Weaving Futures: Data responses.

Wallace Sewell

Harriet and Emma began their project by collating information which specifically related to their individual travel patterns. Harriet lives in Dorset and therefore her method of transport includes travelling by car to the station, train from Dorset to Central London and then a tube or bus to work in Islington. Emma however lives in Camden in Central London and has a different routine to travel to work, usually by bus.

Harriet made note of each method of transport she used and then give them a specific colour or texture.

eg: train from Dorset to London Waterloo - red

bus from London Waterloo to work - blue with lines

She then produced a timetable and her journeys were replaced with the relevant colour or texture.

Emma collated data from her various bus journeys to and from work, analysing the actual timings that the buses arrived and then comparing this with the printed timetable which showed her when the buses should have arrived. Based on this comparison, she constructed a layout of potential woven block proportions based on units of time.

Harriet and Emma then combined their gathered information. Harriet took reference from Emma's block proportions and produced a winding using the colours she had allocated to her various journeys. They then chose weaves for the blocks and their design was woven on the jacquard loom.

Takram

Augmented textiles (working title)

How do we capture data from textiles? And how do we display data? Takram's "Weaving Futures" residency at the London Transport Museum uses conductive thread and augmented reality to visualise the information generated from people interacting with their fabric. By viewing the textile through a smart device the number of times the fabric has been pressed is displayed live in a bespoke designed graphic. This could have multiple applications including enabling maintenance staff track the wear of seats on vehicles to bespoke storytelling for passengers where the narrative changes depending on usage.

Josephine Ortega

Over the 3 days as a resident designer at Weaving Futures at London Transport Museum, I explored the notion of 'space' and examined how space can change in different surroundings and circumstances. Exploring data within aerial views, I began looking at artists such as Bernhard Lang and author Benjamin Grant who present this idea from an extraordinary perspective. I decided to explore this idea myself and photograph this view, examining images from above. It quickly became apparent that the images taken, presented an almost 'readymade' design; the information offered is ceaseless and yet often overlooked by the viewer. I wanted to focus on certain aspects within the image; structures, shapes and formations which presented the design information used in the fabric.

Along with this, I wanted to build/interpret this perspective in 3D, as a fabric. Using a canvas grid as my base, I built my own pixelated images through a tufting method using yarn. This method formed a dense and heavyweight material, which presented a soft version of the image, allowing a comfort form to develop.

Linda Florence

My initial research focused on how we trace our travels and mark our journeys such as embroidered badges or hillwalking shields. I was interested in discovering new places in London and breaking away from the familiar path.

Working with computer programmer Julian Fenner, we designed a program that interprets the data contained on an Oyster card. This data is transformed into a woven pattern representing all of the London Underground stations visited by the user. The design can be changed by adding more destinations to the Oyster card when traveling in London.

Each badge was designed based on a local landmark which would be recognizable when visiting the station. The designs included parts of the Paolozzi mosaics from Tottenham Court Road and the Egyptian mummy from Holborn station. Green Park was based on a satellite image taken of the park showing the paths crisscrossing, while Brixton was based on the iconic David Bowie image from the Aladdin Sane album.

Along with designing the badges, workshops were run with children visiting the London Transport Museum to design their own tube station badge. These included everything from sunny Elephant and Castle to the more personal granny's house.

It is hoped that the program can be adapted for online use so people can upload their journey data and see what their personal journey pattern could look like if it was to be woven or printed.

Perhaps seeing the history of your journey illustrated might encourage visiting somewhere new or getting off the underground one stop early and walking instead to earn an extra badge.

Central Saint Martins BA (Hons) Textile Students
Mimi Forrest

I began my research by recording fragments of conversation whilst exploring the London underground. I then developed this data into pattern through collage and abstraction. By breaking up and distorting typography, I wanted to represent the bustling atmosphere of the Transport for London network and the multiple pieces of conversation you hear, which through the creation of this disjointed pattern the overall experience is derived.

Michael Woods

My project was entitled 'traces of the unseen'. I investigated the symbols, marks and textures that are often ignored on the streets of London, signalling previous construction work, and looked into the inferred and hidden meanings of this symbology. When travelling by all means, by the tube, by foot and by bike, we are bombarded by visual information, not only from advertising but also safety warnings, colour schemes and other information that we as the passengers cannot understand their meanings. I found that when I took my time to notice my surroundings, instead of heading to my destination as quickly as possible, there are symbols absolutely everywhere that I turned.

