

Design Lifetimes: A Manifesto for Strategic Change

Professor Kay Politowicz

University of the Arts London
Professorial Platform 2013

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The Professorial Platforms series is an opportunity for University colleagues and associates, as well as invited members of the public to learn more about the research undertaken in the University. The Platforms enable Professors to highlight their field of interest and the University, in turn, to recognise and commemorate their successes to date.

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Introduction

It is a great honour to introduce tonight's Professorial Platform lecture, Design Lifetimes: A Manifesto for Strategic Change, by Professor Kay Politowicz. Kay has been an inspirational teaching and research leader in the field of textile design over the last thirty years. She built the textile design course at Chelsea from the BTec course in 1982, into the excellent BA course it is has become today. In 1996 she co-founded the Textiles Environment Design (TED) research group, which is now a key platform with the UAL's Textile Futures Research Centre (TFRC). Both achievements are highly regarded in the field of textile design in the international arena today, particularly in terms of creativity and originality.

Kay approaches teaching with an enthusiasm, passion and commitment that has inspired her carefully selected team to strive for excellence with the students and subject. Her office door has always been open to the students, her phone always answered to them, and to us. Textile design and research at UAL and beyond has developed through her extraordinary commitment and vision.

It is that same vision that recognised in the mid 1990's the need for the teaching team to become more aware of the environmental impacts of the industry. The TED group specifically aimed to educate and inspire both the lecturers and the students. When Kay moved from full time course direction into research in 2008 TED inevitably flourished. In 2010 Kay co-authored TED's TEN, a set of design tactics that guide the textile designer through the complex terrain of sustainability. The TEN have been developed from our teaching, research and enterprise work, and are now being used to probe the industry to seek workable ideas for systemic change.

Kay is a true collaborator, mentor, and friend. She has guided and supported the TED research team in a very brilliant way. Often understated and leading from behind, Kay is modest and clear, and always fun to work with. Her ideas, insights, and sense of play are behind all that we do and achieve in TED.

Rebecca Earley
Director of Textile Futures Research Centre (TFRC)
Professor of Sustainable Textile and Fashion Design



Particle Fabrics, 2002

A group collaboration between TED designers and neutron scientists from Institut Laue-Langevin, Grenoble. Using the ILL diffractometer Vivaldi, images were generated by neutron diffraction. Textile installation, based on strategies

for sustainable design, testing methods of production and construction. 'Signatures of the Invisible' exhibition series. EU Science Week, Milan

The What

Textile design graduates who are beginning a professional career today will see a system for production that has remained largely unchanged since the 1950s. Freelance designers and independent studios are the life-blood of the industry, selling directly or through agents to producers, often to retail brands with global production capability. Designs are produced by individuals in their studios in paper or fabric form and sold speculatively outright, including copyright.

However, new technologies have recently enabled designers to become viable small producers and even retailers, capable of developing their fabrics into finished products. The availability of bureaux for digital or laser processes and 3D printing, coupled with social media promotion and internet retailing has made small batch textile production and one-off collections entirely possible. The individual designer has considerable flexibility in producing innovative prototypes as well as developing traditional aesthetics. There are parallels with the new developments in filmmaking and in fine art, where auteur and activist collaborations are well established. Textile designers have the possibility of far greater self-expression within and beyond the demands of a commercial brief.

Many textile designers work on non-fashion textiles – for interiors and architectural contexts. A significant number of graduates take up careers in the arts, which are not in textile production. Our graduates need to be well educated in ‘design thinking’ and able to understand the design process with its values and application to strategic and organizational issues. They must see themselves as agents of change, able to join teams of collaborators, aware of open source developments, of customization, consumer participation and the ‘internet of things’. However, the majority of design careers in textiles remain in connection with the production of fashion.

Sustainability is now high on the agenda, as are humanitarian challenges, economic development and improving social services.

The Why

The spectacle and flamboyance of the fashion industry across high and low culture has real power and influence over all other forms of visual culture. It defines the way we dress and carries the messages of our individuality, our social groups, our morality and value systems. Its signature brands consume art, photography, pop culture and design, while its flagship stores resemble galleries. It is also widely recognized as a serious expression of imagination and identity and as a driving force for both cultural and social change. The luxuries of the catwalk are an investment in research and innovation similar to concept cars – the relationship to the mass production of most clothing is as distant as that between Formula One and cars in the street.

