DESIGN STORIES WARSAW



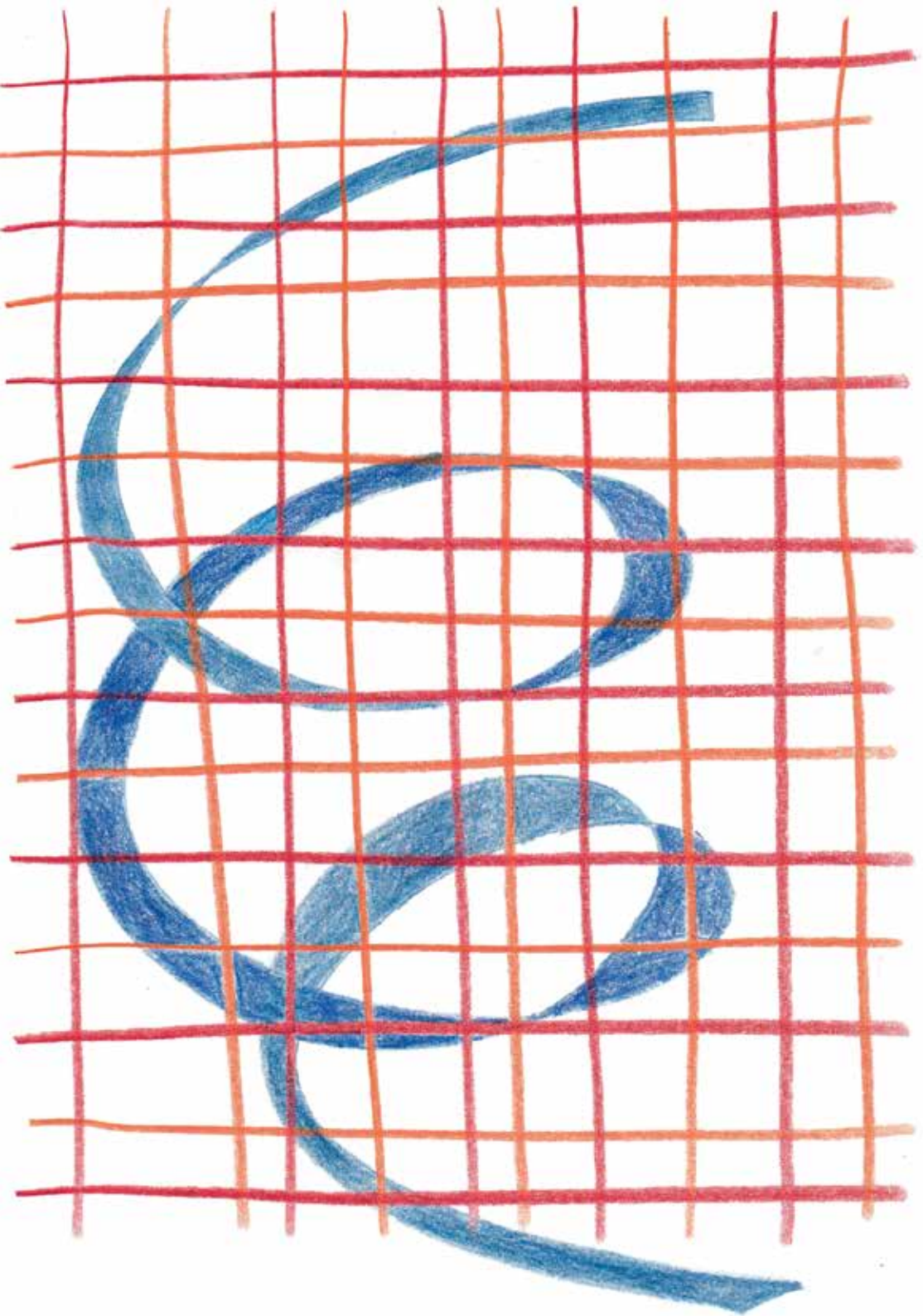
Practices of Responsibility

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Practices of Responsibility

This publication gathers fifteen papers presented and discussed during the Design Stories Warsaw conference (20–21 November 2025), which explored Practices of Responsibility in design through five panel discussions. Topics include social challenges, material storytelling, collecting, and pedagogy. Together, the panels highlighted how women designers shape cultural memory, foster collaboration, and reimagine design as a vehicle for storytelling, ethical reflection, and social transformation.

The conference was a part of a collaboration between SWPS University in Warsaw and London's Royal College of Art, supported by the British Council as part of the UK/Poland Cultural Season 2025.



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Design Stories is a part of a wider programme called *Looking Through Objects*, a curatorial project presented as a touring exhibition featuring a selection of contemporary practitioners from Poland. *Design Stories* foregrounds the voices of designers themselves, allowing them to articulate their approaches, strategies, and reflections. In doing so, the project positions design as both a carrier of memory and an agent of change.

Central to the project is the principle of voice as epistemology: designers are not only subjects of inquiry but knowledge producers in their own right. By enabling practitioners to speak and write directly, *Design Stories* captures uncertainty, experimentation, and contradiction—dimensions often obscured when design is documented solely through objects or exhibitions. This approach challenges traditional historiography and curatorial authority, recognising that practice-based knowledge is a legitimate form of cultural and intellectual inquiry. Designers' narratives reveal processes, motivations, and ethical considerations that illuminate broader structural and societal dynamics, making the contributions of historically underrepresented voices in the design field visible.

The formats of *Design Stories*—podcasts, written essays published in three booklets (2021, 2025, May 2026), interviews, and visual interpretations—are intentionally multi-modal, serving as a curatorial method rather than simply media channels. Portability allows knowledge to travel beyond institutional walls; discursive forms preserve ambiguity and open-endedness, reflecting the iterative, exploratory character of design practice; and networked structures emphasise relational exchange, foregrounding collaboration over hierarchy. This multi-layered approach enables audiences to engage with design on multiple levels, simultaneously experiencing its material, social, and intellectual dimensions.

We deliberately positioned the conference *Design Stories* at the intersection of all the practices connected with design, rather than treating it as a solely academic endeavour. We feel that this approach is more in tune with the contemporary context of design, in which the fluidity of the practice resists the confined boundaries of given labels and titles. Due to this unique characteristic of design as a discipline, we find it more holistic and realistic to hear from historians, as well as acting designers directly involved in design through practice. We believe that this provides a range of voices and perspectives (observers, researchers, practitioners) that will help readers to draw their own conclusions on what design is today.

Finally, *Design Stories* functions as a form of cultural infrastructure: portable, adaptable, and future-facing. It is a space for reflection, dialogue, and knowledge exchange, capable of evolving in response to new contexts, disciplines, and audiences. As a platform, it does not seek to promote designers, nor to produce a definitive record; rather, it creates the conditions for ongoing interaction, experimentation, and critical engagement. In doing so, *Design Stories* demonstrates how curatorial research can move beyond exhibitions to become a generative, transnational, and collaborative practice—one that connects objects, people, and ideas and transforms the study of design into an active, relational, and living inquiry.

Our aim is for *Design Stories* to become a regular platform for discussing design practice from a female perspective—focusing on women designers, their roles, attitudes, and ongoing contributions to the field.

Gian Luca Amadei, Agnieszka Jacobson-Cielecka
project curators


NETWORKS
OF RESPONSIBILITY







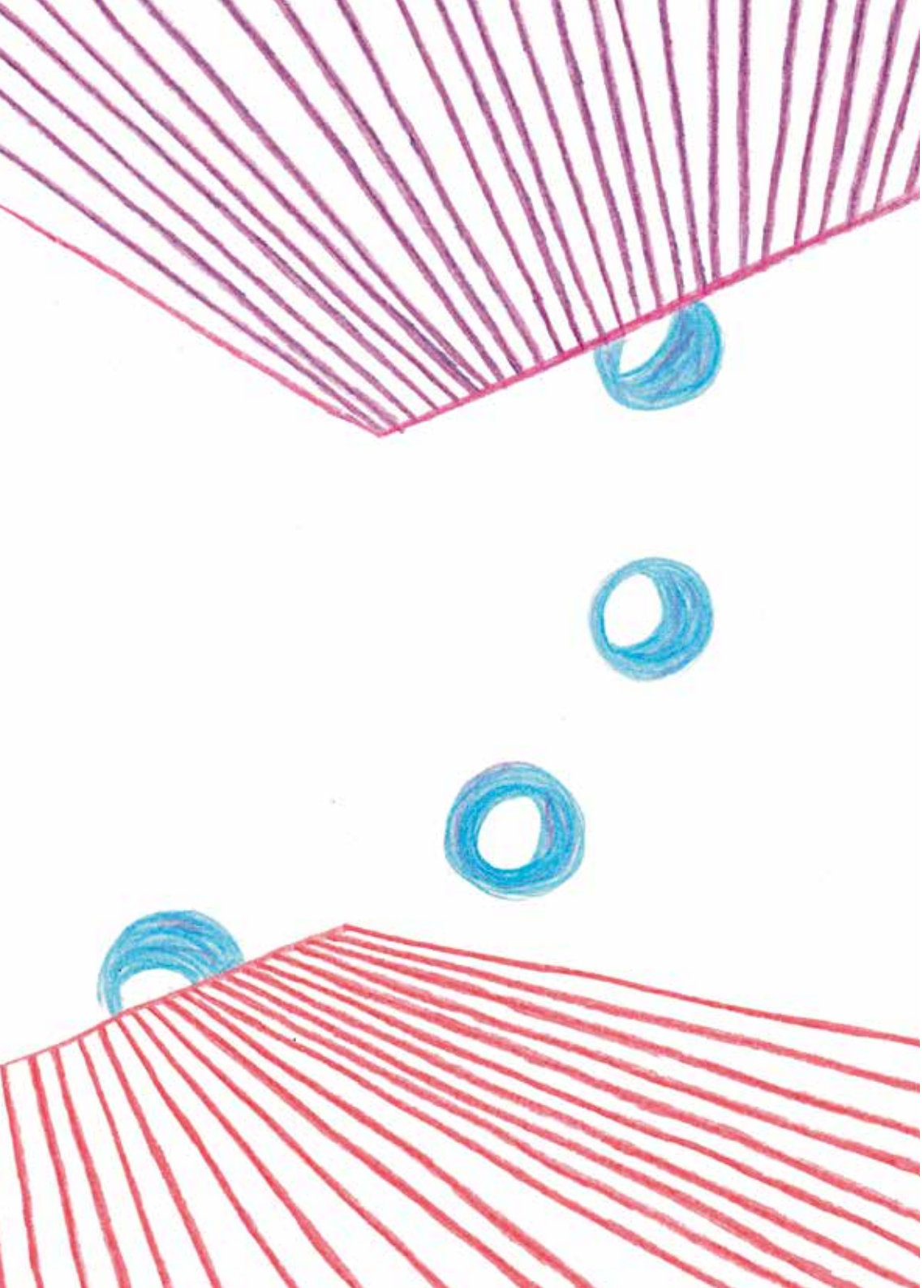





20-21 November 2025
DESIGN STORIES
WARSAW

NETWORKS OF RESPONSIBILITY





WOMEN'S DESIGN + RESEARCH UNIT: NETWORKS OF EDUCATIONAL ACTIVISM

Presented by Teal Triggs
Project Team: Teal Triggs and Siân Cook

The other day, a friend reminded me of a small but not insignificant incident that took place thirty years ago at the FUSE '95 conference held in Berlin. FUSE '95 was a typographic conference that featured a programme of speakers. (It grew off the back of FUSE magazine, an experimental quarterly founded by Neville Brody.) The Women's Design + Research Unit (WD+RU)—a feminist collective I co-founded—was invited to present, alongside an all-female German group called Moniteurs. The rest of the programme was led by 24 male 'star' designers, including Neville Brody, David Carson, Max Kisman, Erik Spiekerman, David Crow, and Gerard Unger, and the audience was overwhelmingly male.

What happened next took us by surprise. When WD+RU took to the stage, it immediately became apparent that the audience was starting to leave—and noisily. Evidently, anything we women had to say wasn't worth listening to. We got through the talk, and it was fine, but the moment was chastening. I had forgotten all about it until my friend brought it up. She said that, for her, it was a juncture, a revelation of the work that needed to be done before women were taken seriously.

For WD+RU, it was also a catalyst. We had appeared at FUSE '95 to promote our feminist experimental typeface, which we named *Pussy Galore*, after Honor Blackman's character in the James Bond film *Goldfinger*. The conceptual typeface appeared in *FUSE Issue 12: Propaganda*. It uses visual and verbal stereotypes of women, inviting the keyboard user to create an alphabet of symbols and words by "addressing gender stereotypes using dingbats of feminine archetypes" (The Editors, 2016).

As an aside, it must be said, we saw the invitation to present at FUSE '95 as a welcome step forward. The inclusion of WD+RU and Moniteurs was tokenistic, but at least we were there. At the previous event, FUSE '94 in London, there was a noticeable absence of women designers on stage (Dauppe, 1996, p. 83). Yet the walkout at FUSE '95 helped us crystallise our ideas, and thenceforward we thought in terms of the need for a network and activist approach that would raise awareness about women working in graphic design.

It has now been over thirty years since WD+RU was formed in response to the male-dominated design and typographic industry. The lineup has changed over time. WD+RU grew out of conversations begun by me and Liz McQuiston in 1993, with Siân Cook joining in 1994 as a member and collaborator on *Pussy Galore*. Soon thereafter, Siân and I became the primary team on subsequent projects involving designers such as Karen Mahoney, Andrew Slatter, Justy Phillips, and Lorna Allan. We've been involved with many collaborators and supporters along the way.

WD+RU has never operated as a design studio but rather as a collective based on feminist principles, including care, community, conversation, curiosity, and collaboration. We create projects that advocate for design and social responsibility. The activities of WD+RU run alongside our day jobs as lecturers—I work at the Royal College of Art, and Siân at the London College of Communication. Our work ethos is based on coming together when there is something to say.

Our heroines were—and are—a generation before us, including American designers Sheila Levrant de Bretteville (at Yale) and Katherine McCoy (Cranbrook), who had carved out prominent roles as design educators. Despite the high profiles of de Bretteville and McCoy, it became increasingly clear that in the UK context, the voices of women working in the field were noticeably absent in the emerging canons of graphic design history: another form of erasure.

As a form of design activism, WD+RU gave us the freedom to be overtly critical of the context in which we were operating. To give one quick example: When we began, the UK's Institute of Practitioners in Advertising reported an under-representation of women in UK advertising agencies, with notable absences from the creative departments, i.e., women accounted for 18% of copywriters and only 15% of art directors (Bishop, 1998, p. 53). We wanted to address gender and social injustices. We never set out to make big claims. This is not to say we didn't have big ambitions. But we always hoped that by generating small projects, it would be like throwing a stone in the water, where you get small ripples. And, if many individuals do the same, then the impact will eventually create change.

Most projects have been self-initiated, whilst other, more substantial work has been research-oriented and supported by external funders. We employ strategies offered by graphic design and educational activism to raise awareness of women working in visual communication. These have included posters-in-a-day, postcards, exhibitions, research projects, direct action, and organised events.

To date, we have completed 32 projects; we've presented at 19 conferences and given numerous other talks; made 1 documentary film; been the subject of around 29 articles written about WD+RU that we know of; shown in 14 exhibitions; and been collected by the National Museum of Modern Art, Pompidou Centre. And, over the years, we can't count how many times we've been contacted for student interviews for use in work raging from undergraduate and postgraduate dissertations to PhD theses—perhaps the aspect of which we are most proud.

It is time now to look in more detail at a select few of these projects.

FROM THE ARCHIVE

I've pulled out two projects from our archives that, for us, represent some of the ways in which care, community, conversation, curiosity, and collaboration underpin our ethos and inform our approach. Most of our work is small-scale, low-budget, and process-oriented. It is often produced with what we have to hand and reflects the immediacy or urgency of the message.

MEMORY CLOTH: NETWORK OF COLLABORATORS (2006)

At various points, we have worked within local South London communities. In 2006, for example, *Handing Down the 'Memory Cloth' at the Elephant & Castle: an exploration into cultural identity and the role of women in craft and design history* took the form of an exhibition, catalogue, and activity day event. We've been particularly proud of this project for offering a space for academic researchers, students, and local community members to share knowledge about local craft-making. Our collaborators included the Bengali Women's Group, I Knit London (a men's knitting group), Imperial War Museum, and the Waterloo Action Centre, along with contributions from a host of designers, educators, letterpress specialists, and historians.

The project represented a different kind of networking for us because it attempted to break down perceived barriers between an academic institution and its local community. The exhibition created a creative space where interactions and conversations could take place between attendees and craftspeople. For example, activities included henna (Mehndi)

painting, and a knitting circle. We also facilitated the production of a fanzine with members of the community whose own zine pages appeared alongside those of over 30 artists and designers working internationally. Each workshop participant took home a set of pages, neatly stitched and bound together, in a retail shopping bag.

In all our projects, it is necessary to say that we acknowledge our privilege and positioning as white women working in education and professional practice and how this brings inherent biases to what we do. Ideally, this positioning heightens our awareness of issues around inclusivity and diversity and the recognition of the many different voices there are in the graphic design and typography fields.

BRAVE NEW NORMAL (2019–2022)

Moving on, between 2019 and 2022, during the pandemic, we embarked upon a collaborative research project called *Brave New Normal* between the Women's Design + Research Unit (WD+RU) and Hidden Women of Design (HoWD) which sought to question received narratives about career lifecycles, while exploring how different kinds of knowledge are valued to inform future working practices in the post-pandemic landscape. When participants were asked which factors affected women in the workplace, the three main hindrances were: a male-dominated/led industry, invisibility of female leaders, and a lack of respect or recognition. Some of the secondary themes suggested bias and/or discrimination, unequal pay, and a lack of flexible working provisions. The report went on to observe:

"Participants repeatedly described the systemic issues of working in male-led design studios or practices. Recent research reports that 78% of the UK's in-work designers are male as compared with 53% across the general workforce (Design Council, 2018). However, more than half of students (63%) completing creative arts and design degree courses are women. In spite of larger numbers of women studying and subsequently entering the industry, participants suggested they remain in junior design positions unless they establish their own studios. Several participants indicated their salaries were not commensurate with male colleagues, yet they had been recruited by women" (Triggs et al., 2022:17).

Brave New Normal was a project that only touched the surface of the design workplace. These issues became personal to us. We recognise that much remains to be done. For example, today, WD+RU is exploring women in the context of an ageing workforce and what that means for the profession.

WHAT'S NEXT?

Some progress has certainly been made, as there are visibly more women attending, speaking at, and headlining conferences; more exhibitions highlighting women working in graphic design and typography; and many more books dedicated to women, which not only add them to the design canon but also disrupt traditional male-hero narratives. Take, for example, the work of Alphabettes (e.g. Amy Papaelias and others)—an international network of more than 300 women and gender-diverse individuals in type. Their website Alphabettes.org is a '…showcase for work, commentary and research on lettering, typography, and type design' (Alphabettes.org, accessed 16/11/25).

Or the work of +FEM Kollectiv (Naomi Rado) and the curatorial team of the Klingspor Museum in Germany, who set out to expand the narrative of Offenbach's typographic history, whose collection had long been dominated by men's names since its founding in the 1950s. This resulted in their exhibition and catalogue, *Same Bold Stories? Type Design by Women and Queers in the 20th Century and 21st Centuries*. (2024) WD+RU was privileged to be represented in both outputs.

So, the example of collectives and networks is still very strong today. Despite such progress, this is not the time to be complacent. Our WD+RU archive has given us much to consider as we reflect on our histories and collaborations, and on what might be waiting for us around the corner. We still need to keep on proclaiming what we profess, until this is no longer necessary.

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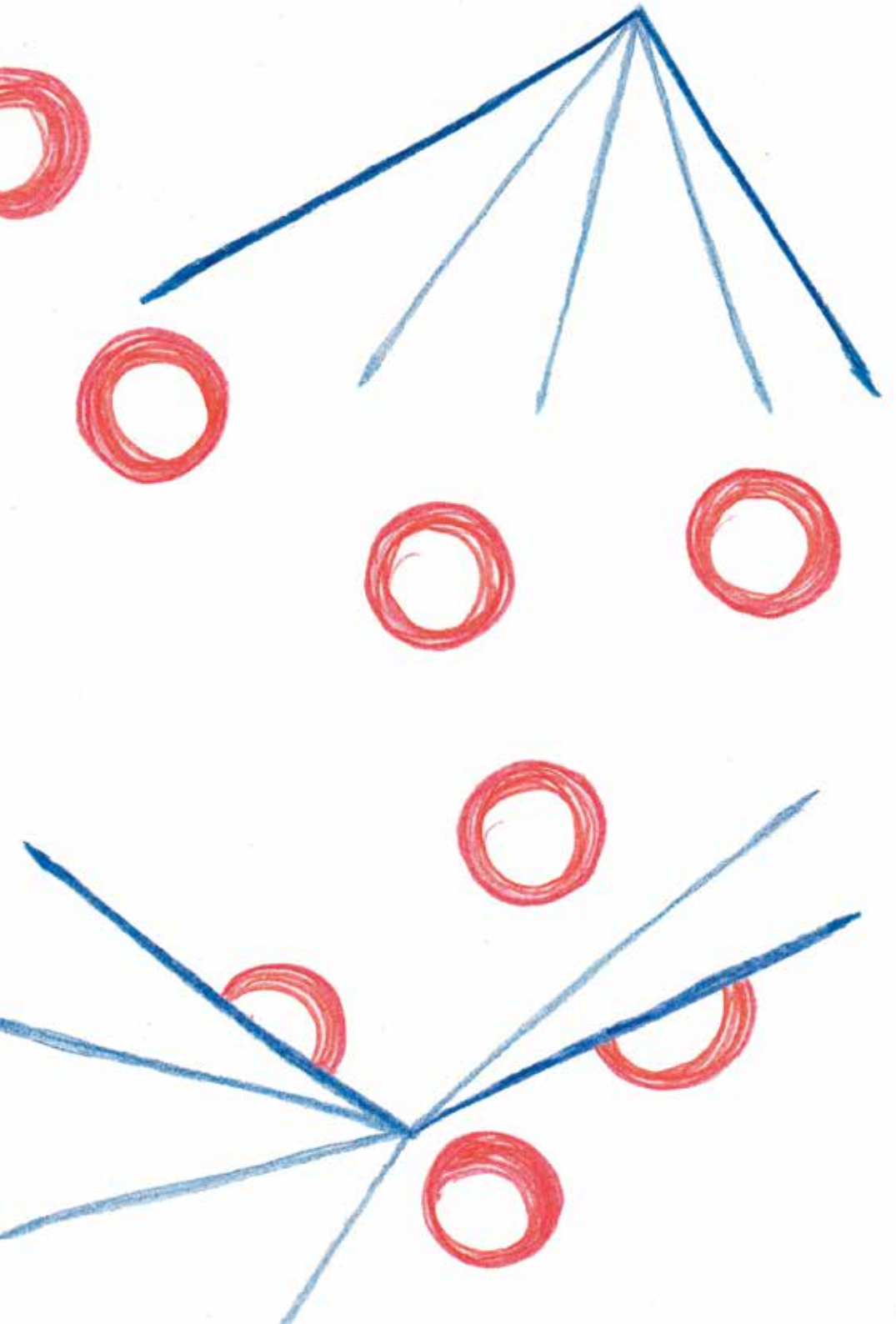
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DESIGNING OTHERWISE: CARE, RESPONSIBILITY, AND DIVERSITY IN AI SYSTEMS

Frédérique Krupa

INTRODUCTION: AI AS A MIRROR OF SOCIETY

Artificial intelligence systems reflect the social and political worlds in which they are made. They are not abstract or neutral machines, but socio-technical artefacts that mirror cultural values, power relations, and historical inequalities (Haraway, 1988; Suchman, 2007). This paper emerges from a position at the intersection of design and engineering. Trained initially as a product designer in the late 1980s, I have worked in software design for over thirty years, within technical environments that have increasingly masculinised as software and AI have become economically and politically central.

