|Engaging Design

Tools for design practices urging new forms of citizenships

Dr. Rob Phillips
Dr. Laura Ferrarello &

| Recipes to Engage Citizen(s)

Engaging Design

Noun: A distinct discipline or category of design that strategically seeks engagement.

Adjective: Design that is (definitively and effectively) engaging.

Verb: To knowingly engage design—understanding its agency (for engagement).

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Inspired by examples of work creating the conditions for community-led transition(s), this book offers easy-to-follow strategies. These strategic narratives of citizens' empowerment constitute practical guidelines as a manual of methods that can be learned or implemented: a catalyst for creative campaigners, design disruptors, social advocates, and citizens of anywhere. While supporting decolonialized perspectives, these methods open and illustrate new realms for design—as a discipline and practice—that stimulate ownership and agency over our (collective) social and natural environment and urge behaviour to foster sustainable, planet-centred means. *Engaging Design* probes an engaged "metaphorical bridge" between issues (natural and human challenges), public(s), and communities, an engaging design that can be cultivated, designed, interpreted as an applied process in its own right.

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Foreward(s)

For An Ecology of Engagement: A New Generation of Public Services. Lessons from Social Innovation.

Ezio Manzini[1] |

As we read in the presentation of this book, *Engaging Design,* what we are talking about is all that design can do to stimulate and support "new forms of engagement with ownership of, and agency over our surroundings". That is, I would add, all that design can do to make people abandon the role of passive users and customers of the products and services offered by the market and adopt **active and collaborative ways** of being and doing (and, in doing so, operate as co-designers and co-producers of the results they want to achieve). I believe that when this happens, the engagement to which we refer, breaking with the ways of being and doing proposed and imposed by the dominant neoliberal culture, is in fact the expression of a social innovation. Consequently, what *Engaging Design* generates is what, in other forums, has been called "design for social innovation". Starting from this observation, as a contribution to this book on *Engaging Design*, I would like to propose some lessons learned from almost twenty years of work for, and with, social innovation.

What We Learned / 1: Strengths |
In recent years, we have spoken of social innovation referring to a specific and particular wave of social changes that began with this century and has now reached maturity. Overall, it has been, and is, characterized by the fact that groups of citizens are engaged as they decide to collaborate to **obtain results concerning daily life**: sharing spaces and condominium services, creating groups of mutual care and mutual help, caring together for community gardens, dedicating their time and energy to neighbourhood regeneration... The list could go on. A relevant aspect for the purposes of our discussion is this: these practical results are achieved by collaborating

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[1] A leading Italian design academic and author known for his work on design for social innovation and sustainability | The MIT Press, Massachusetts Institute of Technology. (2023, January 6). *Author – MIT Press*. MIT Press. https://mitpress.mit.edu/author/ezio-manzini-8295/

and, in collaborating, also contribute to the **regeneration of social resources and the fundamental values** on which they are based (such as closeness, empathy, trust and mutual care). Therefore, we can say that this social innovation, which is molecular and bottom-up, has produced value not only for the people directly involved, but also for society as a whole. And it has shown that, even today, in contrast to the processes of individualization and passivation that characterize the dominated neoliberal ideology and practices, forms of collaboration are possible. That is, forms of engagement which are innovative mainly because they refer to everyone. That is, not only to those who choose to operate as activists (the social heroes), but to anyone who wants to live sustainably.

What We Learned / 2: Limits |
Today, twenty years after the start of this wave of social innovations, we have entered a phase that we can define as maturity: a phase in which the best proposals have been consolidated (some have run out, others are diverted, losing what was their initial social value). And in which, as it should be, one can also recognize their limits in addition to the values they have generated. As regards the issue of engagement, i.e., active, collaborative, and unpaid participation in obtaining a result, it is clear that it depends on two factors: **enthusiasm, as a dynamizing factor** (attracting element), and the **ability/willingness to invest the required time**, energy, and attention (actuating element). And it is equally clear, because it is demonstrated by an infinite number of examples, that every new idea, at the beginning, is generated and implemented by social heroes endowed with great enthusiasm and great willingness to commit their own resources of time, energy, and attention. Over time, enthusiasm diminishes. Therefore, if a practice is to last over time, the required participatory intensity must also decrease in parallel.

That said, it is quite clear that engagement occurs when **enthusiasm is sufficient** to justify the **investment required**. It follows that the basic limit to the possibilities of this engagement is given precisely by the **availability of enthusiasm** (and by the possibility of extending and regenerating it) and by **the amount of commitment required** (participatory intensity). These two aspects (enthusiasm and participatory intensity), therefore, become the limiting factors: they limit its duration over time (even the most exciting ideas normalize, and even the most active participants get tired), and the extension in the social space (not everyone has the opportunity to commit themselves and, therefore, an inequality is created between those who have the necessary time and energy and those who do not). **An articulate commitment** in the face of all this, a

new role for **public policy and design arises:** to create conditions in which these limiting factors are reduced. This can be done by acting on two levels: creating opportunities to regenerate enthusiasm and making the proposed practices of participation more diversified, including also lighter and more flexible ones. These two levels are complementary to each other and operate in opposite ways: one leads to imagining exceptional events capable of **catalysing new social energies**. The other tends to normalize commitment by reducing the effort required and allowing modes of engagement practicable in the daily life of those who cannot or (at that moment) do not want to behave like social heroes.

It follows that what design for engagement should do is operate as a *sense maker* to create a culturally dynamic environment in which reasons for enthusiasm are proposed, and to do so as a *problem solver* to propose different forms of engagement, in which many can find ways to participate that are more consistent with their actual possibilities. Finally, it is necessary that this dynamization and these **participatory ecologies** be brought to geographical and social areas where the **available resources are scarcer**. In order to do this, there must be specifically designed social and technical infrastructures. That is, infrastructures capable of sustaining and coordinating different contributions, including small and intermittent ones. Finally, there must be public services which, using these infrastructures, offer the appropriate enabling platforms: public services that take charge of the most onerous activities required by a collaborative initiative and that are capable coordinating them and making them effective (included when, as we have already said, they are very small and intermittent). To give more concreteness to this proposal, I will take two examples which, in my opinion, are prototypes of what I am trying to say.

An Ecology of Possibilities |
Let's consider a community garden. More precisely, a community garden as it could be and as in some situations already is. At first glance we see that there is someone who works a few hours every week; someone who is more continuously engaged and takes on the management; someone else who participates sporadically, for instance to help in organizing parties and special events; and someone who attends and supports these activities, feeling part of the community that created this garden and collectively manages it. This example clearly shows us that the term engagement can be understood in a variety of ways. That is, with a variety of forms of involvement and participatory intensities: an ecology of possibilities thanks to which everyone can find the involvement that, at that moment, she or he can and want to adopt. Generalizing, we can say that it is possible to

create environments, i.e., technical, economic, and regulatory systems, **which constitute a favourable context for a multiplicity of forms of engagement**: from those that require a high participatory intensity to lighter ones, but which can nonetheless make those who participate feel that they are part of a collective project. The task of engaging design, therefore, is to create conditions in which this ecology of forms of participation is effectively possible. And it does so by proposing new ideas and new initiatives that people can get excited about and, at the same time, by expanding a variety of ways for them to be and feel involved.

Collaborative Public Services |
Now let's move on to another example. For some time now, many libraries have begun to aggregate other activities around the traditional ones: from reading groups to conference cycles; from activities to reduce the generational digital divide, to support for new parents, with the offer of courses and consultancy; from visual art exhibitions to theatre performances; from after-school activities for children, to inclusive courses for new citizens of migrant origin; all the way up to the organization of training sessions to support residents in developing ideas and skills. The result is that the most dynamic libraries have become points of reference for the cultural associations of the neighbourhood. At the same time, being connected with other libraries, they have become places where the short networks of the local cultures intertwine with the long ones of city and international initiatives. Ultimately, they will contribute as centres of socio-cultural activity. But, unlike the spontaneous ones (whose existence depends only on the energy deployed by the citizens), they are supported by an enabling platform made up of the library itself (the physical space) and, above all, by the librarians (who collaborate as stimulators, facilitators, and event coordinators).

The case of libraries that become cultural hubs distributed throughout the territory can be seen as parallel to that of schools that open up to the neighbourhood or that of post offices that become centres for coworking, and other related activities. All of them are examples of public services which have also become promoters of platforms for participation and collaboration between citizens. These examples of socio-institutional innovation show us the concrete possibility of redefining the idea and practices of public services, imagining and implementing services which, while delivering the services that constitute their traditional *raison d'être* (which we can call "vertical"), make available a platform enabling collaboration activities with and, above all between, citizens (which we can call "horizontal"). Generalizing these experiences, we can imagine the birth

of a new and widespread generation of services that we call collaborative public services: collaborative because they favour (that is, they stimulate and support) the birth of collaborative activities. And public because they do it also, and above all, where these collaborations are more difficult. The design of these collaborative public services is, in my opinion, the most urgent and necessary field of intervention for a design for engagement adequate to the challenges of the difficult times we are going through.

Engaging Design | Designing New Forms of Citizenship

Cat Drew[2] |

Citizenship… The Heart of The Climate Crisis

The premise of *Engaging Design: Designing New Forms of Citizenship* is that citizen engagement and action is the natural response to the climate and nature crises. These twin challenges are often positioned as requiring technical or ecological solutions, but leaving citizens out of the equation means that they will never truly be effective. Technical solutions to lowering emissions need people to use them. Nature-based solutions to biodiversity (often) need people to steward them. And more than this, citizens need to be at the heart of reimagining and then enacting a completely new way of living. A look at indigenous communities around the world highlights the critical role engaged citizens play in a more regenerative way of living that is interdependent with the planet. This is not the type of citizenship that is confined to the identity on your passport, or voting in an election. This is about people's responsibility to be citizens of the world, and to "foster positive, ecological behaviours involving and benefiting communities through individual and collective action".[3]

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[2] Chief Design Officer at the Design Council where she champions Design for Planet, bringing together practitioners from across the design economy to develop new regenerative practices and create the conditions for designers to do their best work. Cat has pioneered approaches to design in policymaking, having combined 10 years of experience of Government with co-founding the UK Government's Policy Lab | Design Council. (2019). *Cat Drew – Chief Design Officer*. https://www.designcouncil.org.uk/who-we-are/our-people/cat-drew/

[3] *Ecological Citizens | Home*. (2023). https://ecologicalcitizens.co.uk/

Why design? what is different about this typology of design? |
So why do we need to design this? Or, what is the role of design here? As well as the physical form of our imaginations/an idea, design is also the creative process for bringing it into being. Put simply, design helps turn ideas into action. And in doing so, it creates a sense of agency of seeing your imagination spring into life. Whether that is a small child stacking Lego bricks into a castle, *NHS* workers testing out their ideas to make a pharmacy operate more effectively, or communities designing repair cafes and repairing and redesigning things they love. So this isn't design in the "traditional" sense of a chair or car. But over the last century, design has been expanding the boundaries of what it is and who does it. There are 1.6 million professional designers in the *UK*,[4] a further 2.5 million people who use design skills in their work. "Design thinking" has spread across the public sector, and has helped design move into areas such as strategy, organizational structure, and policy. It has also spread into communities, as many of the case studies presented in *Engaging Design: Tools for design practices urging new forms of citizenships* attest.

But that does not mean that professional design isn't important, simply that working together is essential. In *Design when Everybody Designs*,[5] *Ezio Manzini* sets out a model for how different types of design work together: non-designer community members using design, and professional designers working with communities. We used this model in our *Designing Demand* programme,[6] funded by the *National Lottery Community Fund*,[7] which supported twenty-eight community groups co-creating and testing different approaches to climate action. We found that design provided a common framework for people from different backgrounds to realize an opportunity together. But also that they needed professional expertise from architects or UX designers to help realize their dreams, for example ensuring a pub retrofit made the most out of light and energy, or creating an engaging and easily accessible website.

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[4] Design Council. (2021). *Design Economy – Design Council*. https://www.designcouncil.uk/our-work/design-economy/

[5] Advocate of Social Design Practices | Manzini, E. (2015). *Design, when everybody designs: An introduction to design for social innovation*. MIT press.

[6] Leading UK charity, advocating for design across industries and education | Design Council. (2022, June 13). *Designing demand*. https://www.designcouncil.org.uk/our-resources/archive/case-studies/designing-demand/#:~:text=Designing%20Demand%20was%20a%20national,improved%20using%20testing%20a%20prototyping.

[7] The National Lottery Community Fund. (2023). *Home | The National Lottery Community Fund*. https://www.tnlcommunityfund.org.uk/

How does design need to change? |
What it does point to though is a new typology of design—one that this book argues should be called *"Engaging Design"*, which requires different, slower-paced, and more post-participatory methods and a fundamental shift in power, which designers wishing to get involved should understand. From our own work at *The Design Council*, and from the growing diversity and volume of community-led design work that we are following and championing, and from the tools/methods in *Engaging Design*, we see a number of shifts/principles.[8]

From co-design for consumers to co-production as citizens. Moving up *Arnstein's Ladder of Participation*,[9] design needs to function not just by working with users to design products, services, and places that they can use and meet their needs, but that enable them to be active participants—or citizens—in creating a regenerative future, whether that be by returning or repairing consumer items, generating energy through their homes or transport choices, or rewilding their local neighbourhoods.

A focus on power across layers of the system, understanding where power currently lies, and who needs to be engaged across the system to shift it. Design can provide incredible agency to turn ideas into action, and in doing so can disrupt the current "system'" Design needs to bring together people from across the system, from communities to policymakers, so that brilliant ideas that start in communities can inspire and spread—in a diversity of ways—alternative ways of living across the country.

Social circularity and building skills for sustainability. Design needs the means to unpick how and where these processes need to be actioned, and learn new (or lost) skills from communities. Often we think of circular design as about materiality, but we can also think about it as social, and about passing on skills so others can design, but being humble and learning from the wisdom that sits within our communities.

Love, care, trust, relationships |
These invisible things that sit "around" the design process are its fundamental components. They are the basis on which *"Engaging Design"* is done. From sitting down to eat a meal together alongside an ideation workshop, to participating in cultural events outside of the design process

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[8] Design Council. (2022). *Design, differently – Design Council*. https://www.designcouncil.org.uk/our-work/projects-partnerships/design-differently/

[9] Differing levels of engagement | Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of planners*, *35*(4), 216–224.

that are important to the community. This takes time, needs to be made visible, and be built into design processes.[10]

At *The Design Council*, our purpose is to make "life better by design". And we champion it in all its forms. We want to democratize its use as a creative tool to turn ideas into action, and connect up professional designers with communities, and inspire more people to take this career path. *Engaging Design* is a way of supercharging the impact of design. Not in the traditional sense of scaling where more units are purchased. But in putting design into the hands of more people.[11] In this way, *Engaging Design* is essentially a form of regenerative design.[12] It is planting and growing the seeds from which other designs grow.[13]

What is Engaging Design?

Nick Gant[14] |

Engaging Design

Noun: A distinct discipline or category of design that strategically seeks *engagement*

Adjective: Design that is (definitively and effectively) *engaging*

Verb: To knowingly *engage design*—understanding its agency (for *engagement*)

Designed products, services, and systems pervade every part of our lives. The world is awash with "stuff" that has been designed; design has "made it"! However, in times of social injustice, economic inequality, and ecological crisis, design stands simultaneously as both disease *and* potential cure.

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[10] Design Council. (2023b, November 17). *Keynote with Rosie Murphy, Architects Climate Action Network* [Video]. YouTube. https://www.youtube.com/watch?v=HilJmB9WQuM

[11] Design Council. (2023, November 17). *Designing with communities* [Video]. YouTube. https://www.youtube.com/watch?v=5vCgFgU-ZlA

[12] Drew, C. (2022, April 23). Design for a Just Transition: Co-design, community & care. *Medium*. https://medium.com/design-council/design-for-a-just-transition-co-design-community-care-ccbe1136ee05

[13] Design Council. (n.d.-c). *Designing London's Recovery – Design Council*. https://www.designcouncil.org.uk/our-work/projects-partnerships/designing-londons-recovery/#:~:text=What%20is%20Designing%20London's%20Recovery,solutions%20and%20push%20for%20change

[14] Gant, N. (2010). *Community21*. Nick Gant. https://community21.org/about/16283_people

Growing "awareness" of the impact of design and its possible agency (both positively and negatively) motivates new opportunities. In this case design becomes as much about social storytelling, cultural connectivity, political persuasion, and sustainable signposting as it has about delivering the next iteration of homogenous mobile phone. Design has agency and is a tool that is being *engaged* as a pervasive means to facilitate change and to signal new opportunities. Moreover, design is often about *engagement* through potent product propaganda and protest, meaningful, material messaging and critical, craft campaigns; designers are utilizing material literacy as the communicative language of materials, the agency of aesthetics and the provocative power of products to arrest audiences, transform behaviour, and accelerate action.

Much is talked about *what design can do* and *what design is for*, however one might worry that there may be more design rhetoric than actual design(ed) progress. The design sector has, for some time now, been in the possession of the knowledge that in lots of ways it can have an impact—therefore it is incumbent on designers to be critically *engaged* with what this means and moreover how this "influence" is practiced. Many designers are endeavouring to critically *engage* with the question of design's purpose and potential and seek to consider ways of "doing things" that move us in new and better directions. However, it may be valuable to understand that much of what we may want to achieve within the "critical" function of design is not changing the physical, material impact, but to use design to stimulate and facilitate a connection, provoke a reaction, or facilitate a change.

One might argue that we already have the scientific knowledge, the technical understanding, and the statistical data necessary to address many of the issues that the world faces today; however, the question still remains: how do we (actually) motivate society to apply this knowledge, act on these understandings and *engage* with the change required? *Engaging Design* as a distinct discipline might focus on how we may design in a way that promotes engagement. But what do we even mean by engagement? Surely anything can be engaged with to some greater or lesser degree— but what makes this engagement meaningful, valuable, powerful? As designers are we even aware that we are seeking to engage, and if so, how do we ensure we are successful?

Artefacts, objects, products, spaces, services, or systems are designed to *engage*. A chair is often more than simply a (new) place to sit. Instead it may serve up an overtly visible shift in the *material-make-up.* Yes,

the "product" delivers a tangible, physical alternative but moreover the deliberate, often provocative and disruptive design(ed) "language" is deployed to engage an audience in new opportunities and conversations. The object is pursuing a more potent meaning and seeks to arrest users through the disruption of orthodoxy and archetype, driven by alternate agendas that may contrive consumer concern, promote cultural questioning, and provoke new behaviours. These designs are *propositional* not *prototypical*, their role may be less concerned with being the *first-of-many* repeat products but more effective in using the art-of-design as a vehicle and active agent in facilitating and mediating a message.

Users are *audiences* and design strategies and outcomes "perform" with a conscious concern for this interaction between "the thing" and its meaning, object, and subject. A function of *Engaging Design* may be to elevate the importance of certain issues in society or industry. Therefore, *Engaging Design* is often asking "what is the point?" What is the point needing to be "made", who should care, and how does design elevate the importance and/or help deliver on the point? A designer's ambition for their "product" may extend beyond the immediate need of the customer or user and may aspire to "talk" to their discipline and moreover even conceive a critical "conversation" outwardly to the wider world. The "product" is not limited to its initial, commissioned function but imagined as part of a wider cultural conversation enacted by the potential affordances of new media and collective concern.

Engagement is often an explicit expectation and demand. As a word it is ubiquitous in public policy, localism, democratic agendas and planning processes, and when commissioners, clients, and funders seek impact or inclusion. Engagement needs better definition, metrics, and methods. *Engaging Design* may usefully question and define how we engage users in effective co-design that leads to better, more beneficial products, creatively consider how marginalized or underrepresented communities are meaningfully involved in change in their neighbourhoods or how governance organization ensure that the affordances offered by policy are realized. Successful "participation" in participatory design[15] requires engagement; effective collaboration in co-design[16] requires creative tools

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[15] Spinuzzi, C., 2005. The methodology of participatory design. *Technical communication*, *52*(2), pp.163–174.

[16] Sanders, E.B.N. and Stappers, P.J., 2008. Co-creation and the new landscapes of design. *Co-design*, *4*(1), pp.5–18.

and processes of engagement; Critical,[17] Speculative,[18] and Design[19] are necessitated on engagement by shifting audiences beyond the baseline of normality and efficacious; interactive design will facilitate and often be measured on notions of engagement.

In some ways we may be discussing a form of "social" design where society benefits to a greater or lesser degree but importantly where society also needs to be mobilized as an active participant, and *Engaging Design* could be another subset of this. If the issues and opportunities that surround us are a symptom of our behaviour(s) and our designs are all potential means to mediate this behaviour, facilitate action and champion change then *Engaging Design* should evaluate how design might strategically use its "power" to ensure a deep and profound connection with and through people, society, and different forms of culture. This may be an oversimplification and may appear to suggest reinstating obsolete or inappropriate hierarchies and the danger of glib hubris where "design dictates". But this would ignore the demonstrable difference design already delivers in sectors associated with mass consumerism. "Good" design can affect in diverse ways and the ideas and objectives being explored in this book illustrate how investment in design and the prism of engagement can ensure ethical and effective employment, so that all possible benefit is shared, felt, and experienced.

It could be argued that we are well beyond "awareness raising" (?) in which case *Engaging Design* must also facilitate (the) action and leverage (the) change. The value of this book is in providing diverse interpretations of how design is being engaged as an active force for behaviour change, social empowerment, and collective endeavour, as well as how design can democratize and devolve solutions through active engagement. These exemplars can help provide answers to the questions of whom, how, and why we engage. All designers want their designs to be "engaging", no? But how, more specifically, do we deliver *Engaging Design* in practice and apply practical knowledge that better defines our discipline's active agency that can be deployed for the betterment of all?

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[17] Malpass, M., 2019. *Critical design in context: History, theory, and practice*. Bloomsbury Publishing.

[18] Dunne, A. and Raby, F., 2013. *Speculative everything: design, fiction, and social dreaming*. MIT press.

[19] Tharp, B.M. and Tharp, S.M., 2013. Discursive design basics: Mode and audience. *Nordes*, *1*(5).

Engaging Design |

Introduction
Dr. Rob Phillips & Dr. Laura Ferrarello |

Engaging Design: Tools for design practices urging new forms of citizenships is a collection of lived projects and experiences that demonstrate how diversity, inclusivity, and creativity can help create engaged citizens who respond and react to the climate emergency.

Our generation is witnessing events that dramatically strain our planet and individuals whose lives and livelihoods are closely related to the health of the natural environment.[20] As a consequence, to mitigate the changes of the earth's climate, we urgently need the creation of critical mass, stewardship, and coordinated actions that respond to the environmental crisis. As we observe how the planet adapts to the impact of industrialization, we need to adopt more responsible behaviours, as organizations, employers, individuals, and/or communities.

With governments crippling public amenities through austerity funding, society's growing disconnection to the natural world,[21] and the global geopolitical fragility, it is imperative to catalyse communities to adopt creative methods that value responsibility, inclusivity and sustainability as attitudes and behaviours to hold towards society and the planet. This is our motivation for writing *Engaging Design: Tools for design practices urging new forms of citizenships*.

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[20] Seminal work on climate change | Gall, M., 2015. The suitability of disaster loss databases to measure loss and damage from climate change. *International Journal of Global Warming*, *8*(2), pp.170–190.

[21] Insights from the Nature Connectedness Group in Derby, one of the leaders in the field publishing on nature connectedness, its power and importance | Richardson, M., Dobson, J., Abson, D.J., Lumber, R., Hunt, A., Young, R. and Moorhouse, B., 2020. Applying the pathways to nature connectedness at a societal scale: a leverage points perspective. *Ecosystems and People*, *16*(1), pp.387–401.

Within the context of citizenship,[22] we do not refer to territorial waters, laws, or judicial systems… but build off *Buckminster Fuller's*[23] Spaceship Earth,[24] where we all take positive responsibility to serve and protect the planet we live on, by citizenship as practice, not governmental boundaries. Through a collection of projects and leading voices' experiences, we describe how design—in its largest meaning—can be adopted as an attitude to engage contemporary issues and make social impact.

With these projects and experiences, we provide readers with implementable tools and creative frameworks that can be used as strategies for engagement to stimulate sustainable actions towards the planet and society. Furthermore, we present in-depth analysis concerning the pitfalls, benefits, and opportunities to move knowledge and principles to actions. We offer practical methods for enabling communities to respond to the events triggered by climate change. We describe how to design community actions and catalyse social transformation. Finally, we promote agency for sustainable transition(s)[25] that supports social responsiveness to species extinction. *Engaging Design: Tools for design practices urging new forms of citizenships* is a book that design and non-design practices can consult to navigate how to initiate and implement ethical and transitional methodologies towards the planet, led by citizens. Hence, the definition of *Engaging Design*:

Definition: *"Engaging Design" (noun) borrows from design traditions and emergent design disciplines to make design an accessible tool for the benefit of a wider segment of the population; to engage design (verb) as a tool (for social change), to design in ways that engage (adjective) through empowerment and agency.*[26]

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[22] *CITIZENS | Jon Alexander*. (2018). Jon Alexander. https://www.jonalexander.net/

[23] BFI Design Lab is a non-profit design studio and accelerator that is actively supporting world changing initiatives addressing core issues including climate, biodiversity, energy, food, water, and shelter. | *Buckminster Fuller Institute*. (2023). Buckminster Fuller Institute. https://www.bfi.org/

[24] An eminent publisher and founding voice on sustainable practices | Fuller, R.B., 2008. *Operating manual for spaceship earth*. Estate of R. Buckminster Fuller.

[25] Leading authors identifying the field of *Transition Design* | Irwin, T., Kossoff, G. and Tonkinwise, C., 2015. Transition design provocation. *Design Philosophy Papers*, *13*(1), pp.3–11.

[26] Seminal work on *Engaging Design*, shaping it as a practice | Phillips, R. and Gant, N., 2021. Engaging Design-Empowering Beyond "Participation" For Active Engagement. *Research in Arts and Education*, *2021*(1), pp.23–49.

With *Engaging Design,* we intend to build "with" citizens on how to become empowered for supporting a more sustainable, inclusive, and ethical society.[27] The following chapters should be read as an action-based manifesto, or critical compendium of methods and strategies for designing engagement. This is described with a set of diverse typologies that are inclusive by design.

> *"How can people embrace the engaged citizen attitude and thus, behaviour for enacting sustainable actions?"*

This question guided the way we selected the projects and curated the interviews to make the book a source of inspiration for civil communities to embrace creativity as a measure to stimulate ownership, agency, and care over our (collective) social and natural environment. We used "design for engagement" as a leading methodology to offer the reader the conditions for questioning social challenges through values like fairness, care, and equity.

Moved by the experience that both of us, as authors, have developed in collaborating with private and governmental organizations for developing design-led[28] strategies stimulating proactive and engaged participation. We wish to extend and disseminate this approach to a wider audience; our goal is to initiate the cultural ground supporting implementable sustainable actions benefiting both people and the environment.

We approach sustainability[29] as an arguably human construct born from a necessity to re-engage people with their relationship to a range of issues associated with our biosphere. We look at sustainable practices in terms of their environmental focus as well as in regard to their attention to society, as the two aspects are intertwined.

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[27] A leading voice in Design Justice and ensuring communities are designed "with" not "for" | Costanza-Chock, S., 2020. *Design justice: Community-led practices to build the worlds we need*. The MIT Press.

[28] A contextual classic literary work of empowerment for communities seeing new opportunities for more sustainable agency | Hess, K., 1979. Community technology. *(No Title)*.

[29] A fresh perspective on sustainable design, designing emotionally so we connect with items, so we cherish them | Chapman, J., 2015. *Emotionally durable design: objects, experiences, and empathy*. Routledge.

We recognize the need for safeguarding the planet as a grounding value of human dignity and well-being development.[30] However, technocratic, science and statistically driven agendas would be able to engage with sustainable agendas[31] if they reframed their relationship with human culture. Hence, we argue that this could be achieved through new approaches towards citizenship that transition traditional means (e.g., recycling) to implementable, scalable, repeatable, collective, and inclusive actions (e.g., transformative community action). Furthermore, the way we frame the space of design follows this definition:

> *"Designer(s) bear a responsibility for the way the products [they] design are received at the marketplace, [as] there should be no special category called 'sustainable design'. It is simpler to assume that designers will reshape their values and work."[32]*

With the acknowledgement that design, as a "medium", holds opposite poles—one concerned with seducing "polished" products, i.e., artefacts that you see in galleries or shops, and the other connecting abstract and technological capabilities with societal contexts—we also recognize that it can be a tool that communities use to generate preferable future(s)[33] responding to the challenges and cultural barriers directly impacting them.

In *Engaging Design: Tools for design practices urging new forms of citizenships,* design is both held accountable for issues like consumerism, capitalism, exploitation of environments, that can be expressed through products or services, but also as a medium for stimulating opportunities of more equitable strategies of civil coexistence. Furthermore, for the focus on communities' connections and their understanding of citizenship, *Engaging Design* sits outside conventional design norms and practices. Indeed, the projects we selected articulate this new realm for design, and how it is used to induce, provoke, and design sustainable transitions across different

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[30] Founder of the conceptual framework of circulatory | Raworth, K., 2017. A Doughnut for the Anthropocene: humanity's compass in the 21st century. The Lancet planetary health, 1(2), pp.e48–e49.

[31] The Sustainable Development Goals (SDGs), Created by the UN Department of Economic and Social Affairs Sustainable Development | Nations, U., 2017. Department of Economic and Social Affairs Sustainable Development.

[32] A historic approach to design that is still topical requires us to move beyond designing for aesthetics | Papanek, V., 1984. Design for the real world. *Human Ecology and Social Change. New York: Pantheon Books*.

[33] Foresight and its applications are critical to how we see the world, selected as a seminal voice in the field | Bell, W., 1997. The purposes of futures studies. *The Futurist*, *31*(6), p.42.

ranges of sectors, and, most importantly, construct synergetic social and environmental collaborations.

In the book, we offer propositions to design and non-design industries on how to use *Engaging Design* to increase the radius of potential impact of civil actions. If austerities[34] continue, grassroots[35] approaches, proposals, and comprehension that are built in and stem from engaged societal activities and responses will be critical. Hence, through the analysis of aspects that would be normally classified as "design", we guide readers in critically imagining and designing societal change[36] and cohabitation to transition to more sustainable practices.

Hence *Engaging Design* is a stand-alone methodology that shifts the current thinking of perceiving the design of engagement as a combination of design principles, like participation or co-design. We offer an alternative view of design, focused on its ability to imagine and create futures that foster cultural change through storytelling and narratives. We want to evidence how the powerful language of objects, materials, products, services, and systems can influence (and change) human behaviour, empower communities, and shift the same understanding of design from pure utilitarian application to a medium that citizens can use to address social challenges across health, environment, and welfare; we present non-design readers decolonialized perspectives through material, models, and methods.

We navigate the need to move to the age of the "citizen"[37] and distributed agency by considering "citizenship" as a design factor asserting the impact of designing engagement(s) as leverage eliciting social power and change. In the selected projects, urban communities become engaged citizens when they embrace empowering political stances that foster agency and champion collective and individual change. Through some of the case studies, for instance, we describe how design tools and practice foster accessible activism, more virtuous circular economies, prompt

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[34] The UK has had austerity measures, reducing national infrastructures over decades | Loopstra, R., Reeves, A., Taylor-Robinson, D., Barr, B., McKee, M. and Stuckler, D., 2015. Austerity, sanctions, and the rise of food banks in the UK. *Bmj*, *350*.

[35] Smith, A., Fressoli, M. and Thomas, H., 2014. Grassroots innovation movements: challenges and contributions. *Journal of Cleaner Production*, *63*, pp.114–124.

[36] Advocating for grassroots opportunities and how empowering they are: Qurtuby, S.A., 2012. Reconciliation from below | Indonesia's religious conflict and grassroots agency for peace. *Peace Research*, pp.135–162.

[37] Moving from "consumers" to citizens | Alexander, J., Conrad, A. and Eno, B., 2022. *Citizens: Why the key to fixing everything is all of us*. Canbury Press.

civic engagement or mass participation; through others, we introduce the design ways to stimulate community autonomy through citizen science for environmental agency.

With *Engaging Design: Tools for design practices urging new forms of citizenships* we endorse original thinking that critically engages contemporary societal issues; we describe why becoming an engaged citizen is key for our society and environment, and what design factors make a positive impact on people and the environment through engagement. Furthermore, we articulate the concepts of *engaged citizens* and *design for engagement* as strategies paving the way to the *"age of citizens",* which is an action-based response to the climate emergency.

With *Engaging Design* we intend to dissolve disciplinary boundaries around design; while traditionally the space of design is associated with museum exhibitions, academic lectures, or workshops, with this book we invite readers to be inspired and use their everyday creativity and imagination to re-position those behaviours and attitudes that have a negative impact on complex planetarian challenges. To facilitate the learning experience we organized *Engaging Design* into categories, using five models,[38] each with a different definition, modality, and tools of engagement:

1. *Engagement as Artefact:* understood as a stand-alone "object" providing tangible/physical/tactile boundaries for conversations across different cultures and industries.
2. *Engagement as a System:* as the complex set of relationships between people, institutions, things, ideas, and specific places.
3. *Engagement as Partnership:* describing the role and value of collaborating for developing and strengthening relationships between parties.
4. *Engagement as Process/Event:* as a linear or cyclical process, event, or knowledge-to-action type of decision-making.
5. *Engagement as Affect:* as the final configuration manifesting the object *design for engagement*.

In conclusion, with this book our ambition is to communicate deliverable practices for engagement(s) that the projects, interviews, and repeatable insights illustrate through strategies. These build relationships between audiences, communities, practitioners, cultural institutions, and tertiary

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[38] Our five models are informed by *The National Co-ordinating Centre for Public Engagement* (NCCPE) and their reporting. | *We help universities engage with the public*. (2023). NCCPE. https://www.publicengagement.ac.uk/

sectors. In this book, we draw attention to factors, values, methods, and attitudes of collaborative actions that constitute the object of *Engaging Design*.

The five models serve as guides for readers to learn how to adopt and implement design processes and practices. Most importantly, they use knowledge that would be otherwise restricted to the design community; being conscious that challenges like climate variation need more transdisciplinary thinking, we wish to make accessible to a wider segment of the population the practice of *Engaging Design* to stimulate more collective and widespread sustainable actions (and citizenship).

This is why the book includes an analysis and mapping of the projects; we outlined easy-to-follow guidelines to support adoption across sectors, wishing to champion engaged citizenship as a value for stimulating sustainable development. With this book, we therefore invite anyone beyond and within design who has passion and interest in enhancing their creativity for generating social positive change through the "object"—or method—of *Engaging Design*.

Professionalizing Lived Experience(s) |

As authors, we are very conscious of our perspective(s), including the biases, nuances, privileges, and cultural circumstances that accompany it. Being aware of the opportunities and contexts that we have had (or created), and seeing design as a means to catalyse others. We want to channel our and others' lived experiences as vehicles for stimulating creative intelligence and action. A lived experience is a "direct, first-hand perception of a relevant situation, condition, or identity in an everyday context".[39] Our lived experiences are our professional skills that are contextual and critical; they are equal to the way design practices advocate for the building of empathy to unpick challenges rather than simply

[39] The importance of our lives, and contexts regardless of conventional hierarchies | Vink, J. and Oertzen, A.S., 2018, June. Integrating empathy and lived experience through co-creation in service design. In *ServDes2018. Service Design Proof of Concept, Proceedings of the ServDes. 2018 Conference* (pp. 18–-20). Milano: Linköping University Electronic Press.

throwing technology at the issue,[40] for instance. As a consequence, our lived professional experiences are both holistic and tacit[41] and quite often cannot be "trained", nor should be. From this standpoint, we unpick the models, approaches, and cultures from our perspectives, being aware that there are many other ways to approach this within other cultures. Our perspective, or position, is therefore one of special-interest authors, and not "sole experts", with a lived experience of working in cross-disciplinary teams.

Engaging Design is inherently a collaborative process celebrating people's lived experiences that doesn't demean "non-design" knowledge. Through *Engaging Design*, we put in conversation the designer's and the public's lived experiences, with the objective of transferring knowledge from contextual settings to other types of situations, where that knowledge is appropriate and effective in achieving its goals. This could be applied to the scale of a community, like *YourGround* [42] NSW, a crowdmapping website where women and gender-diverse people in *New South Wales*, *Australia*, identify and share spaces that make them feel safe or the opposite;[43] or the scale of a city, like *Wheatfield*. A project that in 1982, transformed a landfill in lower *Manhattan* into a two-acre wheat field to raise attention on waste management, food hunger and ecological challenges;[44] or of a region, like *Liquid Becoming*, a *European Cultural Foundation*-awarded boat pavilion which will sail across four *European* rivers for a month to share lived experiences and shape narratives on climate change.[45]

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[40] Questioning our start points and emphasis on negative technology pushes | Bennett, C.L. and Rosner, D.K., 2019, May. The promise of empathy: Design, disability, and knowing the "other". In *Proceedings of the 2019 CHI conference on human factors in computing systems* (pp.1–13).

[41] The knowledge, skills, and abilities an individual gains through experience that is often difficult to put into words or otherwise communicate | Explicit, M. I., 2024, Tacit Knowledge. Making it Explicit, London School of Economics https://www.lse.ac.uk/Economic-History/Assets/Documents/Research/FACTS/reports/tacit.pdf

[42] McLeod, C. (2023, November 14). Crowd-sourced project to map NSW's "creepy" and "safe" spots in bid to improve women's safety. *The Guardian*.

[43] Questioning how spaces created for good have negative impacts on those that use them | YourGround|NSW, 2024, Mapping a Safer NSW for Women and Gender Diverse People, https://www.yourground.org/

[44] An artwork that is still hyper-relevant nearly 40 years later | Denes, A., 1982, Wheatfield – A Confrontation: Battery Park Landfill, Downtown Manhattan. In Agnes Denes http://www.agnesdenesstudio.com/works7.html

[45] European Cultural Foundation, 2024, The European Pavilion 2024: Liquid Becomings, https://culturalfoundation.eu/stories/the-european-pavilion-2024-liquid-becomings/

The transfer of knowledge is grounded on the principle of recognizing the diversity of people's experiences, as key assets for *Engaging Design*. This is what informed our approach and method for describing what we think *Engaging Design* is and why it is important in this contemporary history.

Hypothesis |

We, as a society, are individuals who can play different roles in relation to the context(s) we are in. We can be sisters, mothers, fathers, professionals, beneficiaries, or activists. In any of the roles we play, we create knowledge and skills which are valuable assets for making our collective community thrive according to the value(s) we wish to follow. Our approach for this book starts with the hypothesis that "participation" is no longer the only means for stimulating citizens' action. To be able to respond to today's challenges, it is key to hold an attitude that acknowledges and engages any voice representing our everyday experiences, regardless of the role we play.

Hence, our methodology of collecting lived experiences to describe how a "post-participatory" method emerges from the need to include the diversity of our "knowledge" created by these different roles. We describe *Engaging Design* as a hypothetical evolution of participatory design, emerging from the need to empower diverse experience(s) of our society as a means for "pro-acting" within complex challenges like the climate crisis.

Values guiding *Engaging Design* | Values are fundamental behavioural frameworks, as they guide and inspire the motivation underpinning an action. Through values, decisions are provided with directions on how to align personal actions with societal and environmental interests. The projects included in this book present a series of values that often drive, express, or are embodied in the engagement process.

In this section, we listed those (that for us) contribute to shaping and communicating *Engaging Design,* to provide the reader with principles guiding the overview, analysis and collaborative critique of the content included in this book. With this list, we don't want to exclude any other value that reading the book might inspire. We present these as our clear mandate as to why we have selected certain projects.

They are not the sole voice to be used to learn *Engaging Design*, and we hope they will provide ground for evolving wider discussion(s). These

values are generally valid across the different stages of a project; however, we grouped this list in relation to those that can play a fundamental role in leading the success of a project if considered at a specific stage of an engagement project.

Entering an *Engaging Design* project |

Tangible: As a design practice, *Engaging Design* holds its own materiality, like wood or metal within industrial design. As any other traditional material, engagement requires care, deployment, finishing, ethical and considerate use, prototyping, and appropriate custody over time.

Culturally considered: *Engaging Design* stems from the respect of cultural diversity and benefits from contextual worldview. Through engagement, different people find opportunities to express their views in safe spaces. In these spaces, cultural diversity is indeed celebrated as a contextual factor.

Developing on an *Engaging Design* project |

Human: Empathy, humility, and care are fundamental to the practice of *Engaging Design*. A mindset able to consider what all parties bring to the table is necessary for designing engagement(s).

Ownership- and Authorship-driven: This value brings attention to the way knowledge, concepts, or other materials are created and attributed. Even if there is a perceived lack of interest in it, it is important to recognize that ownership or authorship should lead the way content is produced at any level.

Relational: In *Engaging Design* projects, it is key to bear in mind the bigger picture, not the "thing"; this means being aware of the nature of relations between the different components in a system. *Engaging Design* projects are vehicles that emerge from these dynamics, whose outputs are the impact(s) or desired objective.

Cross-disciplinary: *Engaging Design* needs multiple views, including interested parties, public(s), audiences, and organizations. This is to develop awareness of those that will be impacted by the "interaction", and include their view; how should an interaction be managed within and beyond a project of engagement; how does engagement manifest and how it is respected?

Discrete & contextual: *Engaging Design* often lives in frameworks of complexities; for this reason, activities need to bind themselves to clear

objectives within contexts. Contexts have a provenance, location and time of production that are often unique. There is no need to "scale" everything, as contextually appropriate proposals are critical. It is also ok if the *Engaging Design* scenarios exist for a few days to gain impact(s).

Reciprocal: *Engaging Design* activities are confronted with the understanding of contextual power relationships amongst those engaged in the project, including the authors; practitioners should always be mindful of clear reciprocal motivations benefiting all parties by being non-extractive in their methods or outputs.

Fail-to-safe: *Engaging Design* projects often present a high risk of failure, both to originators and engaged parties. To mitigate this, it is important to establish measures in case anything goes "wrong"; this would protect and safeguard people, communities, and practitioners/researchers. These measures will look different for projects, cultures, and locations. It might also include financial risk, safeguarding, data protection, or other means.

Agency enabler: *Engaging Design* are processes for creating new types of dynamics and contexts, whose objective should be to create tools, means, experiences, and activities that let beneficiaries create, lead, and implement the process.

Championing mutual listening: Acting as a bridge between different types of contexts defined by multiple and often contrasting views and opinions, *Engaging Design* activities are tools for championing mutual listening across the different interested parties.

Exiting an *Engaging Design* project |

Exiting responsibly: The end or success of a project, is something that varies across each interested party. *Engaging Design* needs to carefully consider how to build "exiting a project" where people have created their (creative) worlds, lives, and communities. To exit responsibly includes managing clear expectations and ensuring you do not "research/design for extraction".

Holistic in impact(s) & legacy: At its core, *Engaging Design* aims for social and environmental impacts, which create legacies. Nonetheless, impacts need to be holistic as there are different scales, depths, and applications perceived from different parties. Legacy ripples from these dimensions as an operational process.

Self-reliant: *Engaging Design* projects need to consider the degree of self-reliance that activities can develop, once the project is closed; self-

reliance can be equally thought of at the individual and community scale, depending on the context, aimed impact, and legacy of a project.

Just, social & environmental development oriented: *Engaging Design* recognizes that human development can be pursued beyond parameters of economic growth, by including social cohesion and integration as some of the factors that benefit societal and environmental progress and innovation.

Supportive of hidden knowledge: *Engaging Design* activities are often geared to bring to surface unspoken or hidden knowledge leading to long-term impact and more resilient responses to natural or social transformation.

Transformative: *Engaging Design* is a transformative process; this means that any of the parties engaged in the initiative—including the authors—contribute and participate in the design of systemic change that redefines and creates new relations within and outside a system.

Keyword Descriptor(s) |
Each of the projects includes a set of keywords that allow a transversal reading of the book. Keywords frame an *Engaging Design* project under categories that recur across the different models (e.g., empowerment, empathy, climate action). They guide the reading of the *Repeatable Insights* and follow this list:

1. Subject of the project.
2. Means for tackling/engaging.
3. How people and/or organization get engaged.
4. What knowledge or learning is transferred to people and/or organizations.

The correlation between Keywords and *Repeatable Insights* is designed to help readers learn the five *Engagement Models* as a practice; they help identify the impact and legacy projects have created for people. Given the uniqueness of the majority of the projects, we created these tools to outline what aspects can be repeated, why they are important and useful, and for what objective they can be used. Hence, this framework guides the reading of the book, not only through the numerical progress of the pages, but also in relation to the interest that any reader has of *Engaging Design*.

End of Introduction |

Territory Interview | Caren Cooper[46]

I'm an associate professor at *North Carolina State University*,[47] in the *Forestry and Environmental Resources Department* and the *Fish Wildlife and Conservation Biology* programme. I'm also part of the leadership in the public science cluster, a group of interdisciplinary faculty. My area is participatory sciences, which uses citizen science principles. With a background in ornithology, I use top-down[48] citizen science methods and projects for [research on] birds and other ecological [subjects].

Broadly, for me participatory science[49] includes community mapping, participatory, sensing, [and] community-driven approaches; my work spans across planning, designing, and implementing citizen science projects, but also studying the phenomena itself, from a social science perspective.

Author Question | *What do you think is the difference between participation and engagement, within your field?* The difference between the two is that in participation people operate in top-down projects in a prescribed way, for one common purpose that follows specific parameters. Engagement has a broader definition, as it allows us to flip how people engage in ways that fit their condition, their lived experience, personal priorities, and identities. Engagement indicates ways of participating that are driven by choices instead of a top-down approach.

Author Question | *What do you think should be best practice within engagement and its context(s)?* As a scientist, working with other scientists, I observed [that] professional position might influence what you believe are the most important priorities. That might differ from what the people who you are hoping to collaborate with believe. Understanding this requires a lot of reflection, humility, and questions that help realize the built-in

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46   Inclusive engagement in the participatory sciences. An advocate for public science, including practices of citizen science, community science, and other participatory approaches to research, as well as diversity in science careers | *Home*. (2019). Caren Cooper. https://www.carencooper.com/

47   *North Carolina State University*. (2023). NC State University. https://www.ncsu.edu/

48   Böhringer, C. and Rutherford, T.F., 2008. Combining bottom-up and top-down. *Energy Economics*, *30*(2), pp. 574–596.

49   Zoellick, B., Nelson, S.J. and Schauffler, M., 2012. Participatory science and education: bringing both views into focus. *Frontiers in Ecology and the Environment*, *10*(6), pp.310–313.

assumptions and beliefs about how knowledge is produced that we're taught as scientists. Traditionally, citizen science has followed top-down approaches for the way a team of scientists understands knowledge production. This is very limiting, as such a top-down structure is not engaging people far beyond those [who] are similar and think like us.

This might happen because [the people] building projects use their assumptions, views, and priorities in the planning. This determines who is attracted by the project, which happens to be individuals who share the same perspectives, that are not adaptable and do not serve broader segments of society. The positive factor of citizen science is scale… Through this method you can engage hundreds of thousands of people across so many different areas, and achieve a common goal, even though this [method] is not used by most people, because it depends on who the leader is. Something I am discussing (with my collaborators) is how to change this type of model, and move from participation to engagement. However, if we use this term, and keep the scale of citizen science, what would that mean? What would that look like?

Author Question | *Can you identify any design strategies that can help shift activities from participation to engagement, through the perspective of citizen science?* I believe that one of the principles that should be included when planning citizen science projects is to increase representation of diverse groups. This could mean setting up an advisory board composed of people who are [paid and] brought in for their diverse expertise and lived experiences and can inform the project development. A citizen science project should establish more equitable partnerships with other groups, organizations, facilitator organizations; who might be project agnostic, but [who can] help bring projects to their constituents.

These can be environmental educators or librarians, those who worked with churches, or other groups that for different reasons hold interest in a project. I think it's also going to help change how these projects are done and who engages with them. As previously mentioned, projects can be tools that local people can use for their own purposes, including getting sovereignty and control over data. Citizen science projects allow this type of control for its infrastructure, that is adaptable to local purposes. Building from a concept from feminist theory on centring at the margins,[50] the

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50 Founding principles that have informed participatory and engaging design | Hooks, B., 2000. *Feminist theory: From margin to centre*. Pluto Press.

architecture of a citizen science project[51] helps shift focus on the most marginalized groups. Designing for people on skateboards and pushing baby strollers should generate work that works for all of us.

Author Question | *What can institutions do to cultivate relationships with communities? To then make a fertile ground for engagement, not just participation…* I believe diversity, equity, inclusion, [and] accessibility are generally principles for thinking about engagement instead of participation. It is also important to allocate your budget to equitable partnerships, and help build capacities beyond the institution. Furthermore, it is important for institutions to shift culture at different levels. Getting critical mass to cultural change could be a tipping point for developing a fertile ground for engagement.

End of Interview |

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[51] Means and ways of deploying Citizen Science project | Newman, G., Graham, J., Crall, A. and Laituri, M., 2011. The art and science of multi-scale citizen science support. *Ecological Informatics*, *6*(3-4), pp.217–227.
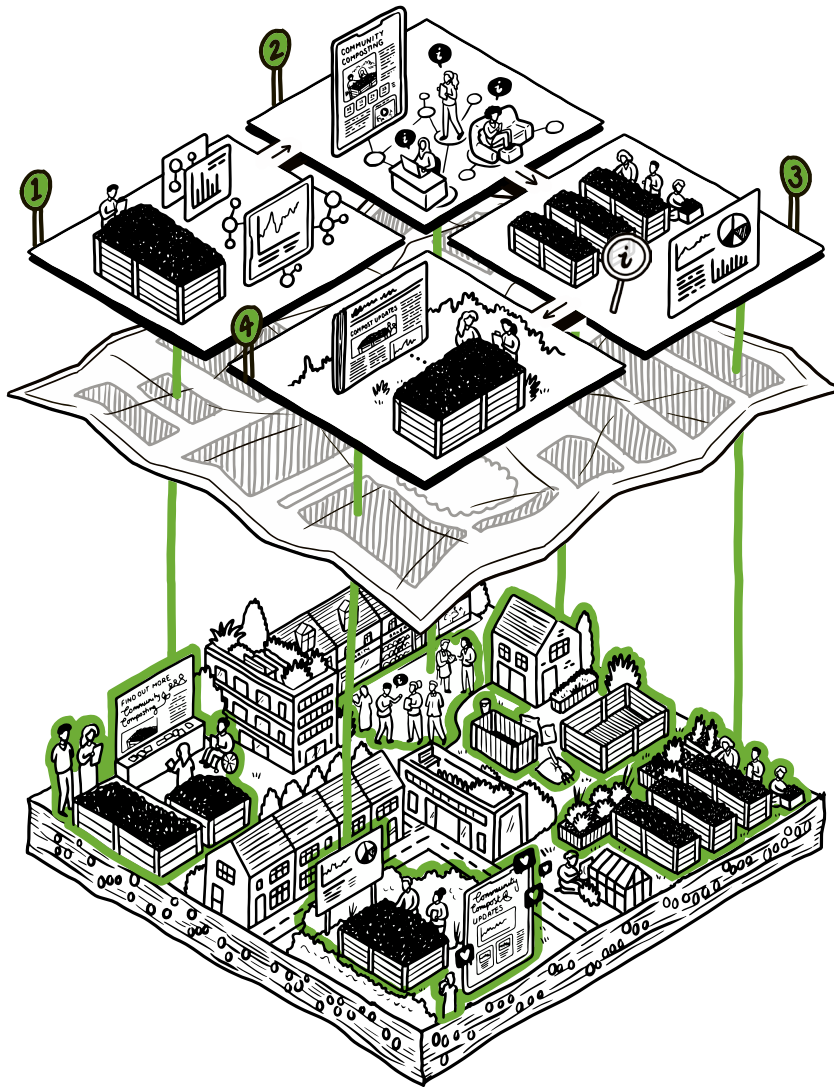
1) Artefact Materiality *(Here the compost becomes a material artefact that is used to make scientific knowledge tangible).*
2) Communication Artefact(s) *(Materials sent out and a digital platform/communication, establishes communication with all parties).*
3) Artefact Interactions *(The monitoring of the samples allows the increase of the accuracy of scientific data).*
4) Artefact Impact *(The audience will continually report on the activities happening within their compost bin.*

Engagement as Artefact |

Engagement as Artefact: Understood as a stand-alone "object"[52] providing tangible/physical/tactile boundaries for conversations across different cultures and industries.

An artefact is conventionally known as an "object made by a human being, typically one of cultural or historical interest",[53] or scientific investigation or experiment that is not naturally present but occurs as a result. Within this framework, we contextualize and frame an "artefact" as a stand-alone intervention enabled/represented/delivered by more conventional materials; hence, *Engagement as Artefact* is based around a place or thing or more commonly known entity (e.g., a place or an object for sharing meals). We also include "digital interactions" that are tied to experiences, i.e., apps or AR technologies.

These are usually single-phase interactions and rely on more simplistic relationships. If, traditionally, the understanding of materiality has been shaped by traditional industrial design models,[54] where you consider the holistic life (within the context) of that thing or place, we as authors see materiality slightly differently. For example, we see sound, data, and smell as a material that you can use to foster and implement interactions.

A grounded example of this is *Ode*.[55] Breaking new ground in healthcare, *Ode* is a fragrance-release system that creates natural aromas of food, coinciding with mealtimes to resolve the issue that people affected by dementia forget to eat, thus impacting their health. Designed to work in homes and hospitals, *Ode* is meant to maintain the independence and nutritional well-being of those living with dementia. It is an artefact that

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[52] We see objects as boundaries and constraints. | Leigh Star, S., 2010. This is not a boundary object: Reflections on the origin of a concept. *Science, technology, & human values*, *35*(5), pp.601–617.

