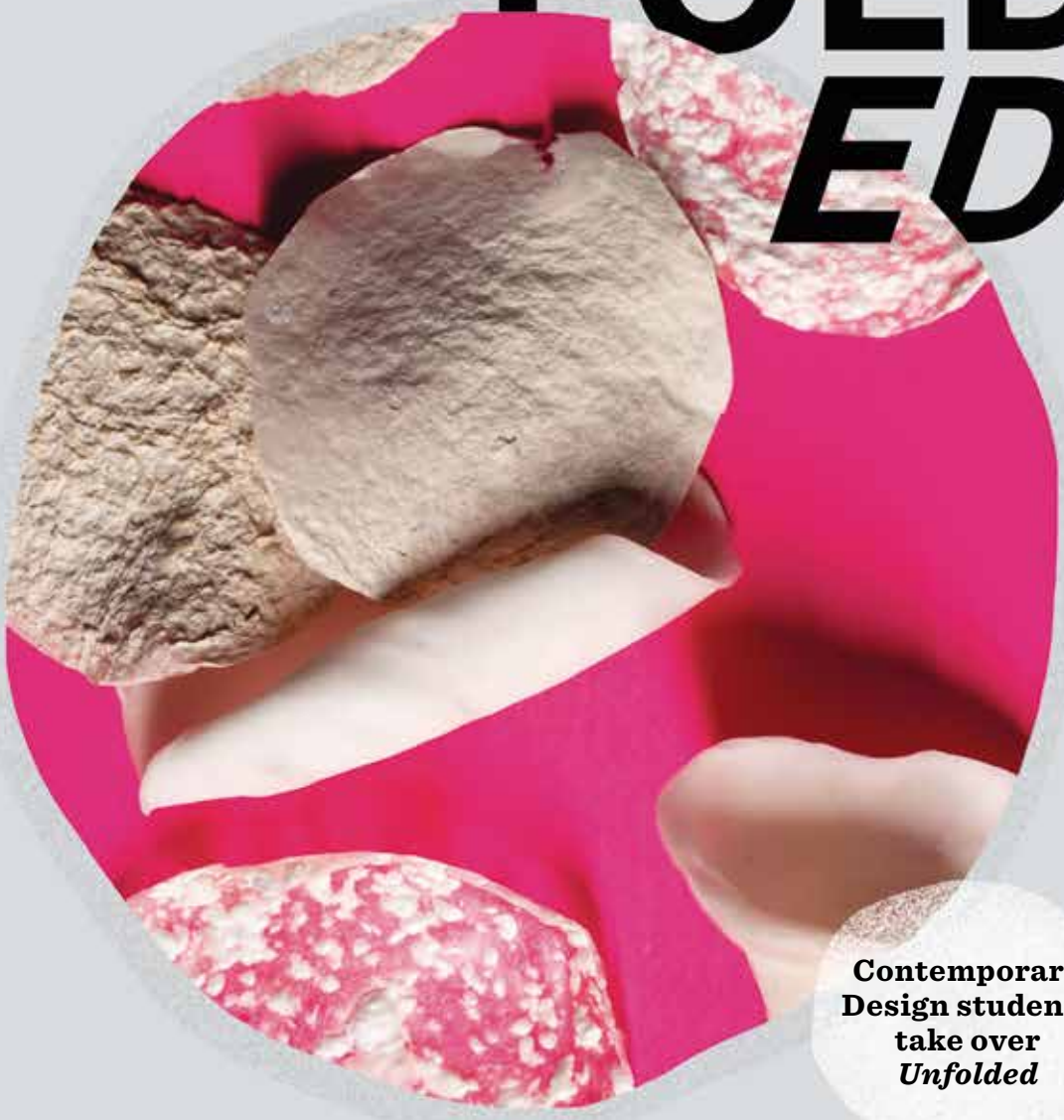
#3

A Cooler Planet

UNFOLDED



Contemporary Design students take over *Unfolded*

Aalto University

- *How can we cool down our overheated planet?*
- *Courage and creativity in higher education*
- *Piloting the circular economy*
- *Art sparks new thinking in the School of Business*

In this issue:

A Cooler Planet

Glass Lake by Jaea Chang
IMAGE *Anne Kinnunen*

IMAGE *Tzuyu Chen*

Disappearance by Saana Murtti
IMAGE *Mikko Raskinen*

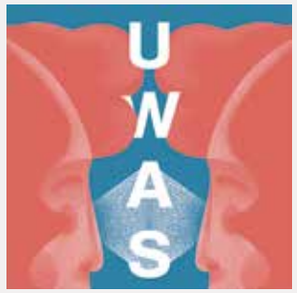
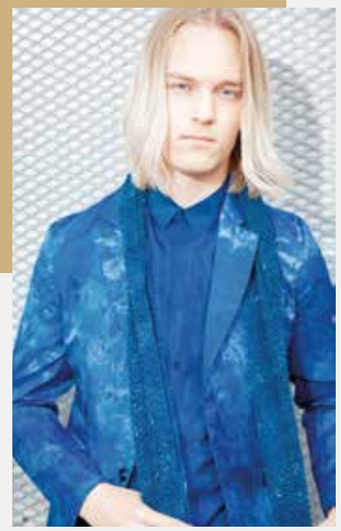


IMAGE *Heini Hiltunen*



Natural Indigo by Artu Åfeld & Kirsi Niinimäki
IMAGE *Eeva Suorlahti*

UNFOLDED

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aalto.fi/unfolded

Unfolded magazine is published by Aalto University's Art and Creative Practices initiative. The articles unfold contemporary issues dealing with creativity, experimentation, and transdisciplinary co-creation. This issue focuses on sustainability which was inspired by student explorations, and our collaboration with Helsinki Design Week 2019 under the theme of Learning Climate.

From the editor

Sustainable transformations through creativity

IMAGE **Mikko Raskinen**

We are facing significant challenges and changes in coming years, as has been highlighted by many recent studies and reports. According to the IPCC report, by 2030, we must have succeeded in remaking our systems of energy and food production, mobility, living environments, and life-long learning models. By that time, fossil-based fuels and materials, harmful chemicals and disposable consumption habits should be replaced by then with better alternatives.

We have to act – now. Instead of building dystopias, we at Aalto University want to develop futures even more liveable than the present. This calls for creativity, and even when automation and computing take over repetitive work tasks, we humans will still excel in creativity. Art, design and creative practices give us diverse perspectives on topical challenges and enable us to approach unpredictable situations in a co-creative, empathetic, imaginative and novel manner. They convey emotions and question our society and culture, humanity, ethics and many other essential topics.

In this issue, we look at how art and design explore topical challenges and produce solutions that are both unique and valuable for a sustainable life. The design fields have expanded during the past years, and in addition to physical objects, we increasingly design immaterial and digital experiences like services, games, transitions, urban environments, and even governmental services.

Aalto University's exhibitions and galleries present fascinating collaborations that cross disciplinary boundaries. During Helsinki Design Week, eleven art galleries in Otaniemi will showcase a wide variety of research projects ranging from sustainable product and service concepts to new material experiments.

Our University-Wide Art Studies are experimental and creative courses intended for all Aalto students. You can read about our Innovative Approach to the Circular Economy pilot course, which is an excellent example of collaborative knowledge exploration.

Design is also about experimentation. In this issue, we test the concept of a 'student takeover': Our MA students from the Contemporary Design Programme have produced the contents for pages 22 to 35.

The next ten years will bring the most significant design challenges we have ever faced. This edition of Unfolded showcases a wide variety of projects that prepare us for these sustainable transformations. I hope you enjoy it.

Anna Valtonen,
Vice President,
Art and Creative Practices

We need to redesign everything—*but how?*

Meeting sustainable development goals requires new kinds of collaboration between disciplines

Finns consume over four times more energy and raw materials than is sustainable. We seem to finally understand that our house is on fire, but do we know how to put it out? Can design and the arts help us? **Minna Halme,** Professor of Sustainability Management, **Peppi Seppälä,** student of Advanced Energy Solutions, and **Julia Lohmann,** Professor of Practice in Contemporary Design discussed these questions.

During Aalto University's strategy process, Julia Lohmann called for a big change:

'We urgently have to rethink everything: How we grow our food, what materials we produce and consume, how we set up exhibitions and how we travel and collaborate—if we want to achieve a future worth living in. Let's use our design skills to this end.'

— JULIA LOHMANN

But what about people from the other disciplines at Aalto? 'Julia's statement really resonated with me,' says Minna Halme, Director of the Aalto Sustainability Hub. 'In terms of my own work, I would say: let's use our *business* skills to this end.' For over 20 years, Halme has studied sustainability and management.

TEXT **Tiina Toivola** ILLUSTRATIONS **Marika Latsone**

Peppi Seppälä also agrees. 'We know the needs well enough already to start implementing changes with the technologies we have now.'

'When I started my studies, many teachers told us we are the generation that will make a difference. However, the next ten years are crucial, and we are still not the decision makers.'

— PEPPI SEPPÄLÄ

Limited by our current systems

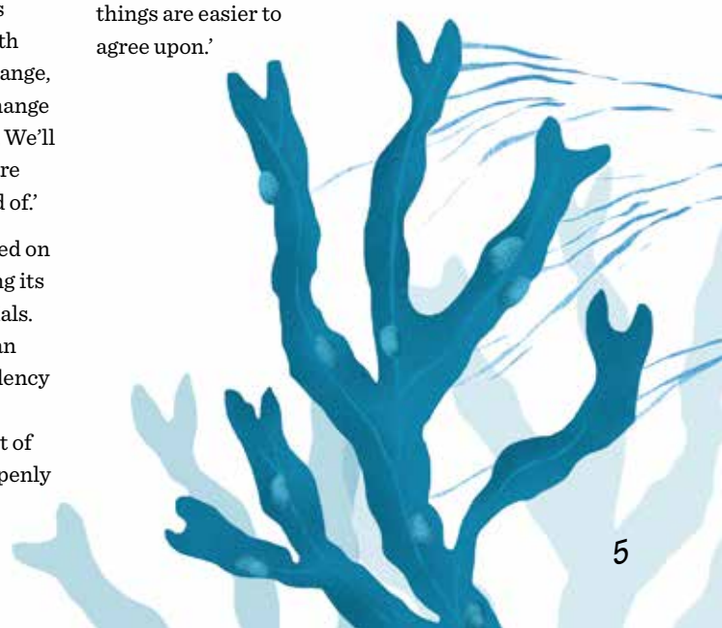
'As a student in technology, I feel we have to be more critical about whether something is really necessary,' says Seppälä. 'For example, should we really use our resources to develop materials which are difficult to recycle and extremely energy intensive to produce?'

Minna Halme believes that the existing scientific merit system encourages business scholars to develop models for the current paradigm based on economic growth, a fact that bothers Julia Lohmann: 'I am surprised that the mainstream is still dealing with 'business as usual' in a time of such crisis. The media is full of dystopias and scientists are practically screaming with urgency. It's obvious we need a systemic change, so critique is only the first step. To really change we'll have to collaborate across disciplines. We'll have to design alternative futures that we are drawn to, rather than the ones we are afraid of.'

A designer by training, Lohmann has focused on seaweed as a material for building, exploring its potential to replace less sustainable materials. Algae can remove excess nutrients and clean the sea while being grown. During her residency at the Victoria and Albert Museum in London, Lohmann established The Department of Seaweed, a community of practice which openly shares new knowledge. 'Seaweed is as important as other materials of making, such as ceramics, textiles and silver. The main difference is that most of what we will have made from seaweed has not been done yet; it is a material of the future.'

