

Activating leverage points for a design skills transition in the UK: Insights from the *Design for Planet Transition Learning Lab*

Niki Wallace

University of the Arts London

n.wallace@arts.ac.uk

<https://doi.org/10.5281/zenodo.21063692>

Keywords: green skills; design for planet; skills for planet; leverage points; systemic intervention; transitions; skills transition;

Abstract

As the urgency of transitions accelerates, so do demands placed on designers to contribute; yet research indicates there is a significant skills gap in key ‘green design skills’ across the UK’s design economy. The need for a green design skills transition as part of the UK’s green transitions will be crucial, and the Design for Planet Transition Learning Lab (‘the Lab’) has emerged in response to this need. The Lab’s activities are part of a Participatory Action Research Through Design project, and the Lab’s pilot—which includes the co-creation of learning prototypes—is the focus of this paper. The paper unpacks how the Lab operates as a systemic intervention: first by specifying the leverage points it seeks to intervene in and describing associated activities and timescales for intervention; and second, by describing how its assemblage constitutes a systemic intervention, by detailing how it meets each of the nine criteria from a ‘Multiplicity Framework’ for designing systemic interventions. Lastly the paper presents tensions and risks that are arising from the pilot and shares early insights that engage with the complexities of a skills transition and the Lab as an intervention.

Introduction

Amidst polycrisis, green transitions are urgent, however ensuring these transitions are socially just and ecologically sustainable demands continuous development of new and different design competencies. The demands for UK-based designers to contribute to green transitions are evident, but Design Council’s (2023) skills gap report reveals only 43% of



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International Licence](https://creativecommons.org/licenses/by-nc/4.0/).

designers feel they possess skills that meet these demands. A lack of deep sustainability integration in design education also limits the reliability of self-reporting (Boehnert & Dewberry, 2025), suggesting this green skills deficit may be higher than reported. Researchers and educators are exploring what it means to build capacities for both design education for sustainability (Boehnert, Dewberry, & Sinclair, 2022; Knight & Wallace, 2025) and for the sustainability of higher education institutions (Loorbach & Wittmayer, 2024; Pigott et al., 2024; Wallace et al., 2024a) yet deeply embedding sustainability into curricula and institutional operations remains challenged. The post-COVID economic crisis is increasing the instability of the UK's higher education sector, leaving little room for reimagining and futuring curricula. A continuing business as usual approach stimulated by growthism in higher education and financial dependency on projects that drive consumption in industry is reinforcing an unsustainable status quo that limits design's contributions to the broader endeavours of transitions.

Design Council's *Design for Planet* mission emerged against this backdrop, and their *Skills for Planet* movement aims to upskill one million designers and commissioners by 2030 (Design Council, 2025). Meeting this bold ambition demands a sector-wide skills transition, and a necessary reconsideration of design education and the design economy, and the alignment of both to the broader goals of just and sustainable transitions. The *Design for Planet: Transition Learning Lab* (hereafter, the Lab) provides a site for exploration of the tensions and challenges that a skills transition presents, and is investigating enablers of critical curiosity and lifelong learning. The Lab convenes design researchers, educators, practitioners and postgraduate students, together we are surfacing and exploring tensions and iteratively developing learning prototypes in response to these tensions and challenges. This paper unpacks how the Lab operates as a systemic intervention, first by specifying the leverage points it seeks to intervene in and then by detailing how its assemblage constitutes a systemic intervention. Lastly the paper presents tensions, risks, and early insights from the pilot and discusses some of the complexities in skills transitions and in this intervention.

The pilot phase of the Lab is being realised through a collaboration between University of the Arts London (UAL) and Design Council, and the Lab's activities include participants from other institutions and industry. Alongside the pilot, the Lab is also nurturing a UK-wide network of institutions to co-create and co-deliver learning for continuing professional development (CPD) focused on 18 green design skills outlined in the Skills for Planet Blueprint in Figures 1 & 2 (Design Council, 2025). The focus on skills is a premise for this research but the pragmatics of this are engaged with critically to explore how skills (as an aspect of work practices) offer a lever for change (Shove et al., 2012, Kuijer, 2017) and how the meaning/mental images designers hold about that skill might influence its development. For example, facilitation skills mean smooth leadership of group processes, but if facilitation does not also mean amplifying marginalised voices and ensuring cultural safety in processes

then the skill's application will reinforce structures of dominance and oppression. In this sense, a focus on skills without considering meaning (or a design mindset) risks a skills transition devoid of justice and regeneration. Similarly, consideration of skills as nested in competencies where they intertwine with knowledge and behaviours reveals how crucial rigorous and responsible skills development is as an interdependent aspect of designers' practices for just and sustainable transitions. To ensure this rigour and responsibility is realised, a group of six partnering institutions are co-bidding for funding to expand the Lab post-pilot, with intentions to deepen this exploration.

