

This is an Open Access document downloaded from ORCA, Cardiff University's institutional repository:<https://orca.cardiff.ac.uk/id/eprint/169296/>

This is the author's version of a work that was submitted to / accepted for publication.

Citation for final published version:

Hobson, K. and O'Byrne, M. 2024. What is the university for these days? Rethinking the foundations of the 'circular campus'. *Journal of Circular Economy*

Publishers page:

Please note:

Changes made as a result of publishing processes such as copy-editing, formatting and page numbers may not be reflected in this version. For the definitive version of this publication, please refer to the published source. You are advised to consult the publisher's version if you wish to cite this paper.

This version is being made available in accordance with publisher policies. See <http://orca.cf.ac.uk/policies.html> for usage policies. Copyright and moral rights for publications made available in ORCA are retained by the copyright holders.



What is the university for these days? Rethinking the foundations of the ‘circular campus’.

In: Journal of the Circular Economy

Authors

Kersty Hobson* and Megan O’Byrne

School of Geography and Planning, King Edward VII Avenue, Cardiff University, Cardiff, Wales, UK

*Corresponding author; email: hobsonk@cardiff.ac.uk and ORCID no.: 0000-0003-4200-9081

Abstract

In line with growing concerns about the negative environmental impacts of Higher Education Institutions’ (HEIs) core activities, Circular Economy (CE) interventions are appearing across campuses, focussing on e.g., curriculum content, operations, and resource-use, and/or research. In parallel, researchers are increasingly exploring the aims, barriers, processes, and outcomes of attempts to make HEIs more ‘circular’. However, this growing literature often fails to connect with broader critiques of prevailing CE goals and processes, to consider the types of CE being enacted and if other forms of CE are possible and desirable in HEIs. In response, this paper discusses data from research interviews undertaken as part of a project that explored on-campus CE initiatives at a sample of UK and Irish HEIs. It reports on key interview themes, which are HEIs as spaces of over-consumption; as testbeds for new CE practices; and as sites of CE degrowth; and makes the case for HEIs to ask fundamental, radical questions—i.e., ‘what is the university for these days?’—as a pivotal part of CE projects and systems across HEIs.

Keywords: Circular Economy; Circular Campus; Higher Education Institutions

What is the university for these days? Rethinking the foundations of the ‘circular campus’

Introduction

'And actually, that's pretty radical, isn't it? When we think about what a HE institution or university is for, and I've been asking my colleagues 'what is the university for these days? That's a genuinely open question' (Interview 1)

The above comment was made during a research interview, undertaken as part of a research project to explore on-campus circular economy (CE) initiatives at a sample of UK and Irish Higher Education Institutions (HEIs). The quote opens this paper as it arguably encapsulates the main imperative underlying the project: that is—in the face of the rapidly growing overshoots of multiple planetary boundaries (Richardson et al. 2023) alongside already-catastrophic climate change impacts (Jones et al. 2022)—what are universities for? Such questions are, without doubt, far from novel. There are now decades of debate and research into the ‘greening’ of HEIs (Adams, Martin and Boom 2018), as well as international policies and declarations that assert the roles that (higher and other) education can and does play in working collectively towards greater socio-environmental sustainability.

However, there have been numerous critiques of said policies and declarations. For example, the ‘Education for Sustainable Development’ agenda has been framed as representing ‘business as usual’ (see Selby and Kagawa 2010, Huckle and Wals 2015), alongside more recent claims of HEI ‘greenwashing’ (Álvarez-García and Sureda-Negre 2023), and a notable lack of clear sustainability targets in many institutions (Times Higher Education 2021). Thus, some researchers now argue that HEIs need to go beyond piecemeal policies and projects that do little to disrupt the status quo, to instead enter a phase of ‘creative destruction’ (Wassénus et al. 2023), to question and reconfigure the fundamental imperatives that drive the HEI sector. This is necessary as, some argue, HEIs are ‘complicit in reproducing unsustainability and inequality in ways that undermine and frustrate concerted and effective action on the planetary crisis’ (McGeown and Barry 2023, Kaufmann, Sanders and Wortmann 2019).

Potentially, one component of fostering ‘creative destruction’ lies in HEIs adopting CE principles; CE systems and practices across operations and management; multidisciplinary CE research; and CE education. This is already happening across campuses and curricula, giving rise to a growing body of research into ‘circular campuses’ (ibid.). That said, questions remain about what forms of circularity are being enacted in HEIs. That is, do they amount to—once again—marginal reforms to ‘business as usual’,

as some critical scholars argue typifies the broader CE agenda (e.g., Fitch-Roy et al., 2020)? Or are there examples of transformative CE practice that align more closely with calls for ‘creative destruction’ within HEIs, in the face to multiple socio-environmental crises?

In response to these questions this paper discusses results of an action research project into student repairing and borrowing practices at one UK HEI. While student-focussed survey data is the subject of a separate analysis (name withheld no date), this paper draws on semi-structured research interviews undertaken with HEI staff from a sample of UK and Irish (and one Australian) HEIs as part of the project. These interviews aimed to explore staff perspectives and experiences of enacting various forms of CE practices and projects HEIs, focussing in particular on the staff charged with rolling-out varied initiatives across campuses e.g., environmental officers or sustainability managers, whose voices are heard less often in the published literature. As such, the goal of the interviews was fundamentally exploratory: that is, to hear first-hand about the challenges, wins, and potential of the practices and projects that HEI staff themselves frame as ‘circular’, to understand more about the different forms of CE being brought into being, alongside their implications for HEI transformation. In doing so, this paper begins with a concise review of research into circular HEIs, followed by the research methods of the featured project. It then examines three central themes from the interviews: HEIs as spaces of over-consumption; as testbeds for new CE practices: and as sites of CE degrowth. It then ends with concluding comments, which include suggestions for further work in this field.

