

Frames of McMahon Hall. A Pedagogical Model for Interdisciplinary Architectural Education using Photogrammetry and AI

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Abstract

Mid-century Brutalist buildings are frequently documented as objects of form, yet their contested reception and lived memory are less often addressed in architectural education. This article analyses the results of an interdisciplinary experiment centred on McMahon Hall during the summer school Rhetorical Machine + the Hyperlocal at the University of Washington. The method pairs UAV and close-range photogrammetry with a retrieval-augmented, persona-based generative AI workflow to produce a polyvocal narrative grounded in curated site-specific sources. The article argues that this combined method offers a transferable pedagogical model through which students can document both the measurable and intangible dimensions of the built environment while developing technical, interpretive, and ethical competencies.

Introduction

Recent advances in photogrammetry and related survey methods have made it possible to record buildings with a high degree of geometric and visual precision. At the same time, scholarship on heritage interpretation has shown that built sites are not understood solely through formal description, but also through the narratives, memories, and competing values attached to them. What remains less developed is a pedagogical framework that brings these two strands together in architectural education.

This article addresses that gap through the case of McMahon Hall [1], a mid-century Brutalist residence hall at the University of Washington. Brutalist buildings are especially suited to this inquiry because their significance is rarely exhausted by conventional documentation, as they are often admired for their structural clarity and social ambition, yet criticised for their scale, material severity, or institutional associations. In such cases, metric recording is

necessary but not sufficient. A fuller interpretation requires methods capable of engaging both measurable form and contested cultural memory.

The article analyses the results of an interdisciplinary experiment in which photogrammetric modelling was combined with a retrieval-augmented, persona-based AI narrative. The resulting audio-visual work is available online [2]. It argues that this workflow can be understood as a pedagogical model for linking documentation, interpretation, and ethical reflection in architectural education.

Currently, the preservation of mid-20th-century Brutalist structures faces challenges. These buildings, often characterised by their use of raw concrete (*béton brut*), exposed structural elements, and a monumental scale, present a paradox in public perception. While a subset of designers and historians admire them for their bold geometry and structural honesty, a broader audience often dismisses them as “bunkerlike” and unappealing, leading to

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a risk of underappreciation, neglect, and eventual demolition [3]. This issue is not simply aesthetic; it is a question of cultural memory, as a significant architectural style and the decades of history it embodies stand at risk of being erased.

On the same site as McMahon Hall, the University of Washington, More Hall Annex, a 1961 Brutalist structure known as the Nuclear Reactor Building, was added to the National Register of Historic Places but was ultimately torn down in 2016 to make way for new campus development [4]. This demonstrates that even official recognition is not a sufficient safeguard against physical loss. The project described herein responds to this challenge by exploring a different approach to architectural heritage documentation and interpretation. It is an act of advocacy that uses technology to promote a more empathetic connection to these structures.

The central aim of the experiment was twofold: first, to preserve the physical form of McMahon Hall (a representative Brutalist dormitory on the University of Washington campus) through digital models; and second, to reanimate its intangible cultural memory through a polyvocal narrative facilitated by generative artificial intelligence. The methodology moves beyond traditional preservation as a mere archival practice to an act of imaginative re-creation, creating what can be considered a *digital afterlife* for the building. The concept of *digital afterlife* has been approached in different ways, depending on one's perspective: digital traces, posthumous digital assets, digital estate, digital legacy, digital inheritance, or digital remains [5], and the main focus remains loss or possible future loss. The experiment's innovation lies in the fusion of two seemingly disparate fields: objective, data-driven remote sensing and subjective, speculative AI storytelling. The photogrammetric model provides the factual, tangible anchor, while the AI-generated narrative provides the emotional and interpretive depth. This creates a new mode of existence for the building that is independent of its physical form.

The article situates McMahon Hall within the contested heritage of (campus) Brutalism, then outlines the theoretical framework, describes the photogrammetric and AI-assisted workflow, discusses its epistemological and pedagogical implications, and concludes with curricular applications, limitations, and directions for future research.

I. Brutalist Architecture and the Campus Context

Brutalism emerged as distinct from the modernist movement style in the post-WWII era. It was largely driven by the urgent need for large-scale reconstruction and social housing across Europe. The style was rooted in earlier modernist ideals of functionalism and monumental simplicity. It sought an architecture

expressive of its time – massive, honest, and without unnecessary ornamentation. Its name reflects both the material reality of raw concrete, *béton brut* (coined by Le Corbusier in *Unité d'Habitation*) and the movement's deliberately harsh, unadorned aesthetic philosophy. The style was a functional, low-cost, and rapid solution for urban reconstruction. British architects Alison and Peter Smithson defined "New Brutalism" as "an ethic, not an aesthetic", a deliberate and moral rebellion against the ornate designs of the past [6].

