Design perspectives:

design skills.

Design Council's mission is to make life better by design.
We work with people to create better places, better products
and better processes, all of which lead to better performance.

We commission pioneering evidence-based research,
develop ground-breaking programmes and deliver influencing
and policy work to demonstrate the power of design and
how it impacts three key areas of the economy: business
innovation, places and public services. We bring together
non-designers and designers – from grassroots to
government – and share with them our design expertise
to transform the way they work.

Contents

Introduction

In March 2020 Design Council launched its new strategy which sets the direction of work for the next four years. It has identified three strategic priorities where the greater use of design could make a significant difference and subsequently benefit peoples' lives: improving health and wellbeing, enabling sustainable living, and increasing design skills.

Design Council believes that the development of design skills across our current and future workforces is essential. This report intends to explain why. It considers the importance of anticipating the post-COVID-19 economic recovery as well as other ongoing challenges, such as the impact of automation and the climate crisis. It describes the skills we will need and why they are so significant, the opportunities that they create and barriers to taking them up, and finally the work Design Council will do to help increase the use of design skills in the UK.

What is design?

3H

Head
Problem solving
The ability to visualise and conceptualise the intangible.

Heart
Humanity centred
The passion and curiosity to design solutions that are right for people and planet.

Hand
Practical skills
The technical abilities to enable the end goal to be reached.

Critically and purposefully creative – understands the ways things are now, sees what is not acceptable and imagines what it ought to be in the future.

Daring and original – looks at old problems through different perspectives or frames, is playful, daring and cheekily provocative about what could be

Doesn't jump straight to a solution – understands the problem first...

...**and is comfortable with simply posing questions or provocations** – for others to respond to

Humble – recognises that you don't have all the answers or ideas

Synthesis – brings together and combined ideas (from lateral places), sees how elements fit into a bigger whole

Iterative and reflexive – thinks through making things (makes a 'move', sees what happens, makes the next move based on that)

Creates a plan of action for turning ideas into change

Is ok with ambiguity and change – sets out on a path without knowing what the answer will be, and being ok with an idea changing over time

Tenacious and resilient – sees things that don't work as learning points, and keeps eye on the goal

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People at the heart – deep empathy for whom you're designing for and with, understands different perspectives, ethical implications and personal blind spots

Inclusive – communicates visually and inclusively so that everyone can get involved, and values diversity and difference

Asset based – starting with what is strong, not wrong, and physical, natural and cultural assets

Builds relationships and connect the dots – between ideas and energy that are already there

Curious – to find out what is happening, existing contexts, and how people respond to new ideas

Collaborative – working with others to bring in different skills and perspectives and co-design ideas, and support others to use design

Facilitates listening and sharing – creates dialogues between different points of view, to create new meaning and shift power

Acts as a trigger for change – knows that your attitude – creative and action-oriented – inspires the same in others

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Thinks through making - imagines what could be through physical or visual artefacts

Mastery of materials – understands materials, whether physical (e.g. clay) or abstract (e.g. data, power) and knows how to manipulate and handle/change them

Circular – uses existing assets or materials and designs in how they can be re-purposed at the end of their current use

Makes invisible visible and complex understandable and useable – to see where to act

Makes things to spot errors and to show others what could be possible to get them to join in

Makes things desirable, convenient, enjoyable and communicates values – so they stand out and people want to buy or use them

Provides choice and flexibility in how things are used or accessed

Types of making skills
Drawing and sketching; graphic design, service/interaction design, prototyping, building and construction, programming, digital visualisation, drafting and layout, textiles/sewing, fine arts, craft, material design, advertising and branding

Addressing current and future challenges

The uncertainty that is always present in our lives and our common existence – with our family, communities and citizens around the world – has rarely been more obvious than at the time we are publishing this report: during the coronavirus pandemic. Whether it is the threats to our health, our jobs and financial security, the pattern of our daily lives and the length and impact of our confinement during lockdown, making predictions and plans can seem almost pointless. Design skills and mindsets, adept as they are at dealing with uncertainty, are vital, both in adapting in the heart of the coronavirus crisis and in finding our way out of it.