Researching the Circular Campus

HEIs have claimed to be ‘greening’ their many facets for decades, with framings and goals shifting in line with broader contexts. For example, HEIs researching and enabling aspects of ‘Education for Sustainable Development’ have, in the last five year or so, been joined by HEI declarations of a climate emergency (Capstick et al. 2022), and/or institutional Net Zero targets (Times Higher Education 2021). While no doubt bringing in changes around curriculum, campus operations and research outputs, critics have pointed out how these overt institutional ‘greening’ initiatives may stem more from HEIs looking for new areas of competitive advantage in the education market (Atici et al. 2021), rather than deep-seated commitments to positive socio-environmental change e.g., the ‘People and Planet University League’ (People and Planet 2024) that HEIs publicise as underscoring their green credentials (e.g., UCL 2022). As such, it has been argued that HEIs can serve as case studies in greenwashing, wherein words are not matched with parallel actions (Thierry et al. 2023, Urai and Kelly 2023). Indeed, that higher education is a key driver of growth

performance and competitiveness (Serrano-Bedia and Perez-Perez 2022)—whilst arguably positive in terms of regional and national GDP etc.—means they have played pivotal roles in the ‘Great Acceleration’ (Wassénus et al. 2023). This latter phrase aims to capture the rapid rise in all aspects of human activity since 1750 (Steffen et al. 2015) that has resulted in burgeoning transgressions of key planetary boundaries (Gardner et al. 2021). As such, there is currently an intractable paradox underscoring the role and impacts of HEIs, which piecemeal sustainability initiatives, in whatever guise and framing, fail to address. This paradox has, in turn, given rise to increasing calls for deep institutional transformation within HEIs through processes of ‘creative destruction’ (ibid.) that reframe what HEIs are for and what they do in a climate changing world.

What, then, might such a reframing look like? One potential avenue is argued as rethinking a HEI as a ‘Circular University Campus’ (Bakos and Schiano-Phan 2021): a framing set in the context of the rapid uptake of the CE framework around the world. While a nascent idea, The Ellen MacArthur Foundation (Ellen Macarthur Foundation no date) profiles 68 HEIs acting on the CE—56 of which are in Europe or North America—highlighting key areas of work such as research, procurement, and education. In parallel, there has been an upswing of published research in circular HEIs, with a recent review finding 72 relevant publications: most of which have been published since 2018, and focus on the topics of waste management, education, research, and stakeholder engagement (Vergani 2024). However—as the Vergani (ibid.) review argues—these conceptual and/or empirical papers often focus on one or more topic at a time (e.g. CE in the curriculum), with fewer taking a whole-institution or systems approach (Kumdokrub, Carson and You 2023). Taking a system approach is argued as necessary as it considers ‘the complex relationships existing between the flows and the levels of materials’ as well as the various dimensions and scales of campus operations and the stakeholders involved’ (Vergani 2024: 14: see also Mendoza, Gallego-Schmid and Azapagic 2019). But still, there is optimism that ‘circular’ HEIs, and the research into them, is still nascent and thus has potential to lead the way in ‘social and technological innovation’ (Hopff, Nijhuis and Verhoef 2019).

That said, there is less attention in the literature on the socio-economic and ethical systems that underpin the CE frameworks HEIs adopt. Broader critiques of the CE have highlighted how there are multiple interpretations of what constitutes successful CE goals and outcomes, echoing decades-old ‘weak’ and ‘strong’ sustainability debates (Johansson and Henriksson 2020). For one, there are inherent systemic issues that undermine the CE’s positive environmental impacts e.g., lack of displacement of the use of virgin resources, and multiple rebound effects (Zink and Geyer 2017). In addition, mainstream CE

approaches are charged with failing to question key imperatives underpinning current socio-environmental crises i.e., they have a focus on growth; tacit endorsement of hyper-consumerism; and an amenability to co-option by dominant market actors (Hobson 2022). As such—if these critiques of the CE stand—this raises important questions about what forms of CE are being put in place in HEIs. That is, are HEIs mirroring the by-now accepted ‘business as usual’ forms of CE: or are / can CE projects and practices act as catalysts to deeper institutional transformations, in line with the ‘creative destruction’ (ibid.) scholars are discussing? This paper reports on research that aimed to explore such questions, examining the forms of CE being put into practice ‘on the ground’ by key HEI employees—many of whom were not academics—as well as if and how working to bring about the CE in their institutions evokes—for interviewees, at least—discussions of what HEIs do, are for, and what they can become.

Research Methods

Research was undertaken as part of a project called ‘Sharing and repairing: exploring the Circular Economy in a Higher Education context’ funded by Cardiff University’s ‘Innovation for All’ programme. The project aimed to explore the feasibility of establishing a student-led Repair Café (RC) and/or Library of Things (LoT) within the institution. To that end, Repair Café Wales (<https://repaircafewales.org/>) and Benthg Cymru (<https://www.benthg-cymru.org/>) were project partners, as they are the key RC and LoT institutions in Wales.

The project data collection involved two key phases. First, an online questionnaire was distributed amongst all undergraduate and postgraduate enrolled Cardiff University students. This questionnaire asked students ranked-choice and open-ended text questions about their borrowing, sharing and repair practices. The findings from this survey are reported on elsewhere, and none of this data is included in this paper (see name withheld). Second, practitioner interviews were undertaken with academic and professional services staff within HEIs. The interview data, which forms the empirical basis of this paper, explored the institutional context and staff roles in relation to the uptake of CE actions in HEIs. It is positioned within well-established social science epistemologies that view exploration of individuals’ life-worlds and experiences as valid and valuable sources of data (e.g., see Gillani, 2021): a methodological approach now widely in CE research (e.g., see Hobson et al., 2018; Holmes, 2018; Sijtsema et al., 2019).



