' needs and your resources. Establishing an online catalog can be enormously costly in terms of time and resources. If you decide an online presence is important to your users, consider how you will generate the content and maintain it over time. If you include images, consider whether you will photograph your samples or rely on images from other sources. Decide whether or how student workers can contribute to your online catalog, and how you will handle turnover in trained student workers.

For example: The California Polytechnic Materials Collection does its own photography because the images provided by vendors aren't sufficient for their users--but they cite photography as one of their most resource-intensive tasks. In almost every case study interview, the ILS and online catalog were problematic and resource-heavy components of the overall project.

Craft your space to suit your users.

Ask their opinions, observe their habits, know their deliverables. If you're able to build, renovate, or adjust your space, consult with your users before you start. But don't just take users' word for what they want and need. Study how they work and know what they need to produce. Pay attention to the spaces they already populate, and to what they might lack.

For example: The California College of the Arts Material Library serves as study and social space for students, in an urban campus without many similar spaces. The New York School of Interior Design Materials Library seeks to add "messy" space for students to socialize, do creative work, and possibly eat and drink in the same space where they use the materials collection.

Future work

Academic librarians charged with managing materials collections face many challenges that have been overcome in the more traditional areas of librarianship. There are many ways in which academic materials libraries could be standardized and made simpler and less costly.

Consortial cataloging.

A consortial cataloging system, similar to OCLC for other collections, would reduce redundant effort in material libraries across the country (and potentially around the world.) It would provide a way to share and adapt records, and would help to increase awareness of holdings in other material collections. It would reduce the need for homegrown systems, as well as the challenges of staff training, turnover, and knowledge drain. An open-source digital asset catalog with a turnkey interface would be a good starting place, possibly achievable by a working group of Library of Congress, The Association of Architecture School Librarians, or a consortium of like-minded schools. The Library of Congress has developed the VRA Core standard for the description of works of visual culture, but it doesn't translate well to architectural materials.

A core materials list.

The Association of Architecture School Librarians has developed a list of core journals for architecture libraries. A similar list of core materials would be a helpful jumping-off point for librarians new to the field or the collection type. Such a list could be flexible, providing either suggested general categories in which to collect (metal, glazing, wood, ceramic, etc.) or specific types of materials commonly of interest to students (assemblies, green wall structures, etc.) For settings in which a general list couldn't be used, a template for interviewing users could be provided, to help novice librarians understand what questions to ask and what the answers mean.

A national inventory of collections.

There has been no national inventory of academic material samples libraries, such as the National Union Catalog of Manuscript Collections. Finding collections is hit-or-miss, and made more difficult by the range of vocabulary used to describe these collections, the multiple meanings of the words most often used, and the fact that the collections may be housed in a wide range of units on any university campus. A national, up-to-date directory of material samples libraries increase awareness of these collections, facilitate collaboration between collections staff, and help promote stability and consistency.

Training materials and mentoring opportunities.

Librarians who are not engineers, architects, or designers can learn the skills necessary to run an effective material collection, but the process would be simpler and less redundant given some basic training materials or mentoring opportunities. The Association of Architecture School Librarians, or the Materials Special Interest Group of the Art Libraries Society of North America could be an appropriate body to develop these types of materials and programs.

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