# Teaching with Drawings: Primary Source Instruction with Architecture Archives

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## ABSTRACT

Architectural archival collections contain a wide variety of documents and materials that are effective teaching tools for primary source instruction. Sketches, design and construction drawings, material samples, models, and photographs are just some of the collection materials one may find in an architecture archives. However, architecture archivists are not formally trained to teach with these collections. The authors examine the gap in professional and scholarly literature on teaching with these specific materials and consider this in comparison to the rich literature on teaching with primary sources more broadly. They discuss the pedagogical models they have applied in their instruction work and how these support the information-seeking habits and research needs of architecture faculty and design students. By contributing to the growing body of literature on teaching with special collections in this specific subject area, the authors hope to elevate the skills and expertise that architecture archivists bring to the field.

## KEY WORDS

Design records; Archival instruction; Academic archives;
Teaching with primary sources

Academic architecture archivists carry out special collections instruction within a historical framework. Along with canonical texts in architecture history, architecture schools typically acquired drawing collections for teaching purposes. These collections sometimes expanded to include architectural archives and are now often housed in dedicated archival and special collections units or repositories. Architectural archival collections contain a wide range of materials that document many aspects of architectural history, theory, and practice, such as sketchbooks and architectural drawings, correspondence and project records, audiovisual materials, and photographs. Collections may be hybrid or fully born digital, with media such as floppy disks and hard drives storing emails, office backups, and intricately linked computer aided design (CAD) and building information modeling (BIM) files. These materials contribute to documenting the life cycle of a project, and thus the built environment, from an architect's early sketches to the final, as-built drawing set of a constructed building. The drawings generated, both analog and digital, can form a vast amount of material that makes its way into the archival record.

Situated in this context, how do academic architecture archivists, who are increasingly expected to lead instruction sessions with their collections, and who often have little to no formal training in teaching with archives, learn to teach with architectural archival collections? Teaching with these materials is not always intuitive, and their specificity can be intimidating for archivists without architectural subject knowledge. Yet, as instructors, architecture archivists can impart skills in archival intelligence and primary source literacy, teach visual literacy and research competencies, and speak to the materiality and historical provenance of architectural drawings and objects. The goal is to ensure that students can visually read and interpret architectural primary source documentation, understand its place within a collection, and grasp the broader historical context in which it was created.

To answer the question of how academic architecture archivists learn to teach with architectural collections, we first surface the background and development of architectural archival collections, as well as the traditional and evolving roles of academic architecture archivists, before embarking on an extensive literature review. The literature review looks at existing scholarly literature on the care and management of architecture archives, primary source instruction pedagogy, art and architecture library instruction, and the information-seeking habits of architecture and design students and faculty. The review reveals three substantial gaps: texts on the care and management of architecture archives overlook the increasing instruction responsibilities of academic architecture archivists; the literature on primary source pedagogy does not address teaching with specialized formats or collection materials from a specific subject area, in this case architecture archives, and also overlooks how architectural drawings

suit classes with a show-and-tell model; and the literature on art and architecture library instruction does not examine the importance of archival research skills and how these intersect with existing art, architecture, and design library research competencies and standards.

Following the literature review, we consider our own experiences of teaching with architectural archives by presenting the pedagogical models we have found to be the most effective in the classes we plan and lead at our respective institutions, such as primary source pedagogy, object-centered learning (OCL), and place-based education (PBE). In the final section, we recommend ways to bolster the scholarship on and the practice of teaching with architectural archival collections and discuss how instruction work has adapted in response to the COVID-19 pandemic.[1] With this article, we seek to fill the gap in the existing literature on primary source teaching with architecture collections and contribute to the growing body of scholarship on primary source instruction.

## Background

### Architecture Archives

Architectural archival collections are complex in format and content. These collections contain a wide variety of materials: oversized drawings, fragile sketches, and blueprints; project records generated before, during, and after the construction of a building, which can include correspondence, research, submittals, specifications, contractor information, and publicity and press; photographs, negatives, and slides; and three-dimensional objects such as models, material samples, and architectural fragments. Architectural archives are as varied in subject matter and may document any of the following areas: the practice and history of an architecture firm; the professional and personal life of an individual architect or designer; and work produced in the course of other architectural fields such as landscape architecture, architectural photography, furniture and interior design, lighting design, historic preservation, city planning, and urban renewal and development.

Since the 1990s, concerns over the preservation and access of born-digital architectural and design records have played a central role in the discussion about architectural archives. In the 1996 special issue of *American Archivist* dedicated to architecture records, William Mitchell outlined the many preservation, storage, transfer, and access issues that arise with files created in software-dependent environments such as AutoCAD. He ends with a call to archivists to "develop strategies for dealing effectively with digital media. Otherwise we will lose the records of the architecture of the late-twentieth century and beyond."

In the last twenty-plus years, this call has been answered with projects, case studies, working groups, reports, symposia, workshops, and scholarly literature all dedicated to identifying and developing best practices for the care and maintenance of born-digital design records.[2]

As Nicholas Olsberg states: "Architectural records appear in vastly different settings with vastly different agendas."[3] Academic architectural archives once typically evolved from collections of architectural prints and drawings. Drawing was a primary facet in an architectural education, and collections of drawings were used in teaching. Andres Lepik writes that "future architects" studied by example, looking at previously produced drawings, casts, models, and pattern books before the ubiquity of printed images and "when students of architecture had very limited opportunities to travel."[4] At Columbia University in 1911, the new building for Avery Library was described as containing not only books, but "a collection of autograph drawings by architects and artists, similar to that which is the chief attraction of the library of the Ecole des Beaux-Arts in Paris."[5] Later Avery librarians such as Talbot Hamlin, who also taught in the university's School of Architecture, focused on developing a collection worthy of study. Hamlin wrote to numerous architects, including Frank Lloyd Wright, requesting donations of drawings to add to Avery's growing collection:

> Dear Frank: You may not know that the Avery Library is building up little by little a distinguished collection of American architectural drawings amounting by now to some 3000 items covering the period from the 18th century to the present day. It includes the work of many outstanding architects. . . . It is, of course, obvious that no such collection can even pretend to be representative—much less, satisfactory—unless you are represented in it.[6]

In 2002, Robert A. M. Stern spearheaded the development of an architectural repository "devoted to drawings and materials related to the buildings of Yale University and the work of their architects: work of distinguished Yale University alumni . . . faculty . . . and important Connecticut architects."[7] The purpose of the collection was to support the research and learning of students of architecture, with an understanding that architectural historians and practicing architects also rely on these collections. Other university architecture archives, such as the Environmental Design Archives at Berkeley[8] and the Architecture Archives at Carnegie Mellon in Pittsburgh,[9] were also originally developed as teaching collections.

