grounding technologies

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March - December 2023

Putting people and place at the heart of our work, Grounding Technologies explores how everyday, emergent and mundane technologies can support community-centred climate action.

Developing from the Bristol+Bath Creative R+D Clusters Programme, Grounding Technologies was made possible through funding from the Arts and Humanities Research Council (AHRC) and the Department of Culture, Media and Sport (DCMS). As a sub-branch of the wider national Creative Industries Clusters Programme (CICP), over 2023 8 'Demonstrator Projects' were funded across the UK, with the aim to explore how new areas of the creative industries could benefit from the networks and infrastructure established through the existing clusters programme.

As one of the 'Demonstrator Projects' Grounding Technologies sought to explore the creative use of emerging and everyday technology for climate action, addressing what it means to provide support for creatives who are foregrounding just transitions in the face of climate change. The project aimed to a) establish a network that gives a new focus for Bristol+Bath's aspirations for sustainability and b) support new projects exploring the contribution creatives can make across a spectrum of climate-focused works.

Such ambitions were achieved through a programme of public calls that brought together activists, artists, designers, researchers, programmers, creative makers, hackers, social enterprises, commercial businesses and creative producers. Across 10 months, over 100 people engaged in the programme, with 6 groups each receiving £15K to develop pilot projects.

In establishing a new network in the West of England that focuses on the role of creative practice and climate action, we've discovered a hunger across the region for working with emerging and commonplace technologies for bottom-up, social and environmentally engaged work. The region's deep history in environmental work, engineering expertise and technological know-how also highlights the value of bridging communities of practice. Our findings show that there is a wealth of potential in supporting interdisciplinary, cross-sector and intergenerational knowledge transfer.

Through the transfer of creative methodologies into the climate action and green economy sectors, our work also demonstrates that further support, networking, funding and investment is required in order for meaningful, place-based, just climate action and transition to be cultivated at a regional level.

In considering what meaningful engagement looks like and in supporting underrepresented voices, the emerging principles we set out in this document provide a foundation for establishing collective futures. Going forward, one of the key recommendations is that community-centred work is a must.

Exploring the value of cities' greenbelt areas, the uses of medicinal herbs, access to green space, nature-based entanglements, media literacy and the use of data for environmental activism, the breadth and urgency of our 6 pilot projects demonstrated the value of bringing together a cohort of interdisciplinary, cross-generational, skilled creatives together. As evident in the feedback from our funded teams and their progression across the 10-month period, we are only seeing the beginning of their journeys.

Findings from our cohort have shown that inviting creative approaches to a just transition can be done in a responsible, careful manner that moves away from business-as-usual, but that still allows us all to thrive. To deepen the impact of this work, we propose a re-focus on three key areas to address regional disparities of opportunity and identity: place-based, longer-term support and more flexible funding mechanisms are necessary for building meaningful collaborations across sectors and scales to energise a just transition.

A pilot project exploring how creative technology can be used to support place-based, just climate action.

Creative Uses of Emerging & Everyday Tech

Grounding Technologies placed emphasis on the creative use of emerging and everyday or 'mundane' technologies for climate action.

We define mundane technologies as the tech that we have in our pockets, homes and living rooms. It is the 'tool stuff' we know how to use, work and maintain. It may also be defined as technology that is commonplace (Dourish et al., 2010), where the novelty has worn off (Michael, 2003) and whereby people "exercise their agency and consciousness and appropriate technologies to mobilise themselves towards a quality of life desire" (Nevers, 2022, p.8).

Celebrating what we have at hand, including the craft and ingenuity of doing more with less, our focus on everyday tech also aligns with those working towards new low-carbon materials and solutions, as well as responsible consumption and production.

We define emerging tech as new and next generation digital tools, whose impact and influence is uncertain or yet to stabilise. Some of the current emerging technologies that interest us include augmented and virtual reality, artificial intelligence and Net 3.0.

Within Grounding Technologies, our focus was on the interplay between mundane and emerging technologies in relation to place-based, just climate action.

Place-Based, Just Climate Action

Place-based, just climate action - our focus in Grounding Technologies - refers to how the communities, cities and countries we live in can collectively move towards more equitable futures, where the effects and burden of climate change are equally shared and distributed.

Viewing climate action as the reduction of greenhouse gas emissions (climate mitigation), with the preparation for or adjustment to climate change (climate adaptation), we take the view that neither climate mitigation nor adaptation is possible without climate justice.

Climate justice links human rights and development by focusing on how the burdens and benefits of climate change, and stewardship of the world's resources, can be fairly distributed.

"A Green transition is a just transition" (2003 p.9) West of England Combined Authority Climate and Ecological Strategy and Action Plan.

Framing the Climate Crisis

To enact place-based climate justice, a systematic, joined-up effort is required that knits local communities' and individuals' needs with civic initiatives, corporate responsibility and regional, national and global governance. Such systems thinking therefore requires that we understand the wider positions within which we are embedded. The United Nations Framework Convention on Climate Change (UNFCCC) and its associated decision-making body, COP (Conference of Parties) are the global bodies responsible for how we collectively reduce greenhouse gas emissions. These organisations have led on how legally binding global protocols (Kyoto Protocol, 1997) and agreements (The Paris Agreement/Accord, 2015) can be forged between countries.

Such protocols and agreements inform, for example, the UK's Net Zero Strategy: Build back Greener (2021) and the EU's Net Zero Industry Act (2023). These acts and strategies are aimed at steering how governments and corporate organisations can reach net zero, meaning that the total sum of greenhouse gases produced by human activities is in balance with the amount removed. This is also known as carbon neutrality. To realise carbon neutrality, a radical shift in how we live our lives is required.

To support such thinking, terms such as 'Green New Deal' or 'Green Growth' are illustrative of how an alignment between climate action and the economy is seen as critical to making such a radical shift happen. While many remain critical of a continued emphasis on growth with climate action, others advocate for the opposite: to reduce our consumption and production.

As highlighted by the Institute for Public Policy Research (IPPR), one of the UK's leading progressive think tanks, a number of historic failures have meant that climate issues have not been addressed. According to the think tank, such failures are also illustrative of a "... 'strategic risk' to our collective ability to realise a transformation of societies" (2023, p.5).

Grounding Technologies places itself at the heart of this conversation by emphasising how the creative use of existing and mundane technologies, combined with emerging technological possibilities, can support people in a fair and equitable manner towards viable climate action.

