Carla Paoliello
Ana Thudichum Vasconcelos

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P O C A N T

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Introduction

Carla Paoliello
Ana Thudichum Vasconcelos

FBAUL/CIEBA

https://carlapaoliello.wixsite.com/pconat

https://www.instagram.com/pco_nat/

'Preserving and Communicating Natural Traditions (PCoNaT): A Blueprint for Cultural Continuity and Sustainable Heritage Management' seeks to find and communicate traditional and natural knowledge, techniques and materials, ensuring their integration into future creative processes.

We want to respond to UNESCO's call for new paths of sustainable development in a more holistic way, in which the cultural and creative sectors come together to promote and support social inclusion and natural, integrative, and regenerative knowledge and practices from a historical and traditional point of view.

We recognize the world's natural and cultural diversity and that all civilizations can contribute by facilitating a more sustainable future.

We stress this project's importance due to the risk of losing ancestral knowledge. The artisans and holders of this knowledge are aging, which puts their experiences and domains at risk. PCoNaT, therefore, aims to (re)know, record, and disseminate this know-how, acting as a social agent.

The specific objectives are to study, record, and communicate:

1. Natural and traditional practices,
2. Sustainable materials,
3. Traditional knowledge,
4. Local processes.

Therefore, we can:

1. Involve the academia with local craft communities,
2. **Respect, recognize, and encourage knowledge sharing and cultural exchange,**
3. Expand scientific, artistic, and design knowledge from the local/national to the global/international level,
4. Create a sense of pride and continuity,
5. Promote identities and cultural diversity.

Our primary themes are:

1. **Research and documentation of traditional and natural knowledge, techniques, and materials;**
2. **Promotion and dissemination of sustainable practices;**
3. **Involvement in the Craft and Design community;**
4. Storytelling and oral tradition;
5. Collaboration with artisans/designers and encouraging cultural exchange.

PCoNaT was designed to involve stakeholders at various levels, disseminate research results through multiple channels, and extend natural practices and traditions to local, regional, national, and international audiences.

The project is a think tank for researchers, artisans, designers, and other stakeholders from different locations working in this activity field.

Our first publication brings, initially, our statement "Is the Craft Future Ancestral" and the texts from our partners:

Albert Bore
Costanza Marinelli
Strate École of Design

Carla Szabo Melinda
Cornel Moraru
Nicoleta Silva Iona
Daniela Frumuseanu
UneArte Bucharest

Raquel Noronha
UFMA/NIDA

Henrique Ralheta
Teresa Mascarenhas
Loulé Criativo

Daniel Carpenter
Heritage Crafts

Vatsal Agrawal
The Design Village

Matteo Rigamonti
IED Istituto Europeo di Design

Temesi Apol DLA
Tasnadi Gergely
Szakacs Nikolett
Damjanovich Katalin
Molnár Péter
Moholy-Nagy University of Art and

Smriti Saraswat
IIT Roorkee

Eva Lutnæs
Randi Veiteberg Kvellestad
OsloMet Faculty of Technology, Art, and Design

Susana António
A Avó Veio Trabalhar

Their contribution was fundamental to identifying the local/ regional processes and practices that must be shared.

It is also important to thank
Rimsha Nasir for the book's design and support along the way and the presence of our colleagues during the 2024 meetings:

Álbio Nascimento
The Home Project

Astrid Rovisco Suzano
Passa ao Futuro

Cristina Mendes
CEARTE

Koraljka Vlajo
Arts and Crafts (MUO)

Ricardo Jerónimo
Rival

Rita Jerónimo
Programa Saber Fazer

Finally, a special thanks to

*The following texts and their content represent each partner's perspective and responsibility. While its starting point draws from the discussions and insights presented during the PCONAT talks, any interpretations, opinions, or conclusions expressed herein are entirely those of each author.

Is the craft future ancestral?

Carla Paoliello
Ana Thudichum Vasconcelos

FBAUL/CIEBA

"The future is ancestral." This statement by Ailton Krenak (2022), a Brazilian writer and Indigenous leader, encapsulates a timeless truth. It explains that natural elements has their time passing and seasons; they contain environmental impacts, as we all do. In his writing, rivers, soil, and trees are personified as living entities that unveil the planet's metamorphosis cycles.

It resembles Emanuel Coccia's (2020) posit that the process that allows a single life to exist in various forms—metamorphosis—creates a connection among all species, bridging the gap between the living and non-living and representing a continuous expression of one life.

For both authors, each species, humans included, evolves from its predecessors, assembling new bodies and forms to exist distinctively. **There is no clear division between the animate and inanimate; life is a continual transformation of substances, an interconnected network constantly generating new identities and behaviors.** Therefore, the term Geschichte, from the German language and brought by Koselleck (2006), should be used to place Histoire. It designates a unified sequence of events that, when viewed as a whole, constitute the march of humanity, holding the wisdom accumulated from examples of the past. Or, as the philosopher Roman Krznaric stated in the first sentence of his book The Good Ancestor: A Radical Prescription for Long-Term Thinking, "We are heirs to our past" (2020, p.9).

Krznaric also reminds Jonas Salk's question: "Are we being good ancestors?" revealing sustainability's long-term goal. For him, to imagine, care about, and plan the future requires a legacy mindset, a sense of intergenerational justice, deep-time humility, and cathedral thinking.

Through all these authors' lenses, ancestrality means recognizing and understanding the deep connections between the past, present, and future. One is urged to think of oneself as part of a long lineage that spans beyond one's own lifespan, influencing and considering those yet to come. **One's life is the link "between past and future" (Arendt, 1961).**

These philosophies form the basis of our research question - Is the craft future ancestral? – which invites us to delve into the profound importance of continuing natural traditions. More than that, it underscores the invaluable ancestral knowledge at the heart of these practices, one that deserves our respect and admiration and is crucial for sustainable heritage management.

Heritage is the multiple processes of meaning-making. As posited by the book Uses of Heritage (Smith, 2006), heritage can be usefully understood as a subjective political negotiation of identity, place, and memory; it is a 'moment' or a process of re/constructing and negotiating cultural and social values and meanings. To value heritage practices means appreciating the variety of abilities and traditions in any community, regardless of when and where they were introduced.

The Convention for the Safeguarding of Intangible Cultural Heritage by UNESCO (2003) defines the intangible cultural heritage as

The practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

Therefore, we will adopt this definition, understanding that it manifests in the following domains:

1. oral traditions and expressions;
2. social practices, rituals, and festive events;
3. knowledge and practices concerning nature and the planet;
4. traditional craftsmanship.

They emphasize the pivotal role of individuals in social construction, where their ability to create and act on meanings is of utmost importance. This resonates with the definition of craft as a way of working with people through materiality (Yelavich & Adams, 2014, p. 20) or even how materials change (or collaborate with) people.

Craftsmanship, as Richard Sennett (2008) articulates, is "the basic human impulse to do a job well for its own sake." This understanding of craftsmanship not only involves developing skills but also emphasizes the importance of focusing on the work and the material rather than ourselves.

Saxe (1999) discusses the significance of collective cultural practices through three interconnected processes: microgenesis, ontogenesis, and sociogenesis.

In microgenesis, individuals create schematizations that build on prior representational and strategic constructions (ontogenesis). In turn, these schematizations may become appropriated by others, becoming seeds for the spread of new collective forms of representation or procedures for problem solving in a community (sociogenesis). With the sociogenesis of cultural forms, individuals gain access to new forms for microgenetic schematization that become the basis for new ways of engaging in practices and the germs for subsequent ontogenetic shifts in knowledge. Such an account may not only reveal the interplay between cultural and developmental processes over the social history of traditional groups but also provide a frame for understanding the dynamics of cognitive development in collective practices closer to home. (Saxe, 1999)

This ongoing cycle of individual development, cultural dissemination, and communal adoption forms the basis for evolving collective practices and knowledge within a community and territory. It is a framework that helps us understand the historical development of cultural practices in traditional groups. It also provides insights into how cognitive development occurs within collective practices in various social contexts. **From now on, one's heritage will be the link "between past and future."**

Our initial phase involved conducting searches, selecting relevant sources, and reviewing literature on natural and traditional practices, sustainable materials, traditional knowledge, and localized processes.

We based our investigation on the repository available by the Saber Fazer Portugal Program, a Portuguese government initiative to safeguard, recognize, and promote arts and crafts in this country. They present a map or a digital platform referencing traditional craft activities, articulating different arts with entities, creative spaces, existing documentation, independent projects, and other related resources.

Another source of consultation was the Red Book – Red List of Algarve Craft Activities of 2021. This publication revisits the Algarve region, especially its traditional crafts and techniques, which are at the most significant risk of being lost. It presents the List of Missing Arts and Crafts, the List of Intangible Cultural Heritage of the Algarve Needing Urgent Safeguarding, and the Representative List of Intangible Cultural Heritage. The procedures established by UNESCO guided these three lists, also inspired by the 2017 UK report entitled "The Radcliffe Red List of Endangered Crafts."

Both proposals promote the Portuguese "saber fazer," valuing artisans and their traditional artisanal production. Due to its balanced relationship with the environment, scale of operation, and respect for culture, artisanal production plays a vital role in achieving the Sustainable Development Goals of the United Nations.

Wen also explored 9 case studies, focusing on artisans from Portugal who worked with wicker basketry, palm braiding, bunho furniture, split wood basketry, sedge weaving, other vegetable fibers (cane palm basketry, cane basketry, esparto, willow and straw intertwined), terracotta, black pottery, and stone pottery.

As indicated in the Convention for the Safeguarding of Intangible Heritage, the concept of intangible cultural heritage was considered in each case study. That means focusing on a living heritage composed of people embodied in a set of practices and representations, expressions, knowledge, and skills that reflect cultural and identity aspects associated with a feeling of continuity rather than the products themselves.

Therefore, the case studies were delimited by a set of requirements such as:

1. the fact that it results from knowledge and know-how related to the acquisition and transformation of resources and materials;
2. be practices that imply skill and expertise resulting in predominantly manual production and natural elements;
3. transform raw materials to produce or repair essentially utilitarian objects;
4. be a consequence of the practice of an artisan who works by himself or in small production units;
5. result from know-how and expertise passed from generation to generation;
6. have a presence in the territory for at least two successive generations; and
7. constitute a form of production and expression with local roots, which can be differentiated between Portuguese regions.

The investigation remolded to developing strategies that ensure ancestral practices' preservation, transmission, and dynamic evolution by highlighting characteristics that should be incorporated into future creative processes, promoting sustainable development as UNESCO advocates.

Case Studies

To deepen our comprehension of local communities and their distinctive environments, we understood traditional practices as they encompass the accumulated knowledge and processes developed over generations. These practices recognize and respect historical and current wisdom, promoting and perpetuating a culture that has beneficial physical, emotional, and spiritual ties to the environment. Additionally, they enhance a community's sense of pride and identity.

Wicker Basketry

Salicaceae—Salix viminalis L. was abundant in the past and has been reintroduced into some Portuguese landscapes to protect riverbanks and provide raw material for local crafts (CADA). It serves as the material for wicker basketry, one of Portugal's most common practices.

The wide variety of basket shapes and uses is a testament to the artisans' creativity and skill, which have remained almost unchanged. The willow rods, stored after cooking and drying, are soaked again before being worked, a process that softens them and makes them easier to handle and weave.

The production of a basket begins at the bottom, where the sticks are crossed to define its shape and size. After the bottom is woven, a series of side stakes (guides) are inserted, and the basket's walls expand with manual shaping or wooden molds.

Palm Braiding

The art of plaiting 'slatted strips' of *Arecaceae—Chamaerops humilis L.* leaves into long 'ribbons' is a testament to the deeply rooted elements in the Algarve's material culture. Its historical use in creating everyday rural artifacts, packaging and transportation of goods and food, objects for domestic use, agricultural work, fishing, and some objects of general use is a feat worthy of respect.

Braiding, primarily inhabited by women, was a significant part of their domestic work. Recognition of their contribution is a source of empowerment, pride and a testament to their resilience and dedication. Domestic practice gradually became professional, and at the beginning of the 20th century, production and marketing spaces appeared exclusively dedicated to the palm business.

The current production, driven by a growing interest in artisanal productions, is beginning to attract consumers and encourages artisans to experiment with new models and applications. In this sense, public entities have made several efforts to preserve and promote this practice.

Bunho Furniture

Schoenoplectus lacustris (L.), bunho, is a giant reed species. The plant grows in dense clumps and is easily accessible in spontaneous areas. It is also softer and more malleable than other vegetable fibers and is resistant, giving durability to the products from which it is made (Santos, 2015).

It isn't easy to trace the origin of bunho furniture. The activity developed in the Ribatejano region at the beginning of the century, when peasants dedicated themselves to the production of mats and benches during times of less agricultural work.

Regrettably, the tradition of its furniture production is at risk. Currently, there are only two artisans in the entire country who continue to produce furniture with bunho. Both are from the Santarém area and are over 60 years old. This is despite the initiative in the eighties of the last century, which created courses in professional training centers aimed at preserving and promoting this practice.

Split Wood Basketry

Split wood basketry, along with wicker, represents one of the most prevalent types of basketry in Portugal (Oliveira, 1976). The craft begins with the artisan's careful selection and preparation of wood. Traditionally, oak—*Quercus robur*— and chestnut—*Castanea sativa* have been preferred for their durability and the superior quality of the baskets. However, the decline in these tree species has led to the use of more readily available and rapidly growing species like wattle—*Acacia pycnantha* and silk tree—*Albizia julibrissin.*

The skill of selecting the optimal wood is crucial; the splints for the base and structure need to be broader and more robust, while those for weaving the walls should be thinner and more flexible. **Presently, a markedly small number of individuals possess and practice this knowledge. The decline is attributed not only to the arduous nature of the work, which discouraged its transmission, but also to the decreasing availability of wood caused by the reduction of Portugal's native forests due to fires, pests, diseases, and the expansion of intensive agriculture.**

Despite the significant decrease in production, there remains a demand for skilled artisans capable of crafting these baskets. These artisans sustain the craft and innovate, collaborating with designers to create new forms and uses for their baskets. It ensures the craft's ongoing relevance, emphasizing the need for a responsible practice.

Sedge plant weaving

Junça, sedge plant—*Stipa gigantea*, proliferates rapidly and tolerates temperatures like no other plant species. It is a local and invasive species that must be responsibly harvested. Its ability to survive adverse conditions is enormous, withstanding prolonged drought or extreme abundance of water.

The primary appealing features when working with junça include its aroma, long, thin form, and distinctive sound, which contribute to its sensory appeal. It is a versatile raw material for traditional crafts. It can be braided, woven, and transformed into various items such as carpets, sitting cushions, and baskets. Its unique properties make it also suitable for crafting filter cushions in traditional olive oil production.

According to Emma and Mariana from the Clareira project "the normal braid is traditionally only made by men; here, it is important to know and feel how to add fiber so that the thickness of the braid stays the same throughout the braid. The spiral one is made by women, called the ponto technique, traditionally used (...) as a cushion for workers not to have to sit on the stones warmed by the sun." (https://through-objects.com/blog/clareira-project-by-emma-cogne-and-mariana-campos/).

Other vegetable fibers

Five weaving vegetable fibers are on the list of crafts in need of urgent safeguarding: cane palm basketry, cane—*Arundo donax* basketry, esparto grass—*Stipa tenacissima L.*, willow—*Salix alba* and straw—*Secale cereale* intertwined. **According to the Red Book – Red List of Algarve Craft Activities (2021, p. 33), the main factors that contribute to the threat of these traditional craft activities are insufficient financial viability of the craft (27%), little market interest (18%) and constraints in the transfer of knowledge (16%).**

Terra-cotta

Pottery originates from the Latin *olla*, which refers to a pot. This ancient art dates back to prehistoric times, when man began exploring and using clay. It is present throughout Portugal, although the characteristics that differentiate the various regional productions are related to variations in local raw materials, the production process, and the shapes and decorations of the pieces.

Historical records indicate that pottery was present in Portuguese territory as early as the 1st millennium BC, a crucial era for the evolution of this craft. This development was significantly influenced by the contacts with models the Mediterranean trade flow brought, notably on objects used for transporting and packaging goods (Silva, Fernandes & Silva, 2003).

Until the end of century XX, the potter's activity was primarily in rural areas, a complementary activity to agricultural work carried out by the family. Learning began early in the workshops (10-12 years old) alongside masters, family members, or neighbors. João Eugénio, son and grandson of potters, says, "To be a potter, you have to start early and let the gestures ingrain in as you grow up." (Branco & Simão, 1997, p. 31).

In the 20th century, learning passed to the formal education system by creating schools that provided specialized training in ceramics. Nowadays, pottery has emerged as one of the most vibrant crafts, captivating new generations through enhanced training and recognition of its heritage and significance. The interest of designers and creative professionals in the quality and authenticity of Portuguese pottery has elevated the status of potters as professionals and expanded their market. This shift has bolstered its economic vitality.

Black Pottery

The raw materials and production process for black pottery are similar to those of other pottery. The differentiating characteristic is the firing process, which, carried out in a reducing atmosphere, gives the pieces their final colors.

Production centers for black pottery were often located near clay fields, where the raw material was extracted and prepared. **In some pottery centers, the collection of clay was a community activity, fostering a sense of shared responsibility and connection to the craft. Women were typically in charge of preparing the clay, finishing the pieces, and selling them, while wheelwork was an exclusive domain of men.**

Drying the pieces is a slow step that must be completed before the firing process (IEFP, 2019). Firing, the culmination of the transformation of clay into ceramics, is the critical moment that guarantees the quality and longevity of the pottery. It's also the moment that gives black pottery its unique appearance.

Stone Pottery

As of the 2009 inventory, Nisa's stone pottery production was still alive, with three traditional workshops in operation (Cabral, 2009). These were not just factories but family businesses, where the potters crafted the pieces and their wives added the finishing touches. This local and traditional activity, unique to Nisa, is now at a high risk of extinction.

First, however, what distinguishes Nisa ceramics from others made in Portugal or other parts of the world? The difference is in the containers manufactured there, which always feature cobbled motifs. Artisans use small stones—white quartz—that are applied individually until a particular design is formed.

These designs simultaneously have decorative functions and symbolic meaning. Flowers and leaves represent the region's flora and other unique motifs linked to the territory and local culture.

We started by recognizing the world's natural and cultural diversity and that all civilizations can contribute by facilitating a more sustainable future. **The case studies stressed the urgent risk of losing ancestral knowledge, a consequence of the artisans and holders of this knowledge aging process, which puts their experiences and domains at risk. As Bertram (2017, p.3) points out, a 'heritage craft is considered viable if there are sufficient craftspeople to transmit the craft skills to the next generation.' The primary challenge lies in bridging the past and the future by recognizing the importance of traditional practices. To prevent the loss of ancestral knowledge, one must dedicate themselves to learning the techniques. It takes time to observe and understand the ancestral gestures. It takes even more time to embody the skill, to focus on the work rather than ourselves (Sennett, 2008). This process demands humility and a deep respect for tradition.**

Embracing natural elements also demands patience, as the pieces evolve over time. One must learn to work with the material, respecting its unique characteristics, and collaborating with it rather than dominating or exploiting it. Ultimately, one becomes the material.

On one hand, we have the art of working with plant fibers that reveals an understanding of the land, the climate, the vegetative cycles, and their characteristics. They also reveal the ancient skills and techniques passed down from generation to generation. That is because vegetable fiber weaving is an ancient tradition passed down orally and by miming. They mainly involved women from rural areas who, according to custom, dedicated themselves to that activity and derived some income from it. Another aspect transversal to many artisanal trades while working with these natural elements is their seasonality and the fact that they are carried out in parallel with others, including agriculture.

On the other hand, working with clay requires a balance between technical knowledge and instinct, with part of the process coming from sensory memory rather than conscious thought and part from chemistry and its transformation when fired. It tells a long story of man's close relationship with this material usefulness, symbolism, and beauty. It is a lesson in (re)finding answers to many issues of our day, drawing attention to the different layers of a system and the opportunities and constraints an environment offers.

Either way, **the future of craft should adhere to its sustainable roots, preserving the equilibrium between the practice and the resources available when designing for prosperity. The importance of memory and identification with the place, conscious and more ecological consumption and the defense of close relationships are values that have been gaining strength and are found in craft core practices.**

There should be a focus on fostering microgenesis, ontogenesis, and sociogenesis processes (Saxe, 1999) that empower and conserve local knowledge, traditions, territories, and communities that trust and respect local resources. We should sustain traditional and ancestral methods while rejuvenating and safeguarding the environment and developing regenerative systems.

Conclusions

We studied and understood Portuguese ancestral practices, natural materials, traditional knowledge, and local processes to ensure their integration into future creative processes.

It directly responded to UNESCO's call for new paths of sustainable development more holistically, a place where the cultural and creative sectors play a crucial and integral role.

Characteristics like awareness, respect, patience, humility, and designing for prosperity should be incorporated into today's and future-making processes. It is an ongoing cycle of individual and community development for heritage dissemination, social inclusion, integrative and regenerative knowledge, and environmental preservation.

The study must continue by embracing more examples of the evolution of endogenous, community-led, ecologically balanced, and culturally diverse collective practices. The emphasis on collective practices should inspire and motivate us all to contribute to sustainable development. That is the path to an ancestral craft future.

