

Designing in a burning world:

*Reckon, repair, reimagine
sustainability*

Jonathan Hordvik Alvarez | Mary Baumann | David Benjamin
Martine Braathen | Jonas Giese | Ingrid Holsten | Lucas Martins
Sacha Paternotte | Paweetida Pila | Yngve Rasmussen
Esther Sigauke | Lars Jakob van der Hagen

DESIGNING IN A BURNING WORLD:
RECKON, REPAIR, REIMAGINE SUSTAINABILITY

70-403 - Rethinking Development and Sustainable Futures (Spring 2025)

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Foreword

What does it mean to be a designer when the world is on fire? With climate breakdown a time of reckoning is underway, a systemic unravelling of our conceptions of futurity, well-being, development and sustainability. These tensions reveal that the present and future are more bleak than ever. In the face of the colossal behemoth of change at hand, it is easy to feel that our voices and actions as individuals, designers and as people are insignificant, and yet, this is also a time for repair and regeneration. What you hold in your hands is a form of hope manifest by a cohort of earnest, motivated and dedicated students attempting to articulate their responses to the complex of our systemic hyper-crises, brewing their own concoctions of the radical imagination generating this anthology titled, Designing in a Burning World. This will be the ninth edition of an annual reader completely designed and produced by master students taking the elective course, Rethinking Development and Sustainable Futures (RDSF) at The Oslo School of Architecture and Design, (AHO).

Over nearly a decade, this course has deeply engaged students with a core focus on climate breakdown, global inequities, and conceptions of the future, as seen from their respective disciplines of design, architecture, urbanism and landscape. It offers a safe space for deep introspection and reflection through peer-to-peer engagements, situating an understanding of climate breakdown, its drivers, and repercussions in relation to how the students engage with their questions of development, sustainability and futures—from the situated-personal to the planetary-global. In this student-driven pedagogy, combining weekly discussions of 'staple' literature with their own explorations, they seriously engage with real world issues spanning a vibrant spectrum of topics, just as diverse and complex and enriching as the composition of the class.

We have seen these astute minds develop powerful reflections and challenges to the world that-is, to de-center its power across the various situated sites of struggle and energised to imagine a world that could-be otherwise, as represented by the three sections of the reader. In the first section of the reader titled, ***Unmasking the Present: On confronting the dominant logics of sustainability***, the authors attempt to critique their own fields of design, architecture, urbanism and landscape as they see it. They confront the dominant logics of sustainability manifest in the visible and invisible—from statistical fabulations, cultural challenges, to AI technologies and their hallucinations, to the infrastructures that climate make unjust, and to break from the weight of the world that is. In 'The Biggest Lie: How Statistics Obscure the Reality of Climate Change', Jonathan Hordvik Alvarez unpacks the complexity of how public literacy of statistics can both distort and inform climate discourses in the public arena. In The Conflict Between AI & Sustainability, Ingrid Holsten explores interaction design students' cultural resistance and avoidance around sustainability using technologies like AI. With Rethinking Sustainability in Product Design - Reflections from Milan Design Week, Paweetida Pila highlights the disconnect for an industrial designer between sustainable design ideals and actual product design practices witnessing the spectacle of mass consumption on a field trip. With The Role of Service Design in a Just and Sustainable Transition, Martine Braathen wraps up the section, framing her discipline of service design as a practice for long-term social and ecological transformation and argues that designers have agency—and a responsibility—to shape systemic change.

In the second section, ***De-centering Place and Power: On situated struggles, systemic exclusions, and decolonizing sustainability***, the authors look at the challenges of understanding the complex, place-based and situated sites of struggle that often exclude people and ecology, often obscuring the understanding of power relations within sustainability. Thus, we have Lucas Martins critiquing the extractive design processes in Arctic architecture in From Spectacle to Stewardship: Decolonizing Arctic Architectural Competitions through Sámi Collaboration in Norway and advocates for Indigenous co-design. In Urban Wildlife and the Future of Coexistence: Rethinking Cities as Shared Space, Lars Jakob Van Der Hagen asks how urban life can be reimagined where humans and wildlife are intertwined in good relations. Esther Sigauke further complexifies the challenges of climate resilience with questions of justice in Rethinking Water Resilience: Can Service Design Tools Address Systemic Injustice? by examining Cape Town's water crisis through the lens of racial injustice and infrastructure legacy. In Challenges for Environmental Planning in Norway: Mountain Farm Transhumance as a Potentially Valuable Case Study to Guide Sustainable Development in Rural Areas, David Benjamin investigates rural land loss and proposes culturally grounded planning alternatives for Norwegian rural landscapes that offer critical lessons for land area loss and climate challenges.

In the third and final section, ***Reclaiming Imagination and Agency: On radically reorienting social, ecological and collective futures***, the authors look at the possibilities of a new direction that reasserts that the sites of struggle for the imagination are entrenched from the personal to the political, historically conditioned in social systems like patriarchy, tempering dominant relations between human and non-human others, and

argue that another world is always simply hiding in plain sight. In This is not a women's issue, Sacha Paternotte crucially illustrates why feminism is not a woman's issue but rather exposes patriarchy to be a societal illness that is a major source of disparity and ecological destruction. In Removing Highway Blinders – Rethinking the Concept and Functions of Highway Systems, Yngve Rasmussen deftly challenges the underlying assumptions about highway infrastructure and its adjacent landscape, a space that is often overlooked or underutilized. Jonas Giese offers a deeply personal struggle of an industrial design student. With How Do I Design a Chair While the World is Burning? A Student Reality Check: The Struggle to Answer the Question of How Design Is (Not) Helping to Save the World, calling for a design education that prioritizes critical thinking and social responsibility. Finally, Mary Baumann offers a powerful and evocative jolt in Radical Imagination: A Personal Inquiry into the Future We Could Build, contrasting the oppressive dominant imaginaries of our times and ends with a manifesto for radical hope and care.

We hope that perhaps in our collective efforts to understand the profound challenges of the times we live in as students, future professionals, citizens and most of all as people, we might begin to change it. These critical student reflections expressed through their writing carry forward a possibility of radical hope and design practise in a society that desperately needs deep forms of repair, and how. Ultimately, these are attempts to leave the world better than we found it, for future generations, for non-human others, but also perhaps, simply because we can do the right things the right way. This reader is a testament to the struggles of what is at stake when one tries to have an active engagement with the world, as seen by these students who have a say in its future. These voices have emerged from a collaborative intellectual curiosity, which we believe is essential for their holistic education. It is with great pleasure that we invite you, dear reader, to explore this glimpse of the diverse ecologies of thought bubbling forth in these times of monocultures, to reclaim a new world that is already here, alive and breathing.

- Anders Ese, Jomy Joseph, Håkan Edeholt

Wan Chai, Hong Kong
Photograph by Joseph Chan

Unmasking the present:

On confronting the dominant logics of
sustainability

01



They studied dishonesty. Was their work a lie?

Source: Gideon Lewis-Kraus / The New Yorker (2023).

The Biggest Lie: How Statistics Obscure the Reality of Climate Change

Jonathan Hordvik Alvarez

No matter which field you work in or what your interests are, you have most certainly come across statistics which involve the analysis of data. People gravitate towards statistics because they are a visual tool to describe in a clear and simple manner, for example, how a complex series of numbers change over time. What might usually eat up a tedious page of text can be fit neatly into one table, or figure, image or number, which can be understood within seconds. Unfortunately, it is possible to use statistics to misrepresent the actual data, or to actually lie, and it is entirely possible that you have been lied to by statistics, even if you think that you are able to easily recognize the misinformation. A study done by Kings College London found that only 65% of the UK public believe that climate scientists agree on human-caused climate change.(KCL, 2022) This disagreement and uncertainty is clearly more prevalent than we may think, and it can be easy to blindly accept most statistics as truth: the findings of one study are often contradicted by many other studies. The reason why it is so easy to lie with statistics is because you may not be technically lying in the first place, but rather you are presenting the statistics in such a way that they demonstrate a particular “conclusion” without showing that other “conclusions” could have been produced on the basis of the same raw numbers. By using different strategies to analyze the data, different conclusions can be produced, and in a worst-case scenario, statistics can be used to intentionally manipulate the readers’ perceptions of reality. In this essay, we are not assuming that most analysts deliberately “lie” with statistics or even that most presentations of statistical findings are mistakenly incorrect. Rather, this essay will consider what it means to lie with statistics and some of the ways in which manipulation or misrepresentation can be accomplished. The accusation of “lying with statistics” is often directed at those who deny global warming. This essay does not assume that all or most such studies are dishonest, but given that some studies in this heated debate have been accused of “lying with statistics,” we will use this as our point of reference.

This essay will discuss how one might suspect that we all have been lied to about the climate crisis. It will also discuss multiple different statistical strategies that can be used to manipulate the readers’ perception of the reality of the climate crisis. In a worst-case scenario, whether you want to make something seem more or less urgent than it is in reality is up to you. The numbers do not matter – what matters

is what you want to tell the reader. If you are creative enough, you can determine what the numbers mean. Four key strategies that are particularly powerful when used correctly include the following: false perception, cherry-picking, poor sampling, and false correlation. The focus will be specifically tied to how this relates to the climate crisis, and how people can use statistics to lie, graphing a reality which does not always line up with the real world. Furthermore, it will explain how this is not only applicable to the general public, but that even professionals can be misled by inaccurate statistics. Whether you are trying to make the case that climate change doesn’t exist or that the world will end in ten years is up to you, but you need to know how to do it. Three key authors will also be incorporated into this discussion. Darrell Huff describes how to lie with statistics in his book *How to Lie with Statistics* (Huff 2023). Jason Hickel argues that climate statistics can create a false perception of who is responsible for the various aspects of the climate crisis (Hickel 2024). Finally, Hans Rosling further describes how statistics can be misleading in his TED Talk “The Best Stats You’ve Ever Seen” (Rosling 2007).

FALSE PERCEPTION

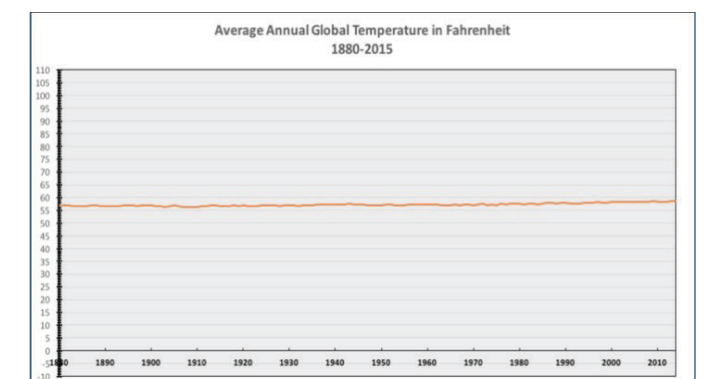


Figure 1. How to misrepresent global warming in one graph, for dummies. Source: Michael Halpern / Union of Concerned Scientists (2015).

The graph above shows the average global temperature over the past 135 years (Bump 2015). It also happens to be 100% accurate and truthful, but something nonetheless might seem a bit off. The reason for this is because something is in fact off, and it happens to be quite

easy to spot, namely the scale of the y-axis. When people think of manipulating statistics, it is easy to assume that this all has to do with how one literally alters the graph visually. Although there are many ways that this can be done (relative axis scales, moving the zero, etc.), this is only one of the key focuses of this essay, and it can all be considered together under the term “false perception.” In “How to Lie With Statistics,” Darrell Huff focuses on this strategy in the fifth chapter titled “The Gee-Whiz Graph” (Huff 2023). Statistics are a tool which is designed to help us better comprehend large sets of data. By creating a graph, one is able to visualize how the data is changing, which helps not only to understand it, but also to be able to remember it. Thanks to the power of visual tools, graphs can also be the perfect way to manipulate your statistics so that the reader will interpret them how you want them to be interpreted. Statistics can be used not to tell the reader the truth, but rather to tell the reader your truth.

So how is this actually done? There are two ways to easily manipulate a graph to make a conclusion look more significant than it may be in reality. The first way to do so is by changing the scale of one (or both) axis. This is what is done in the prior example, illustrating that by simply densifying the scale of one axis, it can appear as if the change is minimal. By compressing the y-axis so that it shows the temperature in increments of five, you can now have a much less steep curve across the full graph, making it appear as if the temperature is barely even increasing. Not only this, but by doing so it sets you up perfectly for the second step, which is to move the zero. Take for example the same graph showing the change of global temperature, only here the y-axis has been stretched to show it in increments of 0.1 degrees instead of five. If one were to graph this without moving the zero, it would still read as being a very significant change, but by moving zero to 50, not only are you now able to be much more efficient with space, but suddenly the increase in temperature is covering the full y-axis. Now this is a true crisis! Jason Hickel describes how false perception can create poor understanding of the global responsibility regarding the climate crisis in his paper titled “Quantifying National Responsibility for Climate Breakdown” (Hickel 2024). Hickel argues that it is inaccurate to only look at territorial emissions, because this completely ignores consumption-based emissions. In other words, it is not only countries such as China and India that are responsible for the climate crisis, but equally important are other countries that are heavily involved in global trade.

There are two things that we can learn from this. Firstly, these strategies can be used to both exaggerate reality and hide reality. A graph can be deliberately compressed, or it can be stretched out to fill the entire graph. This way, one can make a steep curve seem insignificant, potentially using this to hide climate change rather than exaggerating it. If you want to really trick the reader, you can even pick and choose which numbers you want to highlight (or specifically which numbers to omit). This can be used as a tool not only to make the graph appear as if it has in fact not been manipulated, but also to hide the numbers that hurt your case or perhaps highlight the numbers that support your case. This is a perfect tool to use in regard to the climate crisis, as it can easily make it appear that climate change is not real, if used correctly. You are the master of your statistics, and there is still much to learn about how you can lie even more effectively.

CHERRY PICKING

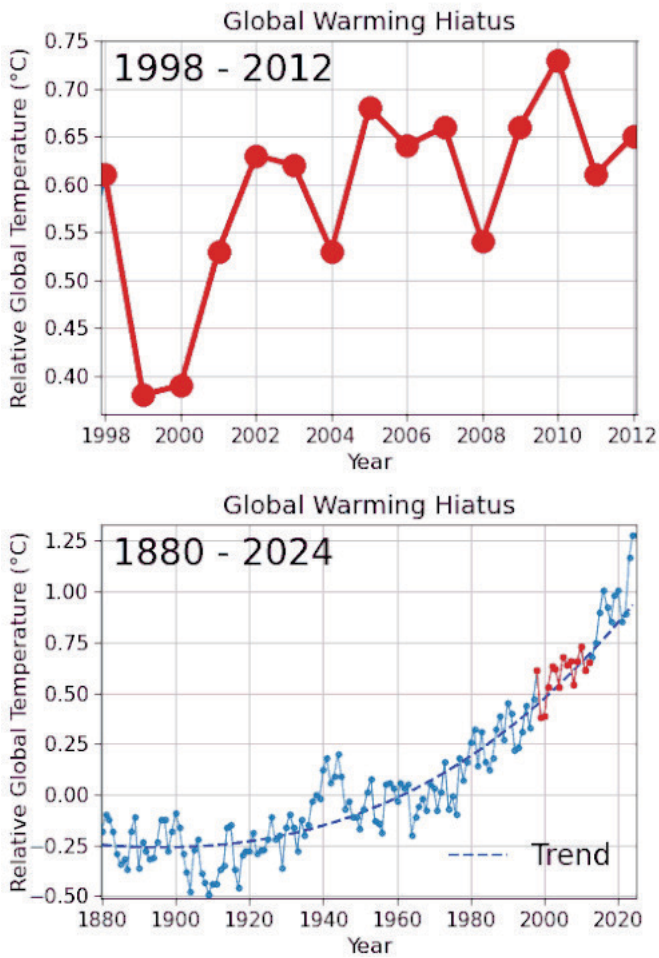


Figure 2. Global warming hiatus

Source: Wikipedia.

The second strategy to manipulate your statistics is by “cherry-picking” which numbers you even want to include. Take for instance the graph above. In the first image, it appears as if the global temperature is perhaps not increasing but might even be starting to slightly decrease. Moving onto the second graph below it, which puts the first one into a much larger timeline and context, it is clear the global trend does not follow this. This can be done with any statistics, as long as it doesn’t outright deny the existence of the larger global trend, but rather it ignores it. Huff makes it clear how prevalent this strategy is by the fact that all of the first three chapters in his book “How to Lie With Statistics” discuss this in some way, shape or form (Huff 2023). This is perhaps the easiest way to “lie” in your statistics, as you can simply keep what benefits you, and ignore what hurts your case.

Nonetheless, it is quite a bit more complex than this, so let’s dive deeper into the phenomenon of cherry-picking. The simplest way to cherry-pick is to do it in the same way as the example above describes, essentially picking what is beneficial for you to include and what can be ignored (or deliberately excluded). Although you are once again technically not providing any misinformation, this is obviously a problem. Take for instance an article describing a climate change protest that took place where police used violence. If they are on the protesters’ side, it may be beneficial to leave out the fact that the protesters physically attacked the police first, but this can of course be ignored since it hurts their case. Instead, by simply writing that the protesters were outside doing their thing, then the police physically attacked them, now the police immediately seem like the bad guys. The same can be done with statistics; simply leaving out whatever information might make your case less strong. This is also beneficial because you are being honest with your statistics, you just happen to

be, for example, leaving out some years and including others. Hans Rosling explains how even experts can be misled when statistics are cherry-picked, or rather how selective perspectives can easily distort our views of the world (Rosling 2007). He essentially describes it as “us and them,” explaining our associations between the western world and the Global South, and how much of it is inaccurate due to our own biases and perspectives. Cherry picking can come in many shapes and forms, making it difficult to always recognize it immediately. This is frequently relevant when talking about the climate crisis, in particular with graphs spanning over long periods of time. Climate crisis deniers might highlight previous ice ages, arguing that this is nothing new, while failing to recognize the thousands of years which have passed between the most recent ice age and the modern day.

This is not the only way to cherry-pick. Perhaps the most powerful way to cherry-pick is by picking which average you want to use. Let’s return to the graph above, stretching from 1900 to 2000 and notice that the temperatures really started to rise around 1970 but stayed quite consistent before this. If you were to take the median value between 1900 and 1920 versus the median value between 1900 and 2000 you would end up with a similar number, because the middle (median) would still be before the increase, yet you can still technically call this an average. Now imagine we instead took the median between 1950 and 2000. Huff focuses on this point in the second chapter titled “The Well-Chosen Average,” explaining how by deciding which average you use, you can see which alternative is more or less in your favor. Averages are generally calculated in three different ways. Mean is what most people think of when they think of an average, meaning to calculate the average number by dividing the total value by the amount individual numbers. The median on the other hand is much more dangerous to use, because this simply selects the number in the middle of a series of numbers sorted from lowest to highest value. If we tie this to climate change it is easy to see how powerful this can be. The final average is mode, meaning the number that occurs most often in the statistics. This one is perhaps even more dangerous, especially if you carefully decide which time period is most beneficial for you to refer to here.

POOR SAMPLING

False correlation and cherry-picking are perhaps the two most common ways to obscure reality through statistics, but these are far from the only ways to do it. Although these two strategies can be effective, they can often be easy to recognize, but this is not the case with every strategy of deceiving people through statistics. The US Department of Agriculture found that “U.S. Southwest ITRDB samples overestimate regional forest climate sensitivity by 41–59%” (Klesse 2018). The reason for this even happening in the first place was due to poor sampling, which is the third strategy that this essay will discuss. ITRDB trees had been consistently sampled in much warmer and drier locations, making the collection inaccurate to other parts of the world. Additionally, they were significantly older, something which only contributed to the problem. This is a case where even professionals were misled by statistics, because they did not consider how the original sample varied from their own.

Poor sampling is in many ways as simple as it sounds, but it is thus one of the most powerful ways to deceive the population about the climate crisis. It is particularly easy to be completely blind to this, even as a professional, because the actual statistics and numbers are in no way being altered or graphed differently than what might be the most obvious way to do it. Rather, only a very specific group or location has been sampled, while ignoring the rest of the statistics. If one does not acknowledge this, and how it might vary otherwise, it can be easy to take these statistics as a general fact. One can intentionally make

inaccurate conclusions from sampling only a very specific area. For example, if you argue that global temperatures are in fact not rising, you might choose to sample the temperatures from a specific city or region where this is in fact the case. Furthermore, you would ignore the fact that this is not consistent throughout the whole world, leaving out the fact that other parts of the world do not have to follow the same trend. Small samples can easily camouflage a larger reality, so when reading statistics, it is important to be aware of where or what specifically the numbers are referring to.

It is nonetheless important to note that all of these techniques can also be used to exaggerate specific statistics, rather than always hiding them. That is what makes statistics so much fun: you can decide exactly what you want the reader to believe. Of course, the further you push this, the easier it can become to spot it. If you are arguing against the climate crisis, you’d better do some research before graphing it. If you do in fact do this, hopefully you will observe that the entire world does not follow the same trends when it comes to increasing temperatures. By deciding which geographical regions to represent, you can simply ignore the rest of the world. This can become even more convincing if you select multiple different regions which happen to support your case, something which relates to the fourth and final strategy which this essay will discuss, namely false correlation.

FALSE CORRELATION

Finally, this essay will briefly discuss a strategy to obscure the reality of the climate crisis in perhaps the most manipulative way yet, namely false correlation. This strategy is discussed by Huff in the chapter titled “The Semi-Attached Figure,” describing how different variables can appear to somehow relate to each other (one being the cause of the other, or both having the same cause), when in reality they do in fact not relate to each other at all (Huff 2023). The reason why this tool is so powerful is because it can be extremely difficult to recognize, since you would need to do your own research to understand which numbers do in fact relate to each other. For the author of the statistics this is of course not actually necessary, because the goal is to make it appear as if they relate to one another, not taking into consideration if they actually do. One can simply observe that two different graphs follow the same trend and graph them together, making it appear as if they depend on one another, or that one is directly affected by the other. In other words, if we see that two variables move together, this does not all mean necessarily that one of them causes the other.

This is naturally perfect to use for the climate crisis, as it can create the illusion that there are additional causes to the climate crisis that are, in reality, irrelevant. This can be pushed even further by combining this strategy with other strategies for obscuring reality. For example, if you use false perception to manipulate one of the axes, it can match even better with a different graph, making it even more convincing. One can essentially create an even more misleading graph by implementing multiple different strategies of manipulation into the same graph. When this is done effectively, it is often easy to recognize one strategy (for example false perception) but not consider the fact that the statistics also have, for example, poor sampling.

CONCLUSION

This essay has discussed how our perception of the climate crisis can be distorted by statistics, and how they often hide reality. Four key strategies to do so have been discussed, namely false perception, cherry-picking, poor sampling, and false correlation, explaining how they are able to hide the climate crisis. This can make it seem more urgent than it actually is, but perhaps this is necessary to make up for the misinformation other statistics are providing. The author of the

statistics can potentially graph them however they want, as long as the numbers are not incorrect. You can leave out certain statistics, or format it in a misleading way, but this essay has also explained why one must be careful in doing this, as it can often be easy to identify. The more such strategies you are able to take advantage of and implement into your statistics, the easier it can become to “lie” without actually lying. So, what does this mean? The key takeaway is that statistics can be, and often are, very misleading. The more statistics we read, the more we can become familiar with these strategies of manipulating statistics and become able to identify them when they are present. The future is still uncertain in regard to the climate crisis, and misleading statistics certainly do not help our understanding of the situation. After reading this paper, hopefully you are able to interpret and understand statistics better, so that we can all have the same understanding of where the climate crisis lies.

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The Conflict between AI and Sustainability in Interaction Design: Personal Reflections on Mindset, Environmental Responsibility and Design Culture

Ingrid Holsten

We sat glued to our computers practicing our prompting skills. Why? To generate AI videos for a DJ gig at the school pub. Our task was simple: produce as many videos as quickly as possible. We used multiple websites simultaneously, constantly squeezing out new content and sending our computers into overdrive. Then, after 30 minutes, an hour, two, or even five hours, the AI website would pling, and there it was. A six second video of:

*A rainbow horse with sunglasses, dancing on top of a moving car/
A fluffy cat disappearing into a pink glitter background/
A Pushwagner painting coming to life in the middle of a disco club*

For an entire week, the whole class of 22 people engaged with AI video generation. A lot of the videos rendered unusable. We just kept going, site after site, prompt after prompt. Using up our free tokens on every single website, until we eventually had to buy a membership.

On the final day, I lifted my gaze from my laptop screen. “How many videos do you think we’ve made?” I asked my group. “At least a hundred. Maybe a hundred and fifty?” someone replied. I paused. “That’s crazy. Do you think that had an impact on the climate?”

The room turned silent. Heads lifted. A few glances exchanged. Then, one by one, we shrugged and turned back to our screens to continue our work.

Afterwards, I tried estimating our water usage for that week. If each group of four people had generated over 100 videos, then that totalled well over 500 videos. 500 videos where each video required 5 litres of water: that’s 2.500 litres of water. Meaning, the water consumption of generating these AI videos equalled the amount of water that serves 12 households for an entire day (United Nations n.d.).

The videos were displayed on a projector during the Thursday pub night, with few questions nor interest about the climate impact of the AI video generation session.

Looking back, it strikes me how quickly we all brushed off the climate aspect of our assignment. This reaction is not unfamiliar to me, but I

find it increasingly concerning, especially since artificial intelligence is becoming more prominent in digital design.

These feelings of concern awakened a curiosity within me, that serves as the inspiration for this personal essay. Through self-reflections and conversations with my fellow students I will try to understand why we rarely talk about sustainability and why caring too much can be uncomfortable. I will not provide any answers, but explore my own and my classmates’ mindsets, and the attitudes that appear when we are confronted with sustainability as a subject in interaction design. I also want to reflect on what could be causing the mindsets.

MY FEAR OF LOSING RELEVANCE

*“We are as gods and might as well get good at it”
(Brand, 1968).*

This quote was the first thing our guest lecturer Matt Webb shared with my class during a module on co-agency. It set the tone for the module immediately: to be bold, fearless and unapologetic. A kind of encouragement that is actually quite commonplace among my tutors. Our task was to create something in collaboration with AI, to explore, experiment and push boundaries in order to understand AI’s capabilities. I recognised that the quote was supposed to be understood in an empowering way. Although something about it felt unsettling, I decided to lean into this way of thinking.

For my project, my intention was to animate a storybook. Initially, I thought it would be pretty straightforward, but I quickly ran into problems. No matter how specific and detailed my prompts were, the animations would just not turn out right. One moment the characters were cute and childish, the next they would morph into uncanny and bizarre versions that looked like they belonged in a horror movie. The scenery would completely change from frame to frame, the characters would grow multiple heads, and random objects appeared out of nowhere.

After forty failed attempts, I still did not have the results I was looking for. That’s when it hit me. At this point I was well aware of the water consumption and energy required to generate these animations. The

guilt started creeping in, and I felt like I should probably stop generating and start considering other solutions. But the encouragement from earlier was echoing in the back of my mind.

I remember pausing, thinking that this might be defining for my work habits as a designer. In hindsight, the choice should have been easy. This was a one-week module; nobody expected perfection. In fact, it would have been a great opportunity to explore more sustainable ways of working. I could have stopped, but quicker than I’d like to admit, I clicked ‘generate’ again. And again. I kept convincing myself the next outcome would be the last. In the end, I had generated over 90 videos in total.

It’s embarrassing to write this out. To admit that I ignored my values by not designing consciously because I wanted to impress, to produce, to succeed. But I think this is an honest reflection of what many young designers might feel but won’t say: that in an industry where speed, innovation and chasing perfection is rewarded, prioritising sustainability can sometimes feel like falling behind. The experience made me realise something I hadn’t admitted to myself before. There is a tension between my values and my ambitions as a designer.

My biggest fear as a designer is that if I don’t keep up, I will lose my relevance and value in the interaction design industry. In times like these, when the field is full of uncertainty and landing a job is more difficult, this fear of falling behind or being replaced entirely is growing stronger. So, with artificial intelligence becoming more prominent, and technology developing at a faster pace, I feel a constant pressure to stay updated on new tools and macro trends.