## Architecture Archivists

While a formal educational background in architecture history and design is not typically required for architecture archivists, some subject area knowledge or curiosity to learn is highly desired. The architecture archivist ideally

also possesses skills in visual literacy and an awareness of or willingness to learn about dealing with unique objects and complex collections in terms of scale and material type. Many of the architecture archivist's specific proficiencies can be learned on the job through processing, reference, and instruction work. Key proficiencies include the ability to read a drawing, an understanding of the relationship between drawings and project records, the processes used to generate those materials, and knowledge of the preservation and conservation issues that arise with drawings on various mediums.

All of these skills situate the architecture archivist as a subject area specialist responsible for the care and maintenance of architectural archival collections. Architecture archivists typically have similar work duties as non-subject-area-specialist archivists, which include (but are not limited to) arrangement and description, collection development, accessioning, reference, instruction, and outreach. In an academic setting, the architecture archivist provides a direct line of support to architecture and design students and faculty through reference and research support, as well as by leading classes and providing archival instruction. To effectively teach with architectural archival collections, the architecture archivist must be able to articulate the complexities of the materials as described here using appropriate learning methods to meet the needs of architecture and design students.

## The Authors

As academic architecture archivists, we perform a wide range of tasks within our departments at Columbia University and Yale University, respectively. Casey joined Drawings and Archives (D&A) at Columbia University as architecture archivist in fall 2016, and Quagliaroli joined Manuscripts and Archives (MSSA) as architecture records archivist at Yale University in early 2018. We each arrange and describe collections, support reference and research services, contribute to collection development priorities, assess prospective acquisitions, and oversee transfers of new materials to our individual repositories. We are also each the lead for outreach and instruction for architectural collections, duties of which can include conducting instruction sessions for undergraduate and graduate architecture and design students; presenting on our collections to donors and outside visiting groups; and curating selections and leading open-house sessions for alumni and incoming students.

We host instruction sessions for the different tracks, or areas of focus, within our institutions' schools of architecture, such as architecture design studio classes, architecture history and theory seminars, research methods classes, art and architecture history classes, and urban studies classes. Most of the classes we host come for single visit instruction sessions, with a few coming

several times in the semester. Casey often also hosts large courses with many sections, which are broken into smaller groups that may visit in back-to-back sessions or over a few days.

Like many instructing archivists, we "are mostly self-taught when it comes to acquiring our teaching skills."[10] We both started out by observing other colleagues' instruction sessions, coteaching classes, and reading available literature, but received no training in special collections instruction in our graduate studies. This educational gap is not unique to subject area archivists but can be a barrier when developing instruction sessions that meet the unique pedagogical and research needs of architecture and design students.

## Literature Review

### On Teaching with Archives and Primary Sources

Archivists are often expected to be able to teach with primary sources and provide archival research instruction. In recent years, job postings for the dedicated position of outreach archivist are increasingly common. Despite this, archival studies courses and programs tend to focus on imparting skills in archival processing and accessioning—instruction and outreach skills for archives are not widely taught.[11] Yet, literature on archivists as educators has been growing since the 1980s. In 1987, Ken Osborne called for a broadening of the archivist's role beyond simply supporting historians and researchers.[12] Osborne considered why archivists' skills and experience make them ideal participants in history teaching as it shifted away from memorization to an emphasis on "student-centred, activity-based methods, usually described by the words discovery or inquiry."[13] Writing in the early 2000s, Marcus Robyns suggested that the growing expectation for higher education to provide critical thinking skills is what led archivists to "define and widen their role as educators."[14] Around the same time, Elizabeth Yakel and Deborah Torres published their seminal article that coined the term "archival intelligence" as a key facet of user expertise in archives and proposed a model for primary source information literacy that archivists could employ in archival research instruction.[15]

In recent years, the literature has tended to be more practical in nature. Professional associations published the *Guidelines for Primary Source Literacy* in 2018, developed by a joint task force from the Society of American Archivists (SAA) and the Association of College and Research Libraries Rare Book and Manuscript Section (ACRL-RBMS). Case studies are regularly edited and published by the Reference, Outreach and Access Section of SAA in its Teaching with Primary Sources series. The Teaching with Primary Sources (TPS) collective has

created an online hub gathering resources and sample lesson plans, and it hosts regular presentations, webinars, and unconferences, all with the aim of creating an opportunity for conversation and knowledge-sharing between archivists tasked with teaching and outreach.

This practical literature provides a wealth of useful information and guidance on active learning techniques and archival research skills. All of these resources were invaluable to both of us as we started to lead instruction sessions. However, teaching with architectural archival collections goes beyond what this literature covers to include challenges specific to working with large, voluminous sets of architectural drawings and other materials; pedagogical models that make for effective sessions specifically for architecture students; and lesson planning that addresses the unique information-seeking needs of design students and the desired learning outcomes of architecture faculty.

## On Teaching with Architecture Archives

The task of teaching with architecture archives can vary by institution. In cases where a curator leads the repository, instruction may form part of their tasks, along with collection development, exhibition planning, writing, and publishing. In cases where there is no curator, such as at MSSA, the architecture archivist teaches with their collections, as well as leading on appraisal, processing, and collection management. At D&A, the curator and the architecture archivist often teach collaboratively, or may split classes between them, depending on the focus of the session. Curators in architecture archives may be architectural historians, archivists, or librarians with in-depth subject and collection expertise. As more and more archivists are teaching with primary sources, we have focused this literature review specifically on the professional and scholarly literature in the archival and library fields, as opposed to considering the potential literature of architectural historians teaching with architecture archives.

