NETWORK
APPLIED
DESIGN
RESEARCH

Design & Research by
Universities of Applied Sciences

WORK IN PROGRESS

Introduction

The Network Applied Design Research (NADR) is committed to improving the quality and visibility of applied design research in higher education research groups. The terminology currently being used indicates that there are many masters that will have to be considered and pleased: society (practice), the discipline (design), and an activity (acquiring knowledge/ conducting research). It is indisputable that society is facing significant challenges to which the discipline of design can make an important contribution. But the question is which knowledge and forms of research are relevant. To make sense of a chaotic world, we are often tempted to think and act in terms of simplistic binaries: practice vs theory, fundamental vs applied, art vs industry, design vs research, universities vs universities of applied sciences, and all the concomitant clichés that are used to keep these boundaries in place. But those who truly want to make a contribution to solving our social issues will notice that these sharply defined black/white binaries have to give way to the grey areas of nuances, collaborations, integration, and ambiguity: linear and straight-lined becomes iterative and circular, individual creativity becomes collective co-creation, research becomes a form of design, and design a form of research.

The term 'applied design research' is not the compromise that indulges the various masters, but illustrates the desire to connect society, disciplines, and knowledge development in all its facets. Design research does not position itself as an exclusive domain but as a linking thread between the knowledge domains of different sciences and the arts, as a link between scientific knowledge and applied knowledge and experience, as a connection between design and research. The objectives of NADR are focused on the partnerships that are vital to successfully take on the challenges that society faces today and includes collaboration with knowledge institutes, government institutes, companies, and citizens.

NADR is organising the second edition of the 'Work in Progress' exhibition and publication for Dutch Design Week. The selected projects demonstrate that they entered into partnerships with a wide range of parties based on a specific design assignment and discovered a new reality through research. This collaboration can be technological and involve the development and application of sustainable materials and production possibilities. But partnerships are also sought with direct users in which the focus of the design process is defined by their practical and emotional experience with the initial materialisation of a concept. Such materialisations can also play a role in the design of new organisational structures and the necessary roles that must be fulfilled in this.

This year, publisher and ‘design specialist’ Gert Staal was asked to give a critical reflection on these research projects in an attempt to identify the value of applied design research. He will be doing so as the critical expert at the ‘Work in Progress on Stage’ event, which is a new activity organised by NADR, and as the author of the article in this publication. NADR would like to thank him for providing critical reflections on the design research from universities of applied sciences in relation to the Dutch top sectors and innovation policy.

Jeroen van den Eijnde
Peter Joore
Karin van Beurden
on behalf of Network Applied Design Research

WORK FOR PROGRESS
How innovation policy inhibits design research

Gert Staal

Let me start by saying I am not a fan of innovation agendas. While the research community exclusively associates the term with the allocation of funds for targeted joint research, the business community has a blurrier definition. In business, the concept has become the latest incarnation of the elusive product touted by consultants under the motto: those who don’t invest are throwing their money away. Innovation calls for an agenda; it calls for a guideline. How to go about doing this, however, remains unclear. ‘Act like a shark,’ says one group of advisers who refer to themselves as transition experts. The implication is clear: if you don’t act like a shark, you’ll be consumed by those who do. This is innovation as the ultimate scare tactic.
Then there’s the Dutch government, which ever since the prophet Jan Peter Balkenende – remember how his platform was dismantled in 2010? – has made innovation an important policy point. First and foremost in the economic sector, but increasingly in other sectors that were considered economic subsectors, with the cultural sector leading the way. This is innovation as an equaliser.
In both worlds, innovation is like the magic potion used by the Gauls to keep the Romans at bay: no one knows exactly what it contains or the long-term consequences of its use, but as long as we keep believing in it and we have enough of it, we can take on the world. The problem is that the world also includes those transition consultants who, emboldened by their own concoctions, are busy playing out their own Silicon Valley fantasies.
The concept has gone so far that consumers can now purchase ‘innovative’ healthcare policies and ‘innovative’ beds. In the meantime, we’re hearing very little from our ‘prophet’, except that things are going well for him in Capelle aan de IJssel.

