

## **Title: Planty Design Activism: designing alliances with seeds**

The poetry of the seed ball concept is simple yet immense. Encase a seed in a protective jacket of clay, creating a seed ball. Distribute seed balls across the ground, not worrying if this day, or this month even, is the best time to ‘sow.’ Protected from insects, birds, heat, and sunlight until the time is right, the seed ball activates with a rain event. But only a rain event that is sufficient to soak through the clay coating to germinate the seed. And that’s it. But that’s not all.

(Bradley 2010)

In cities across Australia and elsewhere, individuals and groups are experimenting with initiatives linking urban dwellers to plant ecologies. Community and street gardens, bush regeneration working bees, botanical expeditions in city parks are examples of renewed interest in urban plants. These initiatives are enmeshed in different and unseen historical and political practices on different scales, from being on Country, to urban planning, local government policies, and climate change.

This paper discusses and make present these ongoing entanglements between plants, histories and politics by focusing on a project in an urban precinct on unceded Aboriginal land (present day Sydney) around our university in the suburb of Ultimo. We consider plants as allies in design activism and advance the idea of “planty design activism.” In doing this, we bring the idea of “plantiness” (Head, Atchison, and Gates 2012), developed in human geography, into design studies. Plantiness is “the assemblage of shared differences of plants from other beings,” such as the ability to perform photosynthesis (42). It is also a way to understand plants’ materialities, capacities, and agency in their terms (44). Head, Atchison, and Gates establish a critical and broad understanding of the plant-human relations debate, focusing on extending the concept of more-than-human from initial attention on animal studies to plants (16-26). Introducing plantiness to design studies allows us to question what kind of political work is done when a public is assembled around an object designed with planty materiality and agency.

Three points are particularly relevant to this article, as they can guide our thinking about designing *with* plants as allies rather than elements. The first is the emphasis in the more-than-human debate on relationality and multiple agency. Human entanglements with non-humans are in relations that are not stable, but in becoming (18). The second is that plants have agency. For instance, they are crucial to the atmosphere we breathe and the provision of food we eat. They

also can link people and places (Cook 2004, 662); use a variety of strategies to lure the attention of humans (Hitchings 2003); create and spark memories; and even participate in the construction of national identities (Head, Atchison and Gates 2012, 35). The third point is that Indigenous understandings of Country as a relational ontology in Australia counter the Western history of plant-human relations.

To explore this position, we produced three campaigning artefacts, intended as designed things that are utilitarian and can also mobilize social and political issues (Julier 2013b). These artefacts demonstrate an ethical orientation made possible by the entanglement between people, nature, images, technologies and infrastructures that Ash Amin calls ‘situated surplus’ (Amin 2008, 10). Rather than relying on the concepts of public space or the commons for political formation in cities, activism that generates affective encounters and non-hierarchical relations can gather new publics to participate in a “planty” reading of our university precinct through these artefacts. These objects were: a library installation, seed balls made with kangaroo grass (*Themeda triandra*), a native perennial that grows widely across Australia, and a map tracing a planty route around campus. Design experiences like workshops and walkshops mobilized these campaigning artefacts. In this paper, we focus mainly on seed balls because of the ways their unruly vibrancy can assemble publics in an embodied political interspecies relationality. Made with kangaroo grass, our seed balls are a design alliance to spark a critical reflection on indigenous ecologies, thus reminding us and participants that in Australia, we are always on Country. Country, defined in more detail later, is the translation to English from Indigenous languages of the foundational concept of the Entity that holds together the interrelations of all beings and things. Often misunderstood as a synonym of land, it is much more and “it comprises ecologies of plants, animals, water, sky, air and every aspect of the ‘natural’ environment. Country is a spiritual entity: she is Mother.” (Foster and Kinniburgh 2020, 68)

### **The Planty Atlas**

We wrote this article soon after the 2019 devastating bushfire season in Australia. “The extensive and long-lived fires,” wrote the Bureau of Meteorology in its annual climate statement, “appear to be the largest in scale in the modern record in New South Wales, while the total area burnt appears to be the largest in a single recorded fire season for eastern Australia” (Bureau of Meteorology 2019). This was also the hottest and driest year on record, and much of Australia was affected by drought and heatwaves.

While superlatives frame these weather events as extraordinary crises, we understand them as manifestations of continuing climate and environmental breakdown: as overlapping

climate indicators, they shaped the research for this paper in late 2019. At the end of our fieldwork, drought, heat, and bushfire smoke further stressed the need to put in place modes of design activism to unflatten the relationships between humans and their environments.

