Design Council

Beyond Net Zero

A Systemic Design Approach

Published April 2021
Registered charity: Charity no. 272099

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Design Council is the government's advisor on design. Our 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 research, develop programmes and influence policy to demonstrate the power of design. We bring together non-designers and designers from grassroots to government and share with them our design expertise to transform the way they work.

Enabling sustainable living is one of our three key priorities outlined in our Strategy 2020-24. As part of our work to improve design standards and promote sustainable development, we have been conducting research into design for net zero, at the same time as developing – through our own programmes of work and engagement with our Design Council experts – frameworks that support designers to come together to work on complex topics. This work can then be used by the 1.69m people working in the design economy in the UK[1] as well as those elsewhere, the design students who will join them soon, and businesses and commissioners wanting to take a design approach to achieve their sustainability goals and climate commitments.

The potential of design to achieve real change

The challenge of net zero

We are facing an enormous challenge in dealing with the climate crisis. Despite promises and good intentions across the globe, we continue to see increasing emissions, environmental pollution and rising inequality. But the global pandemic is starting to change the way we view things. Alongside the extraordinary pain, trauma and hardship, it has brought an increased awareness of the way things are interconnected, how human development over the past centuries has impacted the environment and how the changes affect us all.

Alongside health interventions, the pandemic has brought a renewed focus on the environment, with many countries, organisations and businesses committing to net zero targets, including the UK. Some are even moving beyond this, committing to transition to decarbonised and carbon-negative economies.

This has prompted us to explore how we can harness the knowledge and wealth of past and current sustainability initiatives in this moment of consciousness and energy and how design can best play a role.

NET ZERO:
a state in which the greenhouse gases going into the atmosphere are balanced by an equal amount being removed from the atmosphere.

CLIMATE MITIGATION:
the attempt to reduce the production of greenhouse gasses to minimise the resultant warming.

CLIMATE ADAPTATION:
the process of actively reducing the risks posed by climate change.

SUSTAINABILITY:
meeting the needs of current generations without compromising the needs of future generations. This demands living and growing in ways that support the wellbeing of all people and the environment we depend on indefinitely.

1 • Design Council, 2018, Design Economy

The potential of design to achieve real change

The role of design

This challenge is not only technical; it is creative and social. Design has a critical role to play. Design builds a bridge between technological research and innovation and their application to social practice. Designers work across virtually every relevant field – including infrastructure, transport, retail and advertising, housing, leisure activities and public services – and have the capacity to connect silos and sectors. They encompass a wide array of professionals (from graphic design to urban planning), and work at different levels (from products to policy).

"We could have any number of technical solutions but without making a human link they are going to fail. This is where design is critical - closing the gap between the theoretical take-up and the actual implementation of something that is going to change the world… We need to design the massive transition to net zero so that the consumer sees the benefits and sees that reduction is ok in the short term."

- James Taplin, Innovate UK

For the most part, designers are not yet using their skills and knowledge to deliberately support the green transition in the way that they should and could.

However, there are many individuals who are working – or who want to work – in this way. The designers we've interviewed here are working deliberately and systemically to help transition towards net zero or to support climate mitigation or adaptation. But, in the view of many of our interviewees, much design work is currently superficial, making incremental changes without tackling underlying issues. The practitioners we worked with agree that for the most part, even well-meaning designers have a limited conception of the tools and approaches necessary to design for sustainability and other important emerging issues.

Of course, that doesn't even begin to address the impact of the all-too-many designers who are not sufficiently aware of sustainability issues and the extent of the current climate crisis and are instead continuing to create products and services that do harm to the environment.

Over the summer of 2020 a team at Design Council set out to research how design methods, frameworks and principles were being used to achieve net zero, including circular and systemic methods. We wanted to work across business, public and the third sector, in alignment with the UK government's target outcome of net zero emissions by 2050.

Our intention was to look across the design economy to understand how design is used in different ways. This could include the design of regenerative built and natural environments, how local councils deliver their services and steward their areas towards better environmental outcomes, and supporting businesses that seek to embrace more sustainable choices that will put both people and planet on an equal par with pounds and profit.

We found, through this work, that many experts agree that aiming for net zero alone is not ambitious enough. Net zero allows for the continued production of greenhouse gasses, said to be balanced out by other factors. It can create loopholes such as importing high-emission products from overseas and engaging in temporary offsetting solutions. Net zero plans often rely upon continued global inequality. Some of the approaches have been called 'climate colonialism[2]'. Indeed, despite pledging net zero goals, many countries are able to continue with a 'business-as-usual' approach[3]. Further, these goals do nothing to address other destructive behaviours such as loss of biodiversity and environmental pollution.

We believe there is a need to focus not only on fossil fuel reduction but on broader regenerative goals. It is vital we take a holistic approach that encourages actions that are environmentally and socially sustainable.

Given there are many tools and techniques already in use, we also decided that another 'toolkit' was not necessary. We also found that many designers are already working systemically. We concluded that our role was twofold:

- To provide greater awareness and credibility to the growing practice of systemic design and create a framework that allows designers from different disciplines to come together with non-design professions and communities to undertake this work.
- To use our position to influence policy, regulation, standards and the design commissioning system to make it easier for designers to work in this way.

2 • https://www.resilience.org/stories/2020-11-03/net-zero-emissions-by-2050-leadership-or-climate-colonialism/

3 • https://www.politico.eu/article/un-climate-chief-patricia-espinosa-emissions-reduction-failure/

Enquiries into design practice

ORIGINAL BRIEF

- Research methods designers are using for net zero and sustainable living.
- Create case studies across the design economy.
- Create a toolkit for non-design public sector and professionals to use.

KEY INSIGHTS

- Net zero is not enough. We need to focus on broader concepts of sustainability or regeneration.
- There is lots of technical knowledge already out there but it is not accessible to many or not being used in the right ways.
- Designers do need to work more systematically.

REFRAMED BRIEF

Support designers to work more systematically.
Propose a systematic design framework. Other things that need to happen include:

- Creation and implementation of policies, procurement and regulation that allow designers to work more towards these goals.
- Guidance on design ethics, equal partnership working, and sustainability terminology.

Enquiries into design practice

Our process

INITIAL RESEARCH

The first phase of our work was to collate a base of tools, methods, and frameworks within which to ground the project. We referred to a number of individuals and teams working towards net zero to find what tools were common in this field. Interestingly, while many of the tools had fundamental elements in common, none stood out as widely accepted standard practice, though the Ellen MacArthur Foundation's Circular Design Toolkit was popular, especially with educators. Each team seemed to have their own preferences for the specific tools that they used, which all aimed, ultimately, for the same outcome.
See annex A for an overview of the tools we came across.

OUR OWN PRACTICE

Design Council has a rich history of sustainable living programmes, particularly around the built and natural environment. These served to consolidate the research. Previous work includes Adapting public space to climate change: public space lessons, Grey to Green: how we shift funding and skills to green our cities and Hallmarks of a sustainable city, and we're currently working on Homes England's sustainability framework. Over the past year, we've also been creating more systemic design practice in our work with local government, such as the Shaping Places for Healthier Lives programme. Our own practice informed the process and played a part in our synthesis of the research.

INTERVIEWS WITH DESIGNERS

We reached out to a number of experts working towards net zero or sustainable practices more generally. These were experts in a diverse array of fields. We sought actively pioneering approaches, products, services and initiatives to demonstrate the value of design-led approaches when responding to the climate crisis. Not all would describe themselves as designers but each uses design as a vital part of their work.

This piece of work sits alongside another piece of our research on evolving design practice. The latter takes a look at designers who are working systemically and going further to push their practice. We extended invitations for others to help build this 'next practice' separately. This is due to be published in summer 2021.

OUR INTERVIEWEES

DR OLUTAYO ADEBOWALE – Sustainability Strategist. Tayo is the Director of Cirkadia. She served as a Board Member of the GB Forestry Commission, and Natural England. Current roles include NW Regional Flood and Coastal Committee (Environment Agency: Lead for Sustainable Economics), NW Forestry and Woodlands Advisory Committee, Built Environment Expert and High Street Task Force Expert.

ORSOLA DE CASTRO – Fashion Design. Orsola de Castro is an internationally recognised opinion leader in sustainable fashion. Her career started as a designer with the pioneering upcycling label From Somewhere, which she launched in 1997 and worked with until 2014.

LIZ CORBIN – Materials Researcher and Designer. Liz is Metabolic's Research Director and leads the Metabolic Institute – Metabolic's research think tank.

DAN EPSTEIN – Infrastructure/built environment. Before founding Useful Projects, Dan was the Head of Sustainable Development and Regeneration for the London 2012 London Olympic Delivery Authority.

TARA GBOLADE – Architecture. Tara is a Co-Founder of Gbolade Design Studio, a sustainability-led architecture practice that uses community-led insights to respond to development briefs. Tara is also a winner of the RIBAJ Rising Star award.

DR MERRYN HAINES-GADD – Material design. Merryn is a design, innovation and sustainability researcher and has embodied this role in various capacities within both academia and industry.

ROLAND HARWOOD – Innovation and placemaking. Roland is the founder of Liminal, a collective intelligence community focussed upon addressing complex and collaborative challenges working with the likes of the United Nations Development Programme, Nesta and the Wellcome Trust.

JULIE HJORT – Strategic design. As Programme Director at the Danish Design Centre, Julie works to create meaningful interactions between people who do not usually interact: companies, innovators, technology specialists, decision-makers, cities and designers.

DR MARIALE MORENO – Strategic and product design. Mariale is a design and innovation researcher who has, through both academic and independent consultancy roles, worked with many organisations to incorporate the principles of sustainable and circular design.

SUE MORGAN – Landscape design and nature-based solutions. Sue is the Executive Director of Design Council. She is also a Board Member of the Parks Alliance, a Civic Trust Buildings and Landscape Awards Assessor, a Landscape Institute Awards judge and Heritage Lottery Fund Mentor.

KAMONNART ONGWANDEE – Fashion Design. Kamon is a Bangkok-based designer, researcher and consultant specialising in sustainable fashion and textile design. She is pioneering the Slow Fashion movement and is currently Thailand country coordinator for Fashion Revolution.

ALAN POTTS – Product Design. Design and Innovations Director at DS Smith.

BEN REASON – Service Design. Ben is a founding partner of Livework, having set up the company in 2001. His focus is on keeping Livework at the forefront of service design practice.

JAMES TAPLIN – Strategic design. James is innovation lead for Urban Living at Innovate UK. With an academic background in ecology and environmental economics, he focuses on understanding systems to create strength and resilience.

NESS WRIGHT – Service Design. Ness involves people in the design of services, from public transport to energy, healthcare and government. As Sustainable Design Lead at Snook, she combines expertise in design with a postgraduate degree in Adaptation to Climate Change.

We conducted a series of interviews guided by the following questions:

- Tell us about an initiative you've been involved in that has created real environmental impact (towards net zero or using another framework or target).
- How did design play a part in the development of this initiative?
- What tools or processes did you use in the planning and development stages?
- What tools or processes did you use in the measurement of impact?
- Was social impact considered as well as environmental impact?
- If you were to start another project now, who would you get involved and why?
- In your opinion, what is needed for more designers to work this way?

