

P / REFERENCES OF DESIGN

BEYOND CO-PRODUCTION: DESIGN AS A MEANS OF EVOKING AUTONOMY THROUGH ECOLOGICAL CITIZENSHIP.

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ABSTRACT | Design (as a practice) encompasses; appropriate, contextual, and strategic interventions empowering new ways of living together. In current times of; climate change, biodiversity loss and pollution, design has a role to play. This triple planetary crisis threatens ecosystems at a global scale, necessitating contextual approaches. We (the public) are used to being designed 'to or for', with common terminology referring to people as users and consumers, not 'citizens'. Citizens are already becoming involved in 'Public Interest Technologies', a contextual design field akin to democracy and politics. Cross-disciplinary practices nurture new approaches to collectively design 'with' people, enabling public agency for sustainable action. Design propositions are not always initiated by designers, or even simply organisations, but created by people in-the-field.

Ecological Citizen(s) (EC) is an approach (and project) to create autonomy/agency and sustainable actions within contemporary times (Phillips, et al., 2022). Ecological Citizenship is a design approach intent on catalysing/inspiring/invoking a 'citizen relationship' with our natural world. We focus on citizenship as a practice rather than a 'status distinction' as it concerns the agency to mutually benefit others and the planet through sustainable means.

This positioning article includes; historic and contemporary insights, literature, up-to-date practice-based examples/projects, experiments, and proposals. It advocates for designing proposals to catalyse citizens' agency, supported by appropriate technological outputs. We define a clear distinction between 'design for citizenship' and citizen positioning, a post-participatory perspective for design. Our research question unpicks: What are the attributes and positive benchmarks of design, as a means of evoking agency through Ecological Citizenship?

The audience are not only designers, but leaders in; social innovation, social decision making, design for equity, civic engagement, communities, DIY movements and more. Our Ecological Citizen(s) framework; supports individuals, organisations, businesses to make more positive choices, impacting the planet we inhabit and are reliant upon for all life. The convergence of; the triple planetary crisis, Ecological Citizenship, public interest technologies and designing for citizen agency, offers new modalities of ways we 'live together'.



1. Introduction

This work navigates emerging domains of; design and citizenship, within the context of their interdependencies (Weber, 2010). It responds to rising typologies of work unclassified by; Action Design (Sein, et al., 2011), Participatory Design (Spinuzzi, 2005), or Co-Design (Sanders, et al., 2008) and is itself post-participatory. This nuance might seem academic, but it concerns the balances of; agency, autonomy, power, and is a catalyst for transition. Agency is the “capacity to imagine alternative possibilities”, it is critical to this position as it enables agents to have ‘choice’ (Emirbayer, et al., 1998, p.962). The framework’s purpose is to; map projects, comprehend gaps, navigate opportunities, unpick existing examples, build new models of design, and manoeuvre the creation of citizen-led briefs in this space. The design objectives of the provision of agency substantially impact conventional ‘participation’ and are seen as attendance without a limited voice.

Participation is “the action or state of taking part in something” rather than directing, conceiving or co-ordinating something (Merriam-Webster, 2024). Authors frame and include; historic and current literature, contemporary practice examples, projects and experiments that offer autonomy, intent on enabling citizens (thus fertilising societies), as a contemporary design position.

We navigate the intricate post-participatory terrain, harnessing design-based processes, and the potent influence of activism... all impacting ‘ways we live together’. We re-align; citizenship, acts of citizenship and citizen-led design. The work documents a cross-collaborative multi-domain literature review, defining what ‘citizenship’ is, within design frameworks (Stephens, 2010). Our audience is creative practitioners, designers, and protagonists that desire to nurture autonomy, within interested parties they engage with and those that have, to date, not engaged (or been unable to).

Currently with Ireland considering giving nature ‘Human Rights’ (Luyken, 2023), governments considering ‘rights for nature’ (Watts, 2024), and Brazil pioneering its indigenous voice through government parliamentary representation (Phillips, 2023), it calls to action new modes of citizen voice and agency. We classify; what a citizen is (from a design perspective), alongside examples of Ecological Citizenship with our research question;

What are the attributes and positive benchmarks of designing with ‘Ecological Citizen(s)’, to create and enable acts of ‘Ecological Citizenship’ (EC) for more sustainable futures?

