



Archives in Context

Season 7 Episode 4: Kristine K. Fallon, Aliza Leventhal, and Jody Thompson

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SPEAKERS

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Intro 00:10

From the Society of American Archivists, this is *Archives in Context*, a podcast highlighting archival literature and technologies, and most importantly, the people behind them.

Anna Trammell 00:27

Welcome to this episode of the *Archives in Context* podcast. My name's Anna Trammell, and I'm here with Chris Burns.

Chris Burns 00:34

Hello.

Anna Trammell 00:36

Speaking to Aliza Leventhal, Kristine Fallon, and Jody Thompson. All three contributed to *Born-Digital Design Records*, a 2022 publication from the Society of American Archivists.

Chris Burns 00:49

To start us off, could you introduce yourselves to our listeners and tell us about your own connection to *Born-Digital Design Records*? And could you also tell us a little bit about the other contributors to this book and how you assembled such a terrific team of co-authors?

Kristine Fallon 01:06

Well, my name is Kristine Fallon. I'm involved only on *Module 24*. I'm a fellow of the American Institute of Architects and had a forty-year career in the design and construction industry. I did some very early work in the development and deployment of computer graphics technology to architects and engineers at the SOM Chicago office in the 1970s and 80s and that became the focus of my forty-year career. I founded and led my own firm

that provided consulting to design firms, to construction companies, and to owners, particularly public owners with very large real estate portfolios in the productive uses of various design and communications technologies in the industry. We also did some federally- quite a bit of federally funded research in the area of building information modeling. And then the third area, and why I'm sort of involved in this project at all, is that I was the principal investigator on the Art Institute of Chicago's 2004 study, "Collecting, Archiving, and Exhibiting Digital Design Data," which was pretty much the- the first effort to- to kind of wrangle that topic. My co-authors from *Module 24* include Aliza Leventhal, who will introduce herself shortly, and also Zach Vowell, who's not with us today. Zach is a digital archivist at California Polytechnic Institute State University at the Robert E. Kennedy Library there. His responsibilities include preserving, describing, and providing access to born-digital design records. He is also a co-founder of the software preservation network. And he co-led two SPN related research projects that were IMLS-funded. Before he was at Cal Poly, he was at the Briscoe Center for American History at the University of Texas Austin where he was a digitization project archivist but also the archivist for the UT Videogame Archive.

Jody Thompson 03:35

Hi, I'm Jody Thompson. I am head of the Archives Records Management and Digital Creation Department at Georgia Institute of Technology. My connection with the design collecting is mainly with one of our special collections areas here at Georgia Tech with the Georgia Tech Design Archives. We collect design records of Georgia Tech alums and firms in the Southeast. And I'm also the co-chair of the Digital Design Records Committee, which is part of SAA's Design Record Section. And for our other contributors, Aliza Leventhal is also a contributor in this module, but as Kristine said, she will introduce herself next. So, for the other contributors, we have Euan Cochrane. He currently leads Yale University Library's digital preservation team and provides digital preservation infrastructure and services across all of Yale's libraries, archives, and museums. He is also a lead- he has also led multiple projects on emulation and software preservation. Then we have Laura- excuse me- Laura Schroffel. She is the digital archivist in the Getty's Research Institute in its Special Collections/Collections Management department. She is also an active member of the Digital Library Federation's Born-Digital Access Working Group and a member of the Digital Design Records Committee. And lastly, we have Emily Vigor. She is currently- currently the archives manager at the Eames Institute and the formal digital collections archivist at the Environmental Design Archives at the University of California at Berkeley.

Aliza Leventhal 05:07

And I am Aliza Leventhal. I had the privilege of contributing to all three of these modules, which felt really special in a lot of ways, and we'll talk more about the actual modules later. My involvement with born-digital design records has been for the past decade, plus my current role is the Head of Technical Services for the Prints and Photographs Division at the Library of Congress. But I wrote these modules as a corporate archivist and librarian for a design firm, a multidisciplinary design firm Sasaki, based in Boston, where I was their archivist for about five years. As Jody mentioned, we are co-chairs of the Digital Design Record Section, which celebrated ten years a year ago. So, we're now eleven. And we've continued to do a lot of really wonderful research collaborative across multiple institutions. We've had the opportunity to also write the DPC Tech-Watch Report on born-digital design and construction records. And I'm really fascinated by the subject matter because it's an amalgam of literacies that you need; digital literacy, visual literacy, digital- digital visual literacy, and a lot of technical components even before you get into the digital version. So, it requires a visual technical literacy to