As technical fields accumulate power, they also consolidate cultural norms that determine who is authorised to design technology and whose knowledge is considered legitimate (Ensmenger, 2012; Hicks, 2017). These conditions shape not only participation but also the kinds of problems that are framed as solvable through AI. The questions guiding this paper are therefore fundamentally political: who defines technological agendas, how are resources allocated, and whose values are encoded into machine learning systems?

THE MYTH OF NEUTRAL TECHNOLOGY

A persistent myth in technology claims that code is objective, data is truthful, and AI systems are impartial. Feminist science and technology studies have long challenged this assumption, demonstrating that all knowledge is situated and produced from partial perspectives shaped by social position and power (Haraway, 1988; Harding, 1991). In AI, claims of neutrality function as ideological cover, obscuring the human decisions embedded in datasets, models, and infrastructures.

Every AI system is the result of choices about what to measure, what to ignore, who to include, and who to exclude (Gitelman, 2013). AI, therefore, does not simply automate processes; it automates politics, often reproducing the cultural and epistemic priorities of dominant technological powers, particularly Anglo-American institutions (Benjamin, 2019; Crawford, 2021). When these systems are deployed at scale, partial perspectives become global defaults.

FROM INTERFACES TO INFRASTRUCTURES: EXPANDING THE DESIGNER'S ROLE

Historically, UX design has focused on users and interfaces, emphasising usability, accessibility, and experience. AI fundamentally disrupts this scope. Design is now embedded in datasets, annotation practices, infrastructures, predictive models, recommender systems, and automated decision-making processes (Suchman, 2007; Crawford, 2021). As a result, the designer's responsibility must expand beyond screens and services.

Designers are increasingly called to shape institutional ethics, problem framings, and socio-technical governance, rather than merely refining interactions. This shift requires designers who can navigate ethics, data science, and lived human experience simultaneously. It is for this reason that design education must evolve to embed designers directly within predictive model development teams, where the most consequential decisions are made long before interfaces appear.

DIVERSITY AS AN EPISTEMIC NECESSITY

Diversity is often framed as a moral or political aspiration. In AI, it is also an epistemic necessity. Research across organisational science and STS (Science and Technology Studies) shows that homogeneous teams tend to reproduce narrow worldviews, leading to blind spots, unchallenged assumptions, and systematic failures (Phillips, 2014; Rock et al., 2016). When people from similar technical, cultural, and social backgrounds design AI systems, they encode their worldview into machines, often without realising it.

This dynamic becomes especially visible in data labelling practices. Annotation is not a neutral preprocessing step but a form of epistemic labour that determines how the world is categorised and understood by machines (Gray & Suri, 2019). When annotation work is outsourced through platforms such as Amazon Mechanical Turk under conditions of economic precarity, bias is not accidental but structurally produced.

IMAGENET: CARE AS DATASET REPAIR

The ImageNet dataset, created in 2009 by Fei-Fei Li and Olga Russakovsky, has played a foundational role in the development of computer vision systems. In their investigation *Excavating AI*, Crawford and Paglen (2021) revealed how ImageNet's categories encoded misogynistic, racist, and morally judgmental labels, particularly in its classification of human subjects.

What is significant is not only the critique but the response. Rather than dismissing these findings, Fei-Fei Li and Russakovsky undertook a large-scale dataset remediation process, asking annotators whether images were safe and whether certain labels were even imageable. This process reduced the number of human-related categories from 2,832 to 159. This intervention represents care enacted as structure rather than sentiment, demonstrating that dataset curation itself is a form of ethical labour.

GENDER SHADES AND BENCHMARKING AS CARE WORK

Another landmark example of feminist care work in AI is the Gender Shades study conducted by Buolamwini and Gebru (2018). Their research demonstrated that commercial gender classification systems performed significantly worse for dark-skinned women than for light-skinned men, revealing intersectional accuracy disparities that had previously gone unexamined.

Crucially, Buolamwini and Gebru did not stop at critique. They developed the Pilot Parliaments Benchmark dataset, using portraits of United Nations representatives to provide a more balanced distribution of skin tones. This dataset has since become a standard tool for auditing racial bias in facial recognition systems. Benchmarking, often framed as a technical task, emerges here as ethical and epistemic care work—creating infrastructures of accountability that enable systemic change.

CARE, UNCERTAINTY, AND ACCOUNTABILITY

AI models are inherently incomplete. Feminist epistemology emphasises that acknowledging uncertainty is not a weakness but a form of epistemic honesty (Haraway, 1988; Puig de la Bellacasa, 2017). Feminist ethics of care invite us to conceptualise AI not as an autonomous agent but as an ecosystem of responsibilities distributed across design, development, testing, deployment, and governance.

This perspective helps explain why biased recommender systems—such as those found in Google's job advertising algorithms—are not anomalies but predictable outcomes of opaque optimisation processes (Eubanks, 2018). Care in AI requires relational thinking, accountability across the system lifecycle, and humility about what technology can and should do.

MEMORY, TRAUMA, AND ETHICAL REFUSAL

In our practice-based research "*Mémoires Synthétiques*" with families of the desaparecidos—thirty thousand people forcibly disappeared during Argentina's military dictatorship—generative AI raises profound ethical questions about memory, representation, and consent. Feminist STS emphasises that care sometimes takes the form of refusal rather than intervention (Puig de la Bellacasa, 2017).

Rather than generating synthetic reconstructions, this project focuses on visualising absence and fostering reflection. This approach resists technological solutionism (Morozov, 2013) and centres relational ethics. Notably, such work often encounters institutional resistance, illustrating that feminist care practices in AI can entail professional and personal risks.

ENVIRONMENTAL CARE AND AI INFRASTRUCTURE

Responsible AI must also address environmental impacts. Generative models rely on energy-intensive infrastructures, including data centres with significant water and electricity demands (Crawford, 2021; Verma & Tan, 2024). A collaborative research project, "EcoChat", with partners at the Federal University of Pernambuco (UFPE) in Brazil and King's College London, explores whether visualising the energy consumption of ChatGPT can encourage behavioural change.

Early findings suggest that guilt alone is insufficient. Care must be supported by redesigned systems and structural alternatives. Feminist ethics of care extend beyond human users to include planetary systems, reframing infrastructure as a site of moral responsibility.

DEFENDING DIVERSITY IN A TIME OF BACKLASH

In the current political climate, diversity initiatives face increasing backlash. Yet extensive research demonstrates that diverse teams consistently outperform homogeneous ones on complex problem-solving tasks (Phillips, 2014; Rock et al., 2016). While homogeneous teams may feel more efficient, their outcomes are often inferior.

Kanter's (2008) work further shows that minorities must constitute at least fifteen percent of a group to safely speak up. Care cannot be carried by isolated individuals; it requires community and structural support. Feminist ethics of care therefore depend on institutional conditions, not individual goodwill.

CONCLUSION: HUMANISING THE SYSTEMS THAT PRODUCE AI

The central argument of this essay is that our challenge is not to humanise AI but to humanise the systems that produce it. Designing with care, diversity, and responsibility allows us to move from AI systems that merely predict behaviour toward systems that participate in building more equitable futures.

The care work already being carried out by women in AI—through dataset curation, auditing, benchmarking, refusal, and institutional critique—demonstrates that alternative modes of technological development are not speculative. They already exist. Recognising, supporting, and expanding this work is essential for the future of responsible AI and for the role of design within it.

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THE RIPPLE EFFECT: MAKING AS MATERIAL PRACTICE AND KNOWLEDGE

Alicja Patanowska

INTRODUCTION

The article examines how artistic practice produces knowledge through material participation in processes of production and extraction. Using the installation *The Ripple Effect* as a case study, I demonstrate that artistic activity does not exist outside the environmental crisis; rather, it operates within the same circulations of materials, energy, and waste that shape contemporary industrial production. The work reveals that the process of art production itself remains entangled in the tension between production and environmental care, while visitors entering the installation experience these relations as part of the material conditions of contemporary life.

The analysis adopts a practice-based research perspective in which making—understood as a process of production through which cognition emerges in material action—constitutes a form of knowledge. Knowledge does not appear after the process is complete; it is generated during the process. The making process, in which a material reveals its constraints, errors, and resistance, becomes a crucial source of understanding, and decisions taken during the process respond to these conditions. The finished object does not so much contain meaning as preserve traces of embodied process.

The installation transfers this logic into public space. Its materiality, scale, and tactile accessibility enable audiences to encounter the consequences of production and extraction through direct experience of the installation. The work does not resolve the contradiction between production and environmental care but renders it perceptible.

EMBODIED KNOWLEDGE

In my practice, knowledge does not reside in the finished object but emerges during the process of work, based on continuous interaction between body, material, and tools. De-

cisions are made in response to the behaviour of clay rather than solely according to a predetermined plan. Making, therefore, is not the execution of a pre-existing concept but a mode of thinking through action (Ingold, 2018, pp. 123, 134–135; Malafouris, 2013, pp. 8–9, 37). As I wrote in my doctoral dissertation, "the externalisation of this knowledge, its emergence in external, sensory reality, takes place in practice—in action, gesture, and movement" (Patanowska, 2022, p. 5).

Embodied knowledge develops through the repetition of gestures requiring concentration and attention, and through the gradual recognition of the material's possibilities and limitations during work. Contact with clay reveals moments that cannot be fully predicted or described in language: loss of structural stability, changes in plasticity, or material tensions leading to deformation or cracking. Each such situation requires an adjustment of working methods to the current condition of the material. This type of practical, situational knowledge in action is often described as *mētis* (Scott, 1998, pp. 313–316). Craft practices may thus be understood as embodied systems of knowledge enabling deep understanding of material through direct engagement.

Tim Ingold describes making as a process of correspondence between maker and material, in which form emerges from relations rather than from imposed shape. Similarly, Lambros Malafouris's theory of material engagement presents cognition as distributed between mind, body, and material environment. These perspectives resonate with working in clay, where thinking develops through experiencing material within action.

The finished object records process rather than realising a predetermined idea. Minor differences between elements, traces of touch, or firing effects document decisions taken in relation to matter. Knowledge remains within the process, yet leaves material traces in the object.

CRAFT AS CARE

Working with clay creates a relation that extends beyond a purely technical use of the material. Material limitations influence decisions, pace, and outcomes. Clay cannot simply be forced into form, as attempts at domination often lead to loss of structural stability. The working process, therefore, involves negotiating possibilities with the material itself.

Care, understood here as a practice of sustaining relations with material and working conditions, emerges as a result of prolonged engagement with material rather than as a preliminary ethical declaration. Repeated encounters with fragility and material limits produce attentiveness and responsibility toward the process. Care becomes embedded in decisions regarding drying time, element thickness, or firing parameters, serving as a mode of organising work in relation to material behaviour.

Posthumanist perspectives emphasise human entanglement with material systems. Timothy Morton demonstrates that matter does not function as a passive background but actively co-constitutes reality (Morton, 2013, pp. 101, 129). Maria Puig de la Bellacasa further develops this perspective by framing care as a practice of sustaining relations between humans, environments, and infrastructures (Puig de la Bellacasa, p. 3).

In ceramic practice, care manifests in maintaining working conditions and responding to the material's changing state. Embodied knowledge leads to responsibility, since close engagement with matter reveals the consequences of one's actions. Work tempo and formal choices become subordinate to material possibilities rather than to prior assumptions alone.

Objects do not represent care but materialise a process shaped by attention to material limitations and responses to them. Care becomes a structuring principle organising production.

An expanded understanding of care is also visible in my work *Other Stories 2*, presented in the exhibition *Looking Through Objects* at the Design Museum in Brussels, where material form becomes a space for recording experiences of the female body often absent from official narratives. The work consists of numerous forms produced on the potter's wheel, similar yet never identical, through which the craft process reveals tensions between individual experience and its collective dimension. The repetition of gestures and minor differences between objects materialise both individuality and the recurrence of experience within the community.

In a similar way, the handmade pussy hat, which became a symbol of the Women's March, demonstrates that meaning arises not only from the object itself but also from the collective act of its making, in which individual experiences are transformed into a visible sign of collective action. In both cases, the material does not function illustratively but operates as a medium that enables bodily experiences to enter public space through material presence, showing that relations and meanings emerge through shared practices of working with material.

CLAY AS ARCHIVE

The installation *The Ripple Effect*, measuring approximately 5 × 6 metres, was created at the invitation of the Victoria and Albert Museum in London and presented in the museum garden during the London Design Festival 2025 as a low seating platform descending toward a water reservoir.

The surface of the installation is covered with 2,000 ceramic tiles made from a clay body containing flotation tailings (Łuszczkiewicz, 2000, pp. 25–35) waste from the Żelazny Most reservoir. Incorporating waste required extensive material experimentation, revealing material constraints and demonstrating that design decisions remain subject to material conditions.

The installation's form refers to the shape of the waste reservoir, while eight tiles covered with copper mirror surfaces refer to the proportion between the amount of copper concentrate obtained through flotation and the mass of flotation waste generated during ore processing. This proportion reveals the scale of waste produced in relation to extracted raw material. The installation does not present statistical data but enables visitors experience through space and material contact.

The installation invites visitors to sit and touch ceramic tiles directly, allowing physical contact with a material containing traces of extraction processes. The intense blue colour of the surface, visible from afar and contrasting with the greenery of the garden and the museum's brick façade, made the object a clear meeting point for visitors, serving as a shared spatial reference within the museum grounds. The materiality of the installation thus ceases to function merely as a representation of a problem and instead becomes a shared experiential space in which the consequences of production and extraction become directly perceptible.

The scale of production revealed another contradiction. Manufacturing thousands of elements required significant consumption of energy and materials directly linked to extraction processes, including copper, which is necessary for energy and technological infrastructures, without which the project itself could not have been realised. This demonstrates that artistic practice itself participates in the productive processes it simultaneously reflects upon. The project shows that artistic practice is not environmentally neutral and reveals its own entanglement within extraction and production processes, while the installation operates not only as a representation but also as a space of encounter and experience. The work does not resolve the contradiction between production and environmental care but makes it visible and experientially accessible.

CONCLUSION

The article demonstrates that artistic practice does not function outside processes of production and extraction but remains directly entangled in them. Knowledge generated in the making process does not result from representing ecological problems but from material participation in circulations of matter, energy, and labour.

Working with clay reveals that a material is not a passive substance but a co-participant in the process, shaping creative decisions and work tempo. This relation leads to forms of care that extend beyond the production process itself and makes visible the connections between individual actions and broader environmental processes.

The Ripple Effect does not propose a resolution to these tensions but enables their experience through direct engagement with matter and installation space. Artistic practice thus becomes a tool for understanding contradictions that cannot be easily resolved but require continuous negotiation between production, responsibility, and environmental care.

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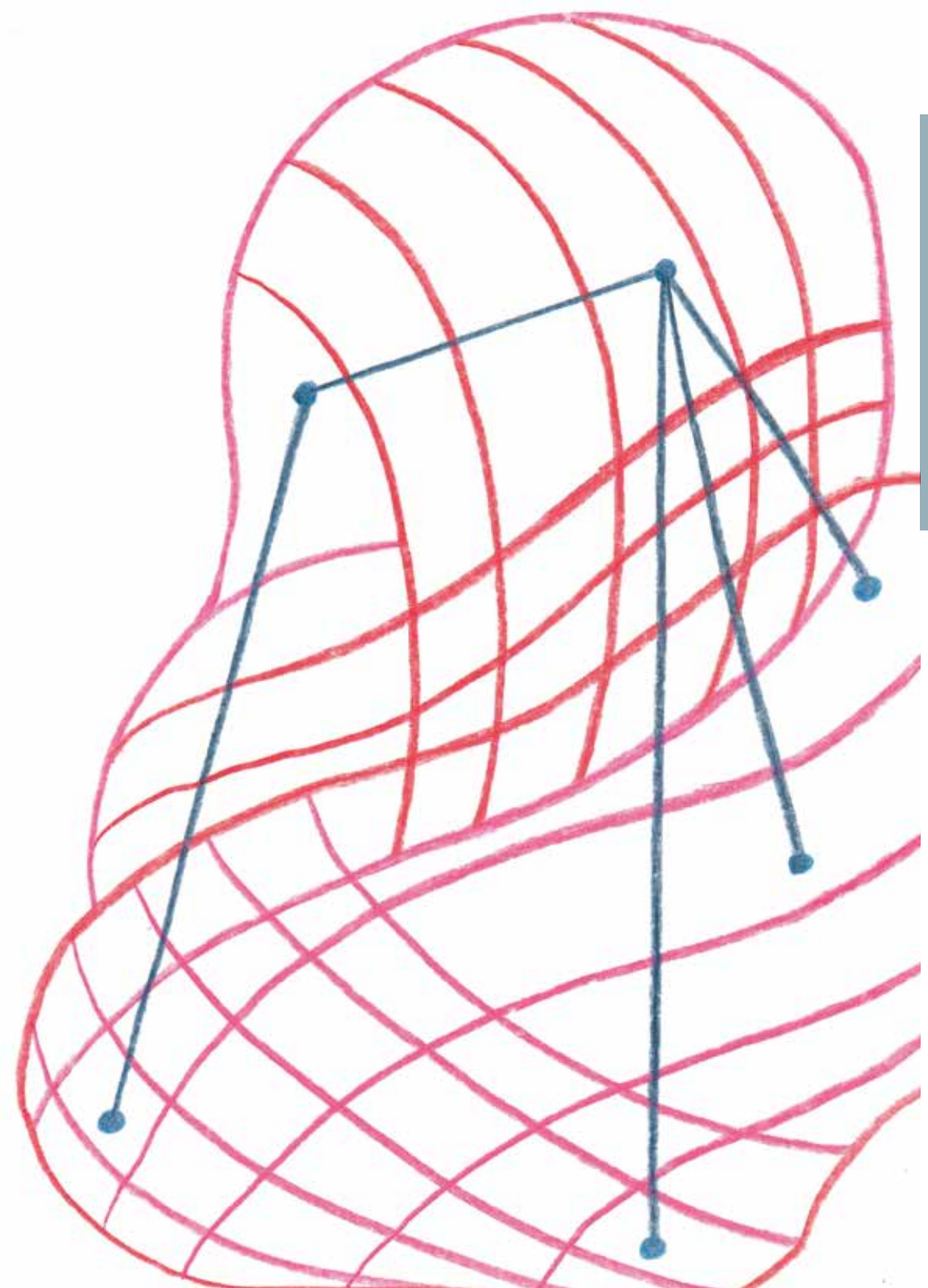
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SEARCHING FOR SOLUTIONS



MEMORY OF THE HIDING PLACES

Natalia Romik

As an architect and artist, I have been researching small former Jewish towns, shtetls, for years. I have conducted performances and created nomadic installations that evoke the spectral presence of Jewish communities and struggle against social amnesia. In my practice, I often use mirrors, which reflect forgotten pasts while offering an aesthetic entry point into often tragic histories. My installations and performances are designed to be approachable: they invite audiences in by reflecting on and subtly twisting their daily surroundings of small towns in Poland.

A few years ago, I travelled through a dozen such towns with the *Nomadic Shtetl Archive*, a mirror-clad vehicle that served as a mobile library and archive, evoking memories of their Jewish past. I remain deeply interested in restoring the forgotten heritage of the shtetls. Recently, my book on this subject was published in open access (Romik, 2025).

Here, though, I would like to focus on my more recent project, *Hideouts. The Architecture of Survival*, and show, through a few examples, how I searched for architectural and historical ways of addressing the ambiguities and uncertainties associated with the places where Jews hid during the Second World War. An artist, architect, designer, or historian never creates alone. Research always depends on collaborative effort, on background work and practical and theoretical support that often remain invisible to the public.

In the case of *Hideouts. The Architecture of Survival*, it was only through many years of collective work that we were able to explore the history and architecture of nine hiding places in Poland and Ukraine in which Jews hid during the Holocaust. The project was co-created with the curators Kuba Szreder and Stanisław Ruksza, and with the anthropologist Aleksandra Janus. The exhibition opened at Zachęta National Gallery of Art in Warsaw in March 2022, and was later moved to the CCA TRAFO in Szczecin (2022) and the Jewish Museum

in Frankfurt (2024).[1]

The project rests on specialist work in ethnography, history, geodesy, monument conservation, dendrology, speleology, and archaeology. The exhibition was a summary of research conducted as part of my postdoctoral projects, supported by the Gerda Henkel Stiftung and the Fondation pour la Mémoire de la Shoah, two institutions that enabled this process. One of our key partners was the Ukrainian Center for Urban History of East Central Europe. Together, we created sculptures and a narrative exhibition that are at once artistic and scholarly tributes to what I call the architecture of survival: the hiding places built and used by Jews during the Holocaust.





In designing the exhibition space, I was inspired by the display tables popular in nineteenth-century natural history museums. Each table included monitors with documentary materials, interviews with specialists from various fields, geodetic spatial analyses, research documentation, scans of the hiding places, maps, memorabilia, and expert opinions. These included, for example, a dendrochronological analysis of the Józef oak and the steps found inside it. The exhibition attempted to create not only an aesthetic experience but also an evidentiary one.