ELLEN MACARTHUR FOUNDATION

For the third phase of our work, we collaborated with the Ellen MacArthur Foundation. We ran a series of 'design sprints' to share our experiences of both designing for sustainability and communicating this work to designers and non-designers. Both organisations have a shared goal of developing design approaches that enable designers and non-designers to achieve positive change in circular design and sustainable living. Sharing our knowledge of how to communicate emerging understanding and design practice really helped focus our thinking and confirmed our initial feeling that we needed to continue to evolve our framework for innovation model – based on the double diamond – to show how it fits into a much wider process of transition.

Dr Olutayo Adebowale

Orsola de Castro

Liz Corbin

Dan Epstein

Tara Gbolade

Dr Merryn Haines-Gadd

Roland Harwood

Julie Hjort

Dr Mariale Moreno

Sue Morgan

Kamonnart Ongwandee

Alan Potts

Ben Reason

James Taplin

Ness Wright

Barriers to change

Through our research, we have collated a strong background of knowledge and thought from the field. There are also pockets of excellent design practice. However, this is not taking place at the scale needed to see broader change and address current complex social and environmental challenges. We identified a number of barriers to designing for net zero. The following is a synthesis of the interviews and conversations we had with our contributors.

1. LANGUAGE AND NARRATIVE

While the concept underlying the climate crisis is relatively simple, its implications and management are vastly more complex. People working in different fields have their own understanding of what the climate crisis means for their work. Different interpretations mean they find it hard to communicate this effectively with people working in other areas, leading to confusion or alienation, and preventing effective systemic approaches and interdisciplinary work. We have seen examples of this in the lack of coordination in government policy, in changes in direction, increasingly siloed teams, barriers to mobilising people and organisations left unsure how to act.

Although the ubiquity of the term net zero – now included in our national targets[4], corporate social responsibility goals and public sector targets alike – suggests a tangible and unifying goal, most of our interviewees were using language that is only used within their field or is not yet common in the mainstream. Their language and approach implied a set of differing goals that move beyond net zero. Examples include creating a circular economy, designing for sustainability, and designing for systems or regeneration. These less well-understood terms are unlikely to appear in political manifestos or company straplines. They need to become shared and better understood or translated in order to be used across fields.

"I don't use the term net zero; it's a concept more used in policy, from a business perspective. For example, EDIE network of businesses working with companies to become net zero. It's simple for businesses to understand. Academics have moved on, we were talking about this 20 years ago – now we talk about the circular economy and systems."

- Mariale Moreno

"Like the word design, the word sustainability means different things for different people. To make a difference you need to define what sustainability means to you"

- Alan Potts

Recommendation: Designers need to use terms that are clearly understood across fields such as the 17 UN Sustainable Development Goals. Terms must be agreed upon with partners from the beginning of the design process to define clear and meaningful goals.

4 • In June 2019, parliament passed legislation requiring the government to reduce the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050 • www.legislation.gov.uk/uksi/2019/1056/contents/made

2. COMPLEXITY AND COMPETITION WHEN WORKING WITH OTHERS

Work in the majority of sectors is currently – often by necessity – competitive rather than collaborative. Knowledge is kept as a valuable asset rather than being openly available so that others can further it. This limits innovation by preventing organisations from building on one another's achievements. Rather, each must learn and discover from scratch in isolation. The speed at which the Covid-19 vaccine was created is a perfect example of how quickly innovation can take place when the work is collective. We need a similar effort to make progress against climate change. There are many examples of collaboration and open-access knowledge. Using these as a starting point, we may be able to build more collaborative approaches to problem-solving.

"We did some research to inform a local authority's Climate Action Plan at the end of last year - they have a service design team and are doing really good work. We identified leading local authorities around climate adaptation - some were data-driven, some bottom-up, for instance using citizens' assemblies. There is so much knowledge sitting in that report that would be useful to other local authorities and I would really like to open it up."

- Ness Wright, Snook

In industries where it is common for organisations to work together towards a shared goal, such as a large built environment project, those companies with the most influence or resources often dictate the values and targets of a project. In these circumstances, when collaboration is most needed to get us to ambitious sustainability goals, we don't have a pre-existing framework to negotiate this form of complex working. With good practice and the right processes in place, collaboration between organisations can, and does, work.

"The complexity of partnership working is often overlooked. There is an increased risk with partnership working and with not taking the normal route. There needs to be a good understanding of how that risk is being shared, and then it's important that the risk is not pushed onto the smaller organisations… What is needed is open agreement at the beginning with everyone buying-in to them. That's what will get us to net zero."

- Dr Olutayo Adebowale

Recommendation: Designers and commissioners need to focus on creating equitable partnerships working from the outset of projects, ensuring everyone has an equal role.

3. ARBITRARY DIVISIONS

When looking to create value or act ethically, there is a tendency to differentiate between environmental and social approaches. The two are intrinsically linked and the false dichotomy hinders our capacity to think systemically.

We need to find ways of working that allow for a greater understanding of complexity and for dialogue that breaks down divisions. This will help to create consensus and, in turn, progress within our individual fields. Working directly together, scientists, designers, policymakers and activists will be better able to articulate what they need from one another and see how their actions directly impact the broader approach. Introducing new perspectives into each field also helps to identify and question assumptions that those within the field take for granted. Innovation in one field can potentially aid processes and solve problems in other areas but without crossing silos, this potential is lost.

"Repair and mending are now being hailed as one of the real solutions. But if you are a single mother with four kids you are not going to be repairing their clothes. If you are a garment worker you are not going to complain in case you get fired. So without social equity, you won't have environmental change. You cannot achieve respect for nature without all beings respecting each other."

- Orsola de Castro

"Initially, the material scientists I worked with were quite sceptical as to whether I – as a designer – would be of any value to our project but they later said that I had changed their view of what they were doing and given them a systems perspective. We brainstormed applications for new materials and technologies by getting them to think about the general properties of their material and therefore what it could possibly be good for, such as a barrier, a filter. Looking at these general concepts allowed them to extrapolate to new products and solutions.

Before academia, I worked in innovation with TRIZ methodologies and this idea-concept tool is one of the methods I became familiar with. I was able to help them think of new ideas without needing to have domain knowledge."

- Merryn Haines Gadd

Recommendation: Design plays a role as a bridge or translator across different sectors and professions. Design processes need to prioritise creating inclusive spaces which build shared language and relationships between different professions and value different ways of knowing.

4. A BLINKERED BOTTOM LINE

Traditionally, the 'bottom line' has been financial, and this is reflected in the way that most companies are incorporated, with all profit being for the benefit of the shareholders. This compromises corporate social responsibility policies. It is generally accepted that working in more ethical and sustainable ways comes at a greater financial cost. Though the concept of a 'triple bottom line' (ensuring that both people and planet benefit, as well as profit) has become more popular, it has yet to prompt real change.

The triple bottom line approach was intended to be a catalyst for system change. Its widespread use is a sign of good intentions. However, without an enabling environment that places sustainability alongside financial capital when considering business success, this concept is unable to prompt system-change. Instead, it has been co-opted as a tool for accounting and reporting, often encouraging organisations to take tokenistic approaches to sustainability. As a result, Elkington, who coined the term 'triple bottom line' in 1994, announced in 2018 that he wished to "recall" it. One of the reasons that many are currently calling for an approach that goes beyond net zero is they have concerns that a focus that stops at net zero will only encourage similarly superficial responses.

Measuring value

In too many cases, making real change can be risky and demands an investment of time, resources and money which people and organisations do not have an incentive to make. Too often, briefs for goods and services that do contain sustainability requirements severely restrict them due to demand on profit margins.

Most organisations aim to provide a quantitative measure of their outcomes. This restricts the scope of environmental value to what is easily quantified with current tools and understanding. Those who do quantify environmental value have failed to do so consistently across sectors. Unless a wider understanding of environmental value becomes demonstrable and accounted for, organisations will not pursue it.

Part of the reason we are blinkered with regard to a bottom line is that many of its harmful effects are not visible or immediate. Climate change is happening at a pace that does not align with profit margins or political terms. Despite much lip service, we just don't recognise the finite nature of resources. One way to address this is to engender producer responsibility.

There are some existing measurement frameworks – particularly around the architecture and built environment sector, such as natural accounting and the recent Dasgupta Review, which calls for a change in how we value biodiversity. As part of our forthcoming Design Economy, we are developing a methodology for measuring the environmental and social value of design alongside the economic value.

Recommendation: Designers need to benchmark and measure the social and environmental impact of their work. Design Council's forthcoming Design Economy 2021 will set out how to measure the wider social and environmental value of design and provide resources to help.

Societal and organisational culture change

Values and understandings are changing. Many of those in the younger generations are very politically active. They engage with digital platforms and social media, which can promote values-led goals across countries, communities of interest and disciplines.

However, this change is happening at a slower pace in organisations. There are forward-thinking organisations that are genuinely interested in change management and have strong policies in place. The growing B Corp movement places value and purpose at the heart of organisational strategy. However, others take more tokenistic approaches which allow them to cut corners while appealing to the same market. This makes it very difficult for ethical companies to compete.

"In the absence of clear government policy or fiscal incentives, we need business to take a lead in developing sustainable solutions that address our major environmental challenges including climate change, mass extinction and resource depletion. These ethical and forward-looking businesses should use their influence to encourage governments to adopt very ambitious environmental policies that in turn stimulate innovation. The transition to electric vehicles is a very good example. Innovators and disruptors like the Rocky Mountain Institute invested in early research, business leaders like Elon Musk adopted the research and created marketplaces, forcing other car companies to invest in research and development. Governments followed by adopting electric vehicle policies and fiscal incentives like the Ultra Low Emission Zone in London, which in turn have created rapid growth in investment in electric vehicles and charging points, superconductors, battery technology and new services, and a whole new area of design and engineering innovation."

- Dan Epstein

Recommendation: Design processes need to articulate and commit to the values that they want to bring into the world through products, services, and places.

5. WORKING SUPERFICIALLY

Much of the design work we came across was grounded in sustainable practices and demonstrated innovation. Nonetheless, many of the designers we interviewed felt that there was still a widespread failure to get to the heart of the issues and for design work to fulfil its potential. This is both due to constraining briefs and a lack of knowledge about what tools to use – or even where to begin – on the part of the designers. We need to design both more deeply and more hopefully, expanding our concept of what can be achieved. Only through first questioning and then redesigning fundamental processes and values will we be able to create sustained change. This means becoming aware of and questioning the assumptions that underlie contemporary practice. This includes questioning the assumption that sustainable, ethical results come at the cost of other measures of success; for example, financial gain.

It becomes difficult for designers to work at the required depth for the same reasons that ethical companies struggle to compete. Were ethical practices to form the foundations of our approach, building atop those foundations would be relatively easy. However, sustainability and ethics tend to be an afterthought. Instead, they need to be incorporated right from the initial planning stage.

"Designers don't know where to start or what the tools are. They don't have projects or clients that allow them to work this way"

- Ness Wright

CASE STORY

Salford Flood Defences, Dr Olutayo Adebowale

Salford has a long history of flooding. In 2015, the council began to develop a new flood alleviation scheme. Systemic design, as we see it, was integrated from the beginning as the aspiration was to create not only a flood alleviation scheme but also an asset for the local community. Instead of building a traditional concrete structure, the local community was involved, working with specialists to help guide the design. The resulting idea was to create urban wetlands.

