Descriptive Elements for Born-Digital Records in Architectural Collections

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Introduction

This document presents a framework for describing born-digital records in architectural collections. Both the format and the language of this document were taken directly from the 2017 *UC Guidelines for Born-Digital Archival Description* (https://escholarship.org/uc/item/9cg222jc); this document presents the option of three levels, or tiers, of description which were originally developed and published as part of the 2018 *Digital Processing Framework* (DPF) (https://ecommons.cornell.edu/handle/1813/57659). The authors of this document have edited the definitions of the tiers presented in the DPF, and determined their application in the context of processing born-digital records in architectural collections. These edits have been based on collective professional experience, while adhering to existing best practices and descriptive standards. The concept of these tiers should be viewed as well-informed yet subjective suggestion, and, just like the DPF itself, are open to redefinition and/or varying application by individual processors and institutions.

Tier Definitions: Three Levels of Description

Baseline: Minimum recommended description for any born-digital material. Data capturing methods do not typically require specialized tools or staff with specialized skill sets.
Apply to:
- Material deemed low priority (staff/funding/backlog issues and/or low research value);
- Material with no known copyright issues that do not contain sensitive, confidential, or personally identifiable information;
- Material that can be made available as-is (i.e. require no restrictions or migration issues).

Moderate: Description for born-digital material that justifies additional investment of time and resources. Data capturing methods may necessitate forensic tools and staff with specialized skill sets.
Apply to:
- Material deemed somewhat higher value;
- Material that may contain copyright issues and/or sensitive, confidential, or personally identifiable information;
- Material that may have access requirements.

Intensive: Description for born-digital material that justifies time consuming and resource-intensive processing. Data capturing methods may necessitate forensic tools and staff with specialized skill sets.
Apply to:
- Material with a high research value;
- Material that have copyright or legal concerns and/or contain copyright issues and/or sensitive, confidential, or personally identifiable information;
- Material that have specific access restrictions or access requirements that require a high degree of manual effort.

N/A: An N/A (not applicable) designation in this document indicates an area of the matrix where that level of description has been deemed unnecessary by the authors and in excess of the levels already defined.

Processing and Arrangement Options

Baseline: All born-digital material arranged as independent "born-digital" series:
Example:

    A+ Architects collection

        Series I. Architectural projects

        Series II. Personal papers

        Series III. Born-digital files

Examples from processed collections:
- The Ron Herman Collection, UC Berkeley (collection no. 2016-01)
- Erica Van Horn papers, Beinecke Rare Book and Manuscript Library (call no. YCAL MSS 863)
- Chuck Hoberman fonds, Canadian Centre for Architecture (collection no. AP169)

Moderate: Born-digital material intellectually integrated into proper location within finding aid, but left as an independent file based on format/carrier:
Example:

    A+ Architects collection

        Series I. Architectural projects

            Vanderweit Residence

                Project records

                Drawings

                Photographic documentation

                Models

                Digital files

        Series II. Personal papers

Example from a processed collection:
- Volz & Associates, Inc. collection, Alexander Architectural Archives, University of Texas Libraries, The University of Texas at Austin (collection no. VOH)
- Raymond L. Watson papers, University of California, Irvine Libraries (collection no. MS.R.120)

Intensive: Exclusively born-digital collection, or born-digital material within a hybrid collection, is intellectually integrated into proper location within finding aid, with format not being a limiting factor for arrangement. This will probably mean the files have been intensively arranged and "bagged":

Examples from processed collections:
- ONL [Oosterhuis_Lénárd] NSA Muscle project records, Canadian Centre for Architecture (collection no. AP167)
- Bernard Cache fonds, Canadian Centre for Architecture (collection no. AP169)

Using this Document

This document uses a table format to present a framework for tiers of description. Each descriptive element is presented in its own table, which includes steps for capturing information at three levels of description, allowing the processor to choose a column of steps to follow based on the level of processing and description they have chosen for a given collection.

This table presents the formatting you will encounter in this document and defines the information you will find in each cell:

Descriptive Element Title *indicates DACS equivalent note* *EAD3: indicates EAD3 equivalent tag* *ArchivesSpace: indicates ASpace equivalent field*			This cell indicates whether the element is considered **required, recommended,** or **optional.**
This cell summarizes the purpose of the descriptive element, and offers an explanation of what type of information should be captured in order to meet the requirements of the element.			
BASELINE		**MODERATE**	**INTENSIVE**
A These cells present the itemized steps a processor should follow in order to fulfill the requirements of each note, in order of importance within each column as steps A, B, C, etc. The processor may choose the column they wish to follow based on whether they are adopting a Baseline, Moderate, or Intensive approach.	**A**	**A**	
B	**B**	**B**	
C	**C**	**C**	
Examples			
BASELINE			
This cell offers a fictional example of a Baseline-level note for each element.			
MODERATE			
This cell offers a fictional example of a Moderate-level note for each element, if applicable.			
INTENSIVE			
This cell offers a fictional example of an Intensive-level note for each element, if applicable.			

Descriptive Elements

Processor	REQUIRED
DACS: Processing Information Note in Notes Element, 7.1.8 *EAD3: Processing Information <processinfo>* *ArchivesSpace: Processing Information Note*	

In the case of a hybrid collection, if the digital materials were processed either at a later date and/or by a different person than the rest of the collection, specify when and by whom they were processed.

Consider including names of employees/archivists at the firm who were involved with the transfer of files for added context.

BASELINE		MODERATE		INTENSIVE	
A	Refer to institutional policy statement.	**A**	Add processing archivist's name and the date of processing.	**A**	N/A
B	Add processing archivist's name and the date of processing.	**B**	Add name of archivist/employee at design firm who assisted with the transfer of born-digital material.		

Examples

BASELINE

- The A+ Architects' architectural projects digital files were processed according to The Repository's preservation policies. For more information see [permalink].

- Ada Roberts processed the archive and wrote the finding aid in 2016. Born-digital materials processed by Marie Montiel in 2017.

MODERATE

- Yuko Hayashi from A+ Architects managed the digital transfer from the firm in the fall of 2016, and remained in consultation during the processing of the collection. Ada Roberts processed the archive and wrote the finding aid in 2016. Born-digital materials processed by Marie Montiel in 2017.