After ignoring the environmental costs of my assignment without confrontation, it was easy to move on. My classmates had done the same, and the tutors seemed unbothered by the ethical concerns. In fact, they praised our explorations without ever acknowledging the negative climate impact of AI. I know our ignorance of environmental costs in this specific case may seem like a small droplet in a large bucket of water, yet it reflected my attitude when sustainability is conflicting with a design process. And it revealed how sustainability is often the first thing to be compromised when the urge to succeed is activated within us.

This reflection has stayed with me. I’ve come to see that this conflict between sustainability and innovation runs deeper than just my own experience. The pressure to keep up, to innovate, to impress, might be what’s causing many of us to look the other way in suitability contexts. And that genuinely worries me.

Looking back at the quote that inspired me earlier: “We are as gods, and might as well get good at it”, I feel unsettled. Designers do hold power, and our decisions do influence the future. But referring to ourselves as “gods” feels disconnected. It makes me question what mindset is being encouraged amongst designers. Are we valuing humans above nature by praising ourselves as gods? Am I guilty of participating in a culture that encourages me to overlook sustainable values?

I’m starting to suspect that my experiences and reflections are rooted in a bigger problem within the interaction design field, one that isn’t always spoken out loud.

THE CHALLENGE OF DISCUSSING THE TOPIC

After spending some time reflecting upon my own mindset towards sustainability in interaction design, I was quite surprised by how unaware I was of my behaviour not living up to my values of ethical

practice. This made me curious to explore the mindsets of the people I’m surrounded with during my studies. Do my classmates have similar attitudes or is it just me?

I decided to have a casual conversation about sustainability with my fellow students to explore the attitudes that appear. Since this subject is already something I don’t know enough about, I was quite nervous. Especially since I already had some experiences of my classmates playfully mocking me for taking courses in sustainability. When I explain what I’m working on, some of my classmates say they feel sorry for me. Apparently, it sounds dry, difficult and boring. I’ve previously just gone along with it and laughed it off, but this time I wanted to dive deeper into the topic.

I started by asking them if sustainability in interaction design was something they cared about at all. They all turned really quiet. “No, not too much” was the reply. I could already sense that this was a topic we wanted to steer away from because of the silence and lack of response. Still, I kept the conversation going and asked why.

“To be honest, I don’t really see the connection. The emissions are really specific for AI, but not for the other things we do.”

I tried answering with the little knowledge I have. I mentioned that the data centres that usually manage and store our digital work, for example in Figma, actually are responsible for a lot of the CO2 emissions. Back in 2015, data centres were estimated to account for around 2% of global carbon emissions, roughly the same as the entire airline industry (Bridle, 2018). But my classmates are right, AI is making the emissions from digital products and services worse. With the rising presence of AI, the data centres demand more energy. It’s causing big companies like Google and Microsoft to abandon their sustainability commitments. Since 2020, Microsoft’s emissions have risen by 29% instead of decreasing. According to the company, it’s mostly due to the emissions connected to data centres (Guidi et al. 2024).

Despite this, my classmates justified our AI use by explaining that a lot of the other software we use, like for example the Adobe applications, are mostly powered by your own computers, not connected to the data centres. That is true, but it’s also true that the plug-ins and fonts in those applications require data centres. I did recognise this mindset, a way of diminishing the issue by implying that it can be worse. I thought the immediate jump to downplaying the extent of digital emissions was interesting, because even though I was careful not to place blame or pointing fingers, my classmates repeatedly wanted to redirect our conversation towards other topics. They would even say it straight out:

“It’s not that we shouldn’t care about this, but I just feel like there are a lot of other sustainability issues that are so much worse.”

After doing some research, I think this rhetorical mechanism is often referred to as whataboutism. It involves shifting blame to stay unaccountable and downplay the importance of the current topic. This manner of communicating is common in the sustainability world and has become a big challenge because it results in people and even entire countries remaining passive in the fight to diminish environmental consequences (Kulin, 2024).

“CO2 emissions? That is not what you’re thinking about while you’re doing an assignment. Maybe if I’m buying a new MacBook, but while designing a website? You can’t focus on that stuff. You focus on the assignment itself, and then the emissions just happen on their own.”

When I asked my classmates to elaborate on this, they explained that sustainability in interaction design does not feel measurable. You can't really grasp the impact of the emissions you're causing. I think this is creating a psychological distance in the interaction design field that is quite comfortable. Noone is keeping you accountable for unsustainable choice's when the emissions are difficult to measure. I can definitely relate to this. I remember sustainability taking a much bigger place in my studies when I studied product design. And I definitely do care more about sustainability when it's more tactile, like for the clothes I wear or the products I buy. When you see the piles of garbage and the plastics in the ocean, you also see the physical consequences of being careless in your consumption practices. But in interaction design these consequences are less visible, maybe causing us to justify ignoring them.

If I choose to design unsustainably, it won't have any consequences for me".

After experiencing that my tutors will not question us when we're quite obviously overconsuming energy, like the case with my AI animations, and hearing that my classmates find it hard to measure the specific emissions and impacts of certain decisions, it's not surprising they say they don't fear any consequences for unsustainable actions. I'm not sure if this mindset is unique within the interaction design community though, or if this indifference mainly exists amongst Norwegians in general.

An EU study from 2022 studying citizens' attitudes toward sustainability across six European countries found that Norwegians expressed the least concern for climate change. Usually, Norwegians are pretty trustworthy towards researchers, but when it comes to science on sustainability, Norway turns out to be the most sceptical country (NTB 2022). Generally, there's a high level of Norwegian climate sceptics, which could also influence university culture.

THE BACKLASHES OF THE CONVERSATION

Even though insightful, this conversation on sustainability was really uncomfortable for me. In some way I felt like it created a distance between my fellow students and me. I was really aware not to shame or point fingers during this talk. In fact, I know way too little about the topic myself and naturally share some perspectives with my classmates. Still, it felt like by bringing up the subject and stating fact, they were immediately defending themselves against me. I actually felt the need to apologise several times during the talk, saying things like "Sorry, I'm not trying to be annoying, I'm just curious." and explaining that I have limited knowledge myself.

After this conversation, I got comments like "Are you going to colour your hair blue now?". I guess they were referring to a stereotypical, yet somewhat fictional character often depicted online: the woke environmentalist girls with the blue hair. Luckily, these classmates are good friends of mine and we can joke around without it being too serious. Still, I find it interesting that only bringing up the subject in a casual conversation was so difficult for me. I felt immediately close to being labelled as "one of those sustainable designers", the kind people worry might walk around like a rule-keeper.

CONCLUSION

To sum up this essay, I would like to reflect on this statement that came from one of my classmates during our conversation: *"CO2 is not something the human body is designed to care about"*. I think what he meant to say was that it's difficult to feel concerned when you are presented with abstract and large-scale numbers and facts, instead of the immediate and concrete consequences of your

decisions. But I find the phrasing really interesting because it also confirms some of my overall assumptions of the interaction design mindset: that we are ignoring the consequences of the systems we're embedded in, due to an essential lack of understanding their functioning. This while underestimating humans as part of nature and the interconnectedness between species, ecosystems and climate necessary for human life. If you think about it, isn't the human body almost solely designed to care about the environment surrounding it?

This may sound ironic coming from an interaction design student who is in practice mostly working on a screen, but the established interaction design mindset I experience in my university is arguably also the reason behind the screens. The everyday technology we are surrounded with today is not always connected to actual human needs. It is antisocial and often requires you to be inactive instead of moving your body, to look down at a mobile device instead of up into the skies.

Now, imagine an interaction designer that was always encouraged to stay truly connected with nature, and then add the possibilities we have with new technology emerging. I don't think they would keep designing for the same limiting formats we have today. I think they would design for humans to be connected, not separated from nature, and I don't think they would risk doing it unsustainably.

This is where I see potential in what our mindsets could become. And it brings me back to the "We are as gods and might as well get good at it" quote from earlier in the essay. When Matt Webb presented this quote, I took in the circumstances and my previous experiences and interpreted it in the sense that it was meant to inspire us. But after actually reading into Steward Brand, who is both a designer and a biologist, I realised that "We are as gods and might as well get good at it" does not mean what I thought it did. Brand is an environmentalist, and the quote is not intended to encourage putting designers above everything else. It's a quote about acknowledging our capabilities and using it ethically with responsibility and care for the world we are part of (Brand, 2009). And that is what I'm bringing into my future work as a designer.

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Rethinking Sustainability in Product Design: Reflections from Milan Design Week

Pawetida Pila

HOW IS SUSTAINABILITY DEFINED, AND WHAT IS ITS HISTORICAL CONTEXT?

The escalating global environmental crisis, characterized by climate change, resource depletion, and biodiversity loss, has firmly placed the concept of sustainability at the forefront of global discourse. Sustainable Development Is Inherently Ambiguous, the classic Brundtland definition as “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987) is intentionally broad since it doesn’t define what exactly needs to be sustained or developed.

What are the important historical influences? In the past, industrial development often prioritized economic prosperity, frequently at the cost of environmental and social issues, which have had lasting negative effects on ecosystems to this day. Key historical influences on design include, The Industrial Revolution, which led to mass production, standardization, and affordability for the masses. The Modern era of the 20th century, with movements such as Bauhaus, form follows function and minimalism, The Post-War Period, which saw the rise of consumerism, the widespread use of plastics, planned obsolescence designing products with limited lifespans, and the late 20th century to the present, marked by the environmental movement, an emphasis on sustainability, ecological awareness, and social responsibility. In the present digital age new materials and techniques along with global connectivity have transformed product life cycles and user interaction.

Product designers today often draw inspiration from history and integrate it with sustainable concepts that reflect contemporary values. For example, they incorporate historical design styles with modern sustainable materials, revive traditional manufacturing techniques to reduce environmental impact, and learn from past environmental mistakes, such as the plastic waste problem. Additionally, they adopt sustainable approaches from the past, such as designing products for durability and more. Despite the emergence of various current practices, industry professionals face complex challenges in integrating sustainability into their development strategies. Practical obstacles include designers’ ingrained attitudes and beliefs, economic pressures, regulatory limitations, and shifting social expectations and

demands. These factors make sustainable development in product design both essential and difficult to achieve.

RETHINKING PRIORITIES AT MILAN DESIGN WEEK

This paper was written during my time attending Milan Design Week—an international event that brings together designers from across the globe to exhibit products developed through innovative thinking, advanced technical solutions, and an emphasis on sustainability in contemporary product design. Through my observations, I noted that sustainability alone was not sufficient to attract attention or generate enthusiasm among audiences. Rather, the success of a product at such events often hinged on the effectiveness of marketing strategies, the methods of presentation, and the narrative constructed around the product. A compelling story, a visually impactful display, or an emotionally resonant message often proved just as critical.



Figure 2. A thousands of designers, architecture and investor at Salone de mobile.

Source: isaloniofficial.

This realization points to a broader conceptual challenge concerning consumer behavior. Despite growing societal awareness of environmental issues, many consumers continue to prioritize factors such as convenience, aesthetics, and affordability over considerations of sustainability. At Milan Design Week, it was frequently the case that visitors gravitated toward products that were visually striking, innovative in form, or aligned with current lifestyle trends and contemporary consumer preferences. Although human-centered design has long

been a driving force for innovation and consumer satisfaction, in their critique of conventional sustainability, (Rupprecht et al. 2020) argue that the dominant anthropocentric model inadequately addresses the complex interdependencies between humans and non-human species. Rooted in reductionism, the mainstream concept focused solely on human needs fails to account for the mutual reliance of all species for well-being (Rupprecht, 2020, p. 2). There's no denying that furniture production contributes to greenhouse gas emissions through deforestation, it also contributes additional emissions through manufacturing, finishing, packaging, and shipping (Huff, 2023). These observations highlight a persistent tension between sustainable design intentions and market realities.

DESIGN AND CAPITALISM

While walking through the vibrant streets of Brera during Milan Design Week, I was struck by the sight of a queue that stretched for hundreds of meters. Naturally intrigued, I assumed the installation at the end of the line must be something truly exceptional. Intrigued, I decided to join the crowd and see what all the excitement was about. After waiting patiently for over thirty minutes, I finally reached the entrance, what I found was bamboo bench and and set against green-painted walls. That was it. No interactive elements, no deeper narrative, no thought-provoking commentary. I couldn't help but ask myself was this what people had been waiting so long to see?



Figure 3. Bamboo chair at Milan design week
Source: Paweetida Pila.

However, there was a crowd enthusiastic and willing to wait. That realization led me to a more critical observation: perhaps the allure of the installation wasn't really about the design itself. Instead, it seemed to hinge on something else entirely branding, reputation, and the subtle yet powerful influence of capitalism. Event was hosted by a world renowned luxury brand. It became clear that the long line of visitors was drawn not by the actual content of the installation, but by the brand behind it. This experience made me reflect on how design is often mediated through the lens of consumerism and marketing. In today's world, the perceived value of design is frequently shaped not by innovation or function, but by brand identity and market positioning. Capitalism has the power to elevate the ordinary into the extraordinary, not by enhancing the design itself, but by altering the way it is framed and consumed.

This is a formidable challenge. It means rethinking success in the design industry. Perhaps success could be measured by impact (how well did this design improve lives or reduce harm?) rather than sheer sales numbers or media buzz. Some forward-thinking firms are experimenting with models like product-service systems (where consumers use products as a service, and companies maintain and re-use the products) or modular designs that can be updated over time. These approaches aim to decouple design innovation from

runaway consumption. Still, adopting them widely calls for nothing less than a cultural shift in how we value material goods and how companies profit from them.

THE CONTRADICTION BETWEEN DESIGN PRACTICES AND THE IDEALS OF SUSTAINABILITY

During my recent visit to Milan Design Week, I encountered an overwhelming variety of furniture designs – chairs, sofas, tables – all presented through diverse forms, materials, and design philosophies. As a design student, I was both excited and bewildered by the sheer volume of new products on display. On one hand, many pieces boasted intriguing narratives of sustainability; on the other hand, the very abundance of stuff felt at odds with the ethos of conservation. This internal conflict set the stage for a deeper reflection on how contemporary design practices often contradict the ideals of sustainability. In this essay, I weave personal observations with insights from design events, thinkers, and educational perspectives to critically examine this tension and what it means for designers and design students today.

Progress or Redundancy? Reinterpreting the Past Walking through hall after hall of new designs, I noticed something intriguing: quite a few pieces were not entirely “new” in the radical sense, but rather reinterpreted or updated versions of familiar designs. In some cases, designers openly drew inspiration from mid-century classics or even directly reissued past designs with slight modifications. This trend raises a critical question: when does iterative development in design count as progress, and when is it merely redundancy?

Innovation in design has never occurred in a vacuum – it's often an iterative evolution. Designers build on what came before, whether consciously paying homage or simply because certain forms work. However, in an age of urgent sustainability concerns, the practice of endlessly churning out new variants of old things deserves scrutiny. On one hand, reinterpreting existing designs can be seen as sustainable – why reinvent the wheel if a form is already optimal? Tweaking a classic design to use greener materials or to better suit today's needs could be a responsible path. On the other hand, continually reissuing designs (or making superficial changes to proven hits) could also be seen as a lack of true innovation, driven by the need to fuel consumption with something new, even if that newness is skin-deep.

Rethinking the Notion of “Progress” in Design. This reflection crystallized for me after attending a thought-provoking lecture by Wanjira Nga'nga, which questioned the very notion of “development” and “progress” that is often taken for granted. In her talk, Nga'nga challenged the assumption that development is a linear trajectory of constant growth and improvement. She urged us to consider: improvement for whom, improvement of what, and at what cost? Although her lecture was not specifically about furniture or Milan, its core message resonates deeply with the design industry's predicament.

In design education and professional discourse, we are inculcated with a forward-looking mindset. We are routinely encouraged to “develop” our ideas, to refine prototypes, to innovate endlessly. The underlying imperative is that we must keep moving – a project is never truly finished, it can always be better; a solution can always be updated as new technologies and trends emerge. On the surface, this drive for progress yields positive outcomes: better functionality, enhanced user experience, fresh aesthetics, and so on. It aligns with an entrepreneurial spirit that fuels startups and keeps established firms competitive. However, the lecture made me pause and wonder if we sometimes pursue innovation for its own sake, without questioning

the trajectory we're on. Are we solving real problems or just creating new consumer desires under the banner of innovation?

On the Oslo School of Architecture and Design website, which asserts: “This program reflects the emerging fields of design that respond to societal challenges, new technologies, and increased complexity.” (AHO, 2025) Such framing positions design as an inherently future oriented discipline. What counts as Progress? Critical Questions for the Future of Design. However, encountering a wide range of both new and reworked designs in Milan prompted a series of questions that challenge this dominant narrative. In a world already saturated with objects, what does it truly mean to design something new? How can we meaningfully differentiate between innovation and redundancy? Moreover, how might designers balance the drive for novelty with the pressing need for ecological sustainability and cultural sensitivity? These questions suggest a broader need to reassess the metrics by which progress is defined within the field.

Crucially, this line of inquiry also compels us to consider who holds the authority to define what constitutes progress. Is innovation always synonymous with improvement? Can reinterpretation or preservation be as valuable as disruption or invention? By engaging critically with these issues, designers and design scholars alike are invited to adopt a more nuanced and reflexive stance one that embraces complexity, questions assumptions, and recognizes the ethical implications of continual development.



Figure 4. Flowers blooming from a vase.

Source: Yu Nomura.

EMERGING PRACTICES AND CASE STUDIES

In Product Design and Sustainability: Strategies, Tools and Practice by Jane Penty explores a range of emerging practices and case studies that reflect a shift toward more regenerative, circular, and system-oriented approaches to product design. Central to this shift is the distinction between eco-efficiency, which focuses on doing more with less (e.g., using fewer resources and generating less waste), and eco-effectiveness, which aspires to eliminate waste and toxicity altogether through closed-loop systems inspired by nature (Penty, 2020, pp. 34–36) While eco-efficiency is more readily adopted due to its compatibility with existing business models and its measurable benefits, Penty emphasizes that long-term sustainability requires adopting the deeper principles of eco-effectiveness namely, cradle-to-cradle design, biomimicry, and regenerative systems thinking (Penty, 2020, p. 36)

A key strategy across both paradigms is lifecycle thinking, which entails evaluating the environmental impacts of a product from material sourcing through to disposal. Lifecycle assessments (LCAs) and environmental product declarations (EPDs) are becoming standard tools, particularly in the contract furniture sector, where manufacturers like Steelcase have shown that material production remains the largest contributor to emissions and environmental degradation (Penty, 2020)

In response, designers are encouraged to extend product lifespans through modularity, repairability, and upgradeability; to use renewable and non-toxic materials; and to design for disassembly and end-of-life recovery (pp. 266–267). The furniture industry serves as a focal point in the book for illustrating how these strategies can be implemented. For example, Axel Kufus's FNP shelving system exemplifies modularity and longevity, while Nucleo's Terra 2.0 chair is made from cardboard, soil, and seeds, offering a biodegradable alternative to traditional outdoor seating (Penty, 2020, p. 267)

Beyond environmental factors, Penty also discusses social and economic sustainability. Furniture and space-related products are deeply entwined with cultural identity, wellbeing, and social equity. As urbanization leads to smaller living spaces, designers are developing multi-functional and built-in furniture solutions to meet evolving user needs (Penty, 2020, p. 250). Socially sustainable design also involves creating products that support inclusive living and responsible consumption, such as speculative projects like Livin Studio's Fungi Mutarium, which transforms plastic waste into edible fungi (Penty, 2020 p.119). Jane Penty's text offers a comprehensive framework for rethinking product design not only as a technical discipline but also as a cultural and ethical practice. By embracing lifecycle thinking, circularity, and restorative design strategies, and by drawing inspiration from nature and society, designers are positioned to drive a more sustainable and equitable future. These examples and insights collectively argue that true sustainability is achieved not through incremental improvements alone, but through a redefinition of what products are and how they fit into broader systems of human and environmental wellbeing.

FUTURE DIRECTIONS

In Industries design textbooks I have frequently encountered, is articulated as follows, future directions in environmental product design emphasize circularity, material innovation, and emotional durability. Designers are shifting toward models that minimize waste, enable product repair and recycling, and utilize sustainable or biodegradable materials. Life Cycle Assessment Integration Quantitative sustainability metrics and life cycle assessments (LCAs) will be embedded into design processes to inform decisions and validate environmental benefits. Digital tools like life-cycle analysis and generative design are optimizing environmental performance from concept to production (Braungart & McDonough, 2009). Additionally, strategies that foster emotional attachment and product longevity contribute to sustainability by reducing consumption cycles (Chapman, 2005). Transparency and product lifecycle accountability are also becoming central to responsible product development.

In my opinion Kimmerer's approach in Braiding Sweetgrass is also quite interesting, that propose a model of environmental stewardship rooted in reciprocity and respect. Drawing from her Potawatomi heritage and her background as a botanist, Kimmerer emphasizes the value of seeing the natural world as a community of living beings rather than as resources to be exploited (Kimmerer, 2013, p. 9) However, collaboration among different sectors and perspectives can only happen when individuals are willing to engage in self-reflection. Therefore, even more important than the reflective attitude that an integrative worldview supports and cultivates is the reflective attitude itself that such a worldview promotes and nurtures. Becoming aware that the way we understand and relate to the world is embedded within a particular perspective can be both liberating and empowering. It can also foster humility and a deeper connection with others. This is because most people can see and experience for themselves that one's worldview can change over time.

CONCLUSION

This exploration of sustainability in product design traced through its historical context, industry case studies, and experiential insights from Milan Design Week reveals a nuanced, evolving discipline grappling with both opportunities and contradictions. While sustainability has become a central narrative in design, its implementation is often challenged by entrenched systems of capitalism, consumer culture, and dominant metrics of innovation that equate progress with novelty and market value.

Currently, as an industrial design student I found myself having to walk a complicated path. On one hand, there is growing awareness of environmental and social impacts. On the other hand, commercial viability and ecological responsibility still heavily influence design outcomes. The key point is that the definition of progress in design must be continuously reconsidered. Drawing from Jane Penty's framework and reflections inspired by Robin Wall Kimmerer, the future of sustainable design must embrace reciprocity, humility, and deeper ecological awareness.

Some things we know today, and others still await discovery in the realm of sustainability(Penty 2020). We question the notions of development or progress, which may not always mean creating or adding more, but might instead involve carefully revisiting and reflecting on what has happened in the past. Ultimately, sustainable design is not just about eco-efficiency or biomimicry it's about ethics, responsibility, and the role of the designer within society. While the world is entering a crisis, it's not just about being a talented designer, but also about being a good member of society.

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The Role of Service Design in a Just and Sustainable Transition

Martine Braathen

Whenever I scroll through social media or read the news, I see stories of natural disasters, growing inequality, and companies being exposed for pretending to be sustainable. They use words like “eco-friendly,” “green,” “net zero,” or “carbon neutral”, with no attempt to make fundamental changes. Each time, I ask myself: How did we get here, in a world where many call themselves service designers? If service designers help shape how systems work, then something must be wrong with how our services have been planned and delivered. So, what is the role of service design in this crisis? Do we have a duty to act?

I am a fourth-year service design student at the Oslo School of Architecture and Design (AHO). I have worked on different projects during my studies, from public services to private sector challenges. However, in most of them, sustainability was never the primary goal. It often felt like something outside the brief or too vague when I tried to bring it up. I began to question the values behind our design choices. Why is the planet left out if service design concerns people and fairness? Human life and nature are deeply connected; we cannot care for one without the other. As Robin Wall Kimmerer writes, “All flourishing is mutual” (Kimmerer 2015). If humans and nature are interconnected, then sustainability should not be treated as a bonus but as a need. I realised I had been taught to focus on users but not the systems around them, such as the energy they use, the waste they create, or the inequalities they face. It became clear that without thinking about sustainability, we risk creating services that are helpful now but harmful in the long run. As I reflected more, I began to see that service design should focus not only on short-term needs but also on supporting long-term needs. That means thinking about who benefits, who is left out, and what kind of future we are shaping. These questions have led me to explore Just Transition to bring justice and sustainability into the heart of design work.

Sustainability is a debated and evolving concept. It can be difficult to define because it means different things in different contexts and involves balancing environmental, social, and economic goals, often with trade-offs. In one article, Kuhlman and Farrington highlight this by discussing how economic growth in developing countries may increase energy use and emissions in the short term yet still be considered sustainable if it significantly improves social well-being.

This illustrates how the meaning of sustainability depends on how we weigh different priorities. It is also a concept that changes over time, as technology, values, and global conditions evolve, making it both complex to define and challenging to measure (Kuhlman and Farrington 2010).

Designit says service design is “developing, planning, and organising good experiences inspired by people’s needs. In this view, innovation means renewing or creating something that generates value for businesses, society, or citizens” (Kistorp 2018). This raises questions about whose needs and values are being served and who is being left out. Unlike product design, which focuses on materials and waste, service design avoids clear talk about sustainability. This may be because services are not physical. But they still shape behaviour and systems. These systems affect how people live, use resources, and adapt to change. This is where the idea of a Just Transition becomes relevant. A Just Transition calls for systemic change that is both fair and sustainable (Burrow and Smith 2017). Service design must move beyond short-term user needs and consider the long-term needs of both people and the planet. As Robin Wall Kimmerer reminds us, “What happens to one happens to us all. We can starve together or feast together.” (Kimmerer 2015). Therefore, if design is truly about meeting human needs, it must also care for the living systems supporting life. Service design, then, has a clear role in either helping or harming that balance. So, Just Transition comes in as a plan for moving toward a greener society fairly and equally. It supports action that recognises human-nature interconnectedness. This is not about new apps or better marketing. It is about real change that respects both people and the environment. In this text, I will explore how service design can support a Just Transition. I aim to show how service designers can help make fair, valid, long-term, and sustainable change.

JUST TRANSITION: WHY IT MATTERS

A Just Transition ensures the shift to a sustainable economy is fair and inclusive, protecting people, especially during climate and energy transitions. It focuses on safeguarding vulnerable groups and ensuring no one is left behind (United Nations 2023). The framework is based on four key principles:

1. Support for workers – Creating green jobs, retraining, and supporting transitions from high-emission sectors.
2. Stable communities – Investing in new sectors to protect livelihoods in regions dependent on fossil industries.
3. Social justice and equity – Prioritizing marginalised groups facing the most significant climate risks.
4. Inclusive decision-making – Involving workers, communities, and labour unions in shaping transition plans (ILO 2022; OECD 2022)

Service designers can help make these principles actionable by creating services that uphold dignity, access, and resilience. For example, the Just Transition Fund under the European Green Deal provides financial support, retraining, and investments in green sectors for coal-dependent regions (European Commission, n.d.). In Canada, national programs assist oil workers transitioning to renewable energy jobs (Canada 2023). However, large-scale policies need local implementation to create real change, where service design is crucial.

A concrete example is Helsinki’s Mobility as a Service (MaaS) initiative, which applies Just Transition principles by improving access to jobs, education, and sustainable transport. MaaS integrates different transport modes into a single app, making transport more accessible and strengthening community connections.

They mapped journeys, identified pain points, and collaborated with users, public agencies, and transport providers to co-create a system that addresses real needs. These methods were important because they made sure the system was built around real needs, not assumptions. The project became more practical and fairer by involving the people who use and rely on transport every day. The result is not just a transport app but also an example of how service design can help build inclusive, sustainable infrastructure. This case supports the Just Transition principle of community stability, illustrating that green change does not have to equate to loss; instead, it can serve as an opportunity to foster better, more connected lives. When designed effectively, public services can empower communities to adapt, thrive, and engage in shaping their futures (Penin 2018).

The MaaS initiative demonstrates that a Just Transition is closely linked to policy. Policies set the framework that makes transitions practical and fair for individuals. Design then facilitates turning these policies into real, usable solutions. Together, they support broader social and environmental goals. In the case of MaaS, these goals were met by improving access to sustainable transport. Public transport, bike-sharing, and other low-emission options were combined into one app, making it easier for people to choose greener ways to travel.

The Helsinki case demonstrates that the Just Transition is not solely about large-scale policy; it also involves thoughtful design. It reminds us that when services are created with care and participation, they can support individuals through change, strengthen communities, and align social needs with environmental goals. It also shows that this shift in behaviour supports cleaner cities and helps reduce the overall environmental impact of urban transport. This raises an important question: What specific role can service design play in advancing a Just Transition?