The seminal American publication on the care and management of architectural archival collections is Waverly Lowell and Tawny Ryan Nelb's *Architectural Records: Managing Design and Construction Records*, published in 2006, a book that most architecture archivists will be familiar with.[16] Lowell and Nelb's publication provides a history of architecture practice into the twentieth century and an overview of the types of records produced during design and construction activities. Chapters provide practical advice on the arrangement, description, and preservation of these records. While later chapters of this book address reference, imaging requests, and other public service needs, classes and archival instruction using these collections are not covered. In 2011, the International Council of Archives published *A Guide to the Archival Care of Architectural Records,*

*19th and 20th Centuries*, the result of a collaborative effort between a number of archivists, many based at museums, working with architectural records.[17] Again, the focus of the text is to explain the types of records created during the design life cycle and to provide standards for their appraisal and stewardship. A final section focuses on supporting research and exhibitions with these records, with no mention of teaching.

These texts built on the efforts and literature that began appearing more than a decade earlier, as both archivists and curators of architectural museum collections sought to define what types of records are important to preserve for the archival architectural record. In 1996, *American Archivist* dedicated an issue to architecture archives, but the contributions focused largely on the appraisal process and defining what records are important to preserve for the research and writing of architecture history. The sheer volume of documentation and drawings produced by architectural firms in the twentieth century making their way into archival repositories likely spurred this focus.[18]

In recent years, art and architecture archivists and librarians have published about aspects of special collections instruction, but this literature does not necessarily focus on the unique challenges of teaching with architectural archival materials. The most recent study on archival instruction for architecture and design classes is by architecture archivist and curator Chris Marino.[19] Marino presents a rigorous, evidence-based assessment of her instruction design, comparing a show-and-tell approach to active learning techniques. While this piece is of great benefit to instructing archivists, it does not specifically consider the use of architectural archives in instruction, nor the experience of teaching architecture design students.

Case studies that illustrate special collection instruction for architecture and design students are sparse and largely written from a library perspective, lacking attention to primary source literacies and ideas of archival intelligence, core pedagogical concepts that archivists use for instruction. Martin Aurand illustrates how architectural special collections at Carnegie Mellon University Library can support students' perception of the library as a source of wonder and inspiration.[20] However, Aurand does not delve into how architectural special collections materials can specifically support primary source instruction. Similarly, Ryerson University special collections librarians George Thomas Kapelos and Susan Patrick describe a collaborative course assignment using an architectural photography collection.[21] The authors focus on how the collection served both as a teaching tool that supported student learning outcomes and as an important source of collaboration between librarians and faculty, but again they overlook the archival nature of these materials and how it can be harnessed in primary source instruction.

## Art and Architecture Library Instruction

Despite the dearth of literature specifically on architectural archival instruction, there is a wealth of information on library instruction for art, architecture, and design students. This literature critically examines how art and architecture librarians teach students information and visual literacy skills using established frameworks and standards such as the ACRL Visual Literacy Competency Standards for Higher Education[22] (Standards) and the ARLIS Art, Architecture, and Design Information Competencies[23] (Competencies). Art and architecture librarians also elucidate key findings on the information-seeking habits and research needs of architecture faculty and students via systematic reviews and surveys. The much more methodical and evidence-based approach to art and architecture library instruction only further illuminates the gap in archival literature.

The Standards and Competencies both identify archival and primary research as basic skill sets for art, architecture, and design students, but stop short of examining how these skills are obtained and meaningfully intersect with other library research skills. This disconnect between primary and secondary source research skills can be seen in the existing literature by art and architecture librarians who write about using the Standards and Competencies in practice. Rina Vecchiola mentions the use of archival collections as one of the Competencies but does not explore how this relates to greater library research skills.[24] Linden How and others briefly discuss how the updates to the Competencies "focus on critical thought processes, using primary information ethically and effectively," but again do not address the role of archival research skills within these larger information competencies.[25]

Hannah Bennett writes about methods and strategies employed to connect library collections and services to art and architecture students who typically "do not regard the library as logically fitting in to their studio projects or coursework."[26] This attitude toward the library is often a result of unique research needs for "visual representation of a memory, mood, concept, or event" that can be difficult to pin down.[27] The unique information-seeking behaviors of art and architecture studio students are further explored by Stephanie Beene, who discusses where special collections visits and archival research skills fall within overall library instruction using the Standards and Competencies. Beene reflects that "the investigative skills and iterative searching inherent to this process can be frustrating to students who are tactile, design-focused, and used to a studio-centric career path."[28] These pieces contribute to a growing understanding of design studio students' research needs and library experiences. Yet, while they mention archives and special collections as essential components

of effective research instruction by librarians, they do not directly engage with archival literature or primary source literacy.

## Information-Seeking Behaviors of Architecture Faculty and Students

In the literature review process, we sought publications on the information-seeking behaviors of students of all architecture courses and disciplines. However, the resources that we found focus largely on the habits of design studio students. In this process, we identified a gap in the studies of the research needs and information-seeking habits of architecture disciplines beyond the design studio. For example, scholarly literature does not address how students of architecture history, theory, and criticism; urban studies; and historic preservation use libraries and/or special collections. However, a recent blog post by architecture librarian Janine Henri focusing on storage needs in her library illuminates how students beyond the studio use library collections. In trying to decide which materials to keep on-site or to send to remote storage, Henri points out that "Books used primarily by historians and theorists who tend to plan out their research and are able to wait a day for a book's retrieval are better candidates for remote storage than books primarily used by designers who tend to have unanticipated research needs during the design process."[29] This implies an inherent difference in research needs between students of design and students in more research-based courses or tracks.

