

2010002567

Original creative work



DONNA SGRO

Morphotex Dress

 2010 | *Science Museum, London*

The Morphotex Dress is one of 3 garments I have created using Morphotex fabric. Morphotex is a world first in structurally coloured fiber technology, developed by Teijin Fiber Japan, a company I worked with during my participation in the 1st SHINMAI Creator's Project in Japan, 2009. The Morphotex dress was selected for inclusion in an international exhibition 'Trash Fashion: designing out waste', a curated selection of international fashion designers, at the Antenna Gallery within the Science Museum London. The gallery selects the latest science news from leading scientists, engineers, designers and thinkers to showcase to the general public.

Using a fabric such as Morphotex demonstrates that unconventional approaches to fashion design production can enable sustainable solutions. The colouration of the Morphotex fabric is created by structural colour, rather than pigmentation, eliminating the highly toxic process of industrial fabric dyeing. By working with a fabric such as Morphotex, my garments demonstrate the possibilities for engaging technological solutions to the problem of textile waste, encourage dialogue around the issue of sustainable fashion, and link biomimicry, an emergent practice within the field of sustainability, to fashion design.

The Morphotex Dress has been recognized as an exemplary example of sustainable fashion, as evidenced by its inclusion in the 'Trash Fashion' exhibition, also demonstrating the interdisciplinary value of my work. The interest generated by this exhibition has extended its duration from June 2010 until September 2011. The Morphotex Dress has also been exhibited at 'FashionWare' SXSW in Austin, Texas, March 18-19 2011.

| Image detail:

Morphotex Dress (Dress with Tucks)

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1.



2.

1. Morphotex Dress (Dress with Tucks)

2. Morphotex Dress (Dress with Tucks)

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1. Morphotex Dress
(Dress with Tucks)

2. Morphotex Dress
(Dress with Tucks)



1.



2.

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Supporting evidence

1. Morphotex Dress
(Dress with Tucks)

2. Morphotex Dress



1.



2.

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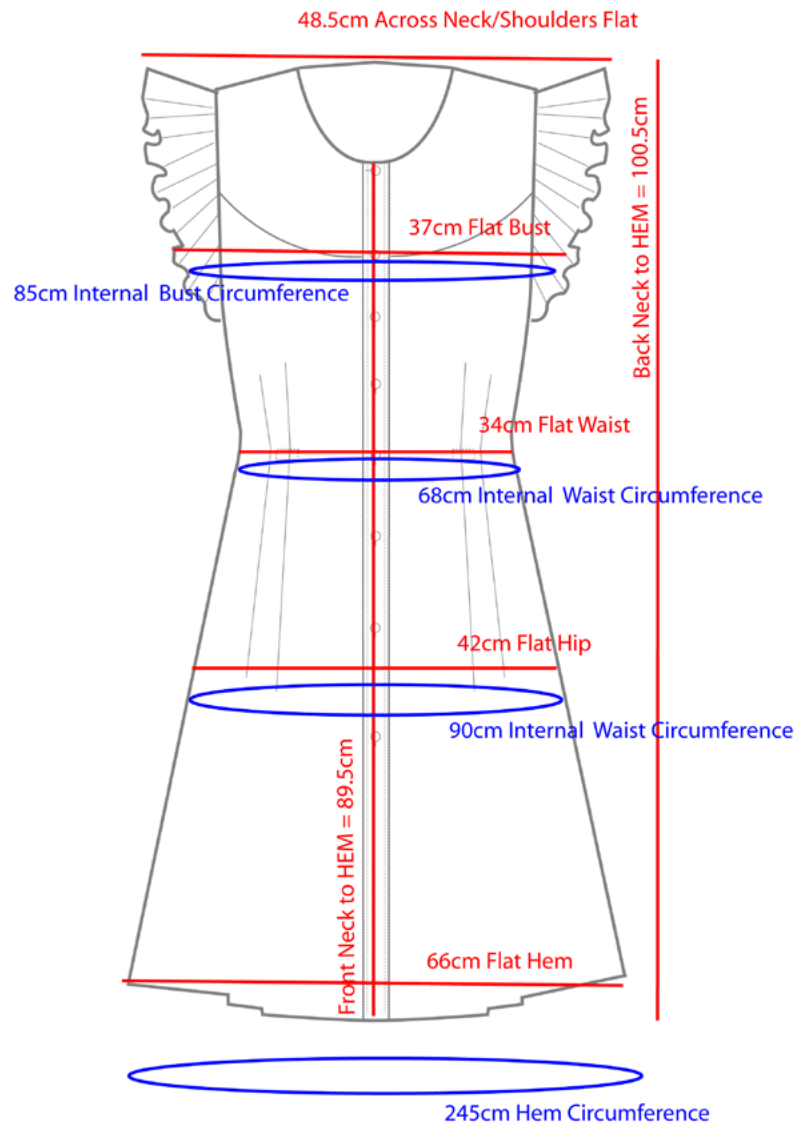
Supporting evidence