[53] Biggs, M., 2002. The role of the artefact in art and design research. *International journal of design sciences and technology*.

[54] Industrial Design is a strategic problem-solving process that drives innovation, builds business success, and leads to a better quality of life through innovative products, systems, services, and experiences: referenced from *The World Design Organization*.

[55] *Ode*, created by rodd.uk.com, design consultancy, a leading example of bridging; design, health, inclusion, compassion, and carers/families. | *Ode* releases three natural aromas of food to coincide with mealtimes. Designed to work in homes and hospitals, *Ode* is intent on maintaining the independence and nutrition well-being of people living with dementia.

catalyses independence and security through dignified non-patronizing and almost invisible means.

Detroit SOUP[56] is another artefact catalyst for hyper-local transition; built around a micro-funding process that enables local business, but also community-led development. The *Detroit SOUP* crowdfunding process seeks to build businesses and social innovations from a community activity. It is place-based, as all of the speakers vying for the money want to regenerate the local area by designing for positive benefit. It is a typology that has spread nationally in the *United States*, with different "chapters" throughout the country.

The final contextual example is the *Big Bubble Barrier*.[57] This uses bubbles to create a non-impacting curtain, over an expanse of water to capture rubbish for collection. It is an artefact that has a deeply considered removal process. It is a low-impact retrofit proposal that is also scalable. Questioning how we create sustainable practices, and how any intervention can be removed over time, it is designed within systemic thinking that also considers the longer life of the environment. We see these and other works included in this section as stand-alone engagement artefacts for how they approach wider goals. The "artefact" within our framework allows different entry points for understanding objectives by satisfying the most traditional definition(s) of "design".

End of Section Introduction |

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[56] Admin, I. (2023, February 3). *Home – Detroit SOUP*. Detroit SOUP. https://detroitsoup. buildinstitute.org/

[57] *The Great Bubble Barrier – A Smart Solution to Plastic Pollution*. (2023, September 13). The Great Bubble Barrier®. https://thegreatbubblebarrier.com/

Engagement as Artefact **001** |

Who Wants to be a Self-Driving Car?[58] |

Keywords | #human_technology_interaction, #self_driving_cars, #data #shift_perception

Who Wants to be a Self-Driving Car? is a product designed to embody "trust" by using augmented reality to help people empathize with self-driving systems, and thus shift one's viewpoint. As humans, biases and prerequisites might often influence the circumstances and surroundings we operate or live within. This can impact our sense of empathy, hence the willingness to engage with something.

To address this common attitude, and its impact on new technologies like self-driving cars, an inter-collaborative team built an unconventional driving machine that lets people use real-time, three-dimensional mapping and object recognition, displayed in a virtual reality headset. This machine helps participants become closer to the experience of driving an autonomous vehicle by experimenting with new, immersive, and interactive prototypes. Through this type of engagement, the public is brought into an experience that questions one's ability to empathize with self-driving cars. That is developed by enabling visitors to see the world through sensors and data-based decisions.

Hence, *Who Wants to be a Self-Driving Car?* is an immersive driving experience visualized by data from multiple sensors located at the top of the chassis and feeding it into the participants' VR glasses; it provides a perspective on autonomous mobility, and its effect on society and the individual, that intends to stimulate people's perceptions, feelings, and thoughts about the sensors, data and, generally, computation used by this technology. The work has a controller used to steer, accelerate, stop the machine, and change the view mode of the VR headset.

The VR experience is created using data collected by the sensors outfitted on the driving machine. The main view is data presented from a 3D depth camera using stereoscopic imaging and image recognition to map and

augment the landscape in real time. Displaying this technology engages people in questioning it, by creating experiences that people comprehend and can build on, thus stimulating people's empathy towards autonomous driving.

"You might not have the domain knowledge, but you can begin your engagement with X domain through some entry point—something experienceable, an experience that makes you feel something that opens the door to curiosity or individual investigation." *(Excerpt from Author-led Interview)*

Repeatable Insights |
Design for enabling unfamiliar connections: Design can give people a touchpoint they can use to build bridges into their unknown, which is valuable, as it helps make connections they would not be aware of otherwise.

Designing for empathy: This project uses technology as a means to help visitors develop empathy for it, which can shift their perception in terms of trust.

Designing for transparency: Designing interfaces and revealing the way they work can help face "black box" issues, and inform more transparent ways of creating human interactions with technology.

Interview | *Joey Lee[59]*

Author Question | *Please explain why you think this project is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* The reproducible aspect of this work is in the way in which "questioning" can be positioned as a design outcome. Rather than providing a solution or resolution to problems, here we apply design to help us ask questions about a challenging, political, and multifaceted problem space (i.e., the arrival of self-driving cars in society). We hope others draw the value that broadly accessible interactive experiences can create opportunities for public discussions about technology that are layered and nuanced, as they meet people where they are.

Author Question | *In relation to the definition of Engaging Design, what aspects of your project articulate this definition?* The project builds tools that can facilitate experiences about topics that are otherwise hard to discuss. It says:

[59] Creative Technologist | *Home* | *Joey Lee* | *Creative Technologist*. (2019). https://jk-lee.com/

"You might not have the domain knowledge, but you can begin your engagement with X domain through some entry point—something experienceable, an experience that makes you feel something that opens the door to curiosity or individual investigation."

You can publish articles, calculate statistics, and create all sorts of media content about how self-driving cars work, but all of that isn't going to help people get a feeling for how all the systems—whether legal or computational—come together to ultimately affect our place in the world, in this case, literally how a car might drive across space using sensors and computers. A self-driving car does only as much as it has been programmed to do. Knowing what a self-driving car can do or how it does what it does is opaque. We built an experience unpacking opaqueness and helped understand what "data driven" means.

Engagement as Artefact **002** |

The Great Bubble Barrier |

Keywords | #catching_plastic_waste, #catchment_technology, #reducing_plastic_waste, #ocean_health

Plastic pollution is one of the biggest environmental problems of our time.[60] *Bubble Barrier's* mission is to catch plastic in rivers before they reach our oceans. This intervention includes different environmental considerations, such as energy and resource "light". The bubble curtain is created by a perforated tube on the bottom of deployed waterways, where air is pumped through. This generates a screen of bubbles blocking plastics and directing suspended plastics to the surface. Diagonal placement of the curtain (in waterways) guides plastic waste in one direction and into a catchment system. The three components are designed to work together to create the optimum solution for each location.

These components are: bubble curtain, air supply catchment system, and subsidiary systems. The curtain creates an upward current directing plastic to the water's surface. The catchment system works in harmony

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[60] *We know plastic pollution is bad—but how exactly is it linked to climate change?* (2023, April 20). World Economic Forum. https://www.weforum.org/agenda/2022/01/plastic-pollution-climate-change-solution/

with the bubble curtain to collect and retain plastics. The Bubble hose is made from rubber tubing and is ideally suited to application in a wide range of locations and can be easily removed, so it is a semi-permanent solution. The catchment system can be adapted to the local infrastructure at the site, for example, to accommodate how it will be emptied by local authorities. *The Bubble Barrier* aims to stop plastic pollution in rivers and canals before it reaches our oceans by removing plastic from waterways and monitoring the amount of plastic in waterways to support the development of policy and additional measures.

Engagement as Artefact **003** |

The Big Compost Experiment[61] |

Keywords | #compostable_plastic, #home_compostable_packaging, #composting, #accessible_science

The Big Compost Experiment is a citizen-science project to help people comprehend the biodegradability of compostable plastic(s). People can engage by completing a short survey and, if practising composting, placing a few biodegradable plastic items in the compost under controlled conditions, and reporting back. Participation helps leading researchers determine the viability of biodegradable and compostable plastics, feeding into their *Live Composting Map* of home composting activities across the *UK*. With consent, this map gives up-to-date information about the project developments. This unites a multidisciplinary team of experts and those who create and test new interventions to eliminate plastic waste.

"*The Big Compost Experiment* website is an engagement tool designed to facilitate different levels of engagement—duration, complexity, purpose, etc. in order to connect with the interests and needs of a wide range of individuals. To do this effectively, the site is designed with user experience and journey in mind." *(Excerpt from Author-led Interview)*

Despite the majority of people believing that "home compostable" packaging is environmentally beneficial, this study shows [that] plastic packaging can be also environmentally beneficial when the whole manufacturing system, use, and disposal works effectively. In the case

of home-compostable plastics, regulation of material type and marketing is needed to ensure [that] people identify suitable materials for home composting. Furthermore, home-compostable certification and standards need to change to better reflect real-world conditions.

With packaging being a global issue [whose] regulations, or challenges, change from country to country, *The Big Compost Experiment* approach is an example that different countries can adopt to understand the global performance of home compostable packaging under different conditions.

Repeatable Insights |

Design for learning sustainable habits: With this project, citizens are offered a part they can play to inform the future of environmental policy.

Design for citizen science: In this project composting is framed as a tool for engaging with citizens and collecting data about behaviour and the environment.

Design for open access data: The act of composting allows people to increase engagement in materials and the transparency of science in terms of participating in environmental initiatives and adopting policies.

Engagement as Artefact **004** |
Nashulai Maasai Conservancy |

Keywords | #indigenous_management, #conservation, #knoweldge_transfer, #indigenous_culture_preservation

The *Nashulai* wildlife conservancy is owned and directed by the community, the first of its kind. Such a program represents a true achievement, and real inspiration for creating positive change in the *East Africa*. It is governed and managed by people whose ancestors have inhabited that landscape for centuries and have understood it intimately by sustaining themselves and their herds in harmony with the natural life of this globally important ecosystem. Located in *the Maasai Mara*, *Kenya*, *Nashulai* received the *UNDP*'s[62] prestigious "Equator Prize"[63] for

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[62] *United Nations Development Programme*. (2023). UNDP. https://www.undp.org/

[63] *Equator Initiative – The Equator Initiative brings together the United Nations, governments, civil society, businesses and grassroots organizations to recognize and advance local sustainable development solutions for people, nature, and resilient communities.* (2023). https://www.equatorinitiative.org/

sustainable development only four years after its launch. Their private community-run conservancy is 5,000 acres, abuts *the Mara National Reserve* and two other large conservancies. It is a "keystone area"[64] in the *Maasai Mara* ecosystem and a critical migratory corridor from the *Serengeti* in *Tanzania* to the *Mara* in *Kenya*. Their interconnected model is: Conserve Wildlife > Preserve Culture > Reverse Poverty, with each of the dimensions profoundly co-dependent.

"The greatest lesson was that indigenous people are willing to share their land with wildlife and can often protect their land better than outsiders, provided that conservation brings benefits and not [just] costs to their communities. By having the entire community buy into the project at its inception and designing it ourselves, with the consultation of our community and under the guidance of our elders.

Our warriors and even former poachers are more than willing to protect our land if they are empowered to do so. With an emphasis on rehabilitation over punishment we have former poachers now using their skills to benefit conservation. Our family ties to other communities allowed us to reach known poachers in other communities and gain human intelligence about their activities." *(Excerpt from Author-led Interview)*

The indigenous population has been stewards of that land for centuries and they understand critical relationships to its prosperity. In the face of a rapidly changing world, protection of indigenous ecosystems is critical. Their rangers not only protect wildlife from poaching but work proactively to prevent wildlife harassment and human-wildlife conflicts from occurring. All *Nashulai* rangers come from local communities. This alleviates poverty by protecting wildlife; in addition, the economic empowerment from ranger's salaries is vital in creating popular support for *Nashulai*. Their embedded community connections allow their rangers greater awareness of activities and possible conservancy threats.

Through this community buy-in framework, poaching decreased to zero across their 5,000 acres within months of the establishment of the conservancy. Their rehabilitation of former poachers constitutes 20% of their scout/ranger force. As a result, in just four years wildlife populations increased 70% to the highest levels in living memory, with approx. 500 zebras, 500 gnu, 200 wildebeests, 100s of warthogs, and 25 lions taking

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[64] Johnson, S.A., Ober, H.K. and Adams, D.C., 2017. Are keystone species effective umbrellas for habitat conservation? A spatially explicit approach. *Journal for Nature Conservation*, *37*, pp.47–55.

up temporary and permanent residence on our land. Their Maasai giraffe population is one of the largest in the eastern *Mara*, packs of cheetahs and African wild dogs take up temporary residence every few months.

"*Nashulai* is the first ever community-owned and directed wildlife conservancy. It is a unique achievement that promises to inspire a positive change in the entire *East Africa* region." John Mbaria, Kenyan Author & Conservation Journalist

Repeatable Insights |
Design for self-reliance: This project describes a holistic and inclusive vision for developing self-reliance, which starts from including local knowledge and abilities in strategies for managing conservatory territories and protected areas.

Design for knowledge transfer: This project describes how the transfer of knowledge across generations of local and indigenous communities can positively influence development and conservatory strategies.

Interview | *Nelson Reiyia*[65]

The *Nashulai Maasai Conservancy* is based in *Maasai Mara* (*Kenya*), a community-led conservation initiative to conserve wildlife, preserve culture and reverse poverty. The project started seven years ago, in 2016, when we came together as a community and decided that we needed to take action to protect our land from getting lost. We decided as a community that we needed to come together to commit to a commons. I am committed to common usage, [which] allows the community to access land traditionally and most importantly, [allows] wildlife to thrive and enables the ecosystem to regenerate.

However, we had a situation where activities interrupted the way of living for the community, and land subdivision was into very small routes which were no longer culturally sustainable for the *Maasai*. With no action, unfortunately, we were going to lose our land, and this land does not belong to us, it belongs to future generations.

We created a conservancy and it became a unique established observation model because it did not lead to a situation where people were pushed out of their traditional land. A typical conservancy, a private one, would be about creating a tour and people would come to see the wildlife and pay

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[65] Cofounder of Nashulai | *Voices of Nashulai — Nashulai Maasai Conservancy*. (2018). Nashulai Maasai Conservancy. https://www.nashulai.com/voices

a premium price for that. Unfortunately, those models tend to benefit the investors, the tourism infrastructure. But the communities [who] own the land are pushed out and most often lose access to the land and even the children would not have a memory of their ancestral land.

So history is harassed and erased, we wanted to create a conservancy that enables people and wildlife to coexist in balance and harmony. It's a place where people live harmoniously with nature, it's a place where the song of the people and that of nature are together in common unity. We followed the same traditional system that the community has done in the past [and] wildlife started to return. Our women took steps to restore the rivers, because they are the primary water users, and three years after, establishing the conservancy we won a UNDP prestigious award for being an effective community-led nature-based solution.

Author Question | *What is the most impactful method (formally or informally), carried out over time that informs best practices?* Our method led to an all-inclusive process where the communities are not left behind. What worked for us was placing the community at the very leadership of our conservancy. Most of the other conservancies would place the interest of the investors in capitalism. And those kinds of interests will be at a very late [stage] creating a vision of conservation. That is why that approach is not working properly elsewhere in the world, because indigenous people have been excluded. For instance, traditional landowners have been excluded in *Tanzania*.

The government came with a top-down approach and they moved out people to create new parks and expand them, which were already existing… and for what reason? To allow hunters to come and shoot wildlife and pay a premium to the government. That money is also not even [trickling] down to local communities.

Our approach has always been to leave no one behind, indigenous and community led. It has become a movement, it's not just a park for wildlife on the ground, for people to come and see them. It is a social movement and an indigenous-led social movement. Last year we were able to double up the size of our space just because of that trust that was created, ensuring [that] our traditional communities remain the landowners and are not pushed out. They are included in the decision-making process, and therefore it is, community inspired [and] community led.

Author Question | *If you were to give key repeatable lessons and insights what would those be?* One thing I believe in, especially in the context of

our project, is co-existence and that is very important. There are many aspects of co-existence.[66] In our case, co-existence worked out for us and has created balance and harmonious relationships between man and nature, people, and wildlife. We co-exist, that is our mantra. Trust is also very important in community mobilization. Local communities (like the *Maasai*) have a known history which bears on trust, and sometimes that's how they ended up losing so much; these communities lost their land and their culture because they trusted others who at the end of it all were not trustful. For example, we are talking of creating the longest wildlife corridor in *East Africa*, connecting the *Maasai Mara* ecosystem to enable opportunities for other communities.

Author Question | *Are there any more specific suggestions of how you engage the communities you work with?* We call it (in our language) a Barassa;[67] a Barassa is when we all come together and sit under a tree and discuss problems. We simply discuss [things] until something distils out, and we have a solution; this is a problem-solving system that we have here traditionally in our community. We don't have a top-down approach. We all sit down in a Barassa and discuss our matters and that is where things happen. Previously, one elder said that this land does not belong to us, it belongs to the wildlife. Of course, all you wanted to say is that we should share what we have, we should co-exist. So that is very, very important, and selflessness is key in all this.

Author Question | *Anything else to share?* Most importantly, in all the work we've been doing, even though we are a small poor community, we've been able to show the way. Local people have solutions even sometimes to global problems. I just want to say that our problems here as a community (which is in a remote place) has also touched the hearts of other people around the world. Our project is a product of the international community in terms of people mobilizing themselves in social media to support this initiative. When we started our project, fifty million people from around the world pitched in to support this idea. There's a lot that connects us, small communities, poor communities, and people across the globe. We all promote the same human heart. That's very important; what we're doing here is not just an issue for the *Maasai* community, it's an issue where the human community can come together to do something for our globe.

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[66] Co-existence: the state or fact of living or existing at the same time or in the same place. In this case we refer specifically to humans and non-humans.

[67] Barassa: a non-hierarchical meeting to discuss issues within a community | *Wildlife Conservation — Nashulai Maasai Conservancy*. (2018). Nashulai Maasai Conservancy. https://www.nashulai.com/conservation

Engagement as Artefact **005** |

The Augmented Tagger Machine |

Keywords |#Artificial_Intelligence, #graffiti, #digital_literacy, #learning_with_creativity

The *Augmented Tagger Machine* explores the potential of Artificial Intelligence (AI) in the creative process of graffiti writing, and engages communities in learning about Machine Learning (ML) to generate novel street tags that transcend traditional letter forms. Author of this work is *Berlin*-based *Alsino Skowronnek*. In the *Augmented Tagger Machine,* the writer live-generates their own ML graffiti tags in the ghostly belly of a deep convolution neural network to then transfer them to a real surface using spray paint. People are involved in the process by learning how to use this custom-made piece of software, trained on a data set of around1,000 annotated street tag images from *Germany*, to generate new graffiti tags based on any textual input collected from the social networks.

With this digital tool, people can transfer the digitally-generated output in physical surfaces using spray paint. Overall, this project serves as a source of inspiration through the use of ML; developing new letter forms, connections, and styles in collaboration with this technology stimulates people's understanding through creativity. The *Augmented Tagger Machine* is accessible to not only professional graffiti writers who want to use this new technology, but also for anyone interested in AI for creative purposes.

Repeatable Insights |
Design for inclusive and accessible learning: In this project, people learn new skills by using creativity as a means for engaging with ML technologies. Accessibility is enabled by graffiti writing, which makes people interested in understanding and learning how AI works for producing creative work.

Interview | *Alsino Skowronnek*[68]

This project uses new technologies and combines it with my background of graffiti writing. In this context, the most important elements are letters, and AI technology helps me combine them in a way that is new, interesting,

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[68]   Alsino Skowronnek – data, design & painting. (2024). Alsino Skowronnek. https://alsino.io/

and evokes some type of reaction when you observe them in their form or appreciate their content. Indeed, with this project I tried to find ways of using AI to come up with new typographic styles, basically new letter shapes, new letter connections, new elements that are produced by a computer. The basic idea is to extend your own capabilities of handwriting by using these types of methods. Also, one of the main objectives was to collaborate with the machine. To understand how this could work and [what it would] look like, there was a lot of experimentation, and going somewhere where nobody had really thought of.

So, the way I went about it was by collecting almost 1,000 images of graffiti tags (handwritten aliases) from an Instagram account that my friend is running to transcribe the words from the images to a Latin alphabet. Once you train the model on this data set, you can use it in reverse. So basically, you train it from A to B, but then you can also use it from B to A, and virtually create graffiti tags from any text. However, the generated tags don't exactly look like text, but rather like ghostly creations because the machine learning model I used at the time (*Picks to Pick*) was still pretty limited. Through the model, I tried to change my handwriting style; hence, the collaboration was between a computer system and myself, producing new capabilities and new learnings which I am still integrating into the practice of designing the written word.

Author Question | *What are your headline points people can build from?* For me the lesson was to use this not only in my own art practice, but also in a community setting. I did several workshops with various groups of participants. The interesting part was that people were trying to get a better understanding of the whole idea behind that by playing with technology. We gave people pens, spray paint, and airbrush machines so they could create their own tags and graffiti previously designed on the screen with the help of machine learning. They would use the generated designs by looking at a phone and trying to translate it onto a surface. Through the process of writing they asked questions like: why is this coming out this way? How can I change this? What would I have to do to get a different outcome? Learning about the parameters of the technology was for them a big thing; people understood how shapes and forms came together. This started a discussion through the act of doing and making something. This opens up the "aha" moment and a horizon of new questions, because once you're engaged in the process, you really start to ask: what am I actually doing here?

Author Question | *How do you define Engaging Design? Engaging design* is something that people take ownership of; it provides agency. For my

understanding of how I interpret it in the context of the project, I would say it has something to do with the environment that people can relate to. For example, graffiti on the street is something you have seen before, but you ask yourself what does this mean? What do people want to express? And then you're trying it out yourself. Hence, you're more engaged because you achieved a certain threshold of knowledge about the topic. Once you build on that, you can go into different directions and ask other questions.

Engagement as Artefact **006** |

The Handwashing Station[69] |

Keywords | #Covid_mobile_handwashing_station, #harnessing_collective_knowledge, #collective_making, #open_source_cycle_economies

The *Handwashing Station* is a portable, modular, and contactless handwashing station that can easily move around hospital wards, hence adapting to *Nigeria's* unpredictable architecture facilities. The product was designed to respond to some of the challenges that emerged from the Covid-19 health emergency, like the overcrowding of health facilities and the lack of manufacturing materials. Hence, this product aimed to slow down the spread of the virus, and identify new avenues for producing locally to overcome the scarcity of imported materials and generate more circular and sustainable economies.[70] The *Handwashing Station* defined new ways for connecting people with other people and materials to support local healthcare facilities in their fight against the virus, and develop something that wouldn't require any outsourcing.

By speaking with healthcare practitioners, considering the challenges related to procurement, studying local hospitals in *Lagos* and ensuring the viability of the final product, designers from *nmbello Studio* recognized the limited number of sinks in hospital wards placed in fixed locations.

This added complexity to the already highly paced shifts, where doctors, nurses, and other medical staff had to move quickly and very often across wards to care for the high number of patients in need of urgent treatments.

By producing within local markets and increasing the opportunities for hospital staff to follow one of the basic *World Health Organization* indications[71]—i.e., washing hands—the *Handwashing Station* increased opportunities for handwashing. Its shape resembles the familiar rural water carrier—*meruwa*—which is locally known for selling clean water to rural communities, and is locally manufactured by *For the Community By the Community*.

"Doing a project in *Nigeria* is different from doing a project in *Rwanda*. It's different from doing a project in *Milan*. It's people that drive that project. I think as designers, sometimes we're lost in the source. You need to understand the design process in a location and consider the cultural aspect; even if you're trying to change culture, you can't change it without embracing it and understanding what's on ground first." *(Excerpt from Author-led Interview)*

Repeatable Insights:
Designing with respect and humbleness: This project gives an example of how designers need to develop listening skills to develop solutions with stakeholders that acknowledge and harness local needs and materials.

Designing with and for culture: In design, location is key to develop solutions that are considered and respectful of the local community, which includes users, stakeholders, processes, and materials.

Designing with your stakeholders: This project describes how including stakeholders as early as possible is important for defining and developing any concept or idea.

Design for circularity: In this project, the design of an object enabled the support of local economies whose benefits extended beyond the object's functionality; being circular fosters a more holistic and inclusive understanding of a design process, beyond the objective of a brief.

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[71] WHO, 2020, Who saves lives: clean your hands in the context of Covid-19.

Interview | *Nifemi Marcus-Bello*[72]

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged in the design?* When I started the studio in *Lagos*, I really didn't want to go with any pre-judged approach of what design should be, like *European* standards of design process or what you've been taught at university. I think it was only recently that I started having the consciousness to understand how I should work and how I work. I realized that on the continent, if it comes to architecture, art, and design, it is heavily contextual. Even in some instances, where maybe you're only thinking about context from a material or form standpoint, you realize very quickly that it's heavily contextual to the material, the person, the stakeholders, makers, the factory, or the artisans, and even [the] culture involved. Certain colours or finishes won't fly in certain cultures. If I was to think about engaging design holistically, it is about looking at an approach where the context isn't just the material and the subject, but various stakeholders as well, like behaviour, ethnography, and cultural aspects of thinking.

Author Question | *With materials, do you mean things you work with and things that interface people to work together from different types of perspectives?* No, I'm thinking of material in the context of people and networks. For example, in assembling a product, how do you get a certain material to this place from a cultural standpoint? In *Europe*, it'll probably go by train or through the post. Here, you might need to use different types of public transport. So, considering the [person] who's going to pick it up, and that hopefully it fits in his car. So designing around all of that. I think the engagement I'm trying to speak on is that as you're designing, you're speaking to all the stakeholders. You understand the distribution channels that it would go through, and you will understand well that, at the end of the day, when that final product has come through, everyone along that chain or along that process of getting a product out has had an input. I think that inherently, to be honest, when everyone always asks what *African* design or *Nigerian* design is, it's very contextual to that because we try to be as considerate as possible to every single stakeholder, the maker, the distributor, the seller, the user, etc. while we create.

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[72] nmbello Studio is an eponymous design studio (Nifemi Marcus-Bello) currently based in Lagos, Nigeria with a design ethos rooted in empathy. | *nmbello Studio*. (2021). https://nmbello.com/

Author Question | *And this comes from culture, right? Since material can be related to availability, and you work with what you have available, this is culture and culture means respecting the other, right?* Yes. Because without respect for one another, or even the material itself, or even spirituality, or culture, you can't create a final product and put it out. The way a certain culture reacts to wood is different to the way a certain culture reacts to metal. It's different when, for example, certain cultures don't want to touch a red product, for others, red products are a sign of luck. It's something that I always try to keep at the back of my mind. My process of engagement tries to start early from the design process, from the ideation. Speak to whoever you've identified who will be potentially your collaborator, because design in itself is collaboration.

Author Question | *Can you explain why you think this is impactful and for what audience? What aspect can be reproduced in other projects and contexts?* I think for me, one of the reasons why I started engaging with various stakeholders as I design is because in my geographical location, economic viability is important. If I'm creating a product that can't be sold or hasn't considered the production line, or it didn't consider the know-how of the space I'm working within, then it will be a lot more difficult to create economic viability. I think one of the things that I realized is to use design as a tool in between making and producing. When it comes to engagement, another aspect I learned from a project the *Handwashing Station* is that it's also important to educate stakeholders on why certain design decisions are being made because they're the experts, so they could always meet you halfway and say: okay, I understand where you're coming from, but how do we take your knowledge and my knowledge to build on this idea?

Author Question | *Design for you is a space for negotiation informed by the process. The impact of your design is measured by how much your stakeholders learn from you, and on the basis of the knowledge exchange, is this correct?* Exactly. For me, the former comes first; without understanding [the context for a project], it's basically near impossible to actually create. So I'm always a student; I meet producers or manufacturers and I sit with them to know their temperament, how they work, the manufacturing capabilities that they have as an idea can burst out of it. I think it's extremely important and crucial to think that way, especially in *West Africa*, or in *Nigeria*, where I'm from because we're very respectful of ourselves and others and people's practices as a culture. You have to be extremely humble when engaging with artisans because these are people who have engaged with certain material or a certain form for years. If you don't create enough room for that understanding, the final

approach might end up going over the artisan's head because they don't understand what it is. Design [has always] existed in *Africa*. It's existed [for a very long] time, and it's always happened. But contemporary design as a practice is still new.

Author Question | *As authors, we are deeply interested in catalytic engagement, not just passive participation, but an informal empowerment process. Can you explain how your project includes community and how it is a catalyst for engagement?* To answer this question I will use the example of the *Handwashing Station* where we engaged the local community of makers, potential users, and experts. In my own personal opinion, design shouldn't be owned by an individual. I don't own the rights to that design. If, for example, an artisan reaches out to me today and says, they want to make a handwashing station, make some money off this and sell it to a few hospitals, I am happy to throw that design with all the technical drawings to them. I think that this is one of the beautiful things about *Engaging Design* that can be open source to the [interested parties] who have engaged in the design process, and everyone benefits from it. If open-source, you think ahead of time that this is not going to be my design, but something that people will be empowered by. Therefore, you may think about accessibility, and imagine who could take ownership of your project. For this project, it came at the beginning during the design process when I realized that it was very important that all the [interested parties] would be beneficiaries, including the manufacturers. Because then it means that they're able to have work, for example.

Author Question | *What were the key lessons from your project experience that others can build on, learn from?* The final product is driven by the people; I know that as designers, we try to push engineers as much as we can and create new abstract forms, but in some cases, it's important to be as considerate as possible to the people. For example, with the hand washing, while we were putting the design specifications together, it was really important to speak to the nurses, doctors, or patients who were going to use it, but it was also extremely important to start identifying the type of materials that we would want to use and start engaging with them as early as possible. Of course, some people say that sometimes this narrows down your idea, but it's also important to really understand that in a lot of cases hyperlocal is extremely important to support the local economy.

Engagement as Artefact **007** |

The Ash Project[73] |

Keywords | #biodiversity_loss, #memorial_intiatives, #collective_memory_of_nature, #experiencing_science

Ash dieback is widely accepted to be untreatable and could see the demise of 90 to 98% of these trees over the next decade.[74] The ecological impact caused by the disease is (at time of writing) unmeasured. Ash trees provide valuable ecological flood defence and contribute to air quality.[75] Almost 1,000 species use Ash trees as habitat, food, and life support. *The Ash Project* asks how we might mark and celebrate Ash trees before it is too late. The project combines a major new commission by internationally recognized artists *Ackroyd & Harvey*[76] with a wide-ranging walks, talks, and workshops programme, an online archive, and a *Kent*-wide plan for landscape restoration.

Repeatable Insights:
Designing for the unknown: This project describes a series of curated activities aimed at engaging the public with unknown and uncertain events. Following the objective of stimulating critical response, designing a programme of engagement becomes a means for people to grow in climate change knowledge.

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[74] McKinney, L.V., Nielsen, L.R., Collinge, D.B., Thomsen, I.M., Hansen, J.K. and Kjær, E.D., 2014. The Ash dieback crisis: genetic variation in resistance can prove a long term solution. *Plant Pathology*, *63*(3), pp.485–499.

[75] Marzano, M., Woodcock, P. and Quine, C.P., 2019. Dealing with dieback: forest manager attitudes towards developing resistant Ash trees in the United Kingdom. *Forestry: An International Journal of Forest Research*, *92*(5), pp.554–567.

[76] *Ackroyd & Harvey | Artists Heather Ackroyd and Dan Harvey*. (2023). https://www.ackroydandharvey.com/

Interview | *Madeleine Collie and Nick Johannsen*

Madeleine Collie, Curator/programme designer of The Ash Project: A project where creative practices think about how to create a living memorial to a species that is under the threat of decline. We used a multi-pronged approach to activating a community of care around ecological questions.

Nick Johannsen, Kent Downs AONB (Director at Kent Downs area): This is an outstanding protected area that extends for 900 square kilometres in *Kent*. It is a very beautiful, wooded landscape, and the most dominant tree is the Ash species. When I heard about Ash dieback, it brought back almost a childhood trauma of living in *East Anglia* where elm trees were dying all around me. Hence, to conserve a landscape of Ash trees was a very personal and almost visceral response to that news. As in *Eastern Europe*, Ash dieback is more advanced, and woodlands are skeleton remains of what was once there. *The Ash Project* initiated connections and a network centred on managing a protected landscape with the support of conservation organizations, before the disease spread; however, we did stop it. To do so we engaged artists: we came with the idea of working through the prism of art and artistic engagement to respond to a scientific and environmental matter.

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged?*

Nick Johannsen, Kent Downs AONB: It is engaging. The objective of the project was to create something extraordinary, enduring, inclusive, engaging, and impactful. We reached our existing audiences in a new way, which [I think] excited them. We had people from *The Woodland Trust*[77] and *The Forestry Commission*,[78] whose communities have a scientific understanding of environmental impacts; however, by using an artistic response the cultural impact became clear and we achieved a strong response at a personal and organizational level. We also engaged completely new audiences. We managed to remove the barriers existing when audiences engage with protected landscapes. So new people came to our landscape, enjoyed it, and responded to the issue of the disease. We created something that is scalable and hasn't gone away. As the issue of tree disease is just accelerating, and with it the impact of climate, we created a vehicle for future engagement.

Madeleine Collie: One of the things that emerged is related to the reliance of environmental narratives on actions to fix things and how much people

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[77] Trust, W. (2023). *The Woodland Trust*. Woodland Trust. https://www.woodlandtrust.org.uk/
[78] *Forestry Commission*. (2023, October 12). GOV.UK. https://www.gov.uk/government/organisations/forestry-commission

want to learn about what they can do better. People come to public engagement events and say, "what can I do about this?" In *The Ash Project* it [struck] me that, as a cultural practitioner and curator, I had to sit with the complexity of maybe not being able to fix this immediately; hence the narrative was on the complexity of the ecological relations that have brought us to the point where ash is in decline, which is something we can't undo, as a human population, and we have to live with this being under threat and decline. It's quite an unusual thing to ask people to come and confront death. The level of engagement we observed was profound as people came with empathy. People developed empathetic ways of relating to a place through a set of concerns.

Nick Johannsen, Kent Downs AONB: There was an interesting impact in using carefully curated artistic approaches to the scientists, the foresters, and the woodland ecologists to widen the perspective beyond the scientific issue. It's not just a health and safety issue.

Madeleine Collie: There's a whole substantial ecology around this not in terms of scientific ecology, but a hinterland around the issue. That landed personally and motivationally; an interesting and very impactful outcome for quite a small number of people, but very influential ones, like top plant scientists and directors who wouldn't trust that person. Another factor of impact is engaging new audiences. When Ash dieback first arrived, it was in *East Kent* and *East Anglia*, and we saw it way before the rest of the country.

Author Question | *Please explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?*

Nick Johannsen, Kent Downs AONB: What I was witnessing was dead and dying trees, and I found it really hard. I spoke to other parents, swinging their kids, etc. It was July/August [2022]. The trees should have been in their full plush dark green Ash leaves, but we only had twenty of their canopies or no canopy. We asked whether they noticed anything weird about the trees. They looked at them and couldn't see anything weird. Hence, the impact was for us to understand how little of what we see other people see, and how this project opened that vision to their surroundings. So we engaged influential people, but also people who live in the landscapes, who couldn't see what's happening around them.

Madeleine Collie: At the beginning of the project I did a survey of who could recognize woodland in *Kent*, and it was 15%. After two years of *The Ash Project*, it has gone up by about two to three percent. How you get people to care about it is the biggest challenge.

Author Question | *What are the key lessons from the project?*

Nick Johannsen, Kent Downs AONB: One is the power of combining science and arts as a route to engagement, understanding and crossing borders. I'm trained as an environmental scientist. My generation of environmental scientists [has] completely failed to land the climate change message. We were using statistics. If there is a graph that shows that this is what is going to happen maybe you do something about it because the science is behind us. If there is an evidence-based graph that draws catastrophe, then the answer is pretty obvious to me, but it didn't land to others. So we learned how roots to engagement and understanding environmental issues is key, and we needed artists.

However, from a very practical level it was hard to get them, it took three years to get *The Arts Council*[79] to buy into this project. It was always conceived as a potentially national project because the issue is about nature which is bigger than the nation, but it is really important given the *UK* landscapes and the criticality of the ashes, which are considered amongst the two or three most valued landscapes; *the Lake district, the Peak district,* and *the Cults* have Ash trees, and we are losing them.

We did a very localized education programme around what localized plants to plant. I think this is a legacy of *The Ash Project* enduring education and people planting trees on their own land in order to think about succession. The other thing we learned is in relation to science and art; there is something that understands them as separate, which is part of the crisis that we're in where projects don't see that the loss of Ash can be a cultural problem. I think there's something about the use of knowledge through a sensual approach that creates a space of possibilities through situated practices like *The Ash Project*. Coming from *Harway,*[80] this is about thinking; how do we feel our way into these things in ways that don't extend, don't accept the sort of duality of art and science, but actually see them as interconnected fields.

Madeleine Collie: The project is unusual as it is not a memorial for something that's gone, but for something that's in the process of decline. There is something uncertain about this, which asks people to take a critical view and bring their feelings. People responded to this idea that

79 Arts Council England. (2023). *Homepage*. https://www.artscouncil.org.uk/
80 Donna J. Haraway is Distinguished Professor Emerita in the History of Consciousness Department at the University of California, Santa Cruz | Haraway, D., 2015. Anthropocene, capitalocene, plantationocene, chthulucene: Making kin. *Environmental humanities*, *6*(1), pp.159–165.

there aren't easy solutions, and that they need to make space for that. Hence, creative practice is really important. In design especially, we get very much into fixing the problem, whereas there is a step before that which is being okay with complexity.

Nick Johannsen Kent Downs AONB: We met a lot of people, and they will remember their contact with *The Ash Project*. I'm absolutely confident about that. They will remember making or going on a walk where a poet is reading a poem to them, or visiting these extraordinary sculptures, or looking at an exhibition all about Ash. It is memorable and lands well. Even if it was just planting trees, being in an event, or reading a poetry book, these awakenings made them think of an artist and that they were in that artist.[81]

Engagement as Artefact **008** |

Detroit SOUP[82] |

Keywords | #accessible_entrepreneurship, #empowering_experiences, #inclusive_change, #inclusive_financing

Detroit SOUP is a democratic experiment in micro-funding founded in the Mexican neighbourhood of *Detroit*. The founding group created this collaborative platform for connecting people in safe spaces through a public dinner that uses arts practice methodologies. Through the design of a dinner, people had access to a human social network of; gifts, talents, and capabilities. Dining has united audiences who have shared resources to support creative endeavours. Furthermore, *SOUP's* social capital has provided neighbours with opportunities to reimagine their local areas; for instance, diners cultivated new ideas and seeded funding for speakers who, for four minutes, shared concepts and answered questions from the audience. Hence, along with eating, talking, and sharing resources, diners voted on projects they believed benefit the city (or surrounding area

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of *Detroit SOUP*). At the end of the event, ballots are counted, the winner goes home with all of the "door" money and with the commitment to report on progress in future *SOUP* events.

As a relational hub uniting various creative communities, *SOUP* provides a forum with critical but accessible discussion to support *Detroit*'s creative people. As a format, *SOUPs* are now occurring all over the world benefiting local communities through new economies and initiatives that cultivate collective action. Hence, *SOUP's* mission to promote community-based development through crowdfunding, creativity, collaboration, democracy, trust, and fun is a channel to generate jobs, empower residents, build new relationships, provide deeper understandings of democracy and much more. At the time of writing (excluding other *SOUPs*), 800+ proposals have been submitted, 450+ ideas have pitched, over 15,000 people have attended a *Detroit SOUP* dinner. It is a catalyst for change with and for communities that engage with it. Two of many successes speak volumes for their deep engagement(s):

Food Field[83] **|** An urban farm occupying four acres in the *Boston Edison* neighbourhood of *Detroit*. Business partners started their company to build more localized food systems for residents and businesses. The farm's harvests include vegetables, fruit trees, honey, catfish and bluegill, hen and duck eggs, amongst others. In addition to supplying fresh food to local markets and hosting seasonal meals and events, the farm preserves its surplus as pickles, salsa, cider, and more. *The Food Field* continues to improve its CO_2 footprint with solar power, aquaponics systems, employment, and enriching the community through organic practices. Their priority is demonstrating that organic urban agriculture is economically viable while providing fresh, healthy, and delicious food.

The Empowerment Plan[84] **|** Created to serve homeless people during cold *Detroit* winters. Based on the concept of fostering people's professional development through products, that business created a stepping stone to financial sustainability for women battling homelessness. The founder *Veronika Scott* employs women to sew coats to support

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[83] Urban farming is inspiring city-grown fresh food, supporting environmental stewardship and bringing together community members. | Visit Detroit. (2018). *Detroit's Greener Side | Detroit Urban Farming | Visit Detroit*. https://visitdetroit.com/inside-the-d/urban-farming-detroit/

[84] A place-based project that produces products, develops skills, and builds individuals | *HOME (mobile) — EMPOWERMENT PLAN*. (2017). EMPOWERMENT PLAN. https://www.empowermentplan.org/home-mobile

the development of life and practical skills by creating products helping homeless people keep warm, during the year's coldest months. At the time of writing, the *Empowerment Plan* employs twenty-five people, eighteen of whom are women working on the production floor to make jacket-sleeping bags. These are distributed to *Detroit's* homeless and have expanded distribution throughout the *United States*. With over seventy thousand jacket-sleeping bags created, *The Empowerment Plan* is transforming lives.

Repeatable Insights |

Designing spaces for economic empowerment: In this project, dining has been developed with the objective to empower local communities to participate in imagining how neighbourhoods could meet local needs.

Designing ownership for promoting positive change: The design of a series of dinner events has promoted agency to change. Local communities have been given power to endorse ideas able to benefit the local areas.

Interview | *Anie Stone*, Build Institute[85]

My role [at the business incubator called *Build Institute*] is running all of the capital programmes. In 2016, we took over *Detroit SOUP*—started by a local art collective and founded by *Amy Kaherl*—which aligns with the things we provide at the institute, like helping people starting or expanding businesses through accessible paths [and much more]. In business, one of the major barriers is finding capital funding; people going through one of our classes learn business plan building, put together a legal structure and do market research. Then, they look for funding and, here, I suggest different things to help them get access; the entry-level programme for this is *Detroit SOUP.* This initiative was founded to overcome the challenges that programmes like *GoFundMe*[86] have in relation to putting together the legal work and finding lenders, which feels very disconnected. *Detroit SOUP* follows the crowdfunded model, but it brings it to face-to-face events by directly engaging communities; it gives people a say about what type of ideas are taking hold.

Detroit SOUP benefits both the person with the idea as well as for the local community. Those attending pay $10 to have a nice soup dinner—usually with some bread and salad—and listen to a local musician or a spoken word poetry, or watch a dance. Then they vote for one of four ideas

85 *Home – Build Institute*. (2023, October 24). Build Institute. https://www.buildinstitute.org/
86 *GoFundMe: No.1 fundraising platform for crowdfunding* | (2018). https://www.gofundme. com/

pitched in the evening. Each of them is presented in four minutes and the audience gets to ask four questions to keep it short and sweet so that the engagement is about three hours. It's a really fun evening, it's entertaining and it's enjoyable for everybody involved. We make a point of having the audience engage with their neighbours, communicate, network, and share ideas. Communities get together and talk about which idea they like, what they are going to vote for and any pros and cons.

Author Question | *What is the most impactful method or process that you think SOUP has had?* There are many ways this programme has had an impact. One is related to those pitching ideas. Many people presenting said they came with a business idea and wanted to start a non-profit. This was the first place where they said it "out loud" and felt it was real to move it forward. Presenters felt legitimation. We have seen a lot of growth out of that; for example, a place called *Sister Pie*,[87] which *Hassan Bazzi*[88] ways to make pies, [which] are now selling internationally. By planting a seed at *SOUP,* people have expanded from that initial point. Furthermore, those pitching their ideas grow through the support of the *SOUP* ecosystem.

People who have won or pitched at *Detroit SOUP* have gone on to pitch at other competitions and also won $100,000. This shows that doing this is great practice for developing some of the skills you need, to grow confidence and learn how to talk about your idea, whether you are presenting to your community, your funders, or your customers. It's a great way to become comfortable in internalising that idea and your position in talking about it. *Detroit SOUP* also made positive impacts on the audiences; when *Detroit* was economically devastated by different factors. People said what was needed but there was no check with them locally, whether they cared about that project or if it was actually necessary. *Detroit SOUP* has been one of the few places where people living in *Detroit* can say whether they want that item in their community or not.

Author Question | *What are the key lessons from this project that people can build off?* One of the great things with *Detroit SOUP* is giving people a place to practise democracy and have their voices heard. We found similar events run by the founder; we think it is important to have these as

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[87] The name was inspired by a term of endearment for each other: "What's up, sister pie? I love you, sister pie!." inspired by an image of women (sisters, mothers, grandmothers, friends) gathering around a kitchen counter, pitting cherries, and rolling out pie dough. *ABOUT | Sister Pie*. (2015). Sister Pie. https://www.sisterpie.com/about

[88] *Hassan Bazzi's schedule for Detroit Startup Week 2017 (Rolling Program Additions)*. (n.d.). https://detroitstartupweek2017.sched.com/artist/hassan.bazzi2020

they provide a platform for people to meet other people in their community and share ideas, hear their voice and to be engaged. Every part of *Detroit SOUP* should have benefited the community. By paying the venue, artists, and caterers who are starting their career and business, we aim to spread a good impact to local entrepreneurs and the community.

Engagement as Artefact **009** |

The Risk Centre[89] |

Keywords | #risk_reduction, #education, #museum, #preparedness_for_risk

The *Risk Centre* transformed *the Arkitekturmuseet* in *Stockholm* into a site-specific risk assessment facility for educational purposes. The centre is an example of redefining and challenging the relationship between design practice and the role of the museum, as it re-imagines the boundaries between a project, an exhibition, and the museum. The institution is no longer a place just for display or the discussion of objects and artefacts, but becomes an actor that supports and is part of an investigative and experimental process. While functioning as a collaborative platform, *The Risk Centre* draws attention to the construction and boundaries of the exhibition.

"Risk assessment looks at the fact that children do not have a wide bank of knowledge and experiences to draw from that would help them deal with risky situations and define safety parameters accordingly." *(Excerpt from Author-led Interview)*

The museum interiors are reconfigured to form a condensed version of *Stockholm* city in which multiple micro-environments are designed to allow the subject of risk to be explored in its many pretexts. This extends the museum's conventional remit into unfamiliar territories, while providing an active space for discourse, exploration, and engagement. Part film set,

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educational facility and theme park, the centre recreated familiar scenes and places from the suburbs and the inner city to act as a venue for a civic programme; here, school groups from the municipality of *Stockholm* and the public are invited on guided daily risk tours of the centre as well as weekly events and workshops that further examine the complex subject of risk.

"Through the collaboration we found a joint interest in Hollywood disaster films, which would essentially use similar crisis-management situations to create fiction, and subsequently, the construction of film sets to play out these fictional scenarios. This interest in the physical environments led the conversation on to those used to create fictional scenarios for simulation and training. These ranged from training towers for fire services to simulated towns, such as *the Metropolitan Police's Specialist Training Centre in Gateshead*, designed with roads, houses, shops, banks, a nightclub, a football stadium, a life-size section of a plane, and train and underground stations with full size carriages." *(Excerpt from Author-led Interview)*

To the untrained eye, this is an educational and experiential project addressing various aspects of risk and safety with a focus on children as the primary audience. On deeper investigation, it can also be seen as a way to explore new modes and motives within contemporary design practice(s). Through an installation and a series of events, the museum engages by shifting the dynamic of an institution to include new audiences, through experiences. Within the work there are scripted moments that highlight key risk messages. These performative elements are emphasised through events and workshop programmes in which schools and private groups are invited on guided tours of the facility. *The Risk Centre* project and exhibition showcases design as an explorative, critical, and speculative practice. *Onkar Kular's* work makes design as a tool for investigation.

"The first of these staged events are *The Risk Centre Tours*. During these, local schools bring pupils from the ages of seven to eleven years old to the exhibition for a 'Risk Tour' of the space. Through the scripts and the space, the children play out risk scenarios as a form of entertainment, and also, education. In these, they explore the themes of 'the right to play', 'privacy and safety on the internet', 'risk in the everyday', 'traffic and the public realm' and 'being a junior citizen'." *(Excerpt from Author-led Interview)*

Repeatable Insights |
Design for continuous learning and preparedness: This project demonstrates one of the roles that museums can play in contemporary society by designing learning experiences beyond school settings, which are aimed at teaching social challenges, like risk mitigation and safety.

Engagement as Artefact **010** |

Justice in Motion |

Keywords | #social_injustice, #theatre, #lived_experience, #social_ awareness

Interview | *Anja Meinhardt*[90]

I'm founder/artistic director of *Justice In Motion*, a physical theatre company [working] around social injustice issues, through the performing arts. We work with non-theatrical disciplines that are exciting to watch—like trials bikes and music—which tell stories that are engaging, heart hitting and thought provoking. We're an art company, but foremost, we are a charity that wants to make a difference. We have had a short tour, around county lines of knife crime and child criminal exploitation. We are working with Parkour trials, bikes, and live rap music on this occasion because it makes sense in the context. We work [through safeguarding procedures] at skateparks because we think it is a good place to be. Yet, it is often a place abused and used for grooming. Our work can be accessed through our associated app,[91] which is something people can read if they want to; our hope is to translate this into different languages for the tour next year.

Author Question | *What do you think is the most impactful method, process, or narrative?* After ten years, we are in the process of refining our approach. For instance, we started speaking with people and with lived experience. Interestingly, despite having lots of initial conversations and research, once we go into the rehearsal space, we have other conversations with a team and invite speakers to come and share their knowledge; this exchange gives us an understanding of the entire issue. For us, it is key to understand somebody who was once involved in knife crime,[92] went to prison and now is making a positive impact on young

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[90] Justice in Motion. (2022, November 29). *Anja Meinhardt – Justice in motion*. https://www.justiceinmotion.co.uk/team/anja-meinhardt/

[91] Justice in Motion. (2023, May 22). *About – Justice in motion*. https://www.justiceinmotion.co.uk/about/

[92] Data from NHS Digital shows there were 3,775 "hospital episodes" recorded in English hospitals in 2022–23 due to assault by a sharp object. This was a 9.5% decrease compared to 2021/22, and a 3.6% increase compared to 2014/15. | *Defining knife crime | College of Policing*. (2021, November 19). College of Policing. https://www.college.police.uk/guidance/knife-crime-problem-solving-guide/defining-knife-crime

people. So, it is key to really understand and not put any judgement against our biases. Another thing is to spend hours in storyboarding; ahead of the rehearsal process, the three directors have several days where we just sketch out what it should be, bringing in people with s*** hot skills. The people are always different, and they bring different ideas, skills, personalities, and characteristics.

Author Question | *What are the key lessons you would like to share with others?* Understanding the topic in detail and laying a good foundation for that work with people that bring in the skills that you're looking for. We get the best people, not just in their quality and skills, but those that really carry the passion and understand the vision. Because stories are hard hitting, shows are also hard hitting and thought provoking, but also incredibly fun and entertaining to watch. So, people get both; they'll join us in an emotional holocaust not necessarily on one story we're telling of one person we've heard. For us, it is more about hearing many stories to craft something universal so that many can identify with it.

We really need to bring art out into the public space, and people just passing by need to hear it. It's the people that don't choose to come to the theatre that don't want to bring high quality art right to your doorstep; we want to show that we hear you, see you, and value you. I think this is where the issue often is being perpetuated. People don't feel seen. Also, true representation on stage is another important thing, which means having a child performing the role of a child so they speak from their own experience. Finally, production value, which is crafting a story so that literally everything or nothing in the show is arbitrary and every part of it is carefully crafted.

Repeatable Insights |

Design for social empathy: This project uses theatre as an experience to describe to an audience the fragility of our society which needs to be confronted to generate empathic awareness.

Engagement as Artefact **011** |

Swim |

Keywords | #water, #traditional_knowledge, #agency, #managing_natural_resources

Interview | *Luisa Charles*[93]

Author Question | *From your project, what is the most impactful method, process, or narrative that has directly or indirectly emerged?* Project *SWIM* (Surface Water Integrated Monitoring) is a collaboration between community focused *NGO Cobra Collective*,[94] *The Open University*,[95] community researchers and data technicians of the *Makushi tribe*,[96] and *Wateraware Collective CEO Luisa Charles* that uses design and making as a way to bridge traditional indigenous knowledge and modern technologies. [Co-design is used] to build devices for wetland monitoring in region nine of *Guyana.* [These are preventive] labelling technologies, used as methods for [correctly] tackling the environmental challenges faced in the *Rupununi*.[97] In the words of *Caroline Jacobs*, community researcher and logistics officer of the *Rupununi Wildlife* clubs:[98] "We have our own knowledge and (…) the modernized world has their own knowledge, so if you put those two together I think we could create something really unique." Hence, *Makushi* researchers brought traditional crafting techniques, best practices for using natural resources sustainably, and traditional environmental monitoring techniques, like, understanding patterns and behaviours in plants and animals that indicate ecological health and oncoming environmental change.

