



Sustainable Fashion?

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Professorial Platform
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The notion of sustainable fashion seems to be paradoxical, an oxymoron – how can fashion ever be sustainable, with its focus on novelty and inbuilt obsolescence? The business of fashion is full of contradictions: the craftsmanship of couture and bespoke set against high volume cheap fashion; the luxury of Fifth Avenue or Bond Street contrasted with the poverty of many producer communities; the transience of fashion styles and its reinvention of the past in new incarnations; inherently wasteful cycles of seasonal change which sustain livelihoods and economic prosperity; an obsession with the new and the valorisation of vintage. Whether involved in the creation, production, communication or representation of fashion or simply as its consumers, everyone is implicated in the thorny issues inherent in this endemically unsustainable system.

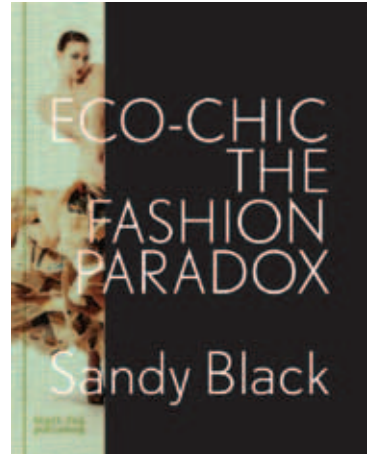
Due to heightened awareness of issues such as climate change and depletion of natural resources, there is a growing consensus that over-consumption in developed countries through faster and faster fashion cycles has to stop. But fashion is part of our DNA, bound up with concepts of identity and personal expression, a cultural construct embedded in the collective psyche that will not suddenly disappear – nor need it. We need to respect the power of fashion and adornment and understand their significance in cultures throughout the world, from the earliest peoples to the present day. Fashion can perform many roles: a social catalyst, a communication medium, functioning in both personal and public realms, simultaneously inward and outward facing. Fashion enables us to enhance our self-esteem and express our identity, playing out in various contexts our status or sexuality, via messages both coded and overt. Through our clothing we can show we belong, or proclaim our difference: make radical statements, or be

part of the crowd. In many professional contexts, appropriate clothing can make a real difference to success and wellbeing, whereas the ‘wrong’ clothing can stigmatise. Of course, we may just want to be seen to be ‘cool’ in the latest fashions. Different forms of fashion work at a different pace: limited edition hand crafted pieces may be treasured for years to become future heirlooms; conceptual fashion pieces have a life beyond the catwalk in the art gallery or museum, and in the academic record; designer fashions continue to inspire and stimulate mainstream fashion, now one of the most significant global industries. Fashion provides livelihoods, and sustainable fashion must continue to meet our personal and symbolic needs, whilst addressing the problems associated with the fashion system. Sustainable fashion does not mean the end of fashion; it can instead become a catalyst for change.

In recent decades, fashion has become democratised, from the diffusion of Burberry to the ‘fast fashion’ phenomenon on the high street, making fashion accessible to an ever wider public. But there has been a severe human and environmental cost to the rapid expansion of low-cost fashion, pressures felt most keenly by overseas manufacturers, garment workers and subsistence farmers who grow fibres such as cotton or cashmere. Media coverage and high-profile campaigns exposing malpractices have raised the bar; a major shift has seen increasing consumer demand for transparency and traceability in the production of clothing, following the lead of similar successful campaigns around food production. There can be no turning back. An uncompromising global agenda has been set and the greening of the fashion industry has become an imperative. I believe that designers and design thinking can play an important role in achieving this goal. Personally, having detested wastefulness

throughout my career as a knitwear designer, businesswoman, educator, and academic researcher, I grew increasingly uncomfortable with the manner in which valuable materials and resources such as clean water are taken for granted in our consumption-driven society. I found myself working and teaching within a fashion industry predicated on wasteful speculative systems of product creation, overstocking, mark-downs and careless disposal. As a Reader at LCF, in 2004 I took the opportunity of the Designing for the 21st Century research initiative (an innovative joint initiative by two UK research councils—Arts and Humanities and Engineering and Physical Sciences) to crystallize ideas and question aspects of fashion’s modus operandi. During 2005 I led the Interrogating Fashion research network, convening discussion workshops covering a wide remit, including sustainability, the cultural role of fashion and the potential for integration of digital technologies for new business paradigms¹. The network brought together fashion industry professionals, academics and practitioners with disparate areas of expertise to share knowledge to create an agenda for research into sustainable fashion design with industry relevance. A number of new connections, research partnerships and projects emerged from the network, including the Considerate Design for Personalised Fashion project and my first book on the subject of sustainable fashion, *Eco Chic the Fashion Paradox* (Black Dog, 2008). *Eco Chic* shone a spotlight on the fashion supply chain, its design and material choices, and

environmental aspects of fashion including fashion life cycles and waste, and profiled companies both small and large who have pioneered sustainable fashion using a range of approaches to both design and raw materials.



The current focus on sustainability in clothing is not new, but is radically different from its earlier manifestations. With a few exceptions, such as Esprit’s Ecollection², the wave of ‘eco fashion’ seen in the early 1990s was judged by the fashion press as worthy rather than fashionable and inevitably associated with the hippie movement of the late 1960s. Sustainable, ‘green’ or ‘eco’ fashions continued to suffer from negative connotations, and the concept was largely sidestepped by the mainstream fashion and textile industries, until the new millennium. Today’s sustainably-oriented fashions are based on innovative design thinking and high aesthetic values allied to an appreciation for craftsmanship and quality

¹ The three themes of the Interrogating Fashion network activities were The Fashion Paradox: transience and sustainability; Fashion in Context: presentation and display, audience and engagement; Digital Fashion? from craft to mass customisation

² see *Eco Chic the Fashion Paradox* for profiles of pioneers in the field eg Katharine Hamnett, Linda Grose (Esprit), People Tree, Sarah Ratty (Conscious Earthwear), Orsola da Castro (From Somewhere)

materials. Whether made from totally organic fabrics, or recycled fashions using vintage clothing, or fashion and accessories designed for multiple lives, the design-led approaches taken by a new wave of independent designers stand or fall on their fashion merits. Importantly, these radical practices by small pioneering companies, together with recent government and industry initiatives (such as the Ethical Trading Initiative, Defra's Sustainable Clothing Road Map, Marks and Spencer's Plan A, and more recently the Sustainable Apparel Coalition in the US) have succeeded in impacting the large mainstream clothing companies. Global brands such as Gap and Nike – companies that were previously identified as part of the ethical problems within fashion manufacturing - have now become part of the solution towards more sustainable practices in the fashion industry. A similar situation was evident in the growth of the organic food movement - the small companies raised consciousness and gathered an increasing consumer following, in turn influencing the mainstream players.

Action on sustainability in the fashion industry has until recently been polarised between pioneering independent designers, such as Katharine Hamnett, on the one hand, and the multiple high street stores, such as Marks and Spencer and H&M on the other. The buying and production power of a large retail company such as H&M means that even a small percentage shift, for example including organic cotton as a proportion of their fabric offer, can make a massive difference in the supply chain. Demand is thus created which helps to encourage the development of more sustainably produced textiles. This improved infrastructure in turn enables more design choice in fabrics – key to overall sustainable fashion development. Time and again, fashion designers lament the dearth of choice in this area, which limits their creativity (see interviews with Dries van Noten and Hussein Chalayan in *The Sustainable Fashion Handbook*). Sustainability is a complex concept to understand and apply in any business, let alone one as fast-changing as fashion. The majority of brand name

designers who produce directional fashion have in the main held back from high profile public statements and debates – with notable exceptions such as Katharine Hamnett and more recently Vivienne Westwood - preferring to work quietly in the background researching the pros and cons of sustainability for their businesses, often for fear of being criticised. A statement of corporate social responsibility may be all that is publicly visible. However, several innovative design companies work with intrinsically embedded principles that conform to sustainability precepts, whether in process, materials or philosophy, without compromising fashion. Issey Miyake and the company's associated labels are a key example, where a philosophy of design-led research and innovation has created new fashion paradigms. Miyake's A-POC concept (A Piece Of Cloth), in development from 1999, totally reinvented the clothing manufacturing process to become a one-step method of knitting or weaving, minimising waste and streamlining production; his Pleats Please line, established as early as 1988, is functional, light and non-crushable, made from 100% polyester, which can be readily recycled, requires minimum energy in aftercare (quick drying and no ironing) and is a durable fibre which when pleated maintains its unique visual aesthetic over its entire lifetime.

