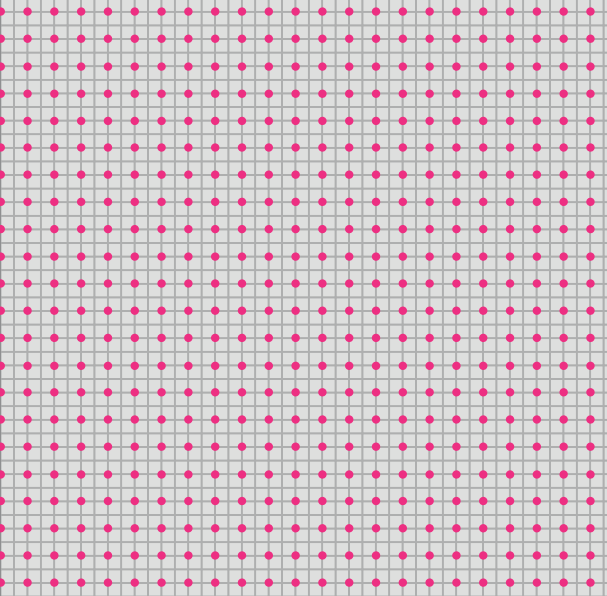
#MDXPD

PRODUCT DESIGN 2020

Middlesex University School of Science and Technology



Middlesex University London

#MDXPD WELCOME

"…bringing people and technology together (in meaningful ways) to create useful stuff and things."

It has been a year of change. Our MDXPD evolution continued; Dr Kate Herd took over as our Programme Leader for BA Product Design and BEng Product Design Engineering; Product Design Engineering completed its first full academic cycle, with students graduating from it for the first time; and COVID-19 emerged and changed society and education dramatically from March 2020 onwards in the UK.

The COVID crisis has made a huge and often tragic impact since it emerged. Our first and foremost focus has been on the health and wellbeing of our students and staff. We have been lucky, in this period of fear, uncertainty and upheaval, to work and learn within an enlightened institution, whose ethos was captured by their statement of principles for staff and students at the beginning of the COVID crisis (see pages 03&04).

This supportive framework enabled us to continue to approach design and engineering within our philosophy that leads with insight, understanding and empathy, and values collaborative creativity and human and ecology centred innovation.

Everything has changed. Suddenly. But we'd been thinking about change for a long time. Our work on Pages 18-19 exploring 'What is a Product Designer?', 'What should a design/engineering course be?' and 'What is a PD/PDE exhibition?' has been ongoing since 2013 and helped provide us with a theoretical base and conceptual underpinning for our course content and experience that ensured that the sudden change was within the boundaries of our model.

The staff and student co-design of the Product Design and Product Design Engineering structure, content and approach has been a huge positive in helping to translate our teaching and learning to the online space. The developed focus on collaborative practice, studio 'environments' and team teaching, rather than traditional lecture-based approaches has been recreated in 'virtual studio' practice, ensuring that the hands-on and peer-supported experience has been and will be retained in a positive and meaningful way. There were, and will continue to be, challenges, but the creative and collaborative mindset of all staff and students makes us optimistic that those challenges will be surmountable.

This year's magazine contains our usual mix of inspirational final year major projects, staff and student stories and projects from across the year, alongside some special features on the impact of COVID and some of the creative work to help in which the course, department and university has been involved.

Good luck to all our brilliant graduates for the future. Welcome to all our new students. And, take care of yourselves & best wishes to all readers of the magazine.

Wyn Griffiths
Senior Lecturer BA/BSc/BEng/MEng Product Design/Engineering

INTRODUCTION TO #MDXPD

We live in a complex, fluid world, swirling with challenges and opportunities. Design offers a powerful medium through which we can strive to build a 'better' life. We are material creatures, in a material world. The 'things' that surround us, and drive us are increasingly interwoven with the virtual 'stuff' that has come to connect us. This is subject to constant change and evolution. Change is the only constant in life; in society and technology; in design and innovation. The puzzle is how to mediate that change for specific and holistic good. How to explore and navigate pathways towards creating new things that have a positive impact, that 'make the world a better place…'.

A Product Designer can be an important part of this exploration. There are many, unresolved, ways to think about 'Product', 'Design' and a 'Product Designer/Engineer', but, regardless of any particular interpretation, we at 'MDXPD/E' think there are some key skills, experiences and attributes that a Product Designer/ Engineer needs. Build skills in Design Thinking, design and technological craft and professional practice. Build experiences through wide-spectrum exploration, focussed sectoral exercises & live industry collaborations. Nurture an attitude of imagination, empathy, collaboration, storytelling, curiosity, ingenuity, courage, perseverance and resilience. The watchwords of gumption, humour and grit will go a long way to helping you on your way as a Product Designer/Engineer!

READ ABOUT OUR COURSES ONLINE:

BA Product Design
www.mdx.ac.uk/courses/undergraduate/product-design

BEng/MEng Product Design Engineering:
www.mdx.ac.uk/courses/undergraduate/product-design-engineering

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2019-20 Reflections

Dr Kate Herd reflects on her first year as **Programme Leader** for the *BA Product Design* & *BEng/MEng Product Design Engineering* programmes; including the university-wide and programme response to teaching & learning during Covid-19 and lockdown, alongside an optimistic outlook on the blended-learning approach for the 2020-21 Academic Year

"We are not 'working from home.' We are at home, in a crisis, trying to work in the best way in the circumstances."

After over ten years involvement with Product Design here at Middlesex, it is an absolute pleasure and privilege to have taken over as Programme Leader for the BA Product Design and BEng/MEng programmes.

Little did I expect that my first year would be quite so eventful. We had a number of exciting plans ahead, including staffing changes, the first graduating cohort of the BEng programme, and a great range of 'live' projects lined up for the year ahead. Little did we know that within a handful of months the entire HE sector, as well as the rest of the world would be in lockdown. The university responded promptly and supportively to the rapid escalation of the external situation with Covid-19. Teaching moved online from the 23rd March and the campus closed its doors to staff and students soon after. It has been a challenging and rewarding few months as we bring each of our year groups study to a successful conclusion. The Product Design/Engineering programme team, as well as the wider university, rose to the challenge, supporting our students in the best way we could – extending tutorial opportunities beyond the end of the teaching year, and supporting students both individually and in groups through individual and group phone and video calls.

We are proud to be part of an institution who value their staff and students so highly. Their Covid-19 principles remind us all to be kind to ourselves and to each other and that

Dr Kate Herd, Programme Leader for Product Design/Engineering programmes at **Middlesex University** & Associate Director of **redLoop**

"We are not 'working from home.' We are at home, in a crisis, trying to work in the best way in the circumstances" and that "Our personal, mental, physical and emotional health, and that of our families, is the most important thing at the moment". The university student support, the no-detriment assessment policy, and the #TeamMDX mindset that has shone through is a reminder that Higher Education is not merely a service for delivering education, but when done well builds relationships and a community where every individual has a place, a value and a contribution to make.

The world outside our walls changes evermore each day in these challenging times, heralding societal, climate and technological change.

COVID-19 Principles

Middlesex University London

1. We are not "working from home." We are at home, in a crisis, trying to work in the best way in the circumstances.
2. Our personal, mental, physical and emotional health, and that of our families, is the most important thing at the moment.
3. We should not try to compensate for loss of productivity by working longer hours – we must do what we reasonably can, and respect our limits.
4. We will be kind to ourselves and not judge ourselves on how we are coping. We will reach out and ask for help when we need it.
5. We will be kind to others and not judge how they are coping. We will support each other.
6. Our achievements now may be different to the usual outcomes our team had before. Therefore our successes may look different, but we will remember that they are just as valuable (if not more).

Adapted from the original by Central and North West London NHS Foundation Trust.

As designers we can play a valuable role in the days ahead, in building new visions for the future and new collaborations. Our ability to navigate change, to ask questions, to work collaboratively and to challenge and explore opportunities with a people focused approach makes us optimistic for the future, and for the role that we, and our graduates, can play.

As we look ahead to September 2020, we are planning for a blended-learning approach, mixing both online and face to face teaching (where possible). Whilst we recognise the challenges that this brings to both staff and students, this approach can stimulate new ways of working and engaging in design, allows us to connect readily with guest speakers from across the globe, and reflects the world into which our graduates will emerge. As always, we face these new opportunities as designers, and as a design team - working together with the university, within the programme team and with our students and graduates, to develop an excellent educational experience.

The close of this academic year completes our first cycle of our new BEng Product Design Engineering programme. The latest major revision of our current suite of programmes was initiated in 2017, with BEng/MEng Product Design Engineering, taking over from our previous BSc Product Design. The ongoing iteration of all of our programmes helps ensure their continued their relevance to industry, technology, and wider societal challenges and opportunities. It is wonderful to see our graduates emerging this year from both the BA and BEng programmes who demonstrate an excellent skill set, confidence in their abilities, and who are ready to enter industry.

We are hugely proud of the achievements of our graduating cohort who, in the midst of societal chaos, have reached their full potential. Whilst it is heart breaking that we can't share a graduation ceremony, the Middlesex University degree show festival and the New Designers exhibition with you all, we celebrate your achievements in a new way, perhaps the way of years to come, where virtual design shows enable a far greater reach of your work and potential. We welcome our new graduates to our mdxpd alumni family.

A huge thank you to everybody, both staff, students, guest lecture speakers and other industry collaborators who have contributed to our successes this year.

#TeamMDX Responds to COVID-19 & PPE Shortage

MDX volunteers make 10,000+ visors in a week to protect NHS workers tackling COVID-19 & Call to other institutions to fire up their laser cutters: **"If anyone has the capability to do it, we're very happy to help them."**

The Faculty of Science & Technology staff volunteered their time from Easter weekend and onwards to cut, assemble and box-up over 70,000 protective visors for NHS employees across a range of London hospitals.

The university had six laser cutters carving polypropylene visor headbands, enabling MDX to make more than 2,000 visors a day, over double the initially predicted number. The team, working nine hour shifts seven days a week on rotation, hit 30,000 visors on April 27th, 40,000 on May 2nd, 50,000 on May 7th, and 60,000 on May 12th.

Thanking colleagues "without whom we couldn't have done it," technical tutor Nick says that they've had more people offer help than they could give tasks to, and have limited volunteers to people who can get to campus without using public transport. "We're doing this on behalf of everyone at Middlesex" he added.

The first batch of 184 visors was sent to the Royal National Orthopaedic Hospital on 3rd April. After this the university stepped up to mass production. Every two days, the visors are picked up and sent either to NHS Gold Command in Enfield or directly to Trusts. Nick says they will keep making visors as long as there's a demand for them from NHS Trusts.

Around ten staff volunteered their time to cut out, assemble and box up the visors. The visor is an open-source design by Sean Drummond, design engineer of Nottingham firm Kitronik, inspired by another visor design by Canadian artist and entrepreneur Noah Li-Leger. It uses the simplest technology – a headstrap and a plastic shield covering the eyes and face - so they can made very quickly when medical masks are in such short supply globally.

The production process is in three stages. One volunteer sets up a polypropylene sheet on the laser cutter, waits for it to cut out a sheet of headband parts, then takes it off the machine to clean all the smoke off with another person helping.Another team assembles the headbands, punches holes in PVC sheets for the shield and fits the visors together. A third group puts them in boxes. As a personal touch, volunteers have been

Read ITVs featured article & watch the interview at *https://bit.ly/32UqyJC*

leaving a thank you message from everyone at Middlesex in each box.

On Monday 20th April, an ITV London report by MDX alumna Faye Barker covered the visor-making process in the Grove building, with video interviews with staff members.

Nick is keen to encourage any organisation with the necessary equipment to make visors themselves. MDX may be able to advise academic institutions and corporations on setting up production safely during lockdown. "If anyone has the capability to do it, we're very happy to help them," Nick says.

"I am delighted with the resources being pulled together across the Faculties of Science and Technology and Arts and Creative Industries, to help address the need for face visors of NHS hospitals in the London area" says Head of Department of Design Engineering and Mathematics Professor Mehmet Karamanoglu. "The effort shown by my colleagues is just amazing. We are all working 9-hour shifts 7-days a week so that we can contribute to what is still desperately needed in the way of PPE".

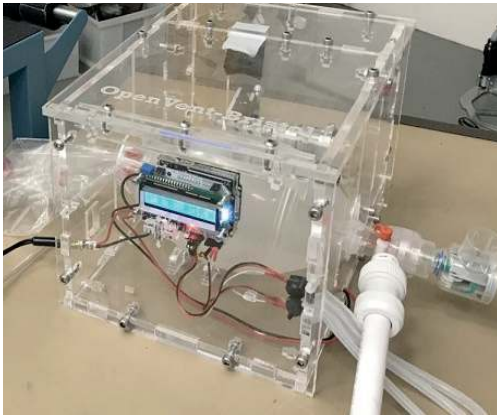
"RNOH would like to extend a huge thanks to @MiddlesexUni for producing visors for our staff to use as part of their essential PPE equipment" Royal National Orthopaedic Hospital Tweeted after their first delivery of visors, with an image of the hospital's Chief Nurse and Deputy CEO Paul Fish wearing one and giving a thumbs-up. "We are so grateful and also really impressed at how fast you guys can make them" added COO and Director of Strategy & Improvement Lucy Davies in a Tweet.

Chris Caldwell, director of Nursing HEE Covid Response, Health Education England said that he was "so pleased to hear about the success with Middlesex producing visors".

Professor Carmel Clancy, Head of the School of Health and Education at MDX said: "We are so proud of our MDX colleagues who have been able to respond to the PPE shortage. The fact that we were able to facilitate connections with the NHS is down to the amazing partnership work we have with our clinical colleagues across the patch".

MDXPD Alumnus Develops Open-Source Ventilator

Darren Lewis, Design Manager at Dyson, has developed a ventilator using simple technology, suitable for treating Covid-19 victims in under-resourced countries and in crisis situations // 29 July 2020



Darren Lewis, who studied BSc Product Design Engineering at MDX and went to work at Dyson, most recently in the New Concepts team, heard about the UK's Ventilator Challenge in the early stages of tackling the pandemic.

"I thought what was needed was a device that was as simple as possible, using readily available parts while meeting requirements" he says. His ambition was to create "something that can be manufactured anywhere in the world. You can't design anything from scratch with any complexity as that will slow down development". He brought together a team of volunteers as OpenVent-Bristol.

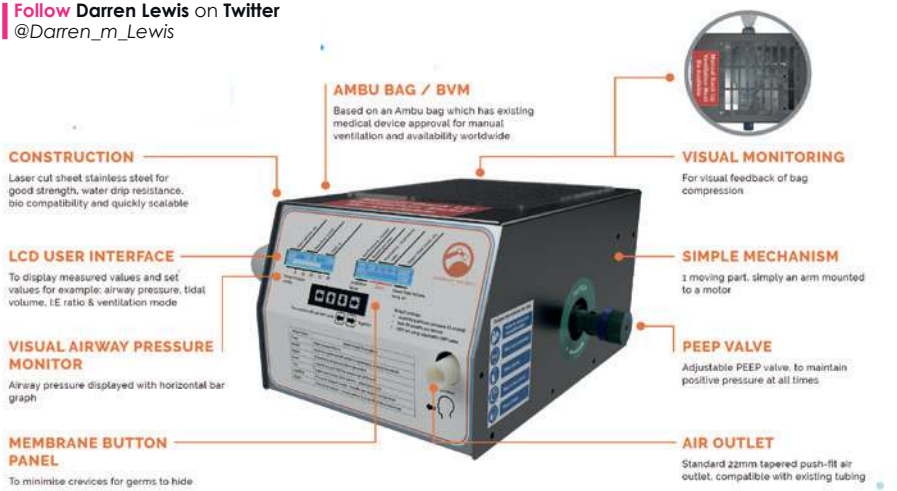
The design is based on an Ambu bag/BVM bag resuscitator (which is cheap and already medically certified for manual ventilation), activated by a mechanical arm powered by a motor. It has a battery back-up to keep operating when mains power is cut. The prototype was first trialled on a test lung at the National Physical Laboratory in May. 24/7 life tests were conducted earlier this month, and the team is now working on perfecting the design for final testing in a few weeks.