Salford Wetlands forms the heart of the scheme and is surrounded by a network of paths, which are great for walking and observing nature. The wetlands naturally prevent flooding by providing space for water. They also provide a natural habitat for birds and wildlife and a park for locals. A hill in the wetlands was named after a local, Harry Davies, and it provides beautiful views of Salford. It is an inspiring example of expanding a brief to include multiple wider public benefits. In expanding a brief in this way, we recognise that everything is connected and we can create something that means more things to more groups – both human and non-human.

Recommendation: Design processes need to include consideration of the impact they have on often marginalised human stakeholders and the natural ecosystem alongside more obvious stakeholders.

Photography by Luke Blazejewski

6. DIFFICULTY TURNING KNOWLEDGE INTO ACTION

The technical knowledge to combat the climate crisis already exists but is not always widely understood or accessible to designers. The drive and confidence to put this knowledge into action are also absent in many cases. Often this results from a feeling of being overwhelmed by the scale of the issue. Design and the act of making and reflecting in practice is useful in helping people move forward through complexity paralysis.

Legislation is also crucial in enabling designers, architects and engineers to tackle these issues by working in value-driven ways and being allowed to experiment and learn. It is a difficult sell for designers to convince commissioners to expand their brief to include sustainable design when so often there isn't an obvious return on financial investment. Policies can ensure that organisations work to environmental standards. For example, Passivhaus has a rigorous certification process. This prevents a race to the bottom whereby companies cut corners to undercut one another. Basic standards are in place in every industry, but we need to see a far higher ethical baseline introduced and action needs to be taken to ensure organisations do not find loopholes to avoid these ethical standards, such as outsourcing overseas. At the moment, if a single part of the chain (for example, investor, developer, client, design team) fails to comply with ethical standards then the system fails.

"We need legislation that requires all new buildings to have a detailed circular economy strategy. The strategy needs to set out how a development is designed to stand the test of time, including reducing whole life cost of maintenance and operations; how the development is designed to facilitate adaptation so that it can respond to economic, technical, commercial, social and environmental change; and how it has been designed and procured to support disassembly and either reuse or recovery at the end of its life e.g building and material passports."

- Dan Epstein

Recommendation: Design Council should support the development of ethical and sustainability standards across different design sectors, continuing to develop them in architecture and the built environment where they already exist, and developing them in less regulated areas such as service, graphic or organisational design.

7. LOGISTICAL CHALLENGES

A move to design for net zero could be facilitated by local authorities, big businesses, and other influential organisations. However, many of these organisations – often those that have the resources to invest in creative new approaches – are mired in outdated legislation and archaic approaches to practice. Legislation needs to be more ambitious and visionary in order to aid practice. In turn, the smaller organisations that might have the freedom to work in more experimental and innovative ways are so often limited by lack of funding or resources.

More traditional commissioners usually demand a measurable financial return if they are to invest in a project. Many of the other kinds of returns that we need to see at the fore, such as social and environmental, are often not obviously quantifiable. We need to rewrite the rule book on how to create, procure and commission these projects, altering expectations from the very beginning. This requires time and investment that many are unwilling to, or cannot, provide.

"There are difficult procurement processes that smaller SMEs, community groups, and community land builders have to go through in order to get access to land that a local authority or other might own… access to land through asset transfer or meanwhile use and access to funding should be made simpler and more accessible, allowing true empowerment and engagement of communities. Local authorities and national funding bodies all play a part in this."

- Sue Morgan

"We interviewed a local authority about their 2030 carbon-neutral targets last year, their ambition was high, including city-wide district heating, replacing 200,000 gas boilers and integration of a transport system like Amsterdam's. However, a massive barrier is the lack of serious scale of funding for this kind of ambition."

- Ness Wright

"Civil servants can only see CO2 emissions. But if we do reduce emissions, how does that connect with mobilising citizens? Having the two together – top-down and bottom-up is crucial. Companies can't create green solutions unless they look at consumer behaviour and demand."

- Julie Hjort

Recommendation: Design Council needs to support alternative design commissioning processes that are experimental, visionary and expansive, at the same time as being inclusive, achievable and sustainable.

Barriers to change

Summary of recommendations

RECOMMENDATION 1

Designers need to use terms that are clearly understood across fields; for example, the 17 UN Sustainable Development Goals. These terms must be used with partners to define clear and meaningful goals from the beginning of the design process.

RECOMMENDATION 2

Designers and commissioners need to focus on creating equitable partnership working from the outset of the project process, ensuring everyone has an equal role.

RECOMMENDATION 3

Design processes need to prioritise creating inclusive spaces which build shared language and relationships between different professions and value different ways of knowing.

RECOMMENDATION 4

Designers need to benchmark and measure the social and environmental impact of their work.

RECOMMENDATION 5

Design processes need to articulate and commit to the values that they want to bring into the world through products, services, and places.

RECOMMENDATION 6

Design processes need to include consideration of the impact they have on often marginalised human stakeholders and the natural ecosystem alongside more obvious stakeholders.

RECOMMENDATION 7

Design Council should support the development of ethical and sustainability standards across different design sectors, continuing to develop them in architecture and the built environment where they already exist, and developing them in less regulated areas such as service, graphic or organisational design.

RECOMMENDATION 8

Design Council needs to support alternative design commissioning processes that are experimental, visionary and expansive, at the same time as being inclusive, achievable and sustainable.

Catalysing change: what we observe people are doing

There are small pockets of design-led systemic change taking place. These pockets are led by people who are able to comprehend and use the uncertainty and messiness that comes with complex challenges, rather than be discouraged. Despite knowing that there are big structural barriers around policy and legislation, these people work more like pioneers, activists or self-starters. They know the power of motivation and paint hopeful visions of the future to which people want to belong, prompting with carrots rather than sticks. They have the freedom to take risks, fail and learn from their processes. They are able to make connections that have not been made before. They connect, convene and bring people together – beyond their own organisation (as well as its bottom line) – to work at a larger scale.

We have brought together the contributions to form an image of what is happening in the field and to understand the types of people that need to be involved in designing for sustainability.

Catalysing change: what we observe people are doing

Characteristics of change-makers

Looking at examples of excellence in practice, we see several distinct groups of actors leading the way in system change.

SYSTEM THINKER: someone who has the ability to see how everything is interconnected in a bigger picture and zoom between the micro and the macro and across silos.

LEADER AND STORYTELLER: someone who can tell a great story about what might be possible and why this is important, get buy-in from all levels and have the tenacity to see the work through.

DESIGNER AND MAKER: someone who understands the power of design and innovation tools, has the technical and creative skills to make things happen, and makes sure they are used early on in the work.

CONNECTOR AND CONVENER: someone with good relationships, is able to create spaces where people from different backgrounds come together, and joins the dots to create a bigger movement.

There are common features across these roles. Some projects may include people who can span different roles, while others may need experts to focus on a single area. For projects to be effective, all of these roles must be filled from the start of the process.

SYSTEM THINKER

LEADER AND STORYTELLER

DESIGNER AND MAKER

CONNECTOR AND CONVENER

The key catalysts of change and the characteristics of those who enact them

The projects at the forefront of positive change have in common several factors that catalyse the process:

SYSTEM THINKING

- Seeing how everything is connected and interdependent
- Finding the root of the problem
- Bringing together marginalised voices and new perspectives, ensuring that all stakeholders - human and natural - are involved
- Holding complexity and expanding the brief
- Working at different levels
- Connecting to and learning from nature

LEADING AND STORYTELLING

- Encourage people to think more broadly and more hopefully
- Develop wider concepts of value and measure and demonstrate them
- Create stories about why these issues are important and relevant to the work and then to gain buy-in from all levels

DESIGNING AND MAKING

- Design products, places and services that make it easy and desirable to live sustainably - that are circular, regenerative and learn from nature
- Designing policies, clear frameworks and parameters for decisions, and that provide a more equal playing field for different voices
- Producing in depth knowledge about what works technically and from nature

CONNECTING AND CONVENING

- Connecting different interventions at different levels
- Connecting partners to create greater ambitious or market demand
- Connecting people with shared goals, designing the platform and movements that bring them together from which further innovations can emerge

SYSTEM THINKING

Systems are dynamic, constantly evolving and based on relationships between elements.

Systems thinking is a comprehensive approach that considers not only the individual elements involved in a project but also how these elements interrelate, how the system changes over time, and how it relates to its wider environment. This approach is cross-cutting, bringing together every level, from grassroots organisations to local government to national policy.

Systems thinking requires us to consider the relationships between the elements of our system (for example, people, organisations, governments) and how they will continue to function over time. It looks at problems holistically, seeing multiple causes and effects, and brings in different perspectives, rather than working with prior assumptions from a siloed viewpoint. Systems thinkers do not look for a single problem and a simple solution. Rather, they will identify the multiple factors that play into an issue. They understand that systems are dynamic and uncontrollable so any intervention will set off another train of interactions which could – with intention or facilitation – positively reinforce the system as a whole.

There are a number of elements necessary for effective systems thinking in design.

SEEING HOW EVERYTHING IS CONNECTED, INTERDEPENDENT AND CIRCULAR

By its nature, systems thinking in this context introduces complexity; changes in the system don't always have the expected response. The same climate outcome may impact different populations in very different ways. For many, considering value and supply chains comes as second nature but we must think more broadly than this.

Designers must look further than the theory of their project to its implementation and beyond. All work takes place within the context of its environment and the outcome is defined by it. Designers must consider how their work will stand the test of time and what capacity it has to evolve. Implementing a great solution at the wrong time and place will cause it to fail. The outcomes will depend upon myriad factors. It is impossible to anticipate everything that will influence a piece of work so resilience should be built into the design, allowing it to adapt to a changing environment. This type of thinking also gives designers the chance to see that their intervention can set off a wider, positive train of events, where more of the system grows and emerges from what they create, although what this looks like is uncertain and uncontrollable.


London 2012
Welcome
Olympic Park
Stratford Gate
London 2012
Bienvenue
London 2012
London 2012

CASE STORY

Olympics 2012, Dan Epstein

Dan Epstein worked on procurement for the 2012 London Olympics. During the project, he was advised by Greenpeace not to use PVC as a building cover due to its environmental impact.

Epstein commissioned research into fabric membranes for temporary buildings. The work compared the life cycle impacts of a range of material including glass fibre, Gortex, canvas, PVC and other material covers. The analysis found that PVC was the only fabric that could easily be taken down, folded, stored and reused over and over again. The result was that the life cycle impacts of PVC – if used more than once – was the best option.

The team worked with suppliers to minimise the environmental impact of PVC. The focus was on eliminating the use of phthalates. A phthalate-free PVC was developed for use on all temporary structures for London 2012. Further contracts were signed with the supplier requiring them to take away and reuse the material at the end of the Games.

Unfortunately, the contractors commissioned to dismantle the temporary building were not told about the contract with the membrane supplier. As a result, in some cases, they removed and then shredded the PVC membranes. A very carefully worked out policy and implementation strategy broke down because there was a failure of communication between different parties at different stages of the project. Ultimately there was a failure to promote the same culture during the post-Games transformation as had been there during construction.