Images

Figure 1. Craftswoman doing Empreita ©Museu Regional do Algarve (CMF) Heldér de Azevedo. Available at *https://programasaberfazer. gov.pt/arte/empreita-de-palma*

Figure 2. The Saber Fazer Portugal Map shows where Portuguese museums (M), artisans (A), studios (O), shops (C) are placed. Available at *https://programasaberfazer.gov.pt/mapa*

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Figure 13. Stone Pottery from Olaria Pequito, Nisa, Portugal. Source Tapa ao Sol/De Sofia/2020 https://www.tapaaosal.pt/olaria-pedrada-de-nisa/

References

Arendt, H. (1961). Between past and future: Six exercises in political thought. The Vikings Press.

Bertram, G. (2017). The Radcliffe Red List of Endangered Crafts. Heritage Crafts Association. Available at https://www. heritagecrafts.org.uk/wp-content/uploads/2017/04/The-Radcliffe-Red-List-of-Endangered-Crafts-Research-Report-revised.pdf

Branco, C., & Simão, J. (1997). Modos de fazer: Guia do artesanato Algarvio. Região de Turismo do Algarve.

Cabral, C. (2009). Patrimônio cultural imaterial: Proposta de uma metodologia de inventariação (Dissertação de mestrado). Universidade Técnica de Lisboa, Instituto Superior de Ciências Sociais e Políticas, Lisboa.

CADA. (n.d.). Cestaria. In Centro de Artesanato e Design dos Açores. Available at http://artesanato.azores.gov.pt/ artesanato/fibras-vegetais/cestaria-2/

Coccia, E. (2020). Metaformoses. Dantes Editora.

IEFP – Instituto do Emprego e Formação Profissional. (2019). Rotas da cerâmica nas Beiras. Lisboa: IEFP.

Kosseleck, R. (2006). Futuro passado: Contribuição à semântica dos tempos históricos. Contraponto: Ed. PUC-Rio.

Krenak, A. (2022). Futuro ancestral. Companhia das Letras.

Krznaric, R. (2020). The good ancestor: A radical prescription for long-term thinking. The Experiment.

Oliveira, E., Galhano, F., & Pereira, B. (1976). Cestaria. In Alfaia agrícola (pp. 333–347). Lisboa: Instituto de Alta Cultura.WW

Palma, G., & Martins, S. (2021). Red Book – Lista Vermelha das Atividades Artesanais Algarvias. Loulé: Comissão de Coordenação e Desenvolvimento Regional do Algarve (CCDR Algarve).

Santos, E. (2015). Os artefactos em bunho: Manufaturas populares na zona do Bairro Ribatejano. Câmara Municipal de Santarém.

Saxe, G. B. (1999). Cognition, development, and cultural practices. In E. Turiel (Ed.), Development and cultural change: Reciprocal processes (pp. 19–35). Jossey-Bass.

Sennett, R. (2008). The craftsman. Yale University Press.

Silva, R., Fernandes, I., & Silva, R. (2003). Olaria portuguesa: Do fazer ao usar. Assírio e Alvim.

Smith, L. (2006). Uses of heritage. Routledge.

UNESCO. (2003). The convention for the safeguarding of intangible cultural heritage. Available at https://ich.unesco. org/en/convention

COMO - Methodological knowledge of the raw materials-centered design approach

Temesi Apol DLA
Tasnadi Gergely
Szakacs Nikolett

MOME

https://apoltemesi.com/
https://soundwooldesign.com/
https://youtu.be/ZKevXxkdEH4

This paper is based on my doctoral research, which explores the possibilities of design responsibility, focusing on a raw material-centered design approach. As a designer, the design process and the assumption of responsibility starts with selecting the raw material. For example, are they working with renewable resources, designing for circular material use, or designing for assemblable components?

All this is complemented by the definition of the principles of material use leading to a sustainable material culture. These include, for example, zero waste production technologies, circular systems, low energy use and the use of local materials.

The methodology of starting material development processes in shorter periods with simple tools is inspired by the material-driven design of Elvin Karana and Valentina Rognoli. In further developing this methodology, they have developed a systematic process of step-by-step improvement and analysis of the results achieved using the tools of the Agile methodology. In the process, they keep a record of the experiments carried out, which not only helps traceability and reproducibility but also lays the foundations for our open source system, where students can work together, building on each other's work, to achieve greater results.

In the first two years, examining a number of raw material-based problems in five topics gave students the freedom to identify raw materials and material-based problems to experiment with and find solutions to over a semester. Topics and materials studied:

1. Regenerated material / industrial waste
2. Interaction / metal, glass, clay
3. Degraded composites / trigger raw material use, development of degradable composites
4. Alternative natural pigments / rocks, fruit seeds, invasive species
5. Composite material experiments from renewable raw material sources / cut flowers, logging residues, parasitic plants, invasive plants, agricultural waste

Drawing on the experience of the research areas of the past years, we have identified two central research areas that address problems of high relevance in the field of raw material-centred design:

1. **Approaching and rethinking industrial waste, especially waste from the construction industry, as a raw material**
2. **Exploring renewable local raw materials and exploring their potential.**

In the autumn semester 2023/24, the first thematic course was announced, working with students in design, architecture, ceramics and jewellery. Mapping the types of waste materials that accumulate in the construction industry, looking at the types of materials that are suitable for experimenting with our methodology, and what machinery and tools are available to support our ambitions.

This approach brought waste as a raw material. By looking at their physical and chemical properties, their potential was achieved through material manipulation or co-materialisation.

In all cases, the material experiments started with basic recipes, and then, as the partial results matured, the process of systematically modifying the details or components of each process began. For example, mixing ratios, drying temperatures, and pressing strength. In evaluating each experiment, simultaneously observing the emergence of new potential in the material as it was being experimented with, and trying to identify the potential they had not previously been aware of but that the material held. It is often the case that the familiar function of a material makes us not realise that its potential allows it to be used more effectively in other areas. These opportunities become particularly important when the materials lose their original function and become of no value to the industry segment concerned, but if they are combined with a new function in another area, they can be upcycled and reused, thus avoiding the need to landfill them.

They made the most successful student works from our course visible and accessible in a series of exhibitions. The five most successful students' works with the chosen materials:

1. Aranka Vass - aerated concrete,
2. Dóra Tarcsi - brick,
3. Jázmin Zsurbej - wood dust,
4. Borbála Tóth - plasterboard,
5. Lilla Sárközi - tile.

In the spring semester 2023/24, we started to focus on our second research area. With 10 students, a botanist and a colleague who is an expert in plant-based dyeing, they started a thematic research project to investigate local invasive plants as potential raw materials. This is a very complex issue. That's why they work with colleagues in other disciplines.

To analyse the changes caused by invasive plants in our environment, they have listed the invasive plants that have a significant impact on the presence of other plants in our living environment. The research, which took place over the course of a full semester and was intended to provide a baseline study, was narrowed down to a systematic study of one plant. they chose the Green Maple, collected from different districts of the capital and surrounding municipalities.
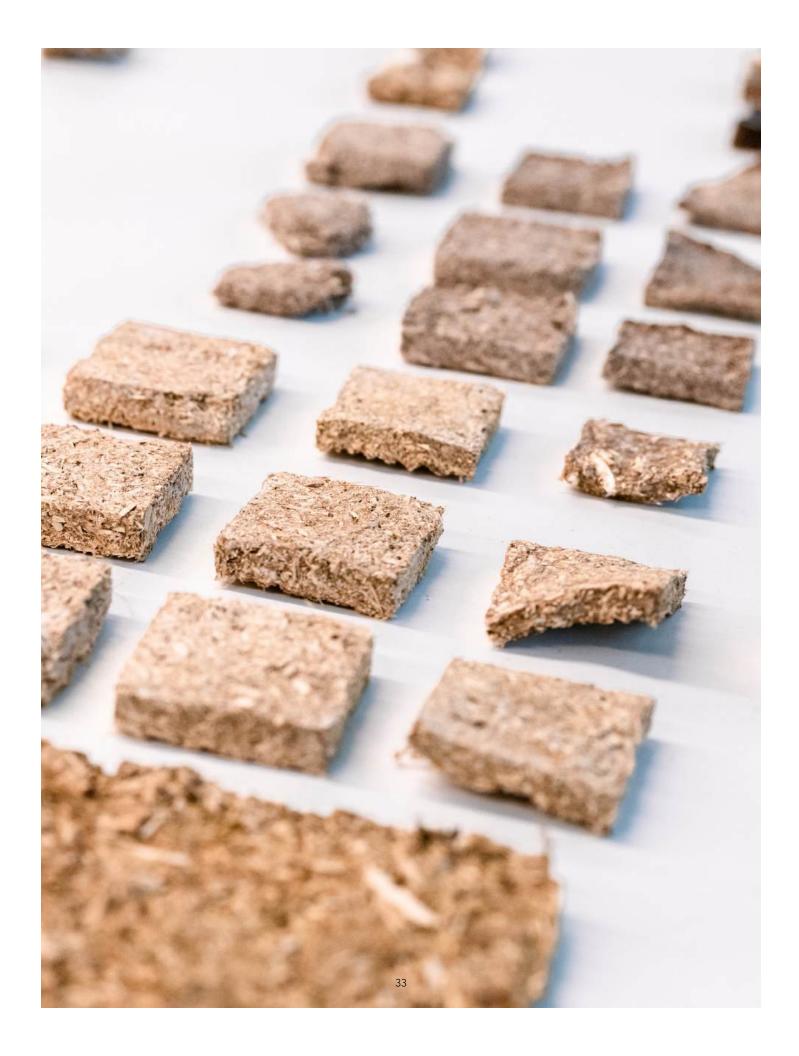
First, they investigated Green Maple as a natural dye plant. To do this, each student made a reference dye using a predefined base recipe and then began to change the recipe's details along a chosen theme. This process was used to investigate, among other things, the modification of the colours in response to acid or alkaline post-treatment, the reactions to the use of water with different mineral content, or the modification of the shades when the fermentation process was interrupted at different times. In each dyeing experiment, they worked with three types of fabric samples (wool, cotton and silk) to see the differences in shade on the surface of cellulosic and protein-based textiles simultaneously.

In the experiments, they use only natural ingredients, without chemicals, to find an alternative to using harmful dyes in the textile industry.

It is also important to mention that the possibility of continuing the research is made possible by the accurate protocols with a sample of the material, which each student learns to fill in, and thus also gives an insight into the method of developing a common language for collaboration with other scientific fields.

After the plant parts have been soaked and used as a dye bath, the soaked plant parts are not discarded but are used in another material manipulation experiment. They will investigate which parts of the plants could be suitable to become biocomposite raw materials. Each part of the plant will be used separately or together. In this case, they will also start with basic recipes, which will vary step by step. Once the material samples are ready and dry, they analyse them and continue to develop them according to their potential.

In one semester, if they take a thematic approach to research, they can lay the foundations. The directions that are deemed successful can lay the foundations for the next semester's research built on this, where they can move up a scale to further explore the potential of the material.

plant name: ACER NEGUNDO
used part: LEAF
place and date of collection: NAGYKOVÁCSI 2024. 04. 06.
processing date: 2024. 04. 06.

student name: BEKE VIVIEN
cotton / wool / silk

extract preparation process:
s/l: 127g 3ℓ
time / temperature: 60 min. 40°C
pretreatment: ALUM

soaking
time / temperature: 180 min. 40°C
water ph, modifier:

post treatment: RINSE WITH COPPER SULFATE

note:

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plant name: ACER NEGUNDO
used part: LEAF
place and date of collection: NAGYKOVÁCSI 2024. 04. 10.
processing date: 2024. 04. 10.

student name: BEKE VIVIEN
cotton / wool / silk

extract preparation process:
s/l: 41g 3ℓ
time / temperature: 180 min. 40°C
pretreatment: SOYA MILK

soaking
time / temperature: 60 min. 40°C
water ph, modifier:

post treatment:

note: THE DYE COOLED FOR 3 NIGHTS

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plant name: ACER NEGUNDO
used part: LEAF
place and date of collection: NAGYKOVÁCSI 2024. 04. 10.
processing date: 2024. 04. 10.

student name: BEKE VIVIEN
cotton / wool / silk

extract preparation process:
s/l: 41g 3ℓ
time / temperature: 180 min. 40°C
pretreatment: SOYA MILK

soaking
time / temperature: 60 min. 40°C
water ph, modifier:

post treatment: RINSE WITH IRON SULFATE

note: THE DYE COOLED FOR 3 NIGHTS

---

student name: BEKE VIVIEN
cotton / wool / silk

plant name: ACER NEGUNDO
used part: LEAF ... NAGYKOVÁCSI 2024. 04. 10.

Plants Raw-Material in Contemporary Object Design

Carla Szabo Melinda
Cornel Moraru
Nicoleta Silva Iona
Daniela Frumuseanu

NUA

https://carlaszabo.com/about/

https://youtu.be/byG-uPqU72g

My doctoral studies and my research are called Plants, Raw Material in Contemporary Object Design. It's based on four coordinates which are all connected with my professional and pedagogical experience on:

1. **Craft (concept, materials and technologies),**
2. **Entrepreneurship in design,**
3. **Ethics in design,**
4. **Design education.**

It started from a personal concern for nature and, in particular, for the world of plants. **It represents a plea for the return of man and human society to nature to its origins. It represents a manifesto against industrialisation, especially through design.**

I studied objects that use plants as a whole or parts of them to create design, design objects or design materials or materials themselves. I studied design ethics, ecodesign and sustainability.

The core of the concept is Nature or God, one creator. The concept of oneness, of one unique thing changed. The unique is all the natural elements, animals, plants. We cannot find two leaves which are the same, like there is not two people the same and, on another extreme, the concept of singular use and industrialisation, where everything is equal. Oneness became a single use.

It all started when I went to a market where I was wearing a necklace, and a woman complimented me, saying "that's a beautiful necklace." This reminds me of a single-use object.

That's when I realised that she didn't mention single-use because in Romanian, it's more simple. So you have **unicat**, unique, *si unica folosinta*. So the lady was about to say something about uniqueness, but actually out of her mind was unique use. So the conscience, the uniqueness of our creator and mind has an internal ethical dimension, and design is the choice of production method.

Nature is a source for all materials, natural or synthetic, which through design, become an object, and nature becomes the place where the object is thrown. That's one major problem we are dealing with. Nobody thinks, especially designers, about what happens to their objects when they are done using them, nor when we are talking about mass production objects with an unknown beneficiary. Therefore, a designer doesn't have a human touch with their clients, which is a significant problem, and also an ethical dilemma.

So the solution I found, which I apply to my professional work, both as an entrepreneur and a teacher, is going back to craft the local economy and use natural materials through eco-design. I will present a very short introduction to my entrepreneurial considerations. For 20 years I've been producing jewellery as well as design services. I'm using nature as a source of inspiration for different objects, from furniture, jewellery and other objects.

One of the collections is called *Winder Birds*, which was a study I made for my doctoral research. I wanted to make brooches since I already had an online selling platform. I wanted to have an eco-design object and bring it into the market to observe what's happening with them.

I created these three birds, which are completely made from plants. Both as a base material as well as a pigment. So I use the pigment out of the leaves, the skin of the walnuts, and the garlic and together with the natural glue, I put together these birds. They have an internal, resistant structure, and the peak and the eye are handcrafted woodwork. These are the ingredients: garlic, skin, grass, metal, poplar leaves etc. So these are three brooches which are on sale online.

Another collection is *The Seeds* which reveals the architecture and potential of life. They encapsulate growth which is beyond our power of comprehension. There is a hidden part in every one of us which brings itself to perfection through a painful process connected with God's will, which is the core concept.

It is made from handcrafted wood, all types of seeds found in the Romanian flora, especially in agriculture. There are also brushes and necklaces which are wood crafted.

Another collection is called *Glass Blade.* Like the seeds, it's a very small detail of nature that no one pays attention to, but I love grass as it symbolises spring.

Another topic from my studies was based on composite materials from vegetable fibres and natural adhesives based on plants from spontaneous local flora. I use them as an inspiration, as a symbol of both nature and human traditions. We use exactly the same ingredients: earth, plants, and protein. I tried to make something connected with the people's homes as well as the birds, therefore I started collecting the plants around my home.

One of those was a reed. My first experiment was to use it as a veneer which did work for a while, about a month or so, but the glue didn't resist, and I realised that reed is a plant for water, so God created that plant that doesn't stand water. So any kind of glue which is water based, will be rejected by this plant. However, when you mix it, the small particles are glued together while the big ones are not.
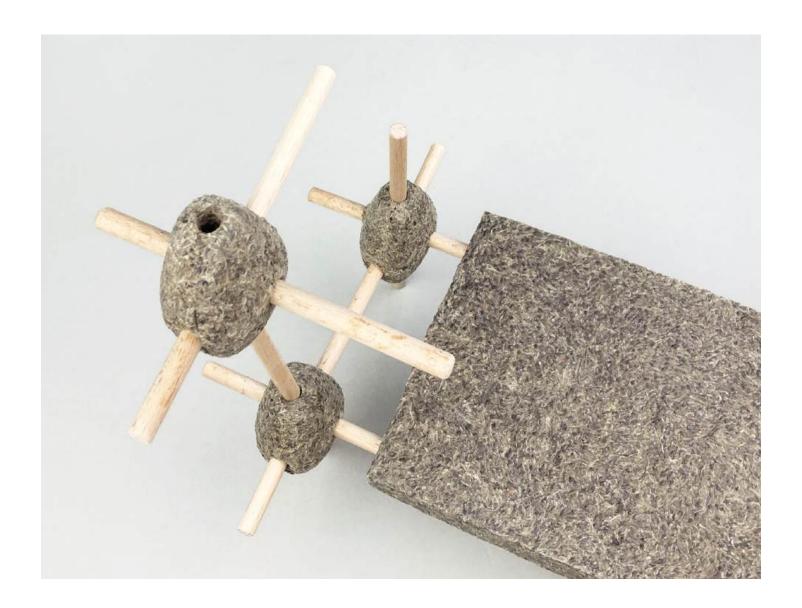
I created an isolation material which has air in the middle and it is very effective due to that. It is the same plant, but treated differently, so we have a different result.

Another invasive plant is called *Clemantis vitalba*. In English, it's called Old Man's Beard. I don't know why, but it looks like that. It's a plant which grows everywhere, especially around my neighbourhood. It reminded me of different plants like cotton. The seed has this fluffy, very interesting way of transportation through the air, which worked very well as a resource for composite materials. I started studying the seed. I aimed to create a 360-degree or six-degree, or spatial node to create furniture out of it. The material turned out to be a very good one, very strong and easy to work with.

I have a mould made out of paper and glue. **I wanted to develop a technique which my students could recreate by themselves very easily in the workshop.** Basically, everything becomes a paste and is placed in the matrix. Once it's ready, we cut it out with the scissors, leave it to dry and it's finished. I did the same process with a simple matrix and created a shelf. Then, I applied a wood veneer on the top, transforming it into a furniture material. I'm still in the middle of the process. I didn't quite finish the new piece, but I'm working with my students on it, and hopefully, you will see some results next year.

This next one comes from a different plant. It's also a reed, Purple Rush, that has a brown flower that also grows out of the water. So, it's water resistant. I used only the fluffy seeds, and the fruit and mixed them with the natural glue to create isolation. The green comes from a yellow condiment which, with the grey from the plant, turned out to be green. It's a decorative isolation because it has this veneer. You can use them in various ways because of the veneer in the matrix.
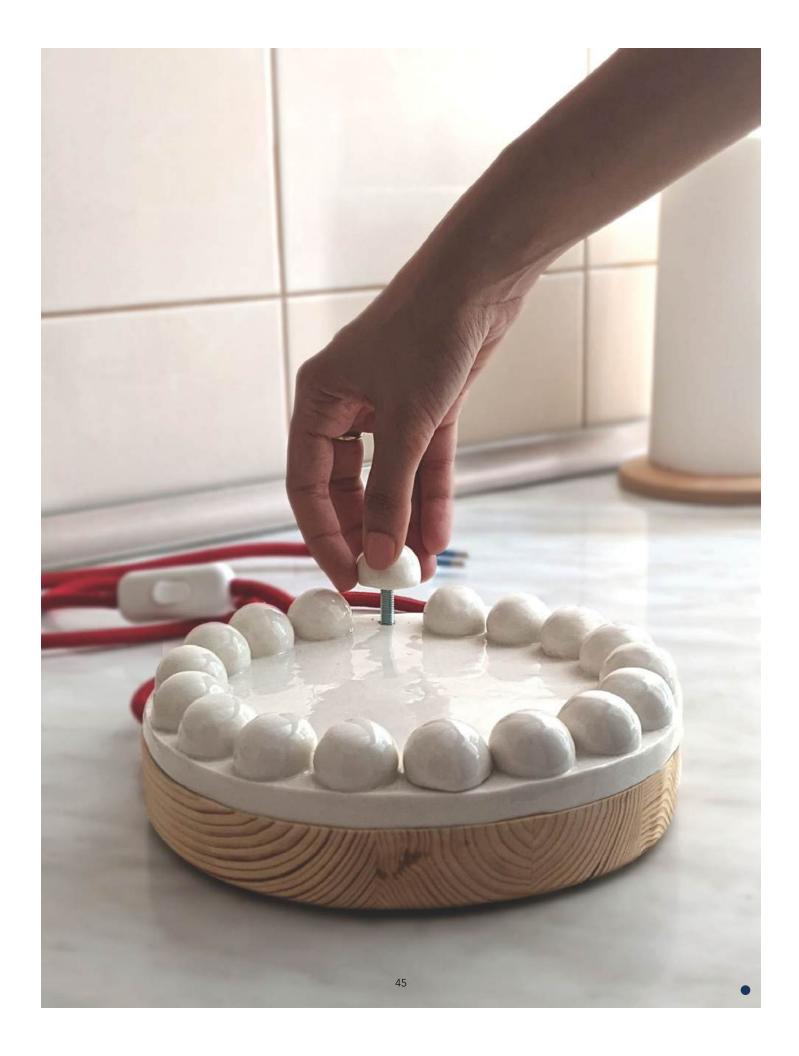
Approaching the end, I will write a few words about my pedagogical approaches. **One of the courses I'm currently teaching is based on materials and technologies.** I realised that there is no bibliography for a designer which contains natural materials.