Brutalist architecture is characterised by three main principles. First, materiality, which celebrates raw, unfinished building materials showing the marks of the construction process to imply honesty and accessibility [7]. Second, monumentality, which involves bold, sculptural, and large-scale forms that create imposing and memorable silhouettes intended to inspire awe [8]. Finally, functionality, where buildings were designed to serve a clear social purpose, often as public or communal spaces, using inexpensive materials and modular design to provide quality environments for ordinary people [6]. These principles define Brutalism's aesthetic and its underlying ideology.

In the US, Brutalism was adapted for a different, more institutional character, widely adopted for government buildings, universities, and courts to project an image of stability, efficiency, and rational governance [9]. The style's monolithic forms were a deliberate visual representation of state and federal power, contrasting sharply with the classical grandeur of previous civic architecture. This monumental scale was particularly prominent on academic campuses, such as the UW's McMahon Hall and the now-demolished Haggett Hall.

McMahon, designed by Kirk, Wallace, McKinley and Associates (1965), represents a significant example of mid-century campus architecture. The structure is noteworthy for its use of precast concrete and its distinctive aesthetic features, including irregularly protruding balconies [1].

The elongated structure, composed of two joined towers, includes a combination of precast and cast-in-place reinforced concrete, with the supplementary use of post-tensioned concrete beams. A key aesthetic feature is the building's exterior finish: the raw concrete exterior panels are characterised by deep horizontal or vertical grooves and are "ornamented" by the discernible traces of board forms and ties left during the casting process, providing the textured aesthetic common to the era [1]. Upon its completion, this building became the second co-educational residence hall at the University of Washington (UW), following Haggett Hall, which was also recognised for its Brutalist architectural style.

The building elicits a spectrum of public response, ranging from admiration to disregard or dislike. This research addresses the increasing apprehension that

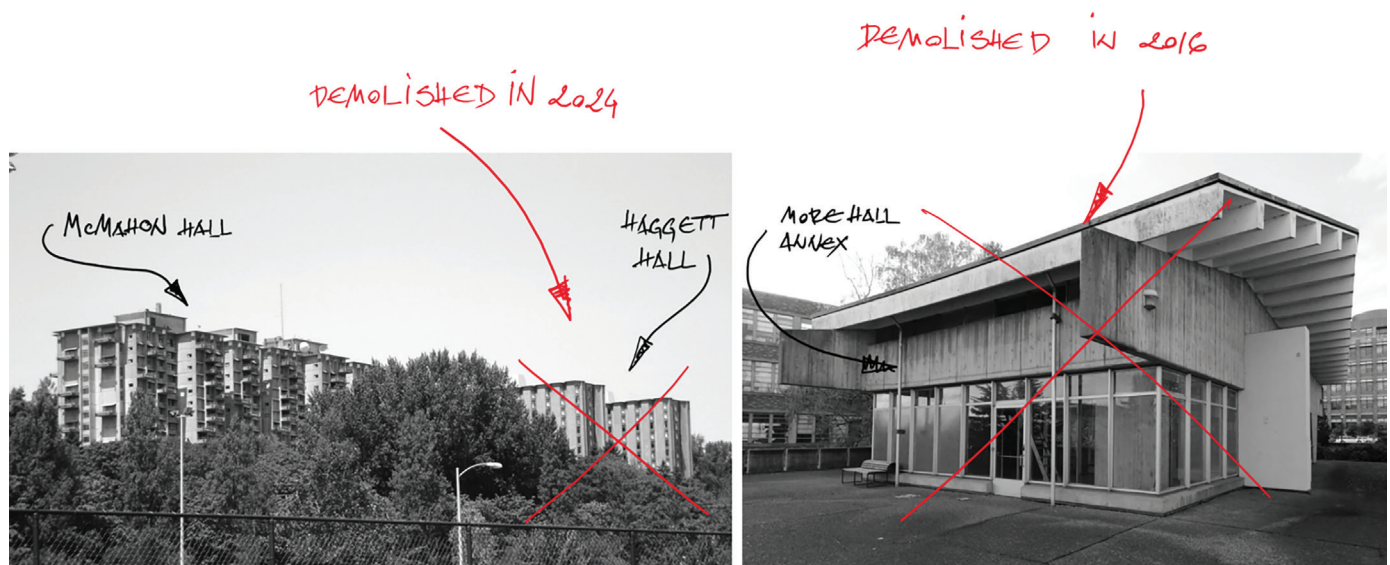


Fig. 1. McMahon Hall, Haggett Hall and More Hall Annex (photos: Joe Mabel) – UW campus.

Brutalist educational buildings are often underappreciated, endangered, or subject to demolition, risking their erasure from collective cultural memory as urban environments undergo transformation. For instance, a significant parallel on the same campus (Figure 1) is the UW's More Hall Annex (1961). Despite its addition to the National Register of Historic Places, it was ultimately demolished in 2016 to facilitate new development [4]. Also, McMahon Hall's adjacent structure, Haggett Hall (1963), designed by the same architectural firm, was permanently closed in 2021, condemned, and subsequently demolished. The site is currently under development to provide new student housing units executed in a more contemporary architectural language [10].

