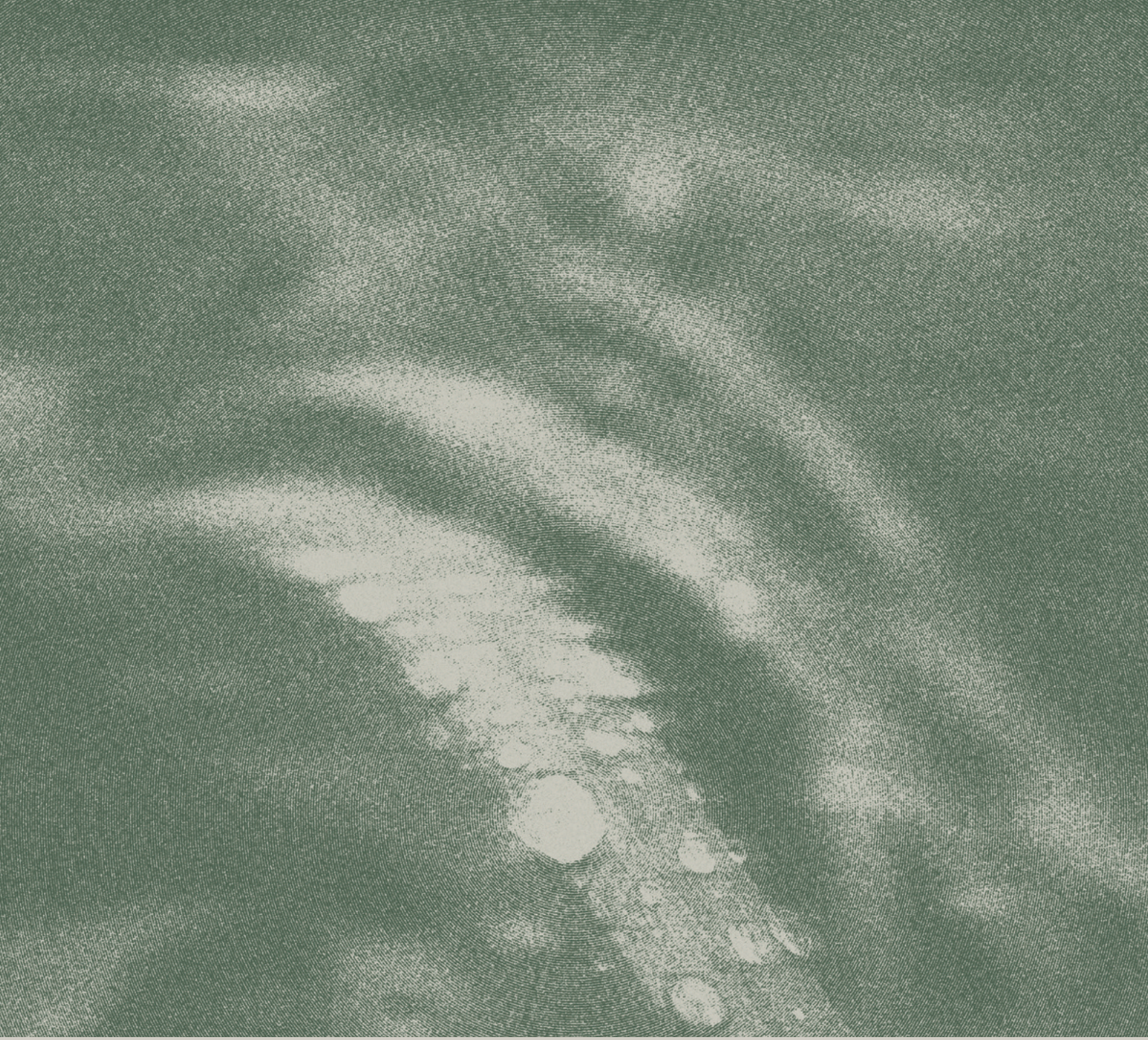


Guoxiang Yang
Design Futures

Reimagine the relationship between nature and young urban residents aged 13 to 15 in London by 2035

Urbanisation and Nature Connectedness

CONTENTS

Introduction

I am interested in the future of environmental and societal issues and in particular the future of urbanisation and nature disconnection in the context of city residents in London in 2035. This is an important environmental and social challenge because as urbanisation expands, city residents have fewer opportunities to engage with nature, which may lead to a weakened sense of environmental responsibility. Without intervention, the next generation may lose their understanding of nature and their ability to appreciate its beatuy.

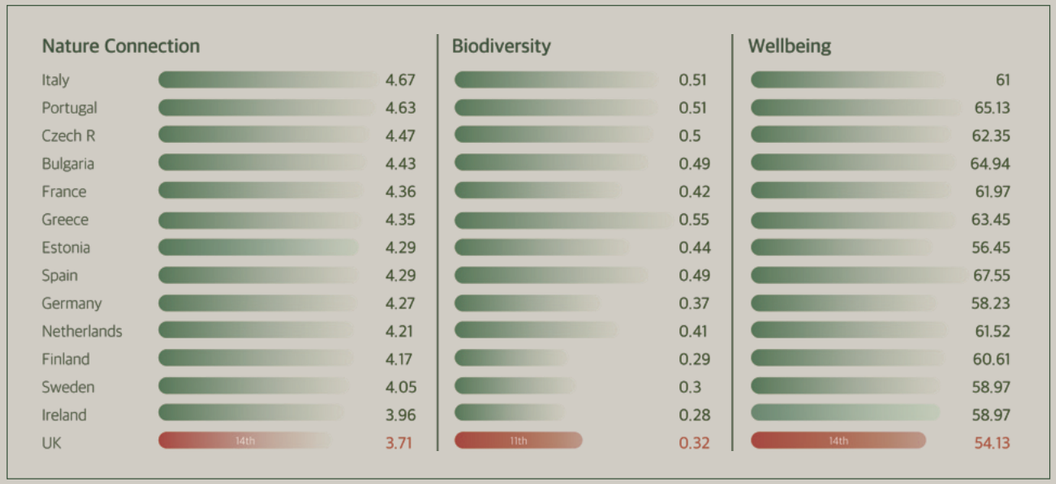


Figure 1: Miles (2022) Country level factors in a failing relationship with nature. Available at: https://findingnature.org.uk/2022/06/06/factors-in-a-failing-relationship-with-nature/

As urbanization accelerates, people's daily interactions with the natural world are declining. This has led to a 'nature disconnection", where individuals are becoming less connected to nature, both emotionally and physically. If this trend continues, we might foster a society that sees nature as distant or irrelevant. This is important because the failing relationship between human and nature has been recognized as a root cause of the environmental crises (Miles, 2022; Richardson et al. 2022). It means that the challenge is not only physically protecting green spaces, but also rebuilding meaningful relationships between city residents and nature. According to the United Nations (2016), More than 54% of the world's population currently lives in urban areas, and it is projected to rise to 68% by 2050. It shows an urgent need to address environmental apathy among future generations of urban dwellers.

London is a particularly important case study, given its high degree of urbanisation and influence as a global city. Statistics reveal a significant low natural literacy of London dwellers. Most of the residents are unable to recognize common native species. For example, only a small minority could identify species like the buzzard (6%) or the dung beetle (14%), while more than 1/3 failed to recognize an oak tree (Connor, 2016). It highlights a broader disconnect between London's urban populations and the natural world. This can be explained by their failing relationship with nature. According to Miles (2022), the UK ranked lowest for nature connectedness out of 14 European countries surveyed (Figure 1).

Nature connectedness is a psychological construct that measures an individual's subjective cognitive connection with nature (Pasca, Aragones & Coello, 2017). Rather than only focusing on observable behaviors, it emphasizes the internal bond people feel about nature. According to Richardson et al. (2022), people with a higher scale of nature connectedness are more likely to adopt environmentally friendly behaviours, such as pro-nature actions that address global warming and support biodiversity. In addition, it is positively related to mental well-being. Nature connectedness allows us to identify key factors that contribute to deteriorating human-nature relationships and develop solutions towards achieving sustainability goals. Therefore, this paper will adopt the framework of nature connectedness as the key metric.

Design futures approach is appropriate for this project because urbanisation and nature disconnection is a long-term and complex problem. It is a systemic issue rooted in cultural norms, urban planning practices, technological developments and socioeconomic structures. Therefore, it cannot be addressed through simple interventions overnight. Design futures methodology enables designers to explore alternative scenarios that anticipate emerging trends and disruptions in urban life, policy and environmental behavior.

In summary, this project aims to explore the preferable future of London by 2035, where the mainstream cultural narratives are shifted, and residents will have a closer relationship with nature. As urbanisation expands, city residents have fewer opportunities to engage with nature. The loss of natural experience in urban living style has permeated culture and become a social norm that contributes to the decline of nature connectedness, which may lead to a weakened sense of environmental responsibility. Under the growing environmental crisis, it is urgent to rethink the modern urban lifestyle, which prioritises convenience and digital consumption over natural connection. Without intervention, the next generation may lose their understanding of nature and their ability to appreciate it.

This project will examine the root causes and barriers in cultural narratives that contribute to a low nature connectedness level of 13 to 15 years old in modern urban life. By adopting a futures design methodology, it reimagines the relationship between nature and young residents in London over the next decade.

Literature Review

How can we increase the nature connectedness of residents aged 13-15 in London in 2035?

This research aims to investigate how nature connectedness can be increased among urban dwellers in London by 2035. A series of transdisciplinary literature and practice reviews are conducted in order to understand the entrenched social norms and values that lead to a declining nature connectedness in London. Urbanisation and nature disconnection are often studied through an urban planning lens, but the psychological drivers caused by urban living style are rarely discussed. This study delves into these underlying cultural and social norms that distance people from nature to provide a comprehensive understanding of these systemic barriers and how we can shift it in the future.

As mentioned earlier, nature connectedness refers to a measure of emotional and cognitive attachment to nature instead of only physical engagement with nature. Richardson et al. (2022) and Pasca et al. (2017) describe nature connectedness as a psychological concept that is strongly associated with environmental behavior, personal well-being and ecological empathy. Their findings suggest that the high level of nature connectedness leads to more sustainable lifestyle choices and greater motivation to support environmental-friendly efforts. However, modern urban living styles are systematically eroding this connection through cultural, societal and economic mechanisms that have evolved into social norms.

As urbanization accelerates, natural land is increasingly being replaced by gray infrastructure, which has led to the degradation of biodiversity and the demise of ecological experiences. Urban Insight (2024) reports that urban development often involves the felling of trees, the covering of natural surfaces and the channeling of waterways, creating ecological “dead zones”. According to Richardson (2022), each generation tends to normalise the level of biodiversity and environmental degradation they experienced. Over time, the notion that nature is unimportant or uninteresting becomes an entrenched cultural norm. It means that urbanization has not only changed the physical landscape, but also human perceptions of nature.