So I started working on a project to find those natural materials. **The three topics that interested me the most are the use of the plant or the material in:**

1. **a traditional manner,**
2. **an innovative manner, which has also already been brought to the market,**
3. **an innovative usage which is still experimental.**

At Unarte Bucharest, the students had to choose one plant, but this time only from a morphological point of view. They study the plant through different types of drawing: botanical or geometrical drawing, linography, and so on. **They must see the same element/subject in different ways to think differently.** In the end, after they finish the study and go through different techniques, they develop an object.

Diana Dragomir (2020) developed an object which keeps food warm, with a thermal, and electrical system inside that goes only to 60 - 80 degrees Celsius. It is a type of storage device which, after food preparation, can be used to maintain its warmth on the table. Sebastian developed this container for condiments. Alexia worked with mushrooms as a starting point and created a lamp, which is also a scent diffuser. From asparagus, you have a kitchen weighing scale. **These are a few examples of the work being done by the students. You can find these objects online (noidesign.ro), which contain all the work.**

Immersive Heritage:
An Experimental XRT Prototype for Architectural Preservation Training.
Advancing Cultural Heritage Education through Extended Reality.

Matteo Rigamonti

IED

https://youtu.be/3wXxjvznx94

The preservation of cultural heritage, particularly traditional techniques and knowledge, is a growing concern in the face of rapid technological advancement and globalization. The need to safeguard both tangible and intangible heritage has prompted the exploration of innovative approaches to education and practice in the field of heritage preservation. The PCoNAT initiative (Preserving and Communicating Natural Traditons) is at the forefront of these efforts, focusing on integrating natural and traditional knowledge into future creative processes to ensure sustainable heritage management.

In this context, this paper introduces an innovative Extended Reality Training (XRT) prototype developed to enhance education in architectural preservation and cultural heritage preservation. By leveraging the experiences gained from digital twin methodologies and real-time rendering in previous research, this prototype represents a significant step forward in the use of digital technologies for heritage preservation. The paper will detail the design, development, and results of this prototype, while discussing its implications for the future of cultural heritage preservation.

Theoretical Framework and Technological Context

The integration of digital technologies into cultural heritage preservation has been a growing field of interest, particularly in the realm of education and practical applications. Extended Reality (XR), encompassing Virtual Reality (VR) and Augmented Reality (AR), has emerged as a tool that offers immersive, interactive environments for heritage education, where users can explore historical sites, artifacts, and techniques in real-time (Ioannides et al., 2017). These technologies have proven valuable in not only preserving but also communicating the value of heritage sites and traditional practices.

Historically, Building Information Modeling (BIM) and Historical BIM (hBIM) have been applied in the documentation and management of heritage buildings (Lin et al., 2020). When paired with XR technologies, hBIM provides a foundation for creating detailed, immersive environments where preservation processes can be simulated and practiced (García- Valldecabres et al., 2019). This combination has been employed in various educational settings to improve engagement, learning outcomes, and practical application of preservation techniques (Smith, 2022).

The research at Politecnico di Milano, which has focused on the development of Digital Replicas and real-time rendering environments, provides a critical foundation for the XRT prototype discussed in this paper. This prototype is the next logical step in a series of experiments aimed at improving preservation education by creating immersive, interactive training environments (Rigamonti and Augelli, 2024).

Overview of the XRT Prototype Development

The XRT prototype was developed as part of an ongoing effort to enhance educational methodologies in the field of architectural preservation. Building upon a decade of experience teaching Architectural Preservation and Adaptive Reuse Design at Politecnico di Milano, this prototype represents the culmination of several experimental approaches to integrating real-time rendering, Digital Twin technology, and interactive training modules. The initial concept originated from the digital twin experience detailed in the research paper "Innovating Architectural Preservation and Adaptive Reuse Design Education in Hunan: The Digital Turn from hBIM Modelling to Digital Replicas" (Rigamon: & Augelli, 2024).

This development follows a foundational digital training module released in 2020 and described in "Aims, Process and Results of a Virtual Experiment for a Didactic Tool Based on Two Hunan Heritage Buildings" (Yi, Rigamon, and Augelli, 2024). Focused on issues of humidity-related alteration and degradation in Chinese wooden heritage architecture, the 2020 module served as an introductory step in virtual preservation training. This earlier tool was successful in addressing these specific degradation concerns, yet its engagement and immersiveness were limited, as it relied on a high-quality 360° panoramic view interface and structured questionnaires, accessible only via desktop.

Findings from this preliminary effort, including results and discussion on its effectiveness, are documented in the published paper. **The aim of the XRT prototype is to build on this initial training, offering a fully immersive experience that allows users to engage with both the physical and methodological aspects of cultural heritage preservation.** By simulating real-world tasks involved in architectural preservation, such as material recognition and restoration interventions, this prototype provides a comprehensive training tool that can function both as a supplement to traditional classroom instruction and as a standalone educational module.

Design of the Virtual Environment

The virtual environment for the XRT prototype was meticulously constructed using high-resolution points-cloud models obtained through laser scanning techniques.

The South Wing of the Viscon: Castle in Cusago, Milan, was selected as the case study due to its architectural significance and complexity, which offered an ideal environment for the prototype's immersive preservation training. Using advanced laser scanning technology, an exceptionally detailed points-cloud model was produced, capturing both spatial accuracy and rich color information of the castle's surfaces.

However, while the points cloud provides a highly precise representation, it is inherently not solid. A points cloud consists of individual points in space and lacks continuous surfaces, making it insufficient on its own for interactive modeling purposes. To create a fully navigable and immersive virtual space, we needed to transform the points cloud into a mesh. This process involves generating interconnected polygons (triangles) that form faces between the points, thereby creating a continuous surface with solidity in the digital environment. The mesh structure serves as a more practical foundation for real-time rendering and interaction, maintaining the spatial accuracy of the original points cloud while providing a tangible form for the user to explore.

The mesh generation process begins with mapping connections between neighbouring points, forming a network of triangles that collectively define the surfaces. During this transformation, colour information from the points cloud is interpolated across the faces of the mesh, creating a gradient effect. This gradient follows the colour data from the original points, ensuring that the visual qualities of the castle's surfaces—such as stone textures and weathered details—are faithfully represented in the digital replica. Due to the density of the points cloud, the transition to a mesh introduces only a minimal approximation; even under magnification with the prototype's interactive tools, this simplification remains imperceptible to users.

To illustrate the precision and effectiveness of this approach, images are included in this section. The second image shows the state-of-the-art points cloud model, highlighting its rich colour data and spatial accuracy. The third image presents the rendered mesh in Unreal Engine 5, demonstrating how the mesh achieves a near-seamless visual translation of the original cloud data.

The virtual space within the XRT prototype is divided into two primary areas, separated by an existing architectural feature: a half-wall with an archway. This element was purposefully integrated into the XRT design, creating a natural division between two distinct stages in the training program. **The first stage focuses on material recognition and alteration/deterioration diagnosis, where users identify and assess various materials within the castle environment. The second stage then shifts to restoration interventions, providing users with tools and interactive features for practising preservation techniques.** While the restoration component is currently under implementation within the integrated XRT module, its mechanics have already been successfully tested as a standalone digital experience, ensuring its functionality and effectiveness before full integration.
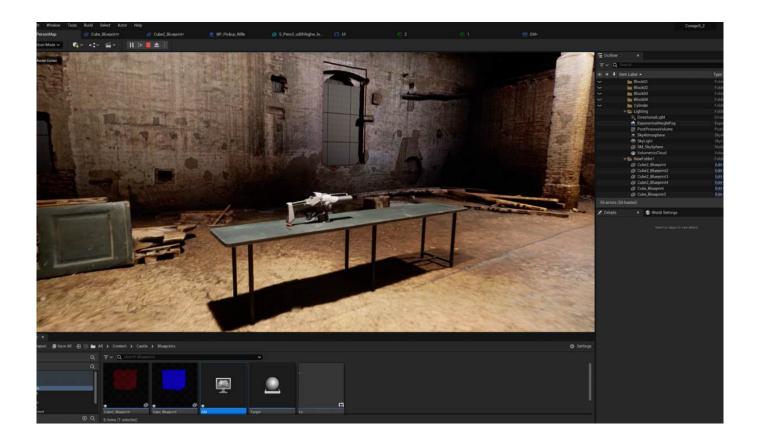
Interaction and Tools

One of the most significant innovations in the XRT prototype is the tool-based interaction system, designed to replicate the hands-on experience of a preservation workshop in a virtual environment. Users engage with the environment by selecting tools from a virtual toolkit, accessed through an interactive workspace. In the virtual realm, this toolkit is represented by a workshop table, which only exists digitally and is not based on any real- world physical setup. The table acts as a central hub where users can freely pick up and set down tools according to the tasks at hand, fostering an intuitive and immersive experience that simulates the flexibility of a real preservation workspace.

This virtual workshop table area is populated with essential tools, such as rulers, lamps, and measurement instruments, allowing users to select the appropriate tool for each task. **New tools become available as users progress, unlocking additional instruments when specific achievements are met. This incremental access to tools encourages users to complete tasks and learn step-by-step, promoting a gradual mastery of preservation techniques.**

In the first stage of the XRT prototype, the primary focus is on material recognition. Here, users begin with two foundational tools: a virtual laser pointer for dimensional measurements and a modified visual magnifying tool for precise material identification. The magnifying tool currently functions using a repurposed video game asset that was originally designed with a "sniper" appearance. This asset was chosen purely for its practical technical features—namely, its prebuilt pointing, zooming, and clicking functionalities—allowing for rapid development and initial testing without the need to custom-build a new interface. The war-like appearance of this tool will be refined as the prototype evolves to align more closely with the preservation context.

As users engage with the environment and complete tasks, the virtual workshop table dynamically responds by unlocking new items. For instance, achieving certain milestones in the material recognition stage could unlock enhanced lighting tools or advanced measurement devices, further simulating the progressive learning and responsibility that would occur in a physical training environment. By structuring the toolkit in this way, the XRT prototype provides users with a guided yet flexible learning experience, enabling them to explore the preservation process with a sense of autonomy and discovery.

This interactive, tool-based system streamlines the user interface and reinforces the experien:al aspect of the training, making it not only intuitive but also highly engaging. Each tool in the virtual toolkit is directly tied to a specific preservation task, providing users with a clear purpose and context for each interaction. As they become more familiar with the tools and functions, users can experience the complexities of heritage preservation in a way that mirrors the real-world demands and practices of the field.

Using this asset allowed us to focus on the core mechanics of material recognition without expending time on creating a custom tool from scratch. Although the war-like appearance is not aligned with the educational and heritage context, it will be redesigned as soon as the prototype mechanics are thoroughly validated. This modified tool allows users to "point and select" areas within the environment to identify materials accurately. Each material is mapped within the virtual space, and the XRT agent provides real-time feedback, guiding users in correctly identifying materials in a structured, interactive way.

Upon reaching all achievements in material and alteration degradation recognition, users can access a complete mapping that appears as a semi-transparent, neon-coloured digital overlay on the building surfaces. This overlay visually marks different materials and degradation areas identified and mastered by the trainee, providing a comprehensive review of their learning progress and adding an intuitive visual summary to reinforce knowledge retention.

The transition to the restoration phase is staged on a new section of the South Wing of Cusago Castle, as described in the achievement-based progression system. This shift to a different portion of the building enhances both the sense of exploration and accomplishment, as users advance from recognition tasks to restoration interventions. **In this second phase, users engage in pre-consolidation, cleaning, and preservation techniques, allowing them to apply their knowledge in a controlled environment that promotes safe experimentation without risking damage to authentic historical materials.** The restoration simulation component is currently under implementation within the XRT environment; however, its mechanics have already been tested as a standalone digital experience, allowing for thorough validation of its functionality and realism prior to full integration into the XRT module.

Decay Mapping
BLISTERING
POWDERING
MISSING PART
DEPOSIT

Material Mapping
PLASTER 1
PLASTER 2
PAINT.RED
BRICK

The XRT system allows users to preview the results of each intervention in real-time, providing immediate feedback on their actions and enabling them to see the long-term effects on surfaces, textures, and colours. For example, users can test various cleaning techniques to observe how each approach interacts with the "patina of time" on a historical surface, offering insight into how particular interventions may subtly alter an artefact's appearance and historical integrity.

A crucial benefit of conducting these tests in a virtual environment is the preservation of the authentic historical maqer. Restoration, especially of heritage sites, demands careful consideration of the material's original state and its natural ageing process. By allowing users to simulate different techniques and visualise outcomes iteratively, the XRT proto-type offers a safe platform for trial and error, where the effects of each action can be studied in depth. This reiteration of results—trying and retrying methods in a virtual space—equips users to make informed decisions, ultimately ensuring greater respect for the physical integrity of historical artefacts in real-world settings.

While the XRT experience provides hands-on digital training, it is not intended to replace the traditional manual learning that is foundational in restoration. Instead, it complements traditional methods, providing a preliminary, immersive experience that can prepare users for physical restoration practices. This virtual approach offers valuable insights into restoration concepts for those who may not be restoration professionals, such as stakeholders, architectural designers, or policymakers. For these individuals, the XRT experience can serve as a bridge, introducing them to the complexities of preservation and helping them appreciate the nuanced impact of each restoration technique. Understanding these principles empowers stakeholders to make informed decisions about heritage conservation projects and fosters greater collaboration between restoration specialists and other professionals in the field.

The potential to expand this XRT prototype into a multi-level learning tool extends its application beyond traditional restoration training. By creating modules that cater to different levels of expertise—from basic introductions for non-specialists to advanced practices for restoration professionals—the XRT can become an adaptable platform for diverse audiences. This versatility makes it an asset not only in training environments but also as an educational tool in architectural and heritage programs, opening new avenues for collaborative learning and broadening the reach of preservation education.

02. Clean the alga with brush.

03. Clean the sediment with sponge and water.

04. Sand the uneven surface, avoid the original red texture.

Achievement-Based Progression

The XRT prototype employs an achievement-based progression system, a pedagogical approach that leverages incremental goal-setting and feedback to enhance learning engagement and retention. **Achievement-based systems in training have roots in constructivist learning theory, where active participation and progressive mastery are essential for deeper understanding (Piaget, 1970).** This approach not only guides users through the training process but also fosters motivation by providing clear, incremental milestones. Each achievement in the XRT prototype is associated with specific preservation tasks, starting with material recognition and diagnosis, which are foundational to the later stages of hands-on restoration intervention.

In the first stage, users are required to complete a series of tasks focused on identifying and diagnosing material alterations, with each task offering real-time feedback and recognition upon completion. **The use of achievements provides extrinsic motivation through immediate rewards and intinsic motivation through the satisfaction of mastering new skills (Deci & Ryan, 1985). By gradually unlocking access to more complex tools and tasks, users are encouraged to persist, building confidence and competence in preservation techniques.**

This progression model is further supported by the theory of "scaffolding" in educational psychology, where structured guidance is gradually removed as learners gain proficiency (Wood, Bruner, & Ross, 1976). In the XRT prototype, the initial achievements act as scaffolds that ensure users build a solid foundation in material recognition before advancing to the more complex stage of restoration. Once all the achievements from the first stage have been unlocked, a virtual barrier within the environment is liled, allowing users to progress to the second stage of training.

This design element provides a tangible sense of accomplishment, reinforcing the educational journey and aligning with experiential learning theories that emphasize the importance of "learning by doing" (Kolb, 1984). In addition to enhancing engagement and motivation, the achievement-based progression system allows for a personalized learning experience. Each user can advance at their own pace, ensuring that they have fully grasped the preliminary concepts before moving forward. By fostering a mastery-oriented approach, this system mitigates the risk of users feeling overwhelmed, ultimately leading to more robust knowledge retention and skill development.

Prototype Results

The XRT prototype has undergone preliminary testing in various classroom environments at Politecnico di Milano, where students engaged in material recognition and restoration tasks within the immersive digital replica environment. This testing took place across multiple courses, including the "Historical Building Preservation Studio" at the Bachelor's level, and the "Architectural Preservation Studio" at the Master's level, introducing students to the digital aspects of preservation through hands-on experience in a simulated environment. While the entire XRT prototype is still being refined, these initial trials have focused on the immersive digital replica, phase-by-phase restoration rendering, and the ability to control the final results through real-time rendering, providing critical insights for future development.

Since the academic year 2021–2022, this digital innovation has been gradually incorporated into two Bachelor's and three Master's studios, creating a framework for testing and improving the prototype. The goal is to continue enhancing the XRT's features until it can be fully integrated as a standard educational tool within preservation courses. The positive reception from students has exceeded expectations, with feedback consistently highlighting higher engagement levels and a deeper, more intuitive understanding of the preservation process compared to traditional methods.

One of the most significant advantages of the XRT prototype is its ability to simulate real- world restoration tasks in a controlled, repeatable environment. Students can experiment with various techniques, such as different cleaning or consolidation methods, and receive immediate feedback on the results of their actions. This interactive approach allows for a comprehensive understanding of the complex processes involved in cultural heritage preservation, providing students with visual and hands-on insights that would be challenging to achieve in a conventional classroom setting.

To assess the effectiveness of this digital approach, pre-course and post-course tests were conducted to measure student improvement. Results from these assessments revealed a marked increase in understanding and skill acquisition, surpassing the improvement levels observed in traditional courses from the academic years 2017 to 2021. These findings underscore the efficacy of immersive digital training, demonstrating that this approach not only boosts student engagement but also enhances learning outcomes more effectively than conventional preservation instruction.

As the XRT prototype continues to evolve, further testing and refinement will ensure its readiness for full-scale classroom implementation, ultimately transforming how preservation education is delivered. By integrating this technology into preservation courses, the author aims to set a new standard in digital education for heritage preservation, creating a versatile and impactful learning tool that combines practical skills with advanced digital immersion.

Discussion

The XRT prototype has demonstrated transformative potential for the field of cultural heritage preservation education. By incorporating advanced technologies such as digital twin and extended reality, the prototype offers an immersive, achievement-based learning experience that encourages experimentation and engagement in ways traditional methods cannot. These digital innovations are particularly effective in teaching complex tasks in preservation, such as material recognition and restoration, where visual and interactive feedback plays a crucial role. The achievement-based progression system in the XRT prototype, grounded in constructivist and experiential learning theories, ensures that students build a strong foundation of skills before advancing to more challenging tasks, fostering both motivation and retention.

One of the critical aspects of the XRT's development has been its emphasis on preserving the integrity of historical materials. The layered, texture-based rendering of the restoration process allows users to test different interventions and see their effects in real-time, reinforcing the importance of careful, context-sensitive preservation practices. The ability to simulate the patina of time and visualise cumulative impacts on historical surfaces has significant implications not only for students but also for stakeholders outside the field of restoration. By providing architectural designers, policymakers, and even cultural heritage stakeholders with access to an authentic simulation of preservation work, the XRT prototype has the potential to foster a broader understanding of the preservation process and promote informed decision-making in collaborative preservation projects.

The extensive classroom testing of the XRT prototype has yielded valuable insights, highlighting both the tool's efficacy and the areas where future improvements can be made. The prototype's deployment across Bachelor's and Master's level courses at Politecnico di Milano, including the Architectural Preservation and Historical Building Preservation studios, has shown that students benefit immensely from this immersive approach. The pre- and post-course assessments, which revealed greater improvement in digital courses than in traditional ones, underscore the tool's effectiveness in enhancing learning outcomes. The overwhelmingly positive feedback also suggests that digital learning tools like the XRT are particularly well-received by contemporary students, who value the interactivity, flexibility, and autonomy that digital education platforms offer.

As the XRT continues to be refined and expanded, new features and tools are expected to further enhance the learning experience. The virtual workshop table, with its unlockable tools and achievement-based progression, introduces an adaptable element that enables users to engage in a personalized learning journey. The ongoing development of additional modules, such as multi-level preservation tasks and specialized tools for different historical materials, will open doors to a comprehensive training platform. **The XRT's multi-level approach also highlights its potential to serve diverse audiences, from novice learners to advanced students, as well as non-specialist stakeholders.**

Conclusion

The XRT prototype represents a pioneering step forward in the field of cultural heritage preservation education. By blending digital twin technology with extended reality, the prototype offers an interactive, immersive training experience that replicates real-world restoration tasks while safeguarding the integrity of authentic historical materials. Its achievement-based structure, which gradually removes scaffolding as students advance, aligns with best practices in education theory, promoting deeper engagement and greater retention of preservation techniques.