Brutalism has been a controversial architectural style since its beginning, and by the late 70s, it had become widely associated with urban decay and bleak social housing. The style's swift decline was driven by a shift in public opinion, which came to see the buildings as cold and uninviting. Originally seen as reflecting the democratic attributes of a powerful civic expression – authenticity, honesty, directness, strength – Brutalism eventually came to signify hostility, coldness, and inhumanity. Ambitions which had been viewed as positively monumental were condemned as bureaucratic and overbearing [11, 18].

The trademark exposed concrete was high-maintenance and prone to staining, while utopian social planning, such as “streets in the sky,” failed to foster community and instead attracted crime. The demolition of the Pruitt-Igoe complex in 1972 became a symbol of this systemic failure [12]. However, recent scholarly reassessments have reframed the style, with some arguing its raw aesthetic was a politically charged, optimistic break from previous luxury-focused designs.

II. Theoretical Framework

The selection of McMahon Hall as a case study was not arbitrary. Its controversial presence and rich history makes it a subject for a project seeking to articulate a plurality of narratives. The project's methodology is suited to a subject defined by a spectrum of opposing views, as it can simultaneously articulate both architectural admiration and public apprehension through its different narrative voices.

The recent emergence of advanced technologies (e.g., remote sensing techniques) has significantly influenced and reshaped the documentation of cultural heritage [13]. Among these innovations, Structure-from-Motion (SfM) algorithms and close-range photogrammetry have become prominent methodologies [14, 15]. These approaches employ sets of overlapping images acquired through terrestrial and aerial cameras to generate 3D reconstructions of the built environment. The creation of digital records of heritage sites is of particular importance, especially for sites at risk from processes such as weathering, natural disasters, human activities, or armed conflict [16–18]. Such digital documentation not only facilitates scholarly analysis but also provides essential resources for virtual representation and physical conservation or restoration [16].

In this case, the photogrammetric model is reconceptualised not as a final product of documentation but as a medium for creative interpretation. Whereas conventional photogrammetry, aligned with conservation objectives, typically emphasises fidelity and accuracy, the methodology presented here approaches the digital surrogate of McMahon Hall as a platform for storytelling rather than a static artefact. The 3D model thus functions as both a stage and a visual framework for speculative

narratives that enrich the otherwise cold data with cultural significance and imaginative vitality. This perspective resonates with broader digital heritage initiatives, e.g., Nonument Group's efforts to digitally preserve deteriorating Brutalist monuments, including Bulgaria's Buzludzha Memorial Hall, before their disappearance [19]. By reframing the digital model as a record of a distinct architectural era, it becomes a resource not only for documentation but also for novel forms of analysis, engagement, and interpretation. This shift signals a movement beyond archival preservation toward more innovative and interpretive practices.

Conventional heritage scholarship frequently privileges what Smith has termed the authorised heritage discourse (AHD) [20], which valorises monumental sites and elite experiences while simultaneously disregarding the perspectives of local communities and non-elite actors [21]. The present case study is conceived as a deliberate counterpoint to singular and authoritative paradigms. It adopts a polyvocal narrative framework to foreground a plurality of perspectives, thereby diversifying established knowledge and challenging the dominance of any singular interpretation of a site's historical significance [22]. Within this framework, the polyvocal approach materialises as an interwoven narrative in which each contributor articulates a distinct perspective on McMahon Hall's material presence and its embedded cultural memory.

The selection of narrators (the building, concrete, an architect, a journalist, and a bird) was an intentional strategy to present multiple perspectives and challenge human-centric views. The approach bypasses traditional human-centric biases by giving voice to non-human entities and explores how a place is *remembered* by its very fabric and inhabitants, regardless of sentience, passing over the conventional modes of historical documentation and engaging with the intangible dimensions of a site [23]. This speculative approach engages imagination and empathy, encouraging audiences to connect with a building's lifespan and significance in diverse ways.

The project uses generative AI to speed the process of generating the voices of the narration, but the project treats generative AI not as a simple black box, but as a *constrained collaborator in a contrapuntal co-authorship*. This approach moves beyond the limitations of contemporary models, which are often accessed through opaque APIs and lack transparency regarding their training data. By using Retrieval-Augmented Generation (RAG), the authors created a private *knowledge stack* of curated historical data about McMahon Hall to ground the AI's output in site-specific information, mitigating the risk of factual errors or *hyperreality* [24]. Even more, system prompting was used to define the tone and constraints for each character. This ensured that each voice had a distinct identity and consistent style, serving as a stylistic and ethical governor to mitigate inherent biases.