The drive to provide democratic access to consumer goods has led to the global fashion industry supported by intensive textile production. Textile designers supply the fabric and keep up a steady stream of innovation through the manipulation of material qualities, design aesthetics and technological invention.

The global textile industries have also delivered mass consumption, pollution and waste on a vast scale. The problem of environmental decay and landfill, the misuse of water and pesticides, the destructive effect on local culture and crafts and the inequity between the poverty of the producers and the wealth of many of the consumers is evident. The fashion industry is predicated on rapid style change, yet seems unable to capitalize on its potential role as a positive agency for ecological and social change. To transform its practices and identity, the many competing self-interests in an astonishingly complex retail supply chain will need to be overcome.

So what incremental changes can be proposed to improve the existing situation and which strategies can be adapted to offer alternative modes of design, manufacture and perhaps consumption?



The Black Hack, 2012

TFRC Director Professor Rebecca Earley's Top 100 project began in 1999 as a practice-based experiment to creatively and technically explore upcycling polyester fashion – specifically women's shirts. Over ten years and seventy shirts later,

the ideas have evolved along with the field, and the latest research uses consumer-facing interventions to probe the potential for consumers to refashion and extend the life of items in their wardrobe. CCW, London

The When

Research culture in textiles at Chelsea began with the arrival of funding in 1996. As designers and teachers we were already aware of the problems in the environment caused by pollution from textile manufacturing. We decided to research and collate the existing body of knowledge and developed a detailed overview of the entire chain of production.

The meaning and possibility of sustainability in textiles became a key element in the TED research group – Textiles Environment Design are its founding themes. We took as our guiding text Graedel and Allenby's '80% of the environmental impact of a product is determined at the design stage' (1995). We aimed in our practice to understand and demonstrate how design could determine the future of textile products. Detailed analysis of every stage of the process of production, including the ecological challenge to 'design out' wastage of material, energy, water and landfill made it clear that designers must consider the entire lifecycle of textiles. The role of new technologies in accelerating consumption was another important theme.

We believed in the need for a transformation of design education in textiles to be necessary for future designers. Since the outset of research we introduced an awareness of sustainability into the undergraduate and postgraduate curriculum at Chelsea.

We realised the need to produce prototypes as models of our practice, which we demonstrated in our first collective staff exhibition in 2002. The large installation in Milan provided a case study for communication of our hypotheses in public – a key event in our experience of collaboration.

In 2005 an AHRC funded project included a research exhibition on the theme of recycling for which we made a collection of 'narrative prototypes'. A significant element was the provision of workshops to study the interconnection between a series of strategies that had been developed for professional design audiences. The organisation of the strategies was a key development of TED's TEN, which we began to see as a way to navigate through the complexity of producing more sustainable products.

The Where

The strategies known as TED's TEN were originally developed as a practical resource to help textile designers understand and address the complexity of sustainability. We saw it as a tool to enable designers to cut through rhetorical blocks and overcome apparently intractable problems. The strategies became a set of ten cards for use in design workshops in conjunction with visual presentations. The TEN cards were gradually developed as a catalyst to encourage businesses to become proactive in creating desirable, marketable products and to consider the whole lifecycle, leading to new ways to do business. The cards were refined through the TED experience of a series of industrial and business workshops and were used, revised and developed in student projects with the BA and MA courses at Chelsea.

Recently, two significant international projects have helped us to develop our approach to product innovation and corporate social responsibility. In 2011 the TED team conducted a workshop with the CEOs of VF Corporation and their Outdoor Apparel brands in the USA. In 2012, TED was commissioned to curate the 'Responsible Living' section of the VF worldwide summit exhibition 'Future Wear', to influence the development of next-generation apparel. New garment prototypes were commissioned from both TED designers and international practitioners. Innovative and inspiring design solutions were presented. It was a kind of sustainability summit where TED addressed the problems of material waste, over-packaging, fast fashion, social enterprise and end-of-life destinations. The TED strategies were used as an integral part of the process of generating design proposals for marginal gains and improving existing modes of production.

