

City Cortex by Amorim

What is City Cortex?

Over the last few years Corticeira Amorim has been actively working to expand the spectrum of cork applications, investing in research and the creation of new products and uses. Due to its unique characteristics, cork has proven to be an extremely useful raw material in the most varied of contexts, including the fields of design and architecture.

Following an invitation by Corticeira Amorim, City Cortex is a programme conceived by experimentadesign, which will emphasise the unique characteristics of cork within the context of the 21st Century.

The programme created focuses on the intersection between contemporary urban contexts and one of the most versatile and sustainable materials Nature has to offer: cork. It views the city as a living and dynamic organism, and looks into the challenges of the 21st Century, where issues such as mobility, safety, comfort, sustainability, climate change and social cohesion are absolutely essential.

Through the contributions of international leading architects and designers, City Cortex will create original projects for public or semi-public spaces in the city of New York.

The programme involves a component of in situ research about the potential of Portuguese cork and its respective transformation industry, along with an element of research into the historical ties that unite Portugal and the United States of America in the context of the use of cork throughout the 20th century.

With City Cortex, Cortieira Amorim has the opportunity of reaffirming the versatility and usefulness of this material, challenging internationally renowned creatives to discover its varied uses and present them to the citizens of New York. Cork has the potential of taking on an essential role in the cities of the present and the future.

Main pillars

Understanding the city as a dynamic system and considering the challenges that large cities face in the 21st Century, City Cortex has the following main pillars of analysis and intervention:

- The environmental sustainability of cities and the influence that this can exercise on relevant issues within the area;
- The potential contribution of cork towards solutions for public and semi public spaces;
- · The comfort of citizens and the improvement of urban spaces;
- The role of design and architecture in the improvement of these spaces, subject to the use of sustainable materials;
- The concept of the city as a place for intergenerational and intercultural exchanges, underlined by safety and happiness.

Why New York City?

New York is one of the most important cities in the world and the source of a collective global imaginary. The city is also easily associated with concepts of freedom, culture, movement and urbanization.

Conscious of the energy New York emanates, as well as the numerous challenges it has been faced with by contemporary realities, Cotriceira Amorim and experimentadesign chose this city as the stage for this initiative. City Cortex aims to create a positive impact within its reality, as well as straighten the connection between Portugal and the United States of America when it comes to the use of cork.

The 5 invited studios

Diller Scofidio + Renfro (architecture)

One of the most important and sought after architecture studios in the world. Based in New York, DS+R possess a broad and unparalleled knowledge of the city. Projects like the Highline and The Shed - one of the most revolutionary cultural centers in the world - have had a pivotal role in the renovation of less developed areas of Manhattan. Across its various projects around the world, DS+R carefully integrate a cultural and social dimension, transporting the practice of architecture into other paradigms.

Gabriel Calatrava (architecture)

Gabriel Calatrava is an engineer and architect who expresses a great inventive capacity, largely informed by both of these disciplines. Dedicated to finding innovative solutions that are technically surprising, as well as including new technologies and established formal options, Caltarava also has a deep knowledge of the city of New York, where he lives and works.

Leong Leong (architecture)

This studio created by brothers Dominic and Christopher Leong, based in New York and with a second office in Los Angeles, represents a new generation of American architects. The studio has already drawn considerable attention and is in rapid development, bringing a new energy and way of creating architecture to the project.

Sagmeister & Walsh (graphic design)

The only graphic design studio to be incorporated into this project, also based in New york. Considered one of the most important and revolutionary communication design studios in the world, Sagmeister & Walsh possess an extremely unique and unparalleled creative perspective, as well as a great ability to look at a specific context and create culturally rooted irreverent solutions and projects of great value for citizens.

Philippe Starck (design)

There is not much that has not been said about the renowned Philippe Starck. While his studio is the only one from this group that is not based in New York, the architect and designer has already executed various projects in this city. His creative ability is recognized around the world, along with his interest in sustainability. He will bring a more Eurpean vision to the project, informed by the fact that he lives in Portugal and has previous knowledge concerning the universe of cork.

The name City Cortex

The word *cortex* comes from a Latin declination that means *bark*, or *cork*. In a broader sense, within the Botanical universe for instance, *cortex* is the soft or rigid tissue that encapsulates a plant or tree, protecting it from the elements. This concept has also been adopted by anatomy, where it represents the outer layer of an organ or biological structure, such as kidneys or (in its most famous form) the brain. *Cortex* is thus considered the protective layer of the elements that are essential to the survival of an organism, making it resistant and stable.

