Deeds of Gift as a Tool to Facilitate Born Digital Design File Processing and Preservation

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Abstract
Institutions with a specific collecting focus on architecture and design records have been attempting to address the complex landscape of accessioning, processing, preserving, and providing access to born-digital design records for some time. This is a multifaceted issue requiring both subject and technological expertise, as well as addressing additional legal and collection complications around software licensure and accessibility of proprietary software. Many collecting institutions have ignored or only superficially dealt with the difficulty of addressing born digital records at the point of acquisition due to their unique complexities or perhaps because of a lack of curatorial and administrative "buy-in." This research will address how deeds of gift can be used to address some of the specific challenges digital design files pose. The goal being that perhaps these challenges can be significantly mitigated if the deed of gift deals with the intractable intricacies of design files upfront.

Introduction

Over the course of several decades, institutions have used their experience with acquisitions to gain familiarity with the categories of records that a design professional may include in their collection. While the design process has maintained certain fundamental features, such as design phases, applications designers use have continued to evolve and present additional challenges to collecting institutions of current and future designers.[1]

Design records have always been bricolage. They are the result of creative engineers articulating complex ideas and structures by any means available to them. Collecting institutions are not able to predict the breadth of materials used and formats created within a designer's career; however, using tools, such as the deed of gift, they have been able to establish a foundation to work from with the donor. The deed of gift is the first opportunity for archivists to establish an understanding and set expectations with the donor. A fundamental part of the acquisition process, the deed of gift establishes "initial control over" the collections.[2] As stated by the Society of American Archivists' (SAA) website, "the deed of gift is a formal and legal agreement between the donor and the repository that transfers ownership of and legal

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[1] Phases of Design: Schematic Design, Design Documentation, Construction Documents, and Construction Administration.

[2] Roe, Kathleen, *Arranging and Describing Archives and Manuscripts,* 45.

rights to the donated materials."3 Through this document, the archivist and the donor are able to develop a relationship based on a common understanding, and most importantly, a dialogue about the transfer of ownership, as a deed of gift describes.4

Digital design files are the byproduct of evolving technologies that have been constantly changing for the past 30 years since the first Computer Aided Design (CAD) software was made commercially available in the late 1980s. The vendors of these proprietary commercial products are compelled by the driving forces of competition to regularly release new versions with increased functionality or fewer limitations. Software and file types can vary considerably within a single project and across a designer's body of work. Each built or planned design project can use a suite of software from a variety of vendors to produce specific representations and data rich files. These file types often require the proprietary software they were created in to be accessed in the future. Due to the innovative and complex nature of design software and the divergent uses of these software by design professionals, this requires archivists to proactively inquire about their creation and functions to ensure accurate representation of the design files in archival collections. This results in a general perception and reality that "CAD systems are typically expensive and complicated pieces of software, and their native file formats are equally complicated, opaque, and in an important sense, incomplete."5

Actively collecting design files requires a familiarity with both the paper-based and born digital design and construction process/workflow. The analog processes/workflows are the foundations from which the ecosystem of CAD software developed. Even with foundational knowledge of the design process, the digital context provides a challenging environment where nuances of the designer/design team's workflow can be easily overlooked compared to their paper-based predecessors. Archivists need to understand the range of files created and the dependencies those files have to ensure the most complete collection of project records possible.

Problem Statement

This research intends to provide a stronger foundation for archivists and collecting institutions to prepare for acquiring digital design records beginning with the deed of gift. Meeting the terms of a deed will often require extensive conversations between the donor and the collecting institution to affirm expectations and context about how the records were created and how to best reflect the designer's specific practice and interests. Without an exchange between the donor and the collecting institution, the archivist may be unable to access or preserve the digital files.6 As more collecting institutions acquire born digital materials, these conversations will prove to be not only valuable, but essential to providing a common language and understanding of the potential range of digital design materials present in future collections. Furthermore, the deed of gift establishes the contents and method of transfer of records, as well as articulates the donor and institution's needs/intention for the collection's use, access, and preservation for all materials, regardless of format. This conversation must be more extensive and detail oriented to ensure the donor is prompted to share more granular information about the infrastructure and digital ecosystem