start with looking at design records and going from there. So, it's- obviously I have a lot of passion about it. We'll talk more- more soon. The other co-authors of *Module 26*; Zach Vowell, who Kristine already introduced, but also Stefana Breitwieser. The other three contributors all were part of what we call team CCA, the Canadian Centre for Architecture. They all were part of the CCA's Digital Archives team; that was Stefana Breitwieser, who in addition to working at the CCA is now the digital archivist at the Arthur H. Aufses Jr., Medical Archives at the Icahn School of Medicine at Mount Sinai in New York; Alexandra Jokinen, who is the digital archivist at the Canadian Centre for Architecture still; and Mireille Nappert, who is a digital archivist at the Institutional Information Archives Management Services at- at HEC Montreal, which is a public business school in Montreal, Quebec, Canada.

Anna Trammell 07:26

Thank you. It's amazing to hear about all these contributors that you pulled together from so many different types of institutions to work on this project. So, you mentioned that this book is a series of three modules, so I'm hoping that you can give us an overview of what each of the modules covers and how they connect to each other.

Kristine Fallon 07:46

Sure. The first module, *Module 24*, is entitled *Navigating the Technical Landscape of Foreign Digital Design Records*, and it introduces the production of digital design records, the- the phases of design, the overview of the workflows, the software used, the data types commonly encountered in design for the built environment. One of the pieces here are two case studies, and they're interesting because what I did was go back to two of the firms that had contributed case studies to the 2004 Art Institute study. And we were able to talk to them about what they're doing now and then compare what's changed and what's remained the same over a period of fifteen years, which I think will be very interesting to people. But this module also reviews the essential tools and resources for archivists and realizes that collection policies of museums and archival institutions dictate different treatment of born-digital design records. So that kind of leads us into some recommendations. But the final third of the module really describes some of the technical challenges that organizations may encounter, and these are the issues that are explored in greater depth in the next two modules.

Jody Thompson 09:20

And for *Module 25*, the title is *Emerging Best Practices in the Accession, Preservation, and Emulation of Born-Digital Design Records*. And it's really coming from the viewpoint of the authors from public and private academic institutions, private research organizations, and corporate archives. It describes the issues and practices that are being used by the authors and at other institutions as well and to consider- and what to consider when dealing with ingest, accessioning, preservation, and access. Looking at the first section "Ingest," we go over assessing organizational- organizational capacity, discussions with donors, deeds of gift, and dependencies with the software. For instance, there are many factors to consider for an organization when preserving born-digital design files such as technical and financial barriers and the ability to move files from the original storage media. The preservation requires the creation of preservation packages to inform archival description, processing, and research. There is also a large section on emulation for access, which covers such topics as local emulation and acquiring legacy software. The authors encourage archivists to work with donors in order to ensure that they capture original software and work with the creators to develop an inventory of the

software that- that was originally used to create and interact with the files being deposited. And how we see them connecting, or at least how I see all three of the modules connecting, it's really an aid for archivists who are planning to or have certainly started collecting born-digital- born-digital design records. They offer practical information and advice in the way of case studies and templates. And although we offer advice in this module, there are also fundamental models to follow. But we also want to recognize and encourage that it is important for each organization to choose a sustainable practice for their stewardship of these files.

Aliza Leventhal 11:14

Which brings us to *Module 26: Case Studies in Born-Digital Design Records*. This module walks through the activities and topics of consideration that every institution must take as staff members acquire, process, preserve, and provide access to born-digital design records. The discussion included the lifecycle of collection of materials from the perspectives of archivists at academic institutions such as California Polytech State University, which Zach represented, the International Research Center and Museum, the Canadian Centre for Architecture represented by Alex, Stefana, and Mireille, and then archives in a firm setting; myself at Sasaki. We offered a range of perspectives and experiences on how an archives can collect, preserve, and provide access to born-digital design records and explain how each of us have navigated those challenges of appraisal and acquisition of those types of records, including then going into arranging and describing those collections, establishing preservation and storage plans, and providing access to the collections. We hoped our discussion would provide a starting point for other archivists and institutions facing similar challenges around born-digital design records as they tried to start collecting these. And so the real thread throughout is this is intended to lower the barrier to engagement with this record type, as well as to raise awareness of the fact this is not a niche type of material and that a lot of core infrastructure related to digital preservation and digital- access to digital collections is the same for architecture and design records. So there's a lot of parallel there. And so it's not about rebuilding from scratch, but rather, learning from our related fields and leveraging existing infrastructure.

