



Physical Value:

Preserving architectural models as cultural
Artifacts and design tools through digital
Archives and documentation strategies.

Celeste Raanoja

Byera Hadley
Travelling Scholarships
Journal Series
2023

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Physical Value

A Proposal for Reinstating the Cultural Value of the Architectural Model



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This report delves into the profound significance of physical models and illuminates pathways to capture our modern legacy of model making through a digital archive. By exploring prevailing industry practices, this research identifies innovative approaches adopted by architecture firms in addressing this subject, while also proposing fundamental starting points. Furthermore, it presents strategies for safeguarding our repository of physical models by envisioning a blend of photography, cultural perspective data and data acquisition as the forefront of this archival endeavor. This report is the culmination of field work undertaken in Frankfurt, Copenhagen and London at institutions and Architectural Practices and is ongoing.

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Introduction



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Around the world, countless dedicated individuals continue to craft and shape physical models, whether independently or in collaboration with architectural firms. Despite the rise of digital technology, I found that in Europe, architectural firms, institutions, and the public continue to regard physical models as a vital design tool. This is clearly reflected in the museums and architectural practices I visited, where models are regularly collected, preserved, exhibited, and archived, deepening the public's understanding of architectural design processes and urban history. In contrast, the role of physical models in Australian architectural model making culture is gradually diminishing, overshadowed by the growing prominence of digital design tools. Consequently, physical models hold a less visible place within Australian architecture compared to our international counterparts.

Architectural models are not merely static objects—they are a testament to craftsmanship in the industry, representing our ability to shape materials, express prevailing styles, and foster creativity through design. Models serve as dynamic explorations of architectural concepts and powerful tools for communication, helping to convey ideas in ways that other mediums cannot. Their significance in shaping contemporary architectural practices is profound. Each model captures pivotal moments in architectural history, reflecting diverse cultural responses, methodologies, and contexts within the creative process. These models act as tangible records of historical milestones, enriching the narratives of our built environment and revealing the evolution of cities over time.

In Australia, numerous historical models are held by councils, landowners, architects, and institutions—created for design competitions, public building presentations, and private developments. Yet, despite a few notable examples, such as the publicly accessible architectural model within the Town Hall chambers of the City of Sydney council many of these works remain hidden from public view. Inside architectural offices across Australia, vast collections of models often stay confined to their respective spaces, rarely leaving the confines of their offices. We have, within our current history, a concealed and largely undocumented

archive of completed projects, unsuccessful competition entries, and proposed schemes that never came to fruition. As these collections continue to grow and occupy more prominent places in architectural firms, we are faced with the pressing challenge of effectively managing and conserving these artefacts. Rising costs and logistical complexities prompt us to question whether we are diminishing the value of these models by relegating them to private display or storage facilities. Could the implementation of archival practices offer a strategic intervention to preserve these objects and unlock their full potential?

Without the support of major cultural institutions, creating a physical archive of Australia's architectural models is a daunting task. My research shows that firms undertaking such work often have dedicated teams of archivists, photographers, and academics, highlighting the need for addressing not only the logistical challenges of space but also the resource constraints required for establishing a successful cultural collection. The cultural appreciation of models feeds the demand for proper archiving, creating a symbiotic relationship between the two.

How can we embark on the crucial task of assessing and documenting architectural models? Could photography act not only as a practical archival tool but also as a medium to encourage the continued integration of models into architectural practice and their broader exhibition in public institutions? What strategies are architectural firms currently adopting to tackle these questions?

This paper proposes that prioritizing the photographic documentation of these models, alongside a foundational archival framework, represents a crucial step forward. Without a comprehensive archival and assessment system for these physical artefacts, the industry risks losing valuable insights into the role and impact of physical models in our architectural practice. Establishing such a system would not only deepen our understanding of model making's purpose and history but also ensure the continued relevance and evolution of these objects in our increasingly digital world.

Method of Research



This research journey spanned three cities—Copenhagen, London, and Frankfurt—and was complemented by an online exploration of existing model archives and publications. The primary focus was to investigate archival practices, photographic methodologies, and the benefits of digitizing collections as employed by various firms and institutions.

In Copenhagen, I spent a week collaborating with the model-making team at 3XN Architects. This hands-on engagement had two main objectives: to develop essential archival procedures that were not yet established and to reestablish the value and significance of model-making within the firm. During this time, I also explored the broader context of architectural archives in Denmark. Exhibitions at the Danish Architecture Centre provided valuable insights into community-driven design narratives and demonstrated how models serve as powerful tools for storytelling. These experiences emphasized the potential of models not only as design aids but also as mediums for engaging broader audiences.

In Frankfurt, I focused on the preservation and presentation of historical architectural models. Visits to institutions such as the Design Center for Architecture and the Deutsches Architektur Museum (DAM) storage facility offered a comprehensive understanding of how models are archived, documented, and exhibited to reflect architectural evolution and urban development. The behind-the-scenes experience at DAM provided a unique opportunity to observe the meticulous processes involved in cataloging, preserving, and maintaining these models. This visit emphasized the importance of controlled environments and strategic planning to ensure the longevity of these cultural artifacts.

In London, I visited several prestigious architectural firms renowned for their expertise in model-making. These visits included tours, discussions with in-house teams, and engagement with model

makers, architects, researchers, and photographers. My aim was to understand the archival systems employed by these firms and how they valued and utilized their existing collections.

Beyond these physical visits, my research incorporated a limited online exploration of resources in Australia, such as the Powerhouse Museum collection and the National Archives of Australia. This allowed me to review digitized photographs and documents related to architectural models, assessing how effectively these online collections are navigated and presented for users. This process highlighted the potential of digital archives to enhance accessibility and engagement with architectural heritage. These online platforms, combined with a review of publications on model-making and archival practices, deepened my understanding of emerging trends and established best practices in the field.

My decade of experience as a commercial model maker provided a unique perspective, enabling me to critically evaluate and adapt archival frameworks suitable for the Australian context. This expertise was invaluable in identifying strategies to address present needs while ensuring these frameworks are future-proof.

This comprehensive approach combining site visits, practitioner discussions, and digital and literary research allowed me to develop a well-rounded understanding of how models and their archives serve as both practical tools and cultural artifacts. By synthesizing these insights and proposing strategies for managing collections in Australia, I aim to contribute to the evolution of archival practices, ensuring architectural models continue to hold value as dynamic tools for design reflection and as enduring records of architectural heritage.

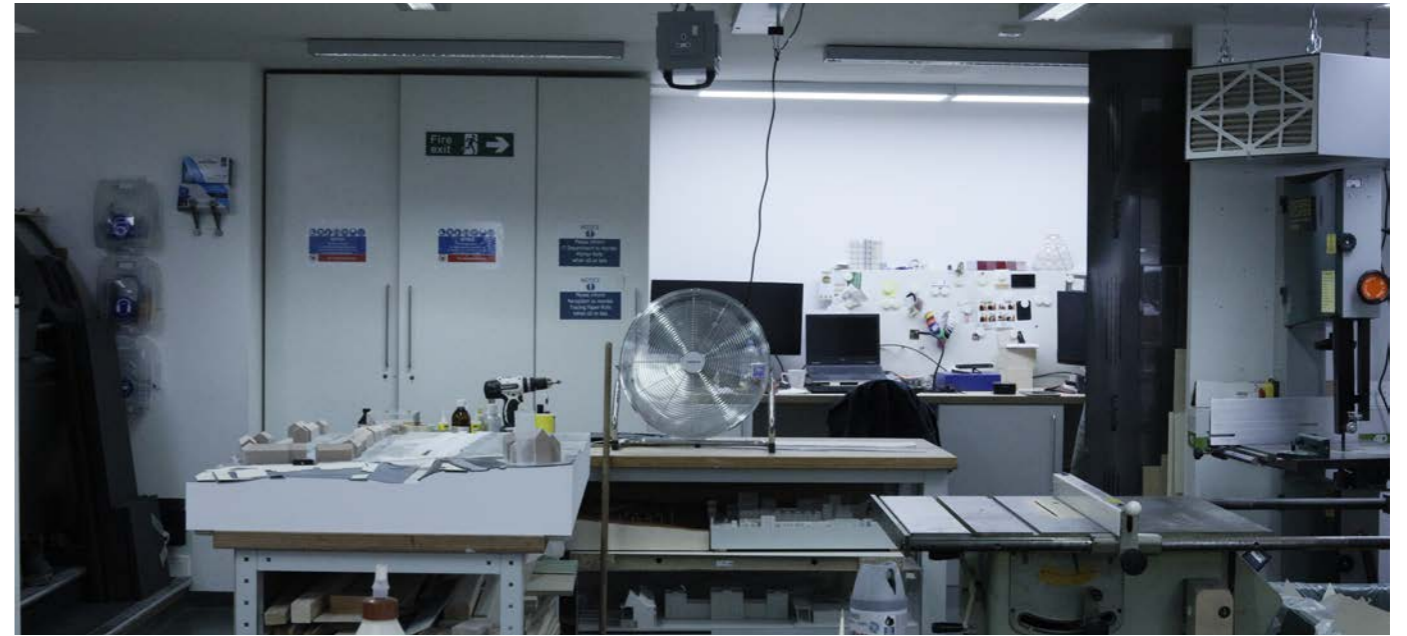


Image 1: Grimshaw's Model making workshop, London. Photograph taken by Celeste Raanoja, 2023

Image 2: Image of an exhibition space in the Danish Architecture Museum, Image take by Celeste Raanoja, 2023

Image 3: DAM Model Archive storage facility, Image take by Celeste Raanoja 2023

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The value of Architectural Models

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Architectural models hold a unique position at the crossroads of functionality, creativity, and cultural significance. Much like works of art, they transcend their initial purpose as design aids, becoming symbols of architectural innovation and storytelling. Whether displayed in museums, utilized in educational settings, or presented to stakeholders, models communicate the essence of architectural ideas and processes.

On a rainy afternoon in England, Dr. David Lund, a lecturer in model-making at the Arts University Bournemouth, shared his insights on the evolving role of architectural models, drawing from his deep knowledge of The Thorpe Collection. He explained that in the 1960s, models were primarily used to present bold architectural concepts. However, this era faced criticism as models often failed to accurately represent the final built structures. This led to a shift toward more abstract models, which aimed to avoid scrutiny over misrepresentation. By the late 1970s, hyper-realistic models resurged for promotional purposes. By the 1980s, architects began producing two distinct types of models: realistic ones for marketing and abstract ones for conceptual exploration.¹

These two typologies, conceptual and realistic, continue to dominate the architectural model-making industry today, underscoring the significance of models as cultural artifacts. They encapsulate the values, creative processes, and architectural ethos of their time, evolving constantly and deserving careful documentation².

Dr. David Lund emphasized that the key to establishing a successful archive of projects within architectural offices lies in framing the value of models in a way that resonates with architects, enabling them to recognize their significance. This highlights the importance

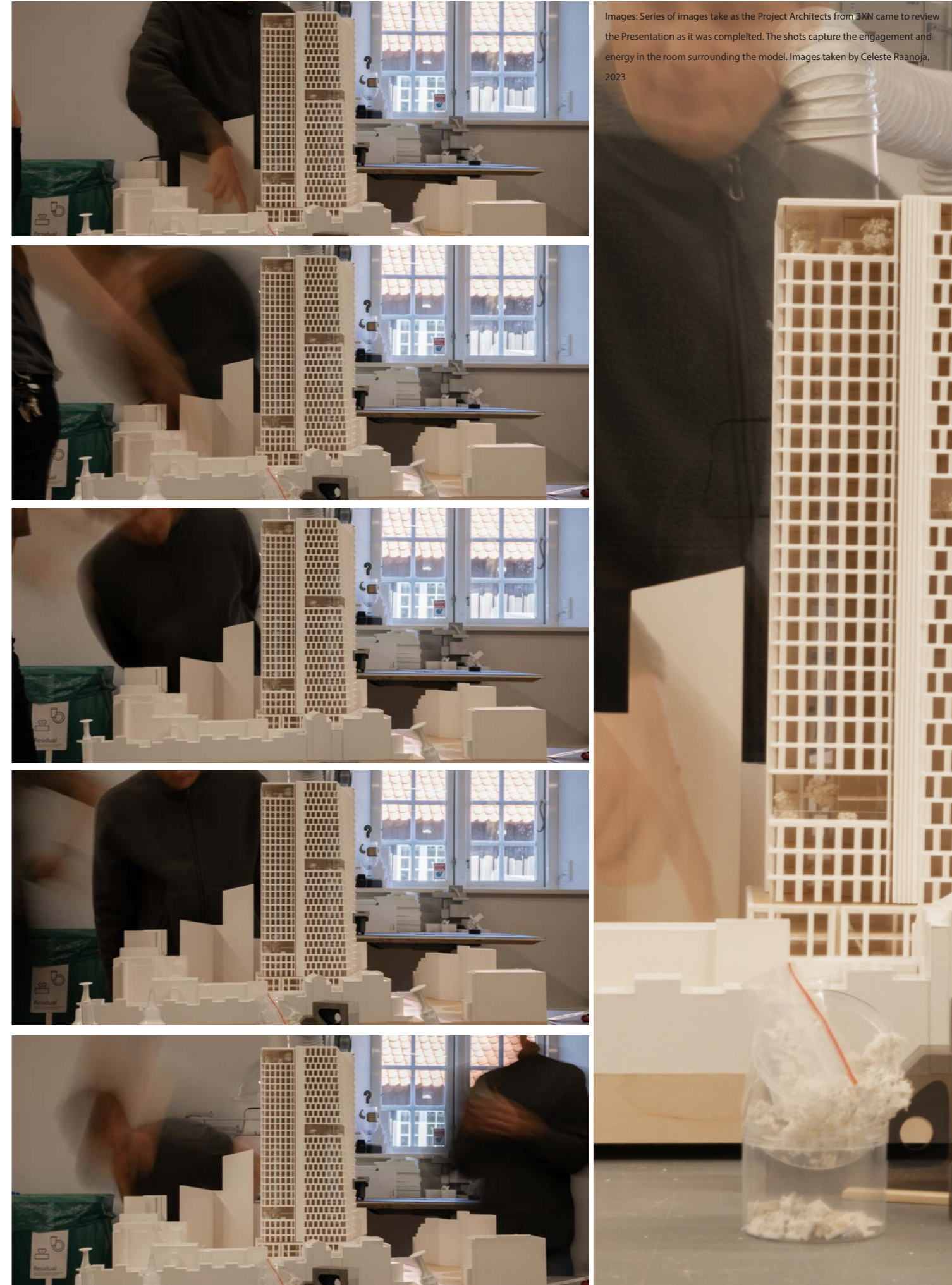
of maintaining close collaboration between designers and model makers to ensure physical models retain their relevance and value within the practice. The relationship between the workshop and architects is integral to the success of model-making—not only within the profession but also in its impact on public and institutional spheres.

