DELFINA FANTINI VAN DITMAR

Our relationship with energy and heating is enveloped in layers of crisis. In UK, the cost of heating homes is rising, driven up further by war in Ukraine and the international reliance on fossil fuels to produce energy continues apace.

In the face of these dispiriting fronts, Delfina Fantini van Ditmar and her collaborators consider domestic heating anew. A NOT TOO COMFORTABLE FUTURE is a speculative proposal for a new way of living in which the responsibility for individual warmth and comfort is renegotiated between architecture and fashion.

Through the residency Delfina drew on her work as a systems thinker and convenor to build two teams. The first comprised architects Thiermann Cruz; the second saw fashion designer Timothy Bouyez-Forge set a series of briefs for a group of RCA Fashion MA students. Together they conceived a new domestic environment set within an ultra-light-touch structure and populated with multifunctional clothing-cum-furniture pieces.

In this chapter, we learn more about Delfina's theoretical approach, encounter her teams and discover their working processes.

Delfina Fantini van Ditmar is a design researcher and senior lecturer at the Royal College of Art (RCA) on the Innovation Design and Engineering programme. Delfina has a transdisciplinary background linking design research, critical algorithmic studies, architecture and ecology. She has been a visiting lecturer and critic at several institutions, including The Bartlett School of Architecture, Architectural Association, Goldsmiths, University of London, Canterbury University, Liverpool University, Critical Media Lab Basel and TU Berlin. She holds a BA in Biology and completed a PhD at the RCA in 2016.

A NOT TOO COMFORTABLE FUTURE

LIVING IN AFTER-COMFORT

'UP IN THE AIR': THE PREVAILING PROBLEM OF CO2

PART 1: PROBLEMATISING NET ZERO

This project responds to the climate emergency by contesting prevalent ideas of techno-centrism in the transition to net zero set out by the UK government. Attempts to remedy the climate emergency require ambitious transformational plans and radically different ways of thinking and making. Design has the responsibility to change prevailing standards and envision new ecological lifestyles. Considering the degeneration of the earth, an uncritical design ethos towards consumption and comfort appears insufficient.

Our reliance on fossil fuels, gas scarcity due to the war in Ukraine and the surge in energy bills suggest that we should reduce our dependence on the current method of heating our surroundings. Heating is a highly polluting service: according to the UK government heating for homes and workspaces accounts for almost one-third of all UK carbon emissions [1] In response to the rise in living costs, money-saving specialist Martin Lewis proposed a set of desperate measures to heat the body. In the introduction to an article published on his website, titled 'Heat the human not the home: save energy and stay warm with thermals, electric blankets & more', Lewis writes: 'This is a guide I really wish we needn't be publishing. The reason I asked Sarah and the team to put this together is due to my overflowing email bag of desperation from people who can't afford their energy bills [...] we're trying to help provide some options and information for those that may need to drastically cut down on energy usage due to financial desperation and some help for others who may want to do it out of a commitment to green issues.'[2]

Undoubtedly this is a terrible situation we find ourselves in. Lewis, in reaction to heating unaffordability and informed by the know-how of his budget-constrained audience, offers guidance on suitable warm clothing and an expanded range of heating devices (e.g. electric blankets, heat pads, foot warmers). [3] The guide also had behavioural-architectural recommendations, such as leaving one's feet on a stool or sitting down on top of a sleeping bag. This article, published in April 2022, exemplifies not only the need for a transition to alternative heating systems but also shows that, by necessity or because of environmental awareness, people are already heating themselves rather than homes. Yet, the government's *Net Zero Strategy: Build Back Greener* report, aiming to improve energy efficiency and reduce heating costs, doesn't aspire to reconceive the question of heating or reconsider the role that housing plays in keeping people warm. The government's techno-solutionist approach regarding heating is based on installing low-carbon technologies such as electric heat pumps and hydrogen boilers [4] This ignores the fact that heating homes would be much less polluting if the houses were better insulated.

Design has the privileged position of working across a variety of sectors and areas of society. Multidisciplinarity captures complex issues, bringing new conceptual and methodological approaches to our common environmental concerns. Trusting this is the right lens through which to view this systemic environmental crisis, the team for my project is composed of fashion designer Timothy Bouyez-Forge with students from the Royal College of Art and architects Thiermann Cruz. Both disciplines embarked on a design research journey based on the idea of architecture (homes) giving the responsibility of the thermal package – the concentration of heat to warm the body – back to fashion (clothing). Aiming for truly decarbonised futures by

[1] HM Government *Net-Zero Strategy*: Build Back Greener, 2021, p. 22.

[2] Patrick Butler, '"Heat the human, not the home": Martin Lewis guide for "desperate" households'. *The Guardian*, 6 April 2022.

[3] Sarah Monro, 'Heat the human not the home' *Money Saving Expert*, 5 April 2022.