New materials are part of the solution, but the key challenge is how to produce and consume less. In Halme's experience, people view degrowth as a scary, backward development, even though our consumption currently exceeds four times the amount that ecologists say is sustainable. 'People have been taught to think that only continuous economic growth ensures a good life, and they don't even want to discuss alternatives. The arguments are always the same: are you suggesting we should go back to the fields and get rid of our amenities?' Halme says.

Lohmann describes how designers from Carnegie Mellon's Transition Design lab co-created a roadmap to mitigate water scarcity in California with communities in which groups such as farmers and residents were at conflict. 'The solution was to find a shared vision. When viewed from a time frame of 30 years, everyone dreamed about the same thing: sitting in a garden with friends. When the dream is shared, things are easier to agree upon.'



‘We lack appealing transitions towards a sustainable future,’ continues Lohmann. Dystopias make us understand the need for change, but they do not show a path toward possible futures.

What would make us feel safe then? ‘Maybe the idea is not look into the future, but to look back in a different way,’ Lohmann suggests. ‘I heard that Switzerland in the 1970’s was sustainable, and that does not sound scary at all.’

Halme backs this up with research: ‘Our happiness in Western countries hasn’t really increased during the past 40 years.’

‘Once basic needs are met and people trust they live in a just society, economic growth does not make us any happier.’

— MINNA HALME

Lohmann and Halme agree that it really matters how our system measures things. ‘We should not just narrow-mindedly maximise profits and growth, but instead maximise something different, like human and ecological wellbeing,’ says Halme. ‘Our target is to keep the earth liveable, and resources should be used accordingly. Even then, business skills will be necessary.’

The first steps on a road to change

There is no magic bullet for a systemic change, as we need to make changes at all levels. We still have time for creative solutions. But can we find changes that might have a substantial impact?

Minna Halme says that constructive models of degrowth are outside the discourse of standard economics and hence won’t be printed in Financial Times Top 50 journals. Julia Lohmann gets excited. ‘That is a design brief! How can we create wellbeing in a situation of zero growth?’

Minna Halme reflects on the level of impact it could make if the tools of evaluation, in this case the FT50 research journal list, was adapted to focus on sustainability journals. ‘That would create huge leverage for change in business studies and economics,’ she says.

In the realm of corporate investment, Halme views large investment funds as a leverage point. If these giants would invest in long-term development it would have an enormous impact and be economically sound as well. The Finnish fuel company Neste made a strategic shift to focus on making fuels from waste. The transformation took 10 years, but has resulted in an increase of over 500% on share price in five years. ‘This only happened because the Finnish government as an investor had patient capital,’ she said.

‘Our existing energy infrastructures stifle carbon-saving technologies despite their environmental advantages,’ continues Seppälä. ‘We also now consider natural gas to be a sustainable alternative for coal, but we should be doing everything we can to find and implement carbon-free solutions. Scientists have calculated the global carbon budget—in a sense there is a clock that measures how much carbon we have left.’

Minna Halme continues. ‘In terms of the amount, do we have to guarantee our electrical grid can deliver maximum peak load at all times?’ Hospitals should always have enough electricity, argues Peppi Seppälä, but prioritising energy usage is important. Smarter appliances can run non-critical tasks like heating and cooling outside peak hours without consumers even noticing the difference.

How can art and design contribute?

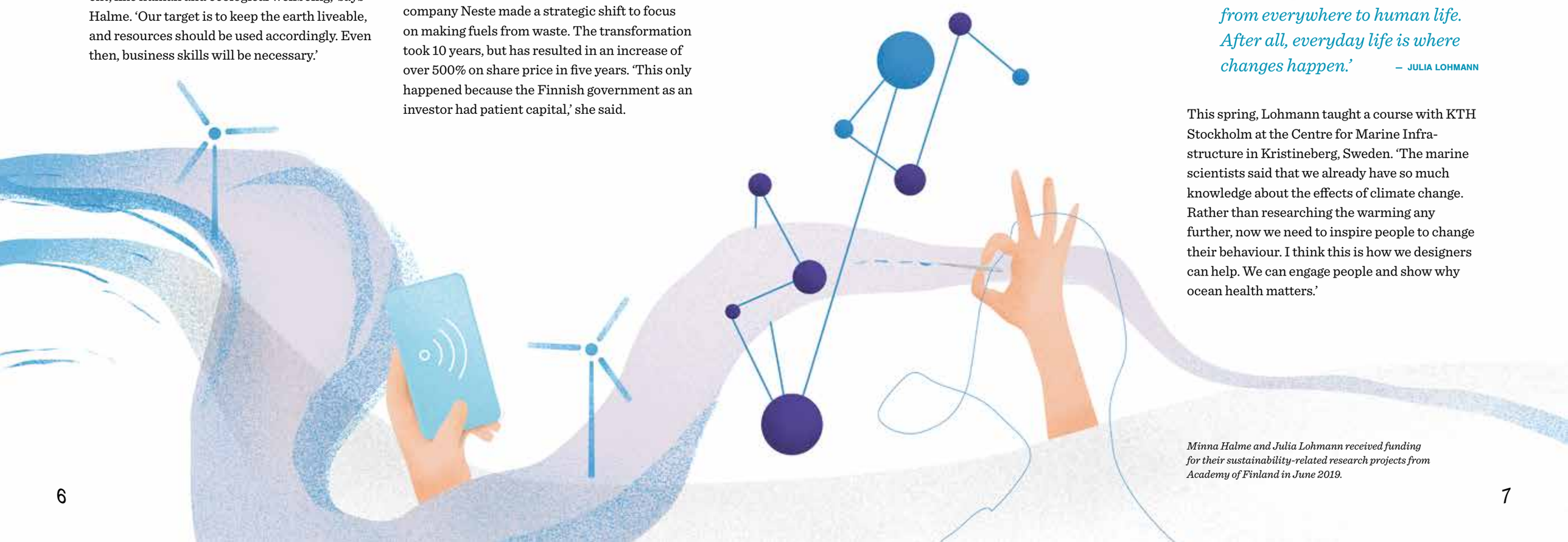
On an individual level, Seppälä believes people need to understand the scale and impact of different activities. ‘If you drive a long way by car to take your plastics to recycling, you produce more emissions than recycling will save. Check out the Sitra-funded *1.5 Degree Lifestyles* study to see which individual activities really make an impact.’

Lohmann believes art and design can build bridges between everyday life and knowledge silos, and can give visibility to those ideas that may yet be too radical or distant for science. ‘If you read a report, it might not matter to you until you make the connection to your own life. Designers and artists engage people through the types of narratives that matter to us and change our behaviour.’

‘This is what design is all about as a discipline, connecting things from everywhere to human life. After all, everyday life is where changes happen.’

— JULIA LOHMANN

This spring, Lohmann taught a course with KTH Stockholm at the Centre for Marine Infrastructure in Kristineberg, Sweden. ‘The marine scientists said that we already have so much knowledge about the effects of climate change. Rather than researching the warming any further, now we need to inspire people to change their behaviour. I think this is how we designers can help. We can engage people and show why ocean health matters.’

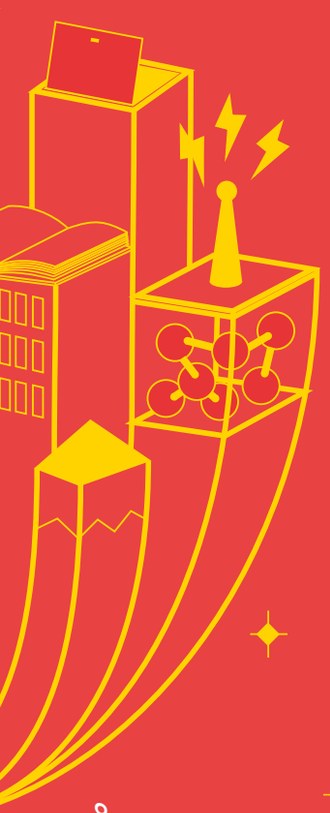


Minna Halme and Julia Lohmann received funding for their sustainability-related research projects from Academy of Finland in June 2019.

Courage and creativity in higher education

Answering the complex, dynamic and networked problems we face today means rethinking our traditional ways of working and building knowledge, according to a recent symposium on teaching arts and design at Aalto University.

The first *U-Create Symposium on Teaching Arts And Design Across Disciplines* was organised in May 2019 by the Art and Creative Practices initiative. Seven international speakers focused on transdisciplinary teaching in higher education in this annual event to develop advanced creative pedagogy at Aalto University.



'If we don't question our structures of knowledge, how can we create something new,' asked independent researcher **Mabel Tapia** *from the Reina Sofia Museum in Madrid.*

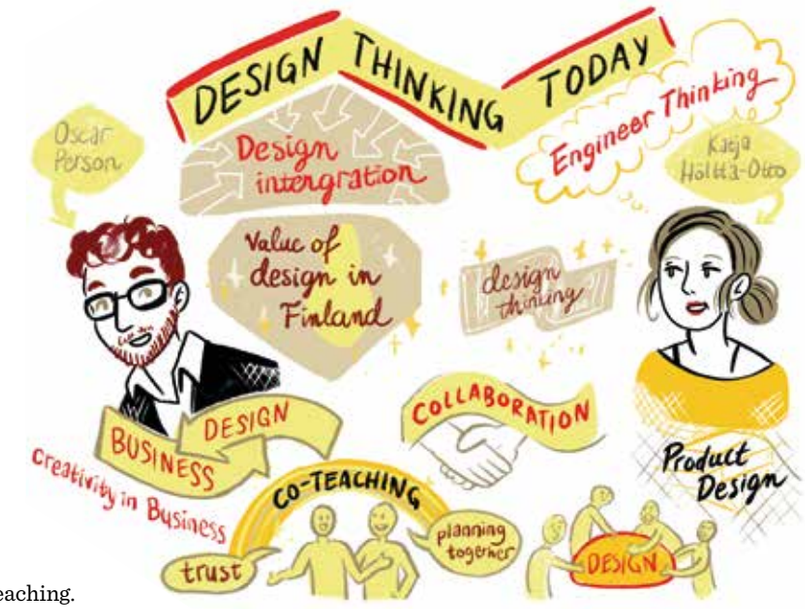
Traditionally, she said, the core function of art has been *representing* reality. This has been turned on its head, with artists now creating reality instead of simply (re)presenting it. This shift pushes artists outside of their normative genres, making artistic practices more operative and active and enabling them to make a strong impact on society.

Tapia stressed that when the function of art changes, so must the function of a museum, for example by becoming a laboratory of action. She envisioned that museums could increasingly become 'spaces of articulation', where symbolic and material ideas are created and then go out into the world. Re-configuring an institution in such a way requires tension to bring about real changes. 'How do we work in a different way—not to simply learn or teach—but to build and share collective knowledge?' she asked.

TEXT **Tiina Toivola** LIVE DRAWINGS **Apila Pepita Miettinen** ILLUSTRATION ON PAGE 8 **Pei-Yu Lin**

The future of teaching is collaborative

Oscar Person, Assistant Professor of Design Integration, addressed emerging design professions and the new demands this places on the skill set of designers. He stressed that a designer's skillset follows the development area in which she operates: 'A game designer and a fashion designer are only similar to a certain extent.'