This research was conceived during the COVID-19 pandemic, a period that significantly affected architectural model-making. Financial constraints, remote working conditions, and the shift to digital meetings reduced opportunities for in-person collaboration and cultural exchange, leading to a diminished demand for physical models. These challenges likely contributed to a more focused and client-driven approach to model-making, as observed during my research trips.

At David Chipperfield Architects, Ricardo Alvarez explained how these changes have shaped their approach to model-making. The firm has transitioned from using abstract models to explore architectural concepts to creating detailed, purpose-built models designed to convey spatial arrangements and architectural qualities tailored to client needs. During my visit, the team was constructing a 3-meter-long sectional model of a performance space, exemplifying their commitment to producing models that balance aesthetic precision with functional clarity.

In Copenhagen, I had the opportunity to speak with Blue-Skye, the leading model maker at 3XN, about how their approach to model-making has evolved in recent years. She explained that their current approach is more refined compared to the past, when the firm placed greater emphasis on large-scale, iterative processes. Today, their presentation models primarily serve dual purposes: as internal design tools and as marketing assets for client and stakeholder

¹ Lund, David. Personal discussion, Arts University Bournemouth, England.
² Findlay, Michael. *The Value of Art*, p.17



Images: Series of images take as the Project Architects from 3XN came to review the Presentation as it was completed. The shots capture the engagement and energy in the room surrounding the model. Images taken by Celeste Raanoja, 2023



Images: Models in display at the WERK Exhibition at the Danish Architecture Centre by Celeste Raanoja, 2023



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Like currency, the commercial value of art is based on collective intentionality, there is no intrinsic, objective value. Human Stipulation and declaration create and sustain the commercial value.⁴



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presentations. 3XN's commitment to models as integral to the design process is exemplified by the Quay Tower project. Scattered throughout their Copenhagen office are models of their award-winning design at 50 Bridge Street, Sydney, the first building they worked on in the city. Approximately 25 models of this project were identified through digital server images, though even more likely exist³. It was heartening to see that the firm values quick card models used during the sketching phase just as much as the detailed presentation models. One such presentation model, a towering centerpiece displayed in their lobby, symbolizes the importance of models in 3XN's design and communication process.

During my week-long visit, I observed the final stages of assembly for a 1:250 scale presentation model for a project in Euston, London. This model, like many others they produce, is designed to travel internationally, highlighting the firm's expanding global reach. The physical movement of these models reflects 3XN's dynamic and collaborative approach to working across multiple locations while maintaining the integrity of their design process. For the Sydney Fish Market project alone, approximately 13 models have been created, six of which are iterative sketch models exploring early ideas. Although it is believed that many of these models have been relocated to either New York or Sydney, their precise locations remain unconfirmed.

Architectural models are much like works of art; they transcend their functional purpose and emerge as objects of cultural and personal significance. When displayed in museums and cultural institutions, architectural models serve as vital tools for education and public engagement, showcasing the intricacies of design and the cultural trends shaping our built environment. The cultural appreciation of models feeds the demand for proper archiving, creating a symbiotic

relationship that increases their value.

It was evident throughout my trip that architectural models derive their cultural value through their preservation and exhibition in galleries and institutions. For instance, the Deutsches Architektur Museum (DAM) elevates models beyond their practical origins, celebrating them as cultural artifacts that narrate the evolution of architectural thought. DAM's exhibitions provide visitors with an opportunity to explore the creative and technical processes behind architecture, fostering a deeper connection to the field. Similarly, the Danish Architecture Centre and the Design Centre for Architecture in Frankfurt emphasize the importance of preserving and showcasing architectural models. These institutions exemplify how models, as historical and cultural artifacts, contribute to public knowledge and awareness of design culture and urban development. By engaging audiences with architectural models, these spaces make architecture more accessible, fostering appreciation for the broader cultural and societal implications of design.

Architectural models have the unique ability to bridge the gap between technical design and human-centered storytelling. Presentation and competition models play a vital role in architectural design, with physical models often required as part of design proposals for competitions. These models, presented to jury members from diverse professional backgrounds, help determine which design best meets the site's constraints and the project brief. As Michael Findlay argues in *The Value of Art*, the ability of art to convey meaning across contexts is crucial for its broader appreciation⁴. Similarly, architectural models communicate complex ideas in a tangible and accessible manner, fostering understanding across audiences with varying levels of expertise.

From my experience as a model maker contributing to significant

³ 3XN digital archive search, Copenhagen Office

⁴ Findlay, Michael. *The Value of Art*, p. 17.



Australian sites and projects, it is clear that there is an opportunity to share more about unbuilt works with the public. Many projects require physical models, which not only celebrate design ingenuity but also add value to architectural culture. Publicly presenting models, whether physical or digital, offers an opportunity to inform and educate audiences about the design decisions shaping the future of our cities. By sharing not only the winning proposal but also the other finalists, architectural practices can foster greater transparency, engagement, and appreciation for the iterative nature of the architectural process.

Models also hold significant educational value, particularly in architectural pedagogy. Since the 1960s, model-making has been a cornerstone of architectural education in the UK, and by the 1990s, diplomas and degrees specifically dedicated to model-making were introduced. Today, several educational institutions and organizations in the UK offer specialized programs and resources in architectural model-making, including Arts University Bournemouth⁵ (AUB), University for the Creative Arts⁶ (UCA), University of the Arts London⁷ (UAL), Royal Institute of British Architects⁸ (RIBA) and Foster and partners⁹.

These educational initiatives ensure the craft of model-making continues to evolve and inspire new generations of practitioners. In contrast, Australia lacks a dedicated curriculum for architectural model-making, with most practitioners being self-taught or trained through broader architectural programs. This difference raises important questions about how the value of model-making is perceived in different cultural contexts. Australia's reliance on self-taught practitioners has cultivated diverse approaches to model-making but highlights the need for formalized education to preserve and advance the craft.

⁵ BA (Hons) Model making degree, Arts University Bournemouth. "BA (Hons) Model making." Accessed January 19, 2025. <https://aub.ac.uk/course/ba-hons-model-making>.
⁶ BA Model Making degree, University for the Creative Arts. "BA Model Making." Accessed January 19, 2025.
⁷ Short courses such as "Model Making for Architecture" and "Creative Model Making in Architecture," focusing on core techniques and creative approaches to architectural model making University of the Arts London. "Model Making for Architecture Short Course." Accessed January 19, 2025. <https://www.arts.ac.uk/subjects/architecture-spatial-and-interior-design/short-courses/architecture/model-making-for-architecture-short-course-csm>.
⁸ Workshops like "Skill Up: Architectural Model Making," aimed at educating young individuals about the significance and techniques of scale model making Royal Institute of British Architects. "Skill Up: Architectural Model Making." Accessed January 19, 2025. <https://www.architecture.com/whats-on/skill-up-architectural-model-making-in-person-workshop>
⁹ Foster and Partners also contribute to advancing model-making education and skills development. They lead the Trailblazer Group, which helped launch the UK's first Model Maker Apprenticeship Standard.

The early 2000s marked a pivotal shift in Australian model-making practices with the integration of digital tools like 3D printing and laser cutting. These innovations transformed the field, creating a hybrid culture where traditional craftsmanship coexists with advanced technology. This era of digital fabrication not only enhanced precision and efficiency but also expanded creative possibilities, enabling architects to explore intricate forms and material combinations previously unattainable. As technology evolves, so does the craft of model-making. This ongoing evolution highlights the importance of documenting and archiving architectural models, which serve as tangible records of technological transitions. An archive, therefore, becomes a valuable resource for illustrating the intersection of tradition and innovation, marking distinct moments in the history of architectural practice.

Architectural models are not merely tools for representation but also catalysts for exploring ideas and testing technological applications in design. A compelling example is Frei Otto's pioneering work on the Multihalle Mannheim, now part of the Deutsches Architektur Museum's collection¹⁰. Otto used hanging nets to simulate complex geometries, translating these physical experiments into structural blueprints. This process exemplifies how physical simulations, blending physics, craftsmanship, and design, can push architectural boundaries and generate insights that might not emerge through purely digital methods.

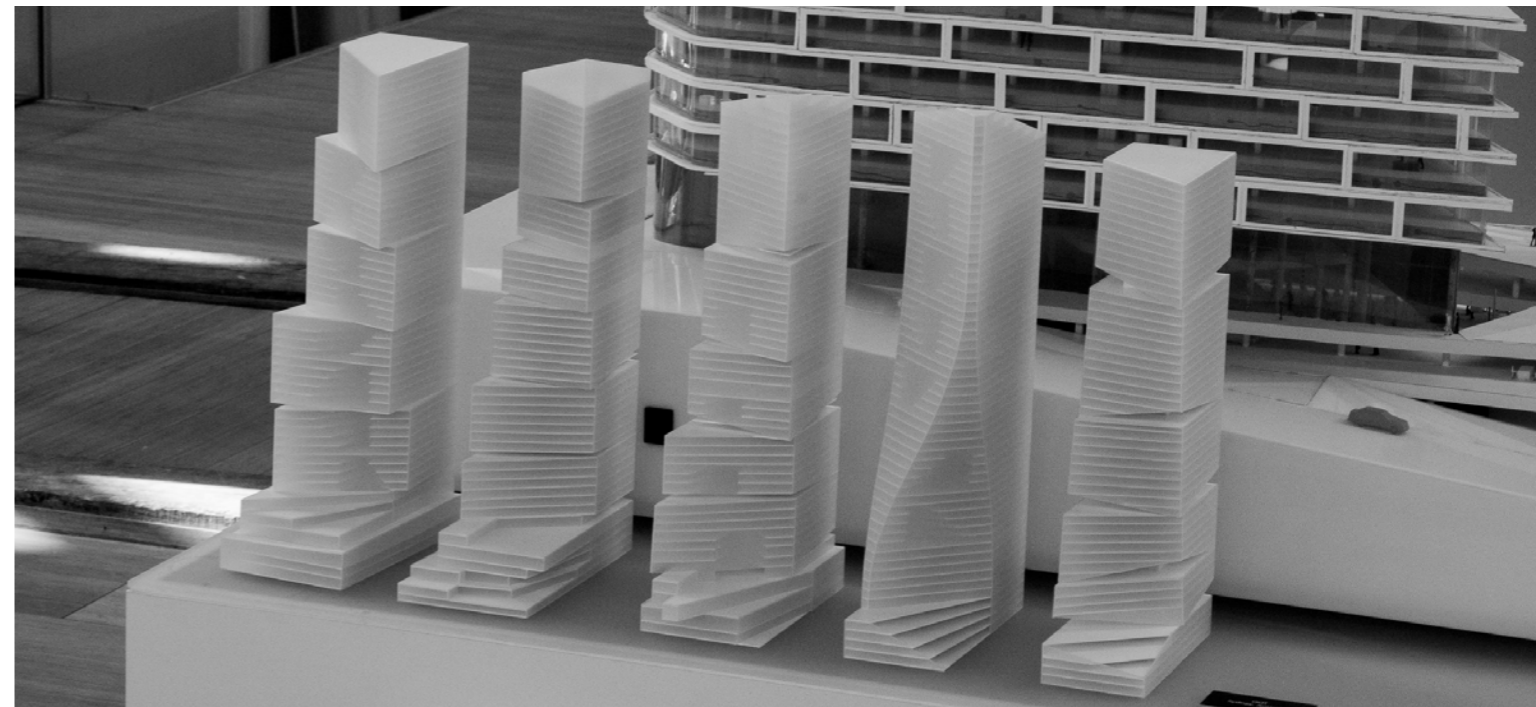
During my research trips, I observed that each architectural practice approaches its models uniquely, shaped by the firm's technological preferences, aesthetic philosophy, material selection, and financial considerations. Moreover, the personal and evolving nature of model-making is profoundly influenced by the expertise of the team members at any given time. Their skills, experience, and knowledge significantly impact the model's outcome, reflecting the enduring craft of model-making, which continues to rely heavily on handmade elements. At David Chipperfield's, for example, Ricardo Alvarez's background in design and cabinet making has profoundly influenced the studio's commitment to exceptional craftsmanship. His expertise has shaped the practice's model-making culture, resulting in exquisitely crafted wooden models that reflect a high standard of artistry and attention to detail. This illustrates how

¹⁰ Frei Otto, Multihalle Mannheim (1975). Deutsches Architektur Museum Collection, Frankfurt. Exhibition archives and project documentation, Deutsches Architektur Museum.

Images: Models of 50 Bridge Street, Sydney on Display at the Entrance to 3XN Offices, by Celeste Raanoja, 2023



Images: Models of 50 Bridge Street, Sydney on Display at the Entrance to 3XN Offices, by Celeste Raanoja, 2023



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The physical Model as An Architectural Archive

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Physical models play a crucial role in preserving architectural history, showcasing design innovation, and revealing cultural narratives. An archive is not merely a collection of records; it is an essential tool for documenting and ensuring future access to valuable material for research¹. In architecture, physical models function as a distinct form of archive, capturing design solutions, structural innovations, and cultural insights. They embody ideas that may never be built, offering a window into the historical and conceptual development of the built environment.

Institutions like the Danish Architecture Centre (DAC) demonstrate the importance of architectural models in documenting urban development and contemporary architecture. Through its exhibitions, DAC highlights how models serve as tools for urban planning, reflecting architectural advancements alongside societal changes. These models go beyond depicting individual buildings, they encapsulate the broader urban context, offering insights into the cultural and regional influences that shape cities

From April 21 to October 22, 2023, DAC hosted the exhibition *Tales of the City*, showcasing 14 architectural projects by WERK Arkitekter. During my visit, I was struck by how the exhibition combined meticulously crafted physical models with audio narratives by author and social commentator Knud Romer, creating an immersive and reflective experience. Observing a detailed scale model animated with figures while listening to the narrator's voice added a new dimension to understanding the architectural spaces. The audio, which at times resembled life stories, enriched my connection to the model and deepened my appreciation for the architectural concepts being presented².

¹ Jimerson, R. C. (2009). *Archives power: Memory, accountability, and social justice*. Society of American Archivists.
² WERK Arkitekter and Kristoffer Romer. *Tales of the City* [Exhibition narratives]. Danish Architecture Centre, 2023

One project that particularly resonated with me was the Sports Tower in Copenhagen, a multi-level sports facility constructed primarily from wood. The model vividly depicted the building's open, unheated spaces separated only by meshwork, highlighting its innovative and sustainable design for a dense urban environment. As I studied the model's intricate details, the audio provided a fascinating historical account of sports facilities that had failed to integrate culture and athletics effectively due to spatial constraints. The narrator then shifted to a personal perspective, recounting how sports halls once played a vital role in offering young people activities that kept them engaged and off the streets. His recollections, playing badminton, wrestling, gymnastics, and more, sometimes motivated by the chance to meet girls as a young man, brought a relatable, human element to the design.