The subject of Jews going into hiding, and the help they sometimes received, has appeared in various contexts of Holocaust research. Yet we know relatively little about the architecture of the hiding places themselves. This is partly because they have eroded or disappeared, but also because researchers have naturally focused on the fate of those in hiding and of their rescuers. Important publications from recent years have addressed the subject of hiding and hiding places, among them books by Marta Cobel-Tokarska (2018), Anna Bikont, Barbara Engelking and Jan Grabowski, and Jacek Leociak. My own work grows out of that scholarship, but asks a somewhat different question: what did it mean, materially and spatially, to build a place in which survival could be sustained?

It is estimated that, during the Second World War, of the three million Jewish citizens who lived in pre-war Poland, only around 50,000 survived the Holocaust by hiding among the mainstream "Aryan" population. Some managed to survive on their own; others were helped by non-Jewish compatriots. They were hiding not only from Nazi persecutors but also from szmalcowniks and regular neighbours who might have betrayed them either out of fear or for financial gain. Most survivors had to adapt existing architecture—attics, sewers or cellars—or build new shelters in tree hollows, caves, and even empty graves (Romik, 2020). This basic infrastructure of survival had to not only conceal people but also to sustain their most elementary life functions: shelter, air, water, food, waste disposal—all within just a few square metres. The geographic focus of my research is Poland and Ukraine.

The case study that opens the exhibition is the extraordinary story of the Józef oak, a hollow tree that to this day holds the secret of two Jewish brothers who once hid inside it. I came across information about this hideout soon after I began researching the subject. The more than 650-year-old oak stands in the heart of the park in Wiśniowa, in Poland's Subcarpathian region, near the former Mycielski estate, now a local cultural centre.



The local community retained the memory that the tree had served as a wartime hiding place for two Jewish brothers, known locally as the Hymi brothers. This memory is confirmed by a postwar account written in 1961 by the journalist Julian Pelc, preserved in the archives of the United States Holocaust Memorial Museum. He testified that the interior of the tree still bore traces of human presence. During the war, there had been an entrance that made the hollow accessible; today, it is overgrown, and only a crack in the trunk allows partial inspection.

1 https://zacheta.art.pl/en/wystawy/natalia-romik?setlang=1

What could not be found in the archives was discovered through collaboration with experts from many fields. An extended examination of the site began in August 2019, with the participation of the dendrologist Jerzy Bielczyk, who was responsible for the care of the oak. He accompanied us during our first inspection, when we looked inside the tree from a hoist and filmed its trunk with an endoscopic camera. Inside, we discovered several wooden steps supported by metal carpentry brackets, which experts agreed had undoubtedly been made before the Second World War.

As for the brothers and their identity, from the beginning of our work with Aleksandra Janus, we suspected that "Hymi" could not have been their real name. We learned their names only later, while Aga Szreder was taking a silicone mould of the tree. We happened to meet Dorota and Wiesław Salamon, who were then working on a book about the local school. They were the first to tell us that the brothers were Paul (Pesach) and Dawid Denholz. Soon afterwards, we managed to contact their daughters in New York, Manya Berenholz and Helen Schwarz. They shared their family archives, which allowed us to reconstruct at least part of the brothers' wartime fate and that of their family.

For Dawid and Paul Denholz, who came from nearby Frysztak, the oak was probably only one of several hiding places. After escaping from the KL Płaszów camp in Kraków in 1942, they hid in the surrounding forests, fields, and farms. They were the only members of their family to survive the war, and both later settled in the United States (Janitschek et al., 2024).



I envisioned the sculptures in the exhibition as mirror-like imprints of historical hiding places. Their making involved a classical casting technique. The representations of the hideouts were produced through the collaborative effort of Aga Szreder, Olek Konoschenko, and Rafał Żwirek, in a laborious process that involved applying silicone directly to surfaces such as the bark of a 650-year-old tree. Once the silicone had hardened, a gypsum master model and supporting scaffolding were added to preserve the future form of the sculpture.

In the final stage, accurate one-to-one casts of the hideout sections were made from an acrylic mixture. They were then sent to the conservation studio of Piotr Pelc in Wrocław, where they were silver-plated using a technique known in monument conservation and sacral architecture: a demanding process involving the application of fine silver flakes, followed by polishing.

The silver surface is, for me, a tribute to these amateur architects of survival, who used whatever tools were available to them, sometimes only a spoon, and worked mostly at night, for fear of their neighbours, to construct spaces that would remain invisible.

Another important example is a hideout preserved in the Jewish cemetery on Okopowa Street in Warsaw. In quarter no. 41, a wartime shelter created by Izaak Posner, then the cemetery's intendant, and Moshe Aroniak, a stonemason, has survived. It was made by widening and bricking up a pit prepared for a grave, resulting in a roughly square room large enough to accommodate several standing people. Its ceiling was formed from matzevot[2] placed on four tram rails. The hideout provided temporary shelter for members of the Posner and Aroniak families. Posner, Aroniak, and most of their relatives did not survive; some died in or near the hideout when it was discovered in 1942. Of those who used it, only two teenage boys survived the war: Abraham Carmi and Dawid Płoński. Both later found refuge elsewhere and eventually settled in Israel.



The exhibition also included a hideout in a private house in Żółkiew, Ukraine, entered through a hatch hidden in the parquet floor of one of the rooms. At its peak, eighteen people hid there, some for as long as twenty months, between 1942 and 1944 (Janus, Romik, 2025).

2 A matzevah is a term used in the Hebrew Bible for a baetyl, a type of sacred column or standing stone.

Another site was the city sewage system in Lviv, where the Chiger family hid with the help of Leopold Socha and two other sewage workers. Material traces of those in hiding were identified there in 2021 by Anna Tyczka from Urban Explorers Lviv. This story is known through Krystyna Chiger's *The Girl in the Green Sweater*, Ignacy Chiger's memoir *Świat w mroku*, and Agnieszka Holland's film *In Darkness*.

We also researched the Verteba and Ozerna caves in today's Ternopil Oblast, where the Stermer family and others hid. In Verteba, Esther and Zaide Stermer and their children first found shelter in a cave accessible from ground level, before being forced deeper underground. In Ozerna, from 1 May 1943 onward, a group of thirty-eight people lived in the cave system, which extends for nearly 158 kilometres and provides access to drinking water. They left on 12 April 1944. Some survived in both caves for as long as 511 days. Esther Stermer later described this experience in her book *We Fight to Survive*.

The story that concludes this essay also opens a new chapter in my research. It concerns a hiding place in the border zone of the Białowieża Forest, between Poland and Belarus. Since August 2021, a so-called refugee crisis has been unfolding there. People on the move, refugees from the Middle East and Africa, continue to take this route, seeing it as one of the safer passages into the European Union. The Belarusian regime has cynically instrumentalised this situation, while the Polish state, under both the previous and the current government, has responded by constructing a 5.5-metre-high, 180-kilometre-long wall. People die in the swamps and dense forest, especially in winter. So far, more than 130 deaths have been officially identified.

Together with Natalia Judzińska, Aleksandra Janus, and the geodesist Przemek Kluźniak, I conducted research and geodetic measurements of a shelter built and used by people on the move: a makeshift hut constructed from pine wood. In documenting it, we used some of the same techniques that we had used in researching Holocaust hiding places, including 3D scanning. This scan and video serve, first of all, as evidence: proof that even today, people are forced to hide, building shelters and secret refuges in order to survive. But they are also an entry point into the next phase of my work (Judzińska, Sendyka, 2022).

The memory of hiding places is never only about the past. It is also about the present and the forms of vulnerability, ingenuity, fear, and responsibility that architecture continues to hold.

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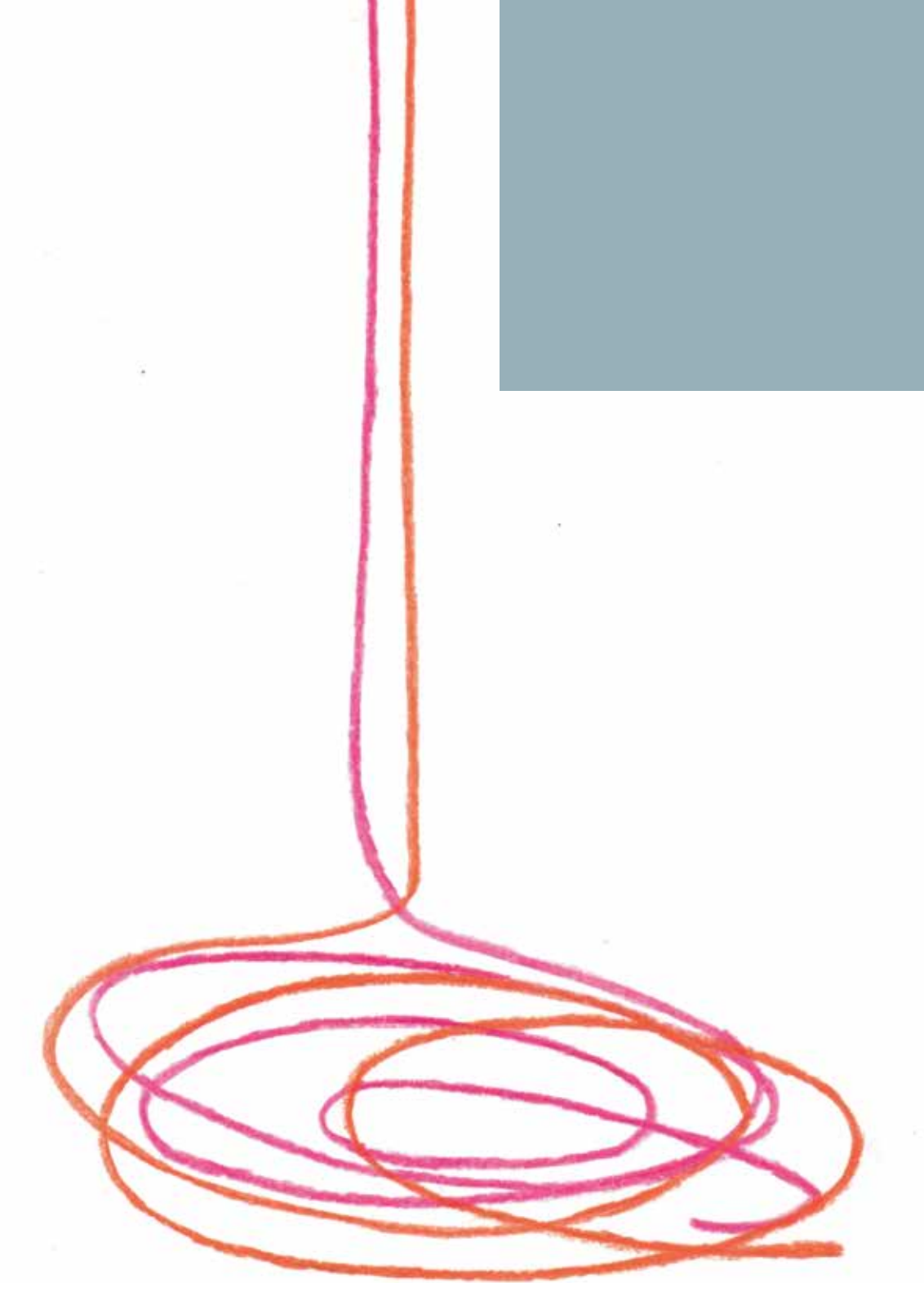
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ON WEAVING WITH CARE: REGAINING AGENCY THROUGH DESIGN PRACTICE

Julia Bujak

Working with textiles, a medium tied to women's domestic caretaking role and therefore devalued as socially invisible and politically silent, has become my personal form of engagement. Through my practice, I address different forms of systemic violence and examine how national identity, notions of belonging, and security are shaped and expressed in contemporary Poland. My textile practice began with the graduate project *Behind My Fence*, consisting of two works, *Tapestry of Care* and *Tapestry of Violence*, developed at the School of Form. The project focuses on the humanitarian crisis on the Polish–Belarusian border and consists of two double-weave tapestries designed and hand-woven on a traditional folk loom. It emerged from a sense of responsibility and from the urgency to respond to state violence toward refugees, exploring how design can become a practice of both resistance and care.

PROXIMITY OF THE VIOLENCE

I observed the crisis and its violence from a distance–first from Iceland and later from Warsaw. Report after report described how Polish policies were condemning thousands of people to suffering and, in many cases, to death. For the first time, I felt such a strong sense of responsibility for my country's actions; I realised that I was part of a political body that allows human suffering. I could not remain indifferent and wanted to find a form of engagement that would be both personal and rooted in my design practice.

Although the government's actions were clearly unethical and unlawful,[1] a more complex question emerged: when do we, as people and as citizens, resist violence, and why do we so often come to justify it? I refused to accept a reality in which a human being can be called "illegal", a reality that legitimises supposedly "humane" procedures for expelling unwanted people. I did not want to design for such a reality. Instead, I wanted my graduate project to confront it, to challenge our notions of home and security, and to create a space for imagining societies shaped by care.

BEHIND MY FENCE AND VISIONS OF HOME

State violence and militarisation soon became the everyday reality of the border region. The area remains a space marked by crisis, restricted access, and an electronic fence that now runs along the border. *Behind My Fence* grew out of conversations with people living inside or directly beside this zone. I wanted to understand how their world and their sense of home had changed and how they interpreted those changes.

I chose to work with the double-weave technique because it is deeply rooted in the material culture of Podlasie, the region most affected by the crisis. Among its characteristic forms are narrative tapestries depicting village life, routines, ceremonies, and the surrounding landscape. Drawing on this tradition, I created two tapestries whose narratives stem from the stories shared by borderland residents. They portray a transformed everyday reality marked by crisis and state violence.

These stories reveal two distinct visions of that reality. Refugees appear either as "people in the forest", victims of state violence, or as "the Others", described as those lurking around someone's yard. In both visions, the space of home is disrupted. In one vision, the disruption is caused by the brutality of the state; in the other, by the perceived presence of refugees themselves.

I wanted to show how those who disrupt the space of home are present: how visible they are, how they move, and how they are identified. On the *Tapestry of Care*, reflecting stories told by activist-residents, refugees have no freedom of movement; they hide in the forest or walk only at night. They are guided by locals or tracked down and forcibly removed by the authorities. They exist in stillness, darkness, and silence. Forced to hide, they begin to blend into the forest and become identified with it. The first tapestry shows migrants precisely as such—as "people in the forest," people forced into an inhumane situation, people who need help.

Stories told by residents who support government policies reveal a different reality. The once familiar space of home begins to change as "the Others" appear among the locals. They are not regarded as part of the community and are denied the right to exist within its boundaries. Alongside them, civil and military services enter the landscape, and home is transformed by their presence as well. The second tapestry, which I called the *Tapestry of Violence*, shows the overwhelming presence of state forces—visible, loud, taking over the borderland with vehicles, helicopters, and drones. In this vision, their presence and violence appear justified and even necessary. This logic emerges from residents' accounts and their fear of refugees. Following these narratives, I chose not to depict people in the forest directly but to show ghost-like, unsettling figures hidden among the trees—"the Others" they fear, from whom the state claims to protect them. Through this imagery, I wanted to make clear that the acceptance of violence toward refugees is rooted in racism and xenophobia.

The colour palette and composition of both textiles reflect these opposing logics. I chose purple and black for the *Tapestry of Care* and bright green for the *Tapestry of Violence*—a colour that works both as a warning and as a signal of safety. In the purple tapestry, the forest fills the entire piece, with refugees blending into the trees and into the darkness. Between the trees and the figures, I placed location pins, some pointing to empty spots, suggesting that a person is hiding, has been caught, or has disappeared. The second tapestry repeats the tree motif as a frame around the militarised landscape, emphasising that, although

1 Migrants at the Polish-Belarusian border often do not undergo official procedures—their identities are not checked and it is not determined whether they are entitled to international protection. Many express their intention to apply for asylum, but these requests are repeatedly ignored, and migrants are pushed back across the border to Belarus. The Polish state and its border and military forces violate both international and constitutional law. The most striking example of these actions is the practice of pushbacks. Moreover, in an attempt to legitimise these unlawful practices, the Polish government has repeatedly changed existing legislation. In doing so, it consistently undermines the Constitution and significantly lowering, or even abandoning, standards of refugee protection and basic principles of humanitarianism. The government has pursued radical and unlawful measures focused solely on securing the border—that is, on preventing migrants from entering Poland at all costs. By denying them humanitarian assistance, the government condemns them to suffering and deepens an ongoing crisis. In official discourse, this situation is described as a "migration crisis". This framing is misleading and deliberate: it serves to justify aggressive policies and to shift responsibility onto Belarus and onto migrants themselves. As noted by Grupa Granica, the situation at the Polish-Belarusian border cannot be described as a migration crisis, as it was not caused by a natural disaster, war, or sudden political change, but is the result of deliberate actions by the Belarusian government. The dramatic situation of people trapped in the borderland forests is, in fact, a humanitarian crisis—one that stems from a strategy of violence against migrants adopted by the Polish government in response to the actions of Alexander Lukashenko.

perceptions differ, both stories concern the same place and the same people.

WEAVING WITH CARE

I learned how to weave from Teresa Pryzmont, a master weaver and outstanding folk artist. She taught me not only the technique itself but also how to prepare the warp, set up the loom, and enter the rhythm of the work. I was introduced to weaving in a deeply traditional way, as a woman learning craft from another woman, through shared work and conversation. While at the loom, Teresa spoke about her life and about how weaving had become for her a way of being recognised and seen, of shaping her own voice, and of improving the material conditions of her family. In those hours, I began to understand that for both of us, weaving was becoming a way to reclaim agency and express care.

Preparing the yarn, warping the loom, and weaving the tapestries required patience and attention. The process was slow and physically demanding, just as the conversations that shaped the project required emotional engagement and careful listening. Through the effort I put into making these pieces, I wanted to express respect for the refugees and for the residents who have been helping them in the borderland forests.

Although *Behind My Fence* is a personal practice of protest, it is also the result of close collaboration with others. The project would not exist without the people who shared their stories with me and without the constant support of those close to me. I see this work as a long conversation. One that is far from finished and that needs to continue.

URBAN ART INSTALLATIONS AS INVITATIONS

Izabela Bołoz

INTRODUCTION

Many of us, as city dwellers, use public spaces almost every day. Whether commuting to work or school, meeting friends in a square on a summer evening, skating together in winter, or taking a short walk in a nearby park, we constantly engage with the shared spaces of our cities. Although we may not reflect on it often, the spatial environment that surrounds us profoundly shapes our well-being, lifestyle, and everyday experience. It contributes to the formation of our identity and the accumulation of memories.

While the overall quality of public space is undoubtedly crucial, its smaller, seemingly insignificant elements can also play a special role in our routines and hold a unique place in our memories. Think of a low wall you like to sit on while waiting for someone, even if that was not the architect's intention. Or a set of steps where teenagers regularly gather. Or a child's favourite swing that has become an obligatory stop during every family walk. Each of these elements may remain unnoticed by many, yet be deeply meaningful to some.



Photo 1: Spontaneous play and spatial appropriation: a child climbing a decorative lantern in a Spanish town.

From this perspective, every element of public space matters. The encouraging news is that designers and architects today enjoy unprecedented freedom to shape these elements in novel ways. The emergence of modern art and the growing acceptance of interdisciplinary approaches have opened up new possibilities for public space design. While in the nineteenth century the public might have regarded a fusion of sculpture and staircase with scepticism, contemporary practice allows us to freely draw from architecture, design, and art, integrating these disciplines with social and interaction design to explore new relationships between form, function, and social meaning.

In this context, urban art installations represent a particularly compelling field. This typology of public space design, which consolidated as a distinct field around the early 2000s alongside the rise of interactive, participatory, and media-based urban practices, has created a hybrid form of applied art that links architecture, design, and artistic expression. In this essay, I argue that, much like a wall used for sitting or a rail used for sliding, such installations may not solve the major structural problems of public space; however, they can meaningfully enrich everyday experience by introducing joy, spontaneity, and social interaction.

Drawing on selected examples from my own design practice, this paper adopts a practice-based research perspective. Through critical reflection on these realisations, I explore how urban art installations can function as spatial invitations, fostering play, interaction, and agency in public space.

SUPPORTING SOCIAL LIFE

One of the central roles of public space is to host and generate social life. Patterns of outdoor social activity vary across cultures and climates, yet public spaces everywhere serve as arenas for encounters, negotiations, and co-presence. In this sense, they do not merely accommodate social life; they actively produce and reveal it.

As William H. Whyte famously observed, people attract people. Crowds form not because spaces are empty and calm, but because others are already present. Social life flourishes where people are given choices to sit, move, linger, observe, or participate without obligation. Edges, steps, ledges, and planter boundaries consistently outperform formal seating, as they enable informal proximity—being near others without being forced into interaction.

Whyte also emphasises that successful public spaces are multigenerational. When children, teenagers, adults, and older people coexist, the space communicates safety, comfort, and vitality. Playful elements—fountains, climbable edges, or interactive surfaces—may attract children, yet their presence benefits everyone by increasing movement, curiosity, and sociability.



Photo 2: Rain-a-way, a public, water-based temporary installation in Gdynia combining playfulness and education.

The qualities Whyte identifies—informality, flexibility, and playfulness—are precisely those that spatial installations can effectively enhance. Unlike formal benches, their open-ended forms offer multiple ways to sit, lounge, climb, or lie down, encouraging spontaneous and even humorous bodily positions. Similar to edges or steps, they avoid prescribing a single function, which makes them particularly inviting. Their ambiguity fosters exploration and casual use, reducing social pressure and encouraging appropriation.





Photo 3: “Intersections”—an installation stimulating playful, informal behaviour among adults and children.
Photo 4: “Waiting Rooms”—a temporary installation serving both as a waiting area for adults and a playful stop for children.

Multigenerational appeal naturally accompanies multifunctionality. Abstract forms, open to interpretation, can simultaneously operate as playground equipment and meeting places, accommodating diverse age groups and shifting functions throughout the day.

EMBRACING TENSIONS

Public spaces not only reveal harmony; they also expose conflict, exclusion, and unequal access. Research shows that some groups may feel discouraged from using public spaces when others occupy them through clustering, territorial behaviour, or acoustic dominance. This dynamic can be observed when children compete over a single slide or when teenagers signal group ownership through body language, volume, and prolonged presence. Although rarely aggressive, such practices can deter younger children, older adults, and women, who may interpret these signals as threatening or exclusionary.

At the same time, adolescents often report being marginalised within public spaces that primarily cater either to children or adults, leaving little room for people aged 13–20. As a result, young people are frequently pushed into commercial recreational facilities, which are not accessible to everyone.

