

TECHNICAL LEAFLET SERIES

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Number 11:

**ARCHITECTURAL RECORDS**  
**Arrangement, Description, and**  
**Preservation**

Susan Hamburger



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Mid-Atlantic Regional  
Archives Conference

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Archives Conference**

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**Editor's Note:** The idea for a technical leaflet series originated with the New York Caucus of MARAC. The series is intended to provide brief, practical information about selected archival topics suitable especially for beginners in the profession.

The series editor welcomes proposals for future publications and comments from readers.

**Technical Leaflet Series**

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**ARCHITECTURAL RECORDS**  
**Arrangement, Description, and Preservation**

**by**

**Susan Hamburger, Ph.D.**

**Manuscripts Cataloging Librarian**  
**The Pennsylvania State University**

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All photographs © Copyright 2003, Susan Hamburger.

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## INTRODUCTION

This technical leaflet addresses the needs of archivists and librarians working in repositories that do not primarily collect architectural records, but who need to know how to arrange, describe, house, store, and provide access to one or several collections of architectural records under their care. In addition to project office files, architectural collections contain a variety of oversized drawings—and possibly even scale models—that document the stages of a project from initial sketches through final as-built drawings. Because of the vagaries of architectural office record-keeping practices, what is transferred to an archival repository may include all documentation for a project, or only the drawings. Whether the collections are historical or contemporary, archivists need to know what to expect to find in a collection, how to identify the records, what is important to keep, and how to preserve the records through proper storage and handling. Contemporary architectural offices increasingly generate electronic records, in the form of CAD (computer-assisted design systems). Although a discussion of CAD is included here, the arrangement, description, and preservation of historical paper documents is the primary focus of this leaflet.

Architectural records serve different functions depending upon the repository. Museums house them as artistic expressions, historical societies collect them to document the local built environment, institutional archives retain them as building records, and government archives preserve them for their regulatory history. Regardless of their final uses, architectural records present particular needs for care and handling. These documents share four characteristics: physical fragility, unwieldy scale, massive bulk, and, for twentieth century records, electronic fluidity. Drawings created before 1920 rarely present problems of volume or

duplication. After World War II, however, the exponential growth of construction, mass reproduction capabilities, and increasing need to retain documents for liability and regulatory requirements fostered an explosion of architectural records that requires a carefully thought-out documentation strategy.

Beginning in the 1960s, architectural firms gradually replaced paper with computer files. Beginning with e-mail and word processing for textual files, architects added digital images, digital drawing files, and three-dimensional models created on computer-assisted systems during the 1980s. The computer programs allowed them to eliminate many traditional working and shop drawings. With the digital model as the definitive record of the design, the architect rarely retains the interim plots and print-outs. Backup and file storage present problems for archivists because of the changing nature of the medium (e.g., floppy disks, tapes, hard drives), the software required to read them, and the requisite hardware to run them.

## **APPRAISAL**

When advances in construction techniques increased the height of commercial buildings, large architectural firms began compartmentalizing their offices into a hierarchical division of labor to organize the design and construction of major projects. Out of this reorganization evolved a process for planning a building and the resultant types of drawings that archivists must now recognize, identify, appraise, dispose of, arrange, and describe. Understanding the chronological and physical process of creating the drawings helps appraisers make crucial decisions concerning retention and disposal. When writing a collection development policy for architectural records, consider the purpose for your collection:

- Documenting an individual's career
- Chronicling the history of an architectural firm
- Providing information about a specific building or group of buildings
- Representing examples of architectural styles

When considering retention of architectural records, archivists must ask themselves the question: is every scrap of paper containing a drawing or sketch, or every set of blueprints necessary to keep? The answer is not necessarily. The nature and scope of the collection, as well as the uniqueness of your copies, affect retention decisions. You do not need to keep copies when another repository has the original. Likewise, you can discard extra **exact** duplicate copies, as well as the diazo print if you have the original of the same image. The older the drawings, the more likely you will want to keep everything to document the creative process of designing the structure. More contemporary drawings, and the plethora of reproduction methods and “actors on the stage” involved in bringing structures to life, require appraisal of the collection for documentation purposes. Factor your collection development policy into your decision-making.

### **Examples of categories of records that may have long-term value include**

- Early records created before 1900, including specifications, written materials, and drawings
- All records of early or historic buildings, including original drawings, record drawings of buildings prior to renovation, and demolition photographs

- Personal papers and professional records of an individual architect who has made a significant contribution to his or her community or the nation
- Full documentation of buildings of influential design or technical development; a city or region's milestone buildings; or an architect's key building; including contracts, correspondence, design development drawings, working drawings, shop drawings, specifications, progress photographs, schedules, and field reports
- Working drawings and specifications of buildings that are likely to be renovated, specifically original reproducible documents or copies, but not diazo prints
- Presentation drawings, renderings, initial sketches, and design development drawings with artistic merit
- Sample sets of records for generic types of buildings, such as gas stations and restaurants, which include representative samples of the work of an architect whose records are not being saved in their entirety<sup>1</sup>

**What to discard is equally as important as what to keep. You can safely eliminate**

- All copies of drawings, unless they have annotations, for which the originals exist
- Models, unless they are historically significant, such as the original model for the Virginia State Capitol
- Product catalogs and samples
- Library materials
- Shop drawings<sup>2</sup>

**Questionable items include:**

- Presentation drawings and renderings, when separated from project files and treated as works of art, decrease the historic value of the archives
- Preliminary sketches and design development drawings possess no legal significance, but record steps in the design process<sup>3</sup>

**IDENTIFICATION**

How do you determine what you have? Understanding the purpose of a drawing helps clarify the process by which it was created. The chronological development (or design phases) of a project begins with preliminary (conceptual), and proceeds through development (design), presentation, and working (mechanical, structural, and supplemental—shop or change orders), to record (as-built). In the *Art & Architecture Thesaurus (AAT)*<sup>4</sup> hierarchy, the visual materials section (VC) covers visual works by medium or technique, drawings by method of representation, building plans, drawings by function, drawings by technique, and drawings by subject type. Appropriate terms are included within each level, and the alphabetical listing provides a succinct, yet descriptive, definition of each term. By combining the *AAT* terminology with identification of process in *Architectural Photoreproductions*,<sup>5</sup> you should be able to identify what the document is, determine where it fits in the continuum, and decide if it should be retained.

In the preliminary design phase, architects often make spontaneous sketches on unusual media, such as envelopes, stationery, and even napkins. Since this marks the beginning of the process of conceptualization, it is imperative for archivists to recognize this stage of inspiration for its creative importance.

Spontaneous sketches are not extraneous doodles. Determining the type of paper used can help date a drawing. The presence of a watermark, color, perforated edges, or imprinted stationery also can assist the dating process. Do note that not all drawings lead to construction. Conceptual drawings include student works, design contests, travel sketches for reference, and polemical drawings used to explain a premise in opposition to current trends.

Architects usually sketch their development drawings on tracing paper in order to build on, refine, and delete ideas. Architects use presentation drawings, created by company or independent delineators, to convince a client to approve a project. These beautifully executed drawings, which are often tinted with watercolors, can take the form of plans, elevations, or perspectives that include human figures, nearby buildings, and landscaping. Since the 1970s, large firms have produced computer-generated presentation drawings with an axonometric view that simultaneously shows the plan, section, and interior spaces of a building.

Working drawings represent an architect's final plans for a building, moving away from the artistic conception to focus on the functional construction requirements in the form of plans, sections, elevations, and detailing. Notations, symbols, and a legend to explain dimensions and requisite materials are included in the working drawings. Since the early nineteenth century, original drawings have been reproduced on paper, then linen, and now Mylar™. Copying the ink on paper drawings required tracing each line with a spiked wheel. A bag of colored chalk was used to transfer the image onto a sheet of paper beneath the original. From the 1880s and into the late twentieth century, architects prepared original working drawings on sturdy linen. Most architects began working on Mylar™ in the 1990s. Linen and Mylar™ originals are reproduced photomechanically as blueprints.

The current drawing sequence is Architectural, Structural, Mechanical, Plumbing, and Electrical Drawings. Corresponding letters (A, S, M, P, E) are used as prefixes with a prescribed order for the drawings within. Prior to this systematized structure, architects grouped general tracings (floor plans, elevations, and structural and ornamental details), and consecutively numbered each sheet. They skipped several numbers and resumed the sequence with framing drawings, and then continued the pattern of skipping numbers between plumbing, mechanicals, and electricals.<sup>6</sup>

Record drawings, which also are called as-built drawings, of a completed project often resemble presentation drawings. Since the late nineteenth century, architects frequently photographed completed projects, and published the photographs in architectural journals.

