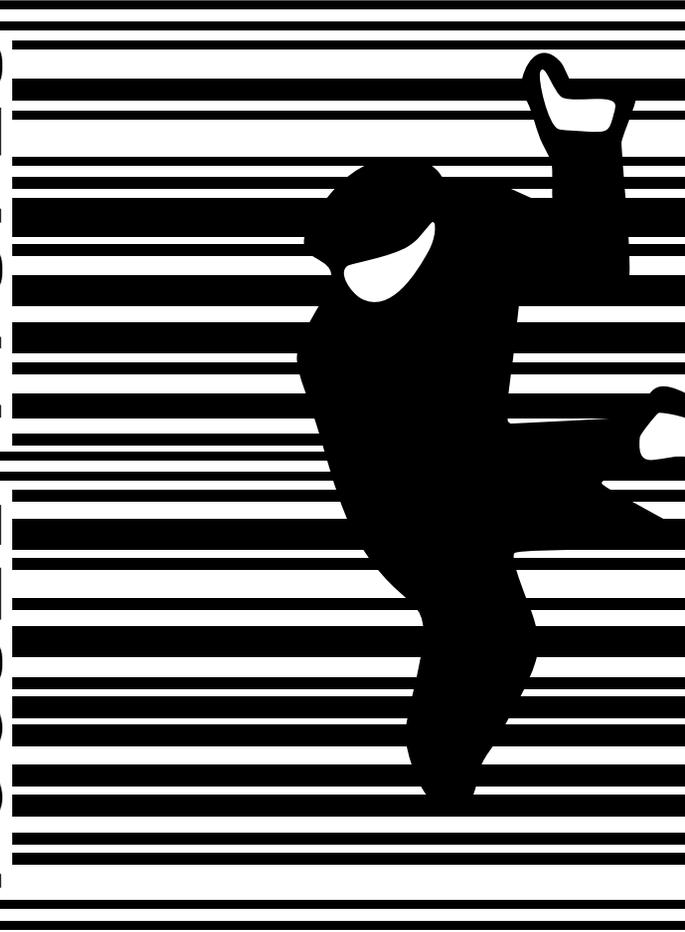


# Design Out Crime

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Design Out Shoplifting  
*Student Challenge 2010*

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Design & Technology  
**Alliance Against Crime**

## Background

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**'What designers can do is 'think thief': that is, put themselves in the place of an offender, anticipate their actions, understand their tools, knowledge and skills and thereby develop design solutions that short circuit the offender's action without jeopardising the design's value to legitimate users.'**

*— Prof. Paul Ekblom, 1997*

## Introduction

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It has been widely reported that the recession has led to an increase in theft and shoplifting. In fact, the 2009 British Retail Consortium Crime Survey indicated *'that the number of thefts from shops rose by a third in a single year with an incident occurring nearly every minute, 24 hours a day.'* This is quite a staggering increase, considering retail crime had been declining in recent years.

Working with Professor Martin Gill of Perpetuity Research, we confronted our young creatives with this dark side of shopping and set them an anti-shoplifting brief. Two challenges were run, one by Central Saint Martins and the other by the Royal Society of Arts (RSA) and we had a terrific response to both with nearly 150 entries received. This brochure presents the RSA winners as well as a few of the more interesting submissions from both challenges.

Our brief asked how design could reduce the opportunities for shop theft and to do this students from around the country were asked to 'think thief'. They needed to use all their skills, cunning and design flair to create effective and affordable anti-shoplifting objects, systems and services without jeopardising the experience of the genuine shopper.

One of our big ambitions for this project was to expose the next generation of designers to the concept of designing out crime. At the same time, we wanted to be able to showcase a variety of solutions to the age old problem of shoplifting, solutions that address the problem but also suggest new and existing business opportunities that designing out crime can unlock.

I hope the following ideas illustrate for you how design can play a central role in the fight against crime.



Lorraine Gamman  
— *Professor of Design: Central Saint Martins*

## The Brief

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Can design of shop furniture, products, packaging, retail space large and small, display areas, security procedures, retail management and the myriad of other factors in this environment – even the experience of shopping itself – reduce shoplifting and improve ambiance without turning a small newsagent or a large department store into Alcatraz?

What follows are a range of anti-shoplifting designs generated by the students.

# The Students

Winner



1. Jy Yeon Suh  
PaidUnpaid

Winner



2. Rachael Muli  
Ugly Faces

Shortlisted



3. Jamie Bates  
Minimising the  
opportunity for theft

Shortlisted



4. Oliver Boulton  
Product theft



5. Georgia Saloustis  
Store Layout



6. Jason Fowler  
Zonal Security Prevention



7. Scott Martin  
Staff Surveillance



8. Scott Wiseman  
The Tracker System

Shortlisted



9. Alex Camp  
Refund Fraud

Shortlisted



10. Matthew Pateman  
Integration of RFID  
technology



11. Ed Bailey  
The Core



12. Jan Rose  
Visual Tag for Vodka bottle



13. Lihsuan Chou  
The Hook



14. Mai Ohashi  
Anti-shoplifting  
Single Hook



15. Marie Bachoc  
Inflatable Meat Packaging



16. Theresa O'Keeffe  
Secura (Security Tag)



17. Anna Schwamborn's  
Perfume Station



18. Ben Powell  
Tackling poor store layout:  
The new purchase process



19. Luke Smoothy  
High Hanger



20. Sam Hodgson  
Wearable Coat Hanger



21. Fraser Gibb  
The Changing Room  
System

# 1. Jy Yeon Suh

## Scanning System for Anti-shoplifting

Central Saint Martin's College of Art and Design, University of the Arts London.  
Winner of the NCR Internship worth £4,500

### Problem

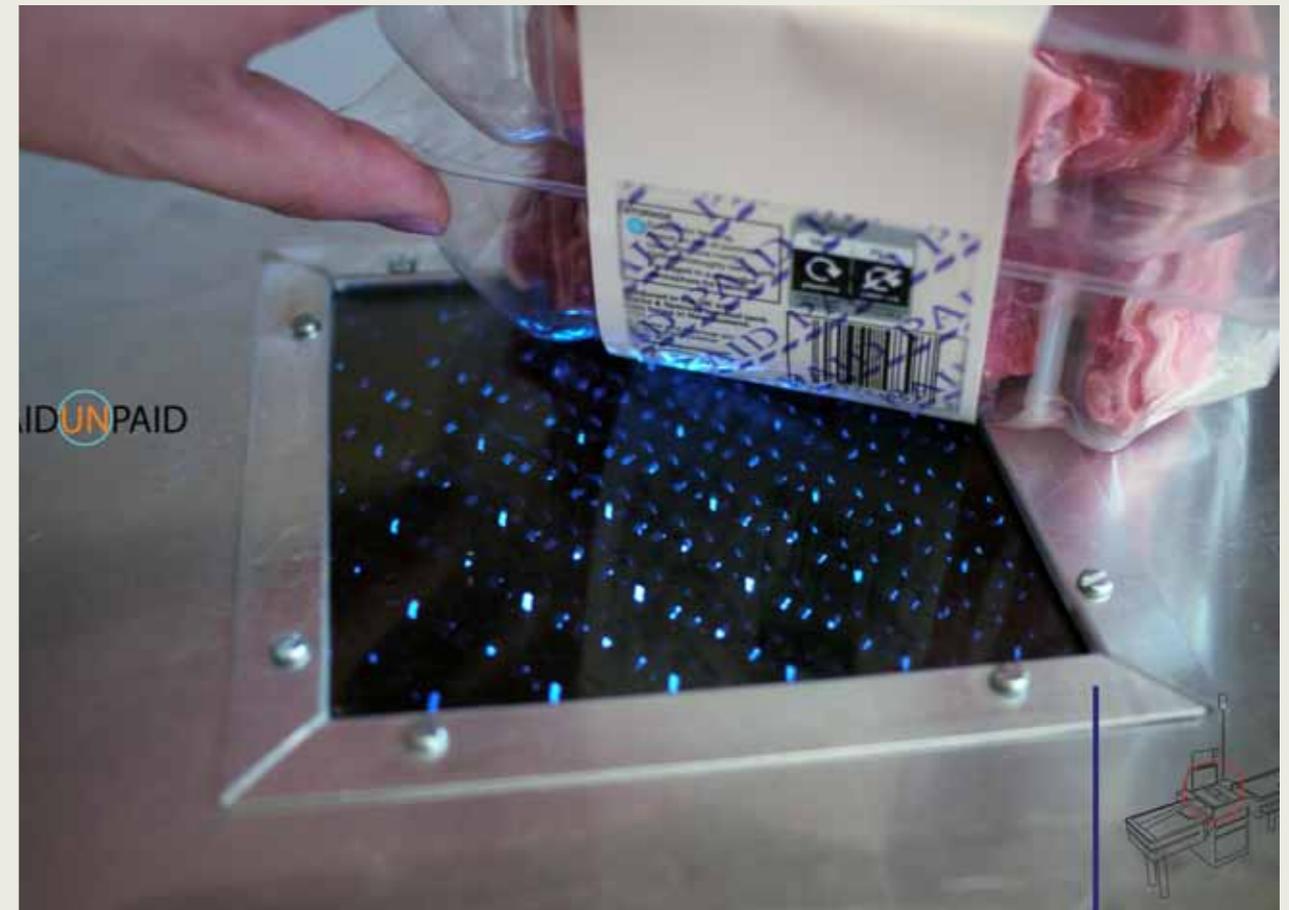
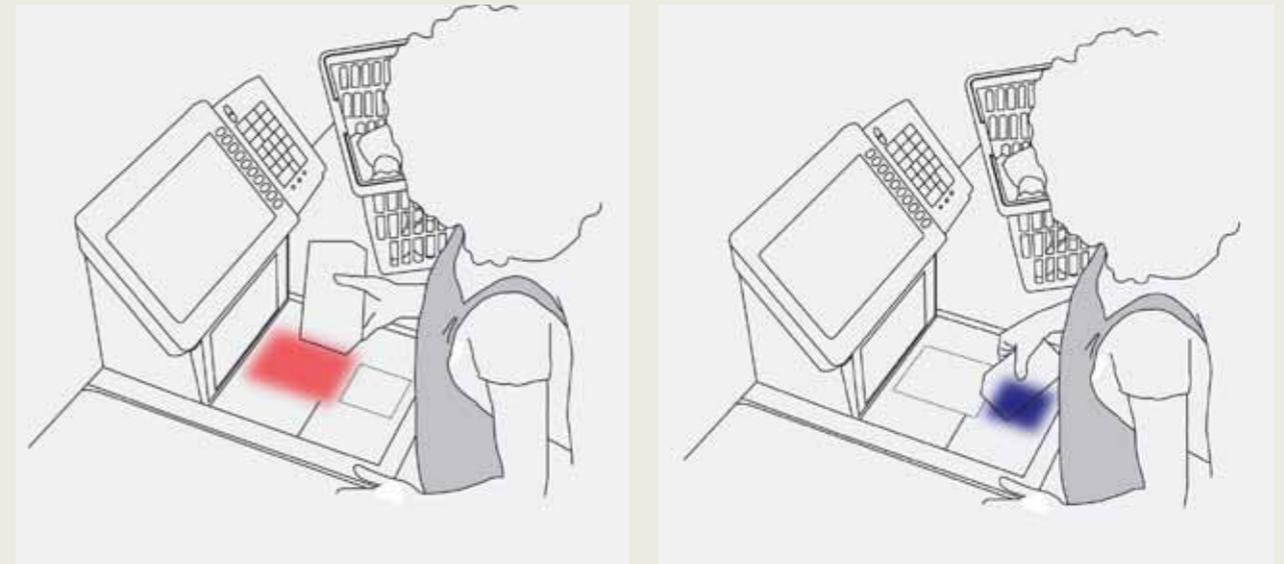
Stores often struggle to differentiate between products that have been paid for and those that have not.

### Proposed Solution

'PaidUnpaid' is a system for busy shops that quickly marks a product that has been paid for. A product's barcode is coated with an invisible photochromatic ink which will change colour when exposed to a UV light. The UV light is located in a device which is integrated with the checkout scanner. The light affects the invisible ink and makes it appear as a blue overprinting on a standard barcode. The mark which appears is a specific design that could include the retailer's logo. This provides store staff with an easy, quick way to determine whether a customer has paid for an item.