Volunteer engineering incubator Helpful Engineering, which formed in March in response to the crisis and now has around 2500 active members in 20 countries, backed Darren's team's design over an in-house alternative. Working swiftly and decisively, in the style of pre-existing Engineers Without Borders networks, "we saw Darren's solution was working better and faster, so we went in to support him" says Helpful's ventilator lead, Tim Artz. They were also particularly impressed with the openness of Darren's approach.

The project is seeking regulatory approval from the US FDA (Food and Drug Administration), one of the more stringent global processes, with the help of regulatory and legal experts in Helpful's network. Once over this hurdle, the device could be fast-tracked for approval by other countries.

Helpful Engineering is engaged with local groups in Latin America around possible take-up for the ventilator, and

Follow Darren Lewis on **Twitter**
@Darren_m_Lewis



OpenVent Bristol has had direct interest in the design from people in different countries. Helpful is running projects to develop various types of ventilator and other medical devices such as oxygen concentrators, and it has shipped hundreds of thousands of facemasks to hospitals.

"The OpenVent-Bristol design is simple to use and has a good battery life which allows the patient to be transferred between facilities" says Dr Emilio Garcia, Consultant in Intensive Care Medicine and Anaesthesia at the James Cook University Hospital, Middlesbrough and a medical advisor to the project. "As its centre mechanism is an ambu bag, there is no need to decontaminate the ventilator as this bag is easily changed between patients. Due to its adaptive modes, lung protection is simple as it allows spontaneous breathing at all times and can be pressure limited.

"Whereas it is not a substitute for a more sophisticated ventilator, it can become invaluable in places where there is a crisis and a lack of equipment".

"The OpenVent-Bristol design ventilator may help us avoid these difficult decisions... regarding who should get the privilege of being mechanically ventilated and instead allow for the standard of care to be unchanged" Daniel Stemen, Manager of Respiratory Care and Interventional Pulmonary Services at the University of Southern California's Keck Medical Centre, who is also advising OpenVent-Bristol. "A key stand-out feature of OpenVent is that it has a simple spontaneous mode of ventilation, which aids in the weaning process and allows healthcare workers to liberate patients from the machines in the normal way. I have not seen this type of logic built into the other COVID response simple vent designs. Bravo!"

"Darren's extensive practice and experience as a designer and engineer lent well to responding to the technical challenges that arose in the pandemic, understanding context, and innovating meaningfully with due consideration to both people and technology" says MDX Lecturer in Product Design and Engineering, Ahmed Patel. "This exemplifies the #MDXPD ethos, responding to pertinent problems with a hands-on approach, embracing the uncertainty and complexity, and delivering outcomes that are robust, validated, and work!"

"I have been following Darren's project and exchanged a few ideas when he first put it up on LinkedIn for comment" says Professor Mehmet Karamanoglu, Head of Department of Design Engineering and Mathematics at MDX. "I am delighted that his solution is well received. Its simplicity and effectiveness make it attractive – also being an open design is a big plus, showing Darren's passion to help everyone in these difficult times."

Commendations & Nominations for MDXPD Graduates at ND19

Graduating cohort **MDXPD UNDEFINED** received 14 commendations, nominations, and internship offers between them at New Designers 2019 - from companies including James Dyson, Joseph Joseph, Lego & Pentland Brands

Creative-Conscience Award 2020 Nomination
Laura Uribe, Radha Sivyer & Tom Downey

'Wow' Spotted by CCD - & 6 month Internship
Laura Uribe

James Dyson Award Nomination
Tom Downey

Joseph Joseph 'Loves'
Misa Tschickart

Lego 'Playful Creativity' Nomination & Job Application Recommendation
Guohong Xu

Lego Job Application Recommendation
Guohong Xu

The Pentland Creative Talent ShoutOut
Radha Sivyer & Tom Downey

Job Interview at Smith & Brown Joinery: SizeBreed.com
Radha Sivyer

Job Opportunity at Start-Up
Radha Sivyer

Start-Up Investment & Mentorship Recommendation from 'We Are Nova'
Ben Plass & Laura Uribe

Read more about the **MDXPD UNDEFINED** graduate projects in our previous publication **#MDXPD2019: eprints.mdx.ac.uk/27603**

Follow the course IG account @MDXPD #MDXPD

MDXPD Student Project is Shortlisted & Commended at the Global RSA Student Awards

Brady Hansen, BA Product Design student, received a commendation from the global Royal Society of Arts Student Design Awards for his sensitive, meaningful and well-considered design of a **Loneliness Emoji** in response to brief 'Alone Together'

The Royal Society of Arts Student Design Awards is an annual global student design competition. In association with industry partners, the awards offer a range of design briefs that call on design to tackle some of the most current societal and environmental challenges. They are a great examples of the relevance and power of design approaches in understanding difficult problems, gathering insights into people and human behaviours, proposing concepts, but also offering a window into the future.

From January 2019, the first year cohort spent 6 weeks exploring how design can play a part in reducing the impact on loneliness in society in response to an RSA project brief. Working together as a design team, the group shared research and early ideas, identifying a range of themes and areas of work. From the team investigations, an excellent set of individual projects emerged, ranging from services and community initiatives, right through the physical products and digital solutions.

As module leader Kate Herd observed, "Briefs such as this are helpful in challenging student perspectives on the types of work that a product designer can contribute to". In every year of study, in particular the first year, it is vital to broaden the view of product design and to provide opportunities for real world engagement.

Brady Hansen's project developing a loneliness emoji responded to the recognition that for many, communicating feelings of loneliness was difficult. His work was shortlisted and the project received a commendation.

Brady Hansen reflects, "I really liked this project and remember it being one where I really felt the power of the design process. The brief initially seemed too abstract, but as I worked through the process of research, ideation, prototyping, and feedback I ended up with a solution that I was proud to submit to the RSA Student Design Awards. Preparing for the panel interview was a tough but enlightening process. The panel asked me questions which required me to think of my design in ways I had not previously considered. I am honored to have received a Commendation and know that I am better designer for having had this experience."

#mdxpd 60 seconds

Staff on the Middlesex University Product Design/Engineering Programmes are active professional practitioners and researchers. Here is an interview with **Dean Brown,** Visiting Tutor at ***Middlesex University,*** Research Fellow within the Interaction Research Studio, Goldsmiths University, and founder of **Brown Studio**

> Your role is to deal with things that don't exist yet. Therefore it's what you make of it.

You are?
Dean Brown. I run my own studio called **Brown Office.** We design and make objects, installations and interiors with a dedication to materiality and narrative - delivering projects for clients including Google, Uniqlo, Nike, Sèvres, Depop and Schloss Hollenegg for Design. I've been a visiting Tutor here at Middlesex for the last 4 years.

Why Product Design?
It brings together creative thinking with practical making and people centred research.

What's a standard day like for you as a designer?
No day is the same in my life. I tend to be juggling 2 or 3 projects at once which keeps things varied and stimulating. I can get by doing almost everything on my laptop, but I prefer a day where it involves drawing and model making as well. I rely on a network to succeed so there's a need to have a constant dialogue with clients, manufacturers and creative collaborators.

What do you consider a good day?
When my to do list is a bit shorter than it was the day before.

What's your favourite design tool?
You can go anywhere with

Images (Left-Right): Dean Brown Portrait; Depop HQ Entrance Furniture; Digital Easel (Google); A Matter of Colour (Sèvres - Cité de la Céramique)

a pen and paper.

What are you great at?
Elevating simple materials to new heights through clear and compelling ideas.

What do you wish you were great at?
Networking outside of the design community.

What is a Product Designer in the 21st Century?
I think we need to be much more mindful of context, rather than just the object itself. What landscape does the work sit within and how does it harmonise or contrast within that landscape? What themes, metaphors and communication methods are therefore appropriate? And hence how do they inform the idea and execution of the work itself.

What's your advice for future Product Design students?
Your role is to deal with things that don't exist yet. Therefore it's what you make of it.

What are the big looming challenges for designers… for society?
The climate emergency and post-Covid 19 are era defining issues that need our help. Also navigating the physical and the digital is really interesting subject matter.

What are the first 5 names on your fantasy exhibition Private View list?
+ Alice Rawthorne - *Design Critic*
+ Justin MCGuirk - *Chief curator at the Design Museum*
+ Rolf Fehlbaum - *Chairman of Vitra*
+ Karin Gustafsson - *Creative Director of Cos*
+ Mr Blobby - *to lighten the tone a bit*

See more of Dean's work at *brownoffice.co.uk* and follow Dean on IG & Twitter *@_dean__brown_*

‘LIVE’ PROJECTS

Our **Product Design** and **Product Design Engineering** programmes always have ‘live’ projects interwoven into the curriculum: a snapshot of activity 2019-2020

LIVE PROJECTS, CLIENTS, COLLABORATIONS & COMPETITIONS at MDX Product Design/Engineering 2019-20

Our **Product Design** and **Product Design Engineering** programmes have always had ‘live’ projects interwoven into the curriculum. They are a valuable component of the curriculum, alongside Guest Lectures, masterclasses, and tutorship by practicing designers, engineers and researchers.

They give our students the opportunity to experience multiple perspectives, from a wide variety of disciplines, practices and sectors, within the broader Product Design/ Engineering landscape.

They also help students to examine their personal practice and ethos. We encourage all students to critically reflect upon each project, talk or experience, deconstructing and critiquing that presented to them. The best projects are dialogic. Projects in which all participants learn from one another, and project partners, as well as students develop their thinking and doing based on the diverse experiences, insights and ideas within both their innovation space, and the broader social and environmental landscape which they all occupy.

This academic year, 2019-20, we've been lucky to work with:

- Prof. Pat Jordan,
- The Thrill Engineer,
- Tocabot/Tocahive,
- The iMechE,
- The RSA,
- Glen Dimplex,
- Space Plague: SMASHfestUK.

Have a look at our BA Product Design course online:
https://www.mdx.ac.uk/courses/undergraduate/product-design

And our BEng/MEng Product Design Engineering courses online:
https://www.mdx.ac.uk/courses/undergraduate/product-design-engineering

Final Year students presenting their initial *Tocahive* concepts to Kagan Rustem, **Tocalabs**

Portfolio Workshop with **Glen Dimplex** (L) and Y1 Ideation Masterclass with **The Thrill Engineer** (R)

Talking to Tocalabs

Real-world skills remains at the heart of our approach and our connections to industry are a critical part of the programmes. This year, our live projects with ongoing collaborators, **Tocalabs,** featured the conceptualisation and industrial design of *TocaHive,* the hardware housing the onsite Toca platform

Tocalabs is a scale-up software automation company headquartered in Reading, UK. Our work focuses on building a no-code, highly productive scalable Enterprise Automation Platform called Toca. Toca is enabling businesses in their digital transformation, improving operational efficiency and allowing them far greater agility than ever before. It includes the ability to automate across all systems within a business through the use of Bots, furthermore for those businesses to then be able to easily create user apps for their customers and employees.

Tocalabs Director, Mat Rule, says, "we've been enjoying working with Middlesex University and RedLoop for a couple of years, previously on a physical robotic platform called 'Cara', that was focused on controlling physical touchscreen devices. Tocalabs and its employees are very much driven by the desire to solve business problems with deep technology and true innovation. Our focus is always on achieving a successful delivery for our customers and so our solutions must be the best in function and design, that is one of our unique selling points.

"Our platform is typically hosted in the cloud however, last year, we came across a problem where some of our customers required our solution to be both hosted in the cloud and also partly on-premise. The on-premise

Follow Tocalabs on **Instagram** *@tocalabs* and **Twitter** *@tocabot*. And learn more by visiting their website **https://www.tocabot.io/**

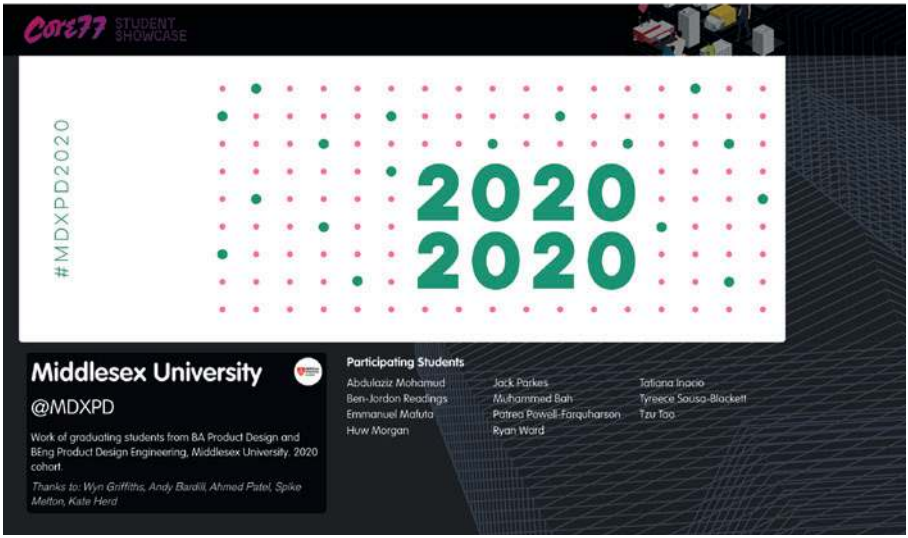
part of the solution would house a number of virtual desktop machines that would be able to carry out automation within the business. This led us to wanting to explorer a way to do this where we could place a system on a desk or on an office floor that would blend into a modern office environment, and be aesthetically suited for both the more fashionable shared working environments right over to the more conservative office spaces. This system would also have to be functional to house the specified electronics and computer hardware and take in to consideration heat, space as well as displaying its status to a user. The name 'Hive' was coined and hence TocaHive was born.

"The MDX students have been fantastic in a number of ways, firstly as all the designs understood the technical constraints and practicalities of the project and I would say all could have gone to production and secondly, none of the student's projects were lacking in aesthetic design, keeping the aesthetics balanced carefully with the function. I think it is too easy for inexperienced designers to fall heavily on one side or the other, either too aesthetic or far too functional.

"We are planning to take TocaHive forward into our product suite, working with MDX to produce a working prototype. We have a number of customers already who are keen to trial the product."

What is a Design Show?

Ongoing conversation continues to inform our course and philosophy, and prepared us positively to the changes of the COVID period for our practice and virtual graduate shows



Where do we start? Curiosity - in a changing world, we ask the same question and get different answers. Prescience. A good question, at the right time, with a well-considered answer can give a similar outcome to the effect of prescience. Our questions come from conversations. Ongoing collaborative conversations between students, staff, the public, industrial and institutional experts in product design and engineering. The conversations take many forms. Our annual guest lecture series, our live projects, our research, our cross-year visioning projects and our exhibitions that cohere all the thinking, and invite visitors to explore and contribute to that thinking.

We have and will always ask questions about Product Design and Engineering. In 2013 we formalised the exploration in a programme of talks, co-design projects and events and exhibitions. 'What is a product designer?' formed. Ideas and discussions emerged.