### Paper Sizes<sup>7</sup>

ISO A	ANSI	Architectural
AO	E	E
AI	D	D
A2	C	C
A3	B	B
A4	A	A

### Architectural Paper Sizes

<b>A</b>	9.0 x 12.0 in.	(228.6 x 304.8 mm)
<b>B</b>	12.0 x 18.0 in.	(304.8 x 457.2 mm)
<b>C</b>	18.0 x 24.0 in.	(457.2 x 609.6 mm)
<b>D</b>	24.0 x 36.0 in.	(609.6 x 914.4 mm)
<b>E</b>	36.0 x 48.0 in.	(914.4 x 1219.2 mm)

## PROJECT PHASES AND THEIR DOCUMENTS<sup>8</sup>

GRAPHIC DOCUMENTS	WRITTEN DOCUMENTS
-------------------	-------------------

### PRELIMINARY PHASE

Topographical Survey	Program
	Town planning certificate
	Preliminary feasibility study
	Feasibility study agreements and agreement covering the distribution of tasks
	Summary budget estimate

### DESIGN

#### Summary Preliminary Design

Preliminary layout plan	Preliminary technical studies: feasibility, ground, climatic features, etc.
Study models	Check on budget estimate
Drawings illustrating the choice of architectural concept	Explanation of the architectural concept

#### Detailed Preliminary Design

Working drawings (including general earthworks and installation of main services)	Sundry studies
	General estimates check
Model	Summary description
	Building permit
	Application for financing (if applicable)

### EXECUTION

#### File for Consultation with Contractors

Detailed drawings	Contract bill of particular technical clauses
	Specifications and bill of quantities (if applicable)
	Schedule of prices (if applicable)
	Contract bill of particular administrative clauses (public contracts)
	Contract bill of particular clauses (private contracts)

	General construction schedule
	Contracts (model instrument)

**Assistance with Contracts**

	Tenders
	Analysis of tenders
	Contracts and specifications

**Execution of Works**

Project execution drawings (siting, structure, special items)	Detailed technical specifications
--	-----------------------------------

**General Site Supervision**

	Timetable, planning
	Records of site meetings
	Payments due and payments on account: interim accounts, statements of work carried out and contractors' memoranda
	Price adjustments

**WORKS COMPLETED**

**Handing Over to the Client or Agent**

Drawings of completed works	Notices concerning functioning
	Contract documents in force

**Life of the Structure**

	Guarantee, and possible claims
	Maintenance and works

# TIMELINE<sup>9</sup>

## ORIGINALS

PAPER

---

DRAFTING CLOTH (LINEN)

---

VELLUM

oil-impregnated

acrylic resins

---

COATED POLYESTER ("Mylar™")

---

COMPUTER FILES

---

1840    1860    1880    1900    1920    1940    1960    1980    2000

---

## COPIES/PRINTS

TRACINGS, "PRICKED COPIES"

---

BLUEPRINTS (1912 – standards adopted)

---

HECTOGRAPHIS

---

VAN DYKES

---

DIAZO

---

wet process    dry process

ELECTROSTATIC COPIES

---

MICROFORMS

---

SILVER HALIDE PRINTS

---

COMPUTER RECORDS

---

CAD/CAM

## ARRANGEMENT

Archivists who arrange collections of architectural drawings generally rely upon the same principles used for arranging manuscript and archival collections, with some distinct differences. For example, adhering to original order is not always useful. When The Pennsylvania State University acquired the architectural drawings from George C. Izenour's practice, archivists discovered that Izenour had arranged the drawings by type in order to facilitate storage of the isometric drawings for his buildings in one drawer. However, Izenour and other researchers often requested a specific building or one particular view, which were reproduced in one of Izenour's three published books. While Penn State retained the original physical order, the finding aid had to be reworked to include building names and list each drawing keyed to the figure number listed in Izenour's books. Describing this collection at the series level did not provide an adequate level of control for reference and retrieval.

A sample arrangement of an architect's papers consists of eight series: Personal Papers, Professional Papers, Faculty Papers, Office Records, Project Records, Large Projects, Art and Artifacts, and Additional Donations. Relevant sub-series are listed within each series.

- I. Personal Papers (records that document the architect's personal life and activities, e.g., education, family relations, friendships)
  - A. Biographical Information (original)
  - B. Diaries
  - C. Correspondence
  - D. Student Work/Education

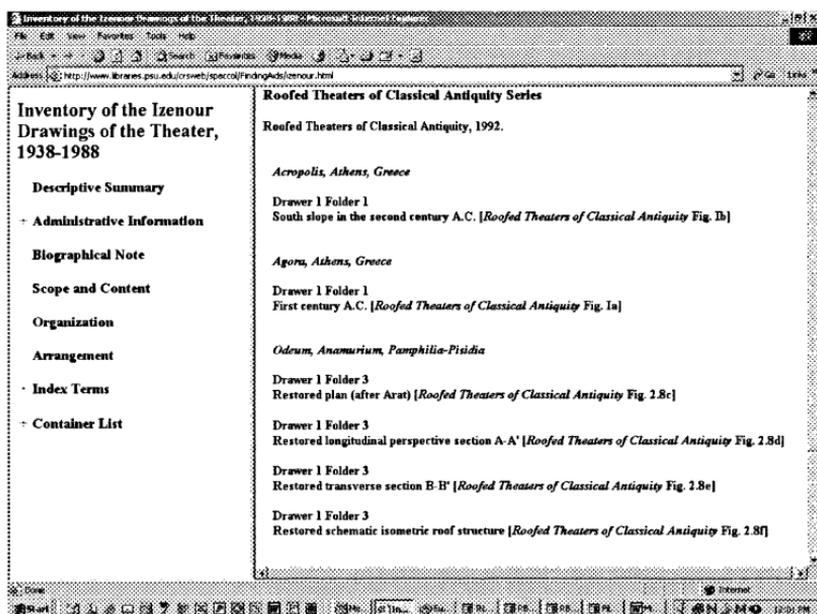


Fig. 1. Encoded Archival Description item-level description of the Inventory of the Izenour Drawings of the Theater, 1938-1988, The Pennsylvania State University.

- E. Travel
- F. Photographs, Personal
  - Unique Sub-series (family papers, military service, art work on paper unrelated to the profession)
- II. Professional Papers (records created by the architect as a professional but not created by the firm as part of the business process)
  - A. Correspondence
  - B. Writings (related to the profession)
  - C. Lectures/Presentations
  - D. Research Notes (original)

- E. Associations and Committees
- F. Awards
- G. Reference Files/Subject Files (secondary: clip books, scrapbooks of examples of styles, etc.)
- H. Printed Materials
  - Unique Sub-series
- III. Faculty Papers
  - A. Administrative
  - B. Lecture Notes
  - C. Course Outlines
  - D. Research Notes
  - E. Student Works
    - Unique Sub-series
- IV. Office Records (documents created by the architectural firm in its non-design/construction functions, e.g., photographs of projects kept for publicity purposes)
  - A. Administrative
  - B. Correspondence
  - C. Photographs (generally compiled for marketing)
  - D. Presentation Materials (presentation boards, models)
  - E. Public Relations
  - F. Financial Records
  - G. Clippings
  - H. Scrapbooks
  - I. Clip books
  - J. Product Literature
    - Unique Sub-series
- V. Project Records (records created by a firm as part of its primary functions—design and construction—related to specific projects and generally arranged alphabetically by project or job number)

- A. Files (textual—correspondence, notes, color samples, specifications and contracts if not kept separately)
  - B. Specifications and Contracts
  - C. Photographs (artificial collections for researcher's convenience)
  - D. Drawings
    - Unique Sub-series
- VI. Large Projects
- This series includes project records for any large or ongoing projects completed by the firm or architect. The title of the series should be consistent with the project title. Sub-series titles will reflect Project Records series titles. Do not separate large projects if the original order includes them within other project files.
- VII. Art and Artifacts
- This series includes artworks created or collected by the architect, drafting tools, 3-dimensional objects, office furniture, and other artifacts.
- VIII. Additional Donations
- To maintain provenance, archivists should list accretions as a sub-series, and include their accession numbers.<sup>10</sup>

## DESCRIPTION

Describe the collection by project or subject to the series and sub-series levels. Consistency in descriptive terminology prevents ambiguity and fosters accurate retrieval of information. Terminology control consists of three components: vocabulary, format, and authority. Vocabulary control regularizes the selection of terms to describe objects using generic concepts (perspective

drawing, landscape, church). Format control standardizes ordering, syntax, and punctuation (McKim, Mead & White instead of McKim Mead and White). Authority control standardizes the proper names of people and corporate bodies, subjects and built works, and geographic locations. Select vocabulary control terms from a standard thesaurus relevant to the subject, in this case, the *Art & Architecture Thesaurus*. The *Library of Congress Name Authority File* and *Library of Congress Subject Headings* both provide format and authority control.

