Formafantasma
Cambio

Formafantasma Cambio

curated by
Rebecca Lewin, Hans Ulrich Obrist
and Cristiana Perrella

Cambio, from the medieval Latin cambium, "change, exchange," refers to the cambial layer, a membrane that runs around the trunks of trees, producing new wood on the inside and bark on the outside, enabling growth and adaptation to climate change. The exhibition presents an investigation in progress conducted by the design duo Formafantasma on the governance of the timber industry. The evolution of this form of commerce over time, and its tentacular expansion across the globe, has made it difficult to regulate and manage in a sustainable way. The industry grew out of bioprospecting for commercial and scientific purposes that took place throughout colonial territories during the 19th century, becoming one of the largest in the world both in terms of revenue and of increasingly negative impact on the planet's biosphere.

Taking a multidisciplinary approach, *Cambio* sets out to raise awareness on this theme, presenting data and research in the form of interviews, installations of materials, videos, plus a series of case studies that offer an in-depth look at how wood is sourced and utilized. *Cambio* has been produced in close collaboration with experts in the fields of botany, forestry, climatology, engineering, environmental policy, art and philosophy, with specializations ranging from microscopic analysis of wood and its ability to store carbon dioxide to a metaphysical understanding of trees as living organisms.

The exhibition underlines the crucial role that can be played by design with respect to our environment, and its responsibility to look beyond its boundaries: in the future, design can and must attempt to translate emerging environ-

Cover
Formafantasma. Cambio, Vallombrosa
Centro per l'arte contemporanea Luigi Pecci. 2021.
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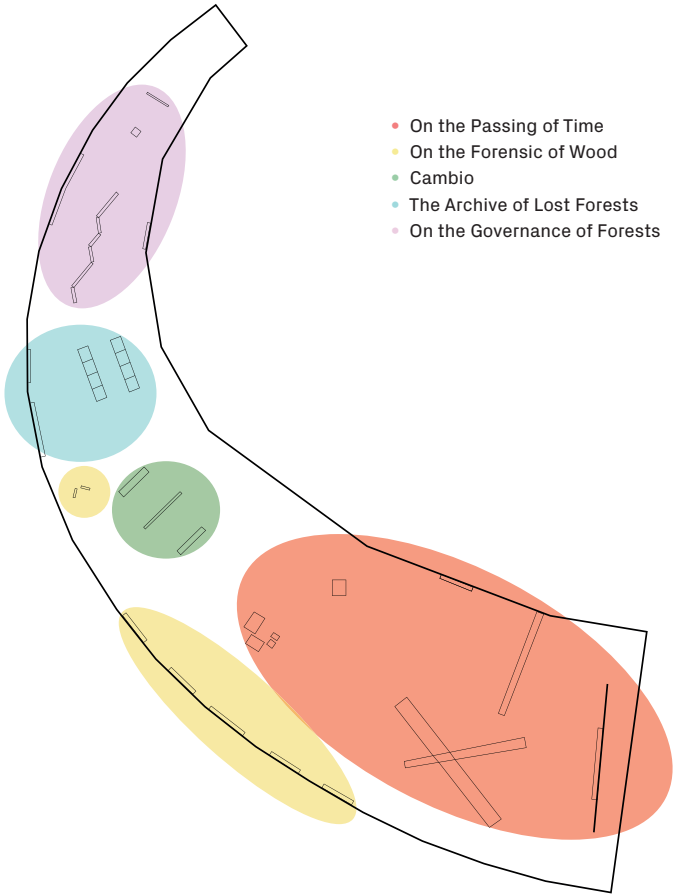
Map

mental awareness into a new understanding of our relationship with nature, also on a philosophical and political level.

Presented from March to November 2020 at the Serpentine Sackler Gallery in London, for its iteration in Prato *Cambio* has been expanded with new themes and new case studies in relation to the territory of Tuscany.

