



ARCA is a workshop for creation, experimentation and innovation around wood, known for one of its surprising inventions: Airwood, inflatable wood! ARCA puts its know-how at the service of interior architects, designers, brands, publishers and individuals. We are a 600m² workshop located in Marne la Vallée: woodworking machinery, digital control, 3D printer, varnish and lacquer cabin, tools for metal, composites, plastic, solid surface...



INNOVATION

Arca specializes in innovation through materials. We develop many innovative materials resulting from experimentations, research and traditional or industrial techniques new appropriations.

Bois larmé

Wood reinforced with metals forming tears. Creation of «rapid ornaments» intimately marrying a veneer of fine essence and a non-ferrous sheet such as aluminum, brass, bronze or copper. It makes the wood more resistant to abrasion and impact. We can print grids in 3D in order to control the patterns, dimensions, colors and relief.

After sanding, the grid partially reappears on the surface, creating patterns that can be regular or more erratic, depending on the desired aesthetic. There are two possible results with our Larmé Wood process. The wood can cover the grid or be drilled, offering an alternative to bas-relief sculptures. This technique also allows curved parts.

The maximum achievable area is 2000 x 1000mm. The thinnest thickness is 2mm. We favor dark species with metals because they gray the wood when sanding.

The price per m^2 depends on the quantity, the type of wood and the complexity of the grid. This technology can be combined with C °-Wood.





Bois larmé

We are able to produce checkered wood from several types of wood and with several metal finishes. This technology can be combined with our ° C Wood for making more curved structures.

Non-exhaustive list of possible combinations: Marsh Oak & Aluminum / Copper / Brass Smoked oak & Aluminum / Copper / Brass Santos Rosewood & Aluminum / Copper / Brass Smoked Eucalyptus & Aluminum / Copper / Brass

US Walnut & Aluminum / Copper / Brass Smoked Larch & Aluminum / Copper / Brass Macassar Ebony & Aluminum / Copper / Brass Amara & Aluminum / Copper / Brass











Kellywood Hermès

Full range of marsh oak handbags made with our Bois Larmé innovation. This new version of the historic Kelly bag from Maison Hermès is the result of an extraordinary 2 years collaboration between ARCA and Hermès Sellier.

Hermès- Marsh oak, Aluminum, Varnish- L. 220 W.80 H 180 mm





Zirv

Zirv is a wooden mirror decorated with fake pressure-generated inlays. These are made with our piercing technique inspired by the work of Georges VRIZ. The design is customisable by varying the sanding intensity.

Rosewood, aluminum, mirror, Varnish- L.600 W.230 H.420 mm





CôL

Suspension made with our thermoformable wood called C ° Wood combined with our Bois Larmé. Curves and counter curves are only achievable with our technology.

Marsh Oak, Brass, Ceramic - L. 240 W. 140 H. 150 mm

Folium

Mirror made with our thermoformable wood called C ° Wood combined with our Bois Larmé. The wood is molded intuitively to generate coat hooks, a paperweight or a tablet. Curves and counter curves are only achievable with our technology.

Marsh oak, Brass, Mirror, Varnish- L. 1000 H. 550 D. 150 mm









Dundee

Smoke eucalyptus, aluminum, Varnish- L.750 W.210 H.100 mm

Skateboard whose Bois Larmé pattern is used as a grip, like a crocodile's back. Repeated rubbing will lead the teardrop inlay to appear under the board.







Rotating watch case, its Larmé Wood© surface allows it to resist frictions while being dressed in an innovative marquetry. A counterweight system makes the case and watches visible.

Rosewood, Bird's-eye maple, aluminum, Varnish-L.505 W.205 H.180 mm





Airwood

Also called inflatable wood; the development of this material took 10 years. It allows the production of veneered panels having the particularity of revealing a pattern in a reversible manner. This material is always composed of a rigid support, an elastic membrane and a chiseled face in wood, plastic, leather, ceramic or even cork ... The panel is accompanied by an automated pneumatic device managing air injections and extractions. Manual pumps are also possible.

Patterns, rhythm and movements offer great aesthetic possibilities. Inflation and suction can be orchestrated by music, the presence of people or even let the light pass.

The wood is chiseled in order to allow the rubber to increase the size of the panel surface. These carvings form pavings that can be personalized.









