

### Context

The textile and clothing industry is an important provider of employment and revenues within the European Union, employing two million and contributing €186.4 billion in turnover to its economy.

However, since 1995 employment within the EU's textile industry has shrunk by approximately 25%. Whilst some of these losses are because of technological advances, meaning that more goods can be produced by fewer workers, most are the result of company closures and production moving to the Far East where costs are cheaper. As competitive pressures grow, these losses will continue, unless innovative, new products and processes can be developed, that are competitive financially and linked to social, environmental and functional performance.

### DIGITEX – background

The DIGITEX Project is an EU response to these concerns. A four year project that began in 2006, its aim is to increase the competitiveness of the EU textile and clothing sector through the development of an innovative textile finishing process called 'Digital finishing'.

Funded by the EU, Digitex is being delivered by a consortium of European partners from academic research institutions, SMEs and larger industry partners such as Ten Cate of the Netherlands, all of whom are involved with digital printing, textile manufacture and finishing, and garment manufacture.

The DIGITEX project has developed technology (chemistry and engineering) which has evolved from ink jet printing, that enables fabrics and garments to be 'digitally finished'. Significantly, this technology enables chemical finishes, offering a range of functionalities, to be deposited and fixed on textiles/materials in controllable quantities and prescribed locations, providing benefits not available from other forms of textile finishing.

This technology creates opportunity for innovation as well as benefits across a triple bottom line of social, environmental and economic impact.

### Opportunities

#### Social

- Protective clothing plays an important role in protecting workers against natural hazards and occupational risks and is an obvious target for this technology. About 40% of workers in Europe use protective wear daily and of these, 9 million use high-protective clothing whilst working in hazardous environments. This work wear contributes to safety, reduces exposure to pathogens, reduces illness and injury, and provides increased comfort while working.

However, there are many other potential applications, across sectors as diverse as healthcare, social care and sportswear. This brief could be an opportunity to explore these and identify new areas for innovation.

You should refer to the Resources page for this project for details of the specific social benefits of digital finishing.

#### Environmental

Digital finishing is able to apply required functionalities (such as protective performance) whilst minimising use of resources (water, energy, chemicals) and has the potential of setting new standards in sustainable production and reducing environmental contamination linked to textile finishing.

You should refer to the Resources page for this project for details of the specific environmental benefits of digital finishing.

#### Economic

Digital finishing protects and develops high skilled employment within the EU by increasing the global competitiveness of the EU textile sector, creating unique value via a knowledge intensive (rather than labour intensive) process that is responsive to consumer needs.

You should refer to the Resources page for this project for details of the specific economic benefits of digital finishing.

## The Brief

*Propose a design that explores and exploits the unique performance characteristics of digital finishing, producing highly functional textiles, better able to respond to the needs of specific users and contexts.*

Work wear is a clear and specific target for this technology. However, you may wish to research and suggest others that demonstrate a clear need for its specialised functionalities and properties as applied to performance apparel or other textile products. Healthcare and social care are possibilities. What are the others?

Your proposal should show how the exploitation of these multiple functionalities in clothing or other textile products creates value and benefit to your chosen user/context of use. It should use at least two of the four functionalities below:

- Chromic Functionality
- Controlled/Slow Release Functionality
- Single sided hydrophobic/hydrophilic Functionality
- Anti Static/Anti Bacterial Functionality

**It is important you refer to the Resources page for this project for detailed descriptions of each of these functionalities.**

You should research and consider your design proposals in relation to the following criteria:

- **Need** Identify end users and end user scenarios that demonstrate need for the functionalities and properties that digital finishing can provide – this could be any specified and researched context of use
- **Practicality** Consider the likelihood of your concept being achievable given the information available
- **Justification** Consider the extent to which your proposal identifies a need for digital finishing over other methods in its realisation – does your proposal make use of the unique attributes of digital finishing, that is:
  - Locatable functionalities/performance characteristics
  - Multiple functionalities/performance characteristics
  - Bespoke customisation of garments to user requirements (gender, size, body shape, therapeutic requirements, scenario of use/risk)
  - Reduced seaming in construction of garments
- **Creativity** The originality and audacity of your proposal

## Things to think about

It is essential to consider the following:

- who is the person (people) that you are designing for?
- what is the environment in which they will experience/engage with your design?
- what actions do they perform within this environment? (e.g. during the course of their working day or other use scenario)
- what situations do they experience/risks are they exposed to? (chemical, biological, physical)
- how often do they encounter these situations?
- what are their needs and priorities?
- what solutions already exist in your chosen design area or related design areas and what is good and bad about them?
- how could Digital finishing and the multiple and locatable performance it offers improve on the current products used?
- are there certain behaviours that you want to promote and prevent?
- how might the deliverable functionalities support this behavioural change? (e.g. sensors – chromics, medication delivery – controlled release)
- how does your proposal relate to the aims and objectives of other stakeholders? (e.g. employers, health and safety officials, healthcare /social care professionals etc)

Work out your design priorities by talking to those you are designing for, and perhaps those that are currently designing for them without the benefit of digital finishing. For example, different users may demonstrate different sensitivities and responses to risk and convenience – how would you accommodate such differences or is it unnecessary to do so?

What is the intervention? How does it relate to existing patterns of use, and/or design provision – clearly communicate what it does, for whom, and why.

How does the intervention work? Is it easy and enjoyable to use? Does it increase rewards for the user, whilst reducing risk and effort for them?

How is your design to be experienced? What will be its impact, both direct and indirect, on the users and user scenarios you consider?

Your proposal should clearly explain how you explored the issues and how this influenced your design proposal.

# RSA

## Submission details

You should submit:

- 500 word summary of your design idea. It is an essential component of your submission and should clearly indicate the rationale behind what you are proposing and why it is a good and viable idea
- evidence of research that has informed your proposal (including information about who you consulted and how this led to your strategy and proposal – this can be in sketchbook/report form and be a mix of visuals and words

Realisation of your design proposal showing how your proposal tackles the issue/scenario/user that your design addresses:

- A3 boards (max. 4) showing design development and final designs
- any models or mock-ups should be submitted as photographs or printouts mounted on A3 board (this can be in addition to the four design boards)
  - **do not** submit 3D work at this stage
- one sketchbook only (if relevant), related to the brief
- students short listed for interview will be asked to prepare a short presentation outlining their proposal
- all submitted work should carry an RSA label on the back; this is to ensure the safety of your work whilst in storage, and that it can be displayed for judging

## Schedule

### **Dates for submission of entry forms, fees and work**

---

Thursday 19 November 2009

### **Deadline for Entry Form(s)/Fee(s) for all projects**

(including *Directions Plus*)

Entry Forms/Fees should be sent under separate cover

– **not** with your entry – to:

RSA Design Directions Registrations  
8 John Adam Street  
London WC2N 6EZ  
UK

---

Monday 16 November  
– Friday 11 December 2009

### **Submission period for all project entries**

(except *Design Directions Plus*\*)

Entries will be accepted at Brooks Transport Services Ltd on any weekday within the dates stated between 08:00-18:00, excluding weekends and bank holidays. Entries arriving after 18:00 on Friday 11 December 2009 may not be accepted

Please remember that all entries should be sent or delivered to:

Brooks Transport Services Ltd  
Unit 2/15  
Second Avenue  
Bluebridge Industrial Estate  
Halstead  
Essex CO9 2SU  
UK

All Entry Forms/Fees should be sent or delivered to:

RSA Design Directions Registrations  
8 John Adam Street  
London WC2N 6EZ  
UK

\**Design Directions Plus* – Submission date for entries for these projects is:  
Friday 8 January 2010