Chris Burns 12:55

You make it very clear in the book that this work stands on the shoulders of previous efforts in this area, work that some of you all, some of the other authors, have been very involved in. Of course, this is true for any work such as this, but it really came across kind of loud and clear that you were recognizing this work and also telling us kind of how we got here. Can you describe some of these earlier efforts to address the issues of born-digital design records?

Jody Thompson 13:28

Sure. There have been some key initiatives such as publications, exhibits, seminar- seminars, and conferences that the archival community have been working on over the past twenty-five years that addressed the challenges and accomplishments associated with the lifecycle of born-digital design records. All of this work demonstrates how the research and experience of archivists can build and be reused to develop best practices and standards for these complex born-digital design files. With the jumping off point, we'd like to start with 1996, and that SAA devoted an entire volume of *American Archivist* to design and construction records, was focusing on the research articles and case studies relevant to the field at that time. And then momentum really started to build in 2012 with the Digital Design Records Committee, and it's had several names, it was formerly

called the CAD/BIM Task Force and the Digital Design Records Task Force, and the Committee took up the call to action of unpacking the complexities of born-digital design files. The membership of this Committee consists of corporate, government, academic, and facilities-oriented repositories. The group has explored the numerous issues of dealing with these files from evaluating deeds of gift and creating appraisal tools for several institutional type. Then we have Alex Ball's seminal work: "Preserving CAD"- "Preserving CAD." It was published in the Digital Preservation Coalition's Techwatch Report in 2013. The report provides an overview of CAD technologies and the growing number of associated preservation concerns, such as the lack of interoperability between the CAD system and the outdated file formats due to the- due to fast pace of software versioning. Some recommendations offered in the report included preserving original CAD model through software emulation and creating a much needed advocacy group for support around standardization of formats in CAD systems. And then jumping ahead four years to 2017, there was the Designing the Future Landscape: Digital Architecture, Design and Engineering Assets Summit that brought together archivists, architecture and design, and engineering professionals. They explored issues and challenges with long term preservation of inaccess to born-digital design files. The report from that summit, excuse me, the report from the summit discussed the proceedings referred to the summit as a call to action, as it served as a model for the stakeholders to begin to take steps to improve and ensure long term preservation and access to born-digital design files and offer potential opportunities for collaborations. Again, SAA devoted a special section to the design field in 2021. Within this section, the author's share their experiences and expertise through case studies, developing resources, and sharing models for appraisal processing, describing, digitizing, and teaching with design records, both analog and digital. And these are just a few of the works that have been done, but it truly shows how the archival community is coming together to address the challenges of born-digital design files. If you're interested in additional works covering these challenges, I recommend the Digital Preservation Coalition's Techwatch Report: *Preserving Born-Digital Design and Construction Records* that Aliza and I wrote back in 2021. And then Aliza had an article in the *Archival Outlook* in the September/October 2022 issue.

Kristine Fallon 16:55

Yes, as I mentioned previously, I was the principal author of the 2004 Art Institute of Chicago study "Collecting, Archiving, and Exhibiting Digital Design Data." And this was a very interesting study. The Art Institute, at the time, had the second largest archive of architectural drawings in the United States. And a wealthy patron kind of said, well, what happens when the drawings are no longer on paper? And that really was a question nobody quite knew the answer to. And they engaged me, my firm to, you know, explore that. So, we started with surveys of design firms, and we undertook a number of case studies, I think it was seven, or nine, or something. And they range from industrial design scale to urban scale. And what was very interesting to me is I went in to visit each of these design firms and as each one started to talk about how they were using computer aided design, they were showing me a PowerPoint presentation. And this kind of raised a realization that, as far as these designers were concerned, it was the output of the- the software and not the software itself that was, you know, important to them. So, we kind of looked at that, and we said, well, that's a real key to kind of simplifying the problem. And we said, you know, furthermore, you can, you know, turn a PowerPoint presentation into a PDF file, and wow, you know, you have something that has considerable longevity. So, we sort of looked at that. And we- we came up with the idea of a two-tier collection, where you would identify the important outputs from the design process, hopefully with the design firm themselves, and those you would get into a PDF format of, you know, high resolution image in PDF and then that would be pretty readily preservable, pretty much like