To provoke a critical reflection on relationships to the local environment, including the colonization of indigenous ecologies, we planned a project to make visible the presence of plants in the high-density inner city precinct where we both work. Redirecting attention to plants in urban precincts through designed artefacts and experiences, we knew from previous research, produces an attunement to local ecologies (Vanni and Crosby 2020a), and gathering people around these ecologies was the overarching aim of this project. In this sense, plants are active agents in our research, providing an entry to the exploration and engagement with environmental matters.

A second aim was to make present the quantity and quality of plants in the city. We have been observing and mapping recombinant ecologies in Sydney for several years (Vanni Accarigi and Crosby 2019; Vanni and Crosby 2020a; 2020b; A. Crosby and Vanni 2019; 2022), including in this area. We had noticed that the university precinct, most well known for brutalist, archistar, and award winning buildings, traffic jams, and the greening of a disused railway line, is perceived by staff and students (and the broader public) as lacking plants and green spaces. One of our goals addressed a “plant blindness” (Wandersee and Schüssler 1999) that stood between people and their capacity to connect to and care for place. Linked to the desire to address the perceived lack of plants, a third aim of the project was to teach participants to make and distribute seed balls as an instrument in their repertoire to green their surroundings. Specifically, using seeds of a native grass, we invited participants to reflect on the erasure of Indigenous ecologies in the suburb and suggest ways to redress the resulting perception of absence of Country.

By drawing attention to the characteristics of specific plants and types of plants as well as the cultural dimensions of plant choices, and by providing Do-It-Yourself tools to green the city, we also instigated a reflection on the diverse greening practices of the precinct to ask more general questions about the politics of urban green space: Who can green? Who decides where and how to green? What kind of urban green is produced? What type is erased? What is the relation between greening practices and sociocultural histories?

*The Planty Atlas of UTS* project was funded by a creative residency in the university library and resulted in a collection of experiences and campaigning artefacts we refer to as “design alliances”, leaning on Daniela Rosner’s definition of alliance as “a composite of relations within a design setting rather than an aggregation of self-contained individuals” (Rosner 2018, 81). Arising from a feminist critique of individualism, alliances are collaborative relations that enable

a collective making greater than the sum of its parts (83). Plants and seeds were an integral part of these alliances, and as we write in the next section, they led to unexpected outcomes.

The first of our design alliances was an installation of plants, seeds, and books about plants drawn from multiple disciplines (Figure 2). This installation transformed the library's entrance into a greenhouse where patrons could stop, sit, read and borrow books and receive information about our project. This was an important starting point because of the material way libraries assemble publics '*as, and as part of, infrastructural ecologies — as sites where spatial, technological, intellectual and social infrastructures shape and inform one another.*' (Mattern 2014). The installation designed a space for an existing public (library patrons) to assemble around planty politics.

The library was also the starting point for the first walk in a series, designed to slow down and observe different examples of urban green, from spontaneous plants growing on edges to formal corporate gardens. We then ran a workshop to make seed balls and a second walk along the same route as the first to distribute seed balls. Our final event was a feedback walk to observe how our seed balling efforts had contributed to greening the precinct. We recorded plants encountered during our walks on a digital and printed map. After the conclusion of events, we conducted an online evaluation survey with participants.

The project ran from September to December 2019, coinciding with the beginning of a summer in Sydney that would become devastating in the months to come. The day of our final walk, the smoke from bushfires hung like a grey and sickly blanket over the city. We had started our walk curious to see which of the seed balls we had distributed had germinated. Participants chatted, coughed, and complained about the heat and the smoke. As we went along our route for the third time, remembering where seed balls had been thrown or planted, the energy died down with the realization that barely any new plants had germinated. Many existing plants had died or were suffering severe stress. The effects of climate change, such as heat, bushfires, and drought, had seemingly prevented the seed balls we had lovingly assembled a couple of months earlier from sprouting.

This fiasco of participatory greening produced some unexpected results. While participants reported noticing plants more than before the project, they also described an increase in their critical understanding of the effects of climate change on local ecologies. By virtue of their failure to sprout, seed balls campaigned differently from what we planned, decentering our role as designers. From this premise and the other insights, this article reflects

on the possibility of expanding the practices of design activism to planty alliances that “build a composite of relations” (Rosner 2018, 81) fit for designing in climate breakdown.

### **Design Alliances on Country**

As we focus our attention on design alliances with plants, there is a risk of becoming distracted from the unevenness of power embedded in the landscapes of cities. In Ultimo, as much as anywhere else in Australia, the ongoing histories of dispossession and colonialism and the (migrant) labor histories have shaped the composition of the precinct, its design and its perception. A design practice such as ours, aimed at shifting perceptions of urban green, needs to begin with the question of how the urban green project surfaces, hides, or erases Indigenous greening and agricultural practices. This question is crucial from a political and epistemological point of view because the lands on which Sydney stands have been cultivated for millennia by their traditional owners and custodians. A failure to recognize this is also a failure to acknowledge Aboriginal sovereignty.

