

UDQ

Q1 2018



**ULTRA
LONDON REDRESS
THE TRUTH ABOUT SUSTAINABILITY**

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Welcome

Welcome to our first newsletter of 2018. I can't believe that it's March already and Spring is now upon us. Hopefully, we have seen the back of the snow and bitterly cold weather.

We have started the year with the same exuberance and vigour that we finished last year with and are working through many new custom client projects, new ranges and technology launches.

Our continued aim is to support all of our clients and potential clients through the tough economic climate that retail finds itself in currently, so please do come and talk to us if you have projects and need help to work within your budgets. More than ever, our mission is to give you added value without compromising on design, quality or service.

We will be busy in the first half of the year with both the new NYC Partners for Creative Retail Market Week (May 21-25) and the VM & Display Show in London (18th & 19th April) where we will be launching even more product. We hope to see you there, however if you can't make these dates our London and New York showrooms are open for business to suit your schedules.

Our new website is up and running, giving you more information on our products and services at your fingertips. It is constantly being updated so please take a look regularly between newsletters for updates. You can also follow us on Instagram, Twitter and Facebook.

Over a long period of time we have been researching and innovating in sustainability and recycling of our products in order to do our bit to look after our already fragile earth. In this newsletter we have shared this information with you and hope that you find it interesting and of use.

As always, we have tried to present you with an informative newsletter and hope that you enjoy it.

Jonathan

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Preview at the VM & Display Show on 18th & 19th April 2018. Business Design Centre Islington, London.

ULTRA
UNIVERSAL DISPLAY



SUSTAINABILITY: 'GREEN MANNEQUINS'

The family of plastics remains a favoured material in the manufacturing of mannequins- it can last for years, it's easy to mould into form, and it has a cheap cost in comparison to other materials. The vast majority are made using fibreglass, making it the most ubiquitous form.

These polymers are virtually all derived from oil, non- biodegradable, and difficult or harmful to recycle/reuse due to their complex composites. Whilst the industrial method for obtaining these monomers hasn't changed much over the last 60 years through the fractional distillation of crude oil, the situation has. There are increasing environmental pressures to find new ways of making plastic if we want to continue to use them. We only have to look at the 'Garbage Patch' covering over a million square miles of the Pacific Ocean with plastic waste too tough for bacteria to break down, and odd fragments of plastic ('mermaid tears') that continue to wash up on shore. This island of plastic debris highlights the seriousness of our dilemma. Being environmentally conscious is not a fad as more companies move away from these plastics in a 'post-petroleum' world, in favour of bio-based or biodegradable alternatives.

Whilst bioplastics remain a minority and currently only represent 1% of the total plastics market today, this is projected to grow continually (15% increase from 2013 to 2016 alone). At Universal Display we pride ourselves in being forward thinking, and the environmental repercussions of our production lay at the forefront of our business decisions, which is why we are championing this cause.

01 WHAT IS CURRENTLY AVAILABLE ON THE MARKET?

FIBREGLASS

Fibreglass is currently the most widely used material for the manufacturing of mannequins, with a balanced ratio of weight and sturdiness. A lighter and stronger product results in lower costs for shipping and storage. This composite can therefore deliver great styling and appearance, whilst also being cost-effective.

Since fibreglass is a very sensitive material and cannot withstand shock or fall, this material is disadvantageous in that it requires extra care in its handling. That being said, with the proper care fibreglass structures provide an exceedingly good life span. It can also be easily painted over and changed into different looks where necessary, making it a cost-effective way to replace and repair parts.

As we know to date, it is not recyclable and the chemicals used in its production are not overly kind to the environment. All we can do is be more careful in our practices and means of manufacture, thus using less material, reducing pollution from extracted fibreglass dusts and resins, and using water based paints.

Given that it can be moulded into almost anything to meet most specifications, with few constraints on size, shape, colour and finish, fibreglass has given designers unlimited possibilities and creative freedom that other materials cannot.



METAL

This is the most recycled material in the world. The obvious problem with metal is that it is mined and all types of mining have a devastating effect on the environment. Steel mining leaves scars on the landscape and surface mining used to extract aluminium employs vast quantities of poisonous chemicals which leak into the ground and contaminate the earth and water for miles around after its extraction.