Citroën Logo

Citroën logo made of inflatable wood for motor shows. The brand logo appears and disappears each time the Airwood© wooden surface inflates. A luminous device enhances the visual effect and volume. The marquetry is a herringbone paving.

Oak, Rubber, Varnish L. 2000 W. 2000 P. 40 mm



Saucitronc

Inflatable Airwood© wall panel representing the cut of a tree and the rings of wood. The inflation of the wood is highlighted by a light which passes through the material and reveals the carving.

Walnut, Rubber, Varnish- L. 600 H. 600 PD 50 mm









Heart

the latter's beats.

Stained oak, Rubber, Varnish- L. 600 H. 600 P. 50 mm

Wall panel representing a heart. The appearance and disappearance of the Airwood© pattern reminds of







MatériO' Logo

Material library Matéri'O logo, made with our Airwood© inflatable wood.

Oak, Rubber, Varnish- L. 1000 H. 300 D.30 mm

Plink

Inflatable wooden quadriptych propagating waves. Water drops appear to let the rings inflate and deflate alternately as a reminder of a falling rain poetic scene.

Oak, Rubber, Varnish- L. 1,300 W. 1,300 P. 20 mm















HP Room

Installation representing a 13m² hospital room created for an exhibition at the Palais de Tokyo in Paris. The interior walls of the room are padding and deflating to create a quilted atmosphere and reinforce the scary effect of the room. The inlay appears intermittently to give the impression that the coating has been worn by patients.

CP Poplar, Rubber, Birch, varnish- 12m2





Ludum

A reinvented game table that stores the toys itself. An evolution of our AIRWOOD© technology combined with the bimetal principle. The four drawers are made of C ° WOOD©. Designed in collaboration with Emmanuel Siefert during his thesis at ESPCI.





Oak, Rubber, ° C Wood, Varnish- D. 610 H. 190 mm

ESPCI 🖲 PARIS







Commode ESPCI

A reinvented chest of drawers whose doors open and close by themselves by rolling up. An evolution of our AIRWOOD technology combined with the bimetal principle. Designed in collaboration with Emmanuel Siefert during his thesis at ESPCI.

US Walnut, Rubber, Varnish -- W 1500 H.600 D.50mm

Baromorphe Door

Door using the evolution of our AIRWOOD technology combined with the bimetal principle. Doors roll up and roll down automatically as soon as they detect the presence of a person

Design: ARCA - Partnership with Emanuel Siefert - 3D rendering: Objem Design



NIKE DISPLAY

Presentation and promotion display for the Nike brand using our AIRWOOD technology to showcase a new Nike shoe model. The inflation of the membrane makes the steps appear and disappear leading to the shoe.



Design : ARCA - 3D renderings : Objem Design

Woowood

WooWood is born from the desire to give more functionality to our Airwood technology. This time it is not the air that inflates or sucks the pockets, but the objects that we slide inside. The wood skin follows the contours of the object to let us guess the outlines.

Acting as a tensioner, this material allows objects to be placed in all directions, defying the laws of gravity. Many functions appear under the wood: cable gland, lampshade, coat rack, socket cover, sliding of drawers, clothes, boxes...

A textile is glued inside the pockets allowing items to slide easily.



Squama

Sideboard without doors or drawers, access is through the openings in the marquetry. Each wall is distorted thanks to our WOOWOOD © technology, even the underside of the cabinet. In tribute to animals whose scales deform under pressure of ingested food.

Ziricote, Bird's-eye maple, rubber, Varnish-L.1 200 W.270 H.1 500 mm













Morphoz Renault

Interior plating of the Renault MORPHOZ concept car. Extendable central column integrating AI through microperforations animated by LEDs and a WOOWOOD© zone which deforms to receive your smartphone and act as a car key.

Design: Renault- Wood, Rubber, Smoked oak, Varnish





Made in US Walnut, this playful lamp uses WOOWOOD © technology to offer different types of lights. A simple rotational movement tightens or relaxes the membrane, which changes from diffused light to ambient light. Designed by Gaëtan GUILLAUMIN.

US walnut, Rubber, Varnish- D.150 H.250 mm











Woowall

This wall, inspired by geological faults and using WOOWOOD © technology, is composed of several storage pockets that can accommodate objects on the wall. The pockets testify the high flexibility of the material and give this piece of furniture the appearance of an endlessly reinvented sculpture, according to the shapes of deposited objects

Ash, rubber, Varnish- L.2100 W.1400 D.30 mm



Melt

ARCA made wood as soft as rubber, so why not marble!? Inspired and passionate about the notion of movement and surrealism, this piece of wood seems to melt in a bain-marie and lose its marble heart (Rose of Portugal). Work, but also storage wall thanks to our flexible wood technology WOOWOOD©. Tinéo wood, with its marked grain, reinforces the movement of the pockets.