The popularity of indoor-centric lifestyle further exacerbates this trend. According to Bunn & Duffield (2023), people spend about 80% to 90% of their time indoors, such as at the workplace, schools, homes and other public indoor spaces. This trend is reinforced by the rise of remote work globally, which has increased from 20% in 2020 to 28% in 2023 after COVID 19 (Sherif, 2024). In addition, the development of digital technology further pushed the indoor-centric living style pattern. Smartphones and social media have reshaped the way people spend their leisure time, especially the younger generation. According to Chaffey (2025), 63.9% of the world's population uses social media, spending an average time of more than two hours a day. This has contributed to deep addiction on digital devices, which further reduced the opportunities to experience nature outdoors. Richardson (2022) criticizes how marketing strategies driven by consumer capitalism tend to link happiness to material consumption. Research on attention economics demonstrates that human attention is a limited resource. This means that when people spend most of their attention on the screen, they are not able to pay enough attention to nature. It means that the attention economy and consumer culture are diverting attention from nature, which has reshaped our values, making nature emotionally and economically irrelevant.

As people spend less time outdoors and more time on digital platforms, direct interactions with the natural environment become less frequent, which further decreases their nature connectedness level. This is important because the physical absence will lead to a psychological and cultural absence. As Nyborg et al. (2016) argue, the disappearance of wildlife and natural experiences has permeated culture and became a social norm. This is evident in popular culture: Kesebir et al. (2017) note that the nature-related words in books, songs, and other pop culture have been decreasing since the 1950s (Figure 2). When nature is absent from cultural narratives, it becomes less visible, less relatable and less desirable, especially for younger generations.

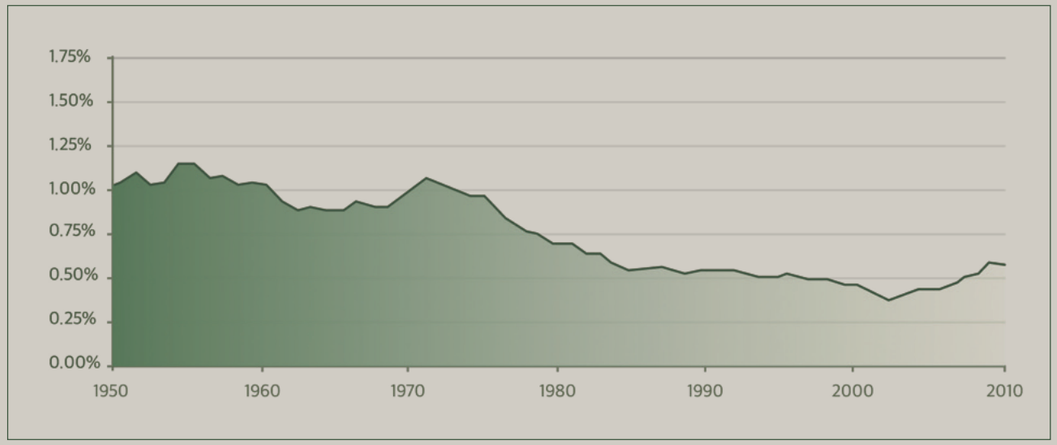


Figure 2: Kesebir, S., & Kesebir, P. (2017). A Growing Disconnection From Nature Is Evident in Cultural Products. Perspectives on Psychological Science, 12(2), 258-269. https://doi.org/10.1177/1745691616662473

The commodification of nature and economic inequality is another major barrier to connectivity. As Vie (2008) argues, what nature provides us is defined as immediate return in economic concepts. For example, forests are valued for their timber. Since the Industrial Revolution, the mainstream narrative has viewed nature as a resource to be exploited and used. This utilitarian worldview has led to overconsumption of natural resources (Richardson, 2022). The commodification of nature is also evident in urban real estate markets. Yoo (n.d.) notes that rich green spaces in urban areas will increase nearby rents for housing, which may contribute to displacing vulnerable groups. In addition to real estate, outdoor activities such as hiking, gardening or travelling often require disposable income and time, which are resources that are not equally available to different socio-economic groups. In this context, nature becomes a luxury product, creating a dilemma that even when green spaces exist, they may be perceived as unwelcoming.

Despite the barriers mentioned above, recent trends and signals indicate a growing awareness to the issue of disconnection from nature. In the academic field, research on nature connectedness has increased significantly. According to Sheffield et al. (2022), the number of publications on this topic more than doubled between 2017 and 2022. In addition, new measurement frameworks are proposed to help researchers accurately assess interventions and outcomes, such as Nature Connections Index (GOV.UK, 2019) and ProCoBS (Barbett et al. 2020). It evidenced that the academic community has realized the importance of nature connectedness.

Furthermore, the political field has responded. The UK government has included nature engagement in its 25 Year Environment Plan, committing to improving access to natural spaces and enhancing the environmental value of urban and rural areas (GOV.UK, 2023). Meanwhile, Green Social Prescribing program has linked thousands of people to green space activities to support mental health, with over 8,500 referrals (NHS England, 2021). These efforts reflect the government's proactive approach to the issue of nature disconnection.

Following the government's policy guidance, design-led interventions have also gained momentum. The Nature Connectedness Network, developed by the University of Derby and Natural England, has released a series of manuals, toolkits and frameworks designed to help people rebuild their emotional connection with nature

(Natural England, 2024). Similarly, the Green Minds Project in South Devon designed a series of activities to enhance participants' connection with nature, such as nature-based leadership programmes, community engagement (Green Minds, 2025). In addition, Orleans House Gallery initiated the Cultural Reforesting program to explore how artists can renew our relationship with nature (Orleans House Gallery, n.d.). These examples reflect a growing trend in relevant organisations that adopt design-led approaches in building meaningful connections between people and nature.

Also, educational innovations are playing a role in changing social norms. Outdoor classrooms and forest schools are emerging as alternatives to indoor-centric and screen-based learning styles (Dabaja, 2020; O'Brien & Murray, 2007; Mann et al. 2022). By immersing children in natural experiences, it aims to benefit their physical and mental health while achieving academic outcomes. In addition to this, it fosters ecological empathy from an early age, raising a new generation in which connection with nature becomes the intuition and the norm. Although potential safety risks are associated with forest schools, their emergence has opened up new perspectives on how to rebuild the next generation's relationship with nature in the future.

Furthermore, emerging technologies started to play a significant role in improving nature connectedness, particularly among younger generations. For instance, Seek is an app that enables users to identify plants and animals in real time through image recognition, thereby expanding their nature-related knowledge (The Guardian, 2023). Similarly, Merlin Bird ID allows users to identify birdsong through sound recognition and explore nearby bird species, supporting accessible and immersive nature engagement (Cornell University, 2025). In addition to tools, social media platforms are also contributing to this trend. Mya-Rose Craig, known as "Bird Girl", is a famous internet influencer who shares bird-watching experiences online (Birdgirl, 2025). Her popularity shows how digital storytelling can inspire youth's interest in nature through social media. On a larger scale, the Ant Forest successfully translates virtual environmental actions into tangible ecological outcomes (Alipay, 2016). Every time users take steps to reduce emissions, such as cycling to work, going paperless, and buying sustainable products, they are rewarded with "green energy points." These green energy points grow into a virtual tree on the user's app, and Alipay will work with local NGOs to plant a real tree. Collectively, these examples have sent a positive trend of technology as a tool to renew our relationship with nature.

Taken together, the decline of nature connectedness is not caused by a single factor, but is a complex web of cultural narratives, behavior norms and economic structures. However, some emerging policies and practices point to a societal shift that is evolving. They provide opportunities for future designs to propose new narratives and imaginations of urban living styles.

Category	Social Norms (Barriers)	Emerging Trends (Opportunities)
Urban Habits and Lifestyles	1. Indoor-centric lifestyle 2. Fast-paced, and prioritize convenience 3. Increased screen time (increased reliance on digital life)	1. The appearance of outdoor classrooms and forest schools. 2. The UK government encourages nature-based daily living (e.g. Green Social Prescribing).
☆Cultural Narratives	1. The decline of nature in popular culture. 2. Nature is seen as boring. 3. Nature is seen as a luxury product. 4. Nature is seen as a resource to be exploited and used (overconsumption of natural resources)	1. Artists and museums starts reframing narratives about nature (e.g. Orleans House Gallery) 2. More and more academic research on nature connectedness is published. 3. Nature connectedness is going into public discourse, such as education / psychology / culture / academics / policy, etc. 4. It is becoming popular to use social media to stimulate audiences' interest in nature (e.g. Birdgirl). 5. Video games themed non-human species have been popular in recent years, such as Stray (2022).
Systemic Structures	1. Urban planning prioritizes infrastructure development, which has damaged biodiversity. 2. Unequal access to nature (economic barriers or uneven distribution of green space).	1. More and more policy in the UK started to pay attention to nature connectedness. 2. The government started to support programs that aim to improve people's nature connectedness (e.g. Nature Connectedness Network, Green Mind).
Digital Technologies	1. The digital attention economy has diverted attention away from nature. 2. Screen addiction limits time spent outdoors. 3. Screen-based entertainment.	1. Reconnection with nature enabled by emerging technology (e.g. Seek and Merlin Bird ID) 2. Digital storytelling renew the appeal of nature (e.g. Birdgirl) 3. The success of Ant Forest - transforming virtual environmental protection actions into tangible ecological results.

Figure 3: Yang, G. (2025) Research Insights Summary Table, [Digital Image] created by the author for this dissertation.

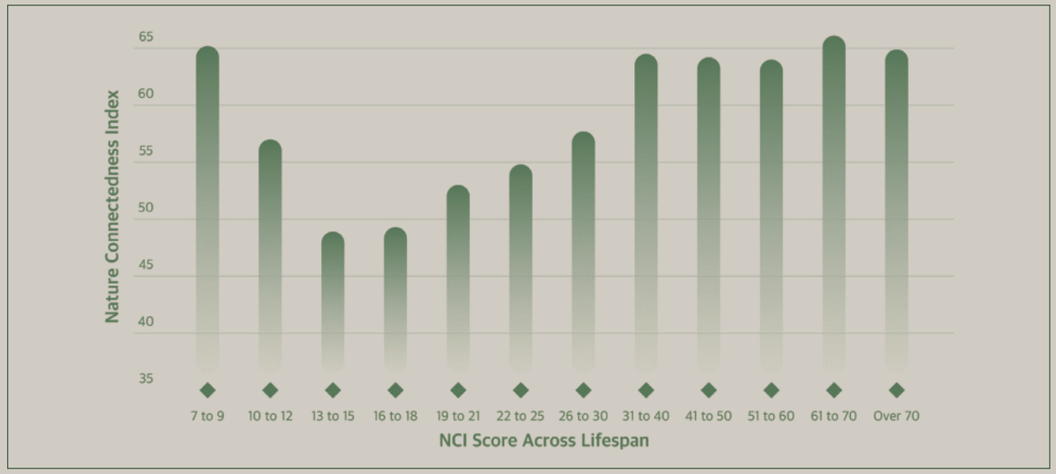


Figure 4: Richardson, M., Hunt, A., Hinds, J., Bragg, R., Fido, D., Petronzi, D., Barbett, L., Clitherow, T., & White, M. (2019). A Measure of Nature Connectedness for Children and Adults: Validation, Performance, and Insights. Sustainability, 11(12), 3250. https://doi.org/10.3390/su11123250

This table groups previous insights into four categories: urban lifestyles and habits, cultural narratives, systemic structures, and digital technology. However, it is important to emphasise that these dimensions are not isolated from each other, but interrelated in practice. For example, the development of digital technology has contributed to the rise of screen-based entertainment and indoor-centric lifestyles, which have reduced opportunities to engage with nature. In addition, these behavioural patterns are further reinforced by systemic issues, such as the commoditization of natural resources, unequal access to green spaces, and urban planning that prioritises economic over ecological value. Underlying these mega trends it is cultural narratives that shape how individuals and societies understand and relate to the natural world. They influence lifestyle choices, affect societal attitudes, justify policy decisions and frame how technologies are developed and used. Most importantly, cultural narratives may have the power to determine whether nature is seen as boring or fun, essential or irrelevant. Therefore, although all categories are important in understanding the issue of nature disconnection, considering nature connectedness refers to an individual's subjective sense, the following part will specifically focus on cultural narratives. By examining and reimagining the cultural narratives that define our relationship with nature, this project seeks to identify new opportunities for long-term behavioural and systemic transformation.