Large cities are organized, move and work at a speed and complexity that is in many ways similar to both the activity and neurological composition of the brain.

The name City Cortex emerges from the connection of these concepts: one that leads directly to cork and another that forms a link between the brain and creative thinking. The project transposes these two ideas into an urban context — more specifically, to one of the most iconic cities in the world.

Relationship between the cork industry and the USA in the fields of architecture and design

The USA has been using cork in industrial production and architecture and design for over 100 years. Architects such as Frank Lloyd Wright and Marcel Breuer used it in their projects, contrary to the practice of many contemporary architects. Cork also emerges as being associated with the automobile industry, and more recently, the aeronautical industry. Over a long period of time, for which there is no extensive information or research, cork was frequently used in the USA.

The intention of City Cortex is to produce knowledge about this period, in a chronology that extends from the beginning of the 20th Century until today, in order to deepen, organize and share information and curiosities about this theme. This research will be accomplished in partnership with american institutions, through the attribution of research grants. It is predicted that dissemination of the information discovered will occur at the end of 2020.

Practical results of the

City Cortex programme

The five invited studios will produce specific projects for the city of New york. With a briefing defined by experimentadesign and the technical support of Corticeira Amorim, the studios have total freedom to create innovative solutions based on its premise. The process is based on a work-in-progress logic. Having begun with a visit by each studio to the cork fields and industrial facilities of Corticeira Amorim.

The five - or more - projects created can be of different scales and have very different uses. They will be revealed during their presentation in New York, at the end of the first semester of 2020.

The projects will be presented in New York it two different ways:

• In an exhibition that will reveal drawings, models and development components of the creative process;

· Full scale interventions in public or semi-public spaces in Manhattan.

The results of the historical research will be shared through the City Cortex website.

With the final objective of presenting design and architecture interventions in public or semi public spaces in the city of New York, through City Cortex Corticeira Amorim and experimentadesign aim to actively contribute towards the improvement of the public space of the city, while affirming the importance of sustainable construction materials in contemporary large cities, and the appreciation of cork as a raw material within the US and across the globe, underlining its sustainable character.

This initiative also aims to contribute towards the recognition of the role of design, architecture and creative thought for the edification of society in the 21st Century.

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Credits

Amorim

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Amorim

The Amorim Group is one of the largest, most entrepreneurial and dynamic multinationals of Portuguese origin. Its origins were in the cork business, back in 1870 and today it is the world leader in the sector.

Guided by a vision of sustained growth, the Group has engaged in the diversification of its business in sectors and geographical areas with high growth potential. In the 1960s, the process to vertically integrate the cork business and internationalise activities began.

Observing the maxim «not just one market, not just one client, not just one currency, not just one product», the Amorim Group overcame geographical borders and constraints which were risky at the time, and presented cork to the world, making its mark in sectors such as real estate, finance, telecommunications and tourism.

Maintaining the family hallmark, the Amorim Group currently boasts a consolidated position in dozens of companies throughout the five continents and in a wide range of economic areas. From cork, through Corticeira Amorim, to wine production and wine tourism.

In this regard, the passion for regional products from the Douro must be highlighted, which is reflected in the refurbishment and operation of Quinta de Nossa Senhora do Carmo. Here, the Group developed a completely integrated and innovative project, which embraces the production of quality natural products, such as Port Wine and table wines, olive oil as well as traditional gourmet products. Since 2005, this project has taken on a new dimension, with the opening of the Quinta Nova de Nossa Senhora do Carmo Rural Hotel, the first wine hotel in Portugal, which has received numerous awards to date.

Always with the mission to respect the principles of economic, social and environmental development, the Amorim Group continues to be founded on the same principles on which it built its empire - entrepreneurial vision, responsibility, diligence, creativity and innovation. As well as in the mission to distinguish itself for its excellence, both in terms of management and products and services. A desire that is contagious and fuels the enthusiasm of the youngest generation - the fourth - involved in the family business.

Amorim

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experimentadesign

experimentadesign is a renowned, Lisbon-based knowledge production and project development unit working in the fields of design, architecture and design culture.