[4] *Net-Zero Strategy: Build Back* Greener, p. 22.

turning away from techno-fixes, my collaborating architects and fashion designers explored means of catalysing transformative net zero design visions. The team proposed a conceptual design provocation that abandons the idea of living in well-tempered housing. The speculative collaboration explores a new dialogue around the 'primordial skin' as a reflection on the role of skin and thermal comfort: both the skin of a building and a person as a form of insulation. With this conceptualisation of 'skin' in mind, the house has no heating and clothing has been recast as insulation worn by its inhabitants. [5] The building itself has very little insulation and is in close proximity to vegetation and its natural rhythms, meaning thermal comfort has moved from the house's cladding to the body's cladding. The architecture of the house is simple but the inhabitants must change their living and clothing habits to live in a state of 'after-comfort'.

As an alternative to current net zero techno-utopic pledges, the proposition aims to reshape the discourse by exploring a paradigm shift thinking through low carbon solutions, dematerialisation and the notion of after-comfort. Design can make futures considerate and desirable while considering material ethics. By problematising the simplification of prevalent ecological net zero schemes, the project aims to unpick larger opportunities for 'design-led' strategies and imaginaries pointing out the new visions, skills and tools needed for this pressing transition.

[5] The speculative project doesn't undermine the need for insulating homes in the UK, as per demands by the Households Declare and Insulate Britain movements. Rather it is based on a propositional vision where fashion has the responsibility for the thermal package and humanity has chosen to live in after-comfort.

'...we will unleash the unique creative power of capitalism to drive the innovation that will bring down the costs of going green...this strategy shows how we can build back greener, without so much as a hair shirt in sight.' [6]

Boris Johnson
Net Zero Strategy: Build Back Greener report 2021

[6] *Net-Zero Strategy: Build Back Greener.*

The rhetoric of net zero and the journey to decarbonisation that implicitly follows is based on the idea that an equal amount of greenhouse gases emitted can be removed from the atmosphere. The carbon-centrism and obfuscation of the production and emission of carbon has characterised the debate. Current visions of net zero do not contest the causes at the heart of the climate crisis. With the increasing governmental pressure toward decarbonisation, two prevalent industrial net zero approaches are Carbon Capture and Storage (CCS) and Carbon Offsetting. CCS is a method of capturing CO_2 emissions where the carbon emitted from industrial processes is sequestrated, transported and stored in deep geological formations. Carbon Offsetting refers to a reduction or removal of emissions of CO_2 to compensate for emissions made elsewhere. Carbon offset schemes and the carbon credit economy frequently result in environmental projects, such as newly planted forests, in developing countries. However, these two approaches don't tackle the urgent need for a radical cut on emissions and the creation of renewable alternatives to fossil fuels.

Comparing carbon offsetting to the sale of absolutions in Dutch culture in fifteenth and sixteenth century, George Monbiot argues that 'you buy yourself a clean conscience by paying someone else to undo the harm you are causing...it is pernicious and destructive nonsense'.[7] Pointing out how offsetting companies don't guide us toward a behavioural shift, but rather into being 'better consumers', Monboit characterises offsetting as an excuse for carbon-intensive enterprises and its dubious measurements: 'BP launched its target neutral scheme, enabling customers to neutralise the CO_2 emissions caused by their driving. The consequences of an entire year's motoring can be discharged for just £20...while the carbon we release by flying or driving is certain and verifiable, the carbon absorbed by offset projects is less attestable'. [8]

[7] *George Monbiot 'Paying for Our Sins', The Guardian, 18 October 2006.*

[8] Ibid

This goes in line with the Design Council report *Beyond Net Zero: A Systemic Design Approach* which asserts that the reductive approach to the current Net-Zero agenda that it is not ambitious and comprehensive enough: 'Net Zero allows for the continued production of greenhouse gasses, said to be balanced out by other factors. It can create loopholes such as importing high-emission products from overseas and engaging in temporary offsetting solutions. Net zero plans often rely upon continued global inequality. Some of the approaches have been called "climate colonialism"...despite pledging net zero goals, many countries are able to continue with a "business-as-usual"approach.' [9]

[9] 'Beyond Net Zero – A Systemic Design Approach', *Design Council*, p. 7.

Obviating the need for a comprehensive approach to the climate emergency, UK prime minister Boris Johnson argues in the Government report *Net Zero Strategy: Build Back Greener*: 'for years, going green was inextricably bound up with a sense that we have to sacrifice the things we love [...] Instead, we will unleash the unique creative power of capitalism to drive the innovation that will bring down the costs of going green'. [10] But can the creative fuel of neoliberalism and the industrialism of the 'green industrial revolution' allow radical alternatives to the deep rooted problems and principles that brought us here in the first place? Without restricting greenhouse emissions, material production or our unecological lifestyles, the prevalent net zero discussions are masked by unfeasible techno-fixes. More than anything, these visions and agendas prolong fossil fuel reliance and distract from a much-needed shift in lifestyles, consumption culture and necessary emission-cutting environmental policies.

[10] *Net-Zero Strategy: Build Back Greener,* p. 8-9.