We choose our words carefully, thinking of the Latin origins of the word cultivate, *cultus* – meaning care, cultivation – and *colere* – to cultivate, to till; to inhabit; to frequent, practice, respect; tend, guard. This idea of cultivation as a practice of care helps us to come nearer to an understanding of caring for Country, the English translation for a set of Indigenous land and water management practices that emerged in Australia in the 1970s and 1980s in the context of land rights (Weir et al. 2011). While care includes management, it also points to an epistemological shift for non Aboriginal people, like ourselves, towards the understanding of Country as a relational ontology, in which everything is interconnected. Country is much more than land and water, as the three quotations we offer below articulate:

Country is often misunderstood as being synonymous with land, but it goes far beyond that. It comprises ecologies of plants, animals, water, sky, air and every aspect of the ‘natural’ environment. Country is a spiritual entity: she is Mother. She is not separate to you: All things are connected, everything is interrelated. Everything you do will affect her and ultimately, come back to you. (Foster and Kinniburgh 2020, 68).

We believe that country is not only the Land and People, but is also the Entities of Waterways, Animals, Plants, Climate, Skies and Spirits. Within this, one Entity should not be raised above another, as these live in close relationship with one another... The strength of our country can also be seen in the relationships between these Entities; hence, it is a truly relational ontology. All things are recognized and respected for their

place in the overall system. Whilst they are differentiated, these relations are not oppositional, nor binaric, but are inclusive and accepting of diversity. These relations serve to define and unite, not to oppose or alienate. (Martin 2003)

Country soars high into the atmosphere, deep into the planet crust and far into the oceans. Country incorporates both the tangible and the intangible, for instance, all the knowledges and cultural practices associated with land. People are part of Country, and their/our identity is derived in a large way in relation to Country. Their/our belonging, nurturing and reciprocal relationships come through our connection to Country. In this way Country is key to our health and wellbeing. (Hromek 2020)

Country, thus, is a multispecies, multidimensional, and multitemporal living entity (Rose 1992). And yet, as Foster and Kinniburgh (2020) maintain, the history of urban development in Australia is a history of erasure of Country. The legal *terra nullius* finds a spatial counterpoint in *tabula rasa*, the fictional blank slate on which Sydney was built. Until the recent Government Architect of NSW framework *Connecting with Country* (2020), these terms absented Aboriginal knowledges from city planning (Foster and Kinniburgh 2020). This exclusion corresponds to the lack of recognition of continuous Aboriginal sovereignty and the “conceptions of country, relational sovereignty, and the embodied ontology of land-based practice that Indigenous peoples have always been practicing and articulating” (Porter, Hurst, and Grandinetti 2020).

As non-Indigenous design researchers, our task in this paper is to discuss a form of design activism that can infuse a critical understanding of examples of urban green and plant human relations in a defined metropolitan area which is also Country. We also explore the possibility to generate interferences (Rosner 2018) that disrupt that dominant “whiteness” of urban green (Porter, Hurst and Grandinetti 2021) and its limited capacity to connect with local ecologies. In this project, examples of such whiteness include isolated patches of green designed for decoration, manicured lawns with decorative edges, and moveable pot plants for display. Disruptions of these aesthetics and the practices that generate and maintain them can highlight that “...Country is always there. We are always “on Country” and should act accordingly. The layers of concrete, glass and metal have not changed the fact that Country is with us and can be interacted with at any time.” (Foster and Kinniburgh, 2020)

In the city of Sydney, the range of contemporary urban interventions that foreground Aboriginal practices of care for Country varies from using native plants to recreate local ecologies to designing with Country. A group of transdisciplinary environmental and climate activists, the Dirt Witches, has planted a small forest of 30 species belonging to the critically

endangered eastern suburbs banksia scrub near Sydney Central Station “as a poetic reminder of the 5,300 hectares of scrub that once stretched between Botany Bay and North Head” (City of Sydney 2021). On the route of our walks, a new landscape development spotlights native plants as a trace of former ecologies (Kilbane 2020). But we also find examples of Indigenous landscape designers and horticulturalists collaborating with the City Council to create cultural landscapes (Jiwah 2022; Yerrabingin 2022; City of Sydney 2022).

To connect people to the local environment in a way that disrupted the whiteness of urban green and to design artefacts that campaigned for critical reflection on Country, we chose kangaroo grass seeds for the seed balls.