Physical Description and Extent	REQUIRED
DACS: Extent Element 2.5	
EAD3: Physical Description <physdesc>	
ArchivesSpace: Physical Description Note; Extents	

Record the extent of the digital materials in the collection by recording the size of the files in gigabytes (GB) and a count for the number of files this represents (use of "circa" is acceptable if exact number is unknown). When calculating size:
- round to two decimal points if size is 1 Gigabytes (GB) or larger;
- round to three decimal points if size is smaller than 1 GB;
- if size is smaller than 1 MB, default to ".001 GB".

For unprocessed material where extent is unknown or difficult to estimate, include a count of the unprocessed media formats.

Processors can also include other units of measure to help a researcher better contextualize the amount of digital material present in the collection. This level of description belongs at the series, file, or item level, as is appropriate. This could include: total runtime of audiovisual files; total number of disk images; or total number of emails.

BASELINE		MODERATE		INTENSIVE	
A	For unprocessed materials, record a count of unprocessed media formats.	A	Record the size of the files in gigabytes (GB) and a count for the number of files.	A	Record the size of the files in gigabytes (GB) and a count for the number of files.
B	For baseline processing, record the size of the files in gigabytes (GB) and a count for the number of files.	B	Record specifications of physical media if possible.	B	Record specifications of physical media if possible.
		C	Record a count of unprocessed media formats not being actively processed.	C	Include more granular file details, as per locally applied descriptive rules.

Examples

BASELINE

- 3.4 GB (1,253 files)

- 14 unprocessed compact discs; 3 unprocessed 3.5 inch floppy disks

MODERATE

- 3.4 GB (1,253 files)

| ● | 20 GB (5,253 files); 2 unprocessed SyQuest 5.25 inch disks (SQ400 cartridge, 44 MB; SQ2000 cartridge, 200 MB) |

INTENSIVE

- Video recording of construction site, 2000
  .003 GB (1 file) Mp4 file; 36 min., 43 sec.; col.

- Scripts and renderings for geometric star designs, 1996-1997
  0.018 GB (42 files)

Abstract *DACS: Scope and Content Element, 3.1* *EAD3: Abstract * *ArchivesSpace: Abstract Note*	**REQUIRED**

If there is significant born-digital material present in a collection, the Abstract should reflect this. Try to differentiate the descriptive language in the Abstract from the Scope and Content note. For instance, if you have listed specific formats in the Scope and Content note, there is no need to repeat that information in the Abstract.

BASELINE		MODERATE		INTENSIVE	
A	Record the presence of born-digital files.	**A**	Record the presence of born-digital files and summarize the operating environments and software used to create them.	**A**	N/A

Examples

BASELINE

- The Los Angeles firm A+ Architects were preeminent designers of modern residential architecture in the early 2000s. Consisting of drawings and plans, models, photographic materials, textual records, and digital files relating to three key projects, this collection provides a record of the large contribution this firm made to residential architecture during their short time in practice.

MODERATE

- The Los Angeles firm A+ Architects were preeminent designers of modern residential architecture in the early 2000s. This born-digital archive consists of drawings and plans, 3D models, photographic materials, and project records relating to three key projects. The digital design files were created within Windows operating systems, and produced with Autodesk AutoCAD and Maya, Revit, and Digital Project software, and provide a record of the large contribution this firm made to residential architecture during their short time in practice.

Conditions Governing Access and Restrictions	REQUIRED
DACS: Conditions Governing Access Element, 4.1 *EAD3: Conditions Governing Access <accessrestrict>* *ArchivesSpace: Conditions Governing Access Note*	

Exactly as described in DACS, this element provides information about access restrictions on files due to the nature of the information in the materials being described, and/or institutional policy. For the purpose of digital collections, use of this field does not change. If there are any restrictions or conditions governing access use this field at the collection level only. The Conditions Governing Access and Restrictions note should be used for general access information and the Physical Characteristics and Technical Requirements note should be used to inform researchers about the detailed physical or technical characteristics of digital materials that will affect their ability to access them.

BASELINE		MODERATE		INTENSIVE	
A	Record any access restrictions to born-digital material. (This includes virtual reading rooms and physical media).	A	Record any access restrictions to born-digital material. (This includes virtual reading rooms and physical media).	A	Record any access restrictions to born-digital material. (This includes virtual reading rooms and physical media). Record approximate size of data in collection that is restricted.
		B	Record the presence of personally identifiable information (PII), copyright restrictions, or other restrictions set by the donor. Refer to the Processing Information note for tools used to locate and identify PII.	B	Record the presence of personally identifiable information (PII), copyright restrictions, or other restrictions set by the donor. Refer to the Processing Information note for tools used to locate and identify PII.
		C	Record if files have been restricted for a specific period, and give the dates so that researchers are aware when material will become available.	C	Record if files have been restricted for a specific period, and give the dates so that researchers are aware when material will become available.

Examples

BASELINE

- Born-digital files are closed until processed. Use copies can be made available upon request depending on staff time and resources. Born-digital files cannot be accessed remotely. Access to files is available on a designated computer with file viewing software in The Repository's reading room.

MODERATE

- Born-digital files cannot be accessed remotely. Digital files can be accessed on a designated computer with file viewing software in The Repository's reading room. Series III is restricted for twenty-five years from the last date of creation (pertaining to all documents in a given folder) or five years after the donor's death, whichever comes later.

INTENSIVE

- Born-digital files cannot be accessed remotely. Digital files can be accessed on a designated computer with file viewing software in The Repository's reading room. 2 GB of born-digital files from Series III contains personally identifiable information (PII) and are restricted until 2035. For more information on the tools used to locate and identify PII, please refer to the Processing Information note.

Conditions Governing Reproduction and Use *DACS: Conditions Governing Reproduction and Use Element, 4.4* *EAD3: Conditions Governing Use <userestrict>* *ArchivesSpace: Conditions Governing Use Note*	RECOMMENDED

For the purpose of describing born-digital materials, this element should be used in the same way as to describe physical materials. Follow existing directions laid out by DACS and/or EAD, and refer to your organization's own policies and procedures for reproducing or using digital or physical material.