Listening to these stories while examining the stacked spaces of the model allowed me to visualize the building's energy and potential. The variety of sports spaces layered atop one another illustrated the social and functional opportunities such a facility could provide for a community. This multi-sensory experience, combining the tactile engagement of the physical model with the narrative depth of the audio, emphasized the transformation role of architecture in shaping community life and fostering connection. Through these exhibits, the Danish Architecture Centre demonstrated how models reflect societal shifts, technological advances, and cultural identities. They serve as invaluable tools for both historical research and public engagement, deepening our understanding of urban landscapes and architectural evolution. This aligns with Michael Findlay's argument in *The Value of Art*: art's significance lies not only in its functional or monetary worth but also in its ability to evoke emotional and intellectual engagement³. Similarly, architectural models inspire reflection on the creative process while serving as tangible records of an architect's vision.

³ Findlay, Michael. *The Value of Art: Money, Power, Beauty*. New York: Prestel, 2012.

Images: Models on Display inside the DAM Museum Storage warehouse, by Celeste Raanoja, 2023





“In a world that is well on its way to becoming one vast quarry, the collector becomes someone engaged in a pious work of salvage. The course of modern history having already sapped the traditions and shattered the living wholes in which precious objects once found their place, the collector may now in good conscience go about excavating the choicer, more emblematic fragments¹.”

DAC focused on contemporary architecture and design by Danish architects, offering a modern perspective on the evolving role of models. In contrast, the Design Center for Architecture in Frankfurt highlighted how architectural models preserve key moments in urban transformation, with a stronger emphasis on historic models. The museum used models to reflect Frankfurt’s evolving identity and responses to pivotal historical events, such as:

- The Old Town Model by the Treuner Brothers, depicting Frankfurt’s medieval city before its destruction in World War II.
- The Destruction Model (1946), illustrating wartime devastation and influencing public opinion on post-war redevelopment.
- The Frankfurt Kitchen Model by Margarete Schütte-Lihotzky (1920s), a pioneering modernist design that redefined domestic spaces.
- The 3D City Map by Matthäus Merian, a detailed recreation of Frankfurt’s historical layout that highlights the enduring value of architectural documentation.

During my visit to the Deutsches Architektur Museum (DAM), I observed the meticulous care taken to preserve its diverse collection of models, which includes works by David Chipperfield, Peter Eisenman, Yona Friedman, Toyo Ito, Daniel Liebeskind, Also Rossi Frei Otto and Richard Buckminster Fuller⁴. DAM’s storage facility revealed the scale and complexity of curating architectural archives, with models ranging in size, material, and craftsmanship. The upper levels housed “non-travel models” that, after years of public display, were permanently stored. Shelved models were protected by plastic sheets, with detailed spreadsheets cataloging their names, materials, and creation dates. This organization highlights DAM’s commitment to preserving architectural heritage while ensuring these models remain accessible for future exhibitions and research.

DAM, like many institutions, has expanded accessibility through Online collections, broadening the reach of architectural knowledge. Exploring these digital archives felt like an act of curation itself.

1. Sontag, Susan. *On Photography*. New York: Farrar, Straus and Giroux, 1977, p. 76.
4. Deutsches Architektur Museum, Frankfurt.

piecing together fragments of history to form a cohesive narrative. My exploration of our own Australian Archives began at the National Archives of Australia, where I discovered photographs of physical models vividly capturing pivotal moments in the evolution of Melbourne’s Arts Precinct master-plan, designed by Sir Roy Grounds. These early models revealed ambitious, unrealised ideas, including plans for underground theatres topped by a dramatic copper-sheathed spire. Costs and the challenging site conditions required a redesign in 1970, which resulted in the concert hall being moved to a separate location and partially raising the theatres above ground⁵.

Reflecting on this legacy, I am proud that Make Models has contributed to Melbourne’s Arts Precinct. Our work includes creating master-plan models for the precinct, the competition model for Candalepas Associates’ winning proposal for the New Contemporary Art Gallery, and a detailed sectional model showcasing the soon-to-be-completed building. Soon, we will update the masterplan model to reflect the latest designs, ensuring our contributions celebrate the evolving narrative of this landmark.

Ultimately, a successful architectural archive captures the diversity of thought, practice, and design. The true value of models lies not only in their physical form but in their ability to inspire, communicate ideas, and preserve the essence of a project. A well-maintained archive safeguards these qualities for future generations, ensuring these critical artifacts remain accessible for study, reflection, and innovation.

5. National Archives of Australia. *Melbourne Arts Precinct: Photographs and Documentation, 1960–1970*. Accessed 2023. <https://naa.gov.au>.
5. Melbourne Arts Centre. *Online Archive: Historical Context for the Precinct*. Accessed 2023. <https://artscentremelbourne.com.au>.



5

Selection, Photography and the Preservation of Architectural Models

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Physical models play a crucial role in preserving architectural history, showcasing design innovation, and revealing cultural narratives. An archive is not merely a collection of records; it is an essential tool for documenting and ensuring future access to valuable material for research. In architecture, physical models function as a distinct form of archive, capturing design solutions, structural innovations, and cultural insights. They embody ideas that may never be built, offering a window into the historical and conceptual development of the built environment.

Curating architectural model collections involves a meticulous selection process, balancing historical, cultural, and artistic significance with the practical constraints of physical storage. This reflects the preservation imperative, which prioritizes the safeguarding of records—physical or digital—against deterioration or loss, ensuring they remain accessible for future study and inspiration¹. At the Deutsches Architektur Museum (DAM), the selection process emphasizes the sanctity of evidence, capturing and preserving the original context and purpose of models to maintain their evidentiary value over time². Rather than archiving every model, DAM often opts to document temporary or student-created works photographically. These photographs, enriched with metadata, serve as enduring records, capturing materiality, scale, craftsmanship, and design intent while alleviating the challenges of physical storage.

DAM's collection, initiated with a discarded model that sparked the museum's founding, has evolved into an international archive of architectural history. Guided by the principles of respect des fonds and provenance, the museum prioritizes preserving models in their original context, ensuring that their historical and cultural

significance remains intact³. However, as competition among institutions for acquiring models has grown, many architectural firms now manage their own collections. This trend highlights the recognition of physical models as both design tools and key assets for exhibitions and scholarly research.

Foster and Partners face a similar challenge, with over 3,000 models in their collection. While the firm initially retained every model, they now conduct regular evaluations—typically over 2-5-10 year periods—to assess each model's long-term significance. This process reflects the primacy of the record, emphasizing the importance of retaining authoritative records for their historical and functional value⁴. Models deemed less critical are documented photographically, ensuring their narratives remain accessible even if the physical objects are deaccessioned.

Photography plays a central role in the preservation of architectural models, particularly at Foster and Partners, where an in-house photography studio supports both archival and design processes. This aligns with the hierarchical nature of records and their collective descriptions, as photographs provide structured, metadata-enriched representations of models that connect to broader design narratives⁵. During my visit, I observed architects using a jig to photograph iterative massing models from multiple angles, creating a comprehensive visual record. This method not only documents the models but also facilitates real-time collaboration and reflection, making photography an integral part of the design process.

The insights from A+U "Supermodels" offer valuable perspectives on this topic. Hisao Suzuki, a renowned architectural photographer featured in the issue, describes how model photography captures

1. Richard N. Gilliland-Swetland, Title of the Work, (Publisher, 2000), 14.

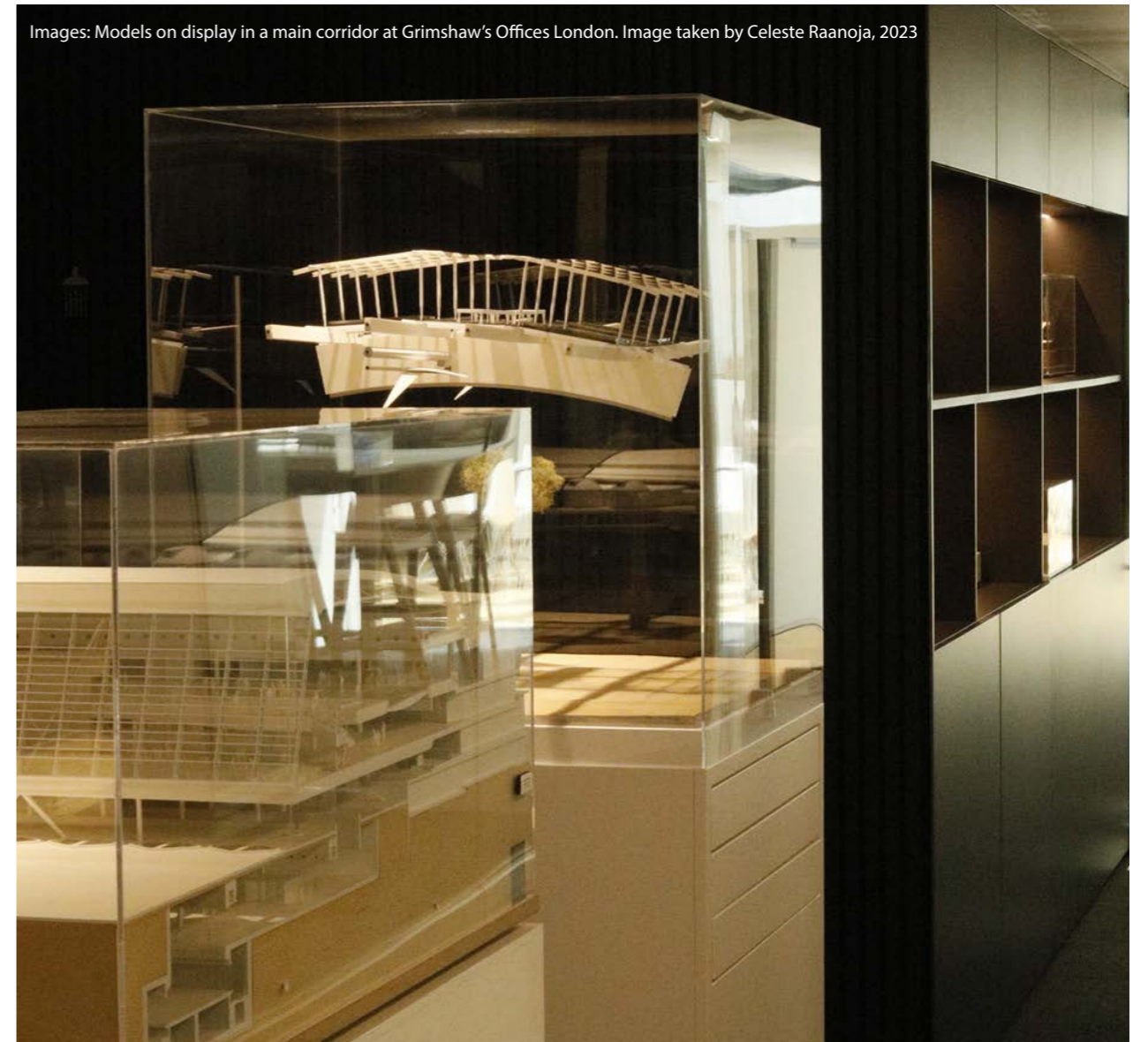
2. Lazorchak, Jeffrey, The Ghost in the Machine: Traditional Archival Practice in the Design of Digital Repositories for Long-Term Preservation. Publisher, 2004, p. 9.

3. Richard N. Gilliland-Swetland, Title of the Work, (Publisher, 2000), 13.

4. Lazorchak, Jeffrey, The Ghost in the Machine: Traditional Archival Practice in the Design of Digital Repositories for Long-Term Preservation. Publisher, 2004, p. 17

5. Richard N. Gilliland-Swetland, Title of the Work, (Publisher, 2000), 18-19

Images: Models on display in a main corridor at Grimshaw's Offices London. Image taken by Celeste Raanoja, 2023



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Images: Experimentating with lighting effects to enhance features of a model when considering how best to archiving through Photography. Image taken at 3XN Studio, by Celeste Raanoja, 2023



“The photographer’s ardor for a subject has no essential relation to its content or value, that which makes a subject classifiable. It is, above all, an affirmation of the subject’s thereness; its rightness (the rightness of a look on a face, of the arrangement of a group of objects), which is the equivalent of the collector’s standard of genuineness; its quiddity—whatever qualities make it unique¹.”

the “core of the actual architecture” by documenting its essence and narrative, whether built or unbuilt⁶. Suzuki’s photographic approach emphasizes natural light and careful composition, which reveal the atmosphere and design intent of models. He notes that “models provide ways to study three-dimensional quality, light and shadow, scale, and weight,” making photography a method for both preservation and design thinking⁷.

Suzuki’s work highlights the evolving role of architectural models, as documented in interviews with architects such as Arata Isozaki and Christian Kerez. They describe models as “vessels of uncertainty” that embody the iterative process of design and suggest directions for future development⁸. Photography, in this context, becomes a tool not only for archiving but also for exploring the potential of unbuilt ideas.

Dr. David Lund highlights the preservation imperative of photography in capturing details that may degrade or become inaccessible over time. High-quality images document materials, craftsmanship, and construction techniques, offering insights into a model’s spatial and cultural significance. Museums like DAM use photography to extend the reach of their collections, creating visual timelines that preserve the iterative nature of architectural design while enhancing accessibility. By employing innovative photographic techniques—such as composite images, creative cropping, and sequence photography—institutions can present models as dynamic, evolving objects that contribute to the broader narrative of architectural innovation.

Suzuki’s reflections on photography and architectural models underline the need to prioritize “actual things”—objects that

cast shadows and occupy physical space—as a counterpoint to increasingly digital workflows. His belief that models photographed with care and artistry can “show that there is an alternative to placing all of our trust in a world that exists only as long as our monitors are powered on”⁹ reinforces the value of physical artifacts in design and storytelling.

Preserving architectural models also requires attention to the diversity of materials used in their construction. This reflects the sanctity of evidence, as each material tells a part of the model’s story and must be maintained to preserve its authenticity¹⁰ (Jenkinson, 1922). From fragile paper and early plastics to durable woods and resins, ongoing maintenance and repair are essential. The storage facility at DAM accommodates this diversity, housing both conceptual and presentation models. However, concerns about the rapid deterioration of newer materials, such as 3D-printed components, highlight the need for responsible preservation practices, including digitization as a safeguard.

Ultimately, preserving architectural models, whether through physical storage or photographic documentation, is an act of storytelling. Photography not only enhances the archival process but also contributes to the design narrative, shaping the legacy of architectural innovation. By combining thoughtful selection, innovative photographic techniques, and responsible archival practices grounded in principles such as provenance, hierarchy, and the preservation imperative, institutions and firms can ensure that architectural models continue to inspire and inform future generations.

1. Sontag, Susan. *On Photography*. New York: Farrar, Straus and Giroux, 1977, p. 61
6 & 7. Suzuki, H. (2014). In *A+U: Architecture and Urbanism (Supermodels Edition)* (pp. 12–20). Tokyo: A+U Publishing pg.12

8. Suzuki, H. (2014). “Life with the Supermodels.” In *A+U: Architecture and Urbanism (Supermodels Edition)* (pp. 12–20). Tokyo: A+U Publishing pg 18.