The problem goes beyond the proposed governmental agendas: it has also been the result of our human-centred unethical and extractivist material culture. As Joanna Boehnert stresses in her book *Design Ecology Politics: Towards the Ecocene*, there is a causality between the unecologically designed world, our self-centred belief systems, our carelessness towards our dependency on ecological systems and our detachment from non-human nature. Boehnert depicts this as a 'highly reductive intellectual tradition and anti-ecological worldview in profound denial of our fundamental interdependencies'. [11]

[11] Joanna Boehnert, Design, Ecology, Politics: Towards the Ecocene, (London: Bloomsbury Academic, 2018).

We need a more ambitious ecological plan that relinquishing from prevalent net zero techno-fantasies.

PART II: CASE STUDIES

Problematising the simplification of prevalent ecological problem-framing is critical. Since the beginning of this residency, I have come across three case studies that exemplify the short-sightedness and failures of reductive techno-solutionist paths. The selected examples expose the profound dysfunction of the seemingly effective functioning of the net zero techno-utopic agenda. More than anything else, they demonstrate that dominant net zero strategies prevent us from responding appropriately to the ecological emergency.

a. 'McDonald's is the first building in the country which fits into the UK Green Building Council's (UKGBC) Net-Zero carbon buildings framework' [12]

According to *Dezeen*, for a building to be net zero, it must remove as much carbon dioxide from the atmosphere as it emits throughout its lifespan. Hence the McDonald's at Market Drayton was built using natural or recycled materials and powered by a combination of wind turbines and solar panels. Yet McDonald's confirmed to *Dezeen* that consumption-based emissions associated with its beef-heavy menu have not been taken into account – meaning that the restaurant overall is not Net-Zero even by loose interpretations. The neighbouring residents of St Mary's Garden Village in Ross-on-Wye, Herefordshire fear this sort of remark shows Herefordshire council is not taking the climate crisis seriously enough. [13] One resident expressed deep concern at the number of light vehicles expected: 2,444 a day...'This is completely at odds

[12] Nat Barker, 'McDonald's opens "UK's first net-zero restaurant"', *Dezeen*, 20 December 2021.

[13] Steven Morris, '2,444 cars a day: McDonald's plan sparks climate row in Herefordshire', *The Guardian*, 27 September 2021.

with Herefordshire council's own declaration of a climate emergency and stated commitment to net zero carbon. [14] What this article highlights is that net zero accreditations by the UK Government is absurd, contradictory, superficial and more than anything far from shedding light on meaningful long term ecological and social remediation.

[14] Ibid.

b. Blockchain fantasy: Cryptocarbon cowboys and colonisation

In an interview for The Crypto Syllabus, environmental science researcher Pete Howson analyses the crypto-carbon economy and green branding. [15] Discussing Reducing Emissions from Deforestation and Forest Degradation mechanisms (REDD+), otherwise known as carbon offsetting schemes, Howson lays out an underlying contradictory narrative. 'It's worth remembering that when you offset your emissions flying to Benidorm or wherever, no one actually goes out and plants trees on your behalf. You're effectively just donating money to a conservation project that claims to have prevented trees from being cut down. And it's super difficult, perhaps impossible, to ever really know if those trees being protected were ever in any actual danger of being cut down. Or whether the trees still exist, or if they're now just someone's hardwood decking when you donate your money. Or whether your donation is just going to some cowboy in Indonesia who claims to own a forest, but actually it's just a golf course and he lives in Benidorm.' [16]

[15] Evgeny Morozov, 'Conversation: Pete Howson on Cryptocarbon', *The Crypto Syllabus*, 19 December 2021.

[16] Ibid.

This article evidences the ongoing offsetting distraction and the pressing need to tackle our deep-rooted consumption habits with meaningful correlated environmental actions. Accentuating that removed offsetting visions are founded on uncritical beliefs on smart contracts detached from reliable environmental remediation, the interview highlights the colonial aspect and the need to understand that the surroundings of the emission source have to be addressed.

c. Ineffective techno-innovations: Carbon capture facilities emit far more than what they capture

According to a CNBC article, Shell Quest plant in Alberta, Canada, is one of the largest planetary facilities that uses Carbon Capture and Storage technology (CCS) to reduce the emissions of hydrogen production. The plant has been found to emit far more greenhouse gases than it captures. [17] The article refers to an investigation by the watchdog group Global Witness, which found that while 5 million tons of carbon dioxide had been prevented from escaping into the atmosphere at the plant since 2015, it also released 7.5 million metric tons of greenhouse gases over the same period. The report specified that this is equivalent to only 48% of the plant's carbon emissions being captured. That's far short of the 90% carbon capture rate promised by the industry for these types of projects in general. [18]

[17] Sam Meredith, 'Shell's massive carbon capture facility in Canada emits far more than it captures, study says', *CNBC.* , 24 January 2022.

[18] Ibid.