you're preserving the, you know, your- your digital equivalents of paper to the paper of, you know, letters and things. But then some people thought that we should just throw out the- the CAD data. And so we came up with this idea of a two-tier collection where you would keep the- the PDF files and they would be in a readily accessible I mean, those are easy to access by anyone, and then you'd have this this sort of re- research collection, which would be a less accessible one. You wouldn't have to have the either the institution or we were thinking, you know, a researcher would say I really want to look at how CADvance was used in this period. And, you know, they wouldn't have the tools to open the files and see them, but you know, you could provide them with a copy of these files. And for this, we did come up- and this was kind of new with the idea of using not, you know, CDs are something, but a digital repository. We were talking about DSpace at the time, that's fallen out of favor, but the idea remains. And the idea of doing bit level preservation, of having automated, you know, checksums to make sure there was no corruption of the files going on, possibly the ability to do automated migration of certain file types over time and things like that. That was pretty new. So, we did come up with some new ideas. And we did cover kind of the full- again we went back to the- the traditional models of archival workflows, and we tried to walk through how you would do all of that with digital design data.

Aliza Leventhal 21:08

And so, what Jody and Kristine have both echoed here is that there's a lot of really good work that's been done, so that was part of the reason we wanted to call it out, we wanted to make clear that this is building momentum, rather than starting from scratch, and doing our own research, and restarting those conversations. Instead, we're continuing the conversations, we're building off of each other's intelligence and each other's experience rather than needing to have that same failure ourselves, that same mistake. We don't all need to go through that copy editing phase of finding all the typos one more time. The other piece that's worth calling out here, and some of the most seminal moments, the- Kristine's project with the Chicago Institute of Art, Jody's echoing of the Library of Congress event, that was also co-hosted by the Architect of the Capitol and the National Gallery of Art, I think, all speaks to the need for collaboration and multiple perspectives. So, I'm going to co-opt this for just one second to also call out that we need to be looking at the tacit knowledge being captured in other related fields. So, for instance, Eric Kaltman has an article that was published in 2020, called "Attending to Process and Data." It's all about how the folder- folder tree file structure is so critical to unlocking the secrets or intentions behind software development for video games. But it's the same thing for looking at an architecture firm's folder structure, you need to have that- that insight. There's also some really great publications, but they're very few. It's a critical dearth, in my opinion, about digital visual literacy. And so, there's one article entitled exactly that; "Digital Visual Literacy" that came out in 2008. These are things I'll provide links for. Molly Wright Steenson wrote a wonderful book called *Architectural Intelligence*, which offers this incredibly helpful overview of the symbiotic development of software design, architectural history, and the evolution of computers in the- in the architectural field. And then lastly, and I promise I'll stop here, but lastly, there's a really phenomenal course that was offered at Carnegie Mellon that now has several articles written about it, but it basically calls itself "An Archive of Interfaces: Exploring the Potential of Emulation for Software Research, Pedagogy, and Design." And it's the first time that we've had academics explicitly saying what they- what they see the potential of using these collections for, which is incredibly helpful to us. And so, it's good to know how we should be preserving them, providing access, what kinds of questions should we expect and be able to support without necessarily committing every institution as Kristine's two-tier approach. You'll see that in the modules over and over again; we talk about how not every institution can support the same amount of access.

That article is by Daniel Cardoso-Llach, Eric Kaltman, Emek Erdolu, and Zachary Furste... came out in 2021. All of that to say that we need to be looking outside of our immediate literature and remembering that other people are thinking about this maybe not so explicitly. So, when I mentioned to Eric and Daniel a while ago about oh, your article is all about digital visual literacy, and he's like, we have no idea what you're talking about. And it was- it was really wonderful moment because it's tacit to them. It's just part of who they are. It's what they do. Every day they go and work in computer interfaces; they don't realize that that's a special skill. And it's not necessarily an entirely special skill to archivists either. But for us to engage in the space that we don't go to school for four to eight years to become practitioners and we need some- we need some help along the way. And these publications are a couple of examples of how we can marry our work together. Instead of everyone needing to write that dissertation, we can use other people's work.