We are in times of massive change with; austerity (Anstead, 2018), Brexit (Zoega, et al., 2018), the cost-of-living crisis (Patrick, et al., 2022) and the triple planetary crisis (climate change, biodiversity loss and pollution) – and design has a role to play (Passarelli, et al., 2021). The emerging field of sustainable futures (Nižetić, et al., 2020) offers the means to explore ‘preferable worlds’ (Jokinen, et al., 2022), for design practices that can help navigate climate change and community (hyper-local) responses. We also see benchmarks as a standard by which other activities are measured – a yardstick of how projects could/should be done, highlighting core merits required for Ecological Citizenship.

This contribution identifies various opportunities for living and creating together. The definition of Ecological Citizenship (EC) is “accessible activities and skills which establish sustainable practice(s) and/or address ecological inequalities. Unsustainable practices (and consequences) are not constrained to individual countries, single industries, or discrete societies” (Phillips, et al., 2023, p.265). An example of Ecological Citizen Design was, My Naturewatch (NW), The NW project (mynaturewatch.net) was designed by the Interaction Research Studio, with engagements led by The Royal College of Art Design Products programme (Phillips, et al., 2022).

The NW project featured a trail camera using; distributed design instructions, off-the-shelf tech found in schools and education, required no tools or specialist equipment to make, was repairable, and created interactions that catalysed new behaviours (Phillips, et al., 2022). NW embodies inclusive design in the

digital age, as the activity engages a wide demographic community and can be used by all. It cultivated the audience's inquiry into the natural world(s) and built on something preexisting yet was more financially accessible than its contemporaries. It was not created for a specific age group.

After deployment with wide audiences (more than three million people) it fostered and enabled 'Ecological Citizenship', as some interested parties; rewilded their gardens, captured evidence for council action, documented for scientific purposes, ecological explorations, and engagement with new audiences (Phillips, et al., 2020). NW enabled; interactions, rewilding, training schemes, youth advocacy, design-for-repair, re-skilling etc. Audiences often commented "they made it" even though they assembled it, so there was a deep sense of ownership and pride in creations. One of the defining points was the agency of use that it gave (Phillips, et al., 2020, p2110). It was brave not to have a highly controlled 'use case', as it opened a life outside the design team. This unintentionally provided a grounded legacy and appropriation by alternative audiences.

This example helps frame nuances and starts to define the design space we are cultivating. We navigate; our lens of 'citizen', agency in designing with citizens, designing citizenship, and our climate, and examples of Ecological Citizenship and how it can positively impact the way we live. Within the work we navigate two tracks of design work that rarely communicate; Track 1 Sustainable Design, Track 2 Co-Design all framed around Our Lens of Citizen.

1.1 Our Lens of 'Citizen'

The term citizen is an equalising word, it carries with it the activism of Aristotle's definition "a citizen is one who rules and is ruled in turn" (Kerber, 1997, p.834). Major social issues such as the status of "immigrants, aboriginal peoples, refugees, diasporic groups, environmental injustices, and homelessness have increasingly been expressed through the language of rights and obligations, and citizenship" (Isin, et al., 2002, p.1). Traditional definitions of citizenship are 'nation-bound', for example the UK government defines it as "confirming British nationality or applying for the Right of Abode" relating to individuals' residential status and working legalisation (GOV.UK. 2022); (GOV.UK. 2018). There is also a difference between citizenship and cultural peer-mandated scenarios. For example; in the 2022 World Cup Japanese football fans were renowned for cleaning-up stadiums after matches (Adil, 2022). Berlin residents are 'obliged' to clear snow from footpaths in front of their properties (Winterdienst BEST, 2023). Finally, in Australia municipal BBQ's are rigorously cleaned by individuals after use (Dumas, 2014). Prior examples are either culturally based, legislatively driven, or mandated by community peers.

Our lens goes against those traditional views, we believe that a citizen is empowered, accessible to all, has autonomy and acts for themselves and others. We (the public) are used to being designed 'to or for', with common terminology referring to people as users and consumers, not 'citizens' (Alexander, et al., 2022). The "concept of sustainable citizenship and its normative responsibility claim on all societal actors and institutions" is the main difference between a citizen and consumer and that we should have agency over things that impact us (Micheletti, et al., 2014, p.203).

We view citizenship as a practice, an optional right of passage that benefits individuals, the ecosystem and those around them. Citizens are becoming more engaged in elements that impact them; for example, Public Interest Technologies involve building 'with' not 'for', enabling people to have a voice in matters that impact them (Abbas, 2021). Our definition is contemporary, not reliant on geopolitical, nation-based citizenship, i.e., not framed by Home Office mandates. Our view of 'Citizen' is "claimed, enacted and performed" (Arruda, et al., 2020, p.59).