Formafantasma (Simone Farresin, Vicenza 1981 and Andrea Trimarchi, Taormina, 1983) are a duo of designers based in Amsterdam, who analyze the ecological and political responsibilities of their discipline. Their works are included in the collections of important museums, including MoMA, MAXXI and Stedelijk. Already in 2011, the New York Times listed them among the most influential designers of the new generation. In 2020 they won the Dezeen Designer of the Year Award. In 2021 the received the award in the same category of the magazine Wallpaper.



On the Passage of Time

The exhibition opens with a series of pieces that introduce the physical matter of wood: a large cross-section of a tree trunk, the pole on which the *Colombina* is placed in the cathedral of Florence for the traditional Easter ceremony of the "*scoppio del carro*," and a work by the artist Giuseppe Penone. The focus then shifts to a different conception of trees, not as material to be exploited, but as indispensable aides in the fight against global warming. The exhibits examine the role of trees as sensors capable of detecting climate change, and as a solution capable of correcting it, through their ability to absorb carbon dioxide. Due to their vulnerability to extreme weather phenomena as a result of over-management and monoculture forests, trees provide a warning regarding the damages caused by unsustainable development, as in 2018 in Trentino, when the Vaia storm destroyed entire forests of conifers. An olfactory installation developed by the Norwegian smell researcher and artist Sissel Tolaas, at the entrance and exit of the exhibition, evokes the moist earth and flora of a forest, offering an immersive reminder of what is at stake if we lose this natural environment.

Giuseppe Penone
Tree with Left Torsion
1988
Larch wood

One of the leading figures of the Arte Povera movement, Giuseppe Penone (Garessio, 1947) has always made trees a central feature of his work. In the piece shown here, through excavation the artist has brought to light, in a beam of larch wood utilized for the framework of a roof, the forms of the tree still visible inside it, identifying the torsion and direction of growth. As Penone himself explains, "my art demonstrates the essence of the material through the language of sculpture; each work attempts to reveal the life that is held within it."

The reciprocal relationship between Penone's piece and the cross-section of chestnut timber in the same section of the show calls into question the separation between nature and artistic or industrial creation, on the one hand, and the living thing that becomes a product, on the other – a product that reattains its features as a living being.

Colombina Pole
White fir wood

The silver fir wood of the *Colombina Pole* comes from the Casentino forests, a large part of which was administered by the Opera del Duomo for four centuries from 1380 onwards. The forestry system adopted by the Opera di Santa Maria del Fiore is an example of a low-impact sustainable infrastructure that has taken into account the delicate environmental balance and the consequences of human activity on the biosphere. In this sense, the *Colombina Pole* is evidence of the undeniable relationship between knowledge of the territories, the economy and the landscape.

The Silvomuseo was established in Vallombrosa with the aim to preserve the cultivation of fir trees in that area and is an attempt to recognise the historical landscape and its conservation as an artefact that needs to be preserved. The cultivation of these living species also guarantees the conservation of the historic centre of Florence.

1858–2020
2020
Two-channel video, 4'52"

The title of the work, *1858–2020*, indicates the life span of a tree shown in the first video, counted from the moment in which it generated its first ring. The shots follow the process of coring used to extract a wood sample, a technique used by dendroclimatologists to analyze growth rate: widely separated rings indicate exceptional growth, while closely placed rings are the result of minimal growth. These findings can be compared with those of other trees and data on temperature and rainfall, to document the effects of climate change on the tree's life cycle. The numbers on the lower part of the screen are the data obtained from a series of trees in the Alps. As a whole, they point to higher temperatures in this region.

The second video examines the topography of Val di Fiemme, where in 2018 the Vaia storm felled over 13 million trees. The tree used for the video *1858–2020* is one of those felled by the storm. Its wood has been utilized to make the fixtures and seats designed by Formafantasma for the exhibition. This choice responds to the designers' conviction that materials should be selected on the basis of considerations that go well beyond mere aesthetic appeal, with an accent on sourcing and the methods used for their extraction.