Over the past few months, we have seen countless examples of design in use: designers coming together to use their graphic design, engineering, digital, manufacturing and urban space skills to respond to the crisis. But we have also seen many non-designers using a design mindset, of being resilient; pivoting and adapting what they do, to a new set of needs, circumstances or constraints; being resourceful, creative and improvising as they go. From businesses shifting production from honey to hand sanitiser, to local mutual aid groups designing novel ways to connect neighbours with supplies, to teachers delivering online lessons and resources to help engage students who have lost the structure and stimulation of school life.

As the pandemic shows, design skills and mindsets give people agency and choice. They allow people to have an idea and turn it into action, to contribute to a goal or a challenge. Even when the picture may look uncertain – not only due to coronavirus but also other long-term changes, such as job insecurity as a result of automation or the impact of climate change – the use of design skills can help us recover. Ensuring that people have these necessary skills to thrive must be the priority of any government rising to the considerable economic, social and environmental challenges that the next 10 years could hold.

The pressing issues

This paper draws out what Design Council believe are the most pressing issues in relation to design skills. It builds on a workshop with stakeholders* held in February 2020.

Issue	Challenge
Increasing automation	How can we protect more people from the impact of full- or part-automation of roles, and prepare them to take advantages of the changes coming from the fourth industrial revolution, working alongside machines and AI[1]?
Creating a better understanding of the value of design and design skills among the public (especially parents of school-age children), educators, businesses, and the public sector.	How can we grow the understanding of, and demand for, the skills that will be needed in the workforce of the future, leading to significant gains in innovation, productivity and creativity?
Evolving nature of design	How can we ensure that the existing design workforce can keep its skills up to date, regardless of the size of enterprise they work in or the design sector they come from, so they can use their talent to address social and environmental challenges as well as economic gain?
Economic and health inequalities	How can we give people the design skills and mindsets to access higher levels of employment and help their businesses become more innovative and competitive, reducing the negative health outcomes that come with poor economic performance, particularly in left behind places? And how can we support communities to use design mindsets so they can take their own ideas about how to improve their health and wellbeing, and turn them into action?
Climate change	How can we develop the skills and innovative approaches needed to mitigate and adapt to the impacts of climate change, achieve the UK's commitment to reaching net-zero carbon emissions by 2050, use the least natural resources and reuse materials, protect our environment, and reduce waste and consumption?

Future skills and mindsets

The changing nature of work has engaged policymakers, think tanks, academics and institutions in recent years as the evidence of what automation means becomes clearer. The ONS has said that 1.5 million jobs are at high risk of complete automation, but PwC have gone further, suggesting it could be 30% of jobs. Apart from those that disappear altogether, far more jobs will fundamentally change in nature with an estimated 60% of roles having some tasks which are automated. And women are more likely to be negatively impacted by these changes.[2] A huge range of jobs will be affected across skills levels, from delivery, sales and customer services through to financial services and healthcare sectors.[3]

Automation need not result in a permanently smaller workforce, however, and new roles will emerge to complement and augment tasks that are automated. But these new jobs will require a particular type of skill and mindset, to work with machines and act as the translator between AI and human intelligence.[4] The skills that will be in demand throughout this fourth industrial revolution will be intrinsically human, taking the power of machine intelligence and adding into it what machines cannot: skills and mindsets that are curious and empathic, sensing and accessing wisdom and knowledge which is intuitive and ecological. And those which are creative: making an imaginative leap to something new and radical and presenting it in a tangible form which others can engage in.

Now, as our resilience and creativity are being tested to an extreme degree during COVID-19, we see the core of ingenuity and compassion that gives design its meaning: people are innovating at speed to care for others, developing new approaches to services or processes that have been forced to change in nature, and bringing together those deeply personal responses to present struggle and chaos with the bigger, interconnected system of which we are all a part.

New jobs that emerge as a result of automation will require a particular type of skill and mindset, to work with machines and act as the translator between artificial and human intelligence.