9. Suzuki, H. (2014). In *A+U: Architecture and Urbanism (Supermodels Edition)* (pp. 12–20). Tokyo: A+U Publishing pg.20

10. Jenkinson, Hilary. *A Manual of Archive Administration*. London: Oxford University Press, 1922.

aerophotography, aerial photography astrophotography candid photography chromophotography chronophotography cinematography cinephotomicrography cystophotography heliophotography infrared photography macrophotography microphotography miniature photography phonophotography photogrammetry photomicography photospectroheliography phototopography phototypography phototypy pyrophotography radiography radiophotography sculptography skiagraphy spectroheliography spectrophotography stroboscopic photography telephotography uranophotography X-ray photography



Images: Model on Display at the Danish Architecture Centre. Image taken by Celeste Raanoja, 2023

Images: Model workshop at the DAM's Archive facility. This particular model made of card was waiting restoration works. Image taken by Celeste Raanoja, 2023



6

Presenting a digital Archive

requires robust measures, including systematic cross-referencing of records, expert review processes, and implementing user-feedback mechanisms to flag and correct discrepancies.

This discovery and contextual research emphasize how mislabeling and incomplete documentation can obscure the narrative of a project's development. By improving archival systems, through better metadata tagging, expert validation, and user-friendly feedback tools, archives can ensure that historical records, such as those of Melbourne's Arts Precinct, remain valuable resources for both researchers and the broader public.

In my commercial work with architects and visits to studios, I observed how images of models play a vital role in shaping the culture, identity, and collaborative processes of a practice. At David Chipperfield Architects, for instance, images of physical models are often displayed to visitors, effectively communicating the studio's design philosophy. These images serve as surrogates for the physical models, preserving their narrative and conveying their context when the actual objects are unavailable. In contrast, during my time at 3XN Architects, I noticed that disconnected image storage practices often led to underutilization. Thousands of model photographs were archived in project folders without a clear system for retrieval or application. To address this, I collaborated with the team to propose strategies for categorizing and filtering these images, focusing on their potential uses—such as for internal collaboration, client presentations, or marketing purposes. This experience emphasized the need for thoughtfully structured archives to maximize the utility and impact of digital images.

Institutions like Foster and Partners and the Deutsches Architektur Museum (DAM) demonstrate how digital archives can extend the reach and influence of physical models. Foster and Partners' Pompidou Centre Digital Exhibition leverages multimedia elements to create an immersive experience³ (Foster and Partners, n.d.), while DAM's visual database allows users to explore diverse models and techniques, encouraging reflection on architectural history (Deutsches Architektur Museum, n.d.). These examples illustrate how digital archives can transcend their role as static repositories, becoming dynamic platforms that celebrate the craft of model-making and its contributions to architectural culture.

To ensure architectural model images are accessible and meaningful, archives should adopt clear categorization strategies. Grouping models by scale, such as 1:500 or 1:200, highlights their intended detail and purpose, while organizing by material type, timber, foam core, or other materials, showcases diverse approaches to model-making. Distinguishing between process, iterative, and presentation models communicates their roles in design development. Sorting by intended use, such as client presentations or competition entries, clarifies the context of each model.

As more firms and institutions digitize their collections, it is important to recognize the evolving role of the digital curator. The responsibility of the curator extends beyond simply organizing content; it now involves managing digital tools, fostering collaboration, and ensuring long-term engagement with architectural archives. This shift in the curator's role will continue to shape how architectural models are preserved and presented in the digital age.

3. Centre Pompidou. Norman Foster Retrospective: Nature and Urbanity. Exhibition, May 10 – August 7, 2023, Paris, France. Accessed [date]. <https://www.centrepompidou.fr/en/program/calendar/event/Lan1n-y>.

The digitization of architectural models has created opportunities to preserve, present, and reinterpret these physical artifacts for broader audiences. However, the organization and accessibility of digital archives significantly impact their effectiveness. My exploration of the Deutsches Architektur Museum (DAM) website compared to the National Australian Archives database¹ highlights both challenges and opportunities for structuring and sharing visual databases. During my search for images of architectural models within the National Australian Archives, I encountered inconsistencies and inaccuracies that reveal both the potential and limitations of Online databases for images. Using the database's Photo Search function, I explored terms like "architectural model," "scale model," and "physical model," each yielding vastly different results. Searching "architectural model" produced 15 results, while "scale model" returned 88 results, and the plural "scale models" offered only 3. Searching for "physical model" provided another distinct subset. These discrepancies emphasized how variations in terminology, such as singular versus plural, can drastically influence search outcomes, necessitating databases that can implement user-feedback mechanisms to flag and correct discrepancies.

One particularly notable discovery during my research was an archival image labeled as depicting a "replica of one of the main reception rooms in the Katsura Imperial Villa Kyoto," purportedly being constructed at the University of Melbourne. Upon closer examination, however, I identified that the image actually featured a model of the National Gallery of Victoria (NGV)². This misidentification highlights the critical importance of accurate meta-data and detailed archival descriptions in maintaining the integrity of historical records.

Such inaccuracies can mislead researchers and undermine the interpretive value of an archive. Addressing these challenges

1. <https://recordssearch.naa.gov.au>
2. National Archives of Australia, NAA:A1501, A4613/1 Item ID: 8905524



5

Archival Practices and Guidelines in Model Making

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Architectural archives play a crucial role in documenting the evolution of architectural practice. They typically include materials such as drawings, photographs, models, and written records, each contributing to the broader understanding of architectural progress. However, the specific focus on models in many architectural firms and museums often remains underdeveloped. Archiving models goes beyond physical storage, it requires careful organization, protection, labeling, digitization, and sharing to ensure their long-term preservation and accessibility. Additionally, effective archival systems must consider privacy concerns, legal issues, and sensitive data management.

During my visit to the Deutsches Architektur Museum (DAM), I had a conversation with Wolfgang, the museum's registrar, who highlighted the crucial role of active archival systems in preserving architectural models and the documentation surrounding them. DAM's collection houses over 1,800 models, many of which lacked sufficient documentation regarding their purpose, construction, and design decisions. This gap in context diminished the models' historical and functional significance. Wolfgang emphasized the importance of systematically documenting these aspects to ensure that the models' value is understood within the broader architectural discourse, a view also shared by Dr. David Lund.

DAM has developed a hybrid archival system that combines manual and digital methods. These efforts reflect the records continuum model, which emphasizes the integration of archival processes throughout the lifecycle of materials, from creation to preservation, without requiring physical transfer to an archive¹. While not all models have been digitized, the museum is gradually integrating them into a digital archive enriched with metadata to ensure long-term preservation and accessibility. The archive functions

not only as a storage repository but as a dynamic resource, frequently showcased in exhibitions and accessible to the public through its online database of digitized models. The DAM team actively manages this archive, ensuring that new acquisitions and modifications are regularly incorporated.

Currently, the museum employs a manual tracking system using spreadsheets to record essential details, such as model names, materials, and reference images. These spreadsheets are posted near the models, and updates are made whenever a model is relocated, offering a functional, if limited, solution for managing the collection. To further enhance their archival practices, institutions like DAM could consider adopting principles from the Open Archival Information System (OAIS) model, such as the implementation of Submission Information Packages (SIPs) and Archival Information Packages (AIPs). SIPs would allow for structured ingestion of models and associated metadata, while AIPs would ensure that this information is preserved and retrievable for long-term use². Incorporating these practices could help standardize workflows, reduce manual oversight, and support the long-term accessibility and integrity of the museum's collection.³

However, the challenges of archiving models extend beyond museums and into architectural firms. Unlike DAM, many firms do not have dedicated staff for model archiving, and rely on informal or ad-hoc methods of organization. At 3XN Architects, I observed the difficulties of managing their large and diverse collection of models. Often, photographs of models were stored within project folders, without any clear system of cataloging or metadata. This disorganized approach severely limited the accessibility and long-term utility of these archives.

2. Consultative Committee for Space Data Systems. Reference Model for an Open Archival Information System (OAIS). CCSDS 650.0-B-1, Blue Book. Washington, D.C.: NASA, 2002
3.Lavoie, Brian F. The Open Archival Information System (OAIS) Reference Model: Introductory Guide. Digital Preservation Coalition Technology Watch Reports, 2004.

During my visit to 3XN, I collaborated with the model-making team to develop a more formalized archival system. The first step was to implement a model tracking system that included detailed forms capturing essential information about each model, such as its project association and design iterations. These forms acted as the foundation for the SIPs, ensuring that the models were properly documented for future retrieval and preservation. We also focused on organizing and categorizing the large volume of photographs associated with each model, making it easier for staff to locate and utilize relevant images. These efforts resonate with archival principles of hierarchical arrangement and metadata-driven retrieval systems.⁴ This initiative marked the beginning of more structured archival practices at 3XN, aiming to enhance the studio's understanding and appreciation of its models while improving their accessibility for internal collaboration, client presentations, or marketing purposes.

In contrast, Foster and Partners has a more developed approach to model archiving, yet it continues to face challenges due to the size and geographical dispersion of its model collection. With over 3,000 models stored across multiple locations, including external facilities and even a salt mine, Foster's initial focus was on preserving drawings and photographs. In recent years, however, the firm has placed more emphasis on documenting physical models.

To streamline model documentation, Foster and Partners developed a two-pronged system: first, each model is photographed and uploaded to an online software system, where it is tagged with relevant keywords (such as model type, scale, and project). These tagged files, akin to SIPs, ensure that the models' context and purpose are preserved for future use.⁵ This system allows staff to quickly search and retrieve models based on these attributes. The second system involves assigning barcodes to models to track their locations, which helps with logistical management. However, the barcode system is not without its challenges, as updates rely on staff input, leading to occasional gaps or errors in the database, especially for iterative models that frequently change. This highlights the importance of balancing usability with reliability, as highlighted in modern digital preservation efforts like the SPIRT Metadata Standards Project.⁶

These examples from DAM, 3XN, and Foster and Partners illustrate the diverse approaches to model archiving and the various challenges faced by institutions and firms. Whether through digital tracking systems, metadata-enriched archives, or barcode-based location management, the experiences of these organizations highlight the importance of proactive archival strategies. By incorporating standards such as SIPs and AIPs, and emphasizing systematic metadata documentation, firms can ensure the preservation and accessibility of architectural models for future generations.

4 & 5. Schellenberg, T. R. Modern Archives: Principles and Techniques. Chicago: University of Chicago Press, 1956.
Gilliland-Swetland, Anne J. Introduction to Metadata: Pathways to Digital Information. Los Angeles: Getty Publications, 2000, 18–19.

6. Gilliland-Swetland, Anne J. Introduction to Metadata: Pathways to Digital Information. Los Angeles: Getty Publications, 2000, pg16.



Data Sheet highlighting key information about models that are in storage at the DAM, these help identify and locate models. Images taken by Celeste Raanoja, 2023

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Guidelines for Archiving Architectural Models

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Active archival practices, undertaken contemporaneously with a model's creation, offer significant advantages over reflective archival approaches carried out retroactively. By capturing detailed information during the model's creation, a proactive system ensures that valuable insights into the design and creation process are preserved. This approach allows for a deeper understanding of the model's purpose, the decisions made during its creation, and its role within the broader context of the project.

A proactive archival system enables the collection of detailed information, such as:

- **Purpose:** What was the model intended to achieve? This helps clarify the model's function and its significance in the design process.
- **Effort:** How many hours were spent making the model? This provides insight into the time and labor involved, underscoring the model's importance to the project.
- **Decision-Making:** What key inputs or choices influenced its design and use? This includes design considerations, material choices, and other pivotal decisions made throughout the model's creation.
- **Cost:** What resources were required to create the model? This includes financial, material, and human resources, which can illuminate the scale and investment behind the model.
- **Methods:** Why were specific materials and techniques chosen? Were there significant changes during production? Documenting the production methods allows for a better understanding of how the model was made and the challenges faced during its creation.
- **Usage:** Who used the model, and for what purpose? What discussions or decisions did it inform? This helps track the model's role in the design process, from conceptual development to client presentations.

By capturing this information contemporaneously, the archival

process becomes more robust, providing future researchers, architects, and historians with comprehensive insights into the creation and significance of architectural models.

To establish effective archival practices for architectural models, firms should consider the following steps. These steps ensure that the information collected is organized, meaningful, and capable of preserving the legacy of architectural model-making.

1. **Collect Relevant Information:** Begin by gathering data that provides insight into the purpose and significance of each model. Architectural firms often hold a wide range of physical and digital documentation, but it is important to focus on collecting only relevant information. A central question to ask when documenting a model is: What is the model's purpose? This helps to focus the archival record on the model's intended function and contextual significance. The collected data forms the basis of the Submission Information Package (SIP), which includes both the digital files (e.g., photographs, 3D scans) and accompanying metadata required for long-term preservation¹. The SIP ensures that the content can later be transformed into an Archival Information Package (AIP) for secure storage and ongoing accessibility.
2. **Diligent Documentation:** With modern devices like smartphones, it's easy to capture an overwhelming amount of data. The key is to filter and categorize information before submitting it to the archive. This ensures that only relevant details are recorded, maintaining clarity and preventing an overabundance of unnecessary documentation. Metadata should include descriptions of the model's purpose, materials, scale, and the design decisions it represents. According to Lazorchak (2004), rich metadata is essential for enabling intellectual control and ensuring that records remain meaningful and retrievable over time.

1. Consultative Committee for Space Data Systems. Reference Model for an Open Archival Information System (OAIS). CCSDS 650.0-B-1, Blue Book. Washington, D.C.: NASA, 2002.

3. **Digitize Models and Materials:** Digitizing both models and accompanying documents is critical for creating a robust digital archive. While physical models are irreplaceable, digitization safeguards their contextual information and makes it easier to share and access these resources remotely. The digitization process should include metadata that documents the scanning or photography process, ensuring that the digital surrogate's authenticity and integrity are preserved². As with physical records, these digital assets must be ingested into the archive as SIPs, with metadata and packaging information that support future migration to more advanced storage formats as technologies evolve.³

• **Organize Information:** A well-structured organization system for both physical and digital archives is essential. Simple project folders with clear subcategories can help manage large amounts of data efficiently. A suggested folder structure could include:

- **Primary Folder:** Organized by project name (e.g., Building X).
- **Subfolders:** Drawings, Data (received and sent), Emails, Photos, 3D Models.

• **Secondary Folder:** Categorize images based on model type, project type, or location (e.g., Model Types, Building Types, Locations).

For digital assets, organizing metadata hierarchically—using standards such as Dublin Core or Encoded Archival Description (EAD)—ensures ease of retrieval and adherence to archival best practices.⁴

• **Protect Information:** Both digital and physical records need protection from data loss, deterioration, and misuse. This includes maintaining secure physical storage for models, such as climate-controlled environments, and ensuring digital files are backed up in multiple locations. Adopting digital preservation principles, such as creating Archival Information Packages (AIPs), ensures that all relevant metadata, file integrity checks, and contextual information are included for long-term storage⁵.