# Winner



## 2. Rachael Muli

### Ugly Faces

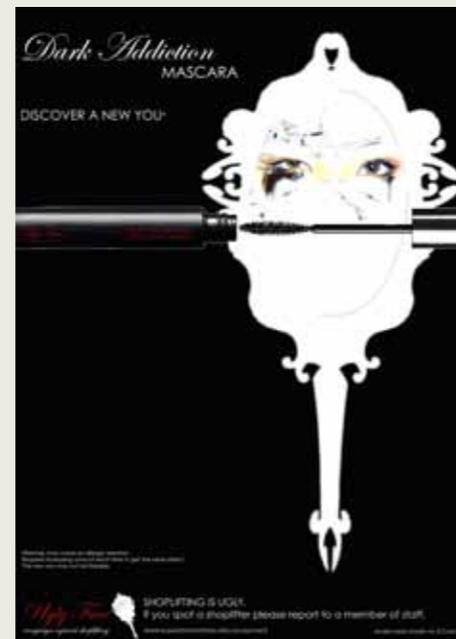
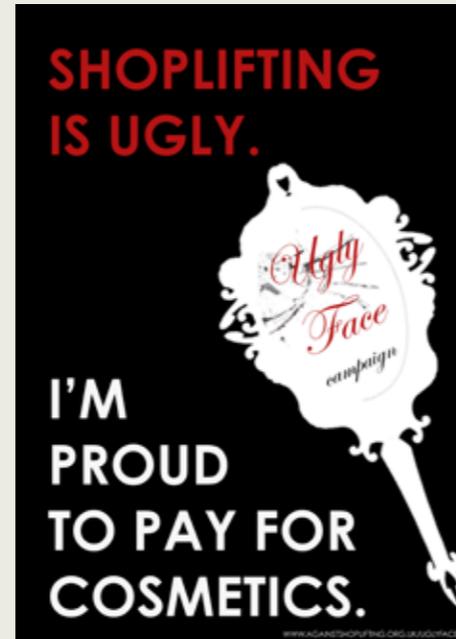
University of East London,  
Winner of the Design Out Crime  
award of £2,500

#### Problem

Cosmetics are an easy target – it isn't difficult to hide them in a sleeve or pocket, they are displayed in large quantities, making it difficult for store staff to determine whether an item is missing, and most items are too small to carry a security tag.

#### Proposed Solution

'Ugly Face' is an advertising campaign aimed at teenage girls who steal from high street cosmetic retailers. Many teenage girls believe that they have to use cosmetics to make themselves more attractive. The campaign's message is that stealing is ugly and socially unacceptable. Provocative images are used to convey this message. The campaign could run in popular magazines or as in store campaigns.



## Winner



...IT IS WISE TO TRY AND STAY ONE STEP  
AHEAD OF THE CRIMINAL AND TO REMEMBER  
THAT THE CRIMINAL IS TRYING TO STAY ONE  
STEP AHEAD OF SECURITY AT THE SAME TIME.

– *Professional shoplifter*<sup>1</sup>



### 3. Jamie Bates

#### Minimising the opportunity for theft

##### Problem

Security guards often feel mismanaged and ill-tasked, leading them to become unmotivated and as a result, their awareness to theft is diminished.

##### Proposed Solution

This solution looks to optimize the deterrent effect of security staff. Having a strong security presence in a retail environment can change the risk perception of thieves. The solution separates individual retail environment into colour allocated zones according to risk levels. The responsibility of guarding each zone rotates randomly within the security team, encouraging the movement of staff to different areas of the store. The movement of security staff increases their visibility.

The changes in zone responsibility are communicated to each guard through a personal watch device. Subtle changes of colour on the face of the watch indicate a new zone should be patrolled. Within each zone there are RFIDs placed at points of importance; the guard swipes the watch over the RFID, and this starts a countdown that indicates how long the zone should be patrolled for. Overlapping zones enable interaction between members of the security team helping eliminate feelings of isolation.



### Shortlisted



## 4. Oliver Boulton

## Shortlisted

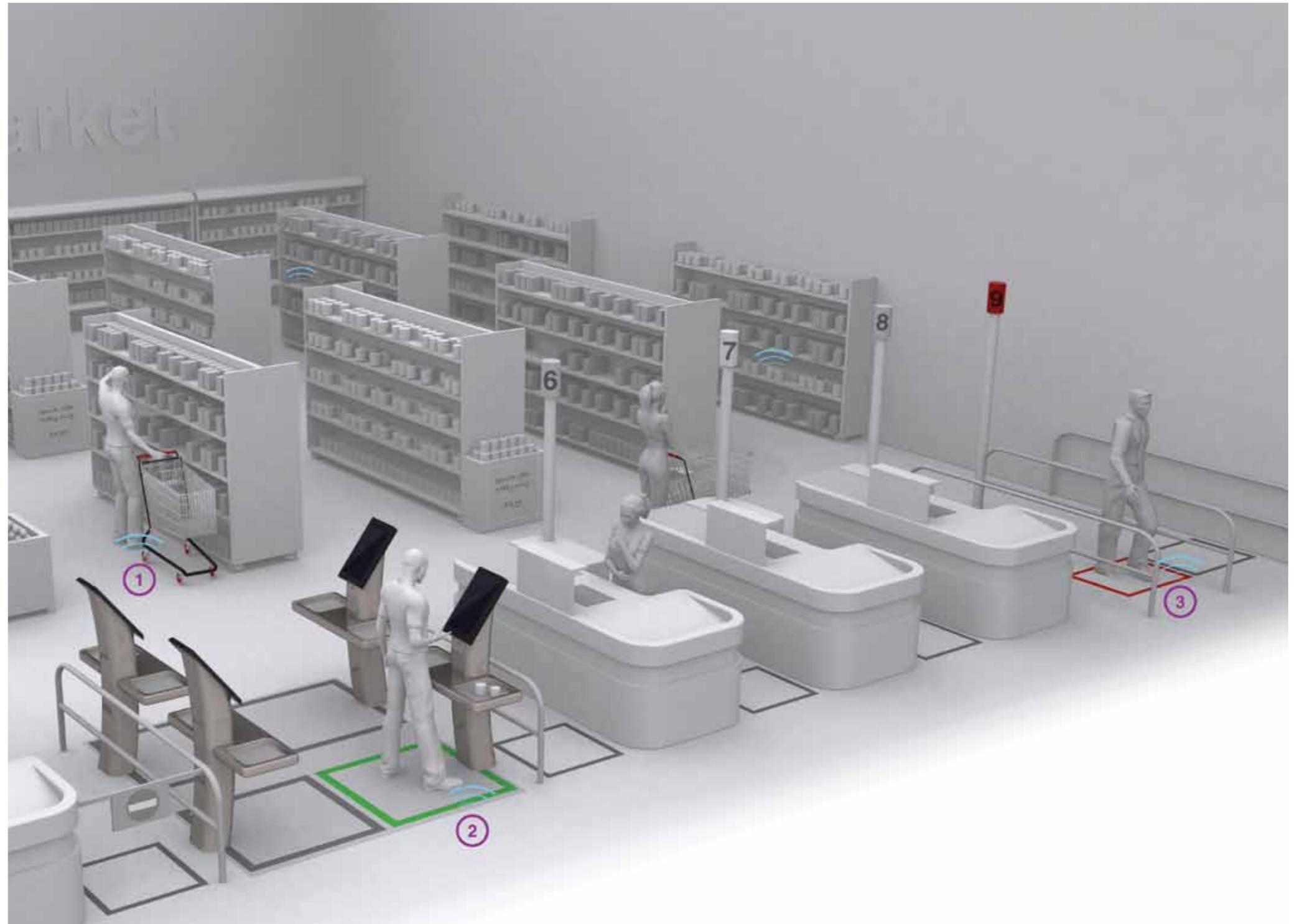
### Product theft

#### Problem

Currently, many retailers do not have a means of limiting the opportunity for theft and raising awareness of unpaid-for products.

#### Proposed Solution

A systems approach which looks to introduce a number of elements that increase the overall security within the supermarket environment while enhancing the shopping experience. RFID tagging is used to indicate paid for and not paid for products through the use of floor based lighting systems using known colour schemes (green=go, red=stop). The tagging of products also allows for the introduction of smart trolleys and the use of self service checkouts that capture all tagged products on a person.



## 5. Georgia Saloustis

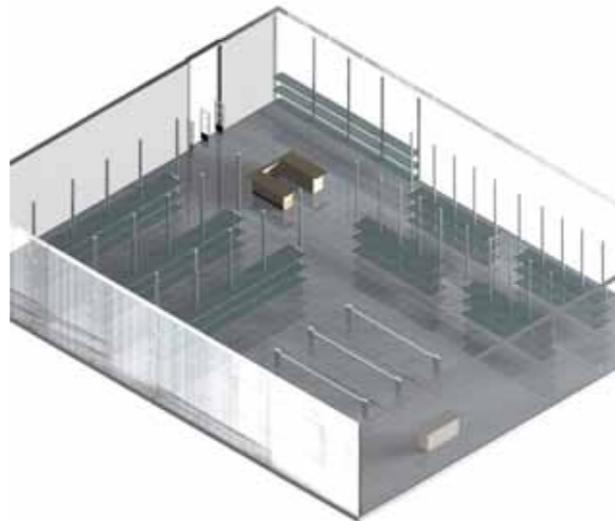
### Store Layout

#### Problem

Many store layouts contain unnecessary blind spots which thieves happily exploit.

#### Proposed Solution

The store layout concept creates a defined 'purchase zone', makes use of shelving which is suspended from the ceiling and allows for clear unobstructed views. It also utilizes good lighting to ensure that no 'dark' areas exist. Floor based shelving is also kept low ensuring that all shoppers and their activity is clearly visible to staff and fellow shoppers.



## 6. Jason Fowler

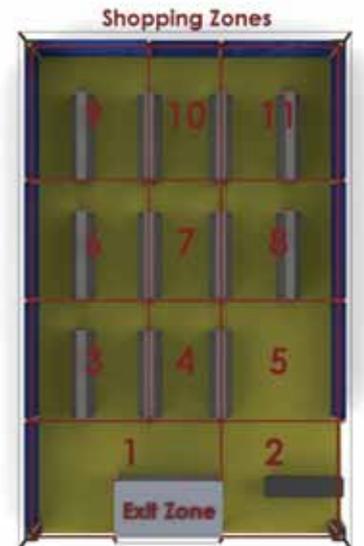
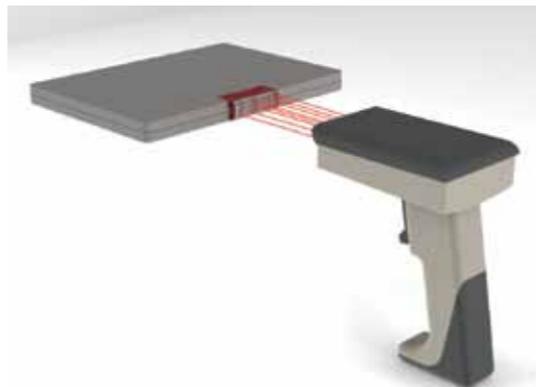
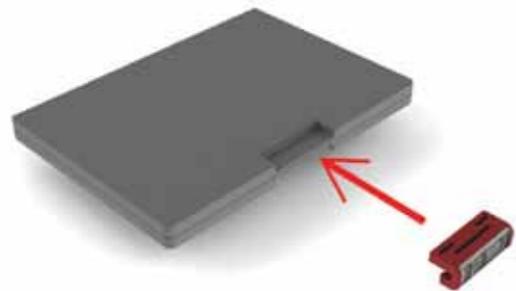
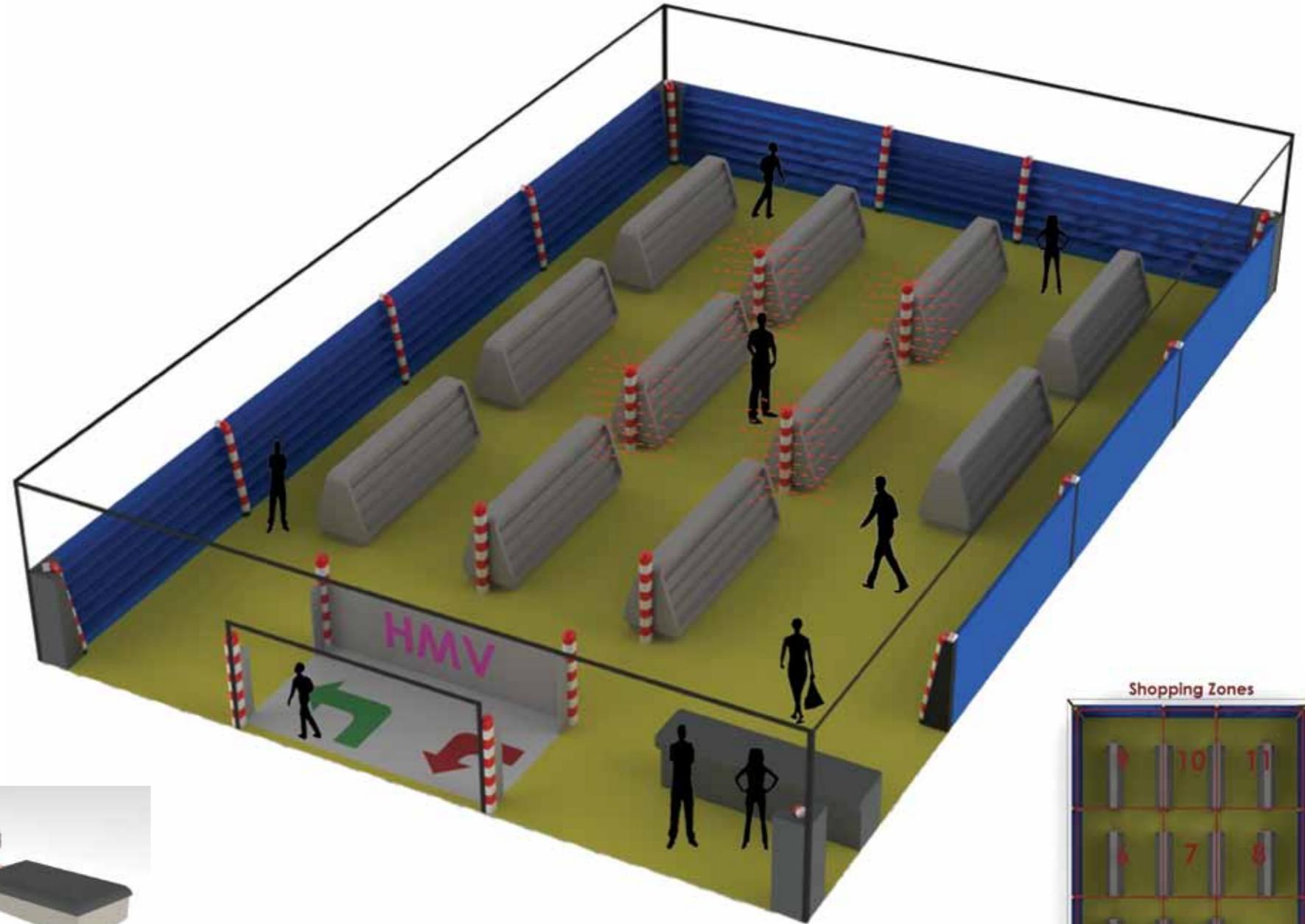
### Zonal Security Prevention

#### Problem

Aims to prevent shoplifting of high-tech products such as DVDs and tampering opportunities within the store environment.