Many faculty members in architecture design studios are professors of practice and often maintain parallel careers as practicing architects. According to Lucy Campbell's research, architecture faculty have "broad and eclectic" information-seeking habits that are often passed on to their students: "Architectural plans, details, and photographs are the most important image types. When seeking information, faculty are most frequently looking for inspiration or current trends."[30] Stephann Makri and Claire Warwick discuss how the creative nature of the architectural profession leads to a more iterative and creative approach to research.[31] They carried out a study testing their theories against real-time observations of urban design students conducting research via electronic resources. Their observations illuminate two key findings: first, the role of inspiration as a driver in information-seeking and use behaviors; and second, that students tend to stay within their comfort zones when searching. For example, students rationalized using Google Images for its ease of use and familiarity, as opposed to an online database available through the library. Makri and Warwick further explore the nontraditional nature of architectural research, which is highly visual and does not always rely upon a need for scholarly articles. Design magazines are not typically peer reviewed and do not fall into the traditional

notion of a scholarly journal. While some design studios incorporate research activities, most assignments do not require scholarly resources, and so students do not always see the need for those sources to support their work.

These insights into the information-seeking habits of architecture faculty and design students help architecture archivists think about how archival and primary source research skills are taught. For example, knowing that these users are primarily engaging with the materials for inspiration may spur archivists to consider selecting class materials that will be visually stimulating for students as well as subject appropriate. Additionally, students might not realize at the outset that architectural collections contain anything relevant to their own creative and iterative research processes. Instruction helps establish that relevancy by showing the range of resources available and explaining how accessible they are to users. We have integrated this information into our pedagogical models and instruction methods, to be discussed in the following sections.

## Pedagogical Models

Principles of primary source pedagogy underpin our teaching and instruction work. These principles center on developing primary source literacy skills for users of archives and primary sources. The *Guidelines for Primary Source Literacy* outlines core concepts that archivists should seek to integrate in lesson planning. Being able to distinguish between primary and secondary sources is a key learning outcome, as is understanding the difference between "online resources that contain information *about* sources, versus those that contain digital versions, originals, or copies of the sources themselves."[32] Learning objectives also include understanding the archival and historical context of primary sources and being able to consider and interrogate the "reasons for silences, gaps, contradictions, or evidence of power relationships in the documentary record."[33] Filling in the archival context is a key part of Yakel and Torres's concept of archival intelligence. They suggest that an awareness of archival theory, practices, and procedures alongside skills in critical thinking and problem-solving strategies can help turn students into expert users of archives.[34]

While architecture design studio students working on creative projects are not necessarily seeking or required to become expert archival researchers, having archivists lead instruction sessions alongside architecture faculty ensures that additional learning outcomes around archival literacy can result. Archivists can highlight how the drawings, photographs, and documents selected for class presentations are part of a larger whole, be it a small collection or a major archival *fonds*. Not only can archivists relate the objects to broader class discussion themes, they can also highlight the archival context of the materials, which students are often curious about once they come face-to-face with an

original sketch or drawing: how did this drawing survive and come to be in *this* repository? By talking about the drawings on the table in this way, archivists can weave into discussions archival principles such as provenance and original order, and the work that archivists do in processing collections, situated in a particular time and place and with their own inherent biases. These topics can contribute to students' richer understanding of the complexity of archives in their own research.

In addition to engaging primary source pedagogy in our archival instruction sessions, we also employ place-based education (PBE) and object-centered (also called object-based) learning (OCL).[35] PBE is defined as "learning that is rooted in what is local—the unique history, environment, culture, economy, literature, and art of a particular place."[36] PBE helps students to contextualize the core concepts of their class by analyzing primary sources related to their immediate surroundings. Largely emerging in the literature of museum studies, OCL "emphasizes deep learning by interacting with objects, which allows students to experience the world in its immediacy."[37] By examining drawings, photographs, and material samples up close, students learn to derive meaning by interacting with a single document and/or object. OCL facilitates meaningful discussion around the materiality of architectural drawings and encourages students to share their own interpretations.

Because of the largely visual nature of architectural archival collections, PBE and OCL are particularly well suited to instruction sessions with architecture and design students. These models can be used to identify learning outcomes, come up with questions for in-class discussions, and develop class assignments. We often integrate features of these different models in one session and move between them intuitively, deciding which elements to apply based on the type of class visiting for instruction, for instance, a design studio versus an architectural history seminar. The weight of one pedagogical model over another typically depends on the learning objectives established during consultations with the faculty member.

## Pedagogy Into Practice

When designing an instruction session, we generally incorporate these pedagogical models in two styles of classes: a show-and-tell that uses OCL and focuses on active learning, which is particularly useful for design studio visits and architectural history classes as an introduction to archives; and an inquiry-based class that uses PBE and focuses on the archival research process, occasionally involving in-class research. The use of these models depends on the type of architecture and design class coming in, as well as what the faculty member requests. As previously mentioned, we host archival instruction sessions for

architecture design studio classes, architecture history and theory seminars, research methods classes, art and architecture history classes, and urban studies classes.

## OCL-Focused Show-and-Tell

The literature on primary source pedagogy and archival literacy encourages instructors to move beyond show-and-tell classes and to focus on active learning techniques. As Anne Bahde, Heather Smedberg, and Mattie Taormina write, show-and-tell classes, while holding some value, are inherently a passive teaching format with vague or limited learning outcomes.[38] Yet, we have found that, planned appropriately, show-and-tell classes can be effective for students of architectural design studios, lending themselves well to both the students' and faculty's information-seeking habits. Repository class visits by studios are often one-offs, and, while an introduction to archives is typically one of the learning outcomes identified by faculty, they are not necessarily seeking to develop students' archival research skills. Architecture instructors often want to use archival instruction sessions to expose students to architectural drawings, styles, and techniques used by specific architects or across certain periods. An architecture design studio environment usually involves both instructor and peer critique of work in progress, and this same type of discussion can often happen over a table of drawings in the repository. As architecture design (and its learning) has become so wholly digital, instructors often want their students to focus on the materiality of the drawings themselves, the creative thinking, the working out of design problems, and the collaborative processes that led to the marks of a pencil or pen on the drawing in front of them.