I began to create surfaces using asphalt as my background basis and layering large amounts of paint on top to give a textural effect similar to that which we see on the roads and pavements. I also began to layer other materials on top to reflect the uneven texture of the surfaces. I was heavily inspired by the star/ stratch like symbols found on the pavements in chalk/ paint noting where workers should drill and used coloured oil bar to recreate this.
For the residency itself I developed a design from my original paintings and drawings on point carré. Originally I planned to use the colours of red, yellow and black often prominent in road markings, but as my design progressed I noted that the textural elements were stronger in monochrome highlighting the different woven structures, reminiscent of the multi textures of my paintings. During the time I explained to visiting members of the public about the concept

surrounding my project, and helped with the rest of the group to create workshops for visiting school groups, in how to paper weave.

Lily Thornton

For this project with LTM, I collected data on the London Underground in the form of recurrent patterns, structures and additions to the space that go often unnoticed in the usual chaos of its use. I began collating the various lines and stripes found in the grooves of escalators, floor grips, air vents and pinstripe suits found on the carriages, platforms and stairwells of the Underground. Looking at the ways in which 'underground' forms of communication and advertising were able to subtlety blend into the architecture, I was interested in the public hijacking of private space evident in the range of stickers that can be found in and around the Tube network. I documented stickers that had both gone noticed and unnoticed, considering the ways in which the colour and layout of commercial propaganda were mimicked in remaining stickers, disguised in a saturated advertorial environments such as the London Underground that we are increasingly numb to. The contrasting texture of dry, peeled stickers alongside the shine of remaining ones was also a explored through my use yarn, juxtaposing dry textured brushed mohair alongside slippy rayons and the coated finish of sublimation print. For the residency in the Designology studio I designed a jacquard developed from an image generated during my research project, using collage to reinterpret found stickers on the Underground.

Ismini Samanidou and Simon Barker
Hidden London

We were intrigued by the number of lost underground stations in London, already aware of these from years of walking around London and noticing what looked like underground stations in odd places where we knew there was no station. During our research for this project we began to piece together the stories behind these stations that had once existed and have since closed for a variety of reasons.

The more stations we discovered the more they began to form in our imagination into a ghost network, an underground line that doesn't appear on the map and whose stations are connected only in the mind. We plotted the locations of the lost stations on the current map of the system and traced the connections between these, exploring many different ways of connecting these points with lines, creating drawings that resemble constellations and archipelagos.

We chose to weave two of the drawings using fine copper wire obtained by a scientific material supplier. We are planning to continue exploring these ideas further.

Brock, Dempsey & Veja
Sensory data

This collaboration brought together three researchers who had not previously worked together on textiles, but who all share an interest in smart materials. The collaboration has been as much about the process of the collaboration as it was the outcomes.

Many ideas were discussed during the initial phases of the project, and the designers were particularly interested in exploring sensory experiences on the London underground – haptic, visual and sound for woven jacquard design. The designers discussed how these specific senses (haptic, visual and sound) respond and interact to sensory signal data on the London underground. Using the idea of contrasts for visual aids, tactility of moquette seat fabrics and platform blisters, and sounds of announcements, these ideas were further progressed into the design ideation phase using ludic methodology for design thinking.

The designers collected a range of small analogue and digital toys/ objects, reactive materials and electronic components, that would help inform design thinking via hacking, making and linking key sensory themes of haptic, visual and sound. Some of the key objects that worked towards the final outcomes included:

- Digibirds – digital toy birds that respond by singing and moving when sensing sound
- Analog music machine – sound response to a punch card data when wound through analog music machine (reading a punch card relating back to jacquard data)
- Stereo earphones – digital music earphones
- Bike light – reflective and flashing mode bicycle safety light
- Tactile materials and yarns – materials including rubber, paper, mohair, plastics, monofilaments, vibration motors, reflective yarn, phosphorescent yarn, wire, chenille, polyester, UV-reactive
- E-textile materials – conductive yarn and sensory output components (LEDs, buzzers, pressure sensors, actuated soft circuits)

Although multiple ideas were inspired by the 'hacking and making' session, only specific ones were taken through for jacquard design. The final jacquard designs were reflective QR code, multi-haptic graphic jacquard, giant speaker, digibird graphic e-textile tracks, mind the gap music/braille code. Each jacquard outcome is explained as follows:

- Reflective QR code (Sensory response: SIGHT)

Visual contrasts to aid clarity and visibility are vital on Transport for London designs. This jacquard outcome grew from how visual contrasts could be transformed as data, and led to the idea of QR codes (digital data as a visual response). The graphics of QR codes are usually a black and white code, read by a digital reader much like a serial barcode. The contrast between the dark and light space is what enables the code to be encrypted to a weblink. Generating a QR code for the @WeavingFutures twitter handle resulted in the visual graphic. Pattern manipulation in some of the idle code areas enabled swirl pattern aesthetics. The QR code was woven in reflective yarn and phosphorescent yarn to give multiple visual contrasts effects depending on the lighting condition viewed in, while still working as an active code.