In the early curriculum for the Scouts, Lord Baden-Powell shares their view of citizenship as "Every scout ought to prepare [themselves] to be a good citizen of [their] country and of the World" (Baden-Powell, et al., 2005, p.213). I.e., highlighting the need for citizenship to protect species and environments. As Citizens, "we must develop a sense of belonging in community, cultivate relationships with one another, help heal each other, and collectively build the world that will cease to make philanthropy necessary" (Alexander, et

al., 2022, p27). Buckminster Fuller refers to Our little Spaceship Earth that is “only eight thousand miles in diameter, which is almost a negligible dimension in the great vastness of space. Our energy-supplying mother-ship, the Sun is ninety-two million miles away” (Fuller, 2008, p.15). And later highlights that “When it is realised by society that wealth is as much as everybody's is the air and sunlight, it no longer will be rated as a personal handout for anyone to accept a high standard of living in the form of an annual research and development fellowship” (Fuller, 2008, p42). Fuller illuminates that all citizens must preserve spaceship earth, i.e., we are all responsible for our role in it.

As sustainable citizens hold different “expectations about ‘good citizenship’ and whether they believe that individuals can be politically efficacious and important agents of change” in the field of sustainability (Micheletti, et al., 2014, p.203). Gandhi's conception of citizenship is largely one concept: “Swaraj” or self-rule. In Gandhi's vision, self-rule means that “everyone is [their] own ruler,” and is a self-realised individual (Shani, 2011, p.660). A contemporary example is ‘Clean Up Svalbard’ a coastal waste-removal program (created by the governor of Svalbard) in coordination with the Association of Arctic Expedition Cruise Operators (AECO). Cruise tourists who visit sites, have responsibilities to keep it clean (Ocean Wide, 2023).

We unite these perspectives, in that citizens should also have accessible autonomy over sustainable and ecological practices that can positively (or negatively) impact them or their communities/surroundings. Agency is defined “the sense of control that you feel in your life, your capacity to influence your own thoughts and behaviour, and have faith in your ability to handle a wide range of tasks and situations” (Davidr, 2021). More deeply autonomy is access to have choice, regardless of financially ‘rich’ or time ‘rich’ backgrounds. Citizen “voice is an integral part of agency, positioning development and democracy. Both highlight opportunities and obstacles – social, institutional, and normative – that agency therefore helps in interrogating on conditions for participation” (Bifulco, 2013, p.176). We acknowledge their complexities, but (here) we do not cover subsequent issues of; design ethics or design justice. We believe that designing interventions for pro-active citizenship inspires agency and whilst interlinked with safeguarding and ethics, we cannot cover them in depth.

A particularly salient example of this empowered agency, or ‘commoning’ (Hewitt, et al., 2020), and working for the common good is found in the Norwegian practice called ‘dugnad’ (Simon, et al., 2019). Dugnad as a cultural practice is embedded in Norwegian culture with origins in small farming communities, where people were historically dependent on each other. Simon et al., defines dugnad as an in-person event with a set time frame that involves all age groups of a community uniting to tackle a specific local issue, such as a spring clean of local park or raising money for local sports team: a “cultural practice that creates an environment that nurtures prosocial and cooperative activities” (2019, p.815). The dugnad usually ends with a social gathering and is a prosocial behaviour (Simon, et al., 2019), thus creating social connection within the community. Although dugnad is voluntary (Simon, et al., 2019), it differs from the British understanding of ‘voluntary work’ (Waikayi, et al., 2012) in the sense that dugnad is undertaken for mutual support and benefit (Furunes, 2022). Similar practices of mutual support are found in rural farming communities globally (Furunes, 2022).

1.2 Our Frame of the ‘Designer’s Role’

Designers strategically intervene with ‘materials of our time’. The 1950s was the ‘age of oil’, with booming plastic and chemical production (Murphy, et al., 2011). In the ‘age of the craftsman’ Chippendale was a skilled furniture designer and maker (Kimball, et al., 1929). They pioneered the concept of publishing an “archive of furniture designs” for business marketing purposes, entitled *The Cabinet-Maker’s Director*, (1754), “including every piece of movable furniture a modern household might need, in different styles” (Chippendale). Openly sharing designs, in a time of non-existent Intellectual property constraint or legislation, was pioneering.