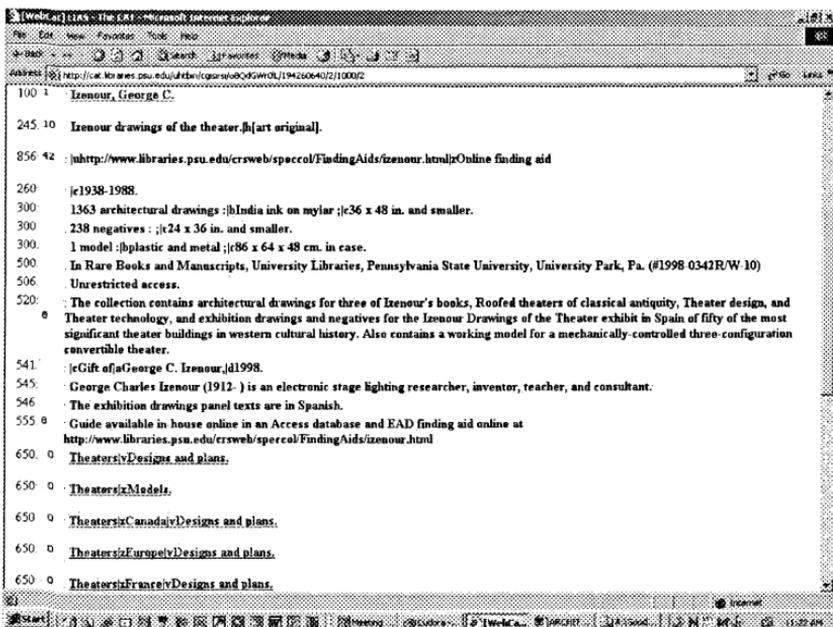
### **Cataloging**

A catalog description must address both intrinsic and extrinsic attributes of architectural drawings. Intrinsic attributes constitute the physical makeup of the document, including its method of representation (e.g., elevation drawing), medium and technique (e.g., ink on Mylar™), and the presence of scale and/or a legend. Extrinsic attributes include the name of the person who made the drawing, corporate entity responsible for commissioning the project, subject of the drawing (church, detail of window, etc.), building name, and geographic location of the building. Catalog the subject as it is depicted, and not the actual built work. For instance, the Theater Building drawings may become the Longstreet Theater. Be sure to recognize the difference and add the appropriate subject headings.

### **MARC-Based Library Catalog**

A **MAchine Readable Catalog** record provides the most basic introduction to the collection. In describing the aggregate collection, the cataloger cannot provide topical, personal, corporate, and geographic subject access points to every drawing in the collection. The catalog record is a surrogate for the highest level of

description, providing the key terms, concepts, and most important people and subjects represented in the collection. For a more homogeneous collection by one architect or of one building, the level of specificity can be much greater. Keep in mind that catalogers create MARC record to alert researchers that a repository has an architectural records collection. Other resources, such as findings aids, will provide more detailed information.



*Fig. 2.* MARC catalog record for the Izenour Drawings of the Theater, 1938-1988, The Pennsylvania State University.

## Database

An electronic database designed to describe architectural drawings uses terminology control elements in prescribed fields to ease retrieval of specific documents. One advantage of a database

is the ability to conduct Boolean searches of several keywords, dates, and concepts, which is impossible with a flat MARC record. A researcher can query a database for isometric drawings of churches in England in the 19<sup>th</sup> century and retrieve a subset of the items with these attributes.

**RBM File/Item Data Entry**

Collection Title:  Subtitle:   
 Box Number:  Bar Format:  Accession Number:   
 Container Location:  Container Size:   
 Comments:   
 Container Link:  Collection Link:  Contains Non-Textual Material:  Fading Aid Type:

Folder	Subgroup	Series	File/Item Title	Year Range	Accession Number	Container Link
01	Architectural drawings	Blueprints (positive)	Guildford Cathedral	1959-1964	1971-0009R	R-MAUFE023
02	Architectural drawings	Blueprints (positive)	Guildford Cathedral	1959-1964	1971-0009R	R-MAUFE023
03	Architectural drawings	Blueprints (positive)	Guildford Cathedral	1959-1964	1971-0009R	R-MAUFE023
04	Architectural drawings	Blueprints, vellum	Guildford Cathedral	1959-1964	1971-0009R	R-MAUFE023

Records: 04 of 4

*Fig. 3.* Database box listing for Sir Edward Maufe architectural drawings, The Pennsylvania State University.

## Encoded Archival Description

Using Encoded Archival Description (EAD) to describe an architectural collection provides a standardized structure for describing the components, whether at the series or item level. EAD encompasses and expands the descriptive elements of a

MARC record to accommodate longer, more detailed descriptions of a finding aid. EAD also can extract item-level descriptions from the database to present it within the context of a particular series.

## **PRESERVATION**

Unlike most of the usual textual documents in archival collections, architectural drawings present special needs for storage and conservation treatment.

### **Care and Handling**

Protect architectural drawings from ultraviolet light exposure caused by both artificial light and sunlight. When not in use, turn drawings that may fade or discolor in light face down. Do not use cotton gloves when handling architectural drawings; they will impede ability to select and turn sheets of paper. Use an archival board cut larger than the item as a support when moving fragile drawings. Remove an entire folder from a drawer or box before attempting to retrieve a particular drawing. If the required folder is not stored on top in a drawer, remove all of the folders above that folder. Grasp the fold side of large folders with one hand, and the open side with your other hand to keep drawings from falling out of the folder.

### **Storage**

Since metal flat files, paper, and Mylar™ are heavy, when deciding where to place stacks of map drawers in a particular storage area, make sure the flooring is adequate for the weight-bearing load of architectural records. In addition, be sure to place the maps drawers in a storage area where you can fully open the drawers to remove folders.

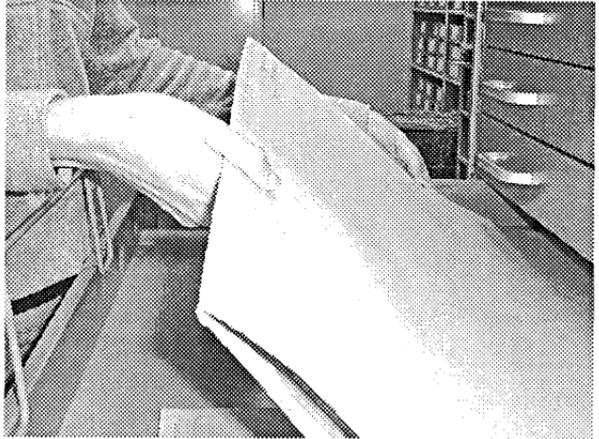
## Foldering

*Size:* Place drawings in folders that are slightly larger than the drawings to protect them from damage. To prevent folders from sliding around in drawers, place folders of the same size in a drawer.

*Orientation:*  
The fold should face the front of the drawer or box, with the opening at the back.

*Quantity:*  
Limit the number of sheets in one folder to ten or less to ease handling, since large drawings are heavy and bulky. Be extra cautious when storing or retrieving drawings encapsulated in Mylar™. They are slippery and can easily slide out of the folder.

*Labeling:*  
Clearly label folders in pencil only. Do not use adhesive



*Fig. 4.* Proper removal of oversized folder from flat file drawer.



*Fig. 5.* All folders are the same size and fit the drawer.

labels since the glue tends to stain and migrate its acidity into the folder. Adhesive labels also tend to dry out and fall off. When placed in the same location on multiple folders, these labels also will expand the thickness of the folders, creating an uneven stack.