#### Proposed Solution

This is a two part solution. The first part proposes the development of a new integrated tag designed to be built into DVD cases. The second part suggests that the store be divided into two zones: shopping and exit. The shopping zone is then divided into smaller sections throughout the store, these sections each have alarm towers which will activate if any of the integrated tags are tampered with or removed. If an offence takes place, the activated alarm will pinpoint which section of the store it is occurring in. It is envisaged that these smaller zones will allow shoppers to be more easily monitored, thereby reducing potential for shoplifting. The solution effectively offers protection within the store environment not just at the exit.



## 7. Scott Martin

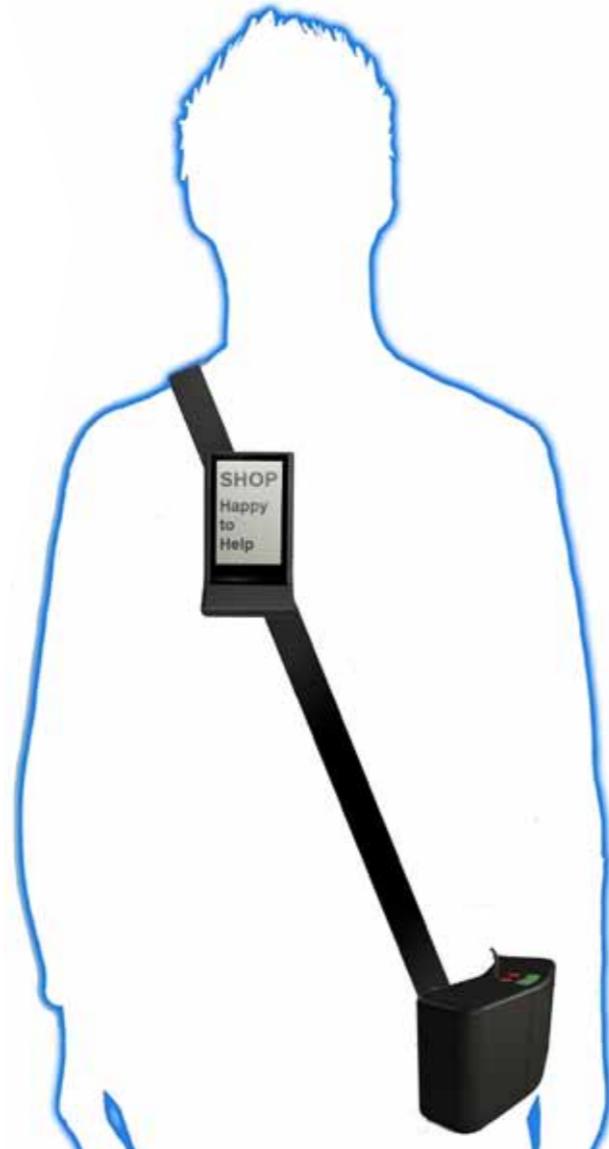
### Staff Surveillance

#### Problem

Staff interaction is limited to the cash points or traditional interaction points such as changing rooms. Therefore staff presence around the store is limited.

#### Proposed Solution

One of the most effective theft prevention techniques is engaging and attentive customer service. The proposed solution allows more staff to be on the shop floor, thereby acting as a visual deterrent to thieves. The solution enables transactions to be made on the shop floor freeing up staff that are often behind cash tills. It also encourages staff to be more vigilant by placing them in a better position to monitor shopper activity.



## 8. Scott Wiseman

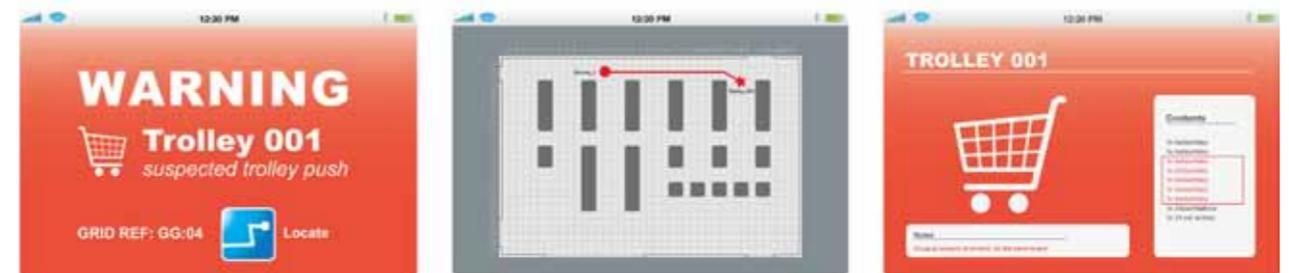
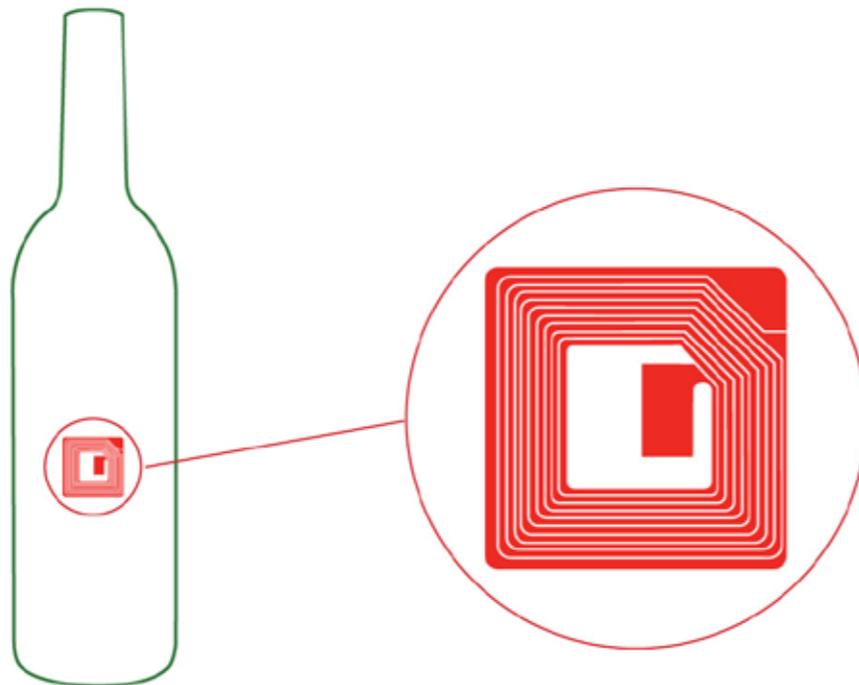
### The Tracker System

#### Problem

Professional shoplifters are extremely adept at blending into the shopping environment, making it very difficult to differentiate them from legitimate shoppers.

#### Proposed Solution

Tracker is a screen based system aimed at discreetly catching shoplifters in the act. The system enables stock to be monitored and warns staff when there are possible shoplifting problems in progress. The system makes use of non-detachable RFID tags integrated at the point of manufacture. Smart trolleys, integrated CCTV and establishing zones for tracking products allows for intelligent shoplifting cues to be established and relayed to staff.



WHAT MAKES SHOPLIFTING AN ATTRACTIVE AND PROFITABLE OCCUPATION? BELIEVE IT OR NOT, OFTEN IT IS A STORES OWN RETURN POLICY.

– Professional shoplifter<sup>1</sup>



## 9. Alex Camp

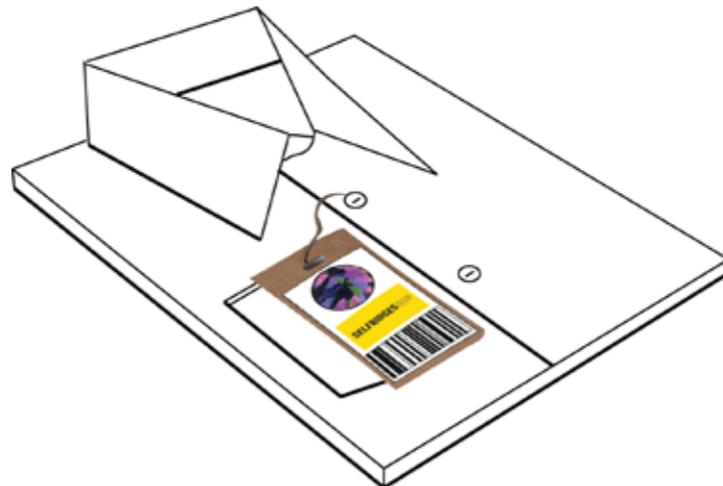
### Refund Fraud

#### Problem

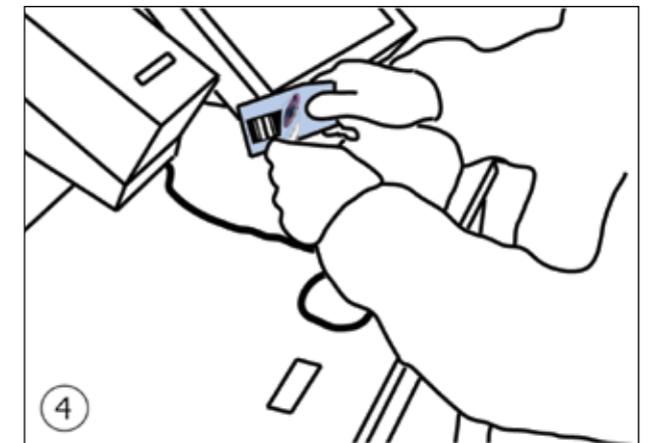
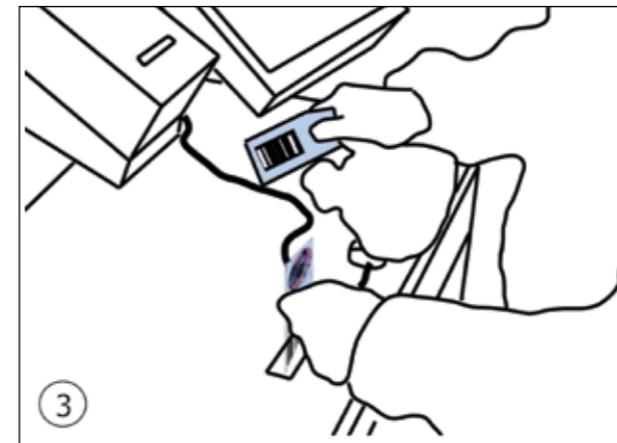
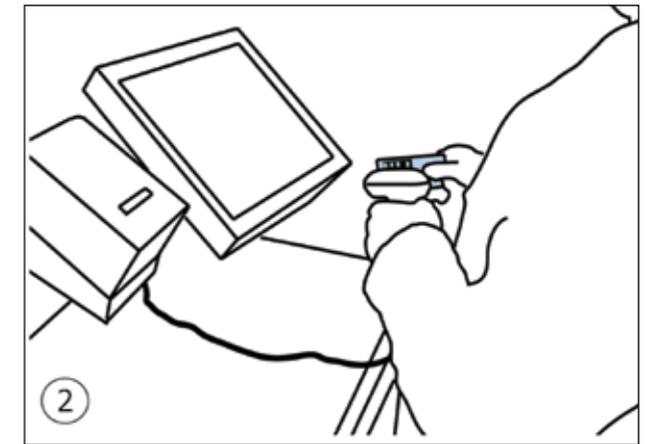
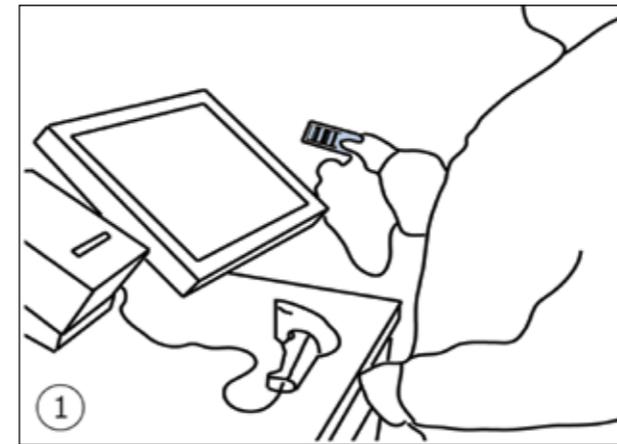
Currently, cashiers cannot differentiate between a bought product and a shoplifted product that is brought to the returns desk for a refund.