The technology in place for processing scrap metal is extremely advanced and uses fewer resources than the recycling of other materials. In terms of visual impact, metal if used correctly can look sharp and stunning. We can produce wire forms both in the UK and Far East, which can work well. We currently manufacture types of draping stands for many brands which work in conjunction with paper forms or hangers, which again are well designed and visually pleasing as well as functional.

25%

100%

The pro is that metals are 100% recyclable, i.e. they can be recycled without losing any of their properties.

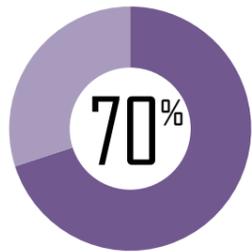
Recycling metal is straightforward due to its magnetic qualities making it easy to sort, melt down and reuse. In fact, at least 25% of all metal product that you buy is made from recycled steel.

PAPER

With advances in technology and processes, recycled paper can now replicate the same performance as non-recycled paper.

Research and innovation in the industry now means printing on recycled paper does not mean approaching the design or printing process in a different way.

Overall, paper is the greenest option, using less energy and producing lower carbon emissions than other sourced materials.



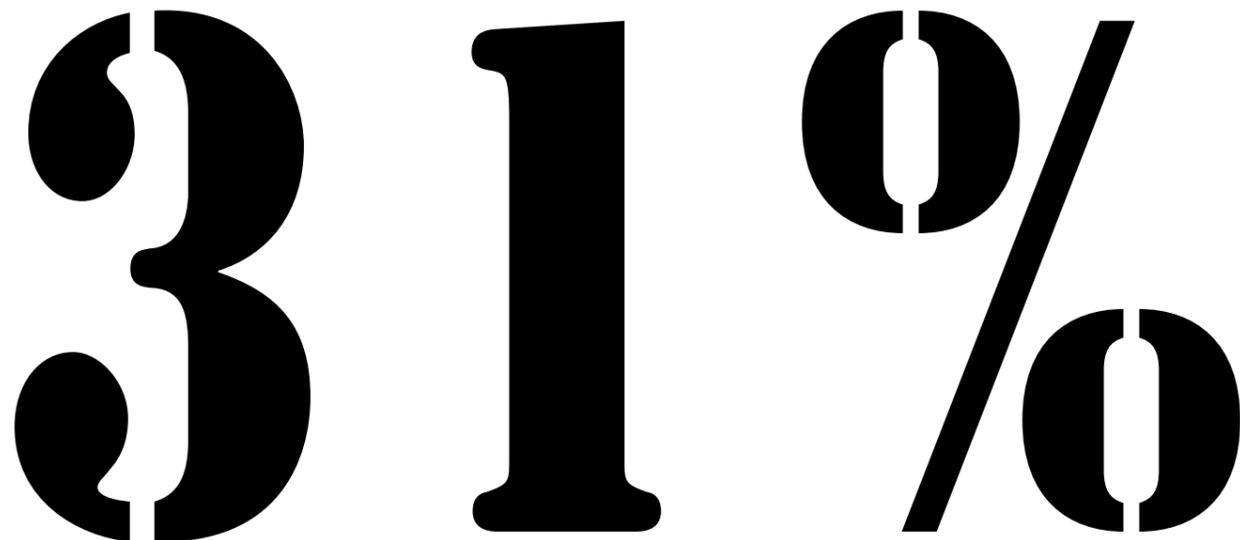
Over 70% of the fibres used to make paper in the UK come from paper collected for recycling.

We propose manufacture from recycled paper, such as grey board and kraft paper, even newspaper. As this is low grade paper it can be recycled back to egg cartons, insulation or animal bedding. Although, about a third of all material will end up as sludge. This being a solid waste comprising of small fibres, glue, etc. that has been filtered during the recycling process. Traditionally this waste has been consigned to the landfill. However, new alternatives are currently being explored, including composting, incineration and recycling in the form of gravel and concrete.

Again, we can produce with metal or plastic arm, wrist, and waist fittings which can be reused or recycled. We can also spray in water based paint and cover in fair trade cottons and fabrics to give the result of a high-end product, which says 'environmentally friendly', without looking as if it has been made using such materials, i.e. raw. Visually, we can produce a well developed product at a reasonable price. However, in comparison to the more popular materials, plastic and fibreglass, this may not execute the same detail, juxtaposing from their elegant and feminine poses.