Jason Tomberlin and Matthew Turi see show-and-tell sessions as opportunities for archivists to share knowledge about their collections with their users and, in so doing, to highlight the "availability of their research expertise."[39] Despite the knowledge archivists may have to share, as an instructor, Casey is keen to encourage students to value their interpretations and observations, and not necessarily to see archivists as the font of all knowledge about the objects on display. As Ladislava Khailova writes, "active learning techniques require the transformation of any potential sage on the stage into *a guide on the side*."[40] In class settings, Casey encourages students to come closer and share observations, empowering them to contribute their interpretations to the class discussion question. Writing about OCL, Shari Tishman explains: ". . . looking carefully at something and trying to discern its features is a form of cognition with an intrinsically rewarding feedback loop. The more you look, the more you see; the more you see, the more interesting the object becomes."[41] In Casey's experience, this type of object-centered interaction affirms the students' experience and the

value of their personal observations in developing their understanding and in growing their knowledge.

Teaching students basic skills in handling materials is a key feature of OCL, helping them feel confident requesting and using materials in the reading room. It is also an important practical consideration in the *Guidelines for Primary Source Literacy*. However, architectural drawings are often fragile and brittle, particularly blueprints and drawings on trace paper. In addition, as so many class sessions at D&A involve fairly large groups of students and are set up as exhibition-type displays, Casey typically limits the handling of drawings and objects by the students. However, whenever possible, Casey tries to incorporate materials students can handle, as this haptic experience can be a valuable type of "knowledge transfer," as described by Helen Chatterjee.[42] For collections that include three-dimensional objects or architectural fragments, Casey sometimes carefully circulates an object for the students to hold (loosely wrapped in glassine or a cotton glove), such as sample tiles from the Guastavino Fireproof Construction Company records. Being able to sense in one's hand the difference in weight between a glazed roof tile and an acoustical tile patented by the company provides a different learning experience. As this is not possible to do for every class or with every collection, Casey often includes library reference materials on the creator or architectural project for the students to browse and flip through during the class. This also succeeds in meeting a key objective in the *Guidelines for Primary Source Literacy*: the ability to distinguish between primary and secondary sources.

OCL highlights the sensory experience of the materiality of an object. We have both observed that architecture design students, who typically learn architectural representation digitally rather than through hand-drawing, are inevitably curious about paper and media types, drawing techniques, and reproduction processes. Both of us often overlooked this aspect of class preparation early in our careers, as we expected questions to be more about the content or historical context of the materials. Discussing how these drawings or documents were actually made not only brings the context of an object's creation into focus, but also serves as an entry point to discussing past practices in firm drafting rooms and earlier design school studios. As curator Lois Hendrickson explains: "By being able to touch artifacts and think about who used them and how, and by contemplating the technologies, ideas, and assumptions of a given time, history is humanized for students."[43] Along with finding aids, collection guides, and library resources, we have both turned to helpful texts such as Lois Olcott Price's excellent *Line, Shade and Shadow: The Fabrication and Preservation of Architectural Drawings*[44] to prepare for these types of questions.[45]

## Inquiry-Based Classes

Inquiry-based classes seek to demystify the experience of archival research for students. By creating exercises that mimic the primary source research process, involving, for example, an iterative back and forth between an initial research question, a finding aid, and a box of archival materials, instruction archivists will ideally, as Susan Cooperstein and Elizabeth Kocevar-Weidinger put it, "simulate those (activities) that will be encountered in real life or in an assignment."[46] In her example instruction sessions, Marino has students work in small groups and answer questions about a set of architectural and landscape drawings, questions that incorporate visual literacy ("How is texture conveyed in this drawing?") and primary source literacy learning objectives ("What was the intent of the author?" and "In which series would these drawings be found?"). This type of exercise inherently reflects the iterative nature of the research process, as well as providing students with sample questions they can use during their own research.

Quagliaroli typically designs instruction sessions to be inquiry based, using PBE in tandem with visual and primary source literacy as the core pedagogical models. PBE works easily with both MSSA's architectural collections and the types of classes that Quagliaroli hosts, the most common being urban studies and architecture history, theory, and criticism. These subject areas can be examined through New Haven's political history and built environment, as well as the built environment of Yale University. A typical active learning activity for an urban studies class has students work in pairs or small groups to look through correspondence and ephemera from New Haven mayoral and city planning files alongside architectural drawings of buildings in New Haven and answer questions about the materials on worksheets. At the end of class, students come together for a large group discussion to share their groups' materials, findings, and any challenges they encountered along the way. PBE helps bring the materials close to home for students, and inquiry-based instruction design encourages students to examine, interrogate, and engage with materials with their peers. Though faculty members do not always request archival research skills to be taught in these sessions, the large group discussion inevitably evolves into Quagliaroli answering questions about how to find and request the materials used in the activities.

Similarly at D&A, Casey used PBE and primary source literacy in a series of classes focused on contested sites in New York City. Casey prepared stations of drawings and archival materials selected from across many different collections to illustrate the varying types of stories archives can reveal. Students worked in small groups at each of the stations and were given a series of questions that aimed to help them make connections between collections, as well

as to connect the repository to the local built environment. Casey also offered a dedicated archival research instruction session that focused on helping students understand what archival research typically entails, covering basics such as search tips on finding archives and how to use finding aids, as well as the types of questions students could employ to drive their own independent research. In all her archival research instruction sessions, Casey's goal is to demystify archives for the students, both in terms of "the archive" as a place for research and "archives" as collections created by a person, state, or corporate entity, and thus never neutral. By connecting the archival research process to the materials they encounter during the class session, the aim is to help build student confidence and their sense of archival literacy to become better researchers at D&A and elsewhere.

Pedagogical models are useful for scaffolding lesson plans and can provide a thematic drive or focus to the questions and exercises we might develop with our collection materials for the students. We employ these models and use them interchangeably when planning class sessions. However, we have also found it necessary to be flexible with these models and pedagogical approaches. Different classes come to the archives for different reasons, and different student interests and needs are essential to keep in mind when planning instruction sessions. The course objectives of a design studio, where a faculty member may want their students to engage with the content and materiality of the archival materials, may differ from a history/theory seminar, where the faculty member may hope to expand their students' understanding of primary source resources and further develop their research skills. And, as we have seen with architecture faculty, both learning objectives may be present at the same time. Ultimately, the goal of successful instruction is to ensure that archivists' and faculty members' learning outcomes align.