1. Morphotex Dress



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1. Digital technical drawing with specifications

THINK Letter

By happenstance our celebration of the Earth has a butterfly theme running through it. It was a wonderful design coincidence that started to show itself once the issue went into production. The cover is a human butterfly shot in Malaysia by a team put together by lifestyle brand Ultra. The other butterfly story takes inspiration from the morpho butterfly's vivid blue wings and transforms the idea of the wings into non chemical dyes. How is that possible? I am always amazed at how far technology has come and the infinite possibilities it presents for the future. In architecture it couldn't be more obvious with the Art Gallery of Alberta. I handpicked this building for this issue because of its organic shapes and use of energy efficient options, the article touches on numerous debates about architecture at the moment and the competitive nature of the industry. I also handpicked Peter Makela's homage to crop circles, a brilliant idea I would like to include in my own home. Crop circles will always be a visual delight something I find fascinating and curious about. Through this magazine I have learnt the use of nature in design always has a design impact like nothing I have ever seen therefore. The butterfly a natural wonder in itself can teach us it is quite possible to renew the Earth through lessening human waste. When I started this magazine I wanted to show the readers you can actually have great design that is luxurious, stylish, and timeless without compromise.



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Ultra

Design 18
Mysterious Carpets and Magic Lamps
On the Ropes and Building Hope

Technology 35
Donna Sgro: The Teijin Fibers

THINK



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'Donna Sgro: the Teijin Fibers'
editorial in *Think* Mag, issue 9,
2011, pp. 35-40

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'Donna Sgro: the Teijin Fibers'
 editorial in *Think* Mag, issue 9,
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Donna Sgro

THE TEIJIN FIBERS

While the rest of the world was preparing fundraisers and promoting ecological strikes, Donna Sgro was creating a new kind of style with an edge to her side of the Green movement, with the help of her conservative side kick, The Teijin Corporation; they began to take on a new kind of fashion battle.

The mass impact came from around the world, gearing up to save planet Earth. We use recycling bins, energy proficient cars, solar panels on our houses, all to come together for one simple purpose; to help the Earth's

atmosphere survive another century to move toward.

But, the clothes today you are wearing could be damaging or endangering the natural settings around you. In the key message, Donna has come up with an idea to end all wasteful fabrics and textiles that may harm the environment, as she teams up with the support of a Japanese based industrial company, the two take on the fight against global warming, while preserving the Earth's natural materials in products.

THINK

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 Supporting evidence

 1. 'Donna Sgro: the Teijin Fibers' editorial in *Think Mag*, issue 9, 2011, pp. 35-40

 2. 'Donna Sgro: the Teijin Fibers' editorial in *Think Mag*, issue 9, 2011, pp. 35-40

Donna Sgro's clothing line finds inspiration and technical beauty in the ways that are both upcoming and surprisingly elegant to our day and age. While just a wandering college student just a few years ago, she studied and graduated from the University of Technology in Australia. Where as of right now she is one of the university's lecturers and is a powerful advocate in the latest generations influence in today's fashion clash.