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[93] *STUDIO ELJAY LTD | 14254583 | The Gazette . . .* (2023, July 27). The Gazette. https://www.thegazette.co.uk/company/14254583

[94] Simpson, M. (2021, March 5). *Home – Cobra collective*. Cobra Collective. https://cobracollective.org/

[95] *The Open University*. (2024). https://www.open.ac.uk/

[96] *Macuxi – Indigenous peoples in Brazil*. (2024). https://pib.socioambiental.org/en/Povo:Macuxi

[97] *Rupununi Savannah wildlife location in Guyana, Latin America | Wildlife Worldwide*. (2024). https://www.wildlifeworldwide.com/locations/rupununi-savannah

[98] *Discover the remarkable work of the Wildlife Clubs of North Rupununi – SWM Programme*. (2024). SWM Programme. https://swm-programme.info/latest-news/-/blogs/discover-the-remarkable-work-of-the-wildlife-clubs-of-north-rupununi/1000

Author Question | *Can you explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* Though the *Rupununi* is relatively isolated globally—most people do not have access to phones or laptops, many areas have no internet access, and the bus to the capital can take up to twenty-four hours on extremely challenging, unsurfaced roads—the legacy of colonialism can still be heavily felt. There is a widespread perception that Western academics have a monopoly on "expertise", but also a movement challenging this idea. It can be easy to fall into the trap of assuming that a community does not have the capacity, or has made no attempt to tackle complex problems without the involvement of outside researchers. By framing traditional knowledge and practice as of equal importance to scientific research and scheduled workshops in fulfilling the goals of the project from the outset, the playing field is levelled for improved collaboration and outcomes. All groups become both teachers and students, experts, and novices. In the same way one would assume a scientist has undergone research prior to entering field work, so must we assume the communities we are working with have methods, ideas, and attempts at tackling problems prior to the project.

The communities had their own ways of monitoring and understanding the changing environment, without the need for state-of-the-art apparatus. However, the bureaucratic systems used by governing bodies in allocating funding to manage these changes requires a more quantitative approach. This collaborative approach created a direct impact for livelihoods in the community, as collected data can be used to inform village improvement plans and secure funding for the protection of the area, to claim the villages' fair share of carbon credits from the government, as well as serving their own purposes.

The approach enabled the community to expand on their own practices, creating community-owned solutions to complex problems that both keep up with modern-day needs and honour their traditional knowledge. Participants have expressed a desire to continue exploring the bridge between traditional knowledge and modern technology in future projects. Though traditional knowledge and indigenous practices are specific to a small number of communities, all communities have traditional practices and commonly used materials. In this way, the approach of creating equal collaborations and incorporating elements of traditional practice as well as state-of-the-art can be transferable to all types of engaging design projects.

Author Question | *We are deeply interested in "catalysing engagement", not just passive participation, but an informed and empowered process. Can you explain how your project includes communities and how it catalyses or fosters engagement?* Project *SWIM* included the integration of transferable skills, such as using tools, drills, and soldering irons, or analysing and interpreting data. These skills mean that data technicians not only can build robots but also maintain appliances in their own homes, and understand data collected by other researchers—they have the skills to continue tackling local challenges without outside involvement. Communities were involved in the project throughout the entire process—from research and design to testing and disseminating findings. From the beginning, it was important to match-up community needs to external stakeholder needs. For example, collecting data on deforestation and tree cover benefits the scientific community while also aiding the *Toshao* and community decision makers in planning for agroforestry. Using an RGBD camera to monitor water depth can bring key information on flooding and climate change to researchers, while these cameras can also be used to allow tourists to remotely view rare fish species: providing non-invasive tourism opportunities that bring cash into the community.

Author Question | *What were the key lessons from your project/ experience that others can build on? 1. Build something new from the ground up:* Culture and social politics can have a huge impact on how a project is received. You want to avoid the perception that your project is aiming to replace or compete with existing practices in the community. For example, building capacity for women in tool usage can be seen as controversial and going against traditional gender roles, which may be met with strong opposition. Robotics currently holds no place in *Makushi* society, and therefore is not traditionally associated with one particular group, usage, or role. This opens up possibilities to create new practices that don't conflict with the status quo.

2. Every step should have some give and take: If you, or any external stakeholders are benefitting from a given activity, the community must also be experiencing a direct benefit. For example, integrating ethnographic research into a teaching curriculum. How can one gain answers to their research question without it becoming a one-way process? During ethnographic research stages, we integrated our research questions into a design engineering workshop; needs finding was framed as a session on creating briefs: who are we designing for? What are their needs and preferences? Participants came away with an understanding of how to create and use a design brief, which means storyboarding and using

ideation tools, or gathering insights from users amongst others, while key ethnographic research questions were answered.

3. Build capacity in transferable skills: Depending on the nature of the project, [interested parties] needs may mean the outcome becomes incredibly niche. Needs of today won't necessarily match future needs, and project outcomes may offer little benefit beyond the duration of the project. By building transferable skills in the community, one maximises the potential for sustained impact – catalysing engagement for future challenges, and improving chances of independent future work and general improved livelihoods.

4. Use what you have around you: It's one thing to bring in specialist equipment to make sure the job gets done, but a bigger challenge is ensuring the project can be locally sustained. Project *SWIM* looks at how local materials can be used to create variations of the same devices: using tuk tuk tires for buoyancy in *Sri Lanka*, and bamboo in *Guyana*. Creating an approach that focuses on functionality and availability rather than prescriptive materials and methods ensures the approach will be transferable in different situations.

5. Allow communities to take the lead: No matter how well planned, everything is subject to change once in the field. If you go in with the assumption that the community has already explored opportunities in tackling the challenge at hand, you can trust that their approach is as valid (if not more valid) as your own. In the best-case scenarios, you find your champion: a local community member who is passionate about the project and would like to take responsibility for ensuring its sustained development beyond the project's initial scope.

Author Question | *In relation to our definition of Engaging Design, what aspects of your project articulate this definition?* Firstly, by building capacity in the entire research process, the potential to run further projects independently becomes possible. This catalyses engagement for the future, and ensures that the benefits of research—both monetary and knowledge based—are felt within the community. Secondly, matching external stakeholder needs, such as need for data for scientific research and climate mitigation with immediate community needs. For example, growing local enterprise [and] increasing resource yield or environmental protection guarantees that benefits are felt within the wider community, including those who are not directly involved in the research. This approach establishes sustainability in the practice, as long as communities feel a direct benefit from projects, they can justify continued work on said

projects. Complex problems, such as climate change, or the specific environmental challenges we were tackling on Project *SWIM* (mercury pollution from illegal gold mining, malaria vector control, flood mitigation) require long-term approaches. Ensuring that activities are mutually beneficial and sustainable over time increases the likelihood of managing these challenges.

Repeatable Insights |
Design for self-reliance: This project describes how local indigenous communities can harness their knowledge to manage their natural resources in combination with scientific knowledge, resources, and tools.

Who Wants to be a Self-driving Car? A data-driven trust engagement, using augmented reality so people can empathize with self-driving vehicle systems. **Credit |** Joey Lee.

Who Wants to be a Self-driving Car? The unconventional driving machine lets people use real-time, three-dimensional mapping and object recognition, displayed in a virtual reality headset to navigate spaces. **Credit |** Joey Lee.

The Great Bubble Barrier is a semi-permanent cost-effective technology producing an air curtain, capturing detritus in rivers or estuaries, removing waste before it enters the sea. A drone photograph of deployment in Amsterdam. **Credit |** The Great Bubble Barrier.

The Great Bubble Barrier catches estuary/river detritus and shepherds it to floating refuse containers. Once clear, the barrier is easily removed from the aquatic location. **Credit |** The Great Bubble Barrier.

Nashulai is the first ever community-owned and directed wildlife conservancy. It is a unique achievement that promises to inspire a positive change in the entire East Africa region. **Credit |** Images Courtesy of the Nashulai Maasai Conservancy.

"In our language 'Nashulai' is a special word. It means a place of harmony where community and wildlife live in balance and mutual benefit." **Credit |** Images Courtesy of the Nashulai Maasai Conservancy.

The conservancy has gained popularity in the Maasai Mara region, attracting local and international media; it preserves the local Maasai indigenous culture with the aim of reversing poverty. **Credit |** Images Courtesy of the Nashulai Maasai Conservancy.

A photography workshop engaging people in "Diminishing landscapes: with Peter Coles & Andrew Stuck Stalking the disappearing ash tree through the Kent Downs". **Credit |** Manuel Vason.

End of Engagement as Artefact Section |
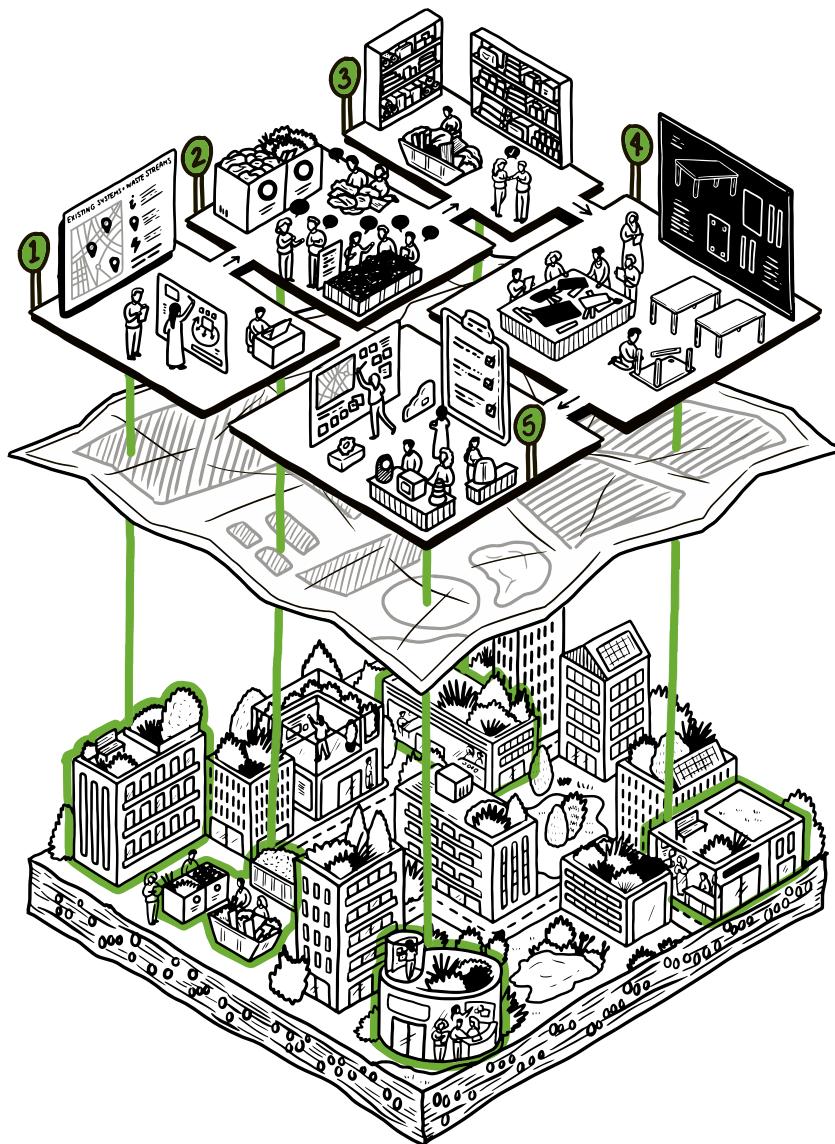
1) **Systems Mapping** *(review existing systems and waste stream).*
2) **Systems Impact** *(carefully consider the waste stream, any impacts, safety concerns).*
3) **Systems Relations** *(create reciprocal agreement to handle and design with waste).*
4) **Design Interactions** *(create outputs and carefully consider the use of the material(s).*
5) **System Delivery** *(deploy the process and repeat).*

Engagement as a System |

Engagement as a System: The complex set of relationships between people, institutions, things, ideas, and specific places.

When you catch a train, turn on a power socket, or fill up a glass of water you are interacting with one touchpoint of a system. These systems have interdependencies, quite often operating outside of our control. They can be delicate and have a tremendous impact when they do not work. Systems design concerns strategic interventions at appropriate points of complexity. There are many co- and inter-dependencies within systemic design. It is easier to see them as system-of-systems or layers that interact with each other. This is evident in town planning, or utilities and the resources that we rely on a daily basis.

Quite often people will share the issues they have within systems as "wicked problems".[99] A wicked problem is one for which each attempt to create a solution changes the understanding of the problem. Wicked problems cannot be navigated in a traditional linear fashion, because the problem definition evolves as new possible solutions are considered and/or implemented. Systemic challenges are interlinked, co-dependant, work across cultures, are often unseen and are skewed by our personal experiences or biases. One example is the recent Covid-19 pandemic, when people had to stay in their homes to keep others safe; as a consequence, their mental health, social health, well-being, and so much more were impacted.

In *Engagement as a System*, we see design as the representation of a connection of a system, a touchpoint rather than an "artefact". These touchpoints might comprise elements from a product, a service or a system, or a combination of all of them working together. They handle innate complexity and layers of information for different audiences.

For example, *Smart Designs'*[100] work for *Gatorade*[101] supports athletes' hydration to optimize their performance. It starts with the *Gx Sweat Patch*, a small, stick-on microfluidic patch measuring the rate and composition

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[99] The classification of wicked problems: Rittel, H., 1967. Wicked problems. *Management Science (December 1967)*, *4*(14).

[100] Smart Design. (2023, October 11). *Smart Design | Strategic Design & Innovation Consulting Firm*. https://smartdesignworldwide.com/

[101] Gx is an ecosystem of physical and digital products that repositions Gatorade as a premium, tech-forward fitness brand, Design by *Smart Design* in the United States.

of their sweat during workouts. Snapping a photo of the patch post-workout sends this information to the *Gx App*, which combines it with details on the workout and athlete's personal stats to deliver personalised hydration recommendations. The app works in unison with the *Smart Gx Bottle*, pacing the athlete's hydration during future workouts with visual cues. Its recommendations also help athletes select the right *Gx Pods* of sports drink concentrate ensuring accurate electrolytes for peak performance. Alone, each product is useful/valuable, but together, they form an ecosystem offering a unique experience. If we contextualize this further, think about your relationship with water. You drink it, you wash with it, cook with it, wash your clothes in it, harvest it to water your plants, and millions of infrastructures use it constantly within sanitation. These systems are complex, as they have multiple interested parties who control them or dictate their use.

Hence, in *Engagement as a System*, systems interface people and services and develop deeper interactions within communities. For example, in the *GoodWaste*[102] project, so-called "waste" materials are transformed into interiors and objects. By intercepting and diverting industrial waste from landfill, and applying principles of circular economy, this project promotes a social and environmental sustainability that balances the commercial output with social impact initiatives bringing local communities into the design and making process. Building from a graduate project, authors of this project sold back to national retailer "*Selfridges*"[103] the waste in their skips, which was transformed through a creative design intervention. That project explores a part of a system at a small scale, by seeing a small resource like waste as a material that can be harvested by communities, which is powerful.

A third example is *CoastSnap*,[104] an intervention relying on photos taken at the same location to track how the coast is changing over time due to processes such as storms, rising sea levels, human activities, and other factors. Using a specialized technique known as photogrammetry, *CoastSnap* turns people's photos into valuable coastal data that is used by coastal scientists to understand and forecast how coastlines might change

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[102] A project that truly questions material provenance, waste and the opportunity for regeneration and circular economies. *Information — GoodWaste*. (2018). https://goodwaste.net/Information

[103] Selfridges. (2019). *Designer fashion, accessories & more – shop online at Selfridges*. https://www.selfridges.com/GB/en/

[104] User, S. (2021, November 11). *Home – CoastSnap- Citizen Science App*. https://www.coastsnap.com/

in the coming decades. Photogrammetry technologies enable the position of the coastline to be pinpointed from your snaps to an accuracy similar to that of professional coastal survey teams. This intervention enables people to have an active role in their coastline and contribute to the preservation of its future. We see this as an example of how to act within complexity, through appropriateness and contextually based on cultures, people and more. However, there might be limits related to operating within existing infrastructures that might be unsuitable, less pliable, or even malleable to change.

End of Engagement as a System Section Introduction |

Territory Interview | *Jon Alexander*[105]

Author Question | *How would you define Engaging Design?* The language is interesting, we tend to talk about involvement rather than engagement. The word engagement in a "public engagement" sense tends to be quite shallow, just "showing" people things.

Author Question | *How do you think Engaging Design differs from designing participation?* I've been having similar conversation(s) with *Claudia Shalisi*[106] who runs *DemocracyNext*,[107] see[ing] it from a research background, with participants in research studies [defined as] meaningful participants with agency. You're talking about a place where "engagement" creates space for people to talk, communicate, and act, taking ownership for themselves, to become a citizen of "it". Not just the consumer, but choosing between options and fulfilling their role in return.

Author Question | *What should we be designing to encourage "citizenship"?* From a background in advertising, the idea of people as participants is a big step forward. We talk about *The New Citizenship Project*[108] as a consulting business to help organizations do stuff better, because we think of people differently. We think of people as participants in meaningful work in the world, rather than as consumers of products and services. This distinction between citizenship is practice, and citizenship of status is probably the heart of it. "Citizen" (*Baratunde Thurston*, a

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[105] *CITIZENS | Jon Alexander*. (2020). Jon Alexander. https://www.jonalexander.net/

[106] *Claudia Chwalisz*. (2023, June 14). DemocracyNext. https://www.demnext.org/people/claudia-chwalisz

[107] *DemocracyNext* believes in a more just, joyful, and collaborative future, where everyone has meaningful power to shape their societies. *demnext.org/*

[108] *The New Citizenship Project* is to catalyse a shift to a more participatory, citizen-led society. We call it the #CitizenShift: newcitizenship.org.uk/

podcast *"how to citizen"*[109]) is a verb rather than a noun; being a citizen is something we all do. It is an orientation to the world, an act of claiming agency and shaping, shaping your own context, it's very different to the idea of citizenship as a status, i.e., the passport you hold.

Most of *The Citizenship Project* work is built around the three principles of participatory organizations. Those three principles talk about *purpose*, *platform*, and *prototype*. The question with purpose is, what's this organization trying to do in the world? The question with the platform is, then what's what? What structures and processes and opportunities do you create that make it meaningful and joyful for people to participate. Finally prototype, how do you build the energy? Because if you're doing it in a participatory way or an engaging way, should we say you're not going to have the final answer. The whole point is you'll build it with people. It is, how do we design stages that people can stand on.

Do you know about soles and self-organized learning environments? In a 2013 TED Talk in *Colombia, Sanjay Fernandez*[110] presented how he created *sole labs* [solecolombia.org].[111] These labs are a great example of designing spaces and processes, tools; the language we use is what makes it meaningful and joyful to get involved. We often draw the distinction between the language of meaningful and joyful. When people talk about sustainability, they state it as easy and convenient, because we are the starting point and people are citizens by nature.

Author Question | *How do you see the relationship between citizenship and engagement?* Citizenship and engagement become deeply interrelated. People engagement is what you have to do, i.e., engagement in your own language rather than that understood as public engagement. This is my battle with the word engagement; because of the language of public engagement today started from the idea that the public are consumers. It's like collectivism; whereas I think, proper deep engagement has to start from thinking of people as citizens. It has to assume that people are creatures who want to have agency in shaping the world rather

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[109] Reimagining "citizen" as a verb and reclaiming our collective power. howtocitizen.com/

[110] Sanjay Fernandes is from Bogotá, Colombia. He is a father, an economist, interaction designer, educator, and electronic musician. His work at SOLE (Self-Organised Learning Environments) Colombia seeks to create a simple powerful solution to transform the future of education.

[111] Empowering communities to develop: autonomy, collaboration, deep learning, and most important of all. solecolombia.org/

than assuming that people are lazy, selfish, consuming creatures who need to have it done for them?

Author Question | *What key design strategies or actions shift the process or event from participation to what we call Engaging Design?* The concept of safe uncertainty, with the original theory, comes from family therapy. The original paper, from *Barry Mason*,[112] states that anyone [who] comes to therapy is either unsafe/uncertain. He says, safe certainty doesn't really exist. There is no safe certainty, there is no final solution. He talks about the danger of that and [says that] what we should aspire to create [is] a safe uncertainty through engagement(s). That idea of safe uncertainty will probably be my key design strategy. It's like, how do you create something that doesn't dictate [to citizens]? What will, what can be done etc…

Author Question | *What role do you think engagement can play in tackling complex challenges?* I don't think we can tackle complex challenges without "engaging" in the way you're talking about. Firstly, people talk about the polycrisis[113] as the definition of the moment, i.e., everything is in crisis at the same time and you can't solve an ecological crisis from within. The consumer story says we are separate from nature, you just can't solve an ecological crisis from within the consumer story. You can't solve a loneliness crisis from within a consumer story, because it tells us that we are isolated, independent individuals like you can't solve, and you can't have an inequality crisis from within it, because it carries the metaphor that society is a competition.

You can't solve complex challenges from within a story treating people as consumers and solve the challenges for people. The only way you can actually meaningfully face the challenges of our time is by getting everyone on the [metaphorical] pitch, i.e., all of us are smarter than any of us. Hence, we need "engagement" in order to face the challenges. The safe uncertainty is like [a therapist] saying to a [patient], "I can't tell you that I'm going to fix you. What I can tell you is that I will stand beside you as we figure out how you can find a way forward." And that, in a lot of ways, is probably a pretty good definition of [what] engagement means.

Author Question | *Are there any projects that you think are on the cutting edge, or that we can borrow from, to achieve Engaging Design?*

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[112] Mason, B., 2018. *Handing over: Developing consistency across shifts in residential and health settings*. Routledge.

[113] *This is why "polycrisis" is a useful way of looking at the world right now*. (2023, March 7). World Economic Forum. https://www.weforum.org/agenda/2023/03/polycrisis-adam-tooze-historian-explains/

The technology is secondary to the infrastructure and mechanics that enable communities to self-organize and self-direct. For example, open collective [a web platform enabling anyone to set up an open budget and crowdfund into it] allows to set up an organization without a board, etc. I like methodologies like legislative theatre basically; once you have brought a group together, you can use something like a system assembly for this or whatever. But once you bring the group together, you then identify scenarios and then [people] act them out, introducing interventions into those scenarios and act out those interventions. It is really fascinating that people sort of play the roles of the participants in that moment with people playing different roles.

Also, *Neighbourhood Parliaments*,[114] a big movement for fairer societies [neighbourocracy.carrd.co] which are fascinating, involving whole communities, including children developing consensus. *Neighbourhood Parliaments* organize themselves around the 2030 UN Sustainable Development Goals[115] setting their own priorities for how to develop local thriving and resilient communities. I like *Legislative Theatre*,[116] an open methodology allowing people to find meaning and unpick wicked challenges. Finally, if we enter a "citizen society", then design will enable people to do things for themselves.

End of Interview |

Territory Interview | *Charlie Waterhouse*[117]

Charlie Waterhouse My background was commercial marketing and graphic design for twenty-five years [at time of writing]. It's difficult to exist in traditional agency environments, because it's built on an amount of *b******. Creativity gets sucked out. You go into this world thinking, at least I'm not "establishment"… Then you realize you're doing the worst of the work, enabling everybody else. For the last fourteen years I've been doing *"This Ain't Rock' n' Roll"*[118] with a creative partner. We've gradually

[114] *A fairer society – neighbourocracy*. (2021). A Fairer Society – Neighbourocracy.

[115] *Sustainable Development Goals | United Nations Development Programme*. (n.d.). UNDP. https://www.undp.org/sustainable-development-goals

[116] *Legislative theatre — people powered*. (2019). People Powered. https://www.peoplepowered.org/legislative-theater

[117] Part of the original art group creating *Extinction Rebellion | About This ain't Rock'n'Roll — Page 8*. (2018). This Ain't Rock'n'Roll. https://www.thisaintrocknroll.com/about/

[118] *This ain't Rock'n'Roll*. (2018). This Ain't Rock'n'Roll. https://www.thisaintrocknroll.com/

divested ourselves from clients, work opportunities and given up on free pitching. We started getting involved in community or social movements we designed at the *Brixton Pound*,[119] a local currency in bricks and in *South London*. In 2017, we were part of the original art group of *Extinction Rebellion* (*XR*).[120] There were four or five of us on the team who designed the original programme for *XR*. We remain involved in *XR*, on a strategy level. There's a whole network of people working for the same ends, the latest manifestation is looking at how we can grow into something beyond civil disobedience, leveraging culture. Everything works in common, in the context of participatory democracy, without realizing it's a massive exercise in engaging design.

Author Question | *What principles, manifesto points, or methods support best practice of how people should design engagements? With the public or other audiences?* I'm involved in the *Brixton Project*.[121] It's community arts based and we're working at the moment with *Guys and St Thomas's*[122] to run a process of public engagement around two of their statues. They have statues to their founders,[123] who surprisingly made money out of slavery. The difficulty with environmental things is that it's a hyper-object.[124] It's almost impossible for people to know; also, the barriers are so enormous that it's difficult to even start to begin to believe that you can have any agency in things not dissimilar to what you do about the legacy of colonialism. People see *Black Lives Matter*,[125] or police violence, or health inequalities in a context, in a way that perhaps we can't yet. Certainly in *Britain* around the environment, they are totally interrelated. You've got to deal with these things as hyper-objects, to have any hope of sorting anything, and working with communities is critical. What even is innovation anymore? Because it's certainly not what is taught in business school, or probably many universities. Innovation has this forward

[119] *Brixton Pound – Local Currency has never been more needed!* (2021, January 21). Brixton Pound. https://brixtonpound.org/

[120] *Home – Extinction Rebellion UK*. (2023, September 2). Extinction Rebellion UK. https://extinctionrebellion.uk/

[121] The Brixton Project. (2023, September 7). *The Brixton Project – Participatory Placemaking in Brixton*. https://thebrixtonproject.com/

[122] *Home*. (2023). Guy's and St Thomas' NHS Foundation Trust. https://www.guysandstthomas.nhs.uk/

[123] Hudson, L. (2021, November 16). At the End of the World, It's Hyperobjects All the Way Down. *WIRED*. https://www.wired.com/story/timothy-morton-hyperobjects-all-the-way-down/

[124] *Our history*. (2023). Guy's and St Thomas' NHS Foundation Trust. https://www.guysandstthomas.nhs.uk/about-us/our-history

[125] https://blacklivesmatter.com/

propulsion, we're almost still in that *Tony Benn*[126] world, and absolutely unfit for purpose. Innovation means really different things.

How should we open up what should be our principles? How we're including people within these engagements correctly, if you want to make something meaningful to a single mum on low income, you have to make sure it's accessible. You take your thinking and your experience, and your understanding of systems and go and sit in the real world rather than the world where *Britain* is trying to get a competitive advantage over *India*. Why does any of that matter when *London's* flooded?

The main principle, born from *XR*, is to give stuff away as quickly as possible. In design terms, engagement, and in graphic design. In identity design terms that's the polar opposite of what you're supposed to do. You're supposed to lock it down with a brand manual. And make sure that everybody deploys it exactly the way it should be deployed. Anyone who's spent any time in that world knows how ridiculous a process it is. You create something that's imperfect, that doesn't work properly. You then need a massive team to make sure that it gets deployed.

We had a great collection of people that united our perspectives and how it needed to land in the world. It was brilliant because there was so much good strategic thinking that we could really work with it. But no one really had any sense that it was ever going to be more than six people. There were more than six people there and it's still a surprise when there are, so we had to do this work without any success. But we had to behave as if it was going to. When this has reached twenty countries, what's it gonna look like, and plan for that. But then without any hope of success. Engagement is on a very different level, people saw generosity and an opportunity to see connections we would never manage conventionally or top down.

Author Question | *What are the mechanisms we should intervene with? Or how do we design as creative practitioners? I.e., the means to roll things out to others?* We've been working on creating a "messaging design hierarchy" to attempt to *Engage Design*. But we also know that we need to show greater solidarity. The similar thing in competitive economics is one-upmanship.[127] The reality is that's one of the biggest barriers. We've been

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[126] Brivati, B. (2017, November 30). Tony Benn obituary. *The Guardian*. https://www.theguardian.com/politics/2014/mar/14/tony-benn-obituary

[127] ONE-UPMANSHIP Definition & Usage Examples | Dictionary.com. (2023). In *Dictionary.com*. https://www.dictionary.com/browse/one-upmanship

working with philosophers and theologians trying to see if that can be an enunciation of what might be an underpinning value. In the rest of the world a high percentage of people will have some form of faith community. We would never say this out loud, but that humanity is love. Even *Jacob Rees Mogg* wants the ability to love and be loved. We were really lucky in early in the first flush of exile to start working with *David Graeber*[128] just before he died. He was talking about [the fact that] the problem that we're dealing with is the unhealthy relation between production and consumption that necessitates perpetual growth.

You then can have sustainable perpetual growth, because that growth will be in kindness and happiness and laughter and joy, and security. Crucially, his thinking was that you use words like freedom really consciously, because it's a word that people like us aren't supposed to be able to use. That's the premise of the right wing, i.e., all the libertarians. However, care and freedom are [maybe] better ways to navigate the decisions that we make.

The conclusion we come to is that maybe the call to action is about work. Work is something that has a start and an end. It's nourishing, that's the question that I think we can pose ourselves as designers or creatives is like. If you can drill down into that in a systems design sense we got a better chance of being able to like work in in collaboration with each other, and be free from the drivers of "Well, I've got to do it this way because it has to make a profit," or' I've got to do it this way because of this legislature entering a market, because there is no other way.' If we can drill down into those fundamental motivations of why we're doing this, that's the start point for engagement.

End of Interview |

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[128] *David Graeber – Here is David Graeber's home and everything related to him: his friends and his family, his texts, and his dreams, his photos, and his visions.* (2023). https://davidgraeber.org/

Engagement as a System **001** |

The GoodWaste[129] |

Keywords | #waste_materials, #repurposed_furniture, #circular_economy, #attitude_to_waste

GoodWaste transforms "waste" material(s) into interiors and artefacts through considered and appropriate design. They divert industrial waste from landfill, integrating circular economy principles and regenerative values. Founded by *Ambra Dentella, Rafael El Baz*, and *Ewan Alston,* the group believes in social and environmental sustainability, so balances commercial output(s) with social impact initiatives, bringing local communities into making processes. *GoodWaste's* initial study was located around *Park Royal*[130] (*London's* largest industrial site), using material offcuts from manufacturers skips. Repurposed materials included marble, steel, and Corian,[131] producing homeware for the 25,000 new homes being built in the neighbouring town. It represented a new model of manufacturing as it is, highly local and highly circular; dissolving the area's waste problem, while preventing an influx of low quality, mass-manufactured goods shipped around the world.

The project highlights the potential of the so-called waste materials as a valuable local resource. *GoodWaste* has fostered local and national engagements through *Selfridges[132]* department store on *Oxford Street*, *Waltham Forest Council*, *Arts Council England* and more. *Selfridges* commissioned them to batch-produce a range of furniture and homeware made from local waste, to be sold in stores and online.

They used the *Selfridges* commission as a test of a local, circular production model furnishing planned new-build homes with offcuts from the neighbouring industrial site. The project presents sustainability as a model of engagement, as it links people directly with their surrounding resources. It promotes and demonstrates how we can become custodians

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[129] Acknowledgements | Ewan Alston, Ambra Dentella and Rafael El Baz.

[130] Hidden London. (2022, September 27). *Park Royal | Hidden London*.

[131] Durable person-made material, used for high traffic areas and kitchens | *Corian® solid surfaces, Corian*®. (2018). https://www.corian.com/

[132] Selfridges. (2023). *Designer fashion, accessories & more – shop online at Selfridges*. https://www.selfridges.com

of resources and materials rather than artefact owners, that fuel a capitalist system. Finally, with this project, it tested how customers would respond to the idea of products made from waste, thus reframing the public material inter-relationships.

Repeatable Insights |
Design for circularity: This project shows how materials normally labelled as waste can be an opportunity for rethinking manufacturing as a circular process; this can increase the average quality of mass-manufactured products.

Design for lifestyle change: With this project, consumers are encouraged to reflect on their attitude towards waste, and whether the items that are typically disposed of, have reached their end-of-life or can (should) be repurposed.

Interview | *Ewan Alston*[133]

Author Question | *From your project, what is the most impactful method, process, or narrative that has directly or indirectly emerged?* Looking at one specific area and trying to best match the material resources that can be extracted from waste, with the needs of the local community.

Author Question | *Can you explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* The approach for dealing with local waste means less goods will be made from virgin materials and imported into the area. It can be transferred to any area, provided the needs and opportunities of that area and community are considered.

Author Question | *We are deeply interested in "catalysing engagement", not just passive participation, but an informed and empowered process; can you explain how your project includes communities and how it catalyses or fosters engagement?* Wherever possible we bring local communities into the process. Our recent project in *Chingford* with *Blackhorse Workshop*[134] *& Waltham Forest Council*[135] took over an empty high street shop front and invited hundreds of community members of all ages to come and learn a process of turning waste plasterboard into household objects such as bowls. The fact that the material had been

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[133] *Ewan online*. (2018). https://ewanalston.com/
[134] Blackhorse Workshop. (2022, October 10). *Blackhorse Workshop*. https://www. blackhorseworkshop.co.uk/
[135] *Home | London Borough of Waltham Forest*. (n.d.). https://www.walthamforest.gov.uk/

sourced exclusively from the local area made the residents more invested in the project and more interested to learn ways of dealing with it.

Author Question | *What were the key lessons from your project/ experience that others can build on/learn from that you think are transferable to other situations?* Involve different stakeholders as early as possible (community members, manufacturers who made the waste, etc.); Design for disassembly; Use local manufacturing; Don't create objects that will be harder to process than the original waste when the objects themselves eventually break or become waste. The project attempts to build bridges between communities and local manufacturing, between waste and useful goods.

Engagement as a System **002** |

CoastSnap |

Keywords | #monitoring_landscape, #data_collection, #building_ community, #climate_awareness

CoastSnap is a web application that monitors, via citizen science, beach erosion/accretion by linking the data collected to other environmental phenomena, like weather conditions, seasonal fluctuations, and extreme storm activities. England has some of the fastest eroding coastline in Europe; if historical records show that the country's soft and sandy east coast has been gradually retreating over time, in 2018 the *UK Government Advisory Committee on Climate Change* calculated that around 9,000 properties in *England* are located in areas likely to be lost to coastal erosion by 2025.

The Southwest Regional Coastal Monitoring Programme[136] collects different typologies of coastal monitoring data, including topographic beach survey data, bathymetric data, LiDAR, aerial photography, and habitat mapping. This is the largest of *the National Coastal Monitoring Programme* regions and covers 2,450km of coast between *Dorset* and *Beachley Point* on the territory border with *Wales*. *Plymouth's Coastal*

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[136] GeoData Institute (www.geodata.soton.ac.uk). (2023, November 2). *National Coastal Monitoring – welcome*. https://coastalmonitoring.org/southwest/

Observatory[137] is a team of coastal scientists that manages the data collected by the programme to ensure its high-standard quality and that it is appropriately safeguarded. *CoastSnap* participates in the data collection by engaging the public in using mobile phones to take pictures which will be used for scientific purposes.

The photography points are fixed camera mounts located in non-overlooking spots to ensure anonymity; by taking a photo and sharing it via email or website, anyone can help document a changing coastal environment via the application. These images picturing the different tidal stages help local communities, organizations and local authorities to determine best practices for managing our valuable beach environments. For this reason, the application and the fixed camera mounts have been designed to ensure that the data collected is useful, accurate, and repeatable. Instructions are simple and clear, and give any participants agency in looking after and preserving the environment. Anything captured can be used for scientific purposes; anyone participating is able to make a contribution to maintain, preserve, and mitigate the risks the *UK* coastline is currently undergoing due to climate events.

Repeatable Insights |
Designing with scale and resolution: With such a large number of images submitted routinely, it is essential to streamline image quality control procedure. This project shows how using the right tools, like Python code packages, can enable citizens to participate in science monitoring by reducing the processing time.

Designing for climate engagement: With some *CoastSnap* sites placed in relatively remote areas, engaging with any local interest groups—who had a stake in the coastal environment—enabled the data collection from those sites, which could be otherwise difficult. Local support can come from a local champion, who visits or passes by the site regularly, thus maintaining a constant and steady flow of incoming images.

Design for scientific accessibility: The scientific publicity of outputs is key for science projects to gauge the benefit in continuing to collect data. Processed *CoastSnap* images were exhibited in a photo gallery accessible to all.

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[137] *Home – SWRCMP*. (2021, May 7). SWRCMP. https://southwest.coastalmonitoring.org/

Interview | *Joseff Saunders*[138]

Author Question | *From your project, what is the most impactful method, process, or narrative that has directly or indirectly emerged?*
The *CoastSnap* southwest project started very humbly with a trial site in 2019 at *Wembury Beach*. After the concept was proven, and the images started to come through thick and fast, the idea attracted the attention of some key representatives in the *Environment Agency*. Through whom, we were able to source some funding to kick-start the project. Between January 2020 and April 2022, we installed a total of thirteen sites, bringing the total number to fourteen. From those fourteen sites, we have received over 14,000 images. An enormous number. What is perhaps the most impactful narrative from this project, however, is its ability to engage the public (whether they be visiting or local) with the ever-changing coastal environment. In addition, the project and associated website landing page act as a springboard to engage and educate participants of the project, who are the reason for its success. Without the many thousand participants, there would be no image collection, and no awareness raised.

Author Question | *Can you explain why you think this is impactful, for what audience and what aspect can be reproduced in another project and/or context?* This project is impactful because anybody can participate and form part of the ongoing monitoring occurring around our coastline. Millions of people visit our coastlines every week, most are likely to be carrying a smartphone with a camera more powerful than has been used in coastal imaging work over the last few decades. The ability to harness that imagery capacity is what makes *CoastSnap* so powerful as a cheap yet powerful imagery collection tool. With enough images submitted, with sites in the southwest averaging 0.4 to 2.4 images per day, we can build a comprehensive image catalogue, capturing both the short- and long-term impacts to a coastal area.

CoastSnap therefore has two primary audiences. Firstly, the coastal managers, scientists, and engineers who each have an interest in how our coastline is evolving over time. They benefit from the comprehensive image catalogue capturing these intricate near-daily coastal interactions. Secondly, the public, from a community science perspective, as the project shares knowledge and information on specific coastal interactions occurring at each of the fourteen locations through the associated website

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[138] *Meet The Team – SWRCMP*. (2018, July 17). SWRCMP. https://southwest. coastalmonitoring.org/about-us/meet-the-team/

page. The community, who ultimately are responsible for the project's success, are therefore empowered as community scientists as well as engaged by visualizing the changes occurring on a day-to-day basis. In terms of reproducing aspects of the project, fixed-point photography camera stations can be found far and wide now and are being used for numerous imagery collection projects. The majority of them rely on the community or local champions for submissions. My message would therefore be to encourage others to harness that potential, providing the project is engaging and there is a benefit to the community participating in it.

Engagement as a System **003** |

The Hannafore Outflow Pipe Project[139] |

Keywords | #marine_landscapes, #human_infrastructure, #observation, #co_existence_with_nature

The Hannafore Outflow Pipe Project actively uses the bio-colonization of coastal areas[140] to increase the public's ecological knowledge about species diversity. It does this through readapting architectural structures made for sea defences to intertidal zones. Intertidal zones are fascinating marine landscapes, transitioning from complete submersion in seawater to exposed spaces. Species have evolved to live there, developing ways of dealing with extreme conditions: crushing waves, scorching sun, and varying water salinity. Because of sea level rising an increased volume of coastal engineering will be needed to meet the requirements for new coastal defences. Animated by this necessity, *Hannafore Outflow Pipe Project* represents how artificial structures interact with surrounding ecologies, and how they affect and are affected by the local intertidal

residents, to challenge the incumbent practice of building structures that inhibit bio-colonization.

Hannafore beach is infamous for being the best rockpooling location in *Cornwall*, due to its low spring tides and wide diversity of marine life. A concrete (water overflow) pipe was built to protect the nearby town from storms. The pipe has a rectangular exterior with flat concrete surfaces. It lacks grooves and pools that trap water at low tide and offer protection from the waves. As such, the pipe has hardly seen phenomena of bio-colonization since it was built. The *project* designed for a section of the pipe included the installation of a layer of tiles incorporating habitats for creatures found in nearby rock pools. Through its long deep grooves, the area was bio-colonized again by mussels, with small pools for anemones, worms, crabs, barnacles, and molluscs.

The Hannafore Outflow Pipe Project tested how technical surfaces can integrate habitat(s) for marine species in artificial structures, and use these as walkways in the intertidal zone. These surfaces took on an ecological function, but also a safer walkway for humans. This is because the marine habitat is attracted by the green algae building up on the intertidal zone and would find it difficult to graze on the algae grown on artificial concrete structures because those typically lack intricate grooves and crevices capturing water at low tide, which is essential for the survival of intertidal species.

At low tide, marine creatures take refuge in the recesses, pools, and crevices beneath the cover stones. At high tide, inhabitants of the pools come out to feed. The technical surfaces reveal a different type of relationship between human and nature, which is centred on a human timeline. *The Hannafore Outflow Pipe Project* represents the way humans can cultivate different approaches to our landscape(s) and environment(s), and poses the question of "how can we work in harmony with nature" mutually benefiting each other through our engagements… rather than battling each other hierarchically?

Repeatable Insights |
Designing for climate mitigation: This project proposes a solution for the protection of biodiversity and mitigation of climate change phenomena. It does so by integrating science in the development of a product and engaging the public in experiencing science.

Designing for climate responsibility: Designing human infrastructure that benefits the natural environment makes communities develop everyday

awareness of how to co-exist and care for nature. This can stimulate more responsible attitudes to nature.

Interview | *Daniel Metcalfe*[141]

Author Question | *Please introduce yourself say a few words about the project.* I'm an industrial designer by training, but I work mostly in landscape architecture. I teach Multispecies Design and Design Research. My main passion is for non-human species. *The Hannafore Outflow Pipe Project (HoP)* was part of my PhD, which adopted a methodology of Research by Design to explore what it would mean to treat nonhuman species as clients of design, in the context of developing a practice of Multispecies Design.

Author Question | *What is/was the most impactful method or process or narrative, through your project?* The project focuses on the separations we create between humans and animals and/or humans and nature, and aims to offer an alternative way to interpret them. The dominant paradigm in nature conservation is that to protect nature, we need to create physical separations and limit human activity in certain areas. In *HoP*, I played with this idea of separation to see if we can create alternative forms of separation that protect both sides, or reduce conflict. I explored a notion of behavioural separations by dividing areas according to different behaviours of different species. Some species would use the structure in one way, and others in another way, creating a "soft" separation that leaves room for interaction but also protection to more vulnerable species. Another way to create soft separations is through temporal separations; in the case of the outfall pipe, at high tide humans are absent and intertidal animals use the whole surface. At low tide, these animals are attracted to where the water collects, and humans can walk safely in the dry areas.

Another main theme of the project was the attempt to draw a perspective of the world from the point of view of other species. Trying to see the world from the point of view of others is central to any design activity, and here I tried to extend this idea to nonhuman species. Attempting this, while at the same time acknowledging the limitations of our ability to view the world from another's viewpoint, teaches us a lot about the animals we are designing for and the limits of our own perspective. It helps us see our biases and create empathy towards others.

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[141] Metcalfe, D.J., 2015. *Multispecies design* (Doctoral dissertation, University of the Arts London and Falmouth University).

Author Question | *Can you explain why you think HoP is impactful?*
One of the things I've seen from teaching about designing for animals,
was that I started getting feedback from students that what we did and
discussed in class became useful for them also when designing for people.
For example, the idea of soft separations can be extended to places
used by people of different ages. The same bench can be used to sit
on, lie on, hide under, or skateboard on, depending on the perspective
and motivation of the user. When we start looking at things from different
perspectives and train ourselves to constantly switch between them, we
can use soft separations to design objects and places that address the
needs of multiple stakeholders simultaneously.

Author Question | *What are your top lessons to encourage
"engagement"?* I came as a designer to a landscape architecture firm;
our ideas of public engagement were different at the beginning as public
engagement leans towards informing the public, or letting them choose
between options. In product design, we have a very long tradition of
participatory design. So, I tried to bring these ideas into the office, methods
from design ethnography that try to uncover tacit local knowledge of the
place, and methods from participatory design that help bring people into
the right state of mind for co-creating. In public engagement, people often
come to complain; It is important to give time and space for this, but also
to create moments of suspending criticism and collective dreaming.

Author Question | *In relation to our definition of engaging design, how
would you advise working with different groups, how do you catalyse them,
and how do you provide agency?* As designers aiming to engage others in
the process, we first need to learn to let go of some of our control over the
outcome. This is true during the process, but also after implementation.
The whole point of the [*Hannafore*] project was to encourage
biocolonization of the structure. Meaning that if you return after six months,
you may not even recognize the original design. This pushes co-designing
to a new level and challenges us to think of aesthetics in a new way. When
I look at my work from *Hannafore*, it feels outlandish to me because it's a
combination of my own intentions as a designer, my interpretation of the
needs of other species, and what it becomes when finalized, which is not
mine anymore. It gets "colonized", and it turns into something completely
different, which is the whole point. In addition, when you bring people in,
it becomes even more interesting because you want the design to also
communicate to people what it does in terms of ecology.

Engagement as a System **004** |

Everything Everytime |

Keywords | #urban_narratives, #data, #digital_poems, #data_awareness

Everything Everytime is an artwork by *Fault Lines*[142] artist *Naho Matsuda*. The work transforms data streams from the city into poetic narratives, captured on a split dot display and presented in several locations across *Manchester*. With "Smart Cities" becoming prolific, the project questions what we want from it, as a preferable future, where do we see our role, and if we see urban landscapes differently through sensemaking technologies.

Everything Everytime addresses these questions through the use of data sets from sensors, timetables, schedules, location information, and any data transmitting purpose located in the city to translate them into poetic narratives that give a glimpse into the ubiquity of technology in urban spaces. A poem is generated from the human interactions with the city; they are anonymous and created by collecting data across different locations, from a garden centre to a public library, a university square to a city laboratory. Writing is displayed across a custom fabricated electromechanical split-flap screen, and the work is a piece of real-time digital writing, drawing from multiple "things" and "events" and "status" changes that are constantly happening in cities and public spaces.

"*Everything Everytime* is a piece of real-time digital writing, which is drawing from the many 'things' and 'events' and changes of 'status' that are constantly happening in *Manchester*. In *Everything Everytime* I have turned these data streams into narratives formatted as poems, that are stripped from their location information and any data transmitting purpose. Smart information becomes impractical poetry." *(Excerpt from Author-led Interview)*

Hence, the work engages citizens by presenting a network of information that is translated into more tangible means digestible to public audiences. This approach increases the transparency of systems and stimulates the public to think about data in a different way. Indeed, this work offers the opportunity to stimulate new insights, as it navigates a space between

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[142] Fault Lines landmark talent development and commissioning programme awarded an Ambition for Excellence award by The Arts Council England. Future Everything. (2020, April 22). *Fault lines – future everything*. https://futureeverything.org/portfolio/entry/fault-lines/

society and technology, which creates fresh outlooks on familiar places. As the use and exchange of data in cities will grow in time, it is important to generate best practices that inform people and communities. Cities transform as thousands of data streams are created, captured, and connected each day. *Matsuda* is a breath of tangible life into the city's technology through "data poetry".

Repeatable Insights |
Design for data transparency: This project illustrates how design practice can become a vehicle for communicating data transparency. Through the experience designed by this project, people and communities are informed as to how urban data are used and what they record.

Interview | *Naho Matsuda*[143]

Author Question | *From your project, what is the most impactful method, process, or narrative that has directly or indirectly emerged?* EVERYTHING EVERY TIME (*ETET*) tells stories of things and events that are happening in a specific city. The installation is a big slip-flap screen that lists five events. It often represents the juxtaposition of those things happening at the same time that paint an image [or] create a story, and makes one wonder how they might be interconnected or how these parallel rhythms and lives exist closely in one place. I'm interested in the poetic potential of smart city data that are collected, for instance, from schedules, timetables which on the first glance may be a little bit dry-looking data. Through my process of stripping specific and numeric values away, abstracting it, these different data streams suddenly can become something else. They become useless in a practical way, but full of potential for stories and wondering about what it is that quantifies us and the cities we live in and how close that is to our lived reality.

Author Question | *Can you explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* I struggle a bit with the word "impactful" with the many different partners, funders, hosts, audience groups, myself. I need to continuously renegotiate what impact could be, find ways to bring together all those different ideas of how and if the work is "impactful" and how it should or shouldn't be measured. As an artist and designer, I am interested

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[143] Maike Naho Matsuda (1986) is a visual artist based in London. Naho examines and constructs alternative narratives of social and cultural structures, and is interested in the blurring boundaries of language and the technologies we use to communicate with | *Naho Matsuda*. (2018). Naho Matsuda. https://www.nahomatsuda.com/

in exploring the potential of a system that uses urban and public realm data, and writes by itself in "real-time" and, most importantly, a work that exists in public space exactly where some of the data that is collected, and also in a place anyone could have access to.

The object itself—a split-flap screen—is very tactical and mesmerising. The combination of an electromechanical screen and poetic writing based on urban city data is unusual. Compared to commercial or civic information billboards, digital screens and signage, the work stands out as something else; this object informs you about many things, but none of it is practical information. Another point is that it is slow enough to be a little annoying but also to pull one in slowing down. And that works; people slow down, stand in front of it and read what the work says.

Author Question | *We are deeply interested in "catalysing engagement", not just passive participation, but an informed and empowered process. Can you explain how your project includes communities and how it catalyses or fosters engagement?* My research process involves speaking and engaging with different groups of people. I often start with any open access data platforms that might exist in the specific city, or hackerspaces, urban data research hubs, etc. These are all good starting points. Another important part of my research and preparation is walking around the city and noting down all kinds of businesses, people's actions, sounds, schedules I come across etc. It's a type of *dérive*[144] [a technique of rapid passage through ambiances] that will inform the types of data points and writing that goes into the work. The engagement that happens with the work itself once its installed is layered.

The work is usually installed outdoors and always in a publicly accessible space. And as with many public artworks, the work lives there over a longer period of time. Conceptually for me, the longer the work is in one place the better. Therefore, people who pass it on the way to work, school, or when they stroll around the city will encounter it during different times of the day, over days or weeks or months. They have time to slowly get to know it and to engage with it deeper and the work is in their space rather than having to enter an art space to see it. People's interaction with it is indirect but huge, as even though *ETET* doesn't write differently just because they stand in front of it, everyone who sees it is somehow intertwined and voluntarily or involuntarily involved with smart city data,

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[144] Debord, G. and Knabb, K., 2014. Theory of the Dérive. In *The Improvisation Studies Reader* (pp.176–180). Routledge.

open access data streams in a city. That could be sitting in traffic, following a schedule, investing, using public transport, etc.

Author Question | *What were the key lessons from your project?* For me one of the most exciting lessons has been showing the work in very different contexts and very different cities. I've adapted and reviewed this project depending on where it goes. Touring it to different places, I've learned more about the work myself and how I want people to engage with it. A big lesson for me is the technical aspect of the work and how installations that involve electronics, many moving parts, Wi-Fi connections, etc. are always tricky and all the things that can go wrong will eventually go wrong. It can only be navigated by understanding each part, how it is connected, and how problems can be solved creatively. For me personally it is a big exercise of being patient and keeping my cool. The work is built with many different very skilled people. It's a collaborative process to make the work and it was important for me to be able to describe my vision of the work and to be quite strict about its concept at the beginning, during a time where many different ideas can start pulling on it.

Author Question | *In relation to our definition of Engaging Design, what aspects of your project articulate this definition?* I like the idea of a "bridge" and could see my work like that. It tells a different story about data, data collection and also about writing than commercial entities and big tech does. I hope that in a charming, intriguing way it gets people to wonder and ask critical questions about data collection and their own agency within the technologies around us.

Engagement as a System **005** |

Speed of Light[145] |

Keywords | #light_performance, #portable_technology, #running, #being_in_a_community

Speed of Light is a poetic public art performance designed by *NVA*[146] which fuses sport and culture. Through the mass choreography and engagement of hundreds of runners in wireless controlled light-suits, this work of art speaks about endurance pushed to the realm of the extraordinary. As site-specific work, *Speed of Light* combines space with collective action. The use of a unique application of digital lighting technologies controlled by using a remote wireless system describes choreographed movement(s) through equipment worn by participants.

Since the work was first executed at the 2012 *Edinburgh International Festival* and *London Cultural Olympiad*, *Speed of Light* has been performed in *Japan*, *Germany*, in the *UK* in *Salford* and the *Yorkshire* Festival and marked the celebration of the start of the *Tour de France*. In any of these events the participants' role is carefully orchestrated and considered; runners wear bespoke light suits and the audience holds custom light sticks to create together a mesmerising pattern on the site's skyline. The design role spans across technology and manufacturing, as the custom light suits and light stick include a sound device that at specific altitudes plays a composition created by *The Resonate Orchestra*.

Similarly to human fireflies, the runners' light suits light up the night sky with their perambulations. As LEDs are attached to joints, limbs, and heads, they create patterns of light as the runners move at dusk. The *NVA* design team, led by designer *James Johnson* and lighting designer *Phil Supple*,

explored whether runners could "harvest" their own energy through self-generating dynamo systems, as well as carry their own power to illuminate their passage, as the flickering light sources could be powered by hand movement alone. These lights are incorporated into bespoke LED light suits containing portable battery packs and remote wireless technologies.

Furthermore, the suits are individually controlled from a central system which can instantaneously change colour, flash-rate, and luminosity. For the audience participating in *Speed of Light,* this is perceived as a piece of abstract public art operating at the grandest scale, where the physical landscape is used as an open canvas. In this work, participants are engaged as both performers and audience; indeed, this display of lights across the skyline is witnessed by those running and those standing as audience at a close and far distance.

Repeatable Insights |

Designing for different and large audiences: With this project, a wide range of people holding different roles were engaged, independently if they were audience or performers.

Designing feasible technology and equipment: In this project, tools, technologies, and equipment are transportable, low cost, and easy to use by anyone participating.

Designing for scale: This project engages people, and also a large space through an immersive experience that "moves the project" across long distances.