RETHINKING SERVICE DESIGN IN A JUST TRANSITION

Service design is particularly well-suited to Just Transition because

it emphasises people, inclusiveness, systems thinking, participation, and iteration- key aspects of ensuring a fair and equitable shift to a sustainable future. Its human-centred approach aligns closely with social justice, ensuring that the real needs of affected communities are understood and addressed. By prioritising co-creation, service design fosters inclusive decision-making, bringing together governments, businesses, workers, and communities to develop solutions collaboratively (Stickdorn and Schneider 2010; ILO 2022).

Breaking transitions into manageable steps through evidence and sequencing makes change more tangible and accessible. Additionally, service design is inherently iterative and adaptive, allowing for continuous feedback, testing, and refinement to ensure that solutions remain relevant and responsive to evolving needs. This iterative and adaptive nature is advantageous for sustainability, as it allows services to evolve alongside changing environmental conditions and societal needs, ensuring long-term relevance and impact.

By integrating Just Transition principles, service design offers a structured yet adaptable approach. It helps create inclusive, practical, and sustainable pathways that ensure no one is left behind.

HOW DO SERVICE DESIGN TOOLS AND METHODS ALIGN WITH JUST TRANSITION PRINCIPLES?

Service design possesses many qualities that align well with the principles of a Just Transition. It is inclusive, human-centred, systemic, and iterative. However, for service design to genuinely contribute to this transition, we must critically evaluate how we apply our discipline. It is not sufficient to use established methods on new challenges; we must reconsider the practice itself.

Through my studies and project involvement, I have observed that service design often enhances existing services within current systems. A Just Transition, however, requires more than mere system optimisation; we need to challenge and rethink these systems. We must shift from designing for users to designing with and for social change. This means involving those most affected by climate and economic changes as active participants and co-creators of decision-making.

We should also reconsider some of the tools we rely on. While journey mapping and personas can be useful, they may oversimplify complex realities and obscure power dynamics. What if we used power mapping to highlight influence and exclusion? What if we collected community stories instead of creating fictional personas? Prototyping shouldn’t just be about testing solutions; it can also be used to explore and visualize alternative futures. Rethinking service design, therefore, involves more than simply adding new tools. It requires a re-evaluation of what we design, who we design with, and why. To support a Just Transition, service design must evolve from being a tool for problem-solving to a practice that fosters democracy, power-sharing, and systemic change.

Service design methods naturally align with Just Transition principles, which prioritise inclusion, participation, and systemic change. For example, journey mapping can visualise the experiences of individuals and communities affected by transition processes, ensuring that their needs and challenges are acknowledged. The co-creation process involves governments, businesses, workers, and communities in collective decision-making, promoting equity (Stickdorn, Lawrence, and Schneider 2018). Break down complex systemic changes into actionable steps and provide a flexible framework for facilitating an inclusive and effective Just Transition.

WHAT RESPONSIBILITIES OR OPPORTUNITIES DOES THIS CREATE FOR DESIGNERS?

Users design with communities, especially those most affected by climate change and economic shifts (Stickdon, Lawrence, and Schneider 2018). This approach ensures that solutions are inclusive, participatory, and responsive to real-world needs. Rather than merely enhancing existing services, designers can be crucial in envisioning and creating new services that support green jobs, social equity, and sustainable systems (see fig 1). By applying service design tools such as stakeholder co-creation and prototyping, designers can help shape transition processes that are fair, just, and equitable. Designers increasingly act as facilitators of social innovation, enabling communities, especially at the grassroots level, to lead their own sustainable transformations (Manzini 2015).

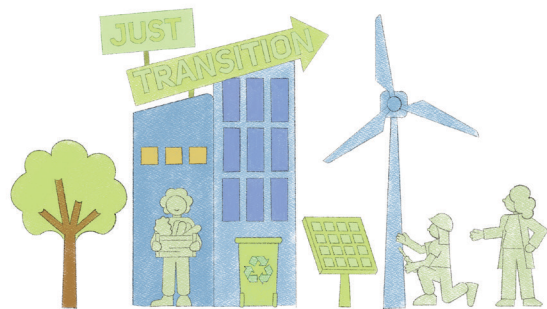


Figure 1. Just Transition-supporting green jobs, social equity, and sustainable systems.
Source: Author notes.

Additionally, service design encourages raising critical and challenging questions: Who benefits from this service? Who is left out? How does it impact the environment now and in the future? These questions ensure that services are efficient, ethical, and environmentally responsible. Creating dialogue tools further empowers communities to express their concerns and collaboratively shape solutions (Stickdon et al. 2018).

Service design must also centre the voices of those historically marginalised. This challenges dominant power structures within traditional design and ensures that equity and inclusion are not afterthoughts, but central to the design process (Costanza-Chock 2020). By adhering to the principles of Just Transition, sustainability, equity, participation, and economic resilience, service design establishes a framework for meaningful change. It ensures that designers are not merely problem-solvers but facilitators of systemic transformation that benefits individuals and the planet.

CONCLUSION

Service design has the potential to support a Just Transition by offering more than tools for improvement. It provides a mindset that can help shape fairer and more sustainable futures. Focusing on people, systems, and participation can translate complex policies into meaningful, everyday change.

As this paper has shown, designers are responsible for looking beyond convenience and efficiency. We must ask critical questions: Who is included? Who is left out? What are the long-term impacts? Just Transition invites us to design not only better services, but better systems, ones that support green jobs, equity, and environmental care (see figure 1).

To do this, we need to challenge our own methods. While useful, tools

like personas and journey maps may not fully capture power dynamics or lived realities. New approaches, like power mapping or storytelling, can help us co-create with communities instead of designing for them.

Service design is most impactful when it bridges strategy and lived experience and when it's used in collaboration with other disciplines. Its strength lies in making systemic change feel tangible and inclusive.

Ultimately, service design is not neutral. If we choose to, we can use it to support justice, sustainability, and long-term thinking, not just to fix problems but to reimagine a better future.

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Aerial view of city buildings during night time
Photograph by Elton Sa

De-centering place and power:

On situated struggles, systemic exclusions,
and decolonising sustainability

02

From Spectacle to Stewardship: Decolonizing Arctic Architectural Competitions through Sámi Collaboration in Norway

Lucas Martins

There is an ever-growing catalogue of design competitions focusing on the Arctic as a playground for experimental architecture. Whilst these competitions claim to advance sustainability and showcase innovative technical solutions, their true environmental and ethical implications remain distinctly underexamined. Although typically showcasing radical design interventions suited for extreme climate conditions, many competition entries seemingly undermine essential local Indigenous perspectives. This paper challenges how Arctic architectural competitions overlook Indigenous perspectives and seeks to provide methods for how they might be reimagined to better serve the Arctic communities they are based in. This text will explore the historical context and adaptation of Arctic architectural competitions in post-war Norway, examining two major competitions within the last five years. This comparison will act as a review, defining what constitutes Arctic architecture and reflecting on decolonial and Indigenous frameworks. It will examine the disconnect between competition criteria and the inclusion of Indigenous voices. Arguing that without meaningful Indigenous participation, these competitions risk being more exploitative than innovative. Through an interdisciplinary analysis of existing literature, articles and competition briefs, this paper provides insight into alternative approaches that integrate cultural sustainability with architectural practice. Ultimately, it highlights the mismatch between technical requirements and the importance of Sámi involvement in Sámi territorial architecture competitions in decision-making, planning and local involvement. In efforts to establish a more inclusive model for Arctic competition criteria– one that not only integrates Indigenous knowledge and participation but envisions them as essential in shaping more sustainable and progressive futures in design.

ARCTIC ARCHITECTURAL COMPETITIONS IN NORTHERN NORWAY – A BRIEF HISTORY

For all purposes of this essay, a historical review of urbanism in the Arctic from a European perspective will be conducted, focusing on development that began in the 20th century. The evident and clear presence of the over 80,000 Sámi in this region cannot be overlooked (“The Sami” 2025), however, this leads to a vast and deeply rich history beyond the scope of this text. While the argument proposes the importance of Sámi presence in the decision-making

process of competition submissions, this section covers the brief history of architectural competitions that began in the south of Europe comparatively. In 1902, iron ore was discovered in Kirkenes, a small northern Norwegian settlement on the Finnish and Russian borders (Espiritu, Rø, and Røyseland 2009), which led to a mineral extraction conflict between the neighbouring countries that persisted through both world wars. In WWII, northern Norwegian settlements were occupied by Nazi Germany, many of which suffered material damages but were also utilized for their advantageous geographical position (Espiritu, Rø, and Røyseland 2009). Following the end of the war, architectural competitions were implemented to rebuild the cities that were decimated. Not only in the reconstruction of everyday infrastructures but also as an opportunity to conceive more innovative design concepts. This rebuilding was crucial as it allowed the nation to showcase its identity in the modernist architectural proposals that followed. In 1968, British-Swedish architect Ralph Erskine advocated for development tailored to these areas, creating various settlement design concepts that emphasized adaptability and sustainability (Hemmersam 2016). In the decades that followed there arose some of the most influential architectural works of modern times, as technology and materials improved. Today, architecture competitions are globally accepted and used as one of the most efficient ways to generate concepts for new ideas, publicize innovative thinking, and formulate discussions on futuristic design methods within built environments. They are a powerful tool that seeks to challenge students and professionals alike, uncovering some of the most skilled participants for any given design task (Buildner 2025a). Architectural competitions subsequently shifted their focus North to explore prospective future settlements amidst a changing climate.

ARCTIC ARCHITECTURE COMPETITIONS: CLIMATE CHALLENGES & CULTURAL SENSITIVITIES

Today, architectural competitions are diverse, not only encompassing experimental infrastructure solutions but also addressing sustainability, climate change, regionalism, and cultural/social equality. Modern competition briefs seek to encourage multidisciplinary participation and the use of innovative technologies to foster creative and exploratory ideas for future architectural projects and development.

The Arctic has become a testing facility for many of these ideas due to its shifting landscape (Buildner 2025b). The warming of previously frozen landscapes has unlocked new territory for urban development and mining possibilities. This region is characterized by extremely cold temperatures and challenges including structural problems, costly materials, limitations on resources, transportation and logistics. Furthermore, the great vastness of the Arctic offers attractive landscapes for experimental design. For many speculative competitions, it is an ideal location to understand ongoing climatic struggles and to uncover the optimal needs and requirements of the various people living and working in extreme Polar environments (Bannova 2016). With everchanging conditions and booming trends in industry and demographics, the Arctic has become essential to respond to these changes through design and planning initiatives. One such method was the introduction of Arctic architecture competitions that allowed for global involvement in hopes of finding answers to challenges such as population growth, a warming climate, and costly living standards. While many of these competitions seek to incorporate essential cultural aspects into their design work, the topic is rather sensitive. In the context of Norway, a preliminary review of publicly accessible information on Arctic design competitions suggests that there is a notable lack of Indigenous Sámi representation and participation in jury and decision-making roles. The question becomes, is the Sámi perspective being adequately accounted for in Arctic projects done by designers with no relation to the land?

THE CENTRAL DEBATE – BALANCING TECHNICAL INNOVATION WITH INDIGENOUS CONSIDERATION

To answer this question, it is important to understand the implications of modern competition briefs. This study will explore two recent Arctic architectural competitions in Norway from the last few years:

The Whale by Dorte Mandrup, Andenes, Norway

Beaivváš Sámi Našunálateáhter by Snøhetta/
Joar Nango, Kautokeino, Norway

Both of these have a great deal in common but differ in the level of Indigenous collaboration that is present. It is important to recognize that architecture competitions in themselves, are inherently unethical because unpaid proposals drive offices to cut corners, forcing them to underperform. Professionals should be paid for generating innovative ideas and when firms allot less hours to this type of work, they cannot properly consider local participation. Therefore, before a deeper analysis is conducted in Section II, this chapter will cover the apparent difficulty in balancing technical innovation with local Indigenous perspectives.

TECHNICAL REQUIREMENTS

The technical requirements often prioritized in competitions frequently overlook the more societal and cultural challenges that need to be addressed. As will be shown in the examples listed above, the ways in which a competition brief is organized and promoted have major repercussions on the innate sensitivity and cultural awareness of the competition process and the given project. This is because, without proper considerations, a brief will be constructed without thinking beyond that which is technical. In competitions entered by large international firms, for instance, the societal and cultural dimensions of a project may not always receive adequate attention. Often, the focus is more directed at engineering feats, construction methods, and material costs. This leaves little space for Indigenous perspectives beyond their reduction to minor artistic interventions.

However, by redefining the value placed on technical requirements in a competition brief, more focus can be given to local voices.

INDIGENOUS CONSIDERATION

While it is necessary to implement safe technical requirements on experimental architectural projects, it is equally as important to address Indigenous considerations for work done in Indigenous territories. 80% of all global biodiversity is found within Indigenous territories, meaning that inclusive partnership with Indigenous groups, such as the Sámi, is nearly impossible to live without (Moola 2022). To necessitate that upcoming Arctic architectural projects conserve northern environments and protect the biodiversity of the area, it is crucial to trust in Indigenous leadership and create models that better reflect their connection to the land. There is evidence stating that ecosystems tend to thrive more effectively when Indigenous groups can continue living and contributing to projects on their customary lands (Moola 2022). A great example of one Indigenous framework is the concept of Two-Eyed Seeing by Mi'kmaq Elder Albert Marshall. This method outlines the ability to see from one eye with Indigenous knowledge and the other with Western knowledge, and by viewing with both eyes together, it benefits all (Peltier 2018). If a more unified balance between the Western technical requirements can be incorporated with the practices and beliefs of Indigenous knowledge, architectural competitions will more effectively integrate sustainable partnerships and nurture environmental restoration.

In many cases, architectural competitions positioned in the Arctic are led by foreign design firms imposing their own country's identity and practices. Meanwhile, only a small number of local residents possess the skill to lead design projects (De Jonghe 2022). When smaller nations have fewer design resources, this unintentionally encourages the invasion of foreign architectural aid, when in reality there are plenty of traditional methods being ignored. It is necessary to create a solid participatory approach to the design process that allows local Indigenous groups, such as the Sámi, to achieve objectives native to them. This therefore encourages that communities can engage more deeply with their surrounding context, allowing for a truly collaborative process that recognizes otherwise excluded groups in decision-making (De Jonghe 2022). Emerging architectural competitions seek to produce inventive strategies to combat the changes happening in these remote landscapes. However, the exploration of cultural contexts to support local communities is often missing during the planning process (De Jonghe 2022). By improving the amount of inclusivity and consideration that is given to local groups, projects can develop with improved Indigenous connectivity, transitioning from foreign design influences to designs more closely linked to traditional Sámi life.

COMPARING THE WINNERS – TWO CASES FROM ARCTIC NORWAY

Within the last few years, there have been many imaginative entries for architectural competitions in Northern Norway. To better emphasize the gap between projects that either include or exclude Indigenous involvement, two examples were chosen. Beginning with one project where Indigenous presence is seemingly unrepresented or nonexistent within the competition brief:

THE WHALE, DORTE MANDRUP, ANDENES, NORWAY

As per the description from the winning firm, Dorte Mandrup A/S:

“300 km North of the Arctic Circle, on the tip of the island of Andøya, lies Andenes. A small town located amid dramatic landscapes – both above and below the ocean’s surface. Just a few sea miles from shore a deep-sea valley unfolds. It is frequently visited by migrating whales, making Andenes one of the best places in the world to see this fabled animal up close. The new Arctic attraction, The Whale, tells the story of the big inhabitants of this underwater world” (“The Whale, Norway | Dorte Mandrup” 2025).



Figure 1. The Whale, 2020

Source: Dorte Mandrup A/S.

A creative endeavour, The Whale was awarded to Dorte Mandrup A/S in 2019. Set to open in June 2027, it is a highly anticipated upcoming attraction in Northern Norway which hopes to welcome an estimated 100,000 visitors annually (“Competition Brief - The Whale” 2020). Benn Eidissen, Chairman of the Board for The Whale A/S states that the aim is to become a world-class attraction; combining architecture with the highest standards of displays, exhibitions, and knowledge (“Competition Brief - The Whale” 2020). While dramatic and inspirational in the promotion of Northern Norway, this project was chosen because it seemingly omits any information about Indigenous involvement, even though it may still be extremely beneficial to the local communities’ economy. Further analysis of the project brief and firm websites indicates that there is engagement with local communities through workshops and feedback sessions, both in architecture and content development (“Competition Brief - The Whale” 2020). Even though it emphasizes local involvement, there is no clear reference to Sámi, the Indigenous group that traditionally inhabits Andenes. This exhibits a missed opportunity for cultural inclusion and a meaningful collaborative process. It is important to address that the project was developed with the local municipality and while it frames itself as an unforgettable and extraordinary experience, it is interesting to note its exclusion of Indigenous voices. This type of selective storytelling amplifies the narrative of “green colonialism” which in this case, leaves out how Sámi have been stripped of their rights by Southern organizations meant to steward the environment (Earth.Org 2021). Kyle Whyte, an Indigenous environmental scholar states that “this enacts an oppressive violence against Indigenous peoples across the spectrum of political views and leanings. In the case of climate justice, settler colonialism is established by the views and actions of those exploiting them” (Whyte 2018).

Whilst it is clear that the attraction is whales, it is unjustified to not acknowledge the Sámi and their traditional history as hunters in the local area. This gives the impression that the land is empty, a place of neutrality to be developed and exploited as mappable, consumable

territory ripe for economic exploitation (Hemmersam and Kampevoll Larsen 2018). Under the same pretense, this reflects how colonizers displaced Indigenous communities in the Americas. The competition’s project brief incorporates an extensive amount of functional and technical requirements, regulations and background, but perpetuates a much larger issue of ostracizing Indigenous involvement. This lack of coordination reads as part of a pattern where high-profile architectural projects overlook Indigenous stewardship. Of the many jury members involved in the decision-making process of The Whale, none of them seem to be of Sámi descent. It is perfectly acceptable for a project of this magnitude to strive for innovation, and it may very well achieve and exceed the expected 100,000 visitors. However, it remains a blatant reminder of continued colonialism that deliberately undermines the many knowledgeable and skillful Sámi Peoples that could be included in decision-making and architectural efforts. To achieve a harmonious congruence between contemporary design beliefs and traditional Northern heritage, it is unacceptable to dismiss the mention or publicized involvement of the local people. To continue this trend is to continue a century-old struggle for acknowledgement, acceptance, and cultural identity. When a project such as The Whale is being commissioned in Norway, a country recognized for its acceptance of Sámi ways of life, this is simply not good enough.

BEAIVVÁŠ SÁMI NAŠUNÁLATEÁHTER, SNØHETTA/JOAR NANGO, KAUTOKEINO, NORWAY

As described on the website of the internationally recognized Norwegian architectural firm, Snøhetta:

“The Sámi National Theater Beaivváš and Sámi High School and Reindeer Husbandry School are two important cultural institutions of Sápmi – the cultural region traditionally inhabited by the Sámi people. The creation of a co-location to a shared cultural and educational facility has been initiated. In June 2021, the architectural proposal by Snøhetta, Econor, 70°N arkitektur and artist Joar Nango, Čoarvemáttá, was chosen as the winning entry for the New Sámi National Theater and Sámi High School and Reindeer Husbandry School (“Čoarvemáttá” 2025).”

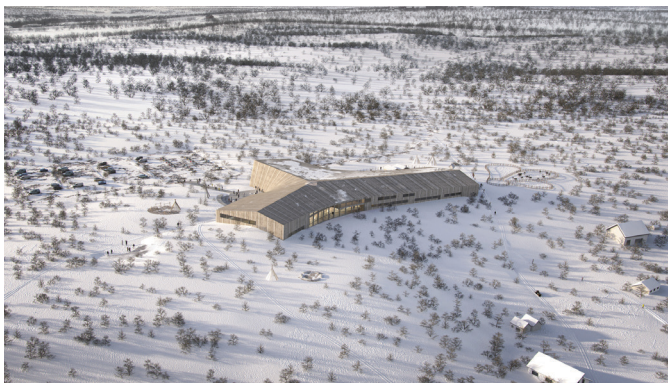


Figure 2. Čoarvemáttá, 2020

Source: Snøhetta.

In contrast to The Whale, this project actively incorporated Sámi voices into every facet of the design process for the proposed and now completed Reindeer Husbandry School. Opened in 2024, Snøhetta states that the vision of the project is to interpret Sámi architecture with references from crafts, materials and nature (“Čoarvemáttá” 2025). Which is a clear and vocalized difference from the previous example. The site is located in Kautokeino, Norway, a small municipality 800 km from Andenes at the same latitude of 69°N. This project exhibits a design framework that is not imposing but immersive through dialogue

with local Indigenous Peoples. The project was developed with Sámi leadership and artistic representation in every aspect, providing a foundation that is built on cultural guidance as opposed to unspoken rejection. It explores symbolism, such as the name that means horn root, characterizing the strongest part of the reindeer antlers, as seen in figure 2. Traditions, that in this case, use reindeer antlers in duodji, Sámi crafts and handicrafts (“Čoarvemáttá” 2025). As well as materials reflective of Sámi culture, placing a focus on a story of heritage that outwardly declares its recognition of Indigenous knowledge systems. As stated earlier, Sámi leadership and participation has been contested in the past, so a work of this nature acts as a display of respect to the territory and people of Kautokeino. Both projects reflect a connection to animal life, whales and reindeer respectively, both of which have a historic connection to Sámi. However, Čoarvemáttá reaffirms that Sámi culture is as evolving as its Western counterparts, with skills and guidance to promote a more successful connection to the environment, therefore leading to a versatile approach to stewardship. KORO, an art management company in Norway, emphasizes this in stating that: “the Sámi National Theatre, Beaivváš, presents stories and theatre performances from a Sámi world perspective, while the Sámi High School and Reindeer Husbandry School provides tuition in traditional knowledge, culture and language to Sámi youth.” (“Sámi Našunálateáhter Beaivváš, Sámi joatkkaskuvla ja boazodoalloskuvla” 2025) By incorporating local Sámi designers and architects, such as Joar Nango, Snøhetta creates a space that demonstrates an ethical engagement with tradition, decentering themselves as designers and letting local knowledge shape the results. The effects of such involvement highlight decolonial architecture in practice. Proving that ecology relates just as much to local culture as it does to ecosystems. Based on this comparison between projects that alternatively represent and ignore Indigenous presence in a design framework, it is important to clarify the tactics and approaches used in Čoarvemáttá to avoid falling into repetitive colonial structures.

SÁMI ARCHITECTURE – A COMPLEX NARRATIVE OF TRADITION

To successfully manage the production and execution of inclusive design work in the Norwegian Arctic first requires an understanding of what constitutes Sámi architecture. Joar Nango, a Sámi architect and artist, played a pivotal role in the creation of the Čoarvemáttá project in collaboration with Snøhetta. His involvement ensured that Sámi cultural perspectives were integrated into the design (“Čoarvemáttá // Sámi National Theatre & Sámi High School and Reindeer H... - 70°N Arkitektur” 2025). Encompassing both conceptual and built aspects, Čoarvemáttá draws inspiration from Sámi architecture, notably the lávvu (a tent used by Sámi) using local materials to reflect the craftsmanship and practices of the local people (“Snøhetta Draws from Reindeer Antlers with Twisting Cultural Hub” 2025). The ability to not only serve functional purposes but to also represent Sámi heritage and identity is one of Nango’s greatest abilities. However, Nango states that there is a more complex picture.

In his 2009 contribution to The Barents Urban Survey, he says “The problem is overshadowing the differentiations that exist within Saami building tradition, and therefore, the differences between North and South. This singular focus also disregards the fact that our building tradition has been changed and influenced from the outside throughout the ages” (Nango 2009). The development of modern Sámi society also requires architectural ingenuity, but Nango argues that this is not merely Western influence but a formal expression of a culture’s collective identity, both historically and contemporary (Nango 2009). These types of expressions are important to the local society’s recognition of self, defining peoples, cultures, and nations. Therefore, to evolve alongside tradition requires a deeper understanding of the

complexity, diversity, and perspectives of Sámi architecture (Nango 2009). In today’s world, Nango mentions that the architectural projects that attempt to incorporate Sámi identity into their design rely solely on referring to visual and formal elements, models and patterns. Oftentimes, the symbolic effect of these buildings comes off as a desperate attempt to position themselves as strictly Sámi, rather than honouring the creators themselves (Nango 2009). However, Čoarvemáttá provides a different approach that is rooted in deeper engagement with Sámi Peoples and culture. Rather than using Sámi as a visual aesthetic, it tells a story about the unique relationship between reindeer and the Sámi. In the context of a Reindeer Husbandry School, this type of symbology honours the Indigenous artists and people involved and is less of an oversimplification of Sámi culture. In contrast, when a distinct differentiation between Sámi and “Norwegian” work is created, this expression emphasizes what differs between cultures. This transforms Sámi work to something exotic and runs the risk of undermining the growth and inclusivity of modern Sámi building methods (Nango 2009). This is exemplified in Dorte Mandrup’s own description of The Whale, as seen in figure 1. Where they themselves refer to whales, a mammal culturally significant to Sámi, as “fabled”.

Therefore, certain approaches such as an active discussion about the future of Sámi architecture within their communities can be useful to ensure that there is closer dialogue between the designers and locals of a site. Just like with Elder Albert Marshall’s Indigenous Ways of Seeing, envisioning Sámi building tradition as a way of thinking can be a useful tactic. This demonstrates the local ability to adapt to the territory and focus on the art of building rather than the visual representation of Sámi culture (Nango 2009). If these perspectives can be aligned to the innate spirituality and sensitivity of a landscape, then a more inclusive framework is created, as was accomplished with Čoarvemáttá. To answer the previously proposed question, “Is the Sámi perspective being adequately accounted for in Arctic projects done by designers with no relation to the land?” the answer would be no. Actors south of the Arctic Circle oftentimes lack meaningful consultation and an understanding of the Sámi Peoples relationship to environmental governance. Nango’s position is a reminder that there is still a gap in authentic Indigenous participation, which is often displayed as merely symbolic or even entirely absent from a project’s creation or decision-making.

THE MISMATCH

Based on a deeper understanding of Sámi architecture and tradition, it is important to highlight the gap between necessary societal discussions and the often-prioritized technical specifications of an architectural competition. This section highlights this mismatch, showing the disconnect between the two.

As seen in projects such as The Whale and many others that follow suit, competition frameworks often fail to integrate Indigenous perspectives and the lived experience of local communities. Entries such as these are frequently judged by foreign architects and designers, primarily focusing on qualities such as aesthetics, innovation, creativity, and environmental impact. These traits are all easily measurable. However, nowhere in the documentation is there an active mention of Sámi consultation when a project is being completed on traditional Sámi territory. While these projects fulfill the technical requirements necessary to pass ecological and engineering guidelines, they reveal a systemic flaw, since Arctic landscapes are perceived as static or neutral. It labels the North as a production of external expectations for development and forced globalization that renders the future of these settlements uncertain (Ray and Maier 2017). Many such competitions view the Arctic as a canvas

for experimental design due to its vastness and the preconceived notion that it is barren, when in reality these lands are historically rich in their bioclimate, culture and community. If projects continue to think of addressing Arctic conditions and climate change as purely technical issues, then it is both politically and culturally unsustainable. On the other hand, a project such as Coarvemátta identifies with the holistic teachings and grounded approach that reveals a much more sustainable model for development. This method is effective because it grows from a long-term engagement with local communities.