### **Seeds, Plantiness and More-than-human Precedents**

While aligning with a body of work that positions seeds as political objects in their own right (Shiva 2004; 2006; Phillips 2008; van Dooren 2012; DiSalvo 2017; Pascoe 2018) we also consider seeds as allies in the design of campaigning artefacts. By extending the concept of campaigning artefacts to material objects that are alive and ecologically embedded, we argue that their design can occur in alliance with plants. While acknowledging the importance of more-than-human literature in cultural geography, anthropology, science and technology studies, and political sciences on “the force of things” (Bennet 2009) and the “*earthlife* nexus” (Whatmore 2006) and in advancing scholarship in design studies (Forlano 2017; DiSalvo and Lukens 2018; Galloway 2017, Kirskey 2014; Escobar 2019; Tsing, L. Deger, Alder Keleman and Feifei 2021; Wakkery 2021), a full review of this debate is outside the scope of this paper. Our focus on the idea of plantiness (and planty), intersects with the more-than-human and brings it to bear in the specifics of participatory design practices that shift human centredness.

In “co-creative, participatory design practices, artefacts begin to be understood and used in terms of their capacity to provoke conjecture and facilitate connection, linking ideas and people” (Day Fraser 2017, 4). Artefacts also facilitate connections between people and plants, demonstrating to humans the need to be attentive to “planty agencies” (Brice 2014). In this way, we consider the relationality and interconnections across different ecologies in the city rather than always centering human needs and aspirations in design practices and projects.

In terms of emergent methodologies, these rearrangements have advanced scholarship that puts forward more-than-human creative practices as alternative techniques for worldmaking. In turn, such alternatives to Western assumptions question human-centered design as the default best practice. Natalie Jeremijenko and Tega Brain, both Australian based artists with engineering

backgrounds, are oft-cited examples. More recently, *The Multispecies Salon* (Kirksey) and *The Feral Atlas* (2020) are large, conglomerate projects that contain further examples of multispecies ethnography as creative practice.

Anne Galloway founded and leads (in collaboration with a flock of sheep, ducks, a cat, and the bush) *The More-Than-Human Lab*. This project is a real farm as well as a speculative fabulation that reimagines the relations between people, animals, plants, and technologies and generates opportunities to imagine an otherwise to the Anthropocene (Galloway, 2018). Gatto and McCardle share a similar multispecies perspective, proposing a collaboration with plants to open to non-human actors sustainable design practices. The authors argue that “engaging other-than-humans in the design process can help designers to rethink the basics of sustainability as a model that is exclusively centered on people, guiding them towards approaches that are more inclusive and participatory (Gatto and McCardle 2019, 16).” Other examples have recently emerged in the survey “Design and nature: A partnership”, which presents a range of experiments in which designers form partnerships with living species as new ways of knowing (Fletcher, Pierre, and Tham 2019).

Closer to our project geographically and theoretically, Wiradjuri/Kamilaroi artist Jonathan Jone’s 2016 installation *barrangal dyara* (skin and bones) (Kaldor Public Art Projects 2016) resurfaced the Indigenous and colonial histories of the Sydney 1879 International Exhibition, housed in a building known as the Garden Palace, destroyed in 1882 by fire, on the site of today’s Royal Botanic Gardens in Sydney. The centerpiece of this installation, at a formal sandstone garden tracing the original location of the central dome of the palace, was a patch of kangaroo grass referencing Aboriginal agricultural practices. This small but abundant grassland disturbed the formal aesthetics, functioning as a potent reminder that kangaroo grass, rather than being a wild growing weed, was cultivated for millennia by Aboriginal peoples on the East Coast of Australia. In other words, kangaroo grass enacted a quiet contestation of one of Australia’s most enduring environmental narratives: that Indigenous peoples did not practice agriculture.

### **Learning with kangaroo grass**

Seed balls can be made using just about any seeds, but our choice to use kangaroo grass was made with the benefit of knowledge publicly shared by Aboriginal elders about the significance of kangaroo grass to pre-colonial farming practices along the Southeast coast of Australia (Pascoe 2018). What we knew from science about the seeds’ ability to “wiggle” and “jump” their way across the landscape in search of a suitable place to bury themselves and, ultimately, begin to grow (“Kangaroo Grass Seeds Hopping towards Climate Change - CSIROscope” n.d.) also



aligned with our ambitions for seed balls to get into cracks and corners of the city. We also chose kangaroo grass because of its potential, at this moment in time, to “trouble” (Haraway 2016) colonial relationships between people and plants in Sydney. Kangaroo grass seeds, in this sense, were a way to resurface plant histories that, as a result of the colonial project, have been dormant under the layers of urban developments. Because it is now widely used in landscaping, it is one of the most recognizable native grasses to city dwellers, but kangaroo grass has always grown where our campus and project are located. Kangaroo grass is considered a keystone species across much of Australia, which means it plays a critical role in maintaining the structure of the ecosystems and affects many other organisms. It also can be a polyploid, which means it has multiple sets of chromosomes to adapt to climate change, for example, in recombinant urban ecologies that emerge in the heat-affected landscape of the university precinct.