Interview | *James Johnson*[147]

James Johnson: The Speed of Light is a project completed with a *Glasgow* arts organization, called *NVA*. It involved runners wearing bespoke light suits with LEDs, which were transformational thanks to the technology that provided participants with lights that people could see at night. The level of controlling the suits was really in its infancy, and cutting edge. We collaborated with runners and different audiences through "light suits" (that runners wore) to create patterns, shapes, and visual images across varying landscapes at night.

Author Question | *What do you think was the most impactful method, process, or narrative?* I think this comes back to one of the [funding] calls of *NVA's* previous work, which was concerned with getting people into

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[147] *About — getMade Design*. (2012). getMade Design. https://www.getmade.co.uk/about

extraordinary places that you wouldn't expect, or are inaccessible. There is this wonderful feeling of being in places you feel you shouldn't be; it naturally creates excitement. Lots of this work ends up being in the dark, so lots of people think about light which adds to the feeling of dark spaces being dangerous and forbidden. This is a thread running through *NVA's* work. *The Speed of Light* similarly reproduced this because it actually happened in remarkable places. The work is also about participation; the audience looking at something becomes very much part of the project. This collective act goes back to the idea that you're somewhere that you shouldn't be, which is slightly out of the comfort zone, because it creates a different atmosphere within it that bonds an audience.

Author Question | *Can you explain why you think it was impactful and for what audience?* It was impactful on a number of levels, probably the biggest and longest impact is the participation. The project was probably about three, (if not longer) years in the pipeline and a lot of the work was about finding people. Runners were the cogs of the project. There was so much practice and training that these groups of people are still friends today. The second impact was making the audience become part of the artwork as well.

In the project, they were considered as "devices" as they were given items to illuminate their way; this means that people can be seen at distance, thus they become part of the visual as well. Another layer was where the audience were unknown to them and carried small audio devices; when they all reached a certain altitude, they started singing and playing an atonal piece of carefully composed music. There was another level where the audience almost created creative work.

Author Question | *What would be your key lessons from the project? For people trying to comprehend or take elements away from this typology of work?* The lesson is related to the organization, because it was such a complex thing on many levels, both in terms of the organization of the runners and the audience. Getting 800 people and items to the top of *Arthur's Seat*[148] in the dark is a task in itself. However, the organization is often seen as technical or just as a requirement or a tool to get the job done when in reality it dictates so much the end result. Hence, it should be used in a creative manner, and be acknowledged during the process. In our case, we used the limitations and the challenges to create the end result.

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[148] *Holyrood Park and Arthur's Seat*. (2023). https://www.visitscotland.com/info/see-do/holyrood-park-and-arthurs-seat-p914341

Some of these are: don't be too tied to what you imagined it to be; let the logistics and the difficulties creatively engage in the project; lastly, never underestimate how bad the weather is as it will always be worse than you possibly imagine. Over a night there were two sets of runners, they would change over at two points, just because they wouldn't be able to [physically] manage it. I was standing at a gate letting people back into this house, and you had 150 runners running back all lit up, coming out of the dark manifesting excitement, adrenaline, and highness.

Engagement as a System **006** |

Bi0film.net: Resist Like Bacteria[149] |

Keywords | #bacteria_resistance, #decentralized_communication, #active_participation, #states_of_resiliency

Bi0film.net: Resist Like Bacteria is a project inspired by bacterial forms of resistance. Microorganisms are able to self-organize and act through de-centred collaboration,[150] which is a very powerful means for communicating across a large group. Inspired by such behaviour, this project engages communities to develop forms of decentralised communication capable of creating resistance to established power. Furthermore, by celebrating the bacteria's collaborative resistance, this project intends to shift the narrative of fighting these microorganisms to learning from their behaviour for supporting communities in co-creating active forms of communication.

Repeatable Insights |
Designing for autonomy and resilient states: This project intends to demonstrate how digital technologies must be diversified; one way is to make them collective, situated, and autonomous. These factors address the contextuality of projects and allow means for implementation in different contexts.

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[150] *Max Planck Institute, (2023, October), How Bacteria Can Organise themselves, https://www.ds.mpg.de/4028176/231006_collective*

Designing with a multispecies mindset: Creating bio-inspired technologies means to develop life-like processes that are more distributed, collaborative, and diverse.

Designing for co-existence: This project presents a scenario for transforming the human relations to nature, and for enabling other politics of the "living" through non-control states.

Interview | *Natalia Rivera & Jung Hsu*

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged?* When we explored what it means for bacteria to resist, in the context of antimicrobial resistance, we realized that their behaviour, technologies, and ways to break through are so similar to some ideas and experiences we have had as humans for resistance and resilience, meaning for instance: gathering to get stronger, self-organize without a centralized decision-maker, cooperate, share information, hide to grow, and so on. At that point we decided to go further and deeper into theirs, as some of the ways for life itself to break through, and start considering how not only humans resist to human control—whose biggest expression today might be climate crisis—but all other living organisms do, in their own way, with their own life experiences and technologies. For us, the most impactful method is that of learning from other living organisms how to resist human control and collectively create situated fabulations (*Haraway*[151]) to autonomously develop our digital technologies for that purpose.

Author Question | *Can you explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* These new fabulations are part of the upcoming biocentric turn in which we artists/scientists/designers and all creators and different communities are enabling new/other possibilities beyond the anthropocentric ideas, technologies, and media that brought us up to this point. It implies a transformation also to what has been mainly considered up to now as bio-inspired creation, which usually sets the difference among human and nature from which to get resources and ideas. Instead, we are considering all living organisms' behaviours to be equally relevant for life's expression and propose to radically transform ours.

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[151] Truman, S.E., 2019. SF! Haraway's situated feminisms and speculative fabulations in English class. *Studies in Philosophy and Education*, *38*(1), pp.31–42.

We consider that [having] dialogues to understand more about all those living organisms with which we co-exist and co-create our biosphere [will] become relevant for any community that wants to re-think and re-create our social and political relations outside the existing hegemonic ones, particularly in response to the centralized, corporative, and capitalist way in which digital technologies are being developed. In other words, gathering as communities to develop autonomous digital technologies is a more life-like way to do it.

Engagement as a System **007** |
The Night Club[152] |

Keywords | #sleep_health, #communication, #learning_science, #health_and_well-being

The Night Club is an award-winning well-being initiative that brings experts into the workplace to help workers and employers create a better and healthier experience of working at night. The project responds to the increased number of people working night shifts, whose growing population has reached over seven million people in the UK since the Covid-19 pandemic. There is evidence that night shift work can have a profound effect on people's mental and physical health.[153] It can be a contributing factor to long-term health conditions including heart disease, depression, diabetes, affect your metabolism and vitamin D. It can interfere with natural sleep rhythms, and causes increases in workplace injury, changes in your metabolism, and vitamin D deprivation. *The World Health Organization* classifies night shift work as "probably carcinogenic".

The Night Club walk-in installation is designed to engage and communicate the best available evidence-based sleep health information, to night shift workers in situ, during their shift. Leading academics and science-communicators are available to offer advice on interventions individuals

[153] Touitou, Y., Reinberg, A. and Touitou, D., 2017. Association between light at night, melatonin secretion, sleep deprivation, and the internal clock: Health impacts and mechanisms of circadian disruption. *Life sciences*, *173*, pp.94–106.

can make, improving the quality and extent of their sleep. The intervention focuses on diet and exercise, sleep environment, sleep hygiene, mental health, understanding chronotype and sleep patterns. Experience and science demonstrate that sleep is a grounded leverage point into wider physical and mental health issues.[154]

In piloting the project, *The Liminal Space* worked with *Veolia*, a refuse and recycling company with around 300 employees at their *Southwark Centre*. The focus of this intervention was on sleep and associated health issues, resulting from working in a way that disrupts circadian rhythms. Designed resources supported employee's mental health, promoted good quality sleep, and provided advice for dealing with relationships and anxiety through consultations with "*Dr. Sleep*"—a sleep science expert. These resources were developed in collaboration with employers to ensure implementation and direct impact to staff well-being. Since then, *Night Club* has been successfully used by *Co-op,*[155] *John Lewis Partnership*,[156] *Thames Water*,[157] and Transport for London[158] (at time of writing), whose night shift workers were given the opportunity to visit *The Night Club* immersive installation learning how to manage the impacts of night work on their health. At time of writing, this project has directly engaged over 10,000 employees across 35 organizations in the *UK* since 2018, thus reaching 100,000+ indirectly.

Repeatable Insights |
Designing for health and well-being: This project presents a scalable and implementable vehicle for people to increase their well-being by learning science in an accessible way.

Designing for scalable impact: In this project, design is a scalable and adaptable vehicle which can be used across contexts and produce different types of impacts to different audiences.

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[154] *Clement-Carbonell, V., Portilla-Tamarit, I., Rubio-Aparicio, M., & Madrid-Valero, J. J. (2021). Sleep quality, mental and physical health: a differential relationship. International journal of environmental research and public health, 18(2), 460.*

[155] *Co-op: It's what we do – co-op*. (2020). Co-op. https://www.coop.co.uk/

[156] Knowledge, J. L. P. a. T. (2020). *John Lewis Partnership – home*. https://www.johnlewispartnership.co.uk/

[157] *Thames Water – The UK's largest water and wastewater company*. (2023). Thames Water. https://www.thameswater.co.uk/

[158] *London Arts and Health (2024), Night Club Project at Victoria Coach Station), in https://londonartsandhealth.org.uk/event/night-club-project-at-victoria-coach-station/*

Interview | *Sarah Douglas*[159]

I am the founding director of *The Liminal Space*[160]—our mission is to use design to engage people on challenging topics, and *Night Club* is one of our flagship programmes. This addresses the rising crisis in sleep and sleep health within the night shift working population(s). It started from a commission from *The Wellcome Trust*,[161] concerned about the impact of long-term night shift work on people's health. It's a rising employment space, going hand-in-hand with our 24h society. The latest research shows night shift contributes to massive health impacts like: diabetes, cancer, and mental health disorders. The reason we should care is because one in five people work at night, a massive proportion of the working population.

Our project is designed for the hidden army of night shift workers in warehouses, those working as *NHS* porters, or delivery drivers. The programme brings sleep scientists, workers, and businesses together to find ways to mitigate the impacts of night shift work. The *Night Club* programme is a travelling mobile health intervention that takes place on-site at people's places of work, bringing direct tips and advice on how to better manage impact(s). In tandem, we work with organization leaders, (currently twenty-five different businesses) to identify structural changes within their workplaces to shift the dial on health impacts. What's unique is that *Night Club* works on a human-centred design approach, which is new for businesses and employees we're working with. The heartland of our practice is public engagement that is design centric to leverage a user-led centric design. The impact is really clear, both in terms of individuals, businesses, and our funders.

Author Question | *From your project what is the most impactful method, process, or narrative that you've direct, directly or indirectly?* We started with the challenge: if on one hand we know that night shift work is bad for people's health, on the other hand, we work in a 24/7 society where night work is inevitable. So, the central challenge was how we can support night shift workers' health and well-being. Our end beneficiary has always been the night shift workers. But, of course, there's this big system in between; these are huge organizations and major businesses employing these night

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[159] *Who We Are — The Liminal Space*. (2018). The Liminal Space. https://www.the-liminal-space.com/who-we-are

[160] *The Liminal Space*. (2018). The Liminal Space. https://www.the-liminal-space.com/

[161] Wellcome improves health for everyone by funding research, leading policy, and advocacy campaigns, and building global partnerships | *Home* | *Wellcome*. (2023, October 27). Wellcome. https://wellcome.org/

shift workers. Currently, we are working with: *Co-op* and other big retail chains, the *NHS*, major transport and facilities management businesses, as well as Transport for London. Our industry partners are the channel for engaging night shift workers.

At the start of the project, we did four months on-site research. This is to get into the skin of our target audience, in the context of the working environment. For us, good user research means not just running focus groups, but really spending time in people's environment. Hence, we observed night shifts in different contexts to understand things like where people have a break, what they do during a break, and who they hang out with. One of the biggest barriers we discovered was them not having the knowledge and tools to improve their sleep. That led to us developing a suite of tools aimed at shift workers and their families, and different ways to support them. We carefully developed the aesthetic for the project using elements familiar to the workers—such as our own uniforms resembling familiar hi-vis worker clothing—to visually appeal to this audience.

The word co-creation is bandied about, but proper co-design means somebody is really working with you at every step.

Author Question | *What were the key lessons from the project that others can build on or learn from?* What is key is to make sure that whatever process you are engaging with is genuinely beneficial to the people you are aiming to serve. It takes a lot of listening, and not underestimating just how hard people's lives are. It is not enough that your end product will one day, maybe, be beneficial to them, as every interaction that you create has got to be beneficial. Taking time to design every touch, point, every interaction, is really important. One thing we specialize in is to create bridges between different worlds. This project is a great example of who we're working with: big businesses, who really, fundamentally care about "the bottom line", funders who care about people's health, and then communities who only care about how they're going to feed their kids tomorrow. We also have scientists who care about our brain cells and analyse brains; lots of very different agendas.

Design has the power to enable people to see where everybody else is coming from. [A note to all] is to recognize the value of design, as a way to bring stakeholders into the shared space of transdisciplinary, or interdisciplinary practice(s). The value of guiding people through that process, being that broker in multifaceted complex problems, is design's role. If you're doing anything in the social design world, it's hugely complex

systemic problems. The innovation here is about the delivery, recognizing the gap and the failure because people are overlooked.

A key part of the innovation here is the power of designing and bringing things to life in a new way, which means redesigning the services and touch points through which people engage with that knowledge and contribute to it. We have tried to establish this throughout as a reciprocal exchange [and feedback], where workers share challenges with us that they want management to know and hear about. So it's not a one-way delivery channel. The programme is currently about 50/50. We still have some grant funded work enabling us to keep iterating the programme for new markets, but about 50% of it, roughly, is now [at time of writing] self-funded by businesses we work with.

Author Question | *We've been working on the definition of Engaging Design, what would you add to it?* We know from the work that we have done with our business partners that there is a reduction in absences. Now we're able to demonstrate that people say they're sleeping better as a result of the programme. In the future, we also want to see better protections for the rest of the workforce; this is even more important, now that we are in the world of AI automation – we need policies that galvanize businesses to take greater duty of care, and an increasingly significant part of our work at *Night Club* is to influence national action for people working at night.

Author Question | We've been working on the definition of Engaging Design, what would you add to it? Engaging design means engaging with everyone who has a stake in the problem, and the solution to create ways that involve them in the design process. It requires us to ask: who are we missing? What are we overlooking? And it's about staying attuned to the shifting wider systems and signals that influence the challenge or brief.

Engagement as a System **008** |

Public Works (*WetLab*)[162] |

Keywords | #connecting_to_nature, #challenging_lifestyles, #hands-on_ activities, #nature_cohabitation

WetLab was a temporary floating laboratory created in collaboration with the design and research practice *Assembly*. As a mission, the lab creates tools and activities that challenge our inherited and institutionalised biases for living, working, and engaging in the natural world. This is pursued by looking at resources—ecological and social—that inhabit spaces and places. In *WetLab,* the *London* canal network is used as a subject for engagement. Creative minds, including artists, architects, scientists, engineers, technologists, and cooks, invited the public to explore the biological and social ecology of the waterways and envisage potential future uses for the canal in north-west *England's* local areas.

Hosted by *The National Waterways Museum*[163] for three days, *WetLab* highlighted systems of care and culture in and around canals. It explored the impact(s) of climate change, water quality, and pollution, while celebrating local networks. With activities facilitated by ecologists working with the rich and resilient local biodiversity of the canals and canal-banks, *WetLab* included opportunities to observe demonstrations, participate in workshops, canal walks and other engagements. The laboratory/kitchen used the rich but overlooked resources and ingredients provided by the canal, including infesting weeds transformed into combustible biomass fuel and edible matter for delicious meals; also, re-forming plastic waste was used for DIY prototypes and more.

Repeatable Insights |
Designing for re-learning nature: WetLab is a design experience engaging the public in discussing ways to reconcile the relationship between

humankind and nature through immersive learning activities. Through this experience, the audience had the opportunity to reflect and (re)learn the role and value of nature in everyday life.

Interview | *Rhianon Morgan-Hatch, Andreas Lang & Carlotta Novella*[164]

Rhianon Morgan-Hatch | *WetLab* was commissioned by *Super Slow Way* and *Abandon Normal Devices*, two organizations that had different outlooks, but wanted to work together and appreciated each other's work. They created a joint brief, *WetLab*, which aimed to make people connect with water and water ecologies around the spaces they live. Through a very long process of research, we wanted people to question what they could take from that environment and change their daily routine by giving them a space where they could connect with all senses to water itself. The lab included three stops ending at the *National Waterways Museum* in *Ellesmere Ports*. We collaborated closely with *Assembly* [*assemblyse8.org*]. We designed, built, and programmed the workshops ourselves.

Carlotta Novella | The brief took the opportunity of the leisure focus activities (e.g., running, walking dogs) along the canals. However, we aimed to generate a programme that is stationary and holds new activities in this post-industrial infrastructure that generates a benefit towards the local community. The funding organizations had previously worked with local community gardens, schools, the marina, and housing associations, etc. Hence, they could plug us in with specific programmes. The commission included other artists, but we were probably the ones that had participatory methodologies.

In the programming, it became clear that we needed an infrastructure; a lot of the time was spent on figuring out the logistics of taking twenty people on a floating pontoon across three sites. Once the site was set, it was wonderful what it could achieve, being something really unseen before on the canal. People would stop and ask what's going on. One of the main gaps inside the local authority turned out to be an interesting situation; this regards the usage of the canals limited to narrow boats or infrastructures. Initially, the proposal was to have a longer period of time. Ultimately, it was achievable to do two days of programming over a weekend at the *National Maritime Museum*. They had regular visit days, and we were part of something that people could pass on and join a tea ceremony in the morning. But what was interesting about the *WetLab* methodologies

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[164] *Public works*. (2013). https://www.publicworksgroup.net/

were the multiple workshops, some of them had been planned ahead in conversation, with locals.

Author Question | *What are the key lessons from your project?*

Carlotta Novella | Understanding your stakeholders, understanding your territory. But, of course, it all depends on the span of projects.

Rhianon Morgan-Hatch | As we design programmes, we think that building the rocket stove [for example], is an act of engagement. Often we call them prototypes, but they're basic. We leave space for people to cut and edit; hence, it doesn't feel like we have the final product(s) or a final workshop. Often we have learned this much, we have people meet us at that point; it's messy. We did five online sessions with a person to teach us about rocket stoves. His daughter was translating for him in the background. We [can] feel when there is a spirit where people feel comfortable to join. We don't come with a polished thing, we come with 60%.

Carlotta Novella | There were little pockets of legacy. I worked across scales, because the structure was quite imposing. *Anna* from *Assembly* and *Ross* created the menu, allowing them to point out a number of herbs, etc., you can forage around the canal to be used for a meal. This took three weeks. At the end, it was a really beautiful moment when a lot of the people came to the marina, taking away seeds and materials for growth with ice cream at the end. We allowed the thinking and the programming to move between scales, from something really big to something else that can be back home and can be attached to a fridge.

Rhianon Morgan-Hatch | The food elements of the whole programme were really exciting for people. The connection between the work is that *Hannah* and *Ross* identify different plants around the canal.

Andreas Lang | These projects work because people give more than they take generally, so that it's not transactional in that sense. You somehow invest yourself into an idea, and try to make that idea work. Sometimes you commit yourself, and you want to draw people in, but you have to build trust. Everyone gets something out of it, whether it's credit, or trying something. It works on a slightly different economy that introduces another layer of care into the projects related to the responsibility of the relationships that are being at play. I think this makes it meaningful for us in many ways to invest specifically into this temporary project. They create value and meaning between the people involved in it, whether it's participants or contributors. For me, that shines through as a quality when I see the photos and the stove.

Engagement as a System **009** |

Felt Like Sheep |

Keywords | #wool_production, #supporting_shepherds, #knowledge_
transfer, #local_economy_support

The *"Felt Like Sheep"* is a *"British Wool"* unit travelling from one shepherd
to another to gather the local community around the first steps of the wool
process, from degreasing to felting to sharing know-how; this experience
creates possibilities of discussion about local wool practices. This unit
stems from the *United Kingdom*'s intricate history with sheep, whose
origins can be traced back to the Bronze Age. Historical records show that
in 6000 BC, sheep were domesticated in *Europe*; in 1100 wool became
the backbone and driving force of the economy, with the largest flocks of
sheep belonging to abbeys and monasteries. Such a grounded heritage
led to the creation of the *"British Wool"* organization in 1950, whose scope
is to collect, grade, sell, and promote wool.

After years of very low prices, since 2020—with almost 23 million sheep in
the *UK*—the production of wool has peaked with a yield of 70.97 thousand
tons of wool. In 2023, the average price of a fleece of 36.4p/kg evidenced
a recovery from rock-bottom rates seen during the pandemic. This cost
represents a 135% year-on-year increase, after prices dropped to as low
as 15p/kg when factories around the world closed due to the pandemic.
Prices for the pre-Covid 2018 clip, paid in 2019, had averaged 60p/kg.
Furthermore, as trade in fleeces continues to recover from a torrid time
during Covid-19, *British Wool* makes payments worth a total of £8.4 million
to its 40,000 farmer members.

However, despite the fact that today there are more than sixty breeds
of sheep in *Britain* and wool has become an important resource for the
UK, it is considered waste for the shepherds. The price does not cover
shearing costs, as shearing is above the material value. Washing, drying,
carding, and felting upgrade the price of the greasy wool almost a hundred
times, but it is often given away to insulate houses, or even destroyed.
Transportation is increasingly legislated, and it becomes binding to leading
to a potential outcome.

The *"Felt Like Sheep"* unit offers to coordinate a nomadic workshop to
support the shepherds, so that they do not have to worry about the greasy

wool transport's legislation. Through its intervention, people have the opportunity to learn and share knowledge of the craft, which is lost with the elders, but also to understand what opportunities the local wool market can open. These nomadic workshops engage the public by making them active participants and also champions of maintaining and divulgating local resources. The *"Felt Like Sheep"* project is comparable to a travelling library that all can benefit from, learning from each other and building a core knowledge that is powerful when shared.

Repeatable Insights |
Design for enabling the transfer of local knowledge: This project demonstrates the value that design practices play in creating opportunities for transferring local and traditional knowledge, which ensures its perpetuation survival as local economies and practices.

Engagement as a System **010** |

An Empty Gunny Bag Cannot Stand |

Keywords | #growing_and_harvesting_potato, #kinship, #care, #expressing_local_voices

"An Empty Gunny Bag Cannot Stand" is an old *Mauritian* proverb, meaning; if you don't feed yourself well, you'll never thrive…

With the Covid-19 pandemic transforming everything within our lives, interactions and relationship(s) with others were regulated by "social bubbles" to protect the public's health.

Artist *Farquhar*, director of *Glasgow* arts organization *Aproxima*, invited *Kanhye* to collaborate on a project aiming to connect people by growing food as an activity to galvanise communities in a socially distanced world. Building from ideas discussed for the SWG3 area in *Glasgow* before the lockdown, which intended to imagine the future of a local land, they developed a community activity for their neighbour in *Kelvindale* near *Gartnavel Hospital*. Groups of people in *Kelvinhaugh* and every house in *Ashburton Road*, were invited to grow potatoes in hessian bags on their front doorsteps. The colourful bags reflected the artist's Mauritian roots and naturally brightened the street.

As over forty local people and *SWG3* tenants looked after the crops, a re-distributed garden came to life; remarkably 90% of the street took part and within the first two weeks two tons of soil arrived with seeds of Scottish Maris Piper potatoes. This collaboration was also driven by the desire to level up the social construction of the neighbourhood; growing a good bag of chips became an opportunity to break some established social borders. The artist's partner *Anne* and their twin daughters *Ava* and *Calla* helped cut hundreds of patterns in their front room. A messy production line got going and gradually friends were roped in to help fill the bags. A cottage industry with a one-mile radius was developed with the neighbourhood participation in the project.

When on a sunny Saturday morning in April the potato seeds were distributed with three wheelbarrows up and down the street, there was a great atmosphere of people chatting together with close and more distant neighbours, many of whom had not really met before. The deal was that everyone who took the potatoes would keep some for themselves; the rest would be donated to a harvest event where a reconfigured "Chip Shop" would deliver free chips to the city. Early press coverage (of a YouTube film) received 100,000 views by word of mouth. In a city experiencing the Covid-19 mandatory isolation, the coloured sacks sitting high on doorsteps attracted attention of those exercising or walking the streets.

The act itself of growing reinforced the sense of unity which was experienced as kinship and ability to have a voice on a very local level. As a knock-on effect, stories started to circulate about the date when the houses in *Kelvindale* were built and who first lived in them. Despite the pandemic and related acts of selfishness and conspiracy theories, this project demonstrates that people nonetheless also engaged in acts of kindness towards their community. Countless neighbours looked out for isolated or shielding people to let them know that help was at hand when needed.

The tagline to this work is "grown with love in lockdown"… to overcome the lockdown strangeness with the love for family, love for friends, and the world. People without any knowledge, skills, and horticultural experience were able to contribute. The activity of growing, "have a meal together" and dining at the same table became the levelling factor connecting people. The engaging design factor was the consideration to others and the logistics around creating a celebratory "event".

Repeatable Insights |
Designing collective expressions of kinship and care: This project's
experience provides an example of how neighbourhoods can become
a community moved by common practical activities promoting informal
conversations, which are key to combatting solitude and isolation.

Interview | *Angus Farquhar*[165]

Author Question | *Please talk us through the project.* We made a decision
to grow potatoes as it is a very simple thing to do, and a safe fail. It's quite
hard to kill a potato; it will stretch towards light, whether it's in dry soil or
wet. So if you get things right, you can have that magical moment when
little potatoes arrive, which I think is very magical whether you are seventy
or three years old. I've got a long history of working and growing. I hooked
up with a very fancy bag-making company who designed the potato bags,
without which the project couldn't happen. The design came into the
streets with four different colours of Hessian. It was really difficult to get it
to *Glasgow*, as one of the hardest things during lockdown was getting raw
materials. My wife *Anne* and my two daughters spent many hours cutting
up very dusty Hessian in the front room and distributing it. In the end, we
had 5,000 different coloured bags.
Then, I had this idea of trying to get people on the street to grow potatoes,
and do this as a visible act. Very typically, growing in private houses takes
place in rear gardens. In some places it's the legislative rule; in others, it
is one of those unwritten rules, like having decorative gardens in the front.
To me the idea of brightening up doorsteps was central. I knocked on
every door in the street over a period of about two weeks, stepped back
twenty feet, and said: "Would you like to grow some potatoes on your front
doorstep?" The looks I got were of absolute suspicion, and many people
said: "What's going to cost?" After explaining, you get the really lovely
Glasgow way turning suspicion to real warmth. The street started talking
about itself regarding those who built the houses back in the 40s and 50s.
With old pictures of the first people who lived there, the street became a
really beautiful social scene that broke down political differences as well.

Some great things happened; for example, twins living down the road,
aged about nine at the time, became known as the Soil Fairies because
they had all the compost. The kids would go in and just do their bags
for them. It gradually won people over because they saw that plants

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[165] National Theatre of Scotland. (2023, October 30). *National Theatre of Scotland*.

were doing well. We filmed the giving out of the bags—which we did in wheelbarrows—as a socially distanced event. But we had 100,000 views without attempting to publicize it. And then something else happened; a lot of people started coming down on the street; they saw these colours back down the doorsteps, and asked what's going on. I think it's important when people work together and make connections. They manage to overcome that bureaucratic meetingocracy and inefficiency, and all the things that would stop people doing good things together, and they just did it themselves.

After four months, everyone had this incredible crop of beautiful, unblemished Maris Piper potatoes. The deal was, you keep a third for yourself and centrally store two-thirds. We made a performance with the potatoes that had been saved and we created a deconstructed chip shop. The performance choreographed swung potatoes in baskets so they could be two and a half metres apart, and would swing the potatoes to each other, to be washed, to be chipped, to be placed into water, and then carried to the chip shop to be cooked. It was exquisite, it was pretty cold, and the audience sat wrapped up. They ate just about the best chips you've ever tasted and musicians played. Quite often people were in tears before they were on the stage, because it was the first time they played in seven months. The conclusion of that work was that you didn't just do this for yourself, but it was the idea that you would. You would sort of share your food with the city, it was very fulfilling for me. It helped me get through [lockdown] time, remain creative, not give up. It gave me hope.

Author Question | *What are your key lessons or repeatable insights?*
There are big words like trust, which came about because people were able to look me in the eyes. It's not about the money; it was very direct, and that trust was built door by door. We never even used the word community because we are a community. It was just working with what's already there. It's led onto what we now have: a really beautiful permanent garden in the street, that's the community garden. It's an entire house plot which we negotiated off the Council, and it's been amazing. The spirit of what we did carried on, and quite a lot of people who were involved in the growing project have carried on; the garden is on, gated and it's run completely by volunteers.

They are just really happy to look at the growth every year, and just see that it's doing something that people really value. We can have a lot of fun with the food that is growing, because of people's nationalities and backgrounds. You can do a cabbage leaf, and it's very different from

Guatemala to *Hong Kong*, *Tanzania*, *Belgium*, *Italy*, *Scotland*, and *England*. We're doing an informal exchange of recipes and sharing food. That is what the project led to, which is meaningful because it is long term. It is not a one-off art event done in isolation, that then becomes a fragment of that neighbourhood's history and the few 1,000 people who saw it were involved. That feels quite important, in design terms. I suppose, I would describe this as an impact, where all that effort doesn't just evaporate.

Engagement as a System **011** |

Collection 374 |

Keywords | #leather_provenance, #fashion, #fashion_systems, #systemic_source_awareness

Interview | *Alice V Robinson*[166]

Alice Robinson | My projects focused on leather's connection to agriculture; I was interested in the material's origins and how those influenced or dictated its aesthetic. At the time of my studies, there was a profound absence of traceability in the leathers I could access or work with. The agricultural identity of the material—intrinsic to its character—was invisible. For me, understanding these material systems, especially those interwoven with our food systems, was very important. Having grown up in *Shropshire* as the daughter of a farm vet, I developed awareness of food choices, and how connections to the people and places that produce food influence decisions about what we chose to eat. I began to see that the same values should extend into fashion: how can we learn what our relationship is to the landscapes of production and those who steward them. When I came to working with leather, those were the considerations that shaped my design ethos—questions of origin, accountability, and impact. In a broader context, I think many fashion designers seek to define those unknowns: what is the best material to be working with [that] you know? What broader system does this connect to? *Collection 374* shows the journey of one bullock through the food, fibre, and fashion system, and seeks those answers.

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[166] *Alice V Robinson*. (2020). https://alicevictoriarobinson.cargo.site/

Author Question | *What do you think is the most impactful method process or narrative that has emerged?* For me what has emerged is a design approach which begins at the farm level. In agricultural terms, each breed, each animal holds particular significance—be it native breeds suited to their landscapes, or farming practices aligned with the soil's types and farm context/conditions. When understood in this place-based way, raw materials become not just "by-products" but active storytellers, shaped by their history. This reframes the role of the designer; a place-based perspective changes and influences what materials look, feel, and are suited to create. This can be impactful because in fashion, we usually work backwards from our ideas, we design and then we go to source materials. But working from an agricultural perspective—from the farming system forwards—means that we have to make new considerations. Expectations of uniformity, abundance and cheapness are challenged when you remove the choice of a globalised supply chain system. This influences the ways we try to review and relocalize systems that are fair along supply and value chains.

Author Question | *Please explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* I believe this approach can be impactful in framing the value of raw materials used in fashion and design, beyond function and aesthetic. There is a growing level of interest in having a discernment for food choices and a connection to the way in which we steward land and produce food, with a benefit to biodiversity, animal health, and ecosystem resilience. On the other hand, in fashion there is high attention to developing more responsible practices. Both agriculture and fashion have an interest in creating systems that connect to regenerative agriculture, but still these require a level of tolerance and empathy.

Fashion must begin to adopt the kind of tolerance that natural systems require—where compromise, and place-based decision-making are not just accepted, but necessary. The fashion system can then play an active role in supporting the food systems its materials come from. This creates new opportunities, where benefits could possibly be measured through tangible evidence of positive impacts, improved soil health, increased biodiversity, or water holding capacity. Generally, in design there is confusion about what is good, what is right, what is what we're supposed to do. With *Collection 374*, by directly connecting to the community where my fibres originate, I attempt to explore answers to these questions. There's so much conflicting information though. This ambiguity often creates hesitation. Anecdotally, I've seen students wrestle with this—drawn

to principles of regenerative systems, but who feel they can't work with leather because of that missed connection of tangible value in the industry, which doesn't value raw materials coming from farming systems. From my experience, I've seen the value in farming or food systems and how it impacts rural communities. In fashion, it's much harder to make such a connection in a way where raw materials can tell stories to other people.

Author Question | *What were the key lessons from your project/ experience that others can build on / learn from?* A pivotal lesson for me was the importance of starting at the origin and moving forward alongside everyone in the system—farmers, slaughterhouses, processors, designers—without skipping the uncomfortable parts. Questioning any inherited wisdom or thoughts is key because many of those you adopted are often taken unchallenged. Looking at things from every different angle is really valuable and also trying to be open when problem-solving. When I started working with leather, I had a very binary view of "this is good", "this is bad"; I learned you can never ask enough questions.

I also put myself in a very uncomfortable position(s). I have never wanted to go to an *abattoir*, but it felt very much that was a necessary part of the process. Even being there as an observer felt like growing a very human and real connection to what I described earlier; I believe we get a real understanding of both ourselves as citizens and also as designers in a context. The abattoir was a very valuable and humbling experience. It helped me understand the connections of design to the system and although this is a specific experience, I think the idea of removing silos to gain knowledge, enables understanding and facilities change.

Repeatable Insights |
Design for systemic changes: With this project, leather as raw material is a vehicle to challenge and provoke the change of some of the issues in the fashion and agriculture industries. By raising awareness of the systemic connections that leather can grow and develop, this project demonstrates how these industries can align with sustainable goals.

The GoodWaste project is an approach for complete circularity of materials through urban mining. RCA Design Products students explore the waste materials of infamous high-street retailer Selfridges, leveraged their design skills to sell the items back to the shop as complete products. **Credit |** Ewan Alston.

The GoodWaste project resulted in retail pop-ups within the Selfridges retailer, providing a vision of a local, circular production model that furnishes the planned new-build homes with offcuts from the neighbouring industrial site. **Credit |** Ewan Alston.
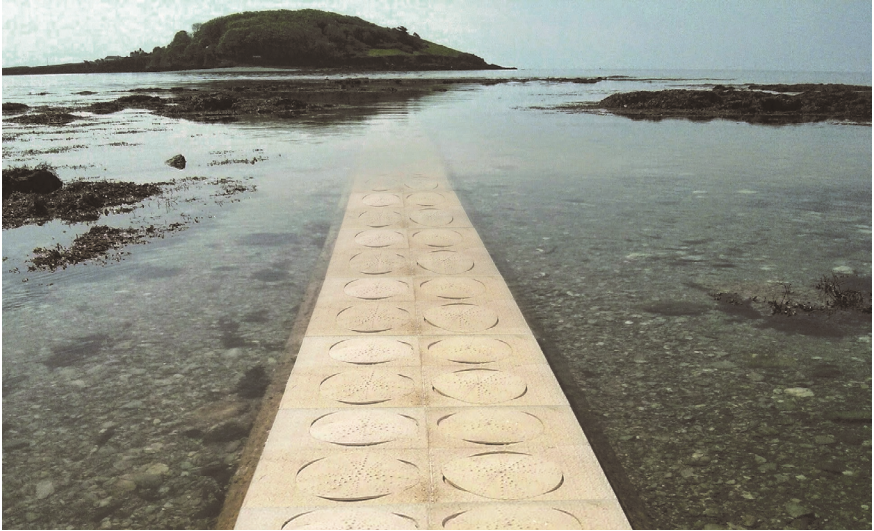
The Hannafore Outflow Pipe Project (located in West Looe, Cornwall, UK) explored ways of redesigning the surface of the pipe, enhancing its ecological function (through the creation of habitat for marine species) while maintaining its secondary use as a walkway for people, and its primary function as a sewage outfall pipe. **Credit |** Daniel Metcalfe.

The Hannafore Outflow Pipe Project, test samples manufactured from concrete and attached to the surface of the pipe. Its intention to observe the human and ecological response to the designs over a five-month deployment trial. **Credit |** Daniel Metcalfe.

Speed of Light premiered at *The Edinburgh International Festival* as part of the Cultural Olympiad. The event has since gone on to tour Japan and Germany. The event involved 120 runners wearing bespoke light suits and 800 audience members with bespoke light sticks per night over a two-week-long run, creating a mesmerizing pattern on the Edinburgh Skyline. **Credit |** Alan McAteer Photography.

The Speed of Light suits pre-fitting and deployment, ready and charged for the runners, the quiet before the storm. **Credit |** James Johnson.

Hundreds of runners wore specially commissioned light suits to create beautiful, choreographed patterns of light flowing through streets. Over bridges, around public spaces and buildings. **Credit |** Alan McAteer Photography.


Through a mass choreographed act of walking and endurance running, *NVA's Speed of Light* illuminated venues from the heart of the city. As a member of the walking audience, you become part of the work, with portable light sources set against the dark features of Cities. Image shows Salford Quays Manchester. **Credit |** Alan McAteer Photography.

More than 8.7 million people now make up the hidden army of night time workers in the UK. Night shift work is classified as "probably carcinogenic" by *the World Health Organisation* and there is mounting evidence that it contributes to a number of serious health conditions – from heart disease and diabetes to mental health issues. *Night Club* is a transformational engagement programme that brings sleep researchers together with night shift workers and employers to create a better and healthier working experience. **Credit |** Photo-Mike-Massaro, provided by Night Club

More than 8.7 million people now make up the hidden army of night time workers in the UK. Night shift work is classified as "probably carcinogenic" by *the World Health Organisation* and there is mounting evidence that it contributes to a number of serious health conditions – from heart disease and diabetes to mental health issues. *Night Club* is a transformational engagement programme that brings sleep researchers together with night shift workers and employers to create a better and healthier working experience. **Credit |** GLA Kois Miah, provided by Night Club

End of Engagement as a System |
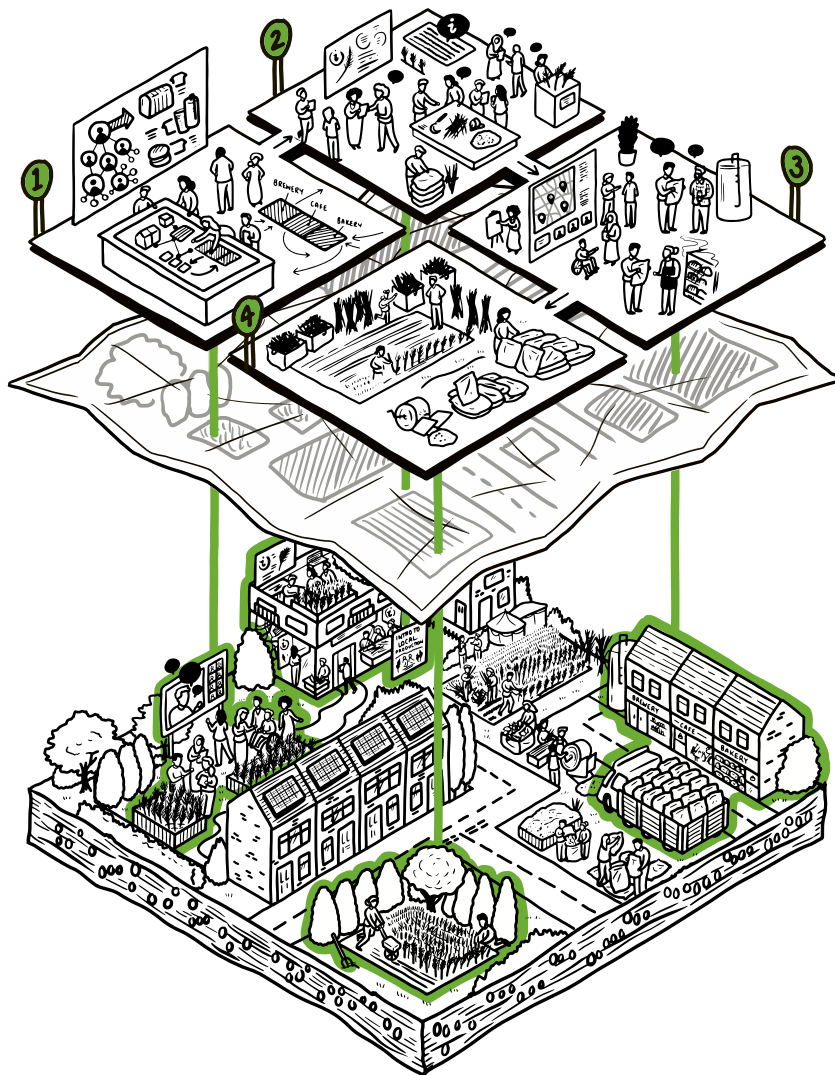
1) Partnership Context *(looking at the wider space, i.e., the types of exchanges and responsibilities the partnership can enable and generate).*
2) Partnership Development *(as a practice that makes partners grow through collaboration. This can take time and cultural understanding).*
3) Partnership Deployment & Inclusion *(working with different people and cultural backgrounds should be led by values like transparency. Here, the partnership between neighbours aimed at increasing the neighbourhood resilience)*
4) Community Partnership(s) *(Bringing together people to harvest, mill and use the wheat).*

Engagement as Partnership |

Engagement as Partnership: Describing the role and value of collaborating for developing and strengthening relationships between parties.

A partnership is a relationship resulting from a contract or agreement, oral or written. These agreements or contracts establish the explicit terms of the relationship, but may overlook unsaid factors that may result in imbalances in power, equity, or assets, if not managed equitably. Here, we see a partnership as a mutual exchange of responsibilities and resources, where explicit and unsaid terms are objects of discussion to reach agreement on how to exchange responsibilities and resources. Any exchange, type of responsibility, and resource will always look different depending on the context, culture, dependencies, and what they enable. For instance, design has always had contentious links with intellectual property,[167] ownership, and social capital that organizations bring to the table.

In this mutual exchange, we see the opportunities of a partnership that can only be brought about by combining cross-disciplinary working practices. As partnerships inter-link different agencies, these come with different contextual backgrounds which can bias and undermine the importance of how relations should be equal and transparent. Quite often there are similar values or aims; for instance, *Sport England*[168] makes objectives and values as a means for connecting with the places, forests, and locations where people recreate, but also with what they do in them. Mutual relationships may take many forms; for example, for the UK's *National Health Service* different levels of human relationships are fundamental for ensuring quality of care to the *UK* population. Furthermore, societal relationships could be a channel for overseeing urban regeneration with green roofing that encourages direct relationships with nature; using audio (for instance, the one gathered from wildlife) in the wards can support contextual well-being, if it is appropriate. Within the *EU,* mutual relationships took the form of supermarket "slow lanes"[169] to encourage conversation, as a means

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[167] Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. | *What is Intellectual Property (IP)?* (2017). https://www.wipo.int/about-ip/en/#:~:text=Intellectual%20property%20(IP)%20refers%20to,and%20images%20used%20in%20commerce.

[168] Sportengland.org Invest in sport and physical activity to make it a normal part of life for everyone in England, regardless of who you are.

[169] Supermarket slow lanes, intent on encouraging conversation, human contact, and mental health.

for enhancing the quality of human interaction. Exchanges can be also formalised through the activities that cultural institutions create to engage their local communities, which also re-define what partnerships mean.

In this regard, *Derby Silk Mill[170]* is widely regarded as the world's first modern factory, and an exemplary cultural institution. In the past, this industry brought prosperity to some and poverty and wage slavery to others. However, in the present it shaped *Derby* as a city of making and creativity. The *Derby Silk Mill* history is one of the examples of how industrial society led to the creation of civic institutions, which stimulated civil society in participating in the cultural and political life, for instance, by campaigning for social and political rights. Now a museum, the *Derby Silk Mill* is present in the life of the city cultural exchanges through its transition into a local making resource. Mutual exchanges have informed its history and legacy as, when funded, the brave decision to put all the funding into manufacturing machines to "make" the museum created a legacy equipment. This is now used to engage with communities who can make bird boxes, equipment for schools, for community groups and so much more.

Quite often partnership relations concern the design of the circumstances and conditions, rather than just the final output. *FixCamp[171]* was a design and engineering activity camp for the problem-solvers of tomorrow. For fifteen days engineers, designers, and thinkers of tomorrow tackled big issues and built big. The camp engaged kids and their parents, who really enjoyed participating in its activities. *FixCamp* was for children aged 9–14, parents didn't participate—though we got repeated requests from parents and carers at drop off and pick up times that they'd like to participate—and not necessarily with their kids! For instance, starting off by making a toolbelt, it went over the scope; audiences built tools, and then subsequently made outputs with those tools. The mechanism of engagement was the deep partnership, i.e., a creative exchange of knowledge directed to making.

Partnership can be also shaped within formal and informal curriculums. A true example of an informal curriculum is *Skateistanz.[172]* Run from

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[170] *The Museum of Making* in the Derwent Valley Mills UNESCO World Heritage Site is a contemporary space telling Derby's 300-year history of making and inspiring new creativity. Designed and made by the people and industries of Derby with exhibits, workshops, activities, and events.

[171] Deelligan. (2020). *FixCamp*. Fixperts. https://fixperts.org/fixcamp/

[172] *Skateistan*. (2017).

Berlin, *Skateistan,* is a social innovation organization promoting a love for skating as a social action. It designed a process of learning skating for gaining agency and building confidence. Its focus is on groups who are often excluded from sports and educational opportunities, especially girls, children living with disabilities, and those from low-income backgrounds. With *Skateistan,* children can have fun in safe spaces; they build their skills and break down social barriers by making new friends.

Finally, in the *Sheffield Wheat Experiment*[173] partnerships are shaped through a grass roots organization, where citizens get access to space for cultivation. This project catalyses the creation of a city where micro-farms proliferate the urban landscape, building exchanges and a community of growers. Born out of lockdown when flour disappeared from supermarket shelves, this project is an exchange that is both practical (i.e., growing wheat) [and] conceptual, as it reminds how society has lost connection to food (i.e., to the people who grow and process it).[174] This type of exchange is a partnership in the sense of making people aware of the current status of the industrialized process of wheat farming and global food system, which has lost transparency. It also draws attention to the radical change of farming and producing food over the last century.[175] Through this partnership, the *Sheffield Wheat Experiment* looks at promoting seed diversification, outside of *Monsanto*[176] [and] big agriculture.

End of Engagement as Partnership Introduction |

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[173] *THE SHEFFIELD WHEAT EXPERIMENT*. (2020). THE SHEFFIELD WHEAT EXPERIMENT. https://www.thesheffieldwheatexperiment.co.uk/

[174] Food's disconnection with our daily lives: Fakhri, M., (2022). The Food System Summit's Disconnection from People's Real Needs. *Journal of Agricultural and Environmental Ethics*, *35*(3), p.16.

[175] An accessible means that discusses the means for food production, farming, and comprehending a nature-friendly future: Lymbery, P., (2022). *Sixty Harvests Left: How to Reach a Nature-friendly Future*. Bloomsbury Publishing.

[176] *Monsanto,* a big agriculture seed and technology producer that has undertaken questionable actions dominating the legacy of food production.

Territory Interview | *Carly Walker-Dawson*[177]

Author Question | *How do you, in your role and experience, see engagement? And what is the difference between participatory and Engaging Design?* I work around local climate engagement programmes with local authorities aimed at getting people on board with climate. We know the scale of the climate crisis, therefore, no one can do this alone; decision makers can't do it, the public can't do it, it needs everyone. I have been working on defining engagement, as people think of it as "communication". We [*involve.org*] look at engagement in three ways: 1) engagement for communication, 2) engagement for intervention, which is essentially incentivization, and then 3) engagement for collaboration. Communication with people only goes so far, [i.e.,] it's really easy to ignore communication. In this regard, we ask questions like: what is really important to think about? If you are communicating, what power [does the other person] hold? What trust do they hold? Who is the primary communicator? In addition, we know about affinity bias, and people feel more comfortable with individuals they see themselves in; we also avoid the words "behaviour change", as it sends people into chaos when they hear it; people don't like being told what to do, if you do it, they get upset.

Our approach is to provide design spaces where people have the time to reflect on unbiased information, hear different perspectives with the objective to converge, to diverge and listen to others. It's a big expectation for people to dedicate time to do that. We compensate them for it, especially when working with people from marginalized/minority groups. To make it accessible, we ask ourselves the questions: how can we engage across our communities? How can we engage across societies? Can it be intentional? It's really important to think of power and privilege, i.e., who commissions engagement?

What is really important when we design engagement is the idea that you have to be comfortable with not knowing the outcome. Engagement isn't copy and paste, or a one-stop shop. It has to be done in a meaningful way and is context-dependent; this is why it takes time, energy, and people's power. Bad engagement is worse than no engagement.

One big issue with engagement is hearing people say, "tell us everything." This is not possible, as it needs to be defined in the research scope. These are the things that you have influence over—for instance decision-making—

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[177] *Carly Walker-Dawson | Involve*. (2019). Involve.

and others where you have not; that is why we speak to people like adults. Another big mistake is not closing the feedback loop; things might have happened, but you don't tell anyone. Then, people think they have been ignored and not listen to overlook. If we are thinking about impact so often, this is because we talk about engagement. It is about the impact on the people who are taking part. But it is not the only thing that has an impact on decision-making. The bigger challenge is how that is going to fundamentally shift where we are in society or help process decisions.

Impact is about follow-up; we did this with *The Scottish Government* and their *Climate Assembly*. Essentially, the *Assembly* members mark the homework of the government, i.e., six months after the engagement the government had to report on recommendations and outcomes to which the *Assembly* members responded by questioning them. From this, the Scottish government built their own decision-making processes. However, design doesn't end at the time that a process ends; this means that impact is often overlooked just because people don't have the time or budget to do it properly.

Author Question | *How do you prepare clients or partnerships and collaborations?* People aren't always ready, and that is fine. However, you should make sure it is a genuine collaboration at the start, a shared vision. Because if it is a PR exercise, it is not engagement, and you are just washing people's challenges [i.e., just tidying them up and making them look better rather than fixing them, therefore not taking people's challenges seriously]. You have to be careful, because this validates bad behaviours. In the same way as you design a product, we design a process that has a clear brief and outline; the process makes or breaks the outcomes of engagement. For this reason, to make sure that you have the right scope and purpose together, the methods are vital.

Often people don't pick the right method for the outcome; then they question how to make this safe, accessible, guided for the people participating. How are you going to take responsibility, as a commissioner, for making sure that there is going to be a follow up? For us, it goes through a coaching process with clients, because some of the work we do is proactive and some of it is reactive. So, you have to be positive with training, mentoring, creating tools and resources. The strategic work informs so much of what we do and ensures that it is taken seriously.

Author Question | *What do you think institutions and organizations should be doing to cultivate, sustain these relationships and engagements?* Fundamentally, institutions need to be open to sharing power; that's the biggest thing. It needs to be a two-way process throughout, which

encourages active citizens to contribute. It is not a paternalistic relationship, where you consult, but it is really collaborative. It comes back to actually valuing people and being open to their view, rather than pre-determining the research. It is about recognizing that lived experience and the way you experience something as an individual is just as valuable as academic knowledge. It is about institutions being an enabler and not being a barrier.

Also, it is about compensating people for the time that they're given and recognizing emotional labour. There is an issue of using people who are trusted in the communities. Who are your messengers? How are you reaching out to people? How do you use people who you already trusted? People need to feel heard, and people need to be able to see people like them within processes. And being really clear about what you want from a relationship is really important.

Author Question | *Can we flip it and define what worst practice looks like?* Worst practice is having a fixed end result, and trying to manipulate people towards it. People need time to reflect on activities, do not rush them. Often organizations cherry pick who is there [at events], because they want certain results. I guess, one other thing is setting the intention; if correct, not everything is going to go perfectly and making mistakes is part of a process. If we are talking about innovation in engaging design, you have to try things which might not work for your "people".

End of Interview |

Engagement as Partnership **001** |

The Sheffield Wheat Experiment[178] |

Keywords | #heritage_wheat, #urban_allotments, #harvesting, #climate_resilience

The Sheffield Wheat Experiment creates space for re-imagining food systems. Following the Covid-19 lockdown crisis of flour stockage, the experiment engaged people to respond by growing patches of heritage

wheat in gardens, allotments and fields that were hand-harvested. Heritage grains are varieties of wheat, rye, barley, and oats grown before the introduction of intensive, scientific plant breeding in the early 1900s. Our ancestors grew genetically-diverse landrace crops[179] that adapted to poor soils and difficult growing conditions. These crops were more resilient, reliable, and adaptable than modern agrotech contemporaries. They had large root systems enabling them to draw moisture and nutrients from deep below the soil. As wheat rarely cross-pollinates, traditional landraces were complex mixtures of pure-breeding lines well-adapted to local growing conditions whose seed was resown from the previous year's harvest. That process ensured crops were always in the process of adapting to growing conditions and climate change. *The Sheffield Wheat Experiment* project encourages participants to recover something that contemporary society has lost, i.e., connectivity with growing food.

As farming and food production has radically changed since the industrialization of wheat and the development of large corporate seed suppliers, *The Sheffield Wheat Experiment* explores how we can create a Sheffield landrace of wheat, bake an affordable Sheffield Loaf, and grow more nutritious cereals and increase resilience to the changing climates. This project re-imagines *Sheffield* with its own local grain economy[180] and questions replication and scale through the transformation and renovation of city (or town) corn exchange buildings. In the past, merchants traded grains and kept economic and food independence. Hence, *The Sheffield Wheat Experiment* interrogates our food system, and the degree of control of all those participating in it, to help see the advantages of diversifying types of wheat to respond to adverse climate events.