Paul Edwards – now Head of Creative Design at Airbus – in an essay for the exhibition framed the discussion and the trajectory of the area for the following 7 years: "*Trying to describe Product Design as a role is much like trying to hold onto a wet bar of soap, with a definition capable of sitting anywhere along a broad and ever increasing bandwidth. Not surprising, as our perception of the two words that make up the title continue to evolve and are in themselves equally difficult to pin down.*"

The answer was, keep asking the question. We kept asking the question, and in 2016 the Government Digital Service team, led by Harry Trimble, joined us on a cross-year project in asking questions like, should the course stop, stay the same or change and what and how should the students be learning? Harry documents and reflect upon the outcomes here:

https://designnotes.blog.gov.uk/2016/01/12/the-government-school-of-design/

https://medium.com/@HarryTrimble/the-government-school-of-design-5de4704d6c73/

The key points for design and engineering education were:

What do people need from designers? I spoke to a lot people. Inside and outside government. These are the characteristics I heard mentioned most:

+ Thinking skills not just

Have a look at our BA Product Design course online:
https://www.mdx.ac.uk/courses/undergraduate/product-design

And our BEng/MEng Product Design Engineering courses online:
https://www.mdx.ac.uk/courses/undergraduate/product-design-engineering

WHAT IS A PRODUCT DESIGNER?

Middlesex product designers put subject under the microscope // 25 September 2015

Join the conversation for 2021

Middlesex's product design students and alumni used 2015's London Design Festival to question what product design is and showcase their innovative and wide ranging products.

Middlesex University's product design students and alumni used 2015's London Design Festival to question what product design is and showcase their innovative and wide ranging products.

The current and former Middlesex students came together and started the debate at an exhibition at the Newton Gallery Arch, east London at the beginning of London Design Festival, and then continued the conversation at the contemporary design event 'Rent' from Friday 20 – Sunday 22 September.

The events stimulated discussion and questioned the assumptions and misconceptions surrounding the wide-reaching discipline of product design. The exhibitions also showcased the professional output of a range of the University's former students, which demonstrated the vast range of work falling under the 'product design' banner.

To stimulate a dialogue around the 'what is a product designer' theme, Middlesex's recent product design graduates built a pop-up photo booth which was installed in the centre of the gallery in East London, where visitors were asked to write down their definition and have their picture taken.

Wyn Griffiths, Product Design Programme Leader at Middlesex and curator of the event, said: "We are hosting a series of events over the coming weeks and months to begin the collaborative creation of a book by crowd-sourcing the opinions of designers and the public, with the aim of exploring the present and potential future directions for product design.

"It's been a lively, creative start to the ongoing collaborative discussion, with great attendances and vibrant conversations. Our event even featured in the media as one of the highlights of London Design Festival 2015!"

Former students whose work was on display included Adam Attwood, Co-founder of Breakthemould; Ciaran Scott Woodhouse, creator of the world's first bamboo smartphone and Co-founder of K&P Design Studio; Menelaos Rodakis, Creative Leader at LEGO Group and Jason Palmer, CEO at Swifty Scooters.

Alongside the alumni, Middlesex's collaborative partners and associated experts also exhibited their professional output as part of the event. These included Yuri Suzuki, Dominic Wilcox, Steve Taylor from The Alloy and Head of Industrial Design Paul Edwards from Arbos.

The design discussion will continue as further planned events and on social media with the tag #whatisapdder

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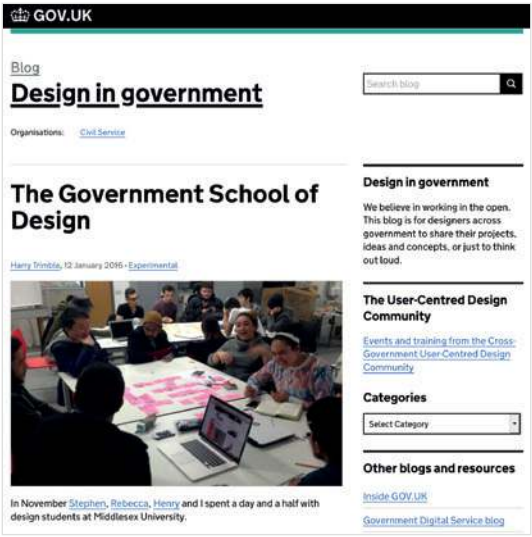

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The Government School of Design

Harry Trimble, 12 January 2016 • Experimental

In November Stephen, Rebecca, Henry and I spent a day and a half with design students at Middlesex University.

Design in government

We believe in working in the open. This blog is for designers across government to share their projects, ideas and concepts, or just to think out loud.

The User-Centred Design Community

Events and training from the Cross-Government User-Centred Design Community

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technical ones

+ …and technical skills not just thinking ones

+ The ability to work in an agile team

+ Be critical about your own work

+ Provide questions, not only answers

+ Be professional: don't be late, plan ahead etc.

What the students need? They designed, tested and visualised what how they wanted to learn. They also came up with a series of their own user needs. These are the main ones;

+ Permission to fail

+ Learn skills as you need them

+ Learn more about user research

+ More working in teams, despite it being "hard to mark"

+ Trust what you're learning is relevant to what you want to do afterwards

+ Be aware of options for when you finish.

The insights and ideas informed the next round of course validations and continued our development of the subjects and approach.

In 2018-19, all our year groups and tutors gathered for another cross-year project, asking the related question: 'What is a design show?', 'What is important to communicate?' 'How do you design your future launch?' Ten teams proposed an exciting range of concepts, most virtualising and customising the 'show' experience. Focussing on what was important for our collective sustainable future and their contribution to that.

What is a product designer? What is a design show? The ongoing conversation and answers continue to inform our course and philosophy development and prepared us positively to the necessary changes of the COVID period for our practice and for our end-of-year graduate shows.

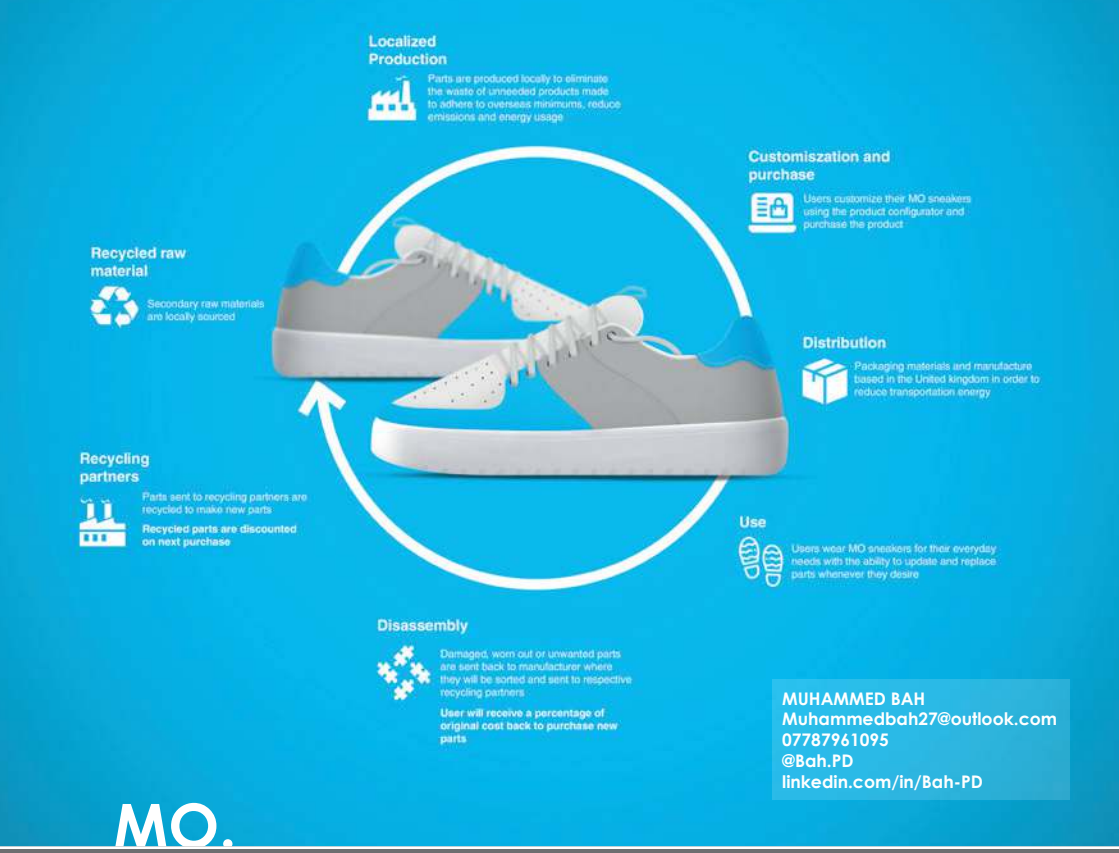
Visit those **virtual shows** at:

Instgram *@mdxpd*

https://www.core77.com/student-showcase/2020/middlesex-university/at-mdxpd

https://www.dezeen.com/2020/06/22/middlesex-university-product-design-vdf-school-shows/

https://creativegraduates.mdx.ac.uk/2020/categories/science-and-technology



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MO.

The Modular Sneaker that Gives You MO.

A **sustainable lifestyle sneaker** that utilises **modularity** and **customisation** to provide users with a **new system** to **repair and personalise** their sneakers. helping to reduce the amount of waste generated by footwear and **promote product longevity.**

MO allows users to update individual components to keep up with trends and replace these components as they wear, rather than disposing the entire shoe, providing a **more environmentally sustainable alternative** to current lifestyle sneakers. Comprising of six key components: the upper, outsole, insole, shank, bolts and laces **MO** is easily assembled and disassembled. And by using recycled and recyclable materials the sneakers **overall impact is greatly reduced.**

MO also gives users the ability to create their own customised sneaker using the product configurator allowing the users to be involved with the design process, establishing a lasting relationship between the user and the product.

Finally, **MO** provides users with a reutilisation service in which users have the ability to return damaged and worn out parts back to the manufacture where they are recycled and remanufactured into new parts. Users who send back parts will receive a percentage of original cost back to purchase new parts.

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NUOVO

Authentic Electric Conversion for Original Lambretta Engine

Nuovo is an **electric conversion retrofit system** designed for **vintage Lambrettas.** Utilising modern technology and manufacturing techniques, paired with the original designs, **Nuovo** facilitates an **authentic Lambretta experience.** By replacing the petrol-driven crank with a DC motor and bespoke coupling, the **original engine remains intact.** The **affective** and **experiential** elements that arise from the clutch, gears, and feelings offered by a 50-year-old engine are all retained.

This conversion has been designed as a **DIY kit**, and will allow all scooter riders to continue to enjoy their vehicles unencumbered by new pollution-reducing measures.

In analysing the **affective nature** of the **Lambretta experience**, Ben engaged with wider the scooter community, and used the work of **Patrick Jordan** and the **four pleasures** to provide a **framework for understanding the user experience**. In retaining the authenticity it became apparent that key elements of the experience including the use and feel of the clutch and gears, the connection to the original design, and the hands-on relationship with all aspects of the vehicle through on-going maintenance and improvements.

BEN-JORDON READINGS
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RIPPLE

A Companion Air Pollution Monitor for Parents

'Ripple' is a **companion air pollution monitor** for parents that aims to reduce the 543,000 infant deaths every year directly linked to poor air quality. The product provides parents with **digestible data, actionable guidance**, and **insights** on their **current exposure levels.** In the long-term, it also aims to **create a community** of like-minded individuals that come together to support and empower each other as a catalyst for **environmental change**.

Children under five are especially susceptible to the negative effects of air pollution, due to their developing immune systems and their 60% higher exposure in comparison to those who stand above 80 centimetres tall.

The project was made up of a series of design conversations that worked with the constraints of the **pollution sensing technology**, demands of the user and a driving **metaphor** to help communicate the products function to the parents

'Ripple' acts as a beacon of information and empowerment to parents, giving them the power to take **immediate action** to **protect their child** and **improve their exposure.** The sensor breathes in the surrounding pollutants and provides data on current pollution levels, **providing reassurance** that the product is looking out for them.

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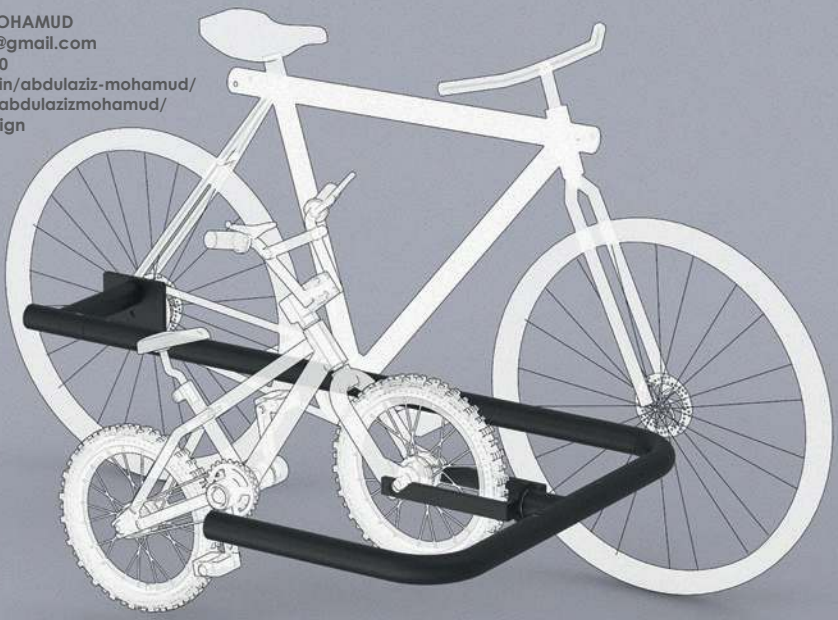

TANDEM

Using Co-Design to Develop Cycling Solutions with BAME Communities & Empowering Them to Partake in Cycling

'Tandem' is a project that uses **co-design** with **under-represented communities** to **encourage active transport** through **cycling** by focusing on the needs of communities to create solutions that **empower** and **engage** them.

The project consisted of 2 parts; the first was the generation and implementation of the **co-design workshops** and other research activities to prove that they provided an **alternative**, **more equitable** form of design development for the cycling sector. The second aspect was the development of an actual product based on the findings of the research.

The final concept was produced from the **research insights** and direct input from the co-design workshops. It aims to help **facilitate safer cycling** whilst also ensuring greater communication between parents and their children as they cycle.

Tandem is able to work with existing bicycles and is **fully modular**, allowing it to be used and adapted to the transportation needs of a growing family. This approach also allows for the **Tandem** to be further tailored to the needs of different communities based on the insights found from working with them.

ABDULAZIZ MOHAMUD
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#mdxpd 60 seconds

An interview with **Yamaha Tsung,** MDXPD Alumnus & Creative Director of Wise Box Alliance LTD, Hong Kong; a start-up specialising in crowdfunding

You are?
My name is Yamaha Tsung. I graduated from Middlesex University, BA Product Design, in 2016. I'm currently a Creative Director at Wise Box Alliance Ltd - A start-up in Hong Kong specialising in crowdfunding. Our services include proof of concept, working prototypes, cost estimations, pre-campaign marketing, campaign launch on platforms like Kickstarter, Indiegogo and others, manufacturing, distributor referrals, sales channel establishment and much more. We have launched over 10 crowdfunding campaigns in the last year with all projects successfully funded.