Kangaroo grass has its English name because of its popularity with kangaroos. However, as has been shown by Aboriginal historian Bruce Pascoe in his examination of the notes of early explorers, it is also an essential edible grain for people, and its cultivation has ancient origins. Kangaroo grass “is the mainstay of almost every ‘unimproved’ pasture in the country. In the past, its seed would have been a boon to the Indigenous inhabitants (Pascoe 2014, 32).” He continues, “Aboriginal people made changes to the genomes and habits of these plants simply through the continuous interference in the plants’ growth cycle and selection of seeds for harvests. This process, conducted over long periods, is what scientists call domestication” (Pascoe 2014, 35).

Since the publication of Pascoe’s seminal work, native grasses and other edible plants (daisy yams, lilly pillies, native leeks) have received significant attention in artisanal culinary culture in Australia, presenting farmers, bread bakers, gin distillers, designers, and consumers an opportunity to make alliances and assemble new publics around their relationships to significant plants. Our decision to learn more about kangaroo grass and design experiences that allow others to do the same acknowledges these trajectories with the hope of doing more than gesturing towards its potential as a commodity. In other words, this project focuses on the way kangaroo grass moves and makes worlds in cities, with the acknowledgment that Aboriginal people and kangaroo grass have been in alliance caring for Country for at least 60,000 years. We pick up on how kangaroo grass seed balls bring people together in the next section.

### **Assembling Planty Publics as Design Activism**

Because of their material composition and the alliances they can form, seed balls are campaigning artefacts (Julier 2013), at once politicizing and utilitarian. Of interest in this paper is the way these campaigning artefacts can be part of design activism, creating new alliances and assembling new publics, and in doing so, generating connections to local city ecologies and the impacts of climate change.

Since seed balls involve people in the lives of seeds and plants, it is not hard to imagine their creation and distribution as a redirective practice that materializes a political agenda by assembling publics. As such, this work brings into the debate the critical thinking on the role of objects in assembling publics around issues “left uncared for” (Latour and Weibel 2005; Marres 2005) and on material participation (Marres and Lezaun 2011, Marres 2015). We lean on Marres’ proposition that objects and devices mobilize the public through their materiality because they make complex problems – plant blindness and the resulting lack of connection to the local environment– available for practical intervention (2015 xii). Things, in other words, become invested with political capacities, acquire the power of engagement, and, once deployed in specific settings, are arranged to produce particular effects of participation (2011).

Campaigning artefacts expand our repertoire of participation in political action beyond forms of deliberative, linguistic, discursive, and performative practices. Schlosberg and Craven, researching sustainable materialism in food activism, similarly redefine participation beyond participating in politics: “it is partly about doing, literally in the case of food movements, about getting hands dirty (2019, 55).” Similarly, seed balls are not a platform for organizing stable politics. Rather, because of their planty materiality, capacities and agency, seed balls assemble publics by generating and recoding relations among people and people and the environment. Making, caring for, circulating these objects creates an interference in people’s ways of sensing, being and doing in cities by redericting attention and affect to local environments. In this way seed balls produce spaces of political affect (Vanni 2020, 26): openings in the possibility of being or becoming political able to lead to future engagement with environmental issues. Seed balls, as we report in the section below, offer such a possibility to bring together around their making, handling, and scattering a public and to make present specific environmental issues.

## **Seed balls**

The technique of seed balling is ancient but was popularized by Japanese farmer Masanobu Fukuoka as “do-nothing agriculture” and by the design principles of permaculture (Crosby, Lorber-Kasunic, and Vanni Accarigi 2014). Travelling across time and space, seed balls have

been used guerrilla gardening, regenerative agriculture and even large scale applications as an aerial reforestation technique (Matthies and Närhi 2016). In many contemporary urban settings, such as our own, seed balls are adopted as a form of environmental activism to disturb power relations in the city and disrupt business-as-usual urban land use and artistic interventions (Badger 2013). Throwing seed balls helps plants get to difficult areas, such as behind wire fences of industrial urban areas (Mccann 2005). Furthermore, seed balling allows humans to build alliances anonymously with plants by selecting areas of potential germination rather than direct planting.