While some of the grain varieties might face decline for the intolerable climate conditions, another might do well; hence, diversifying yields and choosing heritage wheat—a grain that doesn't suit the needs of industrial agriculture—might reduce the use of artificial fertilizers or pesticides. *The Sheffield Wheat Experiment* indicates that a population of *Sheffield* "born out" soil can generate a new climate through the participation of people contributing to grow and harvest pre-industrial wheat. Through participation, people become agents of change; they come together

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[179] Landraces have been selected over time for particular traits or adaptations to local conditions. | Alarcón, M. and Aldasoro, J.J., 2015. Genetic Diversity of Plants Used for Food in the Mediterranean. In *The Mediterranean Diet* (pp.601–610). Academic Press.

[180] Grain economy: freer trade in agricultural and industrial commodities would make a powerful contribution to enhanced food security. | Johnson, R.S., 1977. The world grain economy and the food problem. *World Development*, *5*(5-7), pp.549–558.

to hand process wheat by flailing, threshing, winnowing, and cleaning. These once considered rudimentary skill sets[181] now play a vital role in safeguarding biodiversity, influencing food chains, and building diverse and pro-active communities.

Repeatable Insights |
Designing change for climate agency; in this project, recovering the use of traditional varieties of wheat channels opportunities and means for people to understand how to adapt and grow resilience in unsettling situations, by acting as a community redefining their relations with nature.

Interview | *Ruth Levene*[182]

Ruth Levene | *The Sheffield Wheat Experiment* has been active for a few years and now it has evolved in multiple elements with the objective of growing population wheat.[183] The initial invitation was to get people (as many people as we could) to grow tiny amounts of wheat in their gardens or allotments, or even on a balcony. The idea behind this was to allow them to experience one of the largest commodities in the world which has the biggest impact on the environment, biodiversity, and how we feed ourselves. Because of the pandemic, there was an interest in learning about food systems and understanding why they don't work. Through the process of growing, *The Wheat Experiment* project interlinked soil, environment, carbon, and climate change by putting a lens on the food systems. The wheat people grew was different from the one that 95% of the population experiences in the fields.

This project has political elements based on the fact that the wheat we grew is a heterogeneous material; sowing/populating a field gets many different varieties of grains [whose] differentiation increases resilience in the event of extreme weather. However, it's not legal to grow this type of wheat. Farmers grow grains selected from a list provided by the *UK* Government

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[181] *These are the top 10 job skills of tomorrow – and how long it takes to learn them*. (2023, May 1). World Economic Forum.

[182] Ruth Levene is an artist based in Sheffield, Yorkshire. Curious and concerned by the complex systems we live by, our relationship to, disconnection from, and commodification of the natural world and the environmental and ecological crisis we are living through. She works with others to explore water and flooding, wheat and grain farming, and policy making | *Work*. (2018). Ruth Levene. https://ruthlevene.co.uk/

[183] Population wheat is defined as "a genetically diverse crop produced by breeding a number of different varieties of wheat together." https://sustainablefoodtrust.org/news-views/the-future-of-wheat/

and there are very few varieties.[184] Essentially there are monocultures[185] and you cannot sell or give a seed as a gift. You can give it or sell it to a baker to bake with and sell, but you can't sell it to grow. Essentially, wheat is capped and there are very small samples whose amount is so small that it would take a farmer five or six years to bulk it up.

The Wheat Experiment consisted in creating a diverse farm where people sow in their own gardens, come back once a year, pull the grain and collectively process it. We worked on a larger field, because the amount that we got was tiny. We teamed up with a local market garden, who had enough land, to get two-and-a-half acres with which we started to get a decent amount. The market garden gave us half an acre. Everything is done by hand, and suddenly, you have bodies and people in the land which you wouldn't have on. That is where for me some of the most interesting things happen. Because we have to become skilled, we became independent during the lockdown when at the beginning there wasn't any flour on the supermarket shelves. So there was a motivation not to rely on them.

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged?* It was very conscious and purposely designed. From a social arts practice, I'm looking at food systems and I think my conceptual framing consisted of dispersing the wheat to create a community during lockdown, which connected people. By participating in this experiment people became part of something bigger which felt tangible and it still continues even though its intensity is minor. My research projects are participatory in inviting people on topics like land use. But then, I think it is key as an artist to be responsive and flexible to what the participants do, see, and think. One of the key aspects of the project touching a lot of people was about experiencing growing wheat as an event.

We did "Our Bread",[186] and that was really designed as a tool to diversify the growers. When we first established the project, there was no targeting. We didn't even put posters up, but the participants made a Facebook

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[184] Listing of grains | *Chapter 7: Crops.* (2022, October 21). GOV.UK. https://www.gov.uk/government/statistics/agriculture-in-the-united-kingdom-2021/chapter-7-crops

[185] A *monoculture crop* is vulnerable to attacks, since one (or a pair) of the pests that enter a field will have a high concentration of food with no transport stretches in between | Andrén, O., & Kätterer, T. (2008). Agriculture systems. In *Elsevier eBooks* (pp. 96–101). https://doi.org/10.1016/b978-008045405-4.00313-x

[186] An event organized by the artists

page, with 255 people signed up in four days, that we had to shut it down because there were too many people. It went around a certain network; it was very much white middle class allotment people. So, we were really keen to diversify, to grow resilience and *Sheffield* is made up of a diverse group of people.

We designed an event called "Our Bread" and we invited people from different communities to come and show us their different breads and [share] stories. That element was warming in the sense that it was an event with thread. We worked closely and brought in artist Hannah Fincham as community engagement officer specifically to put more effort into particular groups; we worked with a large number of groups and schools, for instance, the *Russian* group, who were interested in growing but didn't have anything to grow in. The *Roshni* women used our flour to make patties. There was a woman who was at the [lockdown] meal, just holding the flour and smelling it. I wanted to create different spaces, skills, and tools which we can [use to] catch ourselves when the system collapses.

With this project, I didn't want to do something able to change the system, but something that seamlessly helps when flour is missing. I wanted to make people more aware, i.e., to have some seed, some land and some tools and a few people that know what to do. I think as an artist very much around head, heart, and hand. We need a *Ruskin*[187] approach that we are not going to fix this problem, if there is a problem to fix. We need to open up our hearts; it is really about our culture, our community, but we need the skills to do it. I devise projects that have those elements in to see what grows and then run with different elements. Listening is really important. Listening to each other, and if you can't, you can offer a framework by which you offer a space where people can listen outside of this *jumping forward to fix a problem*, or *try and answer, it will be the right one*. We worked with the *Quakers*[188] to try to get people to listen to someone else's view without trying to prove them wrong; this is crucial. This was from a previous project "A Field of Wheat".

Author Question | *What were the key lessons from your project?* From an artist's perspective, I think the benefits of working on a subject, or an area, or in a place over a very long period of time has huge benefits. From

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[187] Artist, Critic, Pundit on Aesthetics & Ethics, Thinker, Seer, this social revolutionary challenged the moral foundations of Victorian Britain. Ruskin believed in the power of art to transform the lives of people oppressed more by visual illiteracy than by poor material conditions | https://ruskinmuseum.com/who-was-john-ruskin-1819-1900/

[188] Quakers in Britain. (2020). Quakers. https://www.quaker.org.uk/

a social arts practice, it is important to create meaningful relationships. In doing something, you embed yourself and then some element is left behind; this is not about the artist's ego. Being generous with your time is listening and not assuming; people want to hear what you've got to say. I would go into a community and see what the issues were, and then see if there was a way around them. Engagement for me is only a small part; I would say that I use participation as one of the elements together with research and conceptual framing. There is a massive deficit of good engagement; people think they know what engagement is and how to do it.

The biggest question we get asked from other organizations is: how do you get people involved? How do you get people interested? This is not a fixed thing. This is where artists, creators, and designers do have a skill. Engagement is not about putting the right poster and using the right phone; it is a deeper understanding of how we behave, how we are together, how we depend on each other, need each other, and how you go in and invite yourself into a space for a community. There's a general lack of understanding about the skill set needed to engage communities. Regarding the project we have trained bakers to use the flour we grew, as they didn't know what was behind their flours. The project was therefore interesting for linking the food systems: from consumer to producer to everything in between. In *Engaging Design*, you need to make sure that your values go through all the way to the core of your actual practice, that's something that's really important.

Engagement as Partnership **002** | FixCamp[189] |

Keywords | #tackling_global_challenges, #design_engineer_activities, #making, #creative_thinking

FixCamp was created by designers, researchers, and strategists from *Fixperts*. At the time the organization was called *FixEd* (*Fixperts* was

and is a discrete programme). It was created by the same designers, researchers, and strategists responsible for the *Fixperts* programme. Drawing on the UN Sustainable Development Goals (SDG)[190] framework as a basis for looking at global challenges, *FixCamp* set teams to build their solutions, demonstrating how deep understanding and big thinking can be inspired through hands-on making and collaboration. Camp activities were designed for kids who want to fix the world, with a focus on design and engineering activities for the problem-solvers of tomorrow. Quite often projects focus on nurturing specific age groups or abilities.

Every activity in *FixCamp* carried the message that it's possible to shape the world around you through making ideas real. Day one started with making a tool belt, then over the course of a day youths mastered simple and complex skills. They learned to voice ideas and collaborate building huge constructions to represent them. All day learners modelled the behaviours and attitudes necessary to make change. The process mashed up design, engineering, technology, art, and architecture. *FixCamp* challenged campers to apply their imagination and skills to solve big problems like housing and transport.

Repeatable Insights |
Designing for creativity: In this project, camp activities are designed to stimulate children's imagination and creativity as a means for tackling big challenges. Here, creativity is a means and end; practical activities help young participants to grow and channel their imagination as a way to understand and evaluate solutions.

Interview | *Dee Halligan*[191]

Dee Halligan | We describe *Forth* (*Forth Together CIC* trading as *Forth*) as a creative studio concerned with engagement and learning and in a changing world; we're interested in new formats which enable more people to connect with the new ideas and skills they need, when they need them. We work in different ways, from self-initiated ventures to consultancy, and funded research.

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[190] Sustainable Development Goals | Dpi Campaigns. (2023, May 31). Take action for the sustainable development goals – United Nations Sustainable Development. United Nations Sustainable Development. https://www.un.org/sustainabledevelopment/sustainable-development-goals/

[191] Dee Halligan is founder-director of the London-based creative lab and social enterprise Forth. She creates new formats and models for engagement and learning in response to a changing world | *People – forth*. (2020). https://wegoforth.org/studio/people/

Author Question | *What do you think was the most impactful method or process or narrative that came out of it? FixCamp* was funded by the *Royal Academy of Engineering,[192]* as part of their Ingenious Award programme, which is concerned with public engagement with engineering, emphasizing community engagement and participation. In our application for this funding, we focused on community (meaning the public); what we slowly came to realize is that shifting the engineering profession is also very important to the *RAE*. This meant it became equally as important to design the engagement and learning experiences for all the engineers (and other professionals) who were involved in creating and delivering *FixCamp* as it was to design for the "participants" (the 9–14-year-olds who would attend every day). This emphasis made us think about what's happening in the project—in terms of beneficiaries—and what's changing because of the project in a very different way; indeed, the end evaluation was mainly concerned with what we found through working collaboratively. Such a perspective widened our focus, helped us concentrate on depth and quality of a wider range of experiences of the project and, ultimately, a potential impact of what could be seen as a kids camp it in shifting the engineering profession. With *FixCamp*—conceived very much as a place-based project—we defined our community not in relation to a particular geographical location or neighbourhood, but as the much wider communities of different interests we interact with in different ways.

Author Question | *Can you explain why you think it was impactful to either the audience or also to yourselves, as well as organizations?* We think this is impactful because rather than focusing on the creation of the end product—the camp—as the "instrument" to create benefit for our communities, we considered all the development processes as engagement opportunities in their own right: the development processes were as creative and as important as the end-product. One example is how we designed the recruitment processes. The operational phase of our projects has always been as important to us as the learning materials or the learning environment, and so recruitment is key because it dictates the quality of that operation. For *FixCamp*, with its emphasis on engaging the team as well as participants, this was all the more important, and we designed a recruitment experience starting with an open call to widen participation and be more representative.

We ran a whole engagement process around recruiting, which meant that rather than coming in for a big interview, applicants came into an evening

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[192] *Royal Academy of Engineering*. (2023). https://raeng.org.uk/

as a drop-in, where they could participate in different activities, which we prototyped. This type of engaged recruitment session forged lots of relationships with future supporters of the project, rather than people who had not been hired, that is a very different relationship. Furthermore, this helped define the relations with STEM ambassadors, as we had opportunities to openly discuss options to get involved and so foster engineers and professionals working on the project from the start.

Author Question | *What is your advice to others about the process of engagement, good practices, and nuances?* Interestingly, we had the opportunity to revisit the project because *The Museum of Making* and *Derby* commissioned an onsite version, two years later. This allowed us to revisit what we felt was the best practice produced the first time around. At the time the project was thought to be a one-off, we were not interested in scaling; we produced something that was designed at a scale, which had a clear purpose within its community. It also worked as a kind of test bed for ourselves, where we tested a number of discrete parts for future applications.

In terms of advice I would say that a lot of one-off engagement projects are very ambitious but could not ever fully deliver their objectives on that one-off basis. It is therefore important to know your purpose, why you're doing it, and what you can reasonably achieve through it on a number of different levels. The importance of place and people—the where and the who—is critical. Indeed, for us the place was super important in all kinds of ways, intertwined with the purpose of the project. Space for us was the location of the place, people's perception of the place, as well as the space to experiment. For example, the fact that our project takes place in a school rather than a university or a museum matters.

Author Question | *What (do you think) are the differences between participation and engagement?* There's a lot of debate about language, and definitions shift which doesn't help. I think it's mainly important to think deeply about what you mean, and make sure you have a shared understanding with your team. Some areas of practice favour specific definitions which you have to be aware of because it has material implications. I come from a background in museums where the distinction between engagement and learning is really problematic because it tends to be reflected in departmental structures; there are those meant to deal with engagement, while others with learning. As they sit in different departments, they bicker about the differences between education and learning. I don't see these as productive conversations, as I prefer to focus

on purpose, on what is your theory of change and clarify what outcomes you want, [whether] this [is] participation, engagement, or learning.

Author Question | *Any further reflections? FixCamp* was a really important project for us. We had a certain limited expectation, because it was a summer camp and never designed to scale but maybe because it was designed as an experiment, without a future in mind, it was more free and it has ended up influencing so many other things. There's a direct line from *FixCamp* to the large-scale Open Learning work that we're doing now. That unique opportunity to go deep into a small project and invest disproportionate creative energy into processes and role descriptions has paid us back many times over. It's probably my favourite project of all the ones I've done.

Engagement as Partnership **003** |

The Derby Museum of Making[193] |

Keywords |#heritage_museum, #making, #creative_critical_participation, #STEAM_skill_building

Derby Museums is an independent charitable trust operating three museums: the *Museum and Art Gallery, Museum of Making,* and *Pickford's House*. It cares for the collections of cultural heritage on behalf of *Derby City Council* and the people of *Derby*. It also houses the *Royal Lancers Museum*. The trust is located in the *Derby Silk Mill* which is an area that changed history as the world's first modern factory, initiating the Industrial Revolution events. This area has shaped *Derby* as a city of making and creativity. Indeed, its unique element is that it has been developed around the communities it works for, with the mission to engage them. The *Museum of Making* in the *Derwent Valley Mills* is a UNESCO World Heritage Site made by the people and industries of *Derby*. Its exhibits, workshops, activities, and events tell *Derby's* 300-year history of making to inspire new creativity.

Derby Museums' learning programmes use STEAM (Science, Technology, Engineering, Arts and Maths)[194] as an interdisciplinary approach to teach ways to understand the world and other people. As this approach encourages creative, inquiry-based critical thinking, it enables people to develop the capacities necessary to thrive in the future, i.e., to be curious, empathize and innovate—think, feel, and do. This interdisciplinary approach to formal and informal learning has been consolidated with *The Institute of STEAM,*[195] exemplified as a mark of recognition. The institute provides learners of all ages with the opportunity to develop twenty-first century skills, including gaining recognition of competencies and achievements through earning digital badges as verifiable credentials. The public programme includes *Steam Babies* (leveraging STEAM learning), *Assemble: Derby's Making Festival*, *Make Works* (Derby & Derbyshire) and *UK Creative Community Fellows* designed to make engagement at the heart of its operations, and to celebrate the area's rich history of innovation.

STEAM Babies | This is an activity for babies and young children (up to five years old) that uses STEAM approaches. To encourage creative, inquiry-based, and critical thinking, babies are invited to explore materials in different and creative ways. Children from two to five years old play in sensory and playful sessions to explore objects and materials that stimulate children's curiosity, imagination, and experimentation.

Assemble: Derby's Making Festival | This festival is a family-friendly showcase of invention, creativity, and resourcefulness, which celebrates making in all its shapes and forms. It features more than fifty makers on-site, with demonstrations in everything from ceramics and embroidery to laser-cutting, weaving, jewellery-making, metalwork, robotics, and automata. Visitors participated in workshops; a *Chocolate Investigation Lab* run by *Rolls-Royce*, clay-modelling with *Aardman Animations*,[196] and letterpress printing from *The Smallprint Company*, etc.

UK Creative Community Fellows | This service offers support to strengthen art and culture communities to drive a positive transformation. It is an online and in-person learning experience which brings together

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[194] *STEM education and STEAM education defined*. (2023). https://www.invent.org/blog/trends-stem/stem-steam-defined

[195] *Institute of STEAM – Derby Museums*. (2023). Derby Museums. https://derbymuseums.org/learn/institute-of-steam/

[196] For over 40 years, Aardman has entertained and charmed the world, creating much loved characters, and bringing unforgettable stories to life | *Home | Aardman*. (2005). https://www.aardman.com/

artists, community organizers, administrators, and entrepreneurs from around the *United Kingdom* to explore new tools and frameworks around driving physical or social transformations through arts and culture.

Maker in Residence | This is a fully-fitted workshop with a large variety of machinery and equipment, including CNC machines, laser cutters, textiles, woodwork, and metalwork equipment. It is accessible to members of *The Museum of Making*, schools/education groups, or to those booked onto workshop sessions from the public programme. This depth, variety, and future thinking that the trust lays is a demonstration of how it values the communities around it and seeks to deeply engage with them through "making".

Repeatable Insights |
Designing learning experiences: The Museum of Derby trust uses engagement as a vehicle for uplifting people's lives, by engaging their creativity associated with critical thinking.

Designing for culture and heritage: By leveraging *Derby's* history, the museum's activities make local heritage, culture, and creativity drivers of community-making across different sections of the local population.

Interview | *Andrea Mercer*[197] *& Steve Smith*[198]

Steve Smith, Manager of the workshops and studios: I've been on the project since 2013 on the site of the world's first factory.

Andrea Mercer, Head of Learning at Derby Museums: Over the past ten years, we have spent a lot of time working with people in co-production to transform what was an old industrial site into a new museum of making where you get hands on, do things, and learn about objects, collections of our industrial past, present and what's going on in the city today. Our main goal is to empower people.

Author Question | *What's the most impactful method/process/narrative that's been, directly/indirectly used?*

Andrea Mercer: We used co-production as an all-around method and design thinking to understand what are people's needs in the city. We went

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[197] Andrea Mercer, Head of STEAM Learning and Participation at Derby Museums Trust | *Meet the team – Derby Museums*. (2023). Derby Museums. https://derbymuseums.org/about/meet-the-team/

[198] Maker | *About – Derby Museums*. (2023). Derby Museums. https://derbymuseums.org/museum-of-making/about/

through a process of defining and understanding what the city needed and lacked in terms of skills. Its 300-year history of making came out as part of what it needs, as a skill set, and how we develop young people's aspirations. We have got a lot of industries in the city. However, not a lot of young people aspire or even know what these industries are; in addition, they don't have the skills to go into those industries. Hence, we asked how to evolve people in that process, how to make it obviously meaningful and relevant, and how to expand perspectives of what a museum was/is.

Steve Smith: I was trained in *Derby*; having an industry background, this has influenced the way I've understood and conveyed what we did from the workshop's point of view. We could have got somebody to design and fit out the museum; however, we wanted the new museum of making to be constructed by the community. We put money into machinery and equipment when the project finished, and this is our legacy. It has carried people throughout the project, and now you can hire them as a member. Furthermore, in our approach we emphasised what mutual benefit people can gain from what we have done. We trained them with new skills and prototyped furniture that they helped to build. Through this design process, we tested whether such an approach would motivate people to engage.

Andrea Mercer: We firstly developed the building and ran a test of the process of construction. Once we got *The National Lottery Heritage* funding to develop the whole building, we experimented with whether the same approach would work to develop the workshops.

Steve Smith: With this process of experimenting and iterating, we learned what to do and how to approach things; this allowed us to move from the first to the second phase, when we also built the fixtures and fittings for the museum. The ground floor had some tables, food, cabinets, and you could play in the workshop.

Steve Smith: We made *the Hub* for the collections to allow people to learn about them through our stalls. In *the Hub*, we had some fantastic conversations; here, people were asked about what and how they wanted to make, and what materials they wanted to play with. We designed the space with a multiple-use space in mind. We collaborated with the *London* company *Tilt*.[199] Now, we do a lot of pop-ups aimed at promoting the museums of making. Through this process, we gave people the value of "stuff that lasts" and "build with quality". From the start, we have been hiring the space for bringing income, which helped quite a lot of

[199] *HOME | Oliver Marlow*. (2022). Oliver Marlow. http://www.studiotilt.com/

workshops. Through this, we created a community of makers in *Derby* and worked with them to design the workshops and the spaces. In addition, people reacted to this strategy by feeling agency in deciding what the museum should exhibit; we collaborated with them to include them in the process.

Andrea Mercer: Sometimes we worked with [fewer] people, who were the community of enthusiasts. We did honour what they designed; for instance, we made triangular tables because the kids wanted to play with them by tessellating them. We collaborated with the local inner-city school *Dale Primary* to make a lot of cardboard that they used to design a mobile kitchen—*Wheelie kitchen*—which was set to be a movable space. We enabled their creative process; we had mock-ups from which they made the actual products that visitors from the museum used.

Author Question | *What were the key lessons from your projects?*

Andrea Mercer: I mentioned experimentation, making sure that you take and allow yourself to take risks, learn from that and think about how you would do things differently. We do it with very simple things, i.e., with the way people experienced the objects. One of the things I would think about early on, I'd say to myself, is that we should have trusted people a little bit more.

Steve Smith: We were very nervous about this. When working in the workshop, there were a lot of conversations and flow charts, which impacted the making time, which was the total opposite to what you want.

Andrea Mercer: Trust all people and be brave pushing through what people can do, skill-wise and safety-wise. Just to reflect on what *Steve* said about gathering great people and understanding what skills they can actually give, this includes the team of experts we collaborated with. The professionals needed to be able to understand fixtures and fittings and be on the same level almost as the people that we worked with in the co-production because they have relevant skills to give as well, as the whole process is about gathering knowledge and utilizing it in the best possible way. Also, keep ideas on the table until such a point that you have to funnel them into options; nothing is stupid at the beginning, all ideas are valid and welcome. Without this approach we wouldn't come up with some of the things that we now have in the *Museum*. People are allowed to be creative, think imaginatively, take that to fruition and see if it actually works. In everyday life, you don't really get a chance to do that. It only sits in your mind as a possible idea.

Andrea Mercer: You do really have to build relationships with people. They have to trust you and the system. It's just the process. And trust the outcomes as well. There was tension for me to bring somebody and then ask people what they wanted. We spoke to the architect and worked with them. One of the design attendees of a participatory event commented that we asked them to design something, which in reality was to help how to design something. For the professionals, it was like starting from where people were at, rather than assuming that everyone is a professional designer. Through design thinking, we cultivated their mindset to start to think as a designer.

Steve Smith: My stylistic or visual approach to design is based on materials, that is driven by my knowledge. When we discussed solutions, this was through an image, which was the way we helped people collaborate with professionals.

Engagement as Partnership **004** |

Skateistan |

Keywords | #empowering_young_people, #skateboarding, #learning, #empowering_life_skills

Skateistan is an international non-profit organization leveraging skateboarding and education to empower children and young people. Its programmes are run in *Afghanistan, Cambodia,* and *South Africa* (growing daily) with 50% (and rising) female students. It began when *Australian Oliver Percovich*[200] arrived in *Kabul, Afghanistan*, and started skateboarding in the streets with children. *Percovich* perceived the lack of opportunities for young *Afghans*, especially girls and children who work.

As we witness daily, the rise of issues like refugee crises, Covid-19 pandemics, displacement from war, or climate change make children the bearer of global catastrophes; they are more at risk of violence than in past years due to unsafe living conditions that increase the risk of them experiencing trauma, which affects the likelihood of returning to school.

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[200] *Oliver Percovich – TEDxSydney*. (2016, February 17). TEDxSydney.

> "I support Skateistan because I believe skateboarding can be a catalyst for positive change especially among children." *Tony Hawk*

Skateboarding is an action sport that originated in *The United States*; it can be considered a recreational activity, an entertainment profession, a means for transportation, but also an "artform". The *Skateistan* NGO realized that skateboarding could be a great way to "engage" and build communities that had the objective to give children opportunities of becoming future leaders and aspirational contemporaries to their peers. *Skateistan* has Skate Schools in *Kabul* and *Mazar-e-Sharif*, *Afghanistan*; *Phnom Penh*, *Cambodia*; and *Johannesburg, South Africa*. Its global community includes students, staff, skaters, and supporters who share the dream of empowering and educating youth. Their programmes combine life-skills with fun, freedom, and creativity, thus creating confident people for tomorrow's societies. Engaging through skateboarding can build confidence in the individuals that participate; skating is an accessible sport, regardless of age. It can cross social divides, as it enables others to champion its practice, thus making them ambassadors and catalysts for confidence and positive change. The engagement runs deeply within the partnerships, stakeholders, locations, and ambassadors that it creates.

Repeatable Insights |
Designing for inclusive and empowering education: Skateistan's activities are designed to inclusively engage young children in difficult conditions in growing skills that stimulate life opportunities. Learning skateboarding is an experience that drives social empowerment and leads learners in imagining how to become future leaders.

Interview | *Zainab Hussaini*[201]

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged?* The most impactful method is creating space and autonomy for local solutions to shine through. Around ten years ago in *Mazar*, the *Jogis* (a marginalized nomadic community) were approached by our Afghan team led by *Zainab Hussaini*. She worked with the elders to be able to get the first girls to school from this ethnicity, which was not something the international team at *Skateistan*

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[201] Passionate about helping other women and refugees enjoy sport, which eventually led her to becoming the Afghanistan Country Manager for Skateistan | Binner, A. (2022, April 8). Zainab Hussaini: The history-making former refugee helping others through skateboarding. *Olympics.com*. https://olympics.com/en/news/zainab-hussaini-refugee-skateistan-skateboarding

could have achieved. *Zainab* was given time and resources to find a local solution to a local problem. We want to scale this up around the world so that community activists can find solutions to local problems through skateboarding.

Author Question | *Why do you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* This approach is impactful because those with the most relevant information are enabled to connect the dots on how to create change in their community. A lot of the time it can be trial and error. But it is important that the person attempting to create change has as much information about the local context as possible as well as time and patience to create the change. This can be reproduced by investments in individuals and not overly relying on systems or infrastructure investments to create the change.

Author Question | *What were the key lessons from your project/ experience that others can build on?* a) Young people are often overlooked as sources of ideas. Consult with children and youth and you will find many ideas that are the right one at the right time.

Afterall it is their future. b) Don't be afraid to be different. There are always new ways of attempting something. Beware of people professing to be experts as you might work out a way to do it better if you ignore them.

Engagement as Partnership **005** |

Common Ground[202] |

Keywords |#foster_conversations, #edible_garden, #food_events, #creating_community

A Common Ground is a *Something & Son's* installation consisting in an edible garden nurtured and maintained by volunteers. Having as a main goal to unite people around food and conversation, the garden's selected flora reflected multicultural *London* today and highlighted the unexpectedly ancient origin of plants and how they're used in modern-day

cuisines. Visitors were invited to share their own recipes and learn more about growing through free pop-up workshops on cooking and herbal medicine. By transforming *Tate Britain's* front lawns into a greenhouse working garden, the installation provided: small dinners, an open-sided kitchen for cooking tutorials, and tables with foundations in the middle made from vegetable soap. The space welcomed the public through a daily programme of activities, and one-off special events run by local communities which feature *London's* diverse food cultures.

Local people run the space through a series of events which act as a platform for engagement. These included an Ital workshop (food often celebrated by those in the Rastafari movement) and a large Iftar gathering (the evening meal with which *Muslims* end their daily Ramadan fast at sunset). *Something & Son* led a series of collaborations with *Common Works*, the *Restoration Station,* and *The TATE Britain* team.

On weekends, visitors were invited to enjoy drinks and cocktails from the herbs grown in the garden. For the summer suppers programme, invited guest chefs, including the Michelin star *Petersham Nurseries and Spring*, hosted a meal. *The Harvest Festival* was the closing event where the local community got together to experience art works in the collection, alongside cooking demonstrations and produce growth. Free seed packets for visitors highlighted some of the plants used within the open pop-up garden. As part of the installation, *Common Works* built the inner workings for four speech reactive water features. The water features are built inside soap sculptures, which incorporate four water outlets opening and closing based on conversations in the surrounding area. When the sculpture detected speech, it would open internal valves to control the flow of water which, over time, would erode parts of the sculpture, leaving a visible record of how people conversed in the space over the duration of the installation.

As *A Common Ground* aimed to increase communication and connection between visitors through sound and movement, these sensors detecting human voices activated the garden in funny and surprising ways. The sculptures used microphone arrays and custom speech recognition software to determine whether the sounds it heard was speech. *Common Works'* aim was designed to make you feel at ease and to encourage conversation, eye contact, and connections with strangers. The garden's intention was to address the modern epidemic of loneliness by using a set of parameters that catalyse and stimulate community's unity to tackle issues like loneliness. For *Common Works,* the community is transient and

gets shaped through the theme of food and growing. This inter-twined approach to wicked challenges, like loneliness and sustainability, often demonstrates best practice and new approaches.

Repeatable Insights |

Design for community dialogue: This project describes how designing activities related to cultures of food and harvesting could catalyse multicultural conversations and create transient but cohesive communities.

Interview | *Andy Merritt*[203]

Andy Merritt: Common Ground was a project at *The Tate*, *Britain*.[204] They never used the lawns at the front of the *Gallery* and we posted this sort of allotment as a way of getting people to use that space. We had planting, growing, and cooking activities. Food choices related to what was being grown around *London*, a lot through people that have moved to the city from other countries. Food acted as a way for keeping you in touch with where you come from, and reminded you of who you are. If allotments represented an opportunity for people (especially those from lower economic countries where there might be less rules on growing and might have done it for themselves) to connect to your origin, in a city like *London* you have to jump through hoops to get one.

We used the allotment as an opportunity to break down some barriers of a place like *Tate Britain*—where maybe their audience isn't that diverse—to get different people down to it. We leveraged food as a common thread with the work, and we did it by treating it as a common touchpoint. We had a kitchen and a greenhouse within these beautiful timber structures. We also had tasters and shares, to try to encourage people to talk. There was technology within the fountains that picked up people's conversations, with water flowing across. We used the garden as a foundation for talking, and inviting different cultures. Religious groups from around *London* took over the space and used food as a means to express their culture.

Author Question | *What are the key lessons that you would share from this project?* First, food is a great way of bringing people together. It is like the people know how to engage with it. The other key thing is that

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[203] Andrew Merritt's work explores social and environmental issues via everyday scenarios criss-crossing the boundaries between the visual arts, architecture, and activism. *Andrew Merritt – Orleans House Gallery*. (2023, January 17). Orleans House Gallery. https://www.orleanshousegallery.org/cultural-reforesting/something-and-son/

[204] Tate. (2023). *Tate Britain | Tate*. https://www.tate.org.uk

you don't have to build communities from scratch; you should approach people and organizations that have already done a lot of work around community building. I think it is important to not put too much pressure on yourself to create these communities, because there are people out there that are doing this anyway. So, we just invited these organizations down to use that space and talked with them about what would happen. These organizations already had members or a database of people they could reach. This made the experience more collaborative. Give yourself a break and don't try to do everything.

Author Question | *How should "we" design engagements; what is good practice?* Do not over-design; if you do, then you're pushing people down certain routes. That is why I talk about building foundations rather than buildings or half-baked projects. Because it allows the rest of the baking to happen more naturally, and I guess it's just a bit of belief in humanity that people are capable. There is a general feeling that you have to get everything in order before you can start a project. We didn't know how we were going to go about doing it, and before we even had all the money secure, etc.

We opened the building and just allowed people to come in. We started working on the project together with volunteers and, I guess, from the very start we realized that you can disengage people when it is all complete because there is nothing for them to do, apart from looking around. If you have this half-baked approach, it allows people to properly get involved. It is like an allotment; people know what an allotment is, and they know how to approach it.

Engagement as Partnership **006** |

The Lotus Flower[205] |

Keywords | #women_empowerment, #training_programmes, #learning_ social_skills, #growing_social_agency

The Lotus Flower[206] is an *Iraqi* Non-Governmental Organization (NGO) providing women and girls impacted by conflict and displacement with the tools and opportunities they need to rebuild their lives. As a species, the lotus is a beautiful resilient and strong flower growing in muddy water. As a charity, *The Lotus Flower* helps displaced individuals in refugee camps heal, learn, and grow through carefully coordinated and designed programmes, which have impacted more than 60,000 women, girls, and community members. With programmes covering education and livelihoods, mental health and well-being support, human rights and peacebuilding, *The Lotus Flower* vision provides training to vulnerable displaced women and girls in camps located across different geographies and locations, training that unlocks their potential and builds sustainable futures.

Educational projects include *English* language, adult literacy, and computing classes, while the livelihoods programmes are designed to enable women to learn new skills and build businesses to support their families. Indeed, the charity runs successful income-generating projects, such as *Women's Business Incubator* (*WBI*); this provides a financial foundation and business mentorship for women-led small businesses. An example of this is *Baking Sisters,* a project supporting talented and skilled female bakers to set up a cafe intending to generate a space for the community. By learning and growing professionally, traditional stereotypes about women's domestic roles are broken. Furthermore, these engagements support primary decision-makers and earners by empowering communities, and their agency.

The Lotus Flower provides a metaphorical "stepping stone" to women and girls' economic independence, which is essential for improving their sense of worth and self-confidence. In addition, women are mentored in

developing awareness and dealing with multiple issues affecting them, including domestic violence, sexual abuse and exploitation, marriage, and human trafficking. In summary, all these projects intend to listen to and address the needs[207] of these communities of women and girls, and avoid assuming what their needs could be.

Repeatable Insights |
Designing for social empowerment and agency: The educational exchanges presented in this project are designed to empower women by gaining professional skills that increase social agency. Here, learning is an experience for growing empowerment in society in breaking social stereotypes.

Engagement as Partnership **007** |

Care Lab |

Keywords | #reimaigine_care, #care, #empowerement_experiences, #change_of_practice

The *Care Lab (CL)*, a design practice founded by *Lekshmy Parameswaran* and *Laszlo Herczeg*, has the mission to reimagine care by transforming its existing systems through the design capacity of being empathic, holding an optimist mindset and being solution-oriented. As a standpoint, the *CL* argues that *Systems of Care* need transformation to recover the unconditional, protective, and trustworthy human approach supporting the very act of caring for one another. Hence, *CL* uses design to facilitate conversations, connect people and their values, foster and champion connections. This is to tackle the codification of care within social structures, e.g., hospitals, schools, or home, and foster new models of understanding, practising, and experiencing care every day.

To increase the care resiliency to the complexity of its systems, and make it able to tackle social challenges like loneliness, mental well-being, and an ageing population, *CL* has developed a framework[208] of seven interventions consisting of: empowering a new breed of care, designing care together,

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[207] Max-Neef, M. A. (1991). Human scale development: conception, application, and further reflections.
[208] The Care Lab 7 Interventions, https://www.thecarelab.org/7interventions

normalizing care conversations, engaging people in their own care, fitting care into communities, and breaking the societal taboos around care. Such a framework guides the practice's actions and methodology, including how to engage key actors to empower them and make them the agent of long-term change. Partnership, participation, and co-creation are some of the methods the *CL* has adopted to trigger change and transformation. This is enabled by the exchange of knowledge, the integration of mutual capabilities, and defining new networks to achieve greatest impact.

Designing care is therefore a multi-level set of distributed and coordinated actions that require the participation of any key actor involved in the system. This could mean, for instance, defining a common vision for the platforms, tools, skills and training on care, like in the *1st Social Forum of Care* in *Catalunya,*[209] a citizen-driven initiative aimed at creating a participatory space to connect and reflect on the development of a new care manifesto to inform a more equitable, fair and dignified national care system. However, encouraging people to participate and engage might require a change of culture; this can be pursued by enabling leaders to break siloed mindsets, empowering care professionals, breaking the taboos around care, but also stimulating everyday self-care practices, integrating care in our neighbourhoods, or normalizing conversations on care. For example, in collaboration with *the Hospital Clinic Barcelona Chronic Pain* team,[210] a new space to support more caring conversations with patients was co-designed with caregivers and professionals. These informed the development of a conversation protocol.

This proactive landscape intends to disentangle the formality of care, normalize its intrinsic social value, and demonstrate that care is at the base of human relations.

Repeatable Insights |
Designing for more equal, fair, and balanced societies: *The Care Lab* uses design to foster partnerships which can transform the culture of care at a system level, through the participants actions.

Designing for growing ownership: Through partnerships, the *Lab* engages with people's needs with the objective of designing ways to grow ownership of the process and outcomes. This fosters a sense of belonging

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[209] Fòrum Social de La Cura, https://www.thecarelab.org/forum
[210] The Care Lab, Normalise Conversations, https://www.thecarelab.org/normalisecareconversations

and empowerment, and ensures the change will be continued after you leave.

Designing for inclusive participation: The practice uses design to help participants visualize a problem space and make everyone able to participate. This is to create a common ground from which to build on.

Interview | *Airí Dordas Perpinyà*[211]

Airi Dordas Perpinya The Care Lab is a collective of designers turned into care activists. We work towards transforming the experience of those who give and receive care in different environments, like hospitals, care homes, schools, and other social work organizations. We try to transform the experience of care from birth to death. Despite the fact that our practice might fit the service design category, we consider our projects artefacts that do not always relate to service design. We look at care as a human interaction, as designers would do, but we are aware that this is such a complex social problem that requires a system thinking approach. With interactions we include patient–doctor interaction, a family–social worker interaction, teacher–student interaction; these are unique cases for which we need to understand each other's needs and perspectives, how personal backgrounds influence actions and attitudes, or how people take care of themselves at home.

To achieve this we ask ourselves a series of questions, including what type of organizations people work for, if these enable an empowering working environment for care professionals; how cities or communities take care of people in vulnerable situations; what are the societal taboos interfering with that; what is the influence of these social taboos; what are the public policies in place that enable these hard and soft infrastructures to guarantee a dignified experience of care. To answer these questions requires an activist mindset, lots of perseverance, and a participatory or *Engaging Design* approach.

We use systemic thinking because of the complexity of care. When we collaborate with hospitals, city councils, health authorities, or social care organizations we involve all the stakeholders that are usually involved in

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[211] Airí Dordas Perpinyà is The Care Lab Design Strategist. Her work focuses on raising awareness about the social inequalities created by today's care systems and designing new services for those who give and receive care, both locally and internationally. She is passionate about designing communication and social innovation programmes that transform mindsets and behaviours, leading to a more equitable society.

that experience to unpack the problem first and transform it after. We use engagement along the design process because we believe this method is key to uncover people's needs, to foster collaboration amongst different stakeholders, and to unlock collective creativity, which for us is important to help decision-making and address multifaceted complex social problems. You'll never solve it in one go, but you leverage this collective intelligence to address care.

Author Question | *Can you explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project or context?* We believe our approach is impactful to those involved in the project, either directly or indirectly, because we aim to transform their experience.

For people working in the front line—patients, social services, social workers, care professionals, doctors, nurses, informal caregivers—our work is impactful for the experience of transformation. Their voices are heard along the innovation process, because we take decisions with them. As a consequence, the ecosystem of solutions is relevant and appropriate for influencing their near or far future. Furthermore, through participation or engagement we are able to nurture for each person a stronger sense of belonging to their organization, which generates a sense of ownership that stays when we leave; this means that change perpetuates even if we are not involved. There is a roadmap to design ownership and membership, which puts people in a learning position, which is very impactful for them.

For decision-makers and designers, the impact is made explicit by citizen participation, as it enables us to get a deeper understanding of the different perspectives of everyone involved. Many times, with conflicting interests, you can make richer and more inclusive decisions, which allow you to design more sustainable solutions and ensure long-term success.

For organizations, collective and ecosystems it is impactful because along the participatory process you generate relationships of trust, which increases empathy. This makes people used to working in collaborative ways and adopting collaborative mindsets that last because they feel the benefits. So, our design stimulates the conditions for a more democratic and equitable governance and culture. We believe our methodology and mindset can be exported and reproduced in many other contexts that require a system thinking approach, such as climate change, organizational change, public policy.

Author Question | *We are deeply interested in "catalysing engagement", not just passive participation, but an informed and empowered process. Can you explain how your project includes communities and how it catalyses or fosters engagement?* For over twenty years of experience, we have developed what we now call *the Care-Centred Design* approach. We try to centre care as a value that guides the teams we work with in the journey of addressing complex social problems. We believe this requires considered and more intentional practices; participation is one of these considered practices that we believe is central to everything we do.

To put it more concretely, we try to engage citizens or communities in five fundamental stages of our practice. We involve them in (1) framing the problem space; (2) identifying people's needs in relation to that problem space; (3) co-creating design solutions; and (4) validating and evaluating those design solutions once we start to implement them. Then, (5) we try to involve them in building capability towards a culture of change and also to mobilise communities to scale and spread impact.

For example, we have been working not only in designing services, but also doing some advocacy processes; we are involved in a social movement in *Catalonia, Spain,* to change the public policies around care and to ultimately create a new national system of care. This requires constant participation, not only in identifying needs and creating solutions, but also in building a collaborative and participatory culture that people [then] embrace and continue. We plant seeds in different organizations, communities, and environments. This ultimately redesigns the system of care through sequences of actions, which can include influencing policy, how to introduce care in organizations, how to influence people's awareness about care and how to take care for ourselves as a society.

Author Question | *What were the key lessons from your project/ experience that others can build on/learn from?* Actually, I'm going to say six; I think the extra one is important.

The first one is always to start with the definition of citizenship, which means: who is part of the system? What role do they play in the system? What is the relationship between them? Asking the citizenship question ensures a diversity of voices and [knowing] how to invite them effectively so they all feel called to participate. Before sending invitations, you need to first identify them to understand the system.

The second point is to define and design the questions that trigger a constructive dialogue, which is to define the subject of discussion, what

is in and what is out. This requires [being] as concrete as possible, and to work on tangible and visual assets. We usually describe our ideas in posters or with scenarios that we print, or artefacts that you can put on the table. These make the conversation more concrete, more tangible, create a common ground, and increase the participants' focus.

The third point is to create a safe space. I think it's very important that people feel comfortable having egalitarian conversation. This helps embrace conflict especially when you create a dialogue space across different stakeholders. In our case, there are implicit power dynamics in patients, doctors, and caregivers' relationships, with their conflict: patients usually need more time; doctors don't have time. To embrace this conflict in a conversation leading to a healthy constructive dialogue needs the creation of a safe space.

The fourth one is something we learned over the last [few] years, which is to provide a wide range of occasions, places, and formats to let everyone find the best moment and way to participate. In the social movement we are trying to create in *Catalonia* around the right to care, this was important. Here, not everyone is able to participate as there are people with care needs, i.e., people who are fully immersed in the caregiving duty. They are not able to come on a Saturday in the middle of *Barcelona*, hence you also need to create online forums or repeat the event; you need to provide different occasions, formats and places that allow flexibility for people to decide when and how to participate.

The fifth point is to be respectful of people's times and ideas. This is a tricky one because everyone wants to participate and they are giving you their time and ideas; hence, you need to make sure that you create the right level of expectations on what you will do with that information to be accountable for those. When doctors, nurses, and patients participate, it requires an effort from us to communicate with them what happened with those ideas that they shared with you. Furthermore, participation is a growing experience in itself; to ensure their motivation stays, it is important to keep them updated on the impact of their participation, and also make sure that they can grow from that opportunity.

And the sixth extra one is to take care of yourself as designers and facilitators of this dialogue, especially for those that are at it long-term. We learned that sometimes you need to learn how to let go of control; you need to find strategies to renew your energy and persevere and keep going because it's human relationships. Sometimes there is conflict and

it is amazing. So to find spaces and practices, reflect and to take care of yourself.

Author Question | *Finally, in relation to our definition of Engaging Design, what aspects of your project articulate this definition?* This definition is totally aligned with what we do, and there are three words from the definition that really resonated with our practice; these are "complex challenges", the "metaphorical bridge" and the "cultivated".

The "complex challenges" relates to care as a complex social challenge that involves a myriad of personal relationships and stakeholders who come with their emotions, vulnerability, and pain; this is what makes care more complex. Also, care is a system made of many disconnected systems—like social care, education, health care, public policies, urbanism. As a society, we don't have the hard and soft infrastructures that are necessary to have a dignified experience of care.

On the "metaphorical bridge", we often use the word *agora*, but actually what we do is to break silos constantly, so people can participate in this *agora* by crossing this bridge, as a metaphor for engagement. This brings you to know diverse collectives, communities, or other people that are involved in the problem space. Once in the *agora*, you grow knowledge of each other's needs, exchange ideas, be constructive and have a dialogue of growth towards the formulation of innovative solutions. You need the bridge to break the silos, but then you need to keep gardening, which relates to a transition state to a new setting. To make it more explicit, through the work we do across different types of complexities related to the topic, we are the bridge, to enable one to be in the *agora*. Being a bridge is a necessary preparation stage to enable the space of the *agora*, otherwise people would stay in a silo. So, I think it's a combination of the bridge and the *agora*.

The last one, the "cultivated". For us, it is important to see the word cultivated in the definition because we use the word gardening in our practice to resemble the legacy of our work. Through a gardening phase, we can be closer to the organization or a community we work with to see how the change is implemented. We might create a beautiful ecosystem of solutions, but these need to be implemented to achieve change. So, we try to stay involved in the last phases in a gardening mode; this is to make sure that this participation culture—or bridge—stays relevant and open and people in that organization, or community, or ecosystem keep this democratic and collaborative culture to achieve change; this means facilitating new solutions to become alive and to keep building new

relationships of trust so the change is sustainable and long-term. For us, the word cultivated is about the seeds that need to be taken care of.

Basically, you have a practice divided into three different stages: a prep, which is the past, the present, and the future. You design for the three different stages for people to actually be able to enter an empowerment process, which is the garden. It is not just us; we are designing the legacy of the action and how that could be looked after in the future. It is more efficient to empower people and this is different from a classical consultancy type of work that many designers could do, where the process consists of arriving at a problem space, facilitating the conversation, designing solutions, and leaving. As we care about care, we like to stay involved. By staying involved we keep gardening; this is our collaborative culture and the method we use to approach problems or challenges.

Engagement as Partnership **008** | Warrior Moms[212] |

Keywords | #air_pollution, #art_practice, #direct_experience, #health_impact_awareness

Warrior Moms is a collective of mothers from *India* fighting for children's right to breathe clean air. According to *the World Health Organization's* (*WHO*) survey of 1,650 world cities, and the *US*-based *Health Effects Institute* of 7,000 international cities, the air quality in *Delhi* is the worst of any major city in the world. The *WHO* indicates that *India* has the world's highest death rate from chronic respiratory diseases and asthma. Air pollution is estimated to kill about two million people every year; it is the fifth-largest killer in the country. To raise awareness on this issue, *Warrior Moms* educate and empower citizens to take action and engage with decision-makers to enforce regulations.

Techno-scientific innovations are seen as the most desirable solutions for toxic air by a neoliberal society. *Bhavreen Kandhari*, the co-founder of *Warrior Moms* states: "what is the most important thing to a parent? To

keep your child safe and healthy and to give them a good future. How does that happen in the midst of a climate and pollution crisis?" As *Delhi's* poor air quality irreversibly damages 2.2 million people's lungs, of which fifty percent are children, with concentrations of fine particles recorded at three times above the acceptable limits (at the time of writing), *Warrior Moms* developed a collection of arts-based engagements drawing attention to air and toxicity—its composition, movement, landscapes and scales of impact—and how this relates to society. The list of these events include:

1. *Does the Blue Sky Lie?* A fictional physical space (much like a real-life trade fair) selling ideas and visions of how our houses and technologies should look to have a better atmospheric future. It asks: in an age of hyper-capitalism, what does it mean when our solutions to crises also unfold in the same capitalistic fold that generated those problems to begin with?

2. *Privatising Air* underlines the transformation of air from the domain of the common to the private. As the smog makes the transparent and invisible air dangerously tangible, the present catastrophe—generated by overproduction and overconsumption—forces us to think about the air as a resource. By exploiting and exhausting the common natural resources, capitalism comes full circle. As a philosophy that advocates privatization, it has led to a condition in which even clean air became a commodity, consumed through air purifiers and face masks to those who can afford them. As viewers walk through a labyrinthic space to hear the audio, they go through a suffocating experience familiar to many of *Delhi's* residents.

3. *Elevator from a no man's land* is an attempt to experience the everyday where air moving upward gets stuck within our lived experience of suffocating reality. At times intense, this suffocating experience brings confusion; an unidentified territory where ownership and responsibility disappear, pushes the viewer to a no man's land. Yet, it is given the impression of being on an upward journey, where prosperity and clean air is in abundance. Here, the elevator movement containing trapped air of one's breath opens up many readings of the human condition in such an environmental era of ours.

Repeatable Insights |
Designing for climate responsibility: *Warriors Moms* design direct experiences that act at a personal level to make the public more responsible towards those collective decisions that contribute to polluted

air. Here, experience is used as a dialogue that brings visitors to reflect on the importance of something invisible like air.

Interview | *Warrior Moms*[213]

Author Question | *From your project, what is the most impactful method, process, or narrative that has directly or indirectly emerged?* *"Know Your Rights"*, an interactive project by *Warrior Moms* combined the concept of "attuned sensing," created by *Spanish* architect and academic *Nerea Calvillo*, with practical activism. It responded to the growing apathy and lack of information among the public, and identified the need to educate and empower citizens with knowledge about their legal rights when confronted with activities contributing to air pollution and to encourage them to take proactive steps. Methods included the use of *Interactive Kiosks:* The *"Know Your Rights"* kiosk provided a step-by-step guide on identifying activities contributing to air pollution and the legal avenues available for reporting and addressing them. *Real-life Testimonials:* Visitors were encouraged to write on postcards addressed to the *Central Pollution Control Board* their experiences of how air pollution has affected their children's health, emphasising the urgency and significance of the issue. *Takeaway Materials:* Participants received pamphlets detailing their rights concerning air quality, guidelines on reporting violations, and steps they can take at individual and community levels to combat air pollution.

Author Question | *Can you explain why you think this is impactful, for what audience and/or context?* *"Know Your Rights"* was impactful as it called attention to the duality and paradox of air's omnipresence and its simultaneous invisibility. The project converges the abstract, sensorial relationship we have with air with the tangible actions we can take to protect it. By using an interactive kiosk—which was set within a larger public art initiative—the project effectively engaged diverse audiences, from concerned parents to curious youngsters, to think about the air that we breathe and what drives it to be toxic, even when it is ephemeral, invisible, removed from our consciousness.

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[213] Indian campaigners advocating for up to one billion children affected by climate crisis | Carrington, D. (2022, November 11). "Put kids first": India's Warrior Moms fight for clean air at Cop27. *The Guardian*. https://www.theguardian.com/environment/2022/nov/11/india-warrior-moms-cop27-egypt-climate

The project was lauded for effectively raising awareness and prompting the audience to pledge their support to combat air pollution, while mobilising attention to micro-encounters we have with the atmosphere. As a result, many visitors, previously unaware of their rights or the extent of the problem, left the expo with a renewed commitment to ensure cleaner air for their families and communities. The core concept of combining sensory awareness, legal literacy with actionable knowledge is universally applicable. Whether it's water conservation or reducing plastic waste, such an approach—i.e., informing citizens of both their sensory relationship and their rights and responsibilities towards it—can be reproduced in other contexts effectively.

Author Question | *What were the key lessons from your project/ experience that others can build on/learn from?* 1) Combine sensory awareness with actionable knowledge: as demonstrated by *Warrior Moms*' projects, understanding a problem at a sensory level and having tools to address it is a potent combination. 2) Personal narratives drive engagement: Personal stories, like those of *Warrior Moms*, deeply resonate and can motivate people to act. 3) Empower through education: Giving individuals the knowledge about their rights and responsibilities can drive community-level change. 4) Visibility isn't always reality: Just because something isn't immediately visible (like air quality on a seemingly clear day) doesn't mean it isn't affecting us profoundly. 5) Embodied connections are vital: Recognizing the physical, emotional, and sensorial relationship humans have with their environment can lead to deeper engagement and awareness. 6) Challenging perceptions and norms: Art and discourse can be powerful tools to challenge ingrained perceptions, making the invisible tangible. 7) Interconnectedness is key: Our environment, health, economy, and our existence are interconnected; understanding these interrelationships can lead to more effective solutions and narratives. 8) Speculative futures as motivation: Imagining both positive and grim futures, as a result of our current actions, can be a compelling motivator for change.