Currently we are going through the ‘age of soil’, progressing regenerative practices that are sustainably and ecologically deployed, strategically building on economic structures and paradigms. Noted economist John Maynard Keynes's epithet was "it's easier to ship recipes than cakes and biscuits", subsequently

inspiring the open-source movement, questioning wasteful manufacturing paradigms (Galilee, 2018). Open-source technologies moved us through an age of access encouraging ‘citizen designers’ (Resnick, 2016) and opened new perspectives on design responsibility (Heller, et al., 2003).

Our current contextual material(s) are; digital, appropriate-ness, contextual situations, and a mix of traditional or green technologies. We are now entering the age of ‘the citizen’ with the designer’s role providing autonomy. Our current material, (we frame) is the means to create, sustainable intent as we simply cannot ‘sustain’ the same approaches and relationships with the natural world. In *Design, When Everybody Designs* (Manzini, 2015) postulates about the more contemporary approaches to designing ‘with’ not ‘for’ people exploring; 1) What and how should experienced designers act, in a society in which all persons, individual and collective, are concerned with the design? 2) What might be the reasons and the developments of design culture to promote social innovation? (2015).

2. ‘Citizen Design’ (Track 1)

Citizen design operates within a multifaceted context, heavily influenced by the Ladder of Citizen Participation proposed by Arnstein (1969). This model illustrates a spectrum of citizen involvement, ranging from low levels of tokenism to high levels of empowerment and control. At its core, citizen design thrives in the upper rungs of this ladder, particularly through mechanisms like citizens’ assemblies and economic forums (Schwab, 2020). These platforms serve as catalysts for deliberative democracy, where citizens actively participate in decision-making processes, transcending the traditional limitations of representative democracy. Unlike conventional political systems, citizens’ assemblies are designed to be apolitical, fostering an environment where diverse voices converge to address societal issues.

These assemblies frame questions collaboratively (Wilson, 2020), ensuring that discussions encapsulate multifaceted perspectives and concerns, thereby enabling inclusive and well-rounded deliberations. A citizens’ assembly embodies the essence of participatory democracy. It is a representative group of individuals, randomly selected to deliberate on specific issues affecting society (Westminster City Council, 2023). Operating independently from political affiliations, these assemblies are tasked with critically analysing complex problems and proposing viable solutions. Their processes prioritise inclusivity, often employing deliberative methodologies to ensure that all voices are heard and considered. The emphasis lies not only on the participatory nature of the process but also on the potential openness of its outcomes, which are designed to be reflective of collective input rather than predetermined agendas.

In contrast to mere community action models, citizen design surpasses localised efforts by engaging a wider array of stakeholders in co-designing the future of Public Interest Technologies (PITs) (Abbas, 2021). This concept embraces ‘Defuse Design’ principles advocated by Ezio Manzini, promoting designs that empower and enable individuals to actively participate in shaping their environments. An example of this approach is seen in the Medellin Cable Car Project, where the inclusion of citizen input was pivotal to its success. Conversely, Brazil’s failed attempt (at emulating the Cable Car Project) highlights the repercussions of excluding citizens from design processes (Santos, 2023). This stark contrast underscores the significance of citizen involvement in the success of design initiatives, setting citizen design apart from conventional approaches to community action (British Council, 2020).

2.1 Citizen Design 01 *Skateistan* (skateistan.org)

Award-winning NGO, driving a global movement in skateboarding and creative learning. *Skateistan* creates spaces where young people can learn, play, and shape their futures. Their model builds skateboarding infrastructure and schools all over the world, delivers programs and equipment, and facilitates a network of over 800 social-skate projects with funding and resources. By focusing on at-risk, BIPOC and migrant communities, they promote inclusivity, diversity, resilience, and autonomy. *Skateistan* stretches across humanity, and anybody can be a citizen. *Skateistan* has five education facilities with state-of-the-art skateparks, across Afghanistan, South Africa, and Cambodia, in some areas where learning amongst young

girls is outlawed. *Skateistan* concerns creating confidence and agency rather than just an object or service... It inspires a curriculum for life. It inspires agency as it brings choice learning, access and a safe space that builds trust, outside of conventional structures.