Seed balls are made by mixing clay, compost, and seeds, then rolling and shaping by hand, reducing the labor in raising seed to seedling. Numerous recipes and instructions for seed balls are available online and in books and zines. Our seed balls (Figure 1) result from remixed techniques from several sources, our designed response to our local context, ongoing learning on Country, and the practical constraints of our project. We designed the process as a public one-hour workshop, during which participants collaborated in groups of four to five, with a kit prepared for each group (Figure 4).

The seed ball kits include:

- Gloves and masks
- Soil
- Compost
- Seeds (mostly kangaroo grass but also batches with wildflower mix and parsley)
- Bucket of water
- Printed instruction sheet

Not all seed balls are made by hand as part of participatory projects like the one we designed. Some are made as part of art projects (Parker, n.d.) or as boutique objects for sale online and in museum gift shops and inner city bookstores.<sup>1</sup> Furthermore the technique of seed balling has been adapted to various commercially available products. One of the participants in our workshop raised for discussion a seed growing kit that a major supermarket chain in Australia had made available as a promotional product (Figure 3). We include a brief analysis of this counter example to seed balls in order to build up our working definition of campaigning

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<sup>1</sup> See for example <https://www.gardenjane.com/product/seed-ball-kits/> and <https://growtherainbow.com/products/wildflower-seedles-seed-bombs-diy-kit>

artefacts. Putting handmade seed balls and mass-produced seedling kits in dialogue with one another helps determine what constitutes planty design activism.

The seedling kits include:

- Seed Mat – small number of seeds of the same plant type embedded in card: herb or vegetable, all introduced species
- Soil Pellet –brown dehydrated "growing medium" (material undefined) machine pressed into a compact round shape
- Pot – small cardboard seedling pot for soil and seeds
- Seed Label – colored printed cardboard (Woolworths Group 2019)

The kits are made in Poland and linked to a comprehensive branded campaign, including encouraging the collection of the whole the set, unboxing videos, and detailed education guides (Woolworths 2019). Like seed balls, once assembled, the kits are designed objects that function to protect and encase seeds. Like seed balls, they enrol people to be attuned to the weather, observe growth, and respond to the plant's feedback.

While both seed balls and seedling kits are intended to encourage seeds to grow by amplifying people's relationships with plants, they each generate different modes of care. One is in the form of individualized attachment between a human, a plant, and a brand in association with the concept of a home garden. While the work of growing of food at a household scale has the potential to be political, and seedling kits can be redirected towards community gardens, geurilla gardening, and urban food networks, the intention of the design is not to assemble publics. Our seed balls, on the other hand, are designed by people collectively in the urban ecologies within which they live, assembling a public in alliance with plants and Country in the city. This public is mobilized to do the political work of addressing plant blindness, greening public space and caring for Country.

As communication objects, seedling kits can also be read as a form of greenwashing; they are intended to give green credentials to the supermarket chain. In this case, the kits address some criticisms raised by a previous campaign that marketed environmentally unfriendly plastic toys to children (Pho). The eco-look of the kits, the animated abundance of the companion website, the biodegradable materials, and the multicultural vegetable garden carefully imagined by the designers of the kits are all part of the sustainability aesthetic. This aesthetics however, also mask other information relevant to the sustainability. For instance, the global supply chain on which production of the pellets depend and the carbon footprint of supermarket industry in

general. While seedling kits can be read as campaigning artefacts (they are clearly used as part of a campaign), they provide a counterexample to seed balls as activist objects.

### **Making artefacts, making present, making connections**

Through this project, we reflect on two points: 1) people's attachment to plants can be amplified, through the making of campaigning artefacts, in this case, seed balls; and 2) through their function (or dysfunction), such artefacts can make present environmental matters of concern. Finally and most importantly, the failure of the seed balls to green the precinct made us directly appreciate the agency of seeds, plants, and Country as a multispecies, multidimensional, and multitemporal living entity (Rose 1992). In this sense, we learned a powerful lesson on planty design activism from Country: that agency is multiple. That plant-human connections resulted from a process of relations in which plants, in concert with land, water, sky, and heat may override a design project's aims, decenter designers in the process, and produce unexpected results.