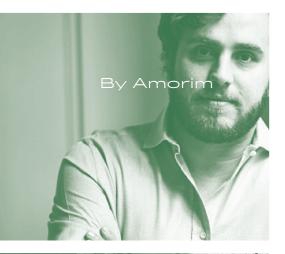
Its primary field of action is contemporary cultural production and its permanent transformation, always from an inclusive and multidisciplinary perspective. experimentadesign intervenes directly in the ways in which culture is thought of, produced and promoted both in Portugal and abroad, through the conceptualization and promotion of projects alongside Portuguese and international institutions and creators.

experimentadesign engages in an active exploration of the different fields of creation and production, and is committed to the use of design as an operative tool and work methodology. After the conclusion of one of its most emblematic projects, the EXD Biennale – which encompassed 9 editions over 18 years –, experimentadesign continues to contribute towards the reshaping of the frontiers of knowledge and aesthetics, through projects that respond to modern-day challenges and generate a positive impact on individual and collective realities.

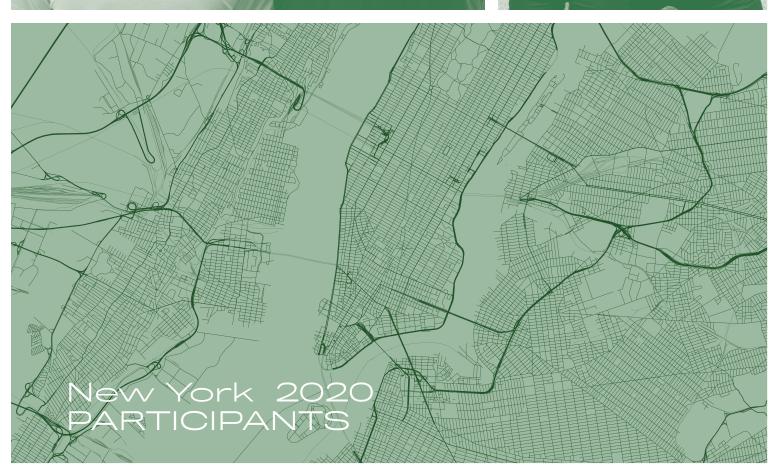
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Participants

Diller Scofidio + Renfro

Founded in 1981, Diller Scofidio + Renfro (DS+R) is a design studio with a practice that spans the fields of architecture, urban design, installation art, multimedia performance, digital media, and print. With a focus on cultural and civic projects, DS+R's work addresses the changing role of institutions and the future of cities. The studio is based in New York and is comprised of over 100 architects, designers, artists and researchers, led by four partners — Elizabeth Diller, Ricardo Scofidio, Charles Renfro and Benjamin Gilmartin.

DS+R completed two of the largest architecture and planning initiatives in New York City's recent history: the adaptive reuse of an obsolete, industrial rail infrastructure into the High Line, a 1.5 mile-long public park, and the transformation of Lincoln Center for the Performing Arts' half-century-old campus. The studio is currently engaged in two more projects significant to New York, scheduled to open in 2019: The Shed, the first multi-arts center designed to commission, produce, and present all types of performing arts, visual arts, and popular culture, and the renovation and expansion of The Museum of Modern Art (MoMA). DS+R was also selected to design Adelaide Contemporary, and the Centre for Music, which will be the permanent home for the London Symphony Orchestra.

DS+R has been distinguished with the first MacArthur Foundation fellowship awarded in the field of architecture, Time Magazine's "100 Most Influential" list, the Smithsonian Institution's 2005 National Design Award, the Medal of Honor and the President's Award from AIA New York, and Wall Street Journal Magazine's 2017 Architecture Innovator of the Year Award.

dsrny.com



Gabriel Calatrava

Founder of CAL (Collaborative Architecture Laboratory), a New York based design studio, Gabriel Calatrava is both a Structural Engineer and an Architect by training. He has worked extensively with his father, Santiago Calatrava, as an architect, engineer and manager of several projects with responsibilities that include coordination, presentation, and client liaising. He has served as the principal-in-charge and project director on many architectural, planning and interior design projects.

In addition to being involved with a number of high-profile projects in partnership with other renowned architects, Gabriel has worked on highly customized residential projects in New York and the UK. Among his accomplishments are designing an apartment at the MoMA Towers where the walls are positioned to create flexible living spaces; renovating the entrance of an old classic cast-iron factory building in Tribeca, and planning the art exhibit layout for renowned sculptor Alexander Calder at the Dominique Levy Gallery on Manhattan's Upper East Side.