Urban art installations cannot offer a single solution to these complex social tensions. However, they can contribute to mitigating them. Research indicates that open forms allowing access from multiple sides and enabling simultaneous play support more inclusive interaction among children. Hybrid outdoor projects with bold, contemporary aesthetics may attract youth, while multifunctional parks and informal hangout spaces can fill gaps in age-specific spatial provision. The challenge for designers is not to eliminate conflict, but to mediate it without erasing it.

MEMORY, IDENTITY, AND AGENCY

Public spaces are also sites of memory. Through repetition, play, and encounter, spaces become intertwined with personal and collective identity. A friend recalls a geometric sculpture from his childhood park; a public staircase becomes the stage for decades of family photographs. Space accumulates emotional meaning, shaping attachment and a sense of belonging.



Photo 5: “Intersections” at a seaside boulevard in Gdynia—a casual stop during many family walks.

Public space also fosters agency—the sense that “we own the city.” Whyte observed that people enjoy shaping their surroundings: moving chairs, decorating parks, or organising spontaneous events. Where agency is supported, signs of ownership multiply: improvised street gardens in Amsterdam, family dinners in Spanish streets, or spontaneous celebrations in neighbourhood squares.





Photo 6 & 7: “Stairway,” a temporary installation in Copenhagen—functioning as a playground and meeting place by day and a skatepark in the evening.

Urban art installations can either limit or amplify this sense of agency. When developed through participatory processes and rooted in local needs, they can open up possibilities for appropriation, collaboration, and collective ownership. Socially sensitive designs incorporate the perspectives and needs of inhabitants and users, while inviting spatial solutions that encourage a sense of ownership and enable a broad range of actions and forms of everyday appropriation.

STRUCTURING COMPLEXITY

Smaller-scale, temporary, or adaptable public space installations, although more limited in size than entire districts or squares, operate within the very same realities of public space. This means that artists, designers, architects, and communities involved in their creation inevitably face the same complexity: overlapping social practices, cultural expectations, spatial constraints, and environmental conditions. To develop urban art installations that are not merely experimental but also responsive to this multiplicity of layers, the design approach must be broad, reflective, and interdisciplinary.

To support creatives in navigating this complexity, I have begun developing simple theoretical models intended for use throughout the design process. By evaluating the interconnected and contextualised layers—such as visual aesthetics (visual appearance, material presence, invitation to approach), functionality (movement, interaction, environmental responsiveness), and social interaction and activation (co-presence, shared use)—I aim to

propose a transparent framework that helps structure both design decisions and critical reflection.

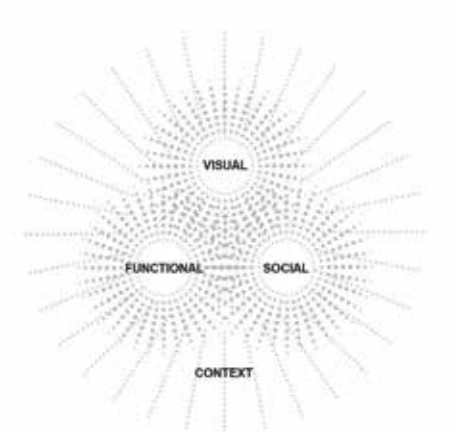


Figure 8: Model of visual aesthetics, social interaction, and functionality rooted in context.

Movement and play are central to this approach. Play functions as a social equaliser: it lowers participation thresholds, allows ambiguity, and legitimises experimentation. Importantly, play does not belong exclusively to children; rather, it enables intergenerational encounters without requiring verbal agreement or shared norms, thereby fostering spontaneous and inclusive social interaction.

INVITATIONS, NOT ANSWERS

I see urban art installations as micro-worlds—small interruptions in everyday routines that momentarily intensify urban experience. They have the potential to foster social relations, invite agency, and create shared meaning without prescribing behaviour. Their strong visual identities can contribute to place-based memory and neighbourhood identity.





Photo 9: A child playing on “Intersections: Emerging Geometry” in Copenhagen.
Photo 10: A passer-by stopping at a temporary public space installation.

Urban art installations will not solve the systemic challenges of public space. Yet they can operate as invitations: to test and explore, to pause and gather, to play and connect. They create situations that allow people to experiment socially and spatially in low-risk but highly meaningful ways.

Public spaces do not require more control; they require carefully designed openness and spontaneity woven into the urban fabric. Intergenerational play and micro-interventions allow for emergence—enabling social life to appear, negotiate itself, and sometimes clash. Seen this way, design becomes an act of invitation: not an answer to how people should behave, but a proposition that asks, “What could happen here?”

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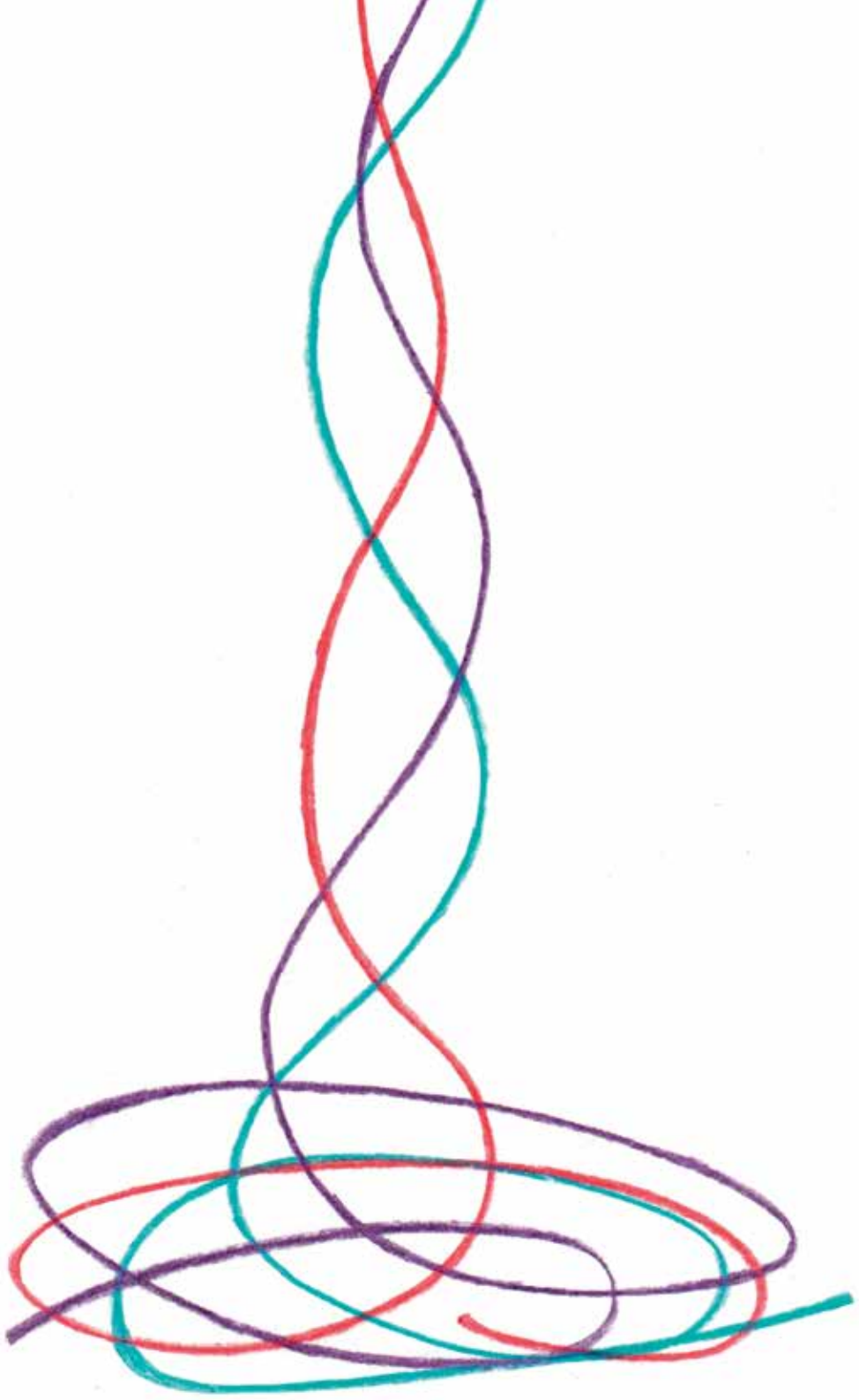
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NARRATIVES IN MAKING





MATERIAL RESONANCE—MAKING AS DIALOGUE

Justyna Popławska

Looking Through Objects—the exhibition I was invited to participate in—reflects an approach deeply aligned with my creative intuition. It proposes a way of attending to an object, not as a static form but as a medium of encounter between the viewer and the maker, mediated by material. Within my own practice, material becomes precisely this point of dialogue: between me as a designer-maker and the substance I work with, and further, between the finished object and the person who engages with it.

This article traces my work with glass waste as a point of departure for developing a body of objects that moves between the functional and the decorative. My practice sits at the intersection of design, craft and art—a space that glass itself has historically occupied.

Many years ago, while studying at the Academy of Fine Arts in Wrocław, Poland, I participated in a study trip across Polish glass factories. Observing glassmakers at work—their physical negotiation with molten matter, the choreography between body and machinery—was deeply compelling. Yet what stayed with me most was not the production floor, but what lay beyond it.

Behind the factory buildings, just outside the controlled spaces of manufacture, an overwhelming landscape of colour unfolded: hills of glass shimmering in the open air. Only upon closer inspection did these formations reveal themselves as industrial waste—not merely shards of broken glass, but entire chunks resembling unreal minerals or abstract ready-made sculptures. One could walk across these chromatic landscapes as if moving through a psychedelic terrain. While the factory environment inspired admiration due to the artisans' extraordinary skills, it also evoked a sense of restriction and inaccessibility. As students, we were observers within a vast techno-human system with limited access. At

the waste site, however, we were told we could take home as much as we wished. In front of me lay piles of what felt like glass jewels—matter that seemed to invite transformation.

That image remained with me. At the same time, I continued, almost dutifully, to immerse myself in the study of glass through its established techniques and technologies, exploring as many facets of the discipline as I could while carrying that memory quietly in the background. Years later, as I began shaping my own material-led practice, I returned to the question of how to work with this 'raw' glass. Raw, not in a technical sense, but as it presented itself to me as a direct material, free from the technological and financial constraints that so often accompany glassmaking.

I turned toward historical techniques involving crushed glass: from ancient decorative applications—where glass frits were fused in moulds as an early method of shaping and working with glass—through to the Baroque use of glass glitter embedded within plaster and mortar wall finishes, to *pâte de verre* processes revived in the Art Nouveau period, known for their richly textured and granular surfaces. Researching these historical examples allowed me to understand crushed glass not merely as waste, but as a material with a long decorative and architectural lineage. The Baroque applications, in particular, broadened my thinking about working with glass frits on a larger scale, extending beyond object-based work into furniture, interior surfaces, and spatial interventions.

I began collecting waste glass from small factories and local art glass studios. Coloured glass is notoriously difficult to recycle into a molten state due to its chemical properties, meaning much of it is discarded. I started crushing this waste in a custom-built mill. After initial attempts at heat-fusing the recycled glass, I began combining the crushed glass with bio-resin (a plant-waste-derived epoxy system).

This composite, which forms a paste that cures without additional heat, energy, or water, freed me from many technical constraints. It allowed for a more direct, intuitive engagement with the material. Over time, the process became more process-led and mutual: I was developing the material, yet each experiment opened up new directions.

This shift enabled me to draw from painterly methodologies. I developed a way of working with the composite as an artist would with paint—building coloured pastes, layering, wiping back, adjusting viscosity. Gestural actions became embedded within functional objects. At the same time, the material proved structurally viable, allowing me to produce furniture pieces such as tables, screens, and interior surfaces.

The composite is not mixed into a homogeneous mass; colour fields and stratifications remain visible, akin to abstract painting. This distinction was important to me since I was not interested in treating the material as a conventional composite, as in terrazzo, where aggregates are dispersed within a binder, and the final surface is largely determined by the randomness of casting. Instead, I sought to refine both the textural language and the method of application. Crushed glass was carefully sieved into multiple gradations, from fine powders and dusts, through sugar-like granularities, to small crystalline fragments, allowing for a far broader spectrum of visual and tactile articulation. When combined with pigments and resin, these graded glass fragments formed an artistic medium capable of producing expressive strokes, controlled colour transitions and varied surface densities.

I was also interested in translating ephemeral painterly qualities, like those found in sketches, palettes and test surfaces, into furniture scale. Ongoing sampling, material swatches and painted studies operate as a coupled creative process. Echoes of gestural abstraction appear: sweeping colour movements, intentional yet open compositions. At times, surfaces are smooth, shimmering with micro-particulates; at other times, they are highly textured, with visible glass crystals creating freckled, tactile fields.

The dialogue I developed with the material does not remain confined to the process of making; it is carried forward into the finished object. Traces of artistic presence are embedded within the surface. Visible hand actions, layered deposits and subtle material shifts act almost like coded messages held within the structure.

This exchange often begins at first contact. The difficulty of immediately identifying the material prompts users to touch, examine and question it. This perceptual disruption becomes an entry point—a moment of pause that initiates a relationship between maker, object and viewer.

Over time, I began working more explicitly with transparency and light, developing material samples that explore degrees of translucency. Light became a material language in itself. In the lamp *Recall*, presented in *Looking Through Objects* in Tallinn (2022) and Gdańsk (2023), the composite filters light through a mass of shimmering coloured particles, contained within a brutalist-leaning form. The material captures visual attention through texture, inviting prolonged attention while simultaneously casting a luminous aura.

In later lighting works from the *Verve* series, also shown in subsequent editions of the exhibition, I turned more directly toward colour, creating saturated lampshades. Drawing from Post-Impressionist palettes, intense yet warm, embracing and deep, the filtered light

disperses into the surrounding space, producing atmospheres conducive to psychological and sensory engagement: states of pause, immersion and attentiveness activated through surface richness.

While the methods I describe may appear aligned with purely artistic practice, I position this work within a functional design framework. Objects are batch-produced in small repeatable series, and the material itself is durable and stable, allowing for long-term use. Utility remains essential: I don't want these works to exist as "museum" artefacts within interiors, but as objects that invite everyday, multisensory interaction.

With the growing accessibility and democratisation of communication platforms, I see my practice increasingly aligned with a contemporary iteration of the Arts and Crafts movement: designer-makers addressing audiences directly, bypassing traditional intermediaries and gatekeeping structures within the design industry.

Years later, when I revisit the image of my first visit to a glass waste site fortunately preserved on an old hard drive, I recognise how persistently it resurfaces across projects. It remains a source of ongoing inspiration, a reminder of the dormant potential embedded in discarded matter, continually propelling my material investigations forward.

LISTENING AS METHOD: MEDIATING ACROSS SPECIES, SCALES, AND COMMUNITIES

Laura Selby

Laura Selby presents listening as a method for multispecies mediation, care, and transformation. Through *Sonic Contamination*, an evolving methodology combining sound, workshops, touch, performance, and storytelling, she explores participatory listening and extended field recording as ways of engaging with ecological systems. The work investigates how revealing otherwise imperceptible processes can open new perspectives for design, collective awareness, and action within interconnected ecosystems.

I am sitting in a glade, a glen in Glenshee. Still and listening. Hands pressed gently on the headphones, trying to cup each ear even deeper into the sounds. My recorder is connected to two contact microphones that are nestled between ancient tree roots and the bed of moss I find myself sitting upon. Nestled, a word that notes the intimacy felt in each passing moment as I listen, listen to the *moss*.



Photo 1: Laura Selby, Moss Listening Image of Recording Setup, Glenshee, 2022.

Take a moment to listen for yourself.

This is a glimpse into how sound can act as a portal to another state of being, in this case, into the moss realm. As you listen, you can hear all the micro-vibrations taking place as the moss absorbs and gathers moisture, an earthworm tracks its path across the soil, and later a lonely robin lands close by, inspecting the moss-human-hybrid that's sitting there transfixed. Significantly, this was the first time I had experienced meditation or my own understanding of it in its purest form. I had fully absorbed into another's world of being, devoid of any inner conscious stream, just a deepening sense of connection and empathy for this moss entity, holding such disparity to my own scale of time and being.

In that moment, the vibrational impulses heard unlocked an embodied relationship to the ecology surrounding me. From my own weight within the sonic field to the expansive activity the moss's tendrils exhibited, my auditory perception of moss became consciously relational in a way I had not before experienced. This unleashed a new way of understanding the organisms and biological systems at work in that patch of glen I was perched upon. A question arose: Could acts of listening help human communities to have deeper, more conscious connections to the world and the species around them, particularly those impercetible within our human scale of being? This consideration became the heart of my developing research project *Sonic Contamination,* and this text explores the concepts, practices and reflections within the work so far.

SONIC CONTAMINATION

From human communities to moss and mycelium, and the interconnecting micro-worlds: we are contaminating. We are collaborating, colliding, and leaving our trace of self behind. Traces consisting of voice, thought, idea, particle, breath, and micro-organisms.

Sonic Contamination explores this idea of encounter through listening acts. The term is inspired by Anna Tsing's text *The Mushroom at the End of the World*. Contamination is not to be viewed negatively but as an invitation for collaboration, where, through encounter, precarity, and vulnerability, we grow and develop relationally. Anna Tsing notes that through these moments of encounter, new worlds emerge (Tsing Lowenhaupt, 2021). By sonifying these connections, can we begin to reintegrate human beings back into the natural world?



TIMESPECIES

An important factor in mediating multispecies and scales of being is time. Carlo Rovelli states, 'Times are legion: A different one for every point in space. There is not one single time; there is a vast multitude of them' (Rovelli, 2019). All beings and matter move in space, in their own worlds of time. Each holding their own temporality, or tempo. I put forward the term *timespecies* to help me understand each encounter of time and being, through listening. Sound holds temporality, only existing as time passes. When scales shift, listening becomes a bridge between these timespecies. Recording these acts of listening is not merely a documentation or translation but an opportunity for situated mediation between species and ecosystems. But how can we access those legions of times, ordinarily silent in our human-auditory field? And how can we achieve this in ways that change how audiences hear or sense them?

EXTENDED FIELD RECORDING

Field recording became the basis for exploring temporality and contamination, drawing on extended methods such as contact microphones and hydrophones to reveal sound worlds from the micro-vibrations in urban and organic spaces. From Croydon in London's concrete brutalism to the moss of Glenshee. Experiences such as the listening you have now also encountered have propelled me on a developing quest to access hidden or seemingly silent worlds. Worlds at the foundations of our ecosystems. Two examples of these include an attempt to listen to mycelium and record the growth of hyphae over a month using hydrophones. I was able to pick up pops and crackles within the sporing bag holding the substrate as water and air pressure changed with fungal growth over time. Following this, sonifying fermenting bacteria and the cellulose byproduct, using postproduction sound granulation tools built within Max/MSP to produce a portal to the micro-realm of chemical

transformation, where relationships are continuously negotiating, invading, caring as they move and contaminate.





EXTENDED LISTENING—A WORKSHOP

In my pursuit of conscious contamination with other species, I deepened my investigations into definitions and forms of listening, and my technical practice of field recording evolved. The accumulation of these experiences led to the creation of a workshop in Extended Listening.

The workshop follows a set of listening exercises. First, the designated site is navigated together as a group, and we notice elements around us at different heights and small signs of species activity that are normally missed. Next, each participant returns to a chosen point in the space to begin their first phase of individual listening. Inspired by Pauline Oliveros' Deep Listening mediations (Oliveros, 2005) they are set ear-cleaning tasks and site attunement methods. Elements of the instruction incorporate meditative breaths and counts to encourage inner listening, and participants are asked to consider these breathing counts as a way to find their own tempo, or time, as they connect with their chosen timespecies.



The following phases of the workshop are shared collectively as we return to each participant's chosen site and listen again together. This time, through contact microphones or hydrophones. At this stage, a hidden parallel universe of sound is revealed. This acts as a foundation for extended listening, and the group are guided through phases of timespecies bridging, as they listen and attune to this new realm of sound. Next, participants interact through touch, breath and movement, hearing how their own presence is situated in the space, noted as an active attempt of sonic contamination. For many, this listening space is the first time hearing from the perspective of another species. It was during these collective listening moments that the most thought-provoking responses were revealed. From the shared awe at the sounds occurring in real time, like a persistent call from an insect hidden and seemingly silent within a tree stump, to hearing the group's own sonic weight, enormous and painful even, as it existed within the delicate sounds.
A simple brush of a flower leaf became a roar!

CHROMATOGRAPHIC LISTENING SCORES – CASE STUDY 1

I then became interested in connecting the participants' listening-site experiences and conveying them as a macro assemblage, exploring whether the chemical-micro relationships at each listening site could be revealed as a graphic score. Or if a mapping of the microscopic collaborations could be used to inform our own interactions towards the microworlds around us. How could our gestures, or how we relate to a site, be more consciously informed? What if we could not only hear but also translate the imperceivable worlds into a mapping of these sonic relationships?

In this pursuit, I explored chromatography—a form of processing used by soil scientists to identify microbial pollutants and organic matter within a sample, via colour, texture and form. This practice was taught to me via a collaboration/contamination with photographic artist Priysha Rajvanshi (2023). At each listening site chosen by workshop participants, a soil sample was collected and processed via chromatography. This became a way of revealing the hidden chemical makeup of each site. I was fascinated by the act of setting all the samples together at once to create a map of contamination. I interpreted this as a score, a more-than-human map of the intermingling micro-worlds: unseen and heard. A map of the sonic contaminations.

Here is a mapping series created from soil collected at workshop listening sites at OmVed Gardens, London.



Here is my hometown of Croydon, where each sample was mapped, in rough translation, to its point on our more traditional human map of the borough. It was crafted from my own listening locations around the borough.



The chromatographic mappings reveal the unique, individual nature of each listening encounter and how each soil trace collected and mapped holds its own identity. Together, as human and more-than-human streams converge, they gather as an assemblage of many, where meaning lives in the whole and in every separate voice or listening experience. It is this idea of multiplicity or pluriversal (Escobar, 2018) relationship that draws a parallel with the musical term: *polyphony*.