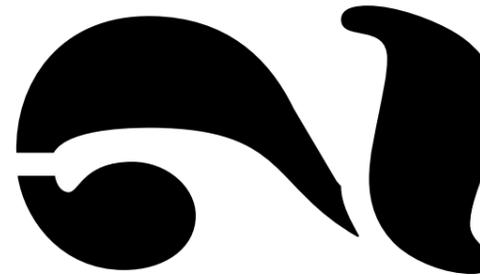
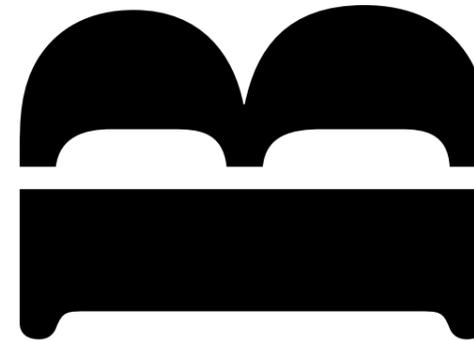
I feel that this type of product is a real forerunner as not only is it the best product in terms of raw material, its manufacture is non-polluting. Recycling is thought to be cost and energy efficient and emissions are virtually none. As it is a handmade item, we can manufacture in developing countries such as the Philippines which will support communities and give financial assistance to a struggling economy. Further to this, there is an alternative for paper pulp product, although not a used, tried or tested application for this industry it is completely possible.

If new timber is sourced for whatever reason we would be sure to use wood which has been originated via the FSC or shows their logo (Forest Stewardship Council).



The process of creating recycled paper uses 31% less energy than the creation of virgin fibre paper.

PLASTIC



Plastics are recyclable, but this has a number of problems. Due to their long molecular structure, they are too large and too tightly bonded to be broken apart with ease, which is a problem given the disposable nature in which we consume plastics. The main problem being that there are various polymer types and they must be recycled separately and at this time there is no way of doing this mechanically.

Therefore, most sorting is done manually into type and colour which is expensive and time consuming. Products with different colours and different types of plastic mixed together are very difficult to recycle. There is an argument that in these cases, the energy and resources used in the recycling process exceed that required to make new plastic. PET is the most efficiently recycled material and is 100% recyclable. About three quarters of reclaimed PET is used to make fibres for carpets, fibrefill, apparel and goetextiles. The remainder is typically extruded into sheets for thermo-forming, stretch blow moulded into containers or compounded for moulding applications.

Alternative to landfill, due to the calorific value of plastic, is incineration for energy recovery. As plastic is an oil based substance, this pollutes the atmosphere with carbon dioxide, contributing to climate change. The chemicals used in its production are then released again in its incineration.

The largest issue is that in the manufacture of these materials 8% of the world's oil is used, harmful solid wastes are produced as well as carbon dioxide, nitrogen oxide and sulphur dioxide emissions. This is coupled with the fact that certain chemicals used in the manufacture of the raw material are thought to be hazard toxins.

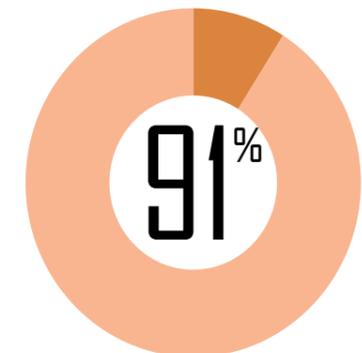
Finally, it appears that plastics are virtually non-biodegradable. Therefore, unless incinerated or recycled they could be around for many hundreds of years.

Polymer compounds can survive for many centuries before nature is able to degrade it, anywhere between 400-1000 years.

Meanwhile they continue to clog our waterways, forests and other natural habitats.

By 2015 humans had produced 6.3 billion metric tones of plastic waste, only 9% of that was recycled, and 79% was discarded in landfill. This is set to increase to 12 billion metric tons of public waste to end up in landfills or the natural environment by 2050.

To tackle this, a global approach is needed to rethink product design and recycling strategies.



According to Natural Geographic (2017) 91% of plastic still is not recycled.