III. Methodology

A. Site Selection and Architectural Significance

McMahon Hall was selected as the subject for the case study due to its significance as both an architectural landmark and a repository of social history (see Section 2). Completed in 1965, the building is a hallmark of mid-20th-century Brutalism, with its form dominated by raw concrete, exposed precast structural elements, and distinctive, irregularly protruding balconies [1]. The goal was to create a digital representation of this structure and imbue it with narrative voices that could convey its rich history and cultural context.

B. Data Acquisition

The creation of the digital model began with a comprehensive photogrammetric survey of McMahon Hall's exterior and interior. A DJI Mavic 2 Pro quadcopter UAV was used to conduct a drone-based survey of the building's exterior, capturing approximately 300 high-resolution photographs with significant overlap (70–80 % forward and 60 % side overlap) from various elevations. The flights were conducted on an overcast day to ensure even lighting and minimal shadows, which is ideal for photogrammetric reconstruction.

For the interior spaces, a SONY Alpha 7c II mirrorless camera and an Apple iPhone 16 Pro Max were used. The Sony camera, with its larger sensor, was used for larger areas, such as the central access hall and hallways. The iPhone, with its super-wide-angle camera and specifications for low light, proved advantageous for capturing narrower spaces and those with complex lighting, such as the former restaurant area. Between 160 and 220 images were collected for each interior space, with a 30–40 % overlap.

All imagery was processed using Agisoft Metashape Professional (v2.2). The workflow involved photo alignment to generate a sparse point cloud; dense point cloud generation, mesh creation and texture mapping to produce a geometrically detailed and realistic 3D model (Figure 2). The final 3D models (Figure 3) were rendered in various forms, including monochrome point clouds, colour-mapped point clouds, and triangulated 3D models, to support the different visual requirements of the narrative segments.

The workflow also had practical limits that shape reproducibility. Exterior and interior surveys were processed as separate models because the project prioritised a time-based audio-visual work rather than a single navigable digital twin. Interior reconstruction quality varied with lighting conditions, low-contrast surfaces, glazing, and lens constraints, while mesh resolution and rendering choices were balanced against processing time and playback performance. These

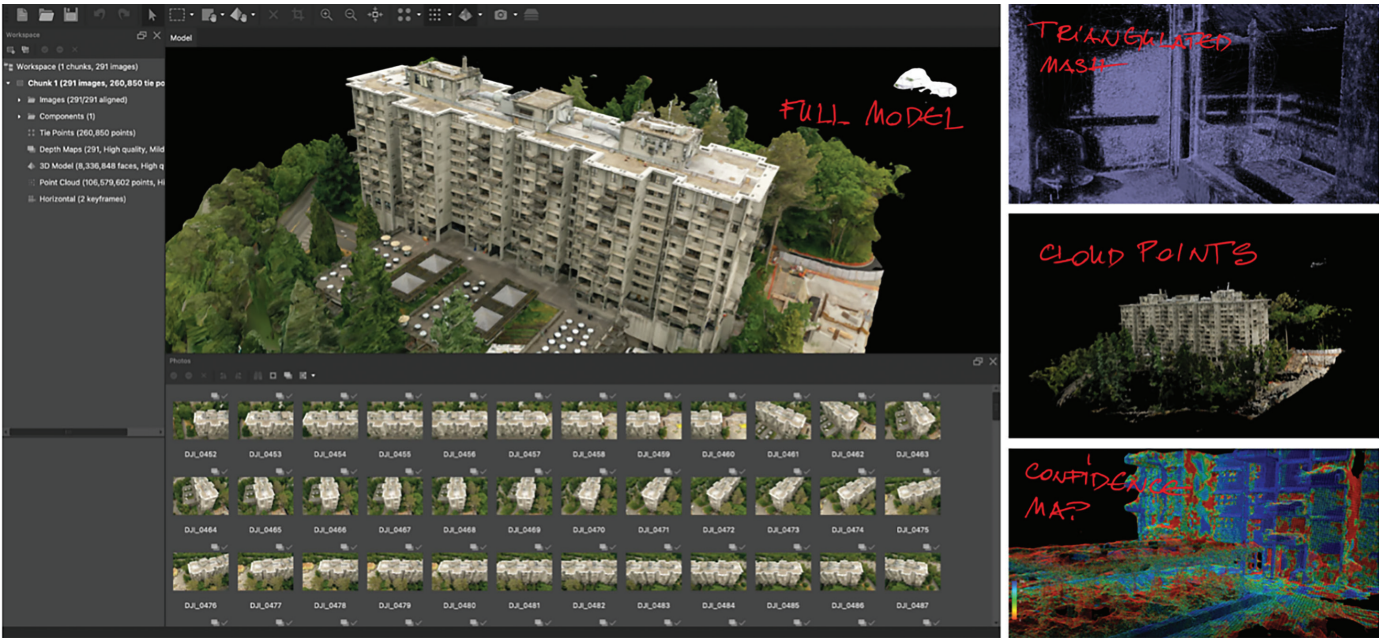


Fig. 2. Digital models of McMahon Hall [by the authors].

constraints show the conditions under which the method can be replicated in future teaching settings, specifically where time represents an issue.