FINDING THE ROOT OF THE PROBLEM

Thinking systemically requires addressing a whole. This means looking for the cause – or causes – of the issue at hand rather than 'treating the symptoms" and demands we question basic assumptions.

"If you don't understand how a system is currently operating you risk defaulting to rearranging the deckchairs on the Titanic. If you really dive into how a system is structured and governed, you can often discover a small set of root causes that are driving a multitude of challenges at the surface."

- Liz Corbin

"If nature-based solutions, green and blue infrastructure, were integrated into all design approaches and became the norm, you could make buildings healthier and more sustainable inside and outside. This affects existing developments through retro-fitting and new developments. It is about understanding whole-system approaches and ecosystems.

For example, managing water through the use of sustainable urban drainage systems, rain gardens, swales, flood catchment areas, upland tree and peat area management, natural filtration to reduce river pollution, we can create more permeable, spongier towns and cities, which then reduce flooding and pollution of water courses. Ultimately this is better for biodiversity and will bring long-term cost savings."

- Sue Morgan

BRINGING TOGETHER NEW PERSPECTIVES AND MARGINALISED VOICES

As explored previously, siloed thinking is a significant barrier to action. Successful projects bring together those from diverse backgrounds. Many indigenous cultures live more harmoniously with the planet and have also been most affected by industrial, extractive practices. We must make space for them to bring their experiences and thinking in from the margins to the centre of our collective work.

"Women have always been the drivers of change; women like Octavia Hill, who started social housing initiatives to help the poor. These became the Chartered Institute of Housing (CIH). Less empowered groups often have to be more innovative; thinking about a broader range of users alongside themselves – for example, when designers implement additional street seating or ramps for the disabled, everyone else in society benefits; parents pushing prams, among many others, utilise these interventions. When we design richer landscape-led developments to assist with dementia for our growing older population, local communities benefit from varied experiences, therefore enhancing their mental health and wellbeing, while varying ethnic demographics have their needs met when visiting park spaces for varying activities such as children's play, exercising or dog-walking. The more marginalised people we have in positions of commissioning and power, the more responsive we can be to the changing needs of society."

- Tara Gbolade

HOLDING THE FULLEST COMPLEXITY AND EXPANDING THE BRIEF

Working to understand interconnections in systems can offer new possibilities as well as bringing to light the complexity that some find paralysing. While it can be a difficult process, it is important. Involving design at the first stages of a project can encourage project leaders to work beyond the brief and offer additional value, as with the Salford Flood Alleviation described previously.

Those we have seen making significant changes work across different levels, spanning from the fine detail to a whole system view.

Systems thinkers begin by reflecting on their current position, situating the work in their values. Next, they will look at the 'project level', generating ideas and creating a shared understanding of goals and purpose within the project team. This approach, in turn, must be embraced at the organisational level, generating a shared mission and set of values that facilitate change. Finally, the systems-level needs to be considered. The team must understand how their project and organisation are connected to others at local, national, and global levels. Traditionally, these perspectives may be divided across teams that fail then to make connections between them. Systems thinkers are needed to join the dots and ensure values translate across every level.

"As a designer working with material scientists, it was useful to understand their process. I provoked them to think about why they are making materials, what happens at end of life, and why they are choosing fossil fuel based components over others. Usually, they are focused on delivering performance, not on the wider picture."

- Merryn Haines-Gadd

"Successful sustainable projects are values-driven. They start with values, then drill into what that means in terms of goals and outcomes/metrics. They use an iterative design process. This process doesn't often happen, very few get it and are rigorous."

- Dan Epstein

FINDING THE ROOT OF THE PROBLEM

We need to recognise that we are part of nature and not separate to it. But as we migrate to cities and spend around 90% of our time indoors, we are losing our connection to the natural world. This shift has altered the way we understand our environments and, in turn, become embedded in our design decisions. Reconnecting to nature helps us understand how entwined we are with it and helps us see natural ecosystems as equal stakeholders. We can also learn from other parts of nature, perhaps the best designer of sustainable solutions and one which has been creating them since time began.

"2020 and COVID have shone a light on and validated what we, and other landscape designers, have known for decades. Areas of deprivation with poor health outcomes, bad housing and a lack of access to green and open spaces are where Covid19, non-communicable diseases and climate issues strike hardest.

As the majority of global populations migrate to cities and spend around 90% of our time indoors, access to good quality greenspace and how we connect to nature is imperative. This is not only for our health and wellbeing, but also to protect and support essential biodiversity and use nature based solutions, biophilia, green and blue infrastructure to support long term sustainable resilience.

We need to recognise that we are part of nature and not separate to it and that understanding and designing with nature can support sustainable solutions in city design."

- Sue Morgan

LEADING AND STORYTELLING

Successful projects are led by those able to envisage a hopeful and imaginative outcome. . Leadership doesn't necessarily mean being at the head of the organisation or in a senior role. Rather, leaders must stick to and embody their values and encourage these values in others. We need to change the narrative about what designers do, creating expectations that designers can challenge a brief in service of the planet and support the organisations they work with to imagine more hopeful futures. This invitation to think more hopefully has previously been extended by the systems thinker and co-founder of Transition Network, Rob Hopkins.

Through our research, we have found examples of leaders and storytellers who encourage people to think more broadly and more hopefully. Their work is value-led, persuasive and tenacious, sometimes taking many years to create change. Their stories are heavily evidence-based, and they introduce new approaches to monitor and quantify outcomes. In doing so, they redefine what is deemed valuable.

These storytellers need to negotiate the disparate values of multiple stakeholders to find common values to work toward. They also need to determine the means of measuring and demonstrating the impact of their work in order to engage others.

There are a number of elements necessary for effective systems-thinking in design.

"My role is to help people see the wider picture. It is important to talk about the wider sustainability benefits – social, environmental, economic. Also to talk about the success that we have had in the past by doing it that way. When you bring people to the table you have to show that you understand them. You have to speak in a language that they understand so that they understand that by supporting you in your design they will also achieve their goals. Monitor and measure those things then use this information as a case study to back up your next project."

- Olutayo Adebowale

CASE STORY

We Are Liminal, Roland Harwood

The Exeter City Futures project was set up by two local successful tech entrepreneurs who were passionate about sustainability. Exeter is a great place to focus on this issue, with many experts in the area working at the Met Office and the university.

However, those on the project were facing all sorts of challenges in local and national government and had to fight a lot of battles. After the project had been going with limited success, We Are Liminal were brought in to deliver innovation and design workshops covering personas, service blueprinting, post-it notes, iterative process and so on. It was messy and they went down some blind alleys, but it opened up new possibilities.

In the end, the design lens was vital. Their insight showed that saying net zero is the right thing is not enough to get people to respond. If, on the other hand, the message paints a vision of a great place to live in, which then leads to net zero, then people will engage. Design thinking was part of coming to this realisation.

Exeter City Futures built up momentum in the city, secured engagement from the CEO of Exeter City Council, Karim Hassan, and achieved buy-in and sign up from all the big employers, along with others. This top-down, bottom up linking with power structures was vital. Through this, Exeter City Futures managed to get all logistics traffic banned in the city centre - a huge achievement.


Fosber
DS Smith
DS Smith

CASE STORY

DS Smith, Alan Potts

DS Smith is a packaging manufacturer that wanted to move to lower carbon. The senior team had a hunch that in order to do so, they would need to shift how packaging quality was defined from grammage (the higher the grammage, the higher the carbon) to performance. This required activity across the whole organisation: from the marketing to communicate this to the customer, to machines to test and predict the packaging's performance under different conditions, and activity across supply chain to optimise the right fibre.

The idea of switching to performance started as a kickaround from the leadership team, and it was only at the testing stage that they saw just how much potential there was for the shift to reduce carbon. It required a large amount of testing and iteration, and they knew it had to be sustainable as well as commercial. But it was a bold idea, it started with a vision, rather than improving the status quo. "It wasn't a reaction to customer need, it was something that evolved in a magical kind of way". It shows that within an organisation, you've got to do it all: solve user needs through product design, but also the more strategic work where there are no problem statements to work with yet.

Left: photo supplied by DS Smith

DESIGNING AND MAKING

Whether it's designing a product that drives more sustainable consumer behaviours or an alliance of different organisations to work together strategically, designers are using their skills to understand different motivations and create things that people want to use or be part of. They are making things tangible and visible to raise awareness, attract people towards them and inspire others to act.

We need to see more designers working across disciplines. We need technical designers who can work with materials (both physical and digital) in more sustainable and regenerative ways, but also social designers who understand people's motivations and behaviours and create social practices that are more in harmony with our planetary resources.

a. PRODUCTS AND SERVICES: DESIGNING AND MAKING THINGS THAT ENCOURAGE MORE SUSTAINABLE BEHAVIOUR

Design tends to span different levels by its very nature. Products and services are designed with an audience in mind so their place in the system shapes their creation.

There are many examples of designers creating products and services that make it easy and desirable to live sustainably. Creating these products requires designers to understand pre-existing motivations and reframe them to align with ethical approaches.

b. POLICY AND STRATEGY: DESIGNING THE CONTEXT WHICH FRAMES HOW DECISIONS ARE MADE

Designers working in policy and legislation have a huge role in creating an environment that facilitates these changes. Although legislation can feel more like a 'stick' than a carrot, it can be designed well to involve different stakeholders, set out clear frameworks and parameters for decisions, and provide a more equal playing field for different voices. This, in turn, gives an impetus for innovation.

"We should aim to remove the fear factor that government legislation in favour of tighter controls and higher standards in relation to sustainability and climate control will have an adverse effect on the private sector. Rather, investors and financial institutions are leading the way in ESG [environmental, social and governance] and sustainability and are seeking leadership from government institutions. The private sector will adjust."

- Sue Morgan

Photo supplied by Snook

CASE STORY

Snook, Ness Wright

Snook is a design studio based in Glasgow and London. A couple of years ago, the team at Snook worked with a start-up called Safety Net Technologies (SNT). SNT had developed a light-emitting device that attaches to fishing nets. The light can be programmed to attract or repel certain fish species to avoid catching and discarding fish that can't be landed under fishing quotas. Bycatch and discards are a huge issue; roughly one in five fish currently caught has to be thrown overboard usually dead or dying. As a result, 27 million tonnes of fish are discarded globally per year contributing to a staggering global loss of £1 billion across the industry.

SNT had built a simple and affordable product. But they recognised something was missing from its development – the voices and opinions of the fishermen who would use it. Snook worked with SNT to understand the needs of their customers from purchase to use and maintenance. Fishermen tend to show strong loyalty to chandlers, often buying from the same places their fathers and grandfathers bought from. If SNT didn't get their product into these trusted places, they wouldn't sell. They also looked at practicalities such as how the product could be repaired over its lifetime and how the accompanying app could be safely used onboard a working fishing vessel. Snook helped SNT build a service around the product and provided direction on the service model. Making changes across all these areas was vital to garner interest from buyers and investors.

CONNECTING AND CONVENING

Seeing and making connections is a core part of acting systemically, be they connections between people, ideas, objects or processes. We see people who are actively building connections with those that can offer something to the project, directly or indirectly. Their work involves designing something that creates and reinforces further connections, which emerge beyond the project, something that focuses on growing sustainable mindsets, practices and behaviours more widely.