Tinéo, rubber, Varnish, Pink marble from Portugal - L.1400 H.1900 P.400 mm







Trametes

Console table inspired by rubbery polypores attached to tree bark. Composed of a degraded mirror, recycled plastic shelves, Le Pavé and WOOWOOD© walnut strips. Designed with our intern Lucile CHESNEAU.

Walnut Us, rubber, Varnish, Le Pavé- D1200 P.350 mm





Fugu

Handbag made of WOOWOOD©; it follows the shape of objects much thicker than itself. Design in collaboration with Octave Grehal.

Walnut, rubber, Varnish- L.400 W.30 H.350 mm











Target

A wall board made up of storage pockets and made with WOOWOOD© technology.

Ash, rubber, Varnish- D. 800 L. 30 mm





Gainerie 91 Bottle Box

Drawer box for a bottle of champagne. It protects and reveals the curves of the bottle. Produced for Gainerie 91, a packaging company.

Oak, Rubber, Varnish, Leather- L. 350 W. 150 H. 75 mm



Marsupio

First piece of furniture in WOOWOOD ©. Thanks to a completely flexible wood, cutouts are made on different sides of the desk to contain everyday objects: binders, files, books, pens, mood lamps ...

Outstanding Talent Hand Intelligence Award 2017.

Tulip tree, Rubber, Varnish- L.2 302 W.981 H.1 880 mm















Pulse

Pulse is a wall speaker that uses the sound properties of wood to create and emit sound. Its soft wooden cone WOOWOOD© stretches on ignition and offers a clear and natural sound.

Design : Gaëtan Guillaumin- Metal, MJF 3D printing, Bronze, Rubber, Smoked oak L. 330 W. 330 D. 50 mm









Cartier Showcase

Display watch made for the Cartier house during the Watches and Wonders show at the Geneva show. The Woowood membrane inflates7 and deflates over time and echoes the concept of the flexible Cartier watch.

Design: Agence Red, Rubber, lacquer, H. 1500 l. 830 D. 500 mm



Wonsole

This sideboard can be placed in an entrance, a living room or a bedroom. Subtle veining connections passing over edges and sides are made from the same sheet of ziricote, with no right to error for the craftsman.

Ziricote, Rubber, Textile- L.1100 D.300 H.330 mm









C°- Wood

In theory, we need a mould to bend wood. This die is very expensive to make and is usually financially amortised by the repetition of casting series. By making prototypes, unique pieces or small series over the years, we wanted to create an easily and intuitively bendable wood.

We combined plastic sheets and veneer to find a material that becomes malleable under heat effects.

It can be bent or twisted during cooling using simple tensioners or clamps and avoiding a complex die. There is an approximately 5% distension effect observed according to the radii of curvature. Therefore, the thickness should depend on the design and function of the object.

In order to achieve optimum radii of curvature, it is essential to put the wood grain perpendicular to the direction of bending. To considerably increase these bending radii, we have joined forces with «Bois Dentelle Dalbergia» technology and its microscopic perforations. This technology also works with teardrop wood.





Copardini

Made of thermoformable wood, plastic sandwich and veneer. Perforations signed Dalbergia to reduce the radius of curvature. The goal is to produce curved objects without having to make a mold. Invented in our workshop.

Oak plywood, Plastic, Varnish- W. 300 H. 1000 mm











Arcane

We asked our artist and designer friend Jörg GESSNER to create a piece with our C°-WOOD© in US walnut. He designed and modeled this magnificent piece, full of subtleties and details, where our thermoformable wood is stretched to create a light and resistant seat, inspired by sacred architecture and its ribbed vaults.



Walnut, Plastic, Varnish- L. 380 W 380 H 450 mm





Copal

This colossal copal can be hung from the ceiling or rolled up to structures in order to suit any interior layout. The wood ribbon can twist in any direction to create a light and warm aerial structure.

Colorful Fraké, Plastic, Varnish-Example on the photos L. 10,000 W 3,000 H 3,000 mm











Structure overlooking a dining room on the Grenada Islands (Caribbean). This 60 meter long wooden ribbon is rolled up on itself and maintains its shape thanks to the °C Wood© technology.