Despite my reluctance to believe in the myths of innovation, I am fascinated by designers and their unwavering optimism in a world that, to me, is often depressing, mean-spirited, and jaded. Where I see stagnation, they see a kernel of progress. As a writer, I prefer to seek refuge in the darker corners of the world rather than the spotlights designers appear to enjoy. While the word itself suggests a kind of regulatory framework, the image allows for flexibility and innovation.
Given that I was asked to write a short essay for the Network Applied Design Research, this is a bit of a problem. How do you deal with something so fleeting? How do you do justice to the speculative way in which research attempts to predict the future in and through design? More importantly, is it possible to determine the quality of those efforts without immediately seeing design policies (light art along the Afsluitdijk) as servants of the Netherlands as an innovative country?

Critical thinking

When I was examining the ten examples of design research that were collected for Work in Progress, I found myself admiring the determination of the research teams involved. Just think about what it entails: establishing and maintaining networks ensuring the participation of administrators, shop owners, citizens and industries writing and rewriting objectives raising money submitting scientific evidence opening labs motivating students binding designers designing a stand for Dutch Design Week updating the outside world coordinating ten different projects Not to forget product development. Who am I to offer criticism?

Nevertheless, that's exactly what I did. I scribbled notes and feedback in the sidelines of project reports and policy papers. Several times I thought I'd caught a glimpse of the emperor's new clothes. For instance, in a research project with the following question: How can virtual reality simulation help healthcare students and healthcare professionals prepare for stressful situations? This is a commendable and useful question, without a doubt, but hasn't a tool like the *flight simulator* proven itself more than capable in military and civil aviation? Shouldn't the question instead be: how can an existing model be converted for the healthcare sector? Should we, as the introduction to this publication proposes, view such a project as an attempt to collaborate with a wide range of parties on a specific design challenge and use research to craft a new reality? Or does this concern a relatively simple design challenge, comparable to building a relational database, which has slightly different requirements for different sectors but is still based on the same universal principles?

A few projects later, I still cannot move past the assumption that social innovation is only possible when people work together in all stages of the process to discuss the development of new products or services. Of course, it's about much more than just generating support. But what exactly does it entail? The research teams undoubtedly have a ready-made answer, but what instantly comes to my mind is a Dutch design classic: the cotton carpet that Benno Premsela and Marijke de Ley designed for Van Besouw in 1970; a product that required a great deal of design research in its development phase. At that time, research was the designer's responsibility, in consultation with the technical experts at the manufacturing company. Support was called 'marketing research' in those days, which was exactly what former Van Besouw director Jan Mes wanted to avoid. Mes believed it was a waste of time to ask people to discuss a product they couldn't picture and knew nothing about. His faith in the process and in the trained intuition of the designers ultimately led to one of the most appealing developments in the twentieth-century Dutch carpet industry.

The world has changed dramatically since 1970. Nevertheless, one of the ten projects in Work in Progress was coincidentally carried out in collaboration with the Dutch carpet industry. And what did that industry have? Not an old-fashioned need for new products, but an innovation agenda. With the help of five designers and product design students, *new scenarios*[1] are being developed for 'sustainable production and innovative carpet applications' based on the so-called Routekaart Tapijt 2030 ('Carpet Sector Roadmap 2030'). I saw stunning sketches titled 'Breaking the Waves' and a scenario in which carpets are draped over furniture. Those who have been to Great Britain will surely have seen the wall-to-wall carpeting. This extremely popular aesthetic brings to mind claustrophobia rather than innovation.

Research: a solution or a mediator?

To be honest, the results don't really interest me; they are still a work in progress. I trust in the innovative ability of the designers and know that each of the ten projects have interesting and usable ideas. Even small ideas, like the 'cultural reflective souvenirs' created by pop-up store To-kiss-or-not-to-kiss. To me, it's more about the principle behind the project; the aforementioned Roadmap. Design and design research are embedded within a framework defined by the industry. This was also the case with Van Besouw, although then it was simply called an assignment and the manufacturer invested in a lasting relationship with the designer and amassed a wealth of knowledge during the partnership.