In the years since 2007, the global financial crisis has impacted the infrastructure and operations of many industries including fashion. Business methods came under increased scrutiny and fundamental issues of social justice came into media focus. The recent establishment of designer fashion groupings with an emphasis on ethically-produced and environmentally aware practices at the international fashion fairs shows how 'fashionable' ethical and eco fashion became: *Estethica* at London Fashion Week, now in its 6th year, has been the most consistent. Ethical Fashion shows took place in Paris, London and New York as the trend for ethical and environmentally aware fashion spread. However, the long-term aim must be for sustainable fashion *not* to be singled out – rather for sustainability to be embedded into the fundamentals of fashion

processes. Over the last few years, despite the financial crisis, much activity towards sustainable fashion has been consolidated and continues to develop, including in 2011 a major new industry initiative announced in the US, the Sustainable Apparel Coalition, developing tools for improving the environmental footprint of clothing products. The UK government has created a focus on recovering textile waste as the next stage of its Sustainable Clothing Action Plan, and the Nordic countries have established the Nordic Initiative Clean and Ethical (NICE) for their fashion industry. Many established fashion companies are moving to using a higher proportion of sustainable fabrics, including a resurgence in wool, use of finer quality hemp, Tencel and recycled polyester, in addition to organic cotton. New initiatives in cotton production such as Better Cotton are addressing the major environmental issues in growing bulk cotton.

In order for deeper principles of sustainability to become a fundamental part of everyday living, in the same way that recycling of household waste materials is now fully accepted, changes in consumption behaviour will be required. However in western consumer societies, this will be difficult to achieve, as people do not want to reduce their standard of living or become ascetics. Therefore strategies need to be adopted at a deep level of design and production, in order that consumers can make a difference in their purchasing, without necessarily making conscious decisions - because the innovative thinking for sustainability has already been built in, by design, to the products available - including fashion.

Design strategies for sustainability

Sustainable strategies include not only the post-manufacture and post-purchase doctrines of 'reduce, reuse and recycle', but also pre-manufacture design and production, aiming for lower consumption of higher quality longer lasting goods (getting rid of built-in obsolescence). As a consequence, reversing the trend of the previous decade, higher prices in mainstream clothing will be needed to reflect the true value of production, which will in turn

encourage less consumption. Design for end of life and disposal or better still, for reuse, is part of an approach termed 'cradle to cradle' by McDonough and Braungart in their seminal book *Cradle to Cradle: remaking the way we make things* (2002). This approach regards all waste as feedstock for the same or another system, either biological or technological, and comprises a stringent set of system requirements in which no materials are lost, but reused or converted to energy.



In my latest book, *The Sustainable Fashion Handbook*, I have sought to capture the new fashion landscape, including many different perspectives on relevant issues from a wide range of contributors, and exploring current and future developments. It reflects the interdisciplinary nature of fashion's complex ethical and ecological dimensions – as manifested in the production, consumption, marketing and representation of fashion – which often within the industry involve

conflicting priorities that need to be reconciled. The *Handbook* highlights new narratives that are emerging from a growing number of companies (small and large) and individuals, helping to transform practices towards a more sustainable fashion industry.

The realities of operating in the designer fashion sector, or at the mass market level of fashion are both reflected. One effective strategy is to create and communicate a compelling narrative behind the products offered, engaging the consumer at a more emotional level with product purchases, and importantly, generating trust in the label or brand by developing transparency in the supply chain behind the retail offer. Included in this small publication are a number of pages taken from the *Handbook*, to exemplify a range of ways in which sustainable fashion can be approached.

The US based womenswear company Eileen Fisher has recently established a presence in London and the south east of England. The company works towards sustainable practices throughout its supply chain and champions women's entrepreneurship through philanthropic and charity work, financed through the business, including a shop in the US which recycles 'gently used' Eileen Fisher clothing. Their recent marketing communication initiative includes the use of the 'Ampersand' logo (&), which indicates that the consumer can, if she wishes, find out more in-depth information online about the certification of certain materials and provenance of ranges in the collection, or about the company's reasons and methods for sourcing in China or Peru.

Many designers have found ways to divert clothing and textiles from consignment to landfill by 'upcycling' old clothing to make new clothes and extend the life of materials which are already in circulation. These fall into two categories: post-consumer waste and pre-consumer/post-industrial waste. Examples of post-consumer upcycling can be seen in the work of Junky Styling, TRAI Dremade,

Worn Again, who now work with corporate clothing, and Christopher Raeburn, who sources ex-military fabrics and uniforms.

From Somewhere is a company that has been diverting pre-consumer factory textile waste into new clothing for 15 years, including recent collections redesigning redundant Speedo swimsuits banned from the Olympics. The long term vision of organisations spearheaded by Worn Again is eventually to 'close the loop' by recycling materials constantly back to original products, in a sort of eternal re-consumption – where even fast fashion might be made to be sustainable!

In parallel with commercial operations, emerging designers and fashion graduates experiment with pattern cutting in order to create new shapes from one single pattern piece, minimising process stages, or seek to eliminate waste altogether (examples include Timo Rissanen and Mark Liu). Others design innovative fashions with multiple configurations that can serve more than one purpose, or seek to minimise the need to launder clothes for low-maintenance fashion with minimal energy and water requirements (Emma Rigby for example). Design strategies such as these will surely impact the fashion industry in the near future as this new generation of environmentally aware design thinkers and makers enters the mainstream fashion workforce.

'Slow fashion' is a concept which has recently gained traction (following on from the Slow Food movement), although its interpretation can be unclear. Whether it simply means more durable materials and longer lasting clothes, or symbolises a slower paced, engaged and more localised artisan production process, or indicates a longer-term relationship with our clothes, or any combination of such ideas, has yet to be fully agreed by academics and practitioners. Also fitting into the 'slow fashion' category are many expensive luxury goods with high design values and standards of craftsmanship, usually extremely long lasting and likely to be

repaired rather than discarded. The Japanese label *minä perhonen*, designed by Akira Minagawa, exemplifies a type of slow fashion which is evolutionary rather than revolutionary in style, but integrates textile design innovation with a charming visual aesthetic and highly skilled industrial production to create a timeless series of clothes and accessories which can be appreciated for a lifetime.

Narratives rooted in community and place capture the imagination of consumers who are seeking authenticity and connectedness, such as the Project Alabama initiative in the USA (founded by Natalie Chanin) that utilised women's forgotten skills of embroidery and quilting to create high quality hand-crafted products made in Florence, Alabama. Another compelling example is found in the story of a Catholic priest from the Bronx in New York, Father Andrew More O'Connor, who used his artistic talents to develop sacred art, working with weavers in poor communities in Guatemala to create unique hand woven fabrics using light-reflective yarns, and then went on to create a line of clothing named Goods of Conscience, made up in the Bronx from the same Social Fabric®. The clothes are designed to 'look good, feel good and do good' as the social and material benefits are brought back to the producer communities.

In contrast, harnessing new technology is a different strategy for sustainability in future fashion products. Technology can enable a new paradigm of 'fashion on demand'— for example new industrial knitting technology can produce complete garments direct from the machine, eliminating the need for sewing and enabling a customised clothing offer. Body scanning technology coupled with online systems can provide more personalised clothing for better fit and less waste. Welding technology can be used to create both seams and surface decoration on 100% polyester substrates in a one-step process, as the research work of Kate Goldsworthy explores. Current research is in various stages of development to create garments from spray-on

fabric (Fabrican technology by Manel Torres) or grown from cellulosic cultures (Suzanne Lee's BioCouture project). Electronics can be embedded in clothing to create spectacular effects (see the work of Cute Circuit) which will eventually lead to programmable fashions, maintaining their novelty over a long period of time by changing surface and form on demand. The rapid rise of 3D printing technology is starting to impact fashion accessories and footwear as the stylish, near commercial concepts from designers such as Kerrie Luft, Hoon Chung and Ross Barber (all LCF MA Fashion Footwear graduates) demonstrate. This offers the potential of localised production, made to order, which presents new business possibilities for mass customisation. Concepts such as these will in future take fashion into new realms, and change the relationship we have as consumers to clothes as static, unchanging objects. Could interactive clothing, designed for disassembly into its component parts point the way to positive solutions for sustainable fashion in the future?

The answer to such questions will never be simple, but the range, scope and scale of activity towards designing a new future for fashion – new ways of engaging with and consuming the fashion experience - and its related production and supply chains, is unprecedented. The fashion industry is at last responding to the need for fundamental change in the way business is done, co-ordinating new campaigns and strategies across boundaries so that sustainable fashion can become an integrated and timely concept, uniting people, livelihoods, economies, NGOs, governments, manufacturers, designers and fashion consumers in common cause.