Anna Trammell 24:50

I appreciate you both acknowledging in your book how this work has built upon past scholarship but sharing your views vision that you have for how that's going to continue. So, the book talks in several places about the importance of communicating with donors in the acquisitions process, and you give readers some really great tips and forms to assist with that process. So, what are some of the issues that archivists should discuss with donors and why are they important to consider for both parties in advance of a transfer?

Jody Thompson 25:26

So, to tackle these issues, we have to understand that the creators or the donors may have critical information about the creation of the born-digital design records, such as we need to find out the who, how, when, and why these records were created. Born-digital files are created at multiple stages of a project, so there is a lot to wrap one's head around. It's also important to know the hardware and software used to create the design files, so the archivists know how to- how the content has been migrated between files or different formats in the past. We also need to know how the content is currently being stored by the creator and how the content should be transferred to the archivists' organization. Design record creators store content on hard drives and other removable media network- network servers and cloud-based storage. That content may have potentially undergone scheduled sorry- scheduled format migrations too. So, understanding what the records contain and why they're valuable, important information is extremely important, because we want to make sure that we ensure that the transfer of these files include the relevant content for the archives. And then these conversations with their donor are so important to have as they can definitely impact the collection of files and formats that the archivists acquire. We also want to make certain that we support the arrangement and description process whenever that takes place. So, when preparing for the conversation with donors, I highly recommend two resources to help archivists understand all the potential materials that donors may have in their collection, and one is the appraisal grid in Waverly Lowell and Tawny Ryan Nelb's *Architectural Records: Managing Design and Construction Records* book. For the second resource, Aliza and I wrote an article with several other colleagues that build on Lowell and Nelb's book. It's the Design Records and Appraisal Tool. It was in the *American Archivist* in 2021. Our appraisal tool templates offer guidance to several types of institutions and how to assess potential collection materials and raise awareness for the increasing number of born-digital design records that are being acquired. The templates focus on three general collecting scope categories; one is special collections, the second one is facilities management and university archives, and the third is design and engineering for firm corporate archives. In the article, we offer tips on what the archivists should ask the donor.

For instance, the archivist should inquire about any potential sensitive information that may be transferred to their organization. Talking with the donor to better understand the hardware file, naming convention file structures, and hierarchies is essential to helping the archivist better understand the file creation. It also sets the stage for increased accessibility for the researcher once the collections are made available in the archives.

Aliza Leventhal 28:16

And one more resource worth checking out is Appendix B of *Module 26*. It is the CCA, the Canadian Center for Architecture's submission for digital files questionnaire. It is the actual document they use to work with donors who are going to be sharing their collections with the CCA. And it goes through a whole slew of initial questions as well as an actual checklist of things to walk through. So, I won't go into any of those details, but it's those resources combined. The reason for those, the appraisal grids- the appraisal tools that we made in the SAA *American Archivist* is so that it's dynamic, it's an actual, you can download the- the Excel file and move it around and figure out what's right for your institution. The CCA questionnaire is a really helpful jumping off point of, does this even matter to me? Is that actually something that I need to worry about? Or is that going beyond what my institution's hoping to do with the material? And so just- which I'm calling out because the CCA's intention is to collect at the most dynamic and engaged level and that might not be for everybody. So, I like to just remind folks that it's ambitious, it's wonderful, we're so appreciative, but it's not what everyone is trying to accomplish. And so, with a grain of salt.

Chris Burns 29:35

Thank you for including those kinds of resources in the book and pointing- pointing to some others. I, for one- and I know there are many others who just love having those kinds of practical tools to grasp on to as you navigate these tricky conversations and other tasks. So across the three modules, you talk about some of the ways that born-digital design records are even more challenging than managing other types of born-digital records, even though there are many parallels, right. One of the topics you address frequently in the book is the issue of software dependency for born-digital design records. What are some of the ways that this issue is even more complicated when it comes to these types of records? And I realized, that could be a very big question, but it's an important one, right?