Since 2011 TED has been part of the MISTRA Future Fashion research project, funded by the Swedish government body MISTRA: The Foundation for Strategic Environmental Research. The consortium consists of eight research teams with a brief to effect systemic and profitable change in the Swedish fashion industry. The research teams are multi-disciplinary including social scientists, political scientists and material scientists. TED's contribution to the research, as the design team, includes workshop development with Swedish SMEs and training design teams in sustainability for H&M, the giant Swedish fashion company. A further requirement to make links with Swedish design education at university level began with projects in Stockholm. TED will present an online exhibition of the findings of our research team.

The Here and Now

In recent years there have been increasing signs coming from European national agendas and commercial fashion companies that rhetoric concerning sustainable production is being transformed into action. From January 2007, French law extended producer responsibility to the end of life for clothing, linen and footwear. Tax levies are helping to transform the French system of recycling to overcome waste. The EU is looking to adopt the French model throughout Europe. The Sustainable Apparel Coalition (SAC) is an industry-wide group of apparel and footwear brands, retailers and suppliers, who have developed a voluntary interactive tool (The Higg Index 1.0) to measure and publish the environmental performance of their products. The EU is also interested in this model. Other examples of recent initiatives by large private companies are: M&S 'Plan A'; H&M 'Conscious Commitments' and Nike 'Environmental Apparel Design Tool'. The SMEs in the Swedish Fashion Academy (SFA) are already using the TEN sustainable strategies in conjunction with the Higg measurement tool to evaluate their TED redesigned garments.

In terms of material developments towards sustainability, the global race is on. We are linked to one of several projects looking into the separation of mixed fibres for 'virgin quality' closed loop recycling. The end vision is where all materials are cycled through the value chain as part of multiple and never-ending loops, from manufacture to use to end of life and back to remanufacture, maintaining their value as resources and ensuring they never go to landfill.

As the MISTRA Consortium develops it has attracted an extensive group of like-minded designers and commentator bloggers who contribute to the project. A group of PhD students formally associated with each project in MISTRA have become an international network, bringing a new generation of critical involvement. Textile and fashion graduates, connected to TED through websites, blogs and annual events, are another part of our extensive, critical community.

The work of TED in MISTRA is continuing in collaboration with the scientists and engineers developing new materials and processes and with the social and political scientists who are researching value systems. The work by lifecycle analysts on the connection between systems and speed are of particular interest to our study of the relative speeds within the lifecycle loops of products. This is of direct relevance to our proposals for changing manufacturing processes in order to embed cyclability without compromising aesthetic value or the functional sophistication of textile structures. Apart from collaboration, all TED practitioners have common

ground in the sustainability of the lifecycle and the importance of consumer engagement. Individual studies include: open-source involvement in DIY and designer-led hacks to slow down the lifecycle of existing garments by refashioning and extending the life of clothes; the use of innovative paper-based fabrics developed from Swedish wood pulp in a radical new fast fashion cycle; a new generation of polyester treatments for closed loop cycles; the life-span of materials in relation to products and identifying the pressure points for environmental damage.



TED's 24: Summer Workshop, 2012

The TED team like to end each academic year with an event, and last year TED's 24 invited MISTRA scientists and industry designers to come together over two days to share insights around sustainable fashion and textiles. This workshop asked them to: arrive as

consumers and share stories about their most and least worn clothes with the group; become designers and redesign some of the clothes; and then don a critic's hat as they appraised the concepts and advised the industry as to what needed to change. CCW, London

A Manifesto for Strategic Change

Education

Education in the arts must have a wider role in developing the manufacture and consumption of products beyond simple problem solving. Our material culture needs urgent philosophical direction. Stir it up.

Designers

Designers should refuse to accept the dominance of short term profit in the manufacture of textiles and expect to play a central role in integrating sustainability into contemporary culture. Work without guilt.

Manufacturers

Manufacturers should become agencies for change, seeking competitive advantage by redefining value systems imaginatively. Innovate into profit.

Consumers

Consumers need to be better informed about the ethical implications of things bought and the consequences of over-consumption and wastage. Get involved in finding solutions to our behaviour.

Political Strategists

Political Strategists must recognize and promote the power of design innovation to improve our environmental health. Our economic prosperity and social equity depend on it. And you.

Society

Society must accept the urgent need for environmental repair, the abolition of wasteful production and the revaluation of material resources. We pay for the consequences.

THE TEN

V.2



1

Design to Minimise Waste

Aim

How to reduce the many kinds of waste created within the textiles industry, both pre and post consumer?