2.2 Citizen Design 02 *InHouse Records (inhouserrecords.org)*

Having been awarded countless international and national social design and entrepreneurship awards, *InHouse* is a record label with a proven track record of creating positive change for society. Having operated in and out of UK prisons across the South East of England since 2017, the label reduces the recidivism rate and is a rehabilitative record label for change. Their work in prisons exponentially increases positive behaviour [428%] and their impact on life outside is crystallised by a re-offending rate that is less than 1%. Working with Her Majesty's Prison & Probation Service and the Ministry of Justice, they look to bring change in the most challenging circumstances. It is specifically interested in building a metaphorical 'brotherhood' through music that enables people with an established and positive return post-penal system. A grounded technological platform that enables change, not only through connections but skills, development, and business lessons. Connected citizens with new skills, new networks, new opportunities, and an economy to work in. The agency it brings to its community is vast through; learning, skills, a contemporary curriculum, and tools for individuals or for clients to share through mentorship.

2.3 Citizen Design 03 *Fixperts (fixperts.org)*

Fixperts is a learning programme uniting 'fixers' with people and filmmakers, creating accessible narratives that can be publicly shared. Conceived and run by Forth (*wegoforth.org*) – a community interest company built by award-winning researchers, designers and educators who believe in the power of creativity as a tool for social change. The premise is simple: help fix a challenge, create a film, and share the process. It is intent on equipping future change makers to build the next generation of inventors and dreamers, encouraging contemporary and traditional skills. Each *Fixperts* project is made real by prototyping offering social connection. It employs a wide range of materials, skills, and technologies. The exceptional power of the project is rooted in the human connections between *Fixperts* and Fix Partner. The curriculum / engagement platform enables new methods; insights that can be broadcast providing both opportunities that can scale and impacts that are local. It not only encourages learning and skills development but provides agency in those that use it, can build off it, and see it as a medium to navigate the world of fixing.

2.4 Citizen Design 04 *Empowerment Plan (empowermentplan.org)*

Empowerment Plan (EP) was about designing jobs that keep people warm and develop their skills. Born out of the celebrated Detroit Soup (Admin, 2023). EP is a working economy, upskilling, training, and development of safer communities. The product is a coat, designed to keep the homeless population of Detroit warm and provide jobs/skills to those communities. The founder committed to hiring parents from shelters across Detroit to manufacture the coats helping families break the vicious cycle of poverty and become financially secure. The Empowerment Plan has evolved into an internationally recognized workforce development organisation. By pairing full-time employment with a wide range of supportive services, they have helped dozens of individuals achieve financial stability and independence for the whole family.

The *Empowerment Plan* creates significant economic impact by serving as a stepping stone out of poverty into a state of stability. The core of their work stems from their intensive two-year employment model, focused on providing job readiness training and support services to their workforce. The model has enabled every single person to move out of shelters within the first 90 days of working with them. It provides a bridge to financial stability, agency for choice and is a true example of citizen design. It also has a circular vision that enables its employees to grow and be developed within its core business.

3. 'Ecological Citizen(s) Design' (Track 2)

In Ecologism, Smith asserts that “citizenship refers to the framework of complex interlocking relations which exist between obligations and entitlements, in any legal and moral system” (1998, p.98). The argument continues that Ecological Citizenship means that “humans need to exercise caution before embarking on any project which is likely to have the possibility of adverse effects on the ecosystems” that it operates within (Smith, 1998, p.99). Ecological Citizenship “displaces the human species from the central position that it has always had” (Smith, 1998, p.99). This approach of considering potential impacts upon your surrounding peers, ecological systems, and environments, is pivotal to Ecological Citizenship. We should not be reliant on ‘acts of kindness’ to navigate our burgeoning planetary crisis, but think about how we build it into systems, enabling all to make better choices.

In Ecological Justice, Weston, et al., state “human rights advocates, champion the ecological rights of future generations”, i.e., our human rights and ecological justice are intertwined (2012, p.251). Simply put “our societies [and] descendants depend on achieving ecological justice for future generations” (Weston, et al., 2012, p.43). I.e., we must protect future generations through Ecological Citizenship. It also feeds into lifelong learning as Ecological Citizenship holds an “important role in social change toward sustainable development, achieving economic, social, and environmental balance through informed, cooperative, and participative citizens” (Monte, et al., 2021, p.1).

We define Ecological Citizens ‘touchpoints’ as interaction points where appropriate and considerate technologies can be applied to assist people in their daily lives. Due to the complexity of these situations, they are not merely ‘products’ in their traditional sense, but are physical, digital or system interactions. The imperative element of Ecological Citizenship is designing ‘with’ and not for ‘for’, i.e., the touchpoints give agency enabling parties to make choices. We see it as an opportunity for how design (as a discipline) can be cultivated with / within societies. This design frame purely concerns the act of Ecological Citizenship for the betterment of many, designed and created ‘with’, but also constantly driven by positive ecological and regenerative outputs.