	BASELINE		MODERATE		INTENSIVE
A	Include a statement pertaining to copyright and other rights issues following local guidelines.	A	N/A	A	N/A
B	Include a statement on appropriate use of materials and when certain actions are restricted, such as copying, downloading, and file sharing materials, as well as taking screenshots. Follow local guidelines.				

Examples

BASELINE

- Copyright for born-digital files in this collection belongs to A+ Architects. Restrictions apply to the use of born-digital files. Researchers are not permitted to copy, download, or take screenshots or printouts of born-digital files from The Repository's reading room designated computer.

Physical Characteristics and Technical Requirements *DACS: Physical Access Element, 4.2 ; Technical Access Element, 4.3* *EAD3: Physical Characteristics and Technical Requirements <phystech>* *ArchivesSpace: Physical Characteristics and Technical Requirements Note*	**COLLECTION LEVEL = REQUIRED** **SERIES/FILE LEVEL = OPTIONAL**

The Physical Characteristics and Technical Requirements is an essential field for digital collections that combines information from the EAD tag <phystech>, and the Physical Access (4.2) and Technical Access (4.3) DACS fields, which are sub-fields of Conditions Governing Access. Use this field to inform researchers about the physical or technical characteristics of digital materials that will affect their ability to access them. This is especially important for open-access collections in which users may want to interact with digital materials on their own home computers, or in cases where the storage media or format cannot be made accessible on library computers.

Physical Characteristics and Technical Requirements is also the field in which to note that users may need to contact reference staff to make use requests in advance of their visits. This is important for large, complex collections or collections with many varied software and hardware dependencies. For more complex collections where physical and/or technical requirements impact use, it is required that this field be added to the finding aid for a more complete description.

If any portion of a collection contains digital material that cannot be readily accessed by researchers, then a PhysTech note must be placed at every level of the collection (i.e. series, box, folder, etc.) to notify researchers that this is the case. This ensures that researchers will see the requirements necessary to access material. Notation at each level could also be helpful to reference staff, as it can act as a reminder of the special requirements for serving up born-digital records.

BASELINE		MODERATE		INTENSIVE	
A	Include information on how to access born-digital material and whether specific hardware/software is needed for accessing content and its availability in the repository.	A	Describe when media cannot be read or accessed.	A	N/A

Examples

BASELINE

- The Repository's designated reading room computer is loaded with a range of software. Accessible born-digital material within the collection must be viewed within the reading room during research appointments. Please contact Reference at reference@therepository.com to determine if requested files can be made accessible and to arrange an appointment.

MODERATE

- **Collection level:** This collection contains born-digital files in AutoCAD and formZ 3D modeling formats. Due to a lack of required software formZ files are unavailable for access. AutoCad file use copies are available for viewing with a free reader application. The Repository's designated reading room computer is loaded with a range of software. To learn about available software and how to access born-digital files, contact Reference at reference@therepository.com.
- **File level:** Please note that the library is not able to provide access to the donor's formZ 3D modeling formats due to lack of required software. If interested in viewing this material, please contact the reference desk for more information.

Immediate Source of Acquisition *DACS: Immediate Source of Acquisition Element, 5.2* *EAD3: Acquisition Information <acqinfo>* *ArchivesSpace: Immediate Source of Acquisition Note*	**OPTIONAL**

Record general information about the acquisition of born-digital material, such as the source, date, and type of acquisition in an Immediate Source of Acquisition Note. However, since the acquisition of born-digital content often involves technical processing and data capture after media has been physically transferred, the specific methods and processes of born-digital acquisition and data capture should be detailed in a Processing Information Note. Refer to the Processing Information section in this document. Do not enter specific technical details in Immediate Source of Acquisition. It is important to describe in this note if the acquisition was transferred physically or digitally.

	BASELINE		**MODERATE**		**INTENSIVE**
A	Record date files were transferred. Indicate if files were transferred using physical media or via FTP.	A	Record date files were transferred. Indicate if files were transferred using physical media or via FTP.	A	Record date files were transferred. Indicate if files were transferred using physical media or via FTP.
B	Record date of any disk imaging/file extraction.	B	Record date of any disk imaging/file extraction.	B	Record date of any disk imaging/file extraction.
		C	For physical media, provide a count and description of media types. If files were transferred via FTP, record the name of the transferring product used.	C	For physical media, provide a count and description of media types. If files were transferred via FTP, record the name of the transferring product used.
				D	Describe custodial history of how files were stored prior to transfer to the repository. If files were transferred using hierarchical file system conventions designed to support disk-based storage and network transfer of arbitrary digital content (e.g. Bagit) then indicate that specification and whether files validated post-transfer.

BASELINE

- The digital files from the A+ Architects records were donated to the Library by Norma Smith on January 21, 2011, on six 5.25 inch floppy disks. The floppy disks were disk-imaged on March 16, 2015 to create master preservation copies and to extract the content files.

MODERATE

- The digital files from the A+ Architects records were transferred via FTP using DropBox to the Library by Norma Smith on January 21, 2011. Preservation master copies were generated from the transfer to extract the content files.

INTENSIVE

- Files were originally stored on servers in A+ Architects offices in Tampere, Finland. Following the office's closure in 2010 the material in this archive was kept in the personal possession of Norma Smith in Helsinki, Finland. The digital files from the A+ Architects records were transferred to the Library via FTP using DropBox by Norma Smith on January 21, 2011. Files were organized using the Bagit specification and were validated January 22, 2011. Preservation master copies were generated from the transfer to extract the content files.

Appraisal Information	OPTIONAL
DACS: Appraisal, Destruction, and Scheduling Information Element, 5.3 *EAD3: Appraisal Information <appraisal>* *ArchivesSpace: Appraisal Note*	

Note any general information about actions relating to appraisal, deduplication, or weeding of digital files. Refer to or link to institutional policy if applicable. Do not include specific technical details about the process of de-duplication or weeding in Appraisal Information. Use the Processing Information Note to provide additional information if necessary.

BASELINE		MODERATE		INTENSIVE	
A	Refer to institutional policy statement.	A	Refer to collection institutional policy statement.	A	Refer to institutional policy statement.
		B	Review entire collection using checksums to assess presence of duplicate files.	B	Review entire collection using checksums to assess presence of duplicate files.
		C	Conduct review of collection materials with donor to clarify/identify naming conventions	C	Conduct review of collection materials with donor to clarify/identify naming conventions

			of project folders, subfolders, and file types.		of project folders, subfolders, and file types.
		D	Review appraisal grid associated with institutional policy.	D	Review appraisal grid associated with institutional policy.
				E	Indicate any file and software dependencies.