Plastics - PET, MDPE and PS are all viable materials to use in the manufacture of mannequins and forms. The versatility of plastic is an obvious advantage, which is well suited to the requirements of mannequins. The low melting point and high malleability in comparison to other materials, means it can be formed into basic and complex shapes, poses and finishing textures with relative ease. Plastic possesses great structural strength, a much needed quality for mannequins to stand freely. By changing components of the structure, you can control properties of the final product making one of the most versatile materials available today. All of these qualities enable mannequins to better emulate the appearance of a real person with realistic facial and body features.

The set up costs in manufacturing plastic are high, but the unit cost is lower than other products in a run scenario. As the production is mechanised, the product needs very little attention once removed from the moulds.

We have already implemented an environmentally friendly means of packaging, reducing 70% of the bubble wrap and foam used. However, whilst we have the need to reduce the impact on the environment, there is not an adequate replacement for some of the packaging materials used that are essential in delivering a great quality product produced in this material.



Its durable nature means it can offer a longer shelf life (up to 6 times longer) than other materials and withstand the rigours of shipping. In terms of convenience, it's also less expensive.

From a business and consumer point of view this is of benefit as orders can be completed in less time, with a faster moulding process, and thereby delivered at a cheaper price.

BY

02 THE FUTURE OF MANUFACTURING: NEW ALTERNATIVES

The selling point is that the main resource required is a by-product of the meat industry, and therefore readily available inexpensively and in abundance (with an estimated excess of 3 billion pounds of chicken feathers plucked each year in the United States alone).

POULTRY FEATHERS

Feathers are composed almost entirely of keratin, a protein that is responsible for the strength found in hair, wool, fingernails, and horns, making them a suitable plastic substitute.

First, feathers are cleaned and pulverised into a fine dust powder. Once processed with a chemical methyl acrylate they undergo polymerization, which results in films that have been termed 'feather-g-poly (methyl acrylate)'. This protein offers the strength, durability and tear-resistance of plastic that other agricultural sources including plant proteins and modified starch cannot. This has proved to have tensile strength better than that of wood whilst still exhibiting flexibility, and offer values similar to that of polypropylene.

Besides making use of feather which would have otherwise ended up occupying space in landfill sites, it is anticipated that this resource is fully biodegradable- with no archeological sites containing reservoirs of feather, leading us to believe that feathers break down over time. In addition, unlike most other thermoplastics, this doesn't depend on any fossil fuels making this one of the most eco-friendly plastic substitutes.



MILK PROTEIN

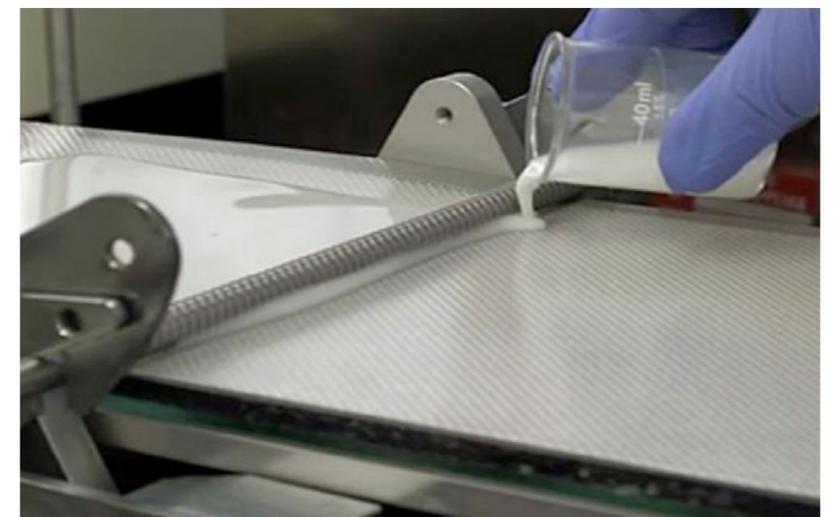
Once used to make buttons, adhesives, and a jewellery substitute, researchers have revitalised the idea of using casein, a protein found in milk, to make biodegradable material. These polymer chains of casein have been shown to mould plastic to rival the stiffness and compressibility of polystyrene.