- Multi-haptic graphic jacquard (Sensory response: HAPTIC & SIGHT)

A photograph of the iconic 'mind the gap' text between the train and platform, enabled the designers to think about the multiple details integrated in this one image i.e. text, yellow boundary lines, paving indentations. Every detail served a purpose, thus the jacquard translation could also respond via multiple tactile materials (e.g. mohair - furry, polyester - smooth/shiny, matt chenille - soft/moquette like, yellow - reflective) while still keeping the 'mind the gap' text in a single woven design.

- Giant speaker (Sensory response: SOUND & SIGHT)

This sample was a reaction to all the sound data on the London underground. When hacking the digibird and earphones, small speakers play an integral part of these functions. One of the physical qualities required for a speaker are coils of copper around a magnetic field. This could be translated as a literal spiral graphic and specifically designed structures, which would enable the piece to operate as a speaker. A giant coil was woven and requires connection to active sound source and magnetic field. In addition, this piece is also woven with a UV-reactive yarn to change visually when exposed to UV light.

- Digibird graphic e-textile tracks (Sensory response: SIGHT, SOUND & HAPTIC)

The digibirds were integral to inspire many trails of thought during the residency. The dissected digibirds enabled the designers to study the internal 'guts' and understand the methods of connections and actuation. The visual photograph of the step-by-step dissection was used as the graphic for the jacquard design, with multiple tactile yarns. Disguised amongst the aesthetic design, multiple conductive yarn tracks were woven in to act as a fabric electronic breadboard. The piece is able to connect to a circuit of multiple electronic outputs to emulate to multiple outputs of the digibirds.

- Mind the gap music code (Sensory response: SIGHT & HAPTIC)

The wind up analog music machine inspired this piece. The punch card system that operates the music machine requires holes to be punched in a specific sequence to play notes/ tunes. The visual aesthetic of the punched music card resembled that of braille, leading the designers to research and analyse the configuration of the braille alphabet. The 2 x 3 dot configuration that can make any braille letter could be reconfigured as a linear 1 x 6; hence, each braille alphabet letter could be translated as a punch card music machine sound/ note. Using this method, phrases from the London underground were translated as complete tunes, including 'mind the gap'. The visual aesthetic of this translated braille to music machine notes were woven as a jacquard design in this piece. The braille-music note hybrid coded dots were woven in structures that enabled raised surfaces, relating back to the original haptic of braille.

Gainsborough

It may seem odd for a 'traditional' company, whose origins date back to 1903, to be involved in 'weavingfutures'. However, Gainsborough was established as a mill catering to contemporary woven design as much as historical restoration, and when it comes to the bespoke side of the business, we are wonderfully creative and experimental in our approach.

It is with this in mind that the Gainsborough design team embarked on its residency at the London Transport Museum from 13 - 17 December 2016. Using 'data' as our theme, TfL as our focus and Gainsborough as our platform, we came up with three great ideas as our inspiration for a capsule collection which we will be launching late Spring this year. Heavily utilising the London Transport Museum Archive of moquette fabrics and drawing parallels with our own, we adapted the current Tube Line colour palette to create a blend of Gainsborough and TFL. From the transformation of data from artwork to card to woven fabric, to the steps leading down to the underground, we took full advantage of both the sampling jacquard loom provided in the studio, and the creative freedom granted us!

Studio Houndstooth
The Wallpaper Wall: Inside|Outside

Studio Houndstooth focussed on the 'local' of the various DLR & tube stops on the network, particularly focusing on one stop, creating 'data' from the area. London is a rapidly changing city, where increasingly long term communities established in an area or 'manor', have to move further out of London due to many reasons, including work, increasing house prices, rent rises or displacement for new builds. Having created a database/archive of wallpapers remaining from a cleared high rise residency in east London, Studio Houndstooth are assisting in creating a tribute to the people who lived in the area before the buildings' use is changed. Studio

Houndstooth live and are embedded within the community and are about to commence on The Wallpaper Project: Inside|Outside, where residents will help design the hoarding that will surround the old residence. This design will test out an interlocking pattern system.