The contemporary trend hit London's Science Museum, when Sgro presented the "Morphotex" Dress. It was displayed at the museum for the collection of Trash Fashion, from July 2010 to this year of March. The dress was inspired by the translucent wings the Morpho butterfly, found by the Amazon River; the light makes the colors known to the eyes of the spectator. The fabric used to benefit this look, is a design that has the world awing, no pigments or dyes went into making this item. When the right light fixtures hit it; the dress seems to spread its own wings and comes to life.

The fabrics and essentials to manufacture just the right look can't be made up in the regular backwoods sewing shops in Shanghai. The Teijin Fibers contribute to this image, with their amount of ecological materials and recyclable substances. Some greater than others, they carry a high variety of these products for consumers such as Sgro's line of blueprint. The company has started with a new artifact called, "Purity" which strays away from heavy-metal-free polyester materials. This new change in direction has significantly impacted to revolutionize the foundation of a healthier look out for trends around the world.

Diverse paths and journeys, take us on very unique roads. To the clothing designer from Australia to the Eco-friendly business in Japan, they make the strides to change the direction of throw away fashion. In today's cycle of life, we are determined by what we wear, and occasionally making a statement for nature can be done without dressing in leaves and branches.

THINK

THINK
 2.

15th Oct 2010 | Biomimicry in Design

The examination and adoption of nature's internal technologies within design, biomimicry is becoming a key design discussion – with pioneers including Michael Pawlyn and Janine Benyus continuing to push boundaries. Stylus investigates how biomimetic design is going mainstream.

3.8 Billion Years of R&D

What does nature have that we humans don't? Well, for starters it has had approximately 3.8 billion years of evolution on this planet. In design terms that is a serious amount of research and development time. The pioneering architect Michael Pawlyn likes to open his presentations with words to this effect – to shine a light on just how much of a head start nature has on us.

The Discipline of Biomimicry

Pawlyn was the lead architect from Grimshaw on the iconic Eden Project – a building that was famously inspired by the formation of soap bubbles. So motivated was he by working on the structure of this revolutionary building, that he later left Grimshaw to focus exclusively on sustainable architecture that's inspired by nature via his own practice, Exploration.

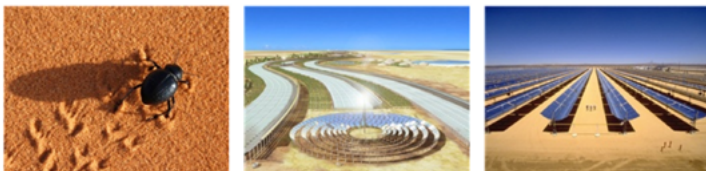


The discipline of biomimicry is Pawlyn's specialty, an approach to design that asks how nature, with all her experience, can teach us to develop more intelligent technologies – so that our products, interiors and buildings can work better, last longer and look beautiful without damaging the environment.

Aesthetics Versus Behaviour

It is important to distinguish biomimicry from biomorphism, the latter being the pure imitation of natural form without regard to structure or process. Biomimicry is not so much an exercise in aesthetics as an examination of nature's internal technologies. So a biomimetic design does not necessarily look like a natural form, but it behaves like one.

For example, Pawlyn's latest proposal, the Sahara Forest Project, is inspired by two different scales of nature: a macro process, the hydrological cycle, and a micro structure, the Namibian Fog Basking Beetle – which, via water condensing on its ridged shell, is able to hydrate itself in the desert. Through a symbiosis of technologies, the Sahara Forest Project ambitiously seeks to produce carbon neutral energy, biofuel crops and fresh water to replant the barren desert.