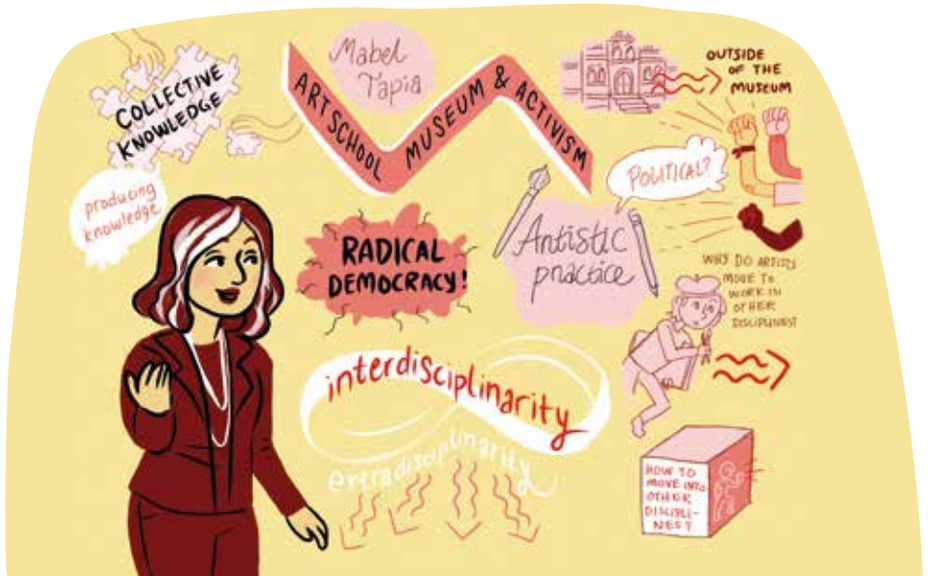
These demands place special requirements on university teaching. 'What we need to learn and teach differs by application area—a fixed set of tools is seldom the solution,' said Person. In promoting new forms of design thinking, he argued that working across disciplines and offering audience-tailored advice is crucial. Co-teachings is essential, said Person, 'a small team that dares to explore opinions in class.'

Associate Professor of Product Development **Katja Hölttä-Otto** from the Aalto Design Factory explained the role of empathy at the beginning of a problem-solving process to understand the context. Methods are then selected to enable better decisions about project planning, concept design and execution.

She concurred with Oscar Person:

> *'Design thinking is not a certain suite of methods—it is always related to the context'.*
>
> — KATJA HÖLTTÄ-OTTO

She reminded the audience that in the end, it is the process and solution—and the people involved—that matter, not the discipline it comes from. 'For me, a discipline is a synonym for a silo. Discipline-free design is problem-based. In a good team everyone contributes, there is a lot of trust, mutual respect and a common goal.'



Transdisciplinarity works!

Design and arts develop and share knowledge in a unique way, and can be combined with traditional skills to become powerful agents for social innovation.

Tatu Marttila, post-doctoral researcher in the Aalto Creative Sustainability programme, made the case that the kind of transformation described by Mabel Tapia is also happening in institutions of higher education.

Marttila sees the potential here to reach more people and achieve more: 'Transdisciplinarity brings the academy to a broader public domain, to develop society and culture', he explained.

According to Marttila, the practice of design is having a fundamental influence on how it is taught. Design weaves perspectives together into a shared problem space, enabling collaborative structuring. 'We're moving from lectures to problem-based learning, and learning through practice,' he said.

Anniina Suominen, Professor of Art Education, said that our challenge is to make sustainability visible.

> *Shocking images do not change people's minds or behaviours. Instead, we need to address human emotions in a constructive way, through a pedagogy of hope.*
>
> — ANNIINA SUOMINEN

She said that art can make intangible or difficult questions visible, such as the following:

'How do we relate to animals and nature? How do we treat our national heritage? What is dignity of end of life care? Art deals with ethics, emotions and values, which are hard to measure but cannot be ignored.'

Design pedagogy teaches context-related discovery

'Design is fundamentally creative by nature', said **Pirita Seitamaa-Hakkarainen,** Professor of Craft Studies at University of Helsinki. She has been studying how to encourage young children to work on collaborative innovations.

'In collaborative settings, you negotiate and share your ideas in order to create a shared design or object.'

Finally, **Salu Ylirisku,** Senior University Lecturer in the School of Electrical Engineering, mused on the differences between reflective and specialist skills and the value of each.

Technology studies have traditionally focused on specialist skills, he said, which are often abstract, rational and logical by nature. 'They deal with certainty and individual problem-solving with measurable outcomes and clear documentation.'

By contrast, design studies are reflective and involve embodied sense-making, relevance and collaborative problem-solving, with outcomes that involve meaningful and valuable artefacts, which can be measured experimentally, but not in numbers.

'We need both skills in problem solving: specialist reasoning in abstract and formal logic, and reflective skills to be able to frame and understand context-related experiences,' he said.

MULTIDISCIPLINARY
People from various fields working alongside each other. The work of each may or may not influence others.

INTERDISCIPLINARY People working together so that the result depends on both.

TRANSDISCIPLINARY
People crossing disciplines to create something new together.

In the course, Oona Ojala studied how the cultivation conditions of luxury products such as coffee and cocoa will evolve with climate change. Their production may be affected by rising ocean waters, displacing growing areas specifically suited for these products.

Exploring the future of circular economy

An innovative pilot course studies the circular economy, arts and systemic changes

TEXT **Tiina Toivola** IMAGES **Elisa Dametto**

‘Environmental issues are quite complex. Some sources claim that a textile bag is more ecological than a plastic bag, and others insist exactly the opposite. One thing is clear: our consumption-based lifestyle, which uses the resources of four planets, cannot continue,’ says **Riikka Mäkikoskela,** Visiting Lecturer at Aalto University and Managing Director of the Finnish Association of Art Schools for Children and Young People. She organised and taught the Innovative Approach to Circular Economy pilot course as part of the UWAS programme.

‘For some time, we have known that our natural resources are being depleted. We know that the economy and our society must operate in a new manner. Circular economy thinking is the first step in a new direction.’ The pilot course was funded by Sitra, the Finnish Innovation Fund, as part of the Circular Economy Programme at the Department of Design.

The course included guest lectures from experts and artists, but the main focus was on practical workshops. According to Mäkikoskela, theory and practice are currently at odds with each other. We are aware of some solutions, but would require personal effort to integrate them into our everyday lives.

Hands-on experimentation can be the first step in learning new practices and processes.

In the course, experimentation took the form of small-scale projects which explored new ways of doing things to ensure that materials remain in circulation and product life cycles are extended. For example, the students built a grill out of recycled bricks with a narrow form to ensure the highest heat efficiency possible. No mortar was used, so the bricks could be reused again.

‘Instead of taking a dystopian look at the problem, the approach we took was constructive: What if everything does not end here, what if we can still learn to act more wisely? When you see what you can do with your hands, you may come up with alternative ways of doing things.’

A new (old) way of thinking

Mäkikoskela emphasises that in the past, Finland already practiced the principles of circular economy. In the 1950s, after the wars, many Finns still lived in self-subsistent households on small farms. Hardly any materials were wasted, and everything was used many times over. ‘In a circular economy, we do not need to reinvent everything. We can draw on old methods and adapt them to suit our current way of life.’

This spirit of innovation has space to unfold on Aalto’s campus in Otaniemi: namely the Test Site, built under the direction of Professor **Mikko Jalas,** head of the Creative Sustainability programme.

The course on circular economy put the Site to good use, exploring old and new solutions directly. Students were obliged to take an active role, and when there were no simple solutions, the course could take a lot of time. ‘That is exactly what finding one’s own vision requires: tolerance of uncertainty and persistence,’ Mäkikoskela says. ‘One must try out different approaches and adapt one’s thinking and actions to figure out what everything is about.’

Mäkikoskela believes that in our daily lives we do not have enough time to think freely. ‘An important skill for the future will be the ability to shift from doing routine tasks into a state of mind for creating something new.’ The work of an artist also includes a lot of mundane tasks, such as bookkeeping, tax matters or applying for funding. At times, the proportion of creative work may be quite small.

‘Everyone can learn how to work creatively; there is still a playful child living in each and every one of us. What is essential, though, is learning how to shift rapidly from one mode of working to a different one. We should find new practices for this. On the other hand, a new way of thinking is never created out of nowhere, but it is built upon the old one. With experience, we can reach excellent results quite rapidly by combining existing knowledge in surprising ways.’

This grill designed by a group of students can be moved to a new place and reassembled. Helena Allegro is warming up the grill.

Physics students Myriam Caizergues, Johanna Czech and Irina Annenkova made an insect curtain from waste. They acquainted themselves with the Finnish waste management system and examined how all parts of the curtain could be recycled after use.

Tuomas Kohosalmi's artificial intelligence art was created by recycling classic works of art.

Multidisciplinarity requires versatile teaching methods

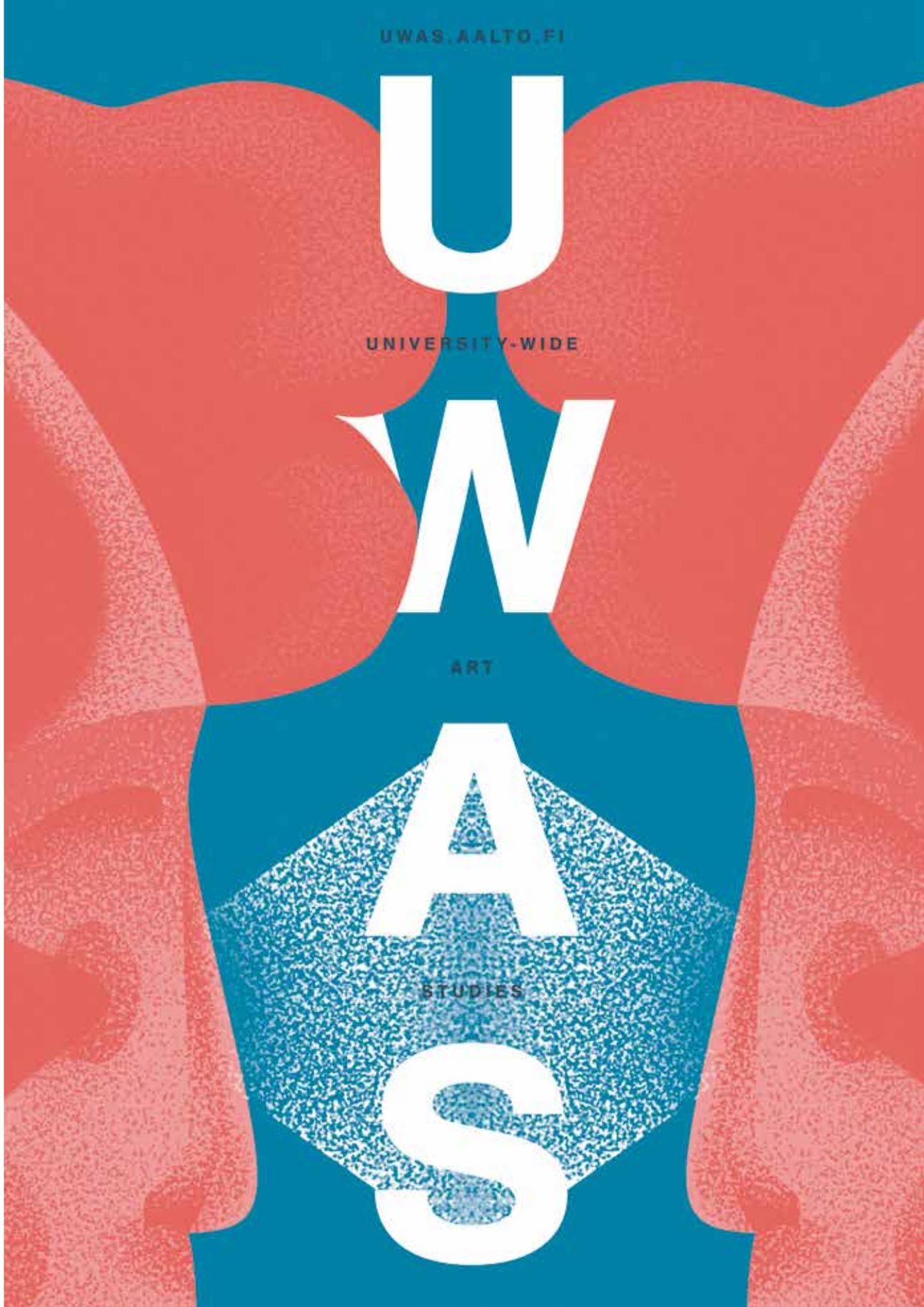
The community and public teaching methods of the course encouraged students to work in teams and promoted networking and interaction between various fields. Environmental and community art reflected wider societal perspectives. 'The practices applied in the visual arts are excellent when you need to visualise something new. The strength of art lies in its courage to come up with different solutions, even though the artist may have no idea what the final result will be.'