As a musician, I have my own connection to the term and what it means within an ensemble of instrumentalists, but the way it can be used to understand temporal relationships or forms of emergent listening to multispecies can be powerful. Simha Arom describes the many interweaving characteristics of the polyphony as '…ostinato figures, continuous or broken pedal points, melodic imitations, melismatic improvisations, movements of parallel fifths, half-spoken, half-sung interjections, or even strict contrapuntal variations…' (Arom, 1981), each voice carries its own narrative, intertwining with the many and flowing together as a whole. In Louis Sarno's field recordings of the Bayaka people, the piece titled *Women Gathering Mushrooms* follows a group of women as they forage for mushrooms in the forests. Mycologist Merlin Sheldrake notes that as they move through the forest tracing the paths of mycelium beneath their feet, 'no voice surrenders its individual identity, nor does one steal the show' (Sheldrake, 2020). Notably, with each listening, a different collection of voices coalesces, informing an emergent way of listening. Anna Tsing notes that these polyphonic assemblages can hold meaning in the ways different biological systems relate to one another. Similar to music-based polyphony, different ecologies hold and gather many rhythms, pollinators, fungi, plants, and people, multiplying rather than merging into the singular (Tsing Lowenhaupt, 2021, p. 24). Difference is celebrated, evolved, and supported by each individual stream of being.

INTERSPECIES PERFORMANCE – CASE STUDY 2

These ideas around polyphony, emergent listening and rhythm assemblage helped further develop the listening scores / sonic contamination maps into interpretable polyphonic performance scores. Crafted into a collaborative performance exercise between instrumentalists and non-humans. In the example below, *moss*! The Chromatographic listening maps became the basis for the score codification, alongside fragmented annotations derived from musician-collaborator responses to a series of field recordings from previous workshop listening sites. These elements came together to form *Contaminate – A Performance Exercise*.

The piece follows three main phases, drawing on elements from the extended listening workshop, arching towards collaborative polyphony, and incorporating experiments in flow states and emergent listening. Each individual responds and plays their own interpretation of interspecies listening and response. To further amplify this, a non-human performer is amplified in parallel, such as moss, which interweaves its own unique and prolific resonances into the performance's field of sound.





SOUNDSCAPE AS INTERFACE

The exercise of interspecies polyphony is just one example of how ways of listening can reveal new models of interaction between humans and other beings. But how can acts of listening link us to multiple streams across many species, or to an entire ecosystem with varying temporalities and scales? The developing field of eco-acoustics puts forward the soundscape as a means of providing ecological data, and through our listening acts within our environments, vibrations and resonances in turn hold meaning, meaning across different species. How we evolve methods of translating these meanings can unlock collaborative understanding between different sonically sensing organisms (Eldridge et al., 2021, p. 142).

Notably, Bernie Krause's Acoustic Niche hypothesis demonstrates how species hold their own band of frequency and uses the phenomenon of the Dawn Chorus as an example of how a seemingly abstract form of randomly displayed sounds in fact holds a closer likeness to that of a symphony – a deeply structured system of voices fitting perfectly together (Krause, 2013, p. 10). Building upon this exploration of species relationship was defined in David Monacchi's *Temporal Niche* analyses, conveying the temporal collaboration of resonance throughout an environment's soundscape, each voice not only defining its own space in the frequency spectrum, but also time (Monacchi, 2014). Each call fits perfectly within the cacophony of voices, as exemplified in Monacchi's sonic explorations of primary equatorial rainforests.

Alice Eldridge puts forward ideas about how we can consider the soundscape as an interface with different species and beings and look at how our idea of self exists within an environment (Eldridge, 2021, p. 4). In indigenous knowledge systems such as the Kichwa of Ecuador, these sonic interfaces are intrinsic to ways of being. The culture-nature division loses meaning as the boundaries between them blur. The soundscape expands to not only interspecies relationships but also relationships with other beings, forest spirits and their ancestors (ONCA, 2022). Ways of knowing come together and resonate.



DETOURS AND BEYOND

Listening can also be considered as a practice of the detour, a way of following the quiet whisper until it crescendos–as one step leads to the next. Within my own case studies exploring Sonic Contamination, a listening workshop led to soil chromatography, then a polyphonic interspecies score, and finally a touch-based sonic textile interface.

These peripheral moves and detours have the potential to surface unheard relations. It could be understood as a method of attunement and adjustment, moving rhizomatically and leaning into the detour. An important question to ask designers and researchers is: what can we all achieve if we embrace the detour, the unknown, or the peripheral in our own practices?

Treating sound and touch as mediators, not just media, we begin to bring hidden ecologies into lived experience and develop the ability to portal to multiple temporalities and species. Multisensory practices across contexts invite care and non-extractive collaboration. Here, listening becomes common ground and holds potential as an entry point where funders, policymakers, and ecologists could listen together, with 'stakeholders' becoming co-listeners for authentic ecosystemic action.

As you, the reader, move through this collection of ideas and methods, maybe take a moment to reflect on what contaminations you have encountered and which you may even pass on.





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DESIGN NARRATIVES ON WALLS AND THE FLÂNEUR

Maria Jeglińska-Adamczewska

I define myself as an industrial designer. I work on objects, furniture, and exhibition design, as well as research projects that sit somewhere between commercial commissions and collaborations with cultural institutions. I set up my own practice in 2012, and having now worked for more than ten years, I can start to see recurring themes—topics that come back, sometimes in slightly different forms, but they have been there from the beginning. Looking back, I can see how certain intuitions or interests were already present early on, even if I didn't articulate them clearly at the time.

One of these is the relationship between objects and space—more precisely, everything that happens in between. I often think about walls and not only as architectural elements but as something that defines a relationship. Maybe this also comes from working a lot in exhibition design, where walls are never neutral. Instead, they guide, frame, support, and suggest.

There is an image I often think about by Joel Sternfeld called *Women at Their Daily Gathering Beside an Ancient Roman Wall, Parco dei Gordiani, Rome (1990)*: it shows a group of women gathering in an open field somewhere in Rome. They could have sat anywhere, but they chose to sit next to a fragment of a wall. They brought chairs, arranged themselves, and created something that resembles an interior, even though they are outside. There is something in that gesture: this search for a backdrop, for a form of protection or context, maybe even a reference to a home. It's a way of recreating a situation that is missing.

In my studio, this question appears in a very direct way. The walls are always changing. They are filled with mock-ups, existing objects, and drawings. There is a constant play between two-dimensional and three-dimensional elements. It's a way to check proportions,

to understand how things relate. I often think of it as a kind of cabinet of curiosities, but one that is not fixed. It's an evolving surface, where objects lean, overlap, and inform each other. This way of working is also connected to how I use images. Visual research is very important to me, not in the sense of mood boards, but more as a way to construct a narrative. I collect images, sometimes from very different contexts, and place them together to create analogies. It becomes a tool for discussing a project, especially in its early stages, even before a brief is clearly defined. Sometimes it's easier to communicate an intention through an image than through words.

Early on, I started to think about objects that sit somewhere between furniture and architecture. I was interested in leaving space for interpretation, allowing the user to define the use, rather than imposing a very precise function or posture. Of course, there is always a function, but I try not to overdetermine it. Before one of my early projects, I conducted research I called a *Topoctivity,* a visual study aimed at understanding and comparing the relationship between space and activities. The research preceded the work *Space/Object* (2008), and I was looking at how people redefine spaces through themes such as re-appropriation, the hybrid, the territory, the mobile and the fragmented. This idea led me to a somewhat naïve question: what if, at an urban scale, you could move buildings according to your needs? And then, how could that idea be translated at the scale of interiors?

This is how I started thinking about objects as movable spatial elements. Things that are not entirely furniture, not entirely architecture, but in between. Even if some of these early projects were not fully successful, they laid the ground for later work. They helped me understand that what interests me is not so much the object itself as the relationship it creates. Since I work mostly on commission, this reflection is always negotiated within a given context. I don't typically take on self-initiated projects. Each project comes with its own constraints, and the challenge is to integrate these ongoing interests into those frameworks, whether the client is a commercial entity or a cultural institution.

During the COVID-19 pandemic, this became very tangible. Like many people, we were trying to redefine our own spaces, often ones not designed for working from home. I was commissioned in 2020 by the American Hardwood Export Council and the Design Museum (UK) to create a table and a set of chairs, which resulted in the *ARCO collection* (manufactured by Benchmark). So, I started thinking about how the body itself defines space. A simple gesture, raising your arms parallel to the ground, already creates a kind of boundary. During the research phase, I was inspired by the work of dancer and choreographer Merce Cunningham. In particular, a photo of a performer holding another performer horizontally, with the latter's arms and legs stretched to the edges of the photograph.

Drawing plays a central role in how I explore these ideas. It's really a way of thinking. I draw a lot, sometimes filling several notebooks for one project. Through repetition, certain forms start to emerge. In one case, I became interested in a semi-arc shape that could suggest a kind of refuge or alcove. I then tried to repeat this form across different elements of a piece, creating consistency while still allowing for openness in use.

Material is also important, not only technically but in terms of what it allows. Certain forms or scales are only possible because of specific material properties. But again, I try to think of objects less as fixed functions and more as platforms for activities. As structures that can adapt rather than dictate. This thinking continued in other projects where I explored the idea of walls that could move or surfaces that define space without completely enclosing it. I started to see furniture as something that could operate spatially like fragments of architecture. Sometimes it's just about shifting your perspective: thinking of a table or a side element not in terms of typology, but as a surface, a plane, a boundary.

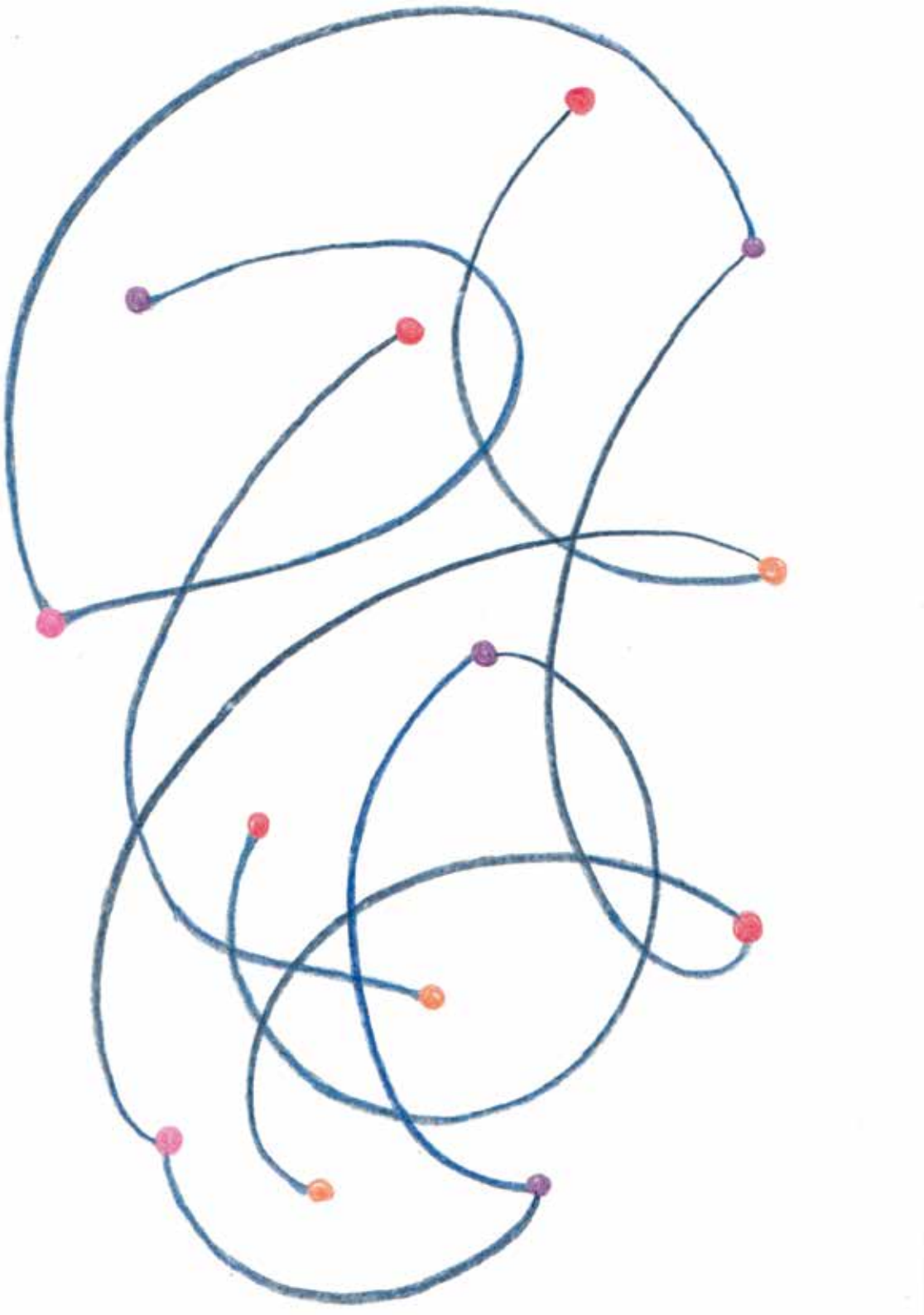
In exhibition design, these questions become very explicit. Often, you are working with two-dimensional material, images and texts, and the challenge is to give them a spatial form. How to create supports, but also how to build a narrative that allows visitors to engage with the content and understand the intentions behind it. I also became interested in systems, elements that can be moved, reconfigured and adapted depending on the context. Not as a fixed solution, but as a tool. Something that can respond to different situations rather than define a single one.

There is a figure that I find helpful in thinking about this approach: the flâneur. The urban observer, moving through the city, looking, collecting impressions. It's not a direct method, but more a way of navigating; of finding connections, of letting things emerge gradually. I see the flâneur as an analogy to the designer. I don't impose a clear structure from the beginning but instead wander through different ideas, images, and situations until something starts to make sense.

Across all of this, what remains constant is this interest in relationships between objects and space, between use and interpretation, between what is defined and what is left open. The objects I create have very precisely defined functions because they are commissioned pieces. Yet, their uses are open-ended, setting up conditions in which different meanings can arise.

CURATING DESIGN FUTURES





ARCHIVAL ABSENCES

Jane Pavitt

By way of introduction, the exhibition *How We Live Now: Reimagining Spaces with Matrix Feminist Design Co-operative*, which was active in the 1980s in the UK, is a useful model to consider.[1] Staged at the Barbican in 2021 and co-curated by Jos Boys (a founder member of Matrix) and the Barbican's Jon Astbury, the exhibition explored the group's collective and activist approach through a previously unseen, informally constituted archive. Matrix worked on social housing as well as projects for refugees, community, childcare, and LGBTQ+ facilities. The exhibition foregrounded their participatory method—showcased in the flyers, photographs and educational materials assembled for the exhibition. It told a story of feminist design practice in the 1980s, a far cry from the dominant narratives of British architecture at the time.

This exhibition was a useful counterpoint for me when thinking about narratives of women in architectural practice in the late-twentieth-century. In 2023, when I was Head of Research and Learning for the Zaha Hadid Foundation (ZHF) in London, we ran a series of workshops entitled *Rethinking Architectural Legacies*, organised jointly with Professor Dana Arnold from Manchester Metropolitan University.[2] These workshops, together with a prior project led by Dana around women and architectural history, which took the form of a workshop in 2022 and ended in a book (Pavitt, 2024), informed ZHF's thinking about what it meant to establish an architectural foundation devoted to a female architect of colour–the first of its kind in the world. It drew together a number of curators and historians to reflect on potential strategies. Archives formed an inevitable part of the discussion–as Dana observes in the book, 'at best, women account for only slightly more than 1% in

1 https://www.barbican.org.uk/our-story/press-room/how-we-live-now-reimagining-spaces-with-matrix-feminist-design-co-operative

2 https://www.zhfoundation.com/research/rethinking-architectural-legacies/

such collections at Avery Archives and Drawings at Columbia University' (Arnold, 2024). Contributors to all the workshops variously discussed reading archives against the grain, archival absences and reimagined archives, the subversion of hagiography and the canonical monographical approach.

Zaha Hadid's legacy includes extensive collections and archives and a level of celebrity which surpasses that of most other architects, let alone female ones, and who was the first woman to win pretty much every architectural award in the modern world (and sometimes the second, and sometimes the last). She was obviously a prime topic for debate. Let's just remind ourselves that the erasure of women architects, even at the pinnacle of the profession, is, in recent decades, still commonplace. Take Denise Scott Brown–excluded from her own Pritzker Prize in 1991 when the award for their work was given only to her partner in business and husband Robert Venturi. They both protested this, and it was only with a prominent campaign some years later that this was rectified. Hadid became the first solo woman to win the prize in 2004. Or the case of how Patty Hopkins, business partner and wife of Michael Hopkins, one of the 'big five' British High Tech architectural practices of the last decades, was infamously photoshopped out of the press photographs for the 2014 BBC documentary *The Brits Who Built the Modern World.*

Such erasure was not so evident for most of Hadid's career, although she faced significant opposition and negative characterisation in the press throughout her life. Her career is often told through a series of episodic challenges and triumphs—the early 'win' for The Hong Kong Peak Competition, which led to international stardom; the notorious setback of the Cardiff Opera House debacle; and the lauded but late 'first' permanent building in her adopted city—the London Aquatics Centre for the 2012 Olympics.[3]

However, the archives also revealed numerous stories of built and unbuilt projects which didn't quite fit the established narrative. Trying to read Hadid's professional history against the grain and in the context of gender—as I did in my essay for Dana Arnold's book—led me to look in detail at one of her earliest completed projects: a social housing block for the Interbau or International Building Exhibition (IBA). This was a project initiated in Berlin in 1979 to mark the 750th anniversary of the city in 1987. At the same time, a separate curatorial project in Berlin was exploring a hidden side of the IBA project, which I will come to later.

3 For example, see the 'official' histories of Hadid's Office: Betsky, A. (2017). *The Complete Zaha Hadid: Expanded and Updated*. London: Thames and Hudson, and Jodidio, P. (2023). *Zaha Hadid Complete Works 1979–Today*, Cologne: Taschen.

The building interested me for several reasons—firstly, it formed part of a major architectural moment at the end of the Cold War, which shaped the rethinking of the city for a generation to come and, amongst other things, introduced postmodernism to the city. Hadid's building was on a 'lost site' on the margins of the western city, where it pointed into the eastern sector and was only steps away from the Wall. Secondly, although it appears in almost all the surveys of her work, the IBA building is a marginalised project that is only briefly described, and when it is, it is often marked as 'unsuccessful' and one she was not particularly fond of. Thirdly, it was completed at *almost exactly* the same time as her much-lauded 'first completed building'—the Vitra Fire Station. Yet its history was much longer (in part due to changes in Berlin in the late 1980s, which delayed it). The official office history relegates this project to the margins because it doesn't fit the 'hero' narrative of her early projects.[4] And finally, research showed that the building's IBA commission was in response to a feminist protest against the male-dominated roll-call of architects who both ran and were commissioned for Interbau.

Her building was part of the so-called Block 2 or the 'Women's Block' situated between Dessauer Street and Stresemann Street in Kreuzberg. The project had been mired in bureaucracy and controversy. Hadid herself referred to the frustrations of working within the terms of the IBA approach and the city's tight social housing building regulations. She also described the 'relegation' to a women-only project as like 'being told you had leprosy.' The context of the 'feminist' commission had been forgotten by those who worked with her, and was rarely mentioned in published sources. A site visit helped to place the building back in its original context since stock photographs and drawings show it as a singular, prow-shaped corner building (with a lower block behind), free from its surrounding blocks. Actually, the building is part of a complex comprising three parts, each by a different female architect, each around a shared courtyard. All the social housing projects were conceived in response to the brief to investigate 'emancipatory living'. The brief included wheelchair accessibility and other provisions for disabled occupants, as well as living spaces for single women with children, including pram access. Hadid's small office had to work with a registered German architect, Stefan Schroth, with whom she had worked on several projects. Due to reunification, the programme was heavily delayed, and inhabitants only moved into Hadid's block in 1993, just as the Vitra Fire Station was also opening.

4 Zaha Hadid Architects online archive of projects only describes the IBA Housing block as a 'social housing' project and does not mention the context of its commission. https://www.zaha-hadid.com/architecture/iba-housing/

Who were the other women architects involved, and how did Hadid come to be part of this group? This context was provided by two curators in Berlin, Océane Vé-Réveillac and Silja Glomb, who were researching an exhibition on the so-called Women's Block and its history as part of a wave of feminist architecture and social practice in Germany in the 1980s. Océane and Silja's exhibition called *Dessauer Strasse and Other Stories on Emancipatory Housing* was staged at the Deutsches Architektur Zentrum in 2024–25. They are currently extending the project with publication.[5]

The *Dessauer Strasse* exhibition was a research-led project that created an archive where none had existed by extracting documents from state institutional records, personal collections and oral histories. There are plans to secure a permanent archive for the materials. The exhibition told the story of the site from its inception to the present day, with stories of its designers alongside the people who still live there. It was also influenced by Esra Akcan's book *Open Architecture,* which explored the housing legacies of the IBA and the urban renewal of the Kreuzberg district through the lens of migration and citizenship, in particular its large Turkish community (Akcan, 2018).

The Women's Block, officially known as Block 2, was a token gesture to address a major fault in the IBA's conception. Amongst the impressive roll call of international architects invited by the director Josef Paul Kleihues—including Peter Eisenman, Rem Koolhaas, Aldo Rossi, James Stirling and Alvaro Siza (as well as plenty of German-based offices)—there were no women. The protest was led by the Union Internationale des Femmes Architectes (UIFA), formed in Paris in 1963 and Feministische Organisation von Planerinnen und Architektinnen (FOPA), formed specifically for this purpose. In response, IBA organised a series of design seminars, identifying a token site in Berlin as a focus for the workshops. FOPA proposed three architects: Myra Warhaftig, Christine Jachmann and Zaha Hadid. A likely introduction to Zaha came through the curator Kristin Feireiss, the founder of Berlin-based Aedes Gallery, who had exhibited Hadid's early work and was an important promoter of her work in Germany.

Warhaftig and Jachmann had markedly different careers from Hadid. Warhaftig was a German-Israeli architect, born and trained in Haifa, who worked in Paris before moving to Berlin. Her doctorate, under the supervision of Julius Posener, was on housing and female emancipation in the 1970s. A single mother, she also moved into the Dessauer Street complex when it was completed, and apparently continued to live there until her death. Jachmann was also an architect specialising in housing. She was one of the three invited architects and her role also extended to planning and coordinating the site when additional factors complicated the project.

The *Dessauer Strasse* exhibition restored to architectural history a story of feminist planning, emancipatory housing and protest at a crucial period in Berlin's history. It created an archive where none had existed, which included stories of its residents and its continuing function as a complex for assisted as well as independent living. It is an entirely different kind of exhibition from a monographical approach. Yet, although not its primary intention, it also produced a counter-narrative to Zaha Hadid's early career. There is no doubt she found the project frustrating and the results disappointing. She found its tokenistic and ghettoising principles irritating. In this period, she was frequently in Berlin, and it is one of the cities where her career was forged. During the chequered and protracted development of the building, she began to achieve a kind of architectural celebrity greater than the proportion of her built works. She competed for and lost many more prestigious projects there in the next few years. Dessauer Street remained the only social housing project of her career.