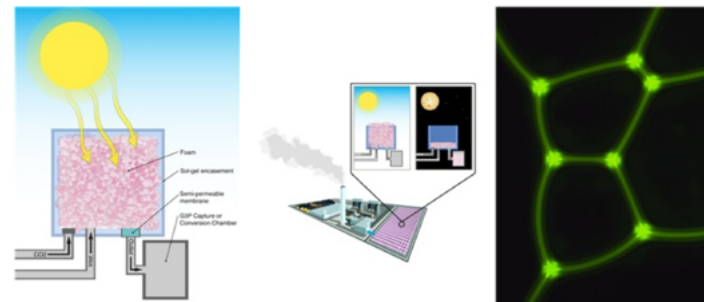


This melding of aesthetics and biomimetic technology was also seen during London Design week recently. Textile graduate Elaine Ng Yanfing describes her work as 'Techno Maturology'. She combines nature and technology in highly decorative forms through the use of shape-memory alloys – usually used in stent surgery – to create 'Alive Furnishing'. They appear to breathe, mimicking plants' responses to changes in temperature and moisture in the environment.


Truly Sustainable Solutions

However, the most successful results of biomimicry in design are those creations that contribute truly sustainable solutions, rather than just aesthetic pleasures. The most recent biomimicry breakthrough could be the crowning achievement of the discipline. David Wendell, a professor at the University of Cincinnati College of Engineering, has been able to mimic a natural process that was long thought impossible to replicate.

The vital process of photosynthesis, the very lifeline of the plant world that only needs the apparently simple recipe of carbon dioxide, water and sunlight to occur, has been replicated in the form of something called Artificial Photosynthetic Foam – the Grand Prize winner of the Earth Awards this year.



Wendell's Artificial Photosynthetic Foam, inspired by the foam nest of the tropical Tungara frog, is a 'protein cocktail' that turns solar energy and carbon dioxide into sugars for bio-fuel. However, this foam is even more efficient than photosynthesis because it doesn't have to divert any of its energy into growing a plant.

1. TRASH FASHION, SCIENCE MUSEUM LONDON

<http://antenna.sciencemuseum.org.uk/trashfashion/home/wearwithoutwaste/cut-it-out/madetomeasure/>

Science Museum London 'Antenna' Gallery, 'Trash Fashion' Exhibition homepage

<http://www.flickr.com/photos/sciencemuseum/4691352010>

Science Museum London flickr page from exhibition

<http://www.thevine.com.au/fashion/blogs/how-biomimicry-works20110328.aspx>

28/3/11, Tullia Jack, How Biomimicry works

<http://www.cpb.co.uk/blog/2010/09/plundering-nature-can-save-the-planet/#more-1999>

28/9/10, Ridhi Sain, Plundering Nature can save the Planet

<http://www.off-grid.net/2010/09/24/biomimics-help-us-off-the-grid>

24/9/10, Alex Benady, Biomimics help us off the grid

<http://inhabitat.com/%E2%80%9Cmorphotex%E2%80%9D-dress-mimics-butterfly-wing-shimmer%E2%80%94without-dyes>

18/7/10, Diane Pham, "Morphotex" Fabric Mimics Butterfly Wing Shimmer Without Dyes

<http://www.spookmag.com/2010/07/20/trash-fashion>

20/7/10, Tullia Jack, Trash Fashion

<http://designrevolutionaustralia.com/2010/07/26/eco-textile-morphotex-dress-by-donna-sgro/26/7/10>

<http://www.ecouterre.com/morphotex-dress-mimics-butterfly-wing-shimmer-without-any-dyes>

16/7/10, Jasmin Malik Chua, "Morphotex" Dress Mimics Butterfly Wing Shimmer – Without any Dyes

<http://www.fileonstyle.com/news/donna-sgro-show-london-science-museum>

15/6/10, Donna Sgro on Show at London Science Museum

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Supporting evidence

2. FASHIONWARE, AUSTIN TX, USA

http://www.fashionwareshow.com/sxsw_book.pdf

Online exhibition catalogue

<http://www.fashioningtech.com/profiles/blogs/sxsw-fashion-technology>

Exhibition curator's blog

<http://fashionwareshow.com/>

Exhibition website

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