



Designing the end in the beginning —

As efforts intensify to move us from our linear models of making and consumption towards more circular, connected and progressive ones, our relationship with the materials we surround ourselves with will change. How we view and design products, not as static objects but as dynamic and evolving systems, is key to this more sustainable future. Respect and care for the materials themselves coupled with an appreciation of their inherent value leads us to create new narratives and perspectives. Can we design, not only for the new product that is destined to disappoint once its shiny shell has faded and worn, but for all the stages of its life journey (birth, growth, decay and death) ultimately guiding it to rebirth once more?

Design has the power to harness these multiple approaches and find ever more creative ways to retell the story of materials and prepare them for their very own afterlife. The concepts and themes on the following pages are as much about the ‘what if’ of this circular material story as the current ‘what is’.

Afterlife

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Continuous —

As our technological recovery routes and systems improve and increase, the potential of a future materials ecology becomes more tangible. The very building blocks of matter can be taken apart and reconstructed as new materials through chemical recycling; virgin materials taken from our ever-dwindling supply can be replaced with those already in circulation or with renewable and recoverable inputs. While still far from a regular part of manufacture, these innovations are ever closer to reality. Longevity of materials can lie in their molecular rebirth and not only their ability to age gracefully as products, ever transforming and mutating into the next reincarnation to feed endlessly back into the system. Closed loops, open loops, connected loops: what does it mean to design for this state of constant undoing and becoming of matter? How can we uncover and learn the new rules of material chemistry and embed them into our future design briefs?





Decay —

Nature's continuous biological cycle is a continual state of transformation through a life journey; birth through to death (or rebirth). Natural, compostable materials used in balance with nature's decay and recovery processes can function in harmony with, and eventually return to, the soil, to feed new growth and multiply future resources. The purest biological waste streams from food production or agriculture can become vital ingredients for new material streams. But designing for this intentional death and rebirth requires meticulous attention to every addition and process involved in crafting such a material. Only pure biocompatible ingredients can safely travel through nature's systems if we are to avoid contamination and waste. An inappropriate chemical, a misplaced plastic coating, an incompatible ingredient can corrupt the flow of nutrients into the next life. How can we work with, not against, this most efficient of systems to preserve and regenerate resources for the next generation and beyond?

Disassemble —

Sometimes, by necessity, we build products with a mix of both biological and technological materials which need very different end-of-life recovery routes. Each material component offers a different and essential quality in order to function as a useful whole; pure material content is not always achievable or desirable. Disassembly enables us to carefully and usefully separate materials and components into the essential elements or nutrients for another product or system. In a sense, all recycling is a kind of disassembly and reassembly; be that at product, component or molecular level. If this disassembly is designed in from the outset, it becomes even more plausible to retain material value and continue its useful life in a new form. How can we decouple one material from another in order to send them to separate and appropriate destinations? How can we design future iterations of material and form into each new product we make?





Remake —

When materials become redundant, without a predesigned future, we can at least give them new life and meaning through reconstruction. Remanufacture, reassembly, reconfiguration, resurfacing, upcycling; our ingenuity is only limited by our imagination. Through ad hoc assemblies and reappropriation we can find new possibilities for creation and deploy materials in continued use. From the shredding and reforming of materials as shoddy or composites to the design of modular and transformable products, remaking can be employed in multiple reactive and proactive ways. At a later date these materials may eventually be sent to more complete recovery ends, but before that point they are valued and preserved as they are. How can we create new norms of beauty which enable alternatives for reuse and remanufacture? Can we find new aesthetic appreciation in functional form? In the very act of remaking, can we add value and signal future reincarnation at a later stage of a product's journey?

Longevity —

Once we have crafted materials into products and things, how can we ensure longevity of use? Maximum physical durability paired with equally enduring emotional appreciation is the ultimate solution – but eternal perfection is not the goal here. There is beauty to be found in the maturing and blemishing of materials in use; the thread-bare or darned elbow in a favourite garment; the well-hugged teddy bear; the faded and worn keepsake. How can we build this ageing into products and find the positive in their continual material change? The role of the user in care and repair become part of the product's narrative and ongoing design story, imbuing value and history into matter. A material which is designed to age well can be shared, exchanged, handed down and appreciated over time. It can, at best, displace the need for a new and shiny replacement, and slow down a seemingly ever-quickenning consumer cycle. Considered design choices and appropriate context are key. The manifold 'stuff' of our daily lives cannot all reach this pinnacle of long life but, where it can, it brings quality and joy beyond pure material gains.