*Material type:* Store different processes in separate folders to avoid chemical reactions. For example, store linens with linens, diazos with diazos, and blueprints with blueprints. Always store handmade drawing paper flat. For efficiency and economy, use buffered (alkaline) folder stock to enclose all drawings, and interleave unbuffered (neutral pH) paper between the folder and top and bottom sheets. Otherwise, the housing guidelines based on specific processes are:

*Buffered Materials*

Tracing papers

Linens

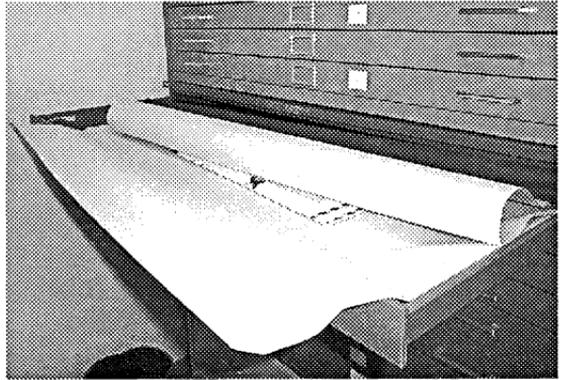
Wove papers

Lithoprints and all black ink or carbon-based processes

Electrostatic prints

*Unbuffered Materials: Photo-Reproductive Processes*

Hectographs



*Fig. 6.* Incorrect on two counts. The folder opening is at the front and the items inside are too small for this large folder.

Blueprints  
Ferrogallic prints  
Pellet prints  
Diazotypes  
Aniline prints

*Unbuffered Materials: Silver-Based Photo-Reproductive Processes*

All photographs, including albumen, salted paper, and silver gelatin prints  
Photostats  
Autopositives  
Fixed line halide prints  
Van Dyke prints<sup>11</sup>

### Drawers and Boxes

Most architectural drawings measuring over 15" x 9" are too large to store in standard record cartons or manuscript boxes. They should be stored horizontally. Before vertically placing smaller drawings in folders inside record carton or manuscript boxes, make sure the drawings completely fit within the folders. To prevent curling, either fully pack the carton or box, or insert a spacer to keep the folders rigidly upright. All folders should fit within the confines



**Fig. 7.** Folders are too small for the drawer and packed too tightly so they curl.

of the drawer or box without curling up the sides, or causing the folder and its contents to slide around.

Purchase metal flat file cabinets that have solvent-free powder coatings of finely divided polymers, or anodized aluminum, in which to store architectural drawings. If you

have wood files that you cannot replace, seal the wood with water-based polyurethane, allow it to air dry for three weeks, and line the drawers with unbuffered lignin-free paper. Do not fill a flat file drawer to the point where the open end of the folder will catch on the inside top. When storing documents in a map box, make sure that the lid fits securely and the box is not too heavy and cumbersome to lift and move with relative ease. Limit the number of drawings in a drawer to 200. When stacking flat files, limit the stack to three, for a total of fifteen drawers, and place them no higher than eye-level.



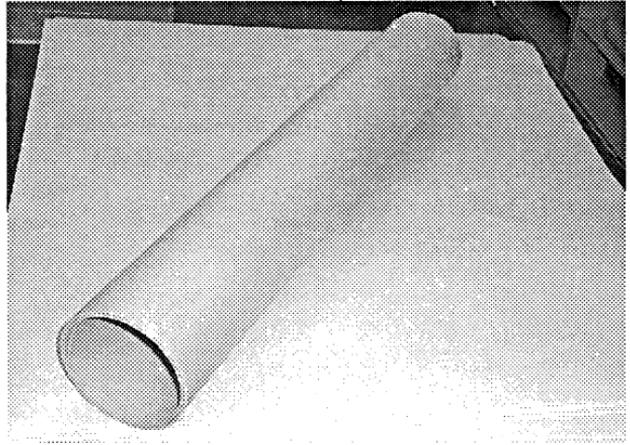
*Fig. 8.* Three problems here. The folders are too small for the drawings, allowing them to tear. They are too short for this drawer and will slide forward and back as the drawer is opened and closed. The rolled drawings should not be stored with the folders.

### **Rolled Drawings**

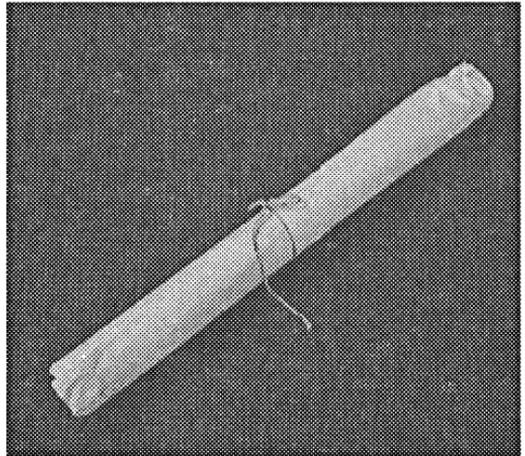
*Tubes:* Some architectural drawings are simply too large to fit inside a flat map box or oversized map case drawer. Although you should never fold these drawings, you can carefully roll them

over an acid-free, lignin-free, and unbuffered tube; wrap them with acid-free, lignin-free tissue paper (on which to pencil the name of the drawing and/or collection); wrap them in Mylar™, and tie flat linen tape around the tube. If you do not have tissue paper, you can attach an acid-free tag label with identifying information with the linen tape. You can roll linen drawings since they are flexible and stable. Never roll drawings produced on a brittle support. If you acquire tightly rolled drawings, you can safely unroll them by scrolling them onto progressively larger archival tubes after relaxing them in a humidity chamber.

*Boxes:* Metal Edge makes a four-sided map/



*Fig. 9.* A four-inch diameter, acid-free, lignin-free tube.

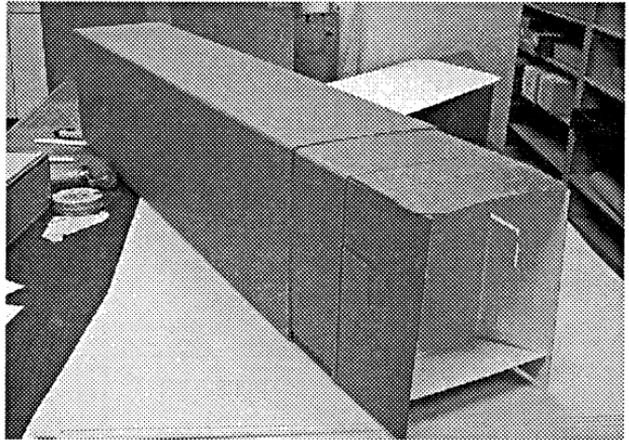


*Fig. 10.* Rolled drawing wrapped in tissue and tied with linen tape.

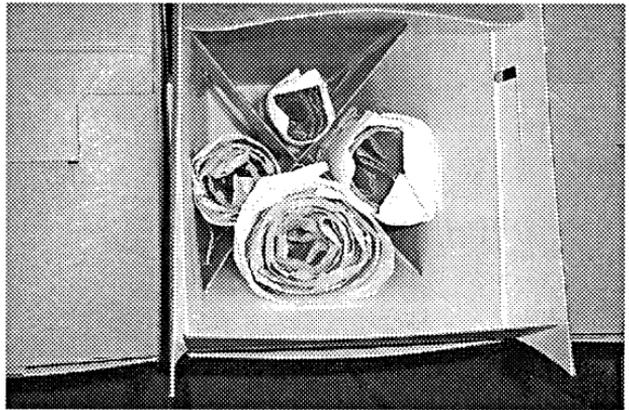
print roll storage box that telescopes from forty to sixty inches, with two X-shaped cross pieces which store four rolls of drawings inside. This box affords more protection than tissue paper/Mylar™, and makes stacking the flat-sided boxes much easier than round tubes. If the drawings are too wide to fit inside a telescoping box, you must roll them onto a tube for storage purposes.

### Framed Prints

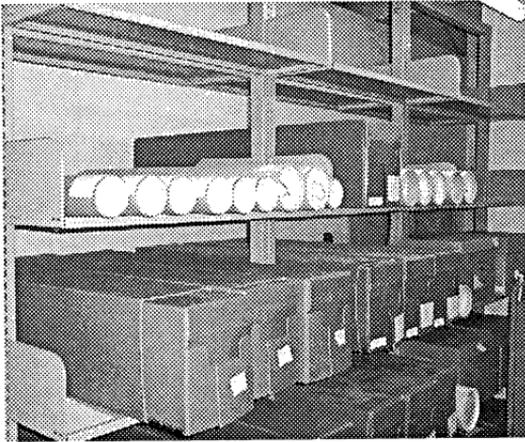
Remove prints from frames with acidic or wood backing, and then place them in folders and boxes. If you intend to display a print in an exhibit, and have the money, arrange for a reputable conservator who uses archival quality materials to professionally reframe the print.



*Fig. 11.* Telescoping box.



*Fig. 12.* Telescoping box with four rolls of drawings supported by the X-shaped cross pieces.