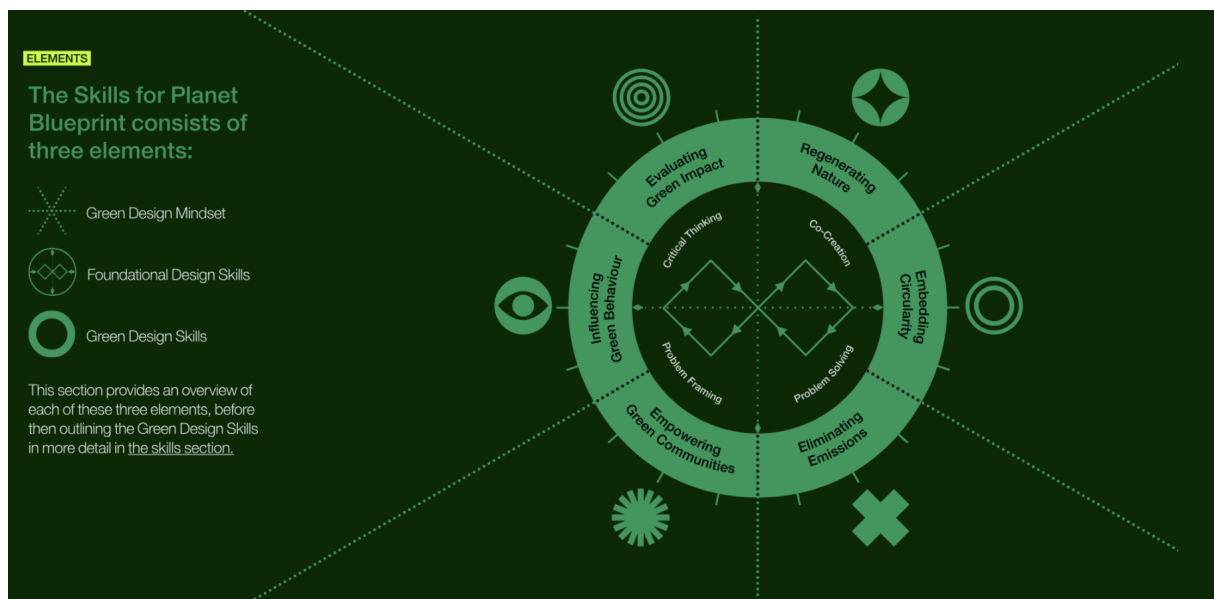


Figure 1 The Skills for Planet Blueprint's core elements (Design Council, 2024)

Regenerating Nature	Embedding Circularity	Eliminating Emissions	Empowering Green Communities	Influencing Green Behaviour	Evaluating Green Impact
SKILL 1 Implementing nature-focused strategy	SKILL 4 Implementing circular strategies	SKILL 7 Implementing decarbonisation strategy	SKILL 10 Gathering community insight	SKILL 13 Facilitating green choices	SKILL 16 Setting measurable goals
SKILL 2 Representing nature in decision-making	SKILL 5 Adopting a circular business model	SKILL 8 Analysing emissions data	SKILL 11 Nurturing community stewardship	SKILL 14 Communicating business value	SKILL 17 Reviewing benefits and risks
SKILL 3 Collaborating with nature	SKILL 6 Selecting materials responsibly	SKILL 9 Planning for future climate scenarios	SKILL 12 Prioritising justice and equity	SKILL 15 Sharing success stories	SKILL 18 Iterating based on evidence

Figure 2 The interconnected green design skills that make up the Skills for Planet Blueprint (Design Council, 2024)

A key aspect of the Lab—beyond the learning content—is a business model that is emblematic of the participatory and regenerative spirit of 'design for planet'. Positioning the

Lab as a non-competitive coalition enables nationwide actors to play catalytic roles in stewarding (not owning) a green design market. The Lab fosters equitable participation by empowering regions to lead in context-specific, place-based green design, allowing a blend of shared, network-wide content to be delivered alongside place-based regionally responsive content. This supports hyper-local growth opportunities across the network, mitigates against over-centralisation in London and minimises threats to the endeavour's regenerative and values-based spirit. Including place-based economic benefits for partners shifts focus to nurturing the collaborative network and catalysing wider markets. The Lab's future vision aims to amplify the design economy's green transition, advance research agendas, and deepen curricula development, and could help accelerate the UK's green transition through plural knowledge exchanges across sectors where design is embedded.

Methodology and Methods

The author is funded as an AHRC Innovation Scholar which has enabled this project's partnership between University of the Arts London (UAL) and Design Council. This in turn has activated the pilot phase of this transition endeavour. Phase one (the pilot) is presented here and uses Participatory Action Research Through Design to structure four iterative stages, each informing the evolution of the next:

- **Discover:** Interviews and focus groups exploring characteristics and criteria of systems-oriented design competencies (informing a framework)
- **Deepen:** Iteration, progression and testing of framework
- **Develop:** Application of framework to the Lab; co-creation of learning prototypes that experiment with pedagogy, delivery formats and learner experiences
- **Delivery:** Testing of learning, sensemaking and insights for future phases; development of guiding principles for the Lab.

This paper shares insights from the Lab's participatory prototyping and focus groups (part of the 'Develop' stage, outlined in Table 1) and analysis draws on four theoretical frameworks. Firstly, the multi-level perspective (Geels, 2002; Wallace, 2021) frames an understanding of the system's dynamics, working with Meadows (1997) 'intervention points' for leverage points analysis. Avelino's (2021) power contestations are used to better understand the role of power, and though this analysis plays a small role in this paper, the Lab's interface with power is more significant, and treats power and change as 'intra-actions' that cannot be separated. Social Practice Theory (Shove et al., 2012) frames understandings of the interplay between skills/materials/meanings within designer's work practices, and skills/meaning are taken as units of design (Kuijer, 2014) with a longer term aim to understand how this might act as a horizontal lever within the more vertical view of systemic change (Hargreaves et al., 2012). Lastly, the Multiplicity Framework (Wallace, 2026) is applied to explore how the Lab meets nine criteria for systemic interventions.