To define the scope of this research, the project will focus on teenagers aged 13 to 15 living in Central London. This group has been selected for its importance in shaping ecological values for future generations and fostering the long-term development of an environmentally sustainable culture.

Firstly, this age range is a critical stage in nature connectedness across the lifespan (Figure 3). According to the research of Richardson et al. (2019), people's nature connectedness sharply drops during adolescence, reaching a lowest point between the ages of 13 and 15. The reason for this decline is unclear, but Miles (2019) suggests that the shift in life focus during this period may have led to a neglect of nature. This is because it is a stage of many major changes, including physical growth, social identity formation, future career choices, etc. Secondly, 13 to 15 is also recognised as a key stage for shaping long-term attitudes and behaviours. As Wells & Lekies (2006) argue, the values formed during adolescence are highly persistent, which can have long-term effects on adult behaviour. Specifically, research has found that wilderness experiences during childhood show a significant positive correlation with time spent in nature in adulthood (Kellstedt et al. 2024). Thirdly, this age group is highly engaged with cultural production and consumption, especially popular culture and digital culture. Teenagers are one of the most active user groups of digital platforms. They play a key role in spreading and shaping cultural narratives through social media, music, games and other entertainment. Other than this, central London was chosen due to its high level of urbanisation and its status as a cultural hub. In this proposal, central London is defined as the Greater London Built-up Area, including Westminster, Chelsea, Lambeth and other regions. This is because these areas are not only highly urbanised, but also host a large number of museums, galleries and other cultural institutions. In summary, interventions related to cultural narratives at this age range and location may have the potential to rebuild emotional connections with nature and improve nature connectedness for the next generation in London in 2035.

Upon review, the decline in nature connectedness among urban residents is driven by a complex interplay of cultural, psychological, and systemic factors.

Key insights includes: 1. The loss of natural experience in urban living style has permeated culture and becomes a social norm that contributes to the decline of natural connectedness. 2. Structural and socio-economic factors act as barriers to connection with nature. 3. Underlying these mega-trends are cultural narratives that shape how individuals and societies understand and relate to the natural world. 4. Well-designed interventions (both direct and indirect engagement) can effectively improve nature connectedness.

Key Trends includes: 1. Policy recognition and organisation support: The UK government's 25-Year Environment Plan, NHS green prescribing programmes, and Nature Connectedness Network reflect the government's proactive approach to the issue of nature disconnection. 2. Attention in academic field: new measurement frameworks are proposed to help researchers accurately assess interventions and outcomes, such as Nature Connections Index and ProCoBS. 3. Forest schools as emerging alternatives: Although potential safety risks are associated with forest schools, their emergence has opened up new perspectives on how to rebuild the next generation's relationship with nature in the future.

In summary, this review provides a solid foundation for the development of future design interventions.

Methodology

The project will use a multi-method approach that aims to explore how to increase the nature connectedness of young London's urban residents (aged 13 to 15) in 2035. As Figure 5 shows, the first phase of this research involves integrating and analysing secondary research data using systems analysis tools.

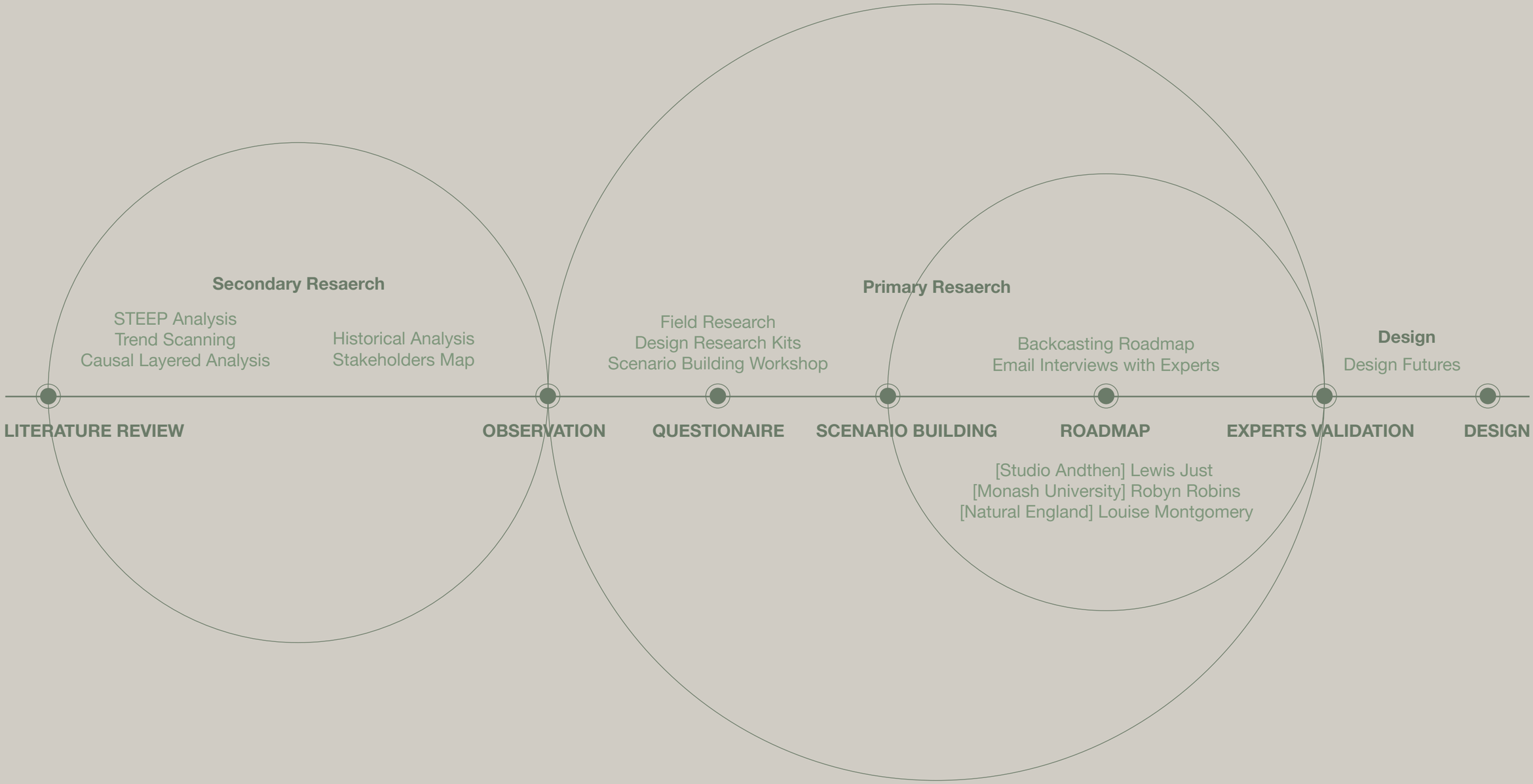


Figure 5: Yang, G. (2025) Methodology, [Digital Image] created by the author for this dissertation.

Secondary Research Phrase

1. STEEP Analysis was used to identify drivers, trends, and weak signals that contribute to disconnection from nature.

2. Causal Layered Analysis was used to understand the root causes of them. 3. Research insight Summary Table was used to organise all the information discovered before and identify key leverage points.

3. Stakeholder Maps then helped to consider who is affected or contributing to the issue.

Primary Research Phrase

1. Observation was applied to explore how teenagers in Central London engage with nature in public spaces.

2. Design Research Kits were used to understand the role of culture narratives in shaping an individual's nature connectedness, and to provide information for designing future intervention.

Future Methods Phrase

1. A Scenario Building Workshop was arranged to explore how cultural narratives influence future relationships between human and nature by constructing four different future scenarios related to the nature connectedness of young people in London in 2035. This process will provide inspiration for identifying future intervention pathways for backcasting.

2. A Backcasting Interview was used to identify key interventions and milestones needed to make that vision (selected in scenario building workshop) a reality by 2035.

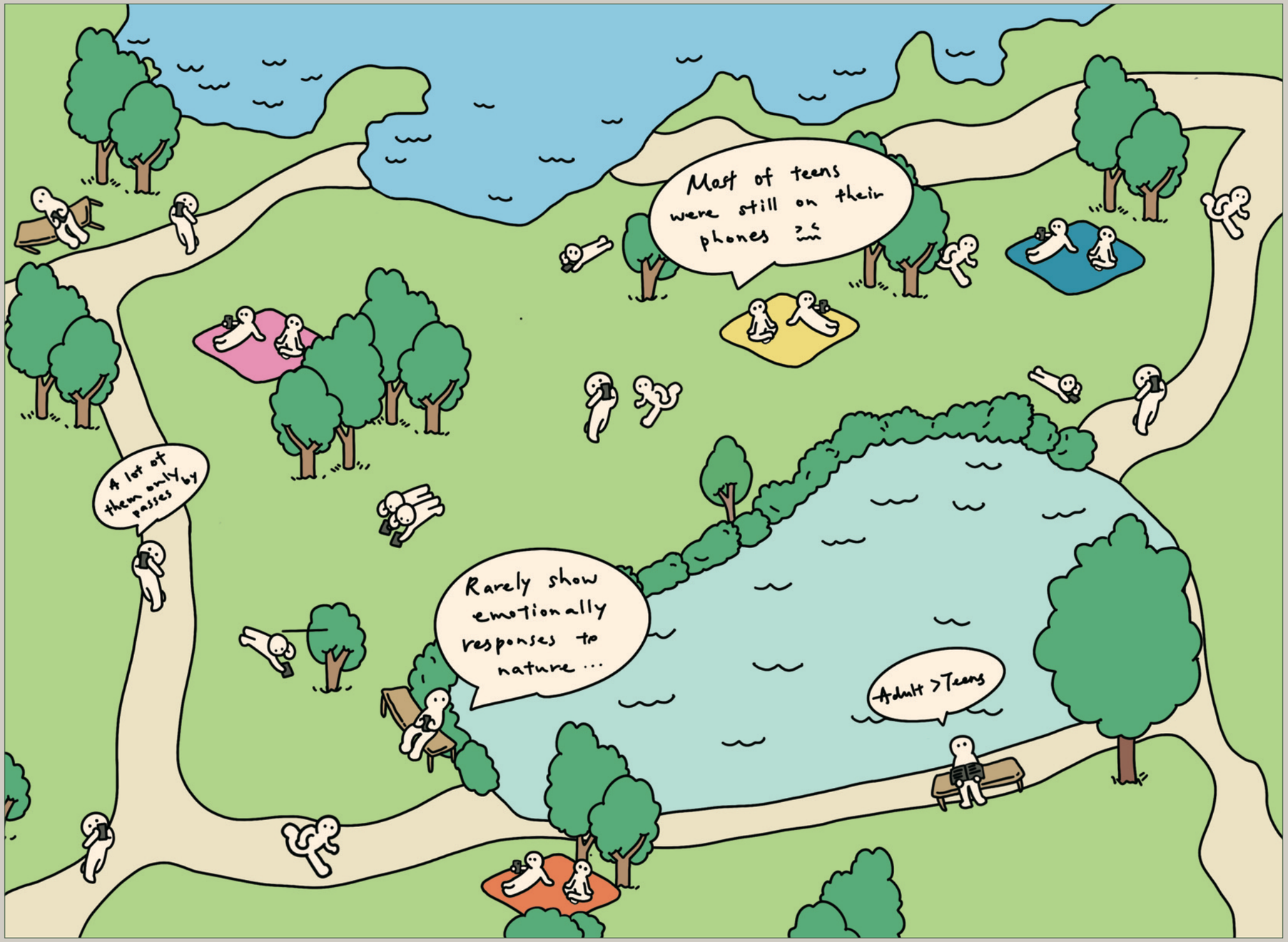
3. An email interview to validate the outcome with experts in the industry.