Previously researchers found this protein to be too fragile and dissolve in water. Casein is now blended with a small amount of silicate clay and reactive molecule glyceraldehyde to prevent cracking. Once freeze-dried and cure in the oven, this has the potential to be used in furniture cushions, insulation, edible packaging and other commercial products.

Despite this, there are implications on the dairy industry. With water consumption, water pollution, and the greenhouse emissions produced by cows, this contributes to a significant environmental footprint. In this respect, this is merely shifting the environmental burden from being fossil fuel based, to other areas.

33%

The best part about milk protein as a plastic substitute is that the plastic has been shown to break down by as much as 33% within 30 days of being in a landfill, making it biodegradable.





Currently, the pulp industry produces in excess of *130 million pounds of lignin a year, making it widely available and with sustainable potential.* Furthermore, 30% less energy is required in its production because the temperature profile is significantly lower compared to conventional plastics.

130M

LIQUID WOOD

As paper manufacturing companies are made more aware of the environmental impact of importing wood, they are looking for new uses for parts not incorporated in the production of paper, using liquid wood to make their case. This biopolymer is derived from pulp-based lignin, sourced as a residue from paper mills. To transform this into the structure of a plastic, lignin is combined with nothing more than water at an extreme temperature and pressure is applied.

According to manufacturers this bioplastic, referred to as Arboform, can be mixed with hemp, flex or wood fibres alongside other additives where petroleum based plastic is currently being used. Whilst relatively new to the market, German researchers have already succeeded in using the composite in the production of children's toys, hi-fi speaker boxes, car parts, 'eco pump' shoes, and golf tees.

Liquid wood has immense environmental potential as Arboform only releases quantities similar to that of wood (carbon dioxide and water), that plants have found from the atmosphere during their growth. Once broken down into small pieces and re-processed 10 times, no change in the material properties was detected, making it recyclable.

This combines the stability of wood, with injection-moulded capabilities of plastic. Under the right conditions, this material behaves like melted plastic and possesses its flexibility and durability. The bio-plastic looks and feels like wood but its ability to change shape lends much greater design possibilities. Researchers from Fraunhofer Institute for Chemical Technology



Dubbed the 'Green Steel' of the 21st century, The 2015 World Architecture Festival predict that bamboo will 'revolutionise the building industry', and go forward to replace steel as the dominant reinforcing material.

BAMBOO FIBRE AS REINFORCED POLYMER COMPOSITE

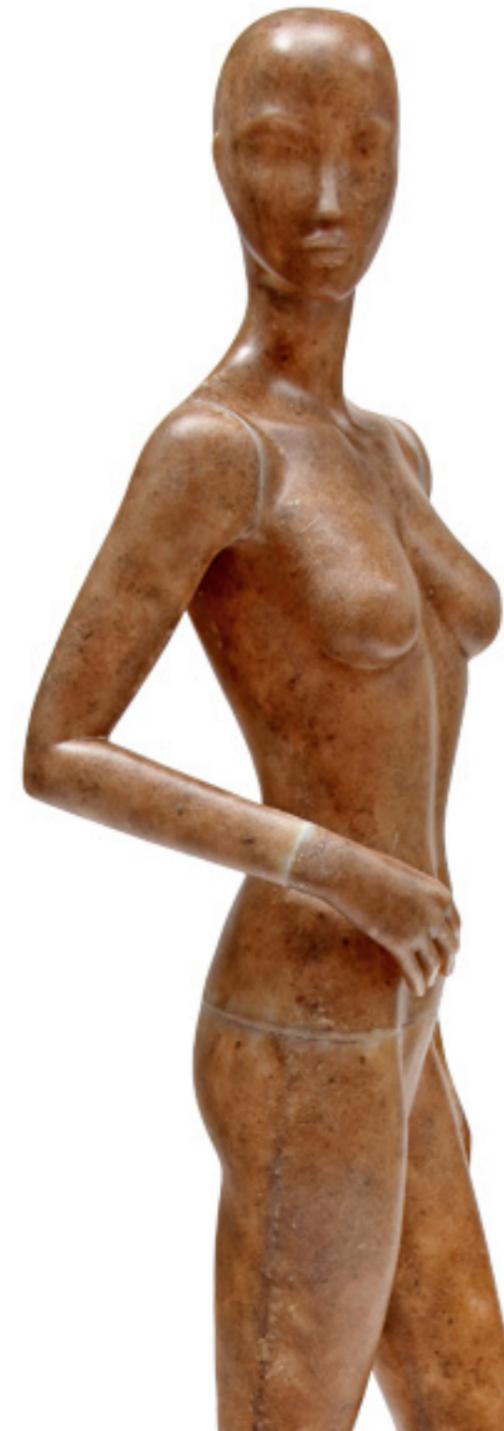
As we begin to respond to the increased demand for biodegradable, sustainable and recyclable materials, bamboo has been shown to have properties that lend itself well to extreme high temperature cooling processes. This makes it an ideal fibre in the production of plastic substitutes. Researchers have found its performance in extreme high temperature situations to have surpassed that of plastic and shows a similar longevity (with a product lifespan of 15 years, three times that of PVC).