Coping with uncertainty in one's own vision and way of doing things is characteristic of artistic work, but for some of the participants, the course embodied a completely new way of studying. Students came from very different professional and cultural backgrounds, which required greater than usual sensitivity and observation by the teacher. Many of the participants had only done independent studies on theoretical issues, and had never worked with their hands. 'Some students had difficulties with me not having a ready-made pattern for them on how to complete the course, because art does not usually define things precisely in advance,' Mäkikoskela explains.

'The multidisciplinary approach made the course interesting to me. The business students know more about the economy than I do. They understand what kind of questions to consider when making a new product. It also amazed me how deeply involved in the artistic activity, say, the engineering students were, producing works of art using artificial intelligence. This enabled the art students to broaden their horizons and learn to work with people with different skills.'

A circular economy experimentation and teaching area was built on the Otaniemi campus area in co-operation between the students and university staff, with the support of Sitra, Helsinki Region Environmental Services Authority HSY and ACRE. The purpose of the site is to enable the implementation of experiments and events related to circular economy. In addition to teaching, the staff of the various schools of Aalto University will use the area as a research site for circular economy.

UWAS GRAPHIC **Heini Hälinen**



TEXT **Juuso Tervo**

University-Wide Art Studies (UWAS) offer all Aalto students and faculty a unique opportunity to explore and study art and design based practices in higher education.

As no discipline owns issues such as climate change, Aalto University encourages the formation of transdisciplinary communities of teachers, students and researchers who together will tackle these and other issues in new and creative ways. By this we aim to educate game changers.

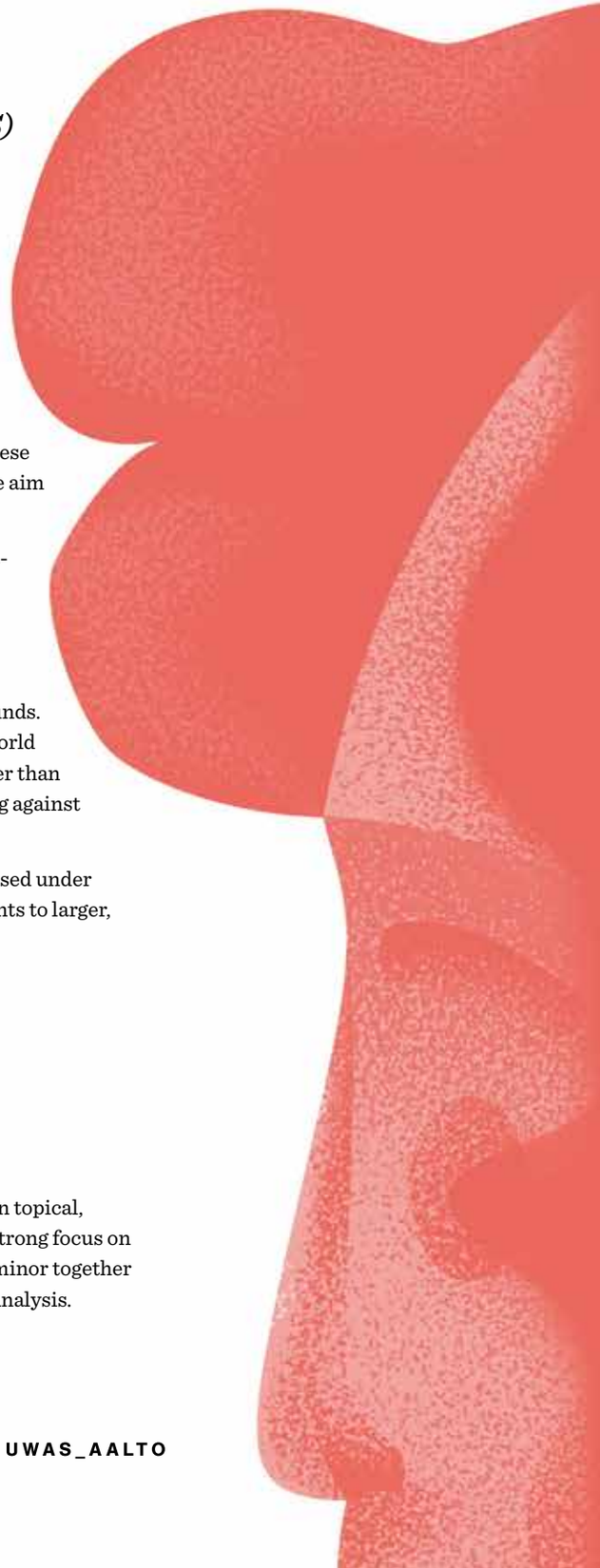
All Aalto students have an opportunity to explore art-based practices and processes beyond disciplinary boundaries. The UWAS course portfolio consists of thematically focused and carefully curated courses where art and design facilitate transdisciplinary encounters between students from various backgrounds. UWAS encourages Aalto students to approach the world from multiple angles and learn from each other rather than simply teaching new knowledge and skills or working against established disciplinary traditions.

In 2019-20 academic year, UWAS courses are organised under seven thematic categories that link the course contents to larger, transdisciplinary questions:

- **Global and Local Issues**
- **Sites and Environments**
- **Crises and Turning Points**
- **Senses**
- **Materials**
- **Narratives**
- **Technologies**

Varied Contents courses are project-based courses on topical, changing issues, and 'Design Inside' courses have a strong focus on design practices. UWAS is also piloting a MathArts minor together with the Department of Mathematics and Systems Analysis.

UWAS.AALTO.FI **UWASAALTO** **UWAS_AALTO**



Explorations beyond disciplinary boundaries

2019 FALL

UWAS-C0002 | SITES AND ENVIRONMENTS
On Site - Island Workshop
PERIOD I • • • 3 ECTS JUUSO TERVO

UWAS-C0035 | TECHNOLOGIES
Electric Energy in the Arts
PERIOD I • • • 3 ECTS GREGOIRE ROUSSEAU

UWAS-C0051 | DESIGN INSIDE
Designing Services with Emerging Technologies
PERIOD I • • • 3 ECTS NURIA SOLSONA

UWAS-C0048 | GLOBAL AND LOCAL ISSUES
How Did We Get Into this Mess? Exploring the Past in History, Science and Art
PERIOD I • • • 3 ECTS ALEJANDRO PEDREGAL

UWAS-C0032 | SITES AND ENVIRONMENTS
Under Pressure
PERIOD I • • • • • 5 ECTS
DENISE ZIEGLER, PETRI KAVERMA

UWAS-C0003 | NARRATIVES
Creating Stories and Narratives
PERIODS I-II • • • • • 5 ECTS JOHAN EICHHORN

UWAS-C0036 | TECHNOLOGIES
Game Design and Production
PERIODS I-II • • • • • • 6 ECTS ARASH SAMMANDER

UWAS-C0008 | GLOBAL AND LOCAL ISSUES
Design Learning
PERIOD II • • • 3 ECTS
JAANA BRINCK, SAGA SANTALA, MARI SAVIO

UWAS-C0013 | TECHNOLOGIES
Introduction to Sound Culture. Audio Across Disciplines
PERIOD II • • • 3 ECTS DEREK HOLZER

UWAS-C0049 | NARRATIVES
Creating Futures in Art, Science, Technology and Business
PERIOD II • • • 3 ECTS JUUSO TERVO

UWAS-C0011 | SENSES
Project: Film as an Emotional Artifact
PERIOD II • • • 3 ECTS JOSE JUAN CAÑAS BAJO

2020 SPRING

UWAS-C0015 | NARRATIVES
Visualized Me: Creative Ways of Thinking and Using Visual Tools
PERIOD III • • • • • 5 ECTS LAURA ISONIEMI

UWAS-C0004 | MATERIAALIT
Miten idea materialisoituu?
PERIODIT III-IV • • • • • 5 ECTS INKA NIEMINEN

UWAS-C0024 | CRISES AND TURNING POINTS
Freedom – An Artistic and Experimental Approach
PERIODS III-IV • • • • • 5 ECTS JOHAN EICHHORN

UWAS-C0027 | GLOBAL AND LOCAL ISSUES
Film, Work, and Labour
PERIODS III-IV • • • • • • 6 ECTS
INÊS PEIXOTO, TIINA TAIPALE, EEVA HOUTBECKERS

UWAS-C0028 | GLOBAL AND LOCAL ISSUES
Fashion in Culture
PERIODS III-IV • • • • • 3-5 ECTS ANNAMARI VÄNSKÄ

UWAS-C0034 | SITES AND ENVIRONMENTS
Photography and The City
PERIODS III-IV • • • • • 5 ECTS KALLE KATAILA, HARRI LAAKSO

UWAS-C0045 | TECHNOLOGIES
AV Club: Thinking and Doing Moving Images
PERIODS III-V • • • • • 5 ECTS LAURI LINNA

UWAS-C0030 | MATERIALS
Human-Material Interaction
PERIOD IV • • 2 ECTS BILGE AKTAS, CAMILLA GROTH

UWAS-C0050 | TECHNOLOGIES
3D Prototyping in Context of Creative Practice
PERIOD IV • • • 3 ECTS ASHISH MOHITE

UWAS-L0001 | GLOBAL AND LOCAL ISSUES
UWAS Doctoral Workshop: Participatory Practices and Social Change
PERIOD IV • • • 3 ECTS ALEJANDRO PEDREGAL

UWAS-C0029 | GLOBAL AND LOCAL ISSUES
Design and Culture
PERIODS IV-V • • • • • 5 ECTS PAOLA CABRERA

UWAS-C0046 | TECHNOLOGIES
Creative Coding
PERIOD V • • • • • 5 ECTS TOMI SLOTTE DUFVA

UWAS-C0014 | MATHARTS
Spatial Structures
PERIODS IV-V • • • • • 5 ECTS TANELI LUOTONIEMI

UWAS-C0023 | UWAS VARIED CONTENTS
UWAS Discussion Series
PERIODS IV-V • • • 1-3 ECTS JUUSO TERVO

UWAS-C0025 | CRISES AND TURNING POINTS
Art and Artificial Intelligence
PERIOD V • • • • • 5 ECTS KASPERI MÄKI-REINIKKA

UWAS-C0042 | NARRATIIVIT
Kertomuksen äänet
PERIODI V • • • 3 ECTS HANNA WESELIUS

Art, design *—and water research*

Water researcher Kaisa Västilä collaborated with design students on producing of the Fragile Water exhibition at Helsinki Airport, a unique learning opportunity.