Our six funded projects demonstrate how, in addressing climate issues locally, we can simultaneously tackle broader societal struggles. This includes misinformation and lack of media literacy (**Focus – but where?**), corporate accountability (**Eyes on Bristol Airport**), the holistic development of land (**Greenbelt 2.0**), accessible cities, nature-based justice and disabled leadership (**Garden Lab Whispers Grow, Where Do We Go When We___**), and the racialised health and wellbeing impacts of nature deprivation (**the apothecary network**).

the apothecary network. Image credit Marcus Berdaut

Climate Action in the WECA Region

Our work is focused in the West of England Combined Authority (WECA), which consists of the local authorities of Bristol, South Gloucestershire, and Bath and North East Somerset. In line with the aforementioned policies and agreements, WECA's Climate and Ecological Strategy and Action Plan (2023) has an ambitious goal to become carbon neutral within the next seven years. This means reducing our CO2 emissions by 10% or more, year on year.

Since the 1960s, the WECA region has been home to some of the UK's key environmental organisations (Sustrans, Resource Futures, Centre for Sustainable Energy, Bristol Friends of the Earth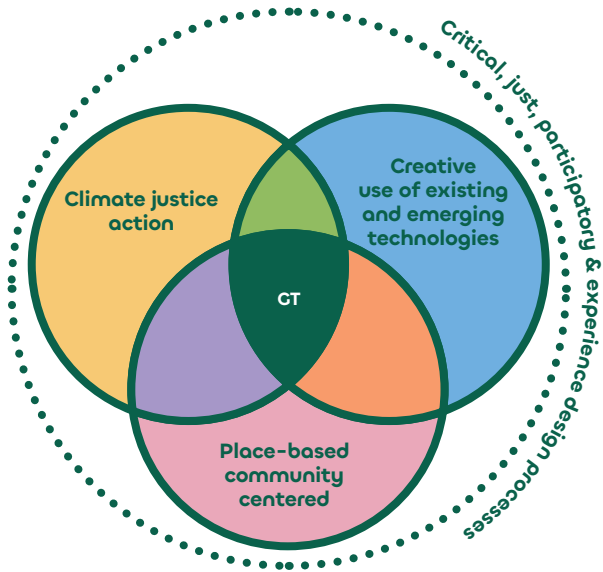, The Schumacher Institute). The region also has a thriving low-carbon technology sector, with Stroud and Bristol being the home ground of Extinction Rebellion. Since 2007, organisations such as Bristol Green Capital Partnership have been working towards long-term change and make the city a more sustainable place to live. Bristol was also the first UK city to declare a climate emergency in 2018, with Stroud following soon after and Bath and North-East Somerset following suit in 2019.

While the region's 'green credentials' may be well-celebrated, it is also home to some of the wealthiest and poorest areas in the UK. Such economic disparities, as well as the region's historic links to the slave trade, cannot be separated from climate justice.

2023 Timeline:

March/April
Delivery Plan

May 2nd
Open Call for Ideas Labs

Expression of Interest (EOI) to attend the Ideas Labs. Applicants provided basic information on their idea and areas of interest.

May 19th
Deadline for Ideas Labs EOI

May 25th
Shortlist for Ideas Labs

June 6th & 14th
Bath & Bristol Ideas Labs

The Ideas Labs were half-day sessions that ran in Bristol and Bath, during which participants learnt about projects that inspired us, met our team and learnt more about our process, programme and call.

June 15th
Applications Open

July 2nd
Applications Close

July 3rd-6th
Shortlisting

July 18th-19th
Interviews

July 31st
Welcome Session

Introductions and feedback provided on each idea and guidelines provided on how to gain support for the projects and overall process explained.

September 6th
Workshop 1

Designing for inclusion and empathy mapping: Sharing and exploration of the Inclusion Framework for Change (developed as part of Bristol+Bath Creative R+D). Empathy mapping exercises to think through the needs of the people who would use or experience their work. Primary conversations on our shared principles.

September 18th
Workshop 2

Design thinking, experience design and wireframing. Critical session exposing histories of design thinking, experience design techniques and their limitations. Open discussion with a critique of design thinking and its relation to design justice.

October 11th
Workshop 3

What values drive our work? Collective conversation and discussion on our shared principles, closing sharing event and future directions.

October 3rd
Exec Board Meeting & Feedback Workshop

December 1st
Public Sharing, Bristol

December 7th
Public Sharing, Cardiff

Our Approach

Centering our work from within a just climate position, we took a multi-pronged approach to developing the Grounding Technologies pilot. With climate action work emerging from the Bristol+Bath Creative R+D Creative Clusters project, there was already a precedent in our focus on climate action. Furthermore, projects by individual Grounding Technologies delivery team members, as well as the Restorative Futures strand of the University of the West of England's (UWE) Digital Cultures Research Centre, enabled the Grounding Technologies team to work quickly and effectively across the project's short timeframes.

Specifically, the Creative Climate Action Toolkit developed through Bristol+Bath Creative R+D explored how we could support small and independent creatives to become more climate-centred. This work found that medium-large scale creative organisations have the capacity to adapt to the climate emergency through existing cultural sector support. For example, see the organisation Julie's Bicycle, who worked with Arts Council England to deliver their Environmental Responsibility Action Plan (2020-2030). Smaller creative entities, freelancers and micro-SMEs, which are an essential part of our creative ecosystem in the West of England, faced different barriers. Non-linear models of growth make translating traditional decarbonisation methods harder for

smaller organisations and individuals. In response, and in conversation with a diversity of businesses and practitioners, the Creative Climate Action Toolkit was an initial guide for those smaller creative companies to combat overwhelm and start their climate action journey. To this end, we worked closely with tiata fahodzi on an action research programme called Black Earth: Resistance, Anti-Racism and the Environment to explore how, beyond decarbonisation, the creative sector could respond to calls for climate justice and step into collaborative action for a just transition. Working with a cohort of artists who identified as part of the Global Majority, the first step in our work was to bridge the knowledge gap between environmental issues and anti-racism to ensure long-term artist-led change.

Our experience across other projects and through Bristol+Bath Creative R+D guided the following research questions: **How is creative technology currently being applied within climate action in the WECA area? What forms do such applications take and what are their key characteristics? What effects are they currently producing and where do we see capacities for future directions? Who are the current key stakeholders and players in the area and who are emerging individuals, groups and companies? What types of support do these stakeholders require in order to develop their work?**

Outcomes

Based on our Expression of Interest, Prototype Call and final team selections. The numbers engaged by Grounding Technologies throughout our Expression of Interest, funding application and team selection stages included:

- 111 Expressions of Interest for taking part in two Ideas Lab events.
- 80 people who attended the two Ideas Lab events, in Bath and Bristol.
- 39 collaborative groups who applied for the £15k funding.
- 6 teams selected for funding from these applicants.

The graphic below represents the headline numbers of people involved in Grounding Technologies across our formal Expression of Interest, Ideas Lab and Selection processes. 6 teams were ultimately selected to receive £15k to support their creative

climate action work out of 39 collaborative teams who applied for the funding we offered. These 39 collaborative teams all included individuals who attended our Ideas Lab events, and many of these collaborations were formed out of people meeting for the first time through our events.