Fibres from bamboo can be extracted and mixed with organic resin to create a mouldable material that can be pressed into any shape under certain pressure. With a tensile capacity that exceeds that of steel, it is also a quarter of the weight. The durability of bamboo fibre composites mean it is now being considered for other industrial applications, such as car parts in the automotive industry, panelling and disaster relief construction projects. It's believed bamboo fibres will be capable of being used to build sky scrapers in the near future.

Furthermore, there are superior environmental aspects. Bamboo is sourced from sustainable rain forests, and can be fully recycled back into nature at the end of its product lifetime. Unlike traditional forestry operations where the trees are fully harvested or replanted, bamboo is regularly trimmed. Grass roots remain stabilised in soil whilst new shoots are generated, providing a continuous supply of material for the industry. At the end of the products lifetime, bamboo fibres can be returned to the eco-system, fully recycled back into nature, as organic waste or fertilisers.

35IN

Bamboo grows naturally in diverse climates, predominantly in Asia and S America in abundance. Types of bamboo can *grow as much as 35 inches a day.*





CONCLUSION

These alternatives offer both the appearance and functionality of traditional plastic, whilst eradicating the harmful environmental impact associated with petroleum-based plastics.

Unfortunately, despite small scale successes, they represent only a small percentage of the industry overall. Currently, these are only well suited for companies and consumers prepared to pay a premium price for sustainable products.

Pioneers of this research note that using current waste or natural materials we can source in abundance is one of the best ways to take a more sustainable approach, and becoming a more environmentally responsible society.

Much of these composites, or recycling systems in the case of fibreglass, are very much still in their infancy. However, if we were to consider the speed of the development of conventional plastics over the last century, any one or number of these could make a breakthrough in the way plastic is manufactured.

RECYCLING OF FIBREGLASS NOW A REALITY

Industries have long been seeking the answer of how to dispose of fibreglass in an environmentally conscious way. We can now offer a service that will dispose of your fibreglass mannequins at an affordable price.

The major component of glass fibres and resins used in the manufacturing of fibreglass happen to be valuable raw materials required for the kiln-firing of cement. Fibre composites can therefore be used in the production of cement, taking a 'zero landfill, zero energy' approach. The cement can then be used in the building of roads, schools, hospitals, housing and dams as well as decorative applications.

There is hope that this formalised collection scheme will increase in its commercial activity.

Contact us for more information.



This takes a circular economy approach, and guarantees 100% of all glass reinforced plastic will be used up. This will enable mannequins to continue to be manufactured using fibreglass, without the environmental impact.



The Bamboo collection was designed with the future needs of our environmentally conscious retailers in mind. At Universal Display, sustainability is part of our ethos and we continue to look for innovative ways to bring environmental and economic benefits to our customers. By combining bio resin and natural bamboo fibres, any Universal Display mannequin can be specified in a bamboo finish. All our products can also be sprayed with a water based paint.

BAMBOO

CHECK OUT OUR NEW WEBSITE

Coming in to the new year we have been working on upgrading our website to be optimised for desktop and phones.

Having done this, you will now be able to visit our website on the go, whether on your phone, iPad or laptop. This Responsive Web Design will allow our webpage to be viewed perfectly on a range of devices. This means you will not lose any quality in the images when browsing our site.