5 *Dessauer Strasse and Other Stories of Emancipatory Housing*, Exhibition, Deutsches Architektur Zentrum, 6 December 2024 – 15 February 2025. https://www.daz.de/en/dessauer-strasse-exhibition/

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EXCAVATING AND NARRATING NEW DESIGN STORIES AT THE MUSEUM OF MODERN ART

Juliet Kinchin

As curator of modern design at New York's Museum of Modern Art (MoMA), I was privileged to take deep dives into a collection that has grown to include everything from a helicopter, textiles, sugar cubes and printed letterheads to conceptual and disembodied works of design. The challenge was to work with the power of such objects to provoke, delight, and inspire new audiences while rigorously interrogating MoMA's historical legacy and institutional framework. Every high-profile art institution has an established organisational structure, identity, and audience. MoMA, established in 1929, has developed an enduring brand which is projected visually across its exhibitions, publications, design stores, graphic identity, and architecture. The institution's modernist roots, harking back to exhibitions such as *Bauhaus: 1919–1928* (1938), are consciously referenced in a famed *typo-logo* (tweaked most recently in 2017 by Christian Schwartz) and campus architecture (expanded in 2019 by Diller Scofidio + Renfro).

Alfred H. Barr Jr., the museum's first director, pushed for the inclusion of industrial design, typography, and architecture (media traditionally excluded from art museums) as progressive forms of contemporary expression. *Machine Art,* curated in 1934 by Barr and Philip Johnson, head of the Architecture and Design Department, set the pattern for an aestheticised style of presentation of design that persists to this day. Theatrically lit, the gleaming springs, metal vessels, chemical glassware and engine parts were displayed against white walls and on geometric plinths. As if descended from some Platonic realm, these everyday objects were isolated, stilled, and removed from the larger systems in which they once functioned. They appeared to bear no imprint of cultural memory, and the labels gave no indication of the wider technological, economic, political or social drivers of their design development.

Further exhibitions developed a heroic narrative structured around white, male architect-designers, echoing the thrust of Nikolaus Pevsner's 1936 book, *Pioneers of the Modern Movement*, a foundational text for the discipline of design history.[1] The exhibition *Organic Design in Home Furnishing* (1941) promoted an evolutionary pedigree for modern design by tracing a lineage from William Morris, via Marcel Breuer, Le Corbusier, and Alvar Aalto, to Charles Eames and Eero Saarinen, whose prize-winning furniture was the highlight of the exhibition. Two decades later, *Playboy* magazine published a group photograph of MoMA's "Modern Masters" (George Nelson, Edward Wormley, Eero Saarinen, Harry Bertoia, Charles Eames, Jens Risom), each posed with a signature piece of furniture. Once more, the image celebrated the creativity of named individuals and singular works of art rather than design as an intrinsically collaborative process. There are no women in sight, and no hints of colourful street style, ethnic diversity or anonymous design.

Yet building a collection is a work in process. MoMA sees itself as a laboratory for engaging contemporary audiences with interdisciplinary, transnational perspectives on art, and there have been strenuous efforts in recent decades to introduce more women, more artists of colour, and greater geographical diversity. Collective research has been vital in critiquing institutional biases.[2] The Modern Women's Group supported my excavation of MoMA's collection and provided crucial funding for new acquisitions and exhibitions. Participation in the Central and Eastern European subgroup of C-MAP (Contemporary and Modern Art Perspectives) and its related online platform, POST: notes on art in a global context, also provided vital momentum.[3]

Institutions are unwieldy entities, driven by a succession of numerous individuals with often competing agendas, ideologies and social backgrounds, which means that digging into marginalised figures can reveal alternative histories and neglected parts of the collection on which to build. We all need role models—important for me was Mildred Constantine, a relatively lowly Associate Curator in the Architecture and Design Department from 1943–70, who focused attention on socially grounded and often ephemeral forms of design. Despite often stiff internal opposition, she assembled a broad range of graphic design (letterheads, brochures, street signage and packaging as well as posters) and introduced

1 In 1949 MoMA published a second, revised edition.

2 I participated in two cross-departmental publication projects, *Modern Women: Women Artists at The Museum of Modern Art* (2009), and *Inventing the Modern: Untold Stories of the Women Who Shaped The Museum of Modern Art* (2025).

3 https://post.moma.org

handcraft and fibre art in a series of pioneering exhibitions in the 1950s and 1960s. She was the driving force behind New York's adoption of Massimo Vignelli's subway map and signage, taking graphic design out of the museum and into the local community. At the same time, she looked outward to Latin America and Eastern Europe, expressing the material dimension of transnational networks through posters and textiles. Yet many of the pieces she collected languished in storage, uncatalogued, for decades. Bringing these back into public view became my starting point for narrating new stories around fibre art, graphic ephemera and political posters.[4]

Research into the collection also revealed a host of women, successful both as collaborators and designers in their own right, overshadowed by their male partners. Ray Eames was not acknowledged as the co-designer of the plywood pieces featured in MoMA's "one-man" show titled *New Furniture by Charles Eames* (1946), nor as the designer of the actual installation. The couple's entries to various MoMA competitions at mid-century were entered under Charles's name alone, and a similar fate befell Cuban-Mexican architect Clara Porset and textile designer Noemi Raymond. These erasures have now been corrected, but the precise nature and extent of collaborations are often difficult to establish. The designers of furniture upholstery are rarely recorded, reinforcing the perception of textiles as a 'support' material of secondary importance. In fact, the majority of MoMA's textile works were initially relegated to the status of "study collection," and so were not photographed or entered into the online collection.

It is vital that we find more nuanced ways to discuss collaboration and to revalue the myriad forms of creativity that inform objects of design and architecture. What of Truus Schröder's contribution to the 1924 Schröder House in Utrecht? As a hands-on client, she worked closely with the architect Gerrit Rietveld on the radical open plan and fitted furniture. Or the retail innovations of Brownie Wise, whose hostess party model secured Tupperware's international success? (The MoMA catalogue gives sole authorship to Earl Tupper, the chemist behind the product's unique air- and watertight seal.) Robert Brownjohn designed the 1968 cover of the Rolling Stones' *Let It Bleed* album, but few are aware that the cake on the front and back was designed by Delia Smith, a future celebrity chef.

Information design and cataloguing systems matter. MoMA's museum-wide label template still prioritises the name of the individual artist in a font larger and bolder than that used for any other details. Little space is left to accommodate multiple names and nationalities, let alone specify different design roles. It is a template driven by a fine art paradigm and reflects the dominance of Painting and Sculpture, the largest of MoMA's six curatorial departments. Nowadays, designers can self-identify their gender, ethnicity and/or nationality when their work enters the museum's permanent collection, but this information was not systematically recorded in the past. (Only recently has the textile designer Joel Robinson been identified as African American, for example.) Many designers are nomadic, and the materials and components with which they work are sourced from different parts of the world, yet such complexity is constantly oversimplified in a system that was set up to ascribe a single nationality to an artist (according to citizenship at the time of death), and none to the actual artwork. In the long term, such museological practices perpetuate hierarchies and exclusions, undermining the aspiration that differing social and ethnic groups—including transgender and transnational communities, immigrants and refugees—be able to recognise themselves in the museum.

Thankfully, there is more room to manoeuvre in exhibition curation. With a view to engaging the widest possible constituency, I was able to sidestep monographic subjects and focus on themes with the potential to transcend demographic and national boundaries—the design of food, kitchens, childhood, interiors and music. *Counter Space* (2010) presented kitchens as a testing ground for new materials, technologies, and the reorganisation of space and domestic labour—themes exemplified by objects ranging from Grete Schütte-Lihotzky's 1926 Frankfurt Kitchen to Adnan Tarcici's collapsible solar cooker (c.1970). Women featured throughout not only as the primary consumers and users of the domestic kitchen, but also as reformers, architects, designers, and artists who have critically addressed kitchen culture and myths. *Century of the Child: Growing by Design* (2012) looked at another area underrepresented in design history—the modernist preoccupation with children and childhood. Interactive components highlighted the importance of play and radical kindergarten pedagogy as a paradigm for progressive design thinking. The exhibition *How Should We Live? Propositions for the Modern Interior* (2016–17) explored the complex collaborations, materials, and processes that have shaped the modernist interior. The focus on cohesive environments rather than isolated objects brought ephemeral elements such as lighting, wallpapers and textiles into play. A contemporary evocation of Lilly Reich's 1927 The Velvet and Silk Café operated as a pop-up coffee shop within the exhibition, offering visitors a multisensory, immersive experience of this vanished interior. Designing a soundscape was an essential part of *Making Music Modern* (2014–15), an exhibition which examined how radical design and technological innovations, from the LP to the iPod, have profoundly altered our sense of how music can be performed, heard, distributed, and visualised. A 1957 Fender Stratocaster guitar, brought into the collection as both an iconic object

4 *Brute Material* (2014); *Taking a Thread for a Walk* (2019–21); *The New Typography* (2009); *Polish Postwar Posters* (2009); *Seeing Red. Hungarian Revolutionary Posters* (2014); *Transmissions* (2016).

and a playable instrument, was regularly put through its paces in the gallery, and exciters were deployed to turn walls and display cases into sounding boards, making objects like Théophile-Alexandre Steinlen's 1894 poster of Yvette Guilbert literally sing. In such ways, strategic acquisitions and the development of a contextualised and experiential approach to exhibitions have been important means of modifying MoMA's legacy and museological practices in the field of design.

PHANTOMS, ARCHIVE, MUSEUM

Agnieszka Rayss

Phantoms is an art-research project consisting of photographs of objects and spaces from various types of European museums. I focus on the ambiguous status of objects: artworks removed from display, items too damaged to be exhibited, anatomical specimens hidden due to contemporary ethical concerns, or mannequins that, after years of service in costume departments, have become valuable "artefacts" in their own right and were formally inducted into collections. In these photographs, they appear as enigmatic, "dormant" beings of unclear status: on the one hand, they are mere objects; on the other, they stimulate the imagination, becoming metaphors for silenced voices.

Through the *Phantoms* project, I opened a path to viewing the museum as an institution that, while maintaining an image of objectivity and neutrality, is inextricably entangled in political, economic, and cultural contexts. This entanglement manifests in how collections are acquired, stored, and displayed, and simultaneously in what the museum decides to show or exclude from its official narrative. I am interested, on the one hand, in the museum's involvement in creating a coherent vision of the world, and on the other, in the diversity of artefacts and voices hidden in storage that could undermine existing hierarchies. It is precisely this discrepancy between the public façade and the "backstage" that inspired my photographic exploration.

My photographs depict museum collections as the eponymous "phantoms"—physically present yet absent from the visitor's experience. We see objects wrapped in protective materials: acid-free paper, fabrics, and tissue, shielded from dust, light, and the public

gaze. These are often sensitive exhibits or body parts, such as anatomical specimens or taxidermy, that remain in storage for ethical or conservation reasons. The photographs also feature "auxiliary elements" of museum scenography: mannequins, storage shelves, transport crates, or old labels. I reveal these seemingly secondary props as part of a hidden story, reminding us that the museum is a complex apparatus of selection and presentation where even a mannequin or a storage rack plays a role in shaping the narrative.





Photo 1: National Museum in Warsaw, mannequin.
Photo 2: Panoptikon in Hamburg, wax heads.

The process of creating museum collections and exhibitions involves a series of administrative and scientific actions: naming, cataloguing, inventorying, conserving, and preparing objects. Each item is assigned an inventory number and entered into ledgers; it is described, and its historical or artistic value is assessed. These decisions are context-driven: they depend on dominant theories, curators' tastes, and sometimes ideological pressures. Consequently, what enters a collection is not a simple reflection of history but an expression of choice and interpretation. Through my photographs, I seek to challenge the presumed objectivity of the museum narrative. I arrange frames and juxtapositions of objects across established classifications—combining exhibits from different orders, institutions, or historical eras to disrupt obvious categories. I forgo linear chronological narratives or divisions into departments (e.g., ethnography, natural history, art) in favour of free visual associations. This strategy brings to light the hidden framework of "museum politics," showing that every exhibition is the result of a specific politics of memory: a system of power over what we deem worthy of remembering.

The photographs in the *Phantoms* series create a narrative where presence and absence mingle. Looking at them, the viewer may feel ambivalent: admiration for the richness of the collections goes hand in hand with reflection on the silence surrounding these objects. As the author, I ask whether a museum can ever be a neutral institution or whether it always operates within a specific political and ideological context. Is it possible to show a collection without imposing a story? *Phantoms* suggests that every museum narrative has its shadows, untold stories and objects that, though hidden, continue to influence the meaning of the whole.





Photo 3: Galleria degli Uffizi, Florence, Torso Gaddi.
Photo 4: Museo delle Civiltà in Rome, nude.

PROJECT DESCRIPTION

The initial impulses for *Phantoms* emerged during my artistic residency at the Altonaer Museum in Hamburg in 2015. In collaboration with the Hamburg Triennial of Photography, I needed to prepare a project on Northern Germany, which the museum curators described as a "land of sturdy fishermen and quiet peasants." After visiting the backrooms of the Altonaer Museum and other historical museums in Hamburg, I decided to address the theme through photographs of objects stored there. These objects are generally related to regional history, but often do not fit the idealised image of local culture. They had been removed from display, covered, wrapped in acid-free cotton or tissue, slumbering on shelves while waiting for their "museum future."

Since then, I have been taking pictures in museums and collections at every opportunity. The images were taken at [in alphabetical order]: Altonaer Museum (Hamburg), Geological-Paleontological Museum (Hamburg), Lviv National Art Gallery (Museum of Sacral Baroque Sculpture), Medical University in Baku (anatomical collection), Museo delle Civiltà (Rome), Museum of Anatomy (Wrocław), National Museum in Reykjavik, National Museum in Warsaw, National Museum of Iceland (Reykjavík), Panoptikum Wax Museum (Hamburg), Regional Museum in Semey (Semipalatinsk), State Ethnographic Museum in Warsaw, and the Uffizi Gallery in Florence.

While the list may seem eclectic, the variety of institutions—from national to small private collections—is intentional. I wanted to create a visual story based on the tensions between the images of objects rather than limiting myself to a vision of the museum as a large institution geared toward receiving the public at set hours. Many of these are "off the beaten path" collections. However, the choice of objects is not accidental; it is based primarily on the apparent contradiction between the tenderness of the museum's protective functions and a critique of an institution built on Enlightenment values.

The museum possesses the power to impose its vision on visitors. It divides the world into categories. It explains who we are, where we come from, and what we believe. It explains history and narrates sequences of events. Some objects bear witness to times when science and anthropology were linked to the idea of a hierarchy of cultures—a perspective defined by the notion of colonialism as a tool for bringing "civilisation" to colonies. Ethnographic museums aimed to construct an image of an exotic and primitive world to distinguish it from the "civilised" world by displaying diverse non-European objects. Other items are even more questionable: not even objects, but specimens—body parts submerged in formalin. They testify to a time when medicine lacked better imaging techniques. We prefer to forget uncomfortable objects and labels, tucking them away in cardboard boxes out of sight, behind closed storage doors.



Photo 5: Collection of the Department of Anatomy, Medical University in Baku, model of the nervous system.

Phantoms utilises references to museum visuality, yet it deceives. It cuts across museum hierarchies. It ignores chronological or geographical divisions. I place photographs of objects together that do not share the same period or even the same collection. On an exhibition table at the State Ethnographic Museum lay photographs of toys, clothes, mannequins, and tags. A woman wrapped in a white sheet of acid-free cotton is a mannequin once used to display the costumes of townswomen and peasants from Northern Germany. A small coffin

with a label hanging on a thread sits against a cardboard background taped to a wall—the "scenic filler" known to museum staff but usually hidden from visitors. Is it closer to the plaster casts of parts of the human head from the Baku anatomical collection? Or perhaps to the authoritative division of collections: *Europe, Africa, Asia, Weapons*?

The photographs are usually taken against neutral backgrounds, whatever I can find in the museum or a backdrop of cardboard or fabric I bring with me. Through this neutral aesthetic, I reference museum object photography, which aims for the most faithful rendering of shape, colour, and condition. However, unlike such photography, I do not avoid the imperfections of the background. Sometimes I include fragments of the photography setup, the edges of the backdrop, the adhesive tape securing it to the wall, or museum tags—the "apparatus" belonging to the organisational rather than the exhibition sphere.

EXHIBITION DESCRIPTION – STATE ETHNOGRAPHIC MUSEUM IN WARSAW

In the *Phantoms* exhibition at the State Ethnographic Museum in Warsaw, I presented sixty photographs. The images show objects from collections as well as "auxiliary objects" like mannequins, shelves, and labels. Many objects are hidden, wrapped in acid-free cotton or tissue to protect them from dust and light. Museum classifications are scrambled. I rejected the appearance of institutional objectivity to arrange my own narrative, asking what the museum was and can be used for, and what its origins are.

The exhibition consisted of several sections (some overlapping) suggested by the selection of works and scenography:

- Constructed Worlds
- Man/Disciplining
- The Other (The Stranger)
- Storage and Excess
- Disciplining: Classification, Cataloguing, Inventory, Segregation
- Non-human Worlds
- Packaging/Mystery
- Death of Objects
- Man/Anatomy
- The Political Museum

CONSTRUCTED WORLDS

We enter through a cramped vestibule separated by a black curtain, where the viewer faces four framed photographs: a paper nativity scene, frescoes with mythological scenes, and

a diorama with stuffed birds. The photographs are placed on black fabric, which must be pulled aside to enter the main space. What lies behind the curtain is unknown. This vestibule is a prologue to the "constructed museum world"—a world meant to seem "real" but which is a vision, a construct that cannot be free from the context of its creation.

MAN/DISCIPLINING

On small shelves, there are photos of wooden male and female heads and hands. The heads are partially wrapped in paper and photographed from three sides, vaguely resembling prison registry photos. These are auxiliary items that, over years of use, acquired historical value. They are meant to evoke associations with the power and discipline of an institution that has the authority to describe and the duty to protect. Tension arises between the unsettling visual of a wooden body cut into pieces and the images of "real" people (the mannequins have individualised facial features) subjected to ruthless observation. Is this total power over the object? Or over the human?

THE OTHER

Next to these are three framed images from the *Other* section: a ceramic head of a Black boy (a piggy bank), a moonstone from Hamburg, and numbered human heads (wax figures of specific people, such as Steffi Graf or Muammar Gaddafi). The piggy bank was likely intended for missionary collections in Africa. These sets discuss segregation, skin colour, and the power of ethnographic museums to define "the exotic."

ACCUMULATION, EXCESS

On a table, we find the section on hoarding. A pile of angel Christmas ornaments and a stack of coin-collecting boxes suggest the immense volume of items museums accumulate, amounts we aren't even aware of. This refers to "institutional greed"—the gathering of objects that often fall into the abyss of storage and lose their chance for a "life."

DISCIPLINING: CLASSIFICATION

Adjacent to this is the *Classification* group: photographs of storage door signs from the State Ethnographic Museum labelled *Europe, Asia, Weapons*, and empty shelves with numbered labels from the National Museum in Warsaw. These labels, which serve a practical purpose in the museum's daily life, become evidence of uncomfortable divisions and "violence-adjacent" classification when brought into the light of the exhibition.

PACKAGING, MYSTERY

This is the narrative climax. Exhibits wrapped in acid-free cotton, their shapes sometimes suggesting human forms. A group of "mannequin ghosts," a woman shrouded in white fabric, and a wooden horse wrapped in tissue. These ambiguous, partially illegible figures evoke anxiety, sometimes bordering on the macabre.

DEATH

The anxiety transitions into the *Death of Objects*. Shoes stuffed with white paper, a coffin with a label, a dollhouse wrapped in cotton that resembles a small sarcophagus, and more literal depictions: a dead bird and an ermine tightly bound with white ribbon. Finally, what looks like a rope, but is actually a braid woven from human hair from the anatomical collection in Wrocław.

THE POLITICAL MUSEUM

The final section features two photographs from Lviv, taken in the summer of 2022 after the full-scale Russian invasion of Ukraine. One shows a sculpture by Johann Georg Pinsel covered in brown fabric; the other shows an empty pedestal. These photographs are distinguished by a dark tone, which contrasts with the lighter palette of the other works. They highlight the museum as a site of memory politics and protection against the "enemy."

ANALYSIS

The primary paradox of the museum as an institution, which I address in *Phantoms*, is its simultaneous oppressiveness and tenderness toward the objects it possesses. Objects that fall into the depths of the museum—described, tagged, and catalogued—lose their former lives. A bird's wing, once part of a living creature, ceases to be an ornament pinned to a hat; in the museum, it becomes an object with an inventory number, a description, and a place on a shelf. The chances of it ever emerging from storage into the light of day, or even reaching a gallery hall, are slim. It remains a testament to someone's life, work, or fantasy, but only when the eye of a conservator or researcher rests upon it. I placed the photographs of the bird and the ermine, which once served as decorations for women's attire (held at the National Museum in Warsaw), in the Death section. Stripped of their original context, they confront the viewer with beings that once led their own lives, only to be deprived of them by humans for the beauty of their fur or the colour of their feathers.