Water connects all living beings, including humans, yet the quantity and quality of global water resources is a pressing challenge. New solutions are urgently needed, because surface freshwaters such as rivers and lakes are extremely important for all living organisms. Globally, 65% of river habitat biodiversity is threatened by human activity. All European rivers are required to reach an acceptable ecological status by 2027, but at the moment 62% of them have not yet achieved this goal. River management needs new approaches which combine ecological requirements, such as water quality and biodiversity, with human uses of rivers, such as agriculture, flood management and urban planning.

Through my research, I have been able to contribute to water management solutions which support the coexistence of humans and nature. The Fragile Water exhibition was a unique experience for me: I was inspired by the pieces of experimental design and graphics that students produced. The designers were able to visualise and interpret the research in unique, memorable ways.

TEXT **Kaisa Västilä** IMAGES **Anne Kinnunen** EXHIBITION GRAPHIC DESIGN **Pei-Yu Lin** ARTWORK **Hidden Lake by Iines Jakovlev**

During the process, the researchers and designers learned a lot from each other. Looking at the same topic from a completely different viewpoint was extremely fruitful. In this way, we could show our research in a new form that may reach people normally not interested in engineering and technology. I was delighted by how well the designers were able to visualise the research points through experimental design.

The Fragile Water exhibition is a good example of how we might present our work to the general public to make clear the value of both research and design.

Precious by Kaisa Jäntti

We all depend on water, and it is our responsibility as researchers to serve society by sharing knowledge on how to tackle water challenges. We all depend on water. Changing our eating habits, using techniques based on the circular economy for nutrient recovery, and applying nature-based designs in urban and natural water management are part of the solution.

The language of design is international, and we researchers hope that the exhibition audience can take some new ideas back with them to their home countries. Perhaps after seeing this exhibition, people will try to better protect our fragile waters in the future.

Postdoctoral Researcher Kaisa Västilä works in the Water and Environmental Engineering Research Group at the Aalto University School of Engineering. Her research concentrates on the flow of water and the transport of sediment and nutrients in rivers, streams and ditches.

The Finnish airport operator Finavia and Aalto University commissioned design students and water researchers to join forces in the Fragile Water exhibition that is open until the end of 2019 at Baggage Claim Hall 2B, Helsinki Airport.

Sea Sick Sea by Niina Hyry

WHAT IS CONTEMPORARY DESIGN

THE STUDENT TAKEOVER

Curating and Storytelling

The Curating and Storytelling course created three visual and textual essays about the first academic year of the MA Contemporary Design. We asked students to reflect on the issues, ideas and practices they engaged with throughout the year. The course adopts the programme's pedagogical concept in which we combine thinking and making with acting and reflecting as drivers for discovery. The learning often takes place in studio contexts and on excursions where the students are immersed with all senses in processes of making.

In the following pages the students share their understanding of the extended field of contemporary design in a 'text in progress' that gives a glimpse into the multi-vocal practices and cultures of discourse that shapes our programme. We reflect on two ongoing exhibitions the students contributed to, both concerned with the ways we as humans have neglected the wellbeing of our environment: The *Working with Soil* Project that took place in the context of Venice Biennale during summer 2019 (8 May until 28 August) and the *Critical Tide* exhibition that will be exhibited in the Design Museum Helsinki in autumn 2019 (6 September until 27 October).

Maarit Mäkelä
Associate Professor, Practice-led Design Research
Department of Design

Julia Lohmann
Professor of Practice, Contemporary Design
Department of Design

contemporary design crafts **interactions**[1] in addition to artefacts and aims to **give agency**[2] that reaches beyond the human through **collective engagement**[3] challenging the role of the designer it seeks to expose embedded social, political, and cultural **values**[4] and functions as **research as design**[5] by merging theory and practice therefore it values **process**[6] over outcome whilst recognising the problem of **scale**[7] and focusing on **regenerative**[8] approaches over user-friendliness to communicate **possibilities**[9] instead of a truth by enabling criticality through **reflection**[10]

Feels like it [the paragraph] tries to cover it all without actually giving a definition. A bit like a horoscope. Everything is appealing and you want to agree, but everyone can interpret it in the way it best suits their own purpose. !!!

This is good so that different people can find themselves in it.

Missing experimentation as a method

Please, can we put this [paragraph] in proper sentences?

Is this a threat for designers?

How to define?

Everyone is a designer in the future?

and imaginaries

or learning?

Valuing knowledge as an outcome of design in addition to artefacts

through?

Research = design
Research ≠ design
Research ≈ design

through?

?

PARADOX!?! We are searching some universal GOOD, value-based design, but resist one truth at the same time.

How to embrace different values?

How could we expand the term to include non-human actors?

Who has agency? Who is given agency?

Are they separate to begin with? Isn't what we know intellectually "theoretical"?

Experiential knowledge

Where are economy and ecology?

Design(er) as an economic and ecological force

Can we challenge economic models through design?

This should be challenged

TOTALLY AGREE !!!

! GOOD

Economy ≠ commerce ≠ finance

Marx forms of capital

What kind of economies or policies should designers be asked to uphold?

Values are confusing!! They are SO relative…!

Can values be objective?

ontological and political

Stay with the problem and its complexity

Requires systems thinking to see this

One size doesn't fit all

But also opportunities by engaging with scale

And challenges

Diversity

= Multiple voices

Important!

Critical of what?

Not being ashamed of cluelessness

YES! Cluelessness opens up new understanding

What about after the reflection?

[1] interactions
Relationships as a material. Also, understanding how as we design our world, it designs us
(Willis, Anne-Marie. "Ontological designing". Design Philosophy Papers, vol. 4, issue 2, pp. 69-92.)

[2] give agency
To enable to take action.

[3] collective engagement
Expanding the role of the designer from isolation to integration. To be active with(in) communities.

[4] values
What is the role of values in the design process?

[5] research as design
Should not be understood as a reference to "practice-led research" (Pedgley, 2007). Functions as a rigorous entanglement of making and theoretical knowledge (Jones, 2014; Findeli, 2008). Here, the aim is also to challenge the concept of objective knowledge, not to refer to theoretical knowledge as such.

[6] process
Situating iterations within a wider network of learning instead of defining them as conclusions.

[7] scale
Recognising the implications of scale in the age of globalisation and the context of regenerative futures. Should scale be defined by demand?

[8] regenerative
Resilience vs. convenience.

[9] possibilities
Resisting the idea of a truth and instead exploring the plurality of perspectives.

[10] reflection
Embodiment, awareness, writing, examining or reviewing, gained knowledge from making, self-reflection, and the list goes on.

Concept, (non)manifesto, and facilitation by Milja Kalliokoski, Mariana Solis Escalera, and Aino Tuovinen. The participating students and faculty have contributed to the editing process.

THE STUDENT TAKEOVER

Contemporary design enables critical reflection

Design is the method with which we shape our world. Designing is a poetical and political act that changes a situation to a preferred one. But how do we know what is preferred, and for whom? What should we affirm and what should we challenge through our actions? Where will all this lead us?

We know that if we want to have a future at all, we need to develop other ways of being in the world, and to critically reflect on attitudes and approaches we take for granted. The new MA Contemporary Design combines material-led design with critical and conceptual thinking practices. The programme aims to understand the extended scope of design and to position student work within the ongoing discourse.

To understand what we need to change and how to do so, we need to extend our awareness in two directions:

- Inwards—to understand the meaning of our tacit knowledge and sense the poetical dimension of our endeavours.
- Outwards—to grasp the political, social, technical and ecological systems that our work is embedded in and understand the implications of the changes we pursue.

We value processes—drawing, prototyping, experimenting and making—for their reflective potential as much as for their material outcomes. We learn skills to enable us to manipulate established and new materials, bringing contemporary relevance to traditional craft processes and updating them with 21st century technologies.

Through transdisciplinary design we can interweave knowledge from various fields, and raise questions and not wait until we have found answers to speak. We can translate tacit and fleeting experiences into resonant pieces that engage others in discourse. We unpack the complexities of what surrounds us so that we understand how our actions affect these situations. We narrate the stories that help us make sense of the complexities of the 21st century. This enables us to find ways to be more benign towards the world we depend upon.

Text: Maarit Mäkelä & Julia Lohmann

Sediment sampling in the historical centre of Venice with the Limnos sampler provided by the Finnish Environmental Institute SYKE.
Image: Pauliina Purhonen

Detail from the exhibition set up at the Research Pavilion.
Image: Tzuyu Chen

Working with Soil group:
Maarit Mäkelä (Professor), Riikka Latva-Somppi (Researcher and Curator), Tzuyu Chen (MA student), Hanna Kutvonen (MA student), Pauliina Purhonen (MA student)

THE STUDENT TAKEOVER

WORKING WITH CONTAMINATED SOIL:
Revealing human traces in Venice

Traces from the Anthropocene. Working with Soil is a multidisciplinary research project that addresses the ecological consequences of the human footprint through ceramic art. The project took place before and during the Venice Biennale 2019, the world's best-known contemporary art event held since 1895.

Climate change has raised general awareness of the impact of human activity on the environment. Ecological degradation induced by anthropogenic factors such as microplastics, contamination of the soil or the successive disappearance of pollinating insects have become major sources of concern.

As ceramists traditionally work with local earth, the research was situated in the local environment of the Biennale, the Venice lagoon area. The principal places of interest were the artificial canals of the historical centre, Porto Marghera's industrial area and the Murano Islands. During the process, local soil was gathered and then analysed for anthropogenic contaminants.

Local brick clay was used to create large ceramic forms, and finally, the analysed, contaminated soil was used to paint the ceramic vessels. The focus was not in making a comparative study of clean and contaminated soil as a ceramic material per se, but rather to investigate how craft practice may reveal embodied relations of the human and material environments. In this project, craft making is understood as a philosophical space to consider ethical and ecological concerns related to the environment. The research is conducted by artist-researchers from Empirica research group of the Department of Design in collaboration with the Finnish Environment Institute SYKE.

www.researchpavilion.fi

This text is based on Maarit Mäkelä and Riikka Latva-Somppi's texts and was edited by Pauliina Purhonen.

Analysed by Hannu Revitzer in Aalto University, School of Chemical Engineering, 18 March 2019

exceesd threshold value
exceeds lower guideline value

SOIL SAMPLE (µg/g)	Zn	Mn	Fe	Pb	Cr	Ni	Ag	As	Cu	Cd
Murano 1	90	463	21292	21	18	<10	<10	<10	22	<10
Murano 2	359	336	20319	139	23	14	86	37	135	<10
Murano 3	384	307	14290	189	26	14	35	33	100	<10
Murano 4	367	287	12935	210	21	15	<10	43	94	<10
Lido 7	32	197	4245	<10	<10	<10	<10	<10	<10	<10
Giudecca 8	86	328	25056	58	18	<10	<10	18	56	<10

Government Decree on the Assessment of Soil Contamination and Remediation Needs, FINLAND:
THRESHOLD AND GUIDELINE VALUES FOR HARMFUL SUBSTANCES IN SOIL
The guideline values have been defined on the basis of either ecological risks (e) or health risks (t) (Pb)
https://www.finlex.fi/fi/laki/kaannokset/2007/en20070214.pdf

mg/kg (µg/g)=mg/kg							
Natural concentration	31(8-110)	5(0,1-5)	31(6-170)	17(8-110)		22(5-110)	0,03(0,01-015)
Threshold value	200	60	100	50	5	100	1
Lower guideline value	250	200(t)	200	100	50	150	10
Higher guideline value	400	750	300	150	100	200	20

THE TRIP TO VENICE
(in the words of the students)

At the start of May 2019, the Working with Soil group traveled to Venice during the opening week of the Venice Biennale. The purpose of the trip was to immerse ourselves in the research project experience as well as to set up the opening exhibition for The Research Pavilion on Giudecca Island in Venice. The week we spent in Venice setting up the exhibition and gathering soil samples for the research was very educational for all of us.