Aliza Leventhal 30:29

It's absolutely an important one, and when I read the question the first time, I thought, let me count the ways, there are so many, but we'll- we'll give you the maybe the list of greatest- greatest hits. So for one, it's- there are multiple external reference files that are linked in different ways, so that's just out of the gate, these are complex dynamic files that could be connected one way or another, you might not get the whole package when you receive it, your software might not even tell you with an error message that you're missing things, or it might tell you you're missing things that you're not missing, because it's not reading it properly. So fundamentally they're complex. They also are multi-author. And so, there's multi-author components to it, where someone might think that they've saved something back to what is called a central file for building information modeling, and it might not- it might not make it or it might not make it into the submission package that you receive from the- former creator. There's also a lot of file naming conventions and folder structure issues, which is just worth calling out because that- that immediately exacerbates you think that you know what you're looking for. An architect was using the standard file naming conventions for each drawing sheet and then

they decided, oh, I want to add another piece of information in there and you lose the pattern that you're working through. There's also just the fact that it's proprietary software. So, not all DWGs are made the same by each creator, and that's something that you need to keep in mind because you might open something made by an Autodesk product and then you go and use a MicroStation product to open it again, later, you'll see most of it, the veracity is quite strong, but it's not complete, it's not- the integrity is a little bit compromised. And it's hard to know that, because again, it's this intense level of digital visual literacy. Constantly during writing the modules, I would lean on Kristine and be like you- you've done this, please break it down for us just a little bit further, because it is- it is a secret language, you know. We all- each profession has its own jargon, but this goes to a hyper level of it and it's a high-risk situation, which is I think the other piece of why we get Chicken Little about this and think that the sky is falling. Because this is our built environment. These are the records of our built environment, both imagined and reality, and that adds a little bit of significance to us being able to actually pull out the true version of the drawings in the future. And the last thing I'll just call out is that a lot of this has moved to the cloud, which has all sorts of additional components to it, including, if it's based off of an AWS server, there's a possibility that when Amazon updates their servers that can impact your software, it can impact the files on the other side of it. It's just a big, unknown space for us right now; I have not had a chance to dig in deep enough on this. And I really hope some smart people out there are doing some great work on it. But those are just a couple of the things that if you have another question later about what keeps me up at night. That's just the beginning.

Jody Thompson 33:35

And to go along with Aliza's complications, and all the challenges she talked about, there's also some things that could impact the collecting scope of your institution, so it may mean preserving software. So, some institutions are actually preserving software online or asking the donors for their software. And then some institutions are also investigating the emulation as a service infrastructure. Easy is working to reduce the effort of archivists to find legacy software by engaging easy sharing of software between participating organizations and by pre-populating Easy Software catalog with the legacy software. So, there's a lot to tackle here, but I think we're starting to come up with some solutions.

Anna Trammell 34:15

Wow, my head is spinning. And that was just the greatest hits of the challenges. So, you're gonna make me stay up tonight thinking about this?

Aliza Leventhal 34:24

So sorry, I'm gonna add one more. These are huge files. So, like each- each project can be hundreds of bytes or kilobytes, but often the archives themselves are several terabytes. I know some firms are already in the tens of terabytes and some possibly into petabytes. So, it's- and that's all about how many times they save things back. So that's it. I'll stop scaring you now. But that's a- that's an important piece of this is that it's not just that they're complex, but they're massive. They're really heavy files.

Anna Trammell 34:53

So, in the last module, in particular, you talk about access, so providing access to born-digital records. How does this issue look different in different types of archives? And can you talk about some of the research that's been

done to understand user needs, and how this informs different approaches to providing access to these types of records?