Action

Assess the potential forward impact of design choices/decisions, on production use and eventual disposal of textile products. Create a design narrative in response to a life-cycle analysis of the product.

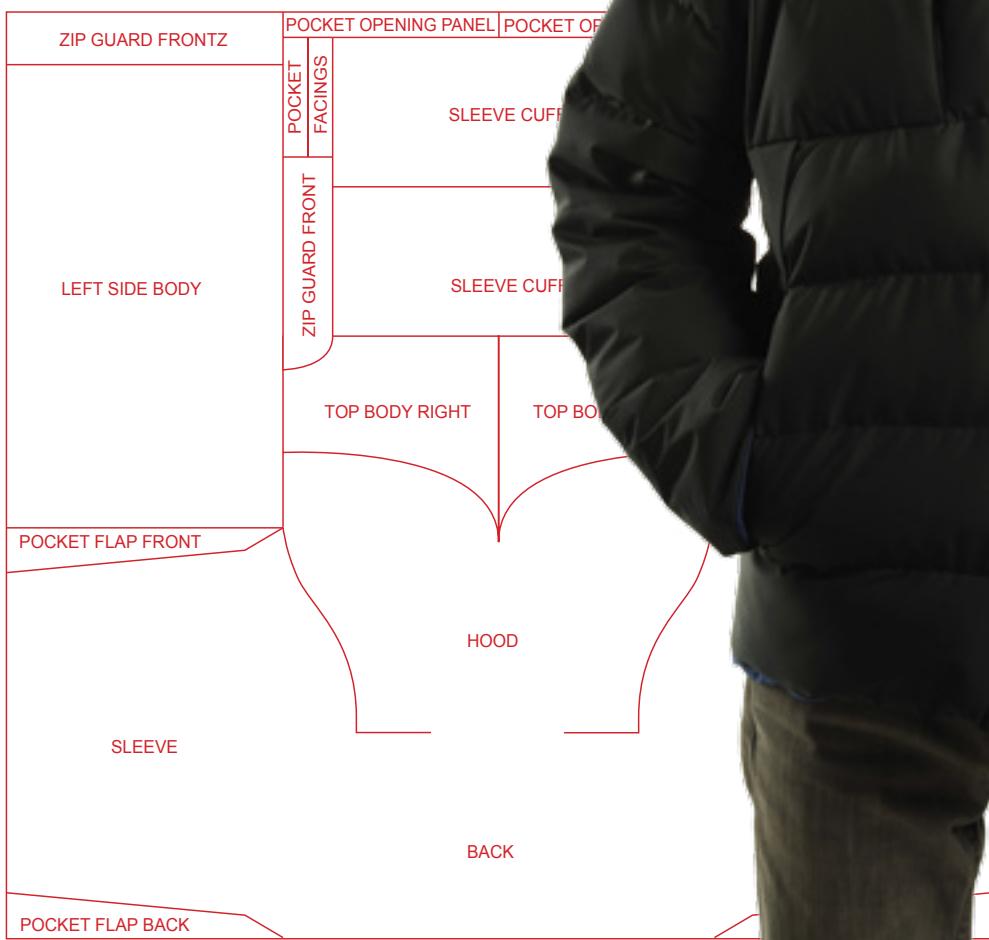
Example

Slow design; design for long-life and short-life applications; design with enhanced aesthetic value; zero waste cutting.

- Zero waste design uses all the fabric in the process of construction
- 23.2% saving on material through pattern layout
- Design with enhanced aesthetic value
- Potential to radically revise conventional garment shapes
- Potential to include secondary products in layout

David Telfer

In collaboration with The North Face and TED, to create a zero waste version of a North Face down jacket. VF Corporation, USA, 2012.
www.davidtelfer.co.uk





2

Design for Cyclability

Aim

How to up-cycle existing garments and how to design with virgin materials in anticipation of future recycling?

Action

The initial design process anticipates the potential for eventual recycling and re-purposing the textile product. Also existing garments or products considered as ‘raw materials’, ready for added value to be applied.

Example

This strategy includes design for recycling, up-cycling, design for mono materiality and design for disassembly for the closed-loop systems of the future. Think re-useable/non-invasive installation or renewal.