Understanding design skills and their value

As the diagram on page 7 shows, design skills are a skillset and a mindset – a particular way of thinking about a problem, putting materials together to achieve a function[5], creating meaning that leads to new ideas. They use our head, heart and hand. The head enables us to frame the right questions, explore diverse types of knowledge and make a creative and daring leap to an answer; the heart tells us to empathise with the people who are affected, understanding what works for them while thinking about the collective impact on others and our planet, as well as building relationships with organisations and individuals that might be involved in future solutions; the hand puts our creativity into use, working with materials to bring ideas to life and manipulate them into prototypes and real life objects and digital products and systems.

Design Council is not alone in seeing these skills as among the most vital in the future. The World Economic Forum (WEF) does too.[6]

"New technology adoption drives business growth, new job creation and augmentation of existing jobs, provided it can fully leverage the talents of a motivated and agile workforce who are equipped with futureproof skills to take advantage of new opportunities through continuous retraining and upskilling. Conversely, skills gaps – both among workers and among an organization's senior leadership – may significantly hamper new technology adoption and therefore business growth."

Creativity, originality, initiative, critical thinking, attention to detail, flexibility, complex problem solving, emotional intelligence were foremost among the skills they identified, and they correlate heavily with the skills most used by designers. Evaluation, analysis and ideation were also identified as important and feature prominently in the WEF Top Ten skills that are growing in significance.[7]

Design skills are crucial because they allow us to:

- comprehend complexity and find out where to act

- deal with uncertainty by trying out different solutions, improvising, seeing what happens, and developing workable solutions

- be daring and imaginative, dreaming up new ideas or connections, and making them real

- convene and collaborate with everyone who has an interest, joining the dots between the many perspectives that every challenge has, knowing there is no single 'right' response and finding the best possible answers

- work with materials to turn ideas and questions to life and bring about change.

Design skills and mindsets are not only used by designers. We all use them from time to time, and from job to job. Creativity is inherent in us all, it just needs to be unlocked and unleashed. Design skills – and the confidence that goes with the ability to take an idea and make it real – help to do that, and can have a transformative effect on ourselves and the wider community allowing us all to contribute fully to a better future.

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The barriers and opportunities we face

If the case for these skills is as strong as we believe, why do we still need to make it? Our research has found that in 2016 there were 2.5 million people using design skills significantly in their jobs, and almost 1.7 million designers working in disciplines encompassing roles from graphic to industrial to architectural designer. But this research also identified skill shortages in the design industries alone that cost the economy nearly £6 billion per year.[8] The cost of not maximising the full potential of design across the whole of our economy and society must be many factors higher. The barriers we set out below must be overcome if we are to exploit fully the potential of design.

Limited general understanding of the full value of design, but increasing interest in making and 'pro-sumerism' (creating consumer items yourself).

Many people still share the narrow perception of design as a purely visual and aesthetic discipline. But the urgent demands of our changing world require us to broaden our skillsets to include the cognitive and physical capabilities that design demands, and embed them deep into our daily lives. Sustainability requires us to bring our skills to bear closer to home: not to become insular or cut off but to engage with the world in a different way. Rather than mass manufactured goods, heavily reliant on extracting raw materials and transported across the globe, we need to think about how we reuse and repurpose what we have locally in ever more creative ways, growing our resourcefulness. The maker culture will be a key route out of our environmentally damaging system, and it will require more of the head, heart and hand skills we are determined to see spread wider across the country and the world.

Design is undervalued in education.

Design needs to break into the mainstream of thought and practice in many more areas of society, particularly in state schools, where the subject is undervalued by many parents, heads, and policymakers. A strong indication of this is the sharp decline in numbers studying design and technology at GCSE from 437,000 in 2002 to just 99,000 in 2019,[9] and a shortage of specialist teachers.[10] In Higher Education, a rapid return on investment of tuition fees may be discouraging students from studying design, where courses require more expensive materials to teach and practice.[11]

However – and perhaps in response to this – there is a rich seam of grassroots activity beyond the classroom. The Royal Academy of Engineering alone has identified more than 600 organisations providing 'inspiration activities' in schools.[12] From Saturday clubs and after-school activities, design challenges and awards, innovative resources and networks for teachers, school partnerships with voluntary organisations, cultural institutions and businesses, maker spaces and mentoring, we can see the passion and drive that exists for design. We need to bring these activities and this enthusiasm into the mainstream of classroom learning. The benefits of a more rounded, broader education which includes the skills we are discussing are widely acknowledged.[13] Opening up diverse ways of thinking and practical skills to more young people gives them more opportunities and ability to discover new disciplines and crafts, and to make more of their own talents. In turn this feeds into a more creative and adaptive workforce, and better business performance.