Shell's unconvincing CCS case is a perfect example of how distracting techno-visions perpetuate our dependence on fossil fuels evidencing the ineffectiveness and measurement limitations of carbon capture technologies.

PART III: CONCEPTUAL LENSES: AFTER-COMFORT, DEFUTURING AND DEGROWTH

After analysing fundamental problems with reductive net zero frameworks, I selected three conceptual lenses proposed by specific thinkers who have influenced my design thinking: Daniel Barber and after-comfort, Anthony Fry and defuturing, and Timothée Parrique and degrowth. These frameworks make us reflect on the various systems we rely on: systems of destruction, systems of comfort and systems of extractive practices linked to consumption.

As part of the residency and in collaboration with RCA colleagues Dr Rob Phillips and Alon Meron at the Design Products + Futures Programme, I was able to invite these three thinkers to a symposium in order to share their ideas. All of the conversations influenced my reflection on current net zero agenda reductionism. They clarified the agenda's deficiencies and shed light on elements and system shifts we must consider for a truly net zero future.

After-Comfort

'The experience of comfort inside is predicated on the global acceleration of climatic instability outside'

Daniel Barber [19]

In his article 'After Comfort', architectural historian Daniel Barber postulates design's role in aestheticising the relationship between comfort and carbon, calling attention to design's role in the climate crisis. [20] In Barber's words, comfort implies that 'one has risen above the inconsistencies of the natural world and triumphed, not only over nature and the weather but over chance itself'. [21] Arguing that comfort is integral to interiors and that it is directly linked to consumption, Barber asserts that 'comfort is destroying the future'. [22] In response, Barber argues that architects will need to construct an absence of comfort in the built environment, stressing that we will have to adjust to the much-avoided sensation of discomfort as a society.

My research considers Daniel Barber's notion of 'after comfort' as one of the fundamental attitudes the world should adopt in redefining the net zero agenda. In the project, after-comfort is the basis from which I address how design could approach spatial design and dwelling to significantly break the vicious carbon economy chain. In the face of the climate crisis, using Barber's notion of after-comfort, the project is an attempt to reconceptualise and redesign dwelling. Using Barber's identification of comfort as a crucial 'figure of thought', the project aims to reduce expectations of architecture in providing a well-tempered environment and to use less material in the first place by proposing a connection with the ground through a floorless home. [23]

Defuturing: the vast and complex equation of creation and destruction

'Without having a critical reflective ethical moment of interrogation, the myopic instrumental design is characterised by the dominant thought of driving things forward.'

Anthony Fry [24]

In *Defuturing: A New Design Philosophy*, design theorist and educator Anthony Fry proposes the notion of defuturing as a mode of inquiry for design. [25] By taking temporality as its major preoccupation, methodologically, Fry argues that designers have to project themselves and their projects into the future, and design back from that future to the present. [26] To paraphrase Fry, we need to place causality and consequences before the focus on the new object under consideration. Whatever is brought into being by designing for the future needs to allow for retrofit before being brought into existence. [27] In his talk at the symposium Fry noted that creativity is a 'mantra of our culture', but destruction is omnipresent, stressing that creation and destruction are dialectically indivisible. He highlighted that most of what we design is

[19] Daniel Barber, 'After Comfort', Log 47: *Overcoming Carbon Form*, pp.45-52.

[20] Ibid

[21] Ibid

[21] Ibid

[23] Daniel Barber, 'After Comfort', talk at Climate Futures II: Design Politics, Design Natures, Aesthetics and the Green New Deal.

[24] Anthony Fry, RCA symposium 'The Cost of Change', 16 March 2022.

[25] Anthony Fry, Defuturing: *A New Design Philosophy,* (London: Bloomsbury, 2020).

[26]Anthony Fry, RCA symposium 'The Cost of Change'.

[27] Ibid

made on the back of the violence of the extractive industry. Fry emphasised that recognising what we destroy is a way of knowing a directive or practice as it provides the basis to develop a possibility to the basis of material ethics.

In the face of material histories, Fry's promise of defuturing is to reinterrogate and reimagine the world of our making, because 'then we are more ethically contemplating its remaking'. Fry specified that the fact that destruction is unavoidable does not mean that destruction cannot be mitigated: 'in a fundamental sense defuturing creates another way of seeing and another way of acting'. Fry trusts that design is a critical field for comprehending why we have left sustainability out of our systems, how it can defuture and what we need to think about if we need to create a sustainable future. [28] For Fry, the climate emergency cannot be addressed with a 2020 vision. Embracing defuturing in design means confronting and removing the authority of the foundations on which narratives of 'future', 'production' and 'progress' stand.

[28] Fry, *Defuturing*, p.2.