Figure 1: participant demographics of gender, geographic location, and professional role distribution

Seventeen interviews were conducted with nineteen participants (thus there was one group interview of three people), with Figure 1 showing key participant information. Participant recruitment involved identifying individuals, either from the authors’ existing contact networks or publicly available information. The key criterion was individuals leading on CE HEI projects and initiatives that engaged students on campus and/or who had published academic research within the area. That is, HEI employees who teach CE in the classroom, as well as staff undertaking both curricular and extra-curricular CE student-focused activities and projects e.g. student ‘Repair Cafes’. Identifying academic researchers also involved keyword searches on multiple research databases. Identifying practitioners mostly required internet searches, although this met with some barriers e.g., some prospective participants had changed roles or institutions, or CE initiatives had been discontinued. Despite this, a list of suitable potential participants was compiled, which included academic or professional staff within HEIs or external stakeholders who operated in HEIs e.g., the Irish Universities Association

The rationale for recruiting participants from multiple institutions, was to generate lessons learned and key challenges within countries the authors are familiar with, and which have similar HEI contexts but differing HEI governance: a perspective not well-represented in the extant literature. That is—whilst published research into HEIs and sustainability does contain country and region-specific analyses—overall, it tends towards either focussing on meta-analyses (Budihardjo et al. 2021, Sugiarto, Lee and Huruta 2022), or drilling down to the practices of specific institutions (Kumdokrub et al. 2023). To that end, the geographical spread of participants is not even between countries, nor was it intended to be. Rather, the location of participants was determined by where, at the time the research was being undertaken in 2022-23, HEIs had publicly identifiable CE projects and interventions. For example, the presence of one Australian university in the data does not suggest there are less relevant projects in that

country: only that this one university has identifiable and publicly available information about relevant, on-campus CE projects.

Prospective participants were contacted via email with a project outline and participant information sheet and interviews were scheduled once ethical consent forms were signed and returned. All interviews were conducted over Zoom, and lasted between 30-60 minutes, following a pre-designed question script whilst allowing key themes to emerge during the dialogue. All interviews were recorded with interviewees consent and transcribed using OtterAI software with the interviewer checking the manuscript for veracity after each interview and only changing only transcription errors made by OtterAI. Transcripts were then coded in an iterative process that involved close reading of each transcript to create initial themes. These themes emerged from the data. That is, rather than mapping interviewee responses onto pre-established analytical frameworks, an analytical approach often referred to as 'grounded theory' (see Pidgeon and Henwood, 2004) was adopted. This was followed by two further rounds of re-reading and refining themes, grouping and re-grouping key quotes until internal coherency existed within data themes, In the remainder of this paper, three of the key themes to emerge from the interviews are discussed, drawing on a range of quotes from across the 19 interviewees.

HEIs as spaces of over-consumption

Interviewees were acutely aware of the paradoxes of their institution and their own roles within them. That is, the contributions their employees make to profligate consumerism, and the inherent wastefulness built into the norms of HEI systems, such as procurement. As one interviewee put it:

'consider...how they buy equipment, what they do with the equipment, how they maintain it, and everything. This raises a broader question about procurement and servicing and maintaining our current assets within the university.' (Interview 10)

Another interviewee pointed about the absurdity of these prevailing norms, and how just beginning to see their HEI through a CE lens uncovers uncomfortable truths about how such institutions operate. For example, one interviewee set up a trial to re-use older furniture on campus, and reported:

'I ran a trial...and we were saving, I think it was 300,000 pounds worth of furniture in three months. And when I looked at the figures, we were spending 1.4 million a year on new furniture at the time. Because we were building a lot of new building, but at the same time, we were throwing away a million pounds worth of good quality furniture' (Interview 15)

Clear here was how challenging individuals found interrupting these normalised systems and navigating institutional silos and established procedures. This theme was repeated multiple times in the interviews, ranging from discussions about the general risk-averse nature of universities, to specific examples of when new ideas were hard for others to comprehend within current frameworks. For example, when talking about trying to set up a Repair Café within their own institution, one interviewee said:

'It took me three meetings for the universities for me to get across what a repair cafe was to the university. They keep coming back to me to say, "well, where's the coffee involved in it?"'
(Interview 7)

However, these points were not only about management systems that require reform. They also concern the need to reconfigure how HEIs value and manage material assets. Here, items such as furniture are not just goods that facilitate the delivery of HEI functions (e.g. research, education). Rather, they are entities with diverse values, which can and need to be given 'after lives' beyond their original limited purpose (Jenkins, Molesworth and Scullion 2014). This requires a conscious reframing of HEIs existing material cultures, wherein the prioritising of the new and un-used is displaced by valuing the university as a system through which goods 'churn' (Lane 2023): a socio-cultural take on arguments around campus metabolisms and material flows, which rarely shows up in the 'circular campus' literature.

There was also discussion in interviews about how HEIs are indirectly stimulating an array of unsustainable practices amongst staff and students. As one interviewee put it, when talking about how students live:

'there's a real culture...like a throwaway culture...because it's such a turnover of time and activity. And think about all the things you buy for random events and costumes you buy.' (Interview 9)

Such student behaviour could be viewed as part of contextual life-stage practices that alter in later years. Indeed, two interviewees positioned students as absorbing sustainability messages and practices that then go on to form later-life behaviours. These take place because, they argued, when students are at a HEI, they are 'in a more radical position in terms of their attitude towards the world' (Interview 11).