Examples

BASELINE

- The A+ Architects' architectural projects digital files were appraised in accordance with the Repository's appraisal grid and institutional policy statement. For more information see [permalink].

MODERATE

- The digital files for 5 projects were donated by A+ Architects. All of the files' checksums were analyzed to identify duplicate files throughout the 5 projects; 6 duplicate files were found across 3 projects, all were kept for contextualization reasons. The collection materials were reviewed with donor to identify folder structure, file names, and confirm whether files were project related or not. Based on the appraisal grid/ institutional policy 10 of the 16 non-project related files were kept for contextualization value, the other 6 are out of scope and were removed from the collection.

INTENSIVE

- The digital files for 5 projects were donated by A+ Architects. All of the files' checksums were analyzed to identify duplicate files throughout the 5 projects; 6 duplicate files were found across 3 projects, all were kept for contextualization reasons. The collection materials were reviewed with donor to identify folder structure, file names, and confirm whether files were project related or not. Based on the appraisal grid/ institutional policy 10 of the 16 non-project related files were kept for contextualization value, the other 6 are out of scope and were removed from the collection. Based on existing software within the collection for access the following software may be difficult to open and identify associated linked files for: Grasshopper, Rhino, AutoCAD, Revit, Civil3D, SketchUp and Adobe Suite.

Scope and Content*	
DACS: Scope and Content Element, 3.1 *EAD3: Scope and Content <scopecontent>* *ArchivesSpace: Scope and Content Note* *****The level(s) at which Scope and Content notes are applied should be chosen according to existing guidelines laid out in DACS. This document provides examples of notes both at the Collection-level, and at lower Series/File-levels, anticipating the fact that the informational content of the notes could be highly varied, based on the level of processing applied to the records.	**REQUIRED**

Record the 'who, what, where, when, why, and how' of the digital materials. The level and kinds of details included in the Scope and Content (S&C) note will depend largely on the collection and the nature and extent of the materials being described. Therefore, it's possible that certain information in the S&C note may be repeated elsewhere in the finding aid (such as Processing Information, Extent, etc.) Some repetition is fine, but the focus of this section is more about communicating the contents of the collection than explaining the greater context surrounding their creation, or addressing technical access requirements.

According to DACS 3.1, the S&C note briefly details how the materials were created. For digital materials, this might include documenting the type of hardware, operating systems, software, version numbers, and other significant media used to create the files, as well as the date ranges included in the data. An important consideration is the method used to determine when digital material was created. Please see "Date range of the materials" point below for specific guidance on recording dates.

Elements of the S&C note:
1. Description of functions, processes, or activities that led to creation of materials themselves.
   ● Describe the operating systems, hardware, software, and significant media used to create the materials being described.
2. Date range of the materials.
   ● DACS advises processors use the date(s) of creation, but these can be difficult to determine;
   ● Record how dates were determined: Date Created? Date Last Opened/Modified?
3. The documentary form(s) or types of records being described.
   ● Consider adding file format types (.dwg, .pdf, .xlsx) and the number of files.

Note: Any software programs used to derive this information (dates, file formats, UUIDs, hash values, etc.) should be considered required information to document in the Processing Information note.

Do not include:
1. Information about the larger context in which the material was created, used, etc. Put this information in the Biographical History note.
2. Information about gaps in the material resulting from archival appraisal decisions (i.e. weeding, deaccessions). Put this information in the Appraisal note.

BASELINE		MODERATE		INTENSIVE	
A	Record the presence of born-digital materials, and a count of physical media for unprocessed	**A**	Record the presence of born-digital materials, and a count of physical media for unprocessed material; record the date range of the	**A**	Record the presence of born-digital materials, and a count of physical media for unprocessed material;

	material; record the date range of the materials.		materials.		record the date range of the materials.
		B	Summarize the types of records being described (i.e. construction documents, drawings, 3D models, correspondence, etc.).	**B**	Detail the types of records being described by indicating the file format types present and the software (including version numbers if known) used to create them.

Examples: Collection-level note for hybrid collection
BASELINE
● This collection documents the design and construction of three of the A+ Architects' architectural projects completed between 2000 and 2007: the Vanderweit Residence (Malibu, California, 2000); Wade Residence (New Haven, Connecticut, 2005); and Barker Residence (Washington, DC, 2007). The collection consists of project records and correspondence, drawings, and models; as well as unprocessed born-digital material comprising a 2 terabyte external hard drive and 43 optical discs.
MODERATE
● This collection documents the design and construction of three of the A+ Architects' architectural projects completed between 2000 and 2007: the Vanderweit Residence (Malibu, California, 2000); Wade Residence (New Haven, Connecticut, 2005); and Barker Residence (Washington, DC, 2007), with over 2000 drawings, 55 models, 30 linear feet textual records, and 750 GB of born-digital files. The digital files include drawings, 3D models, building information data, correspondence, and digital images.
INTENSIVE
● This collection documents three of the A+ Architects' architectural projects completed between 2000 and 2007: the Vanderweit Residence (Malibu, California, 2000); Wade Residence (New Haven, Connecticut, 2005); and Barker Residence (Washington, DC, 2007), with over 2000 drawings, 55 models, 30 linear feet textual records, and 750 GB of born-digital files (over 100,200 files). The firm created digital records within Windows operating systems, and used Autodesk AutoCAD (Release 14; 2000) and Revit (2000) software to create drawings and renderings. Autodesk Maya (2002) was used to create 3D models, and Revit BIM software for structural design, engineering, and construction. This born-digital material documents all phases of the projects, from initial design, through the multiple phases of construction, and the finished buildings. The design records are supplemented with born-digital project records including emails (EML files) and contractual documents (Adobe PDF; Microsoft Word 98, WordX 2001, Word 2004, and Word 2007), as well as an image library containing JPEG and TIFF files.
Examples: File*-level note for hybrid collection   *The term "file" is used here in traditional archival terms, indicating a grouping of like material, not necessarily a singular digital file, even though a singular digital file *could* be the object of description. See Processing and Arrangement Options for further information on the levels of processing and description that will dictate the informational content of a series or file-level Scope and Content note.

