

EMERGENCY!

Designs to combat COVID-19

EXHIBITION AT THE DESIGN MUSEUM
OF BARCELONA · 13.11.2020 - 10.01.2021

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NÚVOL



Ajuntament
de Barcelona

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Designs to combat COVID-19

TERESA BASTARDES AND ROSSEND CASANOVA
Curators of the exhibition

«Design can
save your life»

This exhibition presents a selection of the world of design's many initiatives that provided a rapid response to the health crisis caused by the covid-19 pandemic.

Most of these designs were created at the beginning of 2020, when there was an urgent need to save lives and protect people. Many projects arose during the lockdown, all with a clear objective: designing to be of help.

In our society, information technology and digitalisation have also facilitated collaborative design, a fluid relationship between cross-cutting teams, the opportunity of accessing open-source designs and the chance to use 3D printing in companies, universities, offices or simply at home.

During the lockdown, the Museu del Disseny de Barcelona, which was already aware of this situation, began documenting and selecting the various public and private responses that arose, in order to put together a collection that bore witness to them, paying special attention to protective items, clinical machinery and communicative graphics.

As the pandemic has led to various initiatives arising to meet the needs of the moment, so the collection will continue to grow, in order to show the exceptional nature of this period and the various designs that have helped to save lives. The usefulness of the design was, is and will be, more than ever, a reflection on our times.

«Protecting the people who protect us»

On Diseño, 04/2020



CAR3D prototype face masks, 2020

CIM UPC, Hospital Sant Joan de Déu, BCN3D Technologies, University of Barcelona's research group «gbd...»

Web platform:
www.car3d-project.eu

Production: BCN3D Technologies
Barcelona

Material: PETG

The CAR3D project, funded by EIT Health and the EU, aims to design, develop and validate items of PPE, produced through additive fabrication, which meet all the EU quality and safety requirements and specifications. The project aims to improve Europe's capacity through the use of a web platform that enables validated producers and consumers to contact each other, and where the designs, materials and production centres are uploaded.

The face masks, currently being approved, are made using a certified fabric and a 3D-printed structure. They are separated from the face, making breathing and communication easier, a specific request from the healthcare sector.



**Face masks with filter,
2020**

Covidmakers

Production: various
Catalonia

Material: PLA

Around 13 March 2020, when the lockdown began, a series of people from various professional sectors, along with other enthusiasts, got together under the name of Covidmakers in Catalonia and Coronamakers in Spain as a whole.

The call went out to anyone who had a 3D printer, with the aim of manufacturing items of protection for healthcare personnel who did not have the necessary equipment. In this way, they saved materials, at a time when there were supply problems in the world market for FFP2 and FFP3 technical material. Covidmakers managed to print 3,842 units. The ones on show were printed during the lockdown by Pep Trias i Grau, from the Morillas Brand Design studio.



Protective visors, 2020

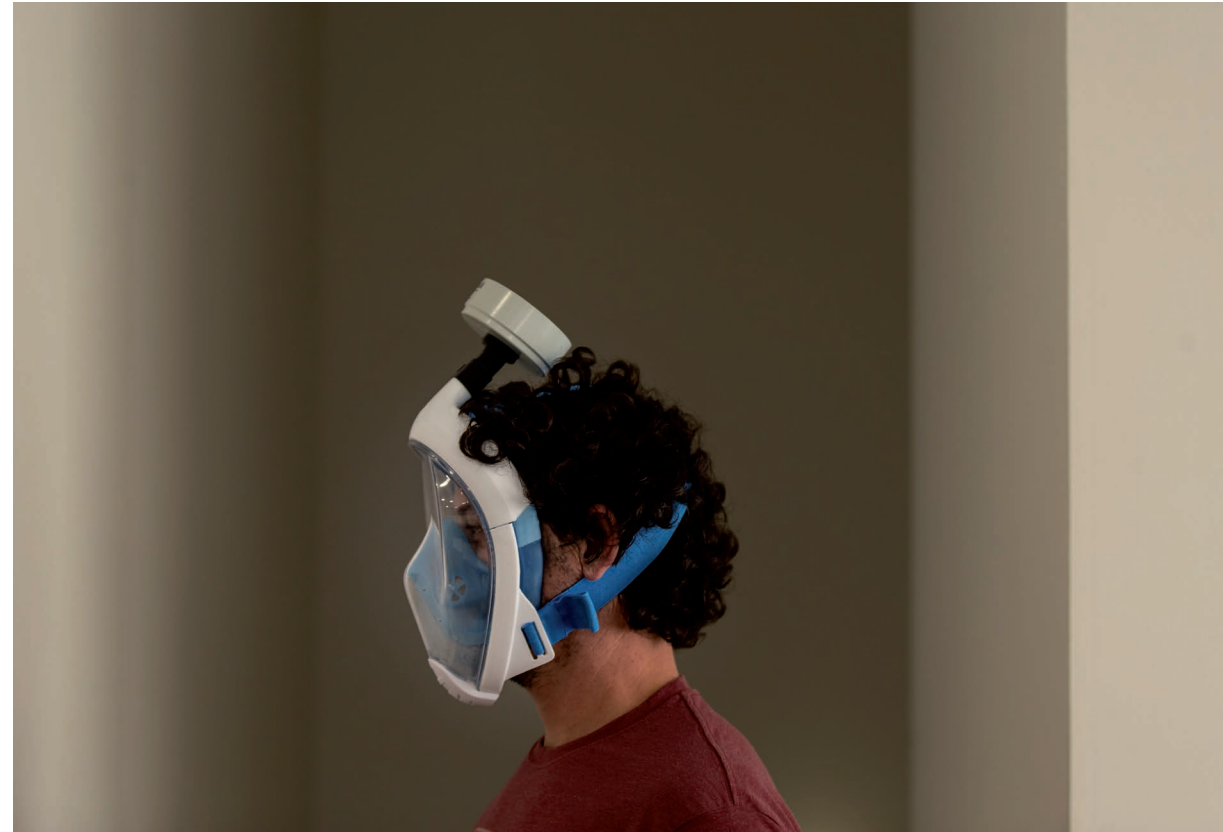
Covidmakers

Production: various
Catalonia

Material: PLA

Around 13 March 2020, when the lockdown began, a series of people from various professional sectors, along with other enthusiasts, got together under the name of Covidmakers in Catalonia and Coronamakers in Spain as a whole.

The call went out to anyone who had a 3D printer, with the aim of manufacturing protective items for healthcare workers, such as this screen, which was the first item to be mass produced. It aims to prevent virus particles impacting on the faces of healthcare workers. Covidmakers managed to print 79,783 units. The ones on show were printed during the lockdown by Pep Trias i Grau, from the Morillas Brand Design studio.



Ear protectors, 2020
Covidmakers

Production: various
Catalonia

Material: PLA

Around 13 March 2020, when the lockdown began, a series of people from various professional sectors, along with other enthusiasts, got together under the name of Covidmakers in Catalonia and Coronamakers in Spain as a whole.

The call went out to anyone who had a 3D printer, with the aim of manufacturing items of protection for healthcare personnel who did not have the necessary equipment, such as these ear protectors, which make it possible for the wearer to adjust their face mask without putting pressure on their ears, thereby offering comfort and safety. Covidmakers managed to print 52,707 units. The ones on show were printed during the lockdown by Pep Trias i Grau, from the Morillas Brand Design studio.

3DDF protective mask, 2020
David Grífols and David Roselló, MOS

Participation: Dr Rafael Padrós

Production: various (3D printing), Blumeprot (injection)
Barcelona

Material: polyamide and polypropylene

The product is made up of two existing elements: a Decathlon snorkel mask and a Camfil filter used in hospital incubators, joined by an adapter designed ad hoc. The contribution of MOS consisted of looking for a suitable filter and designing the adapter between the two items, in order to make it suitable for healthcare personnel.

The piece was initially manufactured with polyamide, using additive printing, so that hospitals could be supplied quickly. A mould was subsequently made to produce them, using polypropylene by injection. The whole project was funded by MOS and Scranton Enterprises.

MOS has supplied centres in Catalonia and the rest of Spain with over 1,200 units, free of charge.