Such theories of change arguably underscore agendas such as 'Education for Sustainable Development' (ESD) which claims that educational knowledge about sustainability 'empowers learners to take informed decisions and responsible actions' (AdvanceHE and QAA 2021: 8) towards environmentally and socially-just futures. Part of these decisions and actions include understanding and taking up 'Responsible Consumption and Production' (ibid.), which links directly to the themes of this research i.e., student circular practices. However, research has underscored that this premise—that HEI-educated individuals

have relatively higher proclivity towards pro-environmental behaviours in later life—is not clearly supported by empirical evidence (Fernández, Cebrián and Fernández 2020, Kountouris and Remoundou 2023, Teather and Etterson 2023). Indeed, given that completing a university degree means, on average, achieving a relatively higher income through one’s working life, the well-established correlation between wealth and GHG emissions means that HEIs can indeed be framed as key institutions in facilitating collective over-consumption, echoing McGeown and Barry’s point (2023) about the complicity of HEIs ‘in reproducing unsustainability and inequality’.

In sum, framing HEIs as unsustainable ecosystems of resource capture and use emerged clearly from the interviews. Less clear was a shared narrative about the role of students in these ecosystems. On the one hand, the wasteful consumption practices of a ‘typical’ student lifestyle was considered part of the ambit of HEIs environmental responsibilities, which suggests a need for such institutions to carefully consider the forms of resource use and waste that they facilitate, even indirectly. However, there were also strong echoes of the prevailing ESD narrative. Here, HEIs are ‘enablers of a change of mindset and values for the coming generations of citizens and leaders’ (Vergani 2024) which is assumed to include graduates who adopt pro-environmental actions in later life: a narrative which, the evidence suggests, requires more critical consideration by those espousing it.

HEIs as testbeds for new CE practices

Alongside discussion about the risk-aversion of some aspects HEI business, there was a clear line of dialogue across interviews about the different forms of circularity being put into practice: as well as HEIs as spaces where different forms of CE practice can be introduced and tested. As one interviewee put it:

‘I think that we’re meant to be a testbed for innovation, for learning, for getting things right. But also, more importantly, I think, for getting things wrong and learning from that.’ (Interview 15).

Such comments pick up on discussion about HEIs as ‘living labs’, wherein they undertake ‘intentional experiments in real world settings which are then monitored and learnt from in a rigorous way’ (Evans et al. 2015: 1), thus requiring considerable support, monitoring, and communication within and between institutions and stakeholders (Verhoef et al. 2020). That said, analyses of projects claiming to be ‘living labs’ suggest that most miss key components e.g., inclusion of the user, which makes them more like ‘pilot projects, showcases, test sites, or demos of existing innovations’ (Steen and van Bueren 2017: 14). For this research, the examples given mostly fell outside the definition of ‘living labs’, but still presented examples of diverse innovations advocated for in the literature (e.g. see Purcell, Henriksen and Spengler

2019). Indeed, in the interviews, small-scale and ‘slower’ forms of entrepreneurship were highlighted, such as ‘Revolution Farm’ project wherein:

“we collect coffee grounds, and we grow mushrooms. The mushrooms are made into a sauce and then sold...activities like that, we give them theory but then have them go out and do things hands on.” (Interview 1).

The potential for similar projects within HEIs depends upon many factors: and in the interviews, one key factor that emerged is the rationale for such innovation. That is, entrepreneurship within HEIs often focuses on innovation and ‘spin-off’ activities with notable potential market impacts (see e.g., Salvador 2021, Scuotto et al. 2020). By contrast projects like Revolution Kitchen aims to foster ‘slow, caring’ practices (<https://revolutionfarmkitchen.com>), thus challenging the norms of how HEIs frame and fund innovation: an area where HEIs arguably needs to make space for business models that embrace circular, zero-waste, and de-growth ethics.

A somewhat different rationale for various on-campus CE projects also emerged in the interviews. Here HEIs were framed as scaled-down exemplars of larger spatial and social configurations, which make them useful testing grounds for potentially scalable interventions. As one interviewee put it:

‘a university is really unique in terms of organization because it is like a mini city. So, if you wanted to trial, a system that works, you know, why not trial with their students who came to gain that enrichment.’ (Interview 17)

This point was backed up by discussions of the Irish Environment Protection Agency-funded ‘Campus Living Labs’ project, which aimed ‘to test and trial effective interventions for waste management and recycling’ (<https://www.iaa.ie/ourwork/sustainability/campus-living-labs-sustainability>) for 2 years across participating Irish HEIs. One interviewee commented that one of the drivers behind this funding included questions such as:

‘What kind of insights could be gathered from the university as a microcosm kind of society? Is there anything that could be applied to similar environments like supermarkets or airports or hospitals or small towns? (Interview 13)

However, others questioned the idea that HEIs offer fruitful spatial and population configurations that enable the transfer of successful interventions from HEIs to other contexts. For example, when talking about attempts to set up Repair Cafes within a HEI, one interviewee suggested that the transient nature of student populations, and their lack of embeddedness within local communities is a key reason so few succeed within HEIs). As they said:

‘With universities, there's a lot of turn-over because students leave, after three years, they may have taken interest in it in their first year, and then realised that you have to do some studying in the second year. There's a lot of movement of people...You don't get that with a normal community Repair Cafe that's embedded in the community. People know what it is, they know where to go, you get regular volunteers, the organiser gets settled, and you have somebody that kind of continues on.’ (Interview 9)

The above quotes suggest a different framing from the ‘microcosm’ model in two ways. First, HEIs are not to be seen as miniaturised versions of a town or city but rather unique configurations of complex material and demographic dynamics. Second, interventions to foster new CE practices are not transferable per se, from one place to another. Instead, they are embedded in the specific local contexts of a HEI. To return to the discussion of Repair Cafes—a common topic in the interviews, given the overall project focus on student repairing and borrowing practices—interviewees drew attention to the existing repair skills in local communities. Arguments were made that these individuals and skills could be drawn into HEIs, in particular to pass on ‘dying’ repair skills to younger adults i.e. ‘There are amazing skills that are sitting in communities that if you could tap into them, you can effectively repair products’ (Interview 7).