Why Product Design?
From as long as I can remember, I was always taking things apart, reviewing the internals and seeing how things work, building LEGO models; and of course not following instructions. Product Design to me is not a job, it is a hobby. I am doing the same things I did in my childhood. The difference being that I am able to play with much more expensive toys and be creative in teams. It is great to see things you design workout the way it was intended to, solve problems, overcome obstacles and create products that solve real needs and problems. Seeing people using the product is most rewarding!

What's a standard day like for you as a designer?
I don't think the word 'standard' can describe my line of work. Most crowd-funding projects depend on the nature of the project. Proof of concept to end of campaign can take around 6 -10 months. Then from manufacturing to completing shipment would take around 4-5 months. My job includes designing products suitable for the crowdfunding market, coordinating with engineers, advising production crew when filming the campaign video, monitoring the campaign, overseeing manufacturing and quality control. When switching between projects, you have to become an expert in that field in a short amount of time. Most of my day involves contacting engineers in the mainland, following up designs, graphics, marketing material such as rendering and animation, and video production work. I would visit our partner factories to meet with clients and engineers to check prototypes, and sometime I would stay overnight to monitor quality control. Once every three months, we showcase our brands and products at events such as the HK Global Source Fair.

What's your favourite design tool?
I personally think the most important stage of design is prototyping. It is when we decide whether we will pursue the design, estimate the cost for production and most importantly, if it is possible to produce. So, my favorite design tool is the 3D printer. When the design has passed the proof of concept stage, I will use the existing CAD model to generate a 3D model - a version where we include threaded nuts and magnets. The 3D printed model not only tests the form and size but also serves as a functional rig. Assembling the 3D prints is the most rewarding stage of the

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process, something no CAD software can simulate, and most effective to help refine the design. When assembling the 3D print mock-up, we will look at the design differently: ways to make it easier to assemble, save materials, retention in certain areas etc. Sometimes something as simple as the position of a screw hole could increase steps in final production and increase the cost of the designed product.

What are you great at?
I'm not sure really - I believe that I have the ability to manage problems when they occur. I am always prepared for the worst, so I will plan and prioritise each step to the best of my ability, alongside having one or two backup plans.

What do you wish you could improve upon?
I would like to have more self-control when working on projects, and from time to time remembering to take a step back to evaluate. I would also like to not get too attached to production and shipping costs of the product at the design stage, but to try and focus on the design and let the finished product convince the client that it is worth the cost.

What is a Product Designer in the 21st Century?
I've had a very unique work-experience in crowdfunding over the last few years. From experience customers these days, especially backers on Kickstarter, are willing to get involved and give ideas during the campaign stage. This is one of the great features of crowdfunding. This is different to design research because the campaign already has a product and working prototype. Our team will evaluate the request from backers, and adjust the form and function of the design before fulfillment. There is still a long way to go but I believe that in the near future, Product Designers will not only work behind the scenes but interact more, or even directly, with customers.

What's your advice for future Product Design/Engineering students?
It is easy to make a product look cool. But a lot of interns, designers, and even clients have fallen into the trap of styling. Designers these days can't just design a product that looks good and hopes it will sell itself. Products that are launching on crowdfunding platforms are not only innovative, but focus on a solution to a certain problem. What they try to sell is not the product, but the idea behind the product. The product is only a tool to solve that problem. Styling is important, no doubt, but beware of falling into the trap of styling.

What are the big looming challenges for designers… for society?
When new ideas come to mind, I always say to myself, if you think you have the greatest ideas or technology in the world and no-one had done it, there must be at least a dozen other people out there thinking the same thing. In that case, it comes down to two factors, who will take it to the market first and who manifests it better. I found that the manifestation of ideas or technology is way more important than rushing to get it to the market quickly. This is the biggest lesson to learn from a few years working on crowdfunding projects - especially when creators can sell the product before it is 100% finished, which is one reason campaigns fail their fulfillment. I don't think any idea or technology is obsolete, but it all depends on how they are manifested.

What are the first 5 names on your fantasy exhibition Private View list?
+ Wyn Griffiths
+ Andy Bardill
+ Nihal Islam
+ Ajay Parmar
+ William Bristow

Follow Yamaha Tsung on Instagram *@yamahatwk*

Why Crowdfund?

Adam Amos, MDXPD Alumnus, Venture builder, Strategist and Co-Founder of Pigzbe, discusses what is crowdfunding and why crowdfund...

Crowd based fundraising is a powerful tool if leveraged well. People are the fuel that powers any business and are the reason we build the product we do. Depending on the stage of the venture, "Crowdfunding' can bring different amounts and types of value to the business and the product...

There are a number of angles here, the key separation in my view being the following:
1) Crowdsourced sales – "Selling a product to the crowd,"
2) Equity crowdfunding – "Selling your business to the crowd."

1) "Selling a product to the crowd"
The most notable platform to support this is Kickstarter, where projects are, more often than not, still in the concept and development stage. This is essentially a sale engine for those who don't have a sales and distribution setup.
Teams often use this platform to gain the funding to complete the development of the product. However, in my view, I think the key benefit of a platform like this is to more easily access a large pool of potential customers to help validate your product positioning with a real audience and build brand visibility. It gives you the ability to build an initial cohort of early adopters that will become your source of data and insight.

Testing the product 'live' to see if the product you envisage really resonates with people beyond your own assumptions and initial research on "needs" and "solutions".

Essentially, it is a super useful platform to help market the product you plan to build, then once you've built it, learn from those super-engaged customers and begin to build your business from there.

A few "gotchas" though...
+ **Timing.** While Kickstarter backers are quite used to waiting a while to receive the product you promised them, there are limits to this. Transparency and communication are key! If you are delayed or are having issues with delivery, or the product is changing in some way, communicate it, be honest and so that your intentions are still to deliver them a great product.

+ **Costs vs revenue.** Kickstarter is generally about offering the buyer (backer) a really big discount due to the fact they are buying a product at risk... ie; you might fail to bring it to market.

Due to this, there is usually very little margin per unit and can sometimes even be a loss leader. So be conscious and realistic of the commercial benefits of running a Kickstarter campaign.

Don't expect to make riches now, it's about gaining the validation to drive future revenue opportunities.

An example here is a business I ran called Pigzbe. Early in the development of the project, we launched a small campaign on Kickstarter with the aim to gain some users, help prove there was a market for the product, and test our brand positioning.

Positives: we gained around 800 backers in 1 week; generally the feedback was positive, both on brand and product, we proved we should continue as planned and also raised nearly $100k in the process.

Negatives:
As with any project, you WILL hit difficulties and delays, especially with industrial design. These delays were hard to communicate and tested the relationships with our backers ~90% stood by us and we issue refunds to the rest.
We had near-zero profit due to

the additional marketing spend to promote and deliver the campaign and the fee paid to Kickstarter (approx 8-10% fo the amount raised).

Summary; We proved there was a desire for our product, which helped build confidence as a team and with our shareholders. We delivered the product to the market, albeit delayed by almost 5months, to mostly happy customers, which gave us that critical initial userbase to gain feedback on our product and learn how to adjust accordingly.

2) "Raising capital via the crowd".
Essentially this is raising money by giving away a % ownership of your business. ie; relinquishing some of the control of equity of the business.

It's very different from "selling a product to the crowd". As an entrepreneur, this is a very personal event and one which you should consider carefully.

A leading equity crowdfunding platform is Crowdcube who help entrepreneurs and early-stage businesses raise money by managing the legal sale of equity to 3rd parties, which is a regulated activity under UK law and requires a license (similar to a lawyer or a bank).

Commonly this is money to help build or scale your business which again has "pros and cons" but in reality, there is no right or wrong approach here, it is completely contextual. It is about the factors that surround you, your aims as a business owner, and the stage your venture is at. For example; pre-product launch, pre-revenue, revenue-generating but pre-profit? These factors will help define the type of investor who may participate, the amount you might raise, or the valuation of your business.

Some 'food for thought' notes below based on a mix of having managed a company that had previously raised money via an equity crowdfunding campaign and general observations of the market over the past few years:

+ It is very different from a select handful of investors that you get to know prior or understand how they can add value to the business alongside their cash, ie, skills, contacts, and network. You will likely gain hundreds if not thousands of shareholders, who you don't know, and who may or may not provide any additional value to your business beyond the money they invest and who may or may not agree with the decisions you are making as the leader of the business which they might vocalise to you or the world.

+ You will have A LOT of investors to manage – as above, this now adds additional pressure and complexity to the communication and management of your shareholders.

+ While your business still remains a 'Privately owned' one, you are now very susceptible to the pressure of the public arena. Think carefully about the stability of your business before embarking on this journey.

+ You will gain A LOT of advocates. Similar to running a Kickstarter campaign you will gain many more people who are supporting your business. They will want to spread awareness and positivity about your business, which may help with driving awareness of your business and may help gain additional customers.

An example of a recent successful campaign in the UK is **Freetrade** (an investment service). Some good insight into their business and why they decided to raise in the links below:

- freetrade.io/crowdfunding-2020
- https://bit.ly/3ikwoKC

In summary, they are a fast-growing business with revenue and a large and scaling user base. In the turbulent world of Startups, they could be considered "quite stable" in comparison to a very early stage startup that has just launched their product and has very few customers. That said, any startup could fail at any time, for any number of reasons, so there is always risk and instability.

How to Secure Funding

Kieron-Scott Woodhouse, MDXPD alumnus, UX design consultant & founder of ADzero - the first Bamboo Smartphone, shares his learnings, experience and advice on securing funding

Securing funding isn't easy, and one of the most significant barriers to entry for those wanting to bring a product to market independently.

During 2011 I managed to secure $20k in seed funding and a further $800k in development funding for a concept I created while still studying at Uni, the Bamboo Smartphone. I hope I can share some of my learnings from this experience, and subsequent career in tech, to give insight into how I managed to do this.

+ Attract attention

If nobody knows about what you're a doing, how will they invest in you? If you believe in what you are doing, don't be afraid to scream and shout about it. The likelihood is you'll find more people that love what you are doing, and they'll, in turn, help raise awareness.

If you don't feel comfortable sharing your idea, then have a long hard think about why anyone else would. The passion starts with you. In the case of the Bamboo Smartphone, I shared my ideas with the design community on Coroflot, and it was here that the seed investors approached me because they liked my style of work. They also liked my passion for phone design and how I mixed this with the use of new materials. I genuinely believed it was possible, so they jumped on board.

+ Take the leap

A lot of this will be new to you. Make sure you are ready to step into the unknown, fail fast and learn quickly.

I made a lot of mistakes while raising funds and developing the Bamboo Smartphone, but tried to learn quickly, especially in the early days. The one thing I knew I had was the drive to take risks, and back then everything felt like a risk as I knew so little. Ask yourself *"What's the risk of not trying?"*, if you don't take the leap, chances are nobody else will either.

+ Test the waters

Ahead of jumping into the deep end, try to get a basic understanding of if your idea is viable. Build low fidelity prototypes, interview the market and share your thoughts in safe environments where you'll get honest and open feedback. With the Bamboo Smartphone, we first released the concept to a

Read more about **ADzero** and the worlds first Bamboo Smartphone at *https://unihub.mdx.ac.uk/i-3-mdx/i-mdx-stories/worldwide-design* & watch Kieron discuss the design via YouTube video: **bit.ly/35nKw22**

small group of peers which allowed us to have a frank and open conversation and gauge initial thoughts. It wasn't until we exhibited at the London Design Festival (funded by the seed investment) that the concept went public, and we were able to engage with members of the design community. This experience allowed us to have conversations with the public about whether it would be something they would buy; it also led to our appearance on the BBC.

The BBC coverage was our final validating step as we gained an incredible amount of interest globally. This response served as a positive signal to potential investors who equated this interest to a genuine market need and funded further development of the Smartphone.

+ Surround yourself with the right people
Understand your weaknesses and look for people that can help. Most successful products are the result of a fantastic team working together. Try not to fall into the trap of trying to be the superhero entrepreneur you hear about on tv, see in films and read about in articles. Many of these stories have sensationalised and excluded the enormous impact of the incredible people that surround the leader - it makes for better reading.

Like I said previously, I had so many gaps in experience and skillset, so it was essential I surrounded myself with people that could make up for this. You must build your network, speak to family/friends and try to understand what people you have close by and what people you need - you'll be surprised the connections that come out of the woodwork by just asking.

A crucial reason I was able to gain the second round of funding was because of the incredible team that surrounded me. We had involvement from MDX, private business consultants, bamboo specialists and international legal firms, all taking the lead in areas such as operations, pr, hr, legal and design. They all made a bet on the passion I had for the product.

+ Work hard
This one is simple; it won't be easy! Think of the hardest thing you've ever done and times it by 100, to be safe. Going out on your own requires resilience, patience and drive. You have to rely on yourself to keep your energy levels high and hold yourself accountable for your actions. You will make mistakes, you will stumble, you will feel uncomfortable, and you may, at times, feel completely out of your depth. What's important to remember is that the harder you work, the more you learn, the better you become.

+ Be prepared and understand the numbers
You must understand the simple concept of having a viable business **Revenues – Expenses = Net Income**. You need to plan for your net income to become a positive number at some point, making your business profitable. You should document how you will get there in some sort of business plan and use this as a roadmap to keep you on track. It also acts as a "brochure" for potential investors. One thing to remember is that this can change as you learn more about your product and the market, so look at this as a living and breathing document that's subject to change every 3-6 months.

The Bamboo Smartphone had a 3-year roadmap planned so potential investors could see when they would see a return in investment. Not all products will need this much planning but it's important you demonstrate "how" you plan to get to at least break-even and/or delivering the product to market.

Why are all these points important? Investors want to see these types of characteristics and behaviours in a leader, someone that is hell-bent on succeeding in what they believe in. My question to you is, *are you ready to be that person?*

Follow Kieron Scott on Instagram *@kieron-scott* and connect on LinkedIn: *linkedin.com/in/kieronscott/*

Crowdfunding Tips

Yamaha Tsung, #MDXPD Alumnus & Creative Director of Wise Box Alliance LTD, Hong Kong, shares advice from his successful experiences in crowdfunding

1) Do not underestimate the back-stage work required
Running a crowdfunding campaign does not only require designers, but also other teams and departments. Marketing, customer services, logistics, management, graphic designers… all these aspects could be time consuming and exhausting. Ideally, it would be best if you co-operated with a team of experts to execute these tasks so that you, as a designer, can focus on product development. There are plenty of agencies and companies on the market that are experienced in doing these tasks for campaign creators. If you are planning to work on your own or with a few partners, remember to reserve the time for supportive tasks.

2) Make sure your idea and the technology are on the ground running
It is exciting to see creative ideas. You may also include many features in a compact design so your product can outperform the others. However, your campaign must be practical so that it is achievable and sounds promising to the backers. Pay attention to the limitations of your product. Materials, manufacturing processes, time and costs… These details will need extra attention as people are investing in a campaign that will require completion in the future, with some uncertainty if it can be realised at the end. If you are using ground-breaking technologies or making something that is unconventional, make sure to prove that the design is totally feasible. For example, film an unedited video of the creator using a functional prototype. After all, you are not creating a scam to bait your backers with fancy technology. And at the end of the day, your products will have to be manufactured and delivered.

3) Tailor your project for crowdfunding
On most crowdfunding platforms, backers from all

Images (L-R): Yamaha Tsung with Yoggi Ball; Masta Box & EIRTouch. Yoggi Ball, Masta Box & EIR Touch all been successfully funded via **kickstarter.**

around the globe can view and see your project. During the design stage, keep in mind that your project should be appropriate for people from diverse backgrounds. Also, consider the product specification. Double-check if the design can be shipped safely, economically, and efficiently. This problem usually relates to packaging, licensing, and specialised components such as batteries and Bluetooth chips.