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3 Society of American Archivists, "A Guide to Deeds of Gift"
4 Roe, *Arranging and Describing*, 47.
5 Ball, *Preserving Computer Aided Design (CAD),* 4.
6 For example, files locked behind a donor's encrypted password.

within which they worked. Archivists and collecting institutions have a clear need to develop consistent language and practices for acquiring these complicated records, because the issues these materials present have only been discussed earnestly since the mid-2000s and will continue to increase in complexity.[7] Without improved collecting workflows and policies for digital design files, accounting for the necessary files, software and hardware, the future study of design and physical spaces will be at risk.

Methodology

In order to get a better understanding of how institutions currently address the acquisition of digital materials, we, as part of SAA's Architecture and Design Section Task Force on CAD/BIM (Building Information Modeling) files realized a sampling of other institutions' documents, such as deeds of gifts, would be needed. In late 2017, the Task Force asked members of SAA to contribute their institutions' documents for evaluation through the SAA listserv platform. Targeted emails were also sent to a large number of SAA Sections that had the potential of institutions having digital materials. The emails asked for any documents that dealt with the acquisition of digital materials but could also focus on analog formats, as well. Due to a lack of response, additional emails were sent out again requesting the acquisition documents in early and mid-2018.

The Task Force received only nine documents from institutions, which was very disappointing. The institutions who contributed varied in size from special collections departments at medium to large state universities, a museum, and a large digitization center. SAA's deeds of gift section on their Appraisal and Acquisition/Accession website page was also examined. The total contributions make up the sample set that was evaluated in this paper and represents the field at large for the sake of our analysis[8]. To review the documents, the Task Force created a spreadsheet to target specific areas of interest contained within the contributed documents. We focused on rights, personally identified information (PII) and surveys, as they were important topics in our research.

Findings

EXISTING CONDITIONS

Of the nine deeds of gift examined, only five addressed the acquisition and/or stewardship of born digital files. It was typically discussed in a survey or addendum or it was specifically called out in its own section in the main body of the document. None of the deeds on the SAA Appraisal and Acquisition/Accession website included material related to born digital content. This is not to say that SAA does not offer examples of good policies related to born digital files, but the application of born digital policy in the deed of gift was for the most part absent.[9]

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[7] Kristine Fallon, *Collecting, Archiving, and Exhibiting Digital Design Data*, 2003; and the Canadian Centre for Architecture's three-part exhibition *Archaeology of the Digital*.

[8] The Task Force did not receive permission to identify the institutions from our sample set so this paper only refers to them generally.

[9] "Born Digital Resources," Society of American Archivists, accessed April 14, 2018, https://www2.archivists.org/groups/museum-archives-section/born-digital-resources.

RIGHTS/PERMISSIONS

Rights and Permissions, particularly for the project records and the supporting software to access digital design files, is an important concept to unpack in a deed of gift. This category of assessment was not present in our sample set. The rights and permissions associated with project records are a nuanced issue around the copyright ownership of the project files, as well as the content of the files themselves. The practice of transferring copyright of a design from the designer to the client is not consistently undertaken, and may not be easily confirmed unless the donor is willing to provide (and the institution willing to accept) the project contracts that would articulate the copyright ownership. Copyright of project files presents an issue for providing access to portions of the collection, which can have larger implications to the processing and preservation priorities of the collection's holdings. Having these embargoed files, or potentially project files that can never be opened for research, raises cost and prioritization concerns for collecting institutions. Furthermore, concerns about who can have access to these files, not only based on copyright but the sensitive nature of detailed documents about notable spaces, becomes an issue requiring a similar approach to private and sensitive information in personal papers. The deed of gift is where issues about copyright, privacy and accessibility levels of the collection's materials should be resolved, which may become granular based on the types of projects' records donated.