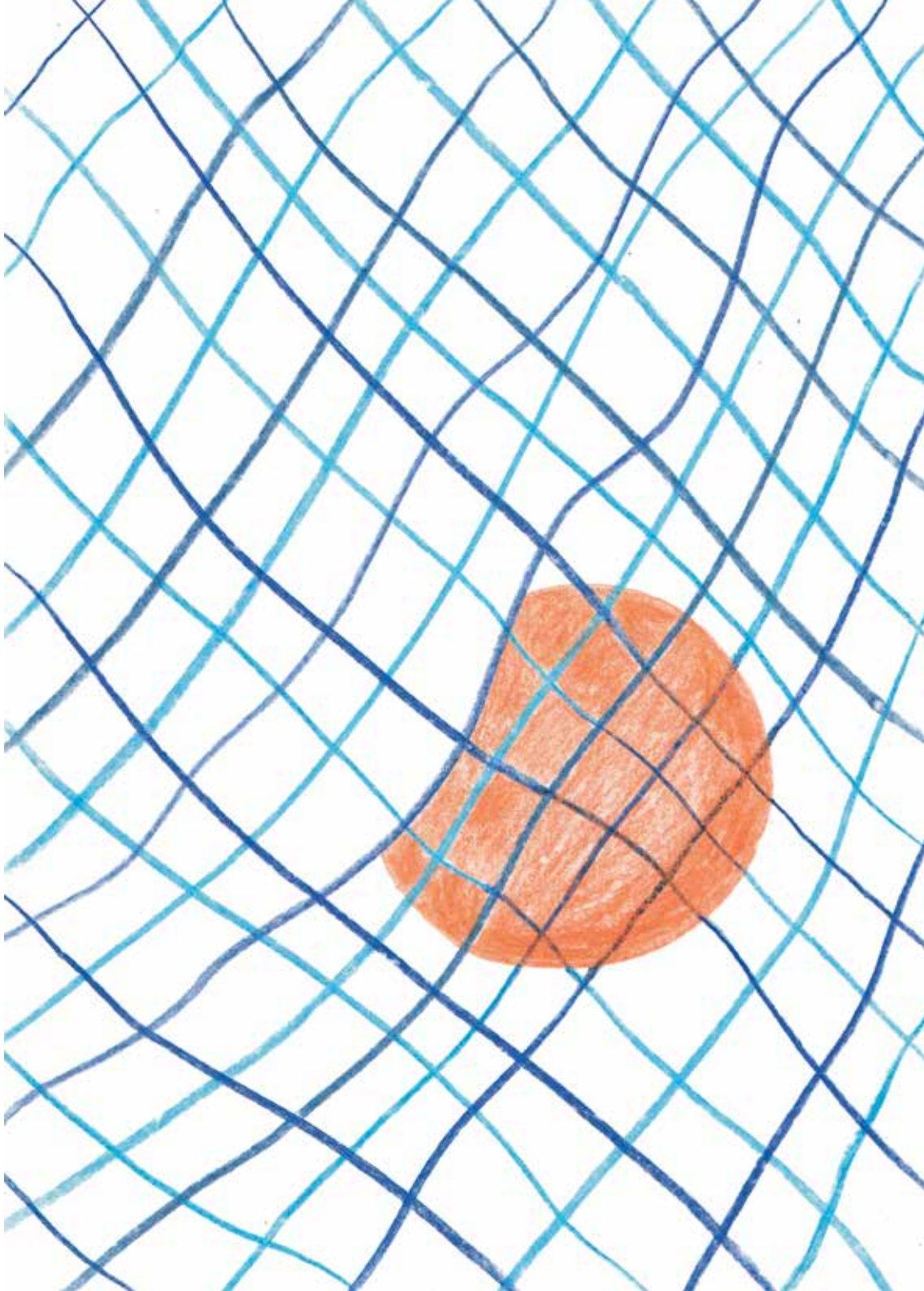
Conversely, the ambiguous forms emerging from folds of white cotton or tissue—hinting at the shapes of the objects beneath—point to the tenderness with which the museum protects its holdings. This holds true even when the protected items are "only" display mannequins that have gained value over the years and become part of the museum collection. These mannequins can be assembled and disassembled at will. By showing their components, I balance care with the ruthlessness of a museum world that disciplines and rigorously oversees every element of its collection.

What policy does the museum pursue toward these resources: toward what is shown publicly and what remains hidden and inaccessible? Naming, cataloguing, inventorying, assigning numbers. Entering items into ledgers and bestowing value. The conservation, preparation, and preservation of images and fragments of both human and non-human bodies. Wrapping objects with care, though perhaps sometimes with shame, in cotton, acid-free paper, tissue, and non-woven fabrics to shield them from dust, light, and the eyes of visitors—or enemies. By selecting items from the collection, museums create visions; they present imagined, deceptive worlds.

Photographing in a museum is, first and foremost, a response to a compelling museum aesthetic. It's a kind of stillness, or latent life, hidden in drawers and cabinets, and under protective cloths. A visit to a museum's storage leads to the discovery of the institution's contradictions: the accumulation of collections versus their concealment (even though the museum's purpose is to show); the tension between the "slumber" of the warehouse and the "resurrection" of forgotten things in the exhibition halls. During my master's studies in art history, I expected the museum to be my everyday environment. That didn't happen, yet I still feel at home there. A visit to a museum store is a privilege since not everyone can enter, and if they do, it is usually by invitation. Only the chosen ones go there. It is like travelling to distant lands, discovering a reality inaccessible to ordinary mortals. It is a confrontation with who we are and where we come from that sometimes borders on the perverse when we photograph objects that are no longer permissible by today's sensitivities and ethics.

The collection of photographs in *Phantoms* is a kind of private Wunderkammer (Cabinet of Curiosities), built on ambivalence and ambiguity. It simultaneously questions and affirms the idea of the museum, utilising its aesthetic while choosing only what fits a fundamentally subjective vision. A *Wunderkammer* cannot be neutral. It signals a personal point of view without worrying that this perspective might soon shift. It offers no answer to the question of which is more important: the photograph or the object, the item or its representation. The static structure of museum collections has been replaced by a dialectic of images that complement, challenge, or contradict one another.

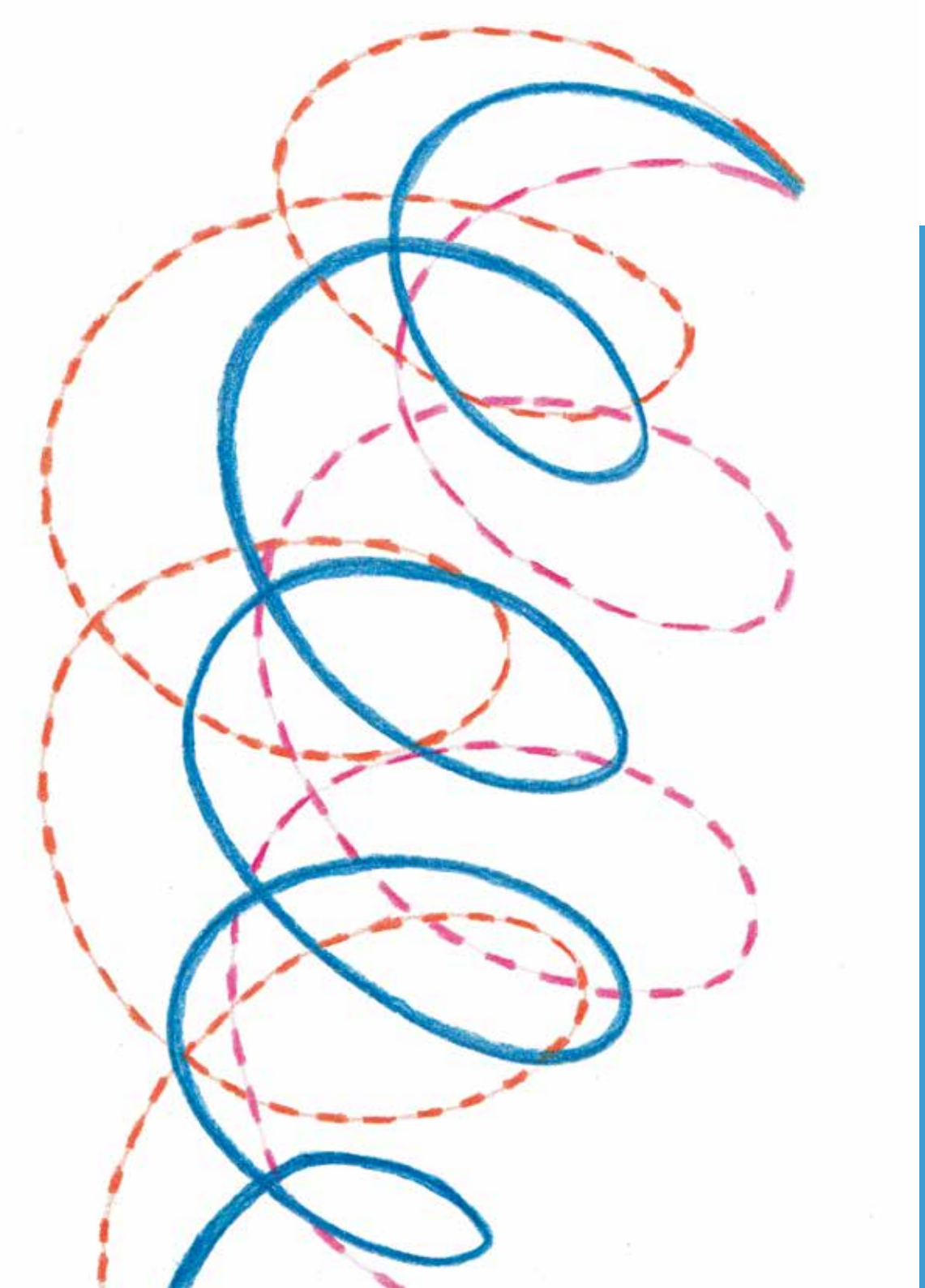
Museums are projects of history that are more political and ideological than realistic representations of the world. According to André Malraux, what happens in a museum is primarily a game with reality: an extraction of what is deemed important and the construction of meanings that shape social consciousness.



PEDAGOGIES OF PRACTICE







COMPETENCES AND THEIR COMPREHENSION: ON THE DISCURSIFICATION OF KNOWLEDGE IN DESIGN EDUCATION

Ewa Klekot

The contribution I would like to make concerns the competencies of teaching design students and the competencies of designers themselves. The viewpoint I propose concerns different types of knowledge. The understanding of the competencies in design education, either my own or somebody else's, as well as their expression in words, can be difficult, because these competencies are often embodied and the related knowledge is mostly not expressible in words.

I am an anthropologist by training, but for fifteen years I have been teaching future designers at the School of Form, now at SWPS University. When I started teaching design students, I had already been an experienced university teacher. However, I realised very quickly that at the School of Form I was offered an opportunity to approach the question of knowledge transmission and competence building in a new way, focusing on the kind of knowledge that I never thought I had. As the Norwegian philosopher Bengt Molander said: "There are features of the world that are only available – or *made* available – by craft practices". I discovered the possibilities of knowledge that craft brings forward because the School of Form, from the beginning, was founded on the premise that we, 'the humanists' (we are called the humanists by our designer colleagues), collaborated closely with designers in teaching. We teach the same course together, and we tutor projects together. In the process,

I quickly realised that not only did I need to understand my students and what they were supposed to do, but I also needed to somehow picture my colleagues' knowledge. Consequently, my teaching practice made me sensitive to those features of the world that I had not been aware I could approach, let alone convey in academic discourse. The anthropology of making has become for me a passage to non-dualistic knowing, which also happens to be a very feminist way of constructing knowledge.

The perspective I work from stems from my position as part of the teaching staff at a design school. I take part in teaching future designers by alerting them to the social and cultural aspects of their project tasks, and of design in a more general sense. They also learn how the research methods work and how to apply them to their particular projects. However, at the same time, as an anthropologist, I feel compelled to acquire at least rudimentary knowledge of the design tools the students would learn to use in order to help them to better learn the anthropological part I am supposed to contribute to the class. When I started teaching a ceramics project, forming a team with a colleague who is a ceramic designer, I felt I was supposed to learn the rudiments of the ceramic production methods the students would use. Or when I collaborated with an interaction designer—as an anthropologist, I felt I was supposed to try to "enter his shoes"—I needed to understand what coding was about and how to code. It does not mean I am skilled at ceramics or coding, but it means I tried to get a hands-on sense of how it works, because I assumed that otherwise I would not be successful in my task of teaching.

To describe my position theoretically, in the process leading up to my attempts at discursification of embodied knowledge in design education, I use the concept of "legitimate peripheral participation", taken from Jean Lave and Etienne Wenger, two theoreticians and practitioners of education. According to their definition, "legitimate peripheral participation is [...] a descriptor of engagement in social practice that entails learning as an integral constituent" (Lave, Wenger, 1991, p. 35) and which can—and is meant to—lead to what they define as full participation. They developed the idea of peripheral participation in education primarily to describe the learning process in craft, but also in music, sports, and the education of dentists or surgeons—whenever you learn embodied knowledge hands-on, in practice. Peripherality is understood here not in the spatial sense, but in terms of responsibility for the outcome: closer to the centre = more responsibility. Therefore, legitimate peripheral participation in the context of education "suggests an opening, a way of gaining access to sources for understanding through growing involvement" (Lave, Wenger, 1991, p. 37).

My perspective on design teaching is a legitimate peripheral perspective: I am not located far from the centre, but my responsibility lies with the research part of the project, not the design part. It's peripheral in terms of design responsibility; I am peripheral to the design part, but I follow it. The most important insights from that arrangement concern, in my opinion, how creativity and embodied knowledge are intertwined. The hands-on approach lets me understand that the materials are agents in the creative process. They are not inert matter, as the hylomorphic concept of creativity would have it. Anthropologist Tim Ingold discussed the hylomorphic idea of a form (*morphe*) being actively imposed by the maker onto inert matter (*hyle*): "To create anything, Aristotle reasoned, you have to bring together an agent with a particular design in mind, while matter, thus rendered passive and inert, became that which was imposed upon" (Ingold, 2010, p. 92). The hands-on approach makes one understand that in the processes in which the designer is involved, the agency is distributed. The form is an outcome of a knowledgeable body attuned to the material. It is not something that arises from a disembodied mind, the Cartesian mind. Cartesian dualism does not explain creativity well because the form arises from a relationship between the entire person and the material; it is relational, depending on material circumstances and skills. It is not something that is invented by the pure, abstract, disembodied mind.

On the way to discursification, I have grounded my thinking in theoretical approaches, including Lambros Malafouris's theory of material engagement (Malafouris, 2013). The author is an archaeologist, currently a professor of cognitive archaeology at Oxford. His book *How Things Shape the Mind* is concerned with different crafts, but I focused on potters because, at the time, I was collaborating with ceramists and potters while gaining embodied knowledge of their fluid materials. Malafouris's approach appealed to me because he draws on both archaeology and cognitive science. I realised that, as with pottery, his conclusions were very similar to my observations, but he had the tools to phrase them academically, and he had done extensive research. What the theory of material engagement claims is that in making—understood as deliberately introducing change into the material world—a human is collaborating with the matter and is engaged with the matter in such a way that what is created arises from that collaboration. "The potter by being a potter possesses a different body" (Malafouris, 2013, p. 221) because "the being of the potter is co-dependent and interweaved with the becoming of the pot" (Malafouris, 2013, p. 210). It is only through practice that you can arrive at these observations, and in my case, it was the regime of legitimate peripheral participation that allowed me to practice.

When I began my pottery practice, I realised that in ceramics there was a lot of knowledge never expressed verbally, nor in technical terms (Klekot, 2021). "Failure with clay is more complete and more spectacular than with other forms of art. You are subject to the ele-

ments… Any one of the old four—earth, air, fire, water—can betray you and melt, or burst, or shatter months of work into dust and ashes and spitting steam. You need to know how to play with what chance will do to your lovingly constructed surfaces in the heat of the kiln", explains a potter in a novel by A.S. Byatt (2009, p. 131). The human factor in ceramics is important because it is a non-parametric material. The materials we call "natural" are usually non-parametric. It is difficult to make them collaborate effectively with technological systems, such as complex machines and robotic arms, because their mathematical descriptions are non-linear. To make a material work well in a factory, you need to change it or generate it anew. You must transform the material before you give it to a complex machine, while the non-parametric materials can be worked by humans because they are non-parametric beings, and as such, they possess a lot of knowledge that is outside of the scope of the parametric. Certainly, there are factories where you have technologists following norms elaborated within the complex body of engineering knowledge. However, during my fieldwork in a fine porcelain factory, I was able to realise the extent to which the whole process depended on the embodied knowledge of the people on the spot, who handled the manufacturing and operated the machines.

I realised at that, had I had a name for that knowledge, it would have been easier not only to render it in academic discourse, but also to talk about it, with the students and designer colleagues, as well as with the workers at the factory. Although I was aware that the knowledge itself could not be passed in verbal categories. I decided to use the Greek term *mētis,* reintroduced into academic discourse by two French classicists, Marcel Detienne and Jean-Pierre Vernant, and meaning "a type of intelligence and of thought, a way of knowing… applied to situations which are transient, shifting, disconcerting and ambiguous, situations which do not lend themselves to precise measurement, exact calculation or rigorous logic" (Detienne, Vernant, 1991, pp. 3–4). Mētis, meaning the knowledge that cannot be abstracted from the body, was neglected by Plato and Aristotle, resulting in its absence from Western philosophical reflection on cognition. After the work by Detienne and Vernant had been published, the term mētis was used by James C. Scott to describe the knowledge of so-called traditional peasant societies (Scott, 1998). According to Scott, the term mētis describes knowledge insusceptible to any normalisations. It represents traditional local wisdom and embodied knowledge practised for generations in particular places by local communities, as opposed to the knowledge promoted and enforced by modern and modernising bureaucracy of a nation-state, or a colonial empire. It is the knowledge of the subalterns and peasants that also makes it political. Mētis was also used by the classicist and architect Ann Bergren in her discussion of architecture and gender (Bergren, 2008), and recently by Erin E. O'Connor in her anthropology of glassblowing (O'Connor, 2025). I have been using mētis in the context of making (Klekot, 2021), coming to the conclusion that when we intervene

with the material substance of the world, mētis is the knowledge you need; not the only one, of course, but the crucial one.

According to Detienne and Vernant, for the ancient Greeks, mētis was not only a concept, but also a deity of that name. She was an Oceanid, or a daughter of the god Oceanus, and she became the first wife of Zeus. In the version of classical mythology promoted by the modern education system, there is no mention that Zeus was married twice, even though we learn a lot about his extramarital love life. However, according to the version narrated by Detienne and Vernant, his first wife was precisely Mētis, and their marriage occurred before Zeus became king of the Olympians. Saved by his mother, who swaddled a stone instead of baby Zeus before passing the bundle to his father, Kronos (having castrated his own father and, consequently, afraid of his own progeny, Kronos developed a bad habit of eating his newborn children), Zeus survived by hiding on Earth. When he came of age and needed to marry, he found an Oceanid. As a water deity, she embodied the fluid knowledge of water, and her powers consisted of shapeshifting. It was Mētis that advised Rhea, her mother-in-law, to give Kronos a vomit-provoking concoction, which made Kronos regurgitate his swallowed children to the world. Once Kronos vomited the children, Zeus gathered all his brothers and sisters. The siblings formed an army, and they successfully fought their father. Therefore, Mētis is behind the victory of Zeus. However, when we think about the way she prepared the ground for the struggle of future Olympians, it does not look like fair play but like a deceitful trick: to make someone vomit. That was the knowledge of Mētis: cunning tricks, shapeshifting, quick and unexpected, operating the way fluids do, also bodily fluids—so, actually, disgusting. Looking at the story, we can understand why mētis—the knowledge represented by the Zeus's first wife—is absent from Plato or Aristotle. Mētis is also absent from the Olympians' company: having won the war, Zeus realised that Mētis was dangerously smart. She was too clever for him. Possibly, a child born out of her womb would do the same to Zeus that Zeus had done to his father. He realised that only by outsmarting Mētis could he secure his power. Praising her shapeshifting abilities, he asked her to change into a fly, which Mētis did, and then Zeus just swallowed his first wife. Once he had swallowed Mētis, Zeus came into possession of all her knowledge. The knowledge of Mētis became embodied in Zeus himself. That is why he is the cleverest, the most important of all the gods, and their ruler. However, Mētis, swallowed by Zeus, was already pregnant by him, and for that reason, Athena had to be born out of Zeus's head, a daughter of Mētis and Zeus. In the story of Mētis, there are many instances of embodiment, of fluid, cunning knowledge, and of transformation, or shapeshifting. To have mētis is to know that changeability is an intrinsic part of identity.

Scott uses the term mētis in the context of the modernisation of so-called traditional societies, while my understanding of it is at odds with the modern concept of knowledge. The concept of a knowledgeable body and the knowledge residing in the body were outside of the scope of the modern concept of knowledge. Trying to combine the knowledgeable body with modernity, Hannah Arendt arrived at a dichotomy between *Homo faber* and *Animal laborans* (Arendt, 1998), or a craftsperson and a factory worker: both "working with their hands", but only one of them was capable of thinking in their work. However, when I did fieldwork in a porcelain factory, I realised that the dichotomic categories Arendt introduced reflected the aims and premises of Frederick W. Taylor's *The Principles of Scientific Management*, or the ideological foundation of the Fordist factory system. They did not reflect what was really going on in a factory in terms of knowledge, thinking, or even creativity. Without the mētis of the workers—their craftiness and embodied knowledge—the manufacturing processes would not go on properly. The duality in Arendt's concept of handiwork does not describe the way we humans know and think, but it arose from the way Taylor constructed the modern factory: his factory was divided into body and mind (Taylor, 1919). Therefore, if the workers are the modern Cartesian body, they are not supposed to think but to follow the rules given by the mind (the management). This construction is political and reflects the power relations in modern industry. With Arendt and Taylor, we are also back to hylomorphism and the hylomorphic way of conceiving creativity: the disembodied mind has an idea and puts it into inert matter, and the material follows the mind's rules. Hylomorphism is reflected in the political construction of modern factories. Certainly, there are fully automated production lines, but then you need another material, or a very high percentage of defective pieces and waste.

Mētis challenges the hierarchy of ways of knowing that results from the dualism of body and mind. Currently, the non-dualistic way of conceiving knowledge finds its best expression in the 4E approach in cognitive science (De Bruin et al., 2018). My way of discursifying it, though, is via the category of mētis because, in my opinion, it is good to have one short word to go beyond the dualistic understanding of knowledge. To be inclusive in our understanding of human cognition means to have mētis inside of the system of education, acknowledging not only that we can teach it in the workshops of design schools, because this is something that we do without any acknowledgement, but to acknowledge it from the academic perspective.