Gabriel Calatrava is on the board of directors at the Municipal Arts Society where he is actively engaged in a conversation about 'the city', overseeing several urban design and planning initiatives. Furthermore, extending his commitment to the multidisciplinary nature of architectural practice, Gabriel is a board member at Pioneer Works—a centre for research and experimentation within contemporary culture.

<u>cal.xyz</u>



Leong Leong

Leong Leong is an award-winning architecture and design firm with offices in New York and Los Angeles, that focuses on projects that envision new relationships between culture and commerce, public and private, and the domestic and monumental. The studio's interests are not defined by a particular project type, but by the potential to create environments and objects with cultural resonance.

Leong Leong's design and research process is driven by a curiosity for new organization typologies and aesthetic experiences that offer new ways of living, working, and interacting with one another. Frequently expanding the role of the architect, Leong Leong's approach spans between strategic thinking and material experimentation, from the city to the artifact.

Leong Leong's work includes a wide range of projects and scales including buildings, interiors, exhibitions, and furniture, with completed projects in New York, Los Angeles, Tokyo, Hong Kong, Seoul, Venice, and the Napa Valley. Most recently, Leong Leong won The Architectural League's Emerging Voices Award of 2017 and exhibited work in The Guggenheim Museum Bilbao.

leong-leong.com



Philippe Starck

Inventor, creator, architect, designer, artistic director – Philippe Starck is all of these things and more. Rebellious at heart and with a sense of humour that has transpired throughout his career, his creations have had a profound impact and influence on the development of contemporary design and architecture.

With a profound comprehension of contemporary mutations and a persistent enthusiasm, the work of this French-born architect, designer and art director reflects the imagining of new lifestyles and a determination to defend the intelligence of usefulness and the usefulness of intelligence. This unique and untiring approach has led to creations that implement an anticipatory concern for environmental implications, translated into technological innovations that search for ways to respect the future of both humans and nature.

A true citizen of the world, he has created unconventional places and objects with the clear vision of improving the lives of as many people as possible, understanding that a piece must always be good before it is beautiful. This sense of duty is an essential element of his practice, which has included the creation of everyday products such as furniture and lemon squeezers, as well as revolutionary mega-yachts, hotels and restaurants that aspire to be wondrous, stimulating and intensely vibrant. He was appointed Chevalier des Arts et des Lettres in 1985, and has not stopped collecting international architecture and design awards ever since.

starck.com



Sagmeister & Walsh

Sagmeister & Walsh is a design studio based in New York, led by Stefan Sagmeister and Jessica Walsh. Known for their controversial and irreverent work, they focus on the creation of brand identity, advertising, websites, apps, films, books and objects.

Stefan Sagmeister (1962) studied graphic design in Vienna and New York. After working for Leo Burnett and M&Co, he founded Sagmeister, Inc. in 1993. Alongside his graphic design work, he recently co-directed documentary "The Happy Film". Jessica Walsh (1986) studied in Rhode Island and worked for Pentagram and Print Magazine before meeting Stefan Sagmeister in 2010. Two years after working at Sagmeister, Inc., she was named partner, at age 25. Her book "40 Days of Dating" has been turned into a movie.

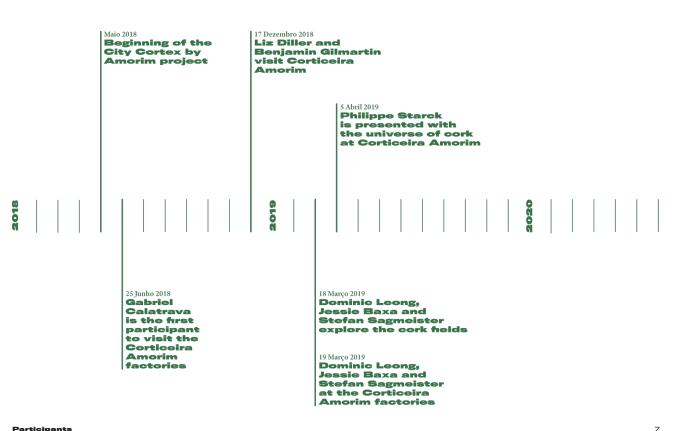
Sagmeister & Walsh have stood out for their strategic approach, having produced work for clients as diverse as the Rolling Stones, Jay-Z, the Guggenheim Museum, Levis, Snapchat, Vitra and the New York Times. Their work has been presented in exhibitions in many cities, including New York, Philadelphia, Tokyo, Osaka, Seoul, Paris, Lausanne, Zurich, Vienna, Prague, Cologne and Berlin.

