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Altered spaces: new ways of seeing and envisioning nature with Minecraft

BRENDA MCNALLY and BRUNO DE ANDRADE

The climate crisis has inspired youth-led activism across the world and young people now lead global campaigns and political protest on climate justice. However, aside from news media coverage of youth activism and the attendant focus on young people's hand-drawn protest placards, relatively little is known about young people's views on the actions needed to respond to the climate crisis or how they imagine environmentally-sustainable futures. This visual essay addresses that lacuna by exploring young people's ideas about local climate actions. The images selected for consideration were created using Minecraft, the 3D block-building visualisation game, at workshops held in Ireland. Young people and their families were invited to create environmentally-sustainable futures at Minecraft workshops.

Exploring these 3D designs as images, the essay documents young people's visual representations of desirable climate actions and reflects on these Minecraft images to shed light on how young people envision alternative climate futures. These collective visions, or climate imaginaries, are powerful indicators of what young people imagine is possible in the future. In doing so, they present an alternative to the mainstream news and entertainment media preoccupation with dystopian constructions of the climate crisis. They also highlight the power of Minecraft as a visual medium to open up new ways of seeing nature and of envisioning nature-society relations.

The selected images were also exhibited as part of the CLIMATE Look Lab 2022 held at the Open Eye Gallery, Liverpool. The gallery invited researchers, community groups and artists to use the gallery as a lab space to engage visitors with our changing environment and to explore how images can change the visual narrative on climate change.

Despite the scale and urgency of the climate crisis, our policy and public responses have yet to adequately respond to the challenge. As sociologist and green thinker, Ulrich Beck argues,

> Why is there no storming of the Bastille because of the environmental destruction threatening mankind, why no Red October of ecology? Why have the most pressing issues of our time – climate change and ecological crisis – not been met with the same enthusiasm, energy, optimism, ideals and forward-looking democratic spirit as the past tragedies of poverty, tyranny and war?. (2010, 254)

The lack of public outrage about climate change and the related questions of how to engage people, whether as individuals, citizens or communities is a longstanding concern of environmental and science communications research. It is also an increasing focus among political science, architecture, planning, and geography as well as arts and humanities scholars. Despite this, the lack of outrage persists, in large part due to the nature of the phenomenon. Climate change is a 'wicked problem' – it intersects with just about every other area of life, it involves deep uncertainties about the future, it requires large-scale, systematic changes to society and climate action is influenced by value systems. Furthermore, there is no technological 'magic wand' or single solution to tackling climate change.

Within this context, images have assumed an increasingly important role in strategies to motivate and mobilise societal responses to climate change. As a highly complex phenomenon, requiring knowledge of

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abstract climate science as well as technological and policy responses to tackle it, researchers now recognise that textual information alone is not sufficient to motivate and mobilise widespread behaviour change. This is because images help to make abstract climate science visually meaningful (Doyle 2009). The power of images, in terms of engaging with environmental challenges is that 'the ways in which we know and represent the world (both nature and society) are inseparable from the ways in which we choose to live in it.' (Jasanoff 2004, 2–3). Images speak to us. Visual representations of the environment and environmental challenges tell us about our perceptions of nature and our attitudes towards environmental threats.

As a future-oriented challenge, climate change will also place major transformational demands on society. This is because climate action goes beyond the direct experience of most people and therefore requires moving beyond our current cultural expectations and values (Beck 1995). As a result, there is growing recognition that climate action requires societies to imagine the previously unimaginable (Milkoreit 2017) and that the transition to an environmentally-sustainable future needs to capture the public imagination (Wapner and Elver 2016; Wright et al. 2013; Yusoff and Gabrys 2011). In other words, the radical social transformations needed to tackle climate change will require new visions, or climate imaginaries, about what is desirable and worth having as part of a sustainable life. According to Hajer and Versteeg (2019) however, this is precisely the problem: we currently lack the necessary visions of desirable climate futures or post-carbon societies. They argue that the climate crisis is, in fact, a crisis of the imagination.