Out of the 39 groups who came together to apply for the Grounding Technologies funding, 16 of these included businesses or organisations engaging with different economic sectors, and 9 were made up of individuals, businesses or organisations from different parts of the West of England region.

As well as bringing new collaborations together, then, we were able to cultivate connections between people and companies operating in different parts of the economy, as well as different geographical locations in the West of England region.
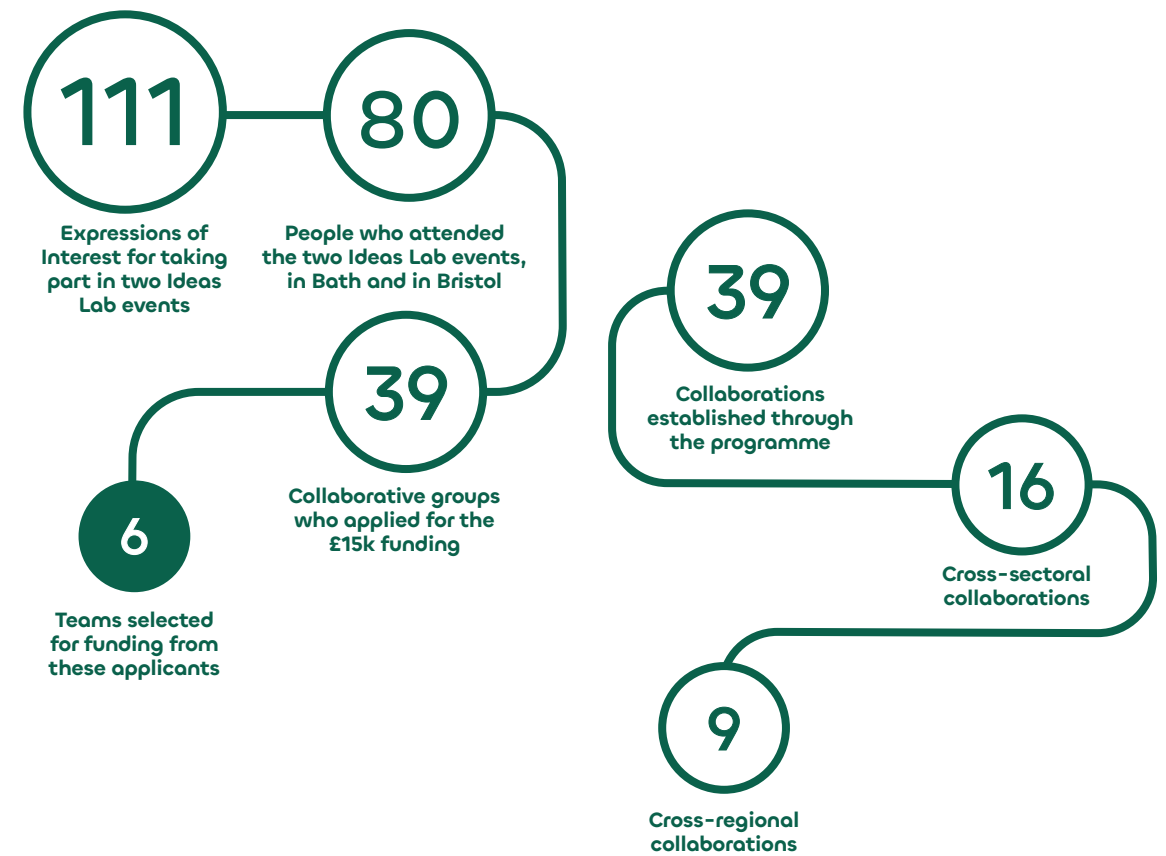
Eyes on Bristol Airport

The aviation industry is set for a huge increase in emissions with the government planning for an extra 70 million passengers a year by 2050. Despite years of opposition from groups, Bristol Airport has been granted an expansion - albeit with constrained planning conditions, such as limits on night flights and other metrics. However, it is difficult to check whether these limits are being upheld. Eyes on Bristol Airport brings local direct action group BAAN (Bristol Airport Action Network) with designers and developers to capture and communicate air traffic data to hold Bristol Airport accountable to its pledges. The software used monitors flights to check adherence to legal quotas and could also be rolled out to other groups fighting airport expansion across Europe. **Bristol Airport Action Network, Stephen Clarke, Gideon Jones, Richard Baxter, Jackie Head, Mary Collett,**

the apothecary network

the apothecary network is focused on using technology to tackle nature deprivation inequality through herbalism. The project centres ancestral knowledge and community joy using app technology. It connects to a network of decolonial community apothecaries which centre growing, community, collective care, joy, and connection with nature in radical, anti-racist ways. This prototype is based upon plants and knowledge from the afrofuturist apothecary and will initially centre eight plant allies that have been selected for their ease of growth, medicinal properties and historical link to the struggles within diaspora communities. Their long term aim is to create a community around this ancestral knowledge and build a relationship of reciprocity with the land and each other. **Marcus Bernard, Zoe Palmer, Javie Huxley, Chinonyerem Odimba, Joel Gethin Lewis**

Focus – but where?
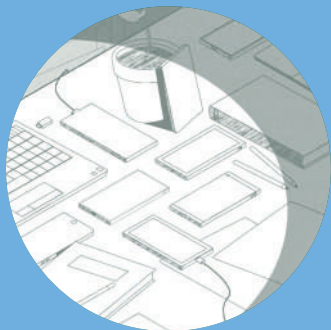
We exist within our own media echo-chambers.
Focus – but where? is a crowd-sourced game using play to explore the intersection of climate change activism and our complex media environment. Through co-production workshops, Focus-but where? has experimented with gameplay to help participants step outside of their echo-chambers, examine the role of emerging technologies in climate activism and study technologies that can foster a more constructive framework for political engagement. Using animation, eye-tracking software and illustration, with a playful, DIY aesthetic, Focus - but where? is a game which helps users navigate their own biases. It enables players to understand their priorities and focus when engaging with climate media. **Kexin Liu, Kai Charles, Inigo Hartas, Xingzhi Zheng**

Greenbelt 2.0, Rings of Resilience, Resistance + Renewal

Greenbelt 2.0 is focused on Bristol's greenbelt. Informed by experiences of loss and conflict, grassroots power and imaginative forays and visions of possibility, it asks what purposes the greenbelt should serve in this time of climate emergency. How would the landscape function if it served these purposes? Through working up these ideas together, Greenbelt 2.0 are holding gatherings on the land, walks, thought and embodiment experiments, and sharing stories and perspectives, co-creating of maps that bring to life these tensions, losses, landscapes, boundaries and their interrelatedness, and creating sensitively designed, captivating animations that transform. This project explores how creative technologies could facilitate a vision and policy from which a million climate actions could proliferate and have far-reaching, healing impact. **Maddy Longhurst, Mark Thurstain, Reuben Armstrong**

Where do we go when we ____?