Bacterial resistance technologies have been colonized by militarist narratives. Microorganisms are regarded as enemies, the entire world undertook a "war against the invisible enemy"—the SARS-CoV-2, the body is seen as a battlefield, and the immune system is a supposed military intelligence, an idea that insults the intelligence of the living. **Credit |** Juan Diego Rivera.
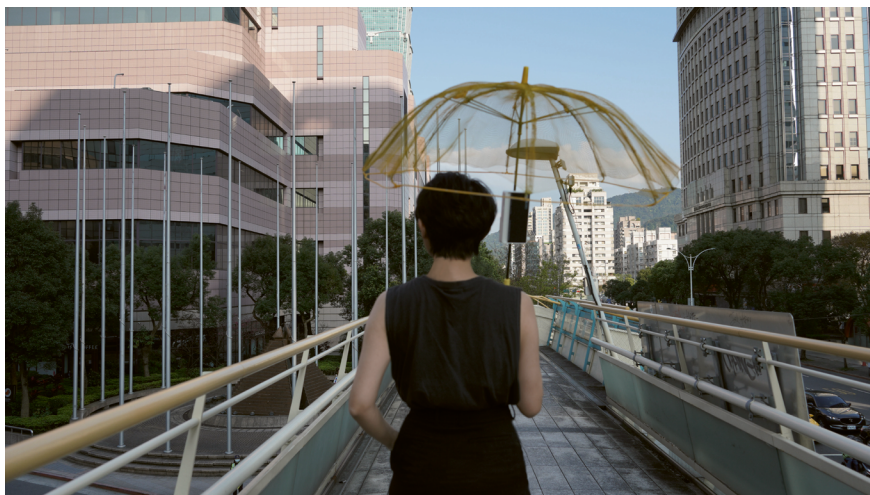
Bacteria, which have been here long before us, have developed amazing technologies of distributed communication and self-organized collaboration. Large numbers of microorganisms can act in unison without any leader and their ability to communicate with other species also allows them to easily relate, skillfully responding to any situation in their environment. **Credit |** Leslie Chi.

The Sheffield Wheat Experiment re-imagines alternative grain economies through hand growing, harvesting, and processing a population of wheat for and of Sheffield. **Credit |** Images courtesy of Ruth Levene, The Sheffield Wheat Experiment.

The S.W.E. sees itself as an invitation to… care, share, tend, notice, connect, challenge, change our status quo toward food, through our relationship to wheat and thus food. **Credit |** Images courtesy of Ruth Levene, The Sheffield Wheat Experiment.

The entire process of *The Sheffield Wheat Experiment* celebrated the community and individuals who carefully grew their grain, a powerful project about preservation and empowerment not "quantities and finance". **Credit |** Images courtesy of Ruth Levene, The Sheffield Wheat Experiment.

Documenting the excitement of the mundane, of baking sharing knowledge & learning new skills. These everyday actions do so much more as they unite people, embody health, material provenance, and our relationship with the natural world. **Credit |** Images courtesy of Ruth Levene, The Sheffield Wheat Experiment.

Ruth Levene (originating artist of *S.W.E.*) has been working with bakers from Sheffield and Nottingham including Miranda Macdonald to experiment with the Sheffield wheat to produce a 100% Wholemeal Sheffield Loaf. Loaves made by Kimberley Bell. **Credit |** Images courtesy of Ruth Levene, The Sheffield Wheat Experiment.

The *S.W.E.* sees itself as an invitation to…care, share, tend, notice, connect, challenge, change. **Credit |** Images courtesy of Ruth Levene, The Sheffield Wheat Experiment.

Empowering Children — Empowering children through skateboarding and education. Become a Citizen of *Skateistan* and help support our programs all over the world. Skateboarding. Education. Support. **Credit |** Images courtesy of Skateistan.


Skateistan stretches across humanity, and anybody can be a citizen. All you've gotta do is dig what we're about, and believe that everybody—regardless of spiritual beliefs, birth country, race, gender, sexual orientation, or push stance—is of equal worth. **Credit |** Images courtesy of Skateistan.

A platform where at-risk youth can learn, play & shape their futures. **Credit |** Images courtesy of Skateistan.

End of Engagement as Partnership Section |
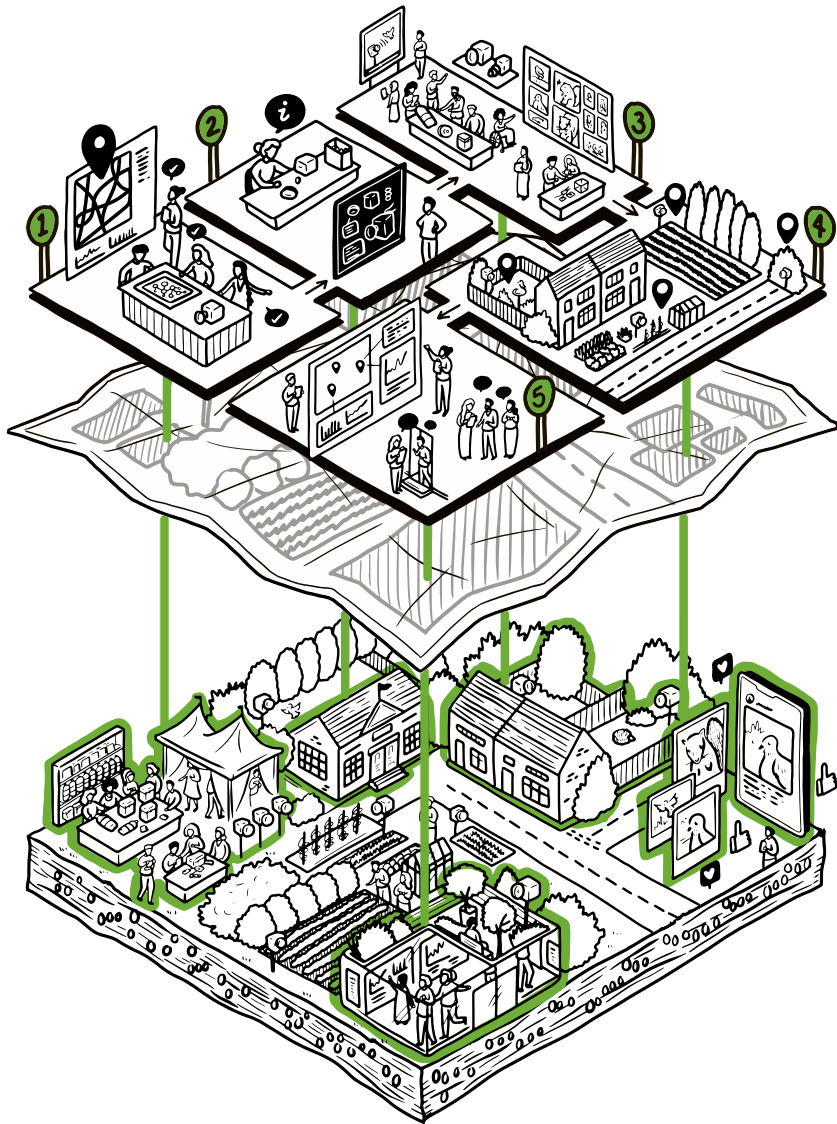
1) Process Conditions *(the initial conditions that can develop the event, e.g., agreement of use, data gathering, place, repair).*
2) Design of the Event *(creating designs using non-expert parts, repairable, codeable, makeable on kitchen table, shared as an approach).*
3) Event(s) that Create Dialogue *(sharing content, training others to use them, adapting designs, leveraging TV audience).*
4) Adaptability to Specific Sites *(changing the location, rewilding, encouraging species, encouraging others, increasing biodiversity).*
5) Process of Legacy *(constantly checking info & seeing people.*

Engagement as Process/Event |

Engagement as Process/Event: A linear or cyclical process, event, or knowledge-to-action type of decision-making.

This typology of engagement challenges how we think of "events" and how they can be designed. Processes and events are a means to comprehend something more complex; they are crafted interactions that help people navigate a particular space or concept. For us, this typology of engagement is often time-sensitive, or transient, and it is built around a context. It might exist for a short period of time, could be described by rituals, or related to a technology that initiates a process, whose use might create something else. Many of the projects we present in this section are location-and context-specific. Some of these activities can't scale or be translated elsewhere, because of the cultural context they were created in. We believe that is not an issue; quite often certain events shouldn't be scaled, as they would destroy the culture and scenario they are created for. Finally, these processes and events of engagement are often carefully curated and considered, and combine different media.

There are often nuances that constantly need further investigation every time a new audience experiences them. For instance, *Lewes Remembers* was a transient event, contextual to its community, which provided a powerful narrative and experience. On the 2017 Remembrance Sunday,[214] nearly five hundred volunteers joined forces to create a unique, highly moving tribute at *The Lewes (East Sussex) War Memorial*.[215] Here, the event consisted of remembering two hundred and thirty-six casualties with an equal number of volunteers of the same age who walked through the streets of *Lewes* to the *Memorial* carrying a flaming torch. Remembering, as a process, involved the entire scale of the population, who participated in the commemoration by witnessing those torches being doused once the casualty's name was announced.

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[214] In the UK, Remembrance Sunday is a day where the nation commemorates the contribution of British and Commonwealth military and civilian servicemen and women in the two World Wars and later conflicts. https://en.wikipedia.org/wiki/Remembrance_Sunday

[215] Lewes Remembers, published by the Imperial War Museum | (2018). *1914-1919: Lewes remembers*. https://www.iwm.org.uk/partnerships/mapping-the-centenary/projects/1914-1919-lewes-remembers

Lewes Remembers was an event designed to create connections with the town's past, by contextualizing it to those living in the present. Despite being an ephemeral intervention, its impact on people was tangible and long-lasting.

Another example is *My Naturewatch,* a project designed to catalyse engagement between people and the natural world with DIY technologies. An openly accessible and repairable DIY camera trap enables connection with nature regardless of location, technological, and/or wildlife expertise. There is no requirement of specialist tools or prior knowledge to assemble the camera. This is designed as a temporal tool to observe nature. Here, technology is a medium that enables engagement aimed at building learning and new relationships with one's surrounding environment, amongst other rippling beneficial effects. Having inspired three million people,[216] the project allowed personal and collective interactions[217] that are impactful at a societal level.

End of Engagement as Process Introduction |

Territory Interview | *Catriona Dejean*[218]

I am the director of Strategy and Impact at the global humanitarian organization *Tearfund*. We work across fifty countries in humanitarian response, community development, and advocacy work with local and faith partners. We collaborate with local church networks and partners. In the past, I worked across environmental consultancy in the commercial sector, for social enterprise organizations on solutions to social issues, on business design, business modelling, and also impact measurement. I also worked internationally on impact measurement, monitoring and evaluation project design strategy, engagement alongside interested parties.

Author Question | *How would you define engagement?* Engagement is not just a point of contact. True engagement is when there is shared purpose or interest where you can go beyond that initial relationship

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[216] The project was a collaboration with Northumbria interaction research studio and The Royal College of Art | Phillips, R. and Matsuda, N., 2022. Engaging design for ecological citizenship: Informing approaches to human–nature interactions. *Journal of Design, Business & Society*, *8*(1), pp.39–68.

[217] Defining interactions that can lead to more interventions in that area over time | Wiese, L., Pohlmeyer, A. and Hekkert, P., 2019, June. Activities as a gateway to sustained subjective well-being mediated by products. In *Proceedings of the 2019 on Designing Interactive Systems Conference* (pp.85–97).

[218] Catriona Dejean, Director of Strategy and Impact, Tearfund | *Our team*. (2023). Tearfund. https://www.tearfund.org/about-us/our-team

of a shared future and work together. It may be engagement around a particular idea, delivering a project in collaboration with others, or it could be engagement on advocacy initiative(s). It is about creating that point of connection, finding common ground.

Author Question | *Do you use any principle, tool, framework or technology in your engagement approach?* You made a comment about participatory engagement or design. In the international sector, for many decades, there has been a focus on participatory development; we want people to participate and engage. Referring to instituted development studies at *Brighton University* from *Robert Chambers*,[219] we see true engagement when you give enough time at the start of processes to ensure key principles. We always start by declaring the principles we want to work together on and how principles will help us guide our work. Social contracting is really important too; this is because as you go through any process, you come back and say: this is what we said at the start. You can use it as framing, providing parameters and boundaries applicable in any context. We developed a framework looking at holistic transformation in communities which started on collaborative principles. Before you get into details, get that common ground to move forward.

Author Question | *Can you describe how do you move from participation to engagement? Do you design events or processes?* For true engagement, you have to move beyond concepts, to actually having prototypes and something people can work around. We created *The Light Wheel*[220] [M&E practitioners from across the sector, academics and anyone who is interested in measuring change holistically]. We have a role in facilitating, and what we do is contextualize that framework. What has shifted is being able to get people to see and feel what it is, then bringing champions into the process as well. Along the way we have identified people to roll out concepts, provided training, and made sure they can attend those sessions, i.e., a snowball effect. It's about being courageous, getting something out there, and testing it with people who are and [aren't] supportive. Having the right people on that journey is critical as they are the champions and earlier adopters.

Author Question | *Like narrative, languages stem from cultural challenges of understanding, and how we communicate. What do you think best practice should look like? Or include within this sort of engagement*

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[219] *Robert Chambers: University of Sussex*. (2023). https://www.sussex.ac.uk/profiles/450
[220] *Tools and guides: The Light Wheel*. (2023). Tearfund Learn. https://learn.tearfund.org/en/resources/tools-and-guides/the-light-wheel

context? As we are learning, quite often you want feedback from a concept. An example is when we run workshops in *West Africa*, and we were planning for inclusion and agency with language; we set this from a global *Northern* perspective. Community partners stated that word [agency] didn't resonate with them. Or, if we translate it, it doesn't make sense. So, we collaborated to find workarounds. If you are trying to demonstrate, or explain, how change happens, use something that is contextually relevant. If you take a gift to communities and state that this is something that should be built appropriately by learning from other cultures and contexts, it means bringing something you want to create, build, and learn together. You need to foster a conversation; sometimes we get caught too much in "the needs". Everyone has needs, and this is where engagement is helpful because you can say: what is the problem we're trying to solve together?

Author Question | *What systems or conditions are more likely to foster engagement with different communities?* It is interesting in this humanitarian setting where we have to respond quickly, and communities are affected themselves. In these times of crisis, and we saw that over Covid, churches (particularly around the world) just sprang into action, and engaged with their communities. In that situation they already had strong relationships and communities were already established to engage with existing elements of trust. The conditions of engagement require trust and relationship building, sometimes that can take years. The longer-term game is recognizing who your key partners, stakeholders, individuals, and networked groups are as parts of "solution(s)", and you may not be directly working with them. If you build those relationships, you build those contacts; so, when you need that engagement, it's much easier to go in with traction, reputation, and a sense of understanding.

Author Question | *What role can design for engagement play to tackle complex challenges?* For systems thinking, you can't just go down a singular linear way of thinking, as the whole concept of collaboration is huge. Sometimes collaboration is misunderstood or used in different ways. Collaboration can also have some gritty, real, and hard conversations as you go through it, because you're grappling with difficult topics. If you're bringing multiple diverse people into that space, you want to get the right answers. If you are entering into design for engagement, you need to be willing to take on different views, be able to balance them, be able to negotiate, navigate through them. That comes down to very good leadership. You need to navigate grounded theories, lived experiences, and

experiential data. It's a complex challenge and, [because it's] complex, it requires different ways of working.

End of Interview |

Engagement as Process/Event **001** | Lewes Remembers[221] |

Keywords | #war_memorial, #active_participation, #lived_experience, #enduring_memory

Lewes Remembers is a vigil performed by nearly five hundred volunteers from the *Town of Lewes*,[222] with the support of the seven *Lewes Bonfire Societies*[223] and *Town Hall* staff. A fully immersive commemorative experience, it was "hand-built" by volunteers from the ground up, remembering fallen service people. *Lewes* is a town at the heart of rural *Sussex*, in the *United Kingdom,* whose medieval streets, old *English* churches, and tiny twittens (*Sussex* word for alleyway) allow visitors a glimpse into bygone times. The townscape is overshadowed by Norman castle remains, it is home to the townhouse of *Anne of Cleves*[224] (fourth wife of *King Henry VIII*), and of a market of independent retailers of subtle aromas wafting from *Harvey's Brewery*.[225]

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[222] Lewes Town – Visit Lewes. (2019). https://www.visitlewes.co.uk/explore/lewes-town

[223] Hugs. (2005). Southover Bonfire Society. Southover Bonfire Society. https://www.southoverbs.com/

[224] *Anne of Cleves House – Sussex past*. (2023, November 3). Sussex Past. https://sussexpast.co.uk/attraction/anne-of-cleves-house/

[225] *The Best of Sussex | Harvey's Brewery*. (2023). https://www.harveys.org.uk/

The town was the stage and home of revolutions; its citizens commemorate the burning of martyrs at the stake (1555), *Thomas Paine*[226] and the infamous annual 5th of November "bonfire celebrations" commemorating revolutionary freedoms. These acts of remembrance honour those who serve defending our democratic freedoms and way of life across faiths, cultures, and backgrounds.

To commemorate the lives of two hundred and thirty-six men and women who sacrificed their lives in the First World War, including those serving the Armed Forces, *Brigitte Lardinois* (Fellow at *LCC*),[227] working with *Tom Reeves* and *Tania Osband* (owners of the *Edward Reeves Archive*[228]) created the commemoration by engaging two hundred and thirty-five men and one woman. At November dusk, these volunteers left the homes to march silently with blazing torches through the streets to converge on the *War Memorial*, where the fallen soldiers' names are recorded. Torches were carried through *Lewes* streets commemorating two hundred and thirty-six residents who died during the First World War. These people matched in age with those who had died; leaving wherever possible from the homes they left, they marched silently with blazing torches through the streets to converge on the war memorial.

The *Lewes* War *Memorial* remembers approximately three hundred and fifty local casualties. *Lewes Remembers* commemorates them with a vigil engaging the local population in actively making the memory come alive. In some cases, the ordinary foundry workers, farm labourers, clerks, and teachers were commemorated by members of the families who walked in their name and distinguished themselves by yellow instead of red arm bands. Where more than one person in a family died the men doused their torches together. The vigil was the result of a common effort coming from grassroots approaches; it was disseminated in a film directed by *Tony Dowmunt* and *Mick Hawksworth* premiered in the local cinema, and an exhibition covered by the *BBC* and social media. It was recorded in still photographs by Tom Reeves of Edward Reeves Photography, whose archive also provided photographs of a number of the original WWI servicemen.

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[226] Thomas Paine, an English-born American Founding Father, political activist, philosopher, political theorist, and revolutionary, author of *The Rights of Man* (1768–1774).

[227] https://researchers.arts.ac.uk/558-brigitte-lardinois

[228] *Archive — Edward Reeves Photography*. (2005). Edward Reeves Photography. https://www.edwardreeves.com/archive

"I was impressed how everybody stood, how everybody stood properly. They didn't fidget around, because I'd said, 'No phones' throughout it… I thought that would be a thing, but there wasn't a phone visible through the whole thing. Everybody just stood. That was because you felt the pressure to stand or because people found it so engaging? I think the fact you can't describe why you stood, and you were engaged says it, in a way, in that the whole event was the reason you stood and you didn't fidget. I thought I'd have to go along the rows and quietly remind them, but they weren't even talking to one another. Nobody talked to one another." *(Excerpt from Author-led Interview)*

Lewes Remembers is an *Engaging Design* process that inclusively involved and stimulated the *Lewes* community in responding to a time-sensitive event, by taking an active role. Through a designed and organized process, anyone had the opportunity to volunteer, observe or participate. The everlasting impact is how people connected with the individuals they were commemorating, and the depth of emotion that they felt, long after the event was over.

"Once I extinguished my torch, I heard my child cry out 'daddy' and it felt like it was the last time I was going to see them… it caused me to emotionally break down… a truly powerful moment and deep engagement." *(Excerpt from Author-led Interview)*

"The 360 men of *Lewes* were brought back to life by *Lewes Remembers*, a small group of local people, including our historic bonfire societies, who meticulously researched each of the men and their families. As each name was read out, one man stepped forward and extinguished his torch. It was done with immense dignity and was unforgettable." *(Excerpt from a speech made by Baroness Kay Andrews in the House of Lords on 5 November 2018)*

Repeatable Insights |
Designing for direct and inclusive participation: In this project, anyone was able to directly participate regardless of the role, as the event was open and free for the local population, regardless of pre-existing skills, status, or standing.

Designing for a location: This was a site-specific project; it took heritage and history as design materials for creating the legacy of an historical event by directly engaging the local population*.*

Design for community ownership: The entire event was designed to be built and owned by the community that it represented. It relied on the links the community was familiar with.

Engagement as Process/Event **002** | Across and In-Between[229] |

Keywords | #political_borders, #memories, #co-creating_experience, #identity_awareness

Created in collaboration with communities in Ireland from both sides of the border, almost one hundred years since the Partition, *Across and In-Between* explores the profound impact the border has on the lives of people living there during a time of intense international focus around Brexit. Co-commissioned for the *14–18 NOW*[230] and *Belfast International Arts Festival*, this project amplified voices and experiences of border residents through words, imagery, sound, and performance which gave them the opportunity and agency to reclaim the landscape around them. *The Yellow Line* worked across five rural regions where the borderline between *Northern Ireland* and *Ireland* is indiscernible.

Residents engaged in the playful construction of unique "actions" expressing their various sentiments and hopes for their region's future. Activities were filmed, resulting in a three-screen projection made with farmers, horse-owners, scouts, hikers, and villagers from communities across *Fermanagh, Donegal, Leitrim, Cavan,* and *Monaghan*. *Across and In-Between* generated a response by over three hundred border residents interrogating a line on a landscape with a collective, metaphorical act of "drawing and erasing".

At the height of the Brexit crisis, one hundred and fifty people arrived at the Northern Ireland's Parliament Buildings, *Stormont*,[231] for a *Border*

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[229] Acknowledgements | Creative collaboration between; Suzanne Lacy and Cian Smyth with Helen Sharp, Garrett Carr, Eva Grosman, Helen Sharp, Helen Sloan, Pedro Rebelo, Mark Thomas and Soap Inc.

[230] *14-18 NOW – WW1 Centenary Art Commissions*. (2019, March 26). 14-18 NOW. https://www.1418now.org.uk/

[231] *Parliament Buildings, Stormont – Belfast*. (2019). Discover Northern Ireland. https://discovernorthernireland.com/things-to-do/parliament-buildings-stormont-p676201

People's Parliament. Guests were part of a carefully staged event, their opinions were recorded in Parliamentary committee rooms and their photographic portraits captured. Over dinner, they participated in drafting *"The Yellow Manifesto"*, a true account of a border and its people, launched on the *BBC Radio 4 Today* programme. The nine points this manifesto[232] covers are: empathy, peace, codes of conduct, jurisdiction, beauty, knowledge, respect, and more. It demonstrates the care, compassion, and collaborative nature in how the work was created, deployed, and documented.

Repeatable Insights |

Designing for enduring memory and collective identity: This project creates engagement by getting people to collect and discuss their memories; these leverage the co-design of an experience that has the objective of uniting two politically divided communities.

Interview | *Cian Smyth*[233]

Author Question | *From your project, what is the most impactful method, process, or narrative that has directly or indirectly emerged?* Apart from curatorial motivation, we were agenda-less in collecting wide lived experiences. It was a very noisy media landscape and our process was very much driven by conversations through the entire process. We wanted to provide the people we engaged with a platform for expressing their views without any mediated editorialism. As the Northern Government had collapsed, we ended up securing access to the Parliament Buildings, *Stormont*. There was an idea to bring the three hundred, or the one hundred and fifty people we had engaged with throughout the process up to *Stormont* for a designed formative experience, but we ended up steering them through an experience which included a tour of the building.

We broke them down into groups of sixteen and assigned them to certain committee rooms where the *Scrutiny Committees* are usually held. We used the parliamentary broadcast TV to record the conversation they had around that table, as if they were like elected officials. Their answers to those questions became the manifesto which we then brought to the *House of Parliament* in *Westminster*; *Suzanne* handed it out to the chair of the *Northern Ireland Select Committee*. It was fascinating to have a

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[232] *The Yellow Manifesto – 14-18 NOW*. (2018, October 23). 14-18 NOW. https://www.1418now.org.uk/commissions/across-and-in-between/the-yellow-manifesto/

[233] *Cian Smyth*. (2023). https://www.churchillfellowship.org/ideas-experts/fellows-directory/cian-smyth/

couple of hundred people from the border sitting in our *Parliament*, and having a conversation in a time when our Parliament of elected officials had collapsed. For the massive ongoing international debate on the border, this experience was massive. At the end, what did matter is how those people felt being listened to in that place [*Stormont*].

Author Question | *What were the key lessons from your project/ experience that others can build on/learn from?* Everybody was already being very serious about it, and people were becoming exhausted with it as well. It was almost like a pandemic situation, and it was constant.

Everybody in the world had an opinion on it, and we were being broadcast on an early basis and on a minute-by-minute basis on social media. Going into the core purpose of our project, we explored their lived experience of their own place and the relationship to the land. In this regard, we needed to be respectful of the fact that they loved where they lived. What was key to us? We were exploring people on both sides of the border.

Furthermore, people are not necessarily prone to reveal local histories or secrets because they become known as the one who published that story amongst their neighbourhoods. The issue of playfulness came up quite early; this is when *Suzanne* introduced me to her work and her mentor's work, *Alan Capro*. This is where the *Yellow Line* comes from. We wanted to have a playful act to disarm the conversation which was not opinion-led; we already knew that people were going to have multiple opinions about it. Furthermore, we were not there to legitimize or delegitimize any of the opinions. *Suzanne* and I were not looking to enfranchise a good or a bad answer about the border. We were there to try to facilitate the entire conversation, to come out transparently and openly in a trusting way. The playful approach was in being both verbal and not, and to respect people's love for their place with the things that they do to create an environment where people work together. We hoped to build a collective trust whereby we could have complicated conversations by the time we were in *Stormont*.

Engagement as Process/Event **003** |

SPARK |

Keywords | #sustainable_transition, #fireworks, #tradition, #imagining_ uplifting_futures

SPARK illuminates the city by providing a sustainable alternative to communal celebrations that celebrate the visual power of light, whether in the context of events such as the Olympic Ceremonies, New Year's Eve or Bonfire Night. Designer *Daan Roosegaarde* and his team have the mission to connect people and technology, and enhance landscapes through imagination. Internationally known designs include: *"WATERLIGHT"* (a virtual flood that shows the power of water), *"SMOG FREE PROJECT"* (the world's first largest air purifier that cleanses smog and can turn it into jewellery), and the *"SPACE WASTE LAB"* (visualizing and upcycling space waste).

SPARK is inspired by the magical light of fireflies, and the desire to update the ritual of fireworks in more sustainable practice. Hence, *SPARK* is a poetic performance of thousands of biodegradable lights which organically float through the air. It inspires visitors who wonder and reflect, as a consequence of the experience.

"[SPARK] is visual poetry in motion, purposefully designed to invoke feelings of interconnectedness between humans and nature." *(Excerpt from Author-led Interview)*

SPARK's approach stands as an example of an environmentally-friendly future, that is pursued and celebrated through the interconnectedness between humans and nature and traditions.

Repeatable Insights |
Designing for imagining sustainable life practice: SPARK presents an example of moving the industry of fireworks to more sustainable practices, by maintaining the tradition of events of this kind and inspiring millions across the planet.

Engagement as Process/Event **004** |

After the End[234] |

Keywords | #grieving_rituals, #light_installation, #direct_experience, #creating_meaning_for_loss

After the End is a public installation in *Green-Wood Cemetery's Historic Chapel[235]* dedicated to contemplating loss in all forms: the loss of loved ones, relationships, health, and worlds we once knew, as well as the practices that have helped us endure. This includes engaging communities through acts of "remembrance", or memorial artworks, that face topics that are complex to be designed, as they are imagined in certain ways that relate to faiths, ceremonial acts, or local traditions. Artists *Candy Chang* and *James A. Reeves* approach the subject as an anonymous shared experience on a scroll that is placed upon an illuminated altar.

Lit from within, each visitor's contribution is reminiscent of a devotional candle and, with others, they create an evolving field of light. Through this installation, visitors read handwritten reflections in the altar, or sit in the apse watching an ever-growing cycle of projected reflections above oriented towards the greater community. Overall, the architectural space gathers the multiplicity of ways we weather the difficult transitions in our lives. Influenced in equal parts by religious ceremonies and science fiction, artists *Chang* and *Reeves* have created a public ritual that contemplates any loss through a simple format, including paper and pens prompting: "Describe your loss. What comforts you?" With *After the End,* the artists offer a temporal and spatial refuge, reminding us we are not alone as we mourn the end of one reality and enter the next.

Indeed, the experience of dealing with loss is collective and personal, as visitors roll up the sheet of paper with their thoughts to insert it into an

[235] *Green-Wood – National Historic Landmark in Brooklyn, NY*. (2023). https://www.green-wood.com/

illuminated grid of circular openings. Following this, written texts taken from the anonymous submissions are projected on the ceiling. The over 5,000 letters describe what rituals and practices comfort visitors: *I swim laps like he did… I eventually forgave you and now I feel lighter… The grief comes in and out like radio static… I am in recovery. I will find my way back… Trees comfort me. Faith exists in these hills… I bought a turntable and began to go through my father's record collection, his musical legacy…*

Hence, *After the End* provides a place for anyone suffering loss, or battered by contemporary life, to mourn, meditate and, perhaps heal a little. This project contributes to discussing the increasingly alienating world we live in.

Chang comments, "I'm inspired by the mashup of many beliefs in most temples in Taiwan. We wanted to inject this sublime, Gothic-style chapel with a modern ritual that speaks to the pains of our age. It's an experiment in emotional infrastructure, a public space to commune and learn from one another about the most difficult experiences in our lives."

Repeatable Insights |
Designing for rituals: This project designs a multi-layered experience integrating visuals and sound to support visitors in creating a personal and collective ritual of mourning.

Designing with emotions: The design of this event leverages human emotions as a catalyser of a temporal and spatial experience of healing.

Designing for complex and difficult conversations: In this project, rituals are used to help people engage with difficult life events and conversations, through a mediated experience designed through crafted actions.

Engagement as Process/Event **005** |

Seed Exchange[236] |

Keywords | #seed_exchange, #everyday_experience #trading_seeds, #agriculture_literacy

As a design practice, *Something & Son* (*Andy Merritt* and *Paul Smyth*) explores social and environmental issues via scenarios developed from everyday activities. Intersecting the boundaries of visual arts and architecture, the duo engages with activism motivated by social issues. By challenging something that is familiar, their installations, sculptures, and public performances intend to build communities, create new ecologies, and force a reappraisal and understanding of some of the biggest social and environmental issues of our time. Their work makes the audience rethink the notions of physical and social structures including farm shops, restaurants, churches, shrines, bathhouses, jewellery stores, factories, fashion stores, recording studios, and the stock exchange.

In *Seed Exchange,* the artist duo takes the same techniques used by the stock exchange to make a statement about capitalism and its approach of reducing the planet to a commodity. The work is centred on seeds, as givers of life, which are used as a means to reverse stock exchange agendas on the environment. The project engages and empowers participants by carefully considering "bibs" as a relinquishing control tool. Bringing their own seeds, participants write what they trade and the seeds they would like to receive back on the trading bib front. By asking people to trade their seeds, the artists intend to raise awareness and protest against large seed companies like *Monsanto*—an *American* agrochemical and agricultural biotechnology corporation—who have attempted to patent seeds and stop farmers saving them from the year's harvest. Indeed, with the patent, the company can push farmers to buy seeds from them every

year and disempower anyone they view as a threat to the capital value of a seed.

Hence, *Seed Exchange* draws attention to this issue by positively encouraging communal seed exchanges, where seeds are the currency. Furthermore, it highlights the human need to connect to nature, whose value is well documented as it contributes to human health and well-being. Planting and exchanging seeds allows people to learn about fauna in all its forms, including how to cultivate and cut it to best spread the benefits of preserving species. Hence *Something & Son's* project raises literacy on natural processes by designing processes for engagement that stimulates participation and agency.

Repeatable Insights |

Designing for climate activism: This project designs a process for engaging citizens in understanding what actions can shift power and increase justice. By raising awareness on a specific topic, this project enables people to develop knowledge they can use to identify actions.

Interview | *Andy Merritt*[237]

Author Question | *What lessons would you share with others from the project?* It was on a design level, highlighting how simple things can be. Providing these bibs gave people agency by making them feel included in this event. Everyone knew who was part, or not. It broke down barriers very quickly, and people just started trading and talking to each other. That is what a community tends to be. In the past, we have done a lot of work around these interest-based communities, like *Make University* where everyone makes, which is a project we completed at *Somerset House* in *London*. As everyone is in this space, everyone knows they make, and that there is this common thread of making in some way. There is a starting point of conversation, which means that people go through a process, and try to manage this community. We prefer to create the foundations of the project, and then allow people to build off that.

It normally takes place in a physical space that those people might literally be building on the foundations. With *Seed Exchange*, it was the bare minimum. That was one of the things we learned; I realized how simple

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[237] Something & Son explore the social and environmental issues that define our time via everyday scenarios, criss-crossing the boundaries between the visual arts, architecture, and design. | *about — Something & Son*. (2015). Something & Son. https://www.somethingandson.com/about

it can be to bring people together. You get your head deep into a current project and sometimes you forget the things you have actually done using processes that allow people to create these communities. How do you create communities in huge cities is the biggest challenge as you need something in common to talk about. People naturally come together, and I don't know where all those conversations were going with the *Seed Exchange*; I bet they started with seeds, and then, before you know it, you talk about wider things. It's the common thread and starting point for conversations.

Author Question | *What do you think are the characteristics of how we should be designing to engage communities, institutions, and others for transitioning to more sustainable means?* It is the power of the everyday. I don't think engagement should be this thing that you have to engage at certain points of the day, or you go to a location to engage in the subject material. It should be part of our everyday life, and this is where I think you are actually creating some popular change. Like a lot of protest movements (so middle class), because the middle classes have the time to do that. The key point is that you tried to create change on an everyday experience, which is what we have done in a lot of the projects on the High Street. They might be funded, they might be an art project, because it surrounds the person that visits or preferably uses it. I think that's the key to change, just creating these everyday experiences.

Engagement as Process/Event **006** |

Group-Think |

Keywords | #social_injustice_demonstrations, #education, #practical_learning, #non_violent_public_participation

Group-Think is an educational programme aiming to expand current school curricula with training on non-violent civil protest, first aid and collective intelligence. Through a variety of activities, including physical exercises stimulating patience, violence prevention, and negotiation, responsibility amongst others, the programme aims to develop the students' individual and collective political agency, by empowering them in understanding how to express their voice in the public domain. By preparing students to be activists in social life through non-violent actions, *Group-Think*

educational programme is designed to tackle social injustice, care, and solidarity through engaging people in safe protests as a collective of individuals who have consciousness of their personal responsibilities. This is achieved by integrating sport activities as part of the training to learn how to control impulses and engage more in reflective thinking processes. This programme was founded by *Stine Marie Jacobsen*, a conceptual artist whose practice focuses on violence prevention through participatory practice. *Group-Think* is also a book presenting exercises stimulating crowd movements and collective sensitivity. These exercises have been tested in eight schools in *Marseille, France—Collège Louis Armand, Collège Vieux Port* and *Lycée Périer*; circus artists *Sophie de Castelbajac, Pamela Pantoja,* and *Andrew Graham* from the *National Circus Centre Archaos*—as part of *European Nomadic Manifesta 13* in *Marseille*.

Repeatable Insights |

Designing for non-violent activism: This project leverages education as a means to design a training programme building non-violent forms of public participation.

Designing for collective intelligence: This project intends to shift the negative connotation of mass participation to engaged expressions of democratic participation that are guided by a sense of care, solidarity, and justice.

Interview | *Stine Marie Jacobson*[238]

I never create my artwork alone. *Group-Think* was developed following an invitation to collaborate by the educational team consisting of *Yana Klechuk, Joanna Mobile,* and project manager *Prima Vera*, who asked me to develop a school project. It manifested in *Marseille*, in the south of *France*, a city that's super political. In recent years, it has been through huge inequities and, when I was invited, I noticed the class difference immediately. However, I didn't want to make anything that "Band-Aids" the problem.

I visited different schools in *Marseille* and talked with 80[+] school students and asked: What do you want to do with an artist? Half of the group shouted sports, and the other half said they wanted to work on political issues, like #metoo, #blacklivesmatter, or climate laws, because they were

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[238] Stine Marie Jacobsen is a conceptual artist working to decode violence and law both individually and collectively through participatory means. She lives and works in Copenhagen and Berlin | *Stine Marie Jacobsen*. (2007). https://stinemariejacobsen.com/

already demonstrating in the streets. In addition, as there were students' demonstrations on better educational systems, I proposed to host a few debates on that. Hence, we put the two wishes together: sports and protests. Going back to *Berlin*, where I'm located, I read a report from *The Berlin Centre for Protest Movements*,[239] which surveyed thirteen different *European* countries on how school students mobilize young protesters.

Group-Think is a set of sports exercises that are focused on swarm ideologies, for example, how we behave when we are in a crowd of people, e.g., how we are safer together when we notice each other and are more aware of consent. *Group-Think* specifically invites young students in schools to try this. I asked a lot of people to help me build exercises, which the students tried. Following this, I asked for reflections on the way the group behaved, which led me to modify the exercise they just tried, or write a completely new one. It's been going on since 2019. And now I have other trainers who are nineteen years old. They say teachers have such a hard time to not [take an] Alpha approach saying, do this to solve it quickly.

The term *Group-Think* comes from an expression that *Irving Janis* coined, when he wrote a book called *The Victims of Group Think*.[240] They always talk about the group as something stupid, dumb, or ignorant, i.e., the masses are not to be trusted, as they will behave irrationally. *Group-Think* is a term used a lot in collective intelligence, like in civic science and collaborative situations. It happens when we try to please the group too fast. A good example is when one person in the group says: "I like ice cream," another person says: "I like t-shirts," then the third person says: "Let's put ice cream on the t-shirt." In that situation the group thinking is actually a negative term, as it leads to quick conclusions. So, *Group* dash *Think!* This is why the dash is so important, and playful from my side. The dash says, let's work with group thinking.

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged?* I [had] been trying to make projects that people really want to do, but they were too complex. You had to have a trainer educated in pedagogy used to reading long boring protocols; *Group-Think* is more like a *TikTok*. It's very digital in its nature, you can read it, and then you get it immediately. We managed to

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239 Sozialforschung, H. I. F. (2023). *Hamburger Institut für Sozialforschung: Special Collection Protest Movement*. https://www.his-online.de/en/archives/holdings/special-collection-protest-movement/

240 Argyris, C., 1974. Victims of groupthink. *Sloan Management Review (pre-1986)*, *15*(2), p.103.

encourage co-authorship very quickly. I think there is this idea that people either love the collective intelligence part, or they love the aspect of protest; this depends on in what country it takes place.

Author Question | *Can you explain why you think this is impactful? And for what audience, and what aspect can be reproduced in other projects or content?* It has been presented internationally including a circus (*Our Chaos*) in *Albania*; here, it was really important to go to the streets and protest. Then it came to *Denmark*, (my home country) and people were a bit worried about protesting because, for many, protesting is connected with something negative. I also worked with law/lawyers to think of the right to assemble, and the right to speak your mind in public, to show your government what you think is critical. But gradually and naturally, the focus went to the collective intelligence aspect. The project was also in *Russia*, and it was supposed to go undercover because some young activists wanted to do it, but it actually got cancelled. The young activists in *Russia* were supposed to rewrite it, and it would have been an undercover project, like collective intelligence. But then the situation changed with the war in *Ukraine*.

For years, I was told by curators to be careful with giving it away, because I would lose the "art project". Indeed, conceptual artwork(s) has its limits, but you also have to trust the intelligence of the people who are using it. It is okay to have a generous approach to knowledge and interpretations of a project, especially because it goes under participatory design. It is the moment we, as the initiators of *x*, have to know that you also have to let it go, so that people can analyse it. The critical point is that not all countries have the same right to protest and right to assemble; to be effective, the book would have to change the legal aspect as it was produced under *French* laws. Ironically, around the world, there is a tendency to believe that in *France* our rights are taken away from us. Of course, it is never great to see protests become violent, but this is not a reason to take away human rights to assemble.

Author Question | *What insights do you want to share that people can build off or from?* 1) Active listening leads to more plural projects in the sense that they are co-created. This is very important. 2) Conflict analysis tools are important for artistic or design work, because we have to analyse where we are working to know who we are producing for; conflict analysis tools can also be used in interest conflicts. If someone is asking you to do something, you would reply: Where? What? What is this? Who are you to go there and do something? 3) Teamwork is everything, even though it

sounds so cliché. We have to train teamwork skills as it is very important for me as an artist, but also as a teacher. How can you work with people, even those you don't like? Transparency should be included on the list. 4) Knowledge is never finite; what I mean is that people can throw anything into the cake or the soup. It is just becoming a really fun soup or cake, and then the whole cooking process becomes much more interesting. My designer said: "Your artwork is like a note, it connects a lot of other things, it is really a decentralised artwork in the end."

Author Question | *Is there anything you haven't said, but wanted to share?* How can we really make this project open source? I put it on *Massachusetts Institute of Technology* (*MIT*)'s co-publishing site called *Pop*.[241] However, I think maybe a *TikTok* would be much more efficient. Talking is great, but, for this type of project maybe a *TikTok* channel would just be the best for *Group-Think*.

Engagement as Process/Event **007** |

My Naturewatch[242] |

Keywords | #observing_nature, #DIY_camera, #create_content, #rewild_with_nature

My Naturewatch is a design-led project that responds to the fundamental role that nature has for us humans in terms of healthcare, sustainability, air to breathe, knowledge, risk, childhood development, resilience, behaviour change, and so much more. Indeed, nature is often referred to as "the natural health services".[243] However, spending lasting and meaningful time in nature requires intentional activities related to everyday life, which

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can unite communities and natural worlds.[244] Hence, the *My Naturewatch Camera;* this was a collaboration between the *Northumbria Interaction Research Studio*[245] and the *Design Products*[246] programme at *The Royal College of Art,* funded by the *EPSRC*[247] to design how to capture pictures of wildlife when it detects movement through an inexpensive camera that people make on "the kitchen table". The project wanted also to align to the interests of the *BBC*'s *Natural History Unit.*[248] Indeed, the *BBC* featured the camera on one of their *Springwatch*[249] broadcasts. Countless units have been constructed using instructions and software from the project website and commercially available components, with over three million viewers and rising. This is because the technology was developed to engage with wildlife through tools that viewers could make at home, with limited or no prior "digital" skill(s).

My Naturewatch was strategically deployed within multiple cultural organizations including, the infamous "rewilding" *Knepp Estate*,[250] *The Wildlife Trusts #30dayswild*[251] campaign (800,000 participants), *Guernsey* high street "take over" for teen photographers within local cinemas, *National Wildlife Trusts, National Wetlands Centres, Kew Gardens, Spitalfields City Farm, The Durrell Trust* and *The Conservation Volunteers UK (TCV).* The scale of the uptake shows the life of the project far beyond the researchers' expectations. This was due to its open-source strategy.

The *Wildlife Trusts'* Director and Head of Policy views technology as a way to engage a more diverse audience in a new "ground-up" approach:

"Without the *My Naturewatch* project we would not be thinking like this and/or encouraging the use of technological approaches within our means." *(Excerpt from Author-led Interview)*

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[244] *Nature Connectedness Research Group*. (2020). University of Derby. https://www.derby.ac.uk/research/centres-groups/nature-connectedness-research-group/

[245] *Interaction Research Studio*. (2020, January). Retrieved October 20, 2023, from https://research.northumbria.ac.uk/irs/projects/

[246] *Design Products*. (2023). RCA Website. https://www.rca.ac.uk/study/programme-finder/design-products-ma/

[247] *Engineering and Physical Sciences Research Council (EPSRC)*. (n.d.). https://www.ukri.org/councils/epsrc/

[248] *The Natural History Unit | BBC Studios Productions*. (n.d.). https://productions.bbcstudios.com/our-production-brands/the-natural-history-unit

[249] *BBC Two – Springwatch*. (2022). BBC. https://www.bbc.co.uk/programmes/b007qgm3

[250] Knepp. (2023, January 5). *Knepp Estate – Knepp*. https://knepp.co.uk/knepp-estate/

[251] *30 days wild!* (2021, June 25). Wildlife Watch. https://www.wildlifewatch.org.uk/blog/thewildlifetrusts/30-days-wild?

My Naturewatch not only opened a tangible space for nature engagement but also it provided lessons for practical repairable projects. It used componentry found in schools and homes, thus creating a design that can be re-appropriated. Whether the authors' intention was to create this project to foster interaction, exploration and engagement, the impact went beyond as it created ambassadors within wildlife and educational organizations. These ambassadors instilled processes of engagement through peers, organizations and their digital networks. For participants, the act of "making" provided inspiration for landscaping gardens and creating ponds and hedgehog superhighways, thus rewilding participants to their community through their private spaces.

> *The My Naturewatch project transformed The Design Museum outreach teams' approach to sustainability:*
>
> *"It opened-up new ways of thinking within the Learning Department on how the museum can collaborate with HEIs on practice-led design research."*
>
> and
>
> *"The course also demonstrated that there is a crucial role for museums to play in introducing contemporary design issues and technologies to older audiences." (Excerpts from Author-led Interview)*

During the Covid-19 pandemic, *My Naturewatch* helped people connect to spaces they could not get to, and supported newly housed refugees to connect with "nature spaces". Indeed, fostering pro-active interest(s) in the natural world was a widespread impact the project developed, which went beyond the initial motivation of "attracting" more interesting wildlife, by using the camera. As a result, young and old audiences created regular habits and changed perceptions.

The *BBC* producer of the *SpringWatch* show (at time of writing) noted:

> *"Since its inception, SpringWatch has tried to innovate in terms of finding ways to interact with its audience and in finding ways for them to interact with wildlife, and the My Naturewatch project allowed us to do both in new and lasting ways."*

In addition, it:

> *"Continues to provide content to this day as well as being a benchmark and inspiration for developing new ideas." (Excerpts from Author-led Interview)*

Repeatable Insights |

Designing means for building ambassadors: The *NW* process took time to build strategic relationships with cultural institutions, charities and experts that were connected to diverse volunteer communities. These critical individuals were motivated in the aims of the project and pro-actively shared information and cultivated further opportunities.

Designing for accessible participation: Building the *NW* camera was financially accessible, publicly attainable, and required no expertise to assemble. This was achieved by working with an online retailer which allowed people to create their relationships with nature.

Designing for shaping shared motivation(s): The *NW* project enabled mutual alignment across organizations and individuals' benefits by giving agency to those using the camera, with the optional choice of sharing content through social media.

Designing for content, not just data: Naming the photo collection as content, not data, inspired people to use creativity to engage with their environment; nonetheless, the project was also used for scientific studies.

Designing for ownership: Project participants used the project to learn, build confidence, and have a deep sense of ownership.

Designing ecological citizenship: The project got people in the process of rewilding and reflecting on how they attracted wildlife, which had a large impact on them in understanding how their space serves surrounding biodiversity.

The Warrior Moms' main objective is to implement the *WHO*'s air quality standards across the country to ensure clean air for their children, as it is a basic right. Pop-up exhibitions and activities catalyse their communities. **Credit |** Images Courtesy of khojstudios.org and Warrior Moms.

Guided Smog Smelling uses the human sense of smell and taste to analyze air pollution and evaluate aeroir—the unique atmospheric taste of a place. **Credit |** Images Courtesy of khojstudios.org and Warrior Moms.

FixCamp was a non-residential week-long pedagogy activity nurturing and sharing making skills, unfulfilled within contemporary formal education. Documented is part of an activity where the engaged audience created the tools they were going to "make with" during the week, providing youth members with new skills. **Credit |** Courtesy of Forth Together CIC.

Lewes Remembers was a vigil engaging a county town, in a collective moment of reflection and silence. The unique event mirrored volunteers' ages matched to fallen World War I servicemen who died in action, their life (represented through a burning torch) was processed through the town from servicemen's known residential address. *"At the going down of the sun and in the morning, We will remember them."* **Credit |** Edward Reeves Photography edwardreeves.com Est.1855 – the world's longest running photographic studio.

Lewes Remembers included people who matched fallen soldiers' ages through intergenerational and cross-cultural community members to bring the profound activity to life. **Credit |** Edward Reeves Photography edwardreeves.com Est.1855 – the world's longest running photographic studio.

Lewes Remembers brought the sleepy town of Lewes to a standstill for one evening surrounding volunteers with total silence and reflection. These voluntary acts were evocative, powerful, and internationally reported on. **Credit |** Edward Reeves Photography edwardreeves.com Est.1855 – the world's longest running photographic studio.

Lewes Remembers individuals extinguished their torches as fallen Lewes residents' names were read aloud. Pictured are two brothers who extinguished their torches simultaneously, a profound visual and powerful act. **Credit |** Edward Reeves Photography edwardreeves.com Est.1855 – the world's longest running photographic studio.

*Across and In-Between* generated a response of over 300 border residents interrogating a line on a landscape with a collective, metaphorical act of "drawing and erasing." **Credit |** Helen Sloan.

In five rural regions where the borderline between Northern Ireland and Ireland is indiscernible, residents engaged in playful construction of unique "actions" expressing their various sentiments and hopes for the future of their region. **Credit |** Image provided by Across and In-Between.
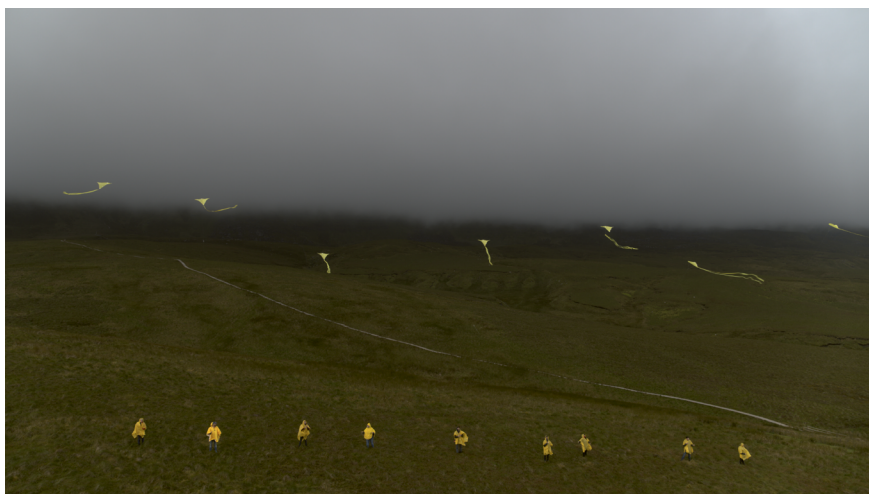
As co-creators of *The Border People's Parliament*, guests were part of a carefully staged event, their opinions recorded in Parliamentary committee rooms and their photographic portraits captured. **Credit |** Helen Sloan.

Across and In-Between actions were filmed, resulting in a three-screen film projection made with farmers, horse-owners, scouts, hikers, and villagers from communities across Fermanagh, Donegal, Leitrim, Cavan, and Monaghan. **Credit |** Helen Sloan.

SPARK transforms traditional and polluting methods of celebration, such as fireworks, balloons, drones and confetti into a new sustainable celebration. **Credit |** Images courtesy of STUDIO ROOSEGAARDE.

Over 5,000 letters were written about the loss of loved ones, relationships, health, homes, jobs, purpose, unlived lives, youth, innocence, certainty, and faith. **Credit |** Walter Wlodarczyk.

After the End is a participatory installation dedicated to contemplating loss in all forms—the loss of loved ones, relationships, health, and worlds we once knew—as well as the practices that have helped us endure. Visitors to *Green-Wood Cemetery's* historic chapel were invited to anonymously share their experiences with loss on a scroll and place it upon an illuminated altar. **Credit |** Walter Wlodarczyk.

Group-Think is a hybrid sports/educational programme that seeks to expand the current formal educational programme at schools by implementing training techniques in nonviolent civil protest, first aid, and collective intelligence skills. **Credit |** Stine Marie Jacobsen.

Group-Think supports young people's discussions and concerns about social and educational inequality by creating a sports platform that strives to strengthen their individual and collective political consciousness, as well as deepen the public's understanding of what young people, collectives, and protest stakeholders need. **Credit |** Aurélien Meimaris.

The My Naturewatch Trail Camera, deployed at *The Natural History Museum*, London for staff workshops. The DIY kit was specifically designed to be accessible, cost effective and repairable from parts (often) found in the home or classroom. **Credit |** James McCauley Photography.

*The My Naturewatch* Trail Camera was often considered as "the product", in truth the product was over 3 years over 3.5m people engaged with it, transforming their relationship with the natural world, resulting in rewilding and acts of Ecological Citizenship. Many workshops and activities were run catalysing people. Pictured are a family building a kit at Wakehurst, Kew Gardens in Sussex. **Credit |** James McCauley Photography.

The project established many new interpersonal relationships between cultures, disciplines and locations from around the UK (that we know of), with the project having a life of its own providing a new model of design engagement. Participants at a workshop on the *Digital Design Weekend* at the *Victoria and Albert Museum*, London. **Credit |** James McCauley Photography.

The My Naturewatch project established an over 60's tech group at the *Design Museum*. The work enabled a mutual exchange of wildlife knowledge and technology skill development. **Credit |** London, Design Museum's *"over 60's tech group"* workshop participant.