**Fig. 13.** Telescoping boxes stacked one high on shelves.

## Shelving

### *Static shelves:*

Stack telescoping boxes no more than two high on shelves deeper than the traditional nine-inch library standard. To adequately support such heavy boxes, install back-to-back shelves at least 15 or 24 inches deep to give 31-1/2 to 48 inches of support. Place these heavy boxes no higher than

five feet and no lower than one foot from the floor. To avoid injury while shelving or retrieving materials, do not store them on the topmost or bottommost shelves.

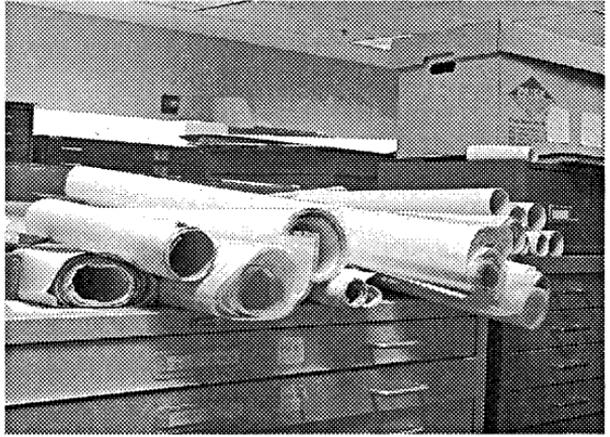
Although you can store tubes up to two deep on shelves, storing only one layer eases retrieval. A repository that owns many rolled drawings can construct a honey-comb of slots from



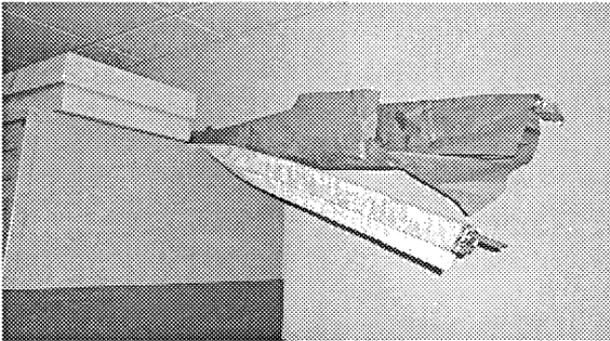
**Fig. 14.** Rolled drawings incorrectly stored on end.

polyurethane-treated solid wood or tubular framing to hold the tubes.

*Compact shelving:* Because of their length and tendency to roll, tubes do not accommodate easily to storage on compact, movable shelving. Not only would they take up both sides of a range, but they also may protrude over the edges of the shelves.

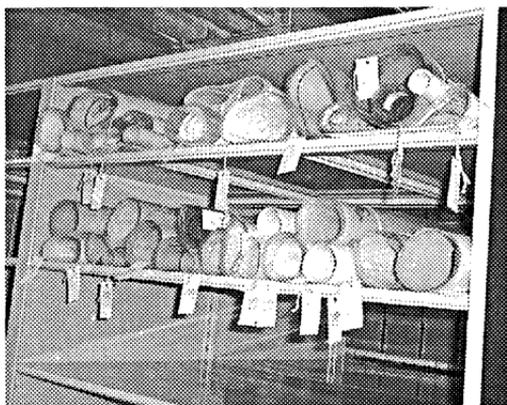


**Fig. 15.** Rolled drawings incorrectly stored on top of flat files. They are too long for their support, not rolled and tied around a rigid tube, not wrapped in tissue paper or Mylar™ for protection.



**Fig. 16.** Long rolled drawings should not protrude this far over the edge of a flat file. The weight and lack of support are causing the drawing in front to sag and bend. The rolled drawing in back is improperly wrapped.

This could prevent the unit from closing, push back boxes or books on the opposite side, or worse, get crushed by opposing shelves not set to the same height. Telescoping boxes, which are shorter than 48 inches in length, will fit on



**Fig. 17.** Rolled drawings on compact shelving. These drawings are not properly rolled onto tubes, and are being flattened and squashed by the weight of their neighbors.

the deepest shelving (24 inches deep each, shelved through both sides).

### Conservation

Any measures taken to conserve architectural drawing should be reversible. The following common conservation techniques, which archivists routinely use to preserve various types of textual documents, should not be used for certain architectural drawings:

- *Deacidification:* Since blueprints are created with an acidic process, do not deacidify them. Deacidification will cause the blue background to turn white.
- *Encapsulation:* Do not encapsulate presentation drawings created in charcoal, soft pencil, gouache, or pastel in Mylar.™ Mylar™ has a static attraction to these friable media, causing them to lift off of the paper. Since acidic papers deteriorate faster within a sealed, encapsulated environment, treat documents that can be deacidified prior to encapsulation. For temporary stabilization, place a fragile document between two Mylar™ sheets. Seal only one or two sides and place a sheet of buffered paper behind the item.

## **Exhibits**

Since diazo prints and blueprints are highly light-sensitive, only display them under extremely low lighting. Be sure to change the image on display each day. Display architectural drawings with archival matting.

## **REFORMATTING**

Architectural drawings are not as easily reformatted as other paper documents. The type of reprographic process, of which there are many, will determine the appropriate reformatting technique. You must thoroughly plan how to reproduce certain images. If you are considering scanning to create a digital copy, will the document fit on the scanner? If you want to photograph the image, will it fit on the copy stand? You might have to photograph or scan sections of large drawings, and reassemble them with a program like PhotoShop. Limit the number of times you expose a document to any reformatting process. It is better to create one high-quality master image from which you can create derivative copies, rather than subject the document to repeated copying in different formats and resolutions.

Since diazotypes fade easily (and off-gas alkaline vapors that are harmful to blueprints, and retain sulfur that damages silver-based prints), reformat them onto a stable archival medium before the intellectual content disappears then destroy the originals. Consider reformatting samples of pre-1930 deteriorating original drawings for informational access, while retaining the originals for their artifactual value. Write a strategic plan that identifies and lists all drawings which require conservation. Include a plan of action, budget, and timeline in your strategic plan, which will help shape reformatting priorities.

**For preservation:** Since microfilm continues to be the standard for archival preservation, use the microfilm as the master image from which to scan a digital copy.

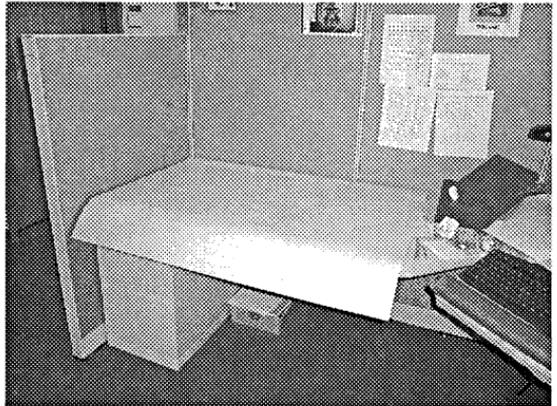
**For reference:** Drawings copied for researchers do not need to meet preservation standards. 105 mm microfiche provides excellent resolution, fits large images in one frame, and can reproduce in color.

**For publication:** A higher-quality photograph or scanned image (at least 300 dpi) is required for reproduction in a book, journal, or exhibit.

## WORK SPACE NEEDS

Sorting and temporarily storing oversized drawings requires a large work surface. Archivists who use free-standing work tables to process collections will need sufficient space around the perimeter of their work table to maneuver a map truck. Archivists who work in cubicles will need access to a flat surface that is at least 36 inches deep to prevent drawings and folders from hanging over the edges.

Archivists also can use oversized map trucks with multiple shelves to sort and temporarily store architectural documents. Transporting oversized draw-

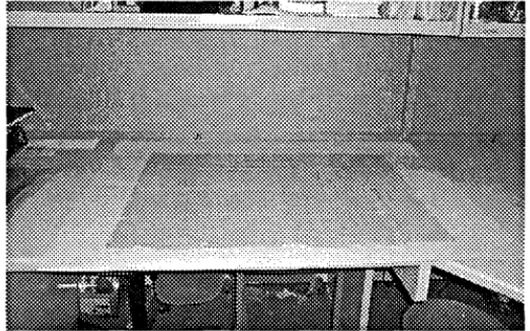


*Fig. 18.* The work surface is too shallow to properly support this folder.