Where do we go when we__? is an exploration into harnessing creative technology to develop a multi-sensory, nature-inspired experience. It aims to address barriers with accessing local green spaces and fostering a value for the natural world through interactive decolonised play and immersive art. Embodying 'access as a creative tool', the team have worked closely with local residents and communities to delve deeper into sensory research; specifically, hoping to better understand what multi-sensory elements will be best suited to create a space that's intersectional and caters to neurodiverse people and those on the spectrum. **Emma Blake Morsi, Ruby Spencer, Olamiposi Ayorinde**

Garden Lab Whispers Grow

Garden Lab Whispers Grow co-creates a garden lab to grow more caring relations and inclusive processes for climate action. Working with creative technologists and a disabled interdisciplinary designer, the project ties together disability wisdom, natures wisdom and DIY accessible tech to create an inclusive garden lab. Participants of the lab will invent experiments and tools for exploring our connection to non-living human beings. Working with active allotment steering groups, led by the local community, Garden Lab aims to enhance the ecology and accessibility of a green space and create models of inclusive collaborative knowledge-sharing, learning and making that can be adapted to any community green space with a climate action agenda. **Knowle West Media Centre, Annali Grimes, Martha King, Paul Granjon, Ruth Hennell**

Core Teams: Process & Journey

It is important to emphasise that our core cohort, the 6 funded projects, were in some cases working in newly formed groups, with new processes and technologies. For some teams, this meant that establishing shared directions and understanding was central to their development process. For those who came into the programme with a clearer technical proposition, the project timeline enabled them to rapidly trial and test aspects of their prototype. For other teams, their process and approach to community work meant that the time given by Grounding Technologies offered space for deeper levels of engagement and conversation. The triad of people, place and process was therefore worked in different ways by each team.

Underlying each team's internal capacities, skill sets and rhythms also had to be negotiated. Going forward with this work, we have learnt that it is necessary not just to address how further financial support can be provided but how the typical language and timelines of R&D work, from notions of rapid turnaround to the modes and pace of delivery, can be exclusionary. Our workshop programme, particularly Workshop 2 on the critique of design thinking and agile innovation methods, explored this with our cohort responding through their knowledge of design justice.

The feedback gathered below from the project teams provides some brief sharing of our collective learnings.

Application Process

+ "Straightforward and well designed"

– "I would argue that after working on this project with disabled creatives, that this would not be a very accessible process - as more time is needed should people not be in a place to respond so fast, due to a personal circumstance."

– "[We would have liked] more chance for collaboration [in the Ideas Labs] , speed dating would have been helpful."

Producer Support

+ "Nothing but supportive and their advice really improved our original concept design"

+ "The producers were always supportive and responsive. They created a great environment for creative development with no pressure on expectations."

– "I would have appreciated more input into guiding the team to make goals that were realistic within the time"

Learning Across Teams

+ "I felt I learnt a lot from the other teams. We were all different, both in terms of our projects and demographics, but there was a common thread of trying to empower others to connect more meaningfully to the natural world and use technology to do this."

+ "Lots of sharing knowledge and resources. Lots of shared experiences… I have also made connections I will use in the future for work and community outreach for certain."

Timeline

– "The time limit was way too short for real community outreach. The time is so short from getting the grant to starting the project which as a freelancer was really scary."

– "On such a short project the proportion of time allocated to workshops was perhaps a bit too high."

Workshop Process

+ "I found all of the workshops I attended really useful and stimulating and they definitely influenced our work as a group."

+ "Workshops were instrumental in forming our strategy to make the Eyes On website a community resource and helped us progress the idea for undertaking focus groups that were essential in getting an understanding of who our supporters are and what they would be looking for in the resource we have been developing."

+ "I also really like the venues we have had the workshops in; enjoyed travelling there to meet and meeting somewhere new to look at things in a new way."

Looking forward: Sustaining Networks and Support

○ "It would be useful if it had the same elements of sharing best practice, learning new ways of looking at process, supporting individual groups to extend their particular goals and also learning about others' processes. It would need a clear purpose, not just a talking shop"

○ "There are a lot of networks already. The trump card might be the Watershed itself. Have physical meetings there; combine with a speaker, workshop, film etc."

The Grounding Technologies Network: Value, Barriers & Needs

In order to understand the value of our work beyond supporting the core funded teams, we also surveyed 58 people who attended our Ideas Lab events in Bath and Bristol. We sought to find out what participants found most interesting about the events, what they might have learnt or gained from them, and the factors that would affect whether they went on to apply for the £15k funding. This data provides us with an understanding of what, in taking this programme forward, a regional network focused on the intersection of creative technology and just climate action would require.

Most valued aspects of the Ideas Labs (across Bristol and Bath):

Networking with other people: 84%

Learning about other inspiring projects: 79%.
Many participants responded that the labs provoked new ideas or helped them to develop existing ideas. This response reflects the value they took from the shared presentation delivered by the Grounding Technologies delivery team on inspiring projects and the state-of-play in the field of creative climate action, as well as a noticeboard of creative climate action projects populated by the participants.

Differences in attendance between Bristol and Bath Ideas Labs:

Bristol Ideas Lab: This event was attended predominantly by people based in Bristol. Feedback from participants indicated that they found the labs a space for idea generation and development, gaining inspiration and understanding the scope of the programme.

Bath Ideas Lab: This event attracted participants from a wider range of geographical areas across the West of England region. Feedback indicated that the event engendered a feeling of being part of a community, reduced a sense of professional isolation and provided a heightened awareness of the range of creative climate action projects in the region. Bath respondents also more frequently cited the value of learning more about the connection between creativity and climate action (70% compared to

55% in Bristol), as well as having the opportunity to meet the Grounding Technologies team (59% in Bath, 32% in Bristol).

Barriers to applying for the £15k:

Short timescale: Surveyed Ideas Lab participants highlighted the short timescale of the Grounding Technologies funding call as being a major barrier to applying (about three weeks between the Ideas Labs and application submission deadline).

Lack of capacity: to complete the application within this timescale. Of the 38% of respondents who selected 'not sure' for the question of whether they would apply for the funding, common responses included not yet having collaborators in place (and wanting more opportunities to develop collaborations), needing further thinking or consultation to shape projects, and not having a clear idea of what to develop yet.

Network needs:

Funding opportunities: 84%. The need for funding opportunities was particularly acute among the attendees of the Bath Ideas Lab (93% of respondents, compared to 77% in Bristol). Given that attendees of the Bath event live and work in places more geographically dispersed across the West of England region than the Bristol attendees, who were mostly situated in Bristol, this may reflect how the latter are more closely connected to creative networks where funding opportunities are available and visible. Though it was still the most commonly identified need among the Bristol attendees.