Professor Sandy Black

November 2012

'Clean up or die'

Unofficially crowned 'queen of sustainable fashion', designer and campaigner **KATHARINE HAMNETT** was made a CBE in January 2011. Hamnett's collections span four decades, and have been sold in over 700 stores in forty countries. Her influence – from slogan T-shirts to new stonewashing – is widespread.
By Sandy Black



In 1989 Hamnett launched her campaign for environmentally and ethically sound practices in the fashion industry supply chain, championing the use of organic cotton to reduce pesticide use and provide better lives for small-scale cotton farmers and their families. Her slogan T-shirts, with messages such as 'CLEAN UP OR DIE', found new resonance in the early years of the 21st century as awareness of climate change and energy and resource depletion increased. As Hamnett's pioneering stance has begun to bear dividends in the wider fashion community, she has revisited her archive, relaunching her womenswear fashion collection for Summer 2011, featuring iconic signature styles, traceable supply chains and sustainable materials. These include organic cotton denim, silk, recycled cotton buttons and zips made from recycled polyester, processed in compliance with recent European legislation on chemicals. The collection, named 'Here Comes the Sun', aimed to be 'glamorous, elegant, sexy and responsible, made as ethically and environmentally as possible'.¹

Hamnett remains committed to the benefits of using organic cotton: 'Growing organic cotton acts as a carbon sink, and the returns are worth much more to farmers. In addition, they have greater food security as organic cotton crops are rotated with food crops.'²

Her fabrics come from India, Madagascar and Turkey. The T-shirts are produced in India in one of the most advanced socially certified factories, which has the highest standards of environmental processing, and state of the art dyeing and water treatment facilities. The factory also has social programmes in all aspects of the community, including women's empowerment, and has supported 140 schools across the country, as well as a teachers' training college and a university.

Hamnett explained her inspiration for 'Here Comes the Sun' in this way: 'We receive enormous amounts of free energy in the form of

This page and opposite: 'Here Comes the Sun', Spring/Summer 2011 collection featuring updated signature styles from the Hamnett archive.



solar radiation, enough to fuel the planet. We should exploit this and stop our dependence on crude oil and unsafe technologies like nuclear. It is important as consumers and voters that we all know the facts, and realize the immense power that we have so that we can do what is needed to save the world. Take action. You can make the difference.¹³

Reflecting on the progress made in the last five years towards a more sustainable fashion industry, she has said: 'Consumer awareness has soared in the last five years, and industry is going to have to change the way things are done. Consumers are driving change; they are enfranchised – the power to change the world is in their wallets and it is life-affirming. Once people have the information (about cotton growing and pesticides, for instance) and realize the negative environmental impact, their conscience is awakened, and they see it threatens all of us (and particularly their children's futures) – it's not a fashion issue. I can be optimistic because young people are more aware and far more responsible than their parents, and will steer the world in a more responsible manner. The sustainable clothing movement is more open to sharing information and problem solving jointly. Companies such as Tesco are important because it has to happen in the mainstream. These are the pioneers of the next chapter in fashion.'¹⁴

Nonetheless, Hamnett acknowledges that there is still progress to be made. 'It has to be possible to produce normal exciting fashion sustainably, but price is the big issue. The true environmental cost of clothing manufacture and labour is not being reflected in the price borne by the consumer. Transparency has generally improved, and a new standard ISO 26000 has just been implemented by the US Fair Labor Association Workplace Code of Conduct. It is great if people are buying more fashion – it provides livelihoods – as long as you make it responsibly.'¹⁵





Above: Vivienne Westwood with her models in the finale of her Spring/Summer 2011 Gold Label show, Paris.

Opposite: Press release for Westwood's 'DIY' collection, Spring/Summer 2010.



We need an estimated \$30 billion per year to save the Rainforest @ 20,000,000,000

Paris, Monday 29th Sept

In these hard times - Dress up.

Do it yourself!

DIY

Suggestions

♡ Vivienne



Necklace out of safety pins

Badges (preferably with political slogans)

Shawls, blankets, table cloths, curtains, towels, or a meter of beautiful fabric,

worn:- a) enfolded around you instead of coats + cloaks (plastic sheeting for the rain).

b) as skirts, dresses, tops, trousers

(pulled thru' legs).

Kerchiefs worn as knickers (good for disco or beach, or tied up as a bag.

Boxer shorts worn showing as outer wear. (We offer them in silk or in the same fabric as our jackets)

We also offer

Tie on frill for skirt or cape (made from rectangle ruffled with a cord)

Meters of precious silk thrown over yourself + attached to your body with hidden strings

Tubed of knitwear

Beautiful pieces from your wardrobe (or from that of your mother, child or husband)

Your old favourites - there is status in wearing your favourites over + over until they grow old (patina) or fall apart.

Beautiful new clothes (expensive) Historical garments.

→ to be continued next season.

Lena's father is the scientist

'I want to make clothes for real people who will wear them for a long time.'

DRIES VAN NOTEN, descended from a long line of tailors, is one of the original 'Antwerp Six' who emerged from the now-famed Fashion Academy in Belgium, and started a new-wave design aesthetic when the group showed in London in 1986. Here he discusses ethical production, the fashion industry and life as an independent designer.

By Sandy Black

In the twenty-five years since his debut, Van Noten has built and maintained an independent business, gaining a loyal following for his sophisticated designs for both womenswear and menswear, which incorporate a distinctive melange of fabrics, many sourced personally by the designer. Despite his esteem for traditional textile craft skills, he also embraces modern technologies such as digital printing. His designs are currently sold in over 400 outlets worldwide and he was awarded International Designer of the Year by the Fashion Council of America in 2008. Asked by *Dazed Digital* magazine in October 2009 for one word that sums up his collections, he answered, 'It's authenticity, I think. The clothes come straight from the heart and I want to make clothes for real people who will wear them for a long time and not just for one season.'

Q It's been a difficult time for fashion. Is the recession easing for your business?

A I'm a designer as well as a businessman. I own my own business; the situation may be different for other designers. But I don't think that the political, ecological and financial situation we find ourselves in is a problematic one. It also creates opportunities. People have to give answers to what is happening to the world at the moment and the fact that you give answers...that's quite interesting: at least somebody understands that something is going wrong. It would be a pity if people, especially the big groups, which have the financial ability to do so, just say 'OK we are going to wait until it's over and continue the way we are'. Things have to change in a way that is appropriate and right.

What things have to change?

Fashion became too complicated. Marketing became more important than creation. I don't know who is interested in buying summer clothes in November. When you go to all the big cities all





'I think nearly everyone in the Western world has enough clothes in their wardrobe to wear for the rest of their life.'

Durability – or rather longevity – is innate to your design philosophy?

It's part of my personality. I have the freedom to do the things the way that I want to do them. I also have financial freedom.

You are one of the few independent companies around.

When you have big financial groups, you have a kind of financial structure that involves people who do not come out of the fashion business. It's all the same to them whether they sell cars, chocolate, computers or fashion. They apply the same rules to all products. Fashion is quite specific. Of course cars have to be created and fashion has to be created but they just think of the turnover – how can we turn two seasons into four? Where we once

had four delivery seasons, they now have eight. People see new things every month. For me the act of buying involves expectation: you see a fashion show and then you have to wait a few months before those pieces are in the store. I like that sense of expectation – I always compare it to children who see little wrapped presents under the Christmas tree and know that they have to wait five days before opening them. Often the longing or the wanting of the item is better than actually having it.

I think since 1986 you have had some challenges?

We went through some rough times, financially, organizationally and also creatively. What's nice is having been in the business for such a long time that you know you will have your high and low moments. Sometimes your moments of low appreciation are not the same as your moments of low creativity. Sometimes you think your collections are not the strongest; at other times you fear doing really strong collections. And sometimes the time is not so good for you. Two years ago everything was going well, with the opening of new stores, but then the [global financial] crisis struck. Of course it shakes you. Fashion never gives you the possibility of getting – lazy is not the right word – maybe a bit more relaxed.

What makes us want something new?

Employment and industry. The skills needed for making fabrics, printing weaving, knitting embroidering. It would be a pity to say it is 'only' fashion, because fashion covers so many things,

everything to do with culture and art. I want to use these in my work. The collection I made for next summer: authentic fabrics. It's not really a cry for attention, but a wish to focus again on these things, on what we still can make. Where we normally put a lot of effort into making our own fabrics, this time we have searched all over the world for authentic fabrics. This included looking in museums like the ethnographical museum here in Antwerp, where we found beautiful documents of ikats from Uzbekistan, and some batiks, Indonesian materials. We took the documents to Italy, where we photographed them and printed them digitally. In the case of the ikats we found some small-scale weavers in India who could make ikats by hand, which is not the most easy thing to do. We also worked with a small atelier in Uzbekistan – the fabric had to travel two days by donkey to get there.



Above and above left: Dries Van Noten, Autumn/Winter 2010/11. Silver metallic decorations were hand-embroidered to embellish this collection.

Opposite: Dries Van Noten Autumn/Winter 2008/09. Rich layered prints revived a forgotten technique, also replicated digitally.

the streets look the same. All over the world the shops look identical... There are too many clothes in the world. When people ask me 'Is your fashion ecological?' I say the only truly ecological thing I can do is to stop making fashion. I think nearly everyone in the Western world has enough clothes in their wardrobe to wear for the rest of their life.

How do you see fashion?

I have quite a personal way of looking at it. I don't want to dictate fashion. I just want to make clothes that people can wear in a way that they want. That is the important thing. That's why when I do a fashion show, the outfits that I put together are only one way to wear the clothes; afterwards, if you want, you can shorten them, cut the sleeves out, you can over-dye them, you can embroider them, wear them however – I don't care.

Do you actually know any customers who have done that?