In this sense, the spatial reimagining of a more circular HEI is not one of a scaled-down city: but more of a porous institution, acting as a node of learning and sharing amongst residents, whether they be part of the HEI or not. A useful example of how to conceptualise this spatial model of a HEI emerged in one interview, where there was discussion of the Re:Make space in Newport (South Wales): ‘Wales’ first permanent community repair and reuse space’ (see <https://www.remakewales.org>). Here, the interviewee commented how such spaces need to ‘make sense’ in the larger ‘ecosystem’ of the town centre street it sits on. That is, we need to consider why people come to the high street: and whether Re:Make, in turn, can start to alter that, to engender ‘a new way to think about why people come into the high street’ (Interview 4)? As such, spaces like Re:Make do not just teach new skills or enable people to borrow items. They also become part of broader spatial transformations of the high street: a theme that echoes the need to re-frame HEIs are situated within their own local ‘ecosystems’, requiring a level of institutional permeability that many do not currently have.

Less is more: HEIs as sites of CE degrowth

There was an express acknowledgement amongst interviewees of tensions at heart of HEIs. For one, there is the push to operate as international institutions with expanded global reach and impact, which is at

immediate odds with the actions and relationships that interviewees felt authentic sustainability requires.

One interviewee said that their HEI:

‘has a really solid, global reputation, there's a real need for development and expansion. And the payoff between business development and...expansion and need to almost shrink things down to a matter of just the value of the single person and the relationship that we develop amongst ourselves.’

(interview 3)

In line with this theme, multiple interviewees underscored how treating agendas like the CE as another addition to already busy schedules and programmes will not work. As one interviewee put it:

‘there's so much that is going on, so many demands on students and staff that it's difficult to kind of wedge in a new opportunity...you're overwhelmed by the possibilities and the opportunities, one more is often seen as a burden, not something which is attractive.’ (Interview 11).

This echoes findings from recent research that details how HEI researchers’ workloads and responsibilities are experienced barriers to acting on environmental crises such as climate change (see Latter et al., 2024).

In this project’s interviews, this was raised as also an issue for students. For one, interviewees challenged assumptions that HEI students today are a captive and interested population, ready and keen to take up extra-curricular interventions such as Repair Cafes (see name withheld). Instead, interviewees experienced low student engagement with such initiatives e.g.,

‘We did promote it internally, but poor levels of engagement, very difficult to get through to students, a little bit of a feeling like they don't like to plan, everything's last minute. So, they get an email through, it will be deleted or ignored if it's come through the official systems.’ (Interview 7)

Such quotes are not meant to bemoan any perceived indolence on the part of students. Rather, it underscores how the logics of otherwise-successful interventions such as Repair Cafes do not translate well into a HEI context in their current forms. As discussed above, this relates in part of the transient nature of HEI student populations. But also, it speaks to students’ time at HEI often sitting far outside the ideal of young adults immersed full-time in an expansive pedagogical experience. Instead, many have jobs and diverse personal circumstances that preclude university being much more than getting their programmes of study completed. In addition:

‘Extracurricular things maybe don't have as clear a career advantage, might be pushed aside for favour of those that do because they're limited in terms of time. They'll dealing with the cost-of-living crisis and have jobs and things as well’ (Interview 17)

As such, HEI CE interventions that are 'in addition' to students' meeting their key programme requirements were deemed problematic and more likely to be ineffective by some interviewees. This, then points towards the concepts and practices of CE being embedded clearly within extant HEI programmes, as well as everyday campus operations – key themes in the 'circular campus' literature to date (see above).

However, to return to the tension between expansion and scaling actions to more local contexts, interviewees questioned if such embedding could be done in ways that resist the current additive, expansionist, and growth-orientated mind-set of HEIs. That is, how do we transform without growing, in the market-orientated, additive sense of the Great Acceleration (ibid.)? Here, the very ideas of the CE become even more salient. That is, if a core CE goal is to retain value in existing assets, what assets are HEIs under-utilising that could form part of circular systems? Beyond the furniture discussed above, interviewees drew attention to the extant skills and human capital within HEIs that could be harnessed more productively. That is, not new or replacement jobs per se: nor altering job descriptions or adding on extra work. Rather, this was about changing the nature of what staff are there to do. As one interviewee put it:

'within University, you've got technicians, and technicians' job are to keep sweating the assets. So, a lot of technicians are actually heavily involved in repair. And it's an internal stakeholder that's just not thought about at all in this space.' (Interview 9)

Others have underscored how socio-environmental issues do, and need to, present challenges to 'the modes of knowledge production' in HEIs which, in turn, needs to be addressed to create 'alternative pathways for action' (Nussey et al. 2022: 16). Along similar lines, interviewees underscored the need to unsettle the existing hierarchies within HEIs, to get manifold perspectives on how current practice can be transformed. As one interviewee said:

'If you walk around any institution and talk to the porters, or the cleaners or the library staff or whoever it might be, and ask them where they think these things can change, they'll have loads of ideas and loads of stuff that you'd never thought of...With students, at the end of three, four or five years' time that they're gone, you've almost got to start again.' (Interview 15)

This is not to say that HEIs do not need dedicated staff, whose job it is to push key transformations forward. Interviewees were clear that 'You need five or ten people, these are the titles, this is their job remit. This is the role and as opposed to a lot of us trying to figure it out ourselves' (Interview 16). The point is rather that the issue of human and cultural capital has not received a great deal of attention in the literature on CE in HEIs, beyond workloads being a barrier to action (see Vergani 2024). Yet

interviewees put forward a clear case for challenging the norms and hierarchies of who contributes and how, outside of standard job roles and prevailing hierarchies.