Dividing the work among multiple designers, making it shorter, embedding it within a subsidised research project, discussing 'deliverables' and using vague terms like 'more sustainable production' makes project management an extremely arduous task. While this should improve the quality of knowledge generation, I have yet to see examples of this in real life. I remember wondering what would happen if you peeled back the outer layer. Imagine if a research designer was given a reasonable budget for a floor design and was encouraged to seek the support and collaboration of anyone who could benefit their research (from concrete workers to housekeepers). Would that designer eventually end up knocking on the carpet industry's door? And would the results be any less applicable?

The quality of many Work in Progress projects may lie in the mediating role they play: the interaction between sectors, learning to understand each other's methods and tools, and developing knowledge at the interface between different specialisations. Many higher education research groups are interested in connecting commercial, creative, policy-efficient, and scientific parties. The only thing I doubt is the strategy used to achieve this goal. In this set-up, research design is positioned as a problem solver – a role that has long been ascribed to design and one that has led to many disappointments. This choice seems to stem from the industry's desire for multidisciplinary and government-funded collaboration. An underlying assumption may be that design in this context only really has meaning if it can produce concrete, measurable, and fundamentally innovative results, preferably ones that are immediately applicable. But is this a realistic expectation? And is it something the discipline can offer?

Dynamic ecosystem versus influential economic forces

The design field does not lend itself to certainties or guarantees, let alone to scientifically measurable results. Rather, the strength of the design field lies in dynamic research methods; as dynamic as the technologies they serve, the culture in which they exist, and the society that may one day reap the benefits. Design research is characterised by a similar agility. The lack of universal claims is closely related to this structural and chameleonic character. That may be the most valuable aspect of this discipline. The only problem

is that this value is hard to pinpoint for established authorities like governments, grant providers, and even the business community. The Pavlov response is clearly revealed in many government departments and their constant cry for a more streamlined sector with a more streamlined agenda. In my opinion, the Ministry of Economic Affairs has no idea who designers are or what they do. With design research in the picture, knowledge development in the field will largely be assessed on its contribution to national objectives. Just because some higher education researchers are perfectly satisfied with this, does not mean that broader, more experimental, and equally innovative forms of knowledge development are taking place in the design sector.

In the early 1980s, debates were held in what was then known as Museum Fodor (ironically the same place where, twenty years later, the former design institute was terminated in a unanimous decision by cultural and political administrators). An official from the Ministry of Economic Affairs would only agree to discuss the issue with the sector if it could appoint one contact person, similar to how real estate brokers and pharmacists were represented by their respective associations. This was the only way to make top-down agreements.

Reading through the documents in the Network for Applied Design Research, it strikes me that we've come far in the past thirty-five years but we haven't made much progress. That is to say, the industry is now represented by different parties; departments have been set up in which administrators, businesses, and organisations meet and interact; agendas have been drafted and terminology has been defined that would bore even the most patient among us. The design sector is no longer being ignored, it's being talked to death. The worst part is that the sector itself is a willing participant in this process.

When the Design Lectoren Network (Design Research Group Network, DLN) was established in 2015 and penned its exploratory essay titled, 'The playing field for design research', the authors wrote the following: 'The design research and research design ecosystem is driven by the top sector, in this case CLICKNL | Design[2] and the overarching Dutch Creative Council[3] as the top team in the top sector.' In other words, there is an ecosystem in which no natural balance exists between the various types. There are two driving forces behind this: CLICKNL and the Dutch Creative Council; in other words, two players that are fully rooted in the Dutch government's policy agenda, in which the stimulation of certain economic sectors (top sectors, such as the creative industry) plays a dominant role. Although CLICKNL | Design no longer exists, it is still important to note that the key parties represent a specific type of design research that is sanctioned by the Dutch government: economic research, preferably with favourable social outcomes. Forms of cultural research, research on design practices, or research projects that knowingly disregard academic protocols or subsidy guidelines are less interesting within the ecosystem. In other words, what happens in the broader world of design is of less importance. The explicit link between the research design playing field and innovation makes things even worse. The boundaries of research design and the many forms it can take is determined by their relevance to economic policy. The results are measured against their contribution to upholding an economic mantra. Surprisingly, the fact that all design activities are of cultural relevance plays no role.