We have also updated our website to include our newest ranges of mannequins and bust forms, as well as some of our most recent customer projects.



16

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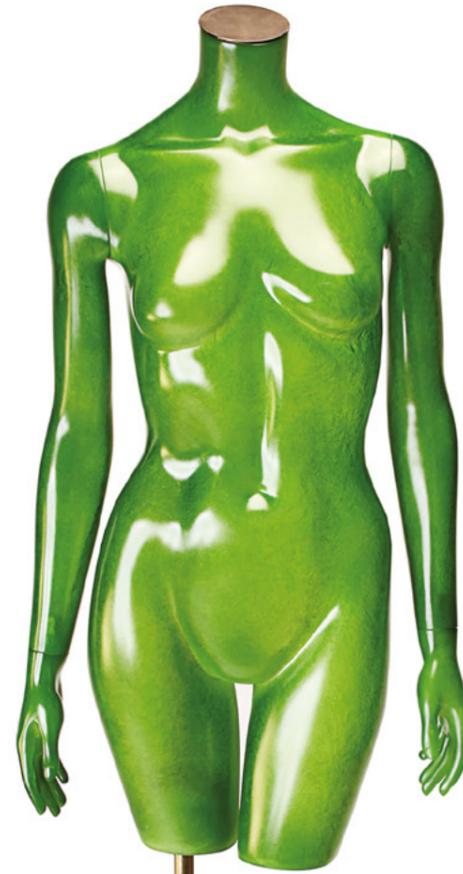
NEW YORK 20-23 MAY





We have just redressed our London showroom, come and pay us a visit!





The Hemmingway collection with wooden arms or arm caps is available with an extensive selection of bases in metal and wood. The bust can be covered in a collection of standard or bespoke fabric.

HEMMINGWAY

The AVA range is an elegant contemporary mix of functional form. The colour and materials are customisable to your own pallet. Consisting of mannequins, torsos and hanging body forms, AVA is available in a vast range of finishes from foundry, translucent through to the traditional sprayed paint.

AVA

NWYC

Partners for Creative Retail

VISIT US DURING MARKET WEEK
SPRING May 21-25 | WINTER Dec. 3-7

WHAT'S ON

2018: NEW YORK

'Type Drives Culture': SVA Theatre
March 23, 2018

Exploring challenges for designers with the intersection of music, fashion, politics, and mass media in changing cultural trends.

Thinking Machines, Art and Design in the Computer Age 1959-1989:
The Museum of Modern Art
Until April 8, 2018

Exhibition considering the role of digital computers in artistic production.

Danh Vo: Take My Breath Away, Guggenheim
Until 9th May 2018

Different mediums used to address topics such as religion, and capitalism.

Giacometti: Solomon R. Guggenheim Museum
Opens June 8th 2018

Sculptures, drawings and paintings by artist well known for his figurative sculptures.

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WHAT'S ON

2018: LONDON

**'The Female Gaze': Getty Images Gallery
Until 14th March 2018**

Photography exhibition capturing the female identity hard at work.

**'Fashioned from Nature': V&A
Opening 21st April 2018**

Displaying garments made from natural specimens, plant and animal fibres.

**London Visions: Museum of London
Until 15th April 2018**

Exhibition displaying architectural predictions of the future of London's landscape.

**Emily Allchurch: Sir John Soane's Museum
16th May- 22nd July 2018**

Allchurch's recreation of historical work in her famous contemporary style.



Profile Man 2 comes in a variety of eight poses all compatible with the original Profile Man collection. In addition to Profile Man's effortlessly versatile poses, he has four new head options. The combination of Profile Man's trim physique and commanding presence is sure to stand out in any retail environment. The collection is available in standard or bespoke colours.