A final point circles back to the opening question of what HEIs are for. In this research, many of the interviewees' examples of CE interventions were extra-curricular activities. This is often the case as key CE skills, such as repair, can be viewed as too atheoretical, or too related to students' personal lives and practices to merit being brought into formal teaching events. But that was not always the case. One interviewee talked about a 30-credit module that included students designing and delivering an on-campus 'Go Green Week' as part of an environmental management and sustainability degree, where they also 'do the evaluation to show the impact of what they've done' (Interview 6). Others talked about how the experiential learning of repair brought so much more to the repairer than just a new skill. As one interviewee noted when talking about people attending a Repair Café, as part the repair process they have to 'tell the story about the thing that they were bringing. So, it's much more than just a repair cafe.' (interview 1). Another noted how repairing their own things gave their students:

'the sense of agency and ownership over material stuff. I think that's one of the big challenges in our consumer culture, generally. We don't, I feel, have the same sense of ownership and responsibility towards the material stuff we consume anymore. I think that simple act of repair goes some way towards creating that sense of ownership stroke responsibility.' (Interview 8)

This sense of ownership—or stewardship of materials (e.g. Lane and Watson 2012)— links directly to debates from critical CE scholars, about how collective shifts in views of material cultures need to be part of a truly transformative CE (Hobson 2020). As such, there is clearly potential to link seemingly 'mundane' acts, such as repairing, to transformative learning that enables students 'to perceive sustainable futures are something positive and shapeable' in spaces of 'conviviality' (Kauffman et al., 2019: 935) like Repair Cafes or some reconfigured HEI equivalent. To be clear, this is not a turn away from an education or indeed from HEIs with 'big picture' or global foci, with a turn instead towards the local and quotidian. If the Right to Repair movement has underscored anything, it is how entwined everyday material cultures—and our abilities to intervene when they fail—are with prevailing socio-economic systems, the logics of which can be opened-up to debate through experiential acts of repair (Graziano and Trogal 2017, McLaren, Niskanen and Anshelm 2020) that can and should be part of an expanded HEI logic in the time of emergent and growing 'polycrises' (Daniel et al 2023)

Conclusions

What, then, is the University for these days, particularly considering the unfolding, multiple global crises fuelled by the unsustainable material practices that the CE looks to ameliorate? This paper does not claim to proffer a singular response to that question, as indeed there is not one answer. Rather, the aim has been to underscore the importance of asking such fundamental, radical questions alongside, and as a pivotal part of, the rolling out of CE projects and systems across HEIs. As the empirical material presented shows, engaging with forms of circularity on campus is already inciting some HEI staff to do just that, as projects and practices highlight the absurdities of current HEI norms and systems. The interview data also shows the different framings and forms of CE being brought into being across HEIs, contingent upon key actors' perceptions of what the CE is and does and indeed, should do. And from these interviews and others' research (see Vergani, 2024), it is clear that attempts to introduce CE-orientated interventions do not sit easily within extant HEI mindsets, which can serve as definite barriers to action e.g., what is a Repair Café without coffee: and why the constant buying of new furniture when there is already enough?

As such, if HEIs are to be proponents of 'strong' versions of the CE, this research suggests that there is a need to recognise the pedagogical and experiential possibilities—for students, staff and across the campus—of using the CE as a tool to 'think with', rather than simply a framework to implement. Indeed, one clear issue illuminated in this research was how, for some, even just trying to be more 'circular' on campus creates opportunities to transform HEIs own theories of change. Some interviewees rehearsed change models often repeated by HEIs to justify the status quo e.g. we give students knowledge, they then go on to act as responsible environmental citizens. While not without merit, research clearly already undercuts that narrative, leaving open questions about what 'environmental' knowledges matter most at this point in time. The aim of this paper has been to start to sketch out some possibilities here e.g., repair as a part of formal curricula. But, there is, as ever, more work to do—specifically in partnership with students and staff—if the transformative potentials of thinking and acting 'circular' are not to be drowned out by a 'business as usual' approach to the CE.

DECLARATIONS

Authors' contributions

Kersty Hobson was the PI on the research project reported on herein. She co-designed the survey instrument used in the research and undertook the data analysis for the survey reported on here. She completed the first full draft of the paper, followed up by subsequent revisions and final edits. Megan O'Byrne was the research assistant on the research project reported on herein. She co-designed and

distributed the survey instrument used in the research through all mentioned channels. She assisted in completing the first draft of the literature review section and contributed to the final revisions and edits of the full paper draft.

Competing interests: The authors declare no competing interests.

Open Access: This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third-party material in this article are included in the article's Creative Commons licence unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0>

References

- Adams, R., S. Martin & K. Boom (2018). University culture and sustainability: Designing and implementing an enabling framework. *Journal of Cleaner Production*, 171, 434-445.
- AdvanceHE & QAA. (2021). Education for Sustainable: Development Guidance. <https://www.advance-he.ac.uk/knowledge-hub/education-sustainable-development-guidance>.
- Álvarez-García, O. & J. Sureda-Negre (2023) Greenwashing and education: An evidence-based approach. *The Journal of Environmental Education*, 54, 265-277.
- Atici, K. B., G. Yasayacak, Y. Yildiz & A. Ulucan (2021.) Green University and academic performance: An empirical study on UI GreenMetric and World University Rankings. *Journal of Cleaner Production*, 291, 125289., <https://doi.org/10.1016/j.jclepro.2020.125289>
- Bakos, N. & R. Schiano-Phan (2021). Bioclimatic and regenerative design guidelines for a circular university campus in India. *Sustainability*, 13, 8238., <https://doi.org/10.3390/su13158238>.
- Budihardjo, M. A., B. S. Ramadan, S. A. Putri, I. F. S. Wahyuningrum & F. I. Muhammad (2021.) Towards sustainability in higher-education institutions: analysis of contributing factors and appropriate strategies. *Sustainability*, 13, 6562., <https://doi.org/10.3390/su13126562>.
- Capstick, S., A. Thierry, E. Cox, O. Berglund, S. Westlake & J. K. Steinberger (2022). Civil disobedience by scientists helps press for urgent climate action. *Nature Climate Change*, 12, 773-774.
- Hoyer, D., J. S. Bennett, J. Reddish, S. Holder, R. Howard, M. Benam, J. Levine, F. Ludlow, G. Feinman, & P. Turchin (2023). Navigating polycrisis: long-run socio-cultural factors shape response to changing climate. *Philosophical Transactions of the Royal Society B* 378, no. 1889, <https://doi.org/10.1098/rstb.2022.0402>.
- Ellen Macarthur Foundation. (no date). Profiled Universities. <https://ellenmacarthurfoundation.org/resources/education-and-learning/profiled-universities>.
- Evans, J., R. Jones, A. Karvonen, L. Millard & J. Wendler (2015). Living labs and co-production: university campuses as platforms for sustainability science. *Current Opinion in Environmental Sustainability*, 16, 1-6.