What I appreciate is when people wear my pieces from a few years ago mixed with new pieces. Several years ago when I visited a store in Boston the owner invited clients to assemble their own little museum. Everybody brought in the pieces they had bought from the first collection and put them in the old presentation boxes from the store. Some of them had also brought pictures showing the memories that they associated with those clothes. Everybody was doing something different with them. That was really nice.

‘Sustainability needs the whole company, a whole supply chain and engaged customers.’

EILEEN FISHER is a womenswear brand based in New York, with stores in London, selling a range of understated, minimally styled casual clothes that aim to ‘give women what they need to relax into themselves’.¹

By Sandy Black



Eileen Fisher produces an ‘Eco Collection’ using organic cotton, linen and denim fabrics, with both cotton and knitwear produced in Peru. Throughout the whole of its range, however, the brand’s underlying design principles of simplicity, beauty, comfort, ease, function and versatility prevail. ‘We build timelessness into our design process, with shapes and fabrics that connect from season to season,’ says Shona Quinn, sustainability leader at Eileen Fisher.²

‘We recognize that one of the best environmental gifts we can give you is clothes you’ll love for years and years. Life cycle is about wear – and care. The greatest environmental impact comes from dry-cleaning shops and home laundry rooms. Most contemporary detergents work perfectly well in cold water, saving on energy. Most of our line is either hand- or machine-washable; our care instructions call for cold water.’ Women are the focus of Eileen Fisher’s business, and also of the company’s philanthropic and charitable work, which supports budding female entrepreneurs and awards grants to non-profit organizations across the US that empower women and build self-esteem.

Quinn speaks about the company’s approach to sustainable fashion with enthusiasm. ‘To make fashion sustainable means we have our work cut out for us. A first step may be to get to a place when all of our fibres, trims and packaging can safely return to the earth or be melted down to be used again. A second step – create a sustainable production process that does no harm to the environment. This can be challenging when it comes to the dyehouse. A third step would be delving deeper into the wants and needs of consumers and finding ways to shift the “wants” from high-eco-impact products to sustainable products – not an easy task when designers don’t have all the tools and materials they need to make these products.’

Quinn sees the work of engineering this shift as a collective task for the whole fashion industry. ‘All of the industry players have a

This page and opposite: Eileen Fisher Spring/Summer 2011 collection. Building on core fabrics and yarns each season, Eileen Fisher customers can adapt their wardrobes, combining new with old.

responsibility to create a sustainable fashion industry. Their work can be supported by government incentives – but it shouldn't be the only motivator. Additionally, customers need to educate themselves about the environmental aspects of clothing and purchase products that they feel good about. We need to find innovative ways to express what sustainable fashion is – it can mean many different things and impacts different aspects of fashion design such as materials, style, quality, reusability... Company leaders can support design teams by understanding and engaging in the challenges that sustainability brings to the designer. But in the end it's not just about a designer – sustainability needs the whole company, a whole supply chain and engaged customers.'

Eileen Fisher herself sees the company's LAB store as an example of how organizations can be creative in furthering their philanthropic mission, even if the economy is tough. 'In September 2009, we quietly launched a unique retail business model called EF LAB. The LAB store is different from our other fifty-two stores nationwide due to its product assortment. It stocks four categories of clothing: our newest delivery of clothing; clothing from past season's collections; samples – designs not available elsewhere (and many not yet in production!); and recycled clothes, starting at \$5 (£3) per item.'

The recycled component is what most excites Fisher. 'By mixing pieces from past seasons with clothes in our current collection, it really speaks to the timelessness of the clothing and how many ways you can work these pieces across time, creating more value in each item. To ensure the EF LAB store has inventory in the recycled section, the EF Foundation launched Recycling Rewards, which rewarded customers for recycling their gently used Eileen Fisher clothing. Money raised from the recycled garments is distributed to non-profit organizations.'



‘The most sustainable product is the one that is not made but is recycled from what already exists.’

PETER KALLEN is design director of *NAU*, a design-led company based in Oregon in the US that produces sportswear and outdoor lifestyle clothing from ethically sourced materials.
By Sandy Black

NAU's unconventional approach to business is one expression of the company's philosophy of seeking new solutions for the fashion system. The brand built up a strong following between 2005 and 2007 but could not sustain its growth plan in a recession and closed in early 2008. Later the same year it relaunched with new backing and enhanced online presence, but with the same underlying ethos, as described by NAU's marketing spokesman Ian Yolles. 'What we did and how we did it was bold and audacious. We set out to design an entire company from the ground up with sustainability at the centre of our thinking. We challenged conventional paradigms when it came to our approach to philanthropy, the notion of "business unusual" and the way we engaged with our community. In some ways it was the right set of ideas at the right time. It seems to have struck a chord.'¹ One of the inevitable casualties of the relaunch was a reduction in the percentage of profit, from 5% to 2%, that the company could give to philanthropic causes via their Partners for Change programme.

Design director Peter Kallen explains the corporate ethos this way: 'Sustainable fashion (or any product) is a challenge – the most sustainable product is the one that is not made but is recycled from what already exists, either as raw materials or as a pre-existing finished object. At NAU we have chosen two paths towards sustainability: materials and design.'²

Presently we use recycled PET, traceable organic cottons and wools, as well as recycled

cottons and wools. We strive to craft timeless pieces that integrate into the customer's wardrobe and have multiple uses. The clothes are built to move seamlessly through the wearer's day in a variety of conditions and settings, allowing them to have fewer items that do more things. The idea is to make a product that is more sustainable, considered and useful.

Our biggest obstacles in achieving this are:

1. Raw materials: the availability of [sustainable] raw materials to create the fabrics and trims continues to be a challenge.

2. Perception: there is a perceived aesthetic that is associated with a product that is 'sustainable' – the idea that it is something to wear for a trip to the ashram, and that you must be shrouded in hemp that feels like a burlap bag.

3. Commitment: when you are pioneering a new direction it takes commitment from all levels to make sure the supply chain will work, and that all of the partners are willing to make this commitment to being sustainable. It costs money and time to create something new.

4. Acceptance: our products need to be accepted and valued by customers for what is put into them.

Aside from all of this, people need to realize the value of sustainability and understand the positive change it can effect for all of us. Part of this realization includes the fact that a sustainable product will cost more to create, but the value and impact it can have is priceless. In time I believe the cost equation can be equalized, but to start with,



Right and opposite:
Womenswear and menswear,
NAU, Autumn/Winter 2011.

the raw materials alone can often cost up to 20% more than their conventional equivalents.

Design is the driving force behind sustainability. Designers can provide leadership, guidance, exploration and influence. It is our responsibility to integrate sustainability into all our products and business models from this day onward. We need to take this initiative ourselves because the fashion wheel is BROKEN! It needs a big kick in the backside to change its bad habits. I am encouraged and inspired by the change that is possible, starting with sustainability and expanding from there... I love fashion and design and am optimistic that collectively we can be agents of change who will steer the ship towards a new destination.

This is our philosophy on design and sustainability: sustainable fashion means timeless colours, smart design, eco-friendly materials and simple care. For you, it means style: you'll want to wear our clothes for more than just one season. Our principles of design are rooted in a blend of beauty, performance and sustainability.

1. Beauty: a passion for the aesthetic in all things. We design for lasting beauty with product colors, details and shapes that are minimalist, modern, and timeless.

2. Performance: meeting or exceeding an intended use. We design products that protect from the elements, and establish a visual tone that allows for multifaceted use – styles look as good on city streets as they perform well in the wild.

3. Sustainability: balancing the 'triple bottom line' of people, planet and profits. We design for social, material, and aesthetic sustainability. 2% of profits on every sale goes to our humanitarian and environmental Partners for Change. Our cut and-sew factories must adhere to our code of conduct. The materials we use include natural and renewable fibres produced in a sustainable manner and synthetic fabrics that contain a high recycled content. We minimize toxics in all product finishes and dyes and use salvaged and recycled materials for our retail fixtures.

These core design principles of beauty, performance and sustainability are our core business principles, too.



‘There is a perceived aesthetic that is associated with a product that is ‘sustainable’ – the idea that it is something to wear for a trip to the ashram, and that you must be shrouded in hemp that feels like a burlap bag.’

‘Taking old/worn/dated/shameful clothing and giving it a new life’

Based in London’s thriving East End fashion district centred on Brick Lane, **JUNKY STYLING** is one of London’s pioneering design-led micro-companies that punch far above their weight, reaching a major audience through its internet presence and media profile.

By Sandy Black



Above: Army wrap cardigan and ladder trousers.

Junky Styling’s signature look involves deconstructing and reworking classic men’s pinstripe suits, shirts and ties into surprisingly sexy and glamorous dresses, bustier tops, skirts and trousers. Other reworked fabrics include tweed suits, Welsh blankets, knitwear and silk scarves. This redundant garment stock is sourced through agents and charities in London and across the UK, and the resulting remade pieces are produced in the company’s East End studio–shop. Each piece is individual: although patterns and styles are repeated, the ever-changing selection of recycled fabrics mean that no two garments are alike. As well as its evolving collection of pieces offered for sale in its studio–shop, Junky Styling also operates a ‘Wardrobe Surgery’ to which customers can bring fabrics or clothes that have been handed down or have fond memories attached, and have them remade into contemporary pieces. The largest single category of clothing brought in by customers is denim: a fabric often imbued with important aspects of a person’s life-history, making its wearers loath to part with it.

