



Christopher Barr Sustaining Emotion

INTRODUCTION

The PLATE (Product Lifetimes And The Environment) Exhibition explores critical themes related to how long products last in contemporary society. The topic of product longevity is examined in innovative ways through prototypes, objects, artefacts, posters, photographs and films produced by designers, social businesses, artists, researchers, lecturers and students.

Featuring household products, furniture, lighting, fashion, jewellery and artworks, this collection of visual work embraces design for longevity, design for disassembly, repair and reuse, emotionally durable design, repurposing and upcycling, and the need to challenge planned obsolescence and the throwaway society.

The PLATE Exhibition runs alongside the PLATE Conference at Nottingham Trent University (17 - 19 June), the first international conference to address product lifetimes in the context of sustainability.

Curated by Rebecca Gamble.

EXHIBITORS

Frank Abbott Christopher Barr Paula Barton Roger Bateman Kay van Bellen Sarah Bushell Anja Claire Crabb Alan Crisp Laura Daniels Callum Field Katrvn Furmston Calum Gardner Mark Golab Jonathan Hamilton Jan and David Hamilton Sara Li-Chou Han Maria Hanson Bridget Harvey Julian Hughes Julia Keyte Riddhi Lodhia

Angharad Mclaren Shirley McLauchlan Tracey McMaster Anna Milada Tom Moulds John Newling Paul Nieuwenhuis Nottingham Bike Works Eleanor Richards Daniel Scott Harriet Shooter-Redfearn Tao Shen Annalisa Simonella Andrea Soler The Urban Worm Sarah Turner Frieda Vanderpump Nick Williams Louise Winter Janet Wootton Gordon Young

EXHIBITION OPEN TO PUBLIC

17 - 19 June 2015 10am - 7pm FREE

LOCATION

Nottingham Trent University Newton Building Level 1 Goldsmith Street NG1 4BU

FRANK ABBOTT YOU DO SOMETHING TO ME

A video record of a continuously evolving piece of public signage created from re-purposed packaging sited in the foyer of Primary in Nottingham and in the Nottingham Castle. It sets out to explore and challenge the redundancy of commercial materials, reanimating them with new meanings.

vimeo.com/frankabbott

CHRISTOPHER BARR SUSTAINING EMOTION

This range of projects explores consumer-product attachment as a method of increasing product longevity. Each project explores the benefits of product-person interaction, the use of traditional materials and processes, and design for social situations to help develop a range of exemplar products that aid the development of a strong consumer-product bond, which may ultimately result in an extended product lifespan.

christopherJBarr.weebly.com

-Christopher Barr Sustaining Emotion





Frank Abbott You Do Something To Me

PAULA BARTON ENTWINED

The textured fabric drapes and handles are designed to create a relationship between the garment and its wearer. Responding to emotional durability, these tactile fabrics, soft surfaces and cocooning shapes provide the wearer with a sense of security and comfort. Their quality, versatile shapes and neutral colours further encourage durability, as garments to be worn again and again.

paulabarton.com

ROGER BATEMAN *BIOFURNITURE*

There is a growing demand for cleaner, greener products and as manufacturers and consumers start to demand high performance environmentally benign materials and processes, there is a critical need for a richer and larger palette of sustainable materials (and their related processing techniques) to be developed and made available. Biofurniture is a project that developed and exploited a flax and PLA sheet material, highlighting the key role biodegradable materials can play at the end of the product lifecycle. The research team engaged in multidisciplinary work and with a variety of stakeholders in order to ensure the material would meet a wide range of end user requirements. The realization of products for commercial availability was a key driver within this project.

materia.nl/article/biofurnitureroger-bateman



Roger Bateman Biofurniture

ROGER BATEMAN, LEWIS GEORGE, MARIA HANSON, SARAH WATERHOUSE GREEN TO GOLD

The product and fashion industries are arguably built upon the need to continually change styles and promote the discarding of 'older model'. In order to be able to promote more socially responsible consumption patterns amongst buyers, there is the need for a wider palette of environmentally sustainable materials and processes to be made available to product, fashion and accessory designers.