The value provided through these processes is more diffuse; it is attributable to other interventions happening elsewhere in the system but also sparks innovation outside the project they might be working on. This makes it difficult to calculate the return on investment it offers. As a result, stakeholders can be less willing to invest in the process.

CONNECTING DIFFERENT INTERVENTIONS AT DIFFERENT LEVELS

The power of design lies in its capacity to span and influence an array of disparate areas. We will need to balance the right combination of interventions and solutions. We need work that is disruptive and radical to inspire collective action. However, we also need those who are able to focus on refining existing interventions and connecting these with other projects that are looking to achieve similar goals.

The work surrounding each project is as important as the project itself. The often 'invisible' work to build new relationships, trust and partnerships are as important as the 'visible' design, making and building process itself.

CONNECTING PARTNERS TO CREATE GREATER AMBITION OR MARKET DEMAND

Connecting partners and creating market demand can be achieved by bringing together the right people. Connectors can build the capacity for innovation and create a mutually beneficial drive towards more sustainable systems. For example, creating the right demand for a product will prompt suppliers to innovate to provide for this demand. Bringing the right creators into the mix provides the creativity needed for this to happen. Allying fragmented groups that share values and developing a common language creates a common goal.

"What we need is big ideas, landscape-scale geo spatial planning and multiple agencies coming together and then amazing things can happen.

Look at the Olympic Park, Walthamstow Wetlands, Thamesmead. These are large-scale landscape-led developments that hard-baked sustainability and climate resilience into the schemes. They were only possible because lots of organisations and councils came together. Some things only make sense at this larger geographic level. They also all put people at the centre. Now seeing landscapes as multifunctional places for food, leisure and energy is possible."

- Sue Morgan

CASE STORY

Olympics 2012, Dan Epstein

When working on the London Olympics in 2012, Epstein aimed to improve the sustainability of the materials he was procuring. The team began by determining which materials had the biggest environmental impact. They found that on this project, 90% of embodied carbon was within concrete and steel. £50,000 was invested into researching more sustainable alternatives to traditional concrete. The process involved speaking to hundreds of suppliers.

While the team could not opt for a single supplier, they were able to set a performance requirement based on their research, for example, that 50% of the items brought onsite had to come by water or rail. This process skews the market by rewarding suppliers that have invested in sustainable processes. If enough time is given, suppliers will invest in these changes, altering the supply chain in the long term. Real change comes about, says Epstein, when repeat clients request these processes and suppliers will see there is a demand for sustainability.


I printed
your
fabric
#WHOMADEMYCLOTHES
FASHIONREVOLUTION.ORG

CASE STORY

Fashion Revolution, Orsola de Castro

After the devastation of the Rana Plaza collapse in 2013, de Castro ran a hugely successful campaign to raise awareness of the sweatshops in fashion supply chains. Her campaign prompted the creation of the hashtag #whomademyclothes, which has been used millions of times.

“We asked a simple question and people were shocked when they couldn’t answer it,” she explained. This prompted buyers to educate themselves.

After that, the hashtag emerged spontaneously on social media, used both by supply chain workers and some brands. For many buyers, this was a prompt to demand better standards and shop more ethically. However, the story went deeper than that.

“We tend to think of supply chain workers as marginalised” de Castro explains “but there are some vociferous ones who are very proud of the work they do. These individuals are working in difficult conditions but are proud of their work.”

“It’s all about perspective. We created the garment worker diaries and learnt that the women who make our cheap clothes aren’t aware that these clothes are disposable for us. They think they are making clothes that we will love and wear.”

CONNECTING PEOPLE WITH SHARED GOALS, DESIGNING THE PLATFORMS THAT BRING THEM TOGETHER FROM WHICH FURTHER INNOVATIONS CAN EMERGE

The most effective projects work alongside others with shared values. By connecting various initiatives, their respective ideas, learning and resources can be shared.

Photos supplied by Fashion Revolution

Our approach: a proposed framework for moving forward

There are a number of things that need to change within the design process to help designers work more sustainably and systemically.

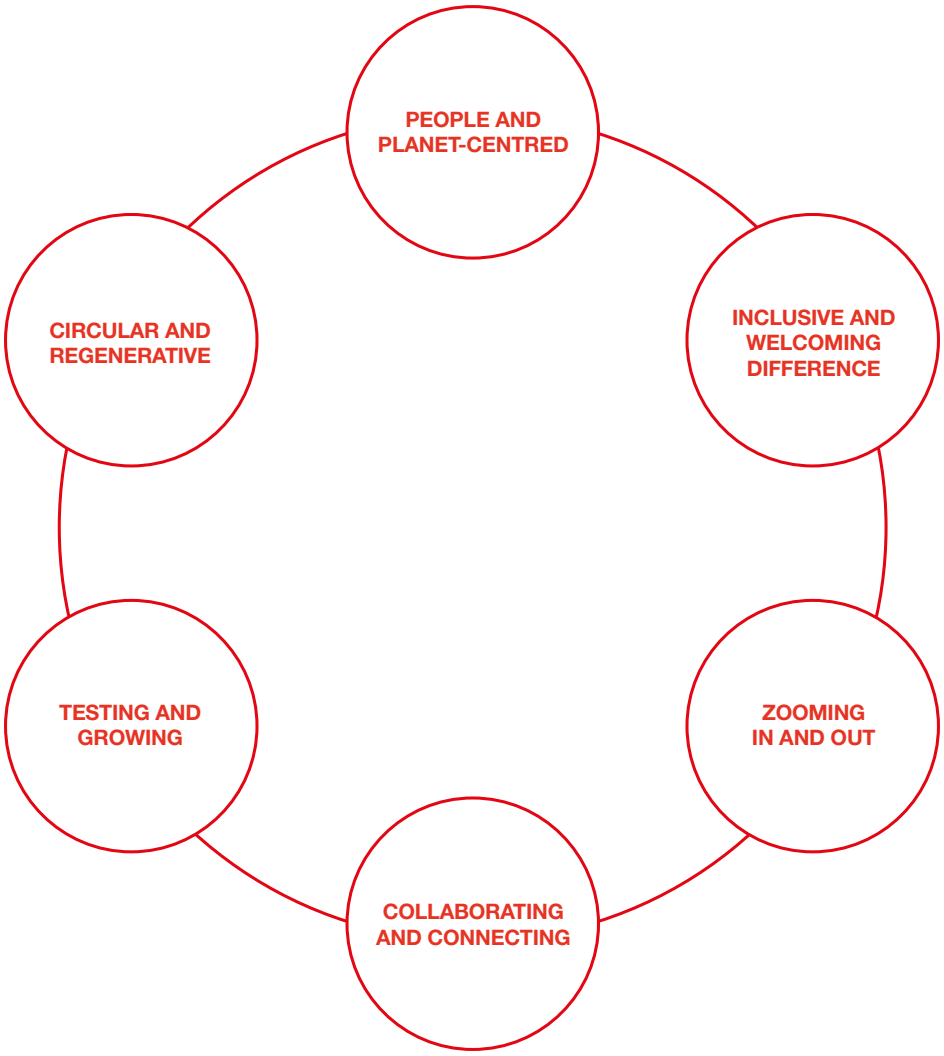
The systemic design framework below aims to support designers and commissioners who want to work in this way. Guided by a set of six principles, this framework outlines four vital roles to be played by a designer or designers, before explaining the key elements of the design process that can help a project run successfully.

The framework encourages a shared understanding of terms for net zero and beyond between partners at the beginning of your project, as well as a focus on ethics and values, and inclusive and equitable partnerships throughout.

We recognise that you may still face barriers when applying parts of this framework, some of which may require a shift in policy or legislation. We will continue to also use our position as the government's advisor on design to influence policy, regulation, standards and the design commissioning system to make it easier for designers to work in this way.

Our approach: a proposed framework for moving forward

The systemic design framework



SIX PRINCIPLES FOR SYSTEMIC DESIGN

Our set of six principles aims to guide activity. They can be used to help people to develop or adapt new design methods and tools from their own practice:

PEOPLE AND PLANET CENTRED

Focusing on the shared benefits of all living things

ZOOMING IN AND OUT

From the micro to macro, from root cause to hopeful vision, from the present to the future, from the personal to the wider system

TESTING AND GROWING IDEAS

Making things to see how they work and help more things emerge

INCLUSIVE AND WELCOMING DIFFERENCE

Creating safe, shared spaces and language to bring in multiple and marginalised perspectives

COLLABORATING AND CONNECTING

Seeing a project as one element in a wider movement for change

CIRCULAR AND REGENERATIVE

focus on existing assets – physical and social – and how we can re-use, nurture and grow these

FOUR CORE ROLES OF A DESIGN TEAM

Our research has shown that systemic design works best when four core roles outlined in the figure below are fulfilled. Some projects may include people who can span different roles, while others may need experts to focus on a single area. In addition to these four roles, designers must also draw different people and perspectives from within and outside the system throughout the process.

System thinker: someone who has the ability to see how everything is interconnected in a bigger picture, and zoom between the micro and the macro and across silos.

Leader and storyteller: someone who can tell a great story about what might be possible and why this is important, get buy-in from all levels and have the tenacity to see the work through.

Design and maker: someone who understands the power of design and innovation tools, has the technical and creative skills to make things happen, and puts these to use early on in the work.

Connector and convener: someone who has good relationships, can create spaces where people from different backgrounds come together, and joins the dots to create a bigger movement.

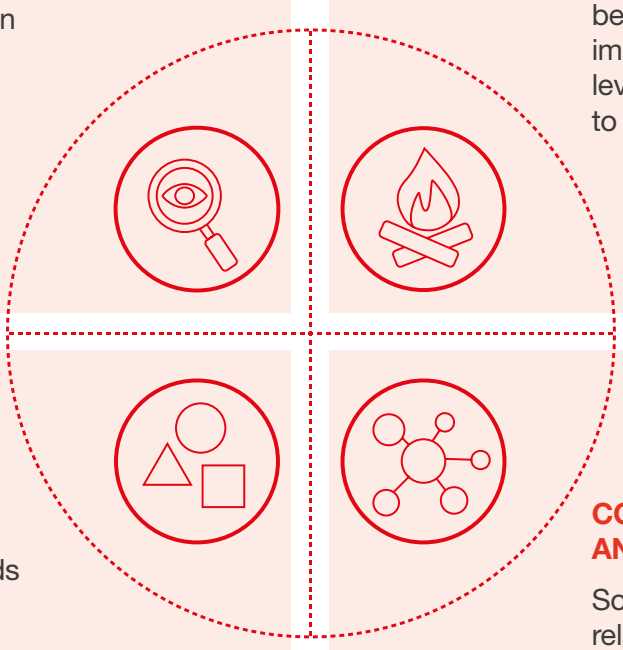
FOUR CHARACTERISTICS

SYSTEM THINKER

Someone who has the ability to see how everything is interconnected in a bigger picture, and zoom between the micro and the macro and across silos.

LEADER AND STORYTELLER

Someone who can tell a great story about what might be possible and why this is important, get buy-in from all levels and have the tenacity to see the work through.