Junky Styling partners Annika Sanders and Kerry Seager have been in business together for over fifteen years. In addition to selling pieces directly through their studio–shop, they have continued to develop their online wholesale business, with fashion retail stockists growing in the UK and Europe. Their latest venture has been a separate menswear line, promoted at the London and Paris fashion weeks.

A new Junky Styling venture launches in Seoul in 2012, in partnership with a major Korean company that holds licences for twenty clothing brands. Junky Styling plans to ‘close the loop’ on all the Korean company’s textile waste by reworking dead stock and creating ranges for both men and women that the collaborating company will sell in the Korean market. This is a pioneering collaboration to upcycle on a much larger scale and divert a different waste stream.

In the context of the wider ethical and environmental fashion movement, the influence of companies such as Junky Styling is beginning to pervade the retail sector and affect charities and the textile-recycling industries on a much larger scale. They are creating a demand for used and waste clothing that increases its worth, and modelling how design and upcycling can be used to add value to surplus clothing and textiles.

The influence of companies such as Junky Styling is beginning to pervade the retail sector and affect charities and the textile recycling industries on a much larger scale... creating a demand for used and waste clothing that increases its worth.



Above and left. Two versions of Junky Styling's Chesterfield coat, using bold, contrasting recycled fabrics.

Zero-waste cutting

MARK LIU *experiments with a new form of eco-efficient fashion.*

By Sandy Black

Mark Liu adopted the principle of zero-waste pattern cutting to address the fact that in every garment approximately 15% of the fabric is wasted in the pattern-cutting process. His approach uses complex multiple pieces, some with intricately shaped edges, which create a striking 3-D textural 'feathered' effect when sewn together. Other pieces do not require sewing at all. 'We create garments in which waste is designed out at the beginning of the process. To do this all the rules of tailoring and textiles must be reinvented. Pattern-making is pushed to its very limits until waste is reduced to zero.'¹

Liu explains the challenges of the process. 'The garment pieces are designed to fit together like a jigsaw puzzle so that nothing is wasted...It took a lot of trial and error to make the zero-waste patterns work. You have to be able to visualize the 2-D pieces in your mind to fit them together in 3-D, acting as both fashion designer and pattern maker at the same time.'

Liu views his approach as part of a wider trend towards improved sustainability in large and small companies across the fashion industry. '[To] sit back and be part of the system is not good enough. We have to try to invent new ideas and be continually researching.'



'[To] sit back and be part of the system is not good enough. We have to try to invent new ideas and be continually researching.'

Above: 'Unicorn' by Mark Liu, demonstrating intricately shaped 'feather' edge-cutting, 2010.

'I don't want to emulate what I'm born to antagonize: the fashion industry.'

FROM SOMEWHERE, the name of Orsola de Castro's label, hints at the provenance of her fashions, which are made of pre-consumer surplus-fabric and cutting waste from garment factories in Italy and the UK.

By Sandy Black

Launched in 1997, From Somewhere became a maggie within the hugely wasteful fashion industry, gathering its discarded treasures instead of using new textile products. In the brand's early days, de Castro travelled around Italian factories to collect waste fabric from the manufacturing floor; now this waste is collected by factory staff and sold or willingly donated to de Castro. Not all excess fabrics in factories are routinely thrown away: more valuable textiles such as jersey and silk are accumulated for the stockmen and sold on in bulk. From Somewhere diverts 3–4 tonnes of textile waste each season.

From Somewhere clothes are made in relatively small quantities: perhaps only 1,000–1,500 pieces annually. Production is situated in Italy and in the UK so that it is as close as possible to the source of the materials. Due to the eclectic mix of numerous different fabrics (everything from cashmere to tweed), each piece is unique; size is not always predictable; and dresses are sold by colourway rather than exact shade. The resulting designs are effortlessly beautiful and eye-catching due to their rainbow-like patchwork panels. However, there are sometimes issues with repeatability, and fashion buyers have had to be educated about the production process of the line and persuaded to accept variability as one of its distinctive selling points. Rather than selling through exclusive individual stores, as is the case at present, the company therefore wants to reach as many people as possible via an increased online presence.

In 2006 de Castro and her partner Filippo Ricci were instrumental in founding Estethica, the ethical fashion section of London Fashion Week that has become a fixture in the London fashion calendar and helped make London a global centre for ethical fashion. Estethica has influenced the wider industry by raising awareness of environmental and ethical issues in the fashion system, and promoting emerging sustainable fashion companies. After ten seasons of Estethica and fifteen years in the business, From

Somewhere's collaborations with multinational companies have demonstrated the long-term influence smaller ethical business can have.

The first such collaboration was with British supermarket giant Tesco, which has committed to moving towards sustainability with its clothing label F&F, in accord with the British government's Sustainable Clothing Action Plan, launched in 2009. In this unique collaboration, entitled From Somewhere to F&F, de Castro developed a capsule collection of six pieces for Spring/Summer 2010, based on From Somewhere's best-selling styles, incorporating upcycled jersey fabrics from Tesco's previous production, including obsolete and damaged stock and 'end-of-roll' waste otherwise destined for landfill. A second range followed in the autumn; both ranges sold successfully online. The garments were produced in a pioneering 'green' factory in Sri Lanka as part of a wider long-term consultancy project. De Castro's direct engagement with the fast-fashion part of the industry represents a positive step for change with the capacity for genuine impact.

The second collaboration underway at From Somewhere has taken advantage of an opportunity to divert an unforeseen waste stream in a creative manner. The swimwear company Speedo, which was unexpectedly barred by changes in regulations from using some of its most technically advanced swimsuits for the 2012 Olympic Games, made these available to From Somewhere. De Castro and her team have developed an original range of signature upcycled dresses and tops that creatively reuse the fabrics, logos and trims from the disassembled swimsuits. The result is a range with a distinctive new aesthetic – and, de Castro hopes, with potential new uses. Given the synthetic swimsuit fabric's quick-drying properties, she envisages a new form of clubwear – the swimdress – that allows the wearer to go straight from swimming to an evening out without changing outfits. The impact of scale that can be achieved by working with large companies in collaborations such as these



Above: 'Viper' dress, part of a capsule upcycled collection by From Somewhere for Tesco, Spring/Summer 2010.

'Precious things exist unnoticed'

The Japanese label **MINÄ PERHONEN** (meaning literally 'I, butterfly' in the original Finnish), designed by Akira Minagawa, exemplifies the values of slow fashion. The line, which is produced locally in Japan, is known for its high-quality fabrication and durable design values.

By Sandy Black

Below: 'Fogland' textured jacquard-weave coat and appliqué leather bag, Autumn/Winter 2007/8.



Akira Minagawa's signature quirky hand-drawn printed and embroidered fabrics are applied to simply cut dresses, separates and accessories, and recently also to furniture. He works in close collaboration with artisan weavers, making use of both sophisticated technology and traditional Japanese methods of weaving, dyeing and printing originally used for kimonos, a legacy that goes back centuries. In this he follows in a long line of Japanese designers, such as Nuno, Makiko Minagawa for Issey Miyake and Jurgen Lehl, who have developed innovative fabrics with the benefit of the knowledge, experience and skills of individual weavers, dyers and embroiderers working in small production units, which are growing increasingly rare as a younger generation fails to preserve these textile skills.

Minagawa was born in 1967, and after graduating from the famous Bunka Fashion College in Tokyo, worked as a pattern-cutter and textile designer for a made-to-order clothing company before setting up his own business, now the company *minä perhonen*. What makes *minä perhonen* distinctive is not only the whimsical visual poetry of its prints, weaves and embroideries, but also the brand's corporate integrity and the values of sustainability that guide its production. Although its clothes are industrially produced, this is done so in a way that respects the time required to capture the nuances of Minagawa's hand-drawn imagery and the individual charm of each design, a refreshing approach in an age in which the need for speed and cheapness dictate most mass-manufacturing processes. Minagawa's exhibition for the relaunch of Japan Fashion Week in 2005 emphasized the value of time in fabric manufacturing by illustrating just how much (or how little) fabric could be woven or embroidered in one hour on industrial production machinery, although he insists that 'time does not determine the value of a product', i.e. its market price.

Minagawa's commitment to slow fashion is also apparent in the designs themselves. The

Right: Finely woven silk jacquard engineered designs: 'Hanako' (top two images) and 'Little Girl' (lower two images).

Far right, top: Knitted top and printed 'Flower Nest' skirt, Autumn/Winter 2007/8.