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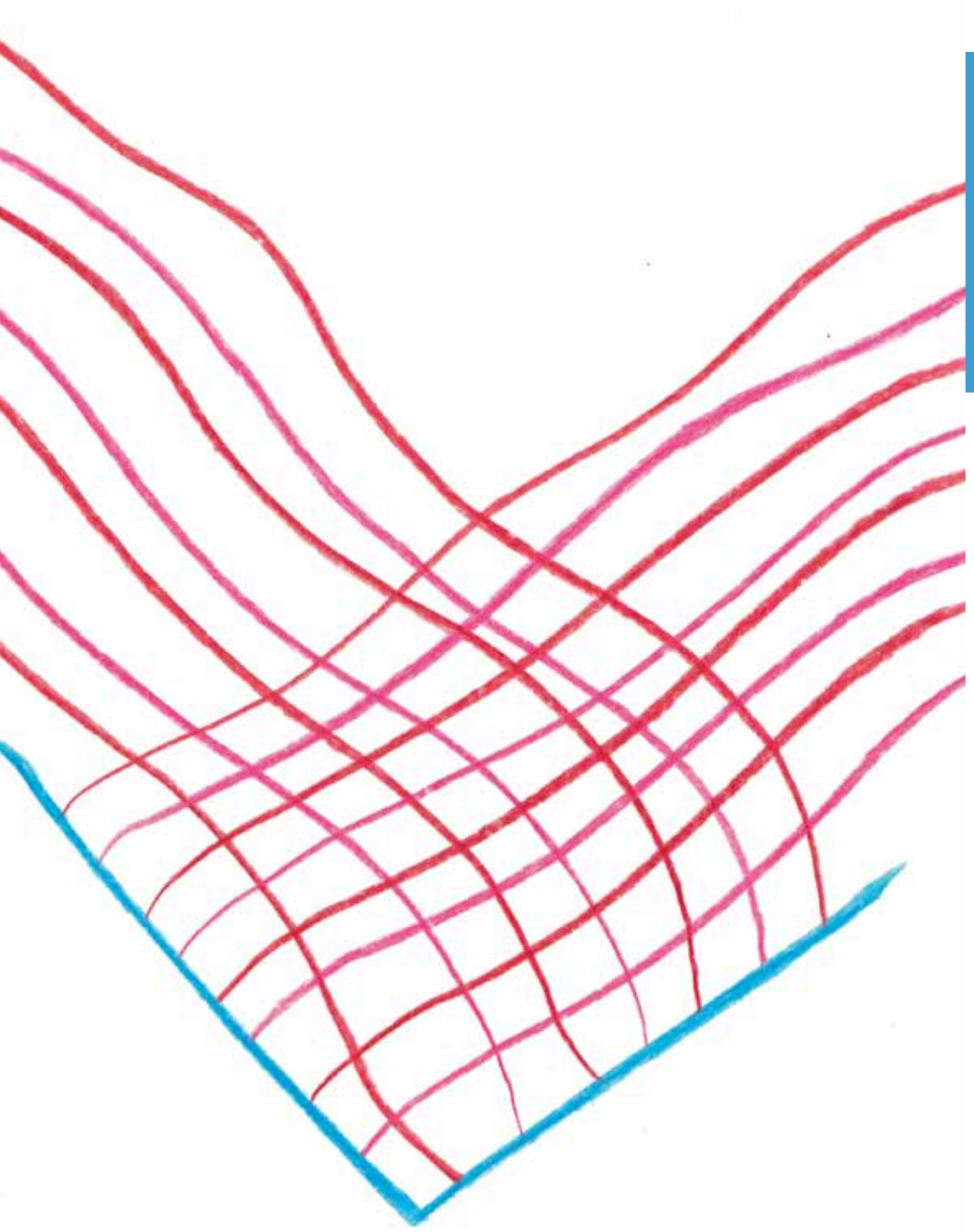
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ROBOTICS BEYOND THE FACTORY: TEACHING DESIGN THROUGH PROCESS

Sara Boś

INTRODUCTION

Industrial robots are most commonly associated with factory environments, where they perform highly optimised, repetitive tasks such as welding, assembly, and sorting. In these contexts, robots are framed primarily as instruments of efficiency and productivity. Yet this narrow framing obscures their potential as flexible, programmable tools capable of supporting exploratory and open-ended processes—qualities central to design education.

This essay examines how design education can introduce industrial robotics into learning processes that go beyond an engineering paradigm. Drawing on teaching practice at the School of Form, SWPS University in Warsaw, it outlines a methodology that prioritises accessibility, embodied learning, and experimentation, positioning robotics as a medium for inquiry rather than a purely technical endpoint.

WHY DO DESIGNERS NEED ROBOTS?

The increasing automation of production processes has reshaped the conditions under which designers operate. Designers who lack an understanding of contemporary manufacturing tools risk losing agency over how objects are made. Teaching robotics within design education is not so much about turning designers into engineers but about enabling them to remain fluent in the language of making.

The *ReRome* case study exemplifies this approach. In the project, students digitally reconstruct and modify ancient vessels based on archaeological evidence, using parametric design and robotic clay 3D printing. The robot becomes a tool for analysis rather than rep-

lication, allowing students to investigate historical forms while actively reshaping them through contemporary computational methods.

One of the most significant educational values of robotics lies in its ability to expose embodied knowledge. Skills acquired through practice are often tacit, residing in bodily experience rather than explicit reasoning. Teaching a robot to perform a task requires students to deconstruct and articulate this knowledge, raising a fundamental question: What does it mean to know how to do something?

The *Hack the Process* project exemplifies this. We asked students to craft ceramic bowls using only one hand. The resulting human-robot collaboration is not hierarchical but dialogical: movement is first felt, then analysed, and finally encoded. Robotics thus becomes a tool for translating intuition into explicit logic.

Introducing robotics into design education fundamentally shifts the students' perspective from designing isolated objects to designing systems. Rather than focusing solely on form, students must coordinate a multistage process linking concept development, scripting, tooling, material behaviour, calibration, and motion.

ROBOTICS AS A TOOL FOR RESEARCH AND EXPERIMENTATION

Unlike fixed manufacturing tools, industrial robotic arms are inherently flexible. By changing the end effector, workspace configuration, or motion parameters, the same system can perform vastly different tasks. This adaptability makes robotics particularly suitable for research-driven design education.

Students are encouraged to treat robotic processes as experimental setups rather than production pipelines. Instead of asking whether something will work, they ask what will happen if a parameter changes slightly—speed, angle, or extrusion rate. This shift from outcome-driven to inquiry-driven making transforms fabrication into research.

The *Reflections* project illustrates this approach. Students produced over sixty metal prototypes within a single sprint to study how surface deformation affects light behaviour. Thanks to the robot's flexibility, the manufacturing process itself became a design variable. Rather than shaping form directly, students designed reflections using Incremental Sheet Forming (ISF) to investigate the relationship between material, motion, and light. Robotics functions here as a tool for systematic investigation rather than mere execution.

ROBOTICS FOR DESIGNERS, NOT ENGINEERS

Despite the growing relevance of robotics for contemporary design practice, methodological resources addressing robotics within design, craft, and art education remain extremely limited. This lack of accessible frameworks is compounded by the scarcity of sustained educational contexts in which universities teach robotics as part of a regular design curriculum.

In many institutions, robotic arms are used only in irregular workshops or short-term projects, making it difficult to develop, test, and refine pedagogical methodologies. Only long-term, recurring courses allow educators to observe learning processes over time and adapt teaching strategies accordingly.

Engineers write the vast majority of available learning materials. Yet, design students typically approach problems visually, spatially, and materially, while engineering-focused robotics education relies heavily on abstract mathematics, textual code, and symbolic representations. This mismatch creates a high entry barrier, reinforcing the perception of robotics as inaccessible or overly technical.

Early pedagogical experiments revealed that immersing design students in engineering-centric tutorials often confused them rather than helping them understand. To bridge this gap, a new methodology was required—one that reduces the cognitive distance between the design student and the robotic arm.

A PROCESS-BASED TEACHING METHODOLOGY

The proposed methodology is built on four interconnected pillars:

1. Learning by Experimenting – visualising otherwise invisible processes.
2. Visual Programming – replacing textual code with visual programming environments such as Grasshopper.
3. Gradual Complexity – transitioning from 2.5D tasks to full 3D processes.
4. Embodied Knowledge – using the human body as a primary reference for robotic motion.

The first step in understanding the machine is to make its invisible logic visible. Robotic motion is fleeting; while video can record it, the structure and precision of movement often disappear in the flow of the recording. To uncover this structure, we must freeze the movement in a single frame.

To achieve this, a light source is mounted to the robot's flange and long-exposure photography is used to trace motion paths. By programming the robot to draw simple shapes—such as stars or flowers—students gain an intuitive understanding of trajectory.

Robotic motion at the School of Form is developed within Grasshopper, a visual programming environment integrated with Rhinoceros 3D. Grasshopper operates through relationships between geometric entities rather than textual code, aligning closely with designers' spatial modes of thinking. Real-time simulation allows students to visualise robotic motion instantly and iteratively, reinforcing a clear cause-and-effect relationship between parameters and movement. By situating robotics within a familiar design interface, the technology becomes more intuitive and accessible.

Learning Grasshopper—and, by extension, robotic programming—requires developing two key habits: deconstructing complex geometry into fundamental components and asking precise, sequential questions. For example, drawing an arc involves identifying the appropriate command and understanding that it requires three points. This logic extends to more complex geometries and robotic motions, reinforcing the idea that complexity emerges from simple rules and relationships.

To further reduce cognitive load, complexity is introduced gradually. Students begin with 2.5D processes that operate primarily within a plane while incorporating limited depth. In the first semester, robotic painting and drawing serve as entry points. These activities are familiar, offer immediate visual feedback, and allow students to focus only on motion rather than material failure.

Before executing robotic drawings, students perform preparatory exercises. They observe how parameters such as plane orientation or tool angle affect outcomes such as line thickness, then manually recreate their designs, marking every change in wrist orientation or direction. This process reveals how much tacit knowledge is embedded in seemingly simple gestures. Only after this reflective phase do students define robotic motion. Full three-dimensional processes are introduced later, once conceptual clarity and confidence are established.

CONCLUSION AND FUTURE OUTLOOK

If learning robotics feels alien, the robot remains merely a machine. When the process is made accessible, grounded in intuition, embodied knowledge, and visual logic, the robot becomes a medium for creative inquiry. Experience at the School of Form demonstrates that demystifying technology does not require simplifying outcomes but rather adapting inputs to the designer's mindset.

Looking ahead, the development of shared pedagogical resources and long-term educational frameworks will be crucial to advancing robotics education in design, craft, and art. By translating the language of making into algorithmic processes, we empower designers not only to use the tools of automated production but also to critically shape their future applications.



DESIGNING WITH TIME: ORNAMENT AS AN ETHICS OF WAITING

Monika Rosińska

Records of Waiting at the 2025 London Design Biennale

Project curators: Jakub Gawkowski, Monika Rosińska, Maciej Siuda

We live in an age that describes itself as accelerated and yet binds many of us to waiting. *Records of Waiting*, the Polish Pavilion at the London Design Biennale 2025, set out to make waiting tangible. Working with architect-designer Maciej Siuda and curator Jakub Gawkowski, we reimagined the Podhale woodcarving tradition not as decoration but as a temporal language: a way to write duration, intensity, and exposure into patterned wooden surfaces that can be sensed, compared, and discussed in public. Funded and produced by the Adam Mickiewicz Institute, the exhibition answered the Biennale theme *Surface Reflections* by treating surface as an epistemic site, a place where social time is stored and where temporal power becomes legible.

Waiting is both ubiquitous and hard to see. Our installation addressed this contradiction through twelve carved panels, each translating a specific waiting situation in contemporary Poland into a pattern. Together they formed a walkable landscape depicting the following situations: mortgage payments, legal gender recognition, public psychiatric intake, residence regularisation for a non-EU migrant, cumulative idle time for food couriers and taxi drivers, traffic jams in Łódź, a farmer's wait for rain during drought, a doctor on call, and ambulance response times. The aim was not only to illustrate data but also to compose experience: to render time as rhythm, density, depth, and touch so that differences of stake and structure could be felt as well as seen.

We worked as an interdisciplinary team. Roles were intentionally blurred: research informed design; design choices fed back into research; curatorial decisions shaped methods of inquiry. This made the exhibition itself a site of experiment and negotiation, not a container for results finalised elsewhere.

Co-production was central. Master carvers Józef Bukowski, Anna Bukowska, and Wojciech Bachleda-Dorcarz worked alongside students from the Antoni Kenar State Secondary School of Fine Arts and the Dr Władysław Matlakowski Construction School (Zakopane). Differences in pressure, steadiness, and return—what we call skill signatures—were preserved as micro-variations in cut. Rather than sand these out, we kept them as indexical traces of embodied seconds, maintaining contact between represented time and making time.



Photo 1: Records of Waiting: On Time and Ornament, exhibition overview, photo by Jakub Celej.

Historically, highland carving filled long pauses. Shepherds carved during winter evenings and pasture hours; surfaces kept time. We traced this history through domestic artefacts, especially through spoon racks documented by Władysław Matlakowski at the turn of the twentieth century, and through ethnographic collections in Zakopane. From this vocabulary, we selected elemental geometric motifs—lines, zigzags, lozenges, dotting—both vernacular and near-universal. They align with what Thomas Weil calls proto-ornaments: early human mark-making that recurs across cultures. In our hands, ornament becomes a notation for time. It does cognitive and political work: it focuses attention, encodes effort, and allows different kinds of waiting to be set in relation.

To keep representation tethered to making, we established a time-ornament legend. In collaboration with Podhale masters and students, each selected motif was carved repeatedly, with the unit-making time measured in seconds and minutes. Averaging across hands produced a table linking motif to time; crucially, variation was retained as part of the record. This enables the same duration to be phrased in different meters: additive sequences of

motif-times can render long spans legible at human scale or short, high-stakes intervals with spareness and intensity. We paired this with a field corpus: official indicators (e.g., "19–21 minutes" ambulance response; "13 years" mortgage term; "2 h 15 m" courier idle per day; "420 hours" of drought) and diary-based narratives gathered through WhatsApp diaries, notes, and photos (a migrant tracking seasons while awaiting a residence permit; a person experiencing homelessness logging a 2 h 45 m wait for food; a taxi driver counting gaps between fares). While statistics set the length of the score, narrated intensity informed composition.

We also wanted to keep the ornament from drifting into nostalgia. The Podhale vocabulary is historical, but we treated it as a working grammar rather than a badge of place. Following design historians who read ornament as a cognitive device rather than a crime, we put it to work to carry attention forward: to phrase time, to encode effort, to set different waits in relation without forcing them into a single code. Ornament here is not surplus; it is a way of thinking with the hand. In Tim Ingold's sense, this was *thinking through making*: knowledge produced in the movement of the tool, not abstracted from it. The time-ornament legend then functioned as a compositional device: a given duration could be rendered as a sequence of motif-times, phrased in different meters depending on the stakes and textures of the wait.

From this basis, we organised the panels through linked aesthetic–material operations:





Photos 2 and 3: Waiting time for an ambulance & A person experiencing homelessness in Warsaw waiting for access to food during the day, photo by Jakub Celej.

RHYTHM

Rhythm converts duration into a keepable form. For example, *Ambulance response (19–21 minutes)* is written as a single, unbroken phrase: no strong opening or closing bar-line, just straight-through vigilance. It reads short and long at once–brief in absolute time, extended as felt attention. In *food-aid access (2 h 45 m),* two meters alternate: a dragging, near-isometric band (queue standstill) and small, countable breaks (a few steps forward, a word with a volunteer). Read by hand and eye, this alternation makes palpable how the same total time is kept differently: one rhythm presses downward; the other allows minimal respiration without changing the structural wait.

DENSITY

Not all minutes are ethically equivalent. *Courier idle* keeps a relatively low global density punctuated by short bursts, rendering idle as distributed micro-lags rather than a single block. By contrast, a *migrant's three-month* wait thickens toward the decision window: our respondent's notes and photos move from distraction and new routines (low density) to maintenance (medium) to pre-decision anxiety (high). Density here indexes uncertainty and exposure rather than simply measuring span.

DEPTH *(LIGHT, SHADOW, SCALE)*

Depth determines how time appears in light. *Mortgage repayment (13 years)* reads as an uneven, stepped field; in oblique light, upper ridges cast shadows on lower runs so parts of the pattern occlude others. Depth encodes instability rather than clarity–an obligation rationalised monthly yet effectively hard to grasp. *Drought (420 hours)* withholds a crisp start or end. The same ripple motif recurs at alternating scales; shadows seem to thicken and recede even when the physical relief remains constant. Scale and spacing produce illusory depth, aligning with drought as a field condition whose edges are hard to perceive from within.





Photos 4 and 5: Average time to pay off a mortgage in Poland & A Polish farmer waiting for rain during a drought; photo by Jakub Celej.

HAPTICS *(TOUCH AND PROPRIOCEPTION)*

We designed for the hand as much as the eye. Eased edges and reachable heights invite tracing; shallow cuts "glide," deeper cuts "catch," allowing counting by fingertip. Following Juhani Pallasmaa and somaesthetic arguments, attention is trained through the body: touch slows the scan, localises care, and lowers barriers for varied bodies and literacies. Visitors did not just look; they leaned, traced, compared.

Across the installation, craft changes the tempo of reasoning. Unlike screen metrics that flatten time into instantly comparable units, carving requires presence, repetition and patience. Tool marks register embodied seconds—in Richard Sennett's terms, an *expressive repetition* that accrues meaning through disciplined care. For makers, prolonged carving sessions became an empathetic discipline, staying with someone else's stalled time. For readers, micro-variation in the cut is evidence: the surface touches back, asking how much attention a given wait demands and for whom.

Our stance is situated and ethical. Statistical indicators are dated and contextualised; diary and photographic materials are selected, aggregated, and anonymised. What we present is a temporal account of lived waiting. We acknowledge limits: any legend averages outliers; any composition risks implying uniformity where lived time remains plural. Visitor responses sometimes called the translation "poetic". We accept poetry in a precise sense: a disciplined language for what is unseen and hard to grasp, that is, a precision of relation.

What can an exhibition do? It cannot reallocate institutional time. But it can make temporal arrangements inspectable, comparable and arguable. In that sense, *Records of Waiting* is also exhibition-as-research: a working instrument that joins concept, craft, and fieldwork to turn surfaces into places where social time can be stored, read, and contested.

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Justyna Popławska
Laura Selby
Maria Jeglińska





IZABELA BOŁOZ

Designer with 12 years of design education experience, teaching in the Netherlands and Poland. As part of her PhD at SWPS University, she is exploring how interactive urban installations activate public space and foster intergenerational play. She combines research, practice, and social engagement, collaborating internationally with public institutions on projects that engage diverse user groups and strengthen place-based identity.

SARA BOŚ

Designer specialising in robotic fabrication processes supported by parametric design, working at the intersection of craft and technology. A graduate of the School of Form, SWPS University, she gained professional experience at Oskar Zięta's studio. Since 2020, she has led the Robotics and Digital Studio at the School of Form, developing experimental approaches to teaching robotics in design.

JULIA BUJAK

Designer and researcher addressing social issues, including forced migration and systemic violence. Through textile art and research-based design, she seeks personal forms of socio-political engagement rooted in care and responsibility. She is a member of the textile collective texpol, whose inaugural exhibition was presented at the Ujazdowski Castle Centre for Contemporary Art.

MARIA JEGLIŃSKA-ADAMCZEWSKA

A graduate of ECAL, she founded the Office for Design & Research in 2012. Her work spans industrial and exhibition design, using research as both a philosophical and material tool to question conventions of use and perception. Balancing functional precision with intellectual depth, her clients include Ligne Roset, Hermès, Vitra, Kvadrat, and the Biennale Internationale Design Saint-Étienne. In 2025, she co-founded the design brand GestGest.

JULIET KINCHIN

A former curator at The Museum of Modern Art in New York. She is a design historian specialising in Central and Eastern Europe. She has organised numerous acquisitions and exhibitions, notably highlighting women's contributions to modern architecture and design. Her previous roles include curatorial positions at the V&A Museum and teaching at the University of Glasgow.

EWA KLEKOT

Cultural anthropologist, professor at SWPS University. Her approach combines social sciences with design and artistic projects. Her current area of research concerns the anthropology of making and related modes of cognition—skills, embodied knowledge, materials, and processes. She also practices anthropological reflection on art, especially the social construction of folk art and heritagisation through monuments and museum exhibits.

FRÉDÉRIQUE KRUPA

UX designer, researcher, and Director of the Digital Design Lab at L'École de design Nantes Atlantique. Holding a doctorate in design from the Sorbonne, she bridges design, technology, and ethics. She co-founded the Platform for Interdisciplinary Innovation (P2I) to foster responsible and inclusive approaches to artificial intelligence.

ALICJA PATANOWSKA

Visual artist, potter, doctor of arts, and a graduate of the Royal College of Art. Her research-driven practice is grounded in direct engagement with materials and explores their narratives through the lens of ecology, transformation, and care. Knowledge acquired in direct contact with clay is crucial to her practice. Her recent installation, *The Ripple Effect*, was commissioned by the V&A.

JANE PAVITT

Professor, design historian, curator and Director of Research, Knowledge Exchange and Innovation at the University for the Creative Arts, UK. Her career includes roles at the V&A Museum, Royal College of Art, and Zaha Hadid Foundation. Her exhibitions include *Cold War Modern: Design 1945-70*, *Postmodernism: Style and Subversion 1970-1990* and *Superstructures: The New Architecture 1970-1990*.

JUSTYNA POPŁAWSKA

Designer and maker based in Copenhagen whose material-driven practice operates at the intersection of applied art and sculpture. Focusing on glass and its transformative possibilities, she creates lighting, furniture, and objects distinguished by intricate surfaces and a painterly sense of colour. Her work explores the expressive possibilities of material grounded in a functional sensibility.

AGNIESZKA RAYSS

Photographer, visual artist, and lecturer, as well as a co-founder of the Sputnik Photos collective. Her work explores myths, history, and the post-Soviet heritage of Central and Eastern Europe. A graduate in art history and Doctor of Arts, she teaches at the School of Form, SWPS University and is the acclaimed author of several photo books, including *From the Notes of a Collector* and *The Last Conversation with Academician Sakharov*.

NATALIA ROMIK

Architect, designer, artist, and political scientist. She holds a PhD from the Bartlett School of Architecture at UCL on the post-Jewish architecture of memory. Romik explores this memory through academic research, art, and architecture. She is a Dan David Prize laureate, co-curator of major exhibitions, and author of installations, including *Hideouts. The Architecture of Survival*.

MONIKA ROSIŃSKA

She holds a PhD in sociology and works at the School of Form at SWPS University. She researches contemporary design practices. She is the author of *Utopias of Design: Between Affirmation and Critique of Modernity* and *Rethinking Use*. She contributes to the field through scholarly and popular articles on design and serves as a co-curator of design exhibitions.

LAURA SELBY

Sonic experience designer, artist, and researcher exploring sonic contamination and biological networks. She uses listening-led methods across field recording, spatial sound, and interactive sculpture to nurture deeper relational understanding. Her work, which harnesses public engagement through community collaboration, has been presented internationally at Ars Electronica, the V&A, and Tate Modern.

TEAL TRIGGS

Professor of Graphic Design at the Royal College of Art, known for her work as an educator, historian, and writer. Her research focuses on graphic design history, criticism, and research methods, including the current *Trans-Atlantic Platform* project, '*Graphic Design Histories for Creative Dissent*.' She is also co-editor of *Design Issues* (MIT Press).

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