This essay is titled “From Spectacle to Stewardship: Decolonizing Arctic Architectural Projects through Sámi Collaboration in Norway” and the gap between technical proficiency and cultural relevance exists because competitions are often designed as spectacles to attract visitors, tourists, and investors, linked to economic development and regional interests. This results in little democratically enabled community input and is largely determined by the authorities overseeing the project (Hemmersam and Kampevold Larsen 2018). The previous section has outlined the importance of Sámi involvement as a way of thinking. In understanding this, it is evident that there is a huge margin for improvement where many competitions respond to Indigenous inclusion as an afterthought of the design process and not integrated as a fluid system throughout the process. Changing this would require that spectacles in architecture are designed so they become relevant to the needs of the local populations whom they seek to impress (Hemmersam and Kampevold Larsen 2018). It begs the question: what are the consequences if this gap continues to exist or widens? Ultimately, as would be the same for all Indigenous groups, it would mean the likely cultural erasure of presence from traditional homelands. It would promote the belittlement of the Sámi way of life and forms of architectural colonialism that would see innovative buildings and technologies overshadow rich histories and cultures. This is not ideal in a modern world where environments demand attention due to climatic changes. If there is a hope to reshape and recover from the destruction caused and the warming attributed to the North, it is more crucial now than ever to focus on place-based, decolonial design processes. Architecture projects of the future should seek to lean towards community-led and consensual design, recognizing local Indigenous artists and architects in the judgement and design process. This would create a more progressive advancement in speculative architecture as opposed to an existing model that is exploitative. This ensures that Indigenous presence is essential to shaping the future of these rapidly sprawling environments.

CONCLUSION

It is important to highlight how Arctic architectural competitions overlook Indigenous perspectives in hopes of providing clarity on this relatively unspoken issue. By exploring two opposing examples and different works of literature on Sámi architecture and environments, it provides the necessary foundation to propose methods for how Arctic architectural competitions might be reimagined to better serve the communities they are based in. Introducing a brief history of Arctic architecture allows for discussion on both the climatic challenges and cultural sensitivities of the area, which questions the adequate representation of Sámi perspectives. Comparing two winning proposals becomes imperative to debate how architectural competitions balance technical innovations with Indigenous considerations. Bridging the gap between the two requires an in-depth review of Sámi building traditions. After this, a critical discussion about the mismatch formulates to more clearly understand the ignorance that is evident within competition briefs today. To conclude, an inclusive model for Arctic competition criteria reflects the everyday choices made by designers. This requires that as much attention is given to the traditional methods of local Indigenous Peoples as is given to

global experimental ideologies. When done successfully and colonial patterns are eradicated from the design process, competitions can finally begin to live up to the refreshing and inventive concepts they claim to champion.

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Urban Wildlife and the Future of Coexistence: Rethinking Cities as Shared Spaces

Lars Jakob van der Hagen

A CITY OF UNEXPECTED NEIGHBORS

Urban environments have long been seen as nature’s opposite—places of concrete, glass, and steel where wild animals are mere visitors or intruders. But maybe we’ve had it all wrong. As David Attenborough’s Planet Earth reminds us, wildlife isn’t just sneaking into cities—it’s settling in, adapting, and learning to coexist with us (Attenborough 2006). From foxes in London alleyways to monkeys leaping across Delhi’s balconies, cities are already full of life, even when we fail to notice. In fact, wildlife has always been more resilient and adaptable than we give it credit for. It thrives in unexpected places, from the undergrowth of city parks to the rooftops of skyscrapers. This resilience has implications for how we think about the future of cities.

Take Stockholm, for instance. There’s a claim that you’re never more than a meter away from a rat in the city. Whether or not that’s true, it highlights something crucial: cities are already ecosystems. Urban spaces aren’t separate from nature—they are nature, just in a different form. And perhaps it’s time we started recognizing and cultivating that fact, instead of resisting it. The familiar buzz of city life—the honking horns, the flashing lights, the rush of people—might be louder than birdsong or the rustling of leaves, but these are the rhythms of a living environment that, in many ways, mirrors the delicate balance of natural ecosystems. Just as forests are teeming with life, so too are cities. We may think of cities as human spaces, but they are also deeply intertwined with the broader biological world.

What about the urban squirrels that weave between park benches, or the pigeons nesting on the windowsills of downtown buildings? These animals, once considered pests or inconveniences, are actually thriving in human-made habitats. The truth is, we’ve coexisted with wildlife for centuries, but the way we approach that coexistence has shifted. In the past, wildlife was something to be managed, controlled, or eradicated. Today, it’s becoming clear that wildlife is not just a byproduct of human civilization—it’s an integral part of it. So, how do we move forward in a world where humans and wildlife are intertwined?

GROWING A SHARED HABITAT

This isn’t just about saving animals—it’s about reimagining our environments. The concept of “wildlife-friendly” spaces is often presented as a niche interest, something done by a few environmentally conscious people or organizations. However, it’s clear that this idea needs to be expanded. We can start small. In our own backyard, we stopped mowing the lawn. No plan, no investment. Just letting it be. The result? A surge of wildflowers, bees, and birds. Turns out, when we get out of the way, nature steps in. We didn’t plant a garden. We didn’t make any special effort to introduce new species. We just let the land rest and reclaim itself. Nature responded.

Across cities, something similar is happening. Roadside strips where the grass isn’t cut, medians that have gone to seed, abandoned lots—these accidental green spaces are doing real ecological work. They host pollinators, disperse seeds, and create micro-habitats in the midst of asphalt and noise. Urban ecologists refer to this as the city’s “first green phase.” This “green phase” demonstrates that life doesn’t need perfection—it just needs a chance. In fact, it shows that ecosystems can thrive even in small, fragmented spaces. The key is to give nature the room to grow and adapt.

But what if we went beyond the accidental? What if we became active participants in shaping urban ecosystems? We could plant nyttevekster—useful plants that serve both humans and animals. By planting edible plants like herbs, fruits, or vegetables in public spaces or residential gardens, we could provide resources for both human residents and wildlife. We could cover roofs with takhager (rooftop gardens), turning unused surfaces into edible landscapes. We could explore creative methods of seed dispersal—yes, even from the sky—using drones to green rooftops and abandoned structures. Drones could be used to distribute seeds to difficult-to-reach places, such as rooftops or vacant lots. This could make the process of planting more efficient and accessible, especially in high-density urban areas.

Imagine a network of interconnected green spaces: community gardens that double as pollinator hubs, corridors for hedgehogs and foxes beneath city streets, and old rooftops reborn as hydroponic farms. These aren’t utopian fantasies—they’re practical, tested strategies already underway in cities like Berlin, Copenhagen, and

Toronto (United Nations 2021). In fact, these cities are already serving as examples of how green urbanism can be effectively implemented. Berlin, for instance, has a network of green roofs that not only provide insulation but also support local wildlife by creating new habitats for birds, insects, and small mammals.

Hydroponic systems, in particular, offer exciting possibilities for cities where land is limited. Using nutrient-rich water instead of soil, they allow for high-yield food production in vertical farms and on repurposed urban infrastructure (United Nations 2021). This isn’t just smart—it’s necessary. As cities grow, they must learn to feed themselves sustainably. By incorporating hydroponics into urban design, we can not only reduce our reliance on traditional agricultural practices but also create new opportunities for local food production. Imagine having fresh, locally grown produce available right in the heart of the city, reducing the need for transportation and the carbon footprint of food production.

Expanding on this, aquaponics—combining fish farming with hydroponic plant systems—could provide protein and produce from the same closed-loop system. Startups around the world are testing compact aquaponic systems that fit into basements, shipping containers, and schoolyards. Why not have these embedded in our future housing projects? By integrating aquaponics into urban development, we could create self-sustaining systems that provide both food and a method of waste management, all while reducing the environmental impact of large-scale industrial agriculture.

And don’t forget fungi. Mycelium, the root-like structures of mushrooms, are emerging as ecological superheroes. They’re capable of breaking down toxins, rebuilding soil, and even forming biodegradable construction materials. Integrating fungal networks into urban design might sound like science fiction, but trials are already underway in cities like Amsterdam and Portland (Glover 2021). Mycelium-based materials are being used to create sustainable packaging, and in some cases, even building materials, demonstrating how fungi can contribute to more sustainable urban environments.

ECOLOGY AS ECONOMY

So who makes all of this happen? The truth is, it’s going to take all of us. Governments and policymakers play a role, of course, but so do designers, educators, farmers, and everyday citizens. This isn’t just about protecting nature—it’s also about reshaping economies. The transition to a greener, more sustainable city will require new economic models that value ecological services as much as financial profits. In this new model, the preservation of nature is not seen as an expense, but rather as an investment in long-term sustainability.

There’s untapped potential here. Creating and maintaining green spaces generates jobs—from urban farming and landscape restoration to seed distribution and hydroponics. Green cities aren’t just better for wildlife—they’re also better for people. Green spaces have been shown to improve mental health, reduce air pollution, and even increase property values. By investing in these spaces, cities can create jobs and enhance quality of life for residents.

Imagine a new sector of green employment: teams who maintain rooftop gardens, educators who teach ecological literacy in schools, and innovators developing aerial seed dispersal technology. Even something as small as designing lawns that bloom rather than buzz can become part of a larger economic system grounded in regeneration. New industries could emerge around technologies that promote sustainability and biodiversity. These industries would not only create jobs but also foster a sense of ownership and pride in local communities.

We could even imagine urban “ecology centers”—small neighborhood institutions that train people in pollinator gardening, offer tool libraries, and coordinate wildlife corridors between properties. These centers could host seasonal seed swaps, citizen science events, or mycological clubs. By bringing communities together around the idea of urban ecology, we can foster a culture of collaboration and mutual support. These centers would serve as hubs for information and resources, making it easier for people to get involved in environmental initiatives and build connections with others who share similar values.

This economic reimagining needs a cultural shift as well. Robin Wall Kimmerer’s Braiding Sweetgrass (2013) explores the idea of reciprocity with nature—a relationship built on mutual care rather than extraction. Applying that to cities means designing spaces that give back: to animals, to air and water, and to future generations. Kimmerer’s work highlights the importance of creating relationships that honor the interconnectedness of all life. By incorporating this principle into urban planning, we can design cities that not only meet the needs of humans but also support the ecosystems that sustain us.

It also means learning from those who have long practiced such reciprocity. Indigenous communities have always understood that human prosperity and ecological health are intertwined. In an urban context, this could mean integrating traditional knowledge into landscape design, waste management, and even zoning laws. By working with indigenous communities and incorporating their knowledge and practices into modern urban planning, we can create cities that are more sustainable and resilient.

A NEW URBAN ETHIC

Urban planning has often been a story of efficiency over empathy. Le Corbusier envisioned the city as a machine—a sleek, controlled environment that left little room for wildness (Le Corbusier 1933). While his ideas shaped modern architecture, they also contributed to an urbanism that sidelined the natural world. The rigid, functional city envisioned by Le Corbusier neglected the importance of the natural world in shaping the human experience. His vision emphasized efficiency over the messy, unpredictable qualities of nature.

Today, new models are emerging. The Open Journal of ReFuturing (2023) describes Climate Resilient Zones—areas where human and ecological systems are interdependent and equally prioritized. In these reimagined cities, infrastructure supports not just human needs but wildlife pathways, biodiversity, and environmental health. These zones recognize the value of nature as an integral part of the urban experience, rather than something to be managed or minimized.

Design is key. Imagine balconies designed for pollinators, buildings with built-in bird nesting cavities, or street lighting that doesn’t disorient nocturnal animals. This isn’t niche—it’s forward-thinking design. It’s a shift in perspective from control to coexistence. Rather than seeing the city as a place to control nature, we should see it as a space where nature and humanity can coexist and thrive together. Designing cities with the needs of wildlife in mind doesn’t just make cities more livable for animals—it also makes them more livable for people.

Equity also matters. Green spaces must be accessible to all. Too often, the most biodiverse or tree-filled areas are in wealthier neighborhoods, leaving marginalized communities with fewer environmental and health benefits. A truly inclusive green city must ensure access for everyone, regardless of postcode. It’s not enough for green spaces to exist—they must be accessible to all people, regardless of their socioeconomic status. Equitable access to nature is a fundamental

aspect of building a more just and sustainable urban future.

We also need to think in phases—not just green phases, but social and infrastructural phases of urban development. The “green phase” of a city might begin with spontaneous vegetation reclaiming a space, , but it can evolve into intentional greening, participatory design, and finally integrated, biodiverse ecosystems that function in tandem with human systems. As cities continue to evolve, they must become more than just places of human habitation—they must be places where the natural world is actively nurtured and protected.

BUILDING BRIDGES, NOT BARRIERS

A crucial piece of this puzzle is connectivity. Fragmentation doesn’t just apply to ideas—it also applies to space. Urban nature is often isolated, trapped between traffic arteries and buildings. Urban sprawl has created disconnected islands of nature, where animals are forced to navigate a sea of concrete to find food, shelter, or mates. To address this, we need to build ecological bridges—literal ones like green overpasses and tunnels that allow wildlife to move safely, and metaphorical ones like policies that connect housing, transport, and ecological health.

The Netherlands and Singapore are leaders in this, developing green corridors that allow species to travel across dense urban fabric (De Lange and de Waal 2020). These corridors connect parks, green roofs, and other natural spaces, creating a continuous network of habitats for wildlife. In Singapore, the “Park Connector Network” links parks and nature reserves across the city-state, allowing animals and people alike to move freely through the landscape. These green corridors not only help wildlife but also provide recreational spaces for residents and promote environmental awareness.

Even small actions help. Planting wildflowers on balconies. Removing fences that block animal movement. Supporting local growers who use regenerative methods. It all adds up. When we begin to think of our cities as interconnected ecosystems, every small action contributes to a larger whole.

We can even embrace the unexpected. The raccoon raiding our compost bin isn’t just a nuisance—it’s a symptom of a deeper story. Animals are adapting. They are responding to our infrastructure with creativity. Can we respond with the same? Just as wildlife is adapting to urban environments, we too must adapt our thinking and design practices to create spaces that work for both humans and animals.

TOWARD A LIVING CITY

So what does a hopeful urban future look like? It might not be perfect or pristine. But it could be vibrant, diverse, and humming with life. Cities could be places where nature and human activity are not opposites, but partners in creating resilient, thriving communities.

It could look like neighborhoods where residents grow food on rooftops and share it with their neighbors. Streets where foxes and children cross paths safely. Parks where native plants thrive beside play structures. Cities where maintenance budgets are designed with pollinators in mind. From unmown lawns to hydroponics, from backyard biodiversity to aerial seed dispersal, the tools are already in our hands. What’s needed now is imagination—and commitment. Let’s treat the city not as a finished product, but as an evolving ecosystem, just like the green spaces we once left to thrive on their own.

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Rethinking Water Resilience: Can Service Design Tools Address Systemic Injustice?

Esther Sigauke

MY DAY ZERO LIVED EXPERIENCE

My first-hand experience in Cape Town reflects what is called “slow violence,” the kind of harm that unfolds gradually and invisibly, rooted in policy neglect and historical injustice (Nixon 2011). Though apartheid officially ended in 1994, its effects never vanished. They persist in market driven solutions and continued lack of investment in marginalised communities. These forms of violence rarely make headlines unlike sudden disasters yet they quietly corrode lives, day after day. These everyday struggles quietly expose people to climate vulnerability. Unless you have lived it; travelled miles just to get water, depended on an unsafe well, waited in long queues, or paid for what should be free-you may never fully grasp the depth of the injustice.

I vividly remember my anxiety in 2018 when Cape Town almost ran out of water. At first, the warnings seemed normal as just another call to save water. But soon things got serious. The government set a strict rule: 50 liters of water per person per day. Showers became quick rinses. Dishes piled up unwashed. Toilets stayed unflushed unless needed. Watering gardens, washing cars, or filling swimming pools became luxuries nobody could afford. Signs appeared everywhere with the slogan, “If it’s yellow, let it mellow,” telling people to save every drop. People complied because they had no choice lest the worst would happen. Living without reliable water was not new to me; I had already experienced it in my home country, Zimbabwe, and learned how to adapt. Yet, having to relive this struggle in South Africa was deeply frustrating. After all, the reason I migrated was to find a better life, one where clean water would be accessible, and daily survival would not be a constant challenge.

The countdown to day zero did not stop. First, there were 100 days left, then 70, then ... Each passing day without rain made everyone more anxious. I remember carrying my baby on my back while hauling two heavy 20-liter containers. In times of crisis, women carry most of the burden. I worried about what would happen if the taps would totally run dry. I imagined a life spent walking miles every day just to get water, on top of attending classes at the University of Cape Town. During that time, illegal “water mafias” emerged. They took control of the queues, offering to hold a place or fetch water on behalf of others

for a fee. Those who could not pay were often bullied or pushed to the back. This exploitation only worsened the stress and inequality of the crisis by turning a public emergency into an opportunity for profit and control.

As days passed, the water crisis showed another hard truth: the crisis did not affect everyone equally. Wealthy families drilled their own boreholes, bought bottled water (see Figure 1), or used private tanks. Poor families had no such options and faced even greater struggles. Some were forced to dig unsafe wells, others relied on nearby rivers for water, and many had to ration the little they had and oftentimes at the cost of their life, health and dignity. I remember standing in the shop, watching wealthy people fill their carts with bottled water. I could not help but envy how easily they escaped the burden of the water crisis. This was not just a drought. It showed how climate change is about justice too. Climate crisis widens the gap between those who have money and those who do not.



Figure 1. People Que to buy water at a grocery Store
Source: Aryn Baker, 2018.

Fortunately, just in time, it rained. The dams filled, Day Zero was cancelled, water restrictions ended and people reverted to their old habits. Yet, even as the immediate threat faded, many continued to be faced with unreliable water access, weak infrastructure and systemic neglect. These can be described as ghosts of past violence (Tsing et al. 2017) such as the resource exclusion of apartheid which continued

to haunt the ruins of modern governance. For the city, the crisis had passed, but for many, the struggle never ended, implying that the absence of visible disaster does not mean justice has been served. So, how did the government attempt to address these deep-rooted injustices? In 2019, after surviving Day Zero, Cape Town approved its Water Strategy, placing “resilience” at its core. The word appears 31 times in a 100 paged document, a clear signal that resilience had become the city’s guiding framework for future water planning. The document outlines three central pillars: adaptive capacity, supply stability, and infrastructure management (City of Cape Town 2019). These priorities aimed to move beyond crisis response and prepare for long-term climate threats. This approach led me to ask: What does resilience really mean? What does resilience have to do with justice? As a service design student, I also began to reflect on my own field: How might service design confront exclusion and extraction, rather than replicate them?

BEYOND JUST BOUNCING BACK

The Cambridge Dictionary defines resilience as the ability to return quickly to a previous good condition after problems. But based on my lived experience during Cape Town’s Day Zero crisis, resilience cannot simply mean bouncing back. For many poor and marginalised communities, there was no “good condition” to return to. Water access had long been unequal and unreliable. This definition reflects a dominant view of resilience which assumes there was once a stable, fair, and well-functioning system to return to. In practice, it risks reinforcing unjust systems by framing resilience as recovery, rather than transformation. It is this narrow understanding that seems to have shaped Cape Town’s 2019 Water Strategy. By aiming to return to pre-crisis conditions, the strategy avoided confronting deeper structural issues such as dilapidated infrastructure, spatial inequality, policy neglect, population growth and migration. In such a framing, those already struggling will be least able to survive the next climate-related water crisis.

A more meaningful understanding of resilience cannot be about preserving systems that have failed; it must be about building systems that can change when needed. Resilience must involve adaptability, learning and transformation across systems (Walker, Salt, and Reid 2006). Systems do not fail due to lack of data or control, but because they are blind to feedback and resistant to change (Meadows 2008). A water system is not resilient if it continues to exclude the same people it failed before. It must reflect on past and present injustices and adapt to serve everyone, especially the most vulnerable.

This calls for what I refer to as reparative resilience, a form of resilience rooted in justice, repair and accountability. Justice guarantees that the underlying causes of harm are not only acknowledged, but actively addressed. Repair requires an effort to restore what has been fractured recognising past injuries while accountability is about establishing frameworks that prevent future harm while nurturing trust by ensuring that those in power are responsible. Therefore, rather than aspiring to return to an imagined stable past, reparative resilience begins by acknowledging that for many, that past was already marked by exclusion. It asks not how we bounce back, but how we build forward, toward systems capable of transformation. Reparative resilience demands a multi-dimensional approach, one that addresses historical injustices, reimagines water governance, restores ecological relationships, centres community voices, and grounds transformation in everyday action. The following four dimensions outline what this view entails.

1. FIXING HISTORICAL INJUSTICES: WHAT WERE ONCE DEEP POOLS ARE NOW FORDS

As the Shona proverb says, “Aive madziva ava mazambuko”- what used to be pools are now crossing points. Reparative resilience begins with recognizing that history has shifted, and with it is the possibility to cross into justice, equity and shared access. Cape Town’s water crisis has highlighted deep-rooted inequalities stemming from South Africa’s apartheid history, which continue to shape access to water through present-day policies and governance structures (Calverley and Walther 2022). Reparative resilience aims to confront these entrenched injustices. For example, the city still relies heavily on dams, providing 95% of its water supply which leaves low-income communities particularly vulnerable during droughts (OECD 2021). In response, the city’s Water Strategy promises alternative sources such as desalination, groundwater extraction, and wastewater recycling (City of Cape Town 2019). However, it fails to outline how these new water sources will be equitably distributed, particularly to poorer communities. Without explicit commitments to fair access and affordability, these solutions risk deepening existing inequalities rather than addressing them. Relying solely on technological fixes without addressing structural injustices in water governance is inadequate. These solutions must be approached with caution due to potential risks, including high costs, privatisation, and uneven access (Sultana 2018; Loftus 2009).

Therefore, reparative resilience is not just about diversifying water sources, it requires transforming social relations to ensure equitable distribution and prioritising vulnerable communities in infrastructure investments. Black and poor communities were historically denied investment in water infrastructure, and many of these areas still experience broken pipes, leaking taps, and irregular supply. This ongoing neglect raises a crucial questions, such as: Whose water pipes or infrastructure get priority in being repaired first? Why do some communities always wait the longest? If the same communities are always left waiting, then reparative resilience is not being built, it is being denied. A just water system must prioritise the repair of historically excluded areas and ensure access is distributed according to need, not income or location. In particular, informal settlement residents, who rely on communal taps and travel long distances for water (see Figure 2), must be placed at the centre of infrastructure planning. Despite over three decades under a government elected on the promise of equality in 1994, many communities still lack access to basic water infrastructure, exposing them to serious risks of contamination, disease, and death. To move beyond this, there is need to embrace reparative resilience in order to correct the past injustices by investing in equitable infrastructure and ensuring that planning begins with those most impacted.



Figure 2. Travelling to a communal tap to get water
Source: Derek van Dam 2022.

2. DECOMMODIFICATION OF WATER: WATER HAS NO CHILD OF ITS OWN

Reparative resilience means treating water as a right, not a commodity. The water tariff system in Cape Town reveals how access to essential resources is shaped by neoliberal approaches, where the ability to pay determines who gets water. Those who can afford higher prices not only use more water, but may also feel entitled to do so, reinforcing patterns of overconsumption and surpassing the limits of free basic water allocations. So, a water tariff system allows the affluent to shield themselves from scarcity while poorer households bear the brunt of restrictions. Moreover, wealthier consumers can invest in water-efficient technologies to lower their costs, while economically disadvantaged communities are left with no option but to pay disproportionately high tariffs or go without. This not only deepen social and ecological injustices, but also shows what Foster calls a metabolic rift, a break in the natural relationship between people and nature caused by capitalism (Foster 2013). We are urged to reclaim a different story, one that resists commodification and re-centres on nature as a gift, a relative, and a shared responsibility (Kimmerer 2015). Certain goods should not be commodified because they are fundamental to personhood and human flourishing. Putting a price on them undermines dignity and equality (Radin 1996). Radin refers to these as “market inalienable” goods implying things that should not be bought or sold, as doing so erodes the moral and social fabric. A Shona proverb states, *Mvura haina mwana wayo*, which translates to water has no child of its own. This reinforces the idea that water is a shared resource with no individual owner, and challenges policies that privilege some while marginalising others. In this context, it is worth asking: is it ethical to commodify water when it is essential for survival and recognised as a human right? If access to water depends on the ability to pay, this undermines the very notion of human dignity and equality. Instead, we must shift toward a model of reparative resilience; one that rejects the idea of commodification of water, but insists on restoring access, rights, and resources to those historically excluded.

3. REBUILDING ECOLOGICAL RELATIONSHIPS: A FEW STICKS CANNOT BUILD A SHELTER

Reparative resilience recognises the interconnectedness of humans and non-human entities. This is especially important because the colonial era alienated people from their environments, replacing reciprocal relationships with systems of extraction, control, and enclosure, forms of ecological violence whose effects continue today. The concept of companion species (Haraway 2016) reminds us that humans live in constant relation with animals, technologies, and ecosystems and water, too, is part of this entangled world. As the Shona proverb says, “*Matanda mashoma haamisi musasa*” - a few sticks cannot build a shelter. Restoring human-nature relationships requires diverse actors working together, in recognition of our shared dependence and responsibility. So, water is not just a basic need, but a life-giving companion that sustains all forms of life. When communities are cut off from safe and reliable water systems, they lose not only access, but also vital relationships with the environment. In response, many are forced to extract water from fragile ecosystems thereby deepening environmental degradation and weakening the symbiotic ties that once supported both communities and landscapes. This erosion of ecological connection increases vulnerability to climate change and pushing water systems beyond their limits.

A reparative resilience therefore seeks to move beyond human-centred thinking. Water must be recognised as part of a multispecies commons, a shared relation that binds humans, animals, plants, microbes, and landscapes. Reparative resilience poses the question: what happens when these symbiotic relationships are interrupted? It challenges dominant paradigms of extraction and control, and calls for

entanglement, reciprocity, and care (Haraway 2016). The concept of “contamination as collaboration” where transformation occurs through unexpected encounters (Tsing 2015) reminds us that water flows through entangled worlds, carrying not just chemicals and nutrients, but also histories, meanings, and other species. The Actor-Network Theory further elucidates this interconnectedness, highlighting how agency arises from the dynamic relationships among human and non-human actors within networks (Bruno Latour 2005). This implies that water is never separate, but always part of messy social and ecological networks. Reparative resilience embraces this complexity, rather than erasing it through technocratic fixes and neoliberal logic. It recognises that resilience is not only about human survival, but about building systems that support all forms of life and repairing damaged relationships by refusing to treat water as a mere commodity. When symbiotic relationships between people, water and ecosystems are upheld, there is a possibility of thriving in the face of future crises.

4. DECOLONISING PARTICIPATION: ONE FINGER CANNOT CRUSH A LOUSE

Including the everyday lives of the urban poor and engaging them in setting priorities for real change (Ziervogel 2019) is vital to reparative resilience. This requires meaningful public participation, where those most affected by policies have a direct voice in shaping them (Amartya Sen 1999). Yet, in many postcolonial states, colonial legacies persist: governance structures often silence marginalised voices, resulting in top-down solutions disconnected from lived experience. Had communities in Cape Town been genuinely engaged, would they have accepted a 6,000-litre-per-month household allocation, especially given the size of many African families? Would desalination have been prioritised over repairing infrastructure in informal settlements? Would they have agreed to a pricing system that commodifies a basic human right? Likely not. Participation must be more than a checkbox or afterthought. It must begin early before decisions are made and continue throughout planning, implementation, and review (National Research Council 2008). As the Shona proverb says, *chara chimwe hachitswanyi inda* - one finger cannot crush a louse. Participation is not the responsibility of a single planner, official, or expert. It requires collective effort and shared action. When early and consistent, it builds trust, strengthens relevance, and grounds policy in everyday life.

Decolonising participation means dismantling inherited structures of exclusion and valuing local knowledge systems and lived experience. In *Braiding Sweetgrass*, Kimmerer writes, “Listening in wild places, we are audience to conversations in a language not our own” (Kimmerer 2015). This reminds us that decolonising participation is not just about including diverse voices, but about listening deeply with attention, respect, and responsiveness. Still, listening must be followed by meaningful action. One such method is radical incrementalism: small, local efforts that steadily challenge deep structural inequalities (Pieterse 2011). These might include community-driven infrastructure like water harvesting or greywater systems, and participatory tools such as water forums, co-creation labs, or ward-level resilience councils. These are not merely technical interventions; they are spaces where marginalised voices shape decisions that impact their daily lives. Though modest in scale, when rooted in lived experience, these actions foster inclusion and begin to undo apartheid’s spatial and infrastructural legacies.