End of Engagement as Process section |
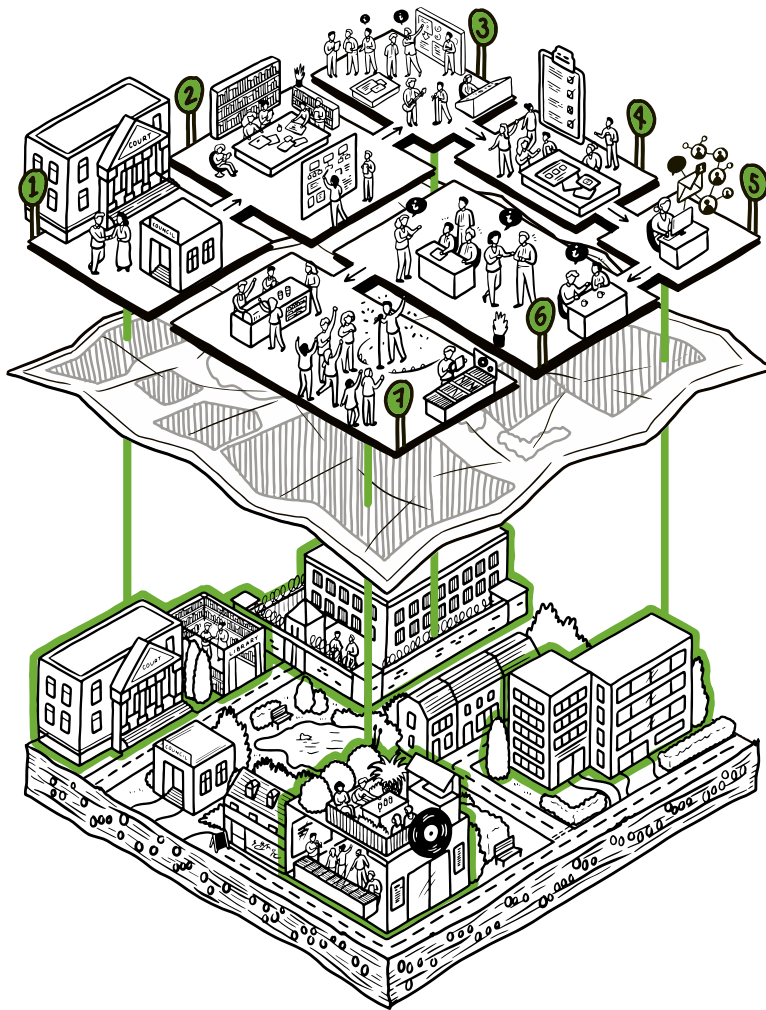
1) Catalyse *(Working with bigger entities, councils, judiciary systems and other parties that are not used to 'design' in the social realm).*

2) Design and Develop Impact *(Working within cross-discipline spaces and developing within existing systems and constraints).*

3) Design the Way To *(Working with inmates to develop their skills).*

4) Design the Ends *(Through education, work collaboratively to review and create new business models in new places and spaces).*

5) Communication *(Aligning partners and organizations with appropriate tools to support all parties).*

6) Mentorship *(Ensure the development of long term peers that listen, help and develop people).*

7) Community Affect *(Curating a community where people are nurtured by positive peers).*

Engagement as Affect |

Engagement as Affect: The final configuration manifesting the object *Design for Engagement*.

Design-led interventions can take many forms across the process of creation; indeed, grounded proposals quite often evolve from the start and develop to a point that people forget their origins. With this last section of the book, we focus on the design's "extended impact", which transcends its status as either "event" or "thing". We call it the final output, which is a status that design achieves, catalyses, or initiates over time by designing engagement. The main differentiating factor is that to achieve its long-term legacy, design might encompass a series of events/activities that are interlinked, either strategically or serendipitously. If the medium is a (design) intervention, the process concerns the impact, and "design" is the means to get there. In *Engagement as Affect*, we present projects that engage with the latter, which we believe is often the hardest to create as it either relies on a bigger community, place, or infrastructure that needs to be established over time. It is a space that is very contextual and not defined, whose methods and processes are tied to a particular situation.

A grounded example is *InHouse Records*, a rehabilitative record label for transforming lives. This project is aimed at creating change, by thoroughly considering the meaning of rehabilitation and how it can support people over time. Operating in and out of *UK* prisons across the *Southeast of England* since 2017, *InHouse Records* exponentially increases positive behaviour [428%],[252] which is evidenced by a re-offending rate that is less than 1%. Working with *Her Majesty's Prison & Probation Service & The Ministry of Justice*, *InHouse Records* looks to bring change that lasts and it is owned by those part of the change in one of the most challenging circumstances.

The second contextual example, *Touched echo,* has a more poetic message unfolding from a place-based experience. The project is a memorial to the bombardment of *Dresden*,[253] which was one of the most controversial Allied actions during WWII, where no distinction between military and civilian targets was made. An estimated 25,000 civilians died

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[252] One of the most tangible, impactful effects on the judicial system in the United Kingdom (from a design perspective) | Inhouserecords.org

[253] Joel, T., 2020. *The Dresden Firebombing: Memory and the Politics of Commemorating Destruction*. Bloomsbury Publishing.

during the bombing.[254] As an art installation, *Touched Echo* takes people right back to that fateful day; it is a place of silent contemplation rather than a monumental memorial. Here, people endure the memory by deciding to participate in experiencing the artwork. Located at the *Brühlsche Terrasse*,[255] a 500-metre terrace overlooking *the Elbe River* and the old town on the opposite riverbank, the project is visible only through four small plaques. By leaning onto the railing of the terrace with the elbows placed on the railing and the hands covering the ears, visitors are able to hear sounds, transported from the railing via bone conduction. It provides an enduring deep connection with the place, the environment and activity.

Our final example is *Pint of Science.*[256] This is a grassroots non-profit organization that has grown astronomically over the few years since two scientists decided to share their research in the pub. Although their mission has expanded, their core values remain the same: to provide a space for researchers and members of the public alike to come together, be curious, and chat about research in a relaxed environment outside of the closed walls of laboratories or the often-limited access of lecture theatres. With *Pint of Science*, everyone has a place at the table to discuss and learn research on one's doorsteps. The project's missions and visions are designed around the people that matter most: audience, volunteers, speakers, and our wider research community. Since the first event, the *Pint of Science* has been transforming the way scientific research is communicated and learned through the many people participating and contributing to carry on its legacy of making science accessible.

End of Engagement as Affect Introduction |

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[254] Joel, T., 2020. *The Dresden Firebombing: Memory and the Politics of Commemorating Destruction*. Bloomsbury Publishing.

[255] Dresden. (2023, February 21). *Brühlsche Terrasse und Festung | Landeshauptstadt Dresden*. www.dresden.de.

[256] *What is Pint of Science?* (2017). Pint of Science. https://pintofscience.co.uk/about/

Territory Interview | *Hana Schank*[257]

Author Question | *How do you define engagement, and what's your experience of it in projects?* I think that there are two pieces to engagement that can lead to successful projects. The first is engaging with stakeholders and people at the top. Very often people in the government or another large bureaucracy might not be in touch with what we would call the ground truth, and being unaware of the reality on the ground. They know what the policy should be, and they know how it can be implemented. However, they might lack knowledge of the experience of those being served by the policy. There is also a third, in-between layer where front-line workers are. All three of these groups must be brought along in order to understand what the problem is. They must all be on the same page about defining the problem, and how it can be solved. Following this, this group of people should develop an understanding of how to get there, and how to be emotionally (might be too strong a word) invested in the outcome.

Author Question | *Do you have any principles or values or factors for engagement practice(s)?* Not sitting in your tower and coming up with ideas that you think will help other people knowing what their ground truth is. A huge piece of this work is understanding the reality of where you are, which sometimes can be very difficult or just that it is not part of an organization's settings. For instance, the [*US*] government is not set up to be told what is really happening, to be brutally honest. We talk in our book [*Public Interest Technologies*] about how the government relies on a lot of self-reported data, which makes all the government dashboards always green. Everything is going great. So, I think knowing what the truth allows everybody to develop a shared understanding of what success looks like for this work. I think one of the tools is data. Data is a great way to understand the truth about things including who you're reaching and really serving. That said, obviously, self-reported data is a problem, as not all data is real data. So you also have to be careful, reduce it to honesty and speak truth to power to be realistic about where we really are, and where we can get to.

Author Question | *What conditions or best practice from your experience should be applied to engagement?* Don't under-underestimate the value of getting the right people in the room, even for just a meeting. However, once you get higher up in government people don't want to go to your meeting, send somebody else, or don't understand why they should attend. We have

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[257] Hana Schank is a Fellow for Public Interest Technology at New America. | *New America*. (2018). WordPress.com. https://hanaschank.com/

seen a number of projects where the first step was to get the right people in the room and get them to talk to each other. Together they can paint a whole picture, which is a picture of what is happening. Without the right people having that conversation you never get that picture, and we are in a situation where systemically often you are denied that picture, because these people never meet and think they have nothing to do with each other. But they are working to solve the same problem, and this requires coordination.

To create a team where there should have been a team, but wasn't, you need to send out weekly updates to make them feel [like] a team. [You do this] to share updates, but also what the blockers are, and senior people don't want to be in that position. We are in a place where our problems are really complicated and where parties have to be in communication. I've seen a lot of examples of this in the [*US*] government where people state they do not want to go to a meeting, because, I think, it might be beneath them. It's really just saying the work is actually being discussed in this meeting.

Author Question | *Wicked problems are large scale and so complex; from your experience how should we use engagement to apply to them?* There are two tools; one is just endlessly asking Why? Why is it this way? Why do we do it this way? For example, we bought a house in *Maine*, which is not a state I know very well. It is a blue state and also the whitest state in the nation. I was interested in the history of *Maine*, and how it came to be that way. I thought it might be because it is really far north. The reason is that there was a thriving free black community pre-Civil War, who were expelled; the Jew[ish] and Catholic communities were also kicked out. That's why the state of *Maine* looks the way it is. In addition, to ensure that those in power would pertain to it, they created the city manager form of government.

This is something a lot of southern states used to ensure white supremacy. And so, *Portland* [interviewee's current home] is an extremely liberal blue place, as they take tons of refugees and asylum seekers, and they have gone on record as saying like, give us more. Why do we have a situation where we have a permanent underclass in the *United States*? Just look at *Maine*. I used this example to say that we need to unpeel onions, as there are so many layers when you get a really old country with a lot of really baked-in systemic ideas from a different era. But there is no end to asking why?

Author Question | *How should we design or create equitable engagements? What does that look like? What's best practice? Do you have any really good examples that are nearly there?* The team has to look like the people you are serving and this is not just because it is a lovely

idea. It is because it will actually affect the work and the efficacy of your project. In our book, we tell the story of *New York City* trying to solve the rat problem, which is a constant battle. They got "live" through *One Data*,[258] our municipal helpline, that mapped the data to where the rat calls were coming from.

Randomly, a person at the *Mayor's* office of data analytics, who grew up in public housing and lived near the neighbourhood, did the very natural thing; he looked at his neighbourhood [and noticed] that there were no rat complaints. He then called a friend, who still lived there, to ask: "You don't have any rats? Because I remember there being rats." His friend replied that there were rats. Then he said: "Well, why don't you ever report it?" And his friend said: "Report what?" We always use that example to show that in your team it matters to have people with lived experience. This is a perspective you just can't get and imagine it, if you didn't live it; this is critically important.

End of Interview |

Engagement as Affect **001** |

InHouse Records[259] |

Keywords | #rehabilitation_service, #record_and_produce_music, #learning_music_production, #social_reconnection

InHouse Records is the world's first record label launched to support those in prison to make and produce music; this pioneering org consists of a network of self-service music studios and high-profile recording and publishing companies working in chorus. Through considered and designed engagement activities, these facilities aim to provide contemporaries with the tools and opportunities to change their lives and the lives of others. The *InHouse Records* variety of expertise creates dignified and skilled employment for ex-offenders, while providing rehabilitation services to prevent reoffending.

As a consequence, *InHouse Records* is a label that has changed as a mission; it seeks to create safer communities, fewer victims of crime, rehabilitation and employment with dignity and aspiration. Since launching, *InHouse's* work has engaged hard-to-reach populations both in prisons and through-the-gate, through music-based training programmes for prisoners and ex-offenders. *The project* began as an agile response from *Judah Armani*; while studying at *The Royal College of Art (RCA),*[260] he wanted to use design skills to reduce reoffending rates. A two-year ethnographic study, and a literature on best practice shared with officers, governors, prisoners, and probation officers resulted in *InHouse Records* being established.

Its success is built on the *"InHouse Way":* choice, relationship, and music. This is grounded on the choice architecture which, giving the option to choose what to learn, allows for defining relationships through learning which materializes as an aspiration for making music. As a result, a learning platform, *Continuum*[261] was created with *Ernst & Young*[262] and *RCA* to nurture core competencies that enhance recovery capital; this platform fosters better relationships & encourages healthier networks and spiralling mobility. Clients of the in-prison programme engage with *InHouse* four days a week through a combination of group and individualized curriculum activities, including instrumental lessons, songwriting, recording, label management, and showcase production. Hence, by developing sustained relationships, and creating the environment for it based on a strength approach, *InHouse* supports those using the platform to develop their core competencies and employability skills while undertaking all the work needed to run a fully functional record label.

Working with *Her Majesty's Prison & Probation Service*[263] and *The Ministry of Justice,*[264] which had the desire to bring change in some of the most challenging circumstances, *InHouse Records* activities have evidenced an increase of positive behaviour [428%] and their impact is also reflected on the outside world, where the re-offending rate is less than 1%. *InHouse Records* engages beyond its field by supporting career paths for individuals and catalysing communities to create an impact(s) well beyond its original

[260] *Home*. (2023). RCA Website. https://www.rca.ac.uk/

[261] *How to enable a new talent continuum*. (2023). EY – Global.

[262] *Home | Building a better working world | EY – Global*. (n.d.). https://www.ey.com/en_gl

[263] *HM Prison and Probation Service*. (2023, September 29). GOV.UK. https://www.gov.uk/government/organisations/hm-prison-and-probation-service

[264] *Ministry of Justice*. (2023, October 25). GOV.UK. https://www.gov.uk/government/organisations/ministry-of-justice

intentions. *InHouse Records* is a model of designing engagement for rehabilitation which works with clients to achieve positive gains that are also scalable. It is not only engaging those using the platform, but also their families, institutions, and those listening to the music. *InHouse* builds healing and creative relationships through the aspiration of making music.

Repeatable Insights |

Designing for social change: This project is designed to develop long-lasting impact by using creativity as an approach to challenge social conditions. Learning how to produce and make music is a leverage for change that is projected towards long-term social transformations.

Designing for cultivating desires: This project describes how harnessing one's aspirations, ambitions, and desires, and using them to gain social agency can be a strong leverage for triggering bottom-up processes of social innovation.

Interview | *Judah Armani*[265]

Judah Armani | *InHouse* is a record label working with prisoners in *UK* prisons; it's essentially a *Trojan horse* as it releases music in and outside of prison. As probation service for those in custody, it is an educational programme that covers literacy and numeracy, and a start towards accreditation and GCSEs. It is a rehabilitative programme that is aspirational; now going for over seven years, we still have a re-offending rate less than 1%.

Author Question | *What do you think is the most impactful method, process, or narrative that's directly, indirectly emerged?* The impact refines a couple of different theories I was exploring through my research, [namely] why there are some initiatives that are vulnerable to changing markets, whereas others are more resilient. Why do some weird, antifragile initiatives get stronger when the markets get harsher? By exploring a theory based out of *San Francisco* in the eighties, called *Recovery Capital*[266] I investigated why you can be addicted to opioids and either ruin your life or absolutely recover from it.

Recovery capital is a theory that touches all of us. We have access to different capital in our lives, e.g., human, social, or cultural capital. Human

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[265] *Collaborative designer | Hoda Judah Armani design*. (2023). Hoda Judah Armani. https://www.hodajudaharmani.design/

[266] Karl, T. (2023, August 5). *5 Dimensions of Recovery Capital — Do you know the basics? — R1 learning*. R1 Learning. https://r1learning.com/blog/2020/recoverycapital

capital concerns the technical things that we learn; social capital concerns how we make relationships; cultural capital is about our understanding of frameworks, like the religious and economic ones. Financial capital is our running potential. All of these together constitute the recovery capital. Social capital,[267] and to some degree the cultural capital, makes the biggest difference between someone that is able to recover quickly, or the opposite. Social capital is our ability to communicate, be accountable, be adaptable, having the skills to infiltrate networks.

This interesting aspect led to research in network shapes which represent how people can be healthier and more successful. This term can take different forms; if this is about finance and well-being, success emerges when people have very strong network shapes and belong to multiple networks. By working with the guys in prison, I realized their networks were one-dimensional and part of one network, especially the guys that were reoffending the most. They only had one network which was toxic and impossible to break it out. Developing an educational programme wrapped up in a record label can increase the social capital skills—e.g., communication, accountability, and adaptability—which can empower the guys to be part of different networks. By engaging with the record label, you are connected to two or three different networks when you leave prison.

In the last seven and a half years, I have tracked over a thousand people that worked with us, who became part of three or more associations or networks and didn't go back to jail. Giving houses and jobs to people makes the 50% and 54% of them in PAYE jobs and end up in prison again. On the other hand, if you're part of three or more networks, you don't go back. So, what should be explored while in custody is how to give the skills to people who might have not grown up with parents or primary caregivers, and might have not learned the social capital of how to form positive, healthy relationships. This was the impact measured with *Ernst & Young*, with whom I created an impact-measuring tool to capture communication, accountability, adaptability. Through *Mac and Gladwell* techniques,[268] we have been able to have daily, weekly, monthly tracking. Furthermore, at the end of the programme, when leaving prison, those numbers go into a resume that shows the development in the capital. This means that somebody leaving prison can demonstrate that in the last six or ten years

[267] Institute for Social Capital. (2004, January 7). *Definitions of Social Capital – Institute for Social Capital*. https://www.socialcapitalresearch.com/literature/definition/

[268] The Economist. (2009, April 20). How did I do that? *The Economist*. https://www.economist.com/books-and-arts/2008/12/11/how-did-i-do-that

they developed communication skills, like writing, and other non-verbal ones by creating music.

Author Question | *What are the key lessons from your project/experience that others can build on/learn from?* The number one [lesson] is speed. Understanding the clock speed of a phenomena you are tracking in terms of speed of change and intervention. For instance, the clock speed of re-offending is 64% on an annual basis and costs sixteen billion pounds.[269] The clock speed of change in terms of when new reforms or new policies around rehabilitation come out is every six or seven years, if we're lucky. So, we already see that there is a latency in this area. We know that creativity doesn't have time, but we don't have time to do a two- or three-year research programme on these particular phenomena because findings will be out of date in three years.

So it is important to work out the clock speed of a phenomenon and the clock speed of change; these set the speed of design, which is already a challenge. Usually, in the toughest areas, we have to short-circuit time. However, this is where creativity and design become really useful, more than business consultants who are nonetheless awesome. Even though they do some really brilliant work in loads, and are far more skilled than a designer could ever hope to be, they lack the speed that design has in short surfing time, because we can use proxies in order to be able to do that.

The second is around scope, which is about the humans involved in the process that allow short circuit time. Even though I choose to work predominantly with prisoners, that is not necessarily the best collaboration; this is because they might not be the best humans to share what we need to do if we are short of surfing time. If one has lived an experience, it doesn't mean they have learned experience. When time is short, we need to be working with people who can articulate, who can bring something that is tacit and make it explicit.

The third thing is around scale. Because we have to operate quickly, it is rare that one thing is ever going to be enough. So "small and many" feels like a much better way in terms of scale than "one and large". [In the] portfolio of *InHouse* are eight or nine micro-interventions that created record labels. This portfolio tested what can grow and become its own thing. An underlying caveat is that as soon as we genuinely want to explore a more co-creative way of doing something, then we also have to run the

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[269] Webster, R. (2022, June 15). Re-offending costs us £18.1 billion every year. *Russell Webster*. https://www.russellwebster.com/reoffcosts/

risk that it might not be delivered in the way that we had imagined. For instance, I'm working on something [for the past] year-and-a-half in *Cardiff* with probation that actually [is] going to be four separate things.

In addition, speed, scope, and scale might reveal a paradox related to trust and collaboration, and this is the fourth point. Even after identifying the humans we want to work with, because of speed, we have a paradox of needing trust to collaborate and also the experience of having collaborated before. With people that we have never met before, whom we want to do something at pace, we need to break this paradox.

This paradox is also a brilliant place, because it's really what the fifth point is: agency through creativity. It is important to give people the opportunity to be creative. When we asked what they might want to do, we received responses like nicer biscuits or better laundry, or more gym time. And this was not because there was a lack of creativity, but a lack of agency, which is part of social capital. It is impossible for someone living in challenging circumstances, growing up receiving support, to grow agency. So, design can play a great role in fostering agency through creativity and there are lots of different ways that we can use creativity as a proxy for developing choice architecture that then leads into agency. We defined an opportunity for them to design an icebreaker. They didn't even know they were engaging in a creative process, but we all needed to get to know each other. Through this process, they were able to not have to be creative on demand, but just do something where they're given the scope and the opportunity to be able to be creative.

Engagement as Affect **002** |

Touched Echo |

Keywords | #remember_historical_event, #bone_conductive_technology, #hearing, #learning_by_reflecting

Markus Kison's installation *touched echo* offers a unique personal experience of the 1945 bombing of *Dresden*[270] over conventional audio guides, or curated texts or erroneous screens. This event remembers the

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[270] Malloryk. (2020, February 12). *Apocalypse in Dresden, February 1945*. The National WWII Museum | New Orleans. https://www.nationalww2museum.org/war/articles/apocalypse-dresden-february-1945

joint *British–American* aerial attack that bombed the city capital of the *German* state of *Saxony*, during World War II. Located at *Brühl's Terrace* in *Dresden*, this installation evokes the four raids the 13–15 February 1945, when 772 *Royal Air Force* (*RAF*) heavy bombers and 527 *United States Army Air Forces* (*USAAF*) dropped more than 3,900 tons of high-explosive bombs and incendiary devices over the city.[271] Since no distinction was made between military and civilian targets, the bombardment of *Dresden* is one of the most controversial Allied actions during WWII, where an estimated 25,000 civilians died.[272]

> "When people use the installation (leaning on the railing and other people walk by them), those people are the artwork. They look like this [hands placed over ears], like a statue who's closing his ears from the bombs. The engagement is a little bit like having room, so the person becomes the artwork, and other people look at it from outside. Somehow the term came up as a 'performative memorial' because people become performers." *(Excerpt from Author-led Interview)*

As described, *touched echo* engages visitors in remembering this event through a silent contemplation, rather than a monumental memorial. The installation is identifiable only by four small brass plaques set within a public space. As visitors' arms touch the terrace's balustrade, their bones conduct to their ears the sounds of the 1945 carpet bombing through bone conduction technology. These custom-made sound conductors mounted to the railing send sounds of aeroplanes, bombers, and bombs exploding through vibrations. Hence, the place is a completely silent memorial experience, unless you touch the railing facing the painstakingly rebuilt old town of *Dresden* across the *Elbe River*.

> "I learned that there is another layer of information different from text, speech, or video, etc., it's really this interaction or experience. When you were touching the railing and closing your eyes, you hear this deep sound of bombings, it is such a deep profound experience. I did not know how much this could be, but the sound and the way you feel it is evocative and transformational." *(Excerpt from Author-led Interview)*

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[271] Ibid.

[272] The New York Times. (2020, February 20). *How Dresden Looked After a World War II Firestorm 75 Years Ago*. Retrieved October 25, 2023, from https://www.nytimes.com/2020/02/13/world/europe/dresden-germany-anniversary.html

touched echo makes visitors imagine being a *Dresden* inhabitant, whose ears might have been tightly closed in fear to shut out the horrendous noise of the explosions. By engaging visitors through the experience of the *Dresden* bombing, this is a place-based and physical interaction that relies on the personal choice to live and endure that experience. Such a choice stimulates a personal reflective process, which is a powerful means to build a deep and meaningful engagement with visitor(s).

Repeatable Insights |
Designing for stimulating reflection: Whether you create a positive or negative experience, this is a means for allowing one to be critical and ask oneself questions related to a topic. This project enables visitors to develop a critical understanding of the experience.

Designing for a material and immaterial subject: To bridge the materiality and immateriality of an experience, this project uses a physical site to enable one to develop a starting point, which creates empathy for the topic and the project.

Designing for legacy: The experience of learning and getting inspired by the artwork is an essential step for the installation to allow people to create ownership of the experience, which is the legacy of the project. By participating, people get a heuristic learning of an historical event, which stays with them beyond the experience.

Interview | *Markus Kison*[273]

Author Question | *What are the key lessons that you would like to share with other people?* Our narrative: this directly and indirectly emerged when I visited the location to have a look at the city. At that time, I did not really know that much about the bombing night during World War II, and I approached this idea a bit naively. I learned another layer of information, which is very different from text or speech, through interacting, or experiencing, the touching of the railing; I closed my eyes to hear the deep sound of these bombings. That was such a deep experience. However, I did not know how this could be; to feel the sound conducted through your bones directly in your body was somehow impressive.

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[273] Multimedia Designer exhibited in various museums worldwide and given talks at art and design conferences, e.g., at Ars Electronica, Japan Media Arts Festival, V2_, ZKM, Transmediale, Design Shanghai and Boston Museum of Science | *Markus Kison – Media Art*. (2015). https://www.markuskison.de/

Author Question | *Can you explain why you think it's impactful to different audiences?* In my past work, I mainly engaged with homogeneous audiences; for this project there was a different public of different generations, which I [had] never had before as customers in my media projects. It was really interesting to go out, find a spot, let yourself get inspired from it, and then set something up there which you give to everyone who just comes by. The work is a little secret as you don't know about it; you see the icon, follow the instructions, and then you are brought into the experience, which is the artwork. It was very interesting for people older than me. There were also people who had suffered from the bombing who suddenly started to talk about how they experienced it. It was very beautiful to listen to them. I was afraid because I was not sure if I'm allowed to do this, but I received really good feedback from a lady who was there during that night, who moved to the basement to hide from the bombs. She really liked the work. My learning from this was how to engage with people who are very different than you.

Author Question | *You mentioned whether you are allowed to do this work or not, can you unpick that?* If you want to reproduce a situation (or experience) far from your own, and maybe it's not a positive experience, then you think [about whether] you are framing it the right way; if you are putting it in the right context. You might have some negative emotions and memories from people, and you don't know how they react. Maybe they start crying; the bombing and war was of course a really difficult topic for them.

Author Question | *How would you define Engaging Design?* When people use the installation, or when they lean on the railing, they become part of the memorial. They look like statues closing their ears from the bombs. The engagement is like having a room where a person becomes the artwork, and others look at it from outside. So the term comes up as a performance where the audience are the performers.

Engagement as Affect **003** |

VR Swing[274] |

Keywords | #VR_fairgrounds, #VR_experience, #virtual_entertainment, #immersive_learning_experiences

Studio Go Go creates thrilling virtual reality adventures, which include community-designed VR swing projects and avant-garde revamps for mechanical fairground classics, found on the *Brighton Pier.*[275] Their work propels the audience's experience and engagement of an existing mechanical ride into new dimensions. By designing and producing bespoke physical ride installations for events, festivals, and permanent installations, they create activities engaging people with different worlds; their creative approach to VR opens up the potential for many other applications, like archaeology sites, *Sites of Special Scientific Interest*,[276] museums, theatres and other "experiences" wanting to communicate content more immersively to different types of audiences.

The design *Studio Go Go* reproduces what might happen in real fairgrounds. For instance, one ride, *"The Twister",* doesn't move vertically but the *VR Twister* sends you visually and physically hurtling and spinning into beautifully rendered digital skies. The initial rush of the sudden virtual ascent and shimmering visuals is not far short of wondrous. It's easy to be distracted by the gorgeous images and admire the virtual hyper-coloured playground. The futurescape moves in real time with the movement of the rider's body in space. It means you do not just view the journey from one viewpoint.

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[275] Pier, B. (2020). *Welcome to Brighton Palace Pier*. Brighton Pier. https://www.brightonpier.co.uk/

[276] Sites of Special Scientific Interest (SSSIs) are those areas of land and water that we consider best represent our natural heritage in terms of their: flora, i.e., plants, and fauna, i.e., animals | *Sites of special scientific interest: managing your land*. (2023, August 31). GOV.UK. https://www.gov.uk/guidance/protected-areas-sites-of-special-scientific-interest

Repeatable Insights |
Designing opportunities for engagement: In this project, VR is a design tool used with the objective of delivering information, in a way that creates meaningful and accessible experiences of engagement with content.

Interview | *Brendan Walker*[277]

Brendan Walker | In a service or system, everything comes down to the audience, the participant, the person who is doing the exposition or the performer. When designing engagement, I think about the public interacting with the service. Even if this interaction is only a thought conjured in their mind, that is an opportunity to create a show. This includes those behind the scenes operating or running things, like in *Disneyland*, where everybody is called a cast member.

Author Question | *What are the key attributes of engagement?* The idea of a community, whose sense of identity can be understood as a brand. The sense of community can be related to the way you become aware of something, how information has been imparted to you, and how you experience it. The latter is a design opportunity that can be shaped as a journey. For example, in the case of a service, a product or an experience, what are those various moments of engagement? It can be by accident, or contrived; you force those moments of engagement. When I talk to students, regardless of what form of design they are creating, I say that you can't ignore any one of those moments and opportunities, because they are the final output.

Imagining a show or a performance is when you form ideas about that product or service. You need to think of how you perceive it yourself. This is what might be perceived by others using your product. So, imagination is key and can be controlled. Despite being accused of being a control freak—I know that nobody likes to be told what to do—you need to understand your audience, their needs, their aspirations, and then offer opportunities to play out some of those aspirations through what you are creating for them; maybe you need to create new opportunities that they have never imagined before. This might be a long process, but it is all you should account for. I suppose you would say this is a customer journey.

Author Question | *Can you explain how your project includes communities, and how you think it is capitalized or fosters engagement?*

[277] Brendan Walker | Thrill Laboratory. (2021, October 14). *HOME – Thrill Laboratory*. Thrill Laboratory – News, Views & Experimental Spews. https://thrilllaboratory.com/

A manifestation of the work that started back twenty years ago, concerning thrill, and my annoyance that I loved the idea of being thrilled, but it was inaccessible to most people. It was for young and fit people. So, we needed to democratize the experience, which I later defined as being the experience of feeling alive. More recently, I have realized that this was an early answer for me regarding accessibility and inclusivity. You can see it through my conscious effort in this regard.

I actually find it natural that my work appeals to a broad church, because accessibility and inclusivity of all was at the heart of what I was doing from the outset. This is a value attached to the engagement of all communities across a broad spectrum, which is used as a motivating force for any project on community engagement. A call to action, or change, is a very basic level of motivation for doing something. Relationships to communities is the motivational thrill given to us all.

Author Question | *In relation to Engaging Design, what aspects of your project articulate this definition?* The way I use entertainment in my work connects me to the resolution of complex challenges. This means using the idea of entertainment and carnival as a permission to play as adults, which we gradually lose. Even articulating art as entertainment makes it accessible, and permission to play equates to this idea of carnival. It is a breaking down of social boundaries to enable fluidity in communities and in society. With carnival, there is a certain reordering taking place between classes, ages, and social economic boundaries. So, I think the element of play in a social setting is really important to the work. Secondly, presenting art as entertainment or entertainment as art gives ambiguity. Both conditions are a very carefully designed ambiguity, which gives a wide range of access points. The final point concerns the public watching a performance, whose physical presence allows them to acknowledge other members of our species.

As a student, I was impacted by *Christopher Alexander's* book, *A Pattern Language*.[278] He discusses the idea of porches and places that people engage at different times of the day. People's time is formalised by the architecture, and its magical effect on those local communities. In this case, the points of interaction are laid out through the architecture. That is the same with fairgrounds and those kinds of architectures that present similar opportunities for traction.

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[278] Alexander, C., 1977. *A pattern language: towns, buildings, construction*. Oxford university press.

Engagement as Affect **004** |

The Nursery Garden, Superflex[279] |

Keywords | #medical_knowledge_exchange, #medical_gardens, #gardening, #health_resilience

The Nursery Garden is a public artwork by *SUPERFLEX[280]* designed for three public hospitals in the *French* islands of *Réunion* and *Mayotte* in *The Indian Ocean*. The project aims to facilitate an exchange of knowledge between different cultures of medicine, challenging the common boundaries between "modern" and "traditional" medicine. Traditionally, gardens were used by many people for multiple purposes; for instance, they provided plants for medicinal and cultural uses: e.g., peaches used for closing wounds. In addition, evidence shows that wildlife-rich and bio-diverse environment(s) benefit both physical and mental health; indeed, people with nature on their doorstep are more active and mentally resilient, and have better all-round health. Whether gardening is recognized as a chief source of food for households, there might be access issues to green spaces in places like hospitals.

The Nursery Garden built in each hospital courtyard a plant nursery and a garden containing medicinal plants growing on each island. This provided a neutral setting where patients, visitors and hospital staff could take a break, meet each other, learn about botany, join a workshop, or nurture the growing plants. In addition to this, the hospital walls were painted with colourful silhouettes of the plants to create a visual link between the three sites. When plants grew larger, they were replanted onto the outer hospital grounds, which extended the knowledge of the medicinal plants to the local culture.

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[280] *WE ARE – SUPERFLEX*. (2023). https://superflex.net/

Repeatable Insights |

Designing for integration of (health) knowledge: This project uses the short-term action of building gardens in hospitals to reach the long-term objective of integrating two different views on medicine through knowledge exchange and nature appreciation.

Engagement as Affect **005** |

Tele-present wind |

Keywords | #phygital_space, #wind_data, #phygital_exhibition, #data_ critical_experiences

Tele-present wind is a choreographed interaction, comprising one hundred and twenty-six dried plant branches mounted on metal rods to offer engagement integrating sound, the space of a gallery and the emotion the work stimulates in the audience. The artwork engages through the concept of remote presence, by connecting remote and, at times, international spaces and geographies. Witnessing data visualized from a remote space makes the audience question phy-digital interactions.

The work of the artist *Bowen* intersects natural and mechanical systems through the interplay of interactive, reactive, and generative processes. In *tele-present wind* there are twenty one x/y tilting devices connected to thin, dried plant stalks installed in the gallery, and a dried plant stalk connected to an accelerometer installed outdoors. When the wind blows, it causes the stalk outside to sway and dance with the wind. The accelerometer detects movements and transmits them in real time to the collection of devices in the gallery space. The beauty and simplicity of the interaction is choreographed so that the stalks in the gallery space move in unison based upon the movement of the wind outside. The latter forces the tilting device to mimic the swaying of the plant outside, so that all the stalks are in-sync. The installation mimics nature through the use of technology. This combination can be seen as an elaborate and even absurd method of capturing qualified data, but the visual poetry holds beautiful merit.

The audience is less engaged visually, and more when it becomes aware of the connection between what happens in the space of the gallery and the surrounding nature. As an effect, this project intends to encourage more

considered interactions between us (humans) and the environment. The input of the work (wind) and its output (installation) have often been situated around the world, hundreds of miles from each other. This includes the installation at *Azkuna Zentroa* cultural centre in *Bilbao, Spain*, whose wind data were collected from an outdoor location near the *Visualization and Digital Imaging Lab* at the *University of Minnesota*.

Repeatable Insights |

Designing for raising critical awareness: This work describes how design can stimulate critical awareness as a form of engagement; this is achieved by integrating different elements, whose goal is to stimulate diverse sensorial and emotional experiences.

Interview | *David Bowen*[281]

Tele-present wind consists of two components. One is the gallery space containing anything from forty to two hundred and fifty-six (depending on location) individual plant stocks automated by servo motors rotating in X and Y, and a computer. The other is a single plant stock on the roof of my laboratory at the *University of Minnesota*. That plant stock has a tilt sensor in it which moves based on how the stock is being blown by the wind, and data from that tilt sensor is sent, all in real time.

Author Question | *What do you think was the most impactful method or process that directly or indirectly emerged?* The first time I exhibited this piece was in *Moscow* and it was called the *Laboratory of Art and Science Space.* It consisted of twenty-four units with the sensor setup here (in *Minnesota*) and in *Moscow*; this responded to the data sent from the *States* to *Russia*. We were collaborating and thinking about it together to create a physical recreation that has a mysterious element of what is happening over there.

Author Question | *Can you explain why you think that it was impactful with different audiences?* I think there are a couple: one is the mystery. As 90% of the time the work is exhibited on the floor, spatially you could walk in amongst them and interact with it and be a part of it; I think people like that physical presence. As you never know what it is going to be day-to-day, people might come back to the gallery. Sometimes there is no wind, so nothing happens, and this is part of the piece. It is not necessarily

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[281] David Bowen is a studio artist and educator whose work has been featured in numerous group and solo exhibitions | *david bowen art*. (2010). David Bowen. https://www.dwbowen. com/

always going to be very dramatic. Also, people left comments on the sound of the piece because, despite the precision of those little motors, they are noisy. They fill the space in a wonderful way. Despite being mechanical, the sound [seems] almost natural.

Author Question | *What key lessons do you think other people can learn from your work?* In terms of climate change, what happens on the other side of the world is critical for the way it affects us. The work is a form of data visualization and now it seems to be moving into the realm of climate crisis that we are all experiencing right now. This piece of context, which I love, was not necessarily the onset of the piece, but is now part of it definitely. In addition, the piece offers another reading about the probability of a time when we can't go outside. As the work is an attempt to physically recreate the physical movements of the wind, it is a hybrid mash-up of electronics where natural data input and natural elements create this new hybrid. Maybe this is the only way you can experience wind, or at least this component of the wind, and there is sadness to that.

Author Question | *This project is all about senses and experiences. If you are encouraging people to design experiences, what do you think you would ask them to include to engage different audiences?* My background is sculpture, and there is a physicality to what I do. Despite VR not having that tactile physicality, I could see it in terms of a poetic, imperfect way of recreating something and talking about it. The ideal way the work should be experienced is in person; I don't think video does it justice. I think you need to be in the gallery, amongst them to fully appreciate it. I think this is true with a lot of my pieces. I have worked to create a physical movement in the gallery, based on data from a remote location. I also have works that create, drawings or sculptures.

I have exhibited the drawings on their own without seeing how it was created, and I never really felt that as the true piece. I feel that seeing it happen, and being there, is a part of the work which the audience participates in. People need to be a part of it. These clusters of physical interaction with the piece are not perfect, but have an elegance.

Author Question | *Any last comments?* There are a couple of serendipitous things happening. The work is a single plant stock in *Louisiana*—where I live—made of a hundred and twenty-six individual units. So, it is a field that fills a four-metre by four-metre space. These are all moving based on one data point, and one data source, it's X and Y. This means that all one hundred and twenty-six of those units are taking that same X/Y data and moving in unison, almost. Here, there are a couple

of serendipitous things: one of those motors is really reliable. When all those plant stalks of different sizes and shapes move, those motors are imperfect, which means that all of them don't move exactly the same.

Engagement as Affect **006** |

Weblab |

Keywords | #learning_the_web, #interactive_technologies, #interactive_experiences, #web_literacy

The Google Web Lab is an interactive exhibition hosted by *The Science Museum* in 2012. Gallery visitors collaborated with millions of online visitors on a series of "experiments" designed to explain how the Web works, and inspire a sense of wonder stimulating new forms of creativity and communication. Together the physical and digital public were able to make music, launch digital images into cyberspace, see where they were on the web, travel to faraway places and watch their portrait being processed, translated, and then drawn in sand by a robot, all in real time. The exhibition was created by *Google Creative Lab*,[282] in partnership with *Map Project Office*,[283] interactive design and engineering group *Tellart*,[284] digital agency *B-Reel*,[285] and graphic designers *Bibliothéque*.[286] It used a series of physical devices that could be operated in person, at the museum, or online at *chromeweblab.com.*

The design of the physical and online exhibition aligned through the development of a new architecture and design archetypes. For instance, *Map* deconstructed the internet's complex technology and made its inner workings visible for all to see and show how digital and physical realms are connected. These new archetypes separated the users from their familiarity with the objects and allowed experimentation and play to be brought to the foreground. Furthermore, *Map* worked in close collaboration with a diverse range of disciplines, embracing a circular process of making, testing, and

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[282] *Google Creative Lab Five*. (2023). https://www.creativelab5.com/

[283] *Map Project Office — home*. (2023). Map Project Office. https://mapprojectoffice.com/

[284] Tellart. (2023, September 27). *Tellart*. https://www.tellart.com/

[285] *B-Reel Creative Agency*. (2023, October 11). B-Reel. https://www.b-reel.com/

[286] *Home*. (2023). Bibliothèque. https://bibliothequedesign.com/

improving. All of the interactive pieces were prototyped from the outset, becoming a living experiment.

The five main mechanisms for engagement included; *Sketchbots*, *Data Tracer*, *Universal Orchestra*, *Teleporter*, *Lab Tags,* and *Music through telepresence*. *The Universal Orchestra* was an eight-piece instrument array that invited onsite and online visitors to play live music together; half of the instruments were played by museum visitors and the other half by people online. To make live music accessible to people of different ages and skill levels, who were also spread around the world, a multitude of interaction models were explored, including physical instruments and graphical interfaces. Online players could choose between playing a virtual instrument with other online players, or playing a physical instrument in the museum.

For *Google Web Lab* connecting virtual (on the website) and physical users (in the gallery) through a series of five unique, web-based experiments was a way to engage the public in learning how things work on the web. For example, the *Sketchbots* show how the web uses computer languages/ protocols to tell machines what to do; the *Orchestra* demonstrates the use of "web sockets" to enable two-way communication and real-time interaction over the web; *Teleporter* teaches how web technologies use compression to send large amounts of data quickly over vast distances.

The *Web Lab* experience targeted audiences including many school-age visitors; hence, to address privacy issues, *Tellart* developed a system—now an industry standard in the museum world—where visitors receive a *Lab Tag*. This is a unique machine-readable optical tag that allows anonymous interaction while maintaining a persistent identity and retrieving all the content created. Furthermore, to better engage online visitors with the digital space, there were architectural planes that mapped out the territory as a graphic surface, thus providing an additional narrative layer to the exhibition.

Web Lab offered multiple taxonomies of approaches to internet-driven experiences that connect people. Through this, visitors are able to make connections between technologies and their application to a taxonomy of internet driven experiences.

Repeatable Insights |
Designing literacy for multiple and large audiences: This project is designed to engage a large variety of audiences across age, gender, background,

and locations. Constructed as a physical and digital interaction, engagement makes these audiences connect and learn about the web.

Interview | *Jason Holley*[287]

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged?* In the early phase of the project, a collection of initial working prototypes of the interactive exhibits was transported to the *Boston Museum of Science*, where they underwent public user testing. The prototypes did not attempt to conceal or camouflage their underlying technology, instead displaying an "in progress" or "unfinished" feel—a tactic that visitors responded to positively. Visitors expressed joy at the openness of the experience, the absence of didactic interpretation, and the implicit encouragement to engage in unstructured play and contemplation.

This shift in visitors' expectations brought to the foreground the significance of learning through play, while positioning each individual visitor, whether within the physical confines of the museum or in the virtual realm, at the epicentre of the space. Embracing this "in progress" narrative became a central strategy for the space, displaying a tension between the unfinished, the engineered and the use of the familiar typology of the lab to signal an active space of experimentation (that required you to engage and play).

Author Question | *Can you explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* The feedback reinforced the idea that architectural space is never actually "complete", it is always in a state of flux. There is an ongoing negotiation between the individual, the collective and the institution. When users of that space feel that they have agency and can influence the space it creates a strong sense of empowerment in the individual, a connection with the collective and a dialogue with the institution. Embracing this state of flux became the main focus of the exhibition. Instrumental to this flux was the interconnectedness and liveness of the physical and digital space. In *Web Lab,* both the physical and digital space were intrinsically linked. This allowed online visitors to have a genuinely active engagement with the exhibition, which expanded

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[287] Jason Holley has been Principal at Universal Design Studio for 19 years (at time of writing). *Universal Design Studio – Jason Holley x Matt Cottam*. (2017). https://universaldesignstudio.com/interview/jason-holley-x-matt-cottam

the reach and the visitors' diversity beyond the walls of the museum. The real time component of the digital/physical engagements were key to this.

Author Question | *What were the key lessons from your project/ experience that others can build on/learn from? (1) Learning through making:* borrowing processes from other disciplines outside of architecture. The experimental nature of the exhibits required a very fluid design process and collaborative approach. In order to achieve this, the conventional architectural design process was dropped in favour of a more agile iterative design process found in digital production—make, test, improve, repeat. Opening the process up to a "learning through making" approach required the team to embrace the idea of not knowing the final outcome but rather trusting the journey that you and your partners are going through.

(2) Collaboration: due to the nature of the exhibition there was a large body of specialist consultants with many overlaps. This required a high level of creative trust between the parties and a working practice that brought out the best in all involved and allowed the boundaries between disciplines to blur. Encouraging perspectives from outside your own area of specialism was vital and required individuals to be brave and bold in their expression of ideas and opinions but to pair it with humility and respect for others.

Engagement as Affect **007** |

Pint of Science |

Keywords | #science_communication, #pub_event, #live_discussion, #scientific_literacy

Pint of Science is a worldwide science festival which brings research to the public domain through your local pub/cafe/space. As a grassroots non-profit organization, *Pint of Science* has grown exponentially over the past few years since two people decided to share their research in the pub. The values supporting a now expanded mission are to provide a space for researchers and members of the public alike to come together, be curious, and chat about research in a relaxed environment outside the closed walls of laboratories or not-easy-to-access lecture theatres. Their model is built on traditional public engagement, with the difference of opening up to a dialogue that would otherwise be unattainable to the general public. The objective is to provide a stage where world-leading research could

be discussed through understanding, vision, application, and dialogue. If on average scientific research and knowledge often remain in the hands of experts or behind closed doors, *Pint of Science* aims to change this paradigm: by connecting people to scientists and their work, it makes an impact on the way we understand, navigate, and behave within the world.

This model of scientific engagement has been adopted internationally in nearly 500 cities. *Pint of Science* received a *Points of Light*[288] award—recognized to outstanding individual volunteers—by the Prime Minister in recognition of voluntary work making change to a community. The (then) Prime Minister *David Cameron* called it: "an innovative way to take science out of the lab and show thousands of people how interesting science can be. They have inspired students and top scientists around the world to get involved in *Pint of Science* and make their subjects accessible for everyone."

With *Pint of Science,* audiences are provided with a space where they engage with research. Here, walls are broken down and everyone has the opportunity to share their thoughts, questions, and ideas. The org provides event organizers with tools allowing them to leverage their creativity and plan events showcasing active research in their area, while developing cross-disciplinary skills that are valuable in the workplace and beyond.

Repeatable Insights |
Designing for scientific dialogue: *Pint of Science* is a platform for the public to learn and discuss science openly. This dialogue aims to rebalance the power relationships between those holding scientific knowledge and those in desire to learn, but were not given the means, or opportunities.

Designing for legacy: By setting up a format, the two founding members provided others with the means for adopting, implementing, and deploying similar events.

Interview | *Praveen Paul*[289]

Praveen Paul | A small one-off project between friends turned into thousands of events over ten years. Each city is packed full of talks, which "inspire, challenge and encourage us all to be curious". While working at *Imperial College* as post-doctoral researcher I met my co-founder, Michael. We both thought it was weird that, despite spending the whole day trying

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[288] *Points of light*. (2018, June 4). Points of Light. https://www.pointsoflight.gov.uk/

[289] Co-Founder & UK Director, Pint of Science | Global Pint of Science Team. (2023). Pint of Science. https://pintofscience.com/team/

to understand neurodegenerative conditions, we didn't meet anyone affected by them. Hence, we had the idea of inviting people into our lab. Once the head of division said yes, we hosted about one hundred people, showing them the latest development in research and giving them a tour of our labs. It was inspirational for all involved. We thought if people want to come to us, why don't we also go to them? We decided to stage events in pubs and run them for three days every year. We didn't know how to manage or organize anything, but we liked the analogy of a music festival, i.e., choosing which stage you want to go to, which band you want to see, etc. We applied this principle to science, allowing visitors to choose what type of science research they are interested in, like black holes or psychology. In the first year, we organized events in *London*, *Oxford,* and *Cambridge*. Ten years later, over thirty countries take part in the same initiative on the same three days.

Author Question | *What do you think is the most impactful method, process, or narrative that has directly or indirectly emerged in reaching the audience?* You need to upskill and support academics involved in organizing events. We give ownership and freedom to our teams to run the events how and where they want. They are made to consider and understand their local communities, what works for an audience in one city may not work elsewhere. This has been the key to success: we don't dictate, we support them throughout the journey and discover new ways to engage. By speaking with scientists, we find that science is not black and white, it's about interpretation and how people do things differently. It's really important that visitors learn about the process of scientific discovery, and how it is led by collaborations. Most of our organizers are academics or postgraduates that we mix across campuses and universities in cross-disciplinary activities. People unite through conversations and collaborations emerge.

Author Question | *What were the key lessons from your project/ experience that others can build on/learn from that you think are transferable to other situations?* Giving independence to the organizers on how they want to create an event and giving them the support, resources, and a common platform. Through this you guide people in organizing the event. We're very open to what happens; our objective is to create collaborations and for local organizers to create a community. You need to be open to see and take every opportunity and see where it ends up. Another important reason why *Pint of Science* works is that people want to be part of something bigger; we never had to find people to take part, people kept coming to us.

Engagement as Affect **008** |

Bristol Sound Walks |

Keywords | #urban_noise_pollution, #data_collection, #sound_walks, #awareness_on_sound_pollution

The *Hush City App* is an international open data research project led by Dr. *Antonella Radicchi* at *Technical University of Berlin* (*TU Berlin*). It aims to engage conversations with partners to explore and address various types of urban noise pollution, ranging from quiet and ambient sounds to loud, damaging, and persistent noise. In *Bristol* (*UK*), the app has been utilized by local communities to identify and map the city's soundscape. This project includes a citizen science programme where *Bristol* citizens from diverse backgrounds participated in a community-led activity called *Bristol Sound Walks.*[290] This was guided by local professionals with expertise in acoustic engineering, urban design, and landscape architecture. Participating in the *Hush City App* project will contribute towards creating a "quiet map of *Bristol*" aligned with the aims of *Bristol's Legible City* initiative.[291] The *Sound Walks* specifically focused on exploring the city's quieter routes and spaces, aspiring to provide insights to guide urban planning, development and regeneration efforts for enhanced community health and wellbeing.

This is one piece of evidence of excessive noise(s) on both people and wildlife which affects quality of life, health, and well-being.[292] Long-term exposure to noise can disturb sleep, affect cardiovascular health, metabolism, cause psychological problems and can impair cognitive development in children. The *Sound Walks* tackle this issue through a community-led action group catalysing collective response.

Hence, the *Sound Walks* respond to the city of *Bristol's* need of retaining, improving, and creating quiet routes and spaces within the city to protect and enhance the health of people and nature. Through public participation, these walks gathered varied qualitative data, including participants' perceptions, noise level ratings, and locations of quiet spaces, all of which

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[290] *Bristol Soundwalks (2025)*, https://bristolsoundwalks.wixsite.com/brisoundwalks
[291] Blc_Admin. (2018). *Home*. Bristol Legible City. https://www.bristollegiblecity.info/
[292] Bakker, K. (2023, January 3), Noise pollution is a menace to humanity – and a deadly threat to animals, in The Guardian.

were uploaded to the *Hush City App.*[293] If in *Europe* over 125 million people (at time of writing) are affected by noise pollution from traffic every year, and noise pollution is the second most harmful environmental health risk in *Western Europe*—according to the *World Health Organization*[294]— the *Sound Walks* and *Hush City* are two calls for action to improve the environments, particularly urban environments, through data collection. *Sound Walks* enables this by engaging local communities in uploading their data and findings related to favourite small, quiet spots in the city into the open-source platform.

Repeatable Insights |
Designing for public awareness and participation: This project uses data collection to enable local communities to understand the impact of noise through participation. Such a call to action has the long-term aim of making the public aware of the issue.

Interview | *Sarah Jones-Morris*[295]

Sarah Jones-Morris | I'm trained as a landscape architect, and I run a business called *Landsmith Associates,*[296] of which I'm a director. When my business started, I wanted to focus on health and the impact of the built environment on it; I was interested in questioning well-being, which is often difficult to see. I was first made aware of this issue by my former Master's tutor, Dr. Marcus Grant, who was the deputy director of the *World Health Organization's Collaborating Centre for Healthy Urban Environment*, and who highlighted noise pollution as the second biggest environmental health problem in *Western Europe*. Following this focus, I developed interest in the open-source system science approach through a project called *the Hush City Project,*[297] run by *Dr. Antonella Radicchi* at the *Technical University of Berlin* (*TU Berlin*), as it had a qualitative element about soundscapes that people perceived as tangible. That is where I started to think about partnering with professionals, particularly acousticians and maybe a

[293] Antonella. (2017). *HUSH CITY APP*. https://opensourcesoundscapes.org/hush-city/

[294] World Health Organization, (2011), Burden of disease from environmental noise. Quantification of healthy life years lost in Europe.

[295] Director of Landsmith Associates and an award-winning landscape architect and urbanist with over 20 years of experience in a diverse range of UK projects | *About* | *Landsmith Associates*. (2023). Landsmith. https://www.landsmithassociates.co.uk/practice

[296] *Landscape Architect Urbanism* | *Landsmith Associates* | *England*. (2023). Landsmith Associates. https://www.landsmithassociates.co.uk/

[297] *Hush City*. (2022, August 5). SciStarter. https://scistarter.org/hush-city

landscape architect, to do free monthly sound walks around *Bristol*. From 2017 to 2020 we collated over two hundreds sound walks.