Degrowth: the need for alternative systems

'We have constructed the system that is now the source of our own demise'

Timothée Parrique [29]

[29] Timothée Parrique RCA symposium 'The Cost of Change', 16 March 2022

Timothée Parrique described his experience in the economics department at his university as a feeling of being stuck within one specific economic system that clouded his ability to imagine an alternative system. [30] Parrique indicated that in the economics of the future, the ecological economics perspective is not prevalent: 'they train you to be the obedient little dentist of capitalism; there's somehow no effort in training and educating and in researching the palette of available economic systems'. On wanting to design a new economic system he noted, 'what we do as economists is forecasting. We study the dynamics of the present and then through our models extend it into the future'. Parrique addressed a double future cancellation in terms of the ecocide and our ability to imagine the future. He noted that the idea of futuring an alternative economy that is not capitalism is considered unrealistic: 'it makes me think that pragmatic realism has never been as dangerous as today'.

[30] Ibid.

Parrique stressed that the effort we've been putting in up until now, despite more than 2,300 climate laws implemented globally, is really insignificant in comparison with the task ahead. Expanding on the growth-centric economies, he stressed that they are not only based on more production and consumption; when monetary economy gets bigger it consumes more natural resources and it also emits more pollution. Parrique stated that it is not about stopping the economy: 'you could still produce and still consume but it would just be a complete reorganisation and rethinking of production, based on values, not based on exchange value, and founded on the ability of production to satisfy concrete needs and not on striving to accumulate money'.

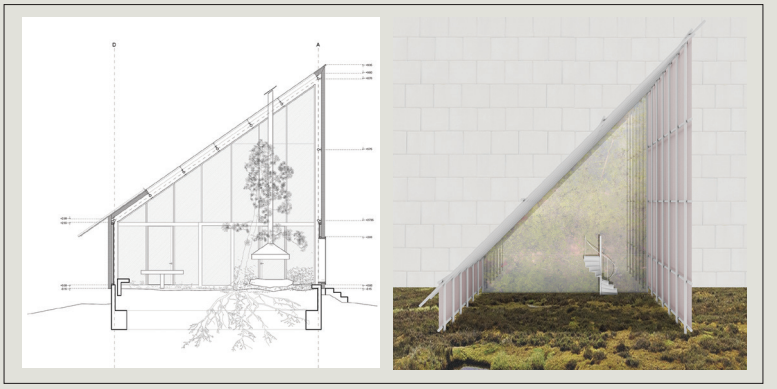
Against the cancellation of futures

The three lenses I discussed offer designers a valuable set of critical concepts to reconsider future design practices and the relationship between their practice and the natural world. They point towards a radical systemic approach to contest design's dominating unsustainable causal chain. Following an approach of critical action and radical directional change in material cultures, the research brings awareness to this relationship from the inception of the design by

The three lenses I discussed offer designers a valuable set of critical concepts to reconsider future design practices and the relationship between their practice and the natural world. They point towards a radical systemic approach to contest design's dominating unsustainable causal chain. Following an approach of critical action and radical directional change in material cultures, the research brings awareness to this relationship from the inception of the design by envisioning the consequences of the proposed designs. By urging designers to ask fundamental questions about their practice, my collaborators and I encourage a reflection on comfort standards, the environmental degeneration caused by creative processes, and the need for alternative economic systems. These principles of radical reconsideration of design apply in the context of rethinking net zero. In view of this, the transition to a net zero economy should be based on substantial changes in the way we live and a radical cut in industrial toxicity.

THE HOUSE AT THE END OF THE WORLD

ALFREDO THIERMANN AND SEBASTIAN CRUZ



The dematerial angle of my research resonated with a house that our collaborators, architects Thiermann Cruz, were building in Aysén, a region deep in the south of Chile. The house, known as Casa VIII, has an entirely floorless section and became the basis for our speculations for the house in the not too distant, not too comfortable future. Here, architects explain the backdrop to the project. [DFvD]

Good houses are artefacts that are crafted to conquer land as much as they are devoted to distance their inhabitants from it. This has been clear in Chile since the time of the colonies in the eighteenth century, and one of the few truly Chilean inventions, the so-called Casa Chilena, is its built manifestation. These houses embodied the specific typology of a courtyard house and were used to organise the territory based on agricultural production, while also separating domestic life from the land. After the second half of the nineteenth century, this type faded away, not so much because of the obsolescence of its spatial configuration, but more due to the banishing of the specific kind of life and land that it previously organised.

In the early 1990s, the brutal dictatorship in Chile – which had lasted for almost two decades – ended, leaving in its wake a radical reconfiguration of the way in which natural resources are administered. The nation's water systems were completely privatised and large concessions for mining exploitation were granted to international corporations, impacting the way that land was subdivided. It is impossible to think about the production of architecture, and specifically of houses, in Chile without considering these phenomena. The forces of global capitalism entered, accelerated by the neoliberal ethos of the dictatorship, and modified the territory beyond recognition. And thus, since the 1990s it has not been tenable to imagine the Chilean landscape as the last untouched and unpolluted corner of the world. Rather, Chile is a ruin, a capitalist ruin emblematic of broader planetary problems.