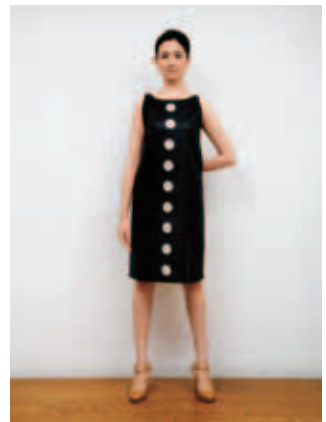
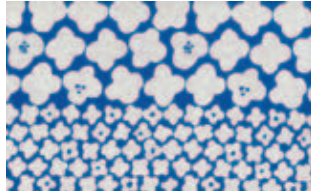
Far right, centre and bottom: 'Full Moon' woven fabric dress, Spring/Summer 2008.

minä perhonen silhouette does not radically change each season, but evolves gradually with each new collection, sometimes with elements of fabrics reworked on a different scale. These collections are not presented in the conventional fashion catwalk format; instead Minagawa invites buyers and customers to touch and feel the clothes in his seasonal presentations, directly engaging with them.

Conceptually and visually charming, but technically challenging, minä perhonen fabric designs and clothing exhibit a synergy of three interwoven ideas: 'time', 'story' and 'life'. Minagawa views the production cycle – from concept through to fabric manufacture and finished garment – as incomplete until the customer brings her own personal story and develops a long-term relationship with the clothes. Durability and longevity are built into the concept: it is hoped that the wearer will grow older with her minä perhonen products, perhaps adapting a dress as her body size and shape change, and that the clothes will continue to have a life and meaning for many years to come.

In 2010 a retrospective of Minagawa's work was staged in Tilburg in the Netherlands, featuring over one hundred textile designs used in both fashions and furnishings. Minagawa has also produced a number of books and catalogues showcasing his drawings, manufacturing processes and timeless textile designs.

In the wake of the devastating earthquake and tsunami of March 2011, the minä perhonen brand, like many other Japanese fashion labels, has redoubled its efforts to be positive, optimistic and strong, and to make its clothes and products ever more relevant to its customers.





‘The soul of the parish is making.’

GOODS OF CONSCIENCE is a sustainably produced clothing line started in 2005 by a Catholic priest, Father Andrew More O’Connor, in the Bronx, the poorest borough of New York City. By Sandy Black

A system of benefices is being built in the US to develop local workshops, which employ locally and act globally, producing clothes that look good, feel good, and do good, based around a unique hand-woven cloth called Social Fabric™.

Father Andrew More O’Connor, who founded the project following a retreat in Guatemala during which he learned of the death of a priest who had worked among the country’s Mayan communities, explains its underlying philosophy: ‘The soul of the parish is making. I propose that we put our parishes

to work making something: bicycles, plates, shoes, beer, miracles, something tangible, anything local. The parish does not need to worry about competing with China, but can offer something of real quality with the added value of local origin – “the work of human hands.” Built to serve the working classes, inner-city parishes can become home to small-scale workshops that manufacture for local markets.

Consumer savvy and the growing demand for sustainably produced goods and fair trade dovetail with a burgeoning taste for the local: locally grown

food and locally produced goods. Particularly in the inner city, parishes have the space and the human resources for manufacturing. The parish as manufacturer could – and would – support its community in both body and soul.’

Putting his ideas into action, Father O’Connor has developed a special high-quality cotton fabric that is hand woven by Mayan communities in Guatemala using simple backstrap looms. Social Fabric™ is made from a combination of local Guatemalan colour-grown cotton and modern light-reflective yarns. O’Connor, who originally trained in the visual arts, initially developed this unique cloth for use in ecclesiastical art projects, and has now adopted it produce stylish and original clothing that he designs himself with the assistance of a pattern maker. O’Connor sees these designs as part of his wider vocation. ‘My own tastes govern the design of the clothing, which is a happy distillation of the parameters of the cloth I am using and the life of the missionary. I like the clothing to be functional and transitional, from the informal to the formal. I want to convince the consumer to dress symbolically, participating in a reality that the clothing visibly signifies.’ High-quality material is important not only to the quality of the clothes themselves, but also as source of pride and opportunity for the communities that produce it: ‘Rather than use cheaper materials, the reflective yarn we use mediates a psychological inferiority the weavers feel about the worth of their labor that is often reflected in the use of inferior materials to



Above: A suit from the Goods of Conscience range, using Social Fabric™ cloth woven with reflective yarn detailing, photographed in Guatemala.

Opposite: A workshop in the Bronx, New York City, that manufactures clothing for Goods of Conscience.

undersell local competition. Social Fabric™ enables the them to live in such a way that their livelihood does not kill off their living.' The cotton is distributed through the Textiles Proteje based in the Museo Ixchel in Guatemala City, and is sold by weight to the weavers; finished cloth is then sold by weight back to the museum, which quality-checks it before it is shipped to Goods of Conscience in New York City. The museum also invites the weavers to showcase their art, encouraging them to feel proud of their work.

The fabric is then dyed (where required) and garments are made up in New York City by a small number of local contract workers. The business's ecological and ethical credentials are becoming increasingly well known in association with the brand and the unique aesthetic of Social Fabric™. Sales are made primarily over the internet and at trunk shows, but interest from eco-design retailers is increasing. O'Connor explains how the profits from these sales directly benefit the weavers in Guatemala: 'Chicacao is the main city and it is divided into sixteen *aldeas* – little villages of a few thousand inhabitants each. San Pedro Cutzan is the *aldea* where our team of twenty weavers live. In February 2010, I distributed the first fifty uniforms and satchels to 200 children in San Pedro Cutzan as part of our school uniform project. I also wrote a check to the local parish for US \$1,250, which paid for food and medical aid. The uniforms are highly symbolic to the community because their cloth and their cotton is made in a North American

style. The food and medicine aid is significant too, since it fortifies the elderly who care for the children and helps the children learn. Fair trade allows the community to earn badly needed cash.'

Father O'Connor believes that the project has the potential to improve not only practical conditions in producer communities, but also the values of modern American society. 'The four principles of Goods of Conscience are Individuality, Common Good, Subsidiarity and Preferential Option for the Poor. A local parish as a place to live, work and pray offers, potentially, a holistic environment in which to develop new communal structures that can modify consumer appetites and habits. Some American parishes dabble in T-shirts and cause-related goods, but this is more of a reflection of affluence and leisure than necessity. These ventures are not brave enough. We need to begin living in a new way, tapping into our ancient beliefs and practices: making something out of little or nothing, building sacred dependency on one another, imbuing the ordinary desiderata of life with intelligence and the savour of love.'

Colour-grown cotton cultivation

Colour-grown cotton comes from ancient cotton varieties that grow naturally in shades of cream, brown and green. The vibrant natural colours of this native 'heritage' cotton owe their richness to the moist soil, humid climate and good drainage on Guatemala's Pacific coast. Restricting the direct application of fungicides and insecticides builds the health of the soil, which has been continually planted with cotton in polycultural conditions since the 1940s. The seed collection amassed by Horatio Villavicencio, now deceased, is a critical legacy, especially in light of the dominance of Monsanto Corporation's annual acquisition of wild seed in the villages of Nuahalá and Santa Ana, north of Atitlán, which limits access to the seed both locally and globally. One advantage of handwoven colour-grown cotton is its resistance to wrinkling. The Maya use a natural mercerization method that utilizes a byproduct of tortilla production: calcium and cornstarch create an alkaline polish for the cotton shaft as well as giving the warp a silky slip.

“Considered” is about creating performance products for our athletes, but with a smaller environmental footprint

LORRIE VOGEL, *Considered Design general manager for Nike, spoke to Sharn Sandor about the company's sustainability initiatives.*



Q For a large-scale business such as Nike, it must have been difficult to establish and understand your environmental footprint. Could you tell us about this process and how long it took you to come to conclusions?

A Nike has been working towards sustainability since the early 1990s when we introduced our shoe-recycling programme – Reuse a Shoe – and we began measuring our environmental footprint in 1998. We wanted to focus on our largest environmental impacts – waste, water, toxics and energy – and target reductions for each of these areas.

How do you look at these things from a product level?

With regard to materials used in our products, we have an assessment where we weigh all of our materials. We look at how sustainable they are and give them a rating. If we look at waste in our products, we are talking about pattern-cutting efficiency. Then we score the processes we use on how environmentally friendly they are.

How does it work? Do you give each product a score and then try to improve that score if it's not a good one?

We have our Considered Design index and have set targets for all of our products. For fiscal year 2011, we wanted 100% of our footwear to achieve our 'considered baseline' standards; for our apparel, we wanted 100% to meet our baseline standards by

2015. So we score each product based upon less waste, less toxics and using more environmentally friendly materials and we set up target goals.

It looks as though our Spring 2011 footwear is going to hit the target of 100% meeting baseline standards. We're excited about that.

How do you overcome the challenges of 'eco' materials costing more than their conventional counterparts?

We wanted to make sure that our Considered Design index was a balanced index, so that when you reduce waste, you save money. When you use environmentally friendly materials they tend to be more expensive, so what we try to do is balance out our waste reduction with the cost of environmentally preferred materials so that it becomes cost neutral.