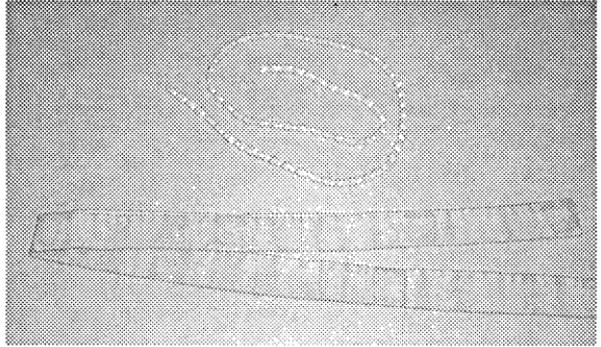
ings on map trucks is preferable to hand-carrying bulky folders containing slippery Mylar™ drawings.

## REFERENCE SPACE NEEDS

- 36 x 48" for size D (24 x 36") drawings
- 48 x 56" for size E (36 x 48") drawings
- 56 x 95" for rolled drawings
- Smaller than 36 x 48" should be accommodated as well
- Adequate tabletop space for photographs, files, and a laptop
- Minimum space per researcher should be 36 sq. ft.
- Ideal space should be 85-110 sq. ft.
- An 11-1/2 ft. long (138 x 72") table accommodates the largest drawings
- Tabletop space for writing surface and three stacks of folders (folders viewed, folders to be viewed, folders being viewed)
- More space is required around tables if the drawings are stored flat, rather than rolled, due to transport space needs
- Group smaller tables of the same height together to handle large drawings
- Appointments are sometimes necessary to provide adequate space



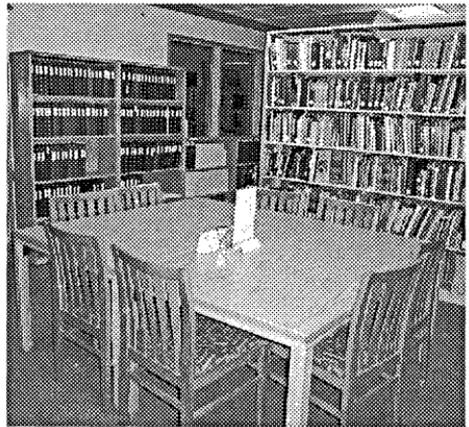
*Fig. 19.* This 36-inch deep work surface provides sufficient space to support the foldered drawing.



*Fig. 20.* Weights or snakes can be used to hold a document flat, leaving a processor's or patron's hands free to make notes on a sheet of paper or a computer file, and not on top of the document.



*Fig. 21.* Custom-made map trucks can accommodate architectural drawings. The top shelf of this truck is slightly indented so the rolled drawing won't roll off in transit.



*Fig. 22.* Two small tables have been pushed together to make one large surface in the reading room for large maps and architectural drawings.

## GLOSSARY<sup>12</sup>

**Aniline print.** Dark blue, purple, or black lines on a yellow-green ground. Recto has an overall green to yellow-beige tone, verso often has no coloration. (Many other line colors may be possible, but are rare.) White scratches, scuffs, and cracks in surface are characteristic degradations.

**Architectural drawing.** A drawing prepared for the design and construction of specific structures.

**Architectural project.** Ensemble of built work completed in accordance with a unified plan, sometimes including several coordinated structures and landscaping. Architectural firms commonly assign each project an identifying name or number that is used on all project records.

**As-built drawing.** Drawings that indicate changes made during construction from the work proposed in the working drawings. Shows some aspect of a built work in its final state, especially those parts of the structure or system that cannot be seen when construction has been completed. Also known as record drawings.

**Axonometric drawing.** Perspective representation without a vanishing point. Angles are distorted to represent a building from above or below so that the plan and certain elevations and sections can appear on the same drawing.

**Bird's-eye perspective.** Perspective drawings having a viewpoint well above normal eye level.

**Blueline print.** Reproduction prints made on light-sensitized surfaces that produce blue images on neutral backgrounds.

**Blueprint.** Reproduction print made on a light-sensitized surface, which produces a white image on a Prussian Blue background. Blues can vary somewhat in intensity and hue. Support can be paper or drafting cloth. Commonly used between ca. 1900 and 1940.

**Bumwad.** Colloquially, a scrap of paper, torn from a larger sheet, which contains a sketch.

**CAD (Computer-aided design systems).** Computer software used by architects to design and prepare drawings for building projects. Also known as CADD (computer-aided design and drafting).

**Capricci.** Scenes of accurately rendered buildings grouped in an arbitrary, imaginary arrangement.

**Cartouche.** *See* Title block.

**Change order drawing.** Written and signed legal document authorizing a change from the original plan, specification, or other contract document.

**Conceptual drawing.** Drawing showing the possible design of a building project or proposal prepared quickly by an architect to experiment with building ideas without regard to scale. Sometimes considered to be an elaboration of a preliminary sketch. Also known as preliminary design drawing.

**Construction drawing.** *See* Working drawing.

**Contract drawing.** Drawing that forms part of a contractual agreement on the basis of which the architect is legally obliged to produce the drawing.

**Design drawing.** Drawing intended to work out the scheme of a project, whether the project is expected to be executed or not. More finished than sketch. Usually created with instruments. Also known as preliminary drawing.

**Detail drawing.** An enlarged drawing of specific parts of buildings, or special features of construction, such as doors and windows.

**Detail paper.** Smooth, greaseproof paper sufficiently translucent for copying, tracing, and often for diazo reproduction.

**Development drawing.** Earliest scale drawing of a project, generally representing the complete graphic representation of a project at a scale that is readable, but shows little detail. Development drawings are usually the basis for construction or working drawings. Also known as preparatory construction drawing.

**Diazotype (blue).** Blue lines (of a variety of hues, from purple-blue to green-blue) on a flecked, dirty white ground. Possible yellowish discoloration on sensitized image side. Soft image lines; folds and marks from original reproduced as well as image lines. Hard calendered surface, paper fibers not raised, typical of dry processing.

**Diazotype (dark brown).** Brown lines (of a variety of hues) on a flecked, dirty white ground. Possible yellowish discoloration on sensitized image side. Usually on opaque paper. No eradications or corrections. No contact degradation to adjacent documents.

**Drafting cloth.** A woven fabric support used for drawings and prints, usually made of a fine cotton or linen coated on one or both sides with starch, or a mixture of starch and gelatin, producing a support of even transparency and strength.

**Elevation.** A two-dimensional, vertical view showing the elements of exterior or interior walls of a structure, drawn to scale.

**Floor plan.** A horizontal view showing the thickness of walls and partitions, arrangement of passages, rooms, and openings on any floor of a structure.

**Hectograph (handmade).** Blue lines on uniform white ground, or brown lines on uniform white ground. Soft, feathery dye lines on well-sized paper.

Dimensions of prints may be quite large (as much as 40" x 60" or more). Early prints (mostly produced before c. 1900).

**Landscape drawing.** A vertical view that includes the position of trees, shrubbery, and other landscape features.

**Landscape plan.** A horizontal view of the position of trees, shrubbery, and other landscape features.

**Linen.** *See* Drafting cloth.

**Longitudinal section.** Two-dimensional scale drawings through the longest vertical plane of a building.

**Measured drawing.** Precise scale drawing of an existing structure based on measure or mathematical calculation.

**Model.** A three-dimensional representation of an architectural project at a reduced scale, usually produced to show the expected appearance of a proposed building. Models are often constructed to scale and may be made of a wide variety of materials such as paper or cardboard, wood, plaster, or plastic.

**Mylar™.** Clear coated polyester film. May be coated with matte lacquer of gelatin on one or two sides. Available in different thicknesses.

**Negative Photostat print.** White lines or gray areas on black or dark gray ground. Print surface smooth, paper fibers hardly visible. Image embedded in emulsion layer at surface. Possible silver mirroring. Found on paper only.

**Negative print.** A print with light lines on a dark ground.

**Negative Vandyke print.** White lines on a cool brown ground. Found on paper only.

**Partí.** A quick drawing, usually in the architect's hand, establishing the basic design or concept for an architectural project.

**Pellet print (positive blueprint).** Prussian blue lines on a white ground. Clean, uniform ground, possibly with faint blue tone overall, or light blue streaking. Hard image lines, embedded into the fibers of the support. Matte surface with raised paper fibers, typical of wet processing.

**Perspective drawing.** A drawing of a building or group of buildings in a three-dimensional form on a plane surface. *See also* Rendering.

**Plan.** A two-dimensional scale working drawing of the horizontal view of a building and surrounding landscape. Also may refer to specific plans, such as foundation plans, roof plans, framing plans, and electrical plans.

**Plat.** A large scale drawing of a parcel of land showing boundaries of lots. A plat also may contain a legal description and one or more certificates indicating due approval.

**Positive print.** A print with dark lines on a light ground.

**Positive Vandyke print.** Cool brown lines on a clean white ground. Lines sometimes have a bronzed, metallic appearance. Image embedded into the fibers of the support. Matte surface with raised paper fibers, typical of wet processing.