Radical incrementalism recognises that real change takes time unfolding through shifts in behaviour, relationships, and practices. As another Shona proverb teaches, *kumhanya hakusi kusvika* - running is not the same as arriving. Lasting change takes time, intention, and direction. It cannot be rushed through top-down programmes or quick

fixes. Yet urgency still matters given the intensifying climate shocks. It is argued that radical incrementalism does not ignore the urgency of change (Swilling 2019). Instead, it recognises that real, lasting transformation takes time and must be built through inclusive, locally grounded steps that address inequalities. Reparative resilience supports this kind of change by focusing on action that is both practical and just. The next section explores how service design tools and approaches can play a vital role in transforming deep-rooted and unjust systems.

DESIGNING FOR REPAIR: A TREE IS KNOWN BY ITS FRUIT

As the African proverb says, a tree is known by its fruit - reminding us that reparative resilience must be shown through action and results, not just words or writing. Can service design help turn this action into practice, and support real change? Or will it remain stuck in a cycle of acknowledging inequality without addressing it? As a service design student grounded in its methods, I believe it can. Service design has the potential to support meaningful, justice-driven change, when it is used with care, reflection and commitment. Service design can support reparative resilience by offering practical, participatory and people-centred tools that shift who gets to imagine, shape and sustain the future. It follows a hands-on, step-by-step approach rooted in design thinking. Some common tools used in service design include co-creation workshops, journey mapping, service blueprints, prototyping, systems mapping, and the use of “What if?” questions (Stickdorn et al. 2018). The design process begins with understanding the needs and experiences of people and communities. This helps create more inclusive and grounded responses that address the actual demands of people. Service design tools are not only valuable because they solve problems quickly, but because they help ask better questions. They reveal where systems break down, and where change must happen. When used thoughtfully, service design tools can promote justice by engaging a wide range of voices, naming systemic inequalities, and supporting the co-creation of fairer solutions (Stickdorn, Marc and Schneider, Jakob 2012). The tools reposition reparative resilience as a process not done to communities, but co-created with them, acknowledging that they are experts not by academic qualification, but through lived experience. By being user-centred, service design moves beyond quick fixes to tackle deeper systemic problems. It is useful when working on complex problems that require adaptive and community-rooted strategies. Moreover, the tools help surface invisible struggles, amplify marginalised voices and test new possibilities rooted in justice and dignity.

While these tools are useful, they must be used with awareness and understanding of power dynamics, context and history, rather than simply following them as methods. On their own, they do not guarantee fairness or justice. If applied without critical reflection on who defines the problem, whose voices are missing, and how past injustices shape present conditions, these tools can turn complex issues into neat visual diagrams that fail to address root causes. Moreover, there is also a tendency among service designers to rely too much on structured tools, maps or blueprints, as if these alone can solve systemic issues. For example, a service blueprint may show how a complaint moves through a water system, but it cannot capture the emotional impact of being unheard. To address this, service designers must go beyond structured tools and cultivate methods that revolve on lived experience and emotional realities of people. This could entail adopting multidisciplinary approach to service design, borrowing from fields like social anthropology that seek to understand people in the of context their cultures, origins, beliefs and values.

Moreover, service design tools should be treated as starting points or

roadmaps, useful for guidance, but not substitutes for the deeper work of repair, trust-building and justice. Rather than rushing to prototype, service designers should begin by building relationships. This means spending time with communities, not just in workshops, both before and after. It also means listening without needing to visualise everything. This could involve storytelling sessions, shared meals, oral histories, indigenous games, or even transect walks. These are gatherings that may not look like “design work,” but they create space for people to open up and connect. They allow participants to feel seen, safe, and valued; not just as sources of knowledge, but as human beings with dignity. These slow, relational approaches push back against what is referred to as “tyranny of participation” where participation is used as a performance, giving the illusion of inclusion, while failing to shift power or foster accountability (Cooke and Kothari 2001). By contrast, when people’s concerns and lived realities are taken seriously, service design can support reparative resilience by helping to challenge and change the systems that produce exclusion, injustice and harm.

Many service design projects are tied to short-term funding or fixed contracts. When funding ends, designers often leave. This makes it hard to build long-term trust or take responsibility for outcomes. Communities are often left with unmet expectations. Participation is often shaped by the agendas of those who control the resources (Cooke and Kothari 2001). When projects or funding cycles are short and externally driven, they can reinforce extractive practices, inviting input but limiting sustained involvement. To avoid this, there must be mechanisms for continuous review, grounded in community feedback and accountability. This ongoing work could be taken up voluntarily by the service designers. Without this, service design risks becoming yet another extractive practice - drawing knowledge from communities, only for them to leave once the work is done. To address this, funding models must be renegotiated to prioritise long-term engagement with communities and ensure that participation is not symbolic, but genuinely transformative.

CONCLUDING REMARKS

My lived experiences, especially during the time towards Day Zero revealed that resilience is not just about surviving a crisis or bouncing back. It is about repairing injustices, especially those rooted in history. I saw how technical fixes and neoliberal solutions, when used alone, fail to address the root causes of inequality and often make the crisis worse. This calls for reparative resilience, a concept that helps us understand that we should go beyond recovery from crises. It is guided by four principles: fixing historical injustices, decommodification of water, rebuilding ecological relationships and decolonising participation. Though this paper centred on water governance, reparative resilience offers a powerful framework for any sphere where justice is needed and historical harm must be addressed. For example, it can be applied in food systems, energy transitions and urban development. In each of these areas, rethinking sustainability means going beyond efficiency and focusing instead on equity, repair, and the active involvement of those historically excluded from environmental decision-making. When service design is aligned with the principles of reparative resilience, it can become more than a set of tools or diagrams. It becomes a way of working slowly, listening deeply and building systems with - not for - communities. It means working slowly, but with urgency because climate shocks are increasing and demand action that is both rapid and informed by local knowledge and histories. This is the kind of service design I want to practise: one grounded in building trust and committed to the everyday work of repair. For me, service design is not just a method for improvement - it is a practice of justice. When grounded in justice and lived experience, service design can support

communities not just to survive the next crisis, but to shape futures that are just, inclusive and resilient.

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Challenges for Environmental Planning in Norway: Mountain Farm Transhumance as a Potentially Valuable Case Study to Guide Sustainable Development in Rural Areas

David Benjamin

*"Don't it always seem to go,
that you don't know what you got 'til it's gone?
They paved paradise and put up a parking lot."
- Joni Mitchell, 1970*

INTRODUCTION

From 2022 to 2025, there has been a great deal of coverage in the popular press in Norway on the apparently increased volume and instances of those types of land use change (LUC), that destroy natural habitats in Norway, especially in rural and other forested areas. (NRK, 2025). These LUCs have occurred mainly in order to build new commercial developments, such as weekend cabins, logistics parks, server farms, retail outlets and infrastructures such as major high-speed highways. This increase in commercial development is in addition to the expansion of resources exploitation and infrastructure construction since WWII, such as commercial forestry, high voltage power lines and wind turbine generators, with their associated access roads and forest cuts.

This recent and ongoing focus on land use changes to the rural and wilderness areas of Norway may be a new focus for the popular press, but there has been an ongoing destruction of natural habitats in Norway since the reconstruction of the country after WWII. It was only with the Norwegian national natural systems mapping between 1991 to 1994 that the country began to systematically record and interpret the destruction of natural and cultural landscapes. (Norderhaug, et al, 1999). The more recent focus, since 2022, of the popular press may be written off as mere pandering of the press to popular interest on environmental issues, but this can also be interpreted as an awakening by the general population that Norway's 'natural' landscapes are not infinite and are indeed in danger of being changed forever into a commercial 'wasteland' of car parks, fast-food restaurants, highways and industrial parks. Such a vision of a future world made up of a carpet of cheap and low-brow commercial development rolled out across the landscape is certainly not congruent with most Norwegian's sense of identification with a real background in a rural past where the land and seacoast was dominated by a more naturalist cultural landscape, only partially under the complete control of humans. (Hessen, 2021, in toto).

The National government recognizes the gravity of this challenge. The government has a dedicated webpage for LUC of agricultural

land, stating that: "Since the Second World War, at least 1.2 million decares (1 decares = 1000 square meters) of cultivated and arable land have been reallocated to other land – an average of close to 19,000 decares per year...", an area being built over every year equal to almost one and half times the size of Gardemoen International Airport! (Regeringen, 2025). Indeed, the two ministers of Agriculture and Food and Local Government and Regional Development wrote a letter to the municipal government councilors in 2024, on the occasion of the start of their local government terms as representatives, in order to encourage them to deal with the negative effects of deleterious LUC. (Pollestad, 2024). Because municipal councils have the major part of authority over both societal strategic and spatial planning (KLD, 2023), it is apparently necessary for the national government to ask the councils to conserve those agricultural lands and cultural landscapes that are part of their jurisdictions. This fragmentation of authority and responsibility is a complicating factor for the implementation of Norway's satisfaction of international conventions. Norway is a signatory to the European Landscape Convention on landscape conservation (signed 20. October, 2000), the Faro Convention that protects cultural landscape heritage (signed 27. October, 2008) and the U.N. Convention on Biological Diversity (signed 9. June, 1992). National goals for spatial planning are also guided by the achievement of the 17 UN Sustainable Development Goals, and for the regions, counties and municipalities to lead and coordinate the planning work that will:

"...contribute to promoting value creation, necessary restructuring of the economy, ensuring settlement throughout the country, reducing greenhouse gas emissions and adapting to a changing climate, safeguarding nature, important outdoor areas and cultural environments, streamlining energy use, offering equal services, managing demographic changes, counteracting shortages of expertise and labor, and ensuring good, equal and safe local communities." (KLD, 2023, 6)

THE POLICY AND REGULATORY CHALLENGES FOR RURAL NORWAY

Understanding the complexity of how 15 counties and 357 municipalities will coordinate and plan infrastructure, transport,

cultural heritage and the overall landscape design while satisfying these national and international commitments seems to be a very tall order for local governments. This is especially true when these same jurisdictions have limited budgets, some of them suffer with a lack of well-trained and expert planning civil servants and their bio-physical and cultural premises are vastly different across the country, i.e., between the arctic Finnmark and the temperate big city of Oslo. Further, many municipalities/counties seem to operate as if they are in a competitive zero-sum game with neighboring communities, competing for the location and expansion of new industry, housing and jobs, so that the imperative to protect and advance cultural landscape and wilderness conservation is talked about but often, in the end, loses out to those efforts producing the quickest monetary returns. Since 1992, numerous reports to the Norwegian parliament, laws on climate, energy and spatial planning (KLD, 2025), regulations governing spatial planning imperatives, quasi-governmental institutional policy documents, book length treatments (Austrheim, et. al., 2015 and Norderhaug, et. al., 1999) scientific journal papers and popular press articles have, in the main, decried the loss of the viability of cultural landscapes to e.g., LUC, and put in place definitive national imperatives to halt and even reverse the deleterious effects of Land Use Change. Yet even in 2025, significant amounts of wetland, mountain and alpine valley wilderness areas and Sápmi and other cultural landscapes continue to be changed to planted forest, major infrastructures and other types of destructive changes that will be exceedingly difficult, if not impossible, to repair. Even though some cultural landscapes have protected status, the destruction of adjacent and nearby wilderness areas reduces the viability and certainly the serenity of many of these cultural landscapes, impacting them also through, for example, nighttime light and noise pollution.

Researchers at the national environmental research organization, NINA, led by Zander Venter, and a team of NRK journalists, led by Mads Nyborg Støstad, estimate that for the five years between January 2019 and January 2024, the total land use change rate that destroyed wilderness, cultural landscape and farm field areas in Norway was actually closer to 79 square meters per minute. This works out to about 3.4 square kilometers/month destructive LUC, or 41 km²/year, (a bit more than three Gardemoen airports per year!), which incredibly translates to about 0.01% of the mainland Norway's nature being turned into short-term developments, such as fast-food restaurants or a high-speed roadway, for this five-year period. (NiNA, 2024; NINA web based application). High speed, multi-lane highways and pioneer, first-mover commercial developments further tend to attract even more development, which contradicts some of the original argument for travel lane expansion to reduce congestion. Thus, highways are themselves a kind of forcing mechanism toward even more habitat destruction.

In this policy implementation space, where authority and responsibility is highly devolved to local councils, there are nine different, main laws governing the regulation and management of the environment. To manage the implementation of these laws and associated regulations, there are several levels and longitudinally authoritative structures, separate from the counties and municipalities, that have other planning authority and consultative responsibilities. (Stokke, et. al., 2022). There is thus apparent fragmentation and dissolution of authority and responsibility. To advance local jurisdiction's efforts at development, civil servants and commercial developers or quasi-governmental infrastructure firms can exploit different official documents to make their case for prioritizing cash revenue producing development based on growth and job creation, over conservation. This includes the Stortingsmelding 27 (2022-2023) A good life throughout Norway – regional and rural policy for the future,(Det

Kongelige Kommunal-og distriktsdepartement, 2023), as support for LUCs that will likely be destructive for cultural landscapes. This is because Stortingsmelding documents are named in the major political policy document Nasjonale forventninger til regional og kommunal planlegging 2023 – 2027, as viable guidances to implement development strategies and area plans. Even though laudable goals for landscape conservation are enumerated in the political policy document Nasjonale forventninger..., the Stortingsmelding 27, does not foreground the conservation of cultural landscapes in spatial or strategic planning, as if the conservation of the cultural capital residing within the landscape is somehow insignificant for the “good life?” It therefore seems important to look for pathways toward radical innovation concerning the understanding of, and planning for, the open and rural spaces of the country, where much of these new infrastructural and commercial developments are being built that impact both natural ecosystems and the heritage of landscapes. And further, it is key in this transformation effort to seek viable ways that human society gain value by managing the land from the environmental goods and services it produces, without destroying the productive abilities of the bio-physical or traditional cultural aspects of landscapes and without destroying the natural capital contained within landscapes.

RETHINKING THE PLANNING AND DESIGN FOR THE RURAL AREAS OF NORWAY

A radical re-thinking for how to transform a situation of wanting to do the right thing but somehow not meeting ambitions that most in society want can start with Theories of Change, ToC, to define a hypothesis for how specific transformative steps in such journeys can lead to beneficial outcomes: 1. Assessing the underlying paradigms and knowledge background for the situation, 2.acknowledging the external and internal actors of both power and disempowerment, 3. Remembering the original goals the commons seeks to achieve, 4. finding possible common ground between the different actors and the diverging goals and methods, and finally gaining assent to start with where the commons agrees to taking steps and dealing with disagreement down the road. Such ToC models for transformation are useful, but they tend to neglect the spatio-temporal specificity and contingency of the complex situations that we name “cultural landscapes,” since such landscapes are places that are meaningful to humans as well as the diversity of living species and the bio-physical systems that make up landscapes. Such places are recognizable to people as well defined, even though difficult to pin down on a map; they have a human history and a natural history; and they are bearers of symbolic meaning for people's identity and their sense of future possibilities. (See Relph, 1976, in toto; Seamon, et. al., 1985). Exactly because of this spatio-temporal complexity of the landscape, and because most sustainability transformation models do not adequately deal with the spatial or temporal aspects where landscapes encompass change processes and meaning, the creativity and insights of the design professions should be foregrounded in the work to find out what and how to conserve cultural landscapes, and what would be likely effective measures for municipalities and counties to work together on their land-based commons.

Norway ran an applied research project between 2020 and 2023, “Field of Goals,” with a group of seven municipalities, two counties and the two County Governors in Northern Norway, to understand how to help them plan for the 17 UN SDGs and to help the jurisdictions build a framework for their ongoing future work in planning. (Nordlandsforskning, 2023). With the inclusion of the Governors, the research brought into the planning effort the national government's authorized representatives at the local level. The research results have already led to important content in one of the textbooks used for

environmental planning in Norway, Introdukjon til Miljøplannlegging, (Movik et. al., 2022). Certainly these insights and new methods for planning are worthwhile, but in the face of 41 square kilometers of land being converted every year into commercial buildings or major infrastructures, it may be that working designers can already now, use their current skills to achieve ecosystem and cultural heritage conservation? The committee led innovation from the Norwegian Society of Landscape Architects has however not prioritized the integrated planning of energy, biodiversity and cultural landscape values into their design political programme, atleast according to the headline subjects agreed upon for their “Climate and nature strategy” of 2025. The closest they come to this inclusion is with the text to “...3. Improve climate change adaptation and strengthen quality of life...” (See NLA, 2025).

Of course, some of these new projects build infrastructures critical to societal wellbeing and assist in the ‘green transition’ to a low carbon economy, such as new housing, hospitals, wind turbine parks, and the like. However, for many building types atleast, some ‘green field’ projects could easily be built as infill projects or renovations of existing structures in small towns, cities or villages, rather than destroy natural habitats or cultural landscapes. Developers are often given a good deal of flexibility in planning simply because many regulating jurisdictions think landscape destruction is an unfortunate but necessary way to their communal cash- based prosperity, and in any case, it is normally up to developers to produce the design aspects of spatial planning, making decisions for what goes where, how big it is and what it all will be used for.

But is selling off farmland for a new McDonalds restaurant the best way to make a living? Perhaps there are existing precedents for lifeways on natural and cultural landscapes that actually depend on the viability of healthy ecosystems, cultural relevance, low carbon lifestyles, where there is room for a living heritage of the landscape and architecture? And even if one focuses solely on prosperity, immediate cash returns are now known to be merely one among many other measures of prosperity and happiness. Indeed, Herman Daly (1997), has shown that an ever-smaller amount of utility accrues to individuals for the increased work effort that goes into acquiring either more cash or goods, the paradox of so-called marginal utility. Alternative measures of prosperity include a sense of, and real attributes of, calm and ecological health in one's environment, in addition to senses of security, control, access to natural landscapes, leisure time, relationships to family and friends, along with a real ability to live in a specific place that has the subjective attributes, to the individual, of home. (Benjamin, 1995). Thus, landscape architectural design, spatial planning, and building architecture all have key and consequential roles to play in defining the attributes of this prosperity in specific places. The design and planning professions influence how landscapes and coastal areas are disposed in relation to one another to make places, how forms of economic lifeways operate in landscapes, whether they be subsistence farming regions or bedroom suburbs and how the aesthetics of landscapes are designed for people's ability to experience beauty in their daily environment.

MODELS FROM THE HISTORY AND ARCHAEOLOGY OF THE LANDSCAPE TO INSPIRE DESIGN

Historical lifeways in the rural mountain regions of Norway might be worthwhile inspirations for the design professions in this effort. As a complement to the foregoing examples of policy documents, white papers, scientific journal research articles and applied research projects with local government planners, this author claims that the long history and the still operating cultural landscapes of shielings,

or higher altitude summer farms in Norway, might provide valuable insight and lessons learned. Such landscapes, when studied from the perspective of planning or design researchers, provide a kind of Clarke “real-world, idiographic model,” (Clarke, 1972), that contextualizes issues of resource exploitation and symbolic meaning in landscapes according to particular spatio-temporal coordinates and socio-historic, bio-physical events and trends. These types of knowledge are complementary to the more nomothetic, theory generated knowledge created by screen mediated desk research and fits in well with the specifics generated by applied science initiatives, such as the “Field of Goals” work. (Austrheim, 2015).

In general, the ethnology of rural life in the Nordics has been a growing area of research for many years, especially after WWII, so that there is a substantial corpus of knowledge concerning the forms of natural landscapes, how humans have designed their landscapes and build economic lifeways in these liminal zones between a wilderness and built urbanization. Eilert Sundt's work (Sundt, 1862), in the 19th Century and the growing tradition in cultural ethnography/geography, as exemplified by Rigmor Frimmanslund's work (Frimmanslund, 1999), are examples of the ethnographic method used to map and interpret the Norwegian cultural landscape. Norway in particular is a landscape that has many mountainous and hilly areas, with a relatively fine-grained specificity of spatial landscape solutions and cultural norms relating to resource exploitation. The narrow fjord hillsides of Western Norway and across the high alpine heaths of the central montaine region, have had for atleast 1000 years, traditional economies that have included these transhumance “seters,” which can be translated as “Shieling” in English. The term refers to both the practice of the seasonal movement of the family and farmhands between the lower valley main farm and the mountain summer farm, and the site itself where the mountain pastures and temporary dwellings are. (Svensson, 2021). Even though authors think the shieling life extends back to Viking Age ninth Century, since the 20th Century, this economic form has been on the retreat, especially because of the mechanization of agriculture and the draw of large urban areas with their demands for labor and the excitement of city life, with its divorce from subsistence labors through leisure time and the stimulations afforded by entertainment activities as paid for services. (Sjögren, et. al., 2015).

THE SETER (SHIELING) AS A TYPE OF LIFEWAY ON THE LANDSCAPE

The seters in Norway still exist as living economies, not mere museum pieces, the seter way of life was recognized as valuable and inducted into the UNESCO Intangible Cultural Heritage list in December 2024, A good deal has been written about these landscapes and their economic practices over the last 100 years in both scientific journals and the popular press, the seter operations can easily be observed by anyone making a small effort to contact the farmers and visiting the sites. Finally, seter cheese, special kinds of milk and butter can be bought in the marketplace in Norway.

The shieling lifeway, with its attendant traditions of building construction, in and out-fields and pasturing practices, is a form of transhumance well suited to Norway's geography where approximately 45% of the country is mountainous terrain, a significant amount of land not at all fit for agricultural cultivation. (See Figure 1). The farm's family members, often with associated farmhands, move on a seasonal basis to a higher elevation dwelling during the warmer months of the year, where they pasture their animals and produce products such as artisanal cheeses. In the fall, these same persons, along with their cattle, return to the main farmsteads at lower elevations, taking with them the valuable summer harvested hay, wildflowers and other

wooden resources (Bele, 2015). This movement pattern follows the lower lying fields and meadows, thus preserving their fecundity and growth volume. Because there are still Norwegian families that make the trek from their “normal” farms or houses in the lowlands up to the summer seter farm every summer, this lifeway and the attendant traditions of making and maintaining this landscape, several authors claim these landscape traditions have lessons for modern European society’s search for how landscape design can enable more sustainable and resilient, perhaps anti-fragile design.

Many seters are not museums, even though museums perform valuable work in preserving abandoned seters and doing seter focused research, including doing ongoing grasslands and forest management and running tours to seter farms and being information gateways to the seter landscape for the lay public. The seters where people still graze their cattle, make cheese and other dairy products and harvest wildflowers from indigenous wildflower meadows, among other economic activities, are still practiced because the family members find these common rituals valuable and worth reproducing. The conservation of natural areas in Norway, adjacent to these seter areas certainly helps these remnants of the Middle Ages to exist in relative peace. Indeed, some of these seters are only reachable by horse, or even on foot, by climbing steep mountain trails. Thus, the seter is pregnant with lessons for the modern, European, urbanized society. (Miljødirektoratet, 2023).

Bolette Bele, at the NIBIO station in Trondheim, is continuing the work of searching out the multiplicity of socio-environmental relationships encompassed by the shieling landscapes. The project “Mitigation and Adaptation in Cultural Heritage Landscapes: Lessons from Transhumant Pastoral Systems for Managing Novel Climate Risks (PastAdapt),” is such an effort, running until 2027. The Principal Investigator claims that,

“Cultural landscapes provide essential ecological and sociocultural services and contain insights needed to combat climate change, but they are vulnerable to climate change and other stressors. By examining the cultural landscapes of transhumant pastoralism in France, Norway, and Spain, we will detail climate and other threats to this intangible cultural heritage (ICH), the characteristics and factors that create adaptive capacity in these systems, and methods for sustaining ICH through community action and policy.”

By investigating real-world places where people or heritage institutions run agro-pastoral operations in alpine valley or mountain regions in Spain, the U.S., and Norway, the investigators have the potential to triangulate idiographic knowledge that can then be compared to the other two examples. Further, they can compare this specific knowledge to what is known from historical and archaeological records about montaine agro-pastoralism in the Northern Hemisphere and to the currently known challenges of mountain agro-pastoralists that are surrounded by expansive areas of high-technology infrastructures and fast-moving land-use changes. The project seeks to: “1. Develop a toolkit that helps communities and decision-makers assess the vulnerability and resilience of cultural landscapes. 2. Develop communication resources for the public and policy makers illustrating why threatened cultural heritage matters and how cultural heritage can contribute to climate change mitigation and adaptation. 3. Contribute to scientific literature on the vulnerability and resilience of cultural landscapes and culturally informed strategies for climate mitigation and adaptation.” (NIBIO, 2025).

The shielings exist in a liminal zone between the designed and built world and the wilderness. They are impacted by the functioning of natural ecologies and the local bio-geophysical climate, but also by 12,000 years of the history of humankind’s settlement of the Norwegian peninsula, (SNL) which has left indelible marks on the land and the seashore, and certainly changed the nature of the forests and meadows of the land.

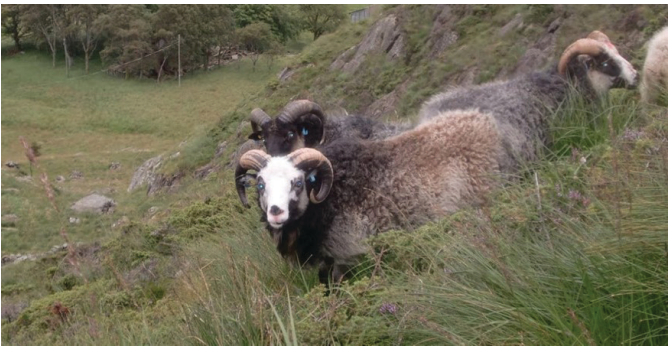


Figure 1. The Norwegian native sheep species on a Northern Norway hillside near the setra.
Source: Nina Svartedal/Nork Genressurssenter.

Norway’s mountainous landscapes have been inhabited for over 9,000 years. Exploiting this land with steep hillsides level has meant that other species besides beef or dairy cattle have to be used, to navigate the terrain, stand up to the windy cliffs and the cold, and be able to run from predators. Figure 1 shows the sure-footed native sheet Austevoldsau, have been used by setra farmers for atleast 1,000 years because of these attributes.

SHIELINGS AS A KIND OF LANDSCAPE ARCHITECTURE

The shieling sites are ordered landscapes. They are consciously placed within larger realms of the possible sites where mountain resources might be exploited, having particular directional orientations toward sunlight, rain and wind, with specific directional orientations of the farm features, such as sheep folds, reindeer trap fences and buildings, with considered and specific proximity to forest edges and certain kinds of tree canopies and meadow/grassland vegetation, and situated in relation to the natural fall of the land for considered drainage pathways. Thus, the shielings are cultural phenomena, indeed a type of designed landscape, no less so than modern “landscape architecture” made by landscape architects. It only appears as if they are a different type of landscape because shielings are not made by the modern profession of landscape architecture and they often do not have the same requisite components of modern landscapes, such as a paved street, kerb stones, sidewalks, road signs, substantial buildings, and the like. Yet shieling sites are analogous to modern sites because of their use of traditional ways of ordering the land for human purposes. I claim that therefore, it is likely that modern landscape architects, if they also seek understanding from the archaeology and the history of the Norwegian landscape, should have something to contribute to re-thinking the large scale planning of the landscape and the re-design of landscapes at the site scale.



Figure 2. Gutulisetra (shieling), in the Gutulia National Park, Engerdal Municipality, Innlandet County, Norway.
Source: Kjell Isa/Nasjonalt parkstyret for Femundsmarka og Gutulia.

The Gutuli shieling site in Figure 2 shows a subtle landscape design that is specific to the place but based on traditional practices for seter settlements: The chosen site is on a south facing slope, at the edge of the forest, and thus sheltered from the cold north winds and open to the daylight and solar gain of the long summer days, also affording a view out over the tree line and down to the valley. The slope leads the water away from the site down to and around the spread out birch, pine and spruce trees, pasturing fields and wildflower meadows. All around the buildings and downslope, a diversity of grasses and wildflowers grow right up to the building edges and over the rock outcroppings, which helps the water to infiltrate the soil while the growth also keeps the pore spaces open for the diversity of the soil biome, such as the protista, bacteria and mycorrhizae. The building gables all face across the topographic lines, with their entrances either directly toward the valley or canted at an angle, so that the entrance is revealed while the “back-end” is dug into the earth. Even the buildings are of the place, made of the pine trees from the forest, with birch bark, grass and soil for the roofing and the eaves.