Networking, collaboration and team-building opportunities: 67%. However, there was a significant disparity in needs between the Bristol and Bath participants in relation to the events they needed. Responses indicating a need for further events like the Ideas Labs (29%), educational resources (15%), business mentoring and support (9%), and training (8%) were higher among Bath participants than Bristol participants.
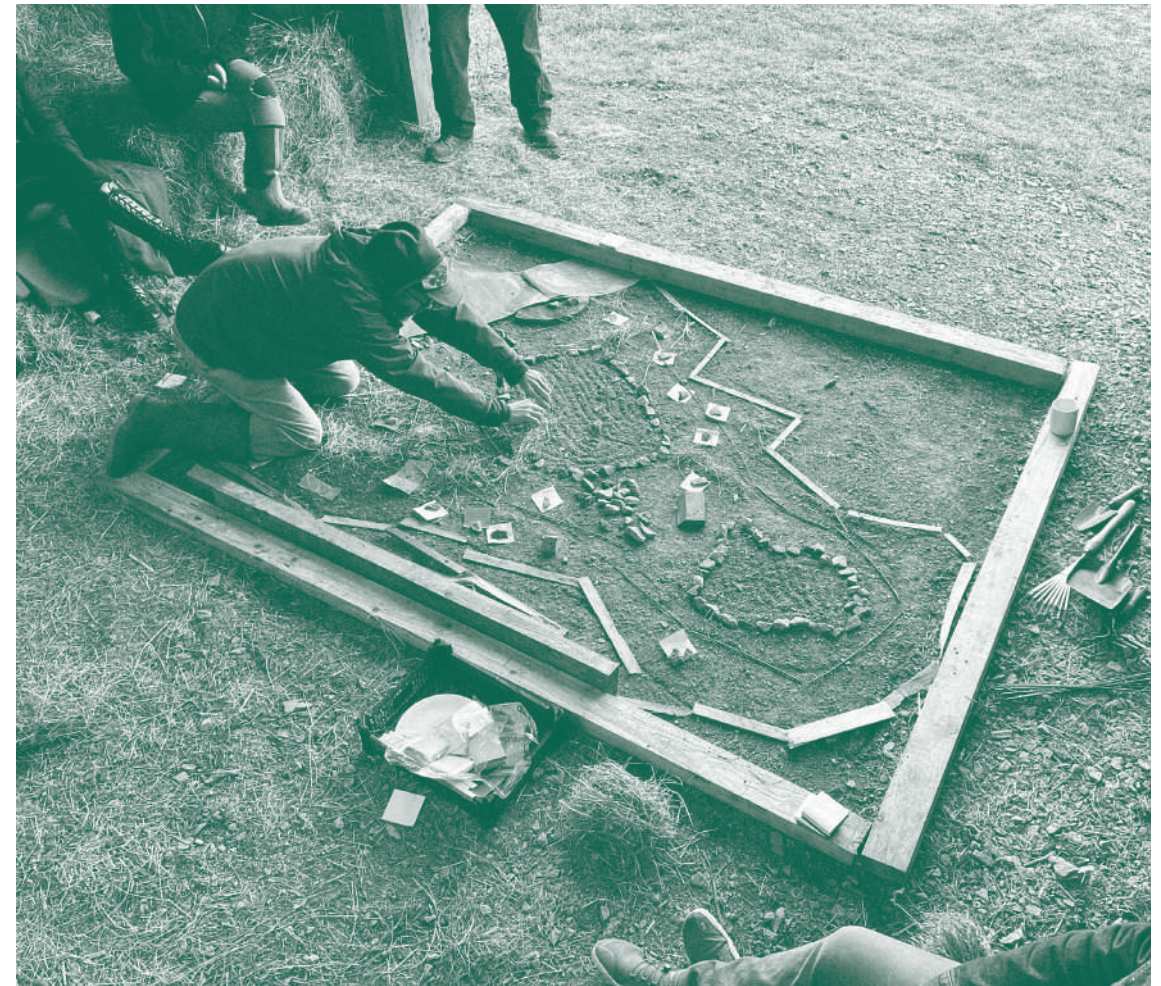
Greenbelt 2.0. Image credit Reuben Armstrong

Future funding:

In thinking about the format that future funded programmes might take, we looked again at the 39 funding application submissions we received, using the information provided to identify each project's current stage of development and what the projects needed to reach their next stage.

We found noticeable variation in the scale and development stage of the projects being proposed, despite all applications being made to the same funding offer. Applications also varied in the aspects of Grounding Technologies that they highlighted as being of particular benefit to their projects.

The most stark observation was that, while some proposed projects were still very much in the early idea stage, or were planned to be co-developed with particular communities or audiences, other projects had essentially already been prototyped and appeared simply to need a chunk of money to fund the next stage of their development. While the latter would certainly have benefitted from the £15k offered by Grounding Technologies, they would have benefitted far less from the programme of workshops, producer support and access to spaces, equipment and networks through which Grounding Technologies sought to nurture other, earlier-stage projects.

Further opportunities for collaboration: This was the most common open text response to the question of 'what would be most useful for the future development of your practice?'

The Economic Profile of Our Network

Looking specifically at the businesses we engaged with across the entirety of our programme activities, we used Companies House data to analyse the sectors of the UK economy to which these businesses belonged.

This method of analysis has some significant limitations. Not all business or organisational activities are undertaken by companies listed on Companies House. In particular, the work of freelancers, community groups and other unincorporated bodies is frequently missed by this data. In our case, only 85 of the 119 companies our programme engaged with were listed on Companies House. What Companies House data does give us, however, is a set of economic sector classifications that are consistent, and the sub-sectors under which companies are listed are decided by the companies themselves.

On the right is a graphic showing the range of economic sectors engaged by Grounding Technologies and the proportion of companies we engaged with that belong to each sector.