Images also have a role in helping us to imagine desirable climate futures, as they create the shared visions that 'shape the way we live now and into the future' (Gaonkar 2002). But what should visual constructions of desirable climate futures depict? Environmental scholars argue that visual representations of the environment tend to be decontextualised and aestheticised in ways that facilitate their consumption by global media markets (Hansen and Machin 2013). The problem with such images is that they promote a form of banal environmentalism, (focussing on generic, iconic or 'representative' images). In doing so, they disconnect from concrete processes and remove any possibility of interrogating the causes of environmental degradation, such as global capitalism and consumerism (Hansen and Machin 2008). Reviewing the field, Hansen and Machin note that representations of responses to environmental challenges do not focus on 'major structural changes in terms of the way in which we organise our societies and the resource greedy nature of capitalism' (2013, 157).

Perspectives on the relationship between humans and the environment are another important starting point for understanding visualisations of desirable, climate futures. Much environmental thought promotes the need to protect nature. Critics point out that this formulation of nature-society relations not only constructs nature as something separate to society, it also places humans above nature. In doing so, nature is in thrall to the benevolence of humans, despite the fact it is often human activity and the relentless over-production and -consumption of natural resources that are the cause of environmental harms in the first place. As a result, progressive theories of environmental perception emphasise the need to reconfigure nature-society relations and reintegrate human society into the world of nature, rather than viewing humans as a force upon it. For Ingold 'the world can exist as nature only for a being that does not belong there' (2000, 20). Thus Ingold distinguishes between a relational view of nature, in which environments 'continually come into being in the process of our lives' and an observational perspective in which external subjects view 'nature' as something that is 'over there'. Similarly, in *The Ecological Thought*, Morton (2010) points to the tendency within Romantic literature and art to reify nature which he argues normalises a conceptualisation of non-human life as 'the big Other' and thus separate from human or social life. Consequently, Morton proposes the idea of coexistence as a way of transcending the problematic, unsustainable, nature-society divide. This entails a de-centring of subjectivity and an awareness of the interconnectedness of all the particles and energies that encompass human and nonhuman life in a 'vast, entangling mesh'.

These contrasting perceptions of nature-society relations are replicated in the distinction between sustainable development and socioecological transformation. Both of these concepts recognise and seek to remedy the current unsustainability of social organisation, however they differ in their understanding of what needs to be changed, and the extent of change required, to avoid a catastrophic future. Sustainable development as outlined in *Our Common Future* by the Brundtland Commission (Brundtland et al. 1987) talks of balancing human 'needs' with environmental 'limits' thereby promoting a narrative of consistent human progress based on continued economic growth. In other words, sustainable development advocates for incremental change within

the existing mainstream framework of techno-growth, which critics argue will not result in a sustainable environment (Hajer 1995; Robinson 2004). In contrast, the term socioecological transformations, as employed in this essay, is used to suggest a radical departure from the status quo through an expanded understanding of the social that places human and nonhuman life on equal terms. As a result, socioecological transformations challenge existing power relations and facilitate entirely new ways of organising that entail a rupture from current unsustainable modes of production and lifestyles.

Coping, caring and the need to acknowledge the emotional work required to confront the Anthropocene are also important issues in discussions about tackling the climate crisis. Several global studies have confirmed the increasing levels of eco-anxiety, or psychological distress due to our changing climate, among young people (Hickman et al. 2021). Similarly, climate science and communications researchers have highlighted the emotional toll of confronting the Anthropocene on a daily basis as part of their work and the need for self-care and healing to function within these disciplines. The focus on care as a practice has also gained traction within architecture. Here scholars point out that the building practices that emerged and have dominated over the twentieth century are no longer sustainable. In response, architecture and urbanism research seeks to rethink the relationship between construction and the planet and to broaden the debate about what care means in the context of the built environment. Examining the approaches to care within architecture, Tronto (2019) notes that current practices are not uncaring per se, but rather that there is a tendency to focus on caring about *things*. This is a problem according to Tronto because focusing on things tends to promote the interests of power and capital (see Tronto 2019, for a review of the literature on care as a practice within architecture). For Tronto, caring architecture is rooted in an ethics of care (1993). This view is consistent with the non-hierarchical perspective on nature-society relations, as 'It requires that we meet the other morally, adopt that person's, or group's, perspective and look at the world in their terms' (1993, 19).