Ruins have long been a source of inspiration for architecture, a locus where the past leaves its traces, but also a void where fantasies and imaginations are projected. As architects, we cannot resist this projective impulse, and it is through projects that we reflect and act on these

conditions. To think about this problem through the house type – in architectural terms – means to suspend the idea of a 'solution' and to think of ourselves instead as part of the problem. How do we still act? We must ask what is the place for architecture in that new context – if there context – if there is any – and acknowledge that solutions are not necessarily part of our field of action.

Casa VIII is being built in a remote area in Chilean Patagonia. It is conceived as an ensemble linking two traditional – yet imported – building typologies: the shearing shed and the winter garden. This house is located at the end of the world; however, the end of the world is not what one initially imagines. Nature here is young; in fact, there is nothing truly natural about this context. The colonisers began lighting fires here at the beginning of the twentieth century to turn thousands of square kilometres of rainforest into productive grasslands. Thus, the relatively young forest surrounding the house is a fragile and recent ecosystem. Situated in this context, the plan of the house is organised in three squares. One contains sleeping rooms, the other houses collective spaces mostly for cooking and contemplation.

Contained between the two, the third square preserves a nine-by-nine-metre fragment of the fragile forest inside the house. It has no heating, almost no insulation and the existing vegetation remains untouched. The trees and plants inside the house are as old as they are outside, and inhabitants make their lives standing on the very ground of the earth. The natural soil of the site is left untouched, and it is now covered and protected only from the rain. The single-pitched shed housing different landscapes and its climates change from season to season. The colours of the leaves inside vary, and the texture and smell of lichens and moss also change according to the light and heat.

The house is constructed from simple ready-made steel frames cladded with a thin and translucent layer of wired reinforced glass. More literal than symbolic, this house traps a relatively large amount of air, and within it, cares for a fragment of a fragile and manufactured territory. With no insulation and in close proximity with vegetation and natural rhythms, thermal comfort has moved from the cladding of the house to the cladding of the body. The architecture of the house is simple, but the inhabitants must change their living and clothing habits to live in a reconfigured relationship with comfort. It is not that the architecture has given up on the questions of thermal comfort, but rather clothing has become a new form of architecture. Afforded by this condition, vegetation will continue its path inside the house, and people will do what they like to do, but yet in an intimate relation with the kind of nature manufactured at the so-called end of the world.

NO BEIGE PLEASE

MULTIDISCIPLINARITY AND THE RESEARCH PROCESS

DELFINA FANTINI VAN DITMAR,
TIMOTHY BOUYEZ-FORGE, SHANTI BELL,
SAVVAS ALEXANDER, ROSA AVILEZ,
JOYCE ADDAI-DAVIS, ALFREDO THIERMANN
AND SEBASTIAN CRUZ

In the Design Council's report Beyond Net Zero: A Systemic Design Approach *the authors describe the role of the 'system thinker': someone who can see the big picture, can understand how everything is interconnected and has the ability to move between the micro and the macro, and across disciplinary silos. This also relates to the role of the convenor: someone who connects people with shared goals and designs the platform for these encounters. The report emphasises the significance of both of these roles to comprehend and act on the uncertainty and complexity of the climate challenge.*

In my research proposal for the residency, I wanted to explore how subtraction could be integrated into a dematerialised design for net zero futures. As a reflection of my pedagogical practice in the context of environmental collapse, I was interested in articulating a multidisciplinary collaboration through critical speculative experimentation. Thus, the roles I decided to explore in the project was that of the system thinker and the convenor.

The group that I convened consisted of two teams, defined by discipline (architecture and fashion), which worked collaboratively across different media and working methods. The following pages illustrate our ecosystem and the ways of working that emerged during the process through notes, experiments, prototypes, calls and more. [DFvD]

METHODOLOGY

CONVENOR / MULTIDISCIPLINARY TEACHING

Delfina Fantini van Ditmar

FASHION LEAD

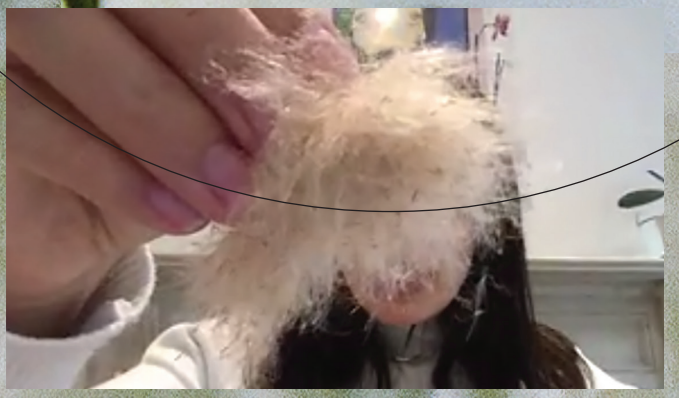
Timothy Bouyez-Forge

ARCHITECTURE OFFICE

Thiermann Cruz Architects:
Alfredo Thiermann
Sebastian Cruz

COLLABORATORS

Shanti Bell (MA Fashion RCA)
Savvas Alexander (MA Fashion RCA)
Rosa Avilez (MA Fashion RCA)
Joyce Addai-Davis (MA Fashion RCA)
Nikolai Aarre (MA Design Products RCA)



SIMPLE PROCESS`

Regive pieces for new purposes without investing so much energy + simple creative ways of repurposing.

