

MIXED MEDIA ART AND DESIGN FROM WASTE MATERIALS FOR COMMUNICATING SUSTAINABILITY.

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Abstract

Environmental problems arising from production, consumption, and the growing volume of discarded materials affect both ecosystems and contemporary ways of life. This is especially evident in materials with short service lives but long environmental persistence, such as plastics and single-use packaging. This article examines the potential of mixed media art to transform waste materials from “objects that have outlived their usefulness” into “media of meaning” through the concepts of Sustainable Art, Eco-Design, and Circular Design. It discusses the roles of physical properties, histories of use, and material traces as components of visual communication.

In addition, the article proposes a five-stage creative framework: Collect, Decode, Experiment, Transform, and Communicate to enable artists and designers to connect material experimentation with sustainability issues systematically. This approach suggests that the artistic use of waste materials should extend beyond simple reuse or recycling toward the development of a Material Narrative, through which materials can communicate relationships among humans, consumption, culture, and the environment.

Keywords: Mixed Media Art, Waste Materials, Sustainable Art, Design for Sustainability, Circular Economy

Introduction

Linear systems of production and consumption commonly follow a “produce–use–discard” sequence, causing large quantities of materials to be reclassified from resources as waste once their original function has ended. However, the report *Turning off the Tap* by the United Nations Environment Program indicates that addressing plastic pollution requires systemic change, including eliminating unnecessary plastics, redesigning products and packaging, promoting reuse, and improving recycling, to make plastics systems more circular (United Nations Environment Program [UNEP], 2023).

Within art and design, waste materials can therefore be reconsidered as “creative resources” that embody both physical properties and social meanings. Transforming plastic bottles, textile scraps, metal, paper, packaging, or electronic components into artworks is not only a means of reducing waste; it also shifts viewers’ perceptions of materials previously regarded as valueless.

The study by Zainal Abidin et al. (2024), which analyzed the use of waste and recycled materials in the works of Malaysian artists, found that waste materials can function as creative media in both two-dimensional and three-dimensional art and can help stimulate awareness of environmental problems. Working with discarded materials, therefore, becomes a space where aesthetic experimentation intersects with social and environmental responsibility.



Figure 1. Framework for transforming waste materials into artistic media for communicating sustainability.

Objective

1. To examine the potential of mixed media art to transform discarded materials into meaningful visual media.
2. To discuss how material properties, histories of use, material traces, and circular design principles contribute to the communication of sustainability.
3. To propose a five-stage creative framework for integrating material experimentation with sustainable art and design practice.

Literature Review

Mixed Media Art and the Concept of Assemblage

Mixed media art enables creators to combine multiple materials, techniques, and processes within a single work, including painting, printmaking, collage, sculpture, photography, sound, light, video, found objects, and natural materials. This flexibility makes mixed media art particularly suitable for experimenting with discarded materials, because each material possesses distinct color, surface, weight, rigidity, transparency, and a different history of use.

This approach is closely related to assemblage, which Tate describes as art created by bringing together diverse elements, often including everyday objects or objects the artist finds (Tate, n.d.). In works made from waste, the selection of objects therefore depends not only on shape or color but also on meanings already attached to them, such as product labels, signs of use, cracks, fading, or rust.

Materials as Media of Meaning

What distinguishes art made from waste materials from craft-oriented recycling is that the material does not function merely as “something used in place of a new material”; rather, it becomes part of the work’s meaning. Artists should therefore ask both what properties a material possesses and what circumstances it has passed through before entering the artwork.

- Plastic may signify convenience, single-use consumption, transparency, and a durability that becomes problematic after use.
- Metal can signify industry, strength, coldness, and traces of time produced by oxidation or rust.
- Paper and packaging can introduce text, advertising, trademarks, and the language of consumption into the artwork.

- Textile scraps can connect with the body, memory, clothing, and the environmental impacts of the fashion industry.
- Electronic components can reflect cycles of device replacement, technological advancement, and the problem of electronic waste.