The positive reception and significant learning gains observed during classroom testing at Politecnico di Milano underscore the potential of the XRT as a powerful educational tool. The pre- and post-course assessments reflect the added value of digital immersion, with results indicating improved learning outcomes that exceed those of traditional instruction. As the XRT prototype is refined further, with additional tools, textures, and modules, it will be poised to revolutionize heritage preservation education, providing students with the confidence and skills they need to approach real-world projects with a clear understanding of both techniques and implications.

Looking ahead, the XRT prototype holds potential not only as an educational tool for preservation specialists but also as a valuable resource for a wider audience. By extending access to include stakeholders, architects, and policymakers, the XRT can foster interdisciplinary collaboration and encourage a holistic understanding of cultural heritage preservation. Ultimately, the XRT prototype exemplifies how digital innovation can expand the boundaries of traditional preservation education, creating a versatile, adaptive plarorm that is relevant to a wide range of learners and practitioners in the field. As we continue to enhance its capabilities, the XRT stands as a model for integrating advanced technology with preservation principles, setting new standards for the future of heritage education.

Future Development

The XRT prototype, as it stands, is a pioneering educational tool in the field of architectural preservation. However, its potential for future development opens the door to further innovation and expansion, ensuring its adaptability and relevance in preservation education. Looking ahead, several key areas have been identified to elevate the prototype's functionality and broaden its applications, ultimately transforming it into an all- encompassing training environment that addresses various aspects of cultural heritage preservation.

Enhanced Restoration Module

Building on the currently implemented restoration mechanics, the XRT environment will integrate a more sophisticated restoration module. This phase, which is still under development, aims to allow users to perform pre-consolidation, cleaning, and preservation tasks in even greater detail. As previously discussed, restoration techniques are rendered using high-quality, dynamic textures that visually respond to user interventions, giving trainees a realistic preview of their impact on historical surfaces. Future improvements will refine this texture-based feedback system to provide an even more accurate simulation of restoration results. With further testing and refinement, the restoration module will transition seamlessly into the broader XRT environment, becoming an integral part of the training flow that prepares users with a deep, realistic experience of conservation work.

AI-Assisted XRT Agent for Enhanced Interaction

Another significant advancement under consideration is the integration of artificial intelligence into the XRT agent, transforming it into an AI-assisted virtual guide. Currently, the XRT agent provides real-time feedback and guidance during material recognition tasks, but future developments will aim to make this interaction more fluid, adaptive, and personalized. An AI-assisted agent would not only answer user questions dynamically but also provide contextual assistance based on user behaviour, offering hints or explanations in real-time according to each trainee's learning pace and challenges. This feature is expected to enhance engagement by fostering a more interactive, human-like experience, encouraging users to explore and learn in a way that feels natural and intuitive. of alteration and degradation, bridging the gap between historical knowledge and preservation techniques. Trainees would navigate through virtual archives and scenes, piece together historical narratives, and discover environmental or anthropogenic factors contributing to the building's current condition, setting the stage for a deeper engagement with the preservation process.

Historical Research Module

A future addition to the XRT environment is the introduction of a historical research module designed to precede and complement the material and alteration/degradation recognition stage. This module, essential for establishing context and understanding the heritage site's background, will immerse trainees in a research-driven, investigative experience. With AI support, the historical research module could guide users through archival documents, images, and virtual artefacts, uncovering clues related to historical facts, material sources, and causative factors behind observed deterioration. This investigative journey would not only enrich the XRT's narrative dimension but also provide users with valuable insights into the causes of alteration and degradation, bridging the gap between historical knowledge and preservation techniques. Trainees would navigate through virtual archives and scenes, piece together historical narratives, and discover environmental or anthropogenic factors contributing to the building's current condition, setting the stage for a deeper engagement with the preservation process.

PCoNAT-Linked Cultural Heritage Training Modules

Aligning with the goals of the PCoNAT initiative, future developments will include specialized modules dedicated to cultural heritage training within the XRT environment. These modules will expand beyond architectural elements to encompass preservation techniques for cultural heritage objects, traditional techniques, and intangible cultural practices. Such additions will allow trainees to engage in the conservation of not only physical artifacts and works of art but also the delicate, often endangered, skills and cultural practices associated with these items. **From traditional crafting methods to ritualistic practices and techniques that have been passed down through generations, these modules will offer trainees a rare opportunity to explore, document, and understand the value of intangible heritage elements, fostering a deeper respect for both the tangible and intangible aspects of cultural preservation.**

By establishing a digital lab within the XRT that integrates cultural, architectural, and practical heritage components, trainees can explore the full spectrum of preservation skills and methodologies in a singular, cohesive environment.

The immersive setting of the XRT, exemplified by the digital replica of Cusago Castle, demonstrates the powerful effect of linking individual modules within a unified virtual landscape. This interconnected environment not only enhances user immersion but also allows for a seamless transition between preservation tasks, boosting the efficacy of each training module. The continuity within the XRT promotes a holistic approach to preservation, where architectural conservation, artifact protection, and the safeguarding of cultural practices are viewed as interconnected efforts, reinforcing the interdisciplinary nature of heritage preservation and strengthening collaboration across fields.

Such a virtual environment goes beyond traditional learning by creating a comprehensive, engaging experience that brings together diverse heritage elements within a single framework. This approach not only enhances the educational atmosphere but also deepens user engagement, empowering trainees to see and understand the links between physical preservation efforts and the intangible heritage that imbues these objects and practices with cultural significance.

Summary and Future Outlook

These planned developments highlight the future trajectory of the XRT prototype as a comprehensive, flexible educational platform for cultural heritage preservation. By integrating advanced restoration tools, AI-assisted interaction, and investigative research modules, the XRT will evolve into a multidimensional environment that combines theoretical knowledge with practical experience. Further, linking to PCoNAT themes and expanding the focus to cultural heritage items will enable the XRT to serve as a bridge between architectural and cultural preservation disciplines, reinforcing the shared goal of safeguarding historical and cultural heritage. These advancements promise to elevate the XRT prototype from a pioneering educational tool to a transformative platform, setting new standards in immersive, interactive preservation training for a wide range of learners and professionals in the field.

Images

Figure 1: Interior view of the South wing of the Visconti Castle in Cusago, showcasing the architectural integrity and historical relevance of the case study adopted for the XRT prototype.

Figure 2: State-of-the-art points cloud model of the South Wing of Visconti Castle, showcasing detailed spatial and colour information captured through laser scanning.

Figure 3: The Unreal Engine 5 rendered mesh, showing the high visual fidelity achieved in the mesh conversion.

Figure 4: The immersive workshop environment in the XRT prototype featuring a virtual table where preservation tools are displayed. Users can interact with the workspace, selecting and exchanging tools like lamps, rulers and other measurement devices as needed for various tasks. New tools are added as achievements are unlocked, simulating a progressively engaging and interactive learning experience.

Figure 5: The temporary magnifying tool with a gun-like appearance sits on the virtual workshop table in the XRT environment. Repurposed from a video game asset this tool offers essential zoom point and click functionalities for material recognition tasks. Its appearance will be refined in future iterations to align better with the preservation context.

Figure 6: A screenshot of the magnifying tool in action during a material recognition exercise in Unreal Engine 5. The user points zoom and clicks within the XRT environment to identify materials, receiving real-time feedback from the XRT agent. This asset's practical functionalities enable rapid prototyping with plans for a redesigned appearance in future updates.

Figure 7: A digital overlay mapping of identified materials on a portion of the historical wall in the XRT environment displayed in semi-transparent colors. This visual aid allows trainees to see the various materials recognized in the previous stages of training.

Figure 8: A digital overlay mapping of alteration and degradation on the same portion of the historical wall showing specific areas affected by deterioration and classified during the material recognition stage.

References

Brusaporci, S. (2020). Handbook of Research on Digital Tools for Architectural Surveying and Restoration. IGI Global

Deci, E.L. & Ryan, R.M. (1985) Intrinsic Motivation and Self-Determination in Human Behavior. New York: Plenum

García-Valldecabres, J., Marco-Such, M., & Portalés, C. (2019). Virtual Reality in Architectural Education. Journal of Architectural Education, 73(2), 271-281

Ioannides, M., Magnenat-Thalmann, N., & Papagiannakis, G. (2017). Mixed Reality and Gamification for Cultural Heritage. Springer

Kolb, D.A. (1984) Experien;al Learning: Experience as the Source of Learning and Development. Englewood Cliffs, NJ: Prentice Hall

Lin, G., Giordano, A., & Sang, K. (2020). From site survey to hbim model for the documentation of historic buildings. Conservation Science in Cultural Heritage, 20, 111-123

Piaget, J. (1970) Science of Educa;on and the Psychology of the Child. New York: Viking

Rigamonti M, Augelli F (2024) Innovating Architectural Preservation and Adap0ve Reuse
Design Education in Hunan: The Digital Turn from hBIM Modelling to Digital Replicas. In: Cultural Heritage Preservation and Reuse for Fragile Territories – The Hunan Province in China, Springer

Rigamonti M (2024) Memory | Human | Space. A paradigm introducing Design Thinking in
Architectural Adaptive Reuse Design. In: Cultural Heritage Preservation and Reuse for Fragile
Territories – The Hunan Province in China, Springer

Wood, D., Bruner, J.S., & Ross, G. (1976) The Role of Tutoring in Problem Solving. Journal of
Child Psychology and Psychiatry, 17(2), pp.89-100

Yi Y, Rigamonti M, Augelli F (2024) Aims, process and Results of a Virtual Experiment for a
didactic tool based on two Hunan heritage buildings. In: Cultural Heritage Preserva;on and Reuse for Fragile Territories – The Hunan Province in China, Springer

Crafting a Future for the Past Heritage Craft's Red List in the Revival an Resilience of Traditional Skills

Daniel Carpenter

HERITAGE CRAFTS

https://www.heritagecrafts.org.uk/

https://youtu.be/p8wlN9NWYLM

Daniel Carpenter is the Executive Director of Heritage Crafts. After an introduction to the organisation, he focuses on the **UK Red List of Endangered Crafts—a grassroots initiative we established to address the gap left by the UK government's failure to document the state of traditional craftsmanship as a form of intangible cultural heritage.**

So founded in 2009, **Heritage Crafts is the advocacy body for traditional heritage crafts in the UK.** Working in partnership with the government and key agencies, we provide a focus for craftspeople, groups, societies and guilds as well as individuals who care about the loss of traditional craft skills. We work towards a healthy and sustainable framework for the future. We now have a membership of around 1,600 and about 3/4 of whom are makers and the rest are people who support the work that we're doing.

Our vision is for a society in which heritage craft skills are acknowledged as being of not being a vital cultural importance and are nurtured and celebrated for their own intrinsic value, not just for the objects or environments they produce, conserve or restore.

We are a grassroots organization formed by craftspeople in response to a lack of support for our sector. We do face some issues in that we fall between the heritage and the contemporary arts sectors in the UK, each of which have a very well delineated infrastructure. We cover both of those areas but neither of them wants to take responsibility for us as an area to be supported. Another issue is that the majority of practicing craftspeople are operating with very little support, many of whom are approaching or beyond retirement age having made no provision to pass their skills on to the next generation.

It's still the case that most support is directed at tangible heritage, so the natural and built environment, museum artifacts and so on, and contemporary arts. However, we are seeing a move towards supporting more living heritage and acknowledgement of the role of craft and craftspeople in our cultural heritage, as evidenced by the recent news about ratification, and also a change of emphasis for some of our major heritage funders. We've just received a sizable donation from the National Lottery Heritage Fund here in the UK and that's the first time we've had funding from them and I think it does show that their priorities are broadening into intangible as well as tangible heritage.

What are heritage crafts? This is the technical description that we use when doing our research for the Red List. We define it as a practice which employs manual dexterity and skill and an understanding of traditional materials, design and techniques, which has been practiced for two or more successive generations. This includes craft practices which are taking place in the UK at the present time and crafts that have originated outside of the UK. Typically, it's people who are working within a lineage of skills and knowledge, and they can be working in a heritage or a contemporary context. It doesn't matter as long as they're using skills from within those lineages. We like to think of it as a seed bank of knowledge that underpins all crafts, both contemporary and traditional.

In 2012, we lobbied for and were part of a consortium of organizations who worked on a research project called Mapping Heritage Craft, which showed that the economic importance of heritage crafts in England was substantial. It was £4.4 billion gross value added, employing over 210,000 workers. But despite the size it showed serious vulnerabilities in that, as I mentioned, it's an ageing sector, with 80% of practitioners stating that they had made no plans to pass on their skills to the next generation. Entry routes into the sector for young people had been eroded over generations, and generally speaking a craft career was rarely considered an option for school leavers.

Our continuing research backs this up, and this is the gloomy par is the lack of support for heritage crafts at national and local government level. None of the UK government departments or agencies for the arts, heritage or business have taken full responsibility for us as a sector. A lack of training routes for people wishing to become heritage craftspeople. The relatively few government supported apprenticeships available are often poorly suited to the requirements of sole traders and micro businesses that make up the vast majority of the heritage craft sector.

The lack of support for training is one of the main factors that has led to an ageing sector. Many craftspeople are approaching or are beyond retirement age with reduced opportunities for passing on their skills. And this loss of craft skills, the lack of creative subjects and haptic skills taught in schools and many employers are finding the young people are leaving the education system with few practical skills, poor dexterity and poor hand-eye coordination.

There are the challenges around running a small business. This includes the bureaucratic burden for small businesses, business rates and taxes, and the cost of workshop space and competition with mass production and low-wage economies in other parts of the world. There are market challenges that stem from a lack of appreciation for heritage craft skill amongst the general public. Whatever one might think of them, popular craft television programs have gone some way to increase the appreciation of craft, and this is a major positive. There are supply chain issues, particularly with sourcing raw materials and a number of external challenges, including Brexit (the British exit from the European Union), COVID and the cost of living crisis currently underway in the UK.

So why safeguard heritage crafts? That was all the doom and gloom, but on a positive note, crafts have survived huge pressures before. Crafts people do tend to be resourceful, inventive and passionate about what they do, which is why many of these skills have survived at all. Our charitable remit is to safeguard heritage craft skills for the benefit of the whole UK population, not just craftspeople themselves. **The cultural benefits are that they are as much a part of our culture as our monuments and museum artifacts. There are economic benefits, productivity, placemaking, tourism, local circular economies, and there are also social benefits, the wellbeing, local pride, and social cohesion.**

There is a widely reported mental health crisis in the UK, particularly among young people. We believe that this is partly as a result of discouraging people from engaging in crafting activities, which are a key component in living a well-rounded life, as has always been the case. Work practices and mainstream media consumption discourage time away from the screen, and we have a decreasing connection to and affiliation with the trades and industries that made our localities. We have less information about the products we consume. Where they are made and by whom and how. **However, we must also be careful not to be drawn into a romanticized, nostalgic vision of crafts.** I hope by the end of this paper, you'll get a sense that our approach to both heritage and craft is one that is dynamic and that gives agency to makers and consumers of crafts.

We are a registered NGO with UNESCO in the field of intangible cultural heritage. And up until the recent announcement, the UK was one of only 12 of the 193 member states, not to have ratified the 2003 UNESCO Convention on the safeguarding of intangible cultural heritage. The UK is traditionally quite good at looking after its tangible heritage. We are known for our stately homes, royal palaces, monuments and museum collections. It's a large part of our unique selling point as a country and a focus of much of our tourism. Because of which, intangible cultural heritage can be an awkward concept for us to convey to a general public for whom heritage is understood as these physical manifestations of heritage. So we found ourselves in a situation where there was a lack of support for the intangible skills and knowledge of the craftsperson.

But there was also very little known about the makeup of the heritage craft sector, the skills that it held and the challenges it faces. Despite the lack of ICH convention in the UK, we set about working on it anyway.

The Red List was created in 2017 in the spirit of intangible cultural heritage and with the same safeguarding principles. The Red List uses a combination of quantitative and qualitative measures, looking at the number of practitioners, the number of trainees, the momentum of change, and any particular existential threats the crafts are facing. It was based on the International Union for Conservation of Nature and the Rare Breed Survival Trust, similar lists and similar ranking. It was intended to be originally to be set up as a wiki like Wikipedia, with many contributors from across the craft sector, but this turned out to be very difficult to manage and keep consistent. So now we gather the data manually. However, it's still essentially a co-produced piece of work with very many contributors. My colleague Mary Lewis collects the data, but the aim is that it is always dynamic and changing. We're always open to being wrong. We've been wrong in the past, and it will also never be a finished piece of work. It's always adapting and changing.

259 crafts now feature in the research, which is up from 244 in the previous edition. Since the previous edition, one craft has become extirpated in the UK, which means extinct, locally extinct, so extinct in the UK. Which was the mouth-blown sheet glass making. 62 crafts are listed as critically endangered. 84 crafts are listed as endangered and 112 are deemed currently viable. Despite being classed as viable, these crafts are not risk free or without issues and will continue to be monitored. In some cases, the methodology has been seen as negative, and it focuses on what's at risk of being lost rather than the positive stories. But that's changed over time. And I think now it's gained wider awareness. It's seen as mostly positive. While people can still be shocked or saddened to see a craft on the list. This is now much more likely to generate a positive response.

What can we do about it? How can we change this? We now have a craft lobbying to be added to the list because they want that validation for what they do and the publicity that it can bring. Crafts that may have been perceived as dying, old fashioned or irrelevant, are now seen as niche, unusual, precious and worthy of protection. It's now been widely picked up by the media, including mainstream TV channels and newspapers and it's widely used by other charities and organizations as a source of data for funding applications. This is important for us because before this, a niche craft or organization would possibly not have stood a good chance, and now that it is contextualized within a community of crafts, they have more weight.

An example of this is the Guild of Cornish Hedges. Back of the 2023 red list were able to raise significant funds to train the next generation of Cornish hedges. Other funders and crafts organizations have started to incorporate more heritage crafts and endangered crafts, perhaps because now they can see that they are not just an anachronism. They are still happening widely across the UK and skills and knowledge held there underpin all crafts, not just those that you might perceive to be heritage.

Our core work is safeguarding craft skills, but we don't necessarily say that all crafts should be saved no matter what. If we have something that is no longer needed or it relies heavily on fossil fuels or non-renewable resources, it might have to change or innovate. And this has always happened.
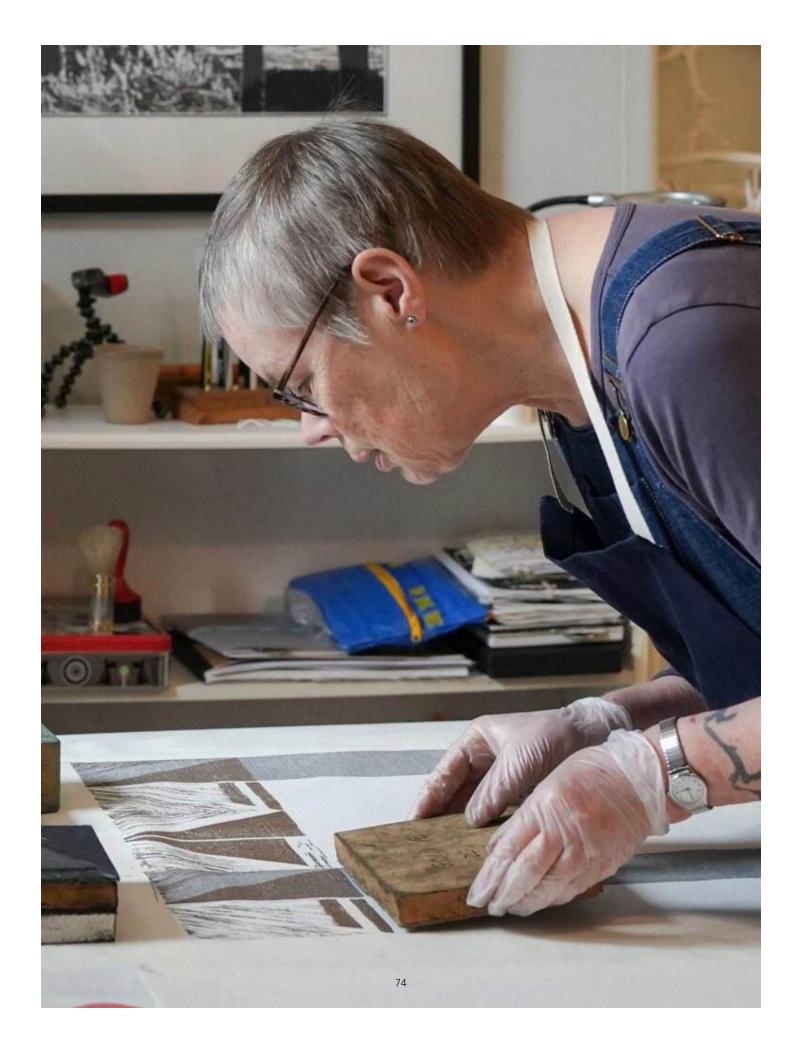
Crafts have always adapted to changes in technologies, markets or social attitudes. This evolution needs to continue if practices are to survive and some may die out along the way. Our job is to ensure that people are aware of this change and have the opportunity to have a reasoned debate about what is nurtured, what can be let go and what can be reimagined for the future.