PROFILE MAN²

Important Dates

Globalshop, Chicago
27th-28th March 2018

Milan Furniture Fair
17th-22nd April 2018

Partners for Retail Creative, NYC
21st-25th May 2018

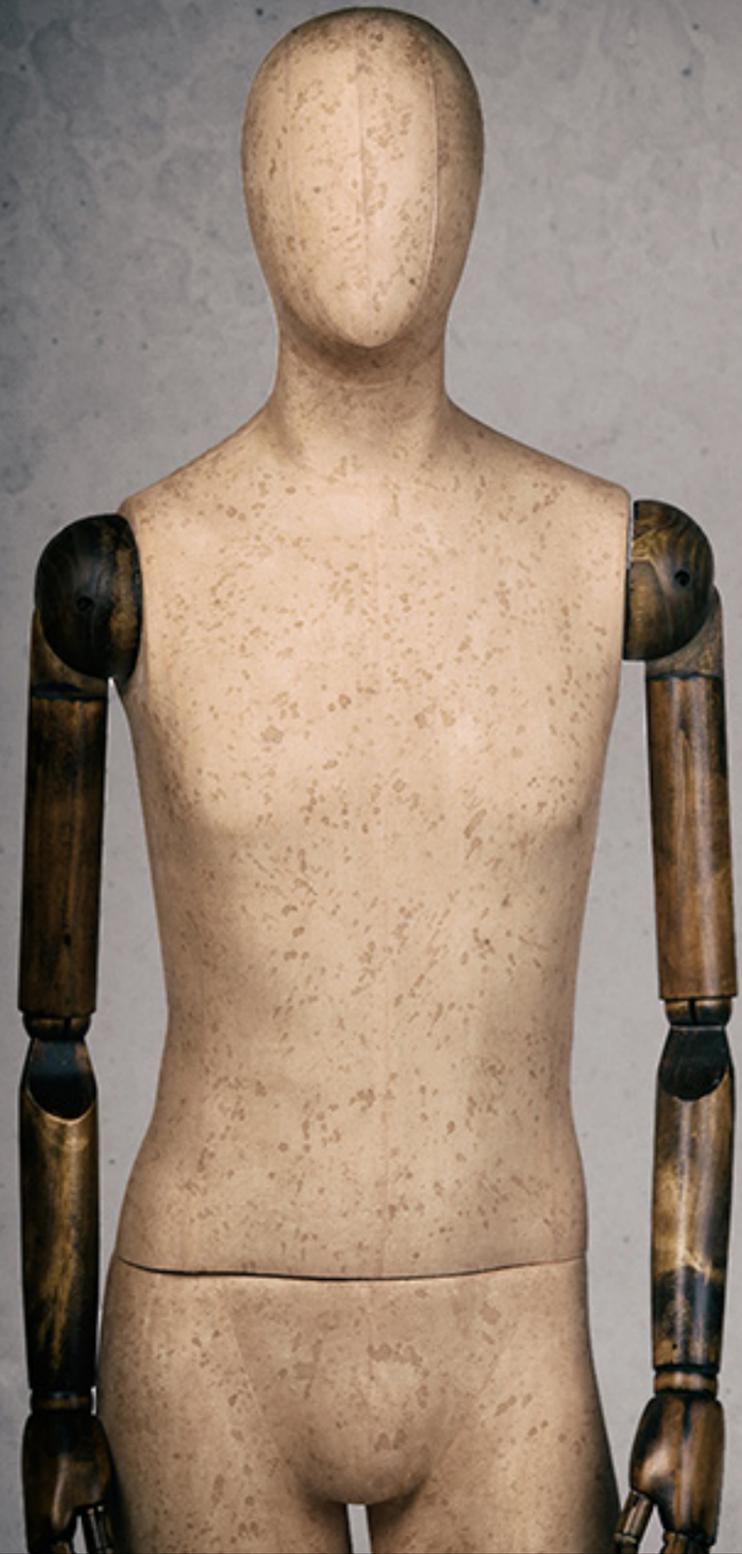
ICFF, NYC
20th-23rd May 2018

VM & Display Show, London
18th-19th April 2018

Clerkenwell Design Week, London
22nd-24th May 2018

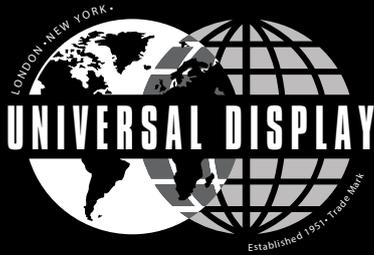
London Design Festival
15th-23rd September 2018

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ELEMENTS





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DON'T MISS OUR NEXT ISSUE WITH A FOCUS ON THE VIABILITY OF 3D PRINTING!

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Print Newsletter

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