sagmeisterwalsh.com





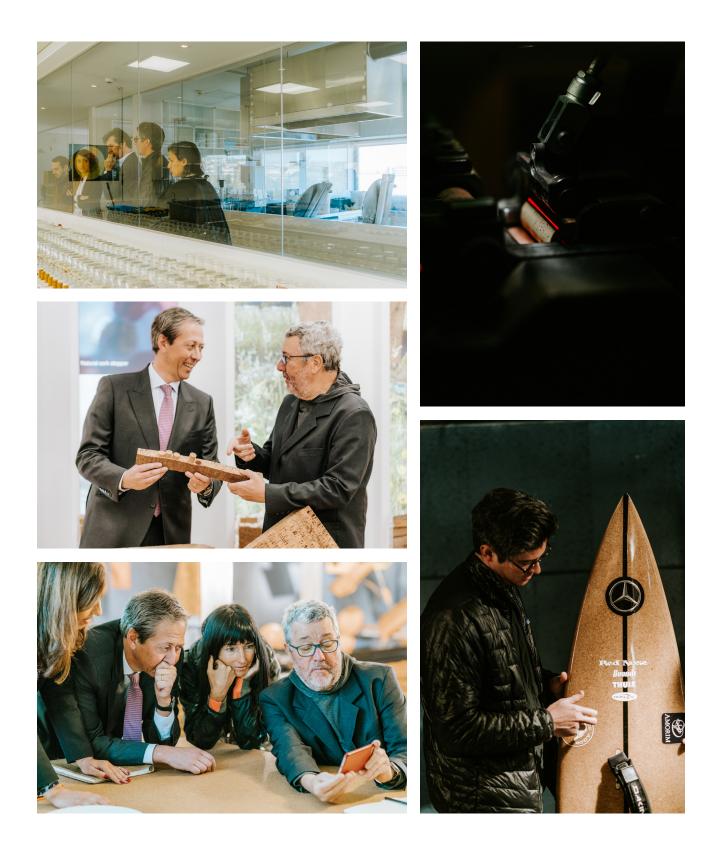
With a strong foundation based on research and investigation, the first stages of City Cortex is comprised of an approximation between the participants and the material they are working with: cork. So far, all of the architects and designers have had the opportunity to delve into the universe of this natural resource, understanding its possibilities and witnessing how it is transformed, used and reused at the Corticeira Amorim factories.











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Cork: Sustainable by Nature

Cork, the raw material that has positioned Portugal as the world leader of an economic sector, is produced by the cork oak tree, or *Quercus Suber*, which is found throughout the entire country, with greater predominance in the South, and a lifespan of around 200 years. It is a 100% natural, renewable, recyclable and reusable material, which makes it a truly environmentally-friendly resource.

The "montados" (or "dehesas", the Portuguese and Spanish terms for forest of oak, holm oak, chestnut and cork oak trees) actively contribute to the balance of the Mediterranean ecosystem, one of the 36 global hotspots of biodiversity: more than 200 animal and 135 plant species live within this habitat.

As a low combustion material, cork makes montados important barriers against forest fires. They also protect surrounding regions from erosion and desertification due to their resistance to warm climate and arid soil. Oak woods are also powerful tools against global warming, for they provide a significant contribution towards air purification and greenhouse gas emission reduction by absorbing volumes of carbon dioxide.

Portugal is the country with the largest extension of cork oak trees in the world, and they are protected by law – it is strictly forbidden to cut them down. The cork industry employs thousands of people, contributing towards its permanence in regions that are highly prone to desertification. According to the WWF (World Wild Fund for Nature) it is estimated that over 100 000 people in Southern Europe and Northern Africa depend on these forests.

Due to its unique features, which no technology has yet been able to replicate, and because it is framed within alternative management and production models and practices, cork truly meets the various needs and demands of contemporary life. It is one of the most sustainable raw materials we have at our disposal, in a moment when the planet calls for the deceleration of production and unbridled consumption, and asks us to adopt human-scaled, Nature-friendly habits instead.