Design is not innovation

The fact that design and innovation appear to be extensions of one another (the former providing the raw materials for the latter) is an unfortunate misunderstanding in my opinion. Innovations are not designed, but can result from the interpretation and use of existing designs. Journalistic innovations (citizen reporters in Egypt, Syria, or Taksim Square) were the result of specific social media use, which was made possible by the network technology that was originally intended as a way for academics to organise their contacts. The *world wide web* was not an innovation but a tool. Facebook became an innovation because of the way members used it. Only by developing specific tools – and thanks to the enthusiasm of groups of people who wanted to make something (new experiences, new friendships, new markets, new money) – can you cautiously conclude that a fundamental shift is taking place. Traditional methods of information exchange and, in this case, reporting were revolutionised. Allow me to put this into its relevant context: while this form of journalism may be new, it is also hard to control, which makes it susceptible to manipulation.

Philips developed the video recorder to give consumers the opportunity to tape their favourite televisions programmes. This resulted in a completely different and unintentional innovation (which, in the case of the Philips VHS system did not become the global standard): users discovered that recording children's programmes during the week meant that parents could sleep in on weekends. What made the video recorder so innovative was that it was the cheapest and most effective babysitter[4].

Design and designers in the spotlight

Researching one's own resources and methods is of great importance to the design field. Typologies must be constantly re-evaluated. Tools and methods call for critical reflection, not least of which because they support rather than limit the designer's development. Moreover, the role that designers can and want to play should be questioned more realistically: where and how do they add uniqueness? All of this is possible during the applied research process, either alone or in a team. Practical projects have the most to teach us. But why focus on key themes like sustainability, co-creation, and the circular economy when all it leads to is transforming the plastic seats at Amsterdam ArenA into new products? Isn't that the opposite of what happened in Arnhem in the 1990s when, with the help of the Postcodeloterij, 22,000 seats made from recycled Arnhem garden furniture were installed in the GelreDome?

Designers and design researchers will increasingly have to take into account the complex reality in which they operate. Research *on* and *through* design is becoming increasingly important and requires both knowledge and intuition. To me, design research – regardless of how it is defined – is most valuable when the starting point lies with the designer and the designer's role. This may seem like an open door, but one has to admit that some of the projects in Work in Progress do not always take a design approach.

Refer to 'Performative Mapping', which is part of the European design research project 'Traders'[5]. As part of the Places and Traces research group at the Design

Academy Eindhoven, Naomi Bueno de Mesquita explored whether digital cartography could be used to understand the spatial structure of the city and to redesign that structure. She approached the digital map as a collective activity in which undocumented residents were given an important role. Nevertheless, the main focus of the project was on designing the interface and the ability of using the interface to identify and modify spatial relationships.

I believe that developing the young design research field would benefit from an approach with designability as the catalyst; an approach that does not project exaggerated expectations about the economic or social applicability of outcomes. Work in Progress confirms that the most appealing designs in the field of design research are abstract enough to generate new insights that could inspire new coalitions. In this regard, the broad approach taken by the Smart Surfaces project appears to lend a productive context to the collaboration between designers, developers, scientists, and industry stakeholders. Because primacy cannot be ascribed to just one party (there are simply too many specialisations involved), there is sufficient room for visual forms of research, analysis, and speculation. In other words, room for research in and through design. The project is also in line with a popular trend in the design world. Whereas previous generations aimed to develop solutions to problems, the research carried out by the most interesting designers tends to focus on visualising certain aspects of society to encourage different societal layers to focus on change.