When artists preserve these “traces” rather than conceal them, the materials function as visual evidence that connects viewers to systems of production, consumption, and disposal. Objects can therefore communicate environmental issues through their own material presence.

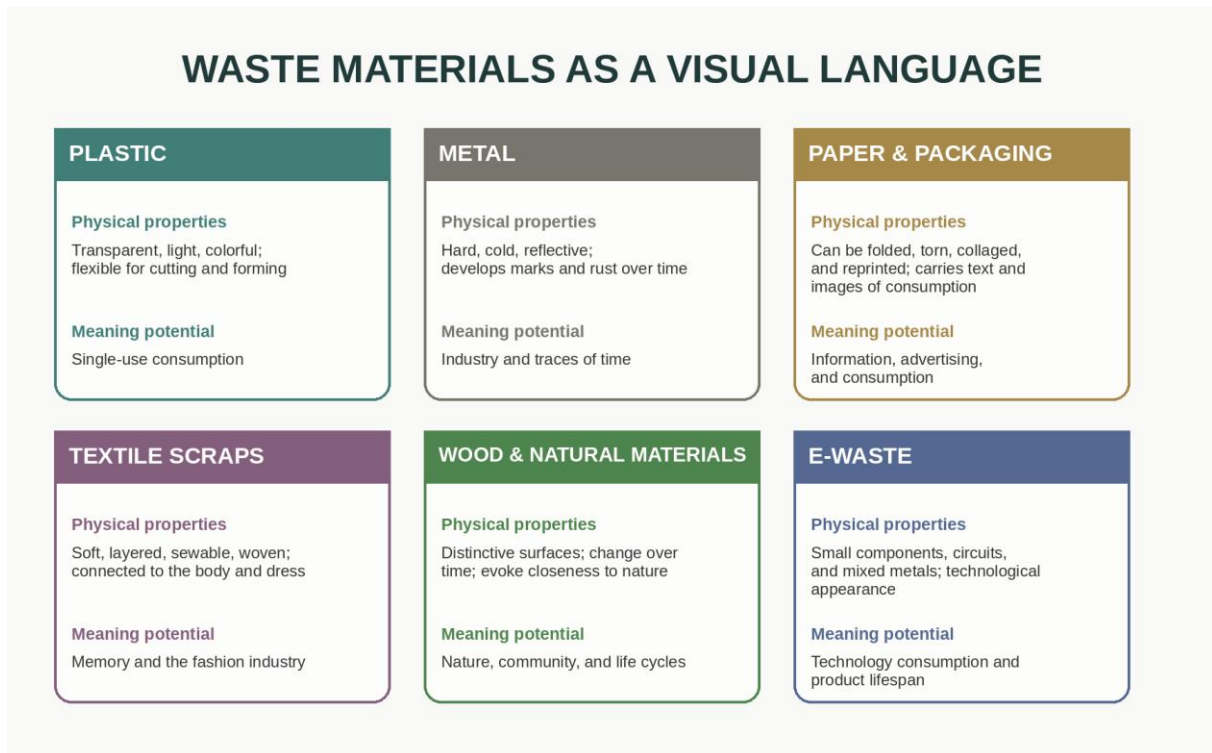


Figure 2. Examples of analyzing waste materials as a visual language and as carriers of meaning.

Circular Design: Sustainability Beginning at the Design Stage

The Ellen MacArthur Foundation’s concept of the Circular Economy is based on three design-driven principles: eliminating waste and pollution, circulating products and materials at their highest value, and regenerating nature (Ellen MacArthur Foundation, n.d.-a). These principles encourage artists and designers to understand sustainability more broadly than simply “reusing old things,” because attention must be paid to the entire life cycle of materials, from before the work is made to after it is exhibited.