BEKVAM
2020
Oak (*Quercus spp.*), Beech (*Fagus sylvatica*), Ash (*Fraxinus excelsior*), Chestnut (*Castanea sativa*), Black walnut (*Juglans nigra*), Cherry (*Prunus avium*), English walnut (*Juglans regia*)

Every stool in this stack has been produced using a different type of wood, among those most commonly utilized in Europe. During growth trees store carbon dioxide, and if the wood is used to make products rather than as fuel, the carbon dioxide remains inside.

The mass production of everyday useful objects, such as a stool by IKEA, calls for constant replenishment of raw materials, with ongoing availability. But for wood products to truly be sustainable, their life cycle has to be equal to or greater than the time required for the tree to grow. Unfortunately this temporal rule of thumb is overlooked by the production cycles of the worldwide timber industry. To maximize this industry's contribution to mitigate climate change, stricter regulations are necessary on issues of sustainable forestry management, monitoring levels of carbon dioxide storage in forests, while making a stable increase in the life span of wooden products, enabling them to retain carbon dioxide for longer periods of time.

51 years
2020
Disposable wood pulp products

The title of the installation, *51 years*, refers to the period of time required for a single tree – in this case a pine from central Europe – to reabsorb the quantity of carbon dioxide (975.16 kg) released by these disposable products when they are thrown away. A broadleaf tree can absorb about 21.77 kg of carbon dioxide per year.

22 pallets 575.96 kg CO_2
3 rolls of paper 73 kg CO_2
38 packages of A3 paper sheets 216.2 kg CO_2
130 cardboard boxes 110 kg CO_2

Exhibition View

Vallombrosa. *Formafantasma. Cambio*, 2021, Centro per l'arte contemporanea Luigi Pecci, 2021. Photo © Margherita Villani.

Valombrosa, *Formfantasma. Cambio*, 2021.
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Interview to Alessio Papini, still image. *Formafantasma. Cambio*, 2021. Centro per l'arte contemporanea Luigi Pecci. 2021.
Photo © Margherita Villani.

On the Forensic of Wood

This section of the exhibition takes stock of the quantity of data that can be obtained from the analysis of wood and its by-products. A series of everyday objects produced using this material are analyzed as if they were recordings of their origin, in spite of the processes of workmanship, extraction of pulp (for paper) or combustion (for charcoal) they have undergone. The analysis of these objects, many of which are still being produced using protected species, can contribute to the regulation of practices of timber production in the world, while providing manufacturers, designers and users with better information on the impact of their choices of materials.

On the Anatomy of Trade
2020
Various materials

Interpol has estimated that each year 15-30% of the wood products that cross European customs boundaries come from illegal sources. The objects displayed on the shelves have been gathered in Germany, Holland and Belgium over the last twelve months, and have been analyzed by Thünen Institute and the Royal Museum for Central Africa with the aim of identifying the species of the trees utilized for their production. This analysis has made it possible to reveal the complex network of the illegal international wood trade. Some rare varieties, for example, are found in parts of musical instruments, while other endangered species have been found in charcoal samples.

On the Origin of Species
2020
A selection of copies of *On the Origin of Species* by Charles Darwin, published for the first time in 1859

In an attempt to map the wood species used for books published all over the world, Formafantasma gathered a selection of copies of *On the Origin of Species* by Darwin, printed in various countries. The paper of each book has been analyzed under a microscope by the Thünen Institute, to identify the location of the printer and the source of the species utilized for the paper. The results show that there is almost never any relationship between the geographical location of the printer and the ecosystem that has provided the wood for the paper. Today the fast-growing species used for the production of pulp and paper are widely scattered across the planet, regardless of the locations where they originally grew, and they are continuing to displace endemic ecosystems. The production of paper is just one of the components of the timber industry, in which productivity and efficiency prevail over respect for biodiversity.

On the Resonance of the Forest
2020
Spruce, two 60W speakers

The form of these two speakers designed by Formafantasma has been reduced to the necessary minimum for the sound. The soundboards are made with spruce wood, also known as “resonance wood,” which grows in Italy in Val di Fiemme. This choice suggests reflections on the production of musical instruments, which are often made with hardwoods threatened with extinction, due to the finer quality of the sound produced by rare species. Nevertheless, when analyzed on a microscopic level, even more common woods like rosewood and resonant spruce have similar anatomical characteristics, lending themselves to sound production.