Is that difficult to measure on such a large scale?

It's not that difficult to measure. When we measure pattern efficiency, we can see the materials we don't have to purchase and that's where we can see the savings.

How do you handle the process of integrating sustainability across the company and the supply chain in practical terms?

Our long-term strategy is focused on innovation, collaboration, transparency and advocacy. We develop targets against our largest environmental impacts and we drive these goals throughout our company and supply chain in order to prepare for a future sustainable economy. Challenges still remain, and transparency and collaboration are the keys to moving forward.

Would you say sustainability can be profitable?

Our goal is to create a more sustainable approach aimed at providing greater returns for our business, community, factory partners, consumers and the planet. We must use this opportunity as a source of growth and innovation. We don't look at this shift as a choice; we believe that these decisions move us towards a more sustainable economy.

When fashion-led companies say that they can't be more sustainable because it is more expensive, how would you suggest they could start incorporating more sustainable practices?

I would say they have to look at all of their environmental impacts and probably the first thing they should focus on is reducing waste. I do think there will be a point when we will have gotten to all of the low-hanging fruit around waste and then we will really need to see more legislation – it's already starting to happen.

Would you say that the changes Nike makes in its policies are responsive to customers' demands or do you lead the way and educate the customer?

We recognize that we must develop processes to prepare us for a more sustainable economy and that our consumers are becoming more aware of these issues. With today's social and environmental realities, this larger commitment is critical to Nike's growth.

There are still a lot of people who aren't familiar with your sustainable practices; they just remember Nike's child-labour issues in the past. How would you educate those consumers about what you are doing now?

Nike has focused on transparency and so people can look at our corporate social responsibility report and understand the continuing improvements we have made around labour.

How and why did you develop the Considered Design ethos and how would you define it?

When we talk about the Considered Design ethos it's about embedding it in everything we do in the company. It is not just a product line – it is an ethos that affects the future of the company. Considered is about every choice the designer makes and about developing more sustainable choices – not only reducing our overall environmental impact but also creating a vision of where we want the future to be. We have a 'closed-loop' vision, in which we take materials from

Opposite: The Air Jordan XX3 basketball shoe issued in 2008 was the first to utilize the Considered ethos to reduce environmental impact during its manufacture.

Right: Disassembled soles of Nike trainers made from Green Rubber, which has greatly reduced environment impact. Worn-out soles are ground up and used to make surfacing materials for playgrounds and sports pitches.



an old shoe and an old shirt and then grind them up and turn them into a new shoe and a new shirt so that we can keep materials in play and not have to continue to tap into the earth's resources.

Is it correct that if your designers come up with a more sustainable way to do something they receive rewards?

We set company targets for all of our products to hit Considered baseline standards, so each season we rate our categories, such as soccer, running and basketball. Through our index we also encourage innovation, so if they come up with a new design that is more sustainable, we will put that onto the index and give them additional bonus points. We also give our designers early adopting points – so if you adopt a more sustainable innovation within a year you get additional points, because we want sustainable innovation being adopted at a much faster pace.

You are applying the Considered index to your subsidiaries such as Umbro, Cole Haan and Converse. Do they use the same materials as Nike? Do you share mills and even fabric itself?

Now that we've learned so much about the index and the Nike brand, we can share this information and the implementation of the index...every group is different but we do a lot of sharing. They explore different material options in the same way as the Nike brands, and we rate those materials in the same way.

What plans do you have to apply the index more widely?

We recently opened up our apparel environmental-design tool on the web. It is based on the Considered index; we've made it easy for other brands to look at the way Nike measures products. With the materials-assessment tool they can see how we assess materials and how we look at waste. It's all about sharing within the industry in the hope there will be more collaboration towards achieving higher global standards.

'Nike believes in the importance of transparency to spur further industry collaboration and fast-track sustainable innovation.'

Do you find there is enough collaboration between industry, government and non-profit organizations, or is there a need for more?

Nike believes in the importance of transparency to spur further industry collaboration and fast-track sustainable innovation. We need to start creating global standards to encourage the adoption and development of sustainable product-design standards to create a level playing field. Early in 2009 we launched the GreenXchange, an online marketplace for sharing intellectual property, to share our commitment to the power of open innovation and collaborative networks and to fuel sustainable innovation by making our patented technologies available for research and licensing. There are a lot of existing resources, so this is about sharing the great work and best practices that are out there.

Have you been able to share some of your patented technology with other brands?

Nike opened up over 400 patents on the GreenXchange and a good example is our environmentally preferred rubber. We put it into the GreenXchange and we're starting to see that companies are interested in using the material. When our chemistry team came up with the environmentally preferred rubber, it removed 96% of toxins by weight, so it was a significant improvement...Within the GreenXchange we have interest from companies outside our industry, such as bicycle and car-tyre companies: they

are learning about the work we are doing and we are learning some of the work they have done.

Who knows what sorts of things will be shared in the future?

That's what is so fun about this. The GreenXchange is all about open innovation and you really never know where it's going to go. It's like when the internet first started and no one could predict where it would finally end up.

This reminds me of a researcher at University of the Arts London, Kate Goldsworthy, whose specialization is in recycled polyester fabrics and laser cutting: she partnered with a company in the north of England making bags for potato chips using recycled materials, and was able to do something completely new for textiles using the innovation of this potato-chip bag maker.

That's what is so great. When we talk about sustainability it's not a competitive space so it's a great opportunity to break down barriers around collaboration in industry.

The Considered Index programme is one of the foundations of the Apparel Index, which is being developed by the Sustainable Apparel Coalition, together with the Eco Index developed by the Outdoor Industry Association in the US.

With thanks to Erin Patterson, global corporate communications manager, Nike

'Better-fitting clothes sell better and create less waste.'

FITS.ME is a virtual fitting room that uses robotic mannequins to ensure a perfect fit, reducing waste in online clothes shopping.
By Sandy Black.

Across the fashion industry, variations in sizing between brands are notorious, and returns (and therefore refunds) of unwanted clothing are a major issue for retailers, especially for fitted or tailored fashions. Returns are lowest for casual and sportswear (12–18%) but fitted fashions often have return rates of more than 35%. In Germany, the return rates for online clothing sales are even higher, as much as 40–60%, since 'open invoicing' policies encourage people to buy the same garment in multiple sizes and then return the ones that don't fit.

Recent collaborative research conducted in Estonia at the University of Tartu and Tallinn University of Technology, in collaboration with German body-scanner manufacturer Human Solutions, has developed a robotic mannequin that is able to mimic the shape and size of the human body. The mannequin (which is available in both male and female versions) can take the shape of either the statistical aggregate target market profile (for example, the average 30-year-old male in Italy), or that of a real individual who has either had his body scanned in 3-D (a webcam scanning method is proposed for the future) or provides the necessary numerical measurements online. After entering this data, the online customer is shown photos of the mannequin wearing different sizes of clothing in order to be confident of the fit. Self-measured entries are error-corrected by statistically comparing them to a database of about 40,000 human scans.

The robotic mannequin is articulated in many sections, and covered in a flexible but non-stretch material usually used for prostheses. It has far more sections than a standard tailoring dummy; each of them can be adjusted to a fraction of a millimetre and, most importantly, can take on asymmetric or unconventional body shapes. Special attention has been paid to shoulder and hip areas to make them look as natural as possible. This facility opens up possibilities for mass customization, made-to-measure fashion, remote fashion design, remote tailoring or any scenario in which the customer cannot physically visit the maker for fitting (this is especially important for layered and more complex clothing).

This virtual fitting-room technology has been tested and reported in the press,¹ and is expected shortly to be made available to retailers. Other benefit of the system will include creating a fitting-model for manufacturers that is statistically more representative of the target market, and facilitating remote fit-quality control for use when a product is being manufactured in a different country from the designer.

Heikki Haldre², the Fits.me company CEO, predicts the future growth of the system: 'Apparel retail growth will be 2–4% annually over the next eight years. At the same time the apparel e-commerce growth will be in double-digit numbers. It will have an additional short-lived accelerated growth as new technologies, such as the virtual fitting room, become mainstream...some analysts believe up to 35% of all apparel will be sold on internet by 2018. (The share is 9% today in the US; and some believe up to 14% in the UK).

'As total apparel sales will not grow significantly overall, e-commerce growth will reduce apparel sales in bricks-and-mortar stores. Up to one in four clothing shops will face closure, or be in dire need of changing their business models, as has already happened to bookshops and travel agencies. Yet three out of four clothing shops will stay open, especially those on the high street.

'While e-commerce is more environmentally friendly, apparel e-commerce today suffers from two obstacles. First, online retailers struggle to convince customers to buy clothes without first trying them on. The numbers illustrate this well: 9% of apparel is sold online versus 50% of computers and 40% of books. Although apparel e-commerce is one of the smallest in terms of share sold online, it is already the largest e-commerce category in terms of value (2010 US apparel e-commerce sales were US \$31 billion, online computer sales were US \$26 billion).