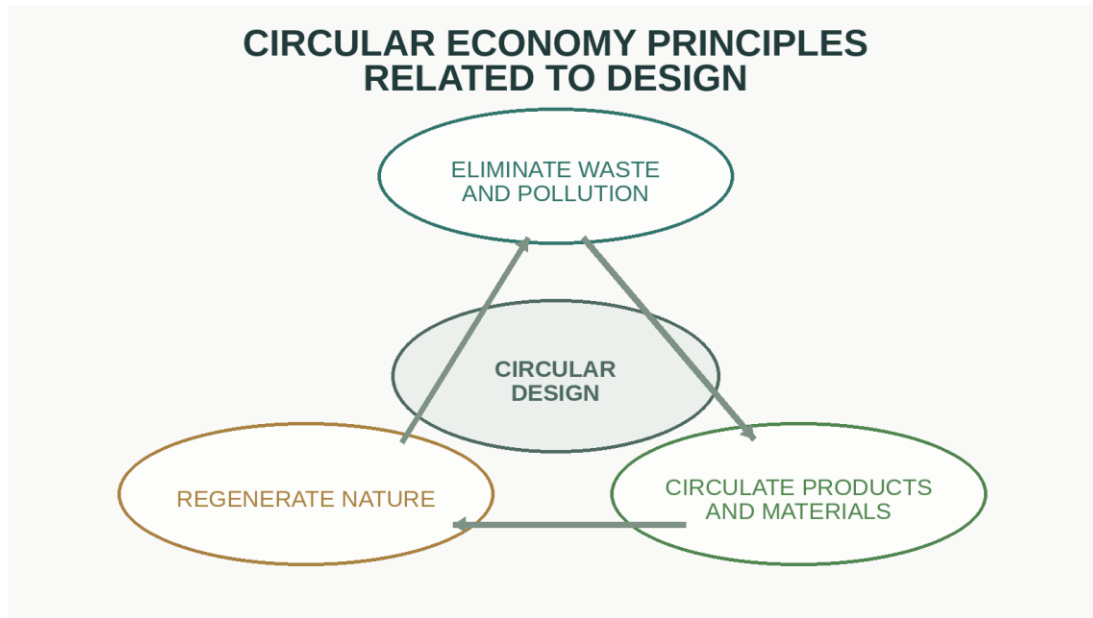


Figure 3. Three circular economy principles applicable to the creative process (adapted from the Ellen MacArthur Foundation).

Circular Design emphasizes decisions made early in the design process, when material selection, assembly methods, durability, disassembly, reuse, and end-of-life outcomes can still be determined (Ellen MacArthur Foundation, n.d.-b). In mixed media art, this perspective may lead to works designed for disassembly, the use of non-destructive fastening methods, reduced reliance on adhesives and chemicals, and the retention of materials after exhibitions for subsequent use.

Case Study: El Anatsui and the Transformation of Discarded Materials into Cultural Surfaces

One important case study in transforming discarded materials into an artistic language is the work of El Anatsui, a contemporary artist known for large-scale hanging sculptures constructed from discarded materials, particularly aluminum bottle caps and seals. Dusasa II (2007), in the collection of The Metropolitan Museum of Art, is made from found aluminum, copper wire, and plastic disks. The materials are flattened, bent, pierced, and connected to form a large, flexible surface that can be folded and hung in multiple configurations (The Metropolitan Museum of Art, n.d.).

The significance of the work lies not simply in its use of recycled materials but in the way those materials connect multiple contexts at once: Ghanaian kente cloth, mosaic patterns and textiles within art history, and traces of beverage consumption and waste in contemporary society. The Metropolitan Museum of Art explains that Anatsui's work connects traditional culture, Western art, and contemporary life. Discarded material, therefore, does not lose its former history; instead, it becomes a medium for dialogue between cultural values and the problems of consumption.

From Waste Material to Material Narrative

A productive direction for contemporary creative practice is to shift the conceptual frame from seeing Waste Material merely as Recycled Material toward developing it as Meaningful Material and, ultimately, Material Narrative. In other words, creators should not stop at reuse; they should investigate what stories the material can tell and determine which pre-existing traces to preserve and how extensively to transform the material.