As it was our first visit to the area, we were able to see the surface as a first-time visitor would. Then we dove deep into the hard environmental facts about the area. Travelling around on the wavy 'streets' and 'highways' of Venice while picking up soil samples gave us a rather different way of experiencing the city. For example, Murano Island is a devastating yet strangely very beautiful example of how overconsumption can influence the environment. The fact that the area was built upon glass manufacturing waste discarded into the sea became clear to us as we took a closer look at the soil. Even though the ecological state of the area felt quite extreme at times, Venice is clearly not alone with its environmental problems.

The trip made it possible for us to better understand the complexity and larger picture of a continuously evolving research project. The story began in Finland, and became real during the days we spent in Venice. By observing the entire exhibition setup process by six different groups from all around the world, we were able to contrast our approach with several other approaches. During the week we faced difficulties and setbacks, but in the end our exhibition was even better than the mock-ups we had built beforehand. The ongoing exhibition invites people to explore the research process and aims to reveal the complex relationship us humans have with nature.

Text: Tzuyu Chen, Hanna Kutvonen and Pauliina Purhonen
Image: Riikka Latva-Somppi

Coiling vases from the local earthenware and painting the vases with the local earth in Earth Laboratory, Venice, August 2019.

Image: Catharina Kajander

Students' portraits with their adopted creatures in Kristineberg Workshop in April, 2019
Images: Xinquan Wen and Shotaro To

EMPATHY: DESIGN IN A SOCIAL CONTEXT

Reaching out to non-human stakeholders

Whether it is intentional or accidental, our designs affect oceans and ecosystems we do not inhabit. No human can ever know the ocean like the species that live underwater.

We must become aware of this limitation to our knowledge and empathically engage with the species we impact. They are the non-human stakeholders in the design process, and they deserve to be taken into account.

Empathy requires knowledge and compassion. To know how our actions affect the species underwater, we collaborate with scientists in a transdisciplinary design process—marine biologists, chemists and ecologists—to ensure we can better understand the complexities of the lives intertwined with our own. To be compassionate, we have to care for the species we affect and see them as fellow beings who own the world as much as we humans do.

When we took a group of Aalto University MA students to the Kristineberg marine research station in Sweden for a project entitled 'Design in Social Context', we began by coupling each student with a species from the local ecosystem. We asked students to research the species, to try to understand its perspective on the world, introduce it to us, and, in the design process that followed, to evaluate ideas in relation to how they might affect the species they were assigned.

This exercise in empathy challenged the students to engage not just intellectually but empathically with the local sea, and helped them to design not just in a human-centric frame but rather in an ecocentric one.

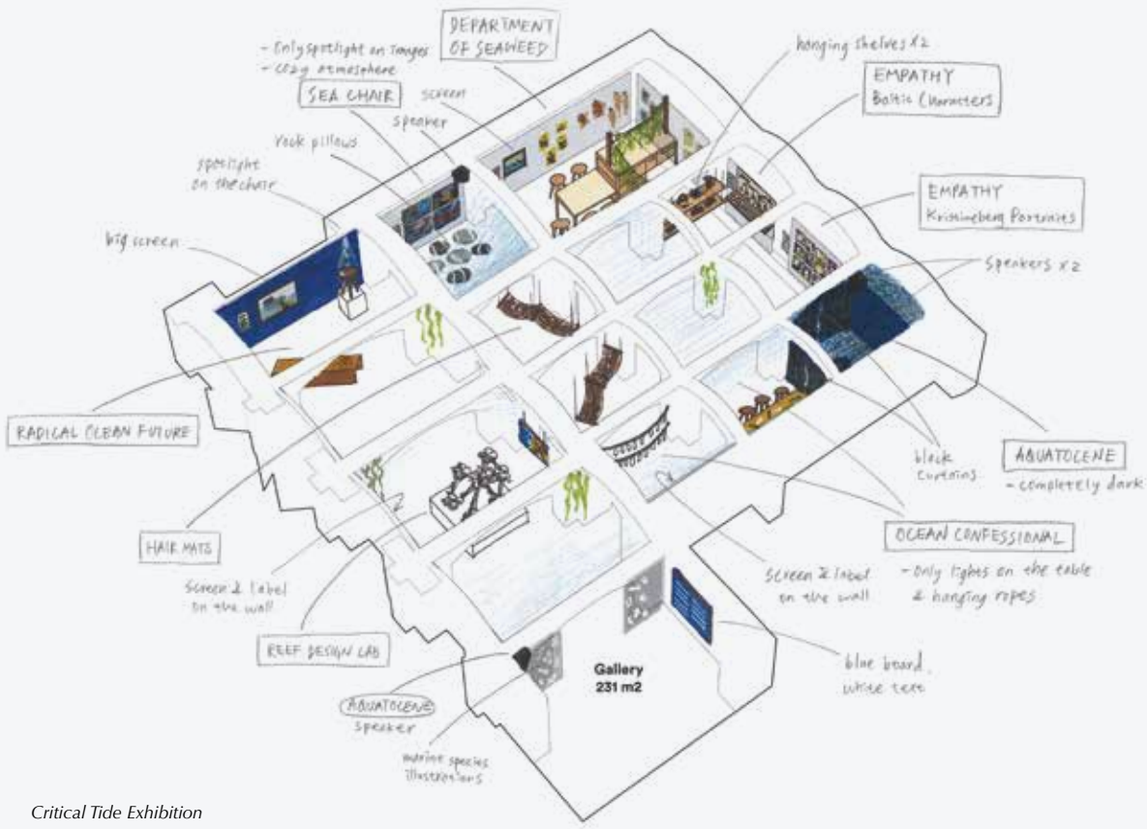
The Kristineberg Project was taught by Prof. Julia Lohmann and Dr. Pirjo Haikola of Aalto University as well as Prof. Fredrik Gröndahl of KTH Stockholm, to whom we are very grateful for making this collaboration between the two universities possible.

Students in the course: Jaea Chang, Tzuyu Chen, Elisa Dametto, Talisa Diwiyani, Linnea Kilpi, Niina Hyry, Chiao-Wen Hsu, Mariana Solis-Escalera, Aleksi Peltonen, Senciria Chou, Milla Vainio, Paul Flanders, Aino Tuovinen, Shotaro To, Jing Zhu, Karla Werner Zeuthen, Zijun Lin, Xinquan Wen.

CRITICAL TIDE EXHIBITION:

From critical design to critical practice

Time is running out. Design, the discipline that defines more than any other who we are and who we aspire to be, has led us to this unsustainable present. We have come to see ourselves increasingly as apart from, rather than part of the ecosphere—an ever more volatile ecosphere we depend on for our survival. Whilst design should be critical of social and technological systems, critique alone is not enough: we need to create future scenarios that turn people into activists and create a pull towards transformation. Among the many social and environmental problems facing us today, those confronting our oceans may be the most urgent of all. While the seas are in peril, they also hold possibilities for positive change that we are only just starting to discover. The exhibition is dedicated to design in and around the seas. It is a platform for engaged research in the form of a lab, exhibition and live events.



Critical Tide Exhibition
6 Sep – 27 Oct 2019
Design Museum Helsinki
www.designmuseum.fi

Critical Tide is curated by Prof. Julia Lohmann (Aalto University), Dr. Pirjo Haikola (RMIT, Melbourne), Dr. Gillian Russell (Emily Carr University, Vancouver) and Illustrator Gero Grundmann.

Exhibition floor plan sketch
Illustration: Chiao-wen Hsu

THE STUDENT TAKEOVER

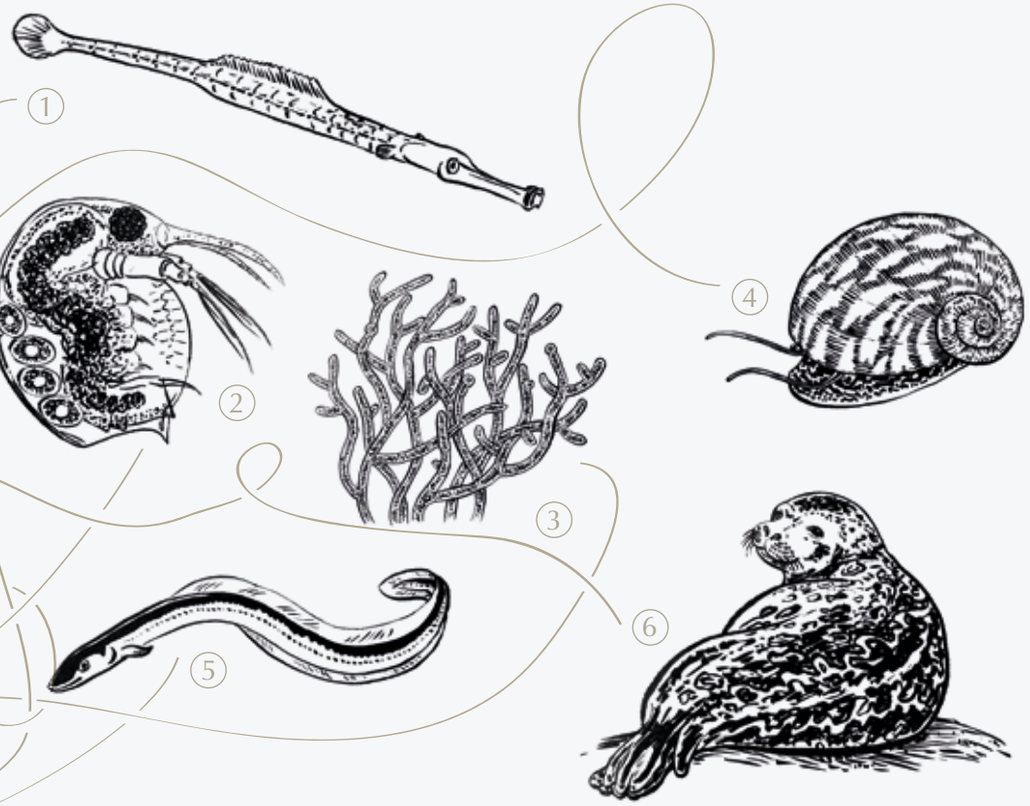
Baltic characters

In the end we will conserve only what we love; we will love only what we understand; and we will understand only what we are taught.

Baba Dioum, 1968.

Very few ever get to experience the underwater world, and none can stay there for long. While the terrestrial world is now our home, our origins are in the ocean. However, it is a connection we have lost, both intellectually and emotionally. Our empathy exercises explore ways in which we can nurture empathy and reconnect with the ocean. Find out which species in the Baltic Sea resonates with you in our character test.

Idea: Anni Avela, Text: Pirjo Haikola, Gero Grundmann, Julia Lohmann
Scientific assistance: Miina Mäki, John Nurminen Foundation
Illustrations: Gero Grundmann



I have great genes.

My weight changes throughout the year.

I defy gender stereotypes.

I have a mysterious side.

I wish I was an only child.

I think facial hair is divine.

1

Broadnosed pipefish
(Sygnathus typhle)

We are the northern cousins of seahorses. We are masters of camouflage, hiding among the seagrass meadows. It is difficult to distinguish us from a plant. Our males look after our young. They gather the eggs of females into a special 'bag' under their bellies and carry them until the babies hatch.