Green to Gold investigates the exploitation of a biodegradable composite material through the designing and making of products and accessories. Through cross-disciplinary research and practice, this project investigates how dyed and printed surface patterns may be achieved, tailoring techniques applied and low-cost production methods utilised to produce durable but biodegradable artefacts. shu.ac.uk/research/c3ri/project/ green-to-gold

Roger Bateman, Lewis George, Maria Hanson, Sarah Waterhouse Green to Gold



KAY VAN BELLEN ILLUSTRATED STORIES

This work explores unwanted ceramics as a medium to illustrate a story, adding a new context and meaning to something that has become redundant or obsolete. Each ceramic piece tells a distinct story; when fired, the ceramics reveal the marks and imperfections of its old life. The lines of the knife, that over time broke the glaze, become magnified and rough. The imperfections within the ancient glaze

can burn through as black marks. The plates that survive the kiln's fire perfectly have the least value, as they are not yet ready to reveal their history.

kayvanbellen.bigcartel.com



Sarah Bushell NOOD

NOOD challe

SARAH BUSHELL

NOOD challenges the consumer culture to buy cheap, wear once and throw away, through making affordable and quality handmade articles that people can develop a connection to. These shoes are made from leather deemed an unsuitable waste product by large manufacturers. Instead these imperfections, such as marks or number codes, are purposely integrated into the design.

cargocollective.com/madebybushell

ANJA CLAIRE CRABB SEAM DECODER

Most garments today are designed as `closed', unchallengeable pieces that don't invite manipulation or change. But what if universal garment staples - the seam, the dart, the hem - signal `adjust to fit here'? Does it set a more open tone of conversation between user and clothing? The colour-coded printed guidelines of the top and skirt in the exhibition mark out areas of adjustment for a range of body shapes. Seam Decoder was a response to Professor Kate Fletcher's Local Wisdom project.

studioanglindo.wordpress.com



Anja Claire Crabb Seam Decoder

ALAN CRISP

A sense of warmth and peace becomes embedded within the tools used for `tinkering', handles that epitomise the perfect ergonomic solution, worn to fit one particular hand over many years, the tool itself infused with the character of the craftsman. Quality tools bought originally for their functionality and expected longevity gain much more as time passes and are used with care and affection, often as instruments of training as father passes to son and grandson the skills passed to him by his forebears. In that sense they become more than just functional tools, they become the stepping stones to the past, the pathway to the future; they evoke the memories of the methods and methodologies of the craft and craftsmen.

When I work with these particular tools I am still working with my father and grandfather, still leaning on their expertise, still remembering their talented ways with materials and still accepting their advice; 'cut it long, then cut again'. So I experience 'life after death', I hear them talking, the longevity of the tools changing their function from instruments of removal and creation into transmitters and receivers of the past and the future.

alan.crisp@ntu.ac.uk



Alan Crisp

LAURA DANIELS RESEARCH POSTER

Product lifetime affects the way in which we calculate embodied carbon and allocate it to its functional unit. In the electricity system, this is a poorly explored area - and it is complex due to its ever-changing nature.

This research poster presents a discussion of the challenge in accounting for the embodied carbon of the electricity network assets, such as pylons and cables. The work looks at the different lifetimes of electricity network assets and how the changing nature of the network makes it difficult to calculate embodied carbon impacts of energy policies.

Credits:

Laura Daniels, Ben Potter, Phil Coker and Paul Walton, University of Reading.

KATRYN FURMSTON JAMES

James is a unique coffee table made with reclaimed timber from Shipley Lock Gate. Named after the engineer James Brindley, who designed Britain's first canals, this project explores the concept of revealing a product's history through its design and materials.

kfurmston@googlemail.com

Callum Field eMotorcycle Conversion



CALLUM FIELD EMOTORCYCLE CONVERSION

Initially donated as an end of life Honda SS50, the motorcycle was stripped, reconditioned and modified to accept an electric drivetrain, extending the product's lifetime. The aim of the project was to investigate the electric vehicle technology currently available. The eMC was designed with a top speed of 40mph and a range of 40 miles per charge. It uses AGM batteries and an air-cooled DC motor.

callum-dave-field@hotmail.co.uk

CALUM GARDNER FRAGMENT

Fragment is a coffee table designed using reclaimed materials. The top is made from reclaimed parquet flooring used in the Baltic Exchange in London, which was bombed in 1992. The coffee table combines a high quality finish tabletop using elegant materials with the rustic and unrefined appearance of the angular table legs to represent the beauty and the destruction of the parquet flooring and the Baltic Exchange.