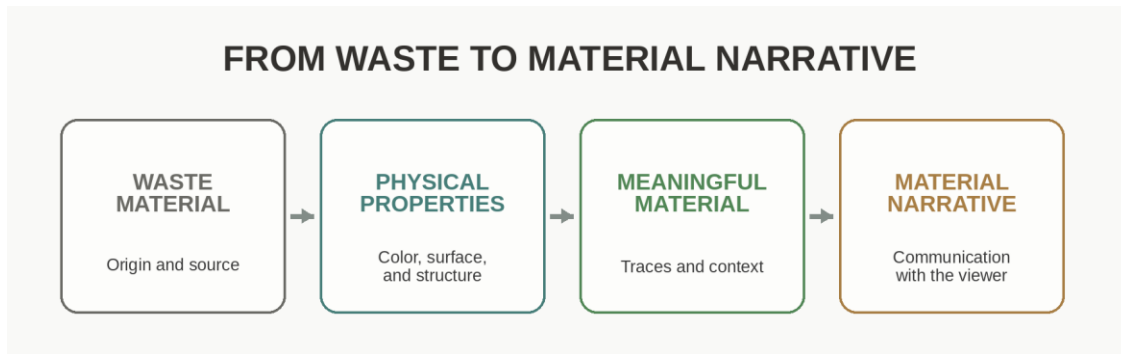


Figure 4. Development of waste materials from physical resources toward a Material Narrative.

Beach waste, for example, may carry fading, corrosion, scratches, and grains of sand. If these traces are preserved, viewers can directly perceive time, the object's movement, and the impact of human activity on coastal environments. Similarly, textile scraps from factories may retain seams, labels, or cut marks, revealing systems of mass production. At the same time, electronic circuit boards can use circuit pathways as visual elements to reflect relationships among humans, technology, and rapid device replacement.

Research Methodology

To prevent creative practice from separating “material experimentation” from “sustainability concepts,” the following five-stage process can be used as a practice-oriented framework.

Stage	Practical Guidelines
1. Collect	Explore material sources; record the type, quantity, origin, and condition of each material, as well as the reasons it became waste.
2. Decode	Analyze color, surface, rigidity, flexibility, weight, changes over time, and social and cultural meanings.
3. Experiment	Test cutting, folding, tearing, threading, weaving, sewing, pressing, melting, or assembling. Record results concerning form, structural strength, safety, and waste generated during experimentation.
4. Transform	Select promising experiments and develop them into compositions, forms, structures, and prototypes while maintaining the relationship between material and concept.
5. Communicate	Define the intended viewer experience, such as raising awareness, prompting questions, making the volume of waste perceptible, or changing perceptions of material value.

Research Results

The value of art made from waste materials does not depend solely on the number of kilograms of waste removed from the system. The amount of material used in a single artwork may be very small compared with the volume of waste generated at the urban or global scale. Art’s distinctive role is to make visible what people have learned to overlook and to transform abstract information about consumption into a tangible experience.

When large quantities of single-use objects are brought together within an exhibition space, viewers can perceive “quantity” through scale, repetition, and density without reading numerical data. At the same time, materials bearing genuine traces of use can make environmental problems feel more immediate than images or statistics in reports. Art can therefore serve as a shared space for perception, discussion, and questioning everyday patterns of consumption.

Discussion

Accordingly, the message of an artwork need not stop at “we should recycle.” It can lead to deeper questions: Why do we design objects for a single use only? Why are long-lasting materials assigned to very short-lived functions? How can designers reduce waste generation at the source? These questions reposition sustainability from an end-of-pipe recycling issue toward a design responsibility that begins with decisions about materials, systems, and product life cycles.

Suggestions

If this topic is developed into creative research, researchers can define specific materials or study sites, such as marine plastic waste, textile scraps from the fashion industry, construction offcuts, or waste materials from local communities, and then conduct systematic material experiments to establish a Material Experiment Sheet database.