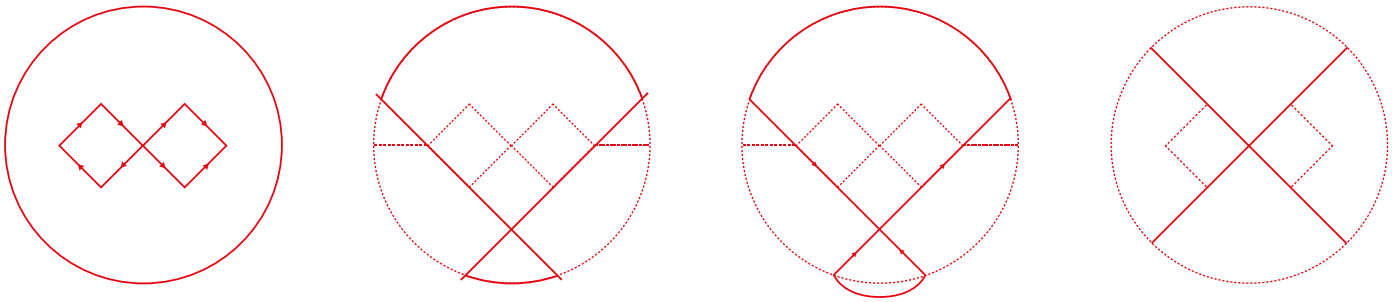
DESIGNER AND MAKER

Someone who understands the power of design and innovation tools, has the technical and creative skills to make things happen, and puts these to use early on in the work.

CONNECTOR AND CONVENER

Someone who has good relationships, can create spaces where people from different backgrounds come together, and joins the dots to create a bigger movement.

WAYS OF WORKING



DIVERGENT AND CONVERGENT

ZOOMING IN AND OUT

DISRUPTING AND REMAKING

RESOURCING 'INVISIBLE' ACTIVITY

OVERARCHING WORKING PRACTICES

Our framework outlines ways of working needed for each particular part of the design process. In addition, we outline here important working practices that designers should use throughout.

DIVERGENT AND CONVERGENT THINKING

The double diamond design process is a key element of the systemic design framework. It is based on a traditional design process of divergent and convergent thinking and dedicates time to clearly understanding the context in which you are working before seeking a solution. It gives you the space and confidence to challenge your brief.

ZOOMING IN AND OUT

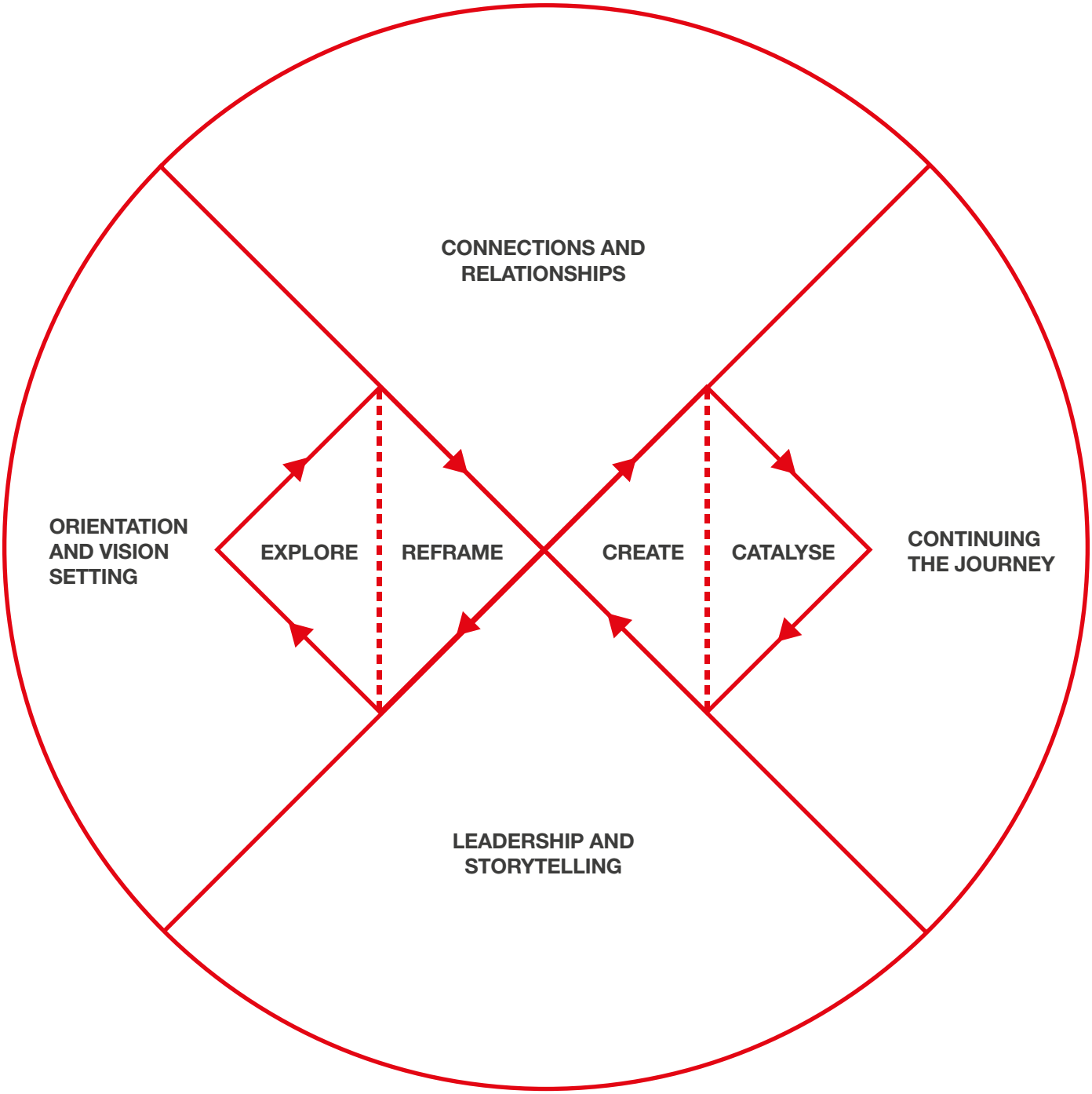
Zooming in and out is a core practice, along with divergent and convergent thinking. It means being able to switch between a focus on the micro and the macro from your project to the wider context in which it sits, from the present to the future, from your personal role to the wider system, seeing the wider consequences – both positive and negative – that your work sets in motion. It involves you seeing your work as one element among lots of different activities (from design to policy to culture change) pushing towards a more regenerative future.

DISRUPTING AND REMAKING

Digging down to the root cause of a problem – which could be something within the 'invisible' structure of governance, regulations, deeply held assumptions or beliefs – is an important part of the design process. With this insight, you can consider what you could make (a product, service, place or other intervention) that could disrupt the problem and create the necessary change.

RESOURCING 'INVISIBLE' ACTIVITY

The connections and relationships and the leadership and storytelling that sit around a project are as important as the design project itself. These activities require proper resourcing and time. These two elements are explored below. Through projects, designers can work towards their bigger vision, while recognising that problems are never fixed: their work is an evolving process that also needs connecting with other similar initiatives to bring about a movement for change.

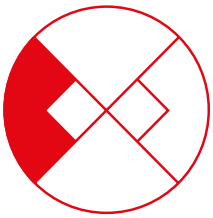

CONNECTIONS AND RELATIONSHIPS
ORIENTATION AND VISION SETTING
EXPLORE
REFRAME
CREATE
CATALYSE
CONTINUING THE JOURNEY
LEADERSHIP AND STORYTELLING

The design process

The systemic design framework builds on our existing framework for innovation by recognising the interconnected, complex nature of challenges and prioritising the planet as well as its people.

This section below outlines the different elements of the design process. Each stage has an overall description of its aim, followed by a series of activities and questions to guide you. Orientation and vision setting needs to happen first; continuing the journey comes at the end. The four stages in the middle: explore, reframe, create, catalyse can happen in a linear fashion, but also are likely to loop back and forth. We have included the way that we previously described these stages in italics.

ORIENTATION AND VISION SETTING



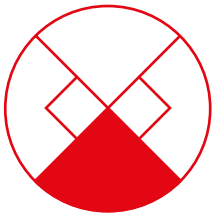
How you start your work will determine the outcome. To achieve a sustainable, fair and just society together, we must be able to radically rethink our world.

Complex environmental and social challenges are not static: they can't simply be 'fixed'. Rather than seeing your work as a 'problem and solution', you should start with a hopeful vision of what you want to achieve, and develop a clear mission from that. It is important to begin your project in a positive, values-driven way. Making sure these are shared across partners is crucial. Spending time with team members and stakeholders at the outset to build trust allows you to collectively return to these values throughout the process.

ACTIVITIES

- Create or understand people's personal connection to this work. Ask 'why are we all here?' and allow the answers to drive the project.
- Understand the bigger system in which your work sits. Consider the history, the societal values and assumptions of the system in which you are working.
- Create a hopeful vision that everyone can aim for. Do so in clearly defined and shared terms and language, for example by drawing from the UN's Sustainable Development Goals.
- Develop a set of values and design principles to guide your work or reframe how you see the work. You could start with the six principles we have suggested.
- Consider how you could treat nature as a stakeholder in the project and how you can create experiences through which people can connect to nature.
- Understand what you need to value, measure, or notice to show that change is happening – environmentally, socially and culturally.

LEADERSHIP AND STORYTELLING



Anyone can be a leader. It starts with personal actions as well as your position within an organisation. Leaders offer a vision that is rooted in their values. They carry this through at all levels, from their own actions including finding and sharing stories to influence and inspire the wider system.

ACTIVITIES

- Self-care so you can show up in the best possible way.
- Self-reflect and learn throughout the work (including things that didn't work).
- Connect to the purpose driving the work and identify what personal change you can make to the overall goal.
- Use organisational design to embed your agreed values across your organisation.
- Work openly and share your stories and approach with others.
- Share skills and mindsets with others or help them see that different ways of learning and creating are possible.
- Build your community and support each other to keep going when things get tough.

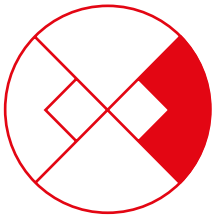
CONNECTIONS AND RELATIONSHIPS

Systemic design is hard work, is never finished, and requires tenacity and hope. It is easier to do with allies. Relationship building happens throughout the design process and is as important as the design itself. It is about building empathy and bringing in the perspectives of all involved in the work: stakeholders, communities and mother nature herself. This work is about creating trust and shared understanding, building confidence for others to imagine and create, and joining the dots between disparate organisations that could work together in new ways. Acting as translators and mediators, designers connect people across a project in a way that is perhaps not immediately quantifiable but undoubtedly vital, and provides value way beyond the project itself.

ACTIVITIES

- Spend time with communities on their terms, ensuring they have a voice and power in the process.
- Map all your stakeholders (human and natural) and understand what value they might gain from the work. Bring in people and natural resources from within and outside the system.
- Create inclusive spaces where people have equal power and a shared language.
- Imagine and assemble new partnerships, create platforms where people and nature can come together to share ideas and build trust.
- Share skills and networks with others.
- Use a variety of engagement methods: co-design, co-production, charettes, open dialogue, etc.