- Paper based non-woven textile for closed loop material recovery
- Prototype designed with intentional short-life duration
- Recyclable guilt-free fashion or workwear
- Alliances of existing forest industries with medical, clothing & waste sectors
- Replaces elements in existing wardrobe whilst maintaining production and employment

Kay Politowicz & Sandy MacLennan

‘Once’ T-shirt designed for VF Corporation ‘Responsible Living’ section, FutureWear Exhibition, 2012.

Image: Aaron Tilley

www.tedresearch.net





3

Design to Reduce Chemical Impacts

Aim

How can the use of harmful chemicals at every stage in the life of the product be reduced by design?

Action

Select the most appropriate material and processes for any product to minimise environmental impacts.

Example

Seek organically produced materials; use mechanical technology to create non-chemical decorative surface pattern; create effects to replace materials and processes known to be harmful.

- Leather hand-cut surface pattern techniques for upholstery
- Physical/mechanical pattern replaces chemical treatments
- No chemical finishes used in printing patterns or coatings
- No consequential chemical pollution at end-of-life

Helen Amy Murray

Hand sculpted leather upholstery in 'Bloom'.
'Bergerina' chair by Architema.
www.helenamymurray.com





4

Design to Reduce Energy and Water Use

Aim

How to conserve water in the production and use of textile products?

Action

Evaluate the ways water and energy are consumed in the processing of textiles. Assess the carbon footprint, particularly in consumer laundry.

Example

In the production phase: exhaust printing and dyeing; dry patterning systems; air-dyeing; distributed manufacture. In the use phase: design for no/low launder; ‘short life’ textiles; technical coatings to reduce washing; innovative and informative labeling; localisation; natural energy systems.

- A weatherproof, multifunctional utility pinafore dress, encourages protective clothing as fashionable
- Designed as part of a wider design strategy to encourage slower and more conscientious washing behavior
- Designed to accumulate evidence of wear with a minimum 30 wears before cleaning is required
- Encourages a worn and unwashed aesthetic like jeans
- Dark colours and waxed finish resists soiling and regular reproothing maintains durability to prolong garment life

Emma Rigby

Garment Collection ‘Design and the Laundry: Changing Behavior and the Rhythm of Consumption’ Current PhD project, LCF.
www.fashion.arts.ac.uk/research/degrees/current-research-students/emmadulcierigby



5

Design that Explores Cleaner / Better Technologies

Aim

How can technology be used to make more sustainable textiles?

Action

Design for new technologies to save energy and materials. Reduce environmental damage in the production of yarn and fibre, the construction of fabrics, dyeing and finishing of products.

Example

Bio-based materials and processes; 3D printing; laser; water-jet; sonic cutting; sonic welding; digital printing, 're-surfacing' of polyester; novel dyeing techniques; digital finishing; tagging.

- Packaging resurfacing technologies applied to clothing industries
- Surface finishes achieved using laser technology on polyester
- Stitchless garment construction
- Environmental improvement through mono-material
- Eternal closed-loop cyclability

Dr. Kate Goldsworthy

Laser-Finishing: A New Process For Designing Recyclability In Synthetic Textiles, 2012.
www.kategoldsworthy.co.uk





6

Design that Takes Models from Nature & History

Aim

How can the practices of the past and models from the natural world inform textile design and production of the future?

Action

Seek design inspiration, information and solutions from studying the textiles, habits and societies of the past and from nature including bio-mimicry.

Example

Shape-memory polymers to mimic natural movement; ‘lotus effect’ nano-coatings; Velcro; austerity repair; make-do-and-mend; DIY/punk customization; modern nomads; historic dying/printing techniques.

- Digital power loom Jacquard woven product development from natural forms
- Scientific models visualised as woven structure interactions
- Varying yarn and woven structure in interactions to create differing 3D effects
- ‘On-loom finishing’ techniques ensure fabrics spring into 3D forms for product development

Philippa Brock

‘Self-Assembly’ collection. Nobel Textiles. A two year collaboration with Nobel Laureate Sir Aaron King and his work on 3D structure of viruses, 2009.

www.weaveshed.org

www.tfrc.org.uk/author/philippa



Design for Ethical Production

Aim

How can design encourage ethical production, that supports and values people and skills?

Action

Designers can engage with communities, either in the supply chain or for local needs.

Example

Sourcing fair trade materials; engaging suppliers who abide by codes of conduct; vertical supply chains; consideration of local resources; designers acting as facilitators of sustainable enterprise in communities.