- Fernández, M., G. R. Cebrián, E. & M. Y. Fernández (2020). Analysing the relationship between university students' ecological footprint and their connection with nature and pro-environmental attitude. *International Journal of Environmental Research and Public Health*, 17, 8826, <https://doi.org/10.3390/ijerph17238826>.
- Fitch-Roy, O., Benson, D., & Monciardini, D. (2020). Going around in circles? Conceptual recycling, patching and policy layering in the EU circular economy package. *Environmental Politics*, 29(6), 983-1003.
- Gardner, C. J., A. Thierry, W. Rowlandson & J. K. Steinberger (2021). From publications to public actions: the role of universities in facilitating academic advocacy and activism in the climate and ecological emergency. *Frontiers in Sustainability*, 2, 42, <https://doi.org/10.3389/frsus.2021.679019>.
- Gillani, D. (2021). Can and "should" Qualitative Research Be Value-Free? Understanding the Epistemological Tussle between Positivists and Interpretivists. *Journal of Political Studies*, 28(1), 181-192.
- Graziano, V. & K. Trogal (2017). The politics of collective repair: examining object-relations in a postwork society. *Cultural Studies*, 31, 634-658.
- Hobson, K. (2020) 'Small stories of closing loops': social circularity and the everyday circular economy. *Climatic Change*, 163, 99-116.
- . 2022. The limits of the loops: critical environmental politics and the Circular Economy. In *Trajectories in Environmental Politics*, 158-176. Routledge.
- Hobson, K., Lynch, N., Lilley, D., & Smalley, G. (2018). Systems of practice and the Circular Economy: Transforming mobile phone product service systems. *Environmental Innovation and Societal Transitions*, 26, 147-157.
- Holmes, H. (2018). New spaces, ordinary practices: Circulating and sharing within diverse economies of provisioning. *Geoforum*, 88, 138-147.
- Hopff, B., S. Nijhuis & L. A. Verhoef (2019). New dimensions for circularity on campus—Framework for the application of circular principles in campus development. *Sustainability*, 11, 627, <https://doi.org/10.3390/su11030627>.
- Huckle, J. & A. E. Wals (2015). The UN Decade of Education for Sustainable Development: business as usual in the end. *Environmental Education Research*, 21, 491-505.
- Jenkins, R., M. Molesworth & R. Scullion (2014). The messy social lives of objects: Inter-personal borrowing and the ambiguity of possession and ownership. *Journal of Consumer Behaviour*, 13, 131-139.
- Johansson, N. & M. Henriksson (2020). Circular economy running in circles? A discourse analysis of shifts in ideas of circularity in Swedish environmental policy. *Sustainable Production and Consumption*, 23, 148-156.
- Jones, M. W., J. T. Abatzoglou, S. Veraverbeke, N. Andela, G. Lasslop, M. Forkel, A. J. Smith, C. Burton, R. A. Betts & G. R. van der Werf (2022). Global and regional trends and drivers of fire under climate change. *Reviews of Geophysics*, 60, <https://doi.org/10.1029/2020RG000726>.
- Kaufmann, N., C. Sanders & J. Wortmann (2019.) Building new foundations: the future of education from a degrowth perspective. *Sustainability Science*, 14, 931-941.
- Kountouris, Y. & K. Remoundou (2023). Does higher education affect pro-environmental behavior? Evidence from household waste recycling in Greece. *Environmental Research Letters*, DOI 10.1088/1748-9326/ace19a.
- Kumdokrub, T., S. Carson & F. You (2023.) Cornell university campus metabolism and circular economy using a living laboratory approach to study major resource and material flows. *Journal of Cleaner Production*, 421, 138469, <https://doi.org/10.1016/j.jclepro.2023.138469>.
- Lane, R. (2023). Inputs, outputs and churn: why some products and materials don't move through. *Journal of Cultural Economy*, 16, 615-621.