cfgdesign@outlook.com



Calum Gardner Fragment

JONATHAN HAMILTON NIKON COOLPIX 990

This camera challenges planned obsolescence and the throwaway society through its elements of design for longevity and repair. This 15 year-old camera has an unfashionable 3.1mega-pixel file size, yet delivers excellent image quality, from a high quality swivelling lens and sensor, different to the contemporary DSLR design. It continues to be regularly used for its unique features, creating stop frame films in live contexts.

vimeo.com/jonathanhamilton

Jonathan Hamilton Nikon Coolpix 990



JAN, DAVID AND JONATHAN HAMILTON

CIRCA 1961, PRESTIGE BREAD BOARD AND INTEGRAL KNIFE

The "Prestige" Breadboard with integral knife was given to Jan and David Hamilton as a wedding present in 1962 and has been in constant daily use by their family since. As well as other products in their home, this breadboard has introduced their children and grandchildren to the benefits of reuse and product longevity, while achieving a sense of wellbeing from its use.

Children coming home from school, making sandwiches to eat whilst watching TV, have used this breadboard and knife set several times a day for the last 53 years, across three generations. This product appears to have been designed for longevity, originally coming with a 10-year guarantee, the knife has never needed sharpening and is still highly effective on all types of bread. Its quality, hardwearing materials, functionality and personal history makes this a highly valued product for the Hamilton family and is an example of emotionally and physically durable design.

SARA LI-CHOU HAN TRASHED COUTURE

Designers and product developers are being called upon to take greater responsibility for the problems presented by the inefficient and unsustainable systems used to create new fashion items. The culture of transience, newness and perceived obsolescence, so prevalent in the fashion industry, has led to over-consumption and high volumes of waste: clothing is often disposed of with as much as 70% of its potential lifetime still left.

Trashed Couture is an ecofashion collection, specialising in upcycled denim pieces. The collection aims to show how waste textiles can be transformed through creativity and design, into products with greater desirability and value than the discarded materials they were made from, to answer the question of whether we can change the current linear model of consumption and disposal in the fashion industry by looking at new circular economy methods of design and production.

Credits: Clothes and styling: Sara Li-Chou Han. Photography: Mina Bihi saralichouhan.com



Jan, David and Jonathan Hamilton Circa 1961, Prestige Bread Board and integral knife

MARIA HANSON REUSE-REVALUE NO. 5 AND 6

The neckpieces, Reuse-Revalue combine reclaimed materials with precious metals and semi-precious gems. Jewellery has for thousands of years been a mediator of personal identity and social standing, and is used here as a device to engage audiences in dialogue about material value, product consumption and global concerns related to waste and material sustainability. This jewellery aims to provoke a sense of consciousness about what we consume, what we discard and what we value.



Maria Hanson Reuse-Revalue No. 5 and

0

mariahanson.co.uk

BRIDGET HARVEY BLANKET, BOWL, WRENCH

Using repair as an expansion of ethical design practice, Harvey investigates user-object relationships, playfully exploring material commonalities, and considering (re)valuing through making. The blanket and bowl are repaired with materials with which they share essences rather than history. They sit with an unrepaired tool, believed to be a wrench part, united with a handle through collage. These pieces riff on repair and maintenance practices, showing ways of thinking about repair possibilities, demonstrating skill and un-skill, knowledge and practice, and highlighting aspects of thingness, while challenging planned and accidental obsolescence and throwaway societies. bridgetharvey.co.uk

Bridget Harvey Blanket, Bowl, Wrench



JULIAN HUGHES WORKSHOP

Visitors are invited to take part in an artist-led workshop by bringing an object of personal value to be photographed; a tool you work with everyday, a piece of old technology still in use or an item that has great personal value. These will be printed and displayed in the exhibition along with the story that narrates them, to investigate objects of emotional durability, in how they wear over time, age to perfection or take on personal histories and identities. Hughes will also be displaying repurposed everyday household products: a Le Creuset kettle, chip and crack-resistant and renowned for being exceptionally versatile and built to last, has now become home for two Nottingham oak saplings, while an all too familiar British BBQ has become an island of foliage, attracting bees and insects.

julianhughes.net

JULIA KEYTE OBJECTS IN PURGATORY. BROOCH EXCHANGE

The Campaign for Objects in Purgatory collects people's stories of uncherished gifts; gifts they have received and not wanted, but nonetheless felt compelled to keep. Visitors are invited to contribute their story, receiving a brooch in return. The Campaign explores the meaning-making processes which influence whether a possession is kept, or thrown away, and contributes to research on emotionally sustainable design.