The origins of cork

It is believed that the original point of dissemination of the Quercus Suber tree was the shore of Tirreno, in Western Italy, around the Cenozoic era. The tree then spread further West, having settled in Portugal, in the Spanish regions of Extremadura and Andalusia, on the Mediterranean coast of Morocco and also, although less abundantly, in Sicily, Calabria, Argelia, Tunisia, Sardinia and Corsica.

Throughout History, there have been attempts to plant the cork oak tree in other continents including America and Asia; but even though some of these regions possessed the ideal climate for it to flourish, these attempts were not fully successful. Consequently, it has become increasingly apparent that the cork oak tree has chosen to keep the Mediterranean as its exclusive address.

Before Christ, numerous civilizations were already aware of cork's potential. In Ancient Egypt, for instance, cork was applied in nautical and fishing tools, as well as in sandals – which still happens to this day. Ancient Rome also valued the numerous potentialities of this resource: Romans applied it in rooftops and ceilings for its thermal insulation properties, as well as in pitchers, as a sealant.

Throughout the Middle Ages, monks relied on cork for temperature maintenance and protection by applying it on the walls of their bedrooms. During the 16th Century, this natural resource was used in many Portuguese ships. Since the beginning of Space Exploration, cork has been the insulation solution elected by NASA and by the European Space Agency (ESA), including space shuttles and rockets for an array of programmes and missions, such as Apollo XI, which took the first Man to the moon.

Over the last decades the potential of cork has multiplied, expanding into new territories and applications through a development process heavily promoted by the research and investigation efforts of companies like Corticeira Amorim.



Characteristics

As the outer shell of the oak tree, cork is a natural and renewable plant-based organic fabric. This bark is regenerated by the oak tree after being extracted, meaning that cork extraction is harmless to the tree, and even contributes towards its vitality. Furthermore, cork can be fully recycled and is completely biodegradable.

Around 45% of cork's chemical composition is suberin. The remainder is lignin (27%), polysaccharides (12%), tannins (6%) and ceroids (5%). This odd combination allows cork to possess a truly unique set of characteristics.

| | Thermal and acoustic insulation Cork has low conductivity to heat, noise and vibration because its gaseous components are enclosed in small and impermeable compartments. These groups are isolated from each other by a water-resistant substance, lowering conductivity levels, which in cork are far inferior to those in other materials, making it an excellent resource to control noise and temperature variations. |
|-------|--|
| | Impermeability The presence of suberin and ceroids in the cell walls makes cork an almost completely impermeable material to both liquid and gas. This resistance to moisture also enables cork to age without deteriorating. |
| | Resistant to fire and high temperatures Cork is a fire retardant. It burns without forming a flame and does not emit toxic gases during combustion. Because of this, montados (the cork oak tree forests) are relevant in the fight against the spread of forest fires within their ecosystems. |
| | Friction resistance Cork is resistant to abrasion and has a high friction coefficient. Its cellular honeycomb structure gives it a high resistance level to impact with other materials. This feature is greater in cork than in any other solid surface. |
| ↓ | Elasticity, compressibility and resilience Cork can be compressed up to half of its volume without losing flexibility and is able to recover its original shape and thickness once decompressed. If compressed on one side, cork does not increase in volume on the other, which makes it an adaptable material even in contexts with variations in temperature and pressure. |
| * | Hypoallergenic Cork does not absorb dust, which makes a good ally in the prevention of allergies, considerably reducing risks for asthma sufferers. Its unchangeable constitution also makes it a highly reliable material. |
| | Comfortable and soft to the touch Despite its irregular texture, cork is soft and flexible, making it pleasant to the touch. Today there are countless types of finishings for cork, meaning that there are less rugged as well as soft cork solutions at our disposal. |
| | Lightweight Around 60% of cork's composition is air, which makes it weigh only 0.16 grams per cubic centimetre. |

cubic centimetre.

Uses and Applications

Highly conscious of the endless possibilities of cork, a natural resource which is impossible to be artificially replicated, Corticeira Amorim has been developing a large and diversified portfolio of products and applications for this material. The fact that cork carries an unusual set of characteristics – from being extremely lightweight to its capacity for thermal and acoustic insulation – has allowed it to become a truly valuable resource for several national and international industries.

Among the several possible uses are solutions for:

- \cdot The wine sector;
- The aerospace industry;
- · Sound engineering;
- · Design & architecture;
- · Infrastructures;
- · Floor and wall coverings;
- \cdot Sports.



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