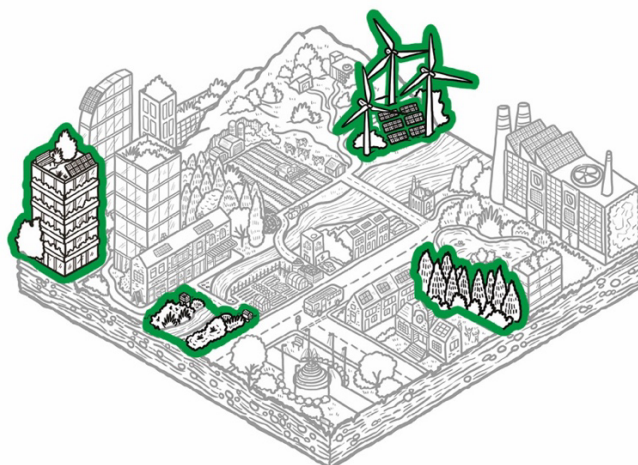
4. Citizen to Ecological Citizen(s)

Co-design practices work with people in collaborative ways, being open about elements. We refer to this as ‘Citizen Design’; it is inclusive, accessible, affordable, and appropriate. Ecological Design has deep considerations for the impact to the ecological surroundings and ramifications (Todd, *et al.*, 2003). Ecological Citizenship encompasses Ecological Design as it cannot exist without ‘Citizen Design’, as you are a citizen of the ecological environment you live within. EC projects are differentiated not only in their process but also their execution. These EC stages (Figure 1.) include;

1. **Towards Citizenship** | They map existing assets (primarily) looking for alternatives, cross-disciplinary regenerative potential in concepts, under the bracket of ‘with’ not ‘for’ citizens.
2. **Ecological Positive Action** | Build upon non-extractive or have neutral impact(s), with sustainable intent.
3. **Collective Autonomy** | Their inception is supported to achieve individual autonomy that (in time) can translate into group / collective autonomy / agency.

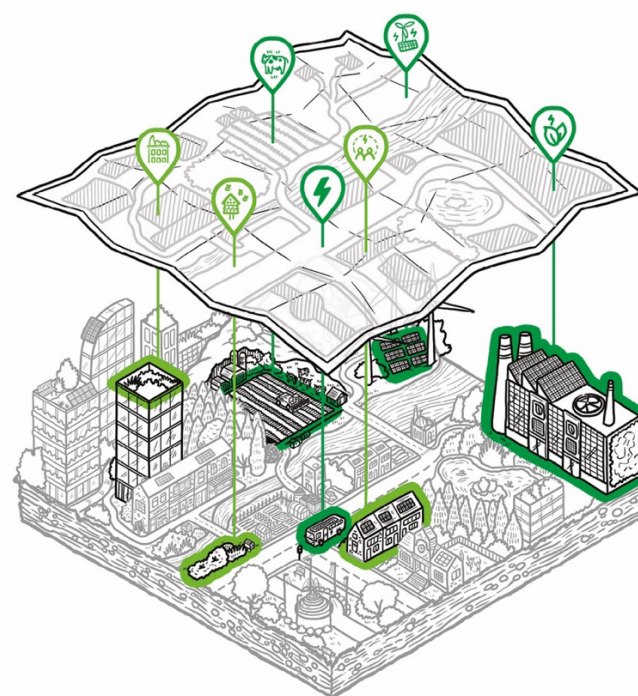
Towards Citizenship |

We begin by recognising the collaborative power in active citizenship. Working as citizens first, we work together for mutual benefit of people and planet.



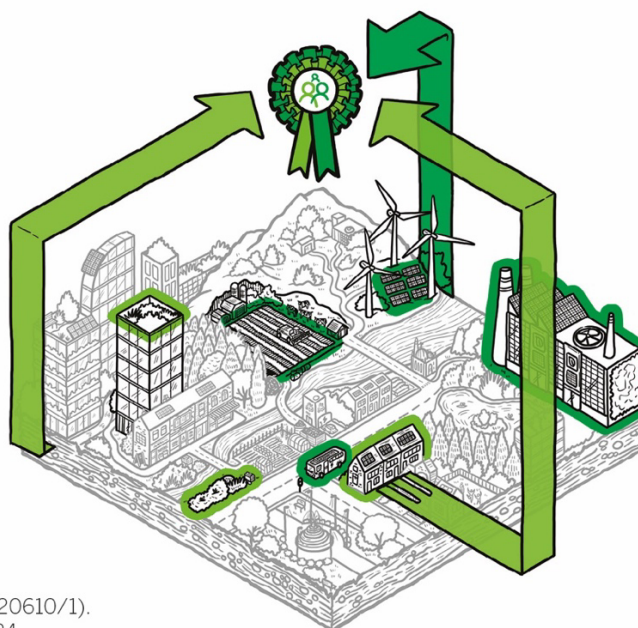
Ecological Positive Action |

We are committed to the long-term well-being of people and planet. We do this through engaging people as part of communities on a practical/relatable level.