Together with the choice of the species for animal husbandry, the selection of the sites of inhabitation and how the landscape is ordered, the seter farmers ordered the landscape for a particular lifeway, but made this typical lifeway specific to a place and time. Thus, there is a typical aesthetics of a design on and of the land. This aesthetic gathers together the temporal process of vegetative and animal growth, the Norwegian seasons in different biogeographical and climatic contexts and a way of re-producing fecundity and biological resource viability that feeds both humans and the non-human biosystems, in an ensemble of a few well chosen and well-made materials, and does this in ways that enable the design to last for 1,000s of years.

CONCLUSION

Landscape architects, urban designers and spatial planners use a variety of methods that can allow for inspiration from lessons we learn from shielings and their operation to both plan for their conservation and to plan the landscapes for modern farm and villages. These methods include design thinking, planning charrettes, the modelling of change in space and time using computer simulations and virtual reality. Design thinking and charrettes are the two key skills that are pertinent here. Design thinking layers several different types of information about space and temporal processes above one another, so that planners can see how constraints, opportunities and landscape features can create potential ordering frameworks to guide long-term land processes and make, in the short-term, places for inhabitation; inhabitation that has specific placements, size, scale orientation, where they engender certain sought after aesthetics, how human and animal movement patterns can be hindered or engendered and where and how the myriad of bio-physical processes that are critical to agro-pastoral economies can be beneficially ordered in space and time.

Further, the charrette form of collaboration and solution finding is a highly inclusive effort, in some ways an analogue to the culturally mediated processes down through history that have made shielings we see today. Charrettes expressly guide the participants to focus on achieving commonly agreed upon purposes and goals, rather than each individual, as in conventional planning meetings, stating and defending the position of their own organization or professional specialty.

Taken together, these two methods, enabled by other modern and electronic collaboration methods from the knowledge of recent and ongoing research on shielings in the Northern European culture area, has the potential to make actionable, physical proposals for cultural

landscape conservation in rural areas of the Nordics. Such an effort is a focus on rural Norden that should be welcomed by the national governments and local authorities, since the natural capital in the cultural heritage dominated countryside is not something that one can simply degrade and then repair, it is not simply a commodity that can be bought and sold. It is a kind of wealth that needs care and nurturing.

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A person's shadow with a yellow string in the air
Photograph by Jr Korpa

Reclaiming imagination & agency:

On radically reorienting social, ecological and
collective futures

03



Chipko Tree Huggers of the Himalayas.

Photo by Pamela Singh in 1994.

This is Not a Women's Issue - If Only 50% of Society is Taught to Care, How Can We Expect 100% of Society to Care for the Environment?

Sacha Paternotte

We all want to save the planet and prevent ecological collapse... or do we? Is this just the politically correct thing to say? Do people really care? This essay is a plea to fight climate change in a more integral manner than simply arguing that we all need to fly less and eat less meat. With this essay, I want to target what lies at the core of consumerism: namely patriarchy. You may be thinking, 'Here we go again, some woman wants to talk about herself.' But that is exactly why I think it is essential to talk about the climate crisis that we are in through a feminist lens. My argument illustrates why feminism is not a woman's issue but rather exposes patriarchy to be a societal illness. I want to invite men into the discussion on how to dismantle patriarchy and radically re-think the extent of what patriarchy destroys. Are we socializing young boys the same as girls? Do we allow them the full range of human emotion or care? How does that effect attitudes towards environmental catastrophe?

Before I get into what this could mean for society anno 2025, I would like to start off with a quote from the 1980 book *The Death of Nature* by Carolyn Merchant:

"In investigating the roots of our current environmental dilemma and its connection to science, technology, and the economy, we must reexamine the formation of a world view and science that, by reconceptualizing reality as a machine rather than a living organism, sanctioned the domination of both nature and women." (Merchant 1989, xxi)

As a young woman it became apparent to me that I was treated differently from my male counterparts quite early in life. I was treated differently than boys even though at a young age there was not anything significantly different about them as far as I could see. But for some reason the boys in my class were praised for intelligence and wit, while I, along with the other girls, was praised for being well-mannered and looking pretty. I quickly learned that those virtues had a different perishability. When I walked into class one day with my hair all a mess because I had forgotten to take out my braids from the day before, a boy in class shouted that he 'hated my ugly hair'. My unknowing dissatisfaction of the expectation of prettiness was all of

a sudden offensive and reason for ridicule. I remember the teacher heard but said nothing. The teacher also seemed to not be bothered by otherwise smart boys shouting dumb jokes in class. I learned that boys were granted more space, more leeway for mistakes and less accountability. These are just the small observations of a young girl, but even as a young girl I could see the unjust oppressive social standards around me. In this essay I will tie together major oppressive systems and argue that they are not completely separate entities. It is important that people that experience oppression call it out because oppression is fundamentally easier to deconstruct, thus better understood, by the oppressed rather than the oppressor.

Slowly but surely more people are starting to understand how society's oppressive systems make it impossible to progress into a regenerative future. Imperialism will continue the search for more land to use and will ultimately cause people to lose stewardship over their environment. Capitalism will continue to chase prices that are too cheap for the environmental and human toll that it takes to produce goods or services. For rich nations to fit within the boundaries that our planet can safely and justly handle, they will be required to abandon growth as a policy objective and shift to post-capitalist economic models (Hickel 2019).

These two oppressive systems, Imperialism and capitalism, are generally accepted to hinder change towards sustainability because unfairness and domination are at their core. But I would argue that the most impactful part of this discussion is gender oppression and the addressing its system: patriarchy. We all deal with gender. It is the one social quantifier that no one can escape, no matter how segregated we live. Segregation on the basis of ethnicity, class or religion all exist and takes many forms. Interactions with oppressed genders is inescapable, we are all part of mixed gender family structures. All of us witness and experience gender discrimination throughout our lives. That's why a societal shift regarding gender could be so groundbreaking. We all know a woman, our mother, and we see how she has been treated differently than a man, our father.

Girls are taught to be well-mannered, compliant, silent, caring, sweet, sensitive, detail oriented and resolving. Boys are taught that their

masculinity is defined by not being like girls. Any display of perceived femininity is belittled. Don't cry – don't be a pussy. Don't whisper – speak up. Don't act so dainty – you are not a princess. Be loud, be assertive, be a real a man. The sad thing is that in doing so, men are not allowed the full range of human emotion. Subsequently boys are not socialized to regulate or present emotions because the only emotion they are allowed to display is aggression. On the other hand, the only emotion that is forbidden for women is anger.

CARE LABOUR

Due to men not being socialized to be empathetic and sensitive, they usually tend to underperform in care roles. Men on average take on less of the everyday household chores and are underrepresented in traditional care jobs like nursing, caring for the elderly, or working as kindergarten teachers. Who makes the grocery list? Who cleans the house, and notices when that needs to happen? Who remembers the birthday of family members? Who takes care of the kids? – generally women. Women perform most care labour in our society. These tasks do not only encompass physical labour but also organisational labour, better known as the mental load, or emotional labour. The mental load refers to the cognitive and emotional effort required to plan, organize, and remember the invisible steps embedded in household tasks. Think of keeping track of when laundry needs to be done, mental notes of when stocked items need to be replenished, remembering that the doctor needs to be called. The mental load is never ending and invisible (Hochschild and Machung 1989). That makes it particularly draining, it requires an autopilot of attentiveness. It is not that men do not try to carry out care work, but they are not taught the same essential attentiveness to the same exhaustive extent that women are.

Even when men take on care labour, they often skip the necessary mental load preparations and therefor do not obtain the same result. In many heterosexual couples this serves men quite well, they can say: 'See honey, I tried to do the laundry, but when I do it I just forget that the sheets also need to be washed, you should do it, you are better at keeping track of all of that, I mess it up anyways.' This phenomenon is known in pop-culture and psychology as weaponized incompetence: strategically underperforming or claiming incompetence to avoid responsibility and being expected to perform the task in the future. So, the question is not "why are men underperforming care labour? But rather, what do we teach girls that we don't teach boys that makes them effortlessly better at care labour? The answer is clear: attentiveness and sensitivity (Beauvoir 1949). Young girls are forced to extend their metaphorical antennas: how are people perceiving me? What social performance is expected of me? What answer is most socially acceptable right now. This is why some think that care just comes naturally to women, when in fact women's and men's brains have exactly the same capacity for these qualities, we just don't expect them from men, so they don't need to perform them as often (Lorber 1994).

Unfair socialisation and allowed social expression hinders the fight against climate change from two sides:

1. Women care so much that they get frustrated: 'WHY IS NO ONE ELSE CARING FOR OUR PLANET?!' This anger in women is often dismissed. This frustration is clearly embodied in Greta Thunberg who, since her earliest news coverage, has had her activism dismissed because of gender and neurodivergence. Her serious discussion and argumentation is often dismissed by the media, the public, and even respected politicians and philosophers alike (White 2021; Nelson 2019; Pinheiro 2020).

2. Whereas men are not allowed to care: 'Oh you are vegan for the environment now, what have you become, a softy or something?'. For a man to vocalise his care for the environment and acknowledge that the current economic system is not working, is threatening the status quo. Male power and domination is a part of that status quo. Many men perceive the challenging of the status quo to be synonymous with a threat to free expression of masculinity in our society. Climate scepticism is therefore a way for men to protect against the perceived threat to their masculinity. Ethnographic fieldwork from January 2022 to March 2025 has revealed that climate scepticism often worked as a strategy to express frustrations regarding gender and changes in the status quo. Gender-based identity markers can function both as identity expression and as a way of expressing group belonging to a self-proclaimed silenced and excluded group of climate-sceptical, privileged men in Southern Norway (Marschner et al. 2024, 221–34 Wilhelmsen).

Environmental care has almost become a women's concern because it is perceived as threatening in two ways for men. One, care is perceived as a feminine trait. So to perform care could threaten masculinity. Two, challenging attitudes towards the environment threatens the status quo and therefore patriarchal systems that determine how we treat the environment.

SOCIAL REPRODUCTION THEORY

Social Reproduction Theory (SRT) shows that care labour creates further distinctions between genders. The theory explains the material basis of the oppression of women and other marginalised groups under capitalism. In Marxism and the Oppression of Women Vogel describes how Marxist theory can be expanded upon to also encompass the feminist struggle in a materialist way (Vogel 1983). This was revolutionary for the feminist movement at the time. Before the introduction of SRT, capitalism and patriarchy were viewed as two separate systems of oppression. In many ways SRT therefore draws the same conclusions as intersectional feminism, arguing that oppression on a different basis is intertwined and inseparable. Hence, sexism cannot be resolved without addressing other oppressions such as racism, classism, homophobia, xenophobia, ableism, etc.

Vogel placed the oppression of women within the capitalist production of social reproduction of the working class. Marx already pointed out that for capitalism to function, it is dependent on the reproduction of the labour force. For the capitalist (system) to make a profit, it is essential that there are enough healthy labourers to work. Labourers and labour are the only commodities that cannot be produced capitalistically. Labour can only be produced by a family system that supports that labourer. In other words, care within a patriarchal structure. In a societal sense, this means capitalism indirectly extracts care labour from women to support, educate, feed and reproduce a labour force, completely for free. Social reproduction encompasses all processes through which labour power is being sustained and replenished; birthing and care for kids, the upkeep of household tasks, care for the elderly or even the immigrant workforce. For capitalism to freely exploit this social reproduction, capitalist societies need to form hierarchical structures to organise this, at seemingly no cost. In our society, this social reproduction is mainly organised within heterosexual family units. Here, the female role is essential. However, this pillar of the economy is systemically devalued as long as care labour is not recognised as real labour.

“Key to social reproduction theory (SRT) is an understanding of the ‘production of goods and services and the production of life are part of one integrated process’, or in other words: acknowledging that race and gender oppression occur capitalistically. (...) Many SRF accounts tend toward historical description rather than analysis. Many adopt a structuralist approach that treats production and reproduction as radically distinct processes and spheres. My point, however, is that there is scope within the SRF framework to move away from those partial false starts, and provide a robust explanation of how oppressive relations are part of the very nature of capitalist society. The best SRF accounts are neither purely historical, nor purely abstract. Rather, they move between history and theory to illustrate how the contradictory relationship between life-making and capitalism’s tendencies toward dispossession and accumulation is worked out historically, in workers’ concrete social relations.” (Ferguson 2017)

PERCEPTIONS ON OUR ENVIRONMENT

Now that we have a better understanding of the objectification of women's bodies as caring baby machines, it is time to tie this into the ongoing climate crisis. What do these have to do with one another?

Violence against women and nature

As long as society allows women to be subjected to violence for their femininity, nature will be subjected to violence as well. Sadly, the truth is that the most dangerous thing to women are their male partners. As society seems to not take male violence against women seriously, and does not implement drastic changes to put a stop to this misogyny. While the overwhelming majority of homicides worldwide are committed against men and boys (81%), women and girls are disproportionately affected by homicidal violence in the private sphere. Intimate partner and sexual violence are mostly perpetrated by men against women (World Health Organization 2021). Approximately 56% of all female homicides are committed by intimate partners or other family members, while only 11% of all male homicides are perpetrated in the private sphere (UNODC 2022). This phenomenon is called femicide; the gendered murder of women because of their femininity, motivated by an entitlement to women's bodies and lives, oftentimes the perpetrator feels a sense of ownership or superiority over the victim (Corradi 2021). The Guardian describes men's violence against women as an ongoing systemic crisis. It highlights alarming statistics, such as the murder of more than one woman a week and the fact that approximately 80% of women who experience violence do not report their abuse. These figures emphasize the vast scale and severity of the issue (Chilcott 2020).

To step away from statistics, I know the widespread violation of women's bodies to be true myself as well. For me and all young women in my circle, we unfortunately know what it is like to be catcalled and assaulted firsthand. I wish this was not a shared experience within my entire cycle of friends but it is. The mindboggling thing is that we often only realise in conversations afterwards the harm that was inflicted on us. Nor was it something we misinterpreted or something we 'seemingly' asked for. That is how deep-rooted patriarchy is in all of our minds, as women we try to find reasoning within ourselves even when the blame lies completely outside of our control. The sheer audacity these men feel to set their attentiveness and empathy aside for their own personal gain is alarming. Why it is mostly men violating others in these ways? Again, men are not socialised to be empathetic and attentive in the same way women are, which ultimately permits violence.

Similarly, nature is violated. All over the world nature and natural landscapes are abused. Natural resources are being exhausted, ancient woodlands are being logged, waste is being dumped wherever we see fit, nature is shoved aside for parking lots and no one bats an eye. No one seems to care because after all, there was a permit. Not to speak of all the illegal nature degrading practices that are, for obvious reasons, unreported.

Vandana Shiva argues that men have a reductionist attitude towards the world, this was imbodyed in the birth of science and got mixed up with the race towards optimisation. In processes like the professionalization of modern medicine or the Green Revolution, indigenous and women's empirical knowledge was overlooked and ridiculed in efforts to modernize and industrialize medical and agrarian processes. In these efforts a substantial amount of power was shifted away from local female knowledge into the hands of male professionals. Many empirical insights were lost through this shift. Due to a mechanistic world view, science, although a necessary tool in our society, has time and time again reduced complex natural processes, in nature and the human body, to only its mechanical parts. This reductionist thinking ends up harming nature and women simultaneously (Shiva 2016). Science ultimately sanctioned the domination of both nature and women (Merchant 1989). These careless and dominating attitudes towards nature have come to a climax with growing economic demands:

1. In Soda Springs Idaho lies Monsanto Phosphate Plant. There, glowing molten phosphate ore is continuously dumped of the side of its waste mound around five times per day, 24 hours a day. The 215 hectare plant has operated since 1952. The mound is slowly growing in width, at its edges it has a height of 45 meters (Girof et al. 2007).



Figure 1. Monsanto Waste Pour: “Soda Spring’s Man-Made Lava Flow.” Source: The Center for Land Use Interpretation.

2. According to the United Nations, approximately 80% of all wastewater is released into the environment without adequate treatment (UN Environment 2019).

3. Even here in Oslo, construction waste is being dumped in as many as 44 landfills located across Oslo's surrounding areas, instead of being properly recycled. There are requirements that the materials dumped in the landfills must not be contaminated, but today no inspections are carried out. Researchers have found various forms of plastic in the landfills. Additionally, stone is not just stone. If removed from its natural element, certain types of stone can pollute; like alum shale for instance, which is abundant in Oslo. This rock is acid-forming and has a high uranium content, which can make the area radioactive. The storage and disposal of alum shale is strictly regulated with mandatory disposal requirements. There are substantial demands on the landfills, but no policing of these environmental demands.

Over time, these rock masses could result in acidic runoff that also contains environmentally hazardous heavy metals and uranium. The researchers found alum shale in many of the landfills surrounding Oslo (Sæther 2024).

There are endless examples of patriarchal violence against nature. If collective care and attentiveness would be central to our society, this destruction of nature and our environment would never happen. These values should be pillars to our society instead of the consumerism and inattentiveness that is central in these examples. Why do we need to always find a use for nature, why can it not just be? Does nature not have a right to exist independent of human consumption? The same tendency applies to women in patriarchal society: Why is a woman defined by her relationship to a man? Why is she not the agent that shapes her life, but is her life largely decided for by men (Beauvoir 1949)? Patriarchy does not take anything or anyone serious except for the privileged human man. Thus, patriarchy ultimately enables this careless handling of nature.

Devalued women’s care and ecosystem services

Women’s care being objectified into free labour; women’s bodies being viewed as sexual and reproductive objects; these objectifications all link to a lack of empathy towards women and result in a devaluation of the feminine in itself. This lack of empathy is echoed in the undervaluing of ecosystem services. Any service that the capitalist system does not need to pay for is automatically devalued. This is why feminism and environmentalism are linked and their struggles will not be solved in separation from one another. Both feminism and the environmental movement call for collective action. It is an illusion to think one can escape natural disasters individually, we need each other. Just like we need each other to put an end to sexism. Both these movements call for a structural reimaginings of our society. A healthy ecology is linked to a healthy life for women and children. Women’s equality should not be achieved at the expense of worsening the environment and neither should environmental improvements be gained at the expense of women. Feminism and environmentalism are inherently linked into one another through ecofeminism (Mies and Shiva 1993).

Our current economic system, capitalism, was built on the domination of land and workers. Centuries of domination over women granted domination over land and slaves. The ‘improvement’ of land has long been the driver for exploitation of said land and its workers. If it were not for men being numbed to the mistreatment and domination of women, I doubt that the step to domination of land and slaves would have been so easy. I argue that the attitudes of objectification that came about from the abuse of women were the starting point for the abuse of workers, slaves, and land. Therefore, misogyny, slavery and capitalism are intertwined, the root of each other, authorizing domination. In my opinion, it is hard to see these as different or separate when they are so clearly synonymous with the same culture and attitude. The dismantling of one unjust system, clearly threatens the others as they make up the intertwined status quo.

SHAME VERSUS ANGER AS A MOTIVATOR

With this essay, I specifically wanted to avoid pointing a finger at individual men or invoke shame because I believe that counters the whole ideology of feminism. But rather address the position men have in our society. Men are essential in any mass movement. To try and point at the guilty would be counterintuitive. I think shame is an emotion that hinders instead of setting people into action. When men feel that feminism is blaming them for harm against women, that is partially outside of the point. The goal of feminism is to not shame individual men, but to criticize a status quo that is not supporting women, and as I argue in this essay, I hold the whole of society accountable. I

am not saying that every man that takes part in a conversation with misogynistic undertones is a bad person. On the contrary, especially those men that see misogyny happen up close, are crucial in the fight for a more fair and equal society. I want to invite everyone to unite in anger at how our patriarchal society is limiting our lives and harming all genders.

Part of the solution to battle the climate crisis is to show men in particular that patriarchy is hurting them too. Patriarchy limits their expression of masculinity. It is not allowing them their full range of emotions. Which in turn limits men in their capacity to care, not only for the people around them but also our degrading environment. Which will hurt the whole of society very soon now that climate change is accelerating.

A recent trend that I observed within environmentally conscious circles is the shift in focus away from the individual blame towards the systemic failure. It is unproductive to point out individual peoples’ carbon footprint and shame them about their individual contribution to climate change, that will not move them to change. Shame is not a good motivator, it freezes people, so they refrain from acting. Fossil fuel companies knew that when they promoted the term ‘carbon footprint’ (Solnit 2021). They knew that by linking carbon emissions to something as personal as a footprint, they could hand over responsibility to consumers; consumers who were too busy worrying about their morality, instead of getting angry at the polluting multinationals that dictate the systems around them.

A focus on the self is a form of looking away from climate change, being too scared to confront the bigger systems at play. Essential is building a mass movement capable of standing up to those defending a failing status quo, like it has been time and time again. Politicians are not the only ones with the power to declare a crisis. Mass movements of regular people can declare one too (Klein 2014). Attention has been deflected away from the systemic changes needed at corporate and political levels for too long. Anger is the real driver for change. No one is coming to save us, we are going to have to do it ourselves, and we can best do it together. We are all allowed to be angry at this failing societal system. We should shout about this as loud as we can!

Only when we permit ourselves a full range of emotions and qualities, regardless of our gender; anger, care, attentiveness, and empathy – will we be able to solve these systemic injustices regarding environment and gender, together!

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Figure 1. Roadside land

Source: William Arndt.

Removing Highway Blinders: Rethinking the Concept and Functions of Highway Systems

Yngve Rasmussen

After graduating with a bachelor's degree in landscape construction and management last spring, I was fortunate to land a summer job in vegetation management for the Norwegian Public Roads Administration (NPRA or Statens Vegvesen). Throughout the summer, my view of highways changed significantly. The biggest surprise was how the infrastructure I earlier viewed as simple and logical, became something I understood as politically complex, fascinating and surprisingly absurd.

I am a road user, like most people in today's western society. Despite not owning a car, I was made very familiar with traffic landscapes through my upbringing and education. It is easy to assume that for most of us, road systems are the preludes of some of life's most significant moments. Like starting school, going to a job interview, travelling to another country or bringing your first child home from the hospital. Our everyday activities like going to work or visiting friends and family also often relay on roads, regardless of if you have a private car or use public transportation. Yet, despite the deep connection between our lives and mobility systems, we rarely consider the different complexities of these spaces. Except for traffic congestion and safety of course. I was no exception to this.

One thing I soon understood after getting the job was that the NPRA practically manages the largest "garden network" in Norway, situated along our national highways. A significant portion of this "garden" is maintained primarily to avoid disruptions to traffic and to provide a consistent backdrop for drivers. Common qualities are clear-stemmed trees, oceans of mono-cultured bushes and grass surfaces that sum up to about 10 million square meters across Norway («Vegkart», 2025). This is equivalent to around 3 Central Parks, which is an area 22 times bigger than Norway's biggest park Frognerparken. Understanding the huge area these "backdrop gardens" cover, and the amount of money spent maintaining them was mind-blowing. And this is just a third of the backdrop gardens of Norway, if you add roadside land managed in the same way, but by other institutions, the area becomes 30 million square meters («Vegkart», 2025). By the end of the summer, I was left with a strong sense of absurdity when it came to all the land that had become monofunctional backdrops for drivers on highways. Should we rethink this practice? Does it hold up under modern demands for sustainability and efficient use of land and resources?

The feeling became stronger after talking with permanent workers about the complexities of land acquisition, project management and juggling the cost and priorities of maintenance. Why are we putting so much complex activity into such a simple function as easy mobility? It is no secret that safe and reliable movement of labor and goods is crucial to society, which makes it easy to understand why we make big sacrifices to receive efficient mobility in return. However, I cannot help but feel that we are overlooking the potential of the spaces that serve as borders between this movement and the surrounding stillness. Of course, the "backdrop gardens" have some functions that are beneficial to the surroundings, but this still seems to be secondary benefits that are rarely put in system. It is almost like the continued mono-use of these areas reflects a broader ignorance of the sacrifices made for our infrastructure and value of the land in its immediate surroundings. What happens if we recognize this land for something more than verges and ditches with no value apart from the neighboring transit activity?

By highlighting both the sacrifices made for highway construction and the active losses caused by conventional management and design approaches, we can challenge the perception of highways as mere conduits for movement, disconnected from their surroundings. My goal is to foster a deeper awareness of the roadside land. Our responsibility extends beyond being critical, innovative, and mindful in future infrastructure development, we must also commit to regenerating and reimagining the spaces we already have compromised.

This essay will explore the complex relationship between open space and road infrastructure through three key perspectives. First, it examines how road infrastructure has evolved to occupy increasing amounts of space, often prioritizing vehicular movement over other land uses. Next, it challenges the dominant paradigms that have shaped road development and zoning, questioning long-held assumptions about mobility, accessibility, and land use. Finally, the essay considers the regenerative potential of reimagining road infrastructure, imagining how roadside land can be revitalized through alternative approaches that prioritize sustainability and multifunctional use of land and resources.

UNDERSTANDING THE EVOLUTION OF SPACE DEMANDING ROAD INFRASTRUCTURE

First, I want to establish that this essay will be focusing on road development, zoning practices and highway systems from a Eurocentric point of view. Especially with a focus on the changes that happened from around the world wars and until our time. Rather few large-scale changes happened between the roman era and the start of the 20th century. European countries have therefore all experienced extreme changes in traffic infrastructure during the last 100 year. («Road Widths - Roader's Digest: The SABRE Wiki» 2025).

Today in 2025, the idea of comfortable living along a national main road seems quite absurd. One will automatically imagine a living situation effected by constant noise, air pollution and the looming concern that your home one day will be sacrificed in the name of additional traffic capacity. However, these negative aspects were not a reality for Kristian Larsen, a man who in 1865 lived right next to the main road between the capitals of Norway and Sweden. He worked as a shoemaker, fixing shoes for travelers. He would also fix shoes for others that lived along the old King's Road that later became E18. Food and accommodation were his usual payment when he himself wandered along the road to find work. The farmstead cluster that Kristian's home was part of went from living of the land to becoming a traveler's guesthouse during his time there (Wiwar, 2020)

The fate of Kristian's home, Vangstua, will be covered later in this essay. However, it's worth considering how a national road and key trade route could once serve as a facilitator for social exchange, settlement and even have a guesthouse in its immediate surroundings. Comparing this to the hostile environment typically found around modern national roads offers a useful starting point for understanding the evolution of national highways, most of them origination from old royal roads, postal roads or military roads. Today, one could still pass through farmsteads when driving on smaller feeder roads in rural areas, this gives us an opportunity to reminisce on how settlements were programmed along important trade routes before modern road development.

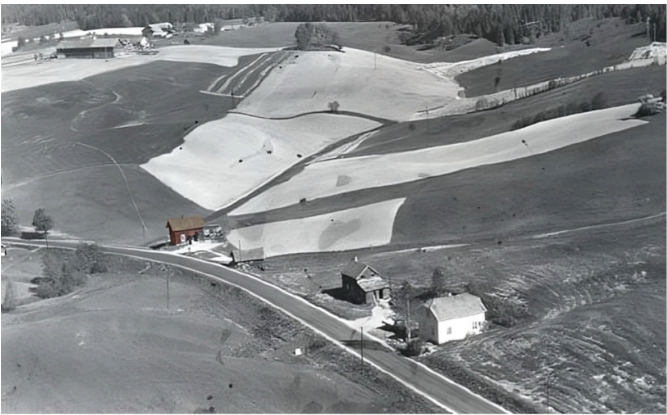


Figure 2. Vangstua (colorized in photo) in 1959, fifteen years later the road was declared European Route 18
Source: Widerøe's Flyveselskap A/S.

Before World War I and World War II, large-scale changes to the European road network were rare. However, improvements in road construction focused on increasing durability, and toll systems for road maintenance and development were introduced in parts of Europe. At the beginning of the 20th century, major trade routes were typically 5-7 meters wide, a standard similar to that of the Roman era («Road Widths - Roader's Digest: The SABRE Wiki» 2025). After the wars, the increasing use of private cars, the introduction of asphalt, and shifting political and economic conditions led to a rapid expansion

of the current road network, much of which was built by the prior ruling regimes of central Europe (Zeller 2007).