This visual essay draws on the above concepts to document young people's visualisations for local climate action and reflect on how they envision desirable climate futures. The images (Minecraft screenshots) were selected from online workshops held with local communities in the Rogerstown Estuary area in the Republic of Ireland. This part of north Dublin is at risk of coastal erosion and flooding due to climate change. Young people (10–12 years-old) were invited to consider the local adaptations they would like to make, and to create environmental designs of sustainable futures using Minecraft, a block-building video game. These workshops were a unique opportunity to include young people in climate adaptation planning as part of a local development consultation (which is an activity traditionally open to adults only). This research was part of the Coastal Communities Adapting Together (CCAT) project which explored the use of digital participatory technologies to engage communities across the Irish Sea with coastal climate change and how they can adapt.

Minecraft is a video game that allows players to build a variety of different tri-dimensional blocks similar to the brick-building logic of Lego (de Andrade, Poplin, and Sousa de Sena 2020). The game is popular among children with a recent survey showing that it is the dominant game for 3–12 year-olds (Movoa, Carter, and Gibbs 2018). The game encourages players to explore and 'mine' the resources needed to build their world and while doing so, players must contend with monsters, zombies and wildlife. As a result, the game is said to mimic real life. It enables players to build creative structures, such as buildings, parks or elements of the environment such as trees, birds or rocks by building or destroying a vast array of coloured blocks. A key feature of the game with respect to its use in engaging young people with urban planning is that it can also model a real spatial context (in addition to being based on a fictional, pixelated landscape). As a result, Minecraft provides an approximation of the visualised reality and it can also be used as a geo-location game to facilitate online communities to gather and construct a digital replica of a place (de Andrade, Poplin, and Sousa de Sena 2020). In these cases, the game can be based on geospatial content such as maps, or visualisations of geographic content and places. The Minecraft game environment of the Rogerstown Estuary Park at the CCAT workshops, was modelled on real-world spatial data from the Office of Public Works in Ireland. As a result, the digital landscape mirrored the real world conditions.

25 young people and their parents participated in three Minecraft workshops held online between May to October 2021 (each workshop took place over two-days at the weekend). Prior to attending the workshops, the young people were asked to view a range of age-appropriate learning resources about coastal climate change and the need for adaptation produced by the CCAT research team. They were then asked to complete an online survey exploring their ideas for

improving their local area. These pre-workshop activities provided a space for the young people to engage with the issue of coastal climate change and begin to consider their ideas about environmentally-friendly future planning. The workshops introduced the participants to the Minecraft software and explained the environmental design activity. The young people were then challenged to create their environmental designs during the rest of the day and provide the research team with a 3–5 min video presentation of their environmental designs when the group met on the following day. The researchers suggested that attendees spend an hour or so working on their designs, however it was up to the participants to decide how long they wanted to spend on the activity.

The 8 Minecraft images considered in this visual essay were drawn from these video presentations. The research team examined each of the video presentations and selected screenshots that highlighted a range of climate actions and ideas about nature-society relations. These screenshots were then saved as Minecraft stills and these were used to create a studio exhibition as part of the CLIMATE Look Lab at the Open Eye Gallery. Thus, in this visual essay, Minecraft is explored primarily as a visual medium rather than assessing its potential as a digital game.

Our studio exhibition sought to highlight how young people's environmental designs challenge mainstream media narratives of climate change and help to change the conversation on the climate crisis. While the selected images are not claimed to represent the entirety of the material collected, they do shed light on prevailing themes in young people's visual constructions of possible responses to climate change. The visual documentation reflects on three themes across the set of images chosen for the studio exhibition which are also considered in this essay: 1. Repairing and Caring for the Planet, 2. Reimagining Nature-Society Relations, and 3. New Ways of Seeing and Being in Nature. The images are explored in terms of both their ideas about local climate actions as well as the complexity and contradictions represented in their visions of desirable climate futures.

REPAIRING AND CARING FOR THE PLANET

The first set of images feature design ideas for rebuilding the local area in the context of coastal climate impacts. What resources do young people want for their local area and what is the focus of their environmental responses? According to arts and architectural scholars, Fitz and Krasny the earth is 'exhausted, drained, depleted, damaged, broken' due to 'long-term exposure to capitalist hyper accumulation of petro-capitalism' (2019, 11). In response, they propose the concept of 'critical care' (a term which they note evokes imaginaries of life support associated with emergency medicine) as a new paradigm for architecture and urbanism. This understanding of 'critical' is informed by Critical Theory, as developed by the Frankfurt School in Germany, and a reflective analysis of society. Thus by adopting a critical stance, Fitz and Krasny seek insights on how to respond to the current planetary condition which they term a broken planet. They argue that 'caring' architecture and urbanism must move beyond ideas of sustainability, which is aligned with ideas of linear progress, incremental change and therefore maintaining the status quo. Instead, they advocate that architecture aims to 'heal, repair and revive' a broken planet and is practiced through processes of maintenance, repair, remediation and restoration. As a result, their approach to development and construction prioritises refurbishment of existing structures over the production of new ones and the nurturing of architecture, community and citizenship.