Collective Autonomy |

Our work supports collective autonomy by supporting people to make choices over the things that impact them, both as individuals and as part of a community.



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Figure 1. The steps toward Ecological Citizenship; 1) cultivating sustainable intent for ecological positive action 2) mapping existing assets, and finally 3) collective autonomy to supporting choice making over elements that impact on people.

EC projects are ethically completed, leveraging participatory design. Ideally EC projects have a life of their own creating: accountability, scaling potential and are (mostly) reproducible, if context, culture, and appropriateness allow. The following examples (01-04) are international and not solely from 'design start points', but they all end with 'designed interventions'.

4.1 Ecological Citizen 01 *Grangemead*

Grangemead offers emergency respite and daycare for learning disabled adults in East Sussex. Culture Shift brokered a connection between East Sussex County Council Adult Social Services and the University of Brighton (Community 21) to lead a three-way partnership to develop the outdoor space. They created the design for the garden in collaboration with staff (design professionals) and supported clients. Culture Shift's role was to support and evaluate the co-design process, capturing outcomes, impact, and learning (Culture shift, 2017). The multi-purpose space included: a wildlife pond, an outdoor kitchen, moveable and accessible planting boxes, a garden gallery, and a maker space.

The process was created and physically 'made' with citizens through their onsite maker space. It provided open agency over the space, upskilled clients and leveraged the use of local materials. It fostered sustainable intent through linking food growth and health in every sense with its outdoor kitchen. Elements of the *Grangemead* garden were also constructed from materials within the boundaries of the outdoor space. For example, using hand mined clay (whilst digging the foundations) that were fired in ground kilns and turned into working ceramic vessels for the kitchen. Graphical imagery was designed and deployed by residents using a pressure washer creating 'semi-permanent graffiti' etched into the gardens paving.

The intent was cultivated not only in what people could get from the space, but also what the space could provide to the clients and surrounding citizens, who lived nearby. This was evident in the projects approaches to biodiversity in the area, bringing autonomy and overall responsibility to those parties involved. *Grangemead* also shifted a boundary as conventionally these 'garden' typologies of are created and run by councils, whereas this was created by and with the citizens that occupy it.

4.2 Ecological Citizen 02 *Vertical University (VU) (belt-project.org)*

A collective organisation where the indigenous farmers are the teachers. The idea of The VU is simple. It is a "living classroom" of sorts, in the form of a 25,000-foot continuous vertical forest corridor stretching from Koshi Tappu (220 feet), Nepal's largest aquatic bird sanctuary, to Mt. Kanchenjunga (28,169 feet), the world's third tallest peak. It is a means to teach and conserve the 6,600 flowering plant species, 800 bird species and 180 mammals that are found in eastern Nepal. In a mountainous country like Nepal, where there is exceptional biological, climatic, and cultural diversity, from the tropical plains to the alpine Himalayas (Admin, 2018). The 'professors' of the VU may not have a Ph.D., but as indigenous farmers, they possess intricate, intergenerational knowledge about local fauna and flora, critical for Nepal's youth to attain.

The VU deepens place-based skills in sustainable technology, craft, and medicinal plants, and seeks to conserve and activate local knowledge while also creating sustainable livelihood opportunities. The outputs include; a curriculum, interdisciplinary learning, new economy, agency over the place and skills to nurture the opportunity. The VU explores new place-based economics that not only sustains the residential youth, but also the neighboring biodiversity. The VU is intent on creating: more sustainable communities, new job roles, citizen-led responsibilities, and contextually appropriate sustainable processes for local communities. The institution was created with the vision to improve a small community the sustainable intent has enabled many more parallel institutions across the Nepalese mountain ranges to thrive and prosper.