C. Narrative Development

The narrative component of the project was developed concurrently with the photogrammetric models, employing generative AI tools. Specifically, a custom instance of GPT-3.5 (under MSTY App) was utilised, which enabled the integration of an external knowledge base (Figure 3). The retrieval corpus was assembled as a bounded, site-specific knowledge stack intended to support factual grounding rather than exhaustive historical coverage. Sources were included when they met three criteria: direct relevance to McMahon Hall, verifiable provenance, and substantive value for one of three dimensions of the narrative workflow – architectural description, historical chronology, or documented social memory. The corpus, therefore, drew on architectural documentation, campus and institutional records, published commentary, and selected anecdotal accounts, while excluding unattributed online commentary and unverifiable claims. Because no structured oral-history campaign was conducted at this stage, the corpus should be understood as partial rather than comprehensive. Using system prompts, distinct personas were created for each character, defining their role, tone and style (Table I). Afterwards, the script was iteratively generated and refined, with the AI being prompted with specific scenarios anchored in the knowledge stack. A critical part of this process was human editing to ensure a coherent and respectful narrative. AI-generated outputs were treated as provisional drafts

rather than authoritative text. Each narrative segment was reviewed by the authors for factual accuracy, tone, and consistency with the assigned persona. Passages introducing unverifiable information, rhetorical inflation, or stylistic drift were either deleted or regenerated. The final script, therefore, emerged through iterative human-AI co-authorship under full editorial control by the research team.

TABLE I
AI Persona Profiles and Narrative Contributions [created by the authors]

Persona	Position	Narrative function	Prompt constraint
Building	Long-duration witness	Establishes memory and continuity	First-person, reflective
Journalist	Contextual investigator	Introduces verifiable facts and public debate	Sensory, restrained
Concrete	Material narrator	Foregrounds endurance and weathering	Evidence-les
Bird (Petunia)	Exterior observer	Adds mobility, scale and ecological distance	Brief, observational
Architect	Disciplinary critic	Interprets design intention and legacy	Measured, evaluative

D. Integration of Visuals and Audio

The finalised narrative script was brought to life through AI-driven text-to-speech (TTS) using the ElevenLabs platform (Figure 3). A unique voice profile was selected for each character to match its persona (e.g.,

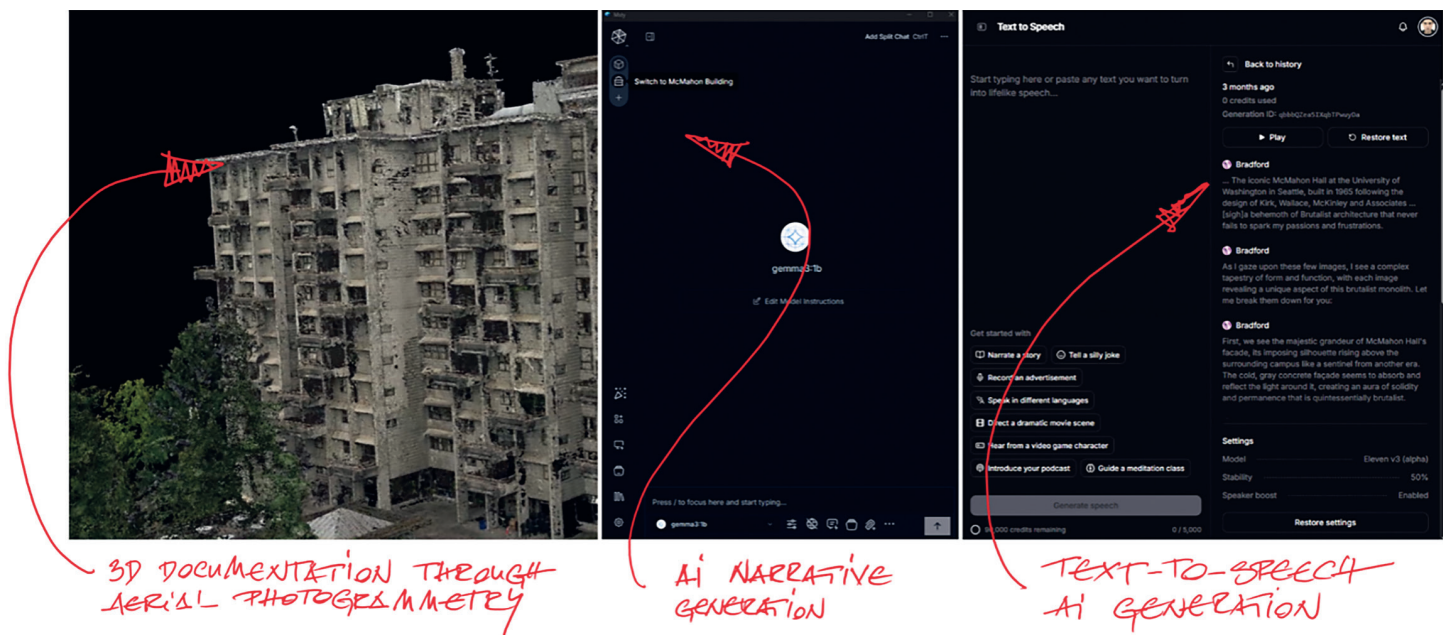


Fig. 3. Different digital tools employed for the video experiment [by the authors].