• **Label and Catalog Models:** Clear labelling is vital to tracking and managing large collections. A consistent labelling system, such as the one used by the DAM, ensures that models can be easily located and identified. For smaller firms, accessible tools like Lightroom can provide a straightforward way to organize and label photos, documents, and models. Suggested labelling systems include:

PCTM = Photograph, Competition, Timber, Model

PCM-T = Photograph, Presentation Model - Timber

Date-Based System: (2024PM-C-AM) Photograph, Model, Competition, Acrylic, Timber

• **Store and Share Information:** The ultimate goal of any archive is to enrich the practice it supports. A well-organized archive improves internal collaboration, informs future projects, and enhances business development by showcasing the firm's work in exhibitions and publications. Incorporating SIPs into an accessible digital repository enables easier sharing and supports metadata-driven search capabilities for staff and collaborators.⁶ Firms must balance accessibility with security to ensure that archives remain both useful and protected.

By following these guidelines firms can establish an effective archival system that ensures models remain preserved, documented, and accessible, supporting the ongoing growth and evolution of architectural practice.

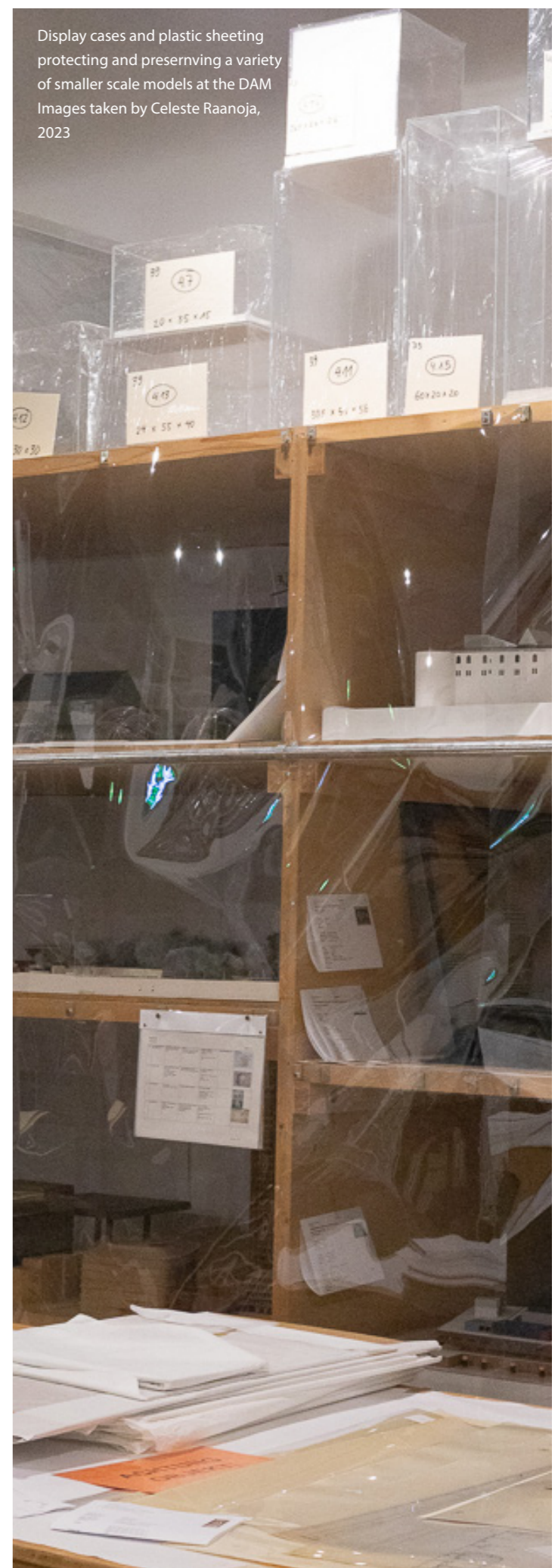
2. Gilliland-Swetland, Anne J. Introduction to Metadata: Pathways to Digital Information. Los Angeles: Getty Publications, 2000, 15-16

3. Consultative Committee for Space Data Systems. Reference Model for an Open Archival Information System (OAIS). CCSDS 650.0-B-1, Blue Book. Washington, D.C.: NASA, 2002.

4. Gilliland-Swetland, Anne J. Introduction to Metadata: Pathways to Digital Information. Los Angeles: Getty Publications, 2000, 24

5. Consultative Committee for Space Data Systems. Reference Model for an Open Archival Information System (OAIS). CCSDS 650.0-B-1, Blue Book. Washington, D.C.: NASA, 2002.

6. Gilliland-Swetland, Anne J. Introduction to Metadata: Pathways to Digital Information. Los Angeles: Getty Publications, 2000, 18-19.



Display cases and plastic sheeting protecting and preserving a variety of smaller scale models at the DAM. Images taken by Celeste Raanoja, 2023

Many Models within this section of the museum were "no travel" models. Facilities were available to help staff process incoming and outgoing assets into the museum archive. Image taken by Celeste Raanoja 2023



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1

Guidelines for Photographing Architectural Models

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To maximize the potential of photography in architectural model documentation, it is essential to establish clear guidelines for its use.

These could include:

- Optimal placement and angle of models for a balanced view: Position the model to minimize distortion and ensure accurate representation. Using a tripod ensures consistent framing and sharpness, and shooting from a slight elevation can provide a comprehensive view, highlighting the model's three-dimensionality.¹ To achieve the best results, also ensure the model is clean and free of dust, as minor imperfections can be magnified in photographs.
- Capturing multiple angles to highlight design opportunities: Photograph the model from various perspectives to showcase its spatial dynamics and design features. This approach offers a holistic understanding of the architectural concept.² Ensure that lighting is carefully considered—using diffused lighting to minimize shadows and highlight key details can further enhance the clarity of these shots.
- Framing the model in a way that conveys its relationship to human experience: Incorporate elements that suggest scale and human interaction, such as placing figures or objects near the model. This technique contextualizes the design within a real-world setting.
- Documenting key moments in the design's evolution: Capture photographs at various stages of the model's development to document its progression and the iterative design process. This practice provides insight into the evolution of the architectural concept.
- Identifying images with strong narrative potential: Select photographs that tell a compelling story or highlight the model's

unique features. These images can serve as powerful tools for presentations and publications.

- Tailoring photography for specific purposes (e.g., design exploration vs. external representation): Adjust lighting, composition, and focus based on the intended use of the photographs. For design exploration, emphasize details and textures, while for external representation, focus on the model's overall form and context.⁶
 - Setting clear expectations for photographic outcomes: Define the objectives of the photography session, including desired outcomes and deliverables. This clarity ensures that the photographs meet the specific needs of the project.⁷
 - Reflecting the project's culture and ethos through imagery: Ensure that the photographs align with the project's vision and values, conveying the intended message and aesthetic. This alignment reinforces the project's identity and purpose.⁸
 - Balancing a systematic database approach with a narrative-driven archive: While organizing photographs systematically for easy retrieval, also consider the narrative aspect of the images. This balance allows for both efficient access and storytelling. Additionally, ensure that post-processing is minimal to maintain the natural look of the model, with adjustments only for clarity and color balance.
- By integrating these considerations, architectural model photography can effectively capture both the technical and conceptual aspects of the design, while supporting a broader narrative of the project's development.





Upon completing the Euston Tower model, I spent time with 3XN team carefully photographing it, emphasizing the use of light and composition to capture pivotal moments in the design. The objective was to enhance the model's aesthetic appeal while creating intrigue around the architectural features and spatial qualities of the building. We selected and compiled the images into a PDF that we share with the project team, using the Photography shortlist technique to organise and filter images for further use. Images taken by Celeste Raanoja, 2023

8

Forms/Questionnaires

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The Threshold of Description Questionnaire is designed to guide architects, designers, and stakeholders in evaluating the significance of physical models within their projects or collections. By posing targeted questions, this form highlights a model's contributions, whether in design performance, stakeholder communication, technological innovation, or cultural legacy. Using a straightforward Yes/No system, models that meet key criteria ("Yes") are flagged for further elaboration. This ensures essential details are captured, supporting thoughtful decision-making about preservation and documentation.

The Archival Form provides a comprehensive framework for documenting architectural models, capturing key details such as purpose, materials, scale, and cultural significance. This form creates a structured record that facilitates the management, maintenance, and showcasing of model collections. It ensures each model's story, technical specifics, and role in the design process are preserved for future reference, aiding both historical and educational purposes. By including fields for physical attributes, protective measures, and contextual information, the form enhances model management and long-term usability while supporting knowledge sharing and digital integration.

The Photography Shortlist is a practical tool for selecting, organizing, and prioritizing images of models for various purposes. By categorizing photographs based on their intended audience and application, this form helps architects and model-makers create a cohesive and purposeful visual archive. It emphasizes the importance of visual documentation in capturing a model's context, materiality, and narrative, ensuring that photography supports collaboration, storytelling, and the broader appreciation of architectural innovation.

Determining What Should Be Included and Why.

The following questions should be answered with Yes/NO. Yes answers require further descriptions and information to be included with the Model archive. Architectural firms could use this to determine if a model holds enough value to be included in an archive and why.

Goals:
Identify the intrinsic and extrinsic value of physical models in architectural practice.
Encourage deeper reflection on how models serve design, communication, and education.
Support the creation of an accessible archive that preserves architectural heritage and informs future practice.
Provide a framework for assessing models' impact on design excellence and broader cultural, technological, or historical significance.

Did the model serve a specific function related to design performance or excellence?

Did the model serve a specific function in exploring design options or experimentations?

Did the model serve a specific function in exploring design options or experimentations?

What the model used for a significant meeting for various stakeholders?

Was the model used to communicate and test various collective ideas?

Was the model used to communicate ideas to a broader audience?

Does the model represent an Architectural firm's legacy or important contribution to Australian Architecture?

Does the model represent a specific typology in Australia Architecture?

Did the model provide for hands on learning experience?

Does the model encompass problem solving abilities?

Was the model used to educate the public in an exhibition?
Were there significant technologies used to produce the physical model?

Does the model showcase significant Architectural advancements of the time?

Does the model have a specific cultural importance?

Is the model a representation of creative art or exceptional craftsmanship?

Does the model have significant market value?

Was the investment in the model significant?

Did the model serve a specific function? (Used at a design review Panel (DRP or similar?)

Does the model provide for a major decision to be discussed or made?

Did the model respond to a budget in an interesting way?

Does the model represent Environmentally friendly resources?

Was the model apart of a significant exhibition?

Was the model made by a significant group of people working together?

Does the model excel in areas of collaboration?

Does the model utilize specific technologies that are leading edge?

Archival Form

Model Identification

Project Name and Number: [Insert project name and number]
Scale: [Insert scale]
Date Documented: [Insert date]
Date of Model Construction: [Insert date]
Model Team: [Insert names or roles]
Architectural Team: [Insert names or roles]

Significance of Records

Why are these records important or of interest?
[Provide explanation]

Model Details

Scale: [Insert scale, e.g., 1:200]
Model Dimensions: Length, Width, Height:
Protective Case: [Yes/No]
Transportation/Freight Box: [Yes/No]
Value of Model: [Insert value]
Hours Spent on Model: [Insert hours]
Model Type: [e.g., Presentation, Sketch, Exhibition]

Materials Used; List of materials used in the model construction:

Foam, MDF, Timber venee, Stainless steel, 3D printing, Trees, Card, Plastic, Acrylic, Plaster, Other: [Specify]

Include any notes or specifics about the materials: [Insert details]

Colors

Identify any important colors used in the model:
Color: [Insert color]
Use: [Describe how it is used]
Notes: [Provide additional notes]

Purpose of the Model

Why was this model created? [Insert purpose]
Type: [e.g., Process, DD, Presentation, Competition, Exhibition]
Purpose/Notes: [Provide additional details]

Digital Copies and Replicability

Is there a digital copy of this model? [Yes/No]
Can this model be easily replicated using digital technology?
If yes, describe how, and include the file location or print data:

Collection Information:

Quantity of models in the collection: [Insert number and details]

Key Decisions

Document any pivotal decisions associated with the model's creation or use:
Date: [Insert date]
Requested By: [Insert name or role]
Action/Outcome: [Describe the action or outcome]

Photography Shortlist

This shortlist is divided into five categories, each tailored to meet specific needs:

1.General Shortlist; 25 Images

A comprehensive collection of approximately 25 images, showcasing the model in various lighting conditions, backdrops, and stages of completion.

Focus: High-quality images that narrate the design process and architecture effectively, with varied views and angles that emphasize craftsmanship and architectural intent.

2.Internal Sharing

Purpose: A curated set of approximately 15 images for internal communication and resource-sharing across teams, both locally and internationally.

Focus: Cohesive selections that highlight process and finished views while reducing redundancy, such as choosing single standout images for specific techniques or stages.

3. Public Shortlist

Purpose: A selection of approximately 20 images tailored for external marketing and public platforms, including websites and social media.

Focus: Visually engaging shots suited for public consumption, such as standard elevations, construction techniques, and interaction moments. Adjustments may be needed based on platform-specific guidelines (e.g., Instagram prioritizing finished compositions over process images).

4.Top 5 Images

Purpose: A highly refined set of five images capturing broad and intimate moments of the model and its architecture.

Focus: Iconic shots suitable for print or display, providing an enduring visual record of the project and showcasing the model's

artistry.

5.Top Image

Purpose: The single, standout image that represents the model at its best.

Focus: An image that embodies the essence of the model and its design narrative, suitable for archival, marketing, or presentation purposes.

This shortlist system promotes efficiency in organizing and ranking images while ensuring that they are versatile and impactful across multiple applications. By following this framework, teams can create a cohesive photographic archive that celebrates their models and supports both internal and public engagement.

5

Challenges And Opportunities

Architectural firms face significant challenges in managing and preserving collections of physical models. One major issue is the dual challenge of preservation and future needs: firms must balance preserving historical records with anticipating future archival requirements. As models accumulate, determining which artifacts hold lasting cultural or historical value can be difficult. This dilemma is compounded by the lack of time and resources for evaluation, as many firms lack the personnel or infrastructure to assess and document models when they are created. Consequently, models often deteriorate in storage, losing critical context. Perceived value and obsolescence further complicate this, as models are often discarded after serving their immediate purpose, particularly if new materials or technologies render them outdated. Storage itself poses challenges as well: storage constraints and deterioration result in models being poorly protected from environmental damage, and larger or more fragile models are especially vulnerable. Digital archiving offers a solution, but the challenges in digital transition involve risks of losing the tactile qualities of models, essential for architectural understanding. Confidentiality and privacy concerns also limit the sharing of models, as firms hesitate to expose intellectual property or confidential client designs. Finally, the omissions in online content where physical models are often overlooked in favor of digital renders or photographs, further marginalize their role in architectural representation.