Skills shortages in the design industries alone cost the economy £6bn per year.

Design skills are not evenly distributed across our society.

The design economy has a diversity problem. It is 78% male, despite women making up 63% of the students who study design subjects in higher education. In product and industrial design, the workforce is 95% male. There are substantial gender pay gaps in many roles, and women are less well represented in management roles. White and Asian people are proportionately represented, but there is under-representation of black minority ethnic groups. Geographically though, the design economy is heavily skewed towards London and the South-East, a trend which is growing rather than diminishing.[14] If we are to address national inequalities, design skills and the jobs that utilise them must be more fairly spread between the sexes and between other parts of our society, especially across the poorer parts of the country, where more good quality jobs are urgently needed. Routes into design roles must be clearer and easier to access. We also found a strong correlation with higher socio-economic classes and design jobs, an obvious function of the degree-level qualifications required for so many roles, and making a strong case for routes from GCSE through to university in design subjects.

Design is evolving, and designers need to keep their skills up to date, which can be costly, time-consuming or difficult within an agency model.
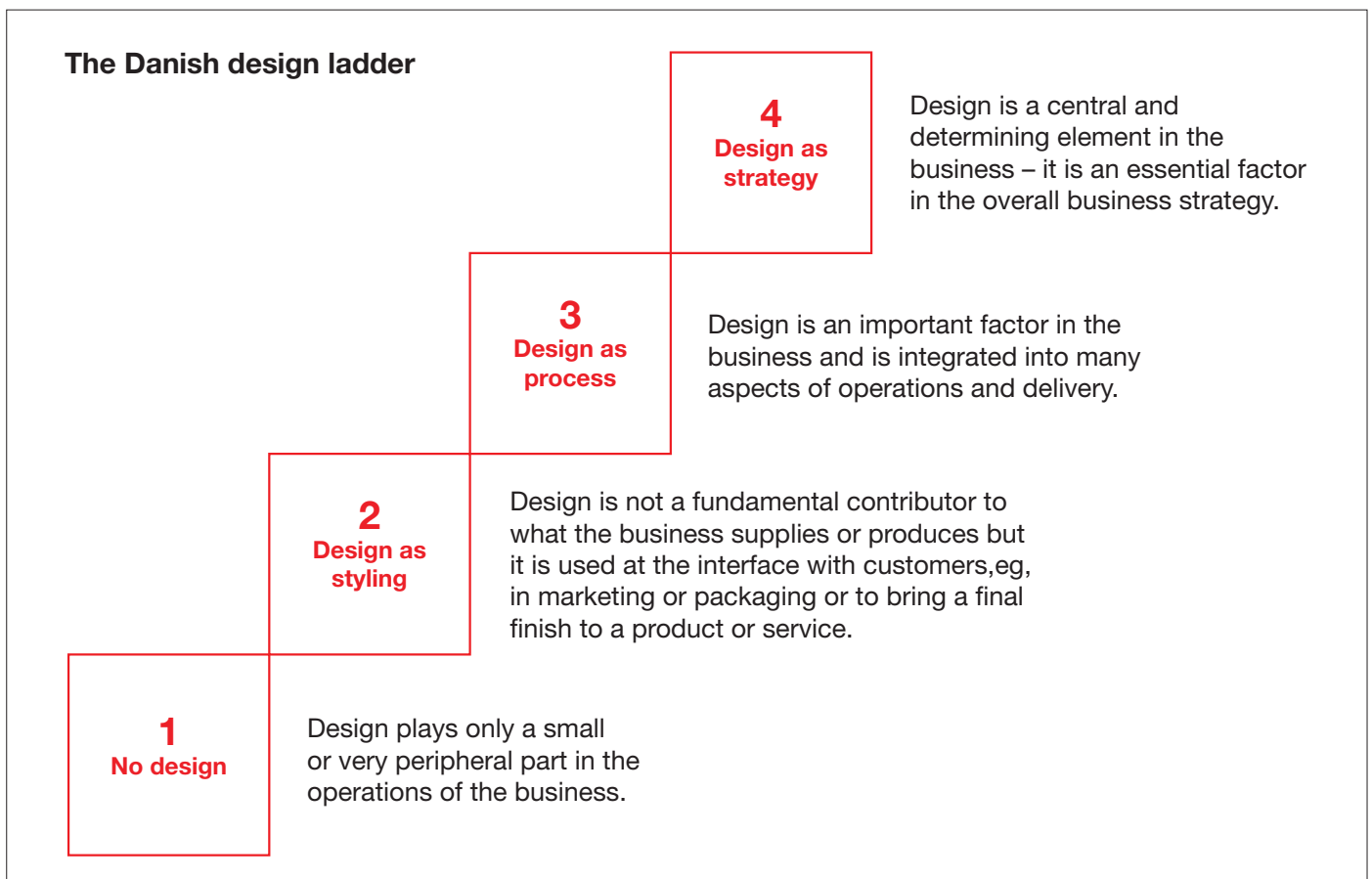
As technology advances, so do design skills. The cost of keeping up to date, both in the equipment and time for retraining is an issue, particularly for small businesses,[15] which struggle to find the time and can prefer to invest in more rapid return on investment parts of their business. Furthermore we see that designers do not always get the chance to work on social or environmental challenges (or to work in a socially or environmentally sustainable way), and if they do, they are not always able to work holistically or systemically. This again is due to lack of awareness about emerging design practice in this space, but also because the predominant design agency model often prioritises profit (its own, and its clients) rather than wider value, or only works on one part of a problem rather than working collectively with others.