4) Kickstart your project with a compelling video

Every campaign requires a video. This video will demonstrate the interactions between your product and your target audience. The video should be less than 3 minutes. It would be best to start your video by identifying the problem. Then, within the first minute, introduce your product and explain how it can solve that problem. Viewers can quickly lose focus or may click away if the video is too long. Ideally, you should introduce your product at the very beginning to draw their attention. The video is also proof to the audience that your project has convincing progress, to date. For product design campaigns, I highly recommend shooting the video with a pre-production prototype. First, it is easier to shoot a video without pretend using a visual prototype. Second, it is all about trust for crowdfunding platforms. After all, products featured in crowdfunding platforms are usually half-finished or during development. Scams and failed projects are common to see. People would like to see a functioning product in the video so that they can back your product with confidence. In some cases, the video can be trustworthy if the creator team shows up and explains their work.

5) Do not expect to make a significant profit in the first campaign

In most cases, the first campaign only makes a little profit or may even have a net loss. However, don't be too frustrated at that point as the hard work will not be wasted. From the first campaign, you have gained your customer's loyalty and experience of running a campaign. Your brand image will also be better established and known so that more people would believe in you. Yet, all of these can only happen if your first product can satisfy the backers. Therefore, bear the aforementioned tips in mind and be adventurous.

Follow Yamaha Tsung on Instagram *@yamahatwk* & connect with Yamaha via *linkedin.com/in/yamahatsung/*

Darren Lewis shares learnings from seeking funding for OpenVent

(see pp. 07-08)

1. Clear communication is important e.g. a booklet and 30 sec video. It takes time to prepare these things in a format that everyone can understand but is worthwhile and valuable.

2. Try not to miss funding application deadlines and get too carried away with the engineering work.

3. We have been more successful at getting sponsorship from individual volunteers or companies rather than monetary funds. This includes:

+ A team of 10 volunteer engineers, many of which I didn't know before this project

+ Sponsorship from a small electronic design company

+ Sponsorship from a PCB manufacture company

+ Sponsorship for the metal fabrication of our ventilator's metal enclosures

+ Endorsement by Helpful Engineering (a US based volunteer engineering group with over 1200 active users of their slack channels and a number of active COVID projects). In March they adopted my design and started developing it themselves, at the end of May we merged both projects and I am Project Lead under their umbrella, which means my project gets access to various of their engineering and non-engineering volunteers to provide more help and advice (including medical device quality managers, legal help, manufacturing and more).

Life After Crowdfunding

Design Council - Morbhen Rattray // #MDXPD 2016

Embrace+, a mobile phone notification bracelet, is a good example of a **failure turned into a success**. Their first campaign failed to attract even half the required funding. However, they were not deterred and, after making some changes, the team took their project back to Kickstarter and raised $44,000 over their original goal.

Life After Crowdfunding -
You have a great product. It's been developed through the prototype stage and you want to get it out into the market as quickly as possible. The problem? Money. Most people don't have the funds to pay for the initial costs to get a product into the hands of suppliers. Bank loans can be difficult to secure and repay and angel investors want to take an equity stake in your business which you may not be willing to give up.

This is a common scenario for thousands of inventors, designers and entrepreneurs who are developing a product. Many use crowdfunding to finance the development and manufacturing costs of a new product. The pre-sale route allows inventors and entrepreneurs to create a network of people willing to part with their money in advance of a product coming to market. While we have learned a great deal about crowdfunding over the last decade, the consequences of the success or failure of a campaign can be unexpected…

Success! What Next?
You did it! Congratulations on achieving the goal, the crowd have seen the product, they love it and more importantly they want to buy it. It has taken a considerable amount of

Morbhen Rattray is Project Manager at ***Design Council***

For more information visit *designcouncil.org.uk* &
Follow The Design Council on **Twitter** *@designcouncil*

ground work and more time and emotion than you expected but you got there and at the moment it feels pretty good.

Now the hard part begins. The funds are in place and you now need to deliver a product to a crowd who have already parted with their money based on a picture and a promise. If you can't deliver them the product they expect in the time promised, the crowd can turn from your biggest advocates into your biggest critics in a few short weeks. The most common problem here is falling into the trap of over promising and under delivering. It can be very easy to spend the majority of your time managing the expectations of the crowd rather than developing and delivering the product.

Balance between progress with the product and communication with the crowd is vitally important. Provide the crowd with as much information as you can on the headway you have made and plans for the next stage. If things don't go as you anticipate, don't disappear; explain what has happened and what you are going to do to fix the situation.

A successful crowdfunding campaign requires a lot of planning and this can help you post-campaign. Yes, you need to initially plan for potential success or failure but what if someone from your team leaves during development or the manufacturing process hits a stumbling block? Foreseeing potential problems and planning for them in advance is key in delivering a product on time and to the intended specification.

Managing the crowd and the development of the project in tandem is the key for keeping the crowd engaged in the long term. They might come in handy when you are ready to launch product 2.0.

Failure – Don't Panic You didn't make it. You weren't prepared for how much time it would take and how many favours you would have to call in. In a world where a potato salad raised $55,000 it can be a miserable outcome for the campaigns that didn't make it.

While it can seem like all is lost, don't panic - this could be just what you need to move forward with your product. The average success rate of platforms like Kickstarter is still well below 50%. Many, many people have found themselves in the same position as you and a few of them have even gone on to have very successful products off the back of an unsuccessful crowdfunding campaign.

Embrace+, a mobile phone notification bracelet, is a good example of a failure turned into a success. Their first campaign failed to attract even half the required funding. However, they were not deterred and, after making some changes, the team took their project back to Kickstarter and raised $44,000 over their original goal. After failure, make sure time is taken to reflect. What went wrong? Did the campaign fail because of time and resources or is your product not ready to be set free into the world? It can be very difficult to be honest with yourself especially after you have put so much time and effort into developing your idea. The feedback you gather over the course of the campaign can help you to understand what went wrong; the next step is up to you.

For more information visit *designcouncil.org.uk* & Follow The Design Council on Twitter *@designcouncil*

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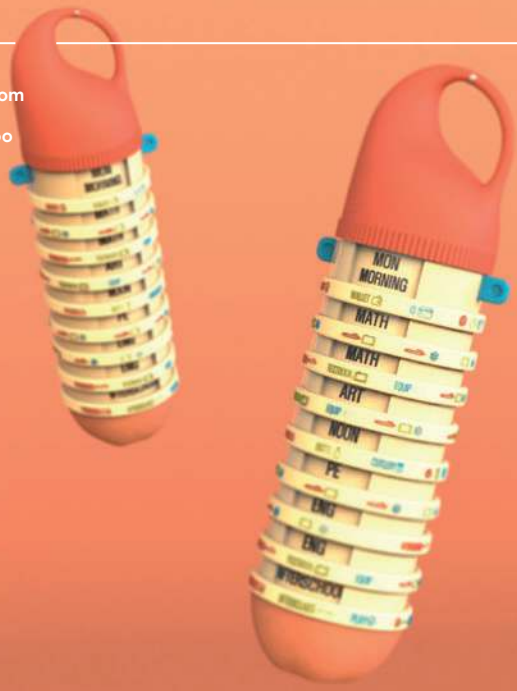

BABY STORK

A wearable, rotatable reminder that supports children with ADHD to manage their belongings in school.

"My son is 8, he loses everything he takes to school with him."

Time management and **organisation** are challenging for many people. For **children** diagnosed with **ADHD**, these challenges can become intensified. Children with ADHD may have trouble **keeping track of tasks** and **activities**, or they may **forget** to do homework. This project explores the notion of an **'assistant'** to support primary school aged children with **managing their belongings**, removing this hurdle from their learning experience.

Baby Stork grew out of a personal experience of growing up with ADHD, and a school life plagued with an inability to memorise **to-do lists**, **forgetting** books, and **losing personal belongings**. As this project explored the literature surrounding ADHD and educational experiences, observed children, and gathered **insights from parents**, it revealed an opportunity space where a product may help facilitate day to day tasks in school, and **increase communication** between parent, child and teacher.

Baby Stork is a **wearable reminder** that supports **children with ADHD** to **manage their belongings**.

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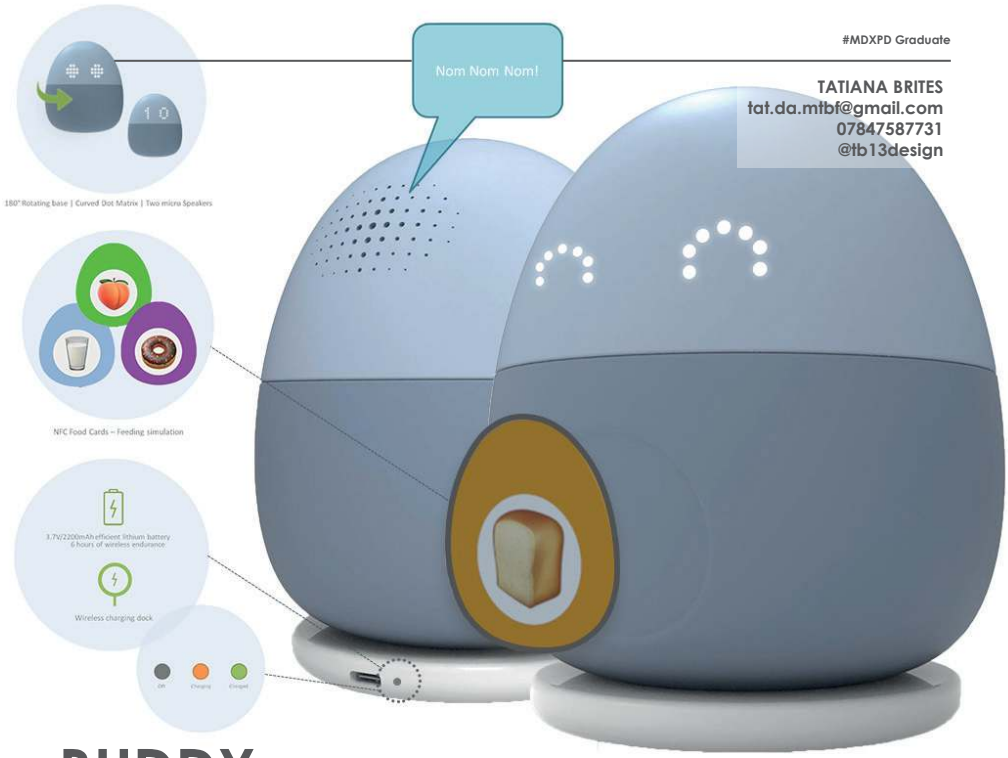

BUDDY

Learning Through Play for Children with T1 Diabetes

BUDDY is an **interactive, educational toy** for **children (age 5-8years) with Type 1 diabetes. BUDDY** simulates what it is like to live with a chronic illness like T1 diabetes and the scenarios that comes with it, facilitating **learning through play.**

Storylines are mapped to daily routines and interactions, aiding the child to learn how to **care** for their little **BUDDY** with T1 diabetes, and in process, themselves. Parents and carers can also use **BUDDY** as a medium to **interact and educate.**

Children can select a range of food, using **BUDDY**'s innovative and interactive NFC cards, to feed BUDDY and understand the impact food has on one's physical wellbeing. BUDDY also allows **interactions** including **carb counting, monitoring blood glucose levels** and **'administering' insulin.**

TATIANA BRITES
PRODUCT DESIGN BA

#mdxpd Prof. Pat Jordan

Staff on the Product Design/Engineering Programmes are active professional practitioners and researchers. Here, **Pat Jordan,** Professor of Design Psychology at ***Middlesex University,*** author of *Designing Pleasurable Products*, and consultant - advising on design, marketing and brand strategy, shares a concise profile, his background and selected works

Good design starts with understanding people - their practical needs and their emotions, aspirations, hopes, fears, and dreams. That applies whether you are designing a product, service, or policy. I am a psychologist and have spent most of my career helping people design things.

I have clients from different industries – automotive, transport, consumer electronics, mobile devices, financial, hospitality, fast-moving consumer goods, hospitality, and healthcare. They are mostly big corporates, which tends to mean that my role is to give them insights about their users' needs and the requirements of a design. They will then take this and apply it using their in-house expertise. This is a very different way of working than with smaller companies who tend to need step-by-step help throughout the design process.

I also do a lot of government work, particularly in the UK, where I work on the design and implementation of policy. Mostly this is for central government. My role is mostly about giving insights and requirements, which are then put into practice by others. However, I do some local government work, which, as with smaller commercial companies, requires the detailed implementation of policies.

Early in my career, I came across a book by anthropologist Lionel Tiger. In the book, Tiger describes his model called the Four Pleasures, which looks at the different kinds of positive experiences a person can have. I was working at Philips at the time and thought that we could apply this model to design and understanding users. I wrote a paper about it and submitted it to an international conference. The organisers liked the Four Pleasures so much that they asked me to give the keynote speech.

Several of the attendees then recommended me to give the Four Pleasures as a keynote at other conferences, and it grew from there. People invited me to talk about it at events in over 50 countries.

Eventually, I left Philips. I had had seven great years there but wanted to start my own business. At another conference, someone from Starbucks heard me talk about the Four Pleasures and asked me to consult for them using it. That was very successful, and I ended up getting lots of well-known clients. The UK government then asked if I would consult on policy for them.

To really understand people, we need to explore them deeply and holistically. All too often, those providing products and services have a view of their users that is superficial, narrow, or simply wrong. As a result, they fail to understand the full context in which people use a product or service, and it fails to deliver the hoped-for benefits. That's why the Four Pleasures is such a valuable tool.

See Pat's Publications on Amazon
https://amzn.to/3mw3R7h

The Four Pleasures are:

- **Physio-Pleasures.** These are to do with the body and the senses. They include things like being safe and healthy. They also include sensorial pleasures such as enjoyable sounds, sights, tastes, smells, and tactile experiences.

- **Psycho-Pleasures.** These are to do with the mind. They include cognitive pleasures such as mastering skills, understanding things, and finding something interesting. They also include positive emotional experiences such as excitement, contentment, or confidence.

- **Socio-Pleasures.** These are to do with relationships, both concrete and abstract. Concrete relationships are those with specific people, such as our spouse, family, friends, neighbours, and co-workers. Abstract relationships are with society more generally, for example, social status or the social groups that others see a person as being a member of.

- **Ideo-Pleasures.** These are to do with people's values. People tend to be happier when they live by their moral values. Ideo-pleasures also include the fulfilment of aspirations – being the kind of person that we want to be.

When creating products and services, it is essential to look at all four dimensions and understand the desired user experience for each. A common reason that products and services fail is that, although they might perform their primary function OK, they provide a negative or underwhelming experience on one or more of these dimensions. Not all four dimensions will be important for every product or service, but we should research each and deliver a great experience on whatever the important dimensions are.

Here are examples of clients that I have worked with:

Commercial Clients:
Renault, Nissan, Infiniti, Volvo, Ferrari, Autoglass, Arriva Trains, Motability, Samsung, Philips, Nokia, Sunbeam, Siemens, Gillette, Unilever, P&G, Carl Zeiss Vision, Clear Blue, Mars, Starbucks, Goodwood, Shell, Lloyds TSB, Royal Bank of Scotland, NatWest, HSBC, Nationwide, Direct Line, Churchill.