BASELINE *(Note for material arranged by media as independent "born-digital" series.)*
● 10 computer discs (CD-Rs) : digital ; 4 3/4 in. Unavailable until reformatted. Contact reference for reformatting.

MODERATE *(Note for born-digital material integrated into the parent of "digital files" within individual architectural projects.)*
● This file comprises 322 born-digital files documenting the design and construction of the Vanderweit Residence (Malibu, California, 2000). The files were created between 1999-2001, and include drawings, 3D models, building information data, and digital images of the site and construction.

INTENSIVE *(Note for born-digital material arranged and integrated into individual architectural projects based on intellectual content, regardless of format.)*
● Title: Working drawings (as-builts), 1999 Extent: 1.8 GB (53 files) Scope & Content: This file comprises 53 working drawings accompanied by a title sheet (Autodesk AutoCAD, .DWG). The .DWG files include architectural, structural, mechanical, and plumbing drawings, representing a complete record set of as-builts.

Organization and Arrangement-Collection	
DACS: System of Arrangement Element, 3.2 *EAD3: Arrangement <arrangement>* *ArchivesSpace: Arrangement Note*	**REQUIRED**

Include a sentence or two about how the digital materials were organized and arranged. Note whether or not the original order of the files has been maintained.

Note whether the digital materials have been segregated into their own series or whether the digital material has been integrated into multiple series, and if so on the basis of what (ie, content, format, etc.)? This is especially important to note in the context of hybrid collections, as well as in cases where there may be duplicative or overlapping material, which is often due to a donor's migration and/or backup routines.

If the files have been arranged by the processor into a folder structure, be sure to include a description of any major necessary rearrangement--especially filename or structure changes, the creation of new "folders", etc. As a point of reference, use the following scenarios, as outlined by the Descriptive Standards Roundtable, of different degrees of intervention and arrangement.

*Please note that there is potential for overlap between this field and the "Processing Information" field. Duplication may not be avoidable, but whereas "Processing Information" provides as complete a record as possible of the actions undertaken on the material, both before and after its arrival at the archive, "Arrangement" relates to recording decisions on arrangement only and to explaining what the arrangement (or perhaps more

accurately the level of processing) is so that its impact on the material can be assessed.

BASELINE		MODERATE		INTENSIVE	
A	Describe at series level; describe arrangement of original order.	**A**	Describe at media level, assuming donor has organized content well enough at this level.	**A**	Provide detailed explanation and context to the original order, or deviation from the original order.
B	At any level, processors can refer users to the Container List & Inventory note for a file directory indicating original order.	**B**	Provide an explanation for any deviation from the original order of born-digital materials		

Examples

BASELINE

- The collection is arranged in the following series: I. Architectural Projects; II. Correspondence; III. Publicity; IV. Writings; V. Born-digital files. Born-digital files are arranged in their own series and original file names have been retained. No further action has been taken to identify duplicate files, modify the original file structure, or fix spelling errors in file names.

MODERATE

- The collection is arranged in the following series: I. Architectural Projects; II. Correspondence; III. Publicity; IV. Writings. Born-digital files are integrated into the appropriate series. Duplicate files have been retained to maintain original order, but to avoid confusion, all files were assigned Unique Reference Identifiers (RefIDs) and checksums during processing, and their 'Last Modified' dates have been preserved and retained.

INTENSIVE

- The collection is arranged in the following series: I. Architectural Projects; II. Correspondence; III. Publicity; IV. Writings. Born-digital files are integrated into the appropriate series based on content. Email correspondence in Series II has been arranged as its own subseries, and files are arranged alphabetically by name. Born-digital files in Series I are also arranged as their own subseries and further arranged by project, phase, and last modified date. Duplicate files were identified and removed during processing. Information about the original file directory can be found in the Container List & Inventory note.

Processing Information	REQUIRED
DACS: Processing Information Note in Notes Element, 7.1.8 EAD3: Processing Information <processinfo> ArchivesSpace: Processing Information Note	

The Processing Information section is one of the most important aspects of any finding aid that describes born-digital materials. Decisions made during processing can greatly affect who, what, where, when, why and how researchers access and understand the digital material within a given collection. In particular, processing legacy born-digital material can often involve changing the nature of the data to make it preservable and accessible: this may include migrating to different file formats, redacting or removing Personally Identifiable Information (PII), extracting files, or normalizing filenames. It is essential that this information be recorded to ensure that future archivists and users understand where the materials came from, how they were created, and the process by which they are able to access the materials. This might include retaining technical details associated with the file's creation, arrangement, or acquisition, and/or recording details associated with the file's accompanying metadata such as the assignation of Universally Unique Identifiers (UUIDs), hash values or checksums.

If the Appraisal Information note was utilized, description should be balanced and not redundant across both notes. The Appraisal Information note can include description of deduplication, or weeding actions but the technical description related to those actions (e.g. software used, weeding criteria) and all other processing actions should be described in the Processing Information note.

For the cases in which libraries are not able to make born-digital materials accessible, even after preserving content, this section will also allow users to understand access limitations of old file formats or hardware. It is essential that organizations include information in their finding aids about some of the key preservation actions and techniques employed during processing.

The Processing Information section can become top-heavy, and often with information that is not collection-specific. For example, acquisition procedures, PII scans, virus scans, and file normalization methods may be standard processing steps for any collection with born-digital materials. Therefore, the authors recommend using the section to link to a Processing Information document that lives outside of the finding aid, potentially with other standard processing procedures.

BASELINE	MODERATE* *Steps B and C can be implemented "á la carte" and applied at each institution's discretion.	INTENSIVE
A Refer users to institutional policy statements regarding file formats, PII scans, virus screens, and storage procedures.	**A** Refer users to institutional policy statements regarding file formats, PII scans, virus screens, and storage procedures.	**A** N/A
	B Document authenticity and related content. -Articulate known dependencies for function	**B**

			-Known referenced/linked files -Known operational difficulties		
		C	Record applicable processing steps taken including: -File normalization / migration -Filename normalization -Virus Scans -Redacting/deduplication/weeding (refer to Arrangement note if necessary) -PII scans and actions -Description of state of unprocessed materials -Preservation storage actions		

Examples

BASELINE

- The A+ Architects' architectural projects digital files were processed according to The Repository's preservation policies. For more information see [permalink].