Design: AW²- Oak, Plastic, Varnish- L.30,000 W.3,000 H.3,000 mm









Koala

Koala is a Woowood wall sculpture giving the illusion that a hungry animal has torn off the covering of the wall to reveal a second darker wood species through these scratches.

Oak, Plastic, Smoked eucalyptus- Varnish- L.700 W.700 D.75 mm





ArcaBamb Wood Eagle

Design and manufacture of a fairing for a Moto Guzzi Griso using our various innovations. The fairings in C° Wood© follow the shapes of the chassis and will marry the line of the motorcycle. The seat made of Woowood© will reveal or not the saddle of the motorcycle when the ignition is on.

Design: ARCA & Alban Jaunay- Oak, Rubber, Plastic







Schoop Wood

For several years, ARCA has been co-financing thesis on wood at L'école des Mines. We bring our wood expertise to the research and development work of this technology, but also ideas for applications, design, implementation and combinations.

This technology consists in depositing at high speed and very high temperature droplets of molten nanometric material on a wood support, using a cold spray or plasma torch. This process combines materials that were previously impossible to associate structurally.

The agglomeration of these material particles on wood prevents a sticking effect and therefore the presence of polymer. In other words, it is a solder that allows wood properties (insulation, heat, lightness, aesthetics, etc.) to be associated with other materials for their electrical conductivity, hygienic properties, resistance to heat, corrosion, heat or even their ease of maintenance.

For example, thermal spraying can help to restore works by recharging them or by robotising and programming the application. It can also mount 3D volumes like 3D printers in ceramic, gold, titanium, steel, aluminum, glass, stainless steel, zinc ...







Margat

Wenge knife with a stainless steel blade brazed by thermal spraying. ARCA finances and participates in a thesis intended to develop this procedure on wood. Thesis carried out at L'école des Mines. We are pioneers in this area.

Wenge wood, Stainless steel- L. 300 W. 20 H. 50 mm



Kapnos

Smoker created for a great French chef and intended for table service. The interior is coated with aluminum deposited by thermal spraying. In partnership with L'école des Mines.

Cherry tree, Aluminum, Varnish- D. 175 H. 150 mm













Labo

Development of a range of objects on the theme "tableware" in partnership with Alexandre Echasseriau. The aim was to make the thermal projection technique more accessible and open up possibilities. The bi-material allows to mix the warm aspect and the elegance of wood with the insulating, thermal, hygienic properties of metal and ceramic.

Ash, Ceramic, Stainless Steel



INTERIOR DESIGN

All the layout projects imagined by our clients or created by ARCA are carried out in our workshop. In order to optimize costs, we ensure design and site monitoring until the final installation. A 360 °, responsive and flexible approach that allows us to meet different requirements.







Tour Ampère Sogeprom

Spaces designed by Bina Baitel. Production in collaboration with Laurent Lainé for the tapestry.

Designer: Brina Baitel- Oak veneered plywood





Loop

This looping bench is composed of a steel and all beech plywood structure CNC cut. It is covered with a skin of steamed beech battens. Installation carried out for Mercyalis and placed in a shopping center.

Steamed Beech, Varnish- L. 10,000 W. 2000 H. 3000 mm



Cocon

Huge structure allowing passers-by to meet or take a break, integrating two benches in steamed beech.

Steamed Beech, Varnish- L. 6,000 W. 6000 H. 6000 mm















Asas

Custom-made set of fittings for private accommodation: kitchen, doors, oak shelves.

Design: Alix Thomsen- Oak, Japanese paper









CYP

Production of an office and cubicle in veneered and solid oak. This capsule trapped in the frame seems to be in precarious balance. Modular space in the bedroom closing with 4 shutters in order to respect privacy.

Designer: Grégoire de Lafforest- Veneered oak and solid oak, Varnish









Tea Room

Creation of differ for a tea room.

Design: Diane De Kergall- Solid Surface, Brass, Marble, Varnish

Creation of different benches, tables and table base

Rue du Bac RMGB

Interior layout of a private apartment consisting of a dressing room, a row and a bench in stained oak.

Design: RMGB- Stained Oak, Varnish













Amsterdam Elevator

Production of covers for four elevators. Wood panels covered with Sophie Mallebranche metal mesh fabrics. Customized hand grip.