Modified Easybreath mask, 2020

Addit-Ion

Production: Addit-Ion
Collaboration: Decathlon, Hospital del Mar and Hospital Sant Joan de Déu Barcelona

Material: Draft Resin

Technology: Formlabs

This project designs, redesigns and optimises the connectors that make *Easybreath* masks a protective element: the *Charlotte* conversion adaptor turns them into a positive-pressure ventilation mask (PPV) for patients with respiratory problems and the EVA conversion adaptor and the redesigning of the *Juliette* frontal piece makes them a PPE item for healthcare personnel.



protective mask Aleu, 2020

TecnoAteneu Vilablareix, Official College of Doctors in Girona, Eurecat Technological Centre, Prometal3D, Aira Robotics, Soler & Palau, Stimulo, Btwice, Alzamora Packaging, Mateo Jaume Escudero (Tallers Jaume), HP, Artein Gaskets, RQ, Venfilter, LC Papel, Mini Pleat Filter, Voluntaris 3D Garrotxa, Antex, Impremta Pagès, Applus+, Spirex and BLS

Material: TPE thermoplastic elastomer material for injection (mask body); PA12 polyamide thermoplastic material processed through 3D printing —HP MJF— (filtering cartridges); H13 category absolute filters; elastic straps, O-rings and clasps

This is a reusable and reconfigurable mask with interchangeable filters that enable maximum protection from covid-19. It is based on a collaborative design and it is an economically competitive solution that is environmentally sustainable. The design prioritises safety and comfort: the breathability values are up to six times higher than those for conventional FFP2 masks and double those for FFP3 masks.

It is called Aleu in honour of doctor Dolors Aleu i Riera, the first woman to graduate in Medicine in Spain.



MP20 protective gown, 2020
Josep Abril and Miriam Ponsa

Production: Miriam Ponsa
Barcelona-Manresa

Material: Teksilk®
polypropylene fabric,
Velcro® and knitwear

A liquid-repellent gown made from Teksilk® polypropylene fabric, manufactured in El Bages by Polisilk, SA. The lack of PPE or access to it brought designers Abril and Ponsa together to design and produce gowns for healthcare workers in hospitals, residencies and other centres.

Single-size gowns that adapt to all users thanks to the adjustment system at the neck and waist, using strips of Velcro®. They include knitwear cuffs. They can be washed up to 35 times at 60 °C. They can be recycled at the end of their useful life.



Belty foetal belt, 2020
Treematernity

Development and prototype:
Eurocat technological centre
Tortosa, Barcelona

Production: The Canet
de Mar Fabric School,
Barcelona Provincial Council

Material: elastic fabric

This is a single-use foetal belt developed by Eurocat and Treematernity, a Rovira i Virgili University startup created by three midwives working at Hospital de Tortosa Verge de la Cinta: Montse Gasparín, Vanessa Sanz and Mabel Gendre. They created a system that improves the fastening of the maternal-foetal transducers used to monitor fetuses during pregnancy.

Belty avoids the reuse of traditional belts and the bacterial load that this entails, helping to prevent possible covid-19 infection. It offers freedom of movement, eliminates marks on or injuries to the skin, reduces the number of readjustments and the minutes of signal loss. It is presented pre-cut and is easy to apply. It is suitable for water birthing.

«Reusable face masks that promote a change in awareness»

El Mundo Ecológico, 23/10/2020



Face mask, 2020
Miriam Ponsa

Production: Miriam Ponsa
Manresa

Material: Texusilk®
polypropylene fabric and
elastic straps

Face masks made from Texusilk® polypropylene fabric, manufactured in El Bages by Polisilk, SA. The fabric ensures a 97% filtration efficiency for aerosols and 96% for particulates. It can be washed at 60°C up to 50 times and it is recyclable at the end of its useful life.

The design uses a double elastic strap system that helps to better adjust the mask to your face. Miriam Ponsa started to design and produce these face masks at the beginning of the pandemic, due to the scarcity of this product on the market.



Face masks, 2020

Josep Abril

Production: Josep Abril
Barcelona

Material: Nylon and viscose
knitwear

These hygienic masks, made from knitted materials that are soft to the touch and elastic, are ergonomic and comfortable to wear. Josep Abril started to make them for people in his intimate circle, but soon began to market them in order to meet the demand for this product. The colours are from this author's range of fashion collections.



Skut-0 face mask, 2020

Production: Manufacturas
Arpe
Arenys de Munt, Barcelona

Material: recycled polyester

These sustainable masks are made with fabric produced from the recycling of post-consumer PET plastic bottles, with a GRS certificate. They are manufactured in accordance with regulation UNE 0065:2020 and the 2020TM2032 report from the AITEX laboratory, accredited by ENAC. The material is free of substances that harm the environment or people, so they are suitable for children. The energy used in their manufacture is 100 % renewable. They maintain their capacity for bacterial filtration and breathability after 20 washes at 60 °C. They can be personalised with the logo of companies or institutions.



**Filter Mask and Filter
Tube, 2020**
BUFF®

Production: BUFF®
Igualada, Barcelona

Material: recycled polyester
95 %

This is a product made from recycled plastic bottles, obtaining a lightweight, pleasant and breathable material that completely adapts to the wearer's face, covering their mouth and nose. This famous company manufactures accessories for the head and neck, geared towards outdoor sports, and it has made its contribution with this innovative mask and neck tube, which also includes a replaceable filter system. The inner surface is treated with the HeiQ V-Block anti-microbe treatment. The certified filters, made in Germany by Ahlstrom-Munksjö provide 98% bacterial filtration efficiency. They are made in adult and children sizes, and are offered in a wide range of models and colours. They can be washed at 60 °C.

**Closca Mask face mask,
2020**

Carlos Ferrando (CEO
of Closca Design)

Production: Closca Design
Valencia

Material: polyester fabric
treated with CO₂pure

The Closca Mask, originally designed to combat pollution and micro-organisms, suddenly became necessary for a much more urgent problem: the covid-19 pandemic. It is reusable and adapts to various adult sizes thanks to its Velcro fastening and frontal rigidity. It is designed to last, can be washed, and is foldable and comfortable to wear. It has a compartment for the filter. The fabric is treated with CO₂pure, an anti-microbial mineral compound that also protects the planet, because it neutralises pollutants (CO₂, NO₂ and NOx). Safety certified according to European regulation CWA 17553:2020 and with Aitex, Eurofins and Oeko-Tex certificates.

«From fashion shows to making healthcare protection equipment»

Diari Més Digital, 17/04/2020



Face masks, 2020
Josep Abril and Opisso

Production: preparation and
silk-screen printing in local
workshops
Barcelona

Material: TEXSILK®
polypropylene fabric, elastic
straps

They are made from TEXSILK® polypropylene fabric with three silk-screen printed onomatopoeic versions that can reflect your mood throughout the day. The masks have a system of folds inspired by *origami* that facilitates the hygienic protection of the inner part when you are not wearing them.



Face masks, 2020

Jacqueline Molnár /
David Torrents

Production: Flor
de Barcelona
Barcelona

Material: printed cotton

When confronted by the pandemic, Flor de Barcelona decided to offer a new product for local users. In accordance with regulation UNE 0065/2020, the face masks are made out of 100 % cotton fabric, cultivated in Andalusia, and spun and woven in Catalonia by Cotó Roig. Their interior lining is hypoallergenic and very soft to the touch. They have a compartment for the filter.

The cheerful printed designs by Molnár and Torrents aim to foster the hidden smile of both the wearer and those that see it, creating a more empathetic and less socially-distanced atmosphere.

For every unit sold on the website, €1 is donated to the Arrels Foundation.



Face masks, 2020

Txell Miras

Production: Txell Miras
Matadepera, Barcelona

Material: nylon and polyester
fabric with lightweight
ribbons

These hygienic masks are made from a nylon (87 %) and polyester (13 %) fabric that is soft to the touch and elastic, looks like neoprene and is very lightweight. The characteristics of the fabric used by Txell Miras in her latest collection, together with an effective design, make this face mask very comfortable to wear. The adjustment system is a simple ribbon made from lightweight material which is also slightly elastic. It can be tied around your head or simply put in place, as its shape adjusts to your face. It is available in three sizes, including one for children.