4.3 Ecological Citizen 03 *Nashulai* (nashulai.com)

Located in the Maasai Mara, Kenya. Notably, it is the first Maasai conservancy in the Maasai Mara to be created, governed, and managed by the people whose ancestors have inhabited that beautiful land for centuries, understand it intimately, and have sustained themselves, and their cattle herds, in harmony with the natural cycle of this globally important ecosystem. They are the first Maasai Conservancy in the Maasai Mara, living in sustainable symbiosis with wildlife for centuries. This is the opposite of traditional conservation models, where local people are displaced from their land. The “ethical grounds for displacement, whether pursued in the name of a larger national interest or a general social good, have always been specious” (Shahabuddin, *et al.*, 2014, p.8).

To counter that process in Maasai territories they talk about conservation refugees and conservation apartheid, where vast tracts of land are set aside for wildlife (and high-end tourism). Instead of leaving their land, they set out to band together and form their own conservancy. In the very genesis of this model there is a profound commitment from people most impacted to push back against a norm and mobilise to achieve positive change. The communities were desperate to see their community-led conservation process work. They were committed to making a more biodiverse sustainable wilderness for their children and future generations. That project will take years to come to fruition and is a true testament of long-term sustainable intent built ‘with’ communities / citizens not ‘for’.

4.4 Ecological Citizen 04 *CLIMAVORE* (climavore.org)

A long-term project envisioning seasons of food production and consumption that react to human-induced climatic events and landscape alterations. CLIMAVORE critically questions the geopolitical implications behind the making of climate alterations and the pressures they enforce on humans and non-humans alike. Established on the intertidal zone at Bayfield, CLIMAVORE: On Tidal Zones explores the environmental effects of aquaculture and reacts to the changing shores of Portree, Isle of Skye. Each day at low tide, the installation emerges from the sea and functions as a dining table for humans, with free tastings of recipes featuring ocean cleaners: seaweeds, oysters, clams, and mussels. At high tide, the installation works as an underwater oyster table. The installation was activated by *Cooking Sections* (2023) in collaboration with local stakeholders, residents, politicians, and researchers. Over breakfast, lunch, or dinner (according to local tides), performative meals featured a series of CLIMAVORE ingredients responding to environmental challenges of Scottish waters. The project engaged with local restaurants that removed farmed salmon off their menu and introduced a CLIMAVORE dish instead. The outputs opened discourse with politicians, was place-based, provided dialogue and agency. CLIMAVORE’s sustainable intent focused on catalyzing others to deeply consider their food, environment and how / when we should consider local communities. The interconnected approach of; redesigning local menus as food is something that binds us all, leveraging place-based intervention and centering the focus around ‘inter-tidal zones’ are something that will (in time) impact us all.

5. Conclusion

The work frames, navigates and positions; What are the attributes and positive benchmarks of designing with ‘Ecological Citizen(s)’, to create and enable acts of ‘Ecological Citizenship’? Example projects were/are intent on creating autonomy as a practice. We are exceptionally aware of the complexities within this space for example; austerity (Helm, 2023), access to data (Mankin, 2024), access to sustainable means (United Nations, 2023), affluence (Gates, 2023), and this design space is exponentially complex, interconnected, and contextual. The examples have sustainable intent within different fields of; cultivating change, sustainable practices, and inclusion. The contexts are not a ‘fix all’ and brings into question: How is the work of design constitutively different when performed by ‘non-designers’?

Within the space, it is cultivating the true means of how this can be achieved without compromising quality outputs. For example, understanding cost, production, and infrastructure challenges with the confidence of knowing a design process and that failure might unlock potential, i.e., prototyping. EC is ultimately bound by ‘the bits in between’ linking systems, processes, and elements. Traditional models try to mitigate impacts; carbon offsetting, recycling etc. is ‘sustaining’ the same behaviour and is contentious (Ghussain, 2023). The article’s framework seeks to question: How is it benefiting the surrounding environment? From the onset. This moves design practice to a place where ‘sustainable intent’ is inclusive and accessible by all, creating situations where people have autonomy, agency and a clear steer on issues that impact their surrounding environment, peers, families, and multi-species.

6. Future Work

The positioning of this work cultivated, and provokes:

1. RQ; What should the balance be between our rights, responsibilities, and autonomy?
2. RQ; What are the wider impacts of citizens sharing their ‘ecological impacts’ and positive outputs publically?
3. Design opportunity: What are the ‘future job centres’ and career trajectories we can nurture over-time?
4. Design opportunity: Curriculum creation to nurture, foster and enable Ecological Citizenship, building and supporting future skills.

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