**Preliminary drawing.** *See* Design drawing.

**Presentation drawing.** Architectural drawing presented to a client to illustrate how the building will look and function. Often are perspective views or renderings that emphasize a project's aesthetic character and setting. The term also can include plans, elevations, and other drawings that illustrate the architect's concept to a client.

**Project file.** Documents created by an architect's office to document its work on an architectural project. Project files include financial and administrative records as well as design and construction drawings.

**Prussian blue.** A mineral pigment which produces a specific blue color, characteristic of blueprints, positive blueprints, and Pellet prints.

**Reconstruction.** Drawing that proposes how a structure may have looked at a previous time.

**Record documents.** File records of a completed project. May include as-built drawings. In historical collections, copies of architects' design drawings, often on a reduced scale, whether executed or unexecuted, kept as a record of their work.

**Rendering.** A drawing in three-dimensional perspective of a building on its site. Often shows the effects of light and shade on a façade, and the building's relationship to its surroundings. Renderings typically are created to show clients the expected appearance of a proposed building design. Also known as a perspective drawing.

**Scale.** The mathematical relationship between a large object, such as a building, and a smaller representation in a drawing or model, usually shown as an equation, e.g.,  $\frac{1}{4}'' - 1'$  indicates that a measurement of  $\frac{1}{4}''$  on the drawing or model represents a distance of 1 foot on the building.

**Schematic.** Simplified drawing showing general building concepts without precise scale or detail. A schematic is more specific than a design sketch but is not sufficiently detailed to building construction.

**Section.** A two-dimensional scale vertical view of a building shown as if it were cut in half.

**Shop drawing.** Scale drawing created by a contractor, subcontractor, or

materials manufacturer showing some aspect or detail of a building project.

**Site plan.** A map of a small area showing the structural outline of one or more buildings in relation to the surrounding terrain and landscaping.

**Sketch.** Rough or summary unmeasured art work; less finished than drawing. Usually created quickly by the architect's own hand to study and experiment with the essential design or concept for an architectural project.

**Skiagraphic drawing.** Depiction of a building's elevation using shading to show recessions or projections of the façade.

**Specifications.** Technical requirements for building structure and systems established in advance and frequently included in contract documents. Specifications generally are in textual form and may include manufacturers' literature.

**Stick-ons.** Any secondary material added to the face of an architectural drawing, including gummed labels, or pre-printed images.

**Supplemental drawings.** May include change order drawings and shop drawings for subcontractors.

**Title block.** A standard block or column of information on architectural drawings to identify the architectural office, architect, project, drawing title, number, date, and scale, and other information, including successive modifications of the document and their dates. Also known as cartouche.

**Topographical view.** Drawing that depicts actual location.

**Tracing paper.** Thin paper impregnated with oil or resin (oil of turpentine, linseed oil, etc.) to make it translucent. This paper often is stored on rolls and is used most commonly for sketches or schematic drawings.

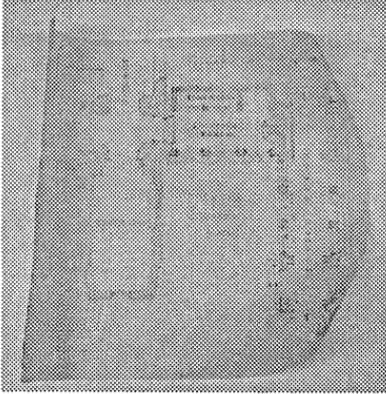
**Transverse section.** Section through the shorter end of a building.

**Vellum.** Tracing paper made from 100% cotton rag and chemically or oil treated, giving it a hard surface and durability. The oil in older vellums will dry out over time, leaving the paper less translucent and in some cases yellowed.

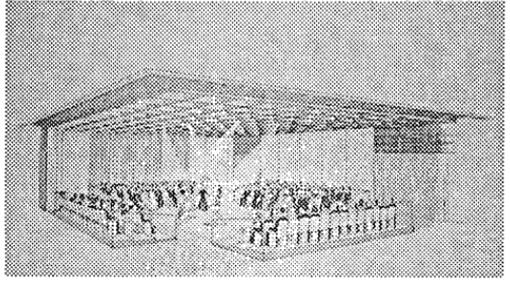
**White tracing paper.** Relatively high-quality tracing paper, white in color.

**Working drawing.** Final drawing from which a structure is made. A scale drawing is used for building construction. Can depict a building's exterior; electrical systems; heating, ventilation, and air conditioning (HVAC); plumbing; structural systems; and other building elements. Each group of working drawings for a project is usually identified by the appropriate initial (e.g., A, E, HVAC, P, S, etc.), and numbered consecutively. Working drawings usually are reproduced as blueprints for use by builders, engineers, and others in the field.

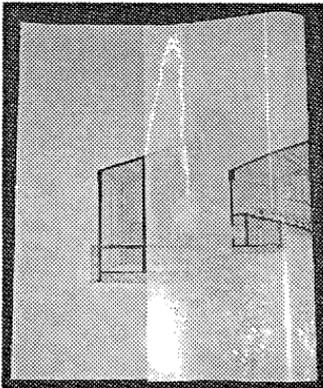
**Yellow tracing paper.** An inexpensive tissue paper with good transparency.



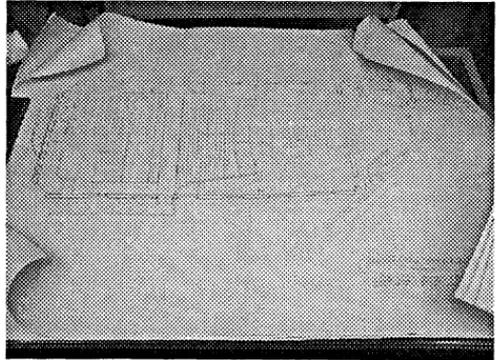
*Fig. 23.* A scrap of bumwad with a sketch of Guildford Cathedral.



*Fig. 24.* Drawing on architectural linen.



*Fig. 25.* Ink drawing on architectural Mylar.



*Fig. 26.* Diazo positive reproduction of plans for Mauch Chunk Opera House.

## RESOURCES

### **Association of Architectural Librarians (AAL)**

1735 New York Avenue, NW

Washington, DC 20006

Phone: 202-626-7490

Fax: 202-626-7587

### ***Brief Biographies of American Architects Who Died Between 1897 and 1947***

URL: <http://www.sah.org/aame/bioint.html>

### **Canadian Centre for Architecture (CCA)**

1920 rue Baile

Montréal, Québec

H3H 2S6

Phone: 514-939-7026

URL: <http://cca.qc.ca/>

The Canadian Centre for Architecture is a museum and research center that documents architecture on an international scale. The Centre's research collections contain over 500,000 examples of publications and architectural design documentation, including conceptual studies, drawings, plans, models, prints, and master photographs. The Centre also houses archives and oral histories of individual architects, and related artifacts and ephemera. The Centre's primary and secondary resources about the nature of the built domain are unparalleled.

### **Cooperative Preservation of Architectural Records (COPAR)**

Architectural, Design, and Engineering Collections

Prints and Photographs Division

Library of Congress

Washington, DC 20540

Phone: 202-707-8695

The Prints and Photographs Division of the Library of Congress established the Cooperative Preservation of Architectural Records (COPAR) in 1973 as a major center for information on architectural records in the United States. COPAR's National Union Index to Architectural Records database, which was compiled in 1986, provides information on the location of records of individual architects and architectural firms. Contact information for the National Trust Library is

available online at <http://www.lib.umd.edu/NTL/contactus.html>. Request a search of the COPAR database, and provide the name of the architect or firm whose records you wish to find. The database includes approximately 4,000 entries. Some information may no longer be reliable since the database was created several years ago.

**Getty Research Institute. *Art & Architecture Thesaurus (AAT)***

URL: <http://www.getty.edu/research/tools/vocabulary/aat/>

The *AAT* is a structured vocabulary of more than 125,000 terms, scope notes, and other information for describing fine art, architecture, decorative arts, archival materials, and material culture.

***. Union List of Artist Names***

URL: <http://www.getty.edu/research/tools/vocabulary/ulan/>

This structured vocabulary contains more than 220,000 names, biographical data, and bibliographic information about artists and architects, and includes a wealth of variant names, pseudonyms, and language variants.