The companies we engaged with through Grounding Technologies represented 16 different sectors of the UK economy. For a project advertised as working at the intersection of 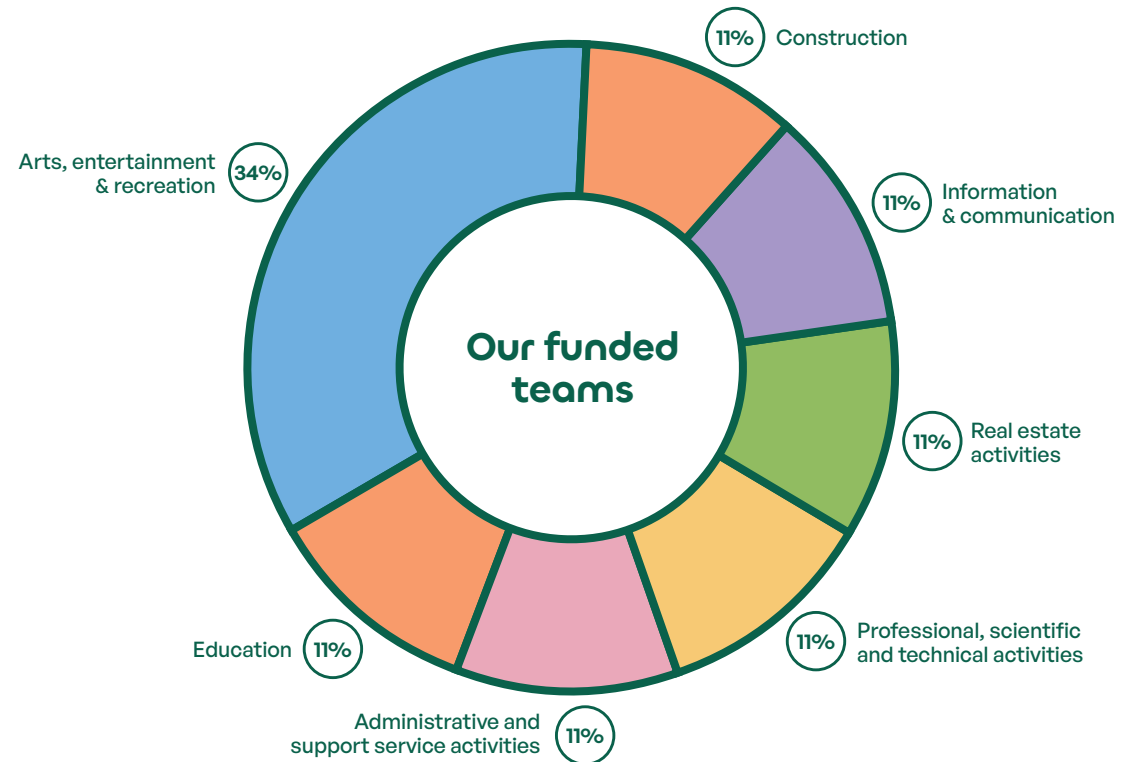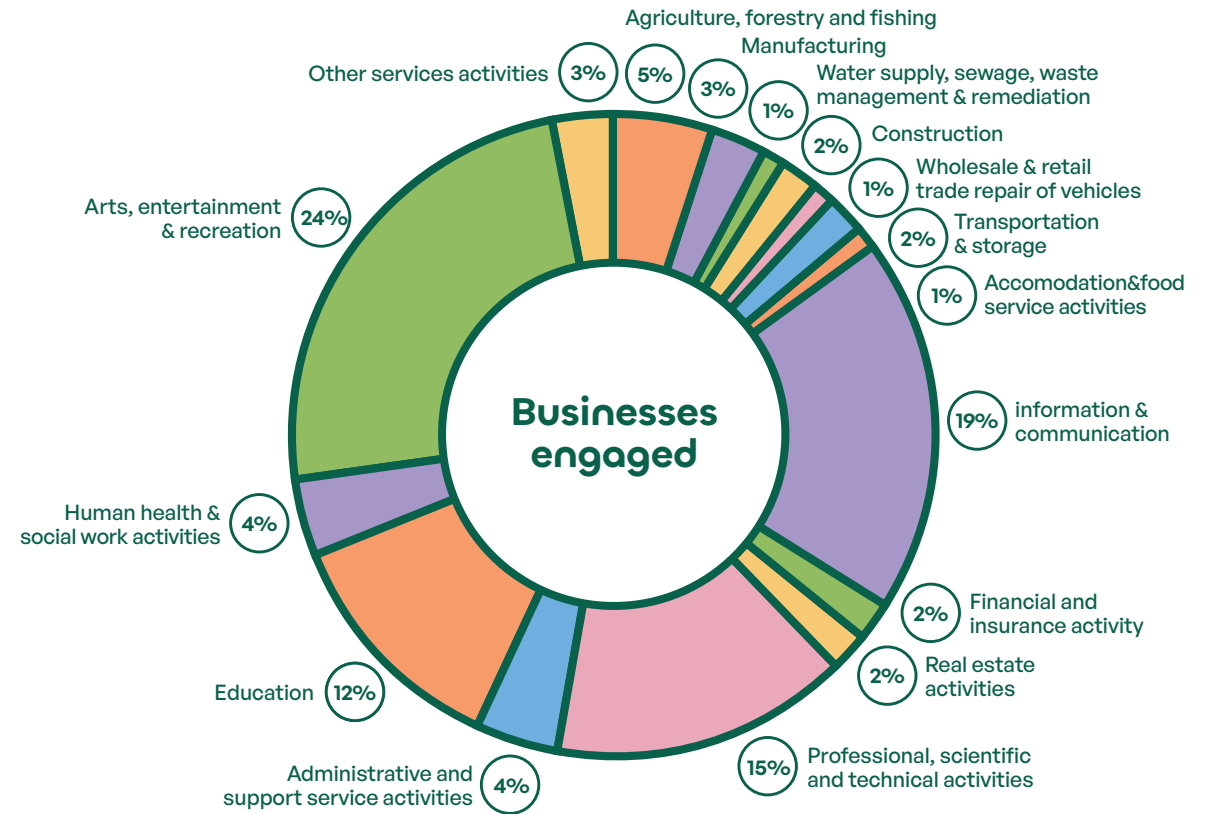creative technology and climate action, it is unsurprising that the sectors with the largest representation were Arts, Entertainment and Recreation, Information and Communication and Professional, Scientific and Technical Activities. These sectors represented 58% of the sectors under which companies we engaged with were listed.

42% - almost half - of our business engagement was with companies operating in sectors outside this 'expected' range. From Agriculture, Forestry and Fishing, to Manufacturing, to Construction, to Accommodation and Food Service Activities, to Real Estate Activities, to Education, to Human Health and Social Work Activities, our programme evidently had relevance for a very wide range of economic activities. In fact, there were only 5 economic sectors of the 21 classified by Companies House that our programme didn't engage with.

What we can take from these observations is that climate concerns are influencing almost all walks of economic life in the WECA region. We can also say that our data indicates that small businesses in the WECA region are interested in how the creative use of technology can potentially help them to transition or address climate issues. In this way, Grounding Technologies has the potential to spill over into many different areas of the UK economy.