Aliza Leventhal 35:16

Sure, so this has been something that we've talked about for the majority of the last twenty years. And Kristine is responsible for really kicking that off with that two-tier concept. But in the Module 26, we start by talking about access from a policy-related place, we start off talking about policy-related challenges and that's really about setting expectations to be clearly understood by both the researchers and your staff, because this is a huge undertaking for everybody. Setting those expectations includes the quantity of material that's going to be served at one time, the amount of lead time that's being provided to prepare the material for a researcher, how that material can be accessed, as in, will it be PDFs that you print out? Will it be electronic PDFs that you can zoom in on at least? Will it be actually in an interface that is dynamic and mobile and multifaceted? And what, if any, material or copies of material can be taken by the research at the end of it. I know that some institutions allow digital files to be sent to researchers, and there's also remote virtual reading rooms. There's a lot of things like that that need to sort of be considered and a lot of that goes back to what the institution's infrastructure can actually support, because some may only be able to provide PDF versions of in-progress or finished drawing sets. And that actually could be quite sufficient for a lot of things that people need. While there's others, like I mentioned the CCA, that aim to provide the most comprehensive dynamic engagement possible. The latter opens up all sorts of additional technology related challenges, which we've already shared a little bit about, but also decisions about whether or not the machine is closed and cut off from the internet or if it's dynamic and you can plug your own USB port to take things with you. Things like that should be accounted for. We talk about in the report, or not the report, the module, about Tessa Walsh conducting an incredibly helpful user experience interviews with researchers in 2017 at the CCA, so it was while she was their digital archivist. It's one of the few times I've seen an actual user study done on this, and I'm so grateful for the work that she did. What she really calls out is that the folks that were using the material at the CCA were really interested in the software itself, almost more so than the files that they were asking to look at. And they were looking at the files to see how the software worked. And- and so we're watching that space really closely. And as Jody mentioned, the ways that we're looking at actual access right now, emulation is certainly one of those that has infrastructural limitations, including getting original copies of that software. So, you know, the dream is that we all share that resource and it becomes super easy to lift it for anyone to plug in. And for the software itself, you know, the emulation environment itself to identify what software you need; that would be amazing. But it's a big technical lift to create your own virtual machines to support that access, so we acknowledge that as a piece of it. There's also providing access to the file folder tree, which I mentioned before; Eric Kaltman's article on video game development, it really does tell you a whole lot about a firm when you open up that project folder structure and you see oh, you actually care about organizing your fault files by each phase of design, or that's not what you care about, you organize it by the type of software that you use, and you do have a milestone folder or you don't; that is incredibly insightful. And I know I'm getting into the weeds here, but that goes into the type of access. What- what are you trying to facilitate? There's also the option which was the case at most active firms of just using the existing software and acknowledging that maybe there's going to be a little bit of integrity problems because backwards and forwards compatibility of the software is not 100 percent. And then lastly, right now we're actually looking into, with the Digital Design Records Committee, free readers as another option. These are things that are provided by vendors, by these software vendors of design software, such as

SketchUp, Autodesk, other Trimble products, MicroStation, all of that we're giving a deep dive to it to see what is the easiest lift, what is- what is feasible for somebody who doesn't have funds and does have these files or would like to collect these files and needs an initial way to get there. That puts a lot of pressure on us to rely on vendors to continue to make these things free. The Wayback Machine has saved some of them, but the full dynamic engagement isn't really there. So, it's something to watch for. But going back to the modules, we try to cover in this really comprehensive way that there isn't one solution. It is going to be a custom decision making based on what your institution can support in the moment and really what you're wanting- wanting to make as your sustainable practices, Jody mentioned before.

Chris Burns 40:04

So, when you think about born-digital design records, here comes the nightmare question, teased earlier, what's one thing that keeps you up at night? And on the more hopeful side, what's one thing that that does give you hope, looking forward?

Jody Thompson 40:24

So, Aliza talked a little bit about the visual technical and digital literacy that's needed by archivists to better understand all the tools, the software, the thousands and thousands of files that are produced, or the output for each design project. And really, what keeps me up is that most archivists are not academically trained in the design profession so that we can acquire a better understanding. And I'm one of them. I just- I've kind of been learning as I go. And so if we could just find a way to support archivists, I think that would give us a better lift on what we could- what we are able to do. And it would also- how we can help them or how we can help archivists read and use the software and how to access the files would be absolutely amazing. And so this goes a little bit into, like, why I think a lot of archivists are just struggling right now trying to get a better handle on all this.

Aliza Leventhal 41:24

And for me, I gave you lots of nightmares, but the one that really sticks with me is the gaps in collecting over the last twenty years leaves society with a potential dearth of documentation about our built environment. And knowing that that barrier to engagement has been so high or perceived as so high, it just it hurts your soul knowing that there's all these local institutions that are not collecting their local architects' work or designs, drawings of their recently created new- new buildings and spaces. So that valent, that's what really keeps me up at night is knowing that the archive is going to be even- this is already a specialized field and for it to potentially be losing some really important documentation along the way is to see some of this see change happen. But positively, I will give you that one. We are building a community of practice and raising awareness that the timeline that Jody mentioned earlier, shows that we've been building momentum and letting people know that we're talking about this, and people don't feel so isolated that this is their only problem or a problem only for them, but it's for all of us to handle. And I'll take this moment to use a quote I love by Ursula Le Guin, that is that "Technology is the active human interface with the material world." And she goes on to say, "We all can learn. That's the neat thing about technologies. They're what we can learn to do." And so I like to just use that to call that out, speaking to Jody's point that we don't come from an architecture background, myself included, it's that we all have the capacity to learn. And it's really about creating some shortcuts for colleagues so that we don't all have to go through eight years of architecture, urban design, landscape architecture, graphic design, you name it, any of those professions, we don't have to go through the whole litany, we can lean on Kristine and other

friendly architects that are willing to have this conversation, friendly art designers that are willing to have the conversation with us and figure out how to close in the divide. Yeah.