objectsinpurgatory.co.uk/research/



-Julian Hughes Workshop

RIDDHI LODHIA TOMAS, DIEGO, HUGO

Tomas, Diego, Hugo are storage table units created from a reclaimed mortar trunk, originally used to store and transport mortars in the Portuguese Colonial War during the 1950s. The units are designed to portray the history of the trunk. Original features, such as markings, latches and waterproofing have been preserved. Corian® sides give it a contemporary twist, while the steel legs resemble the mortars which it once carried.

riddhilodhiadesign.com

– Riddhi Lodhia Tomas, Diego, Hugo

ANGHARAD MCLAREN WEAR YOUR HEART ON YOUR SLEEVE

Mass-produced `fast fashion' has changed our relationship with clothing - cheap and easy to acquire, we are unlikely to take time to undertake simple repairs or address issues of maintenance, often caused or exacerbated by poor construction and low quality materials. Extending the useful life of clothes has been identified as the most significant intervention in reducing the impact of the clothing industry, but many barriers prevent consumers from performing even the most basic of repairs.

Darning is a craft technique for repairing damaged or worn fabrics. These samples were developed for a series of participatory workshops for Zero Waste Scotland / WRAP's Love Your Clothes campaign. By taking time out to darn and repair we can begin to appreciate the value of slowing down, build better connections with our belongings and reflect on the changes we can make to move towards a future without waste.

angharadmclaren.co.uk



SHIRLEY MCLAUCHLAN GIRLS GET STITCHING

This book is aimed at encouraging and inspiring the younger generation to have a go at sewing, gently introducing the reader to upcycling and sustainability. The idea of the book is to make it simple to add detail to your own clothing and accessories or to see what can be done with 10 embroidery stitches and a little imagination. The samples in the exhibition have been hand stitched using cotton and wool from discarded bed blankets collected over many years, demonstrating a no-waste design philosophy.

shirleymcaluchlan.co.uk

TRACEY MCMASTER JOHN

In this film, artist and filmmaker Tracey McMaster explores an alternative perspective to product lifetimes and the environment through the individual story of John, a Nottingham based ex local government officer who has embraced the opportunities of retirement, and among other hobbies, become an amateur clock mender. This story reveals his passion to give previously unwanted or unrepaired clocks a new life.

tracefilms.co.uk



Tracey McMaster John

ANNA MILADA STAIRS AND WATER

The collection was created using a zero-waste draping technique, using either biodegradable or recycled materials. The yarns that were knitted into the fabric have been sponsored by Lenzing and Nilit. Lenzing produces Tencel, a sustainable rayon, while Nilit manufactures its nylon from recycled plastics. Other materials used are off-cuts of bronze, and plexiglass that were cut in a modular way to minimise waste.

annamilada.com

Anna Milada Stairs and Water



JOHN NEWLING ECOLOGIES OF VALUE

Artist John Newling takes the Moringa Oleifera tree, often called the miracle tree or famine tree, as a means of exploring our relationship with ecology and the values immanent in nature. Ecologies of Value is a body of work that included growing Moringa trees hydroponically in galleries in Nottingham and Penzance during 2013. The works exhibited give insight to this exploration through examples of The Generosity Plates and the Charm/Language bracelets.

john-newling.com



John Newling Ecologies of Value

NOTTINGHAM TRENT UNIVERSITY RESEARCH PROJECTS

DIRT, DAMAGE, SERVICING AND REPAIR

Researchers at Nottingham Trent University are currently undertaking a project on product longevity for Defra (Department for Environment Food & Rural Affairs). Vacuum cleaners account for the second largest embodied greenhouse gas emissions of electrical products after televisions. The series of guidance cards displayed has been produced to enable designers, manufacturers, policy makers, repairers and consumers make vacuum cleaners last longer.

Credits (Staff): Tim Cooper, Luke Harmer, Guiseppe Salvia, Tom Fisher and Christopher Barr.

Credits (Students): Conor Leece, Sam Gribben, Ip Ling Sum, Louis Senior and Izel Venhar.