Urbanauta face masks, 2020
 Elisabet Alemany Jubert
 and Bàrbara Glenzel Ribas

Production: Urbanauta
 Barcelona

Material: polypropylene

Urbanauta face masks match their popular anti-theft backpacks, are comfortable to wear and are reusable. They can be washed at 60 °C. They adapt to the bridge of the wearer's nose and can be adjusted using straps around the wearer's ears or head. And when they are not needed, they can be left hanging around the wearer's neck, without having to take them off, which helps to keep them hygienic. They ensure over 94 % filtration of aerosols and 92 % of particulates, and have a protection certificate. They are available in eleven colours and three sizes, two for adults and one for children. The fabric is recyclable and water repellent.

PALENS PLNS 1619 face mask with Proveil® filter, 2020
 IATA-CSIC team and Bioinicia

Production: Bioinicia
 Valencia

Material: nanofibre

José María Lanjarón's team (IATA-CSIC), in collaboration with Bioinicia, has developed a new material for filters, based on nanofibres, which is applied on all mask models, including the ones for children. The Proveil® filter is made of this patented material, which acts through mechanical filtration, instead of the more usual electrostatic filtration, a feature that means the masks last significantly longer and are more effective.

The Proveil® filter is a result of projects approved by the CSIC and the Valencian Innovation and Research System (Generalitat Valenciana), as initiatives for tackling the covid-19 pandemic. It has Applus+ certification and complies with PPE-R/0.2.075, version 2.



Visible Mask face mask, 2020
David Artigas and Jordi Boix

Production: Tèxtil Artigas
Lliçà d'Amunt, Barcelona

Material: polyamide fabric

This is a hygienic mask made with a highly transparent fabric developed by the Tèxtil Artigas company. It is an inclusive mask, thanks to the material used, which makes it possible to see the wearer's lips and facilitates communication with others. It meets regulations UNE 0065/2020 and CWA 17553:2020. It is reusable (it can be washed 30 times), very lightweight and is available in various sizes.



Pantalla Covid-19 Mask, 2020
Nagami (Manuel Jiménez, Miki Jiménez, Ignacio Viguera)

Producció: Nagami Àvila

Material: PETG (polietilè tereftalat de glicol)



Gràcia Mask protective face shield, 2020

Joan Ayguadé Jarque

Production: Materia Rica
Barcelona

Material: polypropylene,
transparent anti-static
polyester and polyester
bands

Gràcia Mask is a protective face shield designed to provide a comfortable, practical solution. There are two models of face shield: closing on the chin and neck for comprehensive protection of the face, or open at the chin to be compatible with the use of a face mask.

Gràcia Mask is lightweight and has an optically clear and transparent screen. It is also comfortable to wear, thanks to the adjustable elastic strap, which makes it possible to wear glasses and ventilate the wearer's face. The anti-static material stops anything sticking to it. This product is 100 % made in Barcelona.



CAR3D facial protectors, 2020

CIM UPC, Hospital Sant Joan de Déu, BCN3D Technologies, University of Barcelona's research group «gbd...»

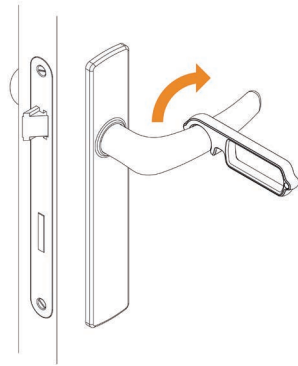
Web platform:
www.car3d-project.eu

Production: BCN3D
Technologies
Barcelona

Material: PETG

The CAR3D project, funded by EIT Health and the EU, aims to design, develop and validate items of PPE, produced through additive fabrication, which meet all the EU quality and safety requirements and specifications. The project aims to improve Europe's capacity through the use of a web platform that enables validated producers and consumers to contact each other, and where the designs, materials and production centres are uploaded.

These protectors are lightweight and transparent, as well as being easy to assemble and maintain. They use the smallest possible amount of materials, which together with the ergonomic adaptation system, makes it possible to do away with elastic straps that may cause allergies.



Anti-covid key, 2020 I-MAS

Production: Proto&Go!
Montcada i Reixac (Barcelona)

Material: polylactic acid (PLA)

The engineering and design company I-MAS, in collaboration with Proto&Go!, the online platform that produces pieces and prototypes through mechanised CNC, have developed this tool to prevent infection.

Its shape avoids the user's hands from coming into direct contact with the handles, knobs and latches of doors, as well as the buttons on lifts, ATM machines, bells and switches which may be expansion points for the virus in public areas, or places that are very frequented. The key can be washed with soap, an alcohol-based solution or in a dishwasher.

The solidarity STL file for 3D printers can be downloaded free of charge. Furthermore, the physical key is sent free of charge to people who do not have this type of printer.



Arm Door Opener, 2020 CIM UPC

Production: BCN3D, CIM
UPC, Campus UPC
Castelldefels, Barcelona

Participation: Barcelona
City Council Fab Labs,
SPMaker in Santa Perpètua
de Mogoda and anonymous
participants

Material: PLA, ABS,
PETG, polypropylene and
polyamide

You can open all communal doors without having to use your hands. It is designed to prevent new infections, taking into account the risk involved in using your hands to open and close doors in communal areas.

They can be made in less than four hours using any domestic 3D printer and replicated worldwide. It has been offered in open source format since March, at the beginning of the lockdown.

It is manufactured in a single piece and is available for doors that open on the left or on the right hand side. It can be assembled in less than one minute with the aid of only three plastic clamps and without any need for technical training or experience.



SafetyBand bracelet and lanyard, 2020
I-MAS

Production: SafetyBand and I-MAS
Montcada i Reixac (Barcelona)

Material: HDPE casing, ABS base and clasp, PE cap, silicon valve, PP strap and lanyard

SAFETYBAND® is a patented Ankuda Union product, developed and manufactured by the engineering and design company I-MAS in Barcelona.

SAFETYBAND® was created because of the need to protect ourselves at a time when biosafety has become essential. It is a bracelet and lanyard that includes rechargeable capsules of hypoallergenic, hydrating gel sanitiser which facilitates hand disinfection, as well as caring for and protecting your skin. It is also safe to use and environmentally friendly.



Evo foot dispenser for alcohol-based sanitiser, 2020
Alegre Design (Sueca, València)

Production: Nofer
Sant Feliu de Llobregat, Barcelona

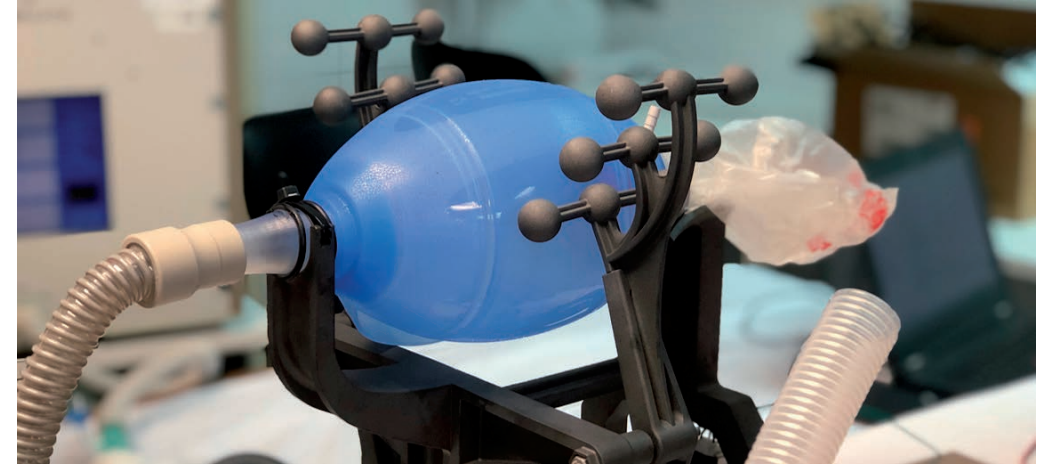
Material: stainless steel

This dispenser is based on an earlier model designed for soap (transformable into foam) which was then adapted to the urgent needs arising from the pandemic. Evo can dispense up to 1,000 ml of alcohol-based sanitiser. It can be fixed to a wall or supported with a foot, in order to move it according to needs.