So this is the list of endangered and critically endangered crafts and you probably can't read all of those, but it's just to give an idea of the number and the breadth of the different crafts involved.

The Red List has been influential outside of the UK too, with the Canadian Heritage Foundation of Newfoundland and Labrador's Craft at Risk List and the Algarve region of Portugal's Red List of endangered artisan activities, both citing the UK Red List as inspiration.

And actually as of this week, there's been a new Red List published in Germany based on our work, which is fantastic. The Michelangelo Foundation based in Geneva has expressed an interest in funding a toolkit of our methodology for organizations in other countries to create their own Red List projects, with the ultimate aim of one day connecting up the national lists to create a pan-European or even a global list of endangered craft skills.

We have thought a great deal about why this area of our work resonates so strongly with national and international audiences.

When a cultural tradition is seen as ongoing, then only a few people seem to care about it. But when presented in the context of endangerment as being on the verge of being lost, then people are much more motivated to support it, even if it's something that was previously unknown to them. So one of the methods we use to gather our data includes running a craft specific symposia. And we've done, I think, eight of those now. This was our one on boat building. We got experts from all around the UK together in a room for a day, just to talk about the issues that their craft is facing. In the case of boat building, we found that there were some significant challenges facing the trade. Very few people were making traditional wooden boats from scratch, most were doing restoration and repair. There is a lack of geographical spread, most are in the south of England, which could threaten regional boat styles and traditions in other areas of the country. There is a lack of diversity, the sector is heavily male dominated and aging.

Pigment making has been an interesting new craft added to the list. Pigment making is often seen as part of fine art and lots of artists will make pigment for their own use. However, the craft element of pigment making is at risk. There are few commercial pigment makers and there is a risk that the high level skills and knowledge that they have of making color could be lost.

The red list is an evolving process. As we have come to understand these crafts more fully, over the years, we realized that we had a problem with recognizing some crafts, particularly those that have a cultural significance to specific groups and communities. So prior to the most recent edition of the list, a craft like this would be considered as sign writing or painting, which is a viable skill. not on the red list, but there are specific manifestations of the craft, so canal boat sign writing here specifically, that are significant to particular communities, in this case the itinerant boat, boating community, specifically in England.

We've changed our methodology so we can include these crafts of significance to particular groups, be they geographical, religious, cultural groups, racial groups, etc. That's a new tack that we've taken that I think is going to pay dividends as we move into the fifth edition to be published next year. We feel that this can only continue to add value to the red list and the work that it can do to advocate the craft and the new methodology also allows us to embed our work into intangible cultural heritage discussions even further by linking with other domains such as festivals and religious practices, by recognizing the geographically rooted nature of some of the craft practices and specificity of crafts practiced by cultural groups.

These are Vardos or wagons that are synonymous with the gypsy, Roma and traveler communities in the UK. They are a distinct ethnic and cultural group but come together under this umbrella. They have their own distinct craft traditions too. These are people who are often subjected to extreme racism and intolerance in the UK and so understandably can be reluctant to share their traditions and experiences.

We feel that it's important that our work comes from the grassroots. So rather than descending on groups, like middle-class white saviors, we're keen that this work is led by people with lived experience. We work with the Gypsy, Roma, and Traveller community. This was led by Romany maker, Image and Bright Moon, who we've been working with and carried out through channels such as the Traveller Times, which is a publication for that community and that we wouldn't have otherwise had access to. This has enriched the Red List and our understanding of how we can work positively with marginalized groups.

Crafts that were already on the red list, such as Jewish scribal art or sofrut, are now much better served in the context of their communities and culture. This is a very ancient and sacred practice that has been carried out in the UK for as long as the Jewish communities have been settled here. It's both a religious practice and a highly skilled craft, from the calligraphy itself to preparing the kosher parchment, ink making and sewing with sinews. It was considered endangered in 2021, and has been relisted as viable in 2023. This is mainly due to increased levels of communication and sharing within the community itself and more visibility to those who practice the craft, which is an important outcome in itself. The new approach is also preparing the foundations for our ongoing work with other communities across the UK that have their own diverse cultures of craft. We've always talked about the cultural loss that is born every time a craft is lost, but over the last few years we've begun to notice another phenomenon. We've increasingly seen how crafts operate with a degree of interdependence.

The loss of hand blown sheet glass is an example of this. The last manufacturer in the UK, English Antique Glass, stopped production of sheet glass in early 2023 meaning that anyone doing stained glass restoration or who uses flashed glass in their artwork will have to source it from one of only two other companies in the world. This was one of the factors that has led to historic stained glass window making being added as an endangered craft and this is the mouth-blowing sheet glass making that I mentioned. It's no longer made in the UK. We are however optimistic that they can start making it again because they still have the equipment and the knowledge. It's just the fact that their workshop was sold out from under them by their landlord, meaning they had to move to smaller premises.

I mentioned interdependencies, and this is the list of sub-crafts just for watchmaking as an example. You can see the overlap with other craft disciplines such as lapidary, silversmithing, goldsmithing, enameling, and so on. As each of these become increasingly endangered, it exposes the interdependencies that exist within the ecosystem of crafts. They form complex ecologies with associated skills, supply chains, and economies of scale.when one business closes or one craft becomes extinct, it can have a knock-on effect on other allied crafts.

Images

Figure 1: Ali Holloway - weaver. Available at: ttps://www.heritagecrafts.org.uk/maker/ali-holloway/

Figure 2: Roslyn Whiting Leathercraft Available at: https://www.heritagecrafts.org.uk/maker/craftsroslynwhiting-co-uk/

Figure 3: BookBinding Available at: https://www.heritagecrafts.org.uk/maker/infoboundbyhand-co-uk/

Figure 4: Fore edge painter Available at: https://www.heritagecrafts.org.uk/alumni/martin-frost-fore-edge-painter/

Figure 5: Clockmaking Available at: https://www.heritagecrafts.org.uk/maker/jeremydodd/

Figure 6: Elin Isaksson Glass making Available at: https://www.heritagecrafts.org.uk/maker/elinisaksson/

Figure 7: The Black Fish Press available at: https://www.portlandworks.co.uk/portfolio/the-black-fish-press/

Figure 8: chair maker Available at: https://www.thelifestyleeditor.com/post/616841066504667136/creative-conversations-who-are-you-jason-mosseri

Sacres Savoir-Faire: Bridging Generations through the Revival of Craftsmanship

Albert Bore
Constanza Marinelli

STRATE ÉCOLE OF DESIGN

https://www.instagram.com/studio_papi/

https://youtu.be/pRj1fu5mtfQ

Albert Bore, a Master's student in Product Design at Strate School of Design in Paris, embarked on a project titled Sacrés Savoir-Faire ("Holy Skills"), a journey across France to explore traditional craftsmanship and investigate how these age-old skills could be preserved and integrated into contemporary design. The project focused on meeting skilled craftsmen and craftswomen, understanding their methods, and collaborating to promote the transmission of traditional knowledge.

Bore was joined in this endeavor by his long-time friend Martin, a first-year Master's student in Audiovisual Production, with whom he co-founded Studio Papi in 2023. The name "Papi," meaning "grandfather" in French, reflects the duo's commitment to honoring the older generation and the knowledge they have accumulated over time. Their goal was to combine Bore's design expertise with Martin's audiovisual skills to create a meaningful dialogue between the past and present, focusing on knowledge transmission to younger generations.

The Sacrés Savoir-Faire project was built around three key pillars:

Exploring French Craftsmanship: Bore and Martin traveled across France, meeting various artisans—ceramicists, wicker basket weavers, metalworkers, natural dyers, and laser workers. The goal was to understand their working processes and learn how their craft could inform and influence modern design, while also documenting the historical significance of their work.

Connecting Generations: The project aimed to create a bridge between traditional craftsmanship and younger generations, making these skills more accessible and emphasizing their importance as a cultural heritage. The artisans' work served as both a testament to the past and a resource for future generations.

Crossing Design and Craftsmanship: Bore's role was to explore how traditional craftsmanship could be integrated into industrial design, with a focus on sustainable practices, local materials, and collaboration with artisans in the same region. Martin's role was to raise awareness about craftsmanship and highlight the skill and dedication it requires, challenging the misconception that such work is only suited for those who struggle academically. The project sought to demonstrate that craftsmanship is both valuable and accessible to everyone.

My main role was to understand their processes and adopt a fresh approach to industrial design, one that emphasizes eco-design by prioritizing local materials and artisans, and completing a project from start to finish within the same region.

The second part involved giving people, especially the younger generation, greater access to traditional crafts and techniques. This was Martin's area. We feel there's an issue in France, where students are often steered toward craftsmanship only if they're not performing well academically. However, we wanted to change this perception, as it doesn't reflect the reality. **Craftsmanship should be accessible to everyone and requires immense skill and dedication.**

The goal of this trip was twofold. First, I wanted to create a collection, as I'm still in school and needed to meet certain academic requirements to complete this project during the year. This collection allowed me to engage in every stage of an object's creation, showcasing authentic French craftsmanship in both technique and material use. The second aim was to create a one-hour documentary capturing our journey and sharing the overall experience.

This is the itinerary we followed. Although we couldn't cover all of France, and missed regions like the East, it doesn't mean there aren't talented craftsmen there; we simply couldn't connect with someone in that area at the time.

The third member of our adventure, our van, Papi. The van played a key role in making us feel welcome, as it provided us with a place to stay wherever we went. This also helped reassure people and made them more comfortable with our presence.

We worked primarily with five types of artisans: ceramists, a wicker basket weaver, a metal worker, natural dyers, and laser specialists. In total, ten artisans contributed to our collection. Along our journey, however, we met with about 20 to 30 other craftspeople, as well as several organizations and associations, to gain a deeper understanding of the craftsmanship landscape in France and the challenges it faces.

For instance, when we arrived in Marseille, we couldn't find a craftsperson able to dedicate a week to collaborate on our collection. Instead, we worked with associations that provided valuable insights, helping us better understand the local environment and nuances of our field. **Our journey introduced us to a diverse range of artisans—men and women of various ages, each with unique skills and experiences.**

One of our pieces, a knife named "Didier," exemplifies a practice we followed: naming each piece after an artisan we met. In creating these items, we intentionally blended different areas of expertise, bringing together artisans who had not previously collaborated. This approach sparked significant interest among them, creating opportunities to connect, exchange knowledge, and foster a close-knit community of craftspeople.

The second stool, named "Pierre," is one of our creations. For this piece, we used wood and collaborated with a wool producer to create a wool top. While it resembles sheep's skin, it's purely wool. We partnered with a company in France that reclaims wool from local sheep, applying it as textile. For the color, we worked with a natural dyeing association in southern France. Natural dyeing is a rare and endangered craft, with only about three practitioners remaining in France, most of whom are older. Achieving consistent colors using natural dyes was challenging; for example, dyeing a hundred stools the same shade of yellow with a single type of flower is incredibly difficult. The process is closer to a scientific experiment, which is why we spent time thoroughly understanding it.

Another piece, the basket "Emily," was an exploration in wicker weaving, showcasing multiple techniques within a single object.

For a knife we created, we blended wicker and metalworking techniques we learned from various artisans we met along the way. The table leg was our final piece from this trip, made in collaboration with a metalworker. This process was a bit rugged and intense but ultimately very rewarding.

Our journey's first phase ended with an exhibition in Paris, where we shared our work with others, especially friends and the younger generation. This exhibition also illustrated the depth of French craftsmanship and the need to support artisans in sustaining their skills and livelihoods—something that remains difficult for many, especially younger artisans.

This experience motivated us to organize the one-week Paris exhibition, which turned out to be incredibly fulfilling.

Design Anthropology within vulnerable contexts: inspirations from the Global South to overcome the Anthropocene

Raquel Noronha

UFMA / NIDA

https://nida.ufma.br/

https://youtu.be/GxchL7zuxg8

In this paper, I will present theoretical and methodological approaches that inspire us at NIDA - the Narratives in Innovation, Design and Anthropology Research Group - to think about designing for the context of the Global South. We are located in Maranhão, one of the poorest states in Brazil. In this situation of vulnerability, around the Amazon region, we find research partnerships with maroon and riverside communities to think about and make *designs others.* In this way, we are dealing with situations related to climate change and all the challenges that the Anthropocene causes in this context.

The research approaches carried out here fall within the scope of design and anthropology. To summarize, at the risk of being simplistic, these fields of knowledge have been working together for some time. At first, anthropology approached design with an interest in material culture to understand peoples' culture when anthropology and archaeology were practically a single form of knowledge.

Over time, design also became interested in anthropology, intending to learn its techniques, especially ethnography, to understand the contexts of use of the artefacts to be designed and thus be "a better design" through anthropology. Again, in the 1980s, anthropology, in its *Material Turn*, once again evoked objects as the focus of its attention. Thus, an anthropology emerged that sought elements from the making practices to construct its cultural analysis. **What we mean by *designanthropology* (DA), and we write it like this, with the two words together for the sake of understanding the two connected and deeply intertwined fields, is the creation of a space in which design and anthropology enhance each other and produce new possibilities for reading and acting in the world . They are not just two separate fields that seek each other out to optimize their epistemologies, but they are a *third place.***

cultura material   arqueologia

-design
+antropologia

antropologia das "coisas"   "virada" material

"Etnografia rápida"

trazer a antropologia para
um engajamento prático

+design
-antropologia

fazer design de forma crítica e significativa

design + antropologia

campos trabalhando juntos

um novo subcampo

The first time this was mentioned, as a third place, was in Joachim Halse's thesis. He discusses this dichotomy between design and anthropology. They are interested in each other but working apart from each other. And then, he proposes, in a speculative way, if we could bring them together to work to go forward these old dichotomies and if we could be less descriptive as anthropologists or less descriptive as designers. So he is working on this possibility of working between description and prescription. It was the first time this thought came together.

Many collective books, with authors worldwide, were released, trying to explain and present this conception and think about these DA relationships. We have authors from anthropology and design who constructed this knowledge.
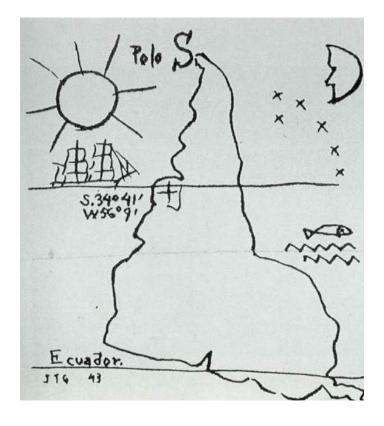
And I'm talking from this field. I'm also a designer and anthropologist. We are working with these vulnerable situations in the Global South. First, we worked with a theoretical and methodological approach from the North because we needed it in the Global South. But nine or ten years ago, we started to think about this encounter of anthropology and design in Brazil. So, we are trying to understand and to make things together. I had the opportunity to do a research mission with Tim Ingold in Scotland in 2018, where I worked through his literature and his partners. **We understood then that we must construct our way of working with design and anthropology. We are thinking of "design by means of anthropology" in dialogue with Caroline Gatt and Tim Ingold.**

From that moment on, we tried to bring those issues, vulnerability, power issues, gender issues. Maranhão is the second most populous state in Brazil with a black population. We were in second place in receiving the greatest number of enslaved people from Africa from the 16th century onwards.

We have many maroon communities here. So, we have different cosmologies, and we must understand how to work with them, reclaiming DA as this space of a possible dialogue. **We use a participatory design approach and tools and started collaborating with these traditional communities, producers of handicrafts and holders of ancestral knowledge. We understood that collective making, practices in the field, and using tools, games, and other design elements would provoke social dialogue to understand what could be done with these communities to mitigate the vulnerability.**

Therefore, our conceptions of designanthropology are interventionist. Participatory, situated, based on co-creation and focused on relationships. Designanthropology is not prescription, it is not description, it is not neutral, it cannot be replicated in their results, and it is not orientated to an end, but it is always an open-ended process.

To build our designanthropology practices oriented towards the issues of the Global South, we began by questioning the name itself. Should we translate it? We are not talking about anthropology of design like some researchers in Mexico; they are talking and writing about it because we are repeating the paradigm where anthropology brings design as a way to be a better anthropology. In Portuguese, we use the English form "design", so we wrote the two words together, symbolizing the profound articulation between the fields.

We often mention relationships or correspondences between design and anthropology as a form of caution, of a certain epistemological modesty, so as not to sediment a single, closed conception of design anthropology. Indeed, there is no single agreement or definition, but rather a series of initiatives that relate the field in an interventionist, participatory and open way, which we wish to maintain in our experimentation.

From this position, we reflect on the peculiarities of doing design-anthropology research in the Global South, addressing our specific agendas and challenges. For this reflection, we turn to Bruno Latour, who, in his book "Onde aterrar?," problematizes humanity's movement towards a promise of globalization that has not happened. We were promised a world for everyone, but it only happened for a few: the privileged super-rich of the world. At the same time, a horde of local cultures set out on a journey of globalization, with the promise of access to goods and consumption, and left their practices and territories behind. When they realized the fallacy of the call to the globalized world and encountered the consequences of this globalization - as Latour calls it - they no longer had the stability of their "places" to return to. Globalization had already modified "the local", subordinated it, and prevented access to these populations.

Latour analyses the current geopolitical context based on this perception that globalization's failure did not happen and that the locals' ruin was something abandoned in this movement. He analyzes that there is then a third attractor, which he names Terrestrial, and it would be a place where we do not separate culture and nature.

All the beings are entangled, all the materials, the environment, and we have this movement to go to this third place. There is another one, the fourth attractor that is "out of this world", which would be a fiction and imagination of futures for the super-rich, like Elon Musk, which would be the colonization of other planets to get rid of the ills that have been created by the exploitation that they have caused to the Earth, with the unsustainability of their processes.

So, how do contemporary geopolitics affect us as researchers in craft production intertwined with design and anthropology in vulnerable communities? We must consider power issues, coloniality, gender, knowledge, hierarchical thoughts, and how we would name things. Antonio Bispo dos Santos was a Brazilian maroon leader. He died last December, and he is known as Nêgo Bispo. He is a critical author. He is an autochthonous academic and discusses our position as colonized and Occidental colonized persons. **Naming, as Nêgo Bispo says, is a colonial instrument for dominating populations in processes of subjugation. It is a form of symbolic expropriation that takes away the soul of cultures, leaving a legacy of semantic voids with empty words that have no basis in local cultures.**

Nêgo Bispo's proposition exceptionally inspires us. In various texts, we question the absence of these discussions in DA by the North and European DA. But we also understand that this is not their job, but it is ours to discuss it. We don't live in a state of social welfare! He talks about his political position in his community and argues that they were not colonized in Brazil, as many indigenous and maroon communities were.

They are trying to make a counter-colonial aWpproach, not a decolonial one, as they are not colonized. Recognizing other positionalities inside discourses and practices is an exciting standing point. It is a feasible movement to be done in design processes, and it helped us decolonize our practices and research tools.

A few months ago, we faced a high-left government led by Jair Bolsonaro, a denialist government. Of course, Brazil is also experiencing a migratory crisis, as are many others worldwide. However, these are the issues we consider when discussing designanthropology in Brazil or Latin America.
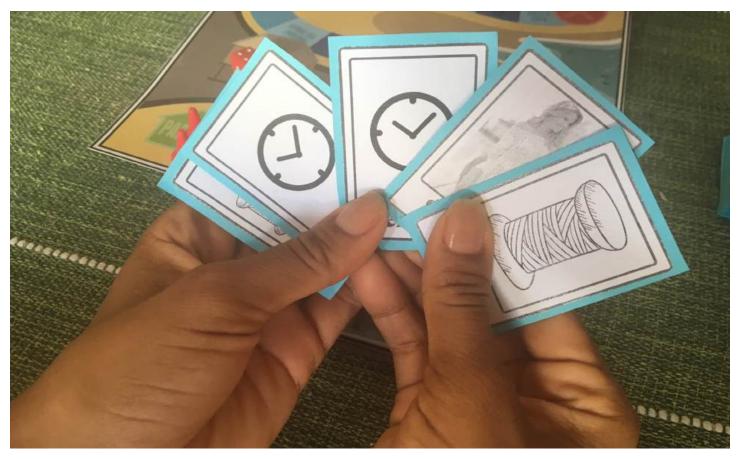
So, I will mention some authors to discuss this issue. The first one is **Silvia Rivera Cusicanqui. She is a Bolivian anthropologist with Indigenous origins. She argues that we are reproducing colonial practices in the way we research. We deal with academic issues and political and academic policies that reproduce colonialism; she adds that we are used to doing those things. It is her thesis, and she presents her research on Bolivia with Indigenous groups to show us. It's fantastic work that inspires us at NIDA.**

I also turn to Marisol de la Cadena, a Peruvian anthropologist who studies science, technology and society. She is one of the thinkers who most inspires me today to think about these relationships between people, and it's not for nothing that I'm proposing that we think about the relationality of worlds. De la Cadena shows us that we need to relate differently to nature. Nature is neither an external entity nor a place to be exploited. We are also part of nature. Some authors, such as de la Cadena and Ailton Krenak, a Brazilian Indigenous intellectual, have based their reflections on this vision of Indigenous peoples:

The Rio Doce, which we Krenak call Watu, our grandfather, is a person, not a resource, as the economists say. It is not something that anyone can appropriate; it is a part of our construction as a collective that lives in a specific place, where we were gradually confined by the government so that we could live and reproduce our forms of organization" (Krenak, 2020, p. 40) .