MATERIAL APPROACHES

Using less (dematerialisation) + regenerative materials + upcycling / reuse of synthetics material.

SPECULATIVE-EXPERIMENTAL MULTIDISCIPLINARY COLLABORATION

Creative weaving of ecological propositions.

SPATIAL-MATERIAL NEGOTIATIONS:

Fashion designers challenge architects and vice versa. Open briefs: where are you gravitating towards?

AN ECOLOGICAL FUTURE DOESN'T NEED TO BE BEIGE

Beige is violently neutral — Luxury is beige — Comfort is beige — Beige is an anti-extravagant colour

EXPERIMENTATION THROUGH DEMATERIALISED DESIGN IN THE CONTEXT OF AFTER-COMFORT

MATERIAL APPROACHES

FURNITURE & HOMEWARE

Play with discarded garments and form them into new typologies of furniture. Create a new typology of furniture that helps insulate the home and is aesthetically pleasing

FABRIC & CLADDING

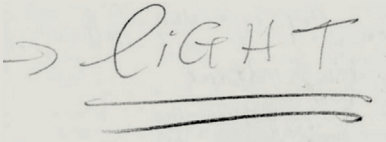
Turning discarded clothes into a cladding that should help the house. Think of the ‘thermal package’ and the protection from water/wind. What other function could it provide while being part of the architecture?

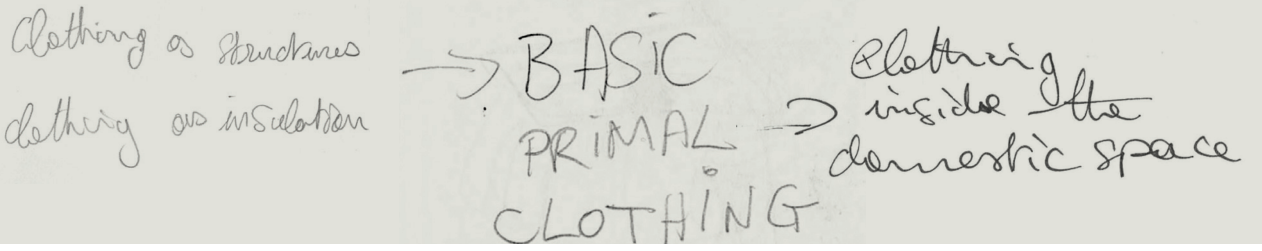
THE INHABITANTS AND THEIR GARMENTS

Set of dolls inhabiting the house. What will they wear? What are they made of? Figure a language of clothing for these future humanoids that reflects the eco-ethical future. Reinterpret a transhumanist approach and consider that the inhabitants live in a semi-nomadic manner: The house is simple (technologically dumb); it is the inhabitant and clothing who have technologically advanced. We look different, not the house: Technology is inserted into garments and the body. The thermal comfort coming from the house is regressive. Inspired by Rossi Braidotti's and Ron Wakkary's post-human rationale; the posthuman subjectivity of the inhabitants is based on humility and cohabitation rather than the universalising model of humanism and anthropocentrism.

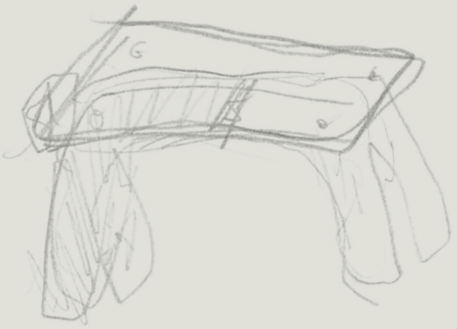
"IDENTITY IS MULTILAYERED AND COMPLEX, SOMETHING A BEIGE COLOUR PALETTE DOES NOT EXPRESS. IN REJECTING, A GENERALISED PERCEPTION OF LUXURY AND MODERNITY AS BEIGE, WE PRESENT A MULTILAYERED AND VARIED PALETTE REPRESENTING A BRIGHT FUTURE + COMPLEX BEINGS WITH COMPLEX PROBLEMS TO SOLVE."

— ROSA AVILEZ





repurposing clothing into furniture.



c house

End Points?

Repurposing ~~fabric~~ Clothing

Back into ~~clothing~~ fabric.

Repurposing glass into sculpture + drinking glass.

design for discomfort

primal shelter/clothing.

Sketches and notes by Timothy Bouyez-Forge

REWET, RESTORE, REPEAT

AN INTERVIEW WITH SALTYCO

The Restore residency has been a great platform to extend conversations with designers working on regenerative design initiatives, a topic I am exploring in my teaching practice at the RCA. I was interested in bringing material science company Saltyco into the project for their multidisciplinary team architecture and my belief that Saltyco's investment in conceiving a healthy supply chain is an exceptional design-led approach that demonstrates how design can participate at a societal and environmental scale toward an impactful net-zero transition.