Figures 1–3 (below) shed light on the ways young people incorporate ideas of critical care and repair in their design responses to the climate crisis. The images visually articulate complex and technical design ideas involving alternate land and water use, as well as the adoption of nature-based solutions and renewable energy.

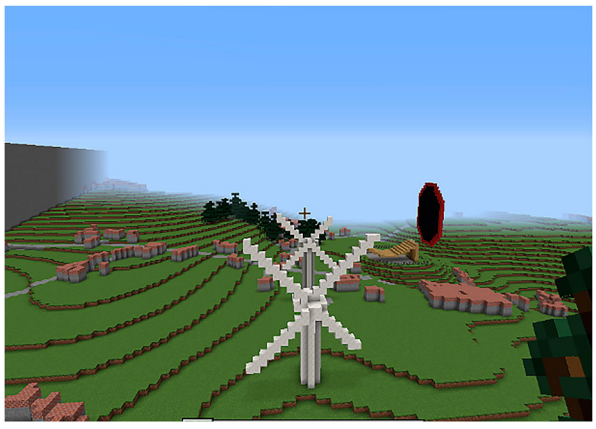

FIGURE 1. Repair and care through new forms of land use: windmill farm with a skate park. Source: CCAT Project.
This image of a windmill farm and a skate park in the distance indicates an awareness of the need to think differently about land use in the future and here the design solution incorporates new forms of energy production with forms of play. The image includes sources of renewable energy with a skate park featuring sustainable materials both of which are consistent with principles of care and repair. While windmill farms are often associated with controversy and contestation, this image foregrounds them in the landscape and they are also constructed as simply another part of everyday life and just as 'normal' as a skate park.

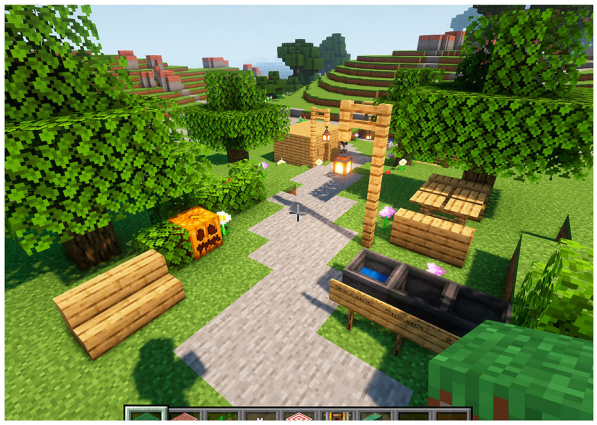

FIGURE 2. Repair with eco-infrastructure: recycling bins outside the café on 'the Rogerstown Path'. Source: CCAT Project.
This image is from an environmental design entitled 'the Rogerstown Path' which traverses the entire park. The path features a range of eco-conscious infrastructure including solar-powered street lighting and recycling bins outside the café both of which can be seen in the image. Further along the path (not shown) are an educational building, a wishing well and a contactless water dispenser with signage about reducing plastic. The design and infrastructure combine eco-friendly materials and solutions to multiple intersecting challenges: decarbonisation, waste and plastic, which indicates an awareness of the wicked nature of climate change. While these proposed solutions focus on technological innovations, they prioritise the use of naturally-existing materials, thus the design embraces principles of repair. Similarly, the inclusion of an educational resource in the park hints at new ways of nurturing ecological knowledge *in situ* and thus more progressive ways of thinking about environmental citizenship.