CLOTHING DESIGN FOR LONGEVITY

Nottingham Trent University researchers have undertaken projects on product longevity in recent years for WRAP (Waste and Resources Action Programme). This slide show presentation displays a series of eight guidance notes aimed at designers wishing to design clothes to last longer; these address childrenswear, occasionwear, knitwear, tailoring, denim, sportswear, casualwear and underwear.

Credits: Tim Cooper, Helen Hill, Julia Kininmonth, Katherine Townsend and Michelle Hughes.

> wrap.org.uk/content/clothingdesign-for-longevity

PAUL NIEUWENHUIS DEAD CARS

I took this picture in rural Tennessee in 2004. I got the impression travelling around that area - and many other parts of the US - that people here just buy a new car and, rather than selling or trading in the old one, they just place it in a field somewhere on their farm. Here they are gradually reclaimed by nature; their constituent minerals gradually mingling with those in the earth. This 1970s Ford was still relatively intact and looked like it had not been there that long. It would be interesting to see what it is like now, 10 years later. This is an interesting process, as rather than totally abandoning the car, or scrapping it, some link is retained by keeping it on the farm to be seen on a regular basis.

sustainableautomobility.com

NOTTINGHAM BIKE WORKS HACKED BIKES

Nottingham Bike Works is a notfor-profit Community Interest Company, who provide cycle repairs, bike maintenance classes and refurbished bikes with guarantee, providing people with affordable and sustainable transport. For the exhibition they present The Bike Lab, through examples of their `hacked bikes', constructed from parts that would otherwise go to landfill. This project embraces product longevity by challenging a throwaway attitude to unused vehicles and parts.

nottinghambikeworks.org.uk



Paul Nieuwenhuis Dead Cars

PRICE & GORE ARCHITECTS / PRIMARY PARAVENT CRATES

An element of programme architecture designed by Price & Gore Architects to house a series of events, entitled Paravent, at Primary artist-led space. Exhibited out of its original context, designed as a reconfigurable structure in the old school building that houses Primary, the Paravent can be viewed as an example of the importance of product functionality and repurpose in design for longevity.

pricegore.co.uk weareprimary.org



Eleanor Richards JUX.

DANIEL SCOTT AND PROFESSOR AMIN AL-HABAIBEH WATER FROM AIR V2

The `Water from Air v2' system provides a low cost and environmentally friendly solution to one of humanity's greatest challenges: water scarcity. Utilising disused fridges, and predominantly other reclaimed materials, the system aims to reliably produce continuous amounts of clean drinkable water in areas suffering from water shortage.

amin.al-habaibeh@ntu.ac.uk

Paravent Crates



Price & Gore Architects / Primary

ELEANOR RICHARDS JUX

Concrete Salt & Pepper Mills made to last. JUX aims to challenge the perceptions of concrete to prove concrete is not just for road and bridges but has a wide range of possibilities. JUX gives the user a longer lasting, stylish and kitchen friendly product. eleanorrichards.com

Professor < 2 Daniel Scott and Al-Habaibeh Air Nater From Amin



TAO SHEN AIRWARE

Every year, vast amounts of waste glass are sent to landfill, an evident misuse of resources. Current applications for recycled glass products are limited, and often involve downcycling. Airware demonstrates an original way in which to recycle this waste. The new foam glass is a light, insulating and environmentally-friendly material, with a cellular internal structure and a ceramic-like appearance.

Airware comprises a wide product range, including a vase, tea set, bowl, cup and lamp, all of which are made using the new foam glass material in combination with other materials, such as different types of transparent glass and bamboo. Each foam glass product has a unique form with elevated impressions on the surface due to the material's properties and its method of production.

taoshen.co.uk



Harriet Shooter-Redfearn Salvage

HARRIET SHOOTER-REDFEARN SALVAGE

The ambition of this body of work is to give a new aesthetic and function to an object, or objects, deemed useless in today's society. Starting out with many tarnished and rusty brass items and amalgamating them with another material, such as ceramics, this process lengthens the original brass object's product longevity through its new sculptural and functional form.

hredfearn.wix.com/designs



-Tao Shen Airware

ANNALISA SIMONELLA NIJO MODULAR FASHION SYSTEM

Nijo is a modular garment with attachments for different sleeves and skirts. The modularity of Nijo allows wearers to create multiple looks which will encourage them to customise at the moment of purchase and increase the longevity of the garments. This approach addresses two conflicting needs: the first to reduce waste and excessive consumption and the second to meet the traditional seasonality of fashion. Modular garments intrinsically provide transformation, satisfying the desire for change and novelty without the need to buy new clothes, therefore countering the fast fashion trend.