Saltyco is a composed of a multidisciplinary team: Mechanical Engineer Julian Ellis-Brown, Chemist Finlay Duncan, Integrated Designer Antonia Jara and Business/Design Strategist Neloufar Taheri. Tackling global overconsumption of freshwater, Saltyco initially developed textile fabric from salt-tolerant plants (freshwater-free fabrics) as an alternative to organic or recycling strategies. Focusing on living systems-societal interrelationships, they evolved their material innovation strategy by engaging with regenerative agriculture. Saltyco worked with farmers and conservation groups to develope BioPuff while aiding in preserving the most efficient natural carbon-capture natural sources: the peats. [DFvD]

DELFINA FANTINI VAN DITMAR **How would you describe your regenerative product? What are its properties?**

SALTYCO BioPuff is a plant-based fibrefill used as an insulation material for the apparel industry. BioPuff is composed of 100% raw cellulosic plant seed-fibre clusters and wholly sourced and manufactured in the United Kingdom. This alternative to animal- and petroleum-based products resembles down with its cluster structure; it is lightweight, warm and naturally water repellent while also being biodegradable and cruelty-free.

DELFINA **Who do you sell it to?**

SALTYCO Saltyco's main target customers are sustainably-driven apparel brands. These range from performance and outdoor-wear brands to luxury and contemporary fashion houses. What Saltyco customers have in common is their mission to replace the existing damaging fibrefill materials they use with healthy alternatives.

DELFINA **How would you define the main strategies of Saltyco regarding fostering carbon insetting?**

SALTYCO As Saltyco's supply chains have been designed and built from the ground up, we have been able to completely rethink how resources and emissions are managed throughout our product's creation. Our main method of doing this is through the origins of our textiles–plants grown on peatlands. Peatlands are a form of wetland ecoystem which, when healthy and wet, can store a huge amount of carbon. However, much peatland is over-exploited and damaged, meaning that carbon is being released and contributing 5% of global

[1] "Peatlands and climate change", *International Union for Conservation of Nature*, [online], accessible at https://www.iucn.org/resources/issues-briefs/peatlands-and-climate-change (Last accessed 8 June, 2022)."

anthropogenic carbon emissions.[1] By rewetting the UK's peatlands to grow plants that can be transformed into textiles, we can sequester huge amounts of carbon, contribute towards biodiversity goals and make some fantastic products.

DELFINA **I am very interested in the community work you are doing with 'experimental farmers' in the context of regenerative design. Can you tell us more about how this method regenerates the peats and creates benefits for farmers?**

SALTYCO Globally, huge areas of peatland have been drained in order to support conventional agriculture. This creates a problem as it allows the peat to degrade aerobically and produce huge amounts of carbon dioxide. According to the International Union for the Conservation of Nature, annual emissions from drained peatlands are nearly 2 gigatons CO_2, roughly double those of the aviation industry.

Many farmers who operate on these lands are therefore seeking alternative agricultural methods that will allow them to decarbonise their farms without losing income from cultivated crops. To stop the emissions the peat can be restored to its wet state and new crops can be used that thrive in such conditions. Saltyco then utilises the unique properties of these crops in order to produce our materials.

By providing a viable market, we are able to work with farmers who are rewetting their land. We are an active part of a growing movement to do this, joining cross-industry discussions and making the case for a shift towards more sustainable practices.

DELFINA **As part of your company's responsible use of natural resources, you harvest a specific part of the plant while keeping the roots that sequester carbon. Can you describe the process?**

SALTYCO In order to ensure carbon stays locked in the ground, it is important to ensure that there is minimal disturbance to the peat once it has been re-wetted. We therefore plant perennial crops that regrow year-on-year without the need for tilling and replanting. By allowing roots and other biomass to remain, we can eventually start to produce new peat, creating long term storage for sequestered carbon.

DELFINA **Saltyco is part of a broader ecosystem of brands, designers, researchers producing products and materials that have more restorative relationships with the planet than previous production methods – does this give you cause for hope going forward?**

SALTYCO Devastating climate impacts, a global pandemic and now the Russian invasion of Ukraine have created huge levels of destabilisation and uncertainty around the world. One of the most evident consequences throughout this is how we must detach our reliance from fossil fuels and their derivative materials. The sustainable and restorative solutions being explored by brands, designers and researchers around the world are critical if we are to create a global ecosystem that has the resilience to thrive in the coming decades. We are emboldened by our colleagues and one of the true pleasures of our work is the opportunity to engage and collaborate with those working towards this same mission. The Shellworks, Notpla and Piñatex are fantastic examples of great materials startups. Shadey. club is also a new startup on the scene looking at changing our fashion consumption practices to be more sustainable. Same mission, different approach, which we love to see!