Despite these challenges, there are numerous opportunities to archive and promote architectural models, ensuring their long-term value. Gallery exhibitions and public engagement are powerful ways to expose architectural models to a broader audience, helping the public appreciate their cultural, technical, and historical significance. Curated exhibitions can deepen connections between architecture and society, illustrating how models communicate complex design ideas. Collaborations between museums and architectural firms offer further opportunities, enabling firms to showcase models

within a larger cultural and historical narrative while ensuring preservation. Digital archiving and virtual galleries create access to models globally, overcoming physical storage limitations and increasing their visibility. Integrating architectural models into educational programs ensures their continued relevance, while also fostering a new generation of curators and archivists who specialize in model preservation. Viewing models as cultural heritage assets elevates their status and provides opportunities for their protection through grants and heritage programs. Archiving models also allows architects to reflect on their design evolution, offering valuable insights for future projects. With the rise of social media visibility, architectural firms can now showcase their models globally, engaging with a wider audience and sharing the stories behind their creation. Finally, galleries as curatorial spaces can not only preserve models but also enrich their cultural context, offering exhibitions that explore the role of models in architectural history and design development.

In conclusion, the preservation of architectural models presents both significant challenges and exciting opportunities. Issues like storage limitations, lack of resources, and the marginalization of models in digital media must be addressed. However, through collaborations, digital archiving, educational initiatives, and curatorial efforts, models can be re-envisioned as cultural artifacts, not just design tools. By embracing these opportunities, the architectural community can ensure that the history, value, and impact of models are preserved for future generations, enriching both the profession and the public's understanding of architectural practice.

Challenges in Archiving Architectural Models
Dual Challenges of Preservation and Future Needs
Lack of Time and Resources for Evaluation
Perceived Value and Obsolescence
Storage Constraints and Deterioration
Challenges in Digital Transition
Confidentiality and Privacy Concerns
Omissions in Online Content

Opportunities in Archiving Architectural Models
Gallery Exhibitions and Public Engagement
Collaborations Between Museums and Architectural Firms
Digital Archiving and Virtual Galleries
Integration with Educational Programs
Model-Making as Cultural Heritage
Enriching Design Practice Through Reflection
Enhancing Social Media Visibility
Gallery as a Site for Curatorial Enrichment

View through the 3XN Model making workshop, highlighting its close proximity to the architectural office. Image take by Celeste Raanoja, 2023



6.1

Journal notes:
Foster and Partners

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Historically, Foster and Partners focused on archiving drawings and photographs, but in the past 3–5 years (early 2000s), they have expanded to include the documentation and archiving of models. Their Online archiving system has undergone changes to accommodate these new practices, reflecting the firm's dynamic workflow.

Workshop and Studio Space:

The firm operates a hands-on workshop in a relatively small 20x10m studio space. The workshop features softer machines for quick studies, and architects are encouraged to engage with the space for creative experimentation. The photography studio plays a crucial role in documenting their models. Both internal and external photographers are invited to capture the key aspects of a project, focusing on access, context, and the materiality of the models. The photography process is integral in documenting design iterations, as seen during my time at Foster and Partners. They utilize a specialized jig in their in-house photographic studio to photograph massing design options for urban layouts, capturing various angles to create a comprehensive visual record of the design evolution. The process of photographing these massing options is notably faster than replicating the same designs digitally, underscoring photography's efficiency in documenting iterative design changes. This approach highlights how photography serves not only as a means of documentation but also as a tool for design exploration. While they once took models into natural light for photography to evoke realism, the increasing sophistication of renderings has led to a reduced reliance on physical models for this purpose.

Value of Models:

Models hold an intrinsic honesty in design that sometimes gets lost in digital renderings. Despite the trend of relying less on

Byera Hadley Travelling Scholarships Journal Series

physical models for representation, the firm sees greater potential in celebrating models for what they are—tangible objects that communicate design intent.

Clients often request models to help with understanding projects, and the firm has long valued the role of models in their design process.

Foster and Partners pioneered the integration of model making into their creative workflow, being the first to combine a workshop with office spaces.

Challenges in Model Management:

As the firm has grown, so has the complexity of managing their models. With over 18,000 employees, including large teams focused on specialized areas, tracking models across multiple projects has become increasingly difficult.

The firm stores models in various locations: on-site storage facilities, an external facility, a salt mine, and within the office. However, the exponential growth in their collection has led to questions about what to keep and why.

Models are cataloged and uploaded to project folders, with a keyword-based search system to assist in retrieval (e.g., "1:500 residential model"). However, the system is somewhat underutilized and could benefit from improvement.

Model Storage and Exhibitions:

Foster and Partners have over 3,000 models in storage. When models are archived, they are bar-coded for easier identification. These models primarily represent sketch or iterative designs that hold historical value for the firm's design process. The trend within the firm is to keep all models, with each having some form of value or relevance. However, with storage spaces filling up, they are beginning to ask harder questions about what is worth preserving.

Most models on display are part of active projects or serve as

presentation models. Many are also loaned out to exhibitions around the world, which makes it difficult to track their physical location at any given time.

They practice a review system (2, 5, 10 years) to assess the continued relevance of their models.

Materials and Technology in Model Making:

The firm uses a variety of materials for their models, including lime-wood, yellow cedar, foam, and recyclable materials for quick, adaptable models.

Advanced machinery is employed, including:

Proxon (for CNC metal and acrylic), M8 Cube (for milling accuracy), and Roland (adapted for various tasks).

3D printers (FDM, SLS, SLA) and laser cutters are also integral to the model-making process.

A key focus is on portability; models are typically designed to fit within the dimensions of a 32kg checked luggage module (approximately 750mm x 1900mm x 650mm), which fills the negative spaces between work areas.

Workshops and Collaborative Space:

Foster and Partners have a dedicated "sketch model" studio with an open-door policy for architects. This collaborative space is equipped with various machines (3D printers, foam cutters, laser cutters) and overseen by a team that supports and maintains the equipment.

In addition to the model-making space, there is a visualization team and a product prototyping team, creating a collaborative environment where models are constantly evolving.

Conclusion:

While the firm continues to innovate and integrate technology into their design and model-making process, they face ongoing

challenges in managing the sheer volume of models produced. The value of physical models remains central to Foster and Partners' creative ethos, even as digital tools increasingly supplement their work. However, as they confront limited storage space and a growing archive, the firm is forced to rethink their archiving strategy, placing greater emphasis on what to keep and how to preserve their design legacy.

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6.2

Journal notes: 3XN 8th May 2023.

Blue-Skye Spence, Head of Model Workshop.

Purpose: To explore the role of architectural models within the firm, their evolving techniques, and the archival system in place.

Overview:

Copenhagen is home to a diverse range of architectural practices, with 3XN standing out for its rich model-making culture. The firm has cultivated an approach that integrates model creation into their daily workflow, bridging the gap between digital design and physical representation. Models have been pivotal to their design process, reflecting the firm's cultural approach to architecture.

Key Insights:

Cultural Context and Role of Models:

3XN has a dedicated model-making workshop directly adjacent to their main computer space, ensuring a close relationship between digital and physical processes. This integration of hands-on work and digital design fosters innovation and creative exploration.

Architectural models have played a central role in the firm's design methodology. Over time, the types and techniques of models created have evolved, reflecting advancements in technology and shifts in the firm's approach to design.

On my visits in 2023 and prior, the office exuded a deep appreciation for architectural models. The firm's rich history in model making is showcased throughout the office, where hundreds of models are displayed on multi-level shelves, surrounding workstations and scattered across architects' desks. These models represent not only the firm's past projects but also their ongoing creative process.

Current Model-Making Team and Techniques:

The model-making team comprises three full-time staff members and a rotating group of interns from the nearby architectural school.

At the time of my visit, the team was primarily focused on creating presentation models. They were finishing the 1:250 scale model for the Euston project, which was set to be sent to London for a presentation. This was the 18th model made for this project alone. The construction techniques used by the team have evolved over time, though they remain rooted in methods developed by past colleagues. For instance, the Euston models marked a departure from their usual approach by testing a new construction method based on a comb structure running from the ground to the roof, rather than the typical floor-to-floor method.

The team also prototyped the building's facade, experimenting with different banding expressions. The horizontal banding was shifted to a vertical alignment to more accurately represent the building's final appearance.

Tools and Technology:

The studio is equipped with several FDM 3D printers, a knife cutter, a foam cutter, a Roland CNC machine, and a spray booth. The team uses these tools to create highly detailed models that capture various aspects of the design.

Digital files for model preparation are typically created in Rhino, ensuring precise output for both the physical models and any digital rendering.

Archival System and Model Storage:

3XN has a detailed filing system for their models, organized and archived in a spreadsheet with corresponding images. This system tracks the evolution of individual models, including variations made for different stages of a project.

A key challenge for the firm, as an international practice, is the "location" of their models. When a project is located in another country, models are generally shipped to that location and stored in the office there. The record of these models in Copenhagen is maintained through folder images, making it difficult to track models that are not physically present in the studio.

Over the years, the firm has made significant decisions about what models to keep. A large "throw out" occurred in the past, during which disheveled, damaged, or unrepairable models were discarded. Sketch models, once mounted on presentation boards, are now rarely made.

Iteration and Experimentation:

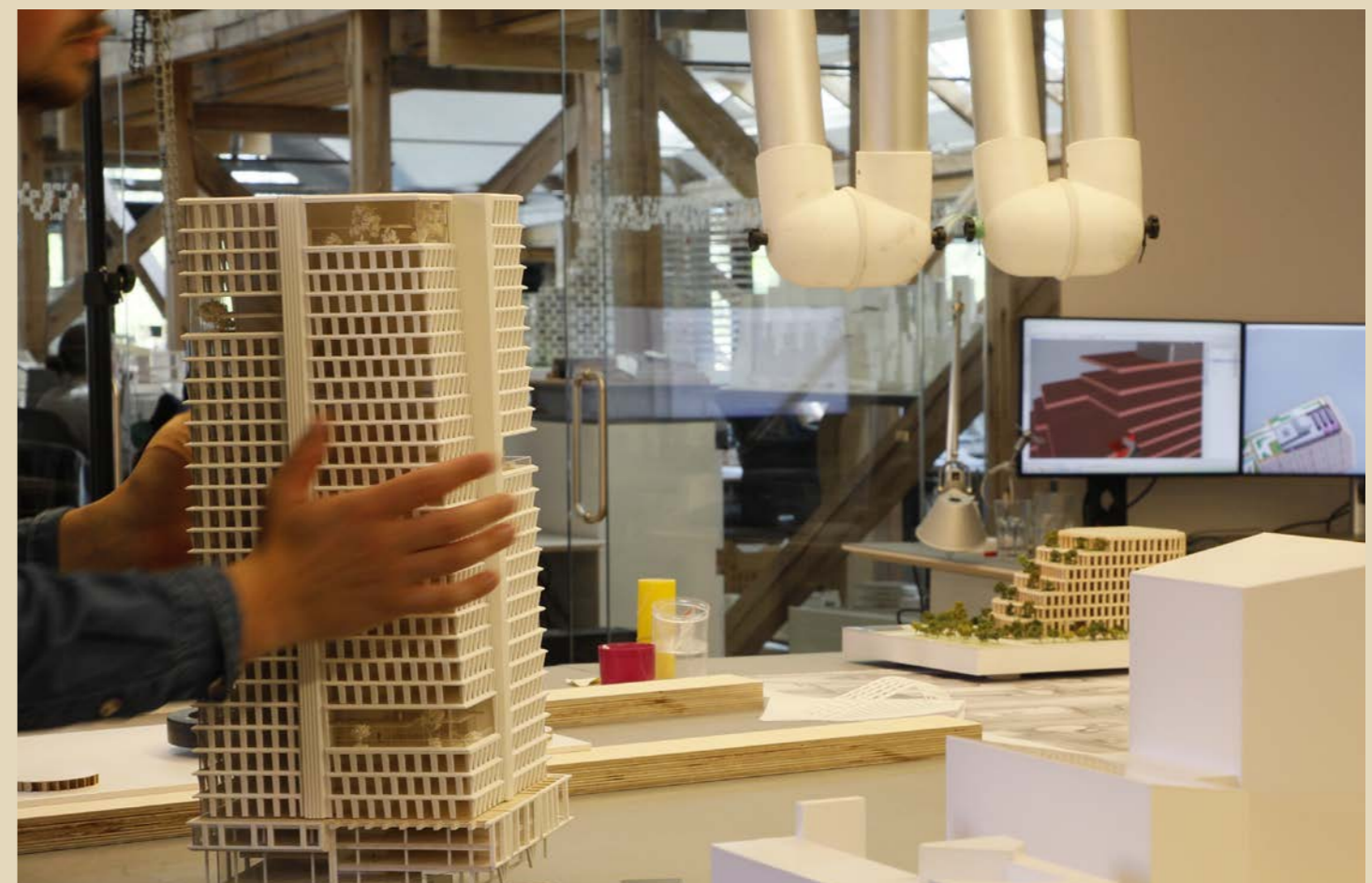
The Euston project exemplifies the firm's approach to iterative model making. The team explored various design aspects through multiple iterations, including wind studies, podium studies, plaster models, competition models, and final presentation models. This progression of ideas and techniques vividly illustrates the evolution of the building's design.

Each iteration was documented with images, allowing the team to track the development of ideas and concepts through their physical models.

Conclusion:

The model-making process at 3XN is integral to their design culture, playing a crucial role in visualizing and evolving architectural ideas. The firm's commitment to physical models has remained steadfast, even as digital tools have grown in prominence.

While the firm has adopted advanced technology and digital tools in their workflow, the hands-on approach to model making remains a core part of their creative process. The archival system, while detailed, is challenged by the international nature of their work, highlighting the need for ongoing improvements in tracking and storing models across various locations.



6.3

Journal note: David Chipperfield Architects

their models, there has been a noticeable shift towards greater use of 3D design technologies post-COVID. This has enabled the firm to streamline their model-making process and create more precise representations of their concepts.

However, despite this shift, they continue to emphasize the physicality of models in their design workflow. Models are still a key tool for expressing the core ideas of a project, even as digital design tools become more integrated into the process.

Level of Abstraction and Detail:

Chipperfield's models tend to use a level of abstraction, avoiding excessive detail. This allows the models to communicate the essence of a design without getting bogged down in minutiae.

The amount of detail in a model often depends on the client and the project type. For example, interior fit-outs for clients in Milan require high levels of detail, while other projects may be more abstract or conceptual in nature.

The firm balances the level of detail by working closely with clients to assess what is necessary for the model. The team evaluates what is needed to communicate the key ideas of the project versus what would be excessive.

Photography and Documentation:

The firm recognizes the importance of photography in documenting their models, and they have established photo rules and guidelines for capturing the models in a way that best represents the project. Basic considerations include: lighting conditions, identifying what parts of the process need to be recorded, and determining the best approach for capturing the models.

The goal is to provide a record that supports the design process and the broader studio culture, while also ensuring the models reflect the "spirit of a place" and communicate the narrative of both past and present projects.