Public Sector Clients:
Department for Education,
Department for Health,
National Health Service,
Department for Business, Energy and Industrial Strategy,
Home Office,
UK Police Force,
HM Prison Service,
East Riding of Yorkshire Council,
Dot Gov Labs,
British Library,
Direct Gov,
Department of Transportation, USA and Canada;
Finnish Development Agency,
Brazilian Department of Industry.

Here are some **examples of projects:**

Volvo: Profiling of car drivers by attitudes and driving behaviour, and understanding the safety issues associated with different types of drivers. Using this to make recommendations about in-car driver-assistance systems.

Gillette: Consumer profiling of key user segments and needs analysis for each. Creating user requirements specifications for new concepts and specifying design and marketing strategies for each segment.

Samsung: Investigating how people's values differ across cultures and the implications of this for the functionality and design of products in different regions.

National Health Service:
Leading research into health issues among people of low socioeconomic status. Identifying how to engage this group and formulate policy and practice to reduce health inequalities.

Prison Service: Understanding why people do or don't reoffend after release from prison, and making policy and practice recommendations for reducing reoffending.

Transport for London:
Understanding disabled people's experience of public transport use in the capital and policy and making service design recommendations for improving this.

REDLOOP

Middlesex University Design & Innovation Centre / Faculty of Science and Technology

Designing cool stuff, with great people, in a nice place.

How we work:
redLoop is driven by collaborative innovation. We work with research teams and form project groups both within the university and beyond, to develop and deliver projects that increase the potential and impact of the University's work for internal and external partners, networks and clients. Research is central to our creative process, both research-led innovation and innovation-led research.
+ We provide opportunities for students to gain experience in a unique working environment, with leading edge design and innovation practice, delivered with the insight of educators.
+ We develop professional competence and employability potential through projects, placements and internships.

As a team of designers, we make significant contributions to high profile research within the university though the formulation, creation and visualisation of innovative of concepts, working with industrial partners in leading edge manufacturing.

We've had another very busy year in the studio working alongside a fabulous team of interns. Although the year concluded with us working remotely, the projects and team-working have continued.

Find out more about **redLoop** at
http://redloopdesign.com

As research calls began to emerge in response to the Covid-19 outbreak, we joined the team led by Middlesex University Professor Richard Bayford, together with academic and industry collaborators, on the development of a rapid detection test for Covid-19 (testing for the levels of both the SARS-CoV-2 coronavirus and anti-viral antibodies as well as other conditions such as the seasonal flu). Using cutting edge science and technology, the test is as simple to use as a home pregnancy test, with a detection unit the size of a matchbox connected to a mobile phone. There is also a big demand for non-invasive lung imaging for COVID patients, so the biomedical engineering group have been working on repurposing the CRADL technology and using advanced manufacturing techniques from PNEUMACRIT. At redLoop we've been contributing by looking at new ways to configure and manufacture EIT wearables to enable them to be easily manufactured at scale, for a low cost.

As a team of designers working with biomedical and technology specialists, we are well placed to provide the insights into human usage that can underpin the creation of such concepts, have an understanding of manufacturability and product usage that can help to get them out of the lab and into clinicians hands, as well as the communication tools to contribute to a persuasive and clear grant application quickly. We expect ongoing exploration in this area over the coming months.

Our other projects have included:
Continuous Regional Analysis Device for Neonate Lung (CRADL) is a pan-European, multi-million pound research project developing real-time lung imaging technology for neonates. The project finished in June 2019.

Pneumacrit: In January we bagan work on as EPSRC grant that will continue the work of CRADL and develop new approaches to much of the underlying technology using leading edge printed and organic electronics and new approaches to wireless power and data transfer in an ICU setting. Prof. Richard Bayford is leading the project from Middlesex University working with UCL and Cambridge University on this project funded to a toral of £1.8M.

Oral cancer detection device: We are part of a team working across Middlesex University and University College London developing a device to enable dentists to perform early diagnosis of oral cancer. The work is currently under Non-Disclosure Agreement and a patent is being filed.

Alexandra Palace: redLoop are STEM partners with Alexandra Palace and continue to work closely with them across a number of projects

We act as a 'transition space' between the University and the outside world, and as such we are able to provide students with amazing opportunities to work on real design projects with commercial clients. During the 2019-20 academic year the redLoop team have worked alongside 7 placement students from Middlesex University, each of whom have played a key role in bringing our projects to fruition, overseen by the redLoop team.

The 2019-20 placement student team:

Jerusa Da Silva
Jonathan Enyim-Otebil
Ibrahim Javid
Tom Milward
Luigi Palumbo
Ralph Pauling
Joseph Salem
Navpreet Singh

If you're interested in a placement with redLoop please drop us an email.
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STASIS

Helping Patients Track Redeveloping Skin Cancers Throughout Remission

Stasis is a **dual-sensor skin cancer tracker** for **patients in remission.** The device uses proven technology from two existing sources and creates a reliable and innovative way to give patients an idea of when they should make emergency appointments with their doctor, alongside providing the doctor with **health data** gathered between check-ups.

All it takes is a scan a week to **build an accurate record** of how your moles or skin lesions evolve. The first scan is a **visual scan**, currently there are phone apps to do this but they are inaccurate due to the variability when taking a photo such as distance and light. The second scan is to **test thermal recovery.** When a cancer forms it starts a process called angiogenesis, this means more blood vessels are pulled into the upper dermis and after rapid cooling if angiogenesis is taking place the mole heats up faster than the surrounding skin.

Two simple scans at home that take less than 10 minutes can help provide the data, so skin cancers aren't overlooked and **can be diagnosed sooner.**

HUW MORGAN
PRODUCT DESIGN ENGINEERING BEng

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STIGMA

Platform to Anonymously Share Stories & Situations Impacting Mental-Health without Associated Social Stigmas & Prejudices

Stigma is an **anonymous community platform** where users can **openly write** about a **negative situation** that is impacting their **mental health and well-being**, all whilst learning from the experiences of others and developing **empathy**. **Stigma** aims to build a **library of experiences** and **lessons** which **break down the barriers** people face, allowing them to no longer isolate, but build as part of a community.

Modern day society has created an **unhealthy representation** of what the **norm** to everyday life should be, which has negative effects on people's mental well-being. When you add social media to this, which includes a never-ending feed of the 'unhealthy representation', matters only get worse.

In our modern society there is an **increasing pressure** to **maintain an image of perfection**, we build this pressure by constantly **comparing ourselves** to which can result in those suffering emotional distress. This problem is common amongst members of **Generation Z**, creating stigmas that challenge those who don't fall into the categories that is set by social media. **Stigma** aims to be a platform where users can openly speak about matters that **impact** their **mental health** & **well-being**.

JOSEPH HANCOCK
PRODUCT DESIGN BA

EMMANUEL MAFUTA
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GAMASSIST

The Mobile Gambling Recovery App

GAMASSIST is a **mobile gambling recovery app** which aims to aid users in keeping clean from online gambling activities. Existing recovery apps are designed to help the user once they are already in deep trouble with gambling behaviour, whereas **GamAssist** is designed to help those already in deep trouble to change their behaviour, in addition to anyone else who realises that they need a change, or are concerned that they may be heading down the wrong path with gambling.

GamAssist desires to help and intervene as early as possible in the process of recovery. **GamAssist**'s goal is not to be an alternative solution to human will to stop gambling, but aims to **change the user's association with gambling.** The app is designed to be an **intervention** for the user and help reduce likelihood of relapsing.

EMMANUEL MAFUTA
PRODUCT DESIGN BA

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HADI

A Spiritual Journey in Co-Working Environments

In the western context, Muslim workers can find it very difficult to offer their prayer at work. Even when they find an appropriate place to pray, the **spiritual connection** and **contemplation** can be easily disturbed or broken by someone talking to them unaware, or accidentally walking infront of them.

Hadi is a product that can **strengthen the connection** between the user and their Creator, by allowing them to recreate a mosque-like setting at work. It creates a **private realm** within the office setting, allowing them to offer their prayer in comfort.

Beyond improving the relationship with God, it also helps colleagues **gain understanding** of the process and why it requires privacy. The product and process can **promote healthy discussions** and **enhance awareness** of other beliefs. Recreating a spiritually uplifting mosque-like environment has been attempted through Islamic geometry portrayed on the panels. Non-Muslims in the work environment will automatically be aware that this space is temporarily occupied, or silence is needed for a short period of time.

Hadi has two modes; office and mosque mode. Inspired by privacy screens and room dividers, switching between the modes can be done with ease. This is due to the product having wheels, where it can be moved around the office and transformed smoothly.

ADIL KAUIM
PRODUCT DESIGN BA

MDXPD Student Project Selected for Finland's national Habitaire Protoshop 2020 Exhibition

Tautvydas Petruškevičius, BA Product Design student at ***Middlesex University,*** discusses his Year 1 Bird Box project, selected as one of 12 national finalists for Habitare Protoshop 2020, Finland's national showcase of young, new design talent

Tautvydas Petruškevičius is a Lithuanian Product Designer who is studying at Middlesex University London, and has recently completed an Erasmus exchange programme at Metropolia University of Applied Sciences in Helsinki. In 2018, Tautvydas was selected for the Junior Achievement Europe mentoring programme as one of sixteen young European influencers. During his Erasmus exchange year Tautvydas entered Finland's national design and architecture competition which pioneers and highlights young, new design, Habitare Protoshop 2020. He was selected as one of twelve finalists to be featured in the 50th year anniversary exhibition, and will be exhibiting his Bird Box project developed in the First Year of the MDXPD course.

Birdbox is a flat-pack product which does not use glue or metal parts. It consists entirely of 2D aeroply profiles, easily lending itself to mass production. The product is made up of eight pieces of plywood, which bends easily into shape, and held together with two wooden pins turned on the lathe thus creating a shell-like nest for the birds.

Ideation – 'the spark' - Creative connections on a bus

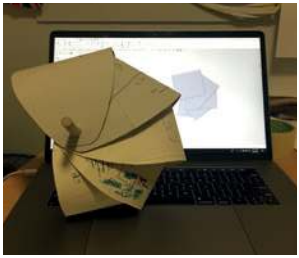
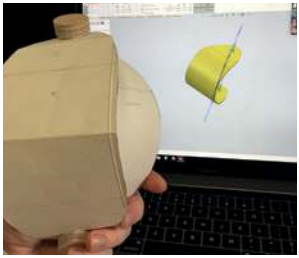
Like everyone on the MDXPD programme, during the 1st Year, we were briefed to make a birdbox from only one sheet of aeroply, without any glue or adhesives, and using the university laser cutter. At the time it was a big challenge. Honestly, I never intended to proceed using the most common way of just using a threaded rod and holes to connect the birdbox, as I initially saw that as a simple approach. In retrospect, I was naïve to think that this project will be easy.

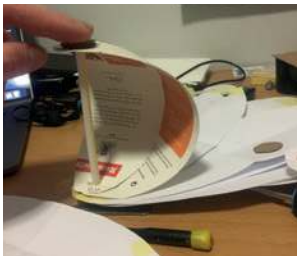
The project commenced with an iterative process of design, combining a process of ideation with many cardboard prototypes, sometimes the night before the deadline, and even on the bus on the way into campus. Exploring outcomes from previous year groups provided additional insight and inspiration in this project. I was obsessed with trying to find the most unusual ways to use the materials given, and then on the long 189 bus ride into campus, I remember sitting and trying to imagine 3D models of birdbox designs.

Also **SHORTLISTED** at **International Architecture Competition** (Legendary Bird Home 2020): beebreeders.com/architecturecompetitions/birdhome2020

Habitare Protoshop 2020:
https://habitare.messukeskus.com/special-sections/talentshop/?lang=en

View Tautvydas's bird box project at *https://tp478.myportfolio.com/birdbox*



It was on the bus, and through this cyclical process of ideation, prototyping and research where I was able to connect various thoughts. A video about biomimicry, the seashell photo from my inspiration boards that summarised hours of research, and the fact that Lukas (alumni) had previously designed his birdbox with curved plywood walls; ignited a spark. The magic had started. I started to use my hands and imagination to try to combine these disparate inspiring elements into the design idea.

Okay, I am on a bus... so, how will I sketch??? I remembered another story from Art History lessons where Picasso and even some business individuals would put down their thoughts on a napkin. I quickly checked my pockets, found a napkin, a lonely marker, and started to doodle. The first cardboard prototype then followed, it was made from old pizza boxes that I gathered from dumpster-diving in Ivy halls, along with hot glue, and plastic straws.

Design and Engineering – wrestling the 'spark' into reality

After presenting different prototypes and finalising the design, our tutor, Ahmed, indicated to me that the chosen design will require some time and grit to model on CAD (considering we had just learnt the basics of the software)... Well, again I was naïve and thought how hard it can be!... After an eternity spent in cursing Solidworks and waking up at 4am to do another CAD model, with guidance and technical advice from Ahmed, I managed to finalise the CAD model. After a few weeks of working on the prototype, and many failed attempts, you have no idea of how happy I was when the laser cutter profiles actually fit together... During the Easter break, we had to finalise a product animation, alongside a few renders for our final presentation. It took a few days to complete the animation using 3ds max, alongside approximately 48 hours of non-stop Keyshot rendering.

The lucky coincidence

During the Erasmus exchange programme at Metropolia University of Applied Sciences in Helsinki , I missed one of the prototyping lessons, and consequently the compulsory training required to use workshop machines. Unfortunately,

because of that, I was unable to submit any developed prototypes in my application to the Habitare Protoshop contest, where 12 best design ideas are featured in the largest design expo in Finland, and where there are more than 150 design companies.

I had no choice but to try and apply with a few of my portfolio pieces including the First Year Bird box project developed at Middlesex University London. A few weeks later, whilst I was coming back from Lapland, in the middle of the night, in the middle of deep snowy woods of Finland, and inside a gas station store, I opened my mail on the phone. I saw the email… the email was strange… the reality struck, I fell on my knees in middle of the shop, "**** yeah!, ****** Yeah!" I could not believe what had happened… for the next 5 hours I was crying from happiness in the bus on the way back to Helsinki, writing messages to everyone who had helped or supported me; my friends, mentors, teachers etc. Overnight I had just become one of the 12 best young designers in Finland and was to be featured in the largest Finnish design event. My Year 1 birdbox beat more than 120 other designers!

Developing the idea and prototypes

In the early days of COVID-19, in Finland, we did not expect anything to change, but as all of the world went into lockdown as the pandemic progressed, it affected Helsinki too. The University was also closed down. Thankfully, I had managed to make a new birdbox two days before lockdown. After receiving feedback from organisers and judges we had identified two issues and opportunities to consider. The entrance hole was considered too big, and the method of attaching and hanging the birdbox required revision to ensure stability for the birds (Nature confirmed that we were wrong later on!). But how can you make an updated prototype without any tools? And no laser cutters? No workshop and uni under lockdow?! Thank God that I had attended hackhathons alongside my garage upbringings. Since I was little I had been tinkering and making various structures and inventions from random things that I could get my hands on. I had made a fully working lifting bridge model from ear buds and plasticine when I was 6 years old. Over time I adapted and adopted unusual techniques, and to this very day I still prefer to use non-conventional tools and approaches to solving problems. Limitations helps to create ingenuity.

Lockdown was lifted in May. I was finally able to come back to the workshop. It was almost like I had been living there for 3 weeks, going in almost every day and working until I was kicked out by security. Later on, I wanted to start making a new version of the mounting mechanism for the prototype. On my way walking to the workshop I had an idea of a universal removable attachment. I did a quick CAD sketch and strangely it worked first time… That never happens!