It runs off batteries (giving a warning when they are about to run out) and can be connected to the grid using a transformer. It discharges gel automatically using an infrared sensor. On one side there is a level gauge to monitor the amount of gel remaining and the upper part has a security lock.

«The first field respirator using 3D technology is being designed in Catalonia»

Diari Ara, 22/03/2020



Leitat 1 respirator, 2020

Magí Galindo and the Leitat R+D team

Participants: Leitat (Tecnio), HP, Zona Franca Consortium (CZFB), Hospital Parc Taulí de Sabadell, CatSalut and the Terrassa Healthcare Consortium (CST)

Production: Leitat Terrassa

Material: mechanics, connection accessories, casing and sensor placement, printed in 3D via MJF

This is the first field respirator that is industrialisable in 3D, prepared to support hospitals and ICUs. It became completely functional with patients in just over a week.

The final version of the respirator includes flow and pressure sensors, has frequency and inspiration-time control and programming, control of supplied volume, inspiration pressure and PEEP, as well as alteration-detection alarms, in order to facilitate its use by healthcare personnel and ensure its functionality.

The Leitat 1, medically validated and approved by the Spanish Agency for Medications and Healthcare Products, is scalable at an industrial level, with a production capacity of between 50 and 100 units a day.



Leitat splitter, 2020

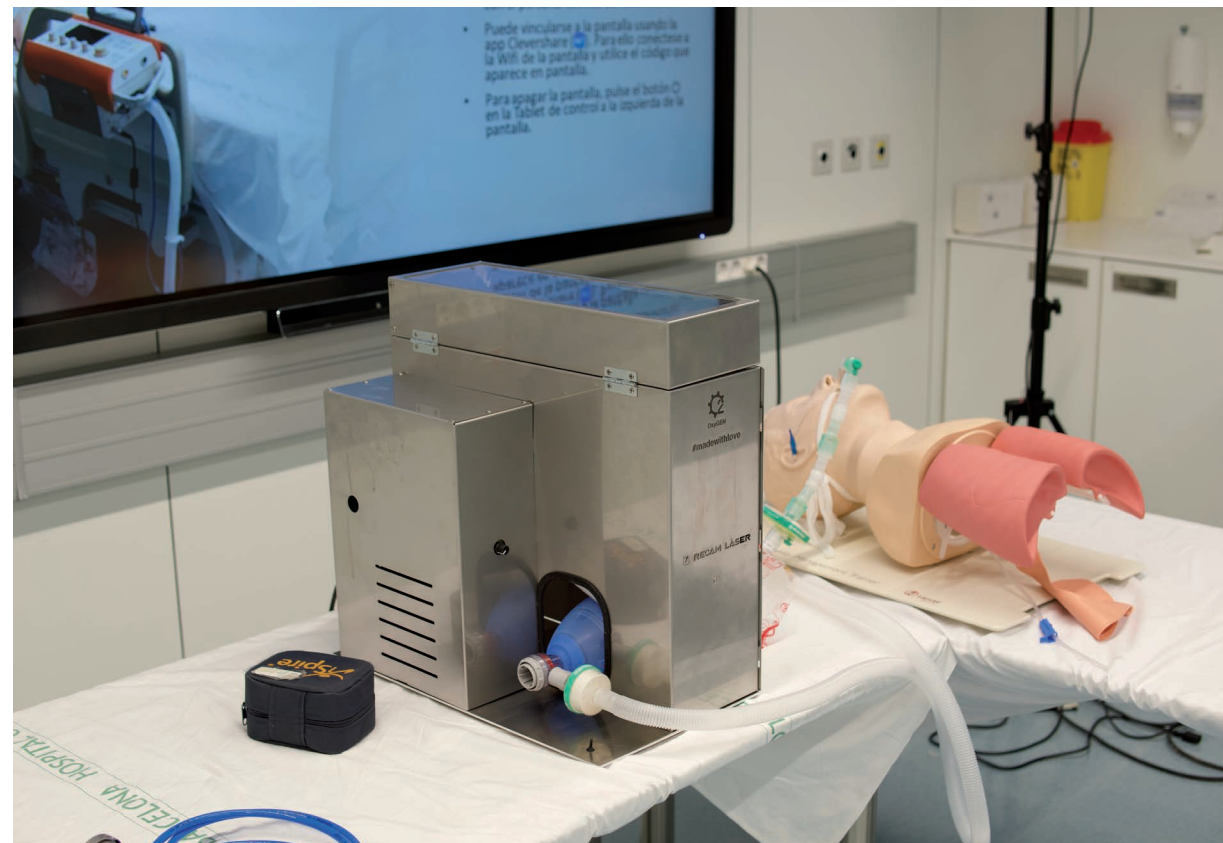
Magí Galindo and the Leitat R+D team
Participants: 3DSix, Avinent-Corus, Barel, Eurecat, CIM-UPC Foundation, Hipra, HP, Ineo, Pantur, Prometal3D and the CZFB 3DFactory Incubator. Medical validation from the intensive care units at Hospital de la Vall d'Hebron and the Terrassa Healthcare Consortium

Production: Leitat
Terrassa

Material: polyamide 12 (PA12)

The lack of assisted respirators led to the development of this splitter, which makes it possible to use one respirator for more than one patient simultaneously.

By March 2020, the alliance between the Zona Franca Consortium (CZFB) and Leitat had started to produce the 3D-printed splitter using HP's Multi Jet Fusion technology. A group of companies and institutions voluntarily produced 17 pieces for uninterrupted printing, eventually producing 1,000 units a week.



OxyGEN respirator, 2020

Protofy (Ignasi Plaza, CEO)

Participation: Germans Trias i Pujol Institute (Hospital de Can Ruti) and Hospital Clínic

Production: SEAT, Clúster Igualada and Recam Làser Barcelona

This is the automation of a manual resuscitator, run on a motor for windscreen wipers which, when connected to a cam mechanism, makes it possible to control the volume of air, the inspiration-exhalation frequency and curve.

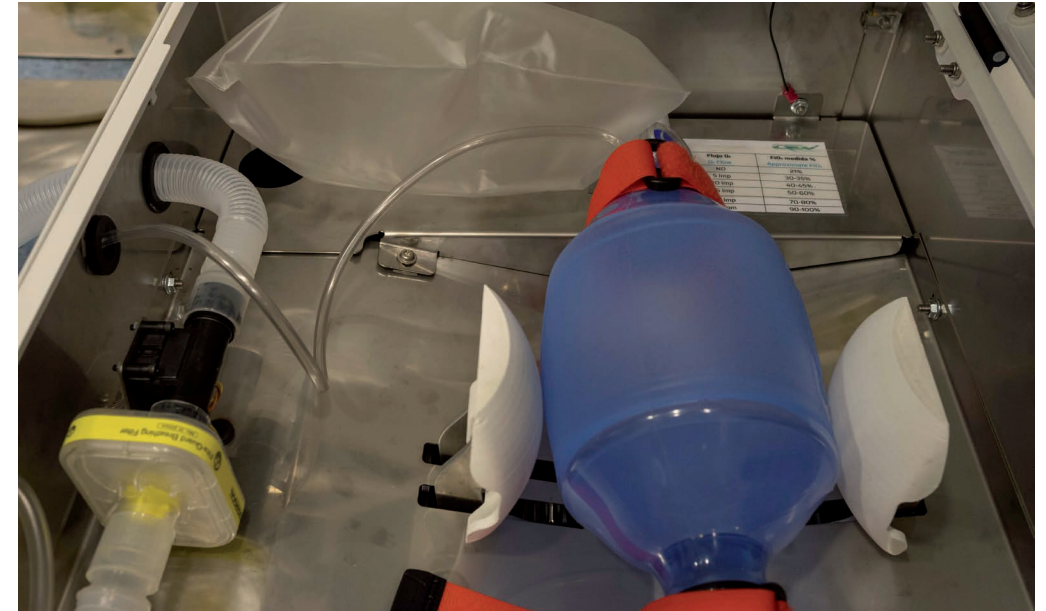
Protofy develops products through prototyping and agile methodology. They created this respirator in seventeen days, co-designing it with healthcare teams and with the participation of a large number of professionals used to working on open projects. We display four of the prototypes and the definitive respirator.