#### Proposed Solution

With this system, when a product (usually an expensive or high-risk product) is scanned through a till, a sticker is dispensed from a separate printer, which will then be placed on that product. This will visibly indicate that the product was purchased, and will hold specific information on it relating, for instance, to the time and date of purchase. The sticker will be tamper evident, and non-transferrable so will prove to the cashier that the particular item was paid for if the customer brings it back for a refund.



## Shortlisted



## 10. Matthew Pateman

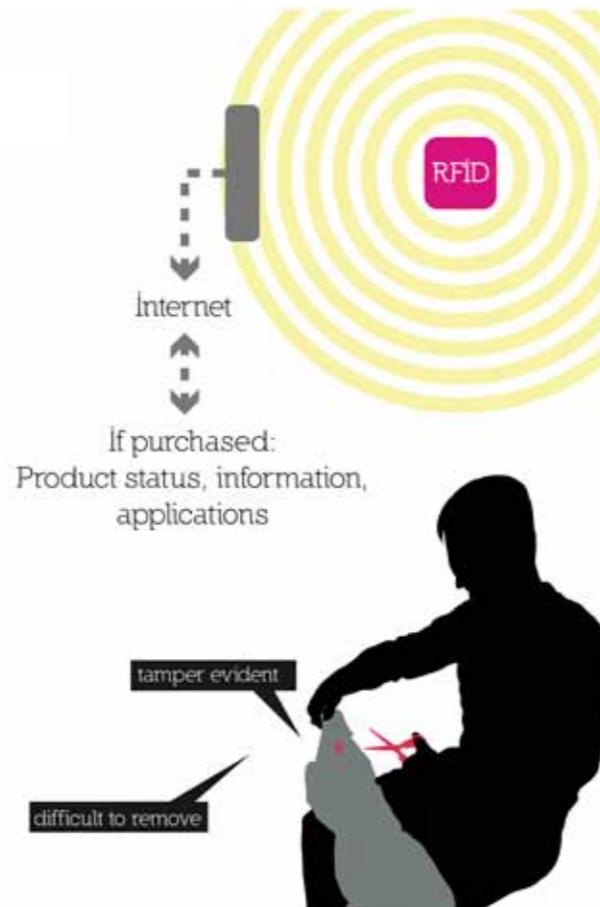
### Integration of RFID technology

#### Problem

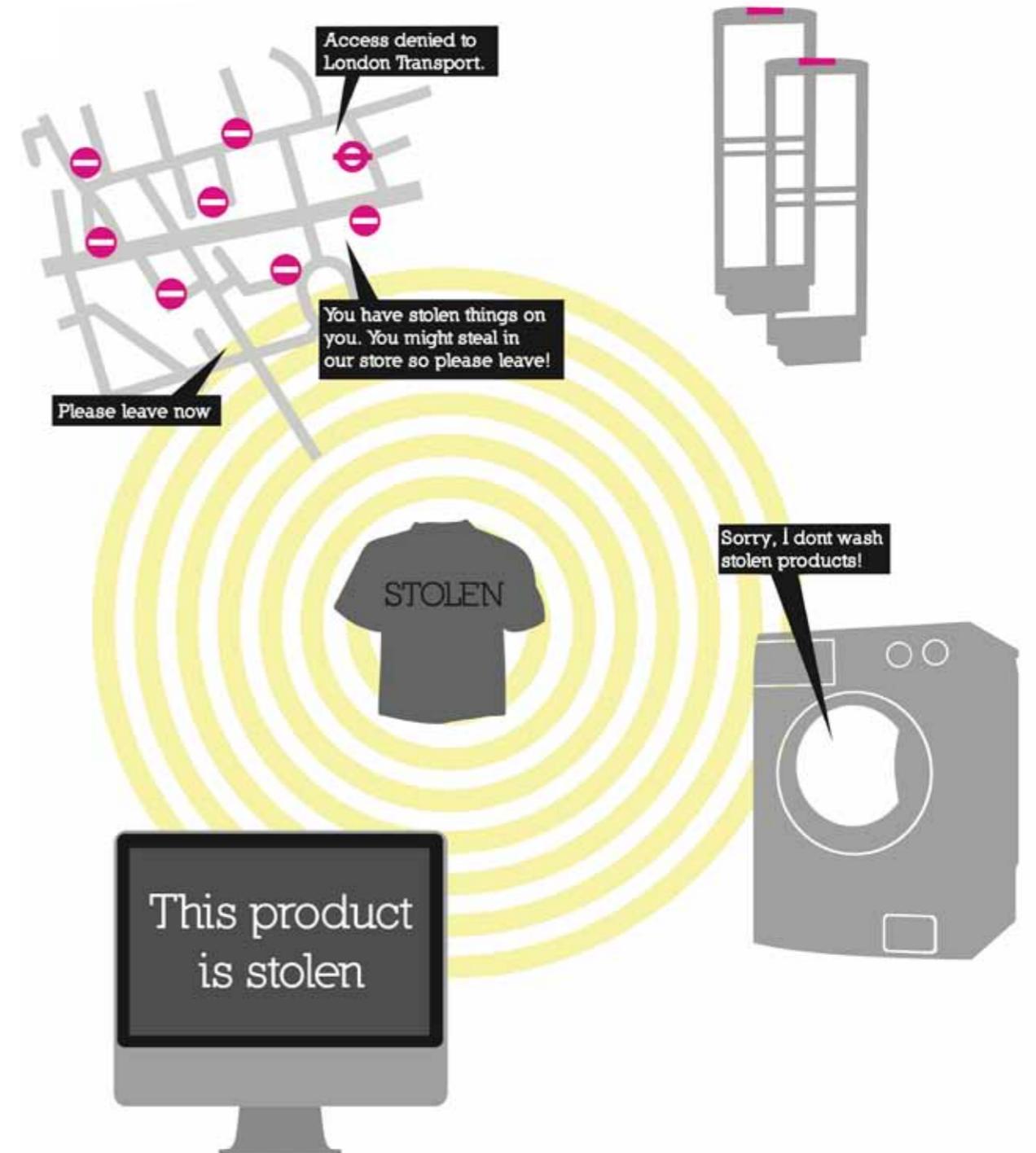
Fake or stolen products are difficult to differentiate from authentic and legitimately purchased products.

#### Proposed Solution

The solution is based on the integration of RFID chips into every high-value consumer product sold. The RFID chip will have a unique number, which is logged on a database when the product is purchased. Various RFID communication points could be used to monitor and determine if the product has been paid for. For the consumer, the RFID chip could contain product information which can offer multiple services directly linked to the brand. For the manufacturer, it opens multiple opportunities, such as self-programmable washing machines.



## Shortlisted



## 11. Ed Bailey

### The Core

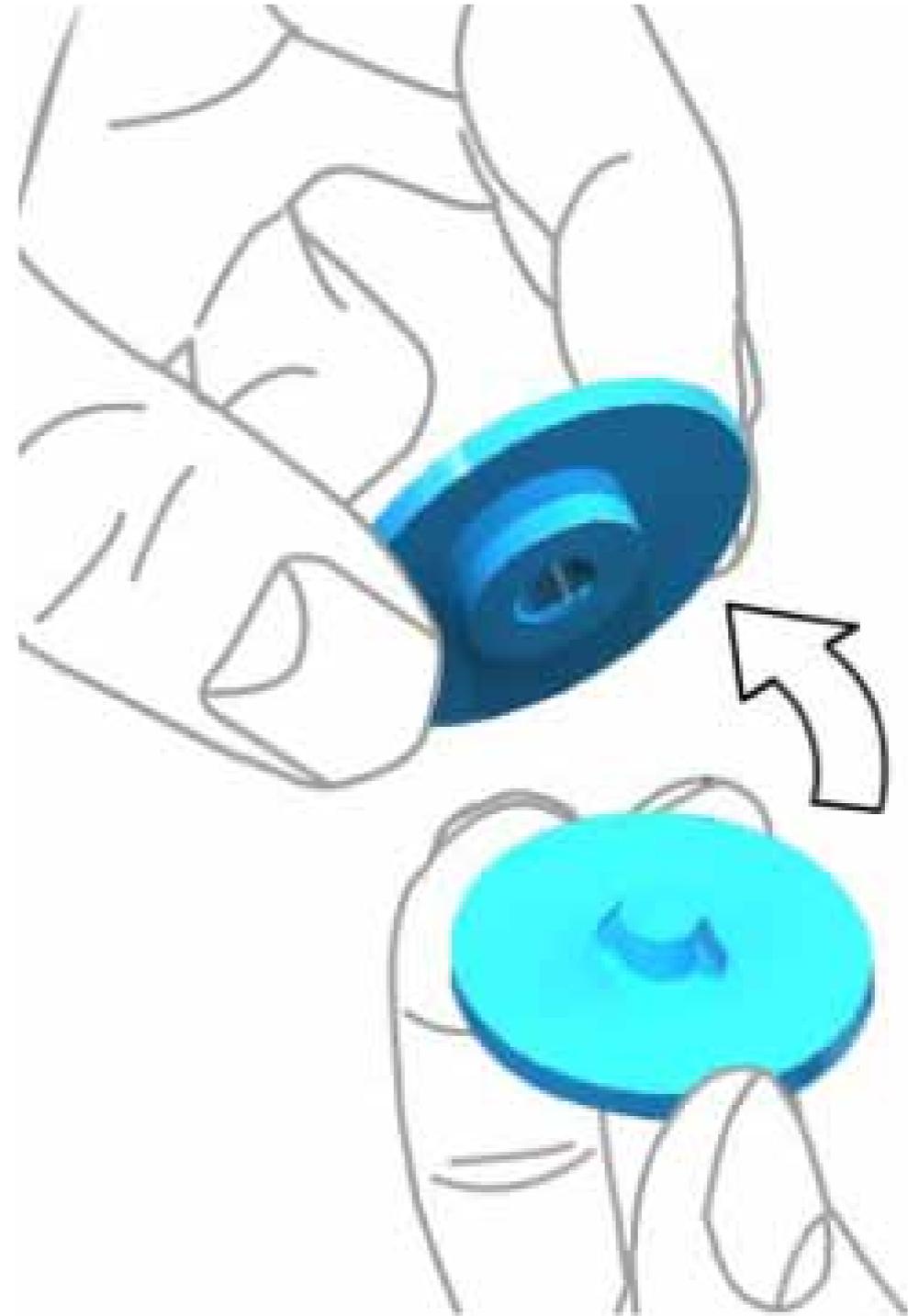
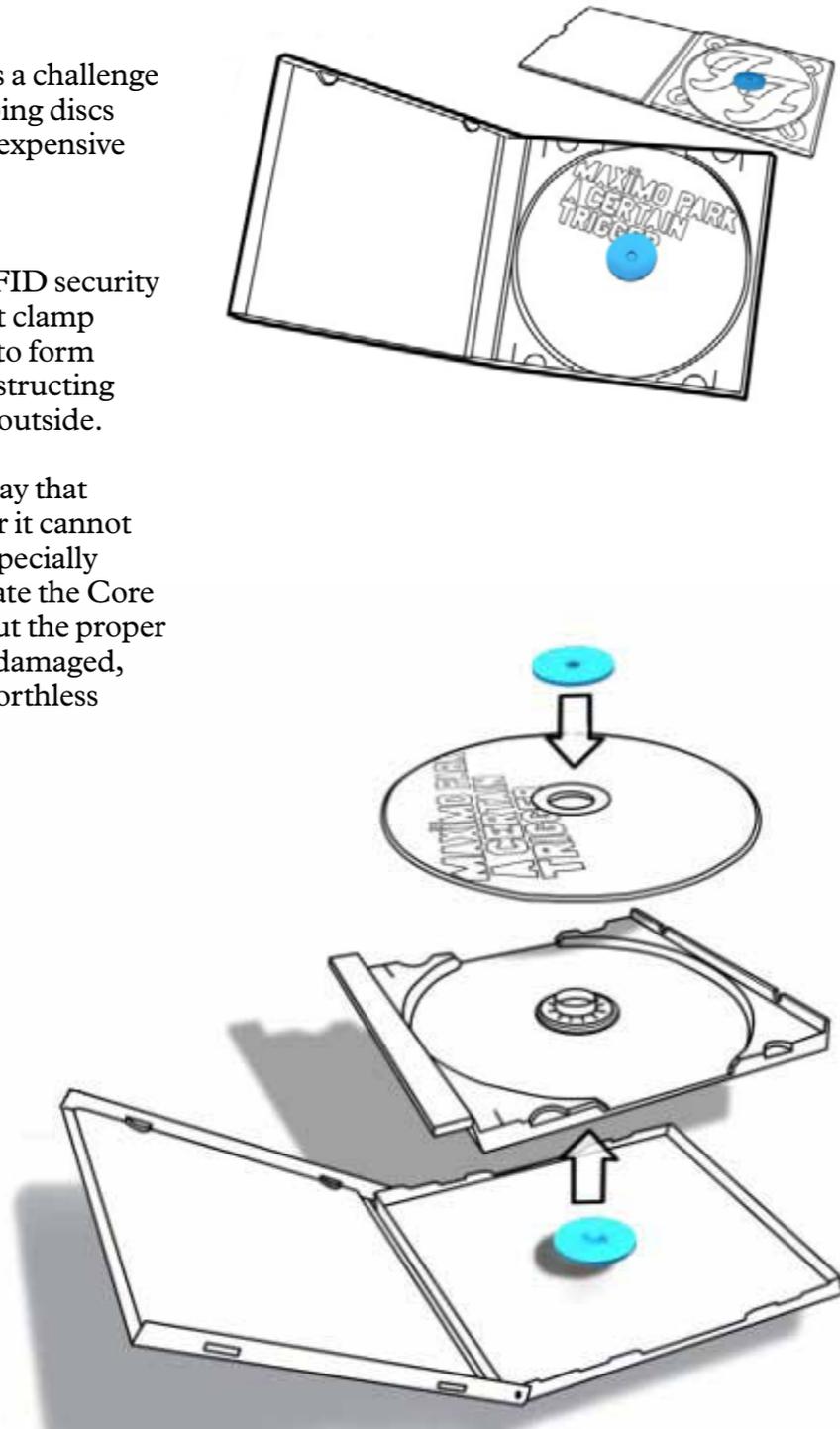
#### Problem