MODERATE

- Marie Montiel evaluated the 3.4 GB (1,253 files) of born-digital files of the A+ Architects' collection. Files were maintained in their original formats: AutoCAD; Autodesk Revit software; digital renderings of 3D models created with Maya and Digital Project software; and digital images (JPEG File Interchange Format). All files have retained their original filenames, and have been kept in their original order within the folder structure. Autodesk Free Readers were used to open the files and determine related linked (xref) files, which Montiel reconnected and saved; however, the functionality of the free reader did not support the original font used by the creators. Files were scanned for viruses using ClamAV and no viruses or malware were identified. Files were scanned in Bulk Extractor and no PII information was identified. Two duplicate JPEG/vector files were found across two different project folders and were kept in situ. For more information on how duplicate files have been managed, see Arrangement note. Maya files found in the "received from consultant" folder created in 1999 were left unprocessed due to software version incompatibility and rights issues.

  The original 1,253 files were deposited in Rosetta in 2019 for preservation. To provide a set of reference files for the Vanderweit Residence project, 20 AutoCAD dwg files representing the final version of the drawing set were migrated to pdf for access and are available here [permalink]. Processing work is ongoing to provide interactive access to the complete set of original files in their native platform in The Repository's reading room using EaaSI.

Container List & Inventory	RECOMMENDED

Including a container list or inventory in a finding aid can provide an additional layer of insight into the digital materials within a given collection. A file list that includes file paths may be especially useful in this regard, as allowing researchers to view filenames and directory structures remotely may help facilitate identification and location of the material in which they are interested.

This has the potential to save both time and resources. This information can be generated in a number of ways depending on the format, age, condition, and variety of the digital material. A DROID report made available as an Excel access file is a recommended option. The DROID file format identification tool can be downloaded for free through the National Archives: (https://www.nationalarchives.gov.uk/information-management/manage-information/preserving-digital-records/droid/)

BASELINE	MODERATE	INTENSIVE
A For unprocessed materials, record a list of unprocessed media formats. Include transcribed labels from media if applicable.	**A** For unprocessed materials, record a list of unprocessed media formats. Include transcribed labels from media if applicable.	**A** N/A
	B Create a DROID report and save an access copy as an Excel file.	

Examples

BASELINE

Summary: 5 compact discs; 3 3.5 inch floppy disks
Container List:

Box 1, Item CD1	Vanderweit CAD, 1999
Box 1, Item CD2	Vanderweit photos, 2002
Box 1, Item CD3	Barker zoning/Coastal Commission, undated
Box 1, Item CD4	Wade emails/photos, 2005-2006
Box 1, Item CD5	Wade maps, 2003
Box 1, Item FD1	Plot plans [unidentified], undated
Box 1, Item FD2	Barker - consultant dwgs, 2005
Box 1, Item FD3	Ron Watson's files [unidentified], 2000

MODERATE

Summary: 5 compact discs; 3 3.5 inch floppy disks
Click here to access a reference copy of the DROID report generated for these media: [permalink].

APPENDIX A.

Sample Finding Aid: Baseline

N.B. The content of this sample finding aid consists of fabricated information for example purposes only

Collection Summary	
Title	A+ Architects collection
Dates	1998-2007
Acquisition no.	2020.X.001
Creator	A+ Architects, 1998-2008
Extent	374.3 Linear Feet (105 boxes, 372 flatfiles, 28 rolls) 3.4 GB (1,253 files); 14 unprocessed compact discs; 3 unprocessed 3.5 inch floppy disks
Language	Collection material is in English.
Abstract	The Los Angeles firm A+ Architects were preeminent designers of modern residential architecture in the early 2000s. Consisting of drawings and plans, models, photographic materials, textual records, and digital files relating to three key projects, this collection provides a record of the large contribution this firm made to residential architecture during their short time in practice.
Conditions Governing Access	Born-digital files are closed until processed. Use copies will be made available upon request. Born-digital files cannot be accessed remotely. Access to files is available on a designated computer with file viewing software in The Repository's reading room.
Conditions Governing Reproduction and Use	Copyright for born-digital files in this collection belongs to A+ Architects. Restrictions apply to the use of born-digital files. Researchers are not permitted to copy, download, or take screenshots or printouts of born-digital files from the The Repository's reading room designated computer.
Immediate Source of Acquisition	The digital files from the A+ Architects records were donated to the Library by Norma Smith on January 21, 2011, 14 compact discs and three 3.5 inch floppy disks. The floppy disks were disk-imaged on March 16, 2015, the compact discs on March 18, to create master preservation copies and to extract the content files.
Appraisal Information	The A+ Architects' architectural projects digital files were appraised in accordance with the Repository's appraisal grid and institutional policy statement. For more information see [permalink].
Processing Information	The A+ Architects' architectural projects digital files were processed according to The Repository's preservation policies. For more information see [permalink].
Scope and Content	This collection documents the design and construction of three of the A+ Architects' architectural projects completed between 2000 and 2007: the Vanderweit Residence (Malibu, California, 2000); Wade Residence (New Haven, Connecticut, 2005); and

	Barker Residence (Washington, DC, 2007). The collection consists of project records and correspondence, drawings, models, and born-digital files.
Arrangement	The collection is arranged in five series: I. Architectural Projects; II. Correspondence; III. Publicity; IV. Writings; V. Born-digital files. Born-digital files are arranged in their own series and original file names have been retained. No further action has been taken to identify duplicate files, modify the original file structure, or fix spelling errors in file names.
Physical Characteristics and Technical Requirements	Please contact Reference at [permalink] to arrange an appointment as well as to determine if requested files can be made accessible. The Repository's designated reading room computer is loaded with a range of software. Accessible born-digital material within the collection must be viewed within the reading room during research appointments.

APPENDIX B.