Trend Mapping

This map visualises key trends and drivers influencing the future nature connectedness of young people aged 13 to 21 living in London, categorised by PESTE (Political, Economic, Social, Technological and Environmental). It illustrates the connection of these drivers and how changes in one category often influence the others. The trends were identified through a combination of secondary research (including academic publications, government and NGO reports, and news analysis), and primary research from a reflective questionnaire and a scenario-building workshop with London-based youth (ages 20-25), and a validation session involving expert stakeholders in sustainability research, environmental department and design.

This approach enabled a multi-layered analysis, combining individual experiences, disciplinary expertise, and policy-level framing. This map aims to show a structured and systemic overview of trends and drivers contributing to the rise or decline of nature connectedness among London youth (aged 13 to 21), which can inform the development of future scenarios and intervention strategies.

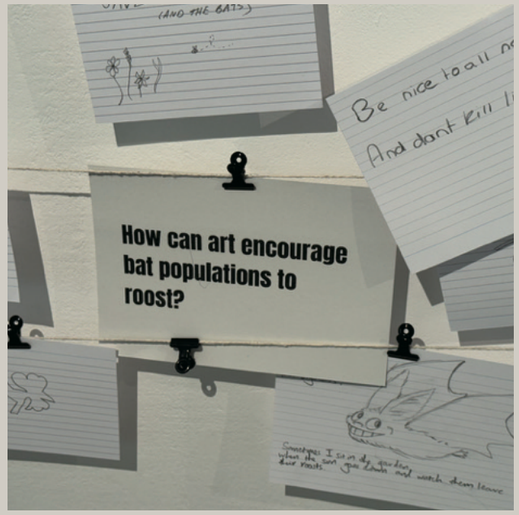
Observation (Part 1)

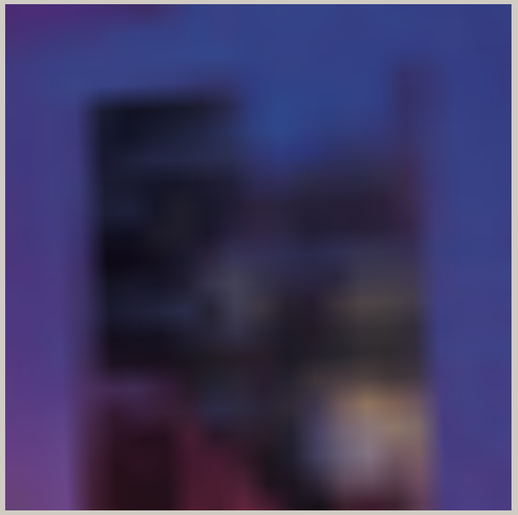


This observational study investigates how adolescents aged 13-15 in Central London interact with urban green spaces in their everyday lives. Conducted across sites such as Battersea Park and Hyde Park, the research used non-participant observation to document spatial behaviours, sensory engagement, and emotional responses to natural elements. By recording activities, body language, and environmental cues, the study aimed to uncover subtle but telling signs of nature connectedness—or its absence.

The findings reveal a pattern of low emotional engagement among teens: most were using the park as a passageway or social backdrop rather than actively interacting with nature. While adults and younger children showed higher levels of engagement, teenagers were often preoccupied with mobile devices, rarely expressing curiosity or affective connection to the natural environment. These insights highlight a cultural and behavioural gap, pointing to a need for targeted interventions that restore emotional and sensory relationships with urban nature.

Observation (Part 2)





To deepen my understanding of how similar problem is being addressed through creative practice, I conducted a field visit to Orleans House Gallery. The visit offered valuable insights into how contemporary designers and artists are exploring the relationship between nature and human through sensory experiences, more-than-human design, and reflective storytelling. Projects on display incorporated elements such as nature soundscapes, ritualised engagement, and design for non-human actors—demonstrating how emotional and cultural connections with nature can be reimagined through creative forms.

This visit broadened my perspective beyond academic literature, revealing diverse methods—from meditation-based interaction to sustainable material reuse—that can inspire systemic and emotional reconnection with the natural world. The gallery also raised critical questions around who participates in these conversations and how such works influence wider policy and public imagination.

Design Research Kits

This research kit was designed to collect reflective insights from participants aged 18-26, inviting them to revisit their nature-related experiences during adolescence (13-21). It combined self-assessment, drawing, and cultural recall to explore how emotional responses and cultural narratives shape long-term nature connectedness.

Findings revealed that nature connectedness follows a U-shaped curve across life stages—high in early childhood, dropping during adolescence, and rising slightly in adulthood. While rich nature exposure during teenage years (e.g. school trips or natural surroundings) is linked to stronger adult connection, passive experiences alone are not enough. Some participants, despite receiving nature education, failed to build lasting emotional bonds due to a lack of understanding and meaning-making during those formative years.

Nature often loses its appeal in adolescence, especially when competing with urban entertainment. Many participants described nature as less attractive than city-based activities, highlighting a lack of motivation and ease of engagement. Emotional connections to nature were most often linked to two types of memorable experiences: time with pets and moments in natural landscapes like the sky, sea, or forest.

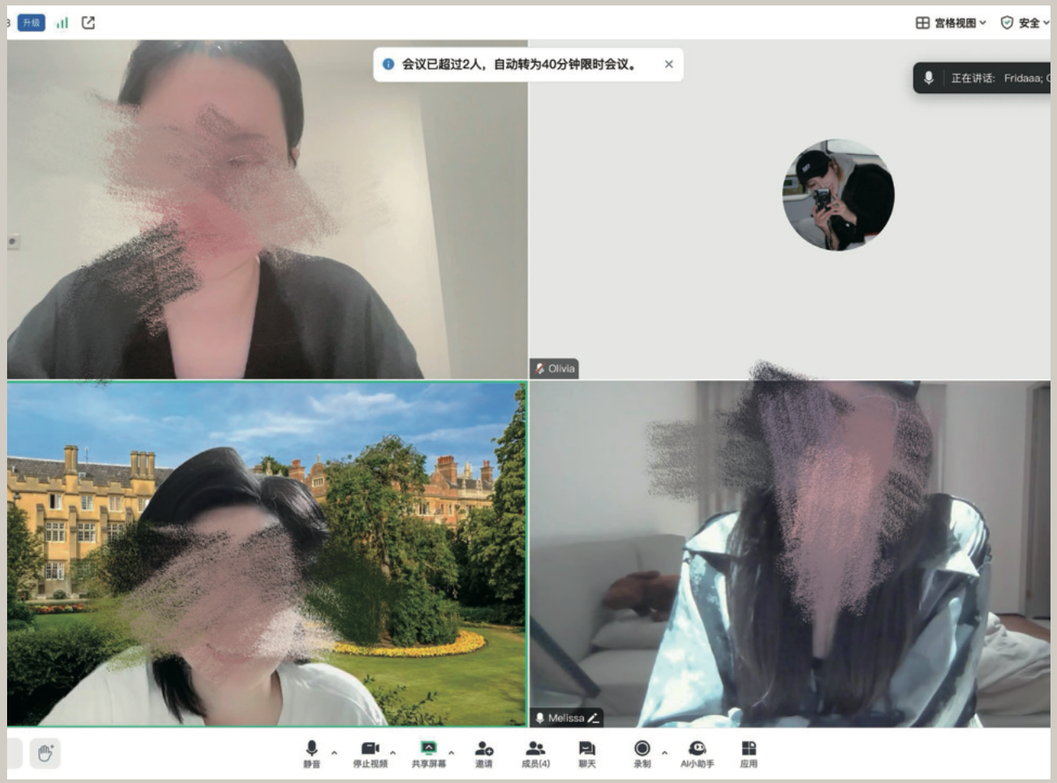
These insights underscore the need for interventions that go beyond access—focusing instead on emotional significance, cultural framing, and low-barrier engagement strategies during adolescence.

Scenario Building Workshop

This workshop co-developed four speculative futures of nature connectedness among young people aged 13-15 in London by 2035, using a 2 × 2 matrix structured around two key uncertainties: (1) levels of nature connectedness (high vs. low) and (2) types of engagement (active vs. passive).

Participants were first asked to reflect on their own nature experiences since the age of 13, recalling key memories, motivations, and barriers that shaped their relationship with nature. These fragmented reflections were collected through written notes and post-its in a facilitated workshop environment.

The final four scenarios (please see descriptions on the next page) reflect distinct trajectories of how London's teenagers might relate to nature in 2035, depending on systemic, cultural, and behavioural shifts. These narratives serve as a foundation for identifying future intervention pathways in the backcasting stage.



Backcasting

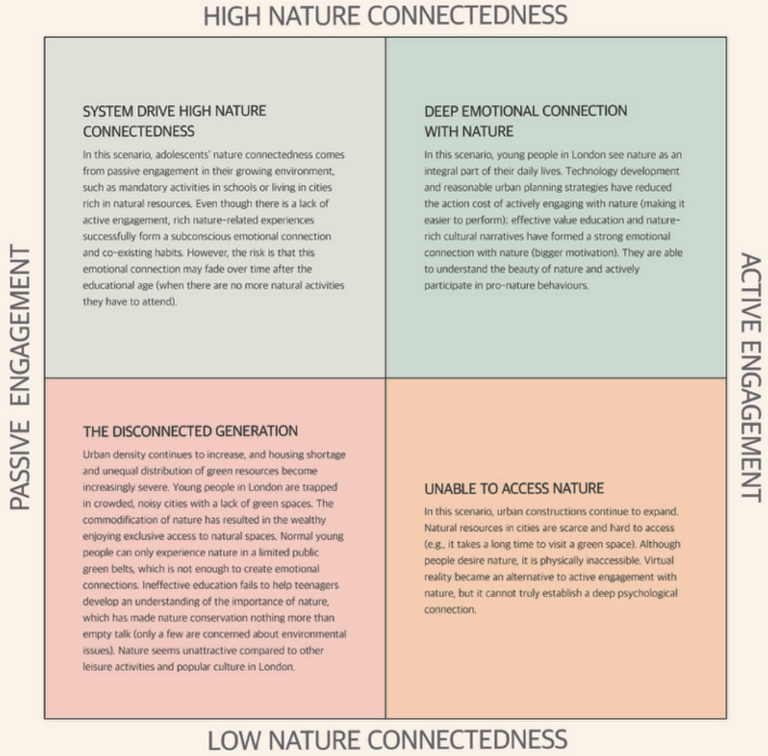
This backcasting roadmap outlines a strategic pathway from the current state (2025) to a preferable future in 2035, where young people aged 13-15 in London develop a deep emotional connection with nature through active engagement.