Overall, we observed participants making new connections to seed balls, their urban environment, and each other during the workshop and walks. These processes were embodied and affective. While making their seed balls by hand, people developed attachments. Participants handled, separated, sniffed, swapped the seeds, and then shaped the balls in designerly ways (Figure 5), discussing their aesthetic qualities and exchanging plant knowledge before carefully laying them out to dry. Some participants were reticent to begin a new process but became increasingly attached to their seed balls as they formed in their hands from the materials provided. We observed an affective dimension of the balls in the hands of their makers. This pressing together of hands, seeds, compost, and clay is a profoundly embodied and material expression of collective action that brings plants and people in alliance. Sara Ahmed explains the bodily, emotional and cognitive capacity of pressing and impressing: "the collective is an effect of the impressions left by others on the surfaces of skins." (Ahmed 2004) Impression is the power of objects to impress and leave impressions on people. Ahmed continues explaining that impressions enable us to connect "the experience of having an emotion with the very affect of one surface upon another, an affect that leaves its mark or trace. So not only do I have an impression of others, but they also leave me with an impression; they impress me, and impress upon me." (2004: 6)

The bodily and material impressions left by seed ball making and handling developed an affective bond between objects and participants and collectively among participants. At the conclusion of the workshop, we observed participants reluctant to part with their seed balls, holding them, patting them, photographing them, and inventing ways to transport them gently using recycled paper or food containers. These balls, so quick and easy to make, invoked and mobilized a sense of care, a connection to the potential plants inside them, and to their future lives. This attachment set the scene for the walks and ultimately for the big disappointment and realization that when climate breakdown affects plants, it affects us intimately.

When asked, “What did you see or sense?” participants responded with enthusiasm about the environment and each other. “Joy and excitement by participants,” “greenness, felt the air was cleaner, felt a sense of calm,” “Ingredients of the seed balls, sun,” “other people engaged and enjoying the event,” “plants on the margins, bees, sound of heat on dry earth.” One participant articulated the theoretical framing (which we outlined in the introduction to the workshop):

Ideas of feminism and gardening - i.e., it supported connection making; in this sense, it opened my eyes to perceptions previously not articulated. For example: Looking for the micro in the landscape alongside footpath edges in the cityscape. Green spaces are vital in cities - I am still growing plants from the seed balls made during the workshop.

When asked, “What was surprising or different from what you expected?”, participants pointed to “The dry and disturbed landscape around the campus.” “Ability to make seed balls and to plant it whenever you want”, “how easy the process was”, and “the ease at which one could contribute to urban greening via seed balling”. Answers also pointed out the people-to-people interactions, for instance, “...it was excellent to spend time with colleagues doing work that stimulated different senses outside the usual daily routine”, and “I was surprised by how energized and excited people were to distribute the seed balls - it changed the way we all interacted with quite inert public spaces.”

By walking together, people also discovered the “location of nearby community gardens” and the “foliage growing in the back streets of Sydney”, “lots of hidden green, overgrown spaces in the area”, “native plants and trees” as well as practices of “guerrilla gardening”.

During the third walk, when participants spontaneously scattered or carefully positioned their seed balls, we noted the attachments to the balls persisted. Some participants crouched down and wished them well, and many photographed them in their new positions. All took seed

balls away with them, which we interpreted to mean they would find places for them outside the precinct. One communicated through the survey that “they have been spread across Redfern and Chippendale” (two inner city suburbs in Sydney). Another “I brought home a seed ball and popped in my apartment building’s common area - no growth yet, but there hasn't been enough rain, sadly.” And expressed intention, “I have a couple of seed balls still that I wish to throw. I’ll throw them somewhere where they can regenerate a space.”

Participants were “determined to include plants in the home.” other comments included: “I appreciate the plants more”; I noticed “The lack of diversity” or “corporate plants”; and “there are more plants around than I thought”; “The amount of plants I saw when I paid attention to my surroundings. I loved how observant others were and the things they pointed out to the group, e.g., the sign in the window.”

Our second point is that seed balls, through their function (or dysfunction), can make present environmental matters of concern, in this case, climate breakdown. On the third and final walk, we retraced our steps to document (through photography, notetaking, and drawing) the evolution, disappearance, success, or failure of the seeds we scattered, facilitating authentic conversations about climate breakdown and its impacts on plants, and therefore on people. By the time of this walk, in December 2019, the severe and protracted drought had produced conditions, which were felt and discussed on the walk:

- Rainfall lowest on record for Australia
- Rainfall deficiencies expanded and intensified in many areas below average rainfall across much of Australia, especially in the east
- Long-term rainfall deficiencies, record-low for some periods, continue to limit water resources across the Murray–Darling Basin severely
- Inflows remain limited for major water storage in the Murray–Darling Basin
- Dry soil conditions continued across much of Australia
- Storage volumes decreased in all significant urban systems (Bureau of Meteorology, n.d.)