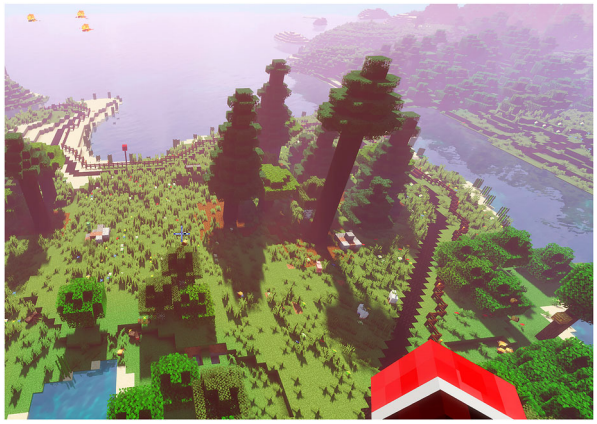

FIGURE 3. Repair with nature-based solutions: coastal wall defences for coastal adaptation. Source: CCAT Project.
This design features coastal wall defences with created green areas near the shores in response to coastal erosion and flooding in Fingal, north Dublin, Ireland. The use of natural materials as a protection from coastal erosion is consistent with principles of repair. These sustainable materials are in contrast to the use of vast manmade, concrete structures such as groynes or seawalls that are often used as coastal defences but can also impact already vulnerable ecosystems.

REIMAGING NATURE-SOCIETY RELATIONS

How do young people reimagine nature and nature-society relations? The visual constructions of desirable climate futures in Figures 4–6 offer a glimpse into young people's imaginaries of desirable, climate futures. One of the most notable aspects of young people's climate futures is that they reimagine the park as a space for connection with community and nature. Most notably, these environmental designs feature non-hierarchical, interspecies relations: beehives, wildflowers, vegetable patches, farm animals, floating obstacle courses and urban buildings co-exist in close proximity. Additionally, the emphasis on playing in, and with, nature stands in contrast to the contemporary 'always-on' culture and 'the spiral of productivity' that drives

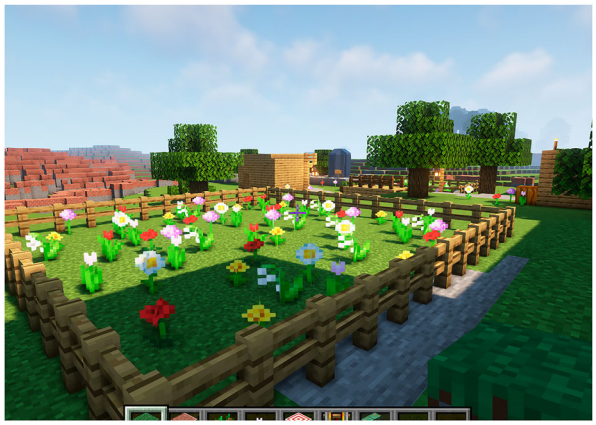

FIGURE 4. Protecting nature: a wildflower enclosure. Source: CCAT Project.
This image of an enclosed wildflower garden allocates a clearly defined and protected space for wildflowers. On the one hand, by designating and prioritising a space for the non-human world this solution indicates an awareness of the need for co-existence, which is in tune with socioecological transformations. On the other, focussing on protecting nature, (even in a desirable future), suggests that wildlife will not be safe. In doing so, nature is constructed as vulnerable and this reinstates hierarchical relations between nature and society.

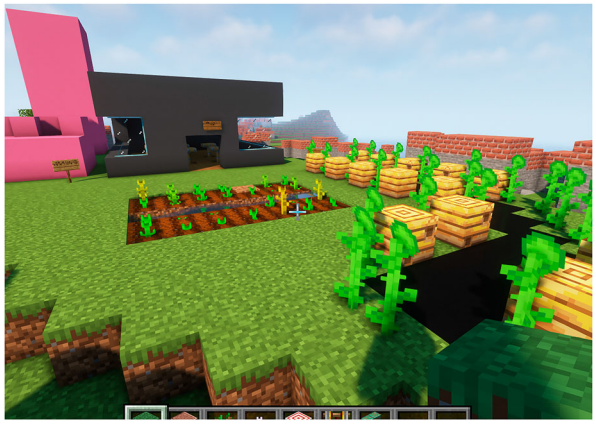

FIGURE 5. Ecological coexistence: vegetable patch, beehives and bee pollen café. Source: CCAT Project.
This image of a vegetable patch, beehives and bee pollen café in close proximity is one of several advancing ecologically-sensitive approaches to construction and local development. The focus on nurturing biodiversity, inter-connectivity and symbiotic relationships between human and nonhuman life, suggests that young people hold progressive ideas about the mutually beneficial relationship between nature and society and of ecological coexistence. This indicates that young people are rethinking traditional hierarchical approaches to nature-society relations.