The legal and technical aspects of supporting a software and digital rights ecosystem for a donor's collection requires the same level of discretion and sensitivity that has unified the treatment given personal privacy. Presently, collecting institutions are disadvantaged technologically when they do not include a request or requirement in the deed of gift to include copies of software (licensed or developed by the donor) used to create the digital design files. This explicit requirement was not formalized in the majority of institutions' deeds of gift reviewed by this Task Force, which is at least partially the result of the confusion archivists and collecting institutions have around fair use for preserving software. This is an issue the Software Preservation Network and the American Research Libraries have been exploring since 2017 and published in September 2018.[10] Through the work of legal experts like Peter Jaszi and Brandon Butler, it has become clear that the majority of preservation and access uses fall within the Fair Use.[11] With these findings, collecting institutions can more confidently and clearly articulate the support materials (e.g. software and hardware) needed to ensure access to the records they collect.

PRIVACY

The deeds that addressed born digital content the most also addressed sensitive electronic information with statements regarding the handling of PII, such as social security numbers, passwords, pins, financial records and medical records. These PII types are standard concerns for both physical and digital files in the archival context. Typically donors are not aware of the content that remains accessible on media, once thought to be previously deleted. If access to that data is being granted via the deed of gift the implications of that access should be made extremely clear to the donor. However, in the specific context

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[10] "Code of Best Practices in Fair Use For Software Preservation," Association of Research Libraries, accessed July 15, 2018, https://www.arl.org/storage/documents/publications/2018.09.24_softwarepreservationcode.pdf

[11] "Code of Best Practices."

of born digital design file acquisitions, the concerns regarding privacy as outlined in the deed are only of actual consequence if access is attainable. One sample deed addressed granting access at the disk image level to researchers, and several deeds granted archivists access to unallocated space and deleted files. This access to a treasure trove of previously private deleted or forgotten information is essentially moot if the software to open them is not actually on hand.

In the best-case scenario where software does not pose an obstacle to access, other privacy concerns should be considered. Due to the layering capabilities of CAD, digital architectural plans can describe built space from the level of a single stone or plumbing pipe. This level of description can pose a risk when made public, especially for files that describe spaces which might house items in cultural heritage buildings, prisons or banks. For collections of this type or for other reasons of client privacy an added layer of security is necessary. For publicly accessible collections, a statement such as "due to copyright or rights of privacy some documents of this collection are only available within the local network,"[12] can deflect the privacy risk. Best practice would be for archival donors to qualify researchers' use during the pre-acquisition process and within the contractual confines of the deed of gift. A single deed from an architectural collection in our sample included such language, instructing donors to designate prior to donation certain materials with "restricted access." This designation can be applied at various levels of granularity, but most likely would be applied at the project level.

CONTEXT

The contributed deeds addressed the needs of born digital design files usually in the addendum or an external document that focused on a set of survey questions to ask the donor. They were present in only three collecting institutions from the sample group. For one large-scale university, the inclusion of a survey was a basic requirement to process. If the survey was not completed, the collection would be given a low priority value for processing. We believe this tactic could be a motivating factor to both the donor and curator or collecting institution. Typical survey questions addressed physical media, computing platform, duplication of files, standards for use of files and expectations for access. Some of the survey examples specifically addressed file formats, but format type only peripherally addressed the software, especially with design files. The major gaps in these surveys were related to expanding intention or standard uses of files to include software environments. The Task Force also discovered that none of the surveys specifically listed the software used nor described the software's interoperability with other applications.

Regardless of the type of institution (public or private) or amount of resources devoted to the acquisition of digital architecture and design records, this topic should be a major concern for all archivists, directors, record managers and curators. The community preserving historical documents, analog and digital, should realize the need for adequate documentation that will address any foreseeable issues at the beginning of the acquisition process. Being proactive is key!

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[12] "Gulbenkian Art Library's Architecture Archives," accessed October 1, 2018, https://gulbenkian.pt/biblioteca-arte/en/collections/digital-collections/architectural-archives/

Recommendations

Following the full evaluation of the deeds sample set, the Task Force recommends several improvements and additions, which we believe will make for a seamless acquisition process of born digital collections. The recommendations are as follows:

- Cover all aspects of the life cycle of a collection: acquisition, accessioning, processing, preservation and access in the deed.
- Target specific elements in the document, such as transfer of ownership, permissions and rights, and supporting software.
- Create a customizable detailed survey to accompany the deed. It can be done via email, over the phone or in person.
- Be proactive and begin work immediately with the donor or creator with the acquisition process.