The preferable future was selected based on outcomes from the scenario-building workshop, in which participants envisioned a future where nature-rich environments and values are embedded into everyday youth life. To understand how to move toward this vision, this roadmap first analysed the gap between the current situation—informed by findings from observations and design research toolkits—and the preferred scenario.

Key barriers identified include a lack of emotional motivation, poor urban nature access, the dominance of screen-based leisure, and the absence of nature in mainstream cultural narratives and education. These systemic and behavioural gaps served as the foundation for designing targeted interventions.

Given that emotional connection to nature is a subjective and often invisible construct, the roadmap adopted Richardson's Five Pathways to Nature Connectedness (Contact, Beauty, Meaning, Emotion, Compassion) as a behavioural framework to translate the vision into observable and measurable goals.

This method supports systemic thinking by linking micro-level experience with institutional shifts, enabling a structured transition from fragmented engagement to long-term emotional and ecological connection.



1

NOW (2025)
Understand The Barriers And Gaps

Research
To understand their memories and attitudes towards sensory experiences in nature (e.g. workshops, interviews, observations, etc.)

| Systemic Supports | Funding |
1. Local council research grants.
2. Universities.
3. Public-sector academic partnerships.

2

ONE TO THREE YEARS (2025-2028)
Build Basic Environmental Awareness

City walk handbooks and guidelines
Introduce practical ways to engage the senses, reflect on emotions, and care for nature in daily urban life.

Meditation
Nature-based meditation sessions to help young people cultivate emotional connection and meaning.

Sensory experiences
Interactive space installation to create sensory engagement with nature, e.g. observe, hear, smell, taste, etc.

Nature Recognition App (AI-based)
Develop an app that identifies animals, plants, or sounds to help youth deepen their curiosity, understanding and appreciation of nature.

| Systemic Supports | Funding |
1. Local arts and culture grants (e.g., Arts Council England).
2. Community seed funding for environmentally friendly projects (e.g., Greener City Fund).
3. Sponsorships from eco-friendly brands or sustainability-focused tech startups.
4. Environmental NGOs and citizen science groups (e.g., London Wildlife Trust, London Environmental Network).

3

THREE TO FIVE YEARS (2028-2030)
Integrating Nature Into Youth Culture

Nature Encyclopaedia Game
A game app where users photograph real-life plants, animals, or natural elements to unlock entries in a personal nature encyclopaedia. Through rewards, progress tracking, and storytelling, the app gamifies outdoor exploration while fostering emotional connection and long-term habits.

Nature Challenge Campaign (Social media):
Partner with Instagram and TikTok to launch a nature-themed challenge series that encourages creative outdoor acts, making nature engagement a trending content among youth (like the Ice Bucket Challenge).

Art and Design
Collaborate with local galleries and cultural spaces to host interactive exhibitions that blend contemporary youth culture with natural themes through sound, installation, or digital art.

| Systemic Supports | Funding | Actors |
1. Funding: Partnerships with tech companies (e.g., Meta, TikTok)
2. Actors: Influencers, youth creators, educators, game developers, social platform partnerships, policy supports.

4

FIVE TO TEN YEARS (2030-2035)
Reshape Values & Long-Term Habits

Forest School Pilot
Scale up forest school programs across urban boroughs as a formal part of education reform. Shape eco-friendly values and long-term habits through outdoor learning experiences.

City Rewilding Zones
Launch rewilding pilot zones in London, transforming vacant land into self-sustaining ecosystems accessible to youth for exploration.

City Rewilding Zones
Implement smart urban systems like automated waste sorters, AI-based wildlife monitoring, and low-energy greenway lighting to reduce the effort required for daily environmental care.

Nature Incentive in Public Systems
For example, nature points for public transport discounts, school credits, or job application advantages, to reinforce ecological actions as socially valuable.

| Systemic Supports | Funding |
1. Urban greening budgets (e.g. DEFRA urban ecology funding)
2. Seed funding via educational innovation grants (e.g. London Teacher Innovation Fund)
3. Community seed funding for environmentally friendly projects (e.g., Greener City Fund).

5

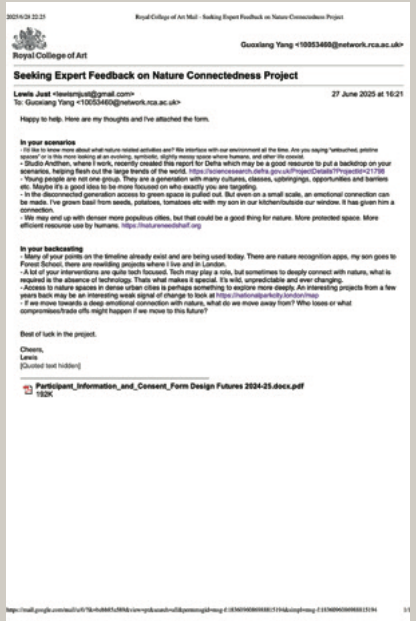
PREFERABLE FUTURE (2035)
Deep Emotional Connection With Nature

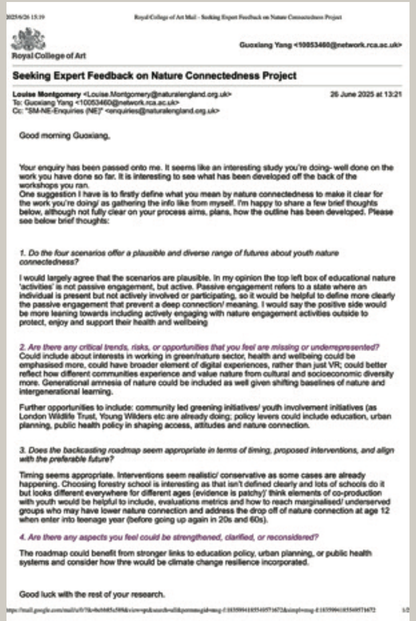
Expand and Scale up
What began as pilot innovations has evolved into a city-wide system, where nature-rich environments and values are embedded into daily life. We have achieved a high level of nature connectedness among London's youth (13 to 21 years old).

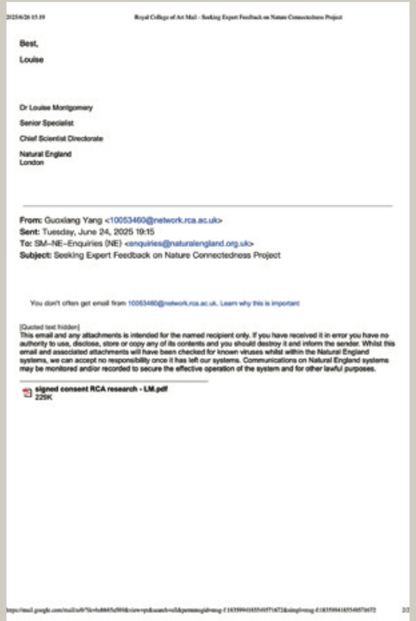
Overall goal of the intervention
1. Create more motivations
2. Less effort required

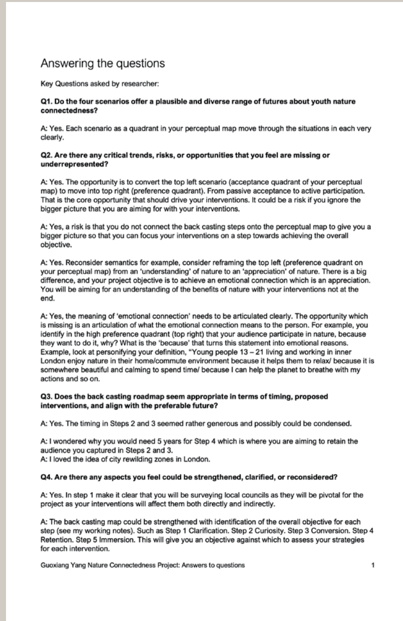
Expert Validation

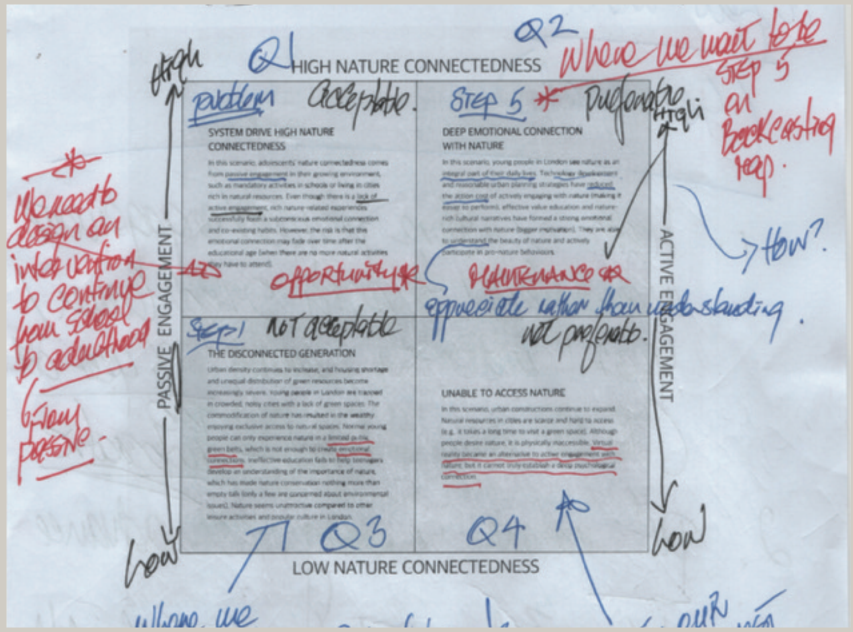
To strengthen the rigour and relevance of the research, a series of expert validation sessions were conducted with practitioners and scholars across environmental psychology, design futures, and policy. These included Dr. Lewis McNeill (Natural England), Louise Pulford (Studio Andthen), and Dr. Robyn Barnacle (Monash University). One key insight concerned the nature of emotional connection itself. As Robins highlighted, nature connectedness should not be treated as a purely cognitive or abstract construct, but rather as something emotionally situated and experientially grounded. She suggested reframing"understanding"nature as"appreciating" it. This emphasis aligned with Lewis's recommendation to draw more directly on emotional and sensory language to support youth engagement. Another key advice from Robins was to reframe the four future scenarios. Instead of isolated situations, she suggeted to see it as a transition pathway. In addition, Robins provided a much more clear structure for the roadmap: Step 1 Clarification; Step 2 Curiosity; Step 3 Conversion; Step 4 Retention; Step 5 Immersion. Louise and Lewis pointed out that some interventions proposed in the initial roadmap lacked futures orientation. Louise emphasized a stronger links to systemic change, such as education, urban planning, public health policy. Lewis also stressed the importance of creating small, tangible opportunities within dense urban contexts. These insights directly informed refinements to the scenario logic and intervention strategy.