## Recommendations for Further Study

### Formal Pedagogical Training and Education

According to Lindsay Anderberg and others: "to successfully utilize primary sources to meet class learning objectives, archivists must have adequate training in how to teach."[47] As previously discussed in earlier sections, this problem persists throughout the profession. We would take these calls for formal training further to posit that archivists also need to know how to find and implement special collections literacies, frameworks, and competencies, and to match them to appropriate pedagogical models. Workshops, training courses, and professional committees can help fill the knowledge gap, but these are not

sufficient, especially when dealing with special formats. For both of us, instruction with architectural materials became most effective when we had a firm understanding of useful pedagogical models in which to ground our teaching methods. With that foundation, we were able to build information, special collection, and visual literacies into the structure of our sessions through active learning methods.

The literature examining the lack of formal instruction training in graduate archival programs is extensive, and we realize that this is a much broader issue that we are not able to fully explore in this piece. The work we did to build our methodological and pedagogical approaches to instruction took time, patience, and a certain amount of trial-and-error to see what would click with students and faculty alike. Without formal training, learning special collections instruction takes research, reading current archival and library literature, and sharing successes and failures with subject area peers. Sharing experiences and reaching out to other architecture archivists and librarians has enabled us to see how others approach similar work, and we have both learned new tactics that we are able to try in our own practice.

## Cross Collaboration with Art, Architecture, and Design Librarians

The professional circles for architecture archivists and librarians are small, though the two are often siloed from each other, creating a perception that the skill sets of both groups are inherently different. As discussed in the literature review, this separation has only created a void of resources from which archivists can draw upon to develop special collections instruction sessions that support architecture faculty and student research needs. Resources created by and for art, architecture, and design librarians such as the ACRL Visual Literacy Competency Standards for Higher Education and the ARLIS/NA Art, Architecture, and Design Information Competencies could be useful for instructing archivists when defining learning outcomes and objectives for design students new to primary source research, especially when paired with *The Guidelines for Primary Source Literacy*.

One solution to the lack of formal pedagogical training and instructing framework is greater collaboration with art and architecture librarians. Quagliaroli has collaborated with the arts librarian for research services (ALRS) for the Arts Library at Yale University to coteach introduction to library and archival research sessions to first-year students, as well as a workshop series dedicated to architecture research at Yale University Library. The sessions focus on teaching visual image research skills across primary and secondary sources and incorporated the Competencies and Standards as well as elements of the

*Guidelines*. These joint efforts led to an embedded library workshop in a required research seminar for design students and a presentation at the 2021 Association of Architecture School Librarians Conference outlining the outcomes of this collaborative work. Quagliaroli hopes that this visibility will inspire other art and architecture librarians and archivists to leave their silos and share and develop instruction resources together. Working together in this way will only result in more robust support for architecture and design students and will strengthen the instruction skills of archivists and librarians alike.

## COVID-19 and Remote Instruction

At the time of this writing, we have adapted in-person special collections instruction sessions to an online environment due to the COVID-19 pandemic. This has been a challenge all instructing archivists have had to face, but for architecture archivists who depend on in-person, up-close examination of large-scale drawings and other visual materials and three-dimensional objects, this has not been an easy problem to solve. How could online instruction mimic in-person analysis of a drawing? Would active learning methods like small group work translate well over Zoom? Would faculty even want or have time for an archival instruction session?

We faced these questions heading into the 2020–2021 academic year and found an ongoing demand for archival instruction sessions, though we had two very different experiences. Quagliroli was able to adapt think/pair/share activity-based instruction sessions online through the use of digitized collection materials and Google Drive, creating folders with PDF copies of collection materials and worksheets in Google Docs for students to work on collaboratively. Despite the challenges of the new learning environment, Quagliaroli found that students still engaged with the materials and actively participated in the breakout group activities. Casey, however, found that some faculty expected an exact re-creation of the show-and-tell, object-based class centered around a selection of specific drawings. Using digitized materials from the repository, Casey prepared presentations for different classes, but found that in this new online environment, the class sometimes became more of a lecture on the drawings themselves, with less opportunity to weave in archival concepts. On one occasion, a faculty member was delighted with the range of drawings shown and found the online environment provided an opportunity for students to see many more drawings than previously possible on the limited spaces of the reading room tables. However, Casey found that preparing for the class was incredibly time and resource intensive, as it required new research, sourcing existing digital images, digitizing new materials, preparing the slides, and writing the accompanying presentation text. While these presentations now exist for future

classes on the topic, this level of effort may not be sustainable for new online classes each semester.

Despite these challenges, this new mode of teaching provides architecture archivists the opportunity to take what is known about the information-seeking habits of architecture faculty and design students and reconceptualize online instruction as a way to support remote search and discovery methods. The COVID-19 pandemic has led to sustained remote research, as so many repositories have restricted access to physical materials, and travel for research has been limited. At the time of this writing, Casey has developed and taught online archival research instruction sessions, guiding students on how to search across repositories and sharing search tips on finding digital archival collections. This has provided the opportunity to discuss challenges and opportunities around research using digital surrogates versus physical objects, such as considering what is lost or gained through digitization. This type of session prioritizes and encourages student discovery rather than focusing on materials preselected by the archivist. In terms of design studio students, these efforts support the iterative nature of the visual image research process.

## Conclusion

Situated in the archival profession as subject area specialists, academic architecture archivists are responsible for a range of duties, which increasingly includes instruction and outreach. With little to no formal training in primary source instruction, these archivists are expected to design and lead classes that impart archival intelligence, articulate the complexities of architectural collections, teach visual and primary source literacy skills, meet the research needs of architecture and design students, and fulfill the desired learning outcomes of architecture faculty.

This begs the question: how do academic architecture archivists learn to teach with architectural archival collections? In search of an answer, we conducted an extensive literature review, in which we found a gap in the scholarly and professional literature on architecture archives, teaching with primary sources, and art and architecture library instruction.