Securing CD and DVDs remains a challenge with solutions ranging from keeping discs behind the counter to bulky and expensive secondary cases.

#### Proposed Solution

The solution is a tamperproof RFID security device made from two halves that clamp through the centre hole of a disc to form one solid security tag without obstructing the view of the product inside or outside.

The Core is designed in such a way that once the two halves click together it cannot be separated by hand; only by a specially designed tool. Attempts to separate the Core from the CD or the casing without the proper tool results in the product being damaged, thereby rendering the product worthless to the thief.



## 12. Jan Rose

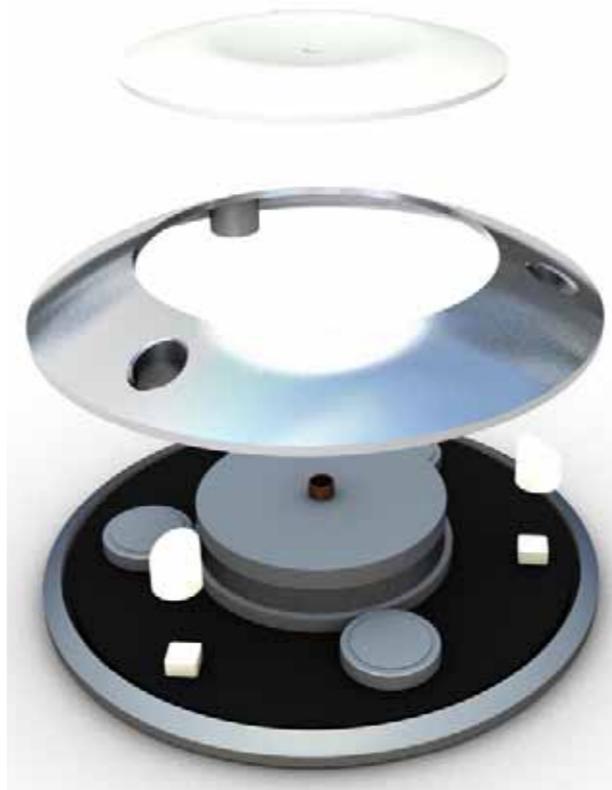
### Visual Tag for Vodka bottle

#### Problem

Alcohol is a commonly stolen product (due to high cost and ease of resale) but comes in numerous different shapes and sizes making common tagging solutions difficult or bulky and thereby competing with the products visual appeal.

#### Proposed Solution

This concept proposes a specific security tag for Absolut Vodka bottles. The tag – attached to the bottom of the bottle – will take the form of a barely visible, slim aluminium film which references the bottle cap. The tag will be attached by a vacuum, which can only be released by store staff. When a customer takes a bottle off the shelf, the tag starts blinking and is easily noticeable by CCTV and staff. The blinking won't stop until the bottle has been paid for and the tag removed, or the bottle replaced onto the shelf.



## 13. Lihsuan Chou

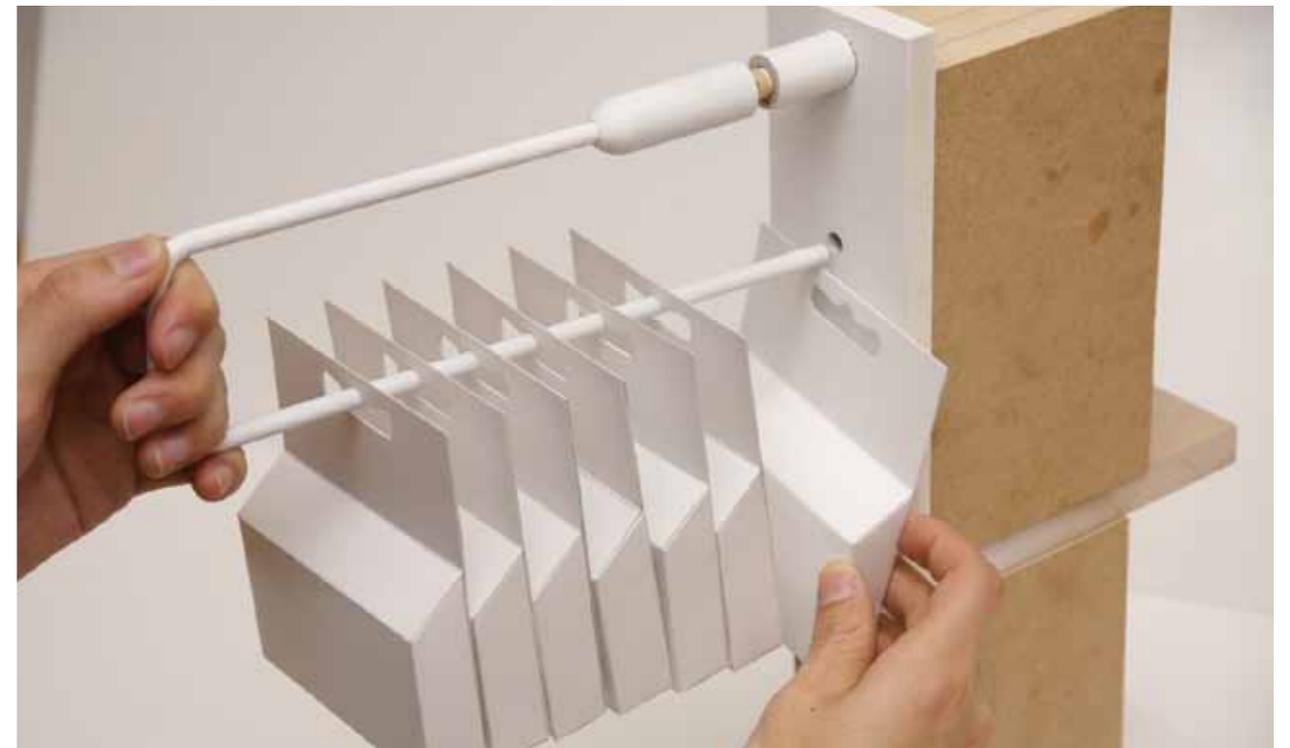
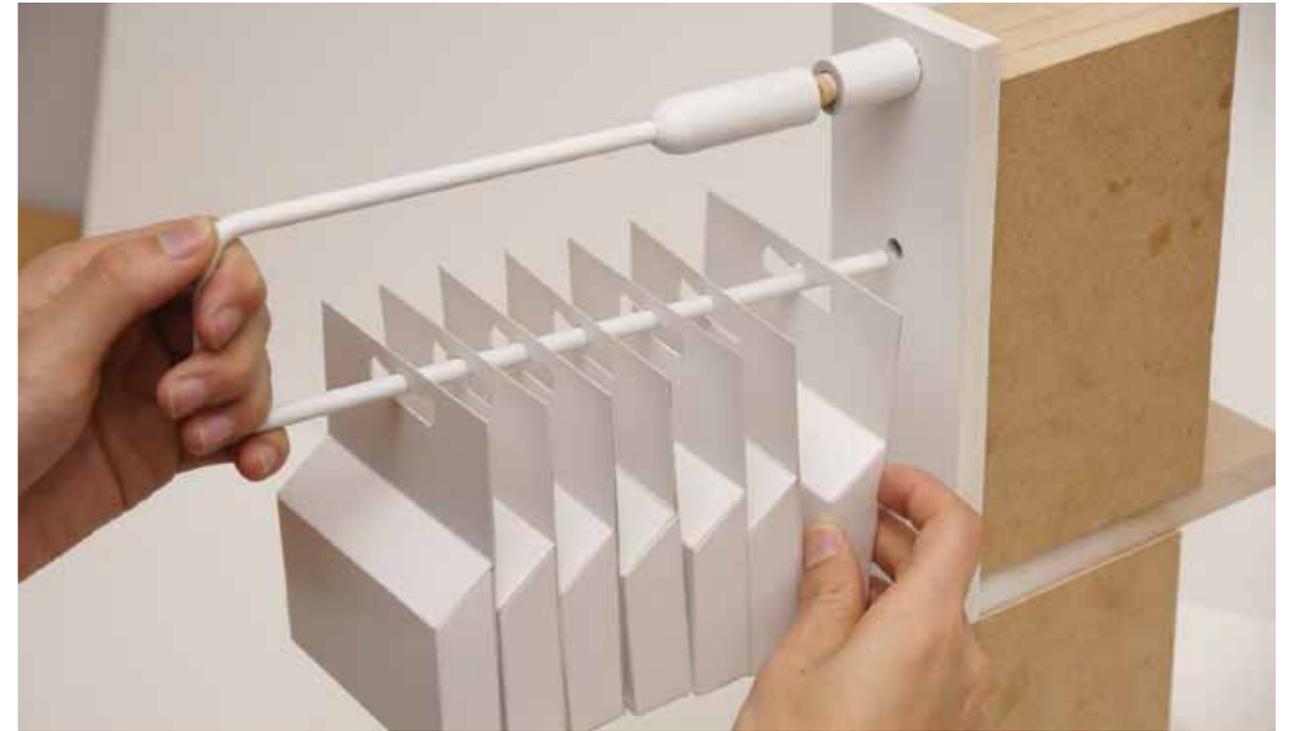
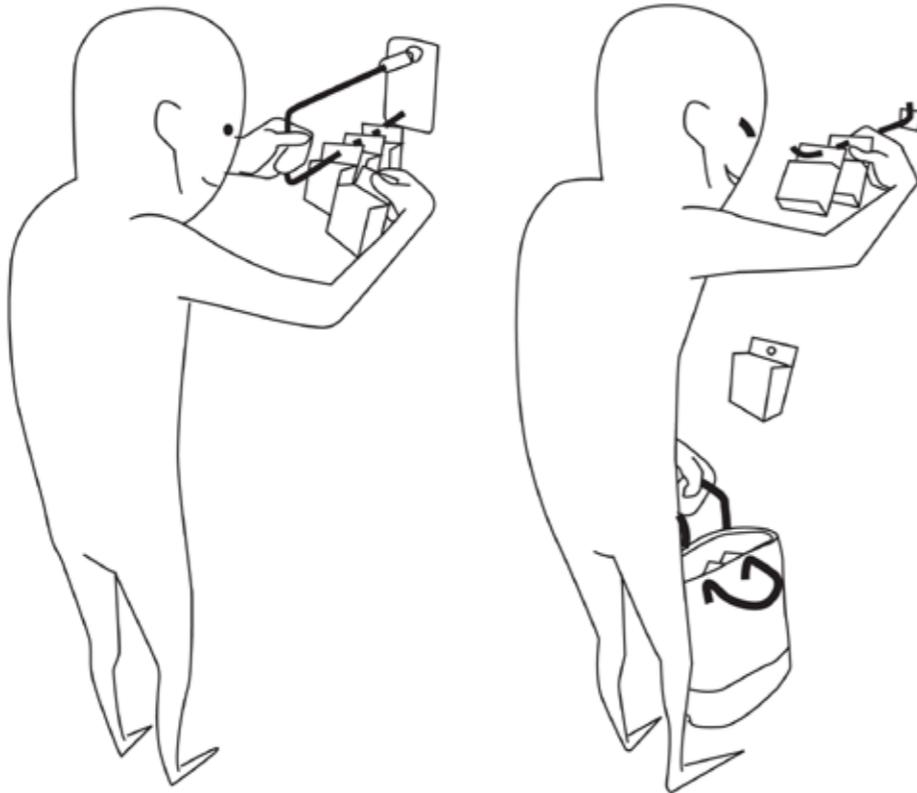
### The Hook

#### Problem

Conventional product hooks provide users the opportunity to steal products on display stands/racks.