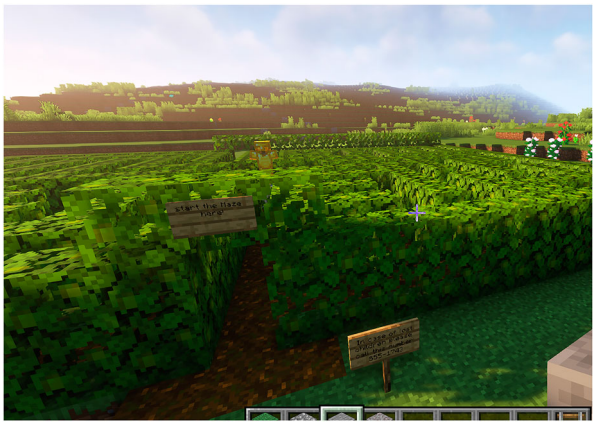

FIGURE 6. Playing *in* and *with* nature: the signage above the maze reads, 'Start Maze Here!' In front of the maze, the sign reads, 'In case of lost children, please call this number'. Source: CCAT Project.
This design solution dedicates a vast swathe of space to the development of a dense, natural maze. More than other built solutions for play, such as the Skate Park or Zip Line across the estuary (not shown), this design represents a form of critical care and repair as an approach to urban development. This is also an example of a shared or inter-species amenity, in that it serves a purpose for both human and non-human life. The maze reclaims the land for wildlife and equally offers a space play, adventure and escape. Entering the maze also requires an openness to getting lost (in nature) and to changing mind-sets. To enter the maze requires a commitment to take time out from constant productivity and simply encounter the non-human world.

unsustainability. These environmental designs invite us to enjoy time out by spending time with others in nature.

WAYS OF SEEING AND BEING IN NATURE

Young people also visually construct (different) ways of seeing and being in nature using Minecraft. In terms of being in nature, many of the images normalise a consumer lens on our relationship to food as several designs featured cafés. However, a few designs produced ideas encouraging alternative food practices by creating opportunities for communal eating and food-sharing in nature. For example, in the community picnic (Figure 7) young people visually articulate a counter-narrative to mainstream, consumerist approaches to food.

Meanwhile, the drone-like images, made possible by the technical affordances of Minecraft, present a different way of seeing nature. For example, Figure 8 offers commanding views of the Rogerstown Estuary landscape. Aerial views of nature and the nonhuman landscape are visually spectacular, often because these images employ nonhuman forms to create eye-catching abstract and geometric patterns. They have also become ubiquitous in environmental and climate change photography, as part of efforts to emotionally and experientially engage people in a digital visual culture (McNally 2021). However, the 'God's Eye' view is an interesting perspective as it is not generally accessible via the human eye alone. The

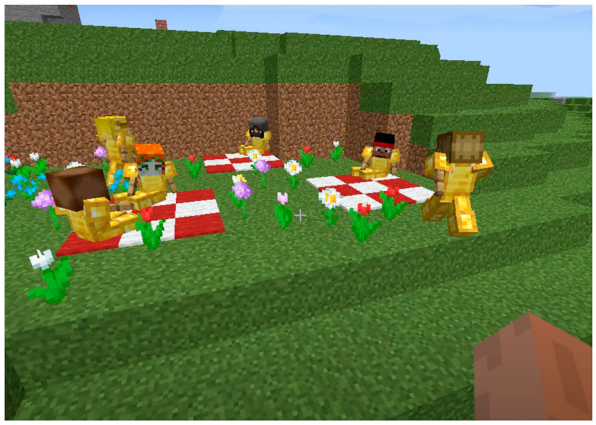

FIGURE 7. Visual counter-narratives: communal eating and food sharing as alternatives to consumerist approach to eating. Source: CCAT Project.
This image shows a picnic area covered with flowers and park goers enjoying communal eating.