It is produced in various countries, adapted to the materials available in each place.

It is authorised by the Spanish Agency for Medications and Healthcare Products for use in clinical trials.

«They are designing a new portable respirator to supply ICUs»

L'Econòmic, 16/04/2020



Q-VENT respirator, 2020
QEV Technologies and the
Hospital de Sant Pau – IIB
Sant Pau Research Institute

Participants: Hospital de
Sant Pau – IIB Sant Pau
Research Institute, QEV
Technologies, Eurecat
Technological Centre
and Nissan

Production: Nissan,
Zona Franca
Barcelona

Materials: automated action features for the manual resuscitator, case and components (stainless steel sheet metal and mechanical elements). Drive-system and mechanical components made using FFF 3D printing in polyamide and selective laser sintering in polyamide. Purpose-designed hardware panels. Certified commercial flow meter and valves. Manual resuscitator components: from healthcare certified materials available on the market

The Q-Vent respirator has been created for use in hospital ICU units around the world. It is portable, low-cost, easy to use, robust and reliable. It has been designed for use in emerging countries with accessibility, flexibility and reliability features. It enables control of the oxygen frequency, pressure and volume values provided for the patient and includes a safety system with acoustic alarms and an interior auxiliary battery with a duration of at least 36 minutes. The device is monitored and controlled by computer, with remote connectivity that does not require configuration, so that it can be used immediately.



Respira respirator, 2020

Pau Sarsanedas (CEO of GPA Innova)

Participants: The Generalitat de Catalunya's Department of Health, the Catalan Healthcare Institute, Hospital Germans Trias i Pujol and the University of Barcelona

Production: GPA Innova, Siemens and MAM Barcelona

Material: sheet-metal casing

Respira automates and controls a manual resuscitation balloon (BVM or AMBU) operated by a piston system that is already available on the market, turning into an emergency respirator suitable for medical use. It was developed by the GPA Innova team, made up of around thirty engineers and designers, and within a few days it was already being used in Hospital Clínic as part of a clinical trial authorised by the Spanish Agency for Medications and Healthcare Products. The software developed by Siemens controls the volume and pressure. It includes an alarm and a remote control system for controlling up to sixteen respirators.

3D-printed face mask, 2020

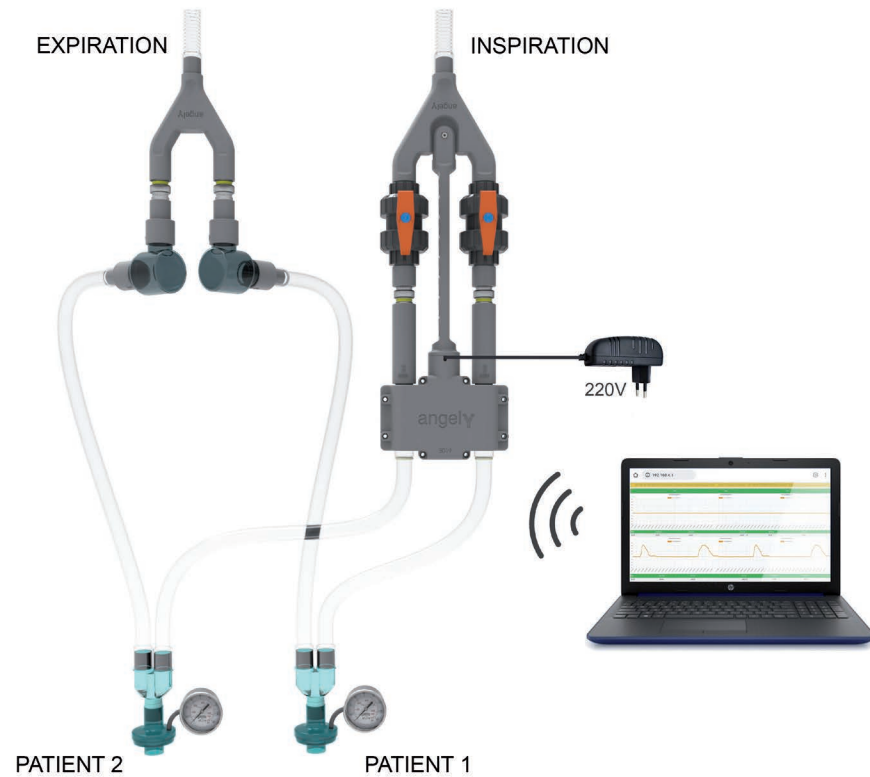
Addit-Ion

Production: Addit-Ion
Collaboration: Hospital del Mar and Hospital Sant Joan de Déu Barcelona

Material: PA12 and TPU
Technology: HP Multi Jet Fusion

This is a 3D-printed mask for use with CPAP machines (continuous positive airway pressure), which maintains air-tightness in order to assist the patient and facilitate a non-invasive ventilation treatment.

The project arose from an imminent stock shortfall of these masks in hospitals.



Angel-Y valve, 2020

Marc Real, Minnim Design

Participation: Germans Trias i Pujol Institute, Hospital Clínic and Draco Systems (software and electronics)

Production: HP
Barcelona

Material: polyamide PA11 and PA12, MJF Multi Jet Fusion technology

Angel-Y is a valve that makes it possible for an approved respirator to serve two patients at the same time, maintaining each patient's air volume and pressure requirements. It consists of two pieces, one for inhaling and the other for exhaling air. Foreseeing the lack of respirators at the beginning of the pandemic, the Germans Trias i Pujol Institute commissioned Minnim Design. The project was developed in only nineteen days. After carrying out tests on animals, it started being used in Barcelona's Hospital Clínic. All the participants worked altruistically.



MTS uvc robot for disinfecting surfaces, 2020

MTS uvc team

Production: MTS tech
Esparreguera, Barcelona

Material: sheet-metal casing for the base and UV-C light with methacrylate protection

MTS uvc is a robot for disinfecting surfaces of bacterial and viral cells.

MTS tech, a company specialising in high tech for automating warehouse management, had already developed a robot. They had been working for months to include ultraviolet light into the robot's design, for disinfecting the warehouses. By the time the pandemic appeared, the robot had become suitable for many other locations, from hospitals to offices. It has a programme with the scanned space and works autonomously by projecting an ultraviolet beam in a radius of about 2.5 metres.



AMS Mini air-management system, 2020
R+D+I FICEP S3

Production: FICEP S3
Vilassar de Dalt (Barcelona)

Material: PA12

This air steriliser was first conceived for the drying system of the daVINCI line of paints, the first system capable of generating dry air temperatures of up to 167°C using 37 KW, while generating zero emissions and without burning any fossil fuels.

With the arrival of covid-19, it was adapted to purify air, removing almost 100% of the active pathogens the captured air contains. The result is the same air, but dry and sterilised.

It is made using 3D fabrication and treats incoming air through a wide spectrum of UV light inside a cyclonic maze, before expelling it through its upper end. The resulting air contains no bacteria, micro-organisms or viruses.



Inflatable field hospitals, 2018

Eduard Pagès,
Tecnodimensión

Production: Tecnodimensión
Hinchables SL
Besençó, Girona

Material: PVC

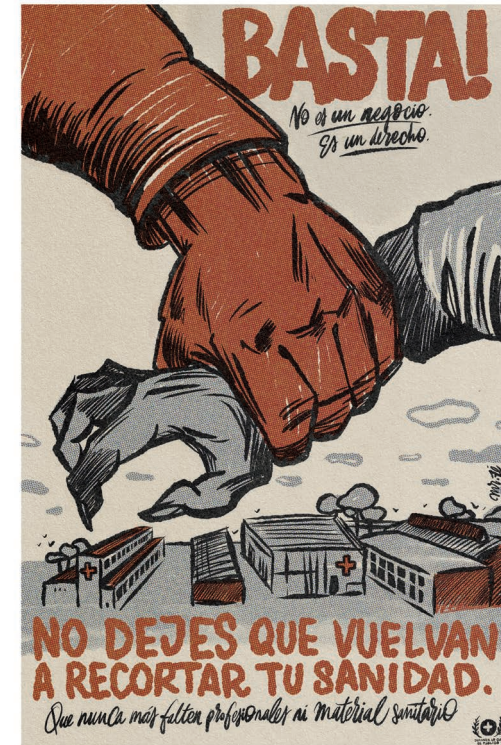
Tecnodimensión Hinchables have been building these hospitals of up to 1,000 square metres (around 100 beds) since 2018, thanks to an order from a medical instrument company in Mexico. With the appearance of the covid-19 global pandemic, this exceptional structure has become more necessary than ever for rural areas that don't have the means to set up field hospitals.