#### Proposed Solution

The Hook only allows a single item to be removed at a time and increases the movement and length of time required to remove an item. Making the removal of items from product hooks a more visible action increases the sense of risk and draws attention to would-be shoplifter.



## 14. Mai Ohashi

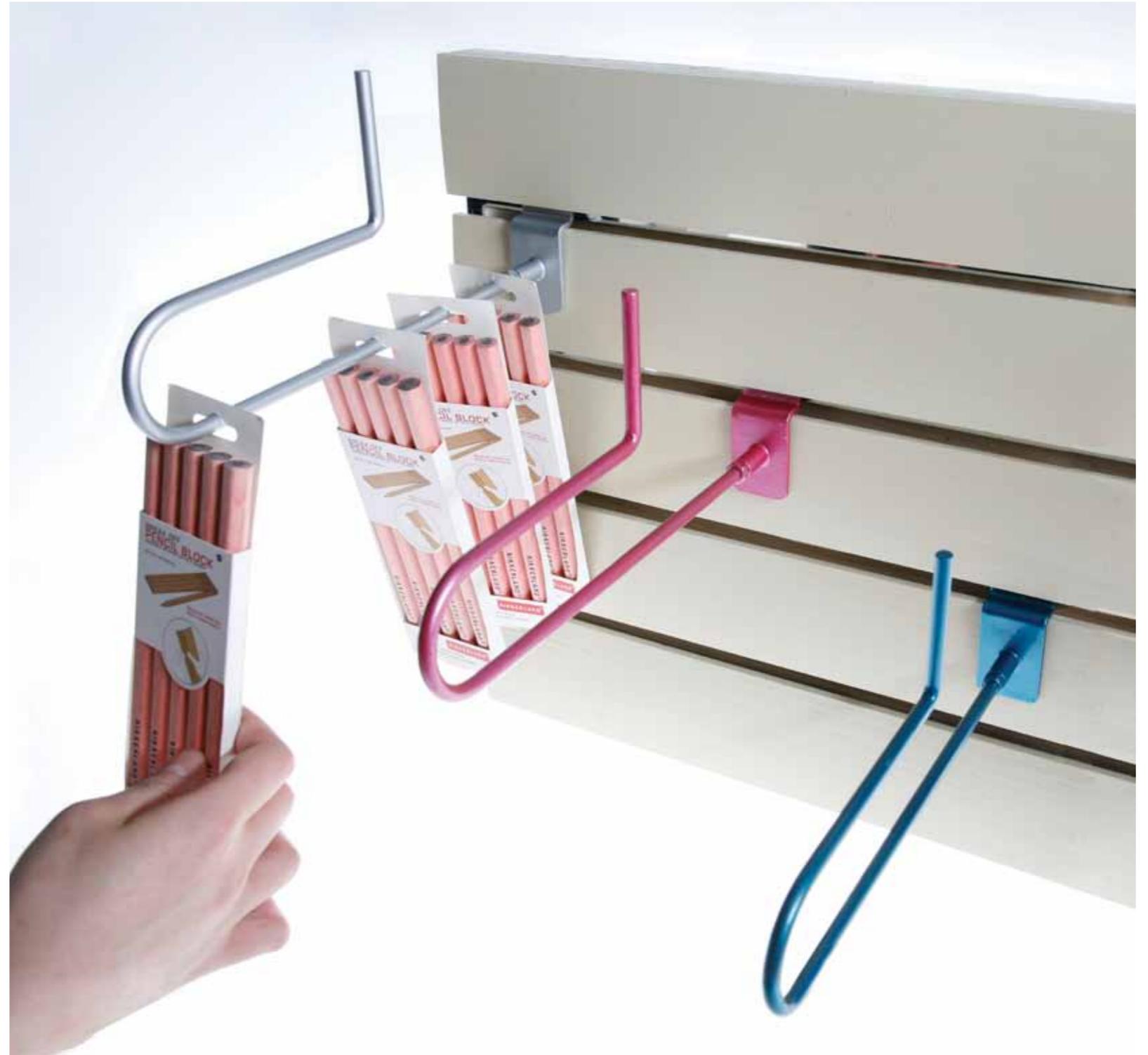
### Anti-shoplifting Single Hook

#### Problem

Current retail hooks allow shoplifters to quickly and easily pull items off hooks without drawing attention to themselves.

#### Proposed Solution

This product is an anti-shoplifting single hook for the retail environment. Its shape is designed to make the removal of an item more noticeable by requiring a hand twist and arm raise. The removal of the items becomes a noticeable activity thereby increasing a thief's perceived risk of being observed.



# 15. Marie Bachoc

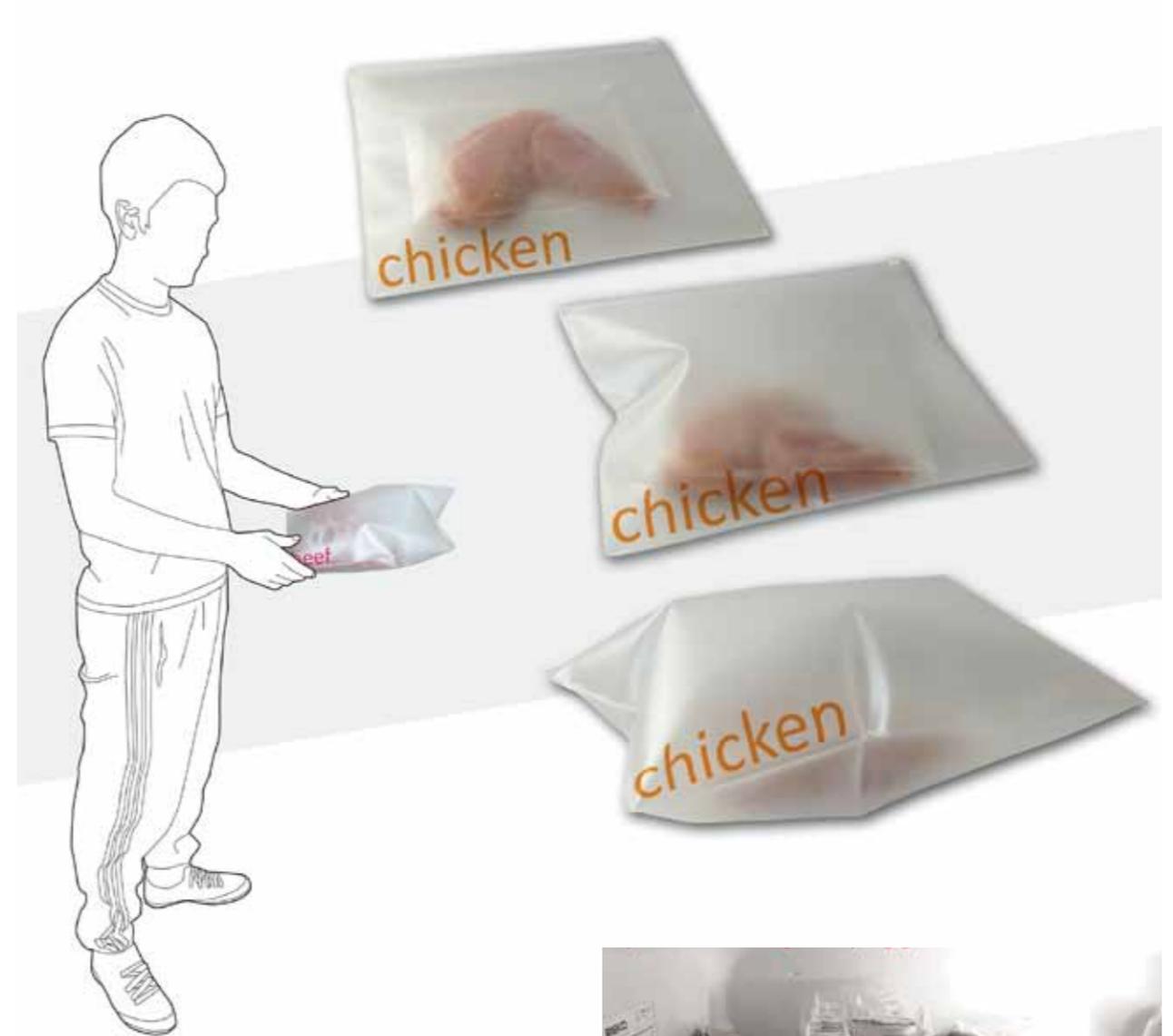
## Inflatable Meat Packaging

### Problem

Theft of meat from supermarkets.

### Proposed Solution

The concept is an inflatable meat packaging solution to deter shoplifting in the supermarket. When the customer takes the pack of meat from the display it inflates and becomes too big to be hidden. When the product is paid for, the cashier separates it from its inflatable packaging (which can be reused). In this way, it is possible to see a visual difference between a product that has been paid for and an unpaid product. The customer experience is also improved as the packaging is small, and can be opened and closed repeatedly.



## 16. Theresa O’Keeffe

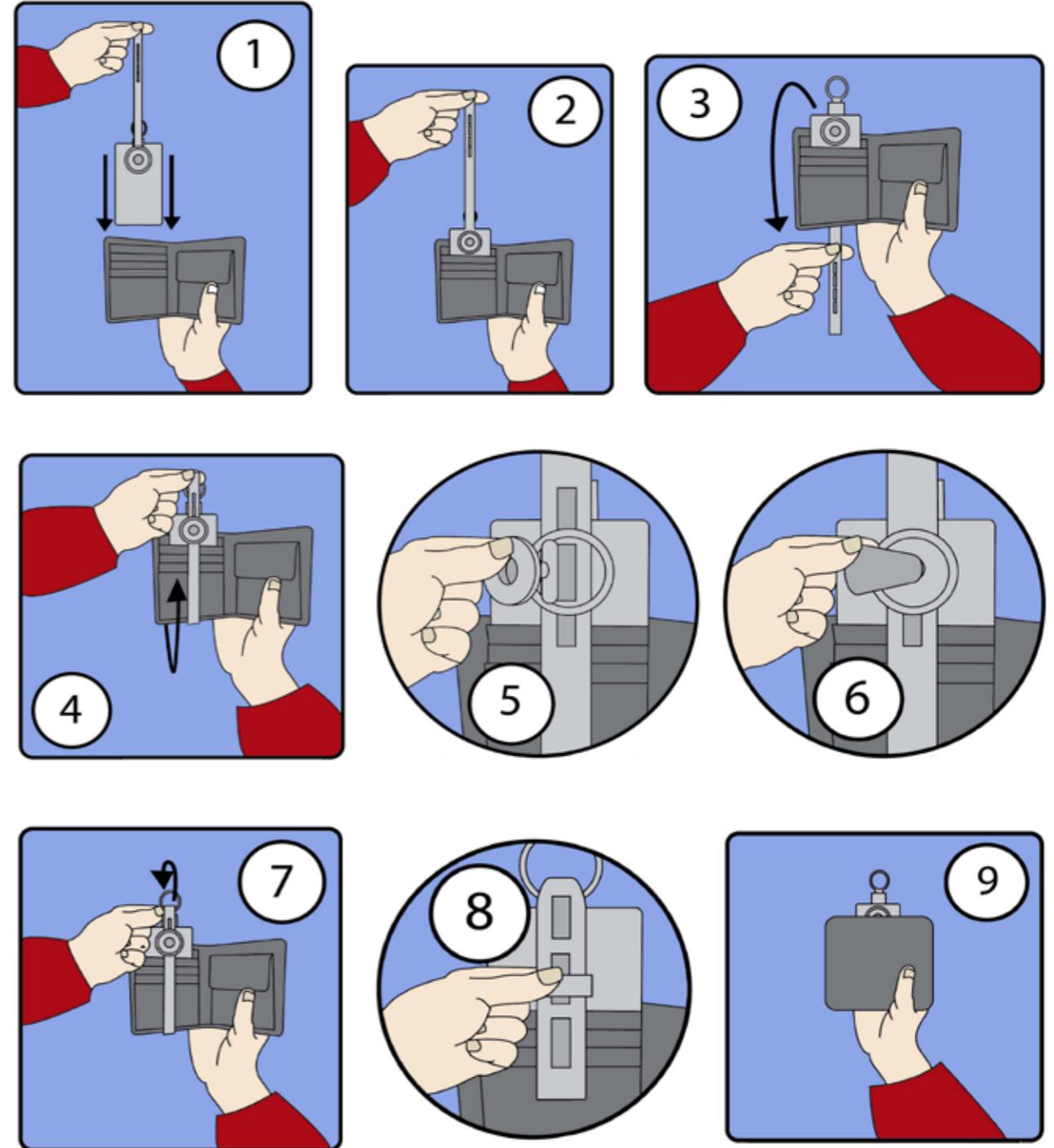
### Secura (Security Tag)

#### Problem

Mainstream tagging solutions are ineffective in securing purses and wallets.