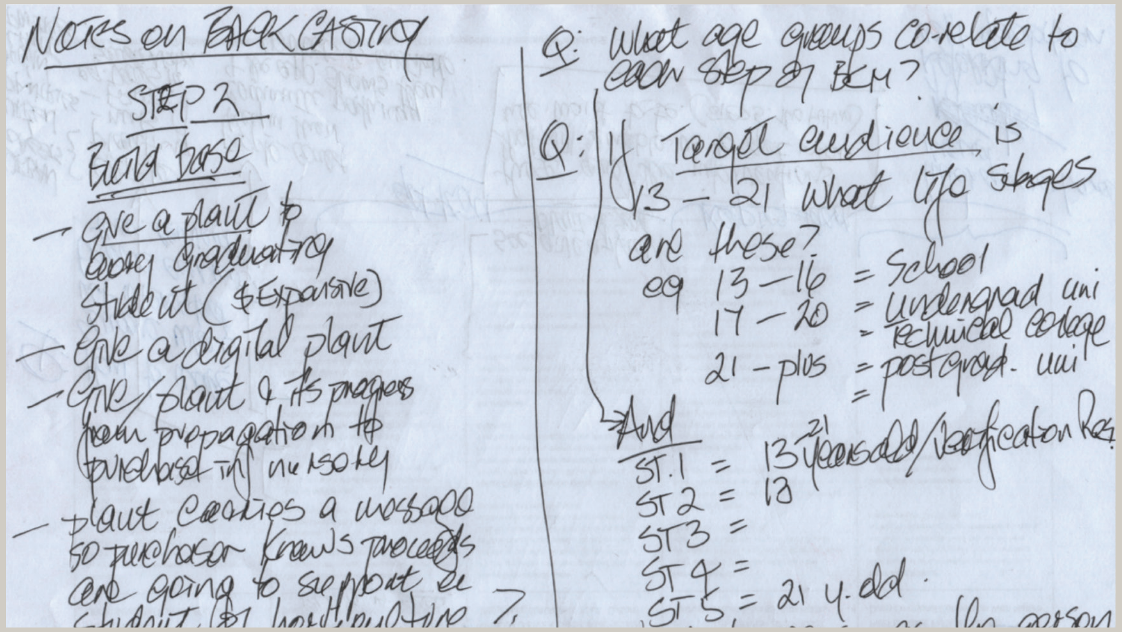


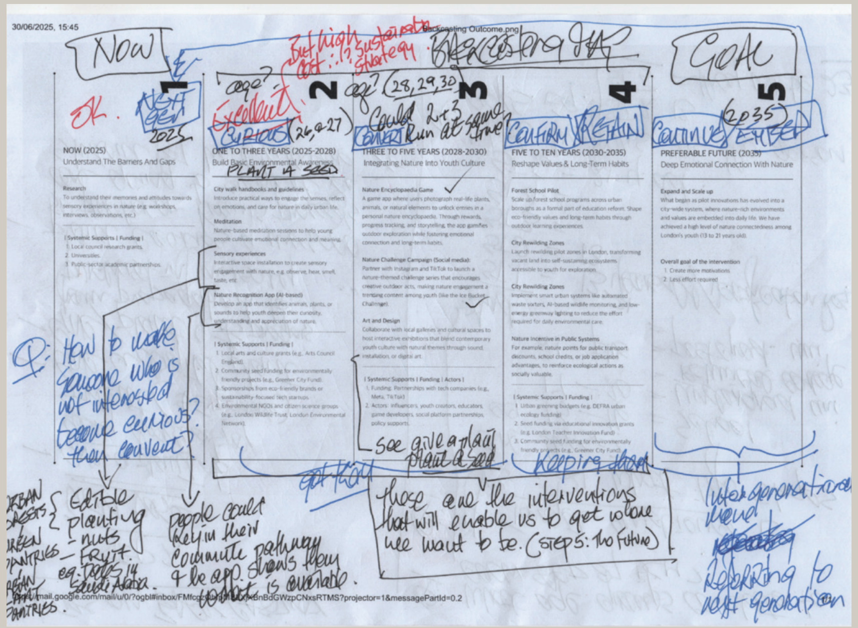


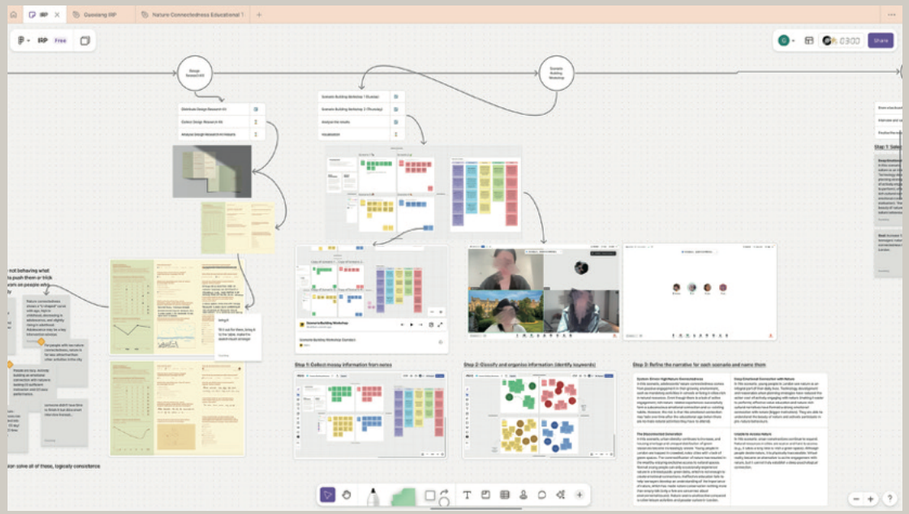


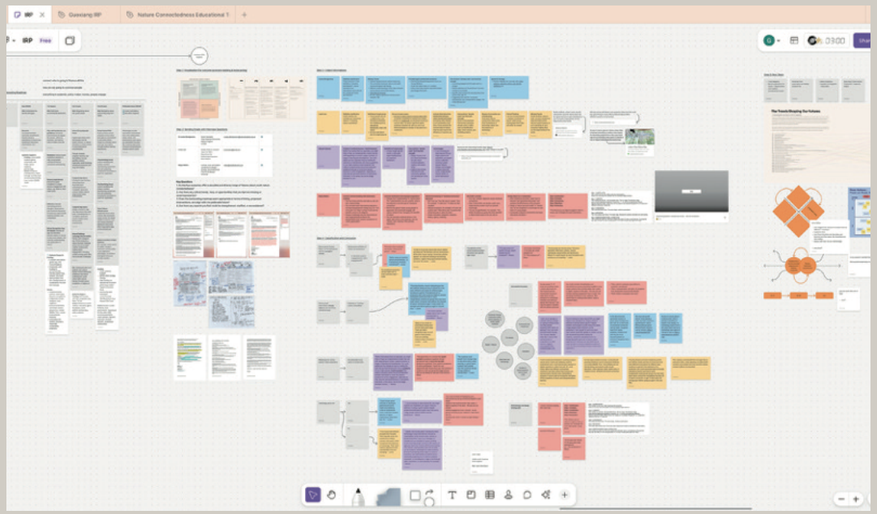




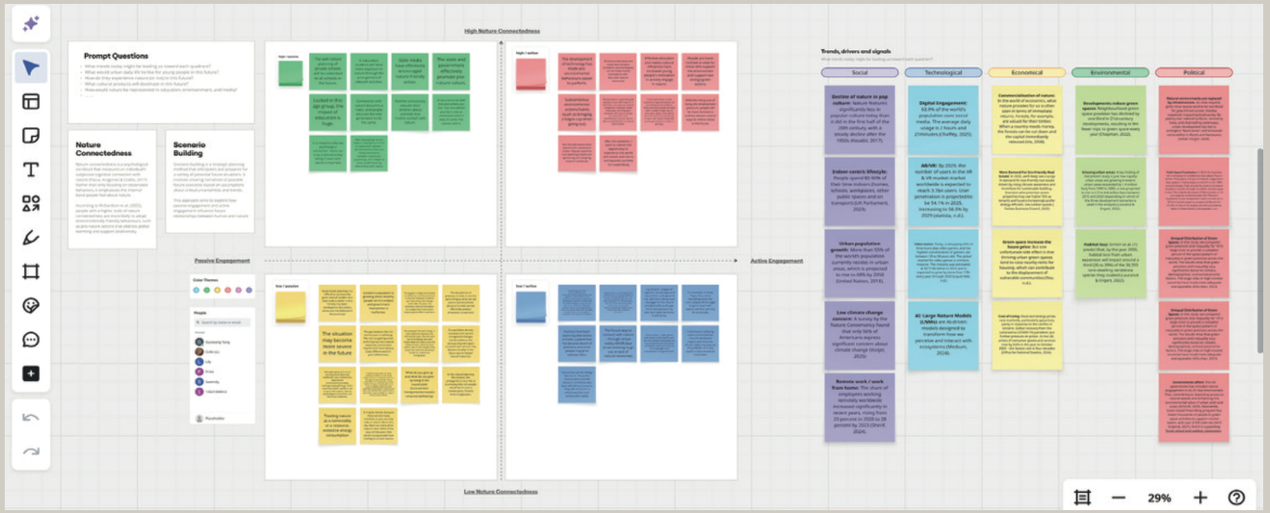




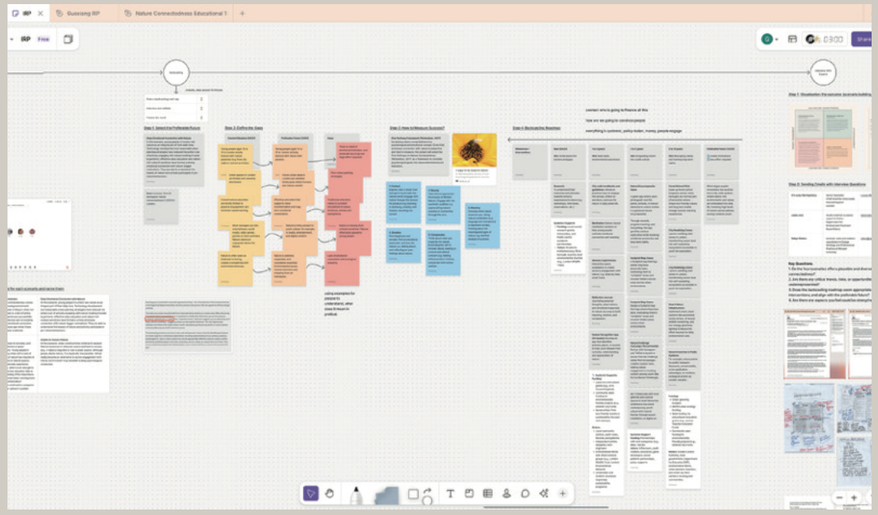


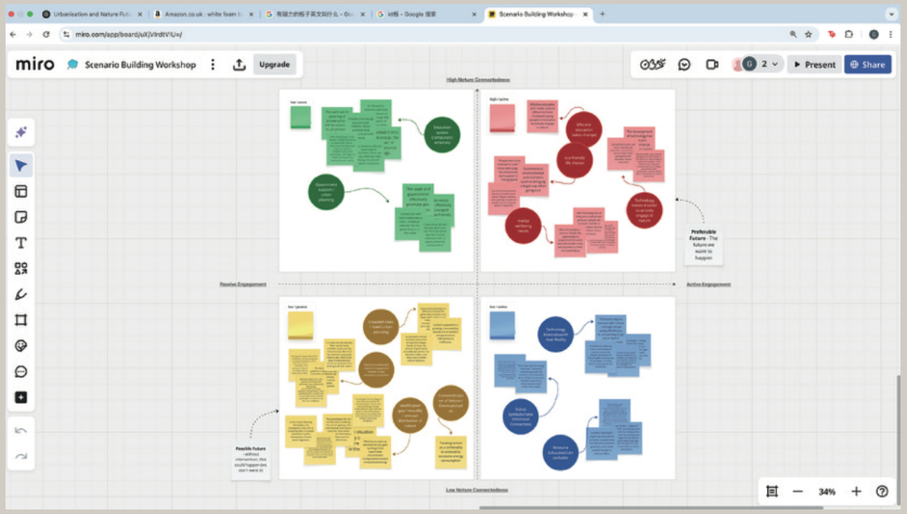


These screenshots captures the process of making sense of a large volume of fragmented qualitative data collected across multiple methods, including observation, design research toolkits, participatory scenario-building workshops, expert validation, and the backcasting process. This phase applys an open coding and thematic categorisation to uncover patterns and shared narratives across those methods.