In May, I received a video from Belgium, where the original birdbox had small birds living inside. In the end, nature confirmed that the original design was working perfectly well, and that birds didn't care too much about the swinging of the birdbox, or the size of the entrance hole.

After finishing the birdboxes with walnut oil, assembling them, preparing the hanging ropes and wooden screws, I had made a total of 11 new bird boxes. One prototype will remain in Metropolia for their prototyping exhibition and for future students. I hope to return to Helsinki in September when Habitare takes place.

From now on I will just enjoy the process, and the result. Who knows, maybe it will be mass produced, or I will get featured somewhere which will open new doors for me in the design world? Over the years I have met some amazing people with crazy stories from these type of events, and I cannot wait to see what other designers have created, alongside showcasing my work!

The exhibition, the bird box and the future…

During the summer I might create a packaging design, as this project grows to the size of a graduate student project. So why not, if I can make it a better portfolio piece, and in the process learn new skills! I will also try to find other contests, not only because of prizes or press coverage, but because it's a nice learning experience for any designer. It teaches and forces you to solve problems. You are the one who tells the story and some cockiness, at least in the beginning, is needed.

Good luck my dear student colleague, try your luck and bend the gap of what is possible whilst you study!

Follow Tautvydas on Instagram *@petruskevicius.tautvydas*

Getting Involved at MDX

Staff within the Faculty of Science and Technology engage in a range of **outreach & extra-curricular activities**, and we love our students to get involved, alongside **opportunities** where students can make to contributions to our programmes too.

As we so often tell our students, studying at university is about so much more than leaving with a qualification. Your educational experience is a chance to not only develop subject specific skills and a high-quality portfolio, but is also an opportunity to participate in a breadth of experiences for both personal development and CV enhancement.

During 2019/20, Product Design and Product Design Engineering students have supported:

+ **New Scientist Live**
+ **WorldSkills UK Live**
+ **SMASHfest 'Space Plague'**

We hugely value the contribution our students can make to our programmes too. The **Student Learning Assistant (SLA)** role offers a paid role (up to 6 hours per week) in which students are assigned to modules to work alongside teaching staff to support student learning in years below them. During 2019/20 we have had 7 Student Learning Assistants who have provided an excellent range of support and encouragement across five year 1 and 2 modules. We hope to increase this for the coming academic year.

"As a first year student, I took the opportunity to become a **Student Voice Leader (SVL)**. This was an incredibly insightful position to hold, which required me to listen and understand different perspectives from my cohort, and share insights with the faculty directly involved in the progression of the course. I am very fortunate to have been voted as SVL of the year for the department, an award I'll always be proud of. I urge prospective and current students to advocate change and proactive development. This mindset is also what led me to being the Student Union representative for my department, voting on important policies for the union to uphold." [Adam Painting, Year 1 BEng Product Design Engineering]

"I've been an SLA for 2 years now and I have loved every moment. The role has given me great confidence in myself and in my design practice, and has also helped to build good friendships with the other students on the course. The SLA system is totally unique in that the students can get support from someone who recently completed that same year. Being an SLA is great because I've had the chance to revisit previous learning on the course, recapping past content and helping me to really strengthen my knowledge of Product Design." [Tom Milward, Year 3 BA Product Design, supporting Year 2]

"Overall, the SLA role was a great experience! It was fun seeing the student's progress though the material, and to be there with them at the beginning of their design journey." [Brady Hansen, Year 2 BA Product Design, supporting Year 1]

"The Space Plague event, organised by SMASHfest UK, was a great opportunity and I'm glad I got involved. Seeing different people from different backgrounds coming together for one cause was quite beautiful. I spoke to people from different universities and I am hopeful that I've made a good enough impression on them to remember me. So, if we meet again I hope we can build stronger and more meaningful relationships." [Navpreet Singh, Year 3 BA Product Design]

#mdxpd 60 seconds

Staff on the Middlesex University Product Design/Engineering Programmes are active professional practitioners and researchers. Here is an interview with **Leigh Marris,** Visiting Tutor at ***Middlesex University,*** and Design Professional at ***Synapse-Point7*** model making & prototyping

Practice your drawing. Being able to sketch is a key method of communication. Everybody gets better with practice, so do it.

When I teach at MDX I don't want to hear that you are not very good at drawing, and neither will your future boss.

If you practice, you will improve.

You are?
Leigh Marris. I've been making prototypes for 25 years. Most of that at Synapse. Making everything such as Action Man prototypes from mood-boards where there was alot of freedom to input ideas, to Aston Martin Speedo clusters from supplied CAD data with very strict tolerances and material finishes.

Why model making/prototyping?
I'm always been good at making. Somebody told me it was well paid. Its not really, but I do enjoy making things so I'm glad I do it.

What's a standard day like for you as a model maker?
Working in a small team means that no two days are the same. It depends on how much work we have at any given time, and where we are on a project/s.

I have many roles. I could be calling current customers to see when data will be released, or calling prospective customers telling them about the services we offer. I quote a lot of projects, many of which we don't get to make. On the other hand, I may be checking and ordering materials in order to

Connect with Leigh Marris on **LinkedIn**
linkedin.com/in/leigh-marris-67303335/

do the work. I have to do this because of the short lead-times on projects and if we haven't got the correct materials we simply can't do the work, sometimes it is that time critical. If any services are to be outsourced such as anodising or plating I am contacting those people to make sure they understand exactly what is required and when I need it back, alongside the level of quality needed.

Sometimes suppliers need to redo work as its not up to the required standard, this is never an easy conversation. Then I might be able to start programming one of the CNC milling machines, set it up and get it running and cutting material. I may be sanding parts down and spraying them... and then there is the tidying up aswell.

What's your favourite tools/processes?
I love the lathe. It is such an easy tool to use, with a little practice, and very rewarding.

What are you great at?
My will to succeed and overcome the challenge. My wife often tells me that 'no mountain is too high for me.'

What do you wish you could improve upon?
Lots of things. But top of the list would be to delegate more and be more patient.

What is a Model Maker in the 21st Century?
I class myself as a product model-maker. I see myself as somebody who helps a designer bring their idea to life in the correct materials, finishes and weight. They can then hold it, feel it, study it, sit on it (if its a chair). They can't do that with a render. Models still have value in the design process.

What's your advice for future Product Design/Engineering students?
Practice your drawing. Being able to sketch is a key method of communication. Everybody gets better with practice, so do it. When I teach at MDX I don't want to hear that you are not very good at drawing, and neither will your future boss. If you practice you will improve.

Make sketch models either out of card or foam as these tremendously help explore scale and form .

What are the big looming challenges for Model Makers… for society?
None of the materials we use can be recycled apart from aluminium. All of the materials are single use. The resins we use are not always nice and need to be disposed of in a responsible manner. The energy we use aswell. We need to leave heaters on all night to force dry components in order to hit deadlines.

What are the first 5 names on your fantasy exhibition Private View list?
+ Chris Hill who was my 1st boss
+ Roger Hulks who was my 2nd boss
+ Joe Rackley who sat next to me at Synapse for 12 years.
+ Friends and family
+ Current work colleagues

SYNAPSE

Leigh Marris, Visiting Tutor at ***Middlesex University,*** discusses model making and prototyping at ***Synapse***

Based in Watford we pride ourselves in the ability to be nimble and flexible. We work for various sectors including Automotive, Consumer Electrical and Medical with a diverse range of clients. We gain most of this work through referrals. We have worked with Aston Martin, Jaguar Land Rover, Bentley, McLaren, Nissan and Lotus in the automotive sector.

We also support the top design consultants such as Native, Barber Osgerby, forpeople and Roli with prototype requirements.

We work with both the design teams and engineers to help develop their products. Generally we produce the fine detailed parts such as instrument clusters, steering wheel, centre stack, gear shift, badges etc.; mainly parts that always get photographed.

These jewelry parts sometimes require lighting sequences or mechanisms, both of which are also no problem for Synapse. We machine chairs, chair parts and tools for Barber Osgerby in a range of materials including carbon fibre.

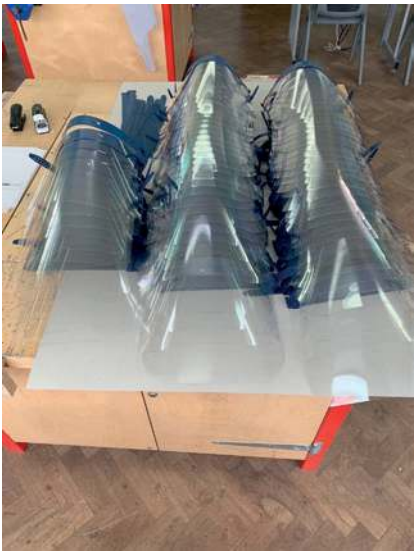
One of the more prestigious projects completed that is in the public domain is hand finished detailing on the Bentley EXP10 including the timepiece clock, speedo cluster (which had a raising and lowering mechanism) and the steering wheel, which also had moving parts. See an image at:

https://bit.ly/3hQGQbP

Synapse also manufactures high quality, low volume, and bespoke parts for car firms including AML's Q Concepts. We produced the DIM instrument cluster for the Mansfield special Vantage one off based on the Omega SeaMaster, plus the 14off DIMs for their million pound limited edition Vantages.

We pride ourselves in the ability to be nimble and flexible. We registered our support for the NHS Ventilator Challenge on the 20th March. We received a generic automated reply saying 'thank you for registering' and that we have been put on a supplier list along with 5000 other companies. We heard nothing more. Then on a Sunday afternoon we took a call from Sagentia asking if we could help. We've worked with Sagentia on previous projects so there was an established and existing working relationship. Obviously, we were delighted. Due to the

Find out more about **Synapse** at
http://www.synapse-point7.com/



ambitious delivery target for this job we went to work that afternoon to get the machines running and finish components that were already on the milling machines in order to concentrate on the ventilators components on the Monday.

The net was cast wide with many machining and prototyping companies asked to quote on parts. We were asked to make two different components. We had to deliver x5 of each part by Tuesday afternoon and the remainder of the x20 off by noon on Friday. These parts were used in trials.

The aluminium component was machined from 3 sides and needed to be wire eroded aswell. Wire eroding is a process where an electrical current is passed through a piece of wire and by doing this it is able to cut through metal achieving very sharp corners.

The other component was an acrylic tube that was turned on our lathes. This part was something that was left by the other suppliers as nobody really wanted to take it on. It was simple in profile but challenging in other ways. The part was a tube which had a relatively small outside diameter but was quite long. Not only that but it had a very thin wall section. The first challenge was stop the part from flexing/moving in order to keep a constant 6mm outside diameter and the second was make sure we didn't melt and stress the material while drilling the deep 5mm bore. This left a 0.5mm wall thickness along the part. A simple but tricky part to machine.

While the aluminium part was machined to very high tolerance it was quite straight forward. The acrylic part was not straight forward in any way. Like most projects that pass through Synapse we have to go through the learning curve drawing from years of experience to find the best solution to master the task in hand. It took 4 attempts to machine the first acrylic tube. Solving problems is a large part of what we do.

Follow Synapse on Instagram
@synapse_models

#MDXPD Graduate

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CONNECT

Service/System that Supports Seeking Help in Gyms

Connect is a **product/service/system** that is provided by gyms, allowing their members to **receive help from more experienced members** who are allowed to if **trusted** by members of staff.

Inspired by people's negative experiences and feelings towards gyms, **Connect** aims to resolve these issues by making gym environments less intimidating for current and future members to **build communities** and **relationships** within gyms as well as allow members to **ask for help without feeling embarrassed.**

Connect is a system that will be provided by gyms and comprises of a wearable and an NFC device that is attached to gym machines that works cohesively. The **wearables** allow the user to scan the NFC device and request for help. The help system was inspired by aeroplane services and self-checkouts, which both use **visual communication** to **identify people in need of assistance.**

The design of the wearable grants a wide range of adjustability to allow all users no matter size or shape to be able to make use of the system. If gym organisations were to adopt the system to their gym branches, the system would be easily accessible as it would just be an extension of services offered.

RYAN WARD
PRODUCT DESIGN BA

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PATHFINDER

Handheld Haptic Navigational Device

Pathfinder lets people interact with their commutes in a new and innovative way; prompting the use of **active commuting** and taking **alternate routes** where possible. This can help people tackle the negative effects of commuting in urban environments during busy periods, unexpected delays and overcrowding with the aim to implement more pleasurable experiences allowing people to not be completely reliant on visual guidance for commuting.

Pathfinder is a **handheld haptic navigational device**, that uses haptic vibrations to guide users to their destinations instead of always relying on following screen-based instructions. The tactile pebble like device pairs with the Pathfinder mobile application (via Bluetooth) to provide the haptic feedback on the selected routes.

The user follows the vibrations and direction is indicated through **rhythm** - straight ahead follows the pace of footsteps; left/ right would vibrate two or three times respectively. This provides an innovative and active experience, allowing one to keep focus on the world around them and removing the need to be dependent on mobile phones when trying to get to navigate to a new destination or take an alternate route.

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PLAY THINGS

Fun Experiences for Children with DCD to Develop Muscle Tone

Children suffering from **dyspraxia** often struggle to **develop the muscle tone** and **coordination** needed for effective hand writing. **PLAY THINGS** are a collection of **game controllers** that enable children to **target and train a series of muscles** in the hands, wrist and forearms to support the skills needed for legible handwriting.

PLAY THINGS helps create fun experiences, allowing **children aged 5-7** who are diagnosed with **developmental coordination disorder (DCD)** to control a **continuous runner video game**. The premise is based on the notion that "practice makes better." Therefore, increased exercising of the targeted muscles a child uses for handwriting, will both strengthen the muscles and in turn enhance the child's hand-writing.

The **targeted muscles** are - f**lexor digitorum profundus** (helps you bend your index, middle, ring and small fingers.); **flexor digitorum superficialis** (helps you bend the middle joint of each finger, except for the thumb, which allows you to do things such as eating with chopsticks); **extensor pollicis brevis** (helps you straighten the thumb); **flexor carpi ulnaris** (helps you move your wrist away from the thumb); f**lexor carpi radialis** (helps you bend the wrist and move it toward the thumb).

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SUPERNOVA

Novel Printer Experiences & Interactions

The concept, **SUPERNOVA**, stemmed from the idea that printers usually present the same user experience, a cocktail of **tedious and frustrating interactions.** Therefore, more modern and innovative approaches are needed. The main focus of a printer is typically the display; with current printers removing buttons and switches as standard, other than a power button. Therefore, the display is a crucial area, more specifically, **the GUI**. However, current printers overlook some elementary forms of interactions, such as **previewing printing jobs** before printing or having a form of **editing tools** for **manipulating text or images.**

Through researching and developing fundamental concepts, **three central interactions** have been formed, based on five areas of focus – **1.** AR (Augment Reality), **2.** Scanning, **3.** Editing and Manipulation, **4.** GUI (Graphical User Interface) and **5.** Wireless communication, specifically NFC (Near Field Communication).

The three interactions are:

- **Constellation** – A GUI focused on image printing via wireless transfer
- **Spacetime** – An information and troubleshooting experience, power by AR
- **Nebula** – A GUI designed around the scanning of Documentation, ID and Literature

JACK PARKES
PRODUCT DESIGN ENGINEERING BEng

Academic Exchange

MDXPD has been active in academic exchange schemes for students and staff throughout its history. We have recently been building a staff exchange programme with the Middle East Technical University (METU), through Associate Professor Dr Naz A.G.Z. Börekçi via Erasmus+

MDXPD has been active in academic exchange schemes for students and staff throughout its history. The benefits of exchange to all involved are huge. Sharing knowledge, experience, perspectives and cultures enriches the educational and research experience for all, and the confluence of disparate elements generates new ideas for projects, programmes and research.