So, Krenak (2020) brings us this reflection in a straightforward, easily accessible way. I would also add Marisol de la Cadena's observation, based on her ethnographies of Indigenous peoples in Peru:

"We're talking about our brothers who quench our thirst, bathe us, and care for our needs—these [brothers] are what we call rivers. We don't use a river as a sewer; one brother can't weaken another brother. We don't stab our brothers. If the transnational corporations only care about our soil, as we have done for millennia, we would happily give them space to work here. Still, they only care about benefiting themselves economically and accumulating wealth." (DE LA CADENA, 2018, p. 97).
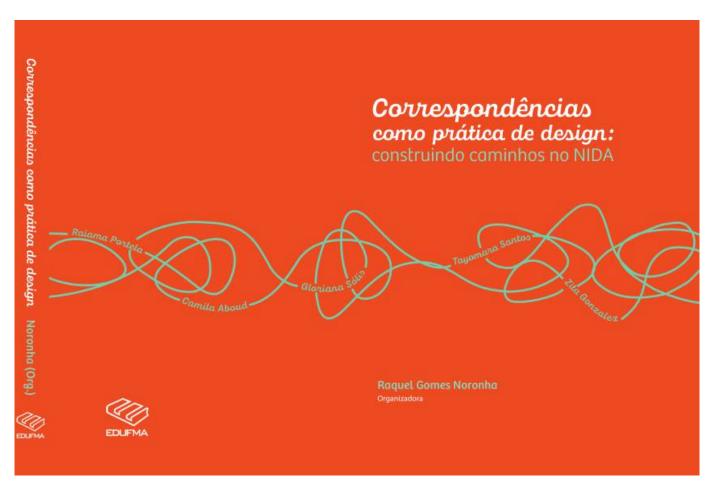
So we are exceptionally inspired by these thoughts, by these authors, and we propose a methodology to work with these communities to make design by means of anthropology, questioning these spaces of power, these power discourses, and, currently, discussing gender and design. So, these authors argue that we are working with colonized categories such as science, methodology, and colonialism. Therefore, it is important to problematize the categories and methods we are working with. **Development, sustainable development, design-user experience, and others are categories that capitalism co-opts as a production system that prevents life from existing. It's our discussion on how we can go further with these colonized categories and bring another category to research with these communities, with these traditional communities.**

At NIDA, we can consider some parameters to achieve full participation, such as avoiding colonial staging, co-optation, and repetition, as the authors warned. We are talking about discursive dispersion, in the words of Michel Foucault and Nêgo Bispo, conditioned inclusion, a concept used by Rivera Cusicanqui to address the processes of lack of inclusion and the perpetuation of colonial ties in Andean peoples.

As I've argued, it's the most critical issue in his book, and we have to take it seriously in the design process. Otherwise, we risk repeating such hierarchical patterns in guiding supposedly participatory research. We often include others but don't really include them; it's a partial inclusion. **Participation has to do with engagement in creation. And how can we think about this genuinely participatory making, taking into account the temporalities of those who participate with us?** Time is another crucial colonial issue because academic time is one, and community time is another. Quilombola communities have a different cosmological way of thinking about participation, time and narrative, and we're trying to understand it. And here I ask: How do these elements appear? How do they emerge in your research and our research? Yes, we must think and do this: discuss these theoretical and methodological issues: how do we produce our tools? How do we build our methodological approaches?
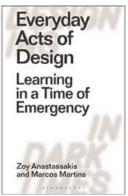
I have some examples of publications to share with you. Firstly, we have discussions in Brazilian literature on design and anthropology. In our last book, we discussed this methodological approach at NIDA, this research group. Since 2018, my colleagues and I have been publishing books and organizing the journal Dossiers to map and consolidate this discussion. We published a few books by Maria Cristina Ibarra, Zoy Anastassakis and Marcos Martins, and papers in journals and book chapters with our thoughts to reflect on design anthropology in Brazil.

Correspondências como prática de design:
construindo caminhos no NIDA

Raiama Portela

Camila Aboud

Gloriana Sólis

Tayomara Santos

Zita Gonzalez

Raquel Gomes Noronha
Organizadora

EDUFMA

a

correspondências
entre **design**
e **antropologia**

a

correspondências
entre **design**
e **antropologia**

Design como
correspondência
Antropologia e participação
na cidade

Everyday
Acts of
Design

Learning
in a Time of
Emergency

Zoy Anastassakis
and Marcos Martins

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12

We prototyped some situations with a maroon community at São Caetano, at Maranhão. They are extractivists women who work with Babassu coconut. Therefore, we collected data about gender equality and the gender gap in many communities, and we started our work based on World Economic Forum (WEF) report . We realized that the parameters of the WEF were very far from their realities. **This research aimed to bring new elements and meanings based on local reality to generalized and extremely Westernized categories related to the social realities of the Global North. So, to work with that community and others, it was necessary to access another vocabulary inspired by Nego Bispo's teachings on naming.** The World Economic Forum report provided parameters for female empowerment. Still, we realized that none of the women used or even knew this term in the six communities we researched, including São Caetano. But that does not mean that they were not empowered women. They were. So we tried to collaborate with the women and their children, staying in the community to understand how they thought about political participation, economic participation, access to education and health and well-being, which were our categories of analysis related to the WEF report.

And then, we stayed in the community for a while and started understanding the economic issues linked to their crops. We realized that they do not connect health issues with hospitals or medicines. Even though they currently do not have access to hospitals, they use herbs and foods with no toxic substances, which they grow in their backyards and link with health. The school in the community is associated with education. Their association with women is related to political issues. We built a game with localized situations with the children of the community. On the cards were photos we took together during the walks to discover the community and its activities. What we couldn't photograph was drawn by the women and children.

By the end, we played the Coconut Game, as the children called it. The board's route led to the four initial parameters, now reframed by the community. The economy was represented by the crops, from where the women harvested the coconuts; the backyards represented health; the local school defined education; and the women's association represented political participation. When we played the game, the participants received cards with real and hypothetical situations, and I invited them to take a stand. This situation generated debates among the group, deepening the issues related to empowerment and the productive autonomy of these women.

Here is another example of this approach in Yochib, an autonomous community in México. Zita González Guzmán was a master's student under my supervision, and she worked with this community to understand how they produce as an autonomous community and to find out how design could collaborate in this social-ontological construction. She stayed there for one month and tried to understand what they could do together. These women brought their aims, goals, and desires. Zita began to propose activities mediated by design , such as games, materials, and food, which were used as prototypes to stimulate social conversations. By the end, they shared their skills to make clothes to design the common plan of this association "by means of anthropology", as Gatt and Ingold (2013) state, to bring that knowledge to life.

They talked about measurement systems, an essential bridge between the traditional metric system and the one understood by the tourists who buy their handmade dresses. They created experimental forms of measurement to achieve this dialogue between cultures. They also talked about protecting their bodies during the heavy work in the fields. They agreed to produce "blucitas" (bras, in English), which, even though they were a symbol of oppression in that context, were re-signified as something related to protecting their bodies. **The knowledge of how to make things familiar to the designer and the craftswomen triggered negotiations and the sharing of new knowledge**.

Finally, I present a case of the creation of storytelling to overcome oppression and vulnerability to emerge in designanthropology processes. Here, I present a prototype inspired by Ursula Le Guin, a feminist author who inspires us to tell smaller stories, such as stories about the oat grains, rather than the narratives of the heroes. We also created a narrative. I told them a story that I had been seeing. I've been working with these communities since 2009, so it was a very universal story to share. And they were attentive and sensitive to this invitation because it was a familiar story to them. The tool, called "Cofo of stories", involved a performance I did, as a female babassu coconut collector, just like them. In my speech, I invited them, bringing stories about life, work, memories, ancestry, and the connection with the territory.

I **want to discuss the importance of this speech, which I built up from extensive previous research on women who live in similar conditions. These are archetypal stories, the lived experiences of many maroon women. The impact was emotional. The women returned the next day with their "harvests" in the basket. These stories were shared and gave rise to a community book, revealing their knowledge, struggles, desires, and achievements.**

This process aimed to support the launch of a biomaterial developed by our team: natural colourants made from earth. **The storytelling provided memories and narratives so that a more traditional design process could take place in the marketing and communication of the biomaterial.**

In addition to this more direct objective, it was possible to identify situations of pain, fear, and resistance, as well as more profound levels of the narrative about the community of Monge Belo. In this process, we recorded narratives about the struggle for land confiscated by large mining companies operating in the area, leading to violence and the need for resistance and political organization. All of this broadens our perception of the parameters of female empowerment in this community, which dialogues with the previous results presented here.

Although we are no longer working with the idea of empowerment, we understand that in practice and also in the literature of decolonial studies, the search for autonomy prevails over the first concept and that neoliberal and colonial discourses and dynamics deeply co-opt it; these cases presented reinforce the need for the official categories for the constitution of public policies to be updated. The design-anthropology experiments we carried out in the field provide an opportunity to situate perceptions and worldviews, constituting an essential approach for these communities' social, material and political emancipation.

Footnotes (in order of appearance)

1. Anastassakis, Z; Noronha, R. (2018). Apresentação: Correspondências entre Design e Antropologia. Arcos Design. PPDESDI. V. 11, N.2, pp.2-6.

2. Izídio, L C L, Farias, L G D, Noronha , R G (2022): Reapropiación ontológica a través del diseñoantropología: producción de narrativas y subjetividades con artesanas en Paço do Lumiar, Maranhão, RChD: creación y pensamiento, 7(12), 5–22.

3. Halse, J (2008): Design anthropology: borderland experiments with participation, performance and situated intervention. PhD thesis, Copenhagen, IT University.

4. Noronha, R. (2018). The collaborative turn: challenges and limits on the construction of the common plan and on autonomía in design. In: Strategic Design Research Journal, Unisinos, (vol. 11, n. 2, p. 125-135, May-August).

5. Gatt, C.; Ingold, T. From description to correspondence: Anthropology in real time. In: W. Gunn, T. Otto & R. Charlotte-Smith (orgs.), Design Anthropology: Theory and Practice, London: Bloomsbury, 2013. p. 139-158.

6. Latour, B. (2020). Onde aterrar? Como se orientar politicamente no Antropoceno. 1ª. Ed. Rio de Janeiro: Bazar do Tempo.

7. Santos, Antonio (Nêgo) Bispo. (2023). A terra dá, a terra quer. Editora Piseagrama e Ubu Editora.

8. Rivera Cusicanqui, S (2010): Ch'ixinakax utxiwa: una reflexión sobre prácticas y discursos descolonizadores -1a ed. Buenos Aires: Tinta Limón.

9. De La Cadena, M. (2018). Natureza incomum: histórias do antropo-cego. Revista do Instituto de Estudos Brasileiros, Brasil, n. 69, p. 95–117, jan-abr.

10. Krenak, A. (2020). Histórias para adiar o fim do mundo. São Paulo: Cia. das Letras, 2020.

11. Foucault, M. (2007). As palavras e as coisas: uma arqueologia das ciências humanas. Tradução Salma Tannus Muchail. 9. ed. São Paulo: Martins Fontes.

12. FÓRUM ECONÔMICO MUNDIAL. (2014) Empoderamento de mulheres. Avaliação das disparidades globais de gênero. Genebra.

13. Guzmán, Zita Carolina Gonzalez; Noronha, Raquel. (2019). Autonomous design and sustainabilielty through resistance, indigenous ecology and environmental feminism. Mix Sustentável | Florianópolis | v.5 | n.5 | p.41-52 | dez.

14. Le Guin, U. K. (2021). A teoria da bolsa de ficção. São Paulo: n-1 edições.

15. The prototype and the name of the tool were created by Paulo Sousa, a student under my supervision, researching in this community.

16. Souza, P., Izidio, L., & Noronha, R. (2024). Imaginando futuros com as mulheres de Monge Belo: prototipando narrativas situadas sobre questões de gênero em um quilombo do Maranhão. Revista Transverso, 1(13), 125–140.

Images

Figure 1. América Invertida (1943). Joaquin Torres Garcia.Available at:https://diplomatique.org.br/pedagogia-descolonial-uma-construcao-da-e-a-partir-da-razao-historica/america-invertida-1943-joaquin-torres-garcia/

Figure 2. Image by the Author.

Figure 3. Image by the Author.

Figure 4. Prototyping with São Caetano Community. Image by the Author.

Figure 5. Prototyping with São Caetano Community. Image by the Author.

Figure 6. Prototyping "blucitas" with Yochib community.Image by the Author.

Figure 7. Reframing parameters with women at Monge Belo.Image by the Author.

Figure 8. Reframing parameters with women at Monge Belo.Image by the Author.

Developing a Skills-Ladder for Woodwork for Ages 5-16

Eva Lutnæs

FACULTY OF TECHNOLOGY,
ART AND DESIGN OSLOMET

https://www.kunstogdesign.no/

https://digitaltmuseum.no

https://husflid.no/om-norges-husflidslag/english/

https://uk.naas.se/crafts/teacher-training-at-the-school-of-crafts-1875-1966/

https://youtu.be/UQdbLBKyJMM

Developing a Skills Ladder for Woodwork for Children and Young People is an initiative aimed at advancing woodworking skills among young learners. The project is led by Eva Lutnæs in art and design education at OsloMet, who also teaches art and craft at Enel Lower Secondary School. The professor shared two key experiences that have influenced her approach—one from a recently concluded EU project on traditional craft and the other from her personal family heritage in natural dyeing.

The first one is an EU project, Craft Hub, which involved multiple OsloMet colleagues and highlighted traditional craft practices. The project documented diverse skills and processes, exploring cultural specificity and individual motivations within craft practice. The professor finds Craft Hub particularly insightful as it presents an impressive array of craft techniques, offering a rich foundation that influences her work with art and design students.

The second detour touches on her personal connection to traditional craft. She was chosen early on to inherit her grandmother's knowledge of natural dyes. She takes pride in this heritage, incorporating it into a project titled "Preserving and Communicating Natural Tradition" (PCONAT). In this project, she strives to honor her grandmother's curiosity and respect for nature by sharing natural dyeing techniques with her daughter, Hanna, and the broader community. Through workshops and a co-authored book, they pass down this family craft to children and families, promoting sustainable, nature-based dyeing practices.

And the third detour was to explain two different roles she currently holds, which ultimately lead to the Skills Ladder project. She works 22% of her time as an art and craft teacher at a lower secondary school every Monday. At the center of her studio, there is a dedicated space where she teaches students aged 13 to 16. Her primary role, though, is at the university, where she instructs future art and craft teachers. The institution, soon to celebrate its 150th anniversary, originally began as the Norwegian Industrial School for Females. It was also one of the first to offer teacher training in textiles. Today, it is known as the Institute of Art, Design, and Drama.

In the arts and crafts subject in Norway, it is mandatory for students ages 5 to 16 and amounts to 622 hours of instruction, making it the fifth largest subject in primary and lower secondary education. The subject covers a wide range of topics, including various forms of craft, art, design, architecture, cultural heritage, and even the study of makers, fakes, and technologies.

She was part of the team responsible for developing the new national curriculum for arts and crafts. One of their key slogans during the development process was "Back to the Studios." They aimed to include in the curriculum a commitment for schools to establish well-equipped studios where students could work with a variety of materials, such as wood, textiles, clay, and metal. The goal was for students to learn traditional techniques while also engaging with new technologies and creative strategies.

Since its implementation in August 2020, the curriculum has faced challenges. Research shows that many schools lack qualified teachers, proper studios, and the necessary budget to purchase materials and equipment. As a result, many students graduate from lower secondary school without acquiring the competencies outlined in the national curriculum. **This is particularly the case for wood.** Because when you don't know how to work with wood and you don't know the equipment, it's really a challenge to walk into a wood studio while also being a security issue. You need to know the ways around the materials. Especially when the economy of the local school is pressed, and wood material is expensive to buy. It's a rough studio to enter if the groups of students grow too big for the teacher.

This is the arena for our skills ladder project. So **our aim with the project is that even more boys and girls will be allowed to make objects in wood and learn craft skills for life. It's going to be a two years project and the final result will be an open access resource (published at this webpage Kunst og design i skolen).** Within this film you will find skills ladders for dry wood and for freshly cooked wood. You'll find films for the pupils and for the teachers and the films will be like how to use the plane, how to make a joint, how to teach someone to use a saw.

Now you might wonder what this skills ladder is. So I will show you what I made in primary and lower secondary education. So the first object I made was a wooden box. **A skill ladder identifies for teachers what tools and techniques would be recommended to start with the youngest kids. What are pupils at the age of 15 -16 years old capable of doing. So the object is just what they make as they learn the techniques, but also it's important that they make something that they can be proud of and would like to keep.**

In this digital resource we would make connections between what the kids make and the past generations of making. So boxes, for instance, we went to research what is in the archive of the museum. This is where we had help here from Terje Planke, he is a professor and he's also a senior conservator at the Norsk Folkemuseum (Velkommen til Norsk Folkemuseum). There are a lot of objects that are documented in this archive DigitaltMuseum and this will be a resource for both the children and the teachers. In the end the open access resource will be published here, the webpage of the Norwegian Arts and Crafts Teacher Organization.(https://husflid.no/om-norges-husflidslag/english/).It will be easily available for the teachers and also the children.

For this project we have got some funding. The funding is from the Savings Bank Foundation DNB. They have this special fund for traditional craft which is called Håndverksløftet. So we got 42,000 euros and the activities that we plan for the project. We started this spring so we have launched an open national competition.

This is the platform where we want to share ideas for skills ladders. Students participate, teachers participate, traditional craftsmen participate. We also conduct fieldwork at different schools. We also map the situation around. We see what kind of equipment they have, how much space they have and also we'll learn from the teacher's way of coping with all the challenges.

This June we will have a workshop and then we will test the different skill sliders and we will select the winner of the national competition. For the next school year, we will pilot, develop and explore skills ladders in different primary and lower secondary schools. We will also host a summer camp for children and young people. In the summer camp, this is where we will produce the films and the digital learning resources. And in autumn, we will do the dissemination of the learning resources as an open access resource.

How is the funding allocated? The majority of the money is used to cover the salaries of young teacher trainees who have a special interest in woodworking. It also supports the salaries of young practitioners skilled in traditional wood techniques, who will serve as role models for both students and teachers. These practitioners will assist in addressing challenges that arise in the studio, offering guidance and support. Additionally, they will be involved in the creation and production of films. The budget also covers materials and equipment for the participating schools, as well as the costs for hosting the summer camp.

The school was established in the late 18th century, known as the Slöjdlärare Seminarium (School of Crafts), a teacher training institution focused on woodworking. The pedagogical system they developed was highly impressive and became internationally renowned. In March, the team (including teachers and students) visited the school to explore its archives.

The school's approach was not only beautiful but also deeply insightful, explaining the methods and philosophy behind their teaching. The teachers were passionate believers in the effectiveness of their methods, which made the entire system even more remarkable.

In addition to the educational heritage, there is also the heritage of crafting wooden objects. The goal is for children to learn how to work with tools and materials and to develop a lasting appreciation for wood as a medium. This was reflected in our field trip in March, where a young girl, around 10 years old, was using a saw, while others worked with hammers.

This initiative is closely tied to PCONAT's theme 5, which focuses on integration in education. **It's about preserving and passing on the heritage of teaching, particularly in woodworking. There are established methods for teaching this craft, and a rich tradition of teacher training in the field, which we mapped through the project. This connects to two distinct types of heritage: the heritage of teaching and the heritage of craftsmanship, involving the techniques of making objects and working with tools and materials.**

Loulé Criativo: Preserving Territorial Identity through Creativity and Innovation

Henrique Ralheta

LOULÉ CRIATIVO

https://loulecriativo.pt/en/home

https://youtu.be/cTO901OIEmM

Loulé Criativo is a municipality project, very structured project with a dedicated team. Our main mission is to safeguard and enhance the territory's identity through creativity and innovation. Loulé is located in the south of Portugal in a very touristic area. That is one of the reasons why we are investing in clarifing our identity, because as it is a touristic destination, it's important to have something that people can really understand about this territory, something that differentiates it from other places. If this identity is very clear, it will become a reason for people to visit and remember us.

Our main goals are to develop the economy through creativity, with a focus on research and innovation, to work on the preservation and development of traditional arts, as part of this larger movement that is happening around the world. With sustainability issues very much in mind, we always work according to the principles of the circular economy and are very much in line with the SDGs, the United Nations Sustainable Development Goals.

Our structure is divided into three main branches:
1. Creative Tourism, which focuses on creative experiences;
2. The Ancient Crafts Network, which is dedicated to the preservation and empowerment;
3. The Loulé Design Lab, which is dedicated to new approaches to crafts and innovation.