PARTICIPANTS	METHODS & PROCESSES	OUTPUTS	CONTRIBUTION FOR THIS PAPER
Academics and Advanced Practitioners	1. Semi-structured interviews exploring characteristics of DfT designers; criteria for systemic interventions; how associated competencies are developed and/or learned. 2. Co-creation of learning prototypes in the Lab.	Competencies, characteristics and criteria for designing systemic interventions; canvas for guiding DfT project work; learning prototypes for CPD in systems-oriented 'green design skills'.	Surfacing tensions and developing responses to key challenges. Co-creation of learning prototypes.
Design Council Experts	Workshop for the co-creation of learning outcomes for 'green design skills' in Design Council's 'Skills for Planet Blueprint'.	Learning outcomes for systems-oriented green design skills spanning undergraduate and postgraduate (masters) design curricula.	Learning outcomes for application to the learning prototypes.
Post-Graduate Students	1. Focus Groups (within a year-long study) exploring development of DfT competencies 2. Testing framework criteria and language used 3. Testing a canvas to guide the design of systemic interventions	Competencies and criteria for systemic intervention, canvas for guiding DfT projects.	Surfacing tensions in learning experiences. Insights for activating systems-oriented green design skills. Testing prototypes.

Table 1 Overview of Participatory Action Research

Leverage points for strategic intervention

The Lab's action-ecosystem is working with multiple levers of change to intervene at strategic leverage points across the design economy. Whilst Meadows' (1997) leverage points are the basis for this analysis, critique of the lack of advancement in leverage points cannot be ignored (Murphy, 2022), nor can the reliance on power over/to change a system in order to create leverage (Murphy, 2024). Much of the engagement with leverage points since Meadows first published her 12 points to intervene, has rearranged or regrouped the different points for intervention (see for example, Kania et al, 2018) or helped in disciplinary sensemaking of them (see Irwin et al., 2022 where leverage points are grouped and translated into tangible entry points for design). These same leverage points structure Zivkovic's (2015) tool for systemic change, where greater specificity is given through application in communities where acts of social entrepreneurship intervene to affect systemic change. Though Zivkovic's framework is somewhat structured by leverage points, it articulates levers (i.e. how/what action is contributing to change), and emphasises the necessity for interfacing with government as part of systemic interventions—an action echoed by participants in this research. Since advancement on *where* to intervene has been minimal, I draw here on Meadows' original list of *where* and take inspiration from Zivkovic to focus on *how* and *when*, by attempting to make explicit an articulation of the leverage points that the Lab engages with now, alongside its future intentions.

The Lab is one of many initiatives in the Design for Planet mission's portfolio. Core to the Lab's theory of change is working across multiple levels of the system, with different actors in different ways at different times, (more detail on this is presented later) and with specific levers that include interventions for education (skills pipeline), for practicing designers (supply) and for commissioners of design (demand). Through key structural leverage points ('information flows', 'rules') and strategic paradigmatic leverage points ('system goals', 'paradigm') the Lab works with system dynamics and everyday practices of design to intervene in design's continuing contributions to an unsustainable status quo.

The co-creation of tangible learning prototypes translates leading research in transitions and systems-oriented design into skills-focused learning. Learning prototypes in the pilot phase are transdisciplinary and focus on laying foundations (e.g. ecological design thinking, co-creation with communities, systems mapping practices to name a few) and testing a variety of learning formats (e.g. webinars, masterclasses, workshops, games, immersive labs, short courses). These prototypes are being designed intentionally to increase information flows at multiple points across the system (pipeline/supply/demand) to activate a *green design mindset* and amplify action in green skills areas (e.g. circularity, decarbonisation, regeneration, evaluation etc). Iterative prototyping uses make-test-learn cycles within the co-creation process, but also intends to expand this over longer time horizons to ensure the

prototypes continue to respond appropriately, both to learners' needs and to the ever-changing system(s) where skills are applied. Insights from the pilot will provide jumping off points for future iteration of pilot prototypes and inform starting points for the development of new prototypes. In the next phase, other granular 'points' address the specific needs for green skills within each sub-discipline of design to ensure that the depth of skills development accommodates for the breadth of design practices and approaches. We anticipate this enabling more holistic design of different learner journeys. Also in the future, the prototypes' intervention points will explore different geographies, thereby creating regional 'points' where place-based green design skills can be activated to respond to the green skills needs of a given region. For example, retrofitting in Wales, or green energy in a Northern-UK corridor. It is the plurality of this work that ensures the 'information flows' leverage point is activated through an applied 'multi-level' 'multi-stage' and 'multi-scale' view of the system.

To activate the 'rules' leverage point, a set of guiding principles are being co-created (currently in draft form) that provide the Lab and its participants with increasing clarity on the Lab's approach with the intention to activate the systemic potential of this lever in the future. The principles are emerging from the pilot and are scaffolding the development of both the Lab and the learning prototypes, by ensuring rigour, responsibility, accessibility, care and community are embodied within the learning experiences and the Lab's many 'intra-actions'. There is a desire to better understand the role that regulation and governance might play in mitigating risks in systems-oriented work (particularly risks arising from unintended consequences that accidentally reinforce systemic problems) and to influence policy accordingly. Our approach to the 'rules' leverage point works with time as a medium: enabling rigour through principles in the present, and ensuring rigour through influencing policy, regulation and governance in the future.