2

Water flea
(Bosminidae and Podonidae)

I am a cyclops! I may be tiny (less than 1mm long) but I have more genes than any other studied species. There are 70-80 species of us in Finland, mostly living in freshwater or low salinity sea water. We mainly eat algae, and fish love eating us, so we're very important.

3

Filamentous green algae
(Cladophora glomerate)

I am said to be the beard of the god of the seas, Ahti. I clone myself to grow fast, up to 20cm in length. You feed me with your farming fertilisers and all the nutrients that end up in the Baltic sea. I feed fish and other creatures. However, if I grow too big my beard forms mats that block the light needed by organisms further down in the water.

4

Nerite river snail
(Theodoxus fluviatilis)

We are small, up to 10mm, and come in colours from dark to light greens, yellows and dark violets, even, spotted, or with zig-zag stripes. We eat algae from rocks, aquatic plants and bladder wrack. Our females lay about twenty egg capsules containing lots of eggs onto a hard surface. From these eggs only one survives—by eating its siblings.

5

Eel
(Anguilla anguilla)

We are snake-like slimy fish. Humans think we are born far in the depths of the Sargasso Sea—but don't know for sure. We live on the Western European coasts and in the Baltic, then return to the Sargasso Sea to spawn. We live for up to 20 years, in captivity even to 150 years. In the Baltic we are critically endangered—so please leave us alone.

6

Baltic ringed seal
(Pusa hispida botnica)

We are the world's smallest seal species. We spend our summers around the islets of the Finnish archipelago, fattening up for winter. We mostly eat fish and crustaceans and especially like herring. Some of us live alone, some in pairs in the open sea. Our cubs are born on ice during winter, therefore cold winters are very important for us.

How can a business school benefit from art?

Public art in the School of Business aims to create a participatory, open and low-hierarchy working and learning environment.

TEXT **Outi Turpeinen, Tiina Toivola** IMAGES **Mika Huisman, Mikko Raskinen** ARTWORK **The Stage by Kirsi Kiiviirta**

In February 2019, the Aalto University School of Business moved from the historically important building in Töölö to completely new premises in Otaniemi. At the opening event, many people remarked that although Töölö had been a fantastic location, Otaniemi was even better. Having all schools located on the same campus is part of Aalto University's core idea: where science and art meet technology and business.

The university has invested in high-quality public art to develop the attractiveness and uniqueness of the Otaniemi area, in line with the percentage principle of art. Indeed, the expert report on the *Status of Built Property* in 2019 says that 75% of Finns would like art to be part of their daily environment.

Public art brings humanity to the heart of everyday working life

Public art always has several functions. A collection of artwork brings areas of focus into the premises and thus becomes part of the architecture and the interior design. But it is not enough to install art in a building, particularly at a university where critical thinking is at the core of all activities. Public art must also be of high quality and of a high international standard.

The main task of contemporary art is to question existing patterns of thinking and acting, which is the starting point for all innovation. This is also true in business. Economic decisions involve choices by a rational individual, but we are also aware that emotions and shared values influence our individual choices. In addition to economic results, we need to discuss the harder-to-measure social values, environmental impacts and ethical consequences of our choices. Art and creative practices provide new approaches for expanding scientific and economic thinking.

This article was originally published on The State of The Built Environment in Finland ('ROTI') blog in June 2019. The report in Finnish: roti.fi

ARTWORK **Falling Water by Maiju Salmenkivi**

Aalto University's vision for public art is to question what a university is, what we are doing as part of society and what the concept 'public' even means. A work of art is subjected to continuous critical evaluation and should reflect the university's values such as courage and responsibility.

Dialogue opens up new perspectives

The staff and students of the School of Business were actively involved in choosing the theme *"Human Approach"*. Some of the university's premises are open to the public, so anyone can experience the works of art at the School of Business by touring the premises or by viewing the art catalogue and videos which give insights to the artworks. The collection has a wide variety of art from a video work that looks critically at the start-up world to a ceramic piece that symbolises finding a person's own place on the stage of life.

Encounters with art may lead to a deeper exploration of the topics and approaches involved. Each individual work of art brings its own perspective to the whole collection. Professional artists work with themes that they have developed over decades when making art, and by exploring their works we can delve into both these themes and the artists' thoughts and emotions towards them.

DESIGNS FOR A COOLER PLANET

5 to 26 September

Designs for a Cooler Planet—

Today's cool choices and tomorrow's concepts in Otaniemi

If we want to keep the earth liveable, the next ten years are crucial.

We Finns consume four times more energy and natural resources than is sustainable. To reach sustainability, the next ten years will have to look completely different—but can still be appealing.

In September 2019, the Designs for a Cooler Planet exhibitions will introduce solutions to support more sustainable lifestyles. Aalto University's Otaniemi galleries showcase eleven multidisciplinary exhibitions, from future homeware to a carbon-free city district.

Change concerns all of us: consumers, companies, education and governments. We have no time to lose.

http://bit.ly/acoolerplanet

Helsinki

Design

Week

IMAGE **Anne Kinnunen** EXHIBITION GRAPHIC DESIGN **Babi Brasileiro**

The world's first microbe-grown headset IMAGE **Aivan**

Designs for a Cooler Planet

DIPOLI GALLERY

Designs for a Cooler Planet exhibition presents a wide selection of experimental climate-friendly products and individual choices that you can do already now.

We need to rethink our individual lifestyles: what we eat, how we live and how we move. The *1.5 Degree Lifestyles* study calculated the climate impact of 30 choices. What will be your contribution?

The prototypes of Future Home will give a glimpse of new material research. What if all our belongings were reusable and recyclable, non-toxic and long-lasting?

Some of the carbon fibre-reinforced plastics may be replaced by nanocellulose.
DESIGN **Tiina Härkäsalmi, Tuomas Pärnänen & Kim-Niklas Antin**
IMAGE **Eeva Suorlahti**

Nordic Rebels: Goose bumpifying learning

VÄRE, V1 GALLERY

How might we create learning experiences to enable everyone to see what role they play in creating a more sustainable future for our societies and planet? This is one of the core tenets of Nordic Rebels: creating learning experiences that help our students see the critical role they play in creating a brighter future for all of us. Learning is not about earning a diploma or a degree, but first and foremost it is about transformation—growing as a human being and helping our peers achieve the same.

In May 2019, a Finnish-Danish blended minor programme Nordic Rebels received a Danish Design Award in the Better Learning category.

ILLUSTRATION **Parvati Pillai**

ILLUSTRATION **Markus Ahonen**

Archilux: a cruise ship for Finnish lakes, coast and archipelago

VÄRE, V2 GALLERY

The cruise business is booming, and a huge number of expedition cruisers take passengers to the most remote locations on Earth. Europe's largest lake district with pure water and the natural beauty of the world's largest archipelago are still missing from the cruise maps. Therefore, the Archilux takes its guests on an adventure to the sensitive nature in Finland. Environmental friendliness has been taken into consideration in every detail, from power production and lightweight structures to everything that happens onboard.

The ship concept was originally designed for Finland's 100th anniversary.

A pile of wood waste in Tarastejärvi recycling center.
IMAGE **Chiara Piccardo**

CircWood: Recirculating wood within the built environment

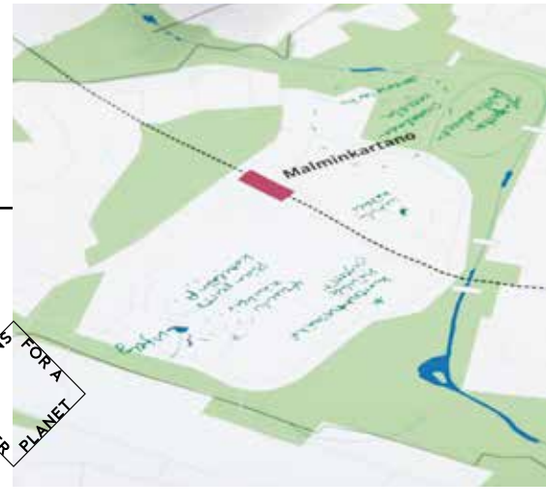
VÄRE, FE LOBBY

Our remaining carbon budget for this century, 800 million tons of CO_2eq, might be overstepped because of the unsustainable use of material resources. Therefore, the recirculation of waste materials for new production is crucial.

In Finland, more than one third of construction and demolition waste is wood. The implementation of Design for Disassembly (DfD) principles in constructions might increase the reuse of wood products.

CircWood aims at modelling the effect that recirculating wood materials within the built environment has on the sustainability of wood use. The exhibition shows how recirculating wood waste is both a technical issue and a creativity challenge.

IMAGE **Andre Vicentini**



Urban transitions: Imagining Malminkartano in 2050

VÄRE, K CORRIDOR

Cities are critical intervention points to address climate change, and there is an urgent need to transform both how we live in cities and how cities support our needs. The Urban Transitions and Futures course focuses on developing transitions to sustainable post-carbon cities by using design-led future-focused thinking. Students develop visions for sustainable urban futures and strategies of experimentation to achieve these visions. In 2019, the course focused on the Malminkartano neighbourhood in Helsinki.

Urban Transitions and Futures course is jointly offered by Aalto University and University of Helsinki and the course was done in collaboration with *City of Helsinki and citizens of Malminkartano neighbourhood.*

New Silk - What can we learn from spiders?

VÄRE, FK LOBBY

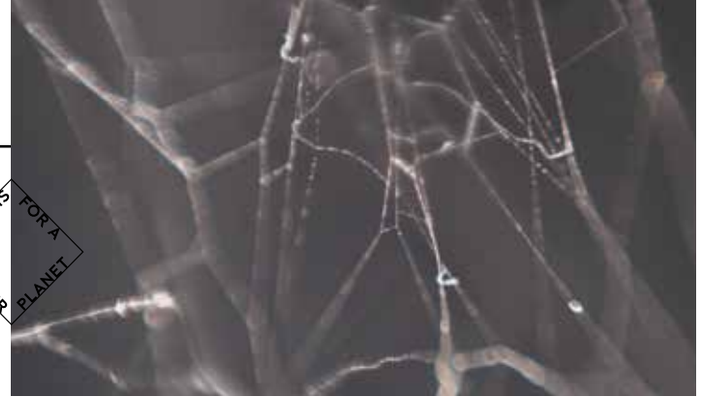


IMAGE **Pirita Lauri**

The New Silk research project studies new ways of producing sustainable materials in the future, especially how to produce new types of silk-like materials in the context of synthetic biology. The project team consists of scientists, material researchers and design researchers with textile expertise. The goal is in the far future: how to design and produce material attributes at the DNA level through genetic engineering. The original inspiration for this project was a spider's way of creating materials for its web using "spider silk", a luxurious and sustainable material with properties that surpass existing synthetic materials.

This research project is a collaboration between Aalto University and University of Helsinki, and is part of the BioFuture25 programme by the Academy of Finland.

DESIGN **Essi Karell** IMAGE **Eeva Suorlahti**

Natural Indigo: New Luxury from Northern Fields

VÄRE, BRIDGE K2

One fifth of the water pollution caused by global industry is due to the dyeing of textiles and the synthetic chemicals used in the process. Some regions of the world already have polluted groundwater because of the textile industry's activities.

From 2018 to 2019, the Crops4Luxury (*Peltoluksus*) project studied special crops that could replace synthetic textile dyes sustainably and ethically. Blue is the rarest color in nature, and in Finland, a crop called dyer's woad (*värimorsinko*) yields a non-toxic blue dye.