In the post-war period, European leaders sought to strengthen economic and military cooperation across borders. An early key driver of major road development was the European Coal and Steel Community (ECSC), which emphasized efficient transportation of goods in its 1951 treaty. This focus was later incorporated into the Treaty of Rome (1957), which established the European Economic Community (EEC) - today known as the European Union (EU). Within six years, this evolved into a common transport policy, covering both domestic and international transport by road, rail and waterways (Böttcher 2006).

Over the following three decades, private car ownership and domestic passenger transport surged, driven by economic growth and mass car production. However, international goods transport by road did not expand at the same rate (Böttcher, 2006). To address this, European leaders launched the Trans-European Transport Network (TEN-T) initiative in the 1980s. This network includes national highways both in the urban and rural, the goal of its establishment was to connect the Scandinavian region to the Mediterranean, link Atlantic nations to central Europe, and later, connect Eastern and Western Europe. This initiative led to the development of wider and faster highways across the continent. By the turn of the 21st century, most highway transportation - measured in tons - consisted of goods rather than passengers (Böttcher 2006).

As a result of these political and economic initiatives, the average width of national roads today is approximately 30 meters. This means that for more than 2000 years, the width of major trade routes remained unchanged, but in just 120 years, they have expanded fivefold (UNECE 2025). Wide buffer zones to ensure safety during high-speed travel is one of the main reasons why roads have expanded in width. It's the acquisition and zoning of these areas that will be the main topic of the rest of this essay.



Figure 3. Opening of a new segment of E18 in Norway, included workers of the project (2021).
Source: Nye Veier.

CHALLENGING THE ESTABLISHED PARADIGMS OF ROAD DEVELOPMENT AND ZONING

This part of the essay aims to challenge the established paradigms of road development and there will be a reflection upon why most of us spend no time questioning these paradigms. In addition, permanent loss caused by zoning practices related to these paradigms will be presented, to hopefully give incentives for us to care about how we use the landscape surrounding national highways.

One of my observations regarding the public's understanding of road development is the surprising degree of simplification. It's almost like the tunnel vision we get from driving on highways transfers over to our understanding of them. To put it simply, most of us view highways as just a line from A to B, when following this line at 100 km/h our front view comes towards us at the rate of about 30 meters per second. Thinking of a meter as a frame, this gives us a view of 30 FPS, similar to videogame animations. The perceptual distortion that happens when we drive in high speed causes us to perceive our surrounding with less detail and wrong proportions (Buzon mfl. 2021), reducing our view of highway surroundings into something closer to a 2D animation, where scale is hard to judge.

These conditions make it impossible to fully fathom the morphology of a highway by driving on it, and therefore most of us do not realize the impact they make on the surrounding landscape. I suspect that this collective difficulty with visualizing the spatial impact of highways has helped the establishment of today's land devouring paradigm. Simply because few can see these highways from a point of view that gives an accurate representation of their span and therefore have little ability to question their size.

Another reason for the simplified understanding could be the lack of historical understanding related to road development. It is easy to assume that important trade routes have had a gradual widening to accommodate the growing production and consumption after the industrial revolution. However, many of us do not know that the establishment of space demanding highways was not a response to a gradual development, but rather a deliberate strategy to have goods be transported by road instead of rail or waterways, like explained earlier in the text. The picture looks a bit different when you realize that the main shift was done as late as the 80s. Less than 50 years ago. (Bottcher 2006). The reason being that high-speed road transport was viewed as more responsive to the needs of the new liberal market in post-Cold War Europe. The ability to transport goods directly from origin to destination without the need for transshipment was highly attractive, aligning with the just-in-time logistics practices that were gaining prominence (Beeckmans 2021).

Understanding today's road infrastructure as a natural progression from roman roads, with a later acceleration in evolution because of post-war private car use, could, in my opinion, be a bit naïve. It gives the current infrastructure a casualness it does not deserve. The fivefold expansion of national roads came with private car use as a preceding cause, but the accelerating cause is the strategy of concentrating goods from different modes of transportation onto high-speed roads. This is what created the need for wide road verges to assure safe high-speed transportation. (Bottcher 2006). By recognizing the top-down and strategic origin of today's mobility landscapes, there might also be room for questioning and improving this strategy.

With the widening of roads came a plethora of different losses, some of which will be mentioned in a bit. An important facilitator for this widening process was the establishment of local rezoning. Zoning or rezoning is the act of defining and fixing the use of a land area to a specific function. Either for the first time or changing the function from one to another. In practice, first-time-zoning often leads to loss of multiple functions in favor of one function. This is usually legislatively enforced and done in a top-down manner (Kendig 2024). Zoning as a practice emerged because of the same factors that caused wide roads; industrial revolution, economic growth and political strategizing. In Europe this got a good foothold after WWII because of the large areas of ruined cities and the need for efficient development of "new cities" («Urban Planning - City Design, Infrastructure, Sustainability |

Britannica» 2025).

Historically, zoning practices were initially centered around the separation of industrial and residential areas, aimed at mitigating the health and environmental impacts of industrial activity (Hall 2014). As urban complexity increased, transportation infrastructure emerged as a distinct zoning category, largely in response to the intensification of goods movement and the spatial demands of increasingly large-scale road networks (Banister 2005). Particularly after the post-war reconstruction of Europe and the subsequent geopolitical shifts following the fall of the Iron Curtain, modernist zoning ideologies became prevalent across the continent. These practices often abandoned the earlier multifunctional approaches to national highways, replacing them with highly specialized and spatially segregated systems (Marshall 2005). This transformation has contributed to a disconnection between contemporary highway systems and the urban or rural fabrics they traverse. It may also explain why highways are rarely perceived as spatial entities in their own right—despite their disruptive presence, they remain culturally situated as "in-between" spaces. This perception likely stems from the historically integrated nature of roads, which for most of human history coexisted intimately with other urban functions and land uses (Gago and Aseguinolaza 2004). Like mentioned earlier, our cultural and historical understanding of roads may obscure a clearer comprehension of the morphology and socio-spatial implications of modern highway infrastructure.

After the shift to zoning the authorities have been following a couple of different strategies when wanting to widen a national road, each with different consequences and losses. The oldest strategy is claiming land along existing roads, so that the road can be expanded in its current place. This gives room for adding or widening lanes, and in some cases putting part of the new expansion on columns above ground. The other and more modern way of dealing with the widening of a road is to relocate it entirely, creating a new road alignment. This new road stretch is often found outside of densely populated areas which gives more space to build wide high-speed roads. A hybrid of these two methods is to find a rural stretch of roads and make it into a new important route and therefore widening to accommodate new traffic. All these tactics are still used to this day, but there is a general movement away from the oldest practice where small and populated road stretches are turned into national highways.

A known example of the old mode of land acquisition is the development of Boulevard Périphérique in Paris. We'll take some time to look at this case to better understand the loss and simplification of function that can occur then rezoning to allow widening of a road in its place. The Boulevard Périphérique that today is part of the TEN-T road network used to be a road following the old city wall of Paris. Around the 1920s the wall itself was torn down in an effort to renovate Paris and to make place for the Boulevards des Maréchaux - a ring system of promenades and later a tram line surrounding the city. This act together with the building of 40 000 affordable housing units starts the story of the Thiers wall's rezoning on a somewhat positive note. However, In the 1950s the historical location of the city-wall and the road next to it was rezoned for high-speed mobility infrastructure for cars, and therefore the old fortification landscape was replaced by an 8 lane motorway in the 1970s (Tribillon 2022). The act of rezoning this belt between Paris' city center and the surrounding suburbs became a large operation of land acquisition that resulted in cultural and social loss.

Findings of urbanist Justinien Tribillons show that rezoning this old fortification landscape, known as the Zone Non Aedificandi, lead to

thousands of cases of home expropriations (Tribillon 2022). The Zone Non Aedificandi, or popularly “The Zone”, was historically meant to be empty for military surveillance purposes, but from the mid 19th century shacks started popping up on these open lawns and along the route surrounding Paris. During the renovation period of Paris in the late 19th and early 20th century many of these homes were removed, while some persisted and were not displaced until the development of Boulevard Périphérique. These were the homes of blue-collar workers, artisans, Romani, sex workers and immigrants (Leveau-Fernandez 2005; Capizzi 2004). The green belt structure around inner Paris was also a popular recreational area for poor Parisians and the fortification landscape had obvious historical value. However, the motorway was prioritized and the old multi-functional nature of the fortification zone, was replaced with the monofunctional highway.

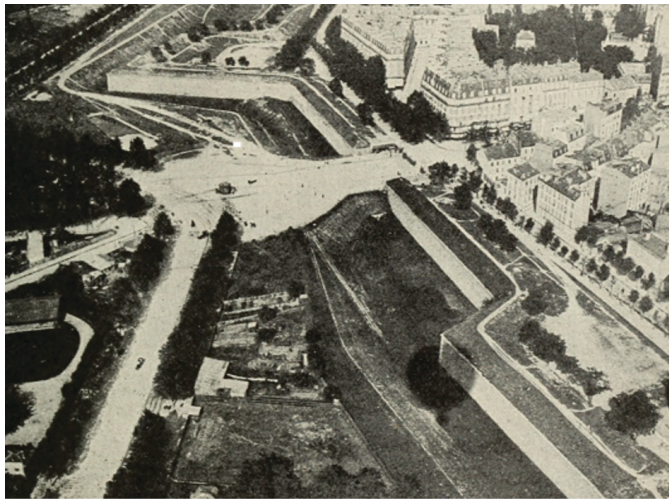


Figure 4. Segment of the old city wall zone from 1908 and the same place today showing Boulevard Périphérique.
Source: Alfred Hildebrandt and Google Earth.

Politicians backed up the development of this area by claiming that the old Zone Non Aedificandi was “empty” and mainly in the governance of the city administration. This statement was overly simplified, as the immediate place along the ring road hosted settlements and was used for recreation and food production by poor Parisians. The city also ended up removing some of the affordable housing unit from the 1920s while developing this “empty space”. Many have theorized that this simplified depiction was strategic, and that for some powerful people the displacement of the residents and users of “The Zone” was an additional bonus of the road development, working as a final stage of the earlier Paris renovation project (Tribillon 2022).

As one can expect, the neighboring places of the new Boulevard Périphérique are heavily affected by air and sound pollution. In

addition to this, the road acts as a new wall surrounding the inner city, with the same negative effects that motivated the disassembly of the old Thiers wall. The value of property inside Boulevard Périphérique is way higher than on the outside, causing a bigger pressure on property development in the already dens center of Paris. At the same time the road causes a physical class-divide where the struggle of transversing the road by foot keeps the urban spaces of the inner city less accessible to working class families outside the highway (Tribillon 2022).

The direct and indirect effects of road developments like Boulevard Périphérique are many and complex, however shortly summarized, the challenges and consequences related to this type of development strategy is the explanation behind why we see stretches of highways being moved out if the city in recent road development projects. Of course this does not come without its own type of sacrifices. To show some of these effects we'll go back to Vangstua in Norway.

After the world wars, cars became the standard mode of transportation on the road next to Vangstua. Kristian Larsen was long gone, and the roadside community was getting increasingly fragmented by the cars driving on the neighboring road. This did not immediately cause the home to stay vacant, but the turnover in residents was high. Shoemakers, leatherworkers, a roadworker, a taxi driver and a worker on the nearby farm were among people who lived in this roadside house up until the 1970s (Hjorthaug 2020).



Figure 5. Vangstua and its residents around 1950.
Source: Asbjørn Hjorthaug.

At the same time as Boulevard Périphérique was being developed in Paris, the amount of traffic passing Vangstua was increasing rapidly. In 1973 the NPRA straightened the road and made it wider, the road was now under the name E18. After this the house stood vacant, and it later came in the possession of the NPRA as the plot of land was too close to the road and was not livable anymore, mostly due to the increased speed limit of the road. There could also be no extensions

added to the small building, since regulations prohibited this so close to traffic.

The E18 was made into a highway between 2000 and 2017, at this point the road was part on the TEN-T network. This development had a more modern approach, where there's built an entirely new road alignment away from most housing. However, the NPRA was still planning to tear down Vangstua in 2015, despite the new road stretch laying a couple of kilometers away from the house. The exact reason for this is unclear, but luckily for the house, an artist and other locals wanted to keep it. With the help from the NPRA, Vangstua was made into an art installation, first placed in front of the Norwegian parliament in Oslo, and later in a glass house next to the new E18. The house has become a symbol of the divide between poor and rich at the time of Norway's founding, since both Vangstua and the parlement building was made at the same time. The house also symbolizes what has been lost in the name of modern road development. However, the main point of this example is not necessarily the destiny of Vangstua itself, but rather how the road next to the house was “moved” to somewhere else. Next, we'll look at the consequences of this type of road development.



Figure 6. Vangstua in front of the Norwegian parliament and in its current location next to E18
Source: Asbjørn Hjorthaug and Visit Østfold.

The “new” E18 in Østfold was in some stretches widened up to the width 20 meters and includes Norway's widest motorway bridge at 28 meters wide. The stretch was lain over mostly agricultural land, forests and bogs. The exact square meter of compromised nature is not clear, but the project contractor responsible for masses moved 256,000 cubic meters of soil and 382,000 cubic meters of rock (Saugstad 2015). This amount could fill the Roman Colosseum twice, and you would still have masses left. As the renewal of E18 has continued in the region west of Oslo there is more data on the

destruction of nature, as this has happed recently and within a time where ecological destruction has become more of a focus. The development of the new E18 stretch from Tvedstrand to Arendal led to the destruction of 2 024 000 km2 forest, 45 000 km2 agricultural land and 109 000 km2 of bog (Homleid 2024). The consequences of this type of ecological destruction are vast and deserves an essay for itself, however in the contexts of this essay, one could say that avoiding the destruction of cultural heritage and livability in urbanized areas, we will most likely compromise more nature. This is a difficult dilemma.

And added to this is the fact that cultural heritage is still at risk when gib roads move out of the urban. In 2023 a contractor hired by the NPRA unfortunately crushed a Sámi offering stone in Nesseby municipality when establishing homogenous road verges (Aslaksen 2025), the same happened along E69 towards Nordkapp when another contractor working for the NPRA was making a new tunnel. After the incident in 2023 a new initiative has been started to thoroughly registrant cultural heritage when planning roadwork, in case prior registrations are not sufficient.

Negative feedback regarding road development on wetlands for the Tvedstand-Arendal project has also made the NPRA and other road development agencies willing to change their practices. We are again looking at redeveloping pre-existing roads, despite the increased risks for social displacement and reduction of life quality along the redeveloped road, as seen with Boulevard Périphérique. These issues are obviously handled more democratically today, but experts in the field of land acquisition still find it hard to execute fair deals when meeting property owners from cultural minorities who struggle communicating, or when meeting people lacking the strategic insight or capacity to deal with the inquiries regarding their property. Unfortunately, these groups are often overrepresented in low-value homes along highly trafficked roads (Eika and Mamre 2024).

Solving these difficult dilemmas is maybe not about abandoning one strategy in favor of another but rather alternating between the two from place to place along a road stretch. This is slow and complex work that requires wide knowledge and awareness. Still, the negative aspects of road development will most likely never be solved, and therefore we must start thinking of how we can better compensate and justify the development we are doing or have done. The next part of the essay will investigate how abandoning the traditional zoning practices can lay the foundations for a more regenerative and multifunctional land-use in a highway setting.

THE POTENTIAL FOR REGENERATION

Like mentioned in the introduction, there is a large area of land along Norwegian highways that are monofunctional lawns. This is the case for most of European countries. Some of the lawns in Norway have a less frequent mowing schedule to accommodate for pollinators and to save money, there has even been honey produced by the pollinators in these lawns (Olsen 2020). I see this practice as a first step towards establishing regenerative and multifunctional land-use parallel to highways. The benefits of expanding this thinking to a larger scale, more functions and longer stretches can be divided into three categories: Connectivity, maintenance for multifunction and land use efficiency

Firstly, one could argue that roadside land holds a lot of potential for regeneration because of its elongated morphology. An important quality in landscape morphology is connectivity (Dramstad, Olson, og Forman 1996). Even though highways can be barriers for bigger animal species and it's important to integrate ecological transversing

corridors in their design, the roads could also be corridors of themselves for insects and smaller animals. Especially with projects like the Tvedstand-Arendal project where waste area of nature was compromised and large roadside areas has been left monofunctional, one can use the potential for connectivity found in the long green areas along highways and make it into green infrastructure.

The pollinator example is maintenance for multifunction. By this I mean that one can change the functions of a land by changing the maintenance. It is not surprising that a change in the way we act upon a land, changes the qualities of said land. However, in modern times these changes are often associated with short time spans of disassembly of old programing, to make space for new programming, also assembled in within a relatively short time. This is of course redevelopment, a process that uses a lot of resources and energy. However, by recognizing that change in maintenance can have just as big influence as redevelopment when it comes to changing the functions of land, we unlock the ability to adjust the land to our needs in a site specific and low-energy and resource efficient way, as long as one can except a longer time span. Luckily there are instances where a long-time span is positive, especially in public management were one often have more time than money.

Within institutions such as the NPRA, “alteration projects” along highways, provided they fall below a certain cost threshold, are categorized as maintenance activities. This classification offers a strategic opportunity to implement small-scale, targeted interventions that can initiate new maintenance practices and gradually support a transformation in land use. This shift can then later be reenforced by small and regular acts upon the land.

Small-scale interventions primarily refers to decisions regarding the timing and method of vegetation removal, the selection of which plant materials to remove, and the utilization of residual biomass. One potential initiative could involve establishing small-scale composting sites at highway entrance or exit ramps. These areas often occupy substantial tracts of land and may offer underutilized space suitable for alternative purposes. Such composting sites could receive lawn clippings and other vegetation from roadside areas, particularly those exposed to non-native plant species. Instead of allowing this material to remain by the roadside, where it risks being transported deeper into the country via vehicle tires, it could be redirected to composting facilities.

Where safety and logistical conditions allow it, neighbors to these highways could also be invited to deposit garden waste in these compost bins, especially considering that informal dumping already occurs in many of these locations. The resulting compost could then be repurposed for soil improvement in ongoing highway maintenance, the development of new green infrastructure, or distributed back to contributing community members. With one smaller shift there could be added multiple functions like: control of foreign and invasive plant species, minimizing of garden waste dumping and production of short traveled and cheap materials for maintenance or establishment of green infrastructure. Not to mention that removal of plant waste after mowing creates under-enriched soil with is the preferred soil for many plants in the Norwegian cultural landscape (Hind and NIBIO 2017).



Figure 7. Site that could hold compost bins Source: Norge i bilder (2025).

Lastly, for the functions that cannot be altered through maintenance, one could use more traditional development, this ties into the point of land use efficiency. When establishing homogenous road verges, one often must fill in mass to create the desired slope. In the Alcântara neighborhood in Lisbon this mass was in one case replaced with functional building mass. The Alcântara Wastewater Treatment Plant along the TEN-T road A5 was designed by João Nunes and others for the public water company Simtejo. The project could be used as inspiration for more efficient land use all over the TEN-T network («ETAR de Alcântara, Lisboa», 2014). Especially after new EU regulations for nitrogen runoff has been put on European nations (Moreno 2025). Instead of compromising more nature to make big regional cleansing facilities, one could make local water cleansing facilities related to agriculture or other industries in road verges and direct the water through the landscape by green infrastructure along highways. This might even infiltrate the water into the soil before it reaches the coast. Industry and agriculture are both often found along highways because new road stretches are often developed on farmland, and because new industrial sites often gravitate towards national highways. Road verges, which are often supposed to be open and homogenous, could be an ideal locations for wastewater treatment plants, since they already hold less potential for biological value than uncompromised nature.



Figure 8. The Alcântara Wastewater Treatment Plant. Source: Argex AS.

CONCLUSION

We should be motivated by the sacrifices we have made for modern road development like seen in the cases of Boulevard Périphérique and The Zone, E18 and Vangstua and all the other cases mentioned in the essay. The continued mono-use of roadside land as “backdrop gardens” does in fact show a disconnected understanding of our negative impact, and the potential roadside land holds. I hope that I have given you a better understanding of highways, what they have evolved from, and what we have lost while making them into the roaring concrete rivers we know them as today. Most of all I hope others like me who work with shaping the land around us can find ways to challenge the monofunctional zoning of highways, to break away from our current practices there must be willpower in every role of our field, from the area planner to the maintaining gardener. Even politics must be challenged, we must resist the urge to see fast highway establishment equal to positive development, where the positive consequences outweigh the losses we make on our way. The ecological and environmental issues related to this topic, and design decisions to accommodate and compensate for negative effects of highway development is something I wish to work on further in my master’s diploma and future career. This is because I believe that unless we remove our “highway blinders” and rethink the way we use roadside land, we will never be able to make highway infrastructure that holds up under modern demands for sustainability and efficient use of resources.

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How Do I Design a Chair While the World is Burning? A Student Reality Check: The Struggle to Answer the Question of How Design Is (Not) Helping to Save the World

Jonas Giese



Figure 1. A scrap heap of old and broken tables and chairs
Source: Tan 2021.

BETWEEN DESIGN THEORY AND WORLD EVENTS

It's Monday morning, I'm a student in an industrial design class. A new design brief for the upcoming module in the design course is presented by my professor. The task: to design a new chair. The course title "Innovation + Form" promises an exciting focus. The project partner is an established and market-leading furniture manufacturer. The chair is to be integrated into the manufacturer's portfolio. In the course of this, we will deal with product language, materials and aesthetic aspects. In addition, we will deal with classical theory from the design discourse of recent years. Concepts and development processes of large companies in relation to design will be presented, including sustainability and brand identity. Upcoming trends and fashions should be well served in the design with foresight. In general, an exciting challenge, methodically structured. The structure and subject matter of the course seems to me to be coherent at its core and offers the prospect of an exciting discussion. I am motivated to participate and look forward to the coming weeks.

In contrast, Tuesday mornings open up a completely different perspective. Once a week, I take part in a smaller elective course. Entitled "Rethinking Development and Sustainable Futures", we look at the world outside of academia and design. We talk about the climate crisis, social inequality, the effects of colonialism, patriarchy and capitalism, and we are made acutely aware of how deeply interwoven

these crises are. Extreme weather events, the loss of biodiversity and water scarcity are just a few of the countless consequences. The complexity of the ecosystem leaves me speechless. It is difficult to comprehend the interrelationships of such a complex system in which everything is interdependent. We are learning just how bad things are for life on our planet.

There is no prospect of a positive development. Most of the problems are being tackled with the same superficial patterns of thought and action that created them in the first place. The global North continues to exploit resources while the global South bears the brunt of the consequences. Capitalism promotes the outsourcing of social and environmental costs in order to maximize profits, at the expense of people and the environment. One thing is clear: almost everything we know has to change fundamentally. A logical conclusion at the end of this debate. We must shape the future of the planet differently, otherwise the situation will continue to deteriorate. Humanity must find solutions and ways to overcome the precarious situation.

On Wednesday morning, I want to start designing the chair, but I struggle. Suddenly it seems absurd to me to design a chair while entire ecosystems are collapsing and society continues to divide. I ask myself whether this is the right way to meet the challenges we are directly confronted with. Will such a doctrine help us to deal with current and future crises? After all, finding solutions and providing answers is my motivation for being interested in the subject. I started studying design in order to shape the world in a future-oriented way. At first glance, however, I find myself in a completely different situation. I find it difficult to deal with.

With this essay I would like to discuss this wrestling match and what I have learned from it. How do I design a chair while the world burns? What follows is a consideration of the roles of sustainability and innovation as well as design practices that can help us solve the problems of the time. A borderline walk on the question of how far design really solves problems or becomes part of the problem.

TWO WORLDS, ONE CONFLICT

I face two problems in my everyday life as a student. For me, a problem is representative of a task that is difficult to solve and involves inconvenience. It can be defined in a problem statement. If it is not solved, it can have a negative impact on individuals, social groups, society or the environment. Be it in the form of stress, inequality, exclusion, environmental degradation or economic damage. In my case, there is an area of tension that could hardly be greater: On the one hand, there is Monday's industrial task. A chair for the market, designed in line with aesthetic trends and economic interests. On the other hand, there are the urgent crises of Tuesday, which demand nothing less than a profound transformation of our social and ecological way of life in order to serve the needs of all life (see Fig. 2).

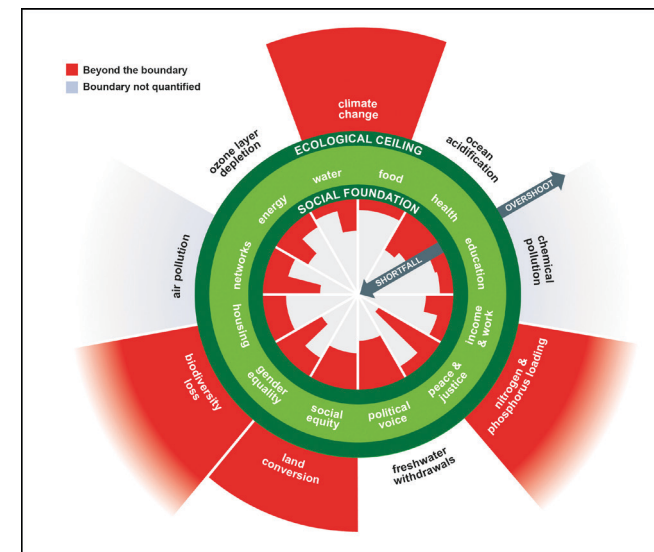


Figure 2. "The Doughnut of social and planetary boundaries (2017)" visualizes the needs of all people within the possibilities of the planet.
Source: Raworth 2017.

An inner conflict arises between these poles: I find myself between two worlds that hardly seem to be compatible. How can my university studies on brand identity and user insights help me to shape a future that remains worth living?

The chair is a fascinating object, no doubt about it. But in view of the climate crisis, social inequalities and ecological reality, the task seems increasingly detached from what is really needed. It is emblematic of a larger imbalance. I find it difficult to bring the problems together effectively. On the one hand, I want to meet the requirements of my studies and perform well, but on the other hand I feel an urgent desire to make a meaningful contribution to solving real problems with my work. This constant conflict is frustrating. Even when I try to build bridges, I only end up feeling pulled further apart. The gap between industrial reproduction and social transformation is clear.

SUPERFICIAL ADJUSTMENTS

At first glance, it seems as if the two worlds are touching to some extent and the tensions are dissolving. After all, the design of the chair should not be arbitrary: There is, as the title also says, talk of innovative and sustainable solutions. It almost sounds as if the project is responding to the crises we deal with on Tuesdays. As if this very debate could be part of a better future.

But this hope doesn't last long. The more I think about it, the more I get the feeling that something doesn't fit together here. Although the terms innovation and sustainability sound very important, they are not discussed further in the course. They seem like set pieces of a narrative that suggests we are at the cutting edge. However, we do

not question exactly what is meant by this or what concrete change it actually stands for. It seems to me that this is more of a rhetorical adaptation to the pressing issues of our time. A cosmetic upgrade that leaves existing structures untouched without any profound changes from which it emerges.

But it is not enough to use the right words if the practice remains the same. This is precisely why it is important to critically scrutinize the terms we work with. The first step is to clarify what it really means to design sustainably in an ecological, social or economic sense. A definition of what innovation is needed and what it looks like in order to address the real problems of our time. Only through a precise examination of such questions can the differences between real change and mere rhetoric be recognized. If we as designers are to respond to the challenges of our time, we need more than linguistic adjustments. We need to fundamentally rethink our perspectives, our priorities and, ultimately, our practice.

DESIGN FOR WHOM?

Ways to resolve the tensions that reveal themselves to me have long been part of a larger discourse. On my way to deal with them, I came across Danah Abdulla. She is a designer and researcher focusing on the decolonization of design and education. She advocates for alternative narratives and practices beyond Western design norms. In her essay "Disciplinary Disobedience, A Border-Thinking Approach to Design" (Abdulla 2021, 241-277), she calls for fundamental changes in design theory:

"With designers looking to respond to the planetary crises, to become more sensitive to their impact of their work to both on human and nonhuman actors, they are beginning to shift their concerns towards serving society rather than solving problem for the industry." (Abdulla 2021, 233)

Abdulla's statement encourages me because it shows the possibility of a different direction. Even if we still seem a long way away from it at the moment: I struggle not without reason. She describes how design could respond to planetary crises, sensitively, responsibly and in the service of society. However, the necessary alternative she proposes stands in stark contrast to my reality, in which I am supposed to design the chair. Abdulla thus underlines the crux of my situation, in which I am confronted with two opposites in everyday university life that cannot be brought together. Sasha Constanza-Chok, a researcher and designer who works on design justice and community-oriented processes to reduce power imbalances and promote environmental sustainability, confirms this: "It's just that too little attention is being paid to the things people need." (Constanza-Chok 2021, 345)

The criticism points to a structural problem that goes deeper than design tasks. It's not just about what we design, but for what and for whom. In my case, the object of design should shift on a more fundamental level: away from what people want and towards an attractive design of what they need. This tension is central. Tuesday taught me that there are currently more important things than individual wishes. Necessary and essential things, without which it simply wouldn't work, are needed.