a deep, reverberant male voice for the Building, a gritty, resonant voice for the Concrete, and a light, high-pitched one for the Bird) Background sounds were generated and carefully mixed into each voice track to enhance immersion (e.g. students chattering and a faint ambient hum for the Building, birds, wind and rain sounds for the Concrete, and office ambient sounds for the Journalist)

The audio narrative was integrated with dynamic visuals derived from the photogrammetric 3D model, short film segments, captured photographs and generative imagery to produce the final composition. Camera movements were deliberately choreographed to align with specific narrative segments, creating a synchronised interplay between sound and image. The result was an audio-visual work in which the audience was invited to *hear* and *see* through each voice's eyes. The decision to present the project as a fixed-duration film positioned the work as an experimental art production rather than a purely technical demonstration.

E. The Result

The final output is a polyvocal narrative that reinterprets McMahon Hall's history through five interwoven voices. The narrative begins with the Building introducing itself as an old sentinel that has watched over generations of students, setting a reflective and slightly whimsical tone. The Journalist continues the narration, providing factual context and critical inquiries about the building's controversial design and local legends. The Concrete offers a poetic and melancholic perspective on enduring decades of weathering and witnessing daily life

within its material fabric. The Bird provides a whimsical, moment-to-moment awareness, playfully recounting an event and describing the building as a "bloody, grey boxy monstrosity" from an aerial view. Finally, the Architect concludes the narrative with a measured and thoughtful critique, positioning McMahon Hall as a representation of both the "triumphs and pitfalls" of the Brutalist movement. The dynamic shift between these perspectives prevents the narrative from becoming a monolithic account and instead presents the building as a convergence of different experiences and understandings.

IV. Discussion

The project navigates a fine line between creative storytelling and factual accuracy. The authors distinguish between two layers of knowledge: a factual baseline (dates, events, physical features) and an interpretive imaginative layer (the inner thoughts and experiences of the narrators). The first layer was strictly maintained using the curated knowledge stack and human review, while the second was creative to enrich the narrative. It is important for these types of projects to maintain transparency with the audience about the nature of the piece, framing it as an artistic interpretation built upon real history. This ethical safeguard mitigates the risk that imaginative elements might be misconstrued as fact. The project intends to demonstrate that curated AI-generated narratives can be a complement to human scholarship, adding emotional and experiential dimensions to the historical record, without replacing it (Table II).

TABLE II

Epistemological and Ethical Safeguards in the AI-Augmented Workflow [created by the authors]

Risk	Safeguard	Purpose
Factual Error (AI hallucination)	RAG with curated knowledge stack; offline generation.	Grounds output in traceable sources
Loss of authorship	Iterative human review and final editorial control	Preserves scholarly judgement
Voice homogenization	Persona prompts	Sustains contrast between voices
Fiction mistaken for history	Explicit framing of the interpretative layer	Distinguishes record from speculation

Typically, remote sensing produces quantitative data for the objective documentation of a site, but this project demonstrates its broader potential by combining photogrammetric models with qualitative, narrative knowledge. This suggests a new epistemological model where a building's *truth* is not only in its fixed, measurable form but in an assemblage of both its measurable form and the layered, subjective narratives it inspires. This statement can be grounded in Assemblage Theory [25], a framework developed by philosophers Deleuze and Guattari [26] and operationalised by DeLanda [27, 28]. The theory provides conceptual vocabulary to move architectural history and theory away from a focus on what a building is toward a focus on what it *can do* [29]. The study provides a practical illustration of this philosophical idea. An architectural assemblage, as theorised by DeLanda, is an arrangement of distinct, concrete components that interact to produce emergent properties. The project documents this dynamic process of *becoming* rather than a static object. The building is not a monolithic Brutalist dormitory but a composition of interacting elements: the precast concrete and exposed structural parts, the thousands of students who inhabited it for decades, the design intentions of its architect, and the digital technologies used to document and interpret it. The project reveals that the building's *meaning* is not inherent or fixed but emerges from the continuous interaction among these disparate parts. This redefines the act of architectural preservation from a static archival practice to an imaginative re-creation that documents the ongoing, dynamic *life* of the building, a true *digital afterlife*. The project does not merely document the building as a fixed entity but documents the processes of arranging and re-arranging its components, revealing that the building is always *able to do different things* [29].