#### Proposed Solution

The ‘Secura’ security tag aims to address this issue, while preserving the appearance/image of the product. The tag is credit card shaped, slotted into a pocket of a wallet/purse and secured using a strap that wraps around the back of an item. The tag is only removable by store staff. A secondary benefit allows the product to be suspended using the security device itself.



## 17. Anna Schwamborn's

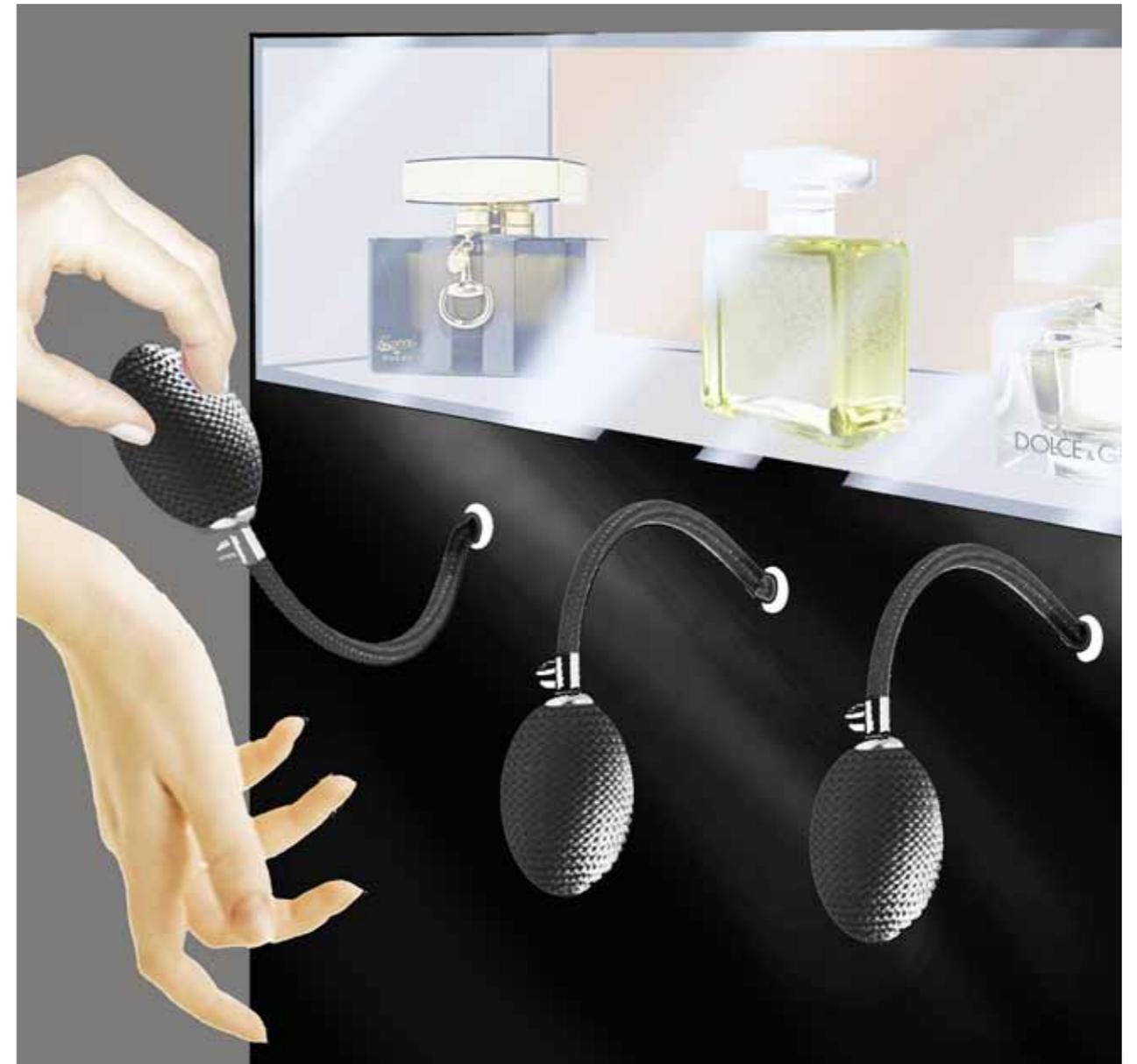
### Perfume Station

#### Problem

Perfume is an expensive product that is experienced prior to purchase making sample bottles targets for shoplifting.

#### Proposed Solution

The solution is a perfume station – a new interior design for perfume stores that attracts customers the customer to test and experience the fragrances but prevents thieves from stealing the tester bottles. Instead of using tester bottles open and available to hold, the customers experience the fragrance via a traditional and proper way of using perfume, via dispensers which can be pulled out of the tester station. The tester bottles are hidden behind glass which can be replaced by staff when needed.



WE ALSO STOLE HAND-HELD AND EASILY CONCEALED INVENTORY CONTROL TAG REMOVERS, WHICH WE CARRIED IN FOIL-LINED CANDY BOXES. THEY INCREASED OUR PRODUCTIVITY AND MADE OUR JOB EASIER AND LESS TIME-CONSUMING.

— Professional shoplifter<sup>1</sup>



## 18. Ben Powell

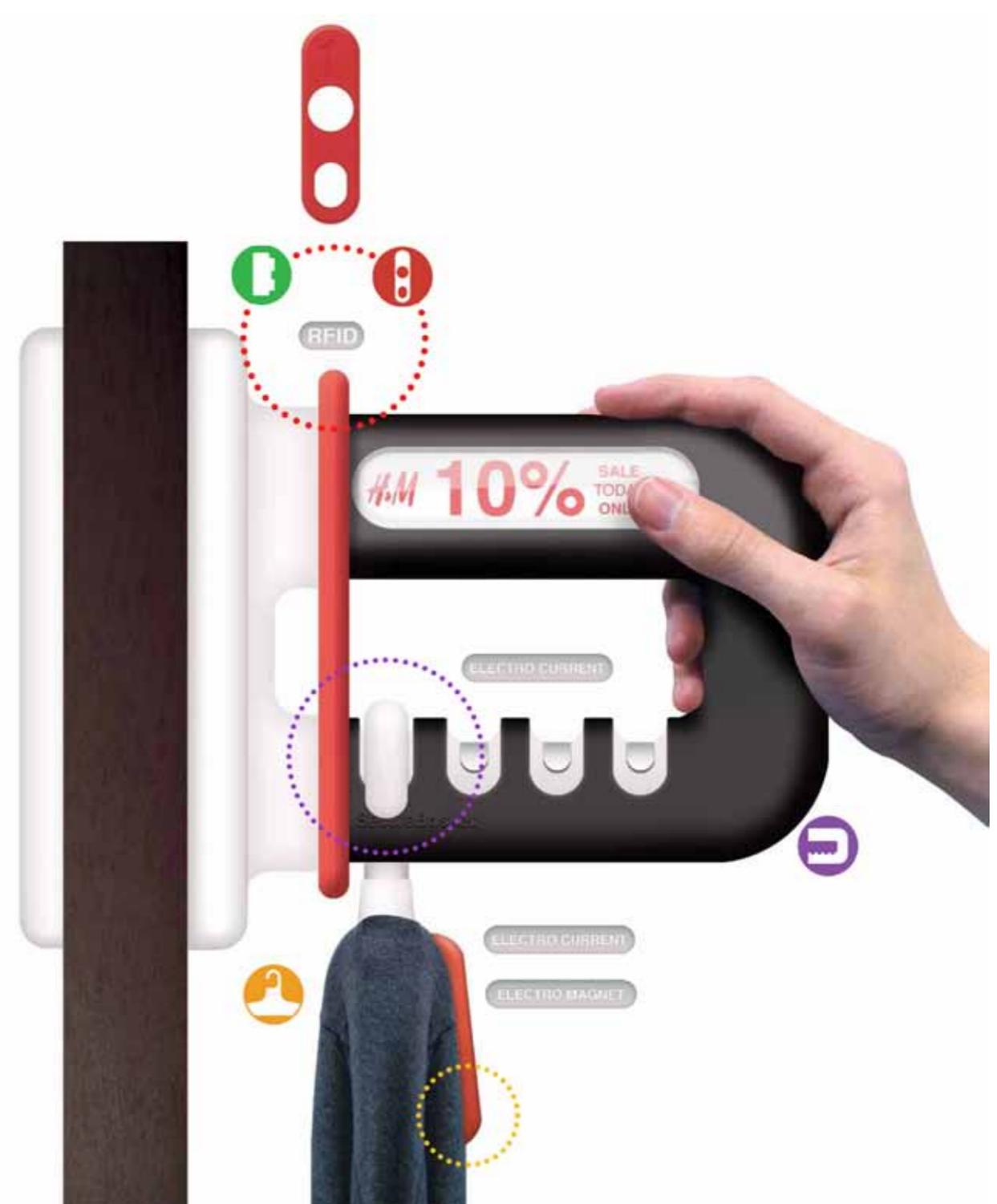
### Tackling poor store layout: The new purchase process

#### Problem

Existing clothing security tags are small, discrete and can be bypassed.

#### Proposed Solution

By taking the mass of the existing clothes hanger and making both it and the basket more of a visual cue to the items in the possession of a customer, the concept aims to make the 'trying on' process and transportation of garments more transparent. Whilst reinforcing new customer behaviour (only allowing the removal of clothes from the hanger in the changing room), it aims to create a substantial benefit denial to thieves by making the changing room the only black spot in the store allowing staff to focus on securing this space. This design addition and alteration in the purchase process hopes to also bring new benefits to existing honest customers (including self-service and a more appropriate garment basket).



## 19. Luke Smoothy

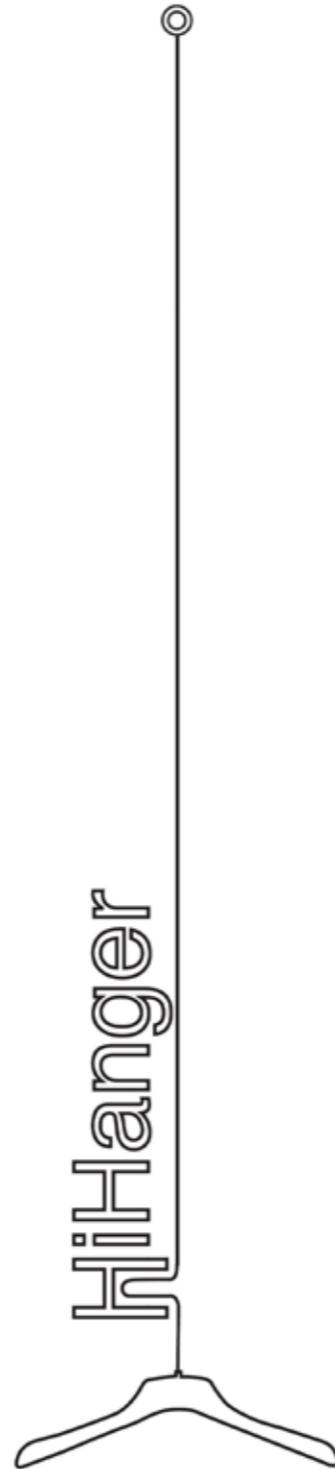
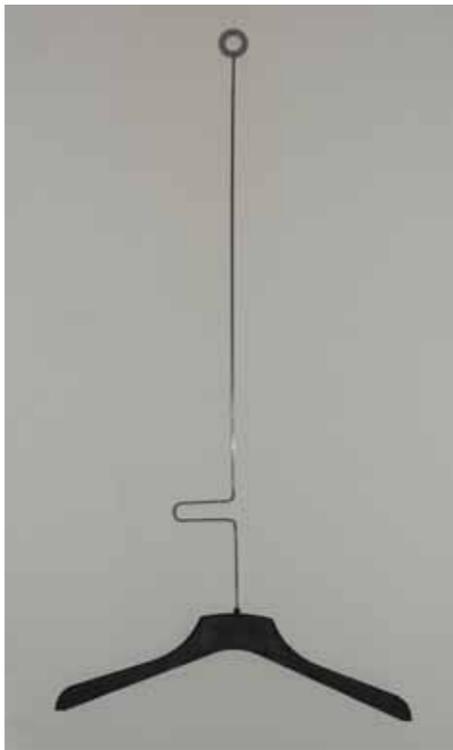
### High Hanger

#### Problem

Clothing can easily and discretely be removed from hangers and concealed by shoplifters.

#### Proposed Solution

This hanging system attracts attention through the exaggerated movement and greater visibility created by this modified clothes hanger, all without debilitating the consumer experience by allowing customers to interact with the product.