Figure 3. Illustration of air pollution from industrial production facilities
Source: Blum 2016.

The focus should be more on who is being designed for. A central question that should be addressed in the debate could be: Who are the actual addressees of our design and who benefits from the design? Sasha formulates the new focus appropriately: “We must also examine design beneficiaries. In other words, who are we designing for?”. (Constanza-Chok 2021, 345) The moment we design a chair for a furniture company, we are designing for the industry that diligently contributes to polluting the environment (see Fig. 3). Design creates new incentives for consumers to buy. Fashions and trends make the consumption of products attractive (again).

“There is nothing wrong with making things that people want. The problem is that personhood and desire are constrained by capital; money affects whose wants appear to matter.” (Constanza-Chok 2021, 345)

I pause for a moment. Does this justify the task I have to deal with? Yes, but also no. It is not wrong to do justice to people’s wishes. But remembering the topics of Tuesday’s theory lesson, I know that design must be practiced differently in the future in order to save life on earth. We have no other choice. The situation in the world shows: We need more of what we really need. Although so much is needed right now and especially in the future, the poles of attention are shifted. So how can design contribute to a solution?

DESIGN AS A SPACE OF POSSIBILITY

Design has the potential to play a decisive role in redefining the poles of attention. After all, it has the tools and skills to make ideals, thoughts and ideas more tangible. For example, through the design of physical objects. In his ‘theory of technological mediation’, the philosopher of technology Peter-Paul Verbeek makes it clear that design has the potential to influence our actions and thus formulate solutions for social and societal change (Verbeek 2005). He confirms the motivation for my design studies, which I have questioned in view of the tensions of recent days. Design can do much more than just create incentives to buy and serve the industry. I want to learn how to use good design to create future-oriented desires in the form of alternative products.

In the teaching of industrial design, there is hardly any room for the idea that radically different products can also emerge from a design process. Products that consciously question existing expectations of function, market value or trend. Instead, teaching is often geared towards what is economically feasible, marketable and aesthetically pleasing. This is partly understandable (more on this later in the text), but at the same time it makes it difficult to develop alternatives that point to more sustainable or socially just systems. Although this is precisely what is urgently needed in view of the crises we are discussing. This lack of openness in my task does not allow for this.

This requires different practices and new ways of thinking that see design not as a means of maximizing profit, but as a tool for change. For example, “include involving members of the community

that is most directly affected by the issue that you are focusing on” (Constanza-Chok 2021, 347). This is the only way to create design for people and with people. We do deal with user insights as part of the concept and development process, which was presented on Monday. However, it remains questionable to what extent this can be achieved effectively if at the end of the process there is a motive like the one that was openly stated in our module presentation: “Give the company an opportunity to develop and learn money”, a declared goal of the task.

Design Justice, on the other hand, would be a suitable approach to integrating new ways of thinking. It shifts the focus away from consumer desires towards real needs and directs the process towards participation, justice and sustainability. Sascha Constanza-Chok gets to the heart of the matter:

“Additionally, where values in design tends to focus on the affordances and aesthetics of designed objects or systems, design justice is concerned with all aspects of design, including the values that are reproduced in the social relations of power of the design process itself, as well as what happens to the profits, attribution, and governance of the designed object or system.” (Constanza-Chok 2021, 349)

Precisely because design has the ability to make new visions tangible, they should not only be aesthetically or economically interesting, but also relevant to society. On Tuesday, I learned how complex and multifaceted the challenges of our world are. This is precisely why it is not enough to deal with problems superficially. Problems need to be understood in a wider context, in terms of their causes and effects. Instead of designing objects because we can, design (from the perspective of design justice) could produce things that are really needed. The potential is there, but it needs the space to unfold.

DESIGN FOR THE CREATION OF ALTERNATIVE RELATIONSHIPS

On Thursday, our professor announces an excursion to Milan, to one of the world’s largest furniture fairs. There we are to gain insights into new products, technologies and trends in order to gather inspiration for our chair. There will also be networking opportunities to make contacts and position ourselves in the industry.



Figure 4. Visitors marvel at furniture from various manufacturers at Salone del Mobile 2024
Source: Mangini 2024.

But I struggle again, which leads to the decision not to take part. Isn’t this fair precisely an expression of the industrial reproduction that we so vehemently question on Tuesdays? An independent parallel world in which aesthetics, innovation and commerce are inextricably intertwined. Detached from the real challenges of our time. The financial outlay alone (travel, accommodation, admission) shows who can afford such an event: privileged circles within the design discourse. Exclusivity is thus reproduced. Exclusion instead of participation. A trip like this reinforces structures that we will be

questioning on Tuesday instead of challenging them. The focus is once again on consumption, not on social change. But there are alternatives. Why not take excursions to places where social and ecological innovation is practiced? To community projects, to solidarity initiatives in the immediate vicinity? The radius doesn’t have to be global. We could experience what it means to create for people and with people at a local level. Such encounters would sharpen our awareness of other realities of life and at the same time make it clear how much our design is interwoven with ecological and social systems. Excursions into nature could also be part of the teaching. It would make dependencies tangible, not only mentally but also physically.

Such a change of perspective would shift priorities: from market logic to life logic. From high-tech to low-tech. After all, simple, accessible, durable and adaptable solutions (independent of corporations or specialized experts) promote self-determination. They are emblematic of a design approach that supports rather than consumes. Such alternative excursions could be the starting point for a change in design theory, as Danah Abdulla calls for in her essay. A teaching that no longer presents designers as experts, but sees them as mediators. Interdisciplinary instead of specialized. Listening instead of prescribing. An attitude of questioning instead of dominating (Abdulla 2021). This change of perspective sometimes seems necessary to me in order to understand design not only as a discipline of making, but also of not making. A discipline in which things are brought to language before they are made. In which we reflect on why we design and for whom and with whom. And what we should perhaps not do.

In order to pave a way out of the current misery for all life, I envision precisely this space: a space in which we learn to mediate the spaces in between. In which we accompany processes instead of prescribing solutions. The anthropologist and critic of Western development logics, who advocates autonomous, locally anchored design approaches, also describes this new role: “with the designer as facilitator and mediator more than expert” (Escobar, quoted in Abdulla 2021, 233). Instead of imposing solutions, we should create conditions in which solutions can emerge together.

STILL CAUGHT BETWEEN MONDAY AND TUESDAY

Despite all the criticism, am I overloading the field of tension between Monday and Tuesday? The design course is a pedagogical framework, a training ground. It is a protected space in which we develop designs without actually producing them. The task is a fictitious game, which also has a certain value. This means that it does not have to claim to meet the challenges of Tuesday. It can also be argued that the lesson brings me closer to industrial processes. It is a representation of an existing reality that shows me how I can best assert myself on the market, my role within an existing structure. There’s nothing wrong with that per se and I understand that. Of course, I want a professional future in design. A prospect of financial stability, recognition and a good life. The design task of the chair paves the way for this. It would be wrong to deny this fact. That’s why I struggle all the more. I am overwhelmed by the question of the extent to which my feelings are justified. After all, I am discussing things that in many cases understandably play no role at all. Do I have to prioritize something, decide between Monday and Tuesday, and if so, for what?

The week between the design course and the theory lesson showed me how great the tension is between industrial requirements and the challenges of the world. The discrepancy between designing a chair for the market and dealing with planetary crises is irritating for me personally. It leaves a feeling of hopelessness. Design is caught

between aesthetics and ethics, between the market and life. Even if these contradictions cannot be completely resolved at the moment, it is precisely this tension that keeps me thinking. They challenge me to question my role as a designer. Why shouldn’t design make a contribution to a future worth living that is urgently needed?

Over the last few weeks, I have realized that we need spaces in which we can think about our role in the system. Studying can be such a space if we also see it as a space of possibility. That’s why I would like to see design teaching that doesn’t stand still. That constantly tries to explore new alternative paths. That manages to leave the path of industrial reproduction and thus dissolve my tensions.



Figure 5. An alternative opens up, the current main route can be abandoned.
Source: Grundsteins 2023.

At the end of the week, the question arises: How do I design chairs while the world is burning? A question to which I cannot give a precise answer. However, I know that design, with confrontations like these, does little to respond to the challenges of the world. For me, a structural problem remains trapped in the task.

In view of this, it is probably not so important how I design the chair. No matter how sustainable and innovative it may be, it serves industry, not people. The associated debate in the design process is of little help to me if I want to tackle the challenges of our time creatively. Nevertheless, Monday’s design task is the starting point for this essay. For me, it marks the naming and the beginning of a critical examination of the tensions. It opens up the question of whether such design solves problems or is itself part of the problem. I can’t leave it at that. It motivates me to dig deeper, to read and research more. I want to engage in discourse and talk to others about the tensions, especially other design students. Especially in the context of a powerful university institution. To find a moment in which we can not only design, but also find a way to deal with uncertainty. The design of the chair is emblematic of a larger problem. Design can do more than what we are taught on Monday mornings. And that is precisely why it is worth taking a look on Tuesdays in order to be able to act.

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Radical Imagination: A Personal Inquiry Into the Future We Could Build

Mary Baumann



Figure 1. Radical Imagination Collage Source: Midjourney AI 2025.

Radical imagination is not so radical really. It is the formation of a narrative that challenges the current larger reality, the system, that has been built on a collective imagination of power over, exploitation, destruction and greed all effecting the macro social, economic and climate spaces. This is not an academic essay; it is a weaving of threads of thought and memory, ideas and experiences to find some sort of clarity. It is a personal story about what it is like to understand radical imagination and how it has informed my life, as a child, as a student, as a woman.

While sitting in the class, Rethinking Development and Sustainable Futures, we were discussing the readings by Jason Hickel in his book *The Divide, A Brief Guide to Global Inequality and its Solutions* (Hickel 2018). He has written on how poverty is portrayed in economic literature and how often the numbers are manipulated, not manipulated, the numbers are a lie. I felt deep anger within me, a rage, the lies that we base our existence on are a deliberate instability.

Concluding the discussion and addressing how to deal with the feelings we were sitting with the professor mentioned: Radical Imagination. When I heard those words, something clicked. My anger turned to curiosity. The word radical has resonated with me most of my life. It means the origin, or seed. It is wild, organic in nature, and free. The act of imagination has informed me intuitively my entire life. I have always seen it as more than “just” imagination. I have recognized it as a powerful tool. It is a source of information about our world and beyond it. It is a form of freedom.

Radical imagination is an individual and a collective act. It happens in layers and at different levels of existence and experience. It happens internally, in our own heads and it happens externally as a common idea, a collective conscious. Both lead to manifestation of our wants and desires within the physical world.

This piece is a personal reckoning with those words: Radical Imagination. It is a subjective inquiry into what it means to imagine differently, to see things not as they are but as they could be, to live in tension with the “way things are” in the social, economic and climate reality that is expressing itself at this moment in history. I write this now as someone who profoundly felt the contradictions between the information that I received and believed in and what was actually happening immediately around me as well as in the wider world. I write this as a woman that grew up in a patriarchal, religious community, that never quite squared with who I was, even as a young child. I watched public television documentaries, about World War II and Vietnam that showed me that people would choose to commit terrible acts. What we are taught as individuals, to care, give safety and treat people with respect got played out on the collective level as the exact opposite. I grew up in the time of the Civil Rights movement, one of my earliest memories is of Martin Luther King Jr. being assassinated. And again, equality, justice for all, and kindness were ignored by the larger systems of law enforcement and government to hold large swaths of people oppressed. I could see and feel those contradictions between what was said and what was done, between ideologies and practices.

From an early age, I began questioning things. The religious logic I was taught, the rigidity of the school system, the way power was used, none of it made much sense. The stories that I was told, to

explain how the world worked, felt weird, uncomfortable, like you are trying to figure out the logic, because the logic was flawed, but it was coming from people in authority. The stories rarely reflected women or girls, or people of color. I remember wondering: Why is the world the way it is? Why do people allow war and injustice to take such a large space in society? The answer I got repeatedly was: “That’s just the way it is.” As if that explained everything. But even then, it showed me the absolute failure of imagination that was at play. Even as a kid, I knew it didn’t have to be this way. My imagination could see different outcomes, I could see kindness and feel the potential for care. That ability to see and feel otherwise, to imagine radically different ways of being in the world has never left me.

CHILDHOOD: THE SEEING AND FEELING OF CONTRADICTIONS

Growing up in Utah, USA, in a large Mormon family I was a talkative, sporty, super curious and actively creative kid. I loved reading and drawing. I was always questioning and thinking about better ways. Maybe the better ways were for me to feel safe and secure in the world I inhabited. I grew up in a large and loving family. I felt the contrasts between what was preached and what was practiced, especially in the religious spaces that we inhabited. I had the desire for peace, in my family as well as in the world. There seemed to be a disconnect between the teachings I was receiving in church, about kindness, generosity and justice, that rarely matched the behaviors of the people preaching them. The men at the pulpit, in their private lives, were main drivers of the narrative of capitalism, misogyny and racism. The hypocrisy made me profoundly aware that I could not trust the authority of the church and it bled out to authority in general.

Those experiences and feelings of conflict and incongruity in my world triggered a desire and a search to understand why the world is so split. Radical imagination took hold, a willingness to challenge the status quo with what I could see as a better future. I understood that people can act differently than the larger narrative dictated. That compassion, kindness and care were not beyond reach – it was just too often discarded or ignored. The behavior of power over, destruction, exploitation, etc. were often not chosen because they were primarily the actions of women, feminine actions, seemingly radical actions such as power with, care, support and safety were often ignored. It was the choices and action of men, the patriarchy, that drove the history, the stories, it was their imagination that we were living out. It seemed so simple to me: feed people, protect them, share what you have. But every time I voiced those ideas; I was laughed at, most often by men, my brothers, father, cousins, teachers – brushed off as idealistic. When I think about it, it wasn’t only men, it was women too, for we are the ones that hold up the patriarchy. It always made me angry and disappointed. But it made me wonder who it was that was benefitting most from things staying the same.

EDUCATION AND DISILLUSIONMENT

As I progressed through school, my imagination was constantly active, intensely aware, always observing my surroundings and how people behaved. Over time, I noticed how the U.S. educational system seemed designed to dull and suppress that very imagination. The narrow solutions, insisting on the right answer, creativity only within tightly defined boundaries was the status quo. Six-year-olds are endlessly creative and inventive. By the time they are 18, many have lost that spark. Education, in many ways, felt like a machine of standardization. Ruha Benjamin, a social scientist who wrote *Imagination: A Manifesto*, observes this with painful precision, noting how most schooling doesn’t prepare students to reimagine society, “but to fit into it – obediently, silently, efficiently” (Benjamin 2024).

Later, I pursued sociology and psychology at university. I wanted to understand how people and societies form, function, and sustain themselves, how change happens and why it doesn’t happen. To understand what it takes to promote equality, justice, and well-being. I was driven by a desire to find a more peaceful world, something that fit my radical imagination.

What I encountered instead was another kind of resignation: people in positions of power unable or unwilling to imagine better systems. The professors’ vision seemed narrow, confined to the status quo, oriented toward profitability or in fear of institutional reprimand. There were some professors that entertained the questions of “What if?” but most of them responded with “That is the way it is.”

I experienced this across disciplines, in political science, criminology and economics as well. I had a Political Science 101 teacher, Professor J.D. Williams, explain the electoral college (the profoundly undemocratic system of how the president is elected in the U.S.) and I really challenged him on the integrity of the “democratic” foundation that it is based on. He continued to defend the process even though it is clearly undemocratic. It came down to that he believed that not every person should have a vote, an opinion that my father, a judge, also shared.

The story seems to rarely change, it is grounded in centuries of history: war, exploitation, racism, greed. It is a story about patriarchy, profits, power and the survival of the fittest. Seldom is it a story that centers on a kinder, more inclusive way of living.

Now, as a student of architecture, I find myself confronting the same limits, despite the creativity and challenge of the discipline. We live in a time of environmental crisis, economic upheaval, and mass displacement – and yet much of the education is still rooted in outdated models of “poetic Nordic postmodernism and Sverre Fenn as the ultimate ideals. We must learn how we can build and design in a way that is in harmony with our planet, and it can no longer be an elective choice” (Skeide 2023). It must be intimately woven into the curriculum and an obligatory line of study.

Sustainability is addressed in the areas of design and architecture, but even that concept is insufficient. It often fails to constantly engage the radical reimagination about what living harmoniously on the planet might look like. We need to move beyond sustainability and regeneration into something deeper, a paradigm shift toward an ecological civilization, one that radically redefines how the system works. With a foundation that establishes that every design decision is a social, environmental and ethical act – not just form or function.

Within the courses themselves, they often don’t take into consideration the harm that is being caused to the environment or even the students by what is being taught, or what they are not teaching, or how it is being taught, the energy that is being consumed or the waste that is being generated. The standard traditional narrative is still in play at all these levels. The standard of education, learning, energy consumption, material and resource consumption, waste removal or recirculation is based in capitalism, patriarchy and exploitation. There is inherently a contradiction found in this education, one that has to face harm, waste and energy use while also educating to incorporate the awareness and understanding in the discipline. There is a shortage of radical imagination, imagining new futures deeply, consciously and consistently based in a thriving planet and the care of others. If there is a place that can lead this change, it is a design school. Engaging in a conscious evolution toward redefining the purpose of architecture and design. The question of care, safety, energy,

sustainability, waste, and regeneration could be part of the foundation

of every course that is developed at the university. I would challenge the system itself to embrace the possibility to engage in the creation of an ecological civilization, a standard where radical imagination is consistently present, and dynamic challenging processes are welcome.

Radical imagination in the collective thrives as new and often difficult processes are introduced. This process of solving what an applicable and effective approach to educating towards an ecological civilization would certainly bring about conflict and disagreement, and this is the fertile ground of radical imagination. This is where it begins. As Max Haiven and Alex Khasnabish write in *Radical Imagination: Social Movement Research in the Age of Austerity*. “The view that conflict is a productive force to the extent that it allows for the generative power of the radical imagination to be put to work when difficult ideological and organization tensions are in the foreground” (Khasnabish and Haiven 2014).

That work needs to be done, conflicts need to be resolved, not avoided, to generate a new narrative. A radical imagination for what a university education could become in the face of the environmental crisis we are living through now.



Figure 2. *Radical Imagination Collage*
Source: Midjourney AI 2025.

THE BLACK RADICAL IMAGINATION

Radical imagination has been a deeply engaged topic within the Black radical traditions which include writers, artists and other creatives looking to address the difficult issues of their existence. From the writings of Amiri Baraka and Ruha Benjamin to the amazing footage in the *Summer of Soul* by Questlove, I found myself drawn into a lineage of survival-based creativity. It is through Black thinkers, artists, writers and activists that my imagination is challenged most. Being an American, raised in the 1970s and 80s, the Black American experience was completely foreign to me, yet it was all around me. From Motown records playing on my sister’s turntable, to the civil rights movement, to my interest in studying and understanding the Black American experience and expanding my own mind at university. Trying to understand a different perspective through empathy and imagination is like learning a different language, new meanings emerge. I am

still learning and am profoundly aware of my precarious position in the discussion. The narratives that were provided to me, and the stereotypes, were false. I find that the Black radical imagination has always existed – not as an abstraction, but as a manifest necessity. “It is rooted in refusal and in resilience. In creating joy and dignity under conditions of exclusion. This body of thought and expression offered me a way to think beyond critique. It gives a blueprint for building a more just society” (Benjamin 2024).

Benjamin draws attention to a moment in 1969, a particularly tumultuous period in US history, when the United States celebrated its moon landing. While white Americans marveled at astronauts walking on the moon, Black Americans gathered at Mount Morris Park at the Harlem Cultural Festival that was about music, community and urgent questions of justice. In the documentary *Summer of Soul* by Questlove (Palmer 2025), people were asked how they felt about the moon landing. Their responses were direct and honest: “Cool, I guess. But what about using all that money to feed people here on Earth?” “Space travel? There is poverty and education that needs to be addressed!” It was a profound contrast in imaginations – one chasing the stars and one grounded in the basic needs of survival for people here on earth.

Amiri Baraka, an American poet and playwright that wrote provocatively of the Black American experience, captured this beautifully when he wrote that “Nothing has to look or function the way it does” (Baraka, quoted (Benjamin 2024). The whole system is a choice. And something else can be chosen. It is a matter of the collective imagination to choose and then create something different. It is in community that this begins.

Fifty years later and I am still living within the same persistent pattern. Poverty and inequality, justice and sustainability are still significant issues in society, and the technological billionaires invest in fantasies of escaping the planet when it dies. Elon Musk dreams of Mars, even as his exploding rocket ships disrupt communities and ecosystems. Jeff Bezos takes billion-dollar joyrides into orbit while his Amazon employees are tracked, and skip bathroom breaks to make quotas. When Bezos publicly thanked his employees and customers “because you guys paid for all this,” (Benjamin 2024) he was profoundly out of touch with the blatant exploitation of his employees. Vandana Shiva, an Indian scholar, environmental activist, and ecofeminist, reminds us that this is not progress – it is colonization disguised as innovation. These projects fail to address the root causes of our planetary crisis. They imagine escape from the Earth rather than social and ecological transformation. Shiva writes, “Space travel is an illusionary idea of human progress, which fails to understand that this is our home, the only one we have....” (Shiva 2020).

To imagine that we can buy our way out of ecological collapse is itself a failure of imagination. To think we can live on another planet to escape the environment is arrogant at best and terribly destructive at worst. Even the Carnegies and the Rockefellers built libraries and created foundations for advancement of education and the arts. When people amass billions of dollars and cannot think of any real contribution to humanity, it is a profound failure of imagination.

REFLECTIONS ON A MANIFESTO.....OF SORTS

This is a manifesto – not of demands, or a call to arms, but of belief, a little rebellion and radical hope. It is rooted in the act of imagining something different, something better.

I challenge the idea that imagination is the realm of artists, elites, politicians, or eccentrics. Imagination is a human birthright. It is the

first act of liberation, individually and collectively.

Radical imagination is not reserved for poets or prophets. It belongs to all of us. It is what allows us to say, even when everything seems set: “Not like this.” And then, “There is a better way.”

For me, radical imagination is a playground for understanding and compassion. My inner life is complex and full of wonder. I observe, read and think about politics, the planet, children, women, and business and I come back to the same core: care. Feeding people, offering safety, and pursuing justice. These simple ideas are not naïve or idealistic, they are radical, and they are the basis of freedom.

My radical imagination also connects me profoundly with Mother Gaia. The joy that I receive by walking through forests, alongside rivers, near the sea or open fields is deeply nurturing and healing. I feel protective on her behalf. Her ecosystems do not need management. She is more than capable of caring for herself, while providing for all beings. I imagine a world with systems that will recognize this.

I imagine ways of being that recognize people as energetic, creative, generous and intelligent. I believe that there is so much good in the world. I believe that freedom is the foundation from which human potential expands. I believe that we can build systems that are rooted in care, safety, imagination, sustainability and regeneration, to birth a new ecological civilization.

So where do we go from here?

I believe we start with stories. Using the imagination to come up with different, more inclusive, diverse and equitable stories. Healthier stories based on caring. Stories that pull at the threads of the toxic myths that we have inherited, and replace them with other stories, based on care, power with, safety and healing.

By doing the hard work of excavating our belief systems we have inherited, sorting through them, keeping what is good for us and discarding what causes harm we write a different future. Some of those beliefs are reflected in the ideas of self-imposed limitations, questions that you don’t even think of asking, because it never occurred to you because “That is the way it is.” Dana Allen Walsh, a journalist, once wrote “The difference between those who shape the world and those who merely inhabit it often comes down to those who believe they have the permission to imagine differently.”

That quote has been on my mind. Permission, conscious or unconscious, is one of those concepts that sit deeply within us. “Who gave them permission? Why do they believe they have it? Why do we think we don’t have the permission?” Or do we even think of it at all? No one needs permission to imagine and create a new world. We are inherently qualified, because we exist (Walsh 2025). We could replace the concept of permission with power, worthiness, belonging, legitimacy or capability in the above inquiry.

How do we change, move from one consciousness, belief, or state of mind to another? Ken Wilber, a contemporary philosopher, proposes five steps of transformation: waking up - becoming more aware, growing up - taking responsibility, cleaning up - engaging in shadow work, opening up - to the field of intelligence and imagination, and showing up - serving others. (DiPerna 2014)

I come back to the last one often: showing up. Showing up means participating in community, engaging in the messy work of being together and imagining and building better futures together. We show

up with our collective imaginations and dreams to make it happen. It takes courage to stand in the discomfort of the friction. It is that friction that disrupts complacency. That tension and resistance is what catalyzes change. It is done in community.

Every day I ask myself: What if?

What if education, from kindergarten to graduate degrees, incorporated the idea of an ecological civilization?

What if we were able to move past sustainability and regeneration to embrace a genuinely thriving Earth?

What if profit was not the motivation for change?

What if there were universal basic services like housing, education, transportation and food?

What if rest was valued?

What if we abolish prisons?

What if we removed the word “blame” from language altogether?

What if there were no borders, and people could move freely as they needed?

What if women were paid for their unpaid labor?

What if we decolonize our own mind?

What if we can heal disappointment, disillusionment, anger, sorrow and longing?

These are just some of the things I think about often. Not to escape reality, but because I am trying to reimagine what it could be, because: ... “may all beings be free” (“Lovingkindness Meditation,” n.d.). “At its deepest level, freedom is the ability to disentangle from the false stories we’ve been told, about who we are, what we deserve, what is possible. It is the ongoing act of liberation from narratives rooted in domination, fear, or unworthiness.”(Hooks 1994)

Are we going to allow that old, outdated imagination of domination, destruction and greed to dictate our future?

Or are we going to radically imagine our own future, something kinder, more compassionate and joyful?

This is what is at stake: our futures. The way we live and exist on this planet. It feels overwhelming and daunting. The complexities are such that if you begin to unravel one thread there are thousands of others that need to be unraveled too.

This is where radical imagination comes in. In the quiet of your own weird and wonderful mind. In the swirling cosmos of possibility. Radical imagination is mystical and full of contradictions. It is the radical act of creating, thinking, visioning and feeling, and that is how change begins.

This is a manifesto of sorts, because it is both a declaration and an invitation, to wonder, to care to radically imagine.

With this exploration, I’ve tried to illuminate the power of imagination as a an engine for collective change. Weaving together personal

accounts and thoughts with the bigger picture of the collective in mind. I have written it to make sense of my own path, to pull at the threads

of contradiction, longing, resistance and vision that have shaped me. I also hope that this resonates with something within you, that it ignites a curiosity about your own radical imagination coming to life. I've asked what imaginations uphold the systems we live under, and what might happen if we dared to imagine stories beyond them, and to write those stories into being.

So, I will leave you with this:

What is your radical imagination sensing?

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AN INTERDISCIPLINARY ANTHOLOGY OF 12 ESSAYS ON SUSTAINABILITY, DEVELOPMENT AND SHAPING THE FUTURE

Designing in a Burning World: Reckon, Repair, Reimagine Sustainability, helps us rethink the implications of the disparate and connected global issues of environmental justice, climate change, cultural heritage neglect and biodiversity loss for the design professions. Thirteen Master's degree students at the Oslo School of Architecture and Design challenge current sustainability narratives to reimagine service design, landscape architecture, building architecture and industrial design. Spanning the spectrum from AI and statistics to indigenous participation in design competitions and through to the act of radical imagination, the authors take on many of the key themes that the design professions are grappling with anno 2025.

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