By granting narrative voices to non-human entities such as Concrete and a Bird, the project adopts a posthumanist perspective that challenges anthropocentric architectural history. Posthumanism challenges the long-standing anthropocentric approach to the built environment, which has historically focused on design carried out by humans and for humans [30]. This intellectual framework advocates for a more holistic understanding that brings together human and non-human, living and non-living, nature and technology. When asking *what things do* rather than *what things are* and exploring the coexistence of these

different entities, it aligns the project with the discourse on posthuman architecture [30].

Frames of McMahon Hall embodies this perspective by expanding the concept of a building's human users and historical record to include non-human entities [31]. The AI-generated voice of the Concrete offers a poetic and melancholic perspective on enduring decades of weathering and witnessing daily life from a material perspective, while the Bird provides a whimsical, fleeting, and aerial commentary. Together, they invite audiences to consider buildings beyond human experience, reframing McMahon Hall as part of an interconnected ecological and material network rather than solely a human shelter or architectural style [30]. By giving a voice to its very fabric, the project reveals overlooked stories about the building's resilience and its relationship to the natural world. This more-than-human approach is an act of advocacy for endangered Brutalist structures precisely because it exposes a deeper, non-human value often overlooked in human-centric architectural criticism.

The project's integration of objective, data-driven remote sensing and subjective, speculative storytelling presents a model for a mixed-methods epistemology in digital heritage. Mixed-methods research is a well-established academic approach that combines the statistical power of quantitative data with the nuanced insights of qualitative data to achieve a more comprehensive understanding of complex research questions [32]. In the McMahon Hall project, the researchers employed an embedded design where the photogrammetric data (quantitative, objective) is intersected within the interpretive AI narrative (qualitative, subjective).

Methodologically, the project models a mixed-methods epistemology in digital heritage. Objective, data-driven photogrammetry grounds speculative, AI-generated narratives, avoiding both sterile documentation and unfettered fiction. Quantitative data anchors qualitative storytelling, while narrative content enriches spatial data as cultural metadata, producing a more comprehensive and meaningful record of the building's ongoing life. This approach, where the "quantitative component can decouple the interview answers from the interviewer's possible interferences" [33, 1], demonstrates how the digital model serves as an objective anchor that validates and enriches the subjective storytelling. The narrative content, in turn, acts as valuable metadata that transforms the cold, spatial data into a culturally significant record.

TABLE III
Epistemological Innovation [created by the authors]

Workflow element	Epistemological lens	Contribution
Photogrammetric model	Quantitative documentation – mixed-methods epistemology	Records measurable form and condition
Polyvocal script	Interpretative narrative inquiry – architectural assemblage	Stages of competing reading of the site
Non-human personas	Posthuman perspective – posthumanism	Extends attention beyond human testimony
RAG corpus	Evidence governance – governed AI scholarship	Links generation to curated sources
Final film	Pedagogical synthesis	Combines form, memory and argument

Table III maps the main components of the workflow to the primary mode of knowledge production through which each operates. The method's value lies in the conjunction of these lenses rather than in any single framework.

This study has significant implications for university education. By combining technical training in photogrammetry and digital modelling with humanistic inquiry into memory and ethics, it offers a model for interdisciplinary curricula. Originating in a summer school workshop, it demonstrates suitability for intensive, collaborative teaching across architecture, engineering, and digital arts. Its use of AI also provides a platform for critical discussion of ethical and philosophical issues in creative practice, fostering a more nuanced and empathetic understanding of the built environment.

Storytelling is a valuable tool for encouraging student engagement, creativity, and conceptual understanding by helping them “consistently articulate the design process, from the initial concepts to the analysis, visualisation, and expression” [34]. In the professional world, this skill is increasingly valued, with design studios explicitly branding themselves as “Narrative” or “Narrative Design Studio.” While storytelling has long been an informal part of architectural and design education [35], the methodology employed in *Frames of McMahon Hall* can be considered a structured, technology-driven workflow that

formalises an abstract concept into a tangible, assessable, and professionally relevant exercise. The project's step-by-step process provides a possible pedagogical blueprint for intensive design studios or workshops. The methodology grounds the creative process in technical skill, ensuring that students develop both artistic and technical competencies. Such an exercise encourages students to think critically about how a building “shapes the human emotions” and is “related to human factors” [36], thereby building empathy and a deeper sense of placemaking that is central to architectural design.

A possible module (Table IV), blending technical knowledge with creative practice and critical reflection, could bridge the gap between architectural theory and professional practice. Photogrammetry, for example, is not simply an academic exercise; it is a professional tool used by architects for site analysis, historical documentation, and design development. The final output, a polyvocal narrative film, would serve as a comprehensive portfolio piece that shows not only a student's technical proficiency in digital modelling and AI tools but also their ability to craft a compelling narrative, a critical communication skill for designers and architects. The module's emphasis on group work and peer review aligns with contemporary pedagogical models that prioritise collaborative, project-based learning.