The Creative Tourism branch, is a part of a local tourist offer, but based on the experience of the territory. Since we are in the south of Portugal, people come here for the sun and the beach, and this is an alternative where people can immerse themselves in a cultural experience.

Loulé Criativo has a monthly programme in which we promote the proposals of a local network of companies, individuals and artists who run the workshops. Our job is to design this programme and give them visibility. Then the contacts are direct and the activities take place in their premises. Most of them are workshops: hands on experiences, to create something related to local culture using traditional crafts, but there are also activities related to gastronomy using local products or or visits to the field to get to know how things are done.

The program is organised considering 4 main areas: Gastronomy, Ancient crafts, Heritage and Design. **We aim to achieve with these actions is:**

1. **Promote interactions between tourists, material culture and intangible heritage.**
2. **Encourage the emergence of new activities and new entrepreneurs.**
3. **Develop the local economy and attract new people to work in these arts.**

There is a network of municipal workshops where local craftspeople can work, exhibit and sell their products. Visitors to these workshops have the opportunity to really get to know the people who create these pieces and see how they work: it can be a very special experience. **We have made a map of all the workshops in the old part of the city. Visiting the city means visiting this craft circuit.** We recently opened the seventh workshop, the first outside the city, in a small village further inland in the municipality - the Esparto Grass studio.

Most of the workshops are colaborative workshops, where several people work together: the copper workshop, the palm weaving workshop, the textile workshop and the clay workshop are examples of this. Then there are individual workshops such as the luthier's and watchmaker's studios. In this workshops network you can find the training courses, which vary in length. In a three-hour experience, you have a first contact with the techniques in a small workshop. In a week-long programme, you begin to understand the techniques and can start working on individual projects, but to be an artisan, you need years of experience.

To do all this, **we have structured training courses lasting several months, some of them in partnership with CEARTE, a national organisation dedicated to the training and qualification of craftspeople, which also brings courses to Loulé. The ones organized exclusively by the municipality, focus on the local crafts of this region, especially those that are in danger of disappearing, as the average age of our craftsmen is 75. There is therefore an urgent need to encourage the younger generation to take up these crafts.**

The Design Lab is dedicated to more contemporary projets. Some of them are new craftspeople who have already studied design or came from different backgrounds and have new approaches to their professional activities. We help them develop their brands and build their businesses in a more structured way. So we have mentoring, training and we organise talks where they have access to different areas of information.

We build our programmes based on identifying the needs of each group or any areas that may need development. This could be: storytelling, branding, business models, digital communication, in-store display, organising product families and copyright.

Among the projects that have been in residence or incubated at the Design Lab, we find a wide variety of techniques and approaches, some more related to architecture, others to design, others to artists who want to move into the applied arts. "Like Cork" is a local brand that already existed when we created Loulé Design Lab. Its designer wanted to integrate our community for development and collaboration.

One of the most interesting creations was a modular rug in which she brought cork into dialogue with different palm weaving techniques, creating a product that was also a showcase for local techniques and materials.

Another project that already existed was the "Oficina Poeta Azul." They were interested in working with local artisans. They had a laser cutting machine which they used to engrave local wood. During the creative residency they tried it in ceramics with great results: they have a red clay base with a white clay engobe on top, and then the engraving goes through the white to find the red inside. So it's high technology applied to traditional techniques. The machine works like an artisan on each piece individually and they have this very detailed result.

"Gonçalo Gama", a designer who decided to learn palm weaving techniques to make his own prototypes for his master's degree. He's really an example of this new generation of craftspeople who come from design and then go on to create their own projects.

"Blow Plastic", a very innovative project where he started blowing plastic because it was too expensive to blow glass, which was his training, and he blows the PLA bio-plastic and he makes these very unique pieces because it's a hands-on process.

One of the most important pieces of empowerment and outreach we did was the mini-docs. During the pandemic, everyone was at home and spending a lot of time online and on social media. So we saw it as an opportunity and we worked on the migration to the online space. Everyone developed their websites and we made a series of mini-documentaries that you could watch on a mobile phone. It was a very interesting project with great impact, in which we worked with design and media students from Loulé High School and the University of the Algarve. You can find the mini-docs on our website and on our YouTube channel.

https://www.youtube.com/channel/UCcLGlpexFCxdNj263zgHxgA
https://www.youtube.com/c/Loul%C3%A9DesignLab/videos?view=0&sort=dd&shelf_id=1

We have another important initiative dedicated to the Circular Economy, which is the Infinity project. We reuse, recycle, reinvent and repair old objets and materials, building new pieces for social impact. Some objects were decomposed until they became raw material again to build make new pieces to create a more comfortable environment for a retirement home which used to look sterile like a hospital. Old tubes from Lost Signage were used to make a giant musical instrument for a a kindergarten. An old chest of drawers has been broken down to become for sensitive and physical stimulation.

The project has had a major impact and has evolved into a movement to promote sustainability. We start working with a local music festival very committed to ecological issues, so now, every year we make new pieces to equip press rooms or seating areas reusing materials from previous festivals.

We have a shop, an exhibition gallery, and accommodation for the creative residencies with 17 beds for people that come to work here with us, a big and flexible training workshop, a wood workshop, product photo studio, 3D printers, and the co-working rooms for the design lab residents. We make our own exhibitions with our projects, but we also receive exhibitions from other partners that are working with something that we really want to show our community.

We strongly encourage the spirit of collaboration in our community. It's one of the ways of development that really makes projects successful. One of the first projects we did was a collaboration between the design lab core and the ancient crafts workshops. We wanted to have a new approach that could change the value perception of craft products that were offensively cheap. By addressing new typologies, we could start to reach new price levels and new kinds of customers.

So each artisan developed a lamp based on a simple brief we defined. Where necessary, we gave them the shape, but in other cases they were independent and defined their own design. Each time one of them delivered the lamp, we took a picture and the collection of these images led to a photographic project that we used in the exhibitions and for publicity. The project was first shown at the Algarve Design Meeting. We then created a display system in the palm weaving workshop, where you can find the whole collection, available on request. It has been a great commercial success.

The following year we repeated this project, but with all the Design Lab community collaborating with all the craftspeople in the ancient workshops. The brief was to develop a piece that would respond to the challenges of the artisan, or simply something that would fit in with their line of work. The results were quite surprising, with different approaches ranging from packaging to material experiences to jewellery or branding issues.

For a long time, we have worked to reach out to local economic operators to collaborate and create opportunities for the creative community. But over time it's gone the other way, and now they're starting to reach out to us because they're interested in incorporating local crafts into their DNA as well.

A good example was a local resort that was rebranding and they wanted us to create a landmark with the new logo. So we invited one of the artists from the design lab to work with the ladies from the palm weaving workshop and we made a huge piece that had a great impact and answered their interest in having a local expression in their new identity.

There have also been nice collaborations with the Lisbon School of Fine Arts, with top local restaurants and other resorts, sometimes with very interesting commissions that represent good business opportunities for the artisans. These are good steps in this long work to make these activities economically sustainable.

We've already had some interesting collaborations with local small businesses and large retailers. Our relationship with IKEA goes back a long way, but recently they challenged us to create a co-branding moment by asking us to do a work live weekend in the store. We proposed to mix our products in the showrooms as well, which they accepted. So we went inside IKEA with our products to show that a dialogue between international and local design and production is possible in people's homes. It was exhibited in the front window and we made the dialogue with their products. We prepared workshop spaces in the middle of the IKEA showrooms, where our craftspeople worked and showed their art to a new possible target.

Many of our creative residencies have grown out of partnerships. One interesting case was with VICARA, a national design brand, who brought some of their designers to work with the artisans and develop new products that they would market. Another was with a fashion stylist who we asked to do a fashion editorial in the countryside, but he said that if he came to Loulé he wouldn't miss the opportunity to work with the local craftspeople, so he created some accessories that got into a nice dialogue with top fashion labels.

We have had some artistic residencies with Passa ao Futuro. One was with international designers, but also a summer school with the Michelangelo Foundation, where design students from 10 European countries came to work with metal techniques, some from Loulé and others from other parts of the country.

My first collaboration with Loulé Criativo was a creative residency. We called it "Designers de Loulé", which means "the designers of Loulé", and we brought three designers who were born in Loulé but had gone abroad to study and work. Vanessa Domingues was working in China, Hugo da Silva was in London and I (Henrique Ralheta) was in Lisbon. We came back 20 years after our studies and after leaving Loulé to have this new look at our origins and our identity, but with all the information we bring from outside. The residency was structured in two weeks, the first of which we had lessons with the craftspeople to learn the techniques and get to know them. And in the second we had some experiences to try to find guidelines, without having the goal of producing prototypes in two weeks. So it was an experimental week, and only after that would we develop real products.

In the training week we had two sessions during the day with the artisans and at the end of the day we had this cultural immersion programme that was open to the whole community. We put up posters around the town and a lot of people took part in these experiences.

One of the sessions was about local gastronomy and the host made this food wheel of the inland Algarve with the traditional food groups. She did it physically, which was quite impressive. Another session was with a local archaeologist who took us around medieval Loulé and we ended up with her pulling apart an ivy vine to show us Islamic graffiti from 700 years ago that was still there behind the vegetation. It was very special.

Another parallel activity was the "Palm Weaving Wheel", where the craftspeople worked in a circle. It's a traditional practice, but we did it in a big way in the centre of town, on the traditional market day. So many people came around and we had an empty chair next to each artisan to invite people to sit and learn with them. It ended up being quite successful and now we do it every year.

After the first week we were supposed to start drawing, but there was so much to think about and talk about. It was really difficult to bring projects, because what we really wanted was to reach out and talk to the people in charge.

At the end of the residency, we had planned a public presentation and exhibition of the results of the two weeks. We prepared a table showing all the tests and references, systematising the materials and our initial design ideas. But more importantly, using design thinking methods, we mapped all the problems in the wall. And we talked to the audience for more than two hours. Council leaders were also there.

It was very interesting because what happened at that moment was that, without realising it, we were just revealing that we were aligned with a mindset that the council already had and with several actions that they were already preparing. But the truth is that we proved that design could play a role in this path, and the consequence was that I was invited to set up the Design Lab as part of Loulé Criativo.

At "The Empreita," you can choose between a two-hour and a four-hour bowl, considering its price and the time it takes an artisan to make it. There are 15 hour, four hour or one hour ceiling lamps or four hour and two hour table lamps. All of these can be flat-packed for packaging. **This project was essential not only to raise awareness among consumers, but also among craftswomen who didn't value their own work.** We thought it was important to work on this issue because during the residency we realised that the artisans were selling for 15 euros a piece that took all day to make. Less than 2 euros per hour. In the projects we developed with them at the time, it was difficult for them to agree to sell at prices that could reach an hourly rate of 6 euros. They thought it was impossible for anyone to buy. But now, 7 years later, with the commercial launch of these pieces, we have re-budgeted them and at the moment the hourly rate for them is 11.25 euros. So there has been a big evolution in the whole context. We had to work on these two parts at the same time, the perception of the market and also the perception of the craftspeople.

Another paradigmatic project are the pots developed by designer Hugo da Silva, because it's important to see the references of local history reflected in contemporary production. These pieces were born from our research in the local archaeological museum, inspired by Islamic pots that didn't have a specific lid. They had the pots and they had the lids. Whenever they needed to cover something, they would use any lid to cover it because it had a shape that made it universal. Another example is the candlesticks with a cataplana shape, which is a traditional pan and the most iconic piece by the Loulé coppersmiths.

The last project I'd like to highlight from this residency is the little cakes. We learnt how to make the traditional fruit-shaped cakes and then created our own version, reduced to a kind of colour sample. And at the inauguration, we served these cakes so that people could taste one of the pieces on display.

Second edition, seven years later, many things had evolved in the local context. **The network of workshops had been created, the Loulé Criativo project had grown exponentially, and the knowledge was transversal and generally greater.** The main objective of the second residency was to bring the products to the market, because we didn't do it the first time.

One of the difficulties was that the way the products were designed meant that a company had to coordinate and sell them. Now we have developed projects in which the artisans are self-sufficient or work with other artisans with whom they already have

But another thing was that the first residency was very much based on the designers. And now it's more about balance, it's very important that we put the designers and the craftspeople on the same level. So some of the differences in this residency was that all the information was shared. **We started the residency with a meeting to put the objectives on the table. All the participating artisans were invited to present their work and were challenged to think about the problems of their work, their dreams, the pieces they want to make, their vision of the world and their specific art. So everyone made an individual presentation and then we went to the museums together, not just the designers. The research was done collectively and the information was shared. It was a great experience for everybody to do it together.**

Master Isidoro Ramos has an incredible suitcase of materials in which he has systematised all the techniques of esparto grass. As a new generation artisan, it was important for him to do his research and register. Based on that, Vanessa and Isidoro created the broom collection. This is a case of soft innovation because the pieces still look very traditional, but new details have been worked out, always respecting the natural expression of this material.

In response to our first challenge, potter Ricardo Lopes brought us his concerns about the water shortage plaguing the region and a solution he was testing - an olla. These ancient irrigation tools are still used in arid countries, where people bury unglazed pots in the ground and fill them with water. The water seeps through the clay walls and the plants get what they need without overwatering. So you don't waste water and you can use this precious resource in a very controlled way. We developed a new model, taking into account the way crops are organised in rows, and created the Long Olla. Then we developed vases with the same system and vegetable boxes, also based on the possibilities of clay. The vegetables will last longer in the pot than in the fridge, which is an alternative to energy consumption.

In Process Piece we show the steps to make a bowl in copper. It is a functional piece, but above all it is a storyteller of the technique itself. Some pieces have been created to emphasise the close relationship between the craft and the territory where it is made. Soidos' Rock is a wall tapestry, a piece traditionally made by Esparto craftswomen in the village of Sarnadas, but always in circular shapes. Hugo wanted to design a more organic one, inspired by the views of the region where they work, and Maria José herself decided which stone she wanted to work on. So they drew together and came up with this bold piece.

The Sarnadas Valley Fruit Bowl is the result of my desire to create a bowl that replicated some topographies of the municipality. So I asked Loulé's Geographical Information Systems Department if they had any maps that could help me. And they prepared me an app so that I could find the valleys that could give us a shape to make a bowl Surprisingly, the most interesting one was where the workshop is: the Sarnadas Valley. When I brought the drawing, it was not easy for then to understand, but as the piece grew, they started to recognise the places and loved it! **So these pieces are literally related to this area and to the places where people work.**

The Role of a Design Villager

Vatsal Agrawal

THE DESIGN VILLAGE
FOUNDATION

https://www.thedesignvillage.org/

https://youtu.be/IVEjrPV9JvI

Vatsal Agrawal, Associate Dean of the International and Executive Affairs Office at The Design Village, a young design school in New Delhi, India, introduced the institution during his presentation. Celebrating a decade since its establishment, the school is focused on fostering social impact and designing for the future.

Recognizing India's diverse context and challenges, including population pressures, waste management, and resource overuse, Agrawal highlighted the school's commitment to addressing these issues through innovative design. The paper was structured in three parts: an introduction to the school, which operates within a retrofitted building to emphasize sustainable reuse, and an exploration of two projects emerging from its pedagogical practices.
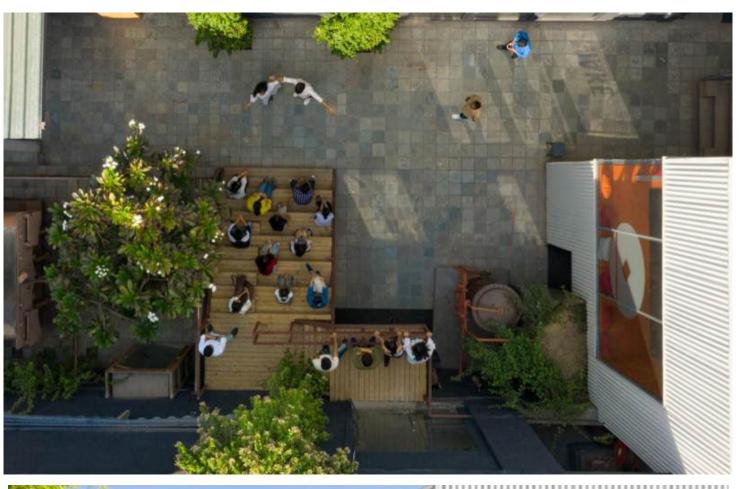
As a proponent of global collaboration, Agrawal shared his passion for building cultural partnerships with institutions and expressed enthusiasm for working with the PCoNat platform, recognizing its potential to inspire growth and shared learning.
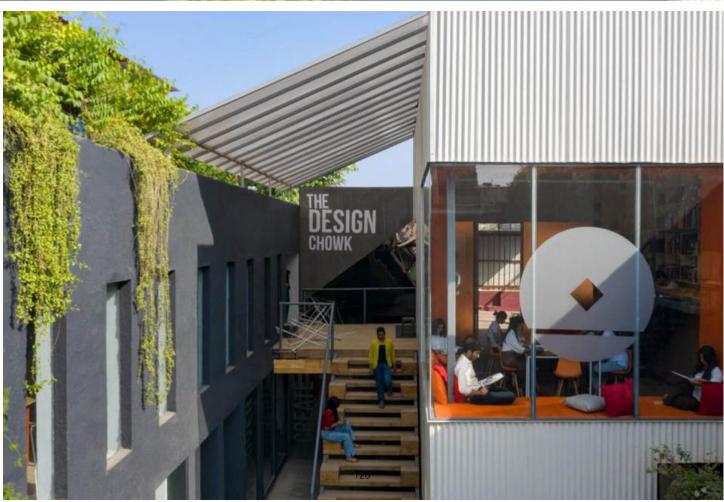
The school is located on a street that transforms into a lively market every Friday evening, reflecting the vibrant bazaars India is famous for due to its proximity to a majestic mosque.

The Design Village is deeply rooted in the local context of India, emphasizing a hands-on approach to addressing real-world challenges. Rather than positioning itself solely as a design school focused on future solutions, it actively engages with the local environment and applies its pedagogy on a daily basis, reflecting the foundational principles upon which the institution was established.

The building that you see here has now been modified to house a design school, but initially, it used to be a factory which used to produce a substance called 'Katha'. It is the red sticky substance inside "Paan" - a betel nut mouth freshener and digestive, which Indians chew on. However, in the early 2000s, this factory was completely shut down because it violated pollution norms.
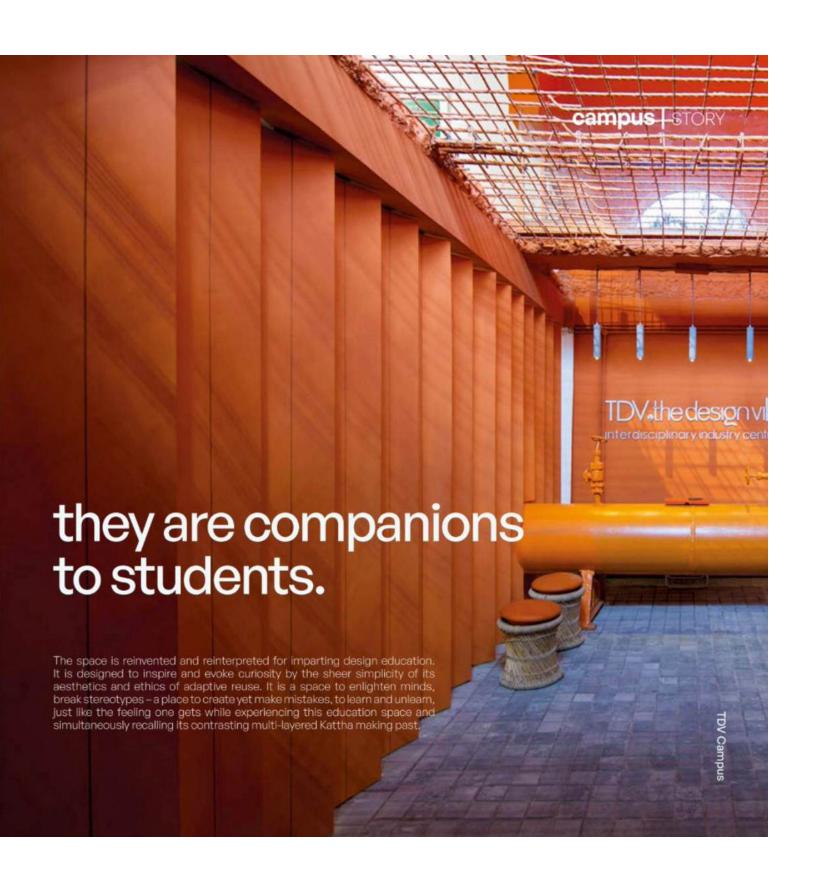
The founder, Mr Sourabh Gupta, is an internationally acclaimed architect, and he was trying to find a location to expand our school, which started on the lower ground floor of his architecture studio "Archohm" in 2014. In 2017, he came across this dilapidated "Kattha" factory across his studio and transiently converted it into a design school we witnessed together. It has been 7 great years in this space. The space itself has become the teacher. You see this old machinery, the machinery which was used as the factory - the steam engine, the cold storage, the processors, the compressors, all used to convert the "Catechu" wood pulp into "Kattha", which was then consumed.
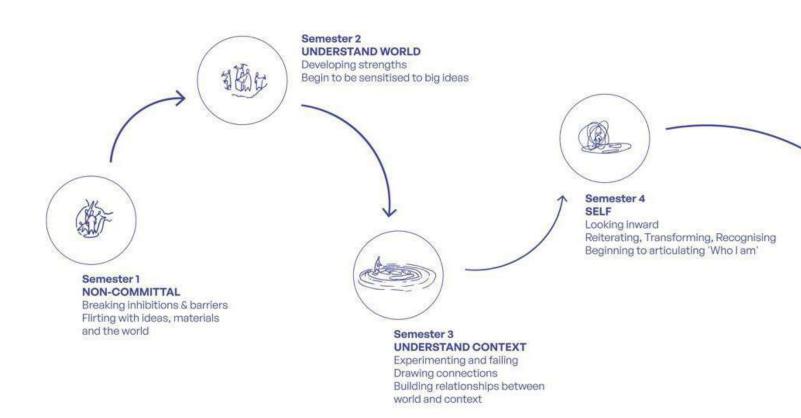
It is always pertinent that the school remind the students that the starting of design is a very basic germination of the idea without thinking of a manifestation. That is why we are a school that encourages multidisciplinary learning, does not restrict the learning to a very specific silo, and the space itself lets you operate into how the world of tomorrow should be.