ANDREA SOLER, MARK GOLAB AND

TOTEM. PEWTER CANDLEHOLDER

Inspired from the traditional pewter candleholder shape, this simple design is composed of two different pieces that can be arranged in many different ways. Through play, the user can create multiple shapes and arrangements, provoking a stronger experience with the product and an emotionally durable relationship. Pewter properties allow design for longevity; when well manufactured, the product can last a lifetime.

andrea.soler2015@my.ntu.ac.uk

THE URBAN WORM

RE-PURPOSED WHEELIE-BIN

The Urban Worm is a social and environmental enterprise providing onsite organic waste management

allenomis

neo modular fashion sustem

allenomis.com

GOLAB ANDsolutions using the composting worm.
This project promotes food waste as a
valuable resource to utilise in the
production of compost, through the use
of re-purposed wheelie-bins. Working
predominantly in urban environments
across the UK, they are based at Eco-

across the UK, they are based at Ecoworks in Nottingham, who promote the interests and personal development of people who are socially disadvantaged by delivering activities connected with the conservation, restoration and enhancement of the environment.

theurbanworm.co.uk

Annalisa Simonella Nijo Modular Fashion System

SARAH TURNER *ELLA, PLASTIC BOTTLE CHANDELIER*

Nottingham-based eco artist and designer Sarah Turner makes lighting and works from waste plastic bottles. The exhibited light 'Ella' is hand made from the ends of different sized plastic drinks bottles, collected locally from homes, cafes and restaurants. The bottles are upcycled into high quality household products to challenge the use of new materials in product and furniture design.

sarahturner.co.uk





Frieda Vanderpump Chums

FRIEDA VANDERPUMP CHUMS

Chums is an eco-friendly stacking toy for children aged 12 months plus. Chums are lifelong friends able to sit happily on any desk. Chums uses a mix of waste hardwood scraps and sustainably sourced cork and acrylic. Chums natural focus introduces children to the natural world through play.

friedavanderpump@hotmail.co.uk

– Nick Williams Duncan

NICK WILLIAMS

This short film documents the story of Duncan Saunders, the last founding member of the Daimler and Lanchester owners club. Duncan Saunders uses traditional materials like sustainably sourced wood and recycled parts that would have been used on the original cars to rebuild these classic cars. He hand sews the leather seat covers and uses felt fabric for the roof as well as carpet for the floors.

nickwilliamsfilm.com

LOUISE WINTER UNTITLED

Artist Louise Winter's work moves between object, process, event and performance. These videos frame familiar sights of discarded and decomposing plastic bottles and metal cans, while disrupting their original context through the considered composition and gentle animation of these objects, thereby questioning their original form and purpose.

axisweb.org/artist/louisewinter

GORDON YOUNG *PHONE CARE SET*

This Phone Care Set is designed to reflect the visual language of the accessories associated with contemporary electronic products, whilst being produced from traditional materials associated with vanity sets and traditional care kits. Designed using traditional materials and a deliberately simple utilitarian style, these tools evoke old fashioned practices of maintenance. These critical objects aim to provoke the viewer into considering the value of the digital devices that they carry about every day, and to engage in actively taking care of their digital possessions.

-Janet Wootton Another Change and The Book Lamp



JANET WOOTTON ANOTHER CHANGE AND THE BOOK LAMP

Another Change is a range of upcycled hand-made jewellery, including bangles, brooches, pendants and earrings, made from unused rainbow strip data cabling supplied by a local IT company. The Book Lamp is an individual and practical, hand-carved wood sculpture made from a 120-year-old sustainably sourced English oak from Hill Holt Wood, near Newark, with the light fitting made from reused copper tubing and a parchment lamp-shade made in Suffolk.

janetwootton.com



Gordon Young Phone Care Set

g.j.young@shu.ac.uk

PRODUCT LIFETIMES SUSTAINABILITY DESIGN FOR LONGEVITY DESIGN FOR DISASSEMBLY REPAIR AND REUSE EMOTIONALLY DURABLE DESIGN REPURPOSING AND UPCYCLING CHALLENGING OBSOLESCENCE

FOR FURTHER INFORMATION PLEASE VISIT HTTP://NTU.AC.UK/PLATE_CONFERENCE/EXHIBITION @PLATE2015