We have a long-standing student exchange with the Technical University of Valencia and developed a vibrant exchange with a range of Brazilian universities during the 'Science Without Borders' scheme period, alongside regular exchanges with universities from Austraila, the US and Finland.

We have recently been building a staff exchange programme with the Middle East Technical University (METU), through Associate Professor Dr Naz A.G.Z. Börekçi via the Erasmus+ programme.

About Naz A.G.Z. Börekçi: https://id.metu.edu.tr/en/person/naz-a-g-z-borekci/

About Erasmus+:
Erasmus+ is the European Union programme for education, training, youth and sport. It ran for seven years, from 2014 to 2020, with organisations invited to apply for funding each year for life-changing activities. Erasmus+ aimed to modernise education, training and youth work across Europe. It was open to education, training, youth and sport organisations across all sectors of lifelong learning, including school education, further and higher education, adult education and the youth sector. Through Erasmus+:
+ Young people could study, volunteer and gain work experience abroad, to develop new skills, gain vital international experience and boost their employability,
+ Staff could teach or train abroad, to develop their professional practice, build relationships with international peers, and gain fresh ideas,
+ UK organisations could collaborate with international partners, to drive innovation, share best practice, and offer new opportunities to young people.

https://www.erasmusplus.org.uk/about-erasmus

Dr Börekçi first visited MDXPD in 2018, working with staff and students to explore working practices and develop new projects and programmes. From this visit, Wyn Griffiths, of MDXPD, was invited to Develop and Chair a Track at the 'DRS Learn X Design 2019 Fifth International Conference for Design Education Researchers "Insider Knowledge" 9-12 July 2019.

Dr Börekçi was one of the organisers of the conference, and the work across both METU and MDXPD in 'Design for Social Responsibility' resonated through the exchange relationship. Naz and Wyn identified an opportunity to develop this strand of shared experience and expertise worldwide.

About the **conference:**
http://drslxd19.id.metu.edu.tr/

Middle East Technical University, Ankara DRS Learn X Design conference series are part of DRS Special Interest Group in Design Pedagogy (PedSIG) and organised with local partners to widen participation in the promotion and dissemination of design pedagogy research. The DRS Learn X Design 2019, 5th International Conference for Design Education Researchers was hosted by Middle East Technical University (METU). The year 2019 marked the 50th anniversary of the first course on industrial design offered in Turkey at METU Faculty of Architecture by the American industrial designer David K. Munro. 2019 was also the 40th anniversary of the establishment of the Department of Industrial Design as a separate undergraduate programme at METU.

The track, developed along with Dr Lindsay Keith, Creative Research Fellow at the University of Greenwich, gathered contributions from researchers or practitioners engaged within design for social innovation to consider the state-of-the-landscape internationally and to drive future conversation within the area and in society.

The track brought together researchers from China, Egypt, Turkey and the UK reflecting on a wide-range of design for social innovations and environments. Building future collaboration potential and further exchange between METU and MDX.

The second phase of exchange begun in March 2020, with Dr Börekçi visiting MDXPD to continue the exploration of practice through the SMASHfestUK Space Plague Phase 3 final year project (see pages 59-60). This completed successfully just before the education lockdown due to COVID began. A reciprocal visit by Neil Melton and Wyn Griffiths to continue the project work with METU Industrial design students was subsequently cancelled due to those same COVID restrictions.

The reflective and generative power of exchange has been effectively demonstrated through this ongoing relationship and we look forward to more collaboration and exchanges in the future!

Full abstracts and papers:
http://drslxd19.id.metu.edu.tr/

Follow *#smashfestUK* on Twitter and Instagram

SMASHfestUK 'Space Plague'

SMASHfestUK is a collaborative ecosystem researching and developing new approaches in co-design and public engagement with communities underserved by STEM and Arts informal education and under- represented in STEM and Arts education and careers

We reported on the first phase of the new SMASHfestUK project – Space Plague – in last year's MDXPD Magazine. The project has now entered its final phase, Phase 3, following a fantastically successful and eerily timed Phase 2, which took place just before COVID-19. Space Plague's storyline imagines a fictional pandemic, and puts its audience actively in a team fighting to understand the pandemic, discover ways to treat the disease and to support society during the pandemic.

Parallels were striking. A mock news report we created with local school children even predicted the run on toilet rolls that we saw unfold in real life just a few weeks later. The COVID-19 epidemic was already underway during Space Plague, but there had been no definite cases or deaths in the UK at the time, although we did decide to have a COVID information desk for anyone who had questions. Preliminary research indicates that the experience was really useful for both parents and children who participated, in helping them understand the science behind the COVID headlines, and to understand the nature of infectious disease spread, treatment and public health responses.

An audience member commented: "What an amazing and timely experience and learning about the power of dealing with a health emergency and all the process involved."

The process of creating a fully immersive production has enabled innovation throughout the design and experience. Our work progresses through cycles of co-design and participatory action research, so that each SMASHfestUK event is both a production in itself, and a test-bed for the next evolution of engaged practice innovation. We are constantly trying to learn from what we do, to deliver better community programmes and events the next time around. MDXPD staff and students are central to this philosophy and process. Final Year students from the 2018-19 graduating cohort (and some from Year 2) worked on the Phase 1 visioning, through

Visit SMASHfestUK
www.smash-uk.org.uk

development and production to the delivery of the Phase 1 event, and the same way through Phase 2. The insight, ability and work of the students is a critical component to the complex interdisciplinary co-design collaboration that creates each Space Plague. Phase 1 and 2 were huge successes, with attendance and response exceeding expectations, while the reciprocal learning and development of participating partner groups from across communities, research, academia and industry was equally positively reported.

Another audience member commented: "A wonderful event. The children were completely absorbed and I learned a lot too." And another said: "Immersing people increased their engagement and ultimately their knowledge and understanding."

Meanwhile, even during lockdown, the next phase, Phase 3, of Space Plague is under development, where we will look at how we might use digital tools and platforms to take the live immersive experience to a wider audience. MDXPD Final Year 2019-20 joined the development at the beginning of Phase 3, developing concepts for hybrid live/VR versions of the storyline and experience. Development has continued, accelerated by the necessities of digital engagement during COVID. The production of Phase 3 in underway, and we hope this offer ways to increase access to this exciting form of engagement to even wider audiences.

"What did you learn today?'", we asked a Black British 9 year old Female visitor: "That I AM a scientist!", she replied.

Dr Nick Sharples, Middlesex University, mentions: "These events have really underpinned for me the importance of tangible, easily explored examples to motivate and understand engineering problems. Physical manipulation of a problem is a really powerful way of fostering engagement, and I'm looking now to apply this principle to the purer ends of the mathematics I teach."

The co-design process, to date, has involved:

+ 60 Year 5 pupils, and 6 teachers from **Haberdashers Aske's Temple Grove Free School** in South East London.

+ 240 pupils and 6 teachers from **Tidemill School**.

+ 240 pupils and 10 teachers from **Edmund Waller School**.

+ 20 young people (aged 10-16) from **Riverside Youth Club/ UnCover @ The Albany** and 3 actor facilitators.

+ 25 young people (aged 16-21) from **TRAMSHED** and 3 actor facilitators.

+ 20 Final Year, and 2 Year 2 Product Design and Engineering students from **Middlesex University London**.

+ 12 Performance: Design and Practice students and 1 tutor from **Central St Martin's UAL**.

+ 2 MSc Creative Technology students from **Middlesex University London**.

+ 4 BSc Film and TV Production students from the **University of Greenwich**

+ 8 Design, Engineering and Film Academics and Technical Tutors from **Middlesex University** and the **University of Greenwich**.

+ 8 Scientists from the **Structural Genomics Consortium**.

+ 4 Scientists and Public Engagement staff from the **Rutherford Appleton Laboratory: Diamond Light Source** and **ISIS Neutron and Muon Source**.

+ 10 Scientists and Public Engagment Staff from the **British Ecological Society**.

+ 1 Independent Public Engagement/ Science/Performance expert.

+ 1 Science academic from **Birmingham University**.

+ 8 Professional Actors/ Performers.

+ 15 Bradford community volunteer facilitators, through the **National Science and Media Museum**.

+ 3 **Bradford** engineering volunteers.

+ 8 Stage and Production professionals.

+ 6 Science Communication specialists.

+ 4 **SMASHfestUK** Core Team.

Read more about Space Plague in the **British Ecological Society - 'The Niche' magazine**:
www.britishecologicalsociety.org/membership-community/the-niche/

And **listen** to Wyn Griffiths discuss **SMASHfestUK** and **MDXPD co-design approach** on **SCiComm Stories podcast** - http://scicommstories.com/012-co-design-with-wyn-griffiths/

Photo galleries of Space Plague: Co-design:
https://flic.kr/s/aHsmLBXnut

Drop-in/access activites -
https://flic.kr/s/aHsmLBP8ns

Space Plague Phase 2 experience -
https://flic.kr/s/aHsmLBCu6H

GUEST LECTURE SERIES

We run an **annual Guest Lecture Series** of **15-20 weekly hour-long talks** for **Product Design, Product Design Engineering and Design Engineering**, but open to all at **Middlesex University**. We bring together a vibrant mix of speakers from the full spectrum of design and engineering. A mix of leading practitioners, opinion leaders, radical thinkers and emerging talents to inspire and support professional development in our students and staff. We go on to work with many of the speakers through collaborative projects and internships!

We've been lucky to been visited by so many amazing people over the last few years, as recorded in our past #MDXPD magazines, with more to come next year and beyond!

The **2019_20** Guest Lecture series included **16** inspiring and informative talks:

Rabia Arif MDX Works • **Al Parra** Director & Co Founder at Building Bloqs • **Margot Sandy** Product Engineer, Author & PhD at ICL • **Thanim Uddin** EDS Engineer at Draexlmaier Automotive UK LTD • **Sam Gwilt** Product Designer at Sam Does Design • **Tobias Schreier** Innovation Consultant at launchlabs GmbH Berlin • **Darren Lewis** Advanced Mechatronics Design Engineer at Dyson • **Amy Shemesh** Creative Lead at Google • **Nick Chubb** Lead Industrial Designer at IDC • **Marco Paldini** Co-Founder and Senior Engineer at GreyParrot.ai • **Sam Brinkley** Senior Operations Manager at ISS Facility Services UK • **Will McGrath** Spatial, Visual and Product Designer • **Peter Holmes** Senior Engineer and Designer in Residence MDX • **redLoop** Design and Innovation Centre MDX • **Ying Wan Loh** YWE 2019 & Manufacturing Engineer at Rolls Royce • **Mamta Singhal** Design Engineer

#MDXPD @MDXPD

Contact **Ahmed Patel - *a.m.patel@mdx.ac.uk*** if you are interested in sharing your experiences in our **Guest Lecture Series**.

2019-20 Final Reflections

A message from **Prof. Mehmet Karamanoglu**, Head of Department, *Design Engineering and Mathematics*

Many of us will remember the 2020 academic year for some time to come, and for many of us with lasting effects. Sadly, whilst there has been some devastating news for some of us, and all of us have encountered many challenges during the Covid-19 pandemic, it is comforting to know that we are making positive moves toward reaching some form of normality. Whether we will go back to how things were is yet to be discovered, but I suspect we will all define a new normal in what we do.

Reflecting on the past year, and particularly for the past 4 months, there is no doubt that there has been some very difficult periods but focusing on the positives, I am very pleased to see our students continue to achieve great successes, alongside staff managing to switch to online delivery and support really quickly and effectively. While none of this was planned, we did fantastically well and managed to get through this difficult period. I am very grateful to everyone involved in ensuring a successful completion of the academic year.

We would normally have a degree show to celebrate our student's success and this year this was going to be a festival of celebration on the campus. Although the plans for this started in October, unfortunately things did not go according to plan but it is still good to see some of the students having the opportunity to showcase their work on various online platforms such as **dezeen**, **core77** and our in-house showcasing website: **creativegraduates.mdx.ac.uk** which was created quickly to replace the on-campus event.

Lastly, I want to acknowledge the amazing response our staff across the University have given when we received calls from the NHS to assist with the COVID-19 pandemic. Hundreds of staff across the institution responded and of course our Faculty did its fair share too. A team of staff started to adapt their research in infant lung function to develop new technological solutions to assess respiratory functions in adult patients to help with their COVID-19 recovery. This work is still ongoing. Another team of staff, made-up of 70+ volunteers across the Faculties of Science and Technology and Arts & Creative Industries pulled together to respond to the chronic shortage of PPE equipment across the hospitals in the London region. They worked long shifts over 38 days, 7 days a week to produce over 67,000 face shields for the healthcare workers which included our own nursing staff and students working in Covid wards. To be working with such fantastic staff and students makes one nothing but proud. (read more pp. 05-06)

OPEN DAYS

Join us at one of our Virtual Open Days

Our online events are a chance to meet us online and find out more about our practical resources and great north London campus. Talk with staff and students and find out more about your subject through interactive livestreams and via live chat rooms open throughout the event.

Book your place so we can keep you up to date with the latest programme.

OUR NEXT VIRTUAL OPEN DAY
Wednesday 07 October 2020

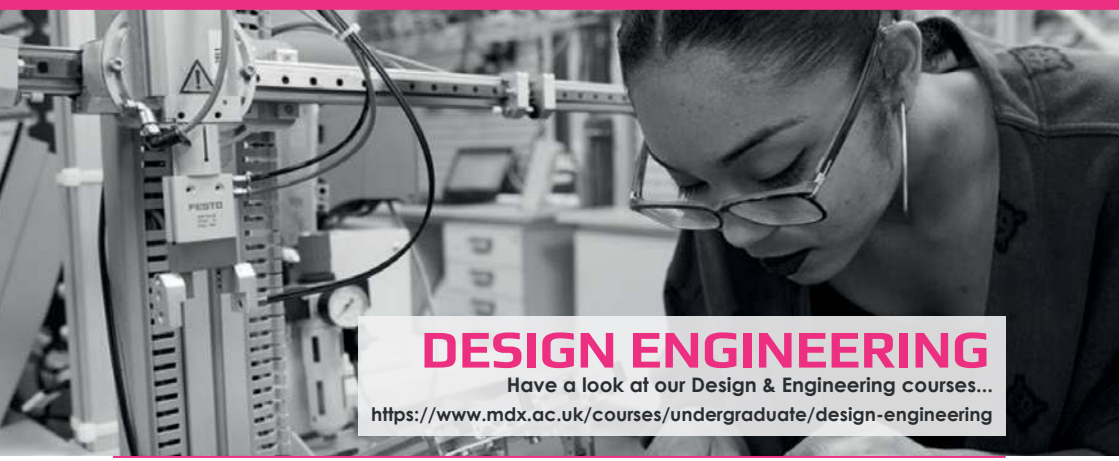
Visit us online for dates on future open days:
mdx.ac.uk/get-in-touch/meet-us/ug-open-days

BOOK YOUR PLACE
app.geckoform.com/public/#/modern/FOEU02440lwL19tC

PRODUCT DESIGN

Have a look at our Product Design BA & Product Design Engineering BEng/MEng courses...

https://www.mdx.ac.uk/courses/undergraduate/product-design
https://www.mdx.ac.uk/courses/undergraduate/product-design-engineering



DESIGN ENGINEERING

Have a look at our Design & Engineering courses...

https://www.mdx.ac.uk/courses/undergraduate/design-engineering

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