Author Question | *What was the most impactful method, process, or narrative that occurred over a period of time?* Heading the research, *Dr. Antonella Radicchi* had specifics around how she wanted the *Sound Walks* to occur in terms of research method. Hence, the most impactful method was how the partnership challenged perceptions and created new partnerships with people from outside of my bubble of landscape architecture. Our first approach was later adapted to the number of people participating in our *Sound Walks.* We firstly aimed to reset the participants' audio experience by starting the walk with a minute of complete silence and closed eyes to avoid visuals having an influence on what one hears. We had amazing feedback, like "I didn't realize I could hear this," or "I can feel that." This approach is intended to help people challenge perceptions.

Author Question | *How did you think the work has been impactful?* With the data produced on how people use a space, we wondered how to use them to inform future policies and inform other similar projects. However, with the volunteers, you have an audience who may not be part of the system related to the evidence we intend to produce. Hence, it was important to form partnerships to reach a broader audience. We made a partnership through conferences to engage a "captured audience". With social media we had a much bigger amount of people than those involved in the conferences and other events. For example, *Bristol Open Doors*,[298] which has a meeting set list of 70,000 people.

Author Question | *What are the key lessons from your project experiences that you could share with other people?* First lesson is if you want to engage people from marginalized communities, who are outside of your bubble, it is incredibly difficult to find those who automatically join your events. However, this is really important; for the data we produced which should be representative of different sections of society. In this regard, there is a bigger question about citizen science projects; with limited time and capacity you need to develop a different approach that involves people in different ways, and this is quite a challenge. This is not just science; this is engagement in general. When many projects just use online tools, in deprived areas many people don't have any access to Wi-Fi; this is not a solution.

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[298] Bristol Open Doors, The Changing City. (2023). *Bristol Open Doors | The Changing City*. Bristol Open Doors | The Changing City. https://bristolopendoors.org.uk/

Second lesson is about what you do with the data collected. We were approached with the idea to explore the development of a quiet area plan for people with particular neurodiversity conditions that are related to audio sensory disorders, for example autism. We are in the process of seeking funding to develop this further. One of the lessons we have learned from this is to communicate with people in a way that helps them understand and catch that information quickly. To achieve this, you need something tangible that can also have a policy or direction. We know there is legislation around quiet spaces, but it is complex. Also, after the pandemic people are more concerned about noise and they value quiet spread areas because it increases property value and productivity, and reduces health issues. Furthermore, quiet spaces can be open and welcome areas.

Author Question | *Anything you would like to add?* To achieve this, you need some very careful design that helps people engage and understand the built environment by being able to stop and listen. That is really important, because every day we are rushing. We don't have much time in our lives. However, stopping and listening just for a minute can help one rethink and reassess the day.

Engagement as Affect **009** |

Draw a line |

Keywords | #balanced_interculture_society, #gaming, #land_culture_ grabbing, #cultural_diversity_awareness

Draw a Line is a game based on an old *Dutch* traditional territorial game *landjepick* (land grab), which engages participants in a battle of losing and gaining land. It can be played in three variants: "Wanna Play", "Wanna Fight" and "Wanna Act". In this third act, the objective is to create space for the opponent. To play, participants throw a knife in the ground; the direction of the knife point indicates the boundary of the player's new territory. This action can be played in turns, thus making the game without end, as the two competitors engage in a never-ending struggle to gain land. Artist *Jeanne van Heeswijk* reproduced this game to engage visitors in the question of grabbing culture as land, with no competition, as it happens in the game, and also to question the meaning of "battle" for fostering balanced intercultural societies. On this aspect, the artist

interrogates the use of the knife as an act of violence to outline the need of creating different ways to achieve a peaceful cultural competition.

Repeatable Insights |
Designing for cultural diversity co-existence: Through the metaphor of a game, the artist is able to engage participants in experiencing the struggle of society in developing and maintaining balance when different cultures coexist.

Interview | *Jeanne van Heeswijk*[299]

Author Question | *What do you think was the most impactful method, process, or narrative that directly or indirectly emerged?* The project concerned two things. It is based on a children's game, so one of the methods involved is actually using game rules for winning or losing land. It is a game that talks about territory, about land, about creating borders. It talks about ground, literally the ground we live on, we play on, we work on. And how we discuss methods or ways in which we show competition around the places we live.

Author Question | *Do you think any cultures or local circumstances had a particular influence on the project or the people engaging with the work?* The work has been presented in different locations where it had really different discussions. The first time was in *Japan* at *the Tokyo Opera Art Gallery*;[300] the first challenge was to bring *Dutch* soil to *Tokyo*, which turned out to be not such an easy thing to do, and at the very end not possible; the second was to play with a kitchen knife, the one used to peel potatoes. It was difficult to bring a knife into *The Tokyo Opera Art gallery* and ask people to play a game with it.

This created a whole discussion about harming people and if there were other objects [with which] you could play the game which would still refer to a knife. In the end we worked with a Japanese metalsmith to make a custom knife that was strong enough to play the game, but that could not be used for harm. Following this, the project was shown in *Venice*, in the *Dutch Pavilion*,[301] where it was easier to ship the soil to play. Here, people

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[299] *Jeanneworks, Typologies & Capacities*. (2018). Jeanneworks, Typologies & Capacities.

[300] *Tokyo Opera City Art Gallery*. (2023). Tokyo Opera City Art Gallery. https://www.operacity.jp/en/ag/

[301] *50th Venice Biennale 2003*. (2003). Universes.art. https://universes.art/en/venice-biennale/2003

played with three sets of rules: one is a fight, one is a play, and one is to act depending on how you follow the game instructions. The game is either about being territorial or about an engagement and a relationship around a territory.

Author Question | *Could you explain why you think it was impactful, and in what way? Audience?* I've been thinking a lot about that work, especially when working in *Philadelphia* on notions around sovereignty, land use and grab. The *English* translation of the game is to pick, which is about the way land needed to grow food is taken away for us. I would emphasize the notion of using the game in relation to land rights where one negotiates territorial boundaries with one another. For me, that would be something to look more into when it's in the context of a particular place.

In *Tokyo*, I looked into this subject because at the time there were a lot of parks which were no longer accessible. So people were worried that there was not enough space to play originally, or to have free time or time outside in a greener environment. Hence, we first played the game outside. We explored this idea of the ground we are allowed to inhabit and stay based on our land right, our right to be enjoying or to even harvest from our soil.

Author Question | *Are there any key lessons that you would like to share, from your project or your experience?* In this work, I engaged with this notion of territory boundaries and how to negotiate the borders between players. It is important that it took place on soil, as there was an aspect related to cultural competence and cultural competition. We drew two questions to set a field of interaction in which we renegotiate our existence and our future collectively: what does it mean to be on the sidelines of the future? Where do we still have room to negotiate our cultural differences? I feel that is an important part where the work has been developing since. I feel this is [a] piece that one wants to revisit. For the different ways the work has been presented during particular times in combination with the development of my practice, it makes me revisit the project and its multiple meanings, multiple times.

Engagement as Affect **010** |

Climate Nan's Caravan |

Keywords | #climate_conversations, #touring_van, #collecting_thoughts, #means_expression_opinions

Climate Nan's Caravan is a touring van travelling across the *UK* to start conversations on climate change with local communities that are and will be affected by it, and are given little support. Through an informal setting, it offers space to express anxieties and frustrations. In addition, in order to tackle issues like climate scepticism, the van provides people with a safe space where one can express personal views, and they are listened to; through this space, it designs an opportunity for people to believe that speaking can be an action for influencing power. Indeed, if many people across the *UK* feel disconnected from those making decisions, *Climate Nan's Caravan* looks after their opinions by bringing them to regional MPs and ministers in *Westminster*.

Repeatable Insights |
Designing a distributed space for expressing personal opinions: In this project, engagement acts as a means for making local communities believe that their voice can influence decisions on climate. This has a potential rippling effect in creating large scale but distributed actions engaging different people living in different geographical locations.

Interview | *Edie Gill Holder*

Author Question | *What is the most impactful method, process, or narrative that has directly or indirectly emerged? Climate Nan's Caravan* worked well because we were providing people with a safe [and] nurturing physical space where the emphasis was on them being listened to, rather than preached to. We went with *Nan* as she could be a familiar figure to lots of people, and I think this helped to make people immediately more comfortable and open. We were not asking people to do anything with the initial approach, just offering them a friendly tea and a chat, which then made it easier to transition to action.

Author Question | *Can you explain why you think this is impactful?* The areas we were visiting, at least some of them, are where support for climate action is relatively low. Related to above, I think a friendly approach that gives people an opportunity to start a conversation themselves, is a

good way to do it. Fun was also super key—making the van look bright, fun, and interesting attracted people to step in and get involved, rather than feeling like they were obligated to. Using the *Nan* character made it easy for people to be honest about any doubts or questions they may have had, rather than creating an environment that may have felt more confrontational.

Author Question | *What were the key lessons from your project/experience that others can build on?* (1) Make people feel relaxed immediately, and show you are open to whatever it is they are feeling. We did this very simply with a comforting character, and offered them a cup of tea. (2) Try and bring some fun/joy into the conversation, particularly when dealing with things that can otherwise be quite heavy. In street activation, people don't want to be confronted too starkly with things they may not want to hear or talk about, so ease them in with some joy and light heartedness. (3) People do have a lot of feelings and things to say, when given the right opportunity to say them by keeping a pressure-free environment, where you're not making quick demands of them, like [asking them to] sign a petition or write a letter. This helps at the beginning of the process. (4) Bring artists and performers into the work.

Climate Nan's Caravan worked because we had a fantastic physical space to hold the conversations, and we had a fantastic improv actor to play *Nan*. People loved that, and it was so different to other things they had seen which gave us an edge that kept people sticking around.

Engagement as Affect **011** |

Shemakes[302] |

Keywords | #women_innovation, #textile_sector, #innovation_training, #thought_leadership

"The *shemakes.eu* project aims to empower girls and women to become innovators in the textile and clothing (T&C) industry. The project addressed a central paradox related to the role of women in the T&C sector, i.e., as a

predominant workforce, yet never fully recognized as innovation leaders despite their growing influence in research and design."[303]

Shemakes built a community of more than two hundred people distributed across different *European* countries, whose participants included girls and women, policy makers, influencers, business partners. Participation was aimed at developing common actions and values grounded on the principle of welcoming differences. Through this community, *shemakes* developed a behaviour change model to make innovation visible and desirable; this follows five steps where the community acts as a receiver in the initial learning stage, and as sender in the final steps. Intermediate stages are dedicated to becoming active participants, thus developing deep connections with other community members.

Learning and innovation skills are aimed at closing the gender gap. A dedicated path initiated by six labs includes the *Curiosity Path*, aimed at children and teens at school, the *Discovery Path* aimed at students in higher education and academia, and the *Innovation Path* dedicated to women working in the T&C sector as a first job. Each path created sessions, talks, presentations, and workshops, with open-source tools, to make topics like digital fabrication, biofabrication, e-textile, and understanding the future accessible to all. Three dedicated paths were developed by six labs and then extended to eighteen labs to address varied innovation needs.

The wool topic was a common thread across the labs and was used to map *European* wool territories and actors to intersect traditional practice with innovation along the value chain. With this topic, activities supported the development of a deeper knowledge on dyeing and DIY equipment. This path engaged multiple traditions across *Europe* of farm-based production of wool, natural dyeing, and DIY tools for creative or small-series knitting.

The Role Models programme provided mentoring and support regarding topics like gender gaps and what strategies can be deployed to create opportunities for the T&C sector. A combination of advisors and mentors supported the different labs' activities and ambassadors helped make the community engagement smoother.

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[303] Summary of Shemakes outcomes in https://tcbl.eu/blog/shemakes-book

Shemakes ended in December 2023; it continues engaging its community by sharing news, activities, workshops, and bootcamps focusing on ecological, social, and regenerative innovation.

Repeatable Insights |

Designing for leadership through innovation: This programme has the two-fold objectives of innovating the textile sector and empowering those working in it. By teaching textile workers leadership skills, this project makes them champions and actors of changing the industry to allow it survival across technological transformations.

Interview | *Frédérique Thureau*

Author Question | *From your project, what is the most impactful method, process, or narrative that has directly or indirectly emerged?* The project's successful results—2,000 participants, 100 activities—were grounded in a combination of models and processes. The engaged stakeholders aligned on principles of actions and values (notably on welcoming differences), followed a step-by-step active behaviour change model (inspired by *Waag Future Lab*), learned and practised radical innovation activities (on digital and social themes), documented them in a extended toolkit (developed by *Fabricademy*), were inspired and coached by accessible role models (including former alumni ambassadors), and aimed to create a long-lasting network for further expansion (based on *TCBL* model and experience). What specifically emerged was 1) how to co-design and adapt the above combination to each sub-group engaged—kids and teens (from eight to eighteen years of age), students (from eighteen to twenty-five) and entrepreneurs of all ages (over age twenty-five), and 2) a common wool practice, that was a field for innovation all along the value chain activities.

Author Question | *Can you explain why you think this is impactful, for what audience, and what aspect can be reproduced in another project and/or context?* Our *Tavistock* partner's role was to identify relevant impact mechanisms to measure impact. After they interviewed participants on their journey into the project, they gathered "stories" from which they selected criteria which were collectively refined with a panel of stakeholders, and then led to larger surveys and data analysis. Throughout this process, strong elements appeared: the likeliness of *shemakes* to contribute to gender equality (80% agree), the number of connections within the network (nearly doubled during the project), gaining new knowledge and gaining lasting connections (73% and 85% agree), local universities or VET

institutions connected with labs expanding their curricula or fairs with some *shemakes* innovation activities (half of them).

Author Question | *We are deeply interested in "catalysing engagement", not just passive participation, but an informed and empowered process. Can you explain how your project includes communities and how it catalyses or fosters engagement?* We believe that a "community" is based on a diversity of stakeholders. Following the quadruple-helix principle, the combined energy of people from research (e.g., universities), production (e.g., SMEs, brands), institutions (e.g., policy-making institutions) and civil society (e.g., activist groups) is the driver for seeding change, making it happen and becoming self-transformative.

In most of the activities conducted, we ensured the presence and active contribution of all these profiles, which provided clear reassurance about the quality of the engagement process of the whole community.

Author Question | *What were the key lessons from your project/ experience that others can build on/learn from, these can be one to five headline points that you think are transferable to other situations.*

1. Ensure a shared alignment on vision, values, and practices.
2. Develop hands-on, collective, distributed curricula, flexible enough to follow the maturity and the learning pace of each target.
3. Support learning with safe spaces, group dynamics, mentors and coaches, and full documentation.
4. Engage, right from the start, diversified stakeholders, for the themes developed to be taken forward seriously.
5. Ensure that the project will continue afterwards, under the specific format of a *shemakes* club.

Author Question | *In relation to our definition of Engaging Design, what aspects of your project articulate this definition?* Gender equality in T&C is a complex challenge (see paradox mentioned above), as it involves a change of mindset and habits, even among the stakeholders who are aware of gender issues. The positive practice of allowing all stakeholders to connect and learn how to act and think as a group from the very first day of the project, with people aligned on similar values and longing for ambitious results, that will be disseminated to engage like-minded new stakeholders into the network, is probably close to a virtuous and transformative process for behaviour change in other similar contexts.

Custom marimba and vibraphone key/resonator mounting systems, designed and fabricated for the *Universal Orchestra*—a mechanical ensemble of percussion instruments, playable by online participants around the world in live collaboration with visitors to *the Science Museum London*. **Credit |** Lee Mawdsley, https://www.leemawdsley.co.uk.
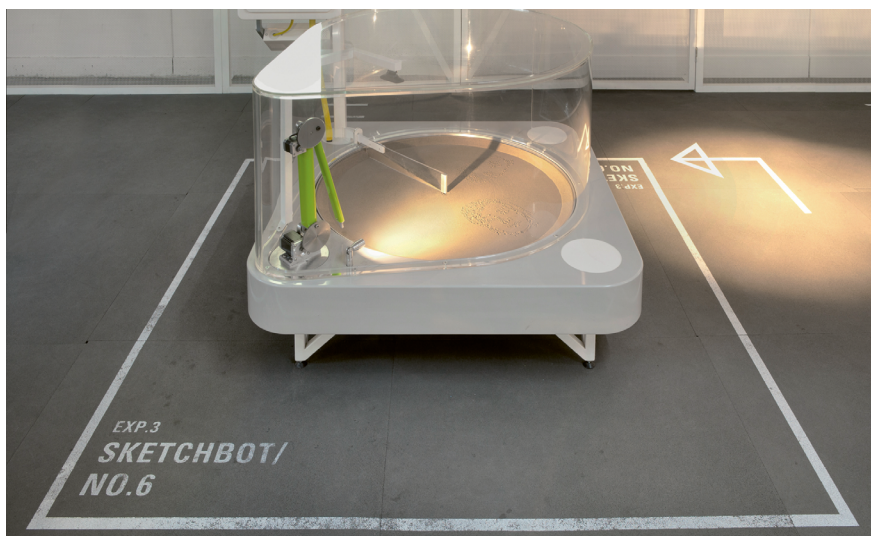
Sketchbots took photos of visitors and then sketched their likeness in sand. These custom-built robots demonstrated how the then-latest version of HTML allowed web browsers to undertake these previously unachievable tasks. Additionally, it highlighted how users could now draw anything they dreamed of online. **Credit |** Lee Mawdsley, https://www.leemawdsley.co.uk.

Google Web Lab featured a series of interactive experiments that brought the magic of the web to life and also connected people across the world online. **Credit |** Lee Mawdsley, https://www.leemawdsley.co.uk.

Universal Orchestra, the orchestra allowed visitors and online participants to play music together, using real instruments live in the museum or virtual incarnations online—the selection of instruments included drums, temple blocks, vibraphones, marimbas, and more. **Credit |** Lee Mawdsley, https://www.leemawdsley.co.uk.

Don a virtual reality headset, jump on a playground swing, and be transported on one of four exhilarating swing-powered adventures as you scoot, leap, jet, and stride through magical worlds. **Credit |** Norfolk & Norwich Festival.

Wear our virtual reality headset to transform this classic Twister fairground ride. We'll send you up, up, and ZOOMING away on an exhilarating twisting, twirling adventure through a candy-coloured world. **Credit |** Studio Go Go.

The Nursery Garden is a collaborative public artwork by SUPERFLEX designed for public hospitals in the French islands of Réunion and Mayotte. It facilitates an exchange of knowledge between different cultures of medicine. A plant nursery and a surrounding garden contain medicinal plants growing on each island. The gardens provide a neutral setting where patients, visitors, and hospital staff can take a break, meet each other, learn about botany, join a workshop, or nurture the growing plants. **Credit |** R.RAVON.

Mechanical devices connected to thin dried plant stalks installed in a gallery and a dried plant stalk connected to an accelerometer installed outdoors. When the wind blows it causes the stalk outside to sway. **Credit |** Images courtesy of the Artist, David Bowden.

The accelerometer detects this movement transmitting the motion to the grouping of devices in the gallery. Therefore the stalks in the gallery space move in real-time and in unison based on the movement of the wind outside. **Credit |** Images courtesy of the Artist, David Bowden.

Pint of Science is an annual worldwide science festival bringing researchers to their local pub/cafe/space(s) to share their rigorous scientific discoveries to anyone. No prior knowledge required. **Credit |** Domininkas Zalys.

Draw a Line is a simple act that draws the viewer's attention to the endless struggle over "territory", the public game engages participants to unite in this simple, visual, and accessible affect. **Credit |** Photo credits: Draw a Line, 2000-2006, Tokyo Opera City Art Gallery, 2000, Jeanne van Heeswijk, Rolf Engelen, Photo: Tadahisa Sakurai.

The custom caravan on tour in locations around the UK, engaging with communities and cultures of all ages. The product was the cultivated conversation and the insights that both parties left with. **Credit |** Images Courtesy of weglimpse.co.

End of Engagement as Affect |

End-duction |
ɛnd-ˈdʌkʃᵊn

Engaging Design End-duction

Verb: A process in which interested parties establish, provide agency, and leave projects ethically with expectations and reputations intact, with all parties involved. Ideally, with a governance and strategy to financial sustainability, where appropriate and possible.

Territory Interview | *Joe Macleod*[304]

Author Question | *How do you see design, as a discipline?* I worked in tech and my last real job was at *ustwo* [*Digital Products Company*] as Head of Design. I am inspired by closure experiences which are not necessarily endings, but relate to emotional closure. As closure experiences per se end things, there is a whole world that opens up in the background of death. The Industrial Revolution set the requirements for marketing and sales; this sociological source framework created a relationship with endings in our consumer experiences, which considers aspirational abundance as a place to end up. As a consequence, we can't get out of that vocabulary because it's been so embedded in us.

Author Question | *What does engagement mean to you?* Creativity is a feature of engagement at the beginning of the consumer life cycle in terms of observing needs, testing hypotheses, onboarding, customer targets, and also usage. What I find is not happening is a discussion about engagement, or disengagement, at the end. Especially in our industry we are under-skilled and lack vocabulary at the end of the consumer life cycle. This fundamental aspect is the *Achilles* heel of the design industry, if it doesn't start changing its behaviour.

Author Question | *How do we design engagements that have a clear positive path to exit? Please specify any principles, values on that.* When I buy stuff, the bank knows who I am, the company knows who I am; this means that there are lots of different levels of identity. Even when I go into shops, I am identified in relation to the money I have and if I hold a loyalty scheme. This happens before I get into the measurements of defining my needs. However, at the end I leave any consumer relationship as an

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[304] *Previously Head of Design at the award-winning digital product studio Ustwo – famed for the game Monument Valley* | Currently founder of Ends, seeking better interactions for the end of experiences | *And end*. (2019). And End. https://www.andend.co/

individual. So, I have my identity, onboarding, and usage with me. As I walk away from any impact, I'm relinquished of that responsibility in terms of my identity. If I throw bad printer ink into food waste, I can do a lot of damage and it is relinquished in my identity. Yet, that identity is intact elsewhere in the consumer life cycle in terms of measurement.

Author Question | *What are the key design strategies or actions to shift from an event to engagement? I.e., on a deeper level for positive, sustainable action?* One of the biggest problems in engagement is lack of consumers' engagement at "the end". One of the problems of engaging initiatives on sustainability is that they apply guilt and shame, which are very old, traditional religious things, and they are also unactionable. *Purpose Disruptors*[305] who do stuff around climate and magic numbers [a data analytics company], got together and did some work for *COP* a couple of years ago, when it was in *Glasgow*. It worked out the carbon impact of advertising in the *UK* saying that advertising is an emotional engagement that inspires people to consume more. If we look at some of the things that we have tried to do in terms of climate change and behaving better at the end of product life, then there is the opportunity to transition through deep engagements.

Author Question | *What role can design for engagement play in tackling complex challenges?* Engagement is about seeing yourself in something, and we have been really good at building engagement in onboarding, but in consumer terms. Patterns are about how we engage in consumption essentially; when we look through the more recent consumer experiences, like *Instagram*, it's just constant consumer engagement. At the end of product life, we have not yet matured enough in our discussions and vocabularies [so] that [we] can dismantle and reflect our consumption. Becoming engaged at the end will take a lot of work, but I think it's absolutely critical. Everyone is desperate to get engaged at the end, i.e., to create engaging offboarding experiences.

End of Interview |

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[305] *Purpose disruptors*. (2015). Purpose Disruptors. https://www.purposedisruptors.org/

Engaging Design End-duction |

Designing Impact through Engaging Design |

In the context of a project, an impact can be understood as outcomes of activities, events, research, and practices that successfully engage those involved directly or via proxy organizational structures. For instance, impact can be seen as a product in its own right when used as a means to work towards a strategic trajectory. An example of this can be the different motivations that make people go to the gym, which can include community engagement, body development, training, conversation, meeting people, physiotherapy, keeping healthy, or other instances that relate to the available services. As a returning impact, there are healthier and fitter "people" who have improved their well-being, and reduced the impact on the *NHS*[306] who can contrast daily increases in: obesity,[307] heart disease,[308] and issues caused by the reduction in physical activities across work and other casual lives,[309] which includes an increase of sedentary lifestyles.[310]

In *Engaging Design*, impact can be the driver of a project that structures the way it is conceived from the outset. For instance, in this book, we dedicated the last chapter to projects which use design practice to generate desired impacts. Some of these projects (e.g., *InHouseRecords*) express impact through numeric and measurable parameters; others (e.g., *Touch Eco*) use more experiential approaches through which impact can be felt and lived. Therefore, the definition of impact might change

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[306] Turner, J., Knowles, E., Simpson, R., Sampson, F., Dixon, S., Long, J., Bell-Gorrod, H., Jacques, R., Coster, J., Yang, H. and Nicholl, J., 2021. Impact of NHS 111 Online on the NHS 111 telephone service and urgent care system: a mixed-methods study. *Health Services and Delivery Research*, *9*(21), pp.1-148.

[307] Catenacci, V.A., Hill, J.O. and Wyatt, H.R., 2009. The obesity epidemic. *Clinics in chest medicine*, *30*(3), pp.415-444.

[308] Keys, A., 1970. Coronary heart disease in seven countries. *Circulation*, *41*(1), pp.186-195.

[309] Diener, E. and Chan, M.Y., 2011. Happy people live longer: Subjective well being contributes to health and longevity. *Applied Psychology: Health and Well Being*, *3*(1), pp.1-43.

[310] Park, J.H., Moon, J.H., Kim, H.J., Kong, M.H. and Oh, Y.H., 2020. Sedentary lifestyle: overview of updated evidence of potential health risks. *Korean journal of family medicine*, *41*(6), p.365.

depending on the context and aimed objectives. For instance, presenting impact of an *Engaging Design* project to boards like the *UK Research Excellence Framework* (*REF*) would require an alignment to its terms;[311] this would be different from the way participants might describe it when asked how they felt about an experience.

The contextuality and uniqueness of *Engaging Design* project impacts is important to bear in mind as it needs to be "translated" and clearly communicated to different audiences whose understanding of impact varies. For example, academic, charitable circles, and tertiary sectors might frame impact as a requirement of their financial support, which is different from a public wishing to learn. Whether financial support requires tangible and often quantifiable evidence of impact, on the other hand, learning *Engaging Design* necessitates the appreciation of its qualitative aspect—e.g., a lived experience—which is indeed the impact created on those involved in transformative activities.

The languages for these two types of approaches are very different, but they are both necessary for ensuring the transferability of the methodologies to different contexts. Learning how to speak both languages provides peer researchers and practitioners with objective measurements that can be used in parallel. How [should] tension between qualitative and quantitative approaches [be mitigated], and how can or should impact be designed in order to reconcile this tension?

In this last section of the book, we explore methodologies and frameworks that can be developed for creating a definition of "impact" for *Engaging Design* that includes and combines both quantitative and qualitative impacts (below, we use a few examples to illustrate this). By analysing the end point of *Engaging Design* projects, we discuss topics like legacy, responsibility, and ethics of engagement to provide an interpretation of how impact could be designed through and with *Engaging Design.*

In *The Wildlife Trusts'* annual challenge #*30DaysWild*,[312] the *United Kingdom* is asked to do one "wild" thing a day every day throughout June. With these carefully designed engagements, the *Trust* seeks to let the natural world into everyone's lives; here, impact is functional to comprehension, new behaviours, and advocacy for our natural world(s).

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[311] An impact is the effect and change on the economy, health, environment, society, culture, policy, beyond academia. UK Research and Innovation, (2024), REF Impact, https://www. ukri.org/who-we-are/research-england/research-excellence/ref-impact/

[312] *30 Days Wild | The Wildlife Trusts*. (2023). https://www.wildlifetrusts.org/30-days-wild

To prevent older people from feeling isolated and disconnected, *the Dutch Ministry of Health*, *Welfare and Sport* supports initiatives like low-cost neighbourhood meals, virtual visits to *the Rijksmuseum*,[313] soccer for seniors,[314] or intervention like *"Kletskasska"*, which consists of special checkout lanes that allow people to engage in a conversation with the cashier to help combat loneliness.[315] One of the impacts of these types of projects is a collective reflection on how our contemporary cultures have transformed from societal norms to potentially "dystopian micro-futures", which also can raise questions of "is that positive progress?"

An example reflecting how communities experience, and lead, a type of *Engaging Design* practice is the practice called "dugnad".[316] This is a cultural practice embedded in *Norwegian* culture with origins in small farming communities; here, people are historically co-dependent on each other. "Dugnad is a cultural practice that creates an environment that nurtures prosocial and cooperative activities".[317] It is based on an empowered autonomy, or "commoning",[318] aimed at tackling a specific local issue—such as a spring clean of a local park or playground or raising money for the local sports team. Involving any age, the "dugnad" promotes prosocial behaviour, thus creating social connection within the community. Although voluntary, it differs from what we might commonly call "voluntary work"[319] in the sense that "dugnad" is undertaken for mutual support and benefit.

Practices of these kinds have the objective of promoting engagement as a stand-alone impact. This can be mostly appreciated through qualitative parameters, which might struggle in contexts where quantitative factors are required for funding applications, for instance. Hence, there is the need to

[313] *Tours – Rijksmuseum*. (2024). Rijksmuseum. https://www.rijksmuseum.nl/en/tours

[314] Soccer for Seniors | *Inclusive sports and physical activity in the Netherlands – Sportfolio Internationaal*. (2021, February 26). Sportfolio Internationaal. https://tools.kenniscentrumsportenbewegen.nl/sportfolio-internationaal/onderwerp/inclusive-sports-and-physical-activity-in-the-netherlands/

[315] McQuarrie, L. (2023, February 24). *Slow checkout lanes*. TrendHunter.com. https://www.trendhunter.com/trends/kletskassa

[316] Simon, C., & Mobekk, H. (2019). Dugnad: A fact and a narrative of Norwegian prosocial behaviour. *Perspectives on behaviour science*, *42*, pp.815–834.

[317] Simon, C., & Mobekk, H. (2019). Dugnad: A fact and a narrative of Norwegian prosocial behaviour. *Perspectives on behaviour science*, *42*, pp.815–834.

[318] Bollier, D. (2020). Commoning as a transformative social paradigm. In *The new systems reader* (pp. 348–361). Routledge.

[319] Paull, M., & Omari, M. (2015). Dignity and respect: important in volunteer settings too! *Equality, Diversity, and Inclusion: An International Journal*, *34*(3), pp.244–255.

transform this "financial" benefit, or capitalist system, required to support projects of this kind to gauge the nuances of impacts of engagement. This is because *Engaging Design* propositions might be "making something disappear", or giving something or someone a voice, rather than following conventional capitalist norms.

Summary of Engaging Design Models: from Participation to Engagement

Some of the methods that guide collaborative practices in design research are co-design,[320] participatory design,[321] action research,[322] and public engagement.[323] Although these methods have been formalized in the context of academia, they play a role in design practice by guiding the initiation of collaborative design work and process. However, in these methods people are only engaged in processes with the objective of learning more about those benefiting from a design output for testing design outcomes. In both cases, the legacy of cultivating agency externally or beyond the life of a project is missing.

In this book, we presented the voices of different design practitioners who have deployed *Engaging Design* as a stand-alone "product" that has a long-term vision of change, beyond the timeline of the design project. Here, the act of designing takes different shapes, which all share the common objectives of developing, or fostering, systemic relationships through Artefacts, Systems, Partnerships, Processes and Affect. We presented five models that describe the different positions that *Engaging Design* takes to harness materials, infrastructure, technology, knowledge, or skills to make them as social assets—like culture, timing, communication, serendipity—for

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[320] Sanders, E.B.N. and Stappers, P.J., 2008. Co-creation and the new landscapes of design. *Co-design*, *4*(1), pp.5–18.

[321] Spinuzzi, C., 2005. The methodology of participatory design. *Technical communication*, *52*(2), pp.163-174.

[322] Somekh, B., 2005. *Action research*. McGraw-Hill Education (UK).

[323] Rowe, G. and Frewer, L.J., 2005. A typology of public engagement mechanisms. *Science, technology, & human values*, *30*(2), pp.251–290.

making change. In addition, these five models present different approaches to entering and existing a design project through and via engagement.

In *Engagement as Artefact*, the entry point is often a design intervention used to engage different stakeholders in thinking about strategies for exit. For instance, *The Big Compost Experiment* used composting as an entry to engage citizens across the *UK* in testing new materials replacing single-use plastic, which led to an exit promoting a reduction of food waste. *NBello Studio's The Handwashing Station* had as an entry point supporting doctors and nurses during the Covid-19 pandemic, and as an exit the application of circle economy principles that engaged local knowledge and resources in the product development and manufacturing.

In *Engagement as a System,* entries concern the design of a relation, which creates rippling effects ending in systemic changes related to learning, literacy, or awareness. For instance, *CoastSnap* used the interface of an app to ask people to help monitor changes in the coastline, whose exit was an increased awareness at the scale of the population of the impact climate change has on shorelines. The *Wet Lab* used as an entry point a floating lab to engage communities living along *London's* canals in learning about the local biodiversity; the exit long-term effect was an informed understanding of the role the canal's biodiversity plays in urban ecosystems in terms of health and well-being.

In *Engagement as Partnership*, the design entries relate to the development of exchanges fostering social empowerment, which shape exits where partnerships support people's ability to implement the change initiated by the design project. For instance, *The Care Lab' Systems of Care* is the entry point for partnering with different institutions and organizations, which creates an exit when partners understand that care can be the systemic relation increasing the organization's human resilience. In the S*heffield Wheat Experiment*, the entry of cultivating indigenous grain was used to increase the local communities' awareness of the economic and political barriers on grain harvesting, to exit with an attitude leading to increasing land resilience.

In *Engagement as Process*, the entry point concerns the design of an event or process leading to a changing experience at a personal and collective level, and as an exit a cultural shift. For instance, *Lewes Remembers* used a ritual to commemorate a historical key event, whose exit consists in creating a generational cultural exchange enduring memories through personal experience. In *My Naturewatch* the entry point of a technology enables people to reframe their relationship with nature. This shapes an

exit where ambassadors champion more empathic relationships with the natural environment at the scale of the population.

Finally, in *Engagement as Affect* the entry point is the design of an exit, which means creating the conditions for making change, whose exit is long term impact carried on by those that have been changed. For instance, *InHouseRecords'* entry is teaching music production to inform the exit of reducing re-offence; the *Pint of Science* entry is designing a more accessible dissemination of science whose exit is creating a trusted dialogue between science and society.

These models of *Engaging Design* serve as inspiration points for "designing the conditions", as outlined by our colleague *Manzini*; in the preface, he indeed sends an invitation to design the means to make change.[324] On the other hand, *Gant* highlights the importance of:

"say[ing] that it is possible to **create environments**, i.e., technical, economic, and regulatory systems, **which constitute a favourable context for a multiplicity of forms of engagement**: from those that require a high-participatory intensity to lighter ones, but which can equally make those who participate feel that they are part of a collective project".

Drew supports this position:

"*Engaging Design* is a way of supercharging the impact of design. Not in the traditional sense of scaling where more units are purchased. But in **putting design in the hands of more people**. In this way, *Engaging Design* is essentially a form of regenerative design. It is planting and growing the seeds from which other designs grow."

In summary, although we categorized *Engaging Design* to provide guidance on the means and terms for designing engagement, there is still the question of how does design, as an action, ensure agency and inclusion? How do we design ethically for the end of project(s) and initiatives, to enable safe exits that have the impact imagined at the beginning?

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[324] Manzini, E., 2020. Politics of the Everyday (Designing in Dark Times).

Designing **"To Exit Responsibly"** (ethically)

Designing the route to exit and the way to do so responsibly should be one of the first factors that practices of commoning, which enable access to tools, skills, and opportunities, need to make a plan for. What is going to be left behind? Are you designing in capacity or handing that over to communities? One of the challenges in this regard concerns the fundamental mechanism for designing projects. Indeed, quite often projects live on external fundings that are limited in time, but also bound by constraints that can be difficult to simply pass over. For example, when there are *Intellectual Property* assets to comply with.

Some of these constraints include the business model; for these projects, whose life often extend the funding timeline, a business model should account for the potential impacts that are often unknown at the beginning—e.g., economic, social, environmental, pedagogical, or health impacts—to mitigate the need for clarity that certain body would require on impacts and to exit a project more responsibly. Indeed, even if a concept is financially viable, it is difficult to protect it either as a charity, social innovation, business or other. Considering the exit point in these types of projects can help imagine the legacy and impact as financial assets. However, being unique, these projects have contextual challenges to navigate.

Limitations on funding might create ethical challenges in respect of exit points. As many of these projects are designed for having a community, or individuals, continuing what an engagement process initiated, leaving a project is often a difficult task. Hence, an ethics of engagement should be put in place from the outset. This is different from many of the ethical clearance processes that institutions have in place. An ethical etiquette for engagement processes relates more to the type of relationships that (can) evolve across a project, including the exit point. Leaving ethics out of the picture can invalidate many of the great results enabled by engagement projects. For instance, a principle that an ethical code could consider is the duty of care towards a process, which includes any of the events that design can create and endure.

Defining the ethics of engagement might overlap with the design of the exit point, for which values like care, respect, accessibility, inclusivity—presented by many of the projects we include—can be used as guidelines

for designing an exit. This code has a forward-thinking approach that requires imagination on the way people might be transformed by a process of engagement, and on what aspects might go wrong in that process. Quite often in design the expression "unintended consequences" is used to point at events going in an unexpected direction. Here, the ethics of engagement can provide support to those designing engagement processes; with ethics in place, events where multiple species, including humans, engage with the beneficiaries, can be seen from a behavioural perspective, thus in need of a behavioural code to mitigate unwanted results. Many of the projects in this book present human values like empathy or inclusivity to increase personal awareness towards aspects that might be out of control.

In summary, responsibly designing engagement projects is an exercise of creative imagination from the outset, which includes an understanding of the relations that a project might develop, how those engaged will be transformed by those relations, and what principles and values should be put in place to mitigate unwanted directions. With this in place, it is then necessary to think about how these processes of transformation can develop in impacts to ensure the financial liveability of the project and sustain its legacy and the actions required at different points of the system.

Designing for Legacy... Engaging Design(s)

Uncertainty is a factor that the majority of processes relying on the dynamics of events—like natural, social and human events—share. To mitigate uncertainty, science uses models to render the behaviour of a phenomena based on data.[325] For instance, the curves we observed daily in the models describing the number of cases during the pandemic supported different governments in regulating the behaviour of the global population. However, these regulations based on data were functional to the actual way people behaved.[326] This is something that can't be

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[325] AlArjani, A., Nasseef, M. T., Kamal, S. M., Rao, B. S., Mahmud, M., & Uddin, M. S. (2022). Application of mathematical modelling in prediction of covid-19 transmission dynamics. Arabian Journal for Science and Engineering, 47(8), 10163-10186.

[326] Rusou, Z., & Diamant, I. (2022). Adhering to COVID-19 health guidelines: A behavioural-failure perspective. Frontiers in Psychology, 13, 916960.

easily controlled and measured with certainty. The uncertainty of human behaviour is where engagement projects focus.

This is an aspect accounted for by the projects collected in this book through different approaches, all sharing the belief that behaviour is a core component for designing the legacy of a project. As *Engaging Design* focuses on the way design can support people in leveraging change, human behaviour is both an opportunity and challenge for drawing the project's legacy.

This tension between these two poles is the place to interrogate the legacy of engagement and whether it can be measured. In *Engaging Design,* how can legacy be defined? How can it be communicated effectively and what indicators, KPIs, or parameters should be used? Design is a discipline that often crosses boundaries by adopting different types of methodologies from other disciplines, like social science. Methods outside design are often used to frame observation, analysis, testing, validations. This means that design-led approaches combine qualitative and quantitative data to create outcomes that often require creativity in terms of analysis.

In *Engaging Design,* impact is quite often pursued by different methods that include design, as well as artistic practice(s). Outputs, or exits, create a great narrative that those engaged understand and take with them as a personal legacy of the project. Hence, it often happens that change occurs at a cognitive or emotional level; it can be visible but often lacks a vocabulary for communicating it well outside the art or design practice.

Legacy is therefore a combination of events which include the transformation of a community of people or individuals. It can be expressed as gaining confidence, agency, participation, leadership, empathy, care, amongst others. It follows that measuring changes—and the legacy of project(s)—is often a struggle, as project(s) might not fit into existing measuring frameworks. However, imagining the exit point of a project could support new thinking in regards to measures to be adopted or created, so as to have tangible and "measurable" evidence.

Many of the existing measuring parameters struggle to integrate the human aspect that has leveraged change and defined the legacy of an engagement project. For instance, it would be possible, if correctly set up from the outset, to use statistical methods to measure change of behaviour, practice, adoption. However, this type of measurement would miss the experiential factor that leveraged the change.

In this book, we included the *Repeatable Insights* from the projects described to communicate where the legacy of these projects could sit in terms of transferability. This is to help others learn and use these approaches in their own practice. The tools that we developed for this book share a similar motivation; their role is to help navigate the value of these projects in terms of legacy, beyond more traditional methodologies. In this regard, these tools should be approached as intentional strategies for reaching objectives through *Engaging Design* practice(s).

This means that the tools indicate applied strategies deployable in relation to the aimed type of transformation, i.e., whether the exit point is about increasing agency, resilience, literacy, etc. Of course, these "applied strategies of intention" would need to be grounded in methods that structure a process of engagement (e.g., action research, ethnographic design, etc.). The value of these tools relates to the direction a project is intended to take and how this can be achieved.

Designing with a legacy mindset is an open field of experimentation. With this book, we hope to contribute by providing models and tools that guide how to think about impact under the *Engaging Design* terms.

Reflection, Evaluation, and Impact

The value of *Engaging Design* is something that cannot be expressed universally; it is contextual to the groups using and deploying it. Pharmaceutical industries have regulations, health and safety industries have clear standards, and even communities have cultural norms. Here we do not seek to dictate terms for use, but question how it is conducted so there is clarity to yield impact and positively evaluate it. For instance, the *Research Excellence Framework* (REF)[327] is the *UK's* system for assessing the excellence of research in *UK* higher education institutions. The *REF* outcomes inform the allocation of £2 billion per year of public funding for universities' research. The *REF* looks for "depth of impact (having considerable impact on people) or breadth", which concerns scale.

All of these means and models do have "performance indicators" that they need to provide to different parties within the project(s). It is important to align those agendas as they are all interrelated and it's possible to

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[327] A process of review that is intent on including many disciplines with what impact is. | REF 2029. (2024). https://www.ref.ac.uk/

strategically cover a number of them at the same time. Points to consider within the impact and evaluation being created:

– Satisfying commissioners, funders, and sponsors.

– Helping you (or others) apply for funding.

– Informing future work(s).

– Boosting the profile of your (or others) work.

– Comprehending motivation and satisfaction of different parties.

– Adding to the evidence base of your work.

– These are not exclusive, but will change depending on the type of impact: society, place-based, health benefits, or other rationales. All of these aspects of the work should aim to collect impact narratives (no matter how small) along the way and then update them (where and if possible). The key principles of evaluation should:

– Include continuous (not just one-off) process informing planning and delivery as the project develops;

– Involve all those with an interest in the project in defining the questions they want answered;

– Use imaginative and creative approaches, which engage those involved;

– Help projects to be more accountable to the wider community;

– Be used to challenge discriminatory and oppressive policies and practice, and to overcome inequality and disadvantage;

– Highlight and celebrate successes and achievements; and Encourage an honest appraisal of progress, so that you can learn from what hasn't worked as well as what has.

What is **Success** in Contextual and Qualitative Projects?

We do encourage contextually questioning what success is (to you, to the project, and to the communities engaging in it) as it will no doubt require some unpicking. In relation to a project is it mainly about the context? To understand success, you might need to capture data, but before doing so, it is important to comprehend how the data will be used. Collecting data might require some openness, as there will be many things that

you (or the project) have not even thought of. Hence, you should have a clear understanding of what you should measure and what constitutes an impact. This might be "by proxy", i.e., to family, friends, or one person rather than the direct audience. We guarantee it will take a bit of time and consideration. People probably won't communicate "it has impacted me on xyz" because it might not be important to them. This is why it is critical to understand what "change" means and how it has happened: What do people do differently? Here, the biggest challenge is capturing "change" ethically so that any data collected (qualitative and quantitative) can be shared in other contexts (e.g., a conference paper or a report) and with other audiences (e.g., new interested parties, clients, or partners).

In this section, we outline a list of possible "changes" that can be observed across the trajectory of a project, regardless of the timeline. To begin with, it is important to acknowledge that the different parties involved in a project might have different understandings of change. Hence, it is important to draw definitions shared across parties and clarify or agree "whose" change defines success. This is because change leading to success can be observed at different levels of a project; it can concern new types of behaviour or new methodologies and strategies for addressing a situation. It can also be related to the overall legacy of the project, in terms of the sequence of actions and associated events that have created the conditions for a change to happen. Under this category, the success of a project can be described as the ability of a project to unpack contemporary challenges through, for instance, failing-to-safe practices.

Our cultures, perspectives, and biases will all be different, and such diversity should be embraced rather than avoided. Processes of change are not about establishing what is right and wrong; in qualitative projects, appropriateness and contextuality are often key qualities that should be used when collecting and analysing data. For instance, when collaborating with communities of a culture, any associated behaviours, perceptions and attitudes, methods and processes need to be recognized to engage in an appropriate manner. The contextuality and uniqueness of a project need to be clearly acknowledged and discussed also in the analysis and evaluation of the project to identify limitations and specify where further work should focus.

In addition, we often measure impact through breadth and depth, i.e., breadth is how many you are reaching, and depth is the level at which you are having an impact. These will often be different, and it is important to measure these critically in relation to the project's objectives and aims

and the relevance within its literature. Throughout our work, we have learned that a "failing-to-safe" attitude is critical when you need to unpack contemporary and complex challenges.

Engaging Design points toward a design, as a practice and theory, whose legacy is socially accessible and can transfer project-specific interventions. In an ideal world, we think that *Engaging Design* can encourage prosocial behaviour toward one another. With *Engaging Design*, the key factors are "ending safely" and its procedural mechanisms are structured so there is always legacy and inclusion that endure and extend success well beyond the financial norms or motivations.

Author's Reflective Note. *Dr. Laura Ferrarello*

I consider the practice of engagement a fundamental part of my design work, and I regard its complexity as something equally exciting and challenging. This is because engagement projects often operate in unique contexts that are shaped and influenced by human relations. To approach such complexity, I outline the learnings I gain from each project, as such learning helps me in refining methods and approaches that can constitute a methodological framework for designing engagement. Through these projects, I learned that the success of an engagement intervention is often functional to one's perceived ability to act in a context. Indeed, designing engagement requires the understanding of those relations, as engaging interventions leverage these as "objects to be designed"—to foster desired outcomes (or by-products) that emerge from conditions designed to pursue aimed objectives.

For example, creating a service for marginalized communities to tackle financial challenges can be approached as an engagement intervention. Here, the service can leverage the community's agency in taking on and continuing developing the conditions the service has designed for them beyond the project timeline. To achieve this, *Engaging Design* can either be the way the service is designed—i.e., create the conditions for having the community design it—or the objective of the service, which is to distribute among the stakeholders the roles and responsibilities for reaching the service's goals by liaising human relations. In the latter case, engagement becomes a strategy for designing the end or exit of a project, which is to

develop strategies that ensure that goals are endured beyond the timeline of a project. Designing the exit is equal to designing a handover where a community of people, or single individuals, continue the design under their terms. *Engaging Design* can also shape the design of the "entry" of a project, which is to define a strategy of engagement that could trigger systemic actions and/or events that reach goals through the relations they create. In both cases, *Engaging Design* informs the design of the project legacy, i.e., how a design work endures its goals and outcomes through the motivation and commitment of the different parties involved. To envision and trace the legacy of a project, a design process needs to hold both forward and backwards thinking to be able to see those rippling effects materializing through those taking ownership of something "designed", but also to understand what or who triggers those effects.

How can legacy be designed? Here, the concept of agency[328] plays a key role; in the analysis of the relations of a context-system, it is important to develop an understanding of (1) what agency a person, or a community, has in the system, (2) what factors (cultural, physical, infrastructural, economic, political) limit agency and (3) what leverage points can increase agency. These are what constitute an "agency assessment", i.e., an assessment of the capacity the parties involved in a system have to act in their reality (physical and mental ability, resources, knowledge, infrastructure). This is related to the identification of the existing connections that limit (challenge) agency.

Engaging Design often evolves from these three points; these should be approached with an empathic mindset. Hence, the necessity to define an "ethics of engagement" framework, which is a form of code of conduct framing the Dos and Don'ts that the design of an engagement, as intervention, should account for. This framework includes: the act of listening, ensuring accessibility at different levels, respecting everyone's time and effort and the ideas that people give to a project, respecting any lived experience as knowledge. These are all fundamental acts of care that designing for the legacy should be aiming at.

With an "agency assessment" in hand and an "ethics of collaboration" framework in place, designing an intervention for engagement becomes an action for transforming challenges into opportunities. Here, engagement becomes a means for dialoguing with people with the objective of putting

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[328] Emirbayer, M., & Mische, A. (1998). What Is Agency? American Journal of Sociology, 103(4), 962–1023. https://doi.org/10.1086/231294

them in the position of moving actions forward by setting up a space that enables agency.

As an engaging design intervention exists through the system's relations, the process of designing engagement is not linear but needs a synthetic and holistic approach[329] that evaluates each action in relation to the effects in the system. The nature of these actions is not always quantifiable, as often they are related to the mental construct that a person, or a community have when acting in the system. Hence, to make a person, or a community, in the conditions for driving change, it is key to this person holds a mindset with the right level of self-efficacy[330]—i.e., the ability of a person to think themselves able to succeed in something, which is totally independent from any factual intellectual or physical ability; with this, ownership—the feeling to own something like a process or an object— can lead to processes of mutual creation that can be leveraged or land in outcomes, like products, services and experiences.

In conclusion, designing engagement as a handover process, requires agility in understanding how people act in their contexts. With this, the design creative process helps understand where *Engaging Design* can draw a systemic change that makes individuals and communities feel they own and are able to act in a system. Considering these factors as exit points, in very general terms, can guide interventions that should support people in moving towards the centre of their agency space.

Author's Reflective Note. *Dr. Rob Phillips*

Personally, the hardest element of this working typology is trust. Ensuring people and organizations are comfortable with exploring "what is appropriate" rather than a fixed "app, or service", before even conducting research or funding. The start point for projects can be as contextual as "making something disappear", or "fostering connections with the natural world". I fully acknowledge the privilege that I often work in the framework

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[329] Hoverstadt, P. (2022). The grammar of systems. Journal of the International Society for the Systems Sciences, 66(1).

[330] Bandura, A. (1982). Self-efficacy mechanism in human agency. American psychologist, 37(2), 122.

of academic funding, but defend the rigorous processes of procuring and developing that. The question is how else do we break free from capitalist models? By working towards more social equity, inclusion, diversity, and autonomy.

There are parallels between grassroots initiatives and industrial design. They have the same constraints with specifications, inclusion, materials, financial sustainability and leverage many strategic relationships. Finally, all initiatives must get both buy-in from audiences and financial decision makers, a near impossible narrative if it is contextual and success is unknown. Learning where to intervene is key, leveraging existing or parallel systems, people often build from scratch over and over again. Designing and cultivating agency always requires the acceptance that it might fail. *Engaging Design* is a material, like any other…

It requires specific tools, sometimes physical spaces, technical resources, safety measures,[331] ethical procedures, all created to protect interested parties using it, making with it or building for it. I believe in the *Do Lectures*[332] approach of "moving fast, then evolve and re-evolve". This can also be applied to the speed and scale. However, let's put in the caveats that we navigate this space by designing; 1) "with" not "for", 2) planning for exit, 3) being transparent… this is a prototype… not a silver bullet, and 4) lets learn to trust each other. All of these things take time, language, and communication.

I was honoured to work with the *Interaction Research Studio*[333] on the *MyNaturewatch* project.[334] That project not only had a profound effect on many people, but also me as a researcher, leading to many people rewilding[335] their gardens and cultivating new approaches. *Naturewatch* also cultivated the "*Training the Trainers*" programme,[336] giving tools to

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[331] *How to carry out a COSHH risk assessment – HSE*. (2023). https://www.hse.gov.uk/coshh/basics/assessment.htm

[332] The DO Lectures is an encouragement network for the creative underdog. Our goal is to inspire you and help you reach your potential. It's that simple. It's why we do the DO | *The DO lectures*. (2023). The DO Lectures. https://thedolectures.com/

[333] https://research.northumbria.ac.uk/irs/

[334] *My Naturewatch – My Naturewatch Project: DIY wildlife cameras and devices*. (2023). My Naturewatch. https://mynaturewatch.net/

[335] Willshire, J. V. (2023, June 15). *How to rewild a new garden*. Smithery. https://smithery.com/2023/06/15/how-to-rewild-a-new-garden/

[336] Phillips, R. and Abbas-Nazari, A., 2022. Fostering Natural World Engagements: Design Lessons and Issues from the My Naturewatch Training Programme. *Design Issues*, *38*(2), pp.47–63.

trainers providing agency (designed by *Amina Abbas-Nazari*). It yielded strong targeted impact through the strategic distribution of resources, outside of researchers' hands.

Finally, *Lewes Remembers* had profound impacts on me. I was personally involved as a Lewes resident and bonfire boy. After I (*Rob*) doused my torch at the war memorial, I heard my (then) two-year-old daughter shouted, "daddy my daddy". It caused me to physically break down. That profound impact knowing that would have been the last time I would have seen them… I (*Rob*) will never forget. I can never imagine those that serve (or have served) in the forces and face that on a daily basis. These are deep impacts of *Engaging Design* on us and that is why it is important, because it impacts us profoundly.

Acknowledgements |