- Lane, R. & M. Watson (2012). Stewardship of things: The radical potential of product stewardship for re-framing responsibilities and relationships to products and materials. *Geoforum*, 43, 1254-1265.
- Latter, B., C. Demski & S. Capstick (2024). Wanting to be part of change but feeling overworked and disempowered: Researchers' perceptions of climate action in UK universities. *PLOS Climate*, 3(1): e0000322. <https://doi.org/10.1371/journal.pclm.0000322>.
- McGeown, C. & J. Barry (2023). Agents of (un) sustainability: democratising universities for the planetary crisis. *Frontiers in Sustainability*, 4, 1166642, <https://doi.org/10.3389/frsus.2023.1166642>.
- McLaren, D., J. Niskanen & J. Anshelm (2020). Reconfiguring repair: Contested politics and values of repair challenge instrumental discourses found in circular economies literature. *Resources, Conservation & Recycling*, 8, 100046, <https://doi.org/10.1016/j.rcrx.2020.100046>.
- Mendoza, J. M. F., A. Gallego-Schmid & A. Azapagic (2019). A methodological framework for the implementation of circular economy thinking in higher education institutions: Towards sustainable campus management. *Journal of cleaner production*, 226, 831-844.
- Hobson, K. & O'Byrne, M. (no date). Sharing and repairing at University: student practices, and the future of the circular campus. *Submitted to Circular Economy and Sustainability (currently out to review)*.
- Nussey, C., A. A. Frediani, R. Lagi, J. Mazutti & J. Nyerere (2022). Building university capabilities to respond to climate change through participatory action research: towards a comparative analytical framework. *Journal of Human Development and Capabilities*, 23, 95-115.
- People and Planet. (2024). How sustainable is your university? <https://peopleandplanet.org/university-league>
- Pidgeon, N., & Henwood, K. (2004). Grounded theory. In (Eds.) A. Bryman and MA Hardy. *Handbook of data analysis*, 625-648. Sage Publications.
- Purcell, W. M., H. Henriksen & J. D. Spengler (2019). Universities as the engine of transformational sustainability toward delivering the sustainable development goals: "Living labs" for sustainability. *International Journal of Sustainability in Higher Education*, 20, 1343-1357.
- Richardson, K., W. Steffen, W. Lucht, J. Bendtsen, S. E. Cornell, J. F. Donges, M. Drüke, I. Fetzer, G. Bala & W. von Bloh (2023). Earth beyond six of nine planetary boundaries. *Science Advances*, 9, DOI: 10.1126/sciadv.adh2458.
- Salvador, E. (2021). Spin-off—Research Spin-off: How the University Fosters Innovative Entrepreneurship. *Innovation Economics, Engineering and Management Handbook 2: Special Themes*, 255-262.
- Scuotto, V., M. Del Giudice, A. Garcia-Perez, B. Orlando & F. Ciampi (2020). A spill over effect of entrepreneurial orientation on technological innovativeness: an outlook of universities and research based spin offs. *The Journal of Technology Transfer*, 45, 1634-1654.
- Selby, D. & F. Kagawa (2010). Runaway climate change as challenge to the 'closing circle' of education for sustainable development. *Journal of Education for Sustainable Development*, 4, 37-50.
- Serrano-Bedia, A.-M. & M. Perez-Perez (2022.) Transition towards a circular economy: A review of the role of higher education as a key supporting stakeholder in Web of Science. *Sustainable Production and Consumption*, 31, 82-96.
- Sijtsema, S. J., Snoek, H. M., Van Haaster-de Winter, M. A., & Dagevos, H. (2019). Let's talk about circular economy: A qualitative exploration of consumer perceptions. *Sustainability*, 12(1), 286, <https://doi.org/10.3390/su12010286>.
- Steen, K. & E. van Bueren. (2017). *Urban Living Labs: A Living Lab Way of Working*. Amsterdam, Institute for Advanced Metropolitan Solutions Delft University of Technology.
- Steffen, W., W. Broadgate, L. Deutsch, O. Gaffney & C. Ludwig (2015). The trajectory of the Anthropocene: the great acceleration. *The Anthropocene Review*, 2, 81-98.
- Sugiarto, A., C.-W. Lee & A. D. Huruta (2022.) A systematic review of the sustainable campus concept. *Behavioral Sciences*, 12(5), 130; <https://doi.org/10.3390/bs12050130>.

- Teather, A. & J. Etterson (2023). Value-action gaps between sustainability behaviors, knowledge, attitudes and engagement in campus and curricular activities within a cohort of Gen Z university students. *Journal of Sustainability Education*, 28, https://www.susted.com/wordpress/content/value-action-gaps-between-sustainability-behaviors-knowledge-attitudes-and-engagement-in-campus-and-curricular-activities-within-a-cohort-of-gen-z-university-students_2023_04/.
- Thierry, A., L. Horn, P. Von Hellermann & C. J. Gardner (2023). “No research on a dead planet”: preserving the socio-ecological conditions for academia. *Frontiers in Education*, 8, 1237076, <https://doi.org/10.3389/feduc.2023.1237076>.
- Times Higher Education. (2021). The race to Net Zero: how global are universities performing. <https://www.timeshighereducation.com/digital-editions/race-net-zero-how-global-universities-are-performing>.
- UCL. (2022). UCL ranked in top 10 in UK university 'green' league. <https://www.ucl.ac.uk/news/2022/dec/ucl-ranked-top-10-uk-university-green-league>.
- Urai, A. E. & C. Kelly (2023). Rethinking academia in a time of climate crisis. *ELife*, 12, <https://doi.org/10.7554/eLife.84991>.
- Vergani, F. (2024). Higher education institutions as a microcosm of the circular economy. *Journal of Cleaner Production*, 140592, <https://doi.org/10.1016/j.jclepro.2024.140592>.
- Verhoef, L. A., M. Bossert, J. Newman, F. Ferraz, Z. P. Robinson, Y. Agarwala, P. J. Wolff, P. Jiranek & C. Hellinga (2020). Towards a learning system for university campuses as living labs for sustainability. *Universities as living labs for sustainable development: Supporting the implementation of the Sustainable Development Goals*, 135-149.
- Wassénus, E., A. C. Bunge, M. K. Scheuermann, K. Resare Sahlin, A. Pranindita, M. Ohlsson, A. Blandon, C. Singh, K. Malmcrona Friberg & P. Villarrubia-Gómez (2023). Creative destruction in academia: a time to reimagine practices in alignment with sustainability values. *Sustainability Science*, 18, 2769–2775.
- Zink, T. & R. Geyer (2017) Circular Economy Rebound. *Journal of Industrial Ecology*, 21, 593-602.