TDV is housed in an old abandoned Kattha (catechu) factory. Studio Archohm and students from TDV, helped convert this former industrial facility into a dream village – retaining its inherent character while injecting new life. Narratives of the past were kept intact while giving the campus a new meaning. The concept was founded on creating permanence out of make-shift spaces without losing the essence. Spaces of no light were converted into places of light!

the grotesque machines are now sculptures.

Katha Factory

TDV.the design vil
interdisciplinary industry cent

they are companions to students.

The space is reinvented and reinterpreted for imparting design education. It is designed to inspire and evoke curiosity by the sheer simplicity of its aesthetics and ethics of adaptive reuse. It is a space to enlighten minds, break stereotypes – a place to create yet make mistakes, to learn and unlearn, just like the feeling one gets while experiencing this education space and simultaneously recalling its contrasting multi-layered Kattha making past.

TDV Campus

To provide a curricular summary, we have our undergraduate programs and master's programs. We partake in the relevant and popular areas of design such as fashion and textiles, graphics and communication, Interaction and UX, product, space and interior, and transportation. But what **we focus on is an interdisciplinary pathway, which is aptly terme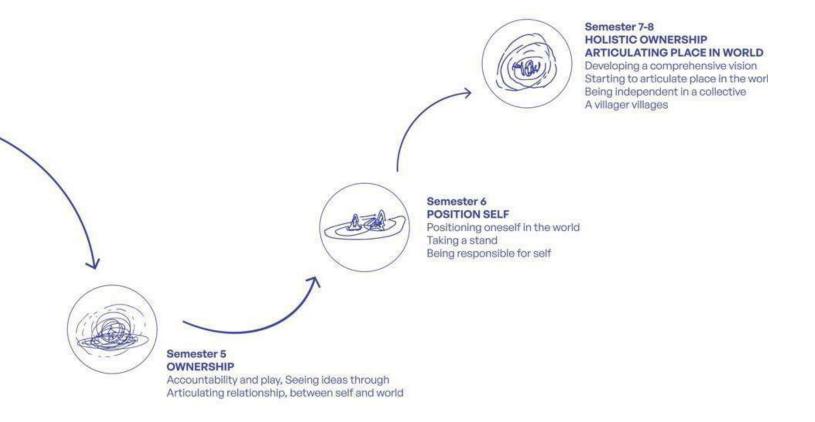d "Transdisciplinary Design," where students intersperse their learnings together and are never forced or restricted to practise or manifest into a particular discipline.**

What we focus on is an overall "eight semester journey" for our learners, which, irrespective of their main discipline of interest, the first year is very non-committal. So you assign them tasks with a lot of rigour, but we don't ask for commitment. Because all of them, especially after the pandemic, come from a preconceived notion of how the world exists in its current state. You have to break that line of discontent. Hence they're immersed in rigorous exercises which do not make them commit. Through this, in the second semester, they're made to understand the world around them. When they're understanding the world around and about, they're able to start picking up courses from the disciplines to understand the context to stay within as their third semester kicks in. While understanding the context, they engage and resonate with themselves by the end of the fourth semester.

Semester 2
UNDERSTAND WORLD
Developing strengths
Begin to be sensitised to big ideas

Semester 4
SELF
Looking inward
Reiterating, Transforming, Recognising
Beginning to articulating 'Who I am'

Semester 1
NON-COMMITTAL
Breaking inhibitions & barriers
Flirting with ideas, materials
and the world

Semester 3
UNDERSTAND CONTEXT
Experimenting and failing
Drawing connections
Building relationships between
world and context

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The fifth semester is the most important semester in the journey because that is the last semester they will spend on campus in a holistic manner. Suddenly, you witness them taking ownership of the disciplines or the individual manifestos they want to practise as designers of tomorrow. In the sixth semester, they go abroad for the semester exchange or undergo industry experience as they are immersed into a pilgrimage of self, where they try to take a strong position in the world they are navigating in. After spending a semester away from the space, they might continue another semester abroad to do their final design project or return to their village to undertake a final project that can create an impact, followed by writing a dissertation capstone. These eight semesters are the journey of an undergraduate student.
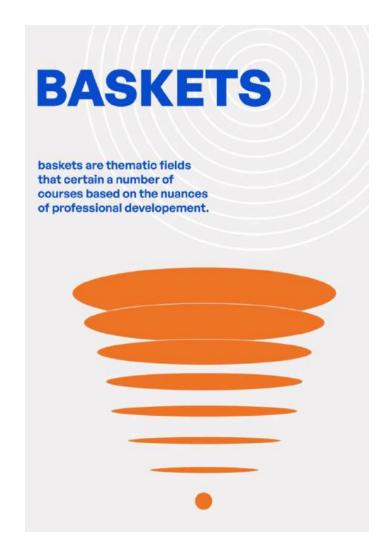
The master's student experiences a more concise version of these eight semesters in that the learnings of the two semesters are inherently absorbed into a singular semester with highly rigorous outputs of every module. **Every learner begins their journey by writing a manifesto and charting their trajectory. Such is the plurality of our pedagogy.**

**Semester 7-8
HOLISTIC OWNERSHIP
ARTICULATING PLACE IN WORLD**
Developing a comprehensive vision
Starting to articulate place in the worl
Being independent in a collective
A villager villages

**Semester 6
POSITION SELF**
Positioning oneself in the world
Taking a stand
Being responsible for self

**Semester 5
OWNERSHIP**
Accountability and play, Seeing ideas through
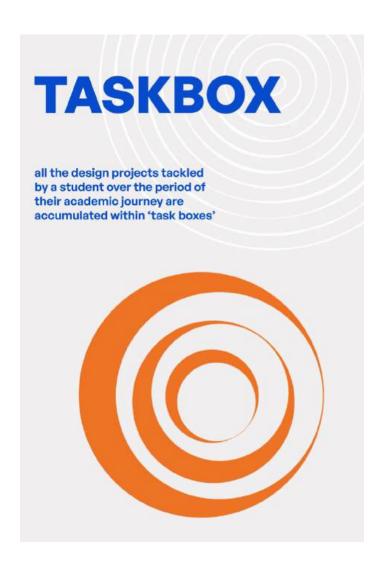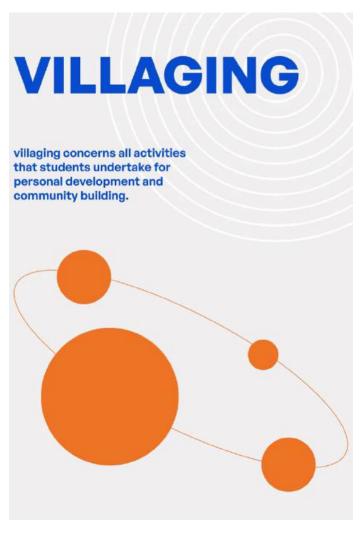Articulating relationship, between self and world

Everything that talks about principles or learning through theory is baskets. So students are given choice-based programs on various baskets of understanding the world, seeing how positioning works in the world, and actually how things work together when they're placed conjointly.

The task boxes are the courses they undertake in the industry. So, every semester, live projects are given to the students who work with the industry from the brief taken. For example, if a hospital has asked them to design a recreating system for an oncology waiting area, they won't find a solution in space design. Students from fashion, UX, UI, space, and transportation will all work together to develop a system which can make the lives of both the people who are suffering from cancer and the people who are getting affected by cancer because of the patients in that same environment. So that is the co-curricular learning which is encouraged through these taskboxes.

The third part, Villaging. is a third of our curriculum, where we consciously exercise compassion to develop a responsible community of designers of circular tomorrow.

BASKETS

baskets are thematic fields
that certain a number of
courses based on the nuances
of professional developement.

TASKBOX

all the design projects tackled
by a student over the period of
their academic journey are
accumulated within 'task boxes'

VILLAGING

villaging concerns all activities
that students undertake for
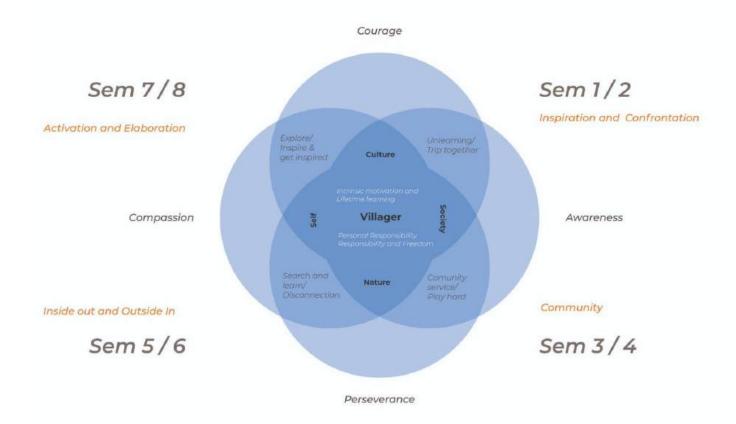personal development and
community building.

The two projects which I will share with you now are based on this curricular journey of villaging, which is assessed through the four pillars of what we stand for.

1. **Courage for the self but also for the community to stand firm on the decision they're taking, to not dwindle with the exterior factors.**
2. **Perseverance to never give up, actually fail, but rise up from the failures to realise the potential that lies within.**
3. **Awareness of the community as a whole to not function in isolation but as a collective.**
4. **Compassion to think beyond self, to step into others' shoes, and to pick them up and work with them to achieve what is truly in their stride.**
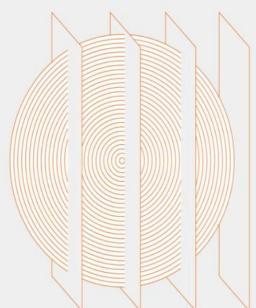
So these are the four pillars with which we gauge every project that a student does, not necessarily in the form of grades and numerics, but in terms of how they work.

To give you a perspective of how a villaging works, it is a toggle between awareness, perseverance, compassion, and courage, between inspiration and confrontation, community building, working inside out and outside in, and activation and elaboration. Together, all these come together as overlaps between the semesters and give you a strong culture, community, society, and sense.

Courage

Sem 7/8

Activation and Elaboration

Sem 1/2

Inspiration and Confrontation

Explore/
Inspire &
get inspired

Culture

Unlearning/
Trip together

Intrinsic motivation and
Lifetime learning

Compassion

Self

Villager

Society

Awareness

Personal Responsibility
Responsibility and Freedom

Search and
learn/
Disconnection

Nature

Comunity
service/
Play hard

Inside out and Outside In

Community

Sem 5/6

Sem 3/4

Perseverance

COURAGE

01 **PILLAR**

pushing one self as an
individual; risk-taking ability
in thoughts/action/approach
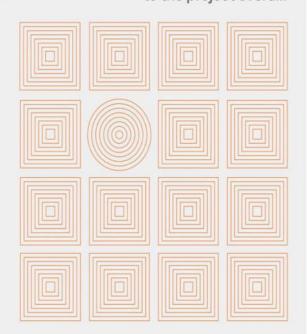to the project overall.

PERSEVERANCE

02 **PILLAR**

extensive exploration of brief,
concepts, domain; rigour of
process, attempts and repetition;
ability to accept failure.
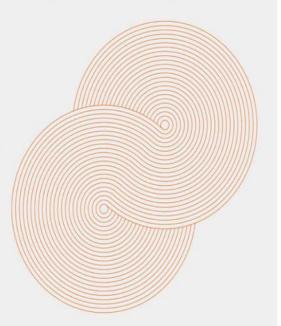
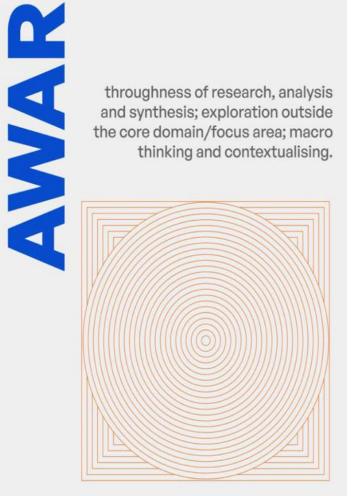# COMPASSION

the drive to be themselves
responsiveness/impact of design
audience understanding, insights,
response to contemporary issues.

AWARENESS

throughness of research, analysis
and synthesis; exploration outside
the core domain/focus area; macro
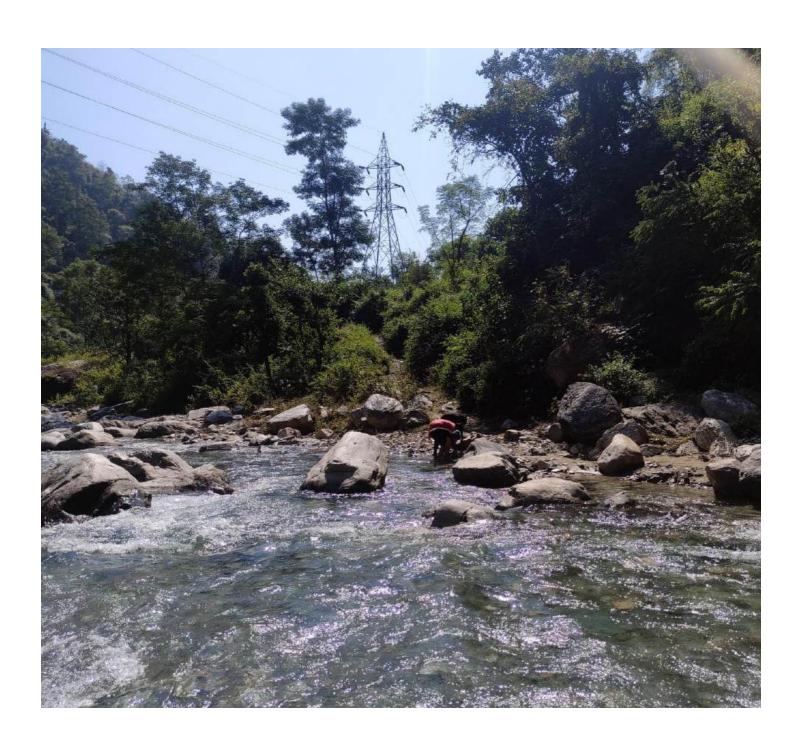thinking and contextualising.

During this first project, the students were asked to collect stones of different sizes and build a temporary stone bridge across the rivulet you see. They had to actually exercise each other as a group and understand each other's strengths. **It was just not about lifting weights of the rocks and placing them together. It was about strategizing, and seeing how we can work as teams.** What they did was analyse each other's strengths, gauge the shapes and angles of each and every rock size, and transport them to the site concurrently so that they could find the actual balance. Of course, we practised safety, this was executed in the low tide season, so the pressure of the water was not very high.

Hence, they were able to build this bridge with convenience and security. Finally, they were able to prevent water. So what this did was, before the next season's high tide, the community was able to cross the harvest of the season from point A to point B by just crossing these rocks. **The students also understood the bridge's temporality and knew it might be washed away during the next tide.**

But what it told them was the aspect of working as a team, the aspect of us designers not being privileged, coming from the centrifugal point of creating something for tomorrow and understanding the impermanence of nature and how things keep changing. That is something which we always try to do in every semester through different activities. Whether they have to work in hospices, or mend furniture at the school, they work as a community of understanding how the world around them works.
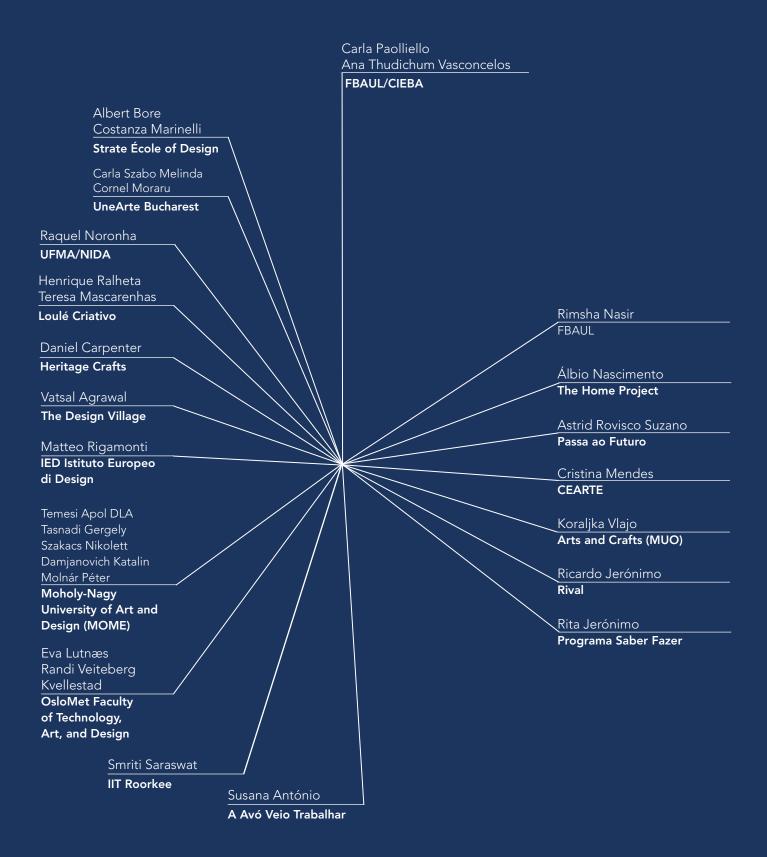
The second project is the project which one of our postgraduate students "Sachin Choyal" got to showcase at 'Salone Satellite' in Salon de Mobile Milano. But what I would like to focus on here is the fact that we worked with these underprivileged women from Gujarat and Haryana. These are two very extreme states in India where a lot of nomadic women are not allowed to work. They are a patriarchal society, and the men are breadwinners. Sachin passed out four years ago from our school, but, when he started, he wanted to open his fashion line of ethnic wear clothing. But by the time he finished the course, he started working with these women, developing a technique for reusing waste.

What you see here in the picture is a woman segregating the selvedges of different fabrics mixed in various colours, weights, and finishes, which in itself is a tedious process. Sachin's mother and grandmother used to do this at home on the rooftop. He started working at home, developing a small loom of wood and using a spindle to weave these fabrics into possible yarns. Later he developed this weaving technique where he was able to produce the rug that you saw in the previous picture. His idea was how can he give employment to these 70- 80 women who are part of this village. **This is what we attempt to practice and facilitate at our school. Creating opportunities for multiple pathways to become a reality. You could make Indian ethnic wear, but if you know the reason behind creating another one - for it not to end in the mass of the landfill. How can every problem be rethought by readjusting an expectation - the expectation as a designer for the future?**

Our inherent aim at The Design Village is to continue this life through design by being extremely responsible and trying to gauge the impact we create for tomorrow.

Carla Paolliello
Ana Thudichum Vasconcelos
FBAUL/CIEBA

Albert Bore
Costanza Marinelli
Strate École of Design

Carla Szabo Melinda
Cornel Moraru
UneArte Bucharest

Raquel Noronha
UFMA/NIDA

Henrique Ralheta
Teresa Mascarenhas
Loulé Criativo

Daniel Carpenter
Heritage Crafts

Vatsal Agrawal
The Design Village

Matteo Rigamonti
**IED Istituto Europeo
di Design**

Temesi Apol DLA
Tasnadi Gergely
Szakacs Nikolett
Damjanovich Katalin
Molnár Péter
**Moholy-Nagy
University of Art and
Design (MOME)**

Eva Lutnæs
Randi Veiteberg
Kvellestad
**OsloMet Faculty
of Technology,
Art, and Design**

Smriti Saraswat
IIT Roorkee

Susana António
A Avó Veio Trabalhar

Rimsha Nasir
FBAUL

Álbio Nascimento
The Home Project

Astrid Rovisco Suzano
Passa ao Futuro

Cristina Mendes
CEARTE

Koraljka Vlajo
Arts and Crafts (MUO)

Ricardo Jerónimo
Rival

Rita Jerónimo
Programa Saber Fazer

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ulisboa**   fct Fundação
para a Ciência
e a Tecnologia