Participants also reflected on this in their survey comments, noticing “the dry and disturbed landscape around the campus”. “I’ve been thinking a lot about sustainable gardening and how I can grow a garden with minimal water. Also have been thinking about native plants and edibles for my garden.” Almost all agreed that the workshops prompted them to think about climate change: “I’m usually very aware of climate but the walk did make the experience physically tangible.” They noticed that plants were “were parched and dry from the heightened heat” and

commented on the smoke and high temperatures. Seed balls prompted reflection: “Especially as I understand that not many seed balls sprouted as no rain fell after the ‘seed bombing’.”

These voices of participants are important, as they show that the diverse and entangled effects of design activism are specific to settings and relationships. In our experiment, deployed in what was, at the time, the everyday location of a university on Country, they produced a particular effect of participation (gathering and making together; sharing knowledge, stories, anxieties, and hopes; transgressing and complying with the expected use of the setting).

Conversely, participants became aware of the impossibility to intervene in the manicured green of the Alumni green, which is the only large green space on the university’s grounds. Inspired by Jonathan Jones, we had envisaged tufts of kangaroo grass springing up at the edges of the lawn, interfering in its design. But our walks ended here, and participants commented that the award winning landscape design made their seed balls inert, and the campus seemed sterile.

We can only speculate on why the seed balls did not fulfil our expectations, with the unideal ecological conditions of climate as likely reasons. But these conditions can also be understood as the agency of Country. Our lack of knowledge and experience of how to work together with kangaroo grass point to a lack of connection to Country in a place with which we are very familiar in some ways (as a university precinct), and very ignorant in others (as a habitat for native grasses with distinct non European seasons). These design deficits open up many possibilities for further research, not least of which challenging the Western expectations of how much time is required for a design activist project such as this.

The seed balls also presented the possibility of different ways of inhabiting the university, including the library. For professional and academic staff, many of whom are alone in offices at computers most of their working day, and for students, focused on their studies, the idea of being part of a more-than-human ecology is at odds with “being on campus”.

Barely four months after these events, almost the entire population of staff and students ceased being on campus at all due to the global pandemic. It remains to be seen how they will reconnect and the role plants will have in the social recovery of the precinct.

## **Planty Futures**

As campaigning artefacts, seed balls function ecologically to amplify the trajectory of seeds, nurture the growth of plants, and encourage political communication between people. To make a



seed ball is to hand form recombinations of seeds, bacteria and soil. To make seed balls *together at a university* is to assemble a new kind of public—students, faculty, plants, campus, passersby—which can evolve, dissolve, and reform over the life of a project. The process provides an example of what Tsing (2015) calls “collaborative survival”, enrolling people in the world-making that plants do every day, even in cities where people are often blind to plant life and Country. The unruly design of our seed balls was invested with environmental politics. Issues of climate breakdown manifest in embodied ways as individuals felt hope, worry and disappointment as their attachment grew and their seedlings did not. Even when they do not sprout and satisfy human expectations, seed balls make present climatic characteristics like drought and heat.

These multi species experiences have helped us define “planty design activism” in two interconnected moves, following the critical reflection that emerged at various project stages. The first move, related to more-than-human relationality, is a practice that creates alliances with plants to activate and amplify relations between people and the environment in urban contexts. The second, connected to the idea of plant agency, is a method that opens the possibility of humans designing *with* plants as part of a network of relationships, rather than being at the center. As guides, plants provokes critical questions about power relations and histories embedded in urban environments. In settler-colonial countries, like Australia, these power relations often result in the erasure of Indigenous knowledges, histories, and Country.

Seed balls helped participants see some of the connections between humans, plants, the built environment of their place of work and study, and ground these connections in care for Country and a changing climate. Beyond the project, seed balls did significant political work in rendering visible the ongoing entanglement of different historical political practices at multiple scales, the politics of city planning, the institutions of local government, the global reach of climate change, and the situated existence of Country. Furthermore seed balls themselves travelled into the library for the first time, bringing with them the politics of plantiness.

The amplification of people’s attachment to plants is a step towards a design politics that goes beyond using plants as design elements and towards valuing plants as worldmaking in cities. By designing in alliance with plants we propose a more imaginative, open, and planty future for design activism. Framed in this way, seeds and seed balls exceed their metaphorical value, becoming participants in planty futures we can all share.

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#### Figure List

1. Seed balls are protective packages for seeds hand made from natural materials. Photo by Karina Glasby.
2. The Planty Atlas of UTS, Installation at UTS Library. Photo by Karina Glasby.
3. Contents of seedling kit for Discovery Garden promotion
4. Seed ball workshop kit: Masks, gloves, instructions and seeds.
5. Individual attachments to seed balls developed as people shaped their balls.



Figure 1



Figure 2



Figure 3



Figure 4



*Figure 5*