We have sought to fill this gap and contribute to the growing literature on teaching with primary sources by exploring the pedagogical models we both employ in our own outreach and instruction work. At the same time, we have illuminated the unique challenges that architectural archival collections pose to primary source instruction. Through these efforts, we have elevated the skills and expertise that architecture archivists bring to the field more broadly and to special collection instruction work specifically. We acknowledge that the experiences of other academic architecture archivists may diverge from our own: we

both work in well-funded institutions where colleagues and supervisors support our work. Without question, the challenges we face would be magnified if these conditions were different.

Moving forward, we see opportunity for further scholarship on the need for formal pedagogical training and education in graduate library programs and how that intersects with subject area specialist archivists tasked with instruction. Great potential also exists in increased collaboration between art and architecture librarians and archivists for the development of shared pedagogical resources and instruction skills, which will in turn lead to stronger research support for architecture faculty and students. COVID-19 raises other challenges for archival instruction with architecture materials, especially pertaining to instruction design and student engagement with digitized materials. Despite these challenges, teaching in a virtual environment has led to a new way of addressing the information-seeking habits of architecture faculty and design students. We share our personal and practical experiences throughout this piece to encourage all archivists to feel both confident that their knowledge and expertise contribute to the student learning experience and empowered to engage with these unique collections in their own teaching practice.

## NOTES

[1] At the time of this writing, February 2021, classes were remote for the 2020–2021 academic year as a result of the COVID-19 pandemic. While we both taught some classes remotely during this time using architectural collections, these experiences have been limited in scope and scale, and are still being refined. For the purposes of this article, we have focused on our in-person instruction work.

[2] We are unaware of a project or literature that examines how born-digital architecture and design records are used in special collections instruction. Because we do not currently use born-digital records in our instruction sessions, for the purpose of this article we will discuss instruction with analog records only. As more repositories collect these records, it will be interesting to see how these are incorporated into special collections instruction sessions.

[3] Nicholas Olsberg, "Documenting Twentieth-Century Architecture: Crisis and Opportunity," *American Archivist* 59, no. 2 (1996): 129, https://doi.org/10.17723/aarc.59.2.987g764618231248.

[4] Andres Lepik, "Show & Tell, Or: What Is the Role of the Architecture Museum at the Beginning of the 21st Century?," in *Show & Tell: Architektur sammeln = Collecting architecture*, ed. Andres Lepik (Ostfildern: Hatje Cantz, 2014), 13.

[5] Steven M. Bedford and Susan M. Strauss, "History II 1881–1912," in *The Making of an Architect, 1881–1981: Columbia University in the City of New York*, ed. Richard Oliver (New York: Rizzoli, 1981), 47.

[6] Letter from Talbot Hamlin to Frank Lloyd Wright, May 13, 1942, ID #C106B03, Frank Lloyd Wright Foundation Archives: Correspondence (The Museum of Modern Art | Avery Architectural & Fine Arts Library, Columbia University).

[7] Robert A. M. Stern, "Personal Reflections on a New Century, 1998–2016," in *Pedagogy and Place: 100 Years of Architecture Education at Yale*, ed. Robert A. M. Stern and Jimmy Stamp (New Haven and London: Yale University Press, 2016), 550.

[8] "About: History," Center for Environmental Design Archives, University of California at Berkeley, https://archives.ced.berkeley.edu/about-the-archives#History, captured at https://perma.cc/268T-MZAX.

9  "About the Architecture Archives," Architecture Archives, Carnegie Mellon University, https://www.library.cmu.edu/ArchArch/home.

10  Magia G. Krause, "Learning in the Archives: A Report on Instructional Practices," *Journal of Archival Organization* 6, no. 4 (2008): 233–68, https://doi.org/10.1080/15332740802533263.

11  Elizabeth Yakel and Doris Malkmus, "Contextualizing Archival Literacy," in *Teaching with Primary Sources*, ed. Christopher J. Prom and Lisa Janicke Hinchliffe (Chicago: Society of American Archivists, 2016), 23.

12  Ken Osborne, "Archives in the Classroom," *Archivaria* 23 (1986): 21.

13  Osborne, "Archives in the Classroom," 21.

14  Marcus C. Robyns, "The Archivist as Educator: Integrating Critical Thinking Skills into Historical Research Methods Instruction," *American Archivist* 64, no. 2 (2001): 364, https://doi.org/10.17723/aarc.64.2.q4742x2324j10457.

15  Elizabeth Yakel and Deborah A. Torres, "AI: Archival Intelligence and User Expertise," *American Archivist* 66, no. 1 (2003): 51–78, https://doi.org/10.17723/aarc.66.1.q022h85pn51n5800.

16  Waverly Lowell and Tawny Ryan Nelb, *Architectural Records: Managing Design and Construction Records* (Chicago: Society of American Archivists, 2006).

17  International Council on Archives, Architectural Records Section, *A Guide to the Archival Care of Architectural Records, 19th and 20th Centuries* (Paris: ICA, 2000).

18  See for example, Olsberg, "Documenting Twentieth-Century Architecture," 128–35; also Richard Cox, "The Archival Documentation Strategy and Its Implications for the Appraisal of Architectural Records,"*American Archivist* 59, no. 2 (1996): 144–54, https://doi.org/10.17723/aarc.59.2.a63421672782h178.

19  Chris Marino, "Inquiry-based Archival Instruction: An Exploratory Study of Affective Impact," *American Archivist* 81, no. 2 (2018): 483–512, https://doi.org/10.17723/0360-9081-81.2.483.

20  Martin Aurand, "Teaching and Learning with Collections: The Library as a Site for Exploration and Inspiration," *Art Documentation Journal of the Art Libraries Society of North America* 30, no. 1 (2011): 12–20, https://doi.org/10.1086/adx.30.1.27949562.

21  George Thomas Kapelos and Susan Patrick, "Teaching with the Canadian Architect Fonds: A Collaboration between Ryerson University Librarians and Instructors in Architecture Using Special Collections," *Art Documentation: Journal of Art Libraries Society of North America* 31, no. 2 (2012): 245–262, https://doi.org/10.1086/668116.