The *Skills for Planet Blueprint* and the aforementioned guiding principles also reveal the ways in which the Lab works with the 'goals' leverage point, by clearly establishing the terrain green design should tread. A skills transition is a complex goal; the pilot activates this goal with mid-career designers, but this is only a starting point. In the design economy actors take many varied forms (based on for example, sub-disciplines, scales of operations, types of clients, locations etc.), and actors' practices will take time to change as new skills phase in and old skills phase out/redirect towards new goals. Furthermore, a transition must look beyond any one sub-set of actors to appropriately respond to context. Transitions therefore require engagement with power, and in this instance, the Lab benefits from Design Council's power-to connect and convene (through the Blueprint and through its network). Power-with is exercised through the coalition of partners collaborating towards a shared vision. Knowledge-power is also brought by university partners who contribute subject expertise to the Lab. Soft met forms of power-with might also be drawn through a kind of trust-by-proxy:

the UK's design economy could build trust in the Lab by nature of its positioning and association with Design Council and universities. Helpfully, the Blueprint's disciplinary-agnostic language creates entry points for all kinds of design(ers), and the pragmatic nature of skills means this goal is not held in any abstract space. Rather, the goal in this early stage of the Lab, is a tangible form of action (learning) that allows for critical, non-linear, compounding engagement.

Whilst the principles also establish a foundation for the Lab's values and virtues, it is the *green design mindset* that underpins the Blueprint that is more intentionally activating the 'paradigm' leverage point. Understanding this as a systems-orientation is important, but more crucially is the understanding that for design to contribute to transitions, systems thinking must be informed by ecological, relational, and futures literacies. The foundational design skill of *critical thinking* being decolonial and regenerative is key here, as is the *problem framing* skill being complexity-led. These are marked shifts in how design 'thinks' before-during-and-after it 'does'. It is crucial to acknowledge here that any intention to change someone's mind is an exercise of power that should be critically engaged with. The Lab's proposition is an invitation to engage with learning experiences that allow learners to explore different ways of thinking, and each prototype offers practices for designers to continue engaging beyond an initial learning experience. There is no manipulative tactic deployed to 'change minds', but the learning outcomes associated with the Blueprint make explicit the roles of foundational literacies to ensure their inclusion in learning.

The Lab as a systemic intervention

The need for such a Lab emerged from research investigating the *green design mindset* and characteristics and criteria for systemic interventions, and through a range of participatory activities the Lab is now surfacing and engaging with the tensions presented by a skills transition. Participants are responding to these tensions through the development of learning prototypes that experiment with a range of entry points and possible learner experiences. The Lab has been designed as a systemic intervention, and the author's emergent Multiplicity Framework (Wallace, 2026) has been used to structure its assemblage, with the aim for the intervention to 'act as a system in its own right', (Seveldson, 2013, p. 1777-1778). The Multiplicity Framework is presented in Figure 3 to provide an overview of each element within the framework. How the assemblage approach has been practiced and how this framework has been applied to the Lab is detailed in the text that follows.



Figure 3 The Multiplicity Framework, author's artwork

Assemblage as a practice in DfT

Assembling the elements needed to enable action is a core practice in Design for Transitions (DfT) that I have articulated elsewhere (Wallace, 2026), but recent as this articulation is, it is not a new practice. Its roots can be seen in Participatory Design as 'infrastructuring' (Karasti, 2014) where key actors, objects and other enabling aspects of a project are gathered together in preparation for anticipated action. From a theoretical perspective, an assemblage creates what Deleuze and Guattari (1987) call a 'multiplicity', which produces a kind of resonance from which new possibilities emerge. In this sense, the assemblage is greater than the sum of its parts (DeLanda, 2016); its elements constitute entanglements and 'intra-actions' (Barad, 2007) that work altogether differently from within the assemblage. In the context of DfT, the resonance an assemblage produces helps enable forward motion in a project, but it is only by making the assemblage explicit that one can identify what is relevant and how best to mix and match elements from one project to the next. Assemblage (as an active practice rather than a static theory) offers insights to the designer about what is/is not working and why, which can help iterate an approach to better meet the complexity (and wade through the messiness) that is inherent in transitions work.

The intervention's elements are presented below, structured by the criteria of the multiplicity framework with bespoke details that are fluid and responsive (mix and match). This is perhaps akin to the way a house has key elements (walls, windows, doors, floors and a roof) that can be configured in many different structural and aesthetic ways, but it is the presence of each element (and some particular arrangements) that generates the 'house-ness'. Similarly, the intervention is structured by particular elements, their presence and utility helps constitute the 'intervention-ness' but their unique characteristics respond directly to the contextual conditions of the project. This is perhaps best illustrated by the multi-actor element: systemic interventions always involve multiple actors, but *who* is involved in an intervention, *how* they are convened, and *what else* they (can) do when they are together, will be specific to the intervention itself. Conversely, without the involvement of multiple actors it is unlikely that a project would constitute a systemic intervention. It is how the elements are assembled *and* their more detailed configuration that produces the assemblage.

The Lab's assemblage

Multi-theory

The Lab's multi-theory element is grounded in contextual and subject-specific knowledge. Firstly, understanding the UK's higher education sector and the condition of its design economy has been crucial for contextualising the work. Secondly, theories of transitions have been key, and central to this is the multi-level perspective (MLP) (Geels, 2002; Wallace, 2021) which provides the assemblage with a theoretical spine. I have argued elsewhere that the MLP provides a kind of 'stickiness' to the assemblage (Wallace, 2026) by framing the complex and systemic nature of an intervention and offering a theory of change for the unfolding dynamics. The MLP has provided a background structure for making sense of the dynamics at play, particularly the niche-regime inter/intra-actions between design education, design practice, and the presence/lack of sustainable and regenerative activity in each. Social practice theory (Shove et al., 2012) offers insights into work practices and the role that skills play in reshaping daily practices in design. Learning and pedagogical theory is also crucially shaping how learning prototypes are developed to amplify sustainability learning, and to explore key roles played by tensions/discomfort, social participation and transformative experiences (Aboytes & Barth, 2020; Freire, 1996; Mezirow, 2008).

Multi-level

The Lab's multi-level approach is observant of 'where' in the system interventions are made, and how they interact across levels to ensure a strategic, coordinated and plural approach. It is here that the MLP provides a spine from which other elements can hang. The author's adapted MLP framework provides five levels (ecology, landscape, mentalité, regime, niche) where action could nest, and the Lab's core work straddles three of these levels (mentalité, regime, niche). The Lab itself is situated in the niche; it is protected by its current positioning

within UAL and Design Council, and as a funded research project, yet remains precarious for its reliance on that funding to survive. Its current funding activated the UAL-Design Council partnership which has enabled rapid and fluid action, allowing the Lab to be responsive in ways that a university cannot be, yet this funding still limits certain actions. From this niche position, the Lab's actions are oriented toward the regime and mentalité levels, where learning prototypes are currently being iterated ahead of their release into the UK's design sector, where they aim to intervene through the niche to build critical mass in a niche-regime, that over time, activates a regime-level reorientation of design skills. Current onboarding and negotiation activity with the Lab's starting network of partners involves engagement across multiple regime-level institutional processes. At the mentalité level, learning is being co-created with the critical intention to activate the *green design mindset* that is underpinned by ecological, relational, and futural thinking. Whilst the skills-focus of the Design for Planet mission drives a fast-paced pragmatic agenda, it is tempered by this slower more critical mindset. The Lab recognises that true competence in systems-oriented green design interlinks skills, knowledge and behaviours, and that designers' contributions to transitions require mindset shifts, knowledge building *and* upskilling. The complexity of the Lab's work involves intra-actions across multiple system levels thereby giving the Lab a purposeful systemic framing.

Multi-stage

Much of the aforementioned multi-level aspects of the Lab are interconnected with how a skills transition unfolds as a multi-stage undertaking. The Lab's work is being approached in stages, some of which have 'this-before-that' dependencies, for example, co-ownership of co-created outputs relies on first reimagining institutional IP and licensing agreements. Future plans to influence policy and governance for systems-oriented design are a strategy that will better serve the work when the skills transition pathway is 'ready' to be stabilised. Other activity co-exists as strategically self-contained phases of work that can be activated when needed to fill time-gaps in funding the larger/longer stages of work. For example, activating hyper-local CPD offerings that are led by one partner, or hosting pop-up labs that intentionally convene designers and commissioners from a region to co-develop and 'sandpit' hyper-local projects, deploying the skills being developed through the Lab. Whether part of a dependent string of activity or self-contained, each kind of activity is designed to amplify the Lab's work at-large, keeping the project in forward motion by working with time as a medium (Fry, 2019) but also as a design constraint that considers the different temporalities across systems and interventions (Gaziulusoy & Brezet, 2015).

Multi-context

The Lab is something of a context container. Actors from multiple contexts (Design Council, universities, the design industry) participate in its activities and a core group act as its stewards, shaping it in multiple ways to enable its contextual responsiveness (e.g. as a space

for research, prototyping, collaborating, networking, learning, and taking action). The Lab offers the dual benefit of being a boundary spanner (i.e. it is accessible within, to and from multiple contexts) whilst also acting as a boundary object, allowing actors to build understandings of 'the other(s)' through it (e.g. other actors, institutions, pedagogies, ways of working) (Akkerman & Bakker, 2011). In each new context the Lab learns from and responds to new conditions, whilst retaining those from its past; this builds a contextual repertoire that allows the Lab to 'be what it needs to be for its given context'. The Lab 'holds' all of these contexts, reflecting familiar parts of them back to participants when they need to see/experience them, while providing a secure base from which participants can explore and stretch into the unfamiliar. In this sense it is uniquely rigorous and responsible (i.e. trustworthy as an intellectual space) and accessible and community oriented (i.e. inviting participation, not intimidating to newcomers), perhaps best captured as 'transcontextual' (Bateson, 2017). In a university context its community spirit can still be felt, and in a community context, its academic rigour can still be experienced.

Multi-actor

The Lab is a multi-actor network that at its smallest scale convenes ten key actors from three entities. The Lab's actor network has various configurations and it works with a broad range of people and organisations to support action across its network. As the network begins planning for the next phase of work, its geographic spread is adding new contexts, new actors, new expertise, and new skills, each of which contributes to the Lab's continued intellectual and spatial (geographic) expansion. The real power of the Lab lies in its relational strength; as new actors join, its continued and expanded use of complex collaboration and communication practices will be key to its continuing success. For example, practices that continuously build shared understandings, processes that surface tension, facilitate dialogue and debate, and proactively mediate conflict, alongside methods that enable equitable co-creation play central roles in nurturing the continuing relational health of the network.

Multi-object

The Lab's multi-object assemblage blends both abstract and tangible objects, some of which mediate or enable processes and others which are the object of design for the Lab. Card sets (physical objects) and accompanying processes (abstract objects) have been iteratively prototyped and deployed within the Lab as thinking-through-making tools, and participants use these objects to explore different combinations of thematics and pedagogic strategies that could activate targeted green design skills. Learning prototypes emerge from the resonant qualities of these object assemblages and are further developed into pieces of experiential learning using other objects (e.g. digital tools like Miro and Learning Management Systems also mediate prototyping activities). Other objects feel more abstract (e.g. guiding principles, sketches of workplans, narratives) but are made tangible through documentation that is crucial to the Lab's operations.



Figure 4 Prototyping cardsets as thinking tools for the development of Learning Prototypes

Multi-action

The Lab is a space of multi-action, where plural, complementary and harmonious actions are deployed within an action-ecosystem. Within the Lab itself, prototyping processes and tools that enable these are being developed and deployed to prototype different learning experiences. The future network is being nurtured through institutional partnerships where the relationships and actions are multi-purpose—institutions are embedding the *Skills for Planet Blueprint* into their design curricula while simultaneously partnering in the Lab to activate green skills across the UK's design industry. The Lab is not only prototyping learning but is also prototyping new ways of working, with the next phase focused on co-creating a regenerative business model so that the coalition can embody the regenerative spirit of the design for planet mission and act authentically as stewards (not owners) of both green design skills and the Lab. The action-ecosystem in which the Lab is nested interconnects the Lab's activity with other actions from Design Council and beyond, creating a rich web of action that is complementary and strategically aligned by a shared purpose and vision (e.g. learning initiatives within schools, bespoke learning for design teams in larger organisations etc.).

The Lab draws insights from the literature (see for example, Boehnert, Dewberry & Sinclair, 2022; Irwin et al., 2022; Knight and Wallace, 2025) where different methods with potential

to build deeper sustainability knowledge, skills and capacities in design education are discussed. These insights inform and enable the Lab's actions, particularly the pilot's development of learning for mid-career designers. Prototyping processes are further shaped by participatory research to surface further insights into what contributes to transformative learner experiences.

The prioritisation of foundational literacies and key green skills aims to help activate the *green design mindset* and foundations are being developed to enable critical action-oriented learner journeys that promote responsible design (Boehnert, Dewberry & Sinclair, 2022). Upskilling designers in this way benefits the broader green transition by harnessing design's influence, which has the potential to contribute to change in the multiple systems and sectors that design operates across and within.

Multi-scale

The Lab's multi-scale-ness is captured in two core ways. Firstly through the core output of the Lab, its different learning prototypes, which offer intentionally different scales of experiences. Online and asynchronous learning has wide reach and fewer limitations in terms of participant numbers, while in-person learning is curated to offer more intimate experiences that have limited capacities in terms of the time and space needed to deliver. Both have advantages and disadvantages, and both respond to previously presented tensions in different ways. Intimate experiences create spaces where community can build and discomfort can be held more carefully as part of the learning experience. While asynchronous online content provides broader access, enabling higher volumes of learners to engage, albeit in ways that are less visible outside of specific learner studies conducted by the Lab. Secondly, the complex collaborations that make up the Lab shift scale from inter-personal to cross-institutional to regional. At its smallest scale, the lead researcher at UAL and the skills programme lead at Design Council have formed a close partnership that has co-created fertile ground where the Lab can establish its roots. Over time this has expanded to include more people from both UAL and Design Council. Then again to weave in a third partner; and scaling again most recently, as three more partners joined the Lab to form the starting network. As this network matures these scales will expand to take root in the regional contexts of each partner, and future scales of activity will interlink with other institutions, organisations and policy networks.

Multi-outcome

Whilst the Lab has not yet been in operation for long enough to have achieved its multi-outcome ambitions, the focus on key skills and strategic leverage points is activating their potential. Anticipated outcomes include amplified green design skills as part of a design skills transition, and insights from this skills transition could contribute to other sector's approaches. Other outcomes include the deeper integration of sustainability learning in

higher education and more aligned briefing for green design from design commissioners. Lastly, the UK's design economy is an influential, cross-cutting societal framework, a transition in design creates ripple effects across the wider economy that we anticipate can also accelerate the UK's green transition.

Insights from the Lab's pilot

Challenges, tensions and risks

The *Skills for Planet* movement faces multiple challenges and tensions, not least of which is captured in the ambition to upskill one million designers and commissioners to enable design responses to the complexities of polycrisis without reinforcing its 'wicked problems'. The tension between the ambitious target and the risks of reinforcement are significant. Meeting this challenge requires investment in a responsive knowledge-pipeline between research, higher education and the design sector, but it also relies on institutional goodwill and genuine engagement in the project's theory of change.

Meeting the plural needs of urgent action and accessible, rigorous and responsible learning poses challenges, particularly related to time, access, and the need to shift both education and industry, each of which has variable dynamics. Whilst early explorations of transitions and transformations within higher education (HE) offer hopeful insights (Loorbach and Wittmayer, 2024) it is evident that the necessary pace of change is yet to be realised. The institutional flux that comes with such transitions is significant (Wallace et al, 2024a), and without adequate investment (socially and economically), building momentum for positive sustained change limits transitions in HE. Furthermore, the UK's design industry (excluding architecture) is made up predominantly (92%) of small-medium enterprises and freelancers, it is diffuse, largely unregulated and does not mandate continuing professional development (Design Council, 2024) which adds to the tensions and challenges of a design skills transition.

Risks are emerging too, perhaps most significantly, the risk of unconscious incompetence and the possibility of assumptions that some small/brief learning engagement is equal to 'upskilled and ready to act'. There are also significant risks to authenticity from appropriation of regeneration and sustainability language and/or learning development happening in a vacuum or without application of rigorous knowledge. In addition to these, there are also risks associated with people's assumptions of what green design skills are (or are not), and how these influence both the development of learning and learner engagement. A successful skills transition requires industry-wide engagement with learning, but a green design skills transition is particularly challenging since it demands this

engagement span complex and dense subjects that rely on additional knowledge and literacies to guide responsible actions. Failure here places the mission's ambitions at risk.

A time-money quandary for both the project team and the learners it seeks to engage also threatens the project's forward motion and ultimate success. The limitations this quandary presents are an objective condition of the system our livelihoods depend upon; the Lab is not immune to this. Overcoming these limitations requires significant effort, and the Lab's resilience will likely be tested as these efforts continue. The scale of change needed and the potential for 'scope-creep' during the pilot couples with the desire to move at a faster pace, all of which places the authenticity and rigour of the Lab's approach at risk. At the pilot stage, the desire to do more and quickly, is being met critically with the need to do better, more responsibly. This has been a challenging line to hold throughout the project as the sense of urgency is ever-present and felt palpably within the Lab. It is anticipated that this risk will likely scale in line with the scale of activities. Protecting the Lab's ways of working and its intended outputs through the iterative development of guiding principles is a key continuing action.

Prototyping learning and learning through prototyping

Early insights from focus groups and prototyping processes in the Lab reveal the crucial role played by transformative learning, and as prototypes develop there is a growing sense that a critical selection of pedagogical strategies can help enable transformative experiences. Key strategies include immersive experiences (particularly place-based), and relational or personal experiences where communities of practice, social connection/cohesion, trust and collaboration are enabled. Participation through practice(s), including more horizontal and social learning, and experiences that contained joy, energy and care were highlighted as amplifiers of participation. Being challenged by complexity and/or tensions and having to work at learning (earning the knowledge) was discussed as a factor in creating long-lasting impressions; this was linked to personal growth and development and a continuing motivation to learn more. This was also discussed as a potential enabler of lifelong learning but claims to this require further exploration and testing through a more specifically designed longitudinal study (planned in the next phase of work). Other enabling factors surfaced during the pilot include the clarity and accessibility of learning, low barriers to entry, and ensuring access to safe-to-fail spaces where confidence can build. Insights continue to inform the guiding principles, and the importance of these principles is ever-growing and regularly recognised within the Lab.

Discussion and conclusions

This paper presented early insights from a pilot Transition Learning Lab that is co-creating learning prototypes with the aim to catalyse a green design skills transition across the UK design economy. The need for such a Lab emerged from research exploring what constitutes a systemic intervention and the Lab has been presented here as a systemic intervention that seeks to address the UK's green design skills gap. I have outlined how the Lab is working with four leverage points ('information flows', 'rules', 'system goals', 'paradigm') to catalyse this transition, and detailed actions being taken now and into the future using particular levers for change. The 'Multiplicity Framework' that emerged out of an earlier stage of this research has been applied to the Lab, and the paper discussed how the Lab meets each of the framework's nine criteria to form an assemblage of resonant 'intra-actions'. The Lab's bold aims build on Design Council's mission to upskill one million designers and commissioners by 2030 and this paper has also outlined tensions and risks arising out of this mission and within the Lab. Sharing these early insights is intended to create transparency around the challenges that ambitious transitions projects face, and to demonstrate how the Lab is facing these challenges in the present and how it will continue attending to them in the future.

Acknowledgements: This research is funded by an AHRC Innovation Scholar award and is being conducted through a partnership between UAL and the UK's Design Council. I am grateful for the generosity of my colleagues at Design Council, and also for the intellectual space and network access provided by this partnership and by the project's role in Design Council's Design for Planet mission. This research benefits from participatory contributions made by expert scholars, advanced practitioners and postgraduate students, and their insights have been graciously given and gratefully received. I'm also grateful to my colleagues and peer reviewers of this paper, their comments have been helpful in bringing these ideas to life with far greater clarity.

Generative AI/AI-assisted technologies have **NOT** been used in this research or in the writing of this paper.

References

Aboytes, R.G.J., & Barth, M. (2020). Transformative learning in the field of sustainability: a systematic literature review (1999-2019). *International Journal of Sustainability in Higher Education*, 21(5), 993-1013.

Akkerman, S. F., & Bakker, A. (2011). Boundary Crossing and Boundary Objects. *Review of Educational Research*, 81(2), 132-169.

Avelino, F. (2021). Theories of power and social change. Power contestations and their implications for research on social change and innovation. *Journal of Political Power*, 14(3), 425-448.

Barad, Karen. 2007. *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Bateson, N. (2017). Warm data: Contextual research and the evolution of science. *Journal of Constructivist Psychology*, 12, 35-40.

Boehnert, J., Sinclair, M., & Dewberry, E. (2022). Sustainable and responsible design education: Tensions in transitions. *Sustainability*, 14(11), 6397.

Boehnert, J., & Dewberry, E. (2025) UG Design Education for Sustainability: Designing for Planet and for Life. In: Learn X Design: Intertwinia in Design Education, 22-24 September 2025, University of Aviero, Portugal.

DeLanda, M. (2016). *Assemblage theory*. Edinburgh University Press.

Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. (Brian Massumi, Trans.). (Foreword by Brian Massumi). Minneapolis: University of Minnesota Press.

Design Council. (2025). Skills for Planet Blueprint. <https://www.designcouncil.org.uk/our-work/skills-for-planet/>

Design Council. (2023). Design Economy: The Green Design Skills Gap. <https://www.designcouncil.org.uk/our-work/design-economy/>

Design Council. (2021) System-shifting design: an emerging practice explored. <https://www.designcouncil.org.uk/our-resources/archive/reports-resources/download-our-systems-shifting-design-report-1/>

Freire, P. (1996). *Pedagogy of the oppressed* (revised). New York: Continuum,

Fry, T. (2019). Starting at the end: A journey in time. *Journal of Futures Studies*, 23(4), 159-164.

Gaziulusoy, A. I., & Brezet, H. (2015). Design for system innovations and transitions: A conceptual framework integrating insights from sustainability science and theories of system innovations and transitions. *Journal of cleaner production*, 108, 558-568.

Hargreaves, T., Longhurst, N., & Seyfang, G. (2012). Understanding sustainability innovations: points of intersection between the multi-level perspective and social practice theory. *Science, Society and Sustainability (3S) Research Group Working Paper*.

- Irwin, T., Tonkinwise, C., & Kossoff, G. (2022). Transition design: An educational framework for advancing the study and design of sustainable transitions. *Cuadernos del Centro de Estudios en Diseño y Comunicación. Ensayos*, (105), 31-72.
- Kania, J., Kramer, M., & Senge, P. (2018). *The water of systems change*. Available at: https://www.fsg.org/resource/water_of_systems_change/.
- Karasti, H. (2014). Infrastructuring in participatory design. In *Proceedings of the 13th Participatory Design Conference: Research Papers-Volume 1* (pp. 141-150).
- Knight, Laura and Wallace, Niki (2025) *When Methods Create Space in Design Education: Insights for future practice*. In: Learn X Design: Intertwinia in Design Education, 22-24 September 2025, University of Aviero, Portugal.
- Kuijter, L. (2014). Implications of social practice theory for sustainable design. *Delft University of Technology*.
- Loorbach, D. A., & Wittmayer, J. (2024). Transforming universities: Mobilizing research and education for sustainability transitions at Erasmus University Rotterdam, The Netherlands. *Sustainability Science*, 19(1), 19-33.
- Meadows, D. (1997). Places to intervene in a system. *Whole earth*, 91(1), 78-84.
- Mezirow, J. (2008). An overview on transformative learning. *Lifelong learning*, 40-54.
- Murphy, R. J. (2024). Leverage Is Fractal, Relative... And What Else? We need a theory of leverage in systemic design. In *Proceedings of Relating Systems Thinking and Design, RSD11*.
- Murphy, R. J. (2022). Finding (a theory of) leverage for systemic change: A systemic design research agenda. *Contexts—The Systemic Design Journal*, 1.
- Pigott A, Nuuttila H, Thomas M, Smith F, Bohata K, Murray T, Palser M, Holmes E and Elias O (2024) "No one talks about it": using emotional methodologies to overcome climate silence and inertia in Higher Education. *Frontiers in Sociology* 9:1456393. doi: 10.3389/fsoc.2024.1456393
- Sevaldson, B. (2013) Systems Oriented Design: The emergence and development of a designerly approach to address complexity, in Reitan, J.B., Lloyd, P., Bohemia, E., Nielsen, L.M., Digranes, I., & Lutnæs, E. (eds.), DRS // Cumulus: Design Learning for Tomorrow, 14-17 May, Oslo, Norway. <https://doi.org/10.21606/learnxdesign.2013.133>
- Shove, Elizabeth, Matt Watson, and Mika Pantzar. 2012. "The dynamics of social practice: Everyday life and how it changes.": 1-208. <https://doi.org/10.5324/njsts.v1i1.2125>
- Silver, M., & Ruokamo, H. (2025). Competences for the modern designer—Systematic literature review. *Arts and Humanities in Higher Education*, 14740222251342646.

Wallace, Niki, Mazé, Ramia, Williams, Dilys, Landin, Domenica, Tuft, Niamh, & Ng, Natascha. (2024a). UAL Climate Systems Mapping: Report on the pilot research project. *University of the Arts London*

https://ualresearchonline.arts.ac.uk/id/eprint/21978/1/CSMP_Full%20Report_Final.pdf

Wallace, Niki, Mazé, Ramia, Williams, Dilys, Landin, Domenica. (2024b). "Universities Undergoing Climate Transition: Developing MLP tools from a context-specific and critical standpoint." *DRS Conference Proceedings, Boston*.

<https://doi.org/10.21606/drs.2024.1119>

Wallace, Niki. (2026, *forthcoming*) Multiplicity through the multi-level perspective in Design for Transitions. *Temes DeDiseny*

Wallace, Niki. (2022). Fostering communication and collaboration through regenerative design games. *The Design Journal*, 25(6), 1019-1044.

Wallace, Niki. (2021). Using the multi-level perspective for problem articulation, leverage point identification, and systems storytelling in design. *Journal of Design Research*, 19(1-3), 106-132. <https://doi.org/10.1504/JDR.2021.121065>

Wallace, Niki. (2020). Thinking while drawing and drawing to think: Exploring the critical reflective practice of 'reflective doodling'. *DRS Conference Proceedings, Brisbane*.

Wallace, Niki. (2019a). "Creating change: A case study of transformation, from 'making greener things' towards 'design for transitions'." PhD diss., University of South Australia.

Wallace, Niki. (2019b). Personal, Political, Professional: A Practice in Transition. *Journal of Management Policy and Practice*, 20(5). Retrieved from <https://articlearchives.co/index.php/JMPP/article/view/4190>

Weil, D., & Mayfield, M. (2020). Tomorrow's critical design competencies: building a course system for 21st century designers. *She Ji: The Journal of Design, Economics, and Innovation*, 6(2), 157-169.

Wiek, A.; Withycombe, L.; Redman, C.L. Key competencies in sustainability: A reference framework for academic program development. *Sustain. Sci.* 2011, 6, 203–218.

Zivkovic, S. (2015). A complexity based diagnostic tool for tackling wicked problems. *Emergence: Complexity & Organization*, 17(4).

About the Author:

Niki Wallace's research focuses on design's role in transitions, with a particular interest in complex collaborations and designing systemic interventions that attend to justice in systemic change. Niki is an AHRC Innovation Scholar and Reader in Design for Transitions at UAL.