Grounding Technologies, Workshop 2

Businesses engaged

- Other services activities 3%
- Agriculture, forestry and fishing 5%
- Manufacturing 3%
- Water supply, sewage, waste management & remediation 1%
- Construction 2%
- Wholesale & retail trade repair of vehicles 1%
- Transportation & storage 2%
- Accomodation&food service activities 1%
- information & communication 19%
- Financial and insurance activity 2%
- Real estate activities 2%
- Professional, scientific and technical activities 15%
- Administrative and support service activities 4%
- Education 12%
- Human health & social work activities 4%
- Arts, entertainment & recreation 24%

Our funded teams

- Construction 11%
- Information & communication 11%
- Real estate activities 11%
- Professional, scientific and technical activities 11%
- Administrative and support service activities 11%
- Education 11%
- Arts, entertainment & recreation 34%

Emerging Principles

Honour nature

Placing the earth at the centre of thinking allows for material cycles, and what we make and do in the first place, to become aligned with a more just environmental position, whereby the earth and its finite resources are honoured and respected.

Act responsibly

Where possible, act in accordance with a view towards allyship and solidarity, empathy and understanding. Be open to change and challenge. Create space for active hope and resilience. Continue to acknowledge the privilege that one's social position may bring in relation to access and possibilities.

Decolonise technology

From its imperialist, capitalist, racist, Western, white and often patriarchal point of view by providing support, time and funding towards understanding what it would mean to re-write technology from other points of view.

Seek reparations

From technology companies for the environmental damages that they are causing. Address their intentional bad design, which privileges planned obsoletism and increased eWaste.

Commit to access; share knowledge

Think creatively about what access means, and how it is the cornerstone of just climate action. Seek to share knowledge wherever possible, in an open and generous manner.

Re-imagine R&D models

How can we do R&D differently and shift emphasis from profit to collective wellbeing? How do we balance time, money and expectations? How can we foster change from within politically turgid environments?

Honour what is already in place, including local knowledge and lived experiences

Acknowledge and foreground the lived experiences of people and communities. Honour ancestral wisdoms and support what is already out there. Commit to providing context and space for connectivity, reciprocity and collectivism.

Commit to material use, repair, reuse and open-source design

Work with existing technologies. Consider the full material cycle from cradle to grave. Re-use and repair technology at every opportunity. Use open hardware and software. Create applications that can be modified by communities for their own purposes. Design with flexibility in mind. Join the dots between what we do and the finite resources of the earth.

Avoid greenwashing

Avoid linking carbon counting to greenwashing. Count all the elements and not just what suits your reporting. Remain critical of quantitative-only climate mitigation measures.

Throughout our course of workshops, we realised that in bringing forward this work, we needed to provide further context about what we, as a collective, understood by Grounding Technologies. During our first and third workshops with the core cohort (September 6th and October 11th), we explored what the project meant and what a collective set of 'grounding principles' could be. From these open discussions, the following points emerged. We see the following statements as part of an ongoing refinement of our work.

Closing Points & Recommendations

Grounding Technologies branched out from Bristol+Bath Creative R+D, a five-year programme funded by the AHRC as part of the nationwide Creative Industries Clusters Programme (CICP), with additional support from DCMS. Aspects developed under this CICP programme informed the work carried out here.

In focusing on just climate action, while preparing this report Oxfam International launched its Climate Equality: A Planet for the 99% paper. Written and compiled by a team of human rights lawyers and policy experts in the field of climate and inequality, the publication states:

"...The focus on economic growth of any kind and endless extraction and over consumption at any cost must end. People should be put back in charge of their destiny, and democratically elected governments, not corporates, should shape our economy. Our economies should be purposely redesigned and reimagined with a primary focus on the twin goals of human and planetary flourishing" (2023, p.xxi)

The impacts of Grounding Technologies outlined in this report show how emerging technologies, and mundane tech, can be used creatively to support just climate action and the green economy within a region. They show that developing new creative approaches to a just transition can be done in a responsible, careful way that moves away from business-as-usual, but that still allows us all to flourish.

Redesigning and reimagining how we organise life is no easy feat. It requires changing what we do, what we know, what we feel comfortable with. This report has shared the projects we funded that tested out creative ways of approaching climate action. From keeping an airport honest about its night flights to providing access for people with mobility issues to green spaces, to educating each other about greenwashing and the greenbelt, to learning about the herbs that heal, to what it means to enable communities to define their nature-based needs, and finally how we might develop ways for marginalised and neurodiverse communities to access nature. We also discovered a desire across our region for a network of people interested in enterprising

and inventive ways of working with emerging and commonplace technologies. At all of our Ideas Labs and events, that was what we heard most clearly. There's huge potential in the transfer of creative methodologies into the climate action and green economy sectors, and this is something that needs funding and support.

As we come to the end of this Grounding Technologies pilot project, we can see three key areas for developing creative approaches to climate action and the green economy: **Place, Process and People**. These approaches are now commonly reflected in mainstream civic society, from funders like Joseph Rowntree Foundation and the Esmee Fairbairn Foundation, to local authorities and universities, but here are our key learnings:

Place:

Place matters. In order for just climate action to shift behaviour, it needs to be meaningfully connected to the everyday places we occupy.

Working at a local scale (economically and socially) supports a wealthy creative economy.

Our Idea Labs survey findings signal a heightened need for support to do creative climate action work in the West of England region outside of Bristol.

Place-based work should also be grounded in wider national, regional and global policies and practices.

Process:

A longer-term view is needed that entails working deeply with communities over a period of 10 years+ if we are to meet our 2030 carbon-neutral ambitions and create transformational systemic change. Making programmes community-led would mean taking time to create structures and processes that support co-design, participatory working and good governance.

The most marginalised groups in our society often have the least amount of flexibility and capacity to respond to calls. Longer-term germination and team-building periods would prevent the application process being a barrier to diverse leadership in this space.

Longer time frames would also deepen collaboration and knowledge exchange across sectors throughout the process, where project teams can develop meaningful connections and have substantial time to embed learnings.

Beyond funding, careful consideration needs to be made with individuals and communities about the pace of work. Terminologies such as rapid development and agile techniques are not suitable for all bodies and all people. To ensure inclusivity, more sensitive approaches to R&D need to be considered.

Capacity needs to be built into funded programmes to research and understand the needs of communities and businesses working at the intersection of technology and place-based, just climate action.

Spotlighting, promoting and maximising the creative use of existing and mundane technologies for climate action is worth pursuing if we are to reach carbon neutral targets by 2030.

Smaller scale, flexible investments (from £5-25K) can provide companies and individuals with the necessary support to get new ideas off the ground, or to build capacities after early development funding.

People:

The practice of including people requires us to be open, understanding and inviting. Committing to diversity requires constant consideration across all levels of our programme, from leadership, to executive boards, to participants and production teams.

The benefits of connecting with other people in the region who share interests, as well as learning about the range of creative climate action projects happening in the West of England region, was consistently considered beneficial by the people who engaged in our programme.

For those located at a distance from creative hubs (e.g. Bristol or Bath), our event programme helped them to feel less isolated and more part of a community.