Their large size is achieved through careful design, as if they were patterns from the textile sector. Once all the pieces have been joined together, there is a chamber of air that acts as a wall. They include an anchoring system, in order to carry out interior separations.

The production process takes about five weeks, while the in situ assembly is ready within a few hours. They include generators.

«Living in the era of coronavirus»

Diari Ara, 2020



Solo el pueblo salva al pueblo (Only the people save the people) posters, 2020
Mr. Zé

Production: Félix Rodríguez
Valladolid

Material: digital printing

Félix Rodríguez, Mr Zé, is a designer and artist who is famous for his artistic calligraphy, as well as for his political activism and commitment. During the first days of the lockdown caused by the covid-19 pandemic, he started to create these posters, clearly based on the well-known artists from the time of the Spanish Civil War. His work, disseminated on social media, shows how posters continue to be a powerful communication tool, although they have now been displaced by other means. This is an extensive collection and some of his posters have ended up being displayed on the streets of various cities in Latin American countries.



Graphic project
«Coronavirus postcards»
2020
 Javier Jaén (Barcelona)

Publishers: The New York
 Times (New York)

«Postales del coronavirus» (Coronavirus postcards) is a graphic project by the artist Pablo Corral Vega, promoted by the Spanish edition of the The New York Times, which presents a collective, digital-format written and visual diary that started during the pandemic to show that readers were not alone in the uncertain situation. Javier Jaén's graphic project is part of that series of articles, testimonies to a time marked by despair, fear, isolation, uncertainty and, at the same time, hope, solidarity and the support of others.

The project communicates the voices and experiences of those who, in spite of being in isolation, shared the exceptional nature of the pandemic. The stamps are witness to this.

ESTO PASARÁ

ESTO PASARÁ

ESTO PASARÁ



La comunidad creativa propone
 proyectos e iniciativas que mejoren la
 vida en tiempos de COVID-19



Visual identity
#EstoPasará, 2020
 Ibán Ramón

Publishers: Valencia World
 Design Capital 2022
 Valencia

#EstoPasará is a collective design and creativity platform in the era of covid-19, promoted by the Valencia World Design Capital 2022. This open, global and digital platform brings together ideas, projects and initiatives which, using design as a creative tool, help to improve people's lives during this pandemic.

Visual identity is the responsibility of the Valencian designer Ibán Ramón, who specialises in corporate-identity, editorial design and graphic communication projects. This graphic project features black on a white background using various typographies and lines, which encourage reflection during a time marked by the health crisis.



**T-shirts and sweatshirt
from the «Born in
Quarantine» collection,
2020**

Desficio

Production: Desficio
Valencia

Materials: 100% spun and
brushed organic cotton
(T-shirts) 85% spun and
brushed organic cotton,
uncombed towel material,
15% recycled polyester
(sweatshirt)

Desficio is a fashion and accessories brand that was created in the second week of the lockdown. Their collection features very direct graphics with phrases originating from the crisis: «Face mask. Gel. Distance. It's that simple» (*Responsable* T-shirt), two mobiles as affection between people (*Conexión* T-shirt), the phrase «If you can read this, you're too close» (*Distancia* T-shirt) and an allusion to the coronavirus (*Fuckovid* sweatshirt).

With its «Born in Quarantine» collection, Desficio donates 100% of the profit to the actions of the «Red Cross Responds» plan for the health emergency.



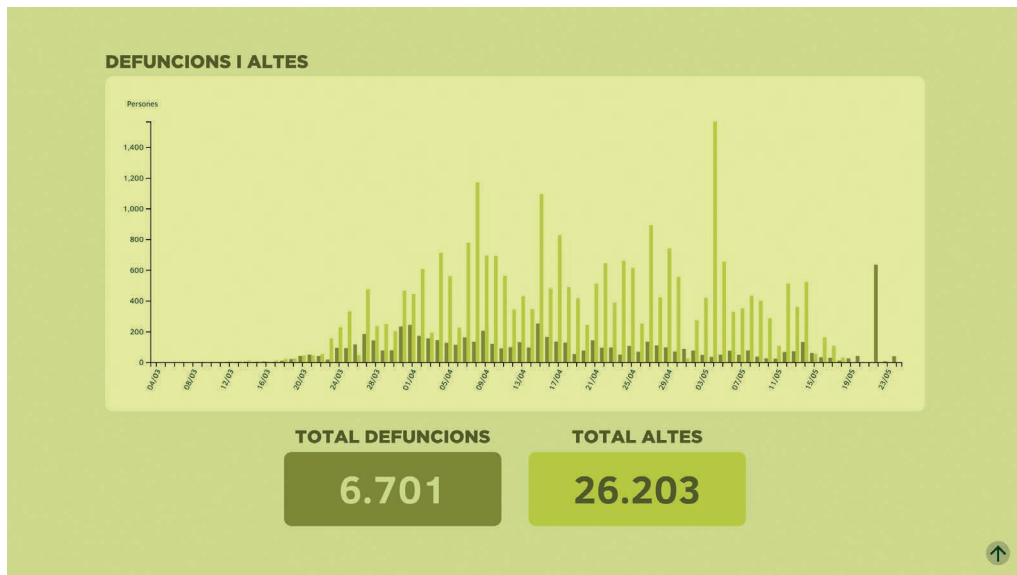
T-shirt, 2020

Txell Miras

Production: Txell Miras
Matadepera

Material: printed
cotton fabric

The fashion designer Txell Miras, trained in Fine Arts, usually includes a T-shirt in her collections which features the image of a woman that she has drawn herself. She has created various versions of what seems to be the same woman and it has almost become a symbol of the brand. This year, during the lockdown, the author did not hesitate to pay her own particular tribute to healthcare personnel and conduct a solidarity campaign: 20 % of the sales price is allocated to Doctors without Borders.



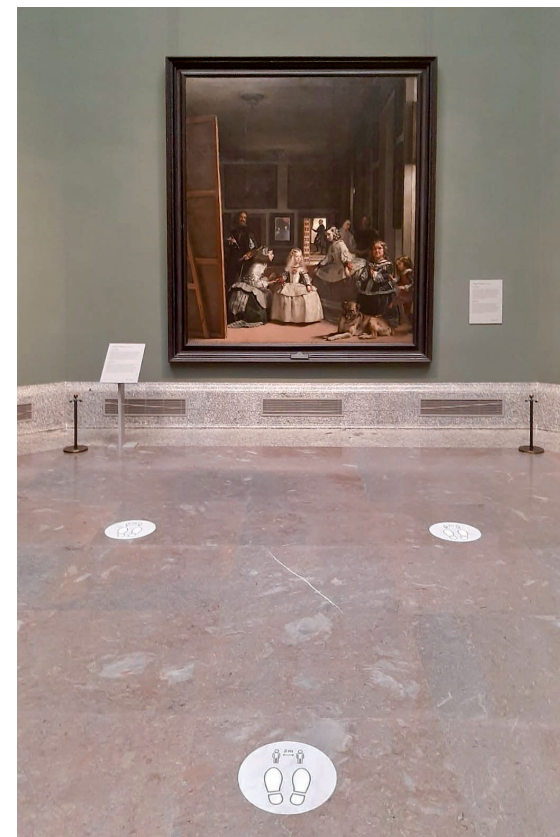
Covid-19 infographics, 2020

Albert Carles (Barcelona)

From the beginning of the lockdown, the designer Albert Carles offered the visualisation of data relating to the covid-19 pandemic on his website. The design consisted of a simple infographic that showed the evolution of cases, deaths and bed occupation in Catalan ICUs. It was automatically updated every day. The data were taken from the Datadista repository, which extracted them from the complicated Ministry of Health PDFs. This was an attempt to make incomprehensible data visible and clear for most of the population.