CONTINUING THE JOURNEY

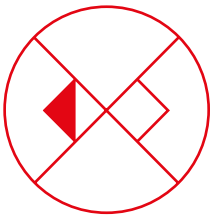


In dynamic systems, our work is never done. Things change and other opportunities arise. As your project comes to a close, you should reflect on it and learn from any mistakes. Your outcomes must be open-ended, focused on creating and sharing knowledge for future work. Consider what you have measured, return to your vision to determine how successful your project has been, and consider what needs to come next in the journey.

ACTIVITIES

- Celebrate your success and reflect and learn from your mistakes.
- Notice the impact your intervention has had on other parts of the system.
- Open up and share the knowledge you created so that others can build on it (if not the specific IP for commercial purposes, the values or sustainable approaches you have taken which we need all businesses to adopt).
- Strengthen the connections and alliances you have built and develop further projects together.

DESIGN ACTIVITIES



EXPLORE
(Previously DISCOVER)

Throughout the design process, we need to explore deeply and widely what is happening, determine the root cause of the issue, consider what ideas and resources exist already that we can re-use and build from, and develop a bold and hopeful vision of what the future might look like. As designers, we must reflect on our own position, and actively draw in perspectives that are different from ours, including those which have historically been marginalised.

ACTIVITIES

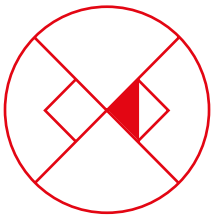
- Dig into the existing system. Review the approach and relevant elements of your project. How have previous structures and frameworks come about? What assumptions are they based on?
- Gather different types of knowledge from people with different perspectives, particularly marginalised voices (for example, expert opinion and evidence, spatial data, different types of lived experience, knowledge of materials and learning from nature, an understanding of the power and relationships within the system).
- Explore how things connect and are related through processes such as systems mapping, supply chain analysis and circular flows. Seek to understand the 'invisible' things too: power, relationships, purpose.
- Identify opportunities. Map or scan for new technology as well as existing materials or assets including work that has previously been forgotten, overlooked or underused.
- Start with making: create a prototype both to test if something works and to reveal the system around it (for example, the relationships, power dynamics or resistance to change).

REFRAME
(Previously DEFINE)

Moving to a more equal, regenerative world means breaking out of our current way of thinking. It means creating things – products, places and services – that reflect new values and shift our collective behaviours. We must allow time and permission to reframe the problem in different ways to act as a springboard for new ideas.

ACTIVITIES

- Bring people together and synthesise insight.
- Reframe opportunities through different lenses (for example, with a different purpose or goal, or with regenerative or sustainable values).
- Remap the system with a new goal or purpose at its heart, with new organisations in it and with different types of relationships. Ask 'if this is the case, then what other ideas are there…?' and 'if this is the case, what has happened to get us here…?'
- Identify specific opportunities or challenges. This might mean refining the brief to focus on one specific area or expanding it to show how everything is connected and impacts multiple groups. Hold this complexity for the moment.

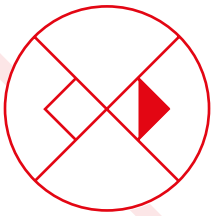


CREATE
(Previously DEVELOP)

Creating a series of different actions and ideas that can connect with other interventions and help designers move towards a bigger goal. Some can be small practical steps and others can be big audacious ideas that might never happen but will help people reimagine what might be possible. This is about thinking big.

ACTIVITIES

- Create a portfolio of interventions. Generate ideas at different layers of the system:
  - specific products, services and places
  - policies, regulations or standards
  - narratives or cultural mindsets
- You might not be able to develop and deliver all of these ideas but you can look to create relationships with people who can.
- Adopt a circular mindset: re-use existing material, fuse existing interventions, think about what might grow from the ideas you create. Ask 'if this, then what else?'
- Allow bold, radical or provocative ideas that might not be the answer but prompt bigger questions and invite further innovation.
- Create exercises to prioritise which actions are most valuable in shifting towards a more regenerative world. These can be seemingly small things that have a big impact. For example:
  - a specific leverage point, for example a rule or target (for example, net zero), or a wave of a new way of thinking (for example, veganism) that disrupts the status quo
  - something that brings to life the larger vision you are trying to achieve
  - a platform that attracts and brings together other people who are also doing similar things.

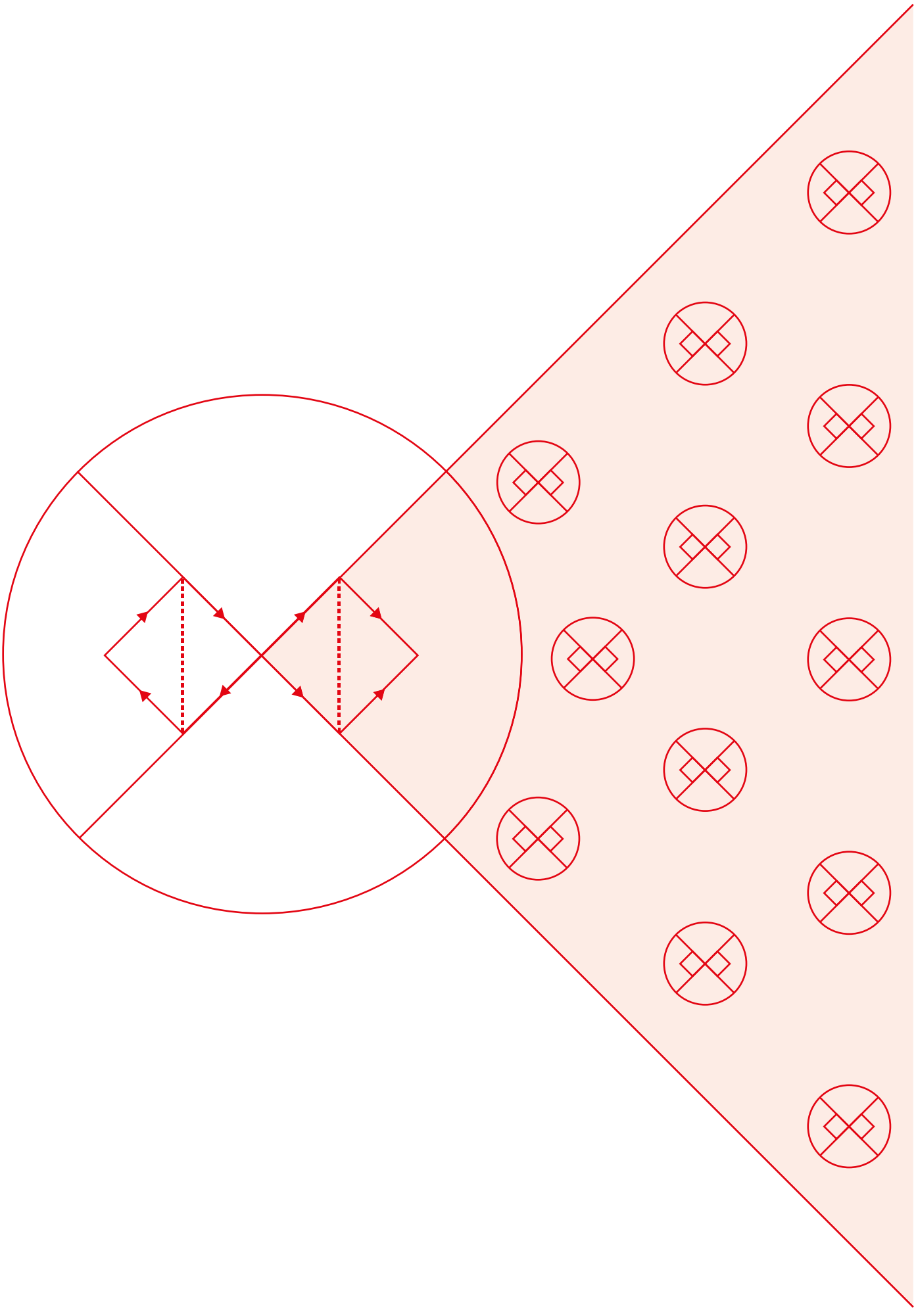


CATALYSE
(Previously DELIVER)

Design is about making things. Thinking systemically can often feel overwhelming, so making things helps move you forward. It shows people what a new vision looks and feels like in a tangible way, so they can get behind it or add their ideas to it. Prototyping (or mocking up) an idea is an important way to test how it works, explore how it connects with other interventions, and see what else develops or grows from it.

ACTIVITIES

- Use prototyping to test and iterate as well as to see what else develops from the idea. Keep your mind open.
- Test consequences across the system/supply chains and different stakeholder groups including marginalised groups and natural habitats.
- Create a set of metrics (qualitative and quantitative) to determine the environmental and social impact of what you're making.
- Think about sustainable scale. Use sustainable business models to ensure your great idea can grow without negative consequences.
- Tell the story or create your narrative so that others can join in or spark their own ideas. Understand what other similar or related ideas yours can bind itself to, creating a bigger movement for change.



Part of a bigger system

The work you do is part of a larger network of initiatives – formally or informally connected – aiming to achieve a more sustainable future for people and planet. Your work might have sparked further innovation, or forged connections with other organisations, ideas and initiatives into a stronger network. Creating a movement of change which is more powerful, together.

Annexes

We've said earlier that there are already many tools, techniques, and technical solutions for achieving net zero and the challenge is turning this knowledge into action. Here is a collection of some of these resources:

Annexes

Annex A: Tools and resources

SHARED TERMS

Net zero: ONS Definition

Sustainable Development Goals, United Nations

OVERALL STRATEGIES

The Ten Point Plan for a Green Industrial Revolution, HM Government, 2020

A Roadmap towards mandatory climate-related disclosure, HM Government, 2020

Project Drawdown: a nonprofit organisation that is a leading resource for information and insight about climate solutions.