Cambio

In the form of a visual essay, the film *Cambio* investigates the historical evolution of the timber industry, and how a networked understanding of materials can be applied to a more holistic approach to design. The film draws connections between timber's physical materiality and the abstract but pervasive conditions of exploitation, colonialism and consumerism.

The other video in this section addresses the theme of governance in the timber industry, indicating the main standards and leading agencies of regulation involved. As a whole, the materials of this section set out to provide a more transparent overview of the research and practice of design, and the structure of the worldwide timber industry.

The Archive of Lost Forests

The images and objects displayed in this space come from various sources: the Economic Botany Collection of Kew Gardens, the storerooms of the Victoria and Albert Museum, and the Tropical Herbarium of the Department of Biology of the University of Florence. The wood samples from Kew Gardens were exhibited at the Great Exhibitions of 1851 and 1862, and were intended for use as a catalogue of timber resources of the British Empire. The history of the Victoria and Albert Museum was intertwined from the outset with the Great Exhibitions, but rather than conserving raw materials, the museum accumulated a collection of furniture and objects that bear witness to the use of many of these wood species by designers and artisans. Real and virtual images overlap in the film at the back of the space, indicating the missing connections between an object and its place of origin, and underscoring the persistent demand for materials in the field of design, always in search of resources that are treated as if they were infinite and impossible to deplete.

The section also contains a series of dried specimens of tropical species conserved at the University of Florence, bearing witness to the bioprospecting that took place for scientific and commercial ends during the colonial era.

On the Governance of Forests

The combination of images, documents and films in this section of the exhibition offers a perspective on forestry that goes beyond the extraction of resources and attempts to understand the complex ecosystems contained in forested regions. To this end, it brings together different approaches to forestry management, from Europe to the Amazon, making comparisons over time and in different geopolitical outlooks.

On Forests' Standing
2020
Digital print on paper

The images and documents gathered in this section convey different visions of forestry and different types of documents used by arboreal communities to monitor and regulate the logging industry. The experiences and knowledge presented herein range from the local level, with maps drawn by groups inhabiting the forests of the Amazon, to a national scale, with initiatives like the black and white aerial photographs of the RadamBrasil project, all the way to the transnational level, with complex legal documents. Combining these approaches, the necessity of a radical change in forestry practices and in the timber industry on a worldwide level becomes clear.

Untitled
2021
Video, 2'19''

In the video, the images of maps drawn by hand come from communities that work together with the association Gaia Amazonas in the Colombian Amazon. Relying on experience, word of mouth and GPS technology to define their territories, they highlight important locations for rituals and social gatherings, as well as places of historical interest. These maps do not respect geopolitical boundaries, but reflect the communities' perception of the region, seen as a single biome. The information is then translated into official maps that support legal documents to recognize the right of the Amazonian communities to live in these areas, and to protect them.

Quercus
2020
Video, 12'08''

This film has been produced by manipulating a LiDAR scan of an oak forest in Virginia. LiDAR technology, an acronym for "light detection and ranging," uses lasers to scan and record large areas, and it is often utilized in the fields of cartography and archaeology. More recently, it has been applied by the timber industry for selective logging practices. In the video, the technique offers the possibility of considering human beings from the standpoint of trees, while an off-screen voice reads a text by the philosopher and botanist Emanuele Coccia. The text challenges the idea of human dominance over forests, observing human dependency on the form and physicality of trees, while suggesting the need for a fundamental change of perspective: if we want to find more radical ways of protecting and living with these complex ecosystems, we have to understand the fact that human beings and trees are inseparably interconnected.

To further explore the exhibition research visit
www.cambio.website

With
Marco Carrer, University of Padua, Padua
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Emanuele Coccia, École des hautes études en sciences sociales, Paris
Marco Fioravanti, University of Florence
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Formafantasma team
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