The diversity of criteria used in compiling the data led to some of the graphics showing incomprehensible readings and revealed the need for establishing unified criteria.

On 24 May, the datadists stopped sharing and the project was interrupted.



Covid-19 signage, 2020

Signes team

Production: Signes
Barcelona

Material: vinyl

Signes has designed and manufactured a new collection of signage for healthcare protection, taking into account the recommendations of the Public Health Agency of Catalonia, the Ministry of Health and the WHO. They have created a family of signage items that are elegant, up to date and neutral, which can be adapted to any kind of space. They offer items ranging from mandatory pictograms and informative messages to arrows and lines indicating safe routes, developed in three colour ranges: blue, grey and black. These items are useful for any company, business or other organisations, which have been able to rapidly obtain signage to adapt their spaces and communicate recommendations to their employees and service users in a simple, clear manner.



#yomequedéencasa (Istayedathome) cup, from the «Born in Quarantine» collection, 2020
Desficio

Production: Desficio
Valencia

Material: white ceramics

Desficio is a fashion and accessories brand that was created in the second week of the lockdown. Its designers chose the Catalan term *desfici* (which means uneasiness), and made it a bit more Spanish so their public would understand it, as it was the word which best summarised the general mood.

The cup is entitled #yomequedéencasa (Istayedathome) and evokes the cyberactivist movement #YoMeQuedoEnCasa (I'mstayinghome), which appeared on Twitter on 11 March, with the aim of promoting social lockdown in order to stop the spread of the pandemic in Spain.

With its «Born in Quarantine» collection, Desficio donates 100 % of the profit to the actions of the «Red Cross Responds» plan for the health emergency.



Balcony bag from the «Born in Quarantine» collection, 2020
Desficio

Production: Desficio
Valencia

Materials: 80 % recycled organic cotton and 20 % recycled polyester

Desficio is a fashion and accessories brand that was created in the second week of the lockdown. Their collection features very direct graphics with phrases and drawings arising from the crisis.

This bag is entitled Balcony and evokes the relationship that arose among neighbours during the pandemic, from applauding healthcare and front-line workers to conversations between neighbours or the fact that balconies became the only available outdoor space during the lockdown.

With its «Born in Quarantine» collection, Desficio donates 100 % of the profit to the actions of the «Red Cross Responds» plan for the health emergency.

«Emotional adverts and models wearing masks: marketing in the pandemic era»

Diari de Barcelona, 20/08/2020

4 de setembre de 2020

Mesures extraordinàries de /Salut per evitar els brots de la COVID-19 a les escoles

- No es pot accedir al centre educatiu en cas de tenir una temperatura superior als 37,5° o altres símptomes compatibles amb la COVID-19.
- Totes les persones de més de 6 anys han d'entrar al centre amb la mascareta ben posada.
- Als passadissos també s'ha de dur la mascareta.
- Cada classe es considera grup estable de convivència (alumnes + professor). Un professor només pot pertànyer a un grup estable de convivència.
- L'ús de la mascareta serà obligatori a secundària i en el cas de primària, s'haurà de portar quan ho determini la situació epidemiològica.
- El contacte entre altres grups/classes es veurà limitat i s'haurà de fer respectant les mesures de seguretat (mascareta i distància).
- Es reforçarà la neteja, ventilació i desinfecció dels diferents espais del centre.
- Es garantirà l'accés a gel hidroalcohòlic i/o sabons allà on sigui necessari per fer una higiene de mans freqüent.
- S'implantaran mesures específiques per a les entrades i sortides al centre.
- S'ha d'evitar compartir estris i dispositius i si es comparteixen han d'estar desinfectats prèviament.
- Els docents i professionals dels centres educatius han de portar la mascareta i respectar la distància.

Al menjador

- Cal rentar-se les mans abans i després de dinar.
- No poden seure junts els alumnes de diferents grups estables.
- No es poden compartir estris ni menjar.

Al pati

- S'ha d'estar amb el grup estable de convivència.
- L'ús de la mascareta serà obligatori a secundària i en el cas de primària, s'haurà de portar quan ho determini la situació epidemiològica.
- No es poden compartir estris, joguines, ni menjar.

Per a més informació, consulta canalsalut.gencat.cat/salutescola

Generalitat de Catalunya

/Salut

«Tria/Salut, protegeix-te»
(Choose/Health, protect yourself) poster, sticker, fan and pin, 2020
Evil Love

Publishers: Catalan Health Service
Barcelona

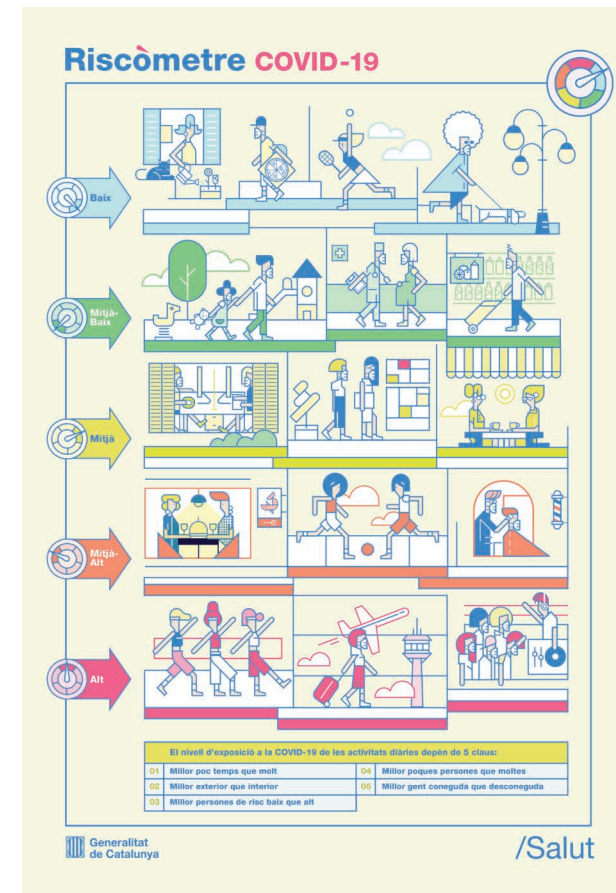
The Department of Health's 2020 summer campaign aimed to raise the population's awareness about the need to continue applying hygiene and social-distancing measures in order to reduce the risk of covid-19 transmission, while also preventing the negative effects that heatwaves and over-exposure to the sun have on our health, especially for more vulnerable groups.



«Invierno #CAPFRED»,
(Winter #Nocold) campaign
poster 2020
Evil Love

Publishers: Catalan
Health Service
Barcelona

The winter campaign has four main objectives: making people aware that the pandemic is not over, that they have to remain alert about the appearance of possible symptoms and get informed about what to do if they have them, as well as insisting on the importance of the early detection of cases and the identification and monitoring of close contacts. It promotes the flu vaccination among high-risk groups and especially among healthcare professionals. It offers health advice to prevent winter illnesses (colds, flu, bronchitis, etc.) and fosters the proper use of healthcare resources, promoting remote care channels in order to avoid excess pressure on the system.



«Riscòmetre covid-19»
poster, 2020

The User Empowerment
Division of the Area of
Citizens, Innovation and
Users. Catalan Health
Service in Barcelona

Publishers: Catalan
Health Service
Barcelona

This is a poster showing how city residents are exposed to covid-19, making it possible to evaluate the risk of infection involved in daily activities, such as shopping, doing sport or going out to dinner. The aim is to raise people's awareness about the risks they are exposed to while carrying out their daily activities.

The Riscòmetre covid-19 [riskometer] graphically explains the level of exposure and aims to help city residents to evaluate the risk, according to the duration of the activity, whether it is indoors or outdoors, the number of people taking part, if they are people they know, how forcefully people are exhaling and the tone of voice they are using.