Overall, the main goal of the deed is to focus on creating access and removing all obstacles for the researcher or user. "Active acquisition is necessary... and need to engage the creators in the acquisition process as soon as possible" is extremely important.13 With this approach, the Task Force feels the acquisition process will minimize many risks mentioned above.

Next Steps

The acquisition of software via the deed of gift is just the beginning of overcoming the intractable conditions of born digital files. Continued research and maintenance is a constant necessity. Research in digital preservation and access concerns must continue to keep abreast with the disruptive technological changes that are continuously occurring in record-creating communities. And maintenance of the original production environment from which files were created with donated software requires regular additional upkeep.

Current work with emulation suggests that it might be possible to create such an environment, but this requires the acquisition of all of those dependent pieces, contextual understanding of how the software and Operating Systems (OS) were used and expertise to build and maintain the emulated environments. Such an environment is challenging to recreate, and requires parallel preservation efforts of the digital files, the software, and the OS and sometimes knowledge of how the creators used, or modified the software and hardware. Emulation could work despite all of its dependencies for complete success, but the products will still require initial mitigation; and, without proactive intervention of future file types the list of possible products (e.g. file types) will only continue to grow.14

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13 Ania Molenda, *Between Creators and Keepers: How HNI Builds its Digital Archive.* (iPRES Conference, 2018), 4.

14 Aliza Leventhal, *Designing the Future Landscape: Digital Architecture, Design & Engineering Assets, report on the Architecture, Design and Engineering Summit,* (Washington DC: Library of Congress, 2018), 7

Design records are a niche record type and has experienced immense changes in the past 30 years, but they are not so different from other complex digital object groups.15 The issues raised in this paper and being discussed in other forums around digital design records will only continue to benefit from a larger community of technologists, researchers, and design and archival practitioners engaging in the conversation. The Task Force's research and proposal is meant not only to raise awareness of specific concerns of these stakeholder groups, but hopefully to develop a more formal and shared treatment of this challenging record type, rather than leaving each institution to develop their own best practices and conduct similar research.

The Task Force membership in 2018 and 2019 has grown as the urgency of addressing this format is being brought to attention. Task Force projects will continue to focus on the appraisal, description, preservation and access of design files, such as the expansion of the frequently asked questions sheet started by the team in 2017. It focuses on current questions raised by the membership focused around technology, description and access/appraisal. In addition, the Task Force will continue to seek engagement from SAA leadership towards establishing best practice language around collecting software-dependent (especially proprietary software) files. Our work on the deed of gift project will also continue to expand as we solicit additional contributions to the sample set and continue to perform analysis. We have charged ourselves to find a balance in our recommendations for when donation or procurement of software would be most appropriate.

There is a great deal of momentum fomenting around digital design file preservation, not just from the Task Force's work, but also parallel to it. The Institute of Museum and Library Services (IMLS) awarded The Frances Loeb Library at the Harvard University Graduate School of Design a grant for the project "Building for Tomorrow" which brought architects, architectural historians, archivists, librarians, technologists, digital preservationists, and others together to frame a national/international collaborative infrastructure to support long-term preservation of digital design data. Similarly, the IMLS also awarded a grant to Virginia Tech, Indiana University, and the University of Oklahoma for a project called "Developing Library Strategy for 3D and Virtual Reality Collection Development and Reuse (LIB3DVR)" which tackled more generally standards for the preservation of 3D files. The Software Preservation Network continues to facilitate and support software preservation efforts through community engagement, infrastructure support, and knowledge generation. The Library of Congress which held the seminal conference, "Designing the Future Landscape: Digital Architecture, Design & Engineering Assets (November 16, 2017)", and also recently held "Born to Be 3D: Digital Stewardship of Intrinsic 3D Data (November 2, 2018)" and continues to be a locus for the exchange of ideas and sharing progress in the community. These initiatives will help focus the work of the Task Force's continued research on deeds of gift and provide an infrastructure and best practice recommendations for us and the variety of practitioners present in the field.

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