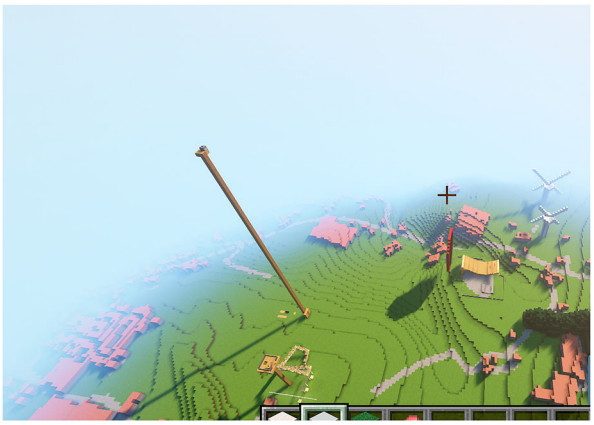

FIGURE 8. Machine vision: aerial view of the environmental design, produced by Minecraft. Source: CCAT Project.
This final image, an aerial perspective of the environmental design, is produced by the Minecraft software. The panoramic view of the windmill farm, the skate park and the water bucket challenge is both eye-catching and powerful. The global view also represents the God's Eye view, a perspective that is not naturally available to the human eye and thus an example of machine vision.

proliferation of geolocation technology and participatory-GIS processes have invited critical reflections on the social, economic and political impacts of these participatory media (Cardullo and Kitchin 2019; Specht 2018). Yet questions remain about the implications for the visual representation of nature. For example, critics argue that these geometrically abstract and visually engaging aerial perspectives contribute to an 'extractive gaze' and the separation of people from nature. In doing so, they subordinate the land to human purposes and justify existing power relations (Specht and Feigenbaum 2018).

CHANGING THE VISUAL NARRATIVE ON CLIMATE CHANGE

The images in this essay illustrate how young people are changing the visual narrative by engaging with local

planning and designing environmentally-sustainable futures using Minecraft. They also highlight the power of Minecraft as a visual medium to start new conversations about climate change. Overall, the environmental designs are optimistic about the possibility of tackling climate change which is in stark contrast to news media representations of youth protests and extreme weather events, or entertainment media's focus on dystopian narratives. Young people created a range of technological and nature-based solutions to local climate impacts such as coastal erosion, as well as developing ideas for more progressive, environmentally-sustainable lifestyles. The designs also include references to agriculture (farming) and food (sharing), which environmental experts believe are important to discuss in Ireland, but are often absent from visual representations (Culloty et al. 2019). These complex debates, involving cutting-edge science, technology and ecosystem management are traditionally the realm of technical experts and concerned organisations. However, by participating in the Minecraft workshops, and working with a digital game, young people were able to visually articulate their progressive ideas for responding to the climate and biodiversity crises. The images also differ from popular, visual representations of nature. Rather than idealising the rural landscape, which is a recurrent trope in art, advertising and news media representations of nature, young people envision the landscape as spaces for connecting with community and with nature. Their images prioritise ways of being in nature, whereas mainstream visual representations focus on othering nature by positioning the viewer as a spectator of romanticised depictions of nature as pristine landscapes or, increasingly, as a witness to nature as a desecrated place following fires, floods or hurricanes.

Nonetheless, the overriding focus on promoting renewable infrastructure, the circular economy and nature-based solutions does raise questions. It could, for example, be argued that these ideas for future planning simply reproduce existing approaches to sustainable development and promote incremental, rather than radical, change. However, the freedom with which young people combine and juxtapose these existing ideas *is* radical. Nature-society relations are effortlessly reconfigured in their climate imaginaries which eschew ideas of nature as 'over there' or instrumental views of nature as a resource. Their environmental designs promote time out as play, contemplation, food sharing, food growing and learning, thereby challenging the normalcy of our always-on culture. As a result, these images suggest that young people's climate imaginaries are clearly attuned to balancing needs – their own, their community's and the planet's. Likewise, young people also recognise the urgent need to care for and protect others – both human and nonhuman forms of life. In doing so, their visual constructions invite us to engage in new ways of seeing nature and to reimagine nature-society relations from a more environmentally-progressive perspective.

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Full ethical approval for the Minecraft Workshops and subsequent collection and reporting of participant data was received from UCD HREC.

The visual essay was conceptualised and written by Brenda McNally.

The Minecraft workshops were conceptualised by Bruno de Andrade and the workshops were facilitated by Bruno de Andrade, Saul Crowley and Chiara Cocco.

The images documented in this visual essay were selected by Brenda McNally, Saul Crowley and Linda Tucker. The images were prepared for publication by CCAT graphic design intern, Linda Tucker.

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