Through grouping and keyword identifying, messy and fragmented data were restructured into cohesive insights. This enabled the integration of multi-layered perspectives, including personal memories of target audiences and expert foresight. This synthesis not only made sense of complexity, but also established a foundation for scenario construction and future-oriented strategy.





Final Scneario Building

PASSIVE ENGAGEMENT

HIGHT NATURE CONNECTEDNESS

System Drive High Nature Connectedness

2

In this scenario, adolescents' nature connectedness comes from passive engagement in their growing environment, such as mandatory activities in schools or living in cities rich in natural resources. Even though there is a lack of active engagement, rich nature-related experiences successfully form a subconscious emotional connection and co-existing habits. However, the risk is that this emotional connection may fade over time after the educational age (when there are no more natural activities they have to attend).

Transition Stage

The Disconnected Generation

1

Urban density continues to increase, and housing shortage and unequal distribution of green resources become increasingly severe. Young people in London are trapped in crowded, noisy cities with a lack of green spaces. The commodification of nature has resulted in the wealthy enjoying exclusive access to natural spaces. Normal young people can only experience nature in a limited public green belts, which is not enough to create emotional connections. Ineffective education fails to help teenagers develop an understanding of the importance of nature, which has made nature conservation nothing more than empty talk (only a few are concerned about environmental issues). Nature seems unattractive compared to other leisure activities and popular culture in London.

Deep Emotional Connection with Nature

3

In this scenario, young people in London see nature as an integral part of their daily lives. Technology development and reasonable urban planning strategies have reduced the action cost of actively engaging with nature (making it easier to perform); effective value education and nature-rich cultural narratives have formed a strong emotional connection with nature (bigger motivation). They are able to understand the beauty of nature and actively participate in pro-nature and eco-friendly behaviours.

If Current Trend Continues

Preferable Future

Unable to Access Nature

4

In this scenario, urban constructions continue to expand. Natural resources in cities are scarce and hard to access (e.g., it takes a long time to visit a green space). Although people desire nature, it is physically inaccessible. Virtual reality became an alternative to active engagement with nature, but it cannot truly establish a deep psychological connection.

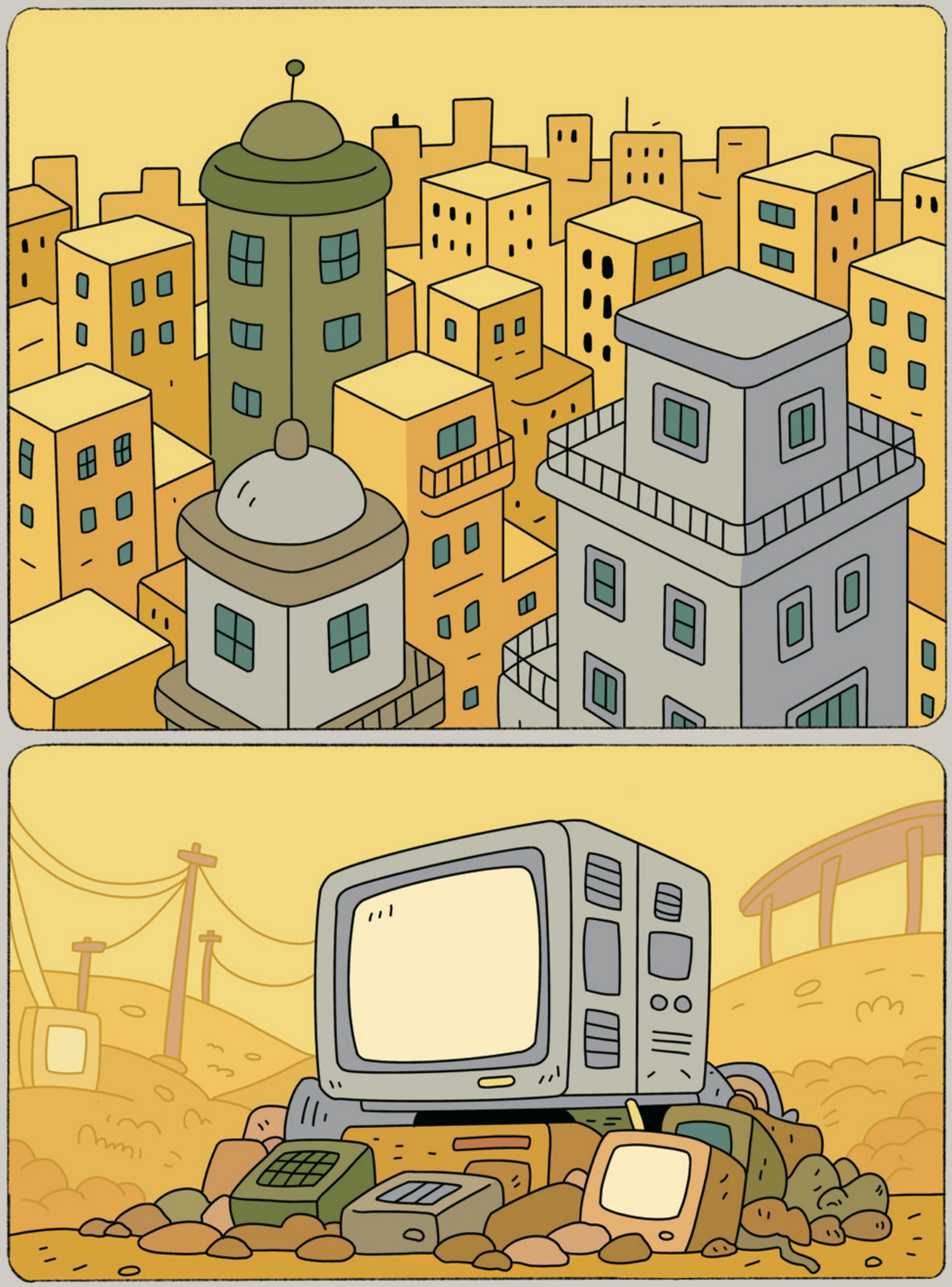
LOW NATURE CONNECTEDNESS

ACTIVE ENGAGEMENT

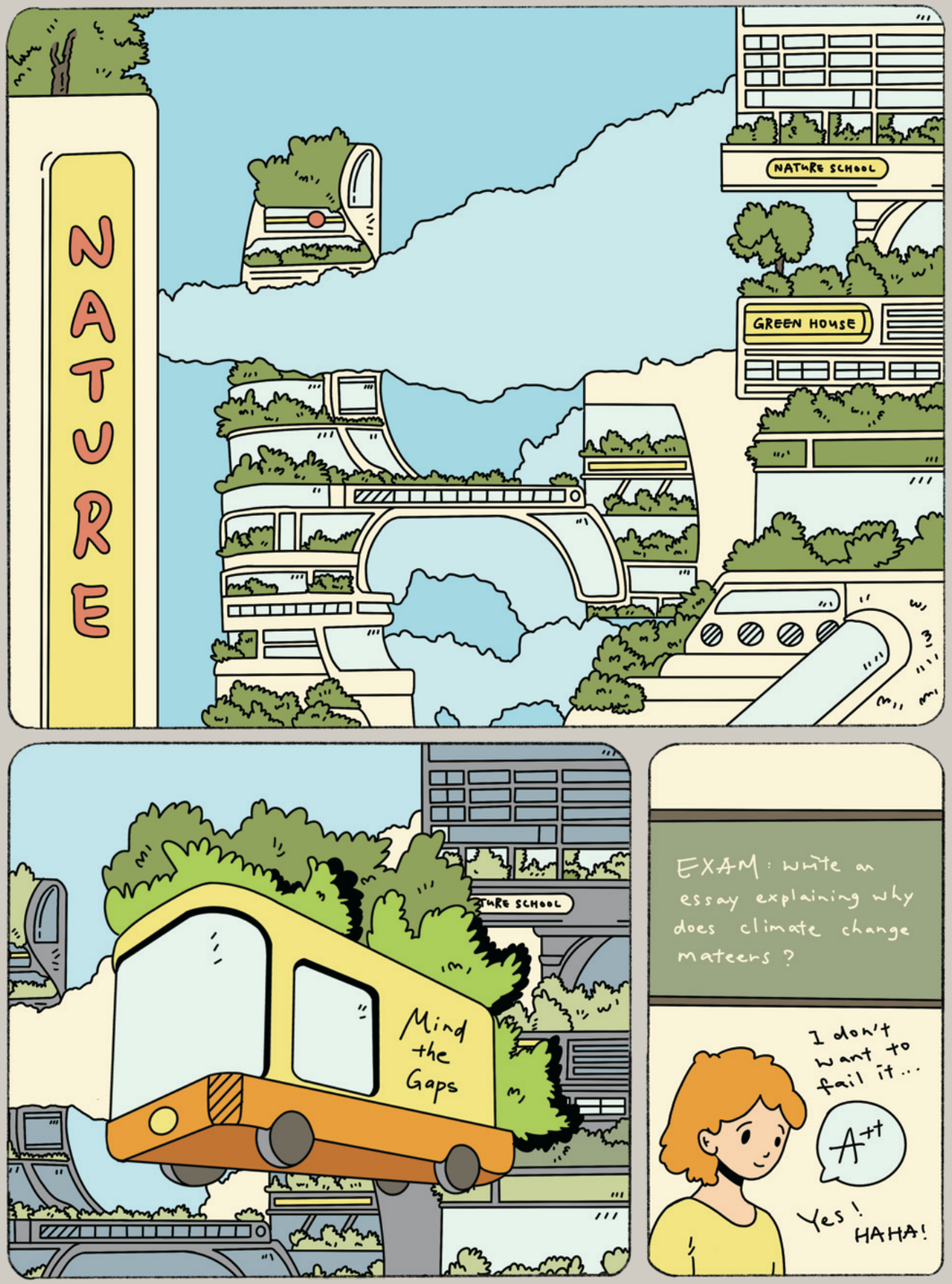
Scneario 01

The Disconnected Generation

Urban density continues to increase, housing shortage and unequal distribution of green resources become increasingly severe. Young people in London are trapped in crowded, noisy cities with a lack of green spaces. The commodification of nature has resulted in the wealthy enjoying exclusive access to natural spaces. Normal young people can only experience nature in a limited public green belts, which is not enough to create emotional connections. Ineffective education fails to help teenagers develop an understanding of the importance of nature, which has made nature conservation nothing more than empty talk. Nature seems unattractive compared to other leisure activities and popular culture in London.