- Designer as social innovator transforming social structures through the garment supply chain
- Design a sustainable production model with local communities
- Garment factory waste repurposed into new products to create a social business
- Facilitation of a social enterprise concept that meets local needs
- Brand engagement with a wider community identity

Clara Vuletich

MISTRA funded PhD project TED.
'Design for Change' Project, VF Corp, 2012.
Image: Robert Self
www.claravuletich.com





8

Design to Reduce the Need to Consume

Aim

How can designers make stuff that lasts, that people want to keep and look after?

Action

Textiles products can be designed and produced to adapt and improve with age. Encourage replacement of shopping with creative social experiences; the customisation of clothing and textiles; the DIY culture.

Example

Emotionally-durable design; slow design; consumer participation in co-design and collaborative consumption, crowd sourcing and social networks; apps for bespoke information.

- Inspirational website with practical tutorials to create designs with standard softwear
- Enables confident, guided DIY clothing production
- Facilitates customization and emotional attachment through engagement
- Replaces mass consumerism with skills development
- Develops communities of practice and museum/gallery workshops

Melanie Bowles & Emma Neuberg

Peoples' Print 'Post Modern Play', 2013.

www.thepeoplessprint.com



the
people's
print

Design to Dematerialise and Develop Systems & Services

Aim

How to develop the concept of designing services that support products?

Action

Employ a design strategy for multi-functional products and materials conservation via temporary and non-invasive installations. Encourage repair. Facilitate on-line/local communities of producer-consumers.

Example

Lease; share; repair; experience design; user-centered methods to design services; collaborative online/local communities; transition-towns.

- Design service for retailers and consumers
- Second-hand polyester garments up-cycled through workshops
- Integration of low-tech production and digital communication
- Customization and consumer collaboration
- Facilitation of extended wear through designer intervention

Rebecca Earley

'Fractal Shirt'. Explored through practice and discourse as part of Top 100 Project. Black Hack Chat, in collaboration with TED collaborator Otto von Busch and PhD Jen Ballie at the EAD Conference, Gothenburg, 2013.

vimeo.com/64294297

www.tfrc.org.uk/research/top-100

PRINCI

Design Activism

Aim

How can designers extend their effect beyond the product to work creatively with consumers and society at large?

Action

The textile designer becomes a ‘social innovator’ using design skills to meet social needs. It includes designing events and communication strategies to increase consumer and designer knowledge about the environmental and social impacts of textile products.

Example

Publications; blogs; open-source networks; exhibitions; conferences; festivals; social media; manifestos.

- Designer campaign to publicise poor conditions where they apply to factory workers
- Website to promote the necessity for action to citizens benefitting from cheap production
- Clothing designed to be the promotional tools of the campaign
- Community engagement to challenge brands facilitated through knowledge and structural organization
- Social media platform to promote environmental and social improvement

Kaly Aluvihare

Stage 2 BA student, Chelsea College of Art & Design.
‘FLEX Project’, TED prize winner, 2013.
www.thatsmadeinchina.tumblr.com



TOYS ARE



Credits

With thanks for the enthusiasm and commitment from such talented people, whose ideas continue to enrich and evolve the character of the group working on the TED Project.

Thanks, too, for the willingness and collaboration from researchers and PhD students involved with TED and TFRC, also for the successive communities of students, lecturers and technicians contributing their energy since the project began, both inside and outside the institution.

With thanks to UAL, CCW, and the MISTRA consortium and its members for enabling the current and future focus of the TED group to move across both real and conceptual boundaries.



www.arts.ac.uk
www.tfrc.org.uk
www.tedresearch.net
www.mistrafuturefashion.com

Author

Professor Kay Politowicz is Professor of Textile Design and is the co-founder of the Textiles Environment Design (TED) research project at Chelsea College of Art & Design. She is co-author of THE TEN strategies for sustainable design, which enable design thinking approaches to the making, lifecycle and aesthetic values of a product. These are used as a toolbox in workshops with large companies such as VF and H&M, events with SMEs, students at UAL and internationally.

Kay Politowicz is currently Guest Professor at Konstfack University College of Arts, Crafts and Design in Stockholm, and co-investigator on TED's project with the Swedish Foundation for Strategic Environmental Research, MISTRA Future Fashion.

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Professor Kay Politowicz

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Chelsea College of Art and Design
University of the Arts London
Lecture Theatre