22  American Library Association, "ACRL Visual Literacy Competency Standards for Higher Education" (2011), https://www.ala.org/acrl/standards/visualliteracy, captured at https://perma.cc/G75P-6U8D.

23  Art Libraries Society of North America, "Art, Architecture, and Design Information Competencies" (2018): 1–27, https://www.arlisna.org/publications/arlis-na-research-reports/1469-info-comp-aa.

24  Rina Vecchiola, "Using ARLIS/NA Information Competencies for Students in Design Disciplines in Course Integrated Information Literacy Instruction at Washington University in St. Louis," *Art Documentation: Journal of the Art Libraries Society of North America* 30, no. 1 (2011): 74–78, https://doi.org/10.1086/adx.30.1.27949570.

25  Linden How, Amanda Meeks, Shannon Marie Robinson, and Alyssa Vincent, "The Art of Information Literacy: New Competencies for Art, Architecture, and Design Learners," *College & Research Libraries News* 80, no. 3 (2019): 165–168, https://doi.org/10.5860/crln.80.3.165.

26  Hannah Bennett, "Bringing the Studio into the Library: Addressing the Research Needs of Studio Arts and Architecture Students," *Art Documentation Journal of the Art Libraries Society of North America* 25, no. 1 (2006): 38–42, https://www.jstor.org/stable/27949400.

27  Bennett, "Bringing the Studio into the Library," 38.

28  Stephanie Beene and Shannon Marie Robinson, "When Research Does Not Start with a Question: Teaching with the Framework and Visual Literacy Standards within Art and Architecture Librarianship," *Art Documentation Journal of the Art Libraries Society of North America* 36, no. 2 (2017): 254–80, http://dx.doi.org/10.1086/694243.

29  Janine Henri, "Struggling with Space: Collection Browsing, Architectural Illustrations, and Remote Storage Decisions," *AASL Column*, August 7, 2017, https://www.acsa-arch.org/2017/08/07 /struggling-with-space-collection-browsing-architectural-illustrations-and-remote-storage -decisions.

30  Lucy Campbell, "The Information-Seeking Habits of Architecture Faculty," *College & Research Libraries* 78, no. 6 (2017): 761, https://doi.org/10.5860/crl.78.6.761.

31  Stephann Makri and Claire Warwick, "Information for Inspiration: Understanding Architects' Information Seeking and Use Behaviors to Inform Design," *Journal of the American Society for Information Science* 61, no. 9 (2010): 1745–70.

32  SAA-ACRL/RBMS Joint Task Force on the Development of Guidelines for Primary Source Literacy (JTF-PSL), *Guidelines for Primary Source Literacy* (2018), 1–19, https://www2.archivists.org/sites/all /files/GuidelinesForPrimarySourceLiteracy-June2018.pdf, captured at https://perma.cc/RXK2-5TDX.

33  SAA-ACRL/RBMS Joint Task Force, *Guidelines for Primary Source Literacy*, 5–6.

34  Yakel and Torres, "AI: Archival Intelligence and User Expertise," 51.

35  The literature uses "object-centered learning" and "object-based learning" interchangeably.

36  Gregory A. Smith and David Sobel*, Place- and Community-based Education in Schools* (New York: Routledge, 2010), 23.

37  Devorah Romanek and Bernadette Lynch, "Touch and the Value of Object Handling: Final Conclusions for a New Sensory Museology," in *Touch in Museums: Policy and Practice in Object Handling*, ed. Helen J. Chatterjee, Sally MacDonald, David Prytherch, and Guy Noble (Routledge: Oxford and New York, 2008).

38  Anne Bahde, Heather Smedberg, and Mattie Taormina, eds., *Using Primary Sources: Hands-On Instructional Exercises* (Santa Barbara, CA: Libraries Unlimited, 2014), xv.

39  Jason Tomberlin and Matthew Turi, "Supporting Student Work: Some Thoughts about Special Collections Instruction," *Journal of Library Administration* 52, nos. 3–4 (2012): 307, https://doi.org /10.1080/01930826.2012.684512.

40  Ladislava Khailova, "For Your Enrichment: Flipping Library Information Literacy Sessions to Maximize Student Active Learning: Toward Articulating Effective Design and Implementation Principles," *Reference & User Services Quarterly* 56, no. 3 (2017): 152, https://doi.org/10.5860/rusq .56n3.150.

41  Shari Tishman, "The Object of Their Attention," *Educational Leadership* 65, no. 5 (2008): 44–46, http://www.ascd.org/publications/educational-leadership/feb08/vol65/num05/The-Object-of-Their -Attention.aspx.

42  Helen J. Chatterjee, "Staying Essential: Articulating the Value of Object Based Learning," *University Museums and Collections Journal* (2007): 2.

43  Lois Hendrickson, "Teaching with Artifacts and Special Collections," *Bulletin of the History of Medicine* 90, no. 1 (2016): 136–40, https://doi.org/10.1353/bhm.2016.0009.

44  Lois Olcott Price, *Line, Shade, and Shadow: The Fabrication of Preservation of Architectural Drawings* (Newcastle, DE: Oak Knoll Press and the Winterthur Museum, 2015).

45  At Avery, Casey also often includes objects from the Andrew Alpern Collection of Drawing Instruments to illustrate further.

46  Susan E. Cooperstein and Elizabeth Kocevar-Weidinger, "Beyond Active Learning: A Constructivist Approach to Learning," *Reference Services Review* 32, no. 2 (2004): 142, https://doi .org/10.1108/00907320410537658.

47  Lindsay Anderberg, Robin M. Katz, Shaun Hayes, Alison Stankrauff, Morgen MacIntosh Hodgetts, Josué Hurtado, Abigail Nye, and Ashley Todd-Diaz, "Teaching the Teacher: Primary Source Instruction in American and Canadian Archives Graduate Programs," *American Archivist* 81, no. 1 (2018): 188–215, https://doi.org/10.17723/0360-9081-81.1.188.

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