



maat



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visit  
guide

# Plastic. Remaking Our World

An exhibition by

Vitra Design Museum,

V&A Dundee,

and maat

Plastic is everywhere, it is the material that shapes everyday life like no other. Used and experienced differently across the globe as product and waste, it is essential yet superfluous, life-saving and life-threatening, seductive but dangerous.

Never has it been more urgent to understand the more than 150-year history of this man-made material and to unpack the wondrous, yet alarming tale of its invention and use. *Plastic. Remaking Our World* charts the material's unparalleled rise, vast popularity, and the dawning realization of its destructive power. Probing design's role within this story, it asks how plastic has both enabled immense innovation and new ways of living, and at the same time contributed to the inescapable environmental pollution crisis we are experiencing today.

Divided into three sections, the exhibition opens with a video installation exploring the relationship between plastic and nature at a fundamental, geological level. The second section traces the history of plastic from its natural origins through to synthetic material experimentation in the mid nineteenth and early twentieth century. It continues with the rise of the petrochemical industry and the subsequent throw-away society and its impact on the scale of production in manufacturing as well as the concern for the planet that grew towards the end of the twentieth century. Finally, the third section takes stock of contemporary efforts to rethink plastic and to implement alternatives, to reduce production and consumption and encourage reuse of plastic.

With this look to the future, *Plastic. Remaking Our World* is a call to action at this time of climate emergency.

Of the 8.3 billion tons of plastic produced worldwide since the beginning of the 20th century, only 9% has been recycled. There are three types of plastic recycling: mechanical, chemical, and biological. The main challenges of recycling are the separation and sorting of different types of plastics, and the fact that it is a process that is often limited to reconvertng waste into lower value products (downcycling) and postponing the

inevitable incineration or landfilling. The export of waste and the lack of an efficient waste-management infrastructure poses a further global challenge. In many waste-importing countries, plastic recycling relies heavily on the work of individual waste pickers and small informal businesses.

# RECYCLING



# KALPA

An immersive video installation by Asif Khan that takes the visitor on a journey through time, from the emergence of microscopic life forms in the Earth's oceans to their ongoing accumulation and transformation beneath the sea floor, and their discovery two billion years later in the form of oil. The second half of the film documents the ubiquity of plastic products and waste, and the contamination of marine ecosystems resulting from their breakdown into microplastics.

Making plastic from natural materials has been going on for thousands of years. Industrialisation and rising incomes in the late nineteenth century increased demand for natural plastics and kindled interest in new materials that could replace or even outperform materials sourced from nature. The enormous demand for materials like ivory or natural rubber, for example, resulted in shortages of supply on the markets. This vast over-extraction of natural resources

led to the near-extinction of some species. The hope was, that early man-made plastics like Parkesine and Casein would offer the natural world a reprieve.

In the early twentieth century, advances in material experimentation led to the invention of fully synthetic materials, starting with Bakelite, and the arrival of endless new possibilities.

# SYNTHETICA

# PETROMO- DERNITY

Advances in the chemical sciences in the 1920s led to an understanding of plastics at the molecular level: plastics are made up of long chains of repeating molecular units called polymers. To exploit this move from hopeful experimentation to polymer science, chemical and petroleum companies joined forces to promote research in the field. The invention of new plastics including vinyl, polyethylene, acrylic, and nylon followed apace. Following World War II, the oil and petrochemical

industries strove to establish plastic as the material of everyday life. The availability of cheap raw materials and the high cost of moulds have encouraged the mass production of plastic objects to ensure a return on investment.

In the second half of the twentieth century, mass production processes such as injection moulding and vacuum thermoforming enabled endless design possibilities. The aims of the plastics industry, focused on the mass production of single-use items, fuelled a throw-away culture. From 1970 to the present day, annual global plastic production has increased eightfold to 400 million tons. More than half of the plastic produced to date has been

manufactured since 2000. Towards the end of the twentieth century, the vast amount of plastic — much of it encountered as litter — awakened concern for the planet. Within a few decades, the public image of plastic shifted from a visionary, democratic material full of possibility to one that is deeply contested.

# PLASTICENE

## RE-

Scientists, designers, activists, and policymakers have been leading efforts to find new ways to tackle and reduce pollution. To achieve a circular plastics economy, the production of single-use plastics must be reduced, and objects need to be designed for reuse, repair, or recycling. Plastics made from renewable resources and biodegradable materials should be a priority, and society's relationship with plastics needs urgent rethinking. Policymakers must set in place regulations and create incentives

that allow all kinds of alternative approaches to break into the market. Manufacturers must be held accountable for what happens to their products after use. Designers must consider the whole lifecycle of a product from the start. Consumers must influence the industry through their choices.

## Plastic. Remaking Our World

An exhibition by the Vitra Design Museum,  
V&A Dundee and maat  
In collaboration with V&A South Kensington

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