Gert Staal works as an independent author and researcher in the field of design. He is affiliated with the Information Design Master's programme at the Design Academy Eindhoven.

NOTES

1 Established in 2012 by Modint, the trade association for the fashion, carpet, and textile sectors.

2 CLICKNL describes itself as follows on its website: 'CLICKNL represents the added value of collaboration: we connect curious researchers to creative and enterprising professionals. Together they develop knowledge and innovations for a stronger economy and a more sustainable society. In order to facilitate collaboration and provide a suitable springboard, CLICKNL developed a knowledge and innovation agenda with experts from the creative and research industries. This agenda focuses on linking the research community, business community, and government and connecting issues, application domains, and the innovative strength of the creative industry.' www.clicknl.nl/over-clicknl, consulted on 24 September 2017.

3 The Dutch Creative Council describes itself as follows on its website: 'The Dutch Creative Council is the independent strategic advisory board of and for the creative industry. The Council aims to stimulate and facilitate this top sector and transform it into a leading industry on the national and international level. In 2011, the Dutch government listed the creative industry as one of the nine top sectors. Top sectors are areas in which the Dutch business community and research centres excel on a global scale. The business community, universities, research centres and the Dutch government work together on knowledge and innovation in order to continue to strengthen this position of excellence.' http://www.creative-council.nl/over-ons/over-ons, consulted on 24 September 2017.

4 I borrowed this example from a presentation by British design research and author James Woudhuysen, who worked for Philips Consumer Electronics from 1995 to 1997.

5 'TRADERS' (2013-2017) was a collaboration between design and architecture programmes in Belgium, the Netherlands, the United Kingdom, and Sweden. The results were published in: Hamers. D. (ed.), Trading Places. Practices of Public Participation in Art and Design Research, Barcelona 2017. http://tr-aders.eu/

PROJECTS

Research Group Industrial Design focuses on research that contributes to the design of a product that meets the world and needs of the user. Research Group Smart Functional Materials focuses on the development of high-end textiles and functional materials.

Nowadays products have become increasingly complex and smaller at the same time, therefore the need for smart surfaces has arisen. Simultaneously, new innovations arise to develop these 'smart surfaces'. Saxion explores the latest possibilities and applications in their projects Funcy and TexEnergie.

Great added value

Its' surface can increase a plastic or vinyl product's value significantly. It can make a product more custom, intelligent or maintenance-friendly. Saxion researches how this added value can be made available through an interesting price, using the latest techniques. How do you make surfaces self-cleaning or antimicrobial? And how do you integrate electronics? How do you harvest solar energy with textiles?

Surface Lab

In collaboration with companies, we are searching for proper applications to integrate electronics into a surface and to make surfaces self-cleaning or antimicrobial. Interesting available techniques are investigated and tested. We expect that the gained knowledge will be publically displayed in the new 'Surface Lab', which will be part of FabLab Enschede, by the summer of 2018.