Businesses are not using design enough.

The Danish 'design ladder' concept[16] illustrates the extent to which design is used in business as four 'rungs', from playing only a small or peripheral part, up to it being an essential part of their business strategy. Given that only 10% of UK firms were on this highest rung and 40% were on the lowest, there is massive scope for increasing the use of design and growing the value of businesses and the economy.[17] Research by McKinsey has shown that 40% of businesses do not talk to their end users during development, and 50% had no objective way to measure their design output, whereas businesses that made the most use of design demonstrated substantially increased revenues.[18] Factors holding back businesses from making more use of design, and thereby demanding the skills we think are crucial, include their knowledge base and resources, which stem from their size, as most of the businesses under-using design tend to be smaller.[19]

Chief Design Officer positions are becoming more common in business, driven in part by the growth of the importance of digital processes and interactions, as more companies recognise the benefits of holistically designed business systems and customer interfaces for their bottom line.[20] The benefits can be spread through the entire workforce, though. Designers are 29% more productive than the average employee[21], and businesses exposed to the transforming potential of design endure: 91% of businesses supported by Design Council's Designing Demand programme were still operating after five years, compared to 49% of comparable businesses.[22]

The Danish design ladder

4
Design as strategy

Design is a central and determining element in the business – it is an essential factor in the overall business strategy.

3
Design as process

Design is an important factor in the business and is integrated into many aspects of operations and delivery.

2
Design as styling

Design is not a fundamental contributor to what the business supplies or produces but it is used at the interface with customers,eg, in marketing or packaging or to bring a final finish to a product or service.

1
No design

Design plays only a small or very peripheral part in the operations of the business.

The public sector has scope for more design.

In the public sector there has been an awakening in recent years to the value of design, and service design is becoming an important part of local authority provision, making key public services and places more responsive and better able to deal with the challenges of the modern world.[23]

Movements such as Co-design put the people they are serving at the centre, building capacity so that the public can be part of the design team, which helps to de-risk public services that are designed in isolation. The UK's Policy Lab is a world leader in the policy innovation space, and the Government Digital Service has now infused its digital design principles throughout departments and agencies. But there is still massive untapped potential for expanding design methodologies and skills into our public sector, particularly in the planning and regulatory space, in the layer of government that sits between local authorities and national government, and in the voluntary and community sector which is a critical piece of how we deliver outcomes, often funded by, but independent from, government.