**International Archive of Women in Architecture (IAWA). *Biographical Directory of Women in Architecture*** URL: [http://lumiere.lib.vt.edu/iawa\\_db/](http://lumiere.lib.vt.edu/iawa_db/)

**Philadelphia Architects and Buildings**

URL: [http://www.philadelphiabuildings.org/pab/app/search\\_architect.cfm](http://www.philadelphiabuildings.org/pab/app/search_architect.cfm)

## SUPPLIES

**Cotton tying tape:** Gaylord Bros., Inc., P.O. Box 4901, Syracuse, NY 13221-4901 Phone: 800-448-6160, Fax: 800-272-3412;

URL: <http://www.gaylord.com>

**Map and blueprint truck:** Trucks custom-made to order by Gryphon Industries, 340 Edinburgh Road, N., Unit #2, Guelph, Ontario, Canada N1H 7Y9; Phone: 519-763-9590; Fax: 519-824-9294;

URL: <http://www.gryphonbooktrucks.com>

**Map and print folders, and boxes:** Conservation Resources International, 5532 Port Royal Road, Springfield, VA 22151, Phone: 800-634-6932 or 703-321-7730, Fax: 703-321-0629; URL: <http://www.conservationresources.com>

**Rolling and storage tubes:** Archivart, 7 Caesar Place, Moonachie, NJ 07074;

URL: <http://www.archivart.com>

**Telescoping boxes:** Metal Edge, Inc., 6340 Bandini Blvd., Commerce, CA 90040, Phone: 800-862-2228; Fax: 1-888-822-6937;

URL: [www.metaledgeinc.com](http://www.metaledgeinc.com)

## SELECTED BIBLIOGRAPHY

- Betz, Elisabeth W., compiler. *Graphic Materials; Rules for Describing Original Items and Historical Collections*. Washington, D.C.: Library of Congress, 1982.
- Canadian Council of Archives. Canadian Committee on Archival Description. *Rules for Archival Description*. Chapter 6, Architectural and Technical Drawings, revised August 2001. Ottawa: Bureau of Canadian Archivists, 1990. URL: [http://www.cdncouncilarchives.ca/rad\\_ch6.pdf](http://www.cdncouncilarchives.ca/rad_ch6.pdf)
- Conservation Center for Art and Historic Artifacts. Architectural Records Conference, Philadelphia, Pa. May 3-5, 2000. URL: [http://www.ccaha.org/arch\\_rec/contents.html](http://www.ccaha.org/arch_rec/contents.html)
- Ehrenberg, Ralph. *Archives & Manuscripts: Maps and Architectural Drawings*. Chicago: Society of American Archivists, 1982.
- Glaser, Mary Todd. "Storage Solutions for Oversized Paper Artifacts." Northeast Document Conservation Center, Technical Leaflet, Storage and Handling, Section 4, Leaflet 9. Andover, MA: NEDCC, February 1999. URL: <http://www.nedcc.org/plam3/tleaf49.htm>
- International Council on Archives, Architectural Records Section. *A Guide to the Archival Care of Architectural Records 19<sup>th</sup>-20<sup>th</sup> Centuries*. Paris: ICA, 2000.
- Jenks, Larry D. *Architectural Office Standards and Practices; a Practical User's Guide*. New York: McGraw-Hill, 1995.
- Kissel, Eléonore and Erin Vigneau. *Architectural Photoreproductions: A Manual for Identification and Care*. The New York Botanical Garden; Oak Knoll Press, 1999.
- Lathrop, Alan K. "The Provenance and Preservation of Architectural Records." *American Archivist* 43 (Summer 1980): 325-338.
- Mitchell, William J. "Architectural Archives in the Digital Era." *American Archivist* 59 (Spring 1996): 200-204.

- National Park Service. "Buffered and Unbuffered Storage Materials." *Conserve O Gram* 4/9 (July 1995).  
URL: <http://www.cr.nps.gov/museum/publications/consveogram/04-09.pdf>
- \_\_\_\_\_. "Caring for Blueprints and Cyanotypes." *Conserve O Gram* 19/9 (July 1995).  
URL: <http://www.cr.nps.gov/museum/publications/consveogram/19-09.pdf>
- \_\_\_\_\_. "Housing Archival Paper-Based Materials." *Conserve O Gram* 19/16 (September 1996).  
URL: <http://www.cr.nps.gov/museum/publications/consveogram/19-16.pdf>
- Olsberg, Nicholas. "Documenting Twentieth-Century Architecture: Crisis and Opportunity." *American Archivist* 59 (Spring 1996): 128-135.
- Porter, Vicki and Robin Thornes. *A Guide to the Description of Architectural Drawings*. Boston, MA: G.K. Hall, 1994.
- Price, Lois Olcott. "The History and Identification of Photo-reproductive Processes Used for Architectural Drawings Prior to 1930." *Topics in Photographic Preservation* 6 (1995): 41-49.
- Reed, Judith, Eléonore Kissel and Erin Vigneau. "Photo-reproductive Processes Used for the Duplication of Architectural and Engineering Drawings: Creating Guidelines for Identification." *The Book and Paper Group Annual* 14 (1995): 41-49.
- Saliga, Pauline. "The Types and Styles of Architectural Drawings" in *Chicago Architects Design; A Century of Architectural Drawings from the Art Institute of Chicago*. New York: Rizzoli, 1982.
- Schrock, Nancy Carlson. "Conserving Architectural Drawings and Oversized Works of Art on Paper: A Bibliography." May 1996. Out-of-date; available only from author.
- \_\_\_\_\_. "Preservation Factors in the Appraisal of Architectural Records." *American Archivist* 59 (Spring 1996): 206-213.

\_\_\_\_\_ and Mary Campbell Cooper. *Records in Architectural Offices: Suggestions for the Organization, Storage and Conservation of Architectural Office Archives*. 3rd rev. ed. Cambridge, MA: Massachusetts Committee for the Preservation of Architectural Records, 1992.

Withers, Marianne M. "Moving Maps at the Virginia State Library and Archives." *Bulletin* (Special Libraries Association. Geography and Map Division) no. 168 (June 1992): 24-27.

Zukowsky, John. "Fine Lines; Connoisseurship in Collecting Architectural Drawings." *Arts & Antiques* 3 (Sept./Oct. 1980): 102-107.

## END NOTES

<sup>1</sup> Nancy Carlson Schrock, *Architectural Records Management* (Washington, D.C.: American Institute of Architects Foundation, 1985), pp. [1-2].

<sup>2</sup> Schrock, *Architectural Records Management*, p. [2].

<sup>3</sup> Schrock, *Architectural Records Management*, p. [2].

<sup>4</sup> *Art & Architecture Thesaurus* 2<sup>nd</sup> ed. (New York: Oxford University Press, 1994), Vol. 2, pp. 478-493.

<sup>5</sup> Eléanore Kissel & Erin Vigneau, *Architectural Photoreproductions; A Manual for Identification and Care* (New Castle, DE: Oak Knoll Press; Bronx, N.Y.: New York Botanical Garden, 1999).

<sup>6</sup> Alan K. Lathrop, "The Provenance and Preservation of Architectural Records," *American Archivist* 43 (Summer 1980), p. 328.

<sup>7</sup> Silicon Graphics Company. Alias|Wavefront Documentation, Output – Plot, 1997. Available from University of Missouri, Columbia. IATS SuperCluster [Website]

<<http://www.cclabs.missouri.edu/things/instruction/aw/Plotfile.html>> (July 18, 2003)

<sup>8</sup> Françoise Hildesheimer, *The Processing of Architects' Records; A Case-Study: France* (Paris: UNESCO, 1987), pp. 16-18.

<sup>9</sup> Nancy Carlson Schrock and Mary Campbell Cooper, *Records in Architectural Offices; Suggestions for the Organization, Storage, and Conservation of Architectural Office Archives*. 3<sup>rd</sup> rev. ed. (Cambridge, MA: Massachusetts Committee for the Preservation of Architectural Records, June 1992), p. 17.

<sup>10</sup> Kelcy Shepherd and Waverly B. Lowell, *Environmental Design Archives Arrangement and Description Guide* (Berkeley, CA: University of California, February 2000), pp. 1-2.

<sup>11</sup> Joan Irving, "Storage of Architectural Drawings," *Architectural Records Conference, May 3-5, 2000* (Philadelphia, PA: Conservation Center for Art and Historic Artifacts, May 4, 2000).

<sup>12</sup> Excerpted from various sources, but most especially the *Art & Architecture Thesaurus* and Maygene Daniels and David Peyceré, "Glossary of Specialized Terms for Archives of Architecture," in *A Guide to the Archival Care of Architectural Records 19<sup>th</sup> and 20<sup>th</sup> Centuries* (Paris: ICA, 2000), pp. 1-5.