Donut Economics Action Lab: an organisation working with changemakers across the world who are turning the ideas of Doughnut Economics into transformative action

Pathways to Net Zero, European Climate Foundation

CITIES AND THE BUILT ENVIRONMENT

Carbon Conscious Places, Architecture & Design Scotland, 2020

LETI Climate Emergency Design Guide: How new buildings can meet climate change targets, LETI, 2020

Sustainable Outcomes Guide, RIBA, 2019

MHCLG National Design Guide MHCLG, 2021

Living with beauty; promoting health, well-being and sustainable growth, Building Better Building Beautiful Commission, 2020

CLC Statement on Net Zero Carbon and the Climate Emergency, Construction Leadership Council, 2020

Net Zero by Design: Developing a UK market for net zero technologies, BEAMA, 2019

Net Zero Carbon Buildings: A Framework Definition, UK Green Building Council, 2019

The City Portrait: A methodological guide from the Thriving Cities Initiative

Climate, people, places, value: Design principles for national infrastructure, National Infrastructure Commission. 2020

Architecture and Design Scotland resources

Newcastle's Centre for Biotechnology in the Built Environment

Sustrans, a charity making it easier for people to walk and cycle

100 Resilient Cities, a project designed to help more cities build resilience to the physical, social, and economic challenges

European Ecodesign Directive, a framework for the setting of ecodesign requirements for energy-related products

GREEN SPACES, BIODIVERSITY AND NATURE BASED SOLUTIONS

Biodiversity net gain. Good practice principles for development: A practical guide, CIRIA, 2019

Building with Nature Standards, Building with Nature, 2017

Ecologic publications, Ecologic

Ask Nature: a portal for resources on nature-based knowledge and learning

Garden communities toolkit, Homes England, 2019

Managing green spaces: seven ingredients for success. Design Council, 2010

Grey to Green: how we shift funding and skills to green our cities Design Council, 2009

Adapting public space to climate change: public space lessons, Design Council, 2008

Hallmarks of a sustainable city Design Council, 2009

Green Infrastructure: an integrated approach to land use, Landscape Institute, 2013

Local Green Infrastructure: helping communities make the most of their landscape, Landscape Institute, 2011

Invest in GI short film, Landscape Institute, 2011

Water Sensitive Urban Design short film, Landscape Institute, 2013

Using Nature-Based Solutions to Tackle the Climate Emergency and Biodiversity Crisis, CIEEM, 2020

What does good green infrastructure policy look like?, TCPA, 2020

A Nature Recovery Plan, Scottish Wildlife Trust, 2020

The Social Benefits of Blue Space: a Systematic Review, UK Environment Agency, 2020

UAL's Design with Living Systems Lab

The annual conference Bio-fabricate started to do London events in 2019

CIRCULAR DESIGN

Circular Design Toolkit, Guide and Hub, Ellen MacArthur Foundation

Circular Economy Guide website, Circular Economy Guide

Centre for Circular Design

Circularity Deck, Delft University of Technology

Life Cycle Assessment tool, Open LCA, n.d.

Emotional Durability ideation methods Merryn Haines-Gadd et al., 2018

Circular Economy Statement Guidance, Greater London Authority, 2020

Circular Business Model Design Guide, PA Consulting, 2020

WRAP, not-for-profit working for sustainable resource use

BUSINESS INNOVATION

EDIE website and podcast for net zero businesses

Flourishing Business Model Canvas

MEASURING ENVIRONMENTAL AND SOCIAL IMPACT

Environmental Product Declarations, Environdec

The Triple Bottom Line Tool, Dr. Janet Hammer, Portland State University, n.d.

The Place Standard, n.d.

Construction Leadership Council Value Toolkit

Higg Index, Sustainable Apparel Coalition (a suite of tools for fashion brands, retail and facilities to measure their company or products' sustainability performance)

ECOLOGY AND MORE-THAN-HUMAN DESIGN

Feral Atlas: a collection of creative and academic resources that describe and explore how humans are inextricably intertwined with their environment.

General Ecology, Serpentine Galleries, 2018 - Serpentine's long-term and ongoing project researching complexity, more-than-humanism, climate justice and environmental balance.

Anthropocene Curriculum: a long-term initiative exploring frameworks for critical knowledge and education in the transition into a new, human dominated geological epoch – the Anthropocene.

Broken Nature Catalogue, Paola Antonelli et al, 2018

Staying with the Trouble, Donna Harraway, 2016

NETWORKS

Architects Climate Action Network - a network of individuals from the field of architecture and related built environment professions. The network is taking action to address the twin crises of climate and ecological breakdown.

Women in Sustainability - a network of women working in sustainability working to grow their network and maximise their capacity despite the gender inequality so many face.

Climate Reframe: This resource highlights the work of some of the best Black, Brown, Asian, People of Colour and UK-based Indigenous Peoples who are climate experts, campaigners and advocates living and working in the UK.

Fashion Revolution: A global network of designers, academics, writers, business leaders, policymakers, brands, retailers, marketers, producers, makers, workers and fashion lovers looking to create a more sustainable and equitable industry.

Ellen MacArthur Foundation Network: a network of organisations leading the transition to a circular economy

Design and Climate: an open community building and sharing tools and guidance to help designers adapt their practice with the planet in mind.

SDN climate working group: based in San Francisco, designers working at intersection
of climate and design

Climate Designers: a hub for designers and creative professional from all industries using creative skills for climate action

Purpose Disruptors: a network of advertising insiders working together to reshape the industry to tackle the climate crisis.

The Design Justice Network: an international community of people and organizations committed to rethinking design processes so that they center people who are too often marginalized by design.

C40 Cities: a network of the world's megacities committed to addressing climate change

Tech Nation, a growth platform for tech companies and leaders

Julie's Bicycle: Creative community tackling climate

Architects Declare Climate & Biodiversity Emergency a network of architectural practices committed to addressing the climate and biodiversity emergency, including a set of online resources.

Annexes

Annex B: References and further reading

The following are resources we have mentioned through this piece.

SUSTAINABLE LIVING

Perspectives on Sustainable Living, Design Council, 2020

Roundtable on Sustainable Living with film presentations from Nat Hunter (Other Today), Simon Widmer (Ellen MacArthur Foundation), Ness Wright (Snook), Seetal Solanki (Ma-tt-er), Design Council, 2020

Donut Economics, Kate Raworth, 2017

How do you distinguish between regenerative and sustainable design?, Daniel Christian Wahl, 2019

Lo-TEK. Design by Radical Indigenism, Julia Watson, 2021

Design for Sustainability, A Multi-level Framework from Products to Socio-technical Systems, Fabrizio Ceschin and İdil Gaziulusoy, 2019

Sustainable Prosperity: a project working to facilitate sustainable prosperity in Europe by liberating economic and political stability from the need of continuous economic growth.

Proposals for the Feminine Economy, Jennifer Armbrust, 2018

Living Beautifully, Building Better Building Beautiful Commission, 2020

Editorial: Other Biological Futures, MIT press JoDS, 2018

DESIGN FRAMEWORKS

Design Council framework for innovation

LIFE, PLANET OR EARTH-CENTRED DESIGN FRAMEWORKS

Earth-Centered Design Manifesto, Smith et al, 2019

Impossible and MakeSense, Planet Centric Design Toolkit, Jonathyn Owens

10 principles of life-centred design, Jonathyn Owens, 2019

The Long Time Tools, The Long Time Project, 2020

LIFE, PLANET OR EARTH-CENTRED DESIGN FRAMEWORKS

Eight Emerging Lessons: From Coronavirus to Climate Action, Otto Sharmer, 2020

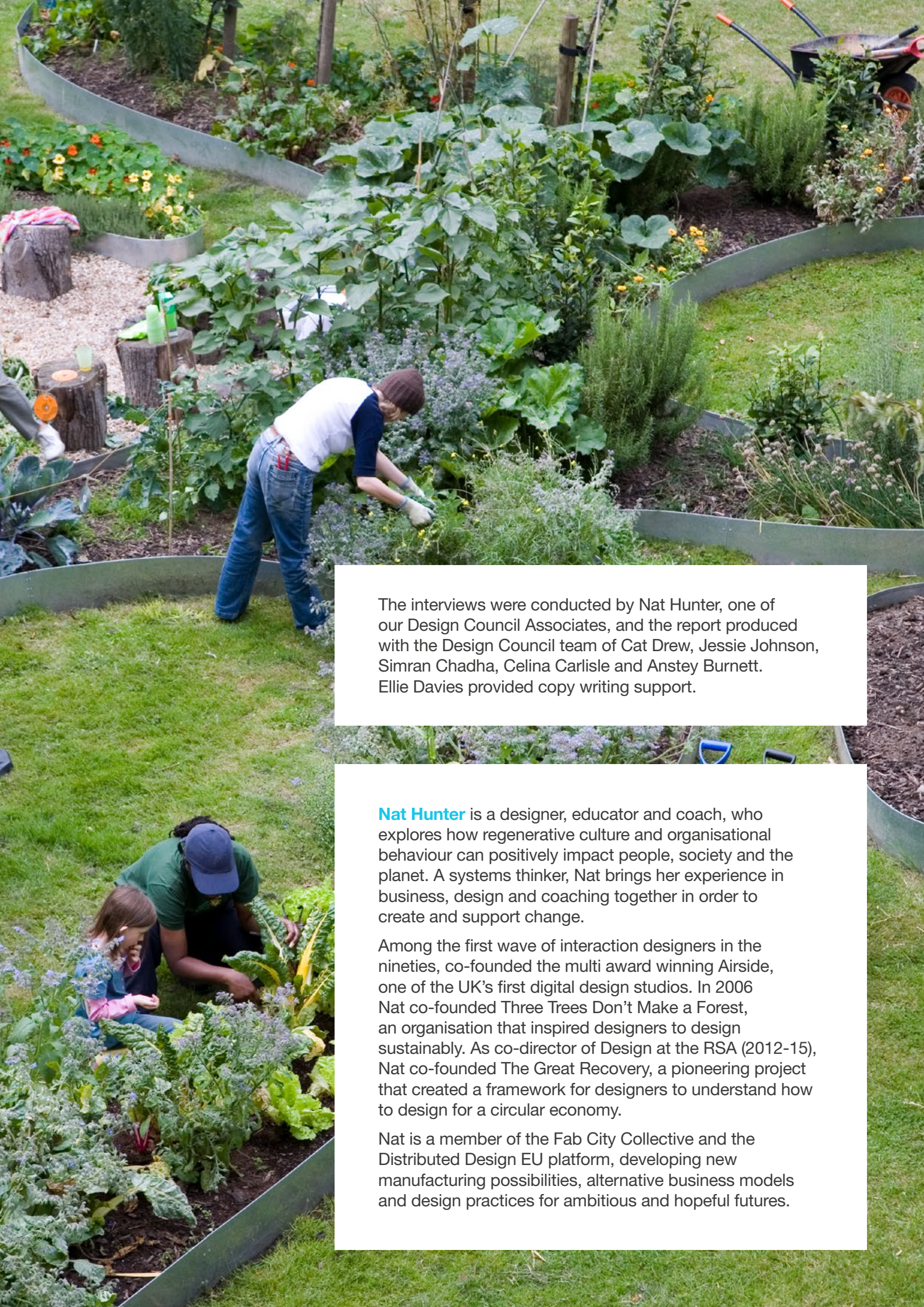
Cynefan Framework: Framework for dealing with complexity, Dave Snowden

The Good Ancestor, Roman Krznariac, 2020

Using Learning Processes to Promote Change for Sustainable Development, David Ballard, 2005

Leverage Points, Donella Meadows, 1999

From What Is to What If, Rob Hopkins, 2019



The interviews were conducted by Nat Hunter, one of our Design Council Associates, and the report produced with the Design Council team of Cat Drew, Jessie Johnson, Simran Chadha, Celina Carlisle and Anstey Burnett. Ellie Davies provided copy writing support.

Nat Hunter is a designer, educator and coach, who explores how regenerative culture and organisational behaviour can positively impact people, society and the planet. A systems thinker, Nat brings her experience in business, design and coaching together in order to create and support change.

Among the first wave of interaction designers in the nineties, co-founded the multi award winning Airside, one of the UK's first digital design studios. In 2006 Nat co-founded Three Trees Don't Make a Forest, an organisation that inspired designers to design sustainably. As co-director of Design at the RSA (2012-15), Nat co-founded The Great Recovery, a pioneering project that created a framework for designers to understand how to design for a circular economy.

Nat is a member of the Fab City Collective and the Distributed Design EU platform, developing new manufacturing possibilities, alternative business models and design practices for ambitious and hopeful futures.

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