Resource constraints are a constant struggle for central government and local authorities, for example almost half of local authorities have no dedicated in-house design capacity in their planning departments,[24] but people's needs can often be met through innovation and the willingness to re-frame challenges and focus on the service users.

Designers are 29% more productive than the average employee.
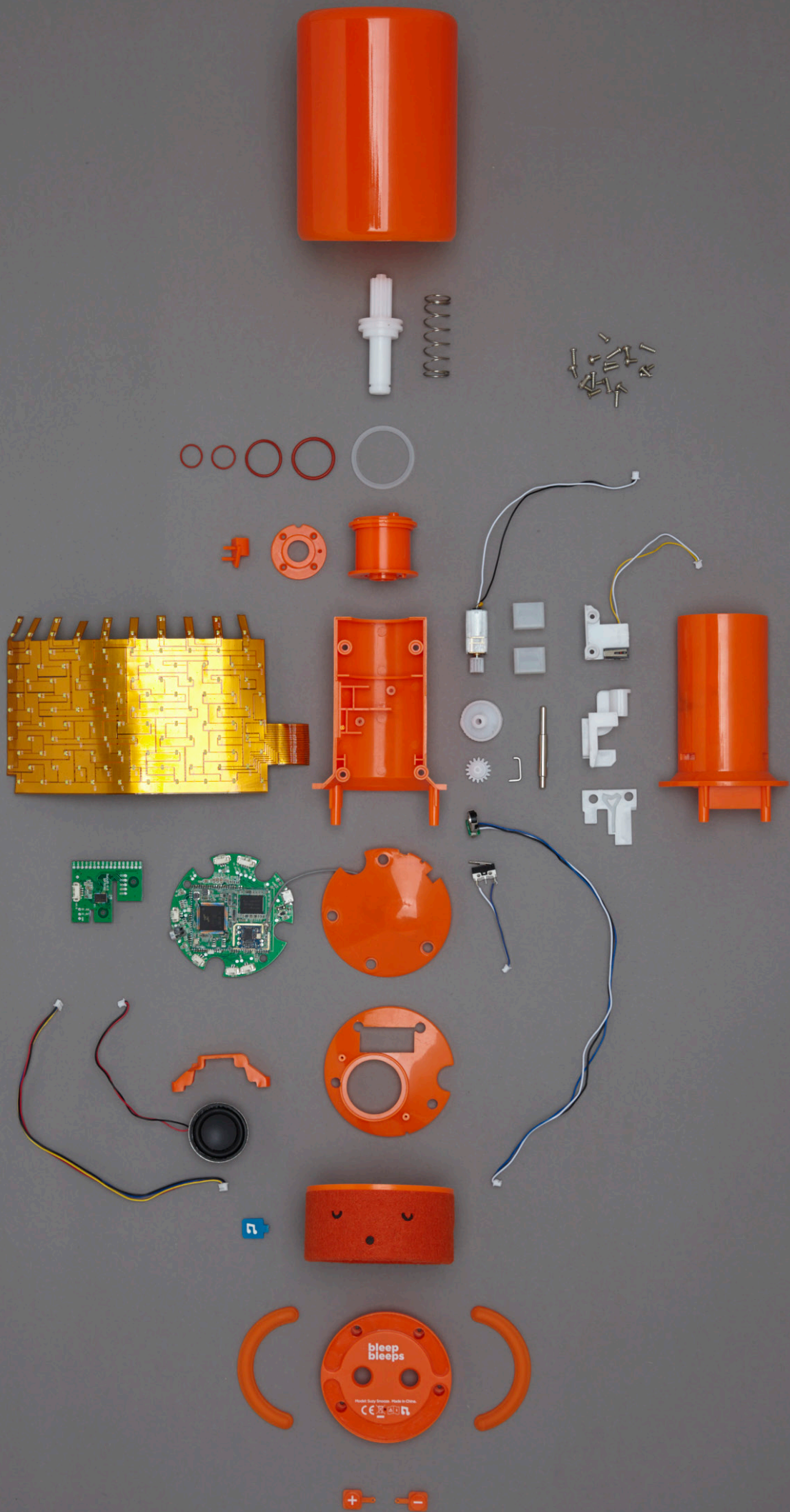
Designing beyond coronavirus