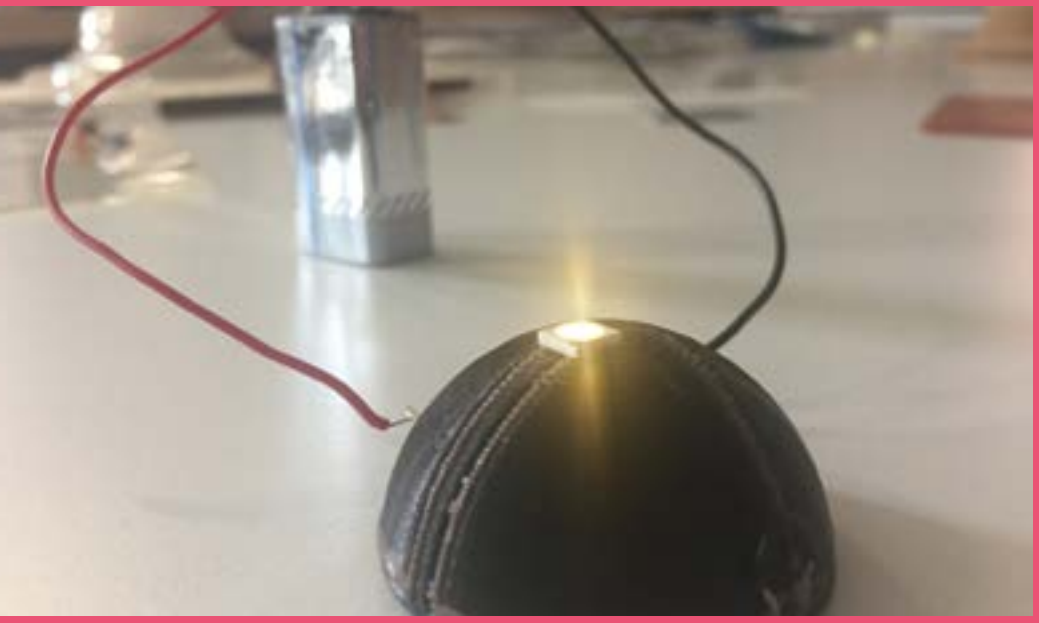
1

SMART SURFACES

More function with less material!

3a

2a



3b

2b

1 Water repellent coating in action! The word “FUNCY” is not coated which attracts the water to the letters. By tilting the surface, the droplets will roll down creating a “selfcleaning” surface!

2 Textile with integrated electronics. The electrical conductive yarn is protected by 3D printing polymer on top of it! This can be applied in a skirt!

3 Dual material 3D print: By printing with regular PLA filament and conductive copper filled PLA filament, a complex electrical circuit can be realised on a 3D object! By creating 3D electrical circuits a construction helmet with integrated sensors can be realised.

Project partners

Funcy: FabLab Enschede, Benchmark, Vernay, Artecs, Senovi, Nedap, People Creating Value, Protyp, BAM, KITT, LAYaLAY, Clafis, IDC, TKT, Fontys, MDT X-Ray.

TexEnergie: Thales Nederland, Philips Research, Bonar, Artex, Teijin Aramid, Polyned, Modint, De Berkel, Johan van den Acker, DPI-Value centre, TenCate, OICAM.

Funding: RAAK

The professorship Fashion (ArtEZ) stimulates and contributes to the development of the theoretical context of fashion. This is done through research projects, new theoretical education programmes and (inter)national publications.
The professorship Smart Functional Materials (Saxion) focuses in particular on research into the development and marketing of high-quality textiles and research into the conditions for innovations in functional and durable materials.

How can we realise a local circular production chain in which locally produced fibres (e.g. hemp, recycled denim) are processed into attractive and high-quality knitted and woven fabrics, applied in durable designs for fashion products, with a concept brand in which locality, material reuse and sustainability are attractively communicated to reach the consumer.

Working together
In Going Eco Going Dutch, founded by the CLICKNL|NextFashion network, textile manufacturers and fashion companies work together with Saxion and ArtEZ to develop sustainable, locally produced textile fibres into yarns, fabrics and knits and process them into (fashion) products. Particularly, the above-mentioned steps are addressed in a collaborative co-creation process.

Moving towards a solution
A special cooperation has been established in the chain, with new insights into and influence on closing the loop, with each party finding new solutions for the sustainability of its own organisation. By the end of 2017 the project will be completed with a number of pilot products.

1

GOING ECO GOING DUTCH
Towards a local circular production chain for fashion

1 Going Eco Going Dutch for a more sustainable world.

2 Workshop Hemp Yeah. Traditional printing techniques applied to hemp fabric

3 Recycled denim fibers and hemp fibers.

4 Prototype products.

5 Mood board for GEGD-platform ‘Van O’.

Project partners
CLICKNL|NextFashion, ArtEZ, Saxion, Modint, Alcon Advies, Texperium, Stexfibers, De Reuver Breifabriek, Knit-IT, Van den Acker Textielfabriek, Enschede Textielstad, Beddinghouse, Collectie MeH, Moyzo, Tous les Chéris, Elsien Gringhuis,