Anna Trammell 43:25

So lots of scary scenarios, but thank you all for the work that you're doing in this area. You know, this is not an area that I had any familiarity with before reading your wonderful book, and it's just great to know that brilliant people like you and your other contributors are working in the space. So, our final question is something that we ask everyone that we interview, and I'm really interested to hear your responses to this. If you could have any superpower, what would it be and why?

Jody Thompson 43:59

So it was funny when Aliza and I were just talking about all these questions, and we're talking about our superpowers, we were just laughing a bit about this, but I took some time to think about mine, but I think it would be the ability to time travel. I would love to go back to the early 1980s when AutoCAD was released and to talk to the developers at Autodesk. They need to know the importance of the future use and needs that archivists will have of the software. I would love to be able to persuade them to tell them about the archival community's coming together. And we need to bring these archivists, software developers, and architectural designers together to find a way to work together. And I think we could use the example from the 2017 Designing the Future Landscape Summit. They brought together archivists, architects, designers, and engineers together and they started exploring these issues and challenges with long term preservation and access to these born-digital design files. So, hopefully if we can come up with these superpowers, I would again love to go back to the 1980s.

Aliza Leventhal 45:04

So, when we read this question the first time I thought, Oh, is this the same thing as if I could be any kitchen utensil? In which case a spatula, but that's not what you're asking for. Though they are dynamic. My superpower would be the ability to translate or interpret between languages or the use of language across disciplines, which I'm sure you can figure out exactly why I'd want to know how to do that to be better at a compelling argument. And also, within the conversation around born-digital design records, it's been incredibly North American, Western European, and Australasia have been the main areas that we've been talking to that we know this is a universal issue. This is a global problem. And so, I wish I could speak more languages to engage more people more easily.

Kristine Fallon 45:55

Yeah. Yeah, to speak to the, you know, one of the things I didn't mention- when you talk about, you know, some of the terminology and things is we did try in the first module to do a pretty comprehensive bibliography- not bibliography, but glossary of computer software terms and architectural terms, both to kind of help that translation. And I didn't think to mention that when I was introducing the module. But, you know, what I would do, you know, software vendors always tried to prevent- prevent architecture from really owning their own data, you know, they tried to lock them into their platform, now they try to lock them into the cloud, you really can't get your, you know, your data out of our cloud and things like that. I would require all- if I had the power, I would require all design software vendors to rigorously support the international standard for data

interoperability and longevity. And that would go a long way to making the archiving of born-digital design data less of the nightmare.

Chris Burns 47:09

Those were all excellent. I was thinking, as you were talking, that we really should ask you what your- your superhero name would be too, right. I have one to try out on you, that's going to make you all groan, related to your topic: the Emulator. Wouldn't that be a good one? As Anna said, thank you so much. I think we both learned a ton from reading this book. My actually- my first job at a library school was working at a landscape architecture firm also in the Cambridge/Boston area. Carol Johnson Associates, you may have heard of it. That was twenty-something years ago, so they were creating a lot of records digitally, but we were largely archiving, you know, the drawing files, the printed-out mailers, and etc. So, I learned a ton about how far this has all come in the preceding twenty years. It's really exciting, very scary, but, you know, we collect architectural collections. I'm sure many of our listeners do as well. So, I think this is going to be a really great podcast episode for folks to listen to and a really great book. So, thanks. Thanks for talking to us.

Aliza Leventhal 48:31

Thanks very much for the opportunity.

Jody Thompson 48:33

Thank you.

Outro 48:37

You've just listened to an episode of the *Archives in Context* podcast, the official podcast of the Society of American Archivists. Members of the podcast team include Rose Buchanan, Chris Burns, Mary Caldera, Abigail Christian, Stephanie Luke, Nicole Milano, Lolita Rowe, Camila Zorilla Tessler, and Anna Trammell. All opinions expressed in this podcast are our own and are not reflective of a particular institution. Be sure to subscribe and listen wherever you get your podcasts or at archivesincontext.archivists.org. And join us again next time.