Responses to the coronavirus pandemic have shown us the transformative potential of design for improving and, crucially, saving lives. From the response to the desperate need for ventilators to PPE and hand sanitizer to the daily need for food distribution systems, products, services and processes have been reimagined and repurposed for the public good. Better coordination and a more evidence-based effort would be even more effective (difficult, but not impossible, when evidence is scarce), channelling designers to the right places. But also understanding that design mindsets are being used in communities, charities and the public sector without any formal design training. Organisations need to support the continued and increased use of this creativity and learn by doing approach, as Design Council does.

We are already looking ahead to a world beyond the pandemic: work, health and care, transport, the environment, trade, social security, tax – all subject to conjecture and analysis about how they will change. Technology is playing a central role, but it must work for us in the future, not make us its servant. We can design out some of the problems that have put such enormous pressure on our institutions and affected our lives so greatly, if we start with people and the planet, understand exactly what they need and form a more equitable relationship between them.

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The role of Design Council

Design Council plays a key role in promoting and driving wider awareness of the value of design, and in championing the mindset of critical thinking and creativity. We have ambitious plans to build this knowledge and understanding so that more people know about design skills, more people to acquire them, and that these skills can be fully exploited in tackling key priorities: inequalities in health and wealth, sustainable living, and work insecurity.

We will measure the wider value of design and communicate this to key audiences.

We are continuing our ground-breaking research into the value of design by adding in fresh research into the social and environmental value of design, and into the economic impact of the wider impact of design, which sits around the innovation itself. We will gain a new baseline understanding of design skills in the public sector, in business and across the public and of emerging design roles and the depth of design skillsets. We will compare the use of design across the UK and internationally, establish a network of research associates who can help us define even more comprehensively the value of design, and draw lessons from how other countries invest in design.

We will align ourselves with those advocating for a broad-based education which includes design, and promote the diversity of grass-roots design activities. We will continue to advocate for multi-disciplinary and transdisciplinary design education at higher education level.

We will research and share the latest design practice on environmental, social and systemic design so that designers can maximise their potential for humanity's good.

We want to identify how designers are using their skills to tackle social and environmental challenges, and share this knowledge. We will therefore be carrying out research to find out what is going on. These evolving approaches can then be opened up to the wider world as examples and templates for action, accelerating their use for the benefit of everyone.

We will support business, public sector professionals and communities to use design skills and mindsets to achieve change.

Building on the learning from our programmes – Design in the Public Sector, Spark, Transform Ageing, and Designing Demand – by 2024 we will have helped close the skills gap across the UK through our design skills-led approach. We will reach another 500 businesses, 5,000 community members, and 2,500 public servants and their stakeholders who will be enabled to use design skills, particularly in the most left-behind places. We will reach out to the places that have missed out on economic prosperity for too long, empowering people to use design skills to improve their places and lives.

We will continue our work with central and local government to help younger and older learners to unlock their full potential, and we will work with partner organisations to develop further research, programmes and initiatives which help people to use the skills they have or gain new skills to improve our environment, our healthcare systems, our economy, places and prospects.

We will roll out our Inclusive Environments programme and create a Place Academy to help local organisations come together to change and improve their communities. And we will continue to communicate clearly to spread the benefits of design skills, as well as develop new national policy proposals that help government to bring these skills to the fore. We want government to have the policy tools and evidence so that they can play their role in bringing design skills to as many people as possible.

Achieving our ambitions, and going beyond them where we can, is a task that we know is shared with many groups, institutions, practitioners, policy experts and businesses. Collaboration and cooperation are in everything we do, and so we want to work with those who seek the same goals. We are already linking up with many, but we want to hear from more of them. In joining our efforts we can address some of the toughest economic, societal and environmental challenges of our time.

We are continuing our ground-breaking research into the value of design by adding in fresh research into the social and environmental value of design.

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