Stained oak, Brass Fabrics, Varnish



Pouget

Custom-made interior and exterior fittings. The arrangement consists of two bookcases, a row, and various storage spaces hidden behind the wall coverings.

Design: Archee, Diane De Kergall-Stained oak, Varnish















Duler

Interior arrangement under one of the many roofs in Paris. Sliding and rotating partitions come out of the closet to create a sleeping area in the living room. Then other drawers, chests, wardrobe, door under curtains, radiator covers ...

Design: GLM Studio- Oak, lacquer



Marignan

Creation of custom interior layouts : guardrails, sliding suspended walls, kitchen, cabin, dressing room, bathroom cabinet, bookcase, oak console.





Design: Diane De Kergall- Stained oak - Apartment of 90 m²











Avignon

Realization of a series of fittings and furniture. These elements include a reception desk, chairs, bookshelves, educational tables, clothes racks, benches and oak-veneer radiator covers.

Design: Berger & Berger- Oak veneer, Varnish









Capestan

Design and production of a custom bookcase and a dining table for an individual. These two pieces of furniture are a subtle blend of oak and swamp oak (ARCA innovation). On the table, the checkered wood fades with a gradation to the light oak sketching a table runner over the entire length of the table.

Design: Arca- Oak, Swamp oak, Aluminum- L.3300 l.1250 H.750mm



Mama Sens Lafayette

Decorative structure in C° Wood© representing a tree. This "dressing sculpture" is adjusted in front of a bar and adorns the ceiling of the Mama Sens restaurant in Galeries Lafayettes. These tortuous and flexible branches come to create plays of height to escape the elements of plumbing and ventilation present on the $35m^2$ of ceiling.

Design: AW²- Oak and Plastic- Surface area of 35 m²













Dragonfly Stair

The stair is the element allowing the transition from one space to another, here it accompanies the passage from the entrance to the living rooms, from the rigor of the outside to the soft family cocoon. A metamorphosis that is expressed formally by a rectilinear threshold, transforming to become more and more organic. We were free to create the central space of this villa hidden in the woods of Brussels, the cradle of Art Nouveau. We have therefore honored this artisitic movement while respecting the work of interieur architecture already validates. It becomes the meeting point for the family around the fireplace, serving as seating, but also a log rack, a platform and a chest. The base parts are made in 3D concrete printing with XtreeE, the central stringer is in steel made by JLM and the wood of the steps comes from an ash tree felled on the property.

Design: Arca- 3D printed concrete, Solid ash, Steel-L.5000 l.2500 h.3000mm









Copal Gainerie 91

In Progress

Creation of shavings in C° Wood. More than 100 meters long, these shavings come from the air to dress the space and design the benches of the entrance as well as the reception counter.

Design: Arca- Oak and Plastic- Length 160 m





InDoor Pool Crans Montana

In Progress

200m² ceiling suspended above a swimming pool in a hotel in Crans Montana, Switzerland. The project is made up of more than 16 kilometers of hexagonal section retified poplar battens held vertically by a suspended stainless steel structure.

Design: AW²- Fireproof retified poplar, Stainless Steel





Drop Off Crans Montana

In Progress

Star-shaped structure suspended above the car access of the Crans Montana hotel (Switzerland). The massive sections follow a random 3D pattern that subtly adorns the ceiling of this entrance.

Design: AW²- Fireproof retified poplar, Stainless Steel





ARCA is the winner of the competitions :





Paul l'helleligense de la vouis











Grandson of a carpenter and Son of an agricultural mechanic, Steven Leprizé spent his entire childhood surrounded by craftsmanship, spending his days in his father's museum workshop, in the sawmill, with his scientist biologist grand brother and in his mother's restaurant. His relationship with materials and enginering became visceral. He trained as a cabinetmaker, among others at the Ecole Boulle Paris, from which he graduated top of his class in 2008. He began his professional career as a cabinetmaker in Paris. He began also to create new esthetics and to developp new materials inspired by movement, surrealism art the traditional craftmanship and the scientist's innovations. To be free to make herself pieces, in 2009 he created the ARCA (Workshop of Research and Creation in Furniture), specialising in cabinet making and developing innovative wood derivatives such as flexible marquetry and thermoformable wood. But also hybrids of wood and metal developed with scientists during theses, or like the Bois Larmé of the KellyWood bag by Hermès.





Steven Leprizé

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