Studio Culture and Model-Making Team:

The model-making team is composed of two core individuals: One team member has over 13 years of experience as a cabinet maker, which brings a deep understanding of materials and craftsmanship to the model-making process.

The other team member, Aora, has a background as a casting sculptor in metals, which influences their approach to designing and crafting models, particularly in terms of texture, form, and materiality.

This combination of craftsmanship and sculptural influences gives the models a unique quality, where materials like jasmonite are often used to create realistic textures and finishes.

Designing Models through Collaboration:

Model design at David Chipperfield Architects is a collaborative process, driven by discussions between the model makers and the architects. The team evaluates what is necessary for the model and how best to represent the design ideas.

The decision-making process is focused on balance: What should be shown and what can be left out. The team believes that the most successful models are those that communicate the essential ideas clearly and succinctly, without overloading the viewer with unnecessary details.

Current Projects:

One of the firm's notable ongoing projects is Dairy Road in Canberra, Australia. This project highlights their continued commitment to high-quality design and model-making, with a focus on the specifics of the local context and the client's needs.

David Chipperfield
19th May, 1-5 Vyner St, Top Floor, E2 9DG with Ricardo Alvarez

Purpose: To explore the current archival practices, model-making approach, and philosophy at David Chipperfield's offices.

Key Insights:

Archival System:

The office has a structured archival system in place for their models. The system tracks various important aspects, including:

Type of models: Purpose-built models, designed to suit specific project needs.

Cost: Models are evaluated based on their purpose and the resources required for creation.

Insurance: Models are insured as valuable assets of the firm, particularly for exhibitions or high-profile clients.

Price Tag & Evaluation: Each model is assessed for its value in terms of both production cost and its significance to the project.

Measurement & Documentation: Models are carefully measured and documented, ensuring that each one reflects the precision and conceptual intent of the design.

Design and Craftsmanship:

David Chipperfield Architects favors a "handmade" and "raw" style in their model-making process. The firm's models reflect the tactile, organic nature of their designs, with a focus on craftsmanship and attention to detail.

The team creates purpose-built models, each tailored to the specific needs of the project. This approach emphasizes the individuality of each design and the importance of physical representation in the architectural process.

Shift to 3D Design Post-COVID:

While the firm traditionally focused on materials and concepts in

6.5

Journal notes: Dr David Lund; The Thorpe Collection

The Thorpe Collection; Arts University Bournemouth
Monday 15th May, 2023, Dr David Lund; Senior Lecturer BA
(Hons) Modelmaking & BA (Hons) Design and Research Ethics
Advisor, School of Design and Architecture

On May 15, 2023, I had the opportunity to meet with David Thorpe to discuss the significance of the Thorpe Collection and the culture of architectural model making in London. The conversation provided valuable insights into the history and current state of architectural model making, particularly in the context of the Thorpe Archive, one of the oldest and most important collections in the UK.

Key Insights from our discussion:

Model Making in Britain: A Historical Context

The profession of architectural model making began in Britain, with educational roots emerging in the 1960s. By the late 1990s, diploma programs that once focused on model making evolved into degree programs, marking a shift in the profession's development. This change led to the emergence of many commercial model making practices, contributing significantly to the global industry today. According to Thorpe, there are now approximately 30-40 architectural practices in London that have in-house model makers, supported by around 50 commercial model making companies.

The Thorpe Archive: A Historical Resource

Housed at the Arts University Bournemouth (AUB), the Thorpe Archive is a testament to the origins of architectural model making as a professional practice. Founded by John Thorp in 1883, the archive holds over 65,000 items, including payrolls, marketing materials, and model-making information. This archive chronicles the development of model making as a craft and its influence on shaping the architectural profession.

The Role of Models in Architectural Communication

David Thorpe shared how the function and representation of models evolved in architectural practice. In the 1960s, models were often used to convey avant-garde ideas and engage the public,

such as the Sea City proposal, which served as a prototype for experimental urban projects. As models became more abstract in the 1980s, they transitioned from public communication tools to design development aids, with presentation models becoming more polished and realistic.

Preserving the Physical Model: The Dangers of Digital-Only Archives

Thorpe expressed concerns about relying solely on digital archives, highlighting that while they can preserve the visual representation of models, they lack the physicality that gives models their unique significance. The Thorpe Collection prioritizes the preservation of physical models, believing they offer a more authentic connection to the past and provide insights into the materials, techniques, and time invested in their creation.

The Value of Photographic Documentation

Thorpe emphasized the importance of high-quality photographic documentation in preserving architectural models. Photos capture more than just visual aesthetics—they convey details such as scale, materials, and the period in which the model was made, offering invaluable insights into the design and creation process.

The Future of Architectural Model Making

Looking ahead, Lund stressed the need to document the process of model making itself. While the role of models in design and communication has been extensively analyzed, the methods and processes involved in their creation remain undocumented. He encouraged efforts to capture this part of architectural history, stressing that model making is integral to the profession.

Summary of Key Points:

The Thorpe Archive is a vital historical resource, offering a detailed view into the evolution of architectural model making.

David Thorpe's insights reinforce the importance of physical models in both architectural practice and their preservation.

Thorpe advocates for prioritizing physical models alongside digital archives to maintain the tactile, authentic nature of these objects. Photographic documentation plays a crucial role in capturing the craftsmanship and context of architectural models.

The future of architectural model making will benefit from documenting the processes behind creating models, ensuring that this integral aspect of architectural practice is preserved.

Key Questions for Future Consideration:

How can digital archives be enhanced to preserve the tactile significance of physical architectural models?

What are the best methods for documenting the processes involved in architectural model making?

How can the preservation and sharing of architectural models be improved through collaborations between institutions, architects, and model makers?

In what ways can architectural model makers and archivists collaborate to ensure the long-term preservation of both physical models and their documentation?

6.4

Journal note: DAM (Deutsches Architekturmuseum Frankfurt) Architectural Archival Institutions

Date of Tour: 5th May 2023, with Wolfgang Welker

The purpose of my visit to the Deutsches Architektur Museum (DAM) was to understand how the museum values, collects, archives, and uses its collection of architectural models. I aimed to gain insights into the processes of acquiring, preserving, and showcasing these models, as well as the challenges and strategies involved in maintaining a vast collection that represents architectural history.

Key Insights:

Historical Context and Founding Vision: Heinrich Klots, the founding director of DAM, argued that architectural models were often seen as mere stand-ins for the real thing, which contributed to their undervaluation in museums. In 1969, he proposed a shift in the perception of architectural models, seeing them as objects with their own history. Klots initiated the collection to preserve not only drawings and plans but also models, considering them the most significant records of a building's evolution. This vision has resulted in one of the world's largest architectural model collections, with over 1,240 models from 419 architects across 25 countries by 2012.

Collection and Storage: The DAM's collection of over 1,800 models is housed in a fragmented, older commercial building, providing a dynamic, living environment for the models. The museum does not solely function as a storage space, but as a continually evolving archive. Models are stored in rolling storage containers, shelves, and protective cases, and each model is carefully cataloged with detailed information. The models are displayed in an informal manner, often in areas where they might be moved or recently acquired, reflecting the constant flow of new additions and departures.

Acquisition Strategy: The museum's acquisitions strategy initially relied on donations and purchases, often facilitated through Klots' network of friends, including famous architects like Mies van der Rohe. Over time, the collection has expanded internationally,

boasting works from some of the most influential architects. As other museums and institutions began collecting architectural models, the competition for acquiring significant models increased, raising prices and making models harder to obtain. This trend continues today, as architectural firms are increasingly managing their own internal collections.

Curatorial Approach and Exhibitions: DAM regularly collaborates with universities for exhibitions, such as those on "Tiny Houses" or "Brutalism," where students create models exploring architectural history. While some of these student works have entered the collection, today the museum is more selective in what it adds. The curatorial approach is focused on highlighting historically significant projects or unique architectural ideas, rather than just showcasing models for their aesthetic value.

Digitization and Archiving: DAM has digitized over 1,800 models, which are available in an Online archive. The digitization process is primarily conducted through photographs taken by the photographer Uwe Dettmer or the in-house team. Despite this, the museum expresses concerns about solely relying on digital archiving. They acknowledge the potential risks of server crashes and file loss. The museum's physical tracking system is manually organized, with printed sheets detailing the model's name, materials, date of creation, and accompanying image. This manual system of archiving highlights the challenges faced by institutions in tracking and documenting vast collections.

Preservation Concerns and Future Directions: The DAM faces significant challenges in preserving physical models, particularly those made with materials like PLA, which can degrade over time when exposed to humidity and sunlight. The museum has also explored 3D scanning as a means of digital preservation, but the results have not always been successful. The museum is considering the possibility of acquiring digital models in the future

but recognizes the challenges involved, including software, storage, and effective communication with the public about these models.

Physical Models in Context: The value of physical models is recognized not only for their visual impact but also for their role in telling the story of architectural ideas. Models serve as tangible representations of concepts and provide a direct connection to the design process. DAM's collection showcases a variety of materials and scales, from wood and plastic to metal, plaster, and paper. However, there does not seem to be a specific regional or cultural style tied to the models in the collection. The collection is globally representative of architectural practices and techniques from different periods and locations.

Challenges of Archiving and Information Gaps: One of the challenges DAM faces in its archiving process is the lack of information surrounding the creation of the models and the design decisions made. The museum has expressed interest in incorporating more backstory and context into the archives, such as information about why specific models were made, their purpose, and the process behind their creation. This would add depth and narrative to the collection, beyond just the physical qualities of the models.

Summary of Key Points:

The DAM collection offers a comprehensive look at the evolution of architectural models, with a focus on significant historical works and internationally recognized architects.

The museum's approach to acquisitions, preservation, and exhibitions emphasizes the importance of physical models in understanding architectural ideas and their evolution.

Digitization is an ongoing effort, but the museum remains committed to maintaining the physical integrity of its models and improving its archival practices.

While the DAM's collection is vast, the museum continues to refine its strategies for acquisition, digitization, and archiving to ensure the continued preservation of architectural history for future generations.

Key Questions for Future Consideration:

How can museums and architectural firms collaborate to ensure the preservation and documentation of significant architectural models?

What are the benefits and challenges of maintaining both physical and digital archives?

How can more information about the creative process behind architectural models be incorporated into archives to provide a richer historical context?

Can architects implement in-house archival systems that improve the long-term preservation and accessibility of their models?





6.6

Journal notes: DAC Danish Architecture Centre

Date of Visit; 8th May, 2023

The Danish Architecture Centre (DAC) plays a crucial role in fostering an appreciation for architectural physical models by providing a curated, accessible space where these models can be experienced by a broad audience. My visit aimed to understand how DAC curates, preserves, and displays architectural models to enhance public engagement with architecture, highlighting the importance of physical models in communicating design ideas and cultural narratives.

Key Insights:

The Role of Physical Models in Architectural Communication

DAC highlights the significance of physical models not only as tools in the architectural design process but also as cultural artifacts that encapsulate the evolution of architectural ideas, materials, and techniques. By displaying models in a museum setting, DAC allows the public to engage with architectural concepts beyond the limitations of two-dimensional plans or digital renderings.

Preservation and Documentation

The exhibition of physical models ensures their preservation as important cultural and historical objects. Models created for specific projects or competitions often represent unique moments in architectural history. DAC protects and documents these models, maintaining their legacy and allowing future generations to appreciate the craftsmanship and creativity behind them.

Tactile Experience and Public Engagement

Physical models provide an immersive experience for visitors, enabling them to appreciate scale, form, texture, and materiality in ways that digital or drawn representations cannot. The tactile nature of models allows the audience to engage with the built environment on a deeper level, fostering a greater understanding of the architectural process and the details often hidden in digital media.

Contextualizing Models within Architectural Narratives

The curated presentation of physical models at DAC offers a larger narrative context, framing them as part of a broader conversation about design, culture, and society. These models are not only viewed as standalone objects but also as storytelling devices, each telling the story of a building or design process. By showcasing the cultural, social, and technical influences behind these models, DAC enriches the public's understanding of architecture.

Sparking Public Curiosity and Engagement

The exhibition of architectural models sparks curiosity and public engagement. Visitors gain a deeper understanding of the challenges architects face and the iterative nature of design. The direct interaction with models provides invaluable insight into the tangible aspects of architectural work, helping both professionals and enthusiasts appreciate the significance of physical representation in the design process.

The Museum as a Platform for Architectural Dialogue

By housing and showcasing architectural models in a thoughtfully designed museum, DAC promotes the appreciation of architectural craftsmanship. The institution ensures that these models are celebrated as integral components of the architectural dialogue, fostering a lasting connection between past, present, and future design practices.

Summary of Key Points:

DAC serves as a vital platform for engaging the public with architectural physical models, offering insights into design, culture, and history.

The museum environment preserves models as important cultural objects while highlighting their tactile and narrative qualities.

Physical models allow visitors to appreciate the scale, materials, and craftsmanship involved in architectural work in ways that digital representations cannot.

The curated presentation of models sparks curiosity and provides a valuable opportunity for public engagement, offering deeper understanding of the architectural process.

DAC fosters an ongoing conversation about architecture by framing models within broader cultural, social, and historical narratives.

Key Questions for Future Consideration:

How can institutions collaborate with DAC to create a network of resources and expertise for promoting the appreciation, documentation, and preservation of architectural models?

What innovative approaches can be employed to ensure the long-term preservation and accessibility of physical architectural models in museum environments?

How can digital tools—such as augmented reality, virtual tours, or interactive media—be effectively integrated with physical models to enrich storytelling and engagement, while preserving the tactile and material qualities that make models unique?

What curatorial practices best showcase architectural models in a way that highlights their role as both artistic objects and functional tools, reflecting the design processes, cultural influences, and societal impacts they represent?

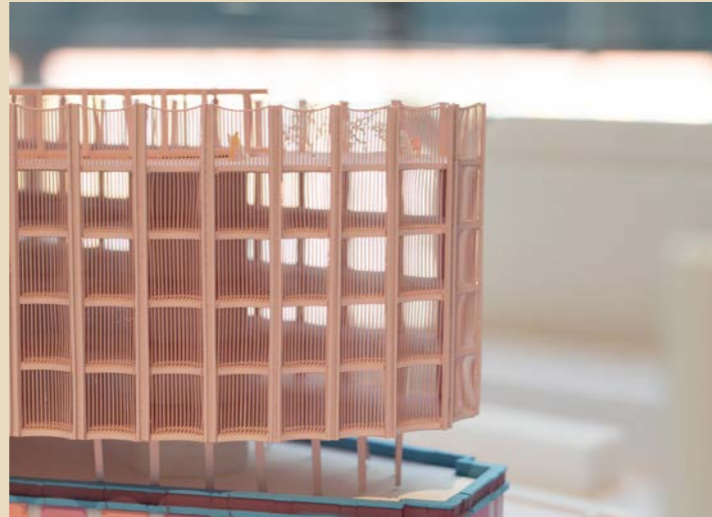
How can museums like DAC design exhibitions that engage diverse audiences, from professionals and students to the general public, while maintaining a focus on the educational and cultural significance of architectural models?