'As a virtual fitting room removes one of the main risks when buying online, sales will increase.

'The second obstacle is that apparel e-commerce is a category with one of the largest waste problems. Because of the lack of a fitting room, customers tend to buy more loosely fitting garments online than they do when shopping at

Below: The Fits.me adjustable mannequin can be programmed to the customer's size.



‘As fashion is one of the most seasonal product categories, garments that fall out of the sales cycle – clothes that are purchased and then returned – represent a significant loss of revenue for retailers. On top of fixed reverse-logistics costs (such as return shipping, reverse warehousing and spillage), garments lose 20% of their value for every four weeks they spend out of the sales cycle.’

bricks-and-mortar stores. Research suggests that on top of the unwanted items actually returned to online retailers, up to a further 16% are not being returned because customers miss deadlines, or find alternative uses for these garments, such as giving them to charity. When we look at why customers return garments bought online, 5–7% of returns are due to computer screens rendering the colour slightly differently; 15% are due to the customer’s inability to feel the fabrics; but a significant 60% are due to the garment being the wrong size. While Fits.me addresses only the fit issue, other technologies, such as haptics, seek to solve the problem of virtually ‘feeling’ the fabrics before purchase. In trials, the Fits.me Virtual Fitting Room increased sales between 57% and 300%; and reduced garment returns by 28% on average.

‘As fashion is one of the most seasonal product categories, garments that fall out of the sales cycle – clothes that are purchased and then returned – represent a significant loss of revenue for retailers. On top of fixed reverse-logistics costs (such as return shipping, reverse warehousing and spillage), garments lose 20% of their value for every four weeks they spend out of the sales cycle. On average a returned garment is out of the sales cycle for 4–5 weeks in Europe; longer in the US where return policies are more lenient. Every 1% in reduced returns increases retailers’ profits by 1.5–2%. As 10–15% of the value of a garment bought online (20–30% for a returned garment shipped both ways) is in transportation costs, reducing unnecessary transportation by reducing the number of returns decreases costs and helps to save the environment. Some returned garments are typically resold at discounted prices, but more often than not they are simply discarded to protect the brand’s pricing policies.’

In addition to these potential improvements in efficiency and sustainability, the Virtual Fitting Room provides retailers with the body measurement data of their customers. This gives brands valuable information about which sizings should be changed and which fit styles should be added. As Haldre says: ‘Better-fitting clothes sell better and create less waste.’

Consumer understanding of sustainability in clothing

Excerpts from Public Understanding of Sustainable Clothing,¹ a report prepared by Nottingham Trent University and Sheffield Hallam University for the UK Department for Environment, Food and Rural Affairs (DEFRA) in 2008. The report explored consumers' attitudes and habits towards purchasing, washing, maintenance and disposal of clothing, and their understanding of sustainability impacts in the clothing life cycle, which was found to be low.

Recommendations

Improve the public's knowledge of sustainable clothing practices, using the appropriate media.

Integrate information into the retail environment on the sustainability implications of clothing acquisitions, use and disposal.

Build on the 'Wash at 30°C' campaign and consumers' desire for economy to promote good habits in tumble-dryer use.

Encourage clothing skills and awareness for children and adults, including repair, through government departments.

Work with retailers and local councils to increase people's understanding of the reuse of clothing and recycling of fibre in order to divert textiles from the waste stream.

Develop greater understanding of informal second-hand markets and their potential to promote reuse.

Explore opportunities to build people's trust, especially between government, industry and NGOs, develop agreed standards and remove clothing with the most significant impact from the market.

Provide better labelling on the source of products, such as the origin of cotton, and explore options to increase recovery of clothing through 'take back' schemes.

Develop understanding of the motivational characteristics of each environmental behaviour segment and target strategies at these motivations.

Explore options to use fiscal measures and trade policies to promote sustainable clothing.

'I don't get too emotional about clothes after six months.'

Male participant, 62, p. 32

Many people give used clothes to charity, but only those which are deemed to be fit to be sold for reuse; there is little awareness of recycling fabrics. Charity shops and doorstep collections are often seen as the most convenient ways to dispose of unwanted clothes, rather than selling them; when such reuse is inconvenient, clothes are more liable to be thrown away. p. 20

Clothing that is well made and intended to last tends to be associated with quality rather than sustainability. p. 19

Many are aware of the cost of tumble drying, in economic terms more than energy terms, and many use line drying whenever possible. p. 8

Even amongst the most pro-environmental, clothing choices most often derive from considerations of identity and economy rather than of sustainability impact. p. 8

Repair work to clothing is no longer undertaken as a normal, regular activity due to a perceived lack of personal skill and the relative cheapness of new clothes. p. 19

People's rationale for their washing routines often drew from standards of cleanliness, relating to sweat and skin contact, rather than environmental considerations. Some participants were able to make judgments about appropriate washing temperatures from the information provided on labels, for example, by treating the temperature indications as a maximum. Several participants said that the temperature they used to wash clothes was linked to the reason for cleaning them. Clothes with visible dirt or an odour were washed at a higher temperature than those that had been worn but were not visibly dirty. p. 26

‘Throw it, if it’s ready for the bin, the proper bin, not recycling. It’s good riddance, you know? You sort of feel yourself physically throwing it.’

Female participant, 20, p. 37

Many people, particularly in younger age groups, purchase cheap, fashionable clothing from low-budget retailers, fully aware that it will not last long in a reasonable condition. p. 8

Fashion and cheap clothing influence clothing choices, but have different impacts on consumers depending on their life stage. Participants from all segments reported buying cheap clothes and being influenced by fashion to varying degrees at different stages of their lives. There was little evidence of environmental concern moderating this behaviour, though there was a sense of weary resignation to fashion trends (‘all that nonsense’). It would be wrong to assume that all consumers are ‘dupes’ of the fashion system. People appear tactical in their clothing acquisition in ways that give them some creative ownership of the process of shopping for cheaper fashion items. p. 63

Even among consumers with a positive general orientation to pro-environmental behaviours and some understanding of sustainability impacts, clothing choices most often derive from considerations of identity and economy rather than sustainability impacts. p. 8

‘I personally think it’s a bit like going down the road to being vegetarian. I think if you had to go this way, you would have to stop buying everything to be guilt free.’

Female participant, p. 42

‘You need to learn about these things, be educated about what is happening and how you can change things. If you choose not to do that, that’s fair enough. But I can guarantee you that if more of that is in the media and we learn more about fair trade and what’s happening to these people and pesticides and stuff like that... even if one person changes their opinion, that’s one person more.’

Male participant, p. 47

While individuals might know which clothing habits are ‘good’ from a sustainability point of view, they do not necessarily act on this knowledge. People may behave in a pro-environmental manner, such as line-drying and using charity shops, but this may merely be an advantageous side effect of their ‘normal’ routines. p. 63

Sandy Black is Professor of Fashion & Textile Design & Technology at London College of Fashion, University of the Arts London. Her background spans the fashion industry and academia. After studying mathematics at university, she created the Sandy Black fashion knitwear designer label, selling in prestigious fashion stores internationally including USA, Canada, UK, Europe, Australia and Japan. Her designs featured widely in the media, together with ranges of Sandy Black branded yarns and knitting kits for home knitting. She began lecturing in the mid 1980s and became director of undergraduate and postgraduate fashion and textiles programmes firstly at University of Brighton, then at the London College of Fashion, where she developed and led the multi-disciplinary MA programme in Fashion Studies for eight years.

Sandy focuses on inter-disciplinary design-led research, in the context of sustainability. She developed the *Interrogating Fashion* research network in 2005, (a Designing for the 21st Century EPSRC/AHRC funded initiative), and the *Considerate Design for Personalised Fashion* project which aims to assist designers in developing sustainable fashion products to ultimately reduce fashion consumption but increase fashion delight. Personalised knitwear was featured in *Trash Fashion – Designing out Waste* at the Science Museum London in 2010-11

Sandy publishes widely on fashion, textiles and knitwear design and sustainability, and their intersection with science and technology. She is founder and co-editor of the journal *Fashion Practice: design, creative process and the fashion industry*. (Berg Publishers)

Key publications include:

The Sustainable Fashion Handbook, (Thames and Hudson, Oct 2012)

Knitting: Fashion, Industry, Craft (V&A Publishing, Oct 2012)

Eco Chic: the Fashion Paradox (Black Dog Publishing 2008, 2nd ed 2011);

Fashioning Fabrics: contemporary textiles in fashion, (Black Dog 2006);

Knitwear in Fashion (Thames and Hudson 2002, 2005)

Recent chapters include:

‘Knitting Technology comes full circle’ in *In the Loop: Knitting Now* (ed J Hemmings) Black Dog Publishing 2010

‘Nanotechnologies: their role in Sustainable Textiles’ in *Sustainable Textiles*, (ed R Blackburn) Woodhead 2009

‘Considerate Design for Personalised Fashion’ in *Designing for the 21st Century Vol 2: Interdisciplinary Methods & Findings* (ed T Inns) Gower Publishing, 2009

Acknowledgments

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