Through an eco-luxury approach we can build a new understanding towards a more sustainable future with fewer synthetic chemicals and a less damaging environmental impact.

Crops4Luxury was a collaboration project between Natural Indigo, the Natural Resources Institute Finland (LUKE) and Aalto University. The project was funded by Sitra, the Finnish Innovation Fund.

Envisioning the future of packaging

VÄRE, LQ LOBBY

There is an urgent need for sustainable alternatives to oil-based packaging materials such as styrofoam. Emerging interdisciplinary practices in material research aim to develop novel wood-based biomaterials with similar or better properties to replace non-renewable and environmentally problematic plastics.

The exhibition features three sustainable packaging projects: CoCeA, Fold and Sustain and Pack-Age.

The **CoCeA project** combined design thinking with scientific research process to obtain unique material solutions by foam forming. This production technology uses wood-based cellulose fibres and enables production of lightweight biomaterials that are renewable, biodegradable and recyclable, using a minimum amount of water.

CoCeA (Complex Cellulose Structures or Consumer Applications) is part of the FinnCERES, a joint research programme between Aalto University and VTT.

IMAGE **Anastasia Ivanova**

IMAGE **Valeria Azovskaya**

The **Fold and Sustain project** investigates patterns and folded structures which can be implemented in packaging design to replace plastic materials, concentrating especially on creating transformable, stable and protective structures.

Pack-Age is Aalto University's innovative packaging design course that combines visual communication, design, business, and engineering thinking with sustainability and project-based learning. Students from different programmes work in interdisciplinary teams with actual projects from the industry. The exhibition showcases sustainable package ideas designed by student groups.

IMAGE **Eeva Suorlahti**

ChemArtsing with bio-based materials

Results from the Summer School 2019

HARALD HERLIN LEARNING CENTRE, LOBBY

CHEMARTS, established in 2012, is a strategic collaboration in education and research between the School of Arts, Design and Architecture and the School of Chemical Engineering.

The aim of CHEMARTS is to inspire designers and material researchers to explore bio-based materials for novel material solutions and their innovative applications. The CHEMARTS philosophy is based on sustainability, with the focus being on renewable raw materials, utilisation of side streams and waste, and creation of biodegradable and/or recyclable materials.

The interdisciplinary CHEMARTS Summer School has been organised since 2012. This year, the overall theme of the Summer School was *'Value from plant residues'*. Some students worked within the theme, some decided to take other approaches. This exhibition showcases the students' ideas, processes and the most interesting experiments.

Traces from the Anthropocene. Working with Soil

BETA SPACE GALLERY

IMAGE **Tzuyu Chen**

Traces from the Anthropocene. Working with Soil is a multidisciplinary research project that addresses the ecological consequences of human footprint through ceramic art. The project took place before and during the Research Pavilion in the context of the Venice Biennale 2019, the world's best-known contemporary art event. As ceramists traditionally work with local earth, the research is situated in the local environment of the Biennale, the Venice lagoon area.

During the process, local soil was gathered and then analysed for anthropogenic contaminants. Local brick clay was used to create large ceramic forms, and finally, the contaminated soil was used to paint the ceramic vessels. In this project, craft making is understood as a philosophical space to think through the ethical and ecological concerns related to the stage of the environment.

This project has been a collaboration between the Aalto University School of Arts, Design and Architecture, School of Chemical Engineering and the Finnish Environmental Institute SYKE.

Urban Façades

VÄRE, MAIN LOBBY

DESIGN **Antti Mikola** IMAGE **Antti Mikola & Aapo Airas**

High quality architecture is sustainable. When thoughtfully designed and well maintained, it can last forever. As architects, it is important to ask ourselves what defines architectural "quality". Besides structural and functional aspects, we must also consider the properties of architectural aesthetics. In this respect, it is of great importance to gain an understanding of how building façades make use of materiality, colours, joints, forms, proportions and depth to determine the qualities of urban spaces. The students were given the main task of producing their own designs for an urban site in the city. The aim of this exercise was to produce a proposal which would establish a language that is formally consistent and sustainable.

Selected Aalto Exhibitions and Events in Autumn 2019

SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY

21 September 2019
Otaniemi Night of the Arts

17. – 18.10.2019
Sustainable Transformations with S+T+Arts,
Bozar, Centre for Fine Arts Brussels

1 Väre galleries

- 7 23.1. – 31.12.2019 **Fragile Water,** Helsinki Airport
- 9.9. – 18.9.2019 **Anatomy Lessons,** Oodi Helsinki Central Library
- 20.9. – 29.9.2019 **Games, Art and Science,** Oodi Helsinki Central Library
- 7 January – December 2020 **Wood architecture,** Helsinki Airport
- 4.9. – 26.9.2019 **Designs for a Cooler Planet,** in several galleries HELSINKI DESIGN WEEK
- 2.10.2019 **EIT Festival & Hackathon,** in several galleries
- 10.10.2019 **Shaking Up Tech Event**
- 11. – 22.10.2019 **Zero Gravity**
- 14. – 26.10.2019 **'Storm-Sing-Along, exhibited'**, V2 Gallery
- 30.10. – 1.11.2019 **60 years' ELO,** main lobby
- 25.10. – 8.11.2019 **Textile Today Summit,** in several galleries
- 15. – 17.11.2019 **Hackathon Junction**
- 12.12.2019 - 10.1.2020 **SPACED,** in several galleries

2 Harald Herlin Learning Centre

- 4.9. – 26.9.2019 **Designs for a Cooler Planet, ChemARTS Summer School** HELSINKI DESIGN WEEK
- 25.10. – 8.11.2019 **Textile Today Summit,** in several galleries

3 Beta Space

- 4.9. – 26.9.2019 **Designs for a Cooler Planet: Traces from Anthropocene** HELSINKI DESIGN WEEK
- 24.10. – 21.11.2019 **ClimATE**

4 Dipoli Gallery

- 4.9. – 5.10.2019 **Designs for a Cooler Planet Main Exibition** HELSINKI DESIGN WEEK
- 9.10.-14.11.2019 **Quantum Explorations**
- 16.11.2019 –16.1.2020 **Artificial Intelligence**

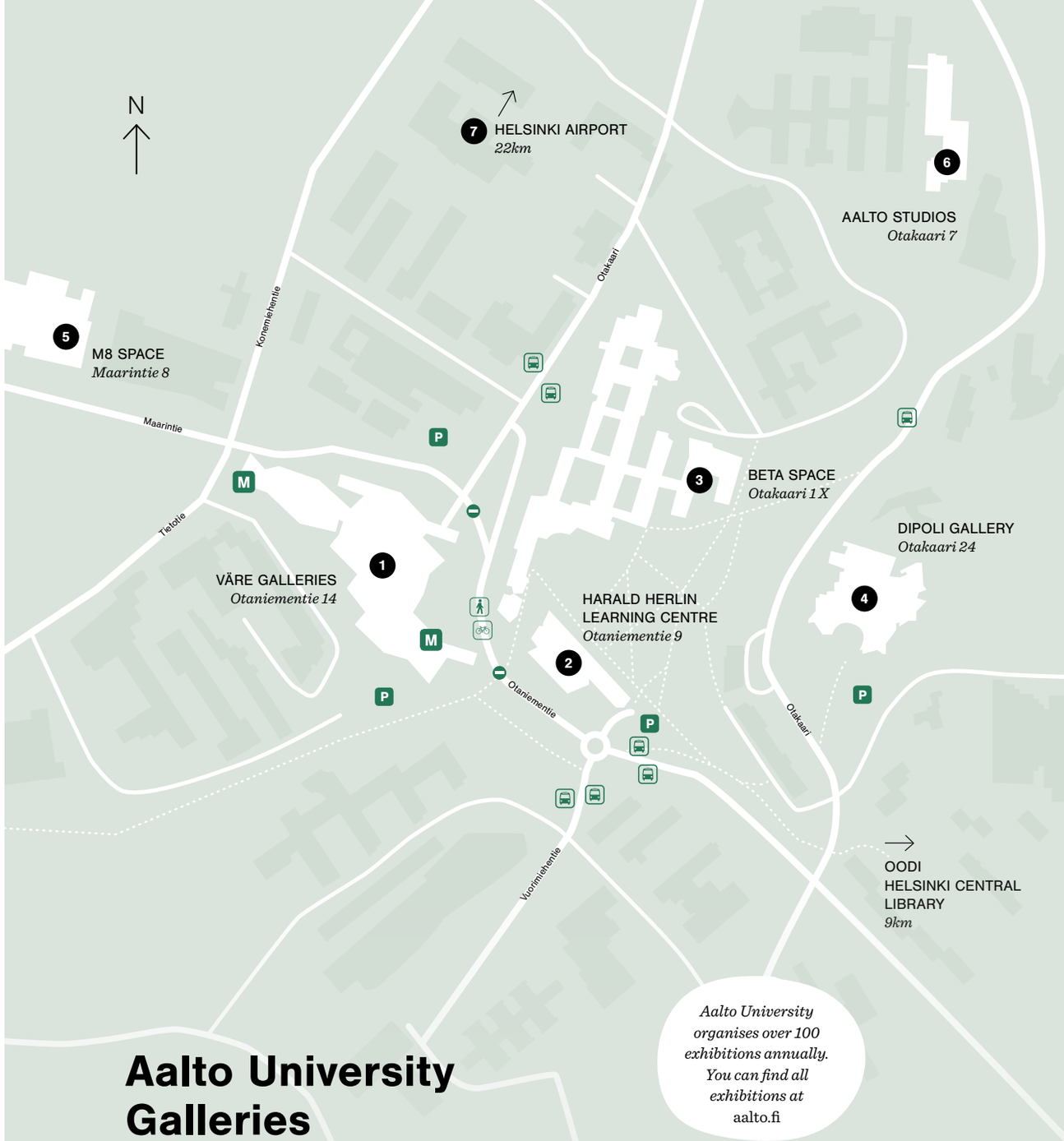
ClimATE

24.10. – 21.11.2019

BETA SPACE GALLERY, OTAKAARI 1
V1 GALLERY, VÄRE

ClimATE exhibition features art and science projects which consider how what we eat has a hold on the PlAnET, influences EArTh systems, climATE change and offer different ways of thinking about what we (will) EAT.

GRAPHIC **Joosung Kang**



Aalto University organises over 100 exhibitions annually. You can find all exhibitions at aalto.fi

Aalto University Galleries

How can we make space for unexpected ways of looking at the world? Galleries and exhibition venues are co-produced spaces for action, bringing together the knowledge, content, vision, and passion of different people as a collaborative practice. They provide experiences built on ideas and concepts, rather than artefacts. These spaces are open for unexpected encounters and diversity of voices.

Aalto University has various spaces for pop-up exhibitions, galleries, conferences, and temporary public art in addition to laboratories for student work. Some galleries have curated programmes, in which educational events take place through open calls and by invitations.

The Aalto University Curatorial team includes Art Coordinator Outi Turpeinen, Assistant Professor Bassam El Baroni and curators Edel O'Reilly and Bilge Hasdemir.

A!

Aalto University

Aalto University is a community of bold thinkers where science and art meet technology and business. We are committed to identifying and solving grand societal challenges and building an innovative future. Aalto University has six schools with 12,000 students and 400 professors. Our campus is located in Espoo, Finland.

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FRONT COVER
'Ryijy' cellulose experiment by Veera Kortelainen

BACK COVER
'The Daily Items' microfibrallated cellulose and cellulose diacetate by Yesul Woo