What lessons can be drawn from DAC's exhibition strategies to inform the curation and presentation of architectural models in other institutions worldwide?

Danish Architecture Centre. Image taken by Celeste Raanoja 2023



Danish Architecture Centre, Image taken by Celeste Raanoja 2023



The Design Centre for Architecture, Image taken by Celeste Raanoja 2023



6.7

Journal note: The Design Centre for Architecture, Frankfurt

Date of Tour: 5th May 2023, with Wolfgang Welker

The Design Center for Architecture in Frankfurt offers a rich and insightful view into the city's architectural history, especially through its extensive collection of historical models. These models capture key moments in Frankfurt's development, providing a tangible connection to the city's past and the transformation it has undergone, particularly during pivotal historical events. The center's exhibitions highlight the role of models in shaping the city's architectural evolution and public perception.

Purpose:

The purpose of my visit to the Design Center for Architecture was to explore how the museum preserves and presents historical architectural models that have played a role in documenting, shaping, and influencing the development of Frankfurt. I sought to understand the relationship between the models and the city's transformation, how they reflect changes in architectural design, and how they contribute to both historical documentation and public engagement with the city's evolving identity.

Key Insights:

1. The Old Town Model by the Treuner Brothers

One of the museum's most notable exhibits is the Old Town Model, created by the Treuner Brothers between the 13th and 14th centuries. This model is a key representation of medieval Frankfurt, documenting one of the largest medieval towns in Germany before it was largely destroyed in 1944. Originally commissioned by the Historical Museum Commission in the 1920s, this model highlights both the city's architectural features and its transformation over time.

2. The Destruction Model

Another striking piece is "The Destruction Model," created in 1946 to depict the almost complete obliteration of the Old Town during World War II. This model was designed not only as a tool for historical documentation but also as a persuasive tool to shape public opinion about the necessity of modernizing and redeveloping the area. The

exaggerated portrayal of damage contrasted sharply with actual images of the destruction, showcasing how models can influence perceptions of urban change.

3. 3D City Map by Matthaus Merian

The museum also houses a meticulously recreated 3D city map of Frankfurt by Matthaus Merian the Elder, created in 1628. This model, which took over 1,400 hours to complete, offers a detailed look at the city's layout and development over time, serving as both a historical artifact and an educational tool for understanding the city's evolution.

4. St. Leonard's Church Model

A faithful reconstruction of St. Leonard's Church, based on research by Guido Schoenberger, illustrates the historical significance of Frankfurt's religious landmarks. This model allows visitors to trace the architectural development of one of the city's oldest and most important structures.

5. Frankfurt Kitchen Model

Of particular interest was the full-scale version of the Frankfurt Kitchen, designed by Margarete Schütte-Lihotzky in the 1920s and is one of the earliest examples of the modernist movement's interest in efficiency and functionality in domestic spaces. As the prototype for the modern kitchen, this model provided an insight into how functional design and space optimization influenced the everyday lives of the city's residents. The design of the Frankfurt Kitchen was based on principles of scientific management and industrial efficiency. Schütte-Lihotzky's innovation was to create a highly functional kitchen that minimized movement, using standardized dimensions and built-in cabinetry. It is considered a pioneering design in the history of modern kitchens and influenced kitchen design globally. The model on display provides a direct connection to the early modernist movement, where architects and designers sought to improve daily life by rethinking domestic spaces.

1. Opernturm Model

Another notable exhibit was a model of the Opernturm, the original site of Frankfurt's first tall office tower, the Zurich Tower. Built entirely from timber, this model is a reminder of the innovative architectural experimentation during the early 20th century, where materials and structural solutions were explored in the pursuit of new building typologies. This model was part of a broader trend in architecture at the time, where architects were beginning to explore the potential for skyscrapers in Europe.

Summary of Key Points:

- The Design Center for Architecture offers a comprehensive look at Frankfurt's architectural evolution through its diverse collection of historical models.
- Models serve not only as documentation but also as tools for shaping public perception and urban development.
- The models on display, such as the Old Town Model, the Destruction Model, and the Frankfurt Kitchen, provide insight into different periods of architectural history, design innovations, and the transformation of the city.
- These models are presented not just as historical artifacts but as integral components of Frankfurt's ongoing architectural narrative.

Key Questions for Future Consideration:

- How can museums and institutions like the Design Center for Architecture curate exhibitions that effectively communicate the historical and cultural value of architectural models?
- What strategies can curators use to organize and display architectural models to engage diverse audiences while highlighting their significance in urban transformation?
- In what ways does the presentation of models—such as scale, materiality, or context—impact their ability to convey architectural narratives to the public?

The Old Town Model by the Treuner Brothers, The Design Centre for Architecture, Image taken by Celeste Raanoja 2023



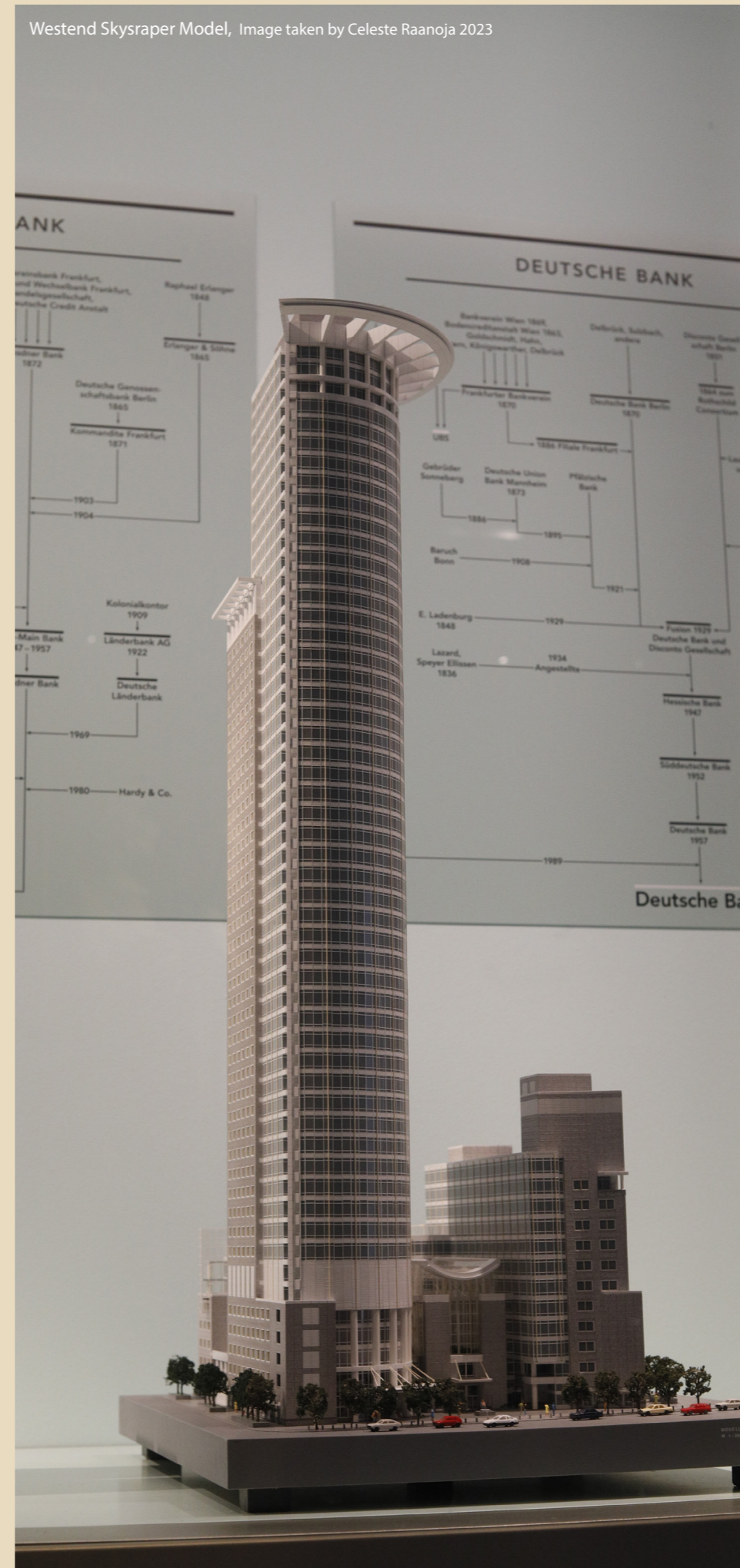
The Destruction Model The Design Centre for Architecture, Image taken by Celeste Raanoja 2023



UBS Skyscraper Model, Image taken by Celeste Raanoja 2023



Westend Skyscraper Model, Image taken by Celeste Raanoja 2023



- How can exhibitions balance the display of historical models with contemporary ones to create a dialogue between past and present architectural practices?
- What role do storytelling and interpretive elements play in enhancing the public's understanding of architectural models within an exhibition setting?
- How can institutions ensure that exhibitions are both informative and accessible while preserving the physical integrity of fragile or historical models?

Exploring the National Australian Archives Database: A Personal Experience.

The National Australian Archives database presents a classic interface, offering a variety of search tools to assist users. These include Basic Search, Advanced Search, Name Search, and Photo Search, each catering to different research needs. While the platform appears user-friendly at first glance, my experience revealed both strengths and challenges.

Search Functionality and Challenges

The keyword search tool was inconsistent in delivering relevant results. Specific queries, such as searching for images of architectural models, often required trial and error to yield meaningful results. Variations in terminology, including singular and plural forms, significantly impacted the outcome. For instance:

- "Architectural model" returned 15 results.
- "Architectural models" returned only 2 results.
- "Scale model" displayed 88 results.
- "Scale models" returned 3 results.
- "Small model" showed 11 results, 2 of which included images of the Sydney Opera House.

This variability highlighted the importance of experimenting with different keywords and their variations to uncover the full range of records.

Photos and Metadata

Finding photos of models proved particularly challenging. While such images do exist within the database, they are scattered across multiple search categories and often lack comprehensive metadata or detailed descriptions. This made it difficult to determine whether a record was relevant without opening and examining it individually. Observations and Suggestions for Improvement

1. Search Consistency: The search tool could benefit from improved indexing and synonym recognition to handle variations in terminology (e.g., singular vs. plural) more effectively.
2. Enhanced Metadata: Detailed descriptions and standardized tags for records would improve the discoverability of specific items, such as photos of architectural models.
3. Search Optimization: Introducing a "Did you mean?" feature or filters for related terms could simplify the user experience and reduce the need for repetitive searches.
4. Photo Access: Creating a dedicated category for architectural model photos or providing curated collections based on themes could make visual resources more accessible.

Conclusion

Despite the challenges, exploring the National Australian Archives database was insightful. It highlights the wealth of historical material available and the potential for deeper research with improved search functionalities. While the platform offers great value to researchers, further refinements to its search tools and metadata would enhance its usability and accessibility for specific

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About the author Celeste Raanoja



My name is Celeste Raanoja and I am a founder of the architectural model making company, Make Models, which I started with three other architects in 2013, in an effort to promote the power of physical fabrication in Australian design processes.

⁶² The path that led me to this career trajectory, and subsequent interest in this proposed research topic, started while I was a Bachelor of Design in Architecture student at UTS working with Collins and Turner on public and residential projects as well as extending myself to participate in competition work with Stephen Collier and Other Architects. This work often saw me engaging in model making, and my interest in art and representation always propelled me to passionately engage with physical making as a part of my student work and extracurricular pursuits.

While studying my Master of Architecture at UTS, I was fortunate enough to extend this passion further, by working within the Sydney University Design, Modelling and Fabrication Workshop (DMAF) as an assistant to fabrication projects for both staff and PHD academics. Over my three years here, I built a strong interest and respect for the design process, prototyping through physical craft and techniques of rapid fabrication, where I quickly became the operating technician of the faculty's CNC machine. This exposure to varied scales and methods of fabrication, from hand-made scale models, to 1:1 installation fabrications, to advanced digital fabrication techniques like robotic operation, formed the groundwork of varied passions that I explore in my work with Make Models day-to-day. After this I was fortunate enough to be able to extend my expertise in aiding fabrication for educational institutions, by simultaneously having a similar role for the University of New South Wales Faculty of Built Environment and have since prepared training guides and courses for both university's to aid their future staff.

After starting Make Models, the company had the pleasure of gaining local industry interest, from a market that appeared to crave architectural appreciation through material representations.

Byera Hadley Traveling Scholarships Journal Series

This has allowed us to work with some of the local and international firms we've long revered, and is the culmination of the passions I've pursued over the years

At Make Models, I proudly support the team as both a maker and project manager for several high profile/stake jobs with leading Australian and international architecture firms. This requires me to strategically lead and consult members of the team to create physical objects that clearly communicate the architectural outcomes of designs, whilst maintaining budgetary and time constraints. I play an active role in all facets of the business operations, taking a leading roles in client management and relations, staff management, finance, marketing, project management, machine operation and, of course, model making.

My most valued experiences are opportunities to engage with architects, to problem solve and supply model-making solutions to each specific and varied project brief. My joy is being able to come up with creative solutions that require multiple skills, that combine digital realms and physical skills as well as the craft of operating and using rapid prototyping machinery. Working within boundaries, effectively and efficiently without compromising on quality is the main aspiration of my work endeavours.

When not making models, I enjoy the challenge and serenity of multi-day hikes and oil painting.

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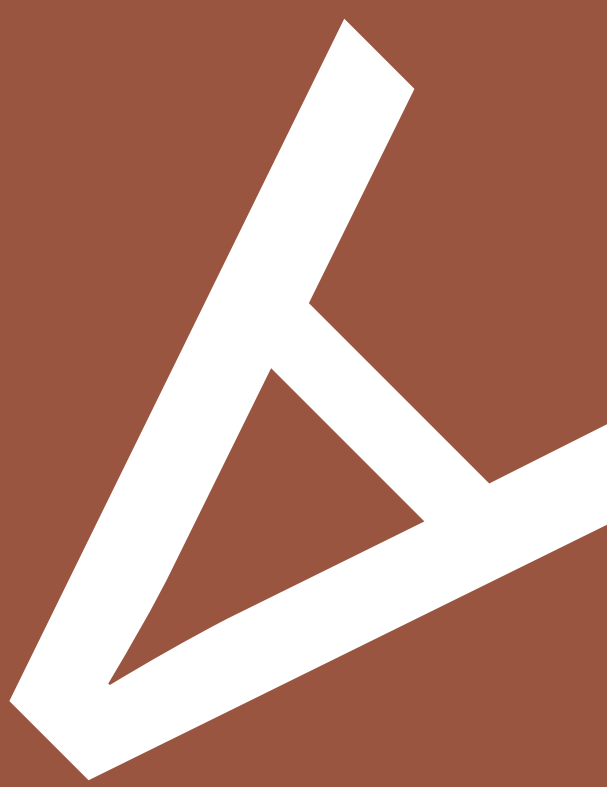
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