Sample Finding Aid: Moderate

N.B. The content of this sample finding aid consists of fabricated information for example purposes only

Collection Summary	
Title	A+ Architects collection
Dates	1998-2007
Acquisition no.	2020.X.001
Creator	A+ Architects, 1998-2008
Extent	374.3 Linear Feet (105 boxes, 372 flatfiles, 28 rolls) 20 GB (5,253 files); 2 unprocessed SyQuest 5.25 inch disks (SQ400 and SQ2000 cartridges)
Language	Collection material is in English.
Abstract	The Los Angeles firm A+ Architects were preeminent designers of modern residential architecture in the early 2000s. This born-digital archive consists of drawings and plans, 3D models, photographic materials, and project records relating to three key projects. The digital design files were created within Windows operating systems, and produced with Autodesk AutoCAD and Maya, Revit, and Digital Project software, and provide a record of the large contribution this firm made to residential architecture during their short time in practice.
Conditions Governing Access	Born-digital files cannot be accessed remotely. Digital files can be viewed on a designated computer with file viewing software in The Repository's reading room. Series III is restricted for twenty-five years from the last date of creation (of all documents in a folder) or five years after the donor's death, whichever comes later.
Conditions Governing Reproduction and Use	Copyright for born-digital files in this collection belongs to A+ Architects. Restrictions apply to the use of born-digital files. Researchers are not permitted to copy, download, or take screenshots or printouts of born-digital files from The Repository's reading room designated computer.
Immediate Source of Acquisition	The digital files from the A+ Architects records were acquired via physical media and FTP. 20 GB of records were transferred via FTP using DropBox to the Library by Norma Smith on January 21, 2011. Additional files were transferred on two 5.25" SyQuest disks on January 31, 2011. Preservation master copies were generated from the transfer to extract the content files.
Appraisal Information	The digital files for 5 projects were donated by A+ Architects. All of the files' checksums were analyzed to identify duplicate files throughout the 5 projects; 6 duplicate files were found across 3 projects, all were kept for contextualization reasons. The collection materials were reviewed with donor to identify folder structure, file names, and confirm whether files were project related or not. Based on the appraisal grid/institutional policy 10 of the 16 non-project related files were kept for

	contextualization value, the other 6 are out of scope and were removed from the collection.
Processing Information	Marie Montiel evaluated the 20 GB (5,253 files) of born-digital files of the A+ Architects' collection. Files were maintained in their original formats: AutoCAD; Autodesk Revit software; digital renderings of 3D models created with Maya and Digital Project software; and digital images (JPEG File Interchange Format). All files have retained their original filenames, and have been kept in their original order within the folder structure. Autodesk Free Readers were used to open the files and determine related linked (xref) files, which Montiel reconnected and saved; however, the functionality of the free reader did not support the original font used by the creators. Files were scanned for viruses using ClamAV and no viruses or malware were identified. Files were scanned in Bulk Extractor and no PII information was identified. Two duplicate JPEG/vector files were found across two different project folders and were kept in situ. Maya files found in the "received from consultant" folder created in 1999 were left unprocessed due to software version incompatibility and rights issues.
Scope and Content	This collection documents the design and construction of three of the A+ Architects' architectural projects completed between 2000 and 2007: the Vanderweit Residence (Malibu, California, 2000); Wade Residence (New Haven, Connecticut, 2005); and Barker Residence (Washington, DC, 2007), with over 2000 drawings, 55 models, 30 linear feet textual records, and 20 GB of born-digital files. The digital files include drawings, 3D models, building information data, correspondence, and digital images.
Arrangement	The collection is arranged in five series: I. Architectural Projects; II. Correspondence; III. Publicity; IV. Writings; V. Born-digital files. Born-digital files are integrated into the appropriate series. Duplicate files have been retained to maintain original order, but to avoid confusion, all files were assigned Unique Reference Identifiers (RefIDs) and checksums during processing, and their 'Last Modified' dates have been preserved and retained.
Physical Characteristics and Technical Requirements	This collection contains born-digital files in AutoCAD and formZ 3D modeling formats. Due to a lack of required software, formZ files are unavailable for access. AutoCad file use copies are available for viewing with a free reader application. The Repository's designated reading room computer is loaded with a range of software. To learn about available software and how to access born-digital files, contact Reference at [permalink]. Access to SyQuest cartridges is not available at this time due to hardware limitations. Please contact reference for questions regarding access.

APPENDIX C.

Sample Finding Aid: Intensive File-level description
N.B. The content of this sample finding aid consists of fabricated information for example purposes only

Collection Summary	
Title	A+ Architects collection
Dates	1998-2007
Acquisition no.	2020.X.001
Creator	A+ Architects, 1998-2008
Extent	374.3 Linear Feet (105 boxes, 372 flatfiles, 28 rolls) 20 GB (5,253 files); 2 unprocessed SyQuest 5.25 inch disks (SQ400 and SQ2000 cartridges)
Language	Collection material is in English.
Abstract	The Los Angeles firm A+ Architects were preeminent designers of modern residential architecture in the early 2000s. This born-digital archive consists of drawings and plans, 3D models, photographic materials, and project records relating to three key projects. The digital design files were created within Windows operating systems, and produced with Autodesk AutoCAD and Maya, Revit, and Digital Project software, and provide a record of the large contribution this firm made to residential architecture during their short time in practice.
Conditions Governing Access	Born-digital files cannot be accessed remotely. Digital files can be accessed on a designated computer with file viewing software in The Repository's reading room. 2 GB of born-digital files from Series III contains personally identifiable information (PII) and are restricted until 2035. For more information on the tools used to locate and identify PII, please refer to the Processing Information note.
Conditions Governing Reproduction and Use	Copyright for born-digital files in this collection belongs to A+ Architects. Restrictions apply to the use of born-digital files. Researchers are not permitted to copy, download, or take screenshots or printouts of born-digital files from The Repository's reading room designated computer.
Immediate Source of Acquisition	Files were originally stored on servers in A+ Architects offices in Tampere, Finland. Following the office's closure in 2010 the material in this archive was kept in the personal possession of Norma Smith in Helsinki, Finland. The digital files from the A+ Architects records were transferred to the Library via FTP using DropBox by Norma Smith on January 21, 2011. Files were organized using the Bagit specification and were validated January 22, 2011. Preservation master copies were generated from the transfer to extract the content files.
Appraisal Information	The digital files for 5 projects were donated by A+ Architects. All of the files' checksums were analyzed to identify duplicate files throughout the 5 projects; 6 duplicate files were found across 3 projects, all were kept for contextualization reasons. The collection materials were reviewed with donor to identify folder structure,