## 20. Sam Hodgson

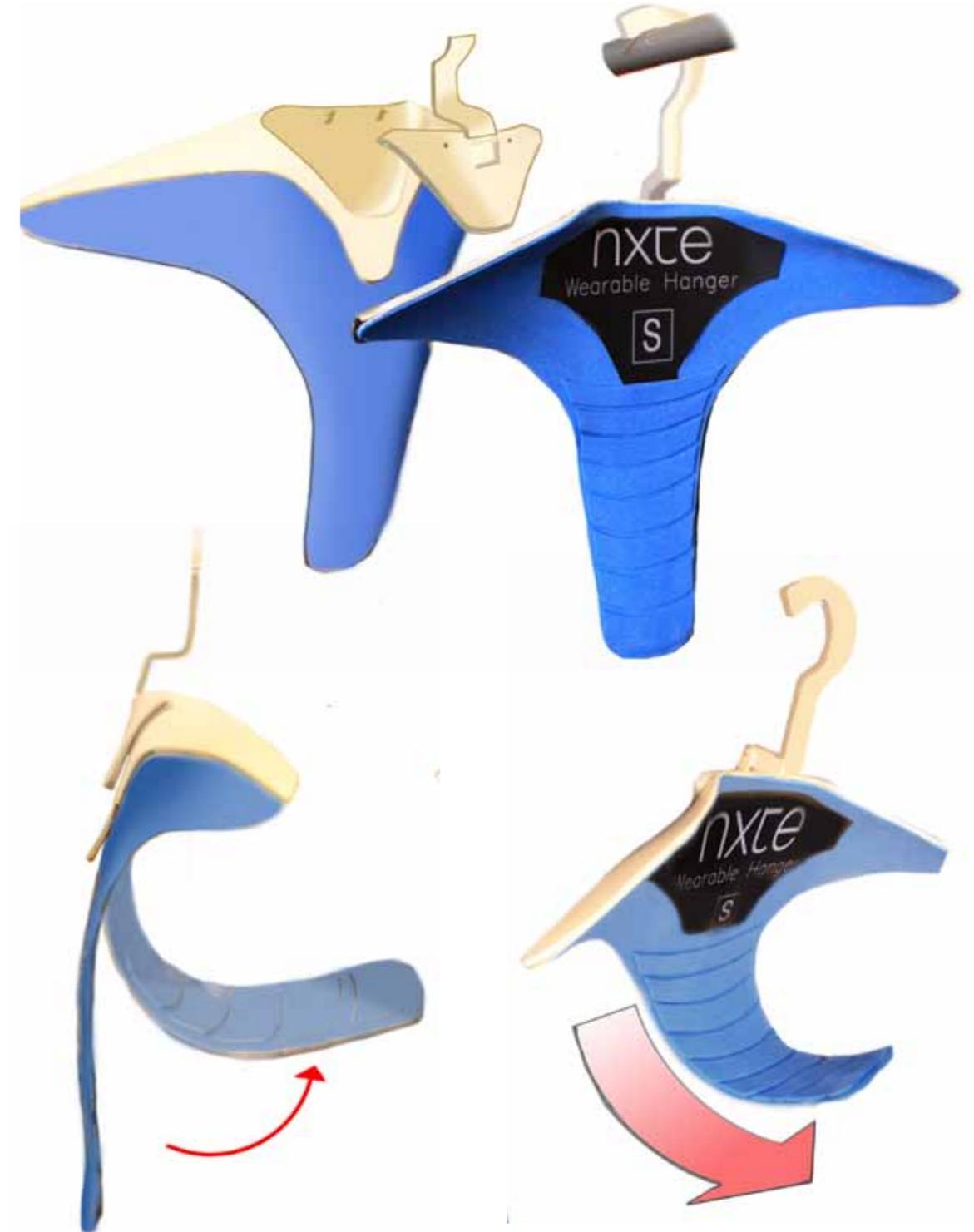
### Wearable Coat Hanger

#### Problem

Clothing can be easily and discreetly removed from hangers making them easy to conceal.

#### Proposed Solution

This is a concept for a wearable coat hanger that is attached to clothing items which cannot be removed until it is brought to the till to be paid for. The hanger allows the customer the flexibility to try on the garment, without affecting the aesthetics of the display, while making it very difficult for a thief to conceal multiple items. The hanger uses a secure clip system that keeps the clothing attached to the hanger in the shop. Only a specific shop key can open the clip.



## 21. Fraser Gibb

### The Changing Room System

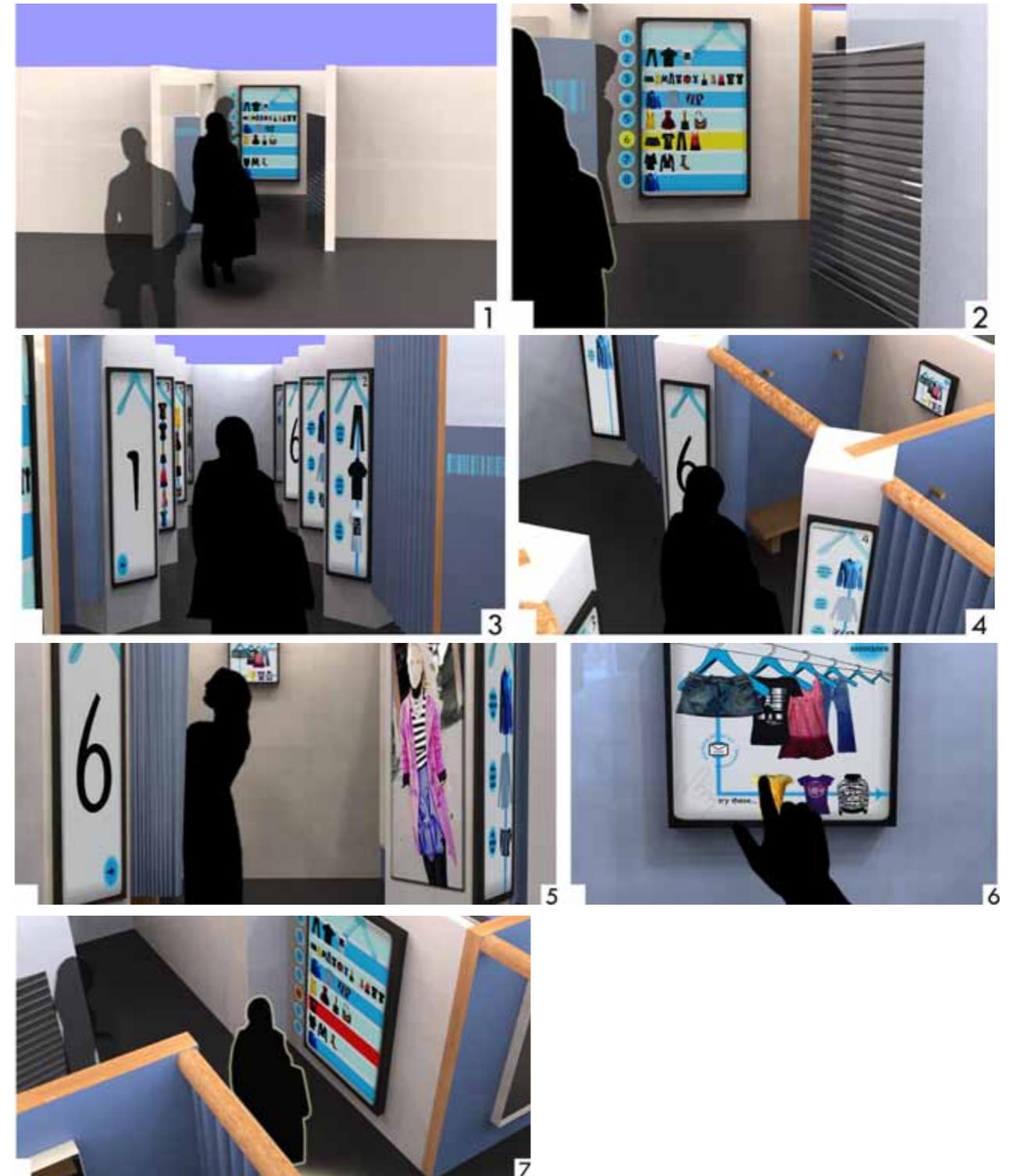
#### Problem

Retail store changing rooms are often environments conducive to shoplifting.

#### Proposed Solution

This proposed changing room system design seeks to promote behavioural change in potential shoplifters by making visible the otherwise hidden act of trying on clothes. The idea is to create a lack of privacy for theft activity by visually capturing and recording the clothes taken in and out rather than relying on number allocations and memory.

The solution envisages that RFID technology will replace existing tags, thereby allowing shop assistants to have greater stock control, not only in the changing room, but throughout the entire store. The series of screens gives a potential shoplifter the feeling that the assistant, surrounding shoppers and 'the system' are constantly aware of what items they are trying on.



## Reference

1 Steve Willis (a pseudonym) was a professional shoplifter for four years. <http://www.entrepreneur.com/tradejournals/article/10393458.html>

## Resource

### Advice about Methodology

A strong account of how to deliver design against crime in terms of practice-led design processes can be found on [www.designagainstcrime.com](http://www.designagainstcrime.com). It has been created based on design projects which have been delivered through practice rather than theory and about how this might be done. It features the Evolved Twin Track Model of the DAC Iterative Design Process (Gamman and Thorpe 2007, revised 2009) and describes i.) What is Design Against Crime? ii.) Why user-centred design. iii.) Mis-users and abusers too, what is unique about DACRC's methodology; and iv.) Conclusions on how best to design against crime. See: <http://www.designagainstcrime.com/index.php?q=designmethodology>

Some of the individual design 'methods' described by this DAC approach to methodology are also independently listed on the Design Council website which offers a general account of various design methods that can be drawn upon to deliver design against crime that you may also want to engage with. <http://www.designcouncil.org.uk/about-design/>

### Crime Frameworks

A number of useful crime frameworks have been created by Prof. Paul Ekblom to help designers bring further critical rigour to the design process, and to help you critically think through crime problems. They are located at: <http://www.designagainstcrime.com/index.php?q=crimeframeworks>

See for example, Gill, M. (2005) Reducing the Capacity to Offend: Restricting Resources for Offending. In Tilley, N. (ed.) Handbook Of Crime Prevention And Community Safety. Cullompton: Willan.

Hayes, R. (2006) Shoplifting. In Gill, M. (2006) Introduction. The Handbook of Security. London: Palgrave, MacMillan.

See for example, Spriggs, A. and Gill, M. (2006) CCTV and the Fight Against Retail Crime: Lessons from a National Evaluation in the UK. Security Journal, 19.4. pp 241-51.

Sasse, A., Ashden, D., Lawrence, D., Coles-Kemp, L., Flechias, I. and Kearney, P. (2008) Human Vulnerabilities in Security Systems. Cyber Security Knowledge Transfer Network. Human Factors Working Group, White Paper.

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The 10,000th Shoplifter Award - A Dutch storeowner is sick of shoplifting, so he decides to make a huge celebration of the 10,000th shoplifter, including even a parade! [http://www.metacafe.com/watch/120683/the\\_10\\_000th\\_shoplifter\\_award/](http://www.metacafe.com/watch/120683/the_10_000th_shoplifter_award/)

Tesco's Guide to Stop Shoplifting - Eyes wide open is the staff training film showed to Tesco colleagues showing how shoplifters operate in a supermarket. <http://www.mirror.co.uk/2009/09/02/tesco-s-guide-to-stop-shoplifting-115875-21643329/>

Crime Stoppers- Business and Retail Crime Prevention Advice. <http://www.crimestoppers-uk.org/crime-prevention/helping-prevent-crime/business-and-retail>

Anti-shoplifting single hook for retail areas- To make shoplifting noticeable, it is effective to make an exaggerated reaction, because shoplifters make smooth actions when stealing items. This product makes it difficult to place stolen items into a bag or clothing even if the shop has CCTV cameras. <http://www.kith-kim.co.uk/presents/index.php/courses/product-design-central-saint-martins/exaggerated-reaction/#>

Home Office Questionnaire- Business and Retail Crime. <http://webarchive.nationalarchives.gov.uk/+http://www.homeoffice.gov.uk/crime-victims/reducing-crime/business-retail-crime/>

### Video Footage

BBC - Former shoplifter issues warning <http://news.bbc.co.uk/1/hi/england/8120797.stm>

BBC- Shop owner's poster campaign <http://news.bbc.co.uk/1/hi/england/7988646.stm>

BBC - Police in Derby asked people to try their hand at shoplifting as part of a training exercise at the Westfield shopping centre. <http://news.bbc.co.uk/1/hi/england/7780742.stm>

**For more information  
on Design Out Crime visit**  
*[www.designoutcrime.org.uk](http://www.designoutcrime.org.uk)*

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**The Home Secretary's Design & Technology Alliance Against Crime brings industry, the public sector, designers and crime prevention experts together with victims of crime to prototype new design-led ideas for crime-proof gadgets, public spaces and housing.**



The programme will work with industry experts to tackle five areas where design can help to prevent crime:

### **Schools**

Finding and applying specific design solutions to reduce problems such as bullying, fighting and petty theft in schools.

### **'Hot' products**

Developing innovations in technology, services and product design which help make personal electronics more crime-proof.

### **Housing**

Embedding design-led approaches to help develop safer communities by reducing crime and the opportunities for them to occur.

### **Alcohol-related crime**

Finding design-led approaches to reduce the harm caused by alcohol-related antisocial and criminal behaviour, especially assaults in pubs and clubs.

### **Business crime**

Helping businesses to use design to minimise the crimes which victimise them, their customers or employees – such as shoplifting and other forms of retail theft.