- Study the sources and types of materials, including the environmental problems associated with them.
- Systematically test material properties and techniques, documenting the process through images and experiment records.
- Develop multiple prototype directions and evaluate them with experts or audience groups.
- Analyze how audiences perceive sustainability issues through material, form, and exhibition strategies.
- Consider the life cycle of the artwork after exhibition so that sustainability is embedded in the actual process rather than appearing only as a stated theme.

This framework can connect mixed media art with research in Material-Driven Design, Design for Sustainability, Environmental Art, and Creative Practice Research, helping research outputs generate both process-based knowledge and verifiable creative works.

Conclusion

Designing mixed-media art from waste materials is a process that integrates beauty, experimentation, and environmental responsibility. Discarded materials possess not only physical properties but also histories of production, consumption, use, and deterioration. Returning these materials to the artistic field therefore transforms both the status and the meaning of objects.

When Sustainable Art, Eco-Design, and Circular Design are applied, creators can move beyond formal recycling to question the systems that generate waste and design creative processes that consider the full material life cycle. From this perspective, waste material is not the “end point” of an object. Still, it can become the starting point of a new artistic language in which beauty, meaning, and sustainability coexist.

References

- Bocken, N. M. P., de Pauw, I., Bakker, C., & van der Grinten, B. (2016). Product design and business model strategies for a circular economy. *Journal of Industrial and Production Engineering*, 33(5), 308–320. <https://doi.org/10.1080/21681015.2016.1172124>
- Boetzkes, A. (2019). *Plastic capitalism: Contemporary art and the drive to waste*. The MIT Press.
- Candy, L., & Edmonds, E. (2018). Practice-based research in the creative arts: Foundations and futures from the front line. *Leonardo*, 51(1), 63–69. https://doi.org/10.1162/LEON_a_01471
- Ceschin, F., & Gaziulusoy, I. (2016). Evolution of design for sustainability: From product design to design for system innovations and transitions. *Design Studies*, 47, 118–163. <https://doi.org/10.1016/j.destud.2016.09.002>
- Donkor, E. K., Boakye-Yiadom, F., Ankrah, O.-A., & Micah, V. K. B. (2024). Sculpture, circular economy and ecological reflections: Redefining waste through sustainable art in Ghana. *World Art*, 14(3), 279–303. <https://doi.org/10.1080/21500894.2024.2367962>
- Dumée, L. F. (2022). Circular materials and circular design—Review on challenges towards sustainable manufacturing and recycling. *Circular Economy and Sustainability*, 2(1), 9–23. <https://doi.org/10.1007/s43615-021-00085-2>
- Geyer, R., Jambeck, J. R., & Law, K. L. (2017). Production, use, and fate of all plastics ever made. *Science Advances*, 3(7), e1700782. <https://doi.org/10.1126/sciadv.1700782>
- Italia, M., Papile, F., Santi, R., & Del Curto, B. (2023). Sustainable material selection framework: Taxonomy and systematisation of design approaches to sustainable material selection. *Sustainability*, 15(24), 16689. <https://doi.org/10.3390/su152416689>
- Kagan, S. (2014). *Art and sustainability: Connecting patterns for a culture of complexity* (2nd ed.). transcript Verlag. <https://doi.org/10.14361/transcript.9783839418031>
- Kanrattanasutra, P. (2021). The creation of art from metal waste with participation of young volunteer in order to raise environmental awareness. *Journal of Fine Arts, Chiang Mai University*, 12(2), 12–51.
- Karana, E., Barati, B., Rognoli, V., & Zeeuw van der Laan, A. (2015). Material driven design (MDD): A method to design for material experiences. *International Journal of Design*, 9(2), 35–54.
- Organisation for Economic Co-operation and Development. (2022). *Global plastics outlook: Economic drivers, environmental impacts and policy options*. OECD Publishing. <https://doi.org/10.1787/de747aef-en>
- Weintraub, L. (2012). *To life!: Eco art in pursuit of a sustainable planet*. University of California Press.