	file names, and confirm whether files were project related or not. Based on the appraisal grid/institutional policy 10 of the 16 non-project related files were kept for contextualization value, the other 6 are out of scope and were removed from the collection. Based on existing software within the collection for access the following software may be difficult to open and identify associated linked files for: Grasshopper, Rhino, AutoCAD, Revit, Civil3D, SketchUp and Adobe Suite.
Processing Information	Marie Montiel evaluated the 20 GB (5,253 files) of born-digital files of the A+ Architects' collection. Files were maintained in their original formats: AutoCAD; Autodesk Revit software; digital renderings of 3D models created with Maya and Digital Project software; and digital images (JPEG File Interchange Format). All files have retained their original filenames, and have been kept in their original order within the folder structure. Autodesk Free Readers were used to open the files and determine related linked (xref) files, which Montiel reconnected and saved; however, the functionality of the free reader did not support the original font used by the creators. Files were scanned for viruses using ClamAV and no viruses or malware were identified. Files were scanned in Bulk Extractor and no PII information was identified. Two duplicate JPEG/vector files were found across two different project folders and were kept in situ. For more information on how duplicate files have been managed, see Arrangement note. Maya files found in the "received from consultant" folder created in 1999 were left unprocessed due to software version incompatibility and rights issues. The original 1,253 files were deposited in Rosetta in 2019 for preservation. To provide a set of reference files for the Vanderweit Residence project, 20 AutoCAD dwg files representing the final version of the drawing set were migrated to pdf for access and are available here [permalink]. Processing work is ongoing to provide interactive access to the complete set of original files in their native platform in The Repository's reading room using EaaSI.
Scope and Content	This collection documents three of the A+ Architects' architectural projects completed between 2000 and 2007: the Vanderweit Residence (Malibu, California, 2000); Wade Residence (New Haven, Connecticut, 2005); and Barker Residence (Washington, DC, 2007), with over 2000 drawings, 55 models, 30 linear feet textual records, and 750 GB of born-digital files (over 100,200 files). The firm created digital records within Windows operating systems, and used Autodesk AutoCAD (Release 14; 2000) and Revit (2000) software to create drawings and renderings. Autodesk Maya (2002) was used to create 3D models, and Revit BIM software for structural design, engineering, and construction. This born-digital material documents all phases of the projects, from initial design, through the multiple phases of construction, and the finished buildings. The design records are supplemented with born-digital project records including emails (EML files) and contractual documents (Adobe PDF; Microsoft Word 98, WordX 2001, Word 2004, and Word 2007), as well as an image library containing JPEG and TIFF files
Arrangement	The collection is arranged in four series: I. Architectural Projects; II. Correspondence; III. Publicity; IV. Writings.

	Born-digital files are integrated into the appropriate series based on content. Email correspondence in Series II has been arranged as its own subseries, and files are arranged alphabetically by name. Born-digital files in Series I are also arranged as their own subseries and further arranged by project, phase, and last modified date. Duplicate files have been retained to maintain original order, but to avoid confusion, all files were assigned Unique Reference Identifiers (RefIDs) and checksums during processing, and their 'Last Modified' dates have been preserved and retained. Information about the original file directory can be found in the Container List & Inventory note.
Physical Characteristics and Technical Requirements	This collection contains born-digital files in AutoCAD and Rhinoceros 3D modeling formats. AutoCad and Rhinoceros file use copies are available for viewing with a free reader application in the Repository's designated reading room computer. To learn more about how to access born-digital files, contact Reference at [permalink].

Sample "Snapshot" of a Finding Aid: Moderate Arrangement
N.B. The content of this finding aid consists of fabricated information for example purposes only

Series I. Architectural projects, 1998-2007, undated

Vanderweit Residence (Malibu, California, 2002), 1998-2002, undated

Project documentation, 1998-2003

Notes and zoning documentation, 1998-2003	Box 1, Folder 1-5
Correspondence, 1998-2000	Box 1, Folder 6-12
Specifications, 2001	Box 2, Folder 1-4

Drawings, 1999-2002

Plot plans and site surveys, 1999-2000	Roll 1
Sketches, 2000	Roll 2
Working drawings, 2001-2002	Roll 3-6
Renderings, 2001	Roll 7
Shop drawings, 2000-2002	Roll 8-10

Models, 2000-2001

Study model, 2000	Crate 1
Final design model, 2001	Crate 2

Digital files, 1999-2002

Drawings, 1999-2001

Plot plans, 1999-2000

Extent: 8 GB (3 files)

Scope & Contents: Complete contents of a floppy disk labeled "Vanderweit plots" [FD01]. File formats: AutoCAD drawings (.DWG)

Working drawings, 2000-2001

Extent: 1.8 GB (53 files)

Scope & Content: Original directory name: "Vanderweit drawings: complete_sets_00_001". Comprises 53 working drawings, including architectural, structural, mechanical, and plumbing drawings, accompanied by a title sheet, representing a complete record set of as-builts. File formats: AutoCAD drawings (.DWG).

3D models, 2005

Extent: 210 GB (42 files)

Scope & Content: Original directory name: "Revised models: Vanderweit_masters". Comprises files for four unique versions of 3D models for the two-story residence, accompanied by presentation captures for each version (PDFs). File formats: Rhinoceros (.3DM), Acrobat PDF (.PDF).

Video recordings of construction, 2001-2002

Extent: 0.7 BG (7 files)

Scope & Content: Complete contents of a flash drive [RM03]. File formats: MP4.

Correspondence, 2004-2006

    Client

Extent: 0.4 GB (33 files)

Scope & Content: Original directory name: "Vanderweit: client: emails". Comprises email correspondence between A+ Architects and client, T. Vanderweit. File formats: Microsoft Outlook Express (.EML).

    Sub-contractors

Extent: 0.6 GB (74 files)

Scope & Content: Original directory name: "Vanderweit: Contractors: Emails". Comprises email correspondence between A+ Architects and three sub-contractors, J.R. Roofing, Anderson Electric, and Five-Star Plumbing. File formats: Microsoft Outlook Express (.EML).