TABLE IV
Module Outline – From Data to Narrative [created by the authors]

Phase	Learning objectives	Key activities & deliverables	Core competencies developed
1. Site selection & conceptualisation	Identify a building on campus or in the local community that is either contested, at risk, or has a rich social history.	Conduct preliminary site research, including archival digging and anecdotal data collection. Draft a conceptual proposal and select at least three distinct narrative personas.	Critical thinking, historical research, conceptual design, and narrative formulation.
2. Data acquisition & digital modelling	Develop technical proficiency in remote sensing and photogrammetry using a variety of hardware.	Conduct a comprehensive photogrammetric survey. Process images in software like Agisoft Metashape to create a 3D model.	Technical skills in digital capture, data processing, and 3D modelling.
3. Narrative development	Curate a knowledge stack and utilise AI as a constrained collaborator to generate and refine a polyvocal narrative script.	Assemble a curated knowledge base of site-specific data. Use system prompting to define character personas. Iteratively generate and human-edit the final script.	AI literacy, ethical data management, creative writing, and human-AI collaboration.
4. Post-production & final product	Fuse the digital model and the narrative script into a cohesive audio-visual experience.	Select voice profiles for each persona. Generate and mix background sounds. Choreograph camera movements through the 3D model to align with the narration. Produce a fixed-duration narrative film.	Video editing, sound design, visual storytelling, and communication.

The use of AI in the module would be an important pedagogical element for critical thought and ethical literacy. The methodology provides a structured, ethically governed approach that turns potential risks into valuable learning opportunities. For example, implementing a RAG setup with a curated knowledge stack serves as a direct, hands-on lesson in mitigating AI *hallucination* and ensuring factual grounding. Instead of simply using a public-facing large language model, students will be required to become curators and editors, actively shaping the data that informs the AI's output.

The practice of persona prompting offers a direct way to address the risks of bias and homogenization inherent in contemporary AI models. When the tone, identity, and style of each narrator are explicitly defined through system prompts, students will learn to act as stylistic governors, mitigating stereotypes and ensuring a diverse range of voices. This process, *contrapuntal co-authorship*, will provide students with new vocabulary for understanding and engaging with human-AI collaboration.

CONCLUSION

This research establishes that a building's truth is not limited to its physical dimensions, but exists as an architectural assemblage, a dynamic composition where raw concrete and structural elements interact with decades of student life and the digital technologies used to interpret them. By shifting the focus from what a building is to what it *can do*, the project redefines preservation as an imaginative act of "becoming" rather than a static archival practice.

Building on this theoretical background, the article argues that photogrammetry and grounded AI narration can be combined not only as a heritage-documentation exercise but also as a pedagogical model for architectural education. Through the case of McMahon Hall, an American Brutalist campus building, the article shows that quantitative capture and qualitative interpretation need not be treated as competing modes of knowledge. Rather, they can be organised as a mixed workflow in which a building is understood as an assemblage of material, social, and discursive relations.

The specific case study offers a concrete illustration of AI's utility as a creative collaborator in the interpretation of the built environment. It demonstrates the technology's capacity to articulate diverse, non-traditional perspectives, including those ascribed to non-human entities, into a cohesive narrative structure. The use of more-than-human narrative positions extends this argument through a posthuman perspective, while the curated knowledge

stack and human editorial review establish methodological limits for responsible AI use. The study challenges established epistemic boundaries by attributing narrative voices to the building and its constituent materials. This approach suggests that a comprehensive understanding of a place can be significantly enriched by the inclusion of fictional narratives. This methodology complements conventional factual analysis by injecting emotional and experiential dimensions that broaden the overall scope of understanding and of perception and appreciation of inhabited spaces.

This pursuit of empathetic connection is particularly pertinent for mid-century Brutalist buildings, many of which are currently threatened by demolition due to prevailing public misunderstanding or aesthetic disfavour. The speculative narratives generated for McMahon Hall thus signify a novel narrative modality, an intersection of remote sensing precision and machine creativity, which may support future heritage interpretation, or at minimum, ensure the enduring memory of their stories.

For architecture schools, the value of the method lies in its transferability. It offers a studio or workshop structure that links site recording, model construction, archival research, prompt design, ethical evaluation, and public communication. Future research will expand this digital afterlife into real-time, interactive systems, allowing users to engage in direct conversation with a building's AI persona. The speculative narratives will be further anchored in lived human experience when authentic oral histories from community members are integrated. Additionally, work should test student-authored narrative variants, explore immersive delivery through VR or AR, and evaluate learning outcomes through formal assessment rather than informal observation. While the article does not attempt to resolve the preservation debate around Brutalism, it presents an adaptable method for teaching students how to document, interpret, and communicate the cultural complexity (tangible and intangible) of threatened buildings.

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