For those who are already well-connected, our events provided a valuable opportunity to develop new ideas and gain inspiration from existing work in the field.

Run over ten months, Grounding Technologies has quickly uncovered new possibilities for the use of emerging and existing creative technologies in just climate action and the wider green economy. As we move forward, we will be looking for longer-term ways to support this work in the coming years and aim to build capacity, power and resources into the network. We are looking forward to seeing what happens next.

Eyes on Bristol Airport. Image credit, Bristol Airport Action Network

Inspiring Climate Action from the WECA region

(Selected Projects)

Afrofuturist Apothecary: A part-real, part-speculative British-African herb garden responding to climate breakdown in Frome. The apothecary cultivates plants native to the UK and Africa for their medicine, adaptability to urban ecosystems and tolerance of poor soil, exploring how plants and people find ways to thrive and increasing agency in relation to climate justice as a form of revolution and resistance. www.infiniteecologies.com

AIM: Developed by Complex Earth, AIM uses AI to automate the design of permaculture planting schemes and incorporate them into soft landscaping projects in the built environment. www.swctn.org.uk/automation/prototypes/aim-agroecological-information-model/

Black2Nature: Making nature relatable through nature camps, walks and day-trips for visibly minority ethnic children. Established by the Bristol-born environmentalist and diversity activist Bird Girl (Mya-rose Craig). www.black2nature.org

Bridges for Communities, Stitching Together: Stitching, mending and repairing sewing group for refugee and asylum seeking women in Bristol and Yate. www.bridgesforcommunities.com/programmes/stitching-together/

Bristol Green Capital Partnership's (BGCP) Community Climate Action Programme: The pioneering, bold and fair community-led climate action programme in Bristol. Established in 2022, several significant works have developed from BGCP including Bristol Energy Cooperative (who, together with Ambition Lawrence Weston, constructed the tallest onshore wind-turbine) and the Community Leadership Panel on Climate and Just Transitions. www.bristolgreencapital.org/project_cat/community-climate-action/

Bristol Green Capital Partnership's (BGCP), Green and Black Ambassadors Programme: BGCP's Black and Green Ambassadors, in collaboration with Ujima Radio, works to empower diverse leadership on environmental issues. It has been celebrated internationally at COP26 for its impact. www.bristolgreencapital.org/project_cat/blackandgreenambassadors/

Edible Bristol: Edible Bristol volunteers cultivate food justice by supporting communities, individuals and businesses to grow food across the city. www.ediblebristol.org.uk

Extinction Rebellion: Established in 2018, in 2023 The Big One, a four-day collaborative occupation of the area around Parliament Square, brought together more than 200 organisations across social, worker and climate justice movements. www.rebellion.global

Future Places Toolkit and Future Soundings: Uninvited Guests and Duncan Speakman use creative technology to reimagine a future city in collaborative ways, creating pathways for imagining and actualising collaborative local development. www.uninvited-guests.net/projects/future-places-toolkit

Global Goals Centre, Bristol: Educational charity creating engaging experiences to inspire learning and action on climate, nature and equality in our everyday lives, inspired by the Sustainable Development Goals. www.globalgoalscentre.org

Re-Wilding Data, Kathy Hinde: Re-wilding Data proposes new ways of speaking about data collection, stewardship and usage through research into how re-wilding practices could be used directly in these areas as a new approach. www.swctn.org.uk/2020/07/10/re-wilding-water-data/

Land Justice South West: Addressing the question of access and food sovereignty for all. www.landjustice.uk/southwest/ and www.landjustice.uk

Just Transition Declaration, Bristol: The Just Transition Declaration, accompanies Bristol's Climate and Ecological Emergency Declarations and strategies, of which culture is a strand. The council, businesses and groups are currently signing on to support this declaration and exploring how the principles relate to their strategies and streams of work. www.bristolclimatehub.org/wp-content/uploads/2023/10/Bristol-Just-Trasition-Declaration-Traditional-version.pdf

Materials In Mind: Consultancy supporting businesses and projects to help meet new and upcoming circular economy industry standards. www.materialsinmind.org

Nature Youth Connections and Education: Bristol-based social enterprise addressing African and Caribbean, Asian and Romani communities' access to nature through creative education, community participation and environmental education. www.nyce.org.uk

Repair Acts: Artist-led, place-based programme of work that fosters restorative cultures by connecting past stories about mending, healing and maintenance with what we do today to how we envision the future. www.repairacts.net

Resilience Project: Founded in Bristol, made for young people by young people to transform, enable and empower young people to build emotional and psychological resilience, rest and care into the climate movement. www.theresilienceproject.org.uk

Retrofit Reimagined: A network of UK-based groups building a movement for community-owned retrofit. www.youtube.com/playlist?list=PLglJxOKjWOphg1f4NeOqHefz6UI0_EuBJ

Sparks, Bristol: A department store with a difference. Former Marks & Spencer department store in central Bristol, reused as a hub for creativity, sustainability and education. www.sparksbristol.co.uk

St Werburgh's City Farm Equity Project: The Equity Project was a community action project designed to explore locals' relationship to the land, urban farming and horticulture, considering the factors that prevented people from engaging in the space. www.swcityfarm.co.uk/wp-content/uploads/2021/01/SWCF-Equity-Report-October-2020.pdf

Super Culture's Climate Carnival, Weston-super-Mare: Brings together diverse groups across Weston to engage in different aspects of climate and biodiversity. www.superculture.org.uk/listings/climate-carnival/

The Quipu Project: An online archive and documentary that captured stories of indigenous people living in rural areas and gave voice to those who were affected by Peru's unconsented sterilisation policy. www.interactive.quipu-project.com

Vana: Prototype mobile phone app, which could allow companies to focus on how their corporate-owned land could be used for environmental good by planting trees. www.swctn.org.uk/data/prototypes/vana/

We Can Make: A neighbourhood test-space, imagining and making new ways to create homes that build social infrastructure and community wealth in Knowle West. www.wecanmake.org

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Grounding Technologies Team:
UWE: Teresa Dillon (Principle Investigator), Melissa Blackburn (Executive Producer), Jack Lowe (Research Associate), Amy Densley (Digital Cultures Research Centre Coordinator), Abbie Rogers (Finance)
Watershed: Zoe Rasbash (Research), Bridget Hart (Production Coordinator).
Design: Marta Celio
Film: Jon Aitken

Grounding Technologies Executive Board:
Tay Aziz (Avon Wildlife Trust), Amy Harrison (Bristol Green Capital Partnership), Danae Stanton-Fraser & Christina Demski (University of Bath), Natasha Kidd (Bath Spa University), Debbie Watson (University of Bristol), Nona Hunter (West of England Combined Authority), Furaha Asani (Watershed), Jo Lansdowne (Watershed), Teresa Dillon (UWE), Melissa Blackburn (UWE).

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