#EnsEnSortirem video, 2020

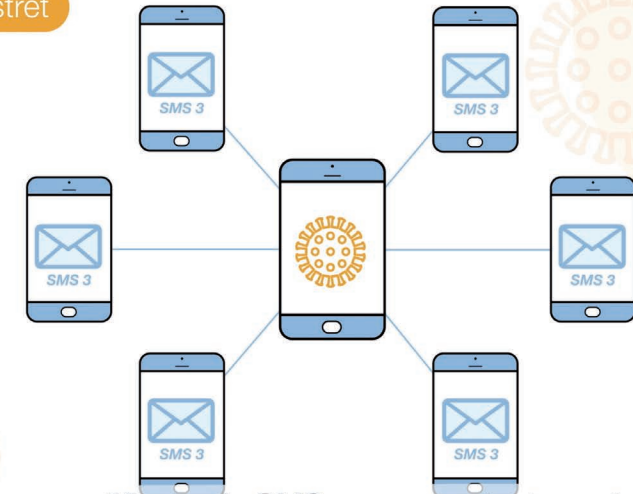
Generous collaboration of the Catalan School of Marketing and Communication

Publishers: Catalan Health Service
Barcelona

The #EnsEnSortirem (We'll get out of this) communication campaign aimed to foster and acknowledge all the efforts the general public made by staying at home. Broadcast in the media and on social networks, this was the second phase of a campaign under the slogan #JoActuo (I Act). It hoped to respond to the citizen's movement that arose spontaneously and included all the gestures of solidarity, neighbourly collaboration and social initiatives.

City residents were able to take part by expressing their support for healthcare professionals and getting involved in the struggle (first phase of the campaign), and the campaign appealed to emotion in order to foster solidarity and citizen collaboration (second phase).

Contacte estret



seran notificats via SMS com a contactes estrets

STOP COVID CAT application, 2020

Publishers: Catalan Health Service
Barcelona

The «STOP COVID19 CAT» application (operational since 18 March 2020) is a digital tool that makes it possible to monitor and watch over covid-19 cases.

It has the following uses:

- Monitoring and reporting on symptoms
- Providing information on the measures and directives for the self-management of the illness
- Ensuring access to the health system, as it is able to create alerts in primary care and in the SEM medical-emergency systems, in order to activate their response operations
- Carrying out patient monitoring by the health system

«How do you make young people aware of the coronavirus risk?»

La Vanguardia, 10/08/2020



«La Mercè 2020» poster and pennant, 2020

Reskate (Minuskula (María López and Javier de Riba)
Barcelona

Creative director: Nacho Padilla and Barcelona City Council

Publishers: Directorate of Communication. Barcelona City Council

This is a poster for the La Mercè festivities marked by the pandemic. It has certain a Modernista inspiration and pays tribute to the Virgin of La Mercè, the patron saint of the city since 1687. At that time, Barcelona residents turned to her in order to overcome a plague of locusts. Today, when a new sickness is afflicting the city's population, La Mercè is represented as a respectful girl who invites us to protect nature. She is holding a locust in her hand, in front of her face, which seems to show the smile hidden behind the face mask. An invitation to the fiesta, in spite of the complex current situation.



«From home» posters, 2020

Koln Studio (Madrid)

Creative director: Nacho Padilla. Barcelona City Council

Illustrations: Miguel Camprubí

Publishers: Directorate of Communication. Barcelona City Council

This is an official communication campaign that uses the «From Home» tagline as the main reference. Using a highly-identifiable graphic code and illustrations, it is used to communicate anything to the general public, from generic information to specific details. For example, it includes the written press and Barcelona City Council's social-media outlets, as well as the specific *ensensortirem.barcelona* website, with information that is up to date and adapted to each phase.

«From Home» is part of the Ens en sortirem (We'll get out of this) campaign, which Barcelona City Council is promoting in the city to lift the mood of city residents.



«Lifting the Lockdown Restrictions» posters, 2020

Familia (Barcelona, 2017)

Creative director: Nacho Padilla. Barcelona City Council

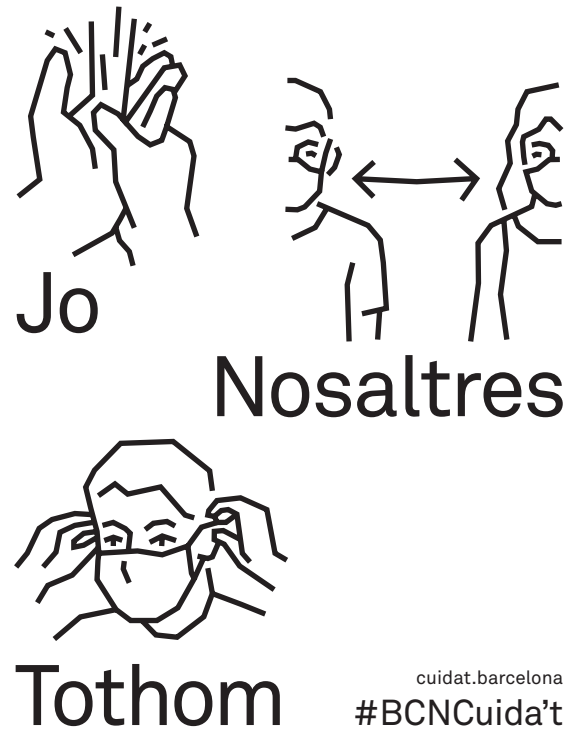
Illustrations: Forma & Co.

Publishers: Directorate of Communication. Barcelona City Council

This is an official communication campaign used as a system for disseminating information about the lifting of the lockdown restrictions. The system has common features in all of its pieces which identify them with covid-19, while also being sufficiently flexible to include recommendations, obligatory messages, multi-messages, etc.

It presents a recognisable, accessible design that is easy to read, with the aim of calling attention, as well being easily identified as part of a communication system.

It is part of Barcelona City Council's «covid-19 Measures» campaign to help safeguard the health of city residents.



«Jo, nosaltres, tothom»
(Me, us, everyone) poster,
2020
Familia (Barcelona, 2017)

Creative director: Nacho
Padilla and Barcelona City
Council

Publishers: Directorate of
Communication. Barcelona
City Council

This is an official communication campaign used during the lifting of lockdown restrictions to make the general public aware of the importance of respecting basic safety measures: distance, hands and face mask.

Its apparently simple design responds to the need for communicating the three health measures in a way that makes the campaign as little like a 'campaign' as possible, so that the poster seems to be an informative piece with a forceful, direct and simple message.

«Me, us, everyone» is part of the «BCN cuida't» campaign promoted by Barcelona City Council to help safeguard the health of city residents.

«EMERGENCY! Designs to combat COVID-19»

Exhibition at the Design Museum of Barcelona · 13.11.2020 – 10.01.2021

Organisation

Museu del Disseny de Barcelona

Director

Pilar Vélez

Curators

Teresa Bastardes and Rosend Casanova

Coordinators

Àngela Cuenca and Adriana Mas

Registration

Laia Callejà and Carla Planas

Preventative conservation

MDB Conservation Team

Space design

Adriana Mas

Museographical features

Sarquella Torres for FAD

Mannequins

Pasqual Arnella

Graphic design

Noelia Felip

Museographical montage

Buit Taller

Audiovisual montage

DS Systems

Graphic production

Serper

Press

Divina Huguet and the MDB
Communication Department

Photography and filming

Josep Abril, Addit-Ion, Ankuda Union, Joan Ayguadé Jarque (photo: @chojnacka), Arpe, Bioinicia, BUFF®, Albert Carles, CAR3D, Eurecat Technological Centre, CIM UPC, Closca Design, Desficio, Barcelona City Council Communication Directorate, FICEP S3, GPA Innova, I-MAS I PROTO & GO!, I-MAS I SafetyBand, Javier Jaén, Leitat, MTS tech, Minnim Design, Txell Miras, Jacqueline Molnár and David Torrents, Morillas Brand Design, MOS. More On Simplicity, MTS tech, Nagami, NOFER, Opisso Studio, Miriam Ponsa (photos: Roc Burgstaller and Eva Bozzo), Protofy xyz, QEV Technologies, Félix Rodríguez, Catalan Health Service, Signes, Tecnodimensión, Tèxtil Artigas, Treematernity, Urbanauta Barcelona, Valencia World Design Capital 2022

The Museu del Disseny de Barcelona would like to thank all the donors for providing these exhibits.

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Ajuntament
de Barcelona