Scneario 02



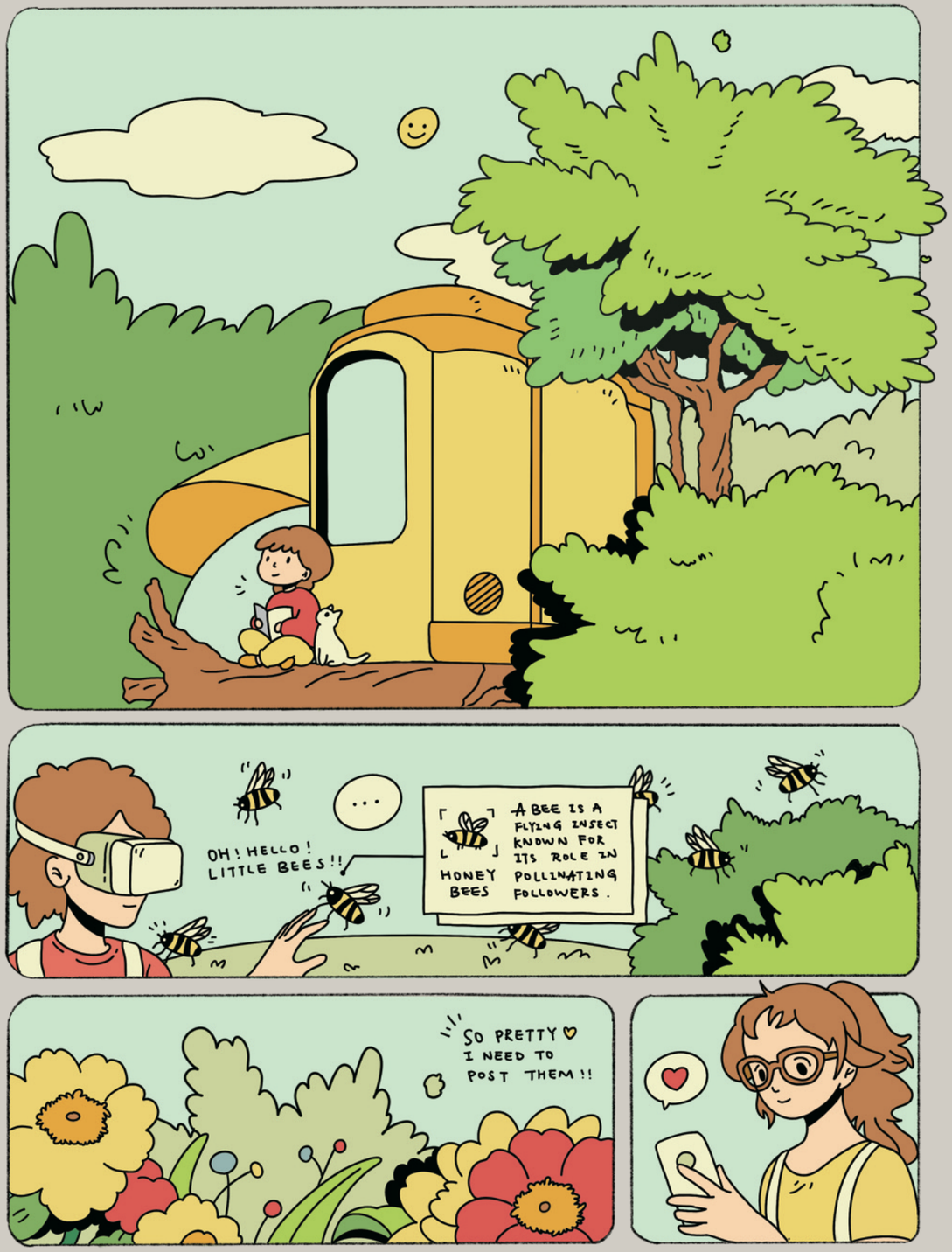
System Drive High Nature Connectedness

In this scenario, adolescents' nature connectedness comes from passive engagement in their growing environment, such as mandatory activities in schools or living in cities rich in natural resources. Even though there is a lack of active engagement, rich nature-related experiences successfully form a subconscious emotional connection and co-existing habits. However, the risk is that this emotional connection may fade over time after the educational age (when there are no more natural activities they have to attend).

Scneario 03

Deep Emotional Connection with Nature

In this scenario, young people in London see nature as an integral part of their daily lives. Technology development and reasonable urban planning strategies have reduced the action cost of actively engaging with nature (making it easier to perform); effective value education and nature-rich cultural narratives have formed a strong emotional connection with nature (bigger motivation). They are able to understand the beauty of nature and actively participate in pro-nature and eco-friendly behaviours.



Final Road Map

This co-created roadmap developed with experts and the target audience offers a strategic vision for how structured systemic change can increase nature connectedness among 13-15-year-olds in London.

INDIVIDUAL CHANGE | COLLECTIVE CHANGE | SYSTEMIC CHANGE

TODAY | 2025 | TRANSFORMATION | 2026-2034 | FUTURE | 2035

SCENARIO 1 | SCENARIO 1 → SCENARIO 2 → SCENARIO 3 | SCENARIO 3

STEP 1 CLARIFICATION

Understand the key barriers and gaps between today and the preferable future

Horizon Scanning

Identify long-term trends and systemic changes that impact nature connectedness of 13-15 residents in London.

Primary Research

Understand the life experiences, values, and emotional responses to nature of 13-15 residents in London.

Understanding Barriers and Gaps

Analyse the barriers and gaps that limit the target audience from building emotional connection with nature.

Leverage Points

Discover leverage points and potential opportunities for increasing nature connectedness.

Key Stakeholders

Researchers, universities, local council research grants

STEP 2 CURIOSITY

Create playful entry points in densely populated cities

Micro Greening Spots

Transform underutilized school spaces into small size green areas to increase everyday passive contact.

Social Media Campaign

Launch nature-themed challenges that encourage creative outdoor activities, making nature engagement a trending content among youth.

Reflective Nature Journal Assignments

Encourage students to keep personal journals capturing emotional and sensory experiences with nature.

Gamified Nature Experiences

Design playful activities that motivate teenagers to explore and interact with urban nature.

Key Stakeholders

Social media influencers, teachers, game developers

STEP 3 CONVERSION

Shift from individual participation to community co-creation

Pilot Forest Schools

Establish forest school pilots in the outskirts of the city. The curricula focuses on outdoor collaborative exploration.

Sensory Activation

Enhance sensory experiences in existing green spaces, encouraging observation, touch, and other emotional interactions with nature.

Participatory Nature Space Design

Use visual tools (such as maps, models, clay, AR drawings) to co-design public green spaces with teenagers.

Student-Led Nature Projects

Encourage student-led natural projects, such as school rooftop farms, plant exchange activities, etc.

Key Stakeholders

Students, schools, environmental NGOs, local communities

STEP 4 SYSTEMIC CHANGE

Embed nature connectedness into systemic change and cultural structures

Education System

Nature connectedness included in national and local education standards with dedicated funding

School Infrastructure Reform

All new schools required to provide accessible outdoor nature-based learning environments.

Evaluations Metrics

The Five Pathways to Nature Connection framework is adopted to assess ecological literacy of students.

Urban Planning Policy

Forest schools and co-design green spaces are integrated into city-wide urban planning frameworks to ensure equitable access to nature-based education

Key Stakeholders

Government, policy makers, urban planners

PREFERABLE FUTURE

Expand and Scale up

What began as pilot innovations has evolved into a city-wide system, where nature-rich environments and values are embedded into daily urban life. We have achieved a high level of nature connectedness among London's youth (13 to 15 years old).

Young people in London see nature as an integral part of their daily lives. Technology development and reasonable urban planning strategies have reduced the action cost of actively engaging with nature (making it easier to perform); effective value education and nature-rich cultural narratives have formed a strong emotional connection with nature (bigger motivation). They are able to understand the beauty of nature and actively participate in pro-nature and eco-friendly behaviours.

Discussion

This research aims to investigate how urbanisation is shaping the nature connectedness of London youth aged 13-15, and how design futures approaches might intervene. Across multiple methods, including observations, design research kits, participatory workshops, and expert validation, this study surfaced a series of interconnected insights.

A key finding is that adolescence represents a fragile yet formative stage in nature connectedness. As observed in public spaces and confirmed by youth reflections, this age group often loses early-childhood curiosity and has limited emotional motivation to engage with nature unless prompted by culture or social context. Barriers are not only physical, but emotional and symbolic. For example, some may describe nature as"boring"or"irrelevant," especially when compared to the fast-paced lifestyle and digital entertainment in urban life.

The design research kits highlighted that the lack of meaningful education results in low nature connectedness. Nature is often invisible in daily routines. Only when prompts encouraged them to reflect on emotion, beauty, or memory, did participants begin to express emotional connection. This revealed the critical role of cultural framing, emotional guiding and sensory experiences in building meaningful relationships with nature.

Further, the scenario-building workshop revealed that young people can imagine different relationships with nature, but their visions are often shaped by structural constraints such as unequal access, school policy, and social norms. Importantly, Dr. Robins' feedback reframed the scenarios not as isolated futures, but as a transitional pathway: The Disconnected Generation as the current state, System-Driven High Nature Connectedness as a transitional phase driven by institutional frameworks, and Deep Emotional Connection with Nature as the preferable future shaped by intrinsic motivation and cultural belonging.

Crucially, experts agreed that many of the initial interventions were not future-oriented enough. They recommended more ambitious and systemic thinking. For example, shifting long-term values by embedding nature into city-wide education systems, leveraging public infrastructure, and using storytelling. Several also encouraged focusing on small but meaningful opportunities, especially in dense urban environments. Even a tree in a schoolyard or a moment of guided reflection during class can become a spark for emotional connection, if designed well.

Finally, the backcasting process clarified the transition logic from present to preferable future. Guided by Robins' suggestion, the roadmap was structured into four developmental phases: Clarification, Curiosity, Conversion, and Systemic Change. Each aligned with measurable changes in both behaviour and perception. Richardson's Five Pathways to Nature Connection framework was used to evaluate intervention success.

Together, these insights formed a comprehensive foundation for a multi-scalar design futures strategy.

Acknowledgment

I would like to express my heartfelt thanks to my tutor Alessio Franconi. Throughout the process, he consistently challenged me to think more critically, design more systemically, and communicate more clearly. This project has been profoundly shaped by his mentorship, and I am deeply grateful for his professional guidance and critical feedback.

A special thank you goes to Robyn Robins. I first had the opportunity to learn from her during my undergraduate studies at Monash Univsersity. Her continued support during this project have greatly improved the logic of my final outcomes. I am sincerely grateful for her lasting impact on my career as a designer.

I would also like to thank Louise Montgomery and Lewis Just for generously sharing their time and expertise. Their valuable feedback on systems thinking, youth engagement, and futures transitions significantly contributed to the refinement of this project.

Finally, I would like to thank all the participants in design resaerch kits and sceanrio building workshop, who generously provided their personal experiences and creative ideas to this project.

This project would not have been possible without the insights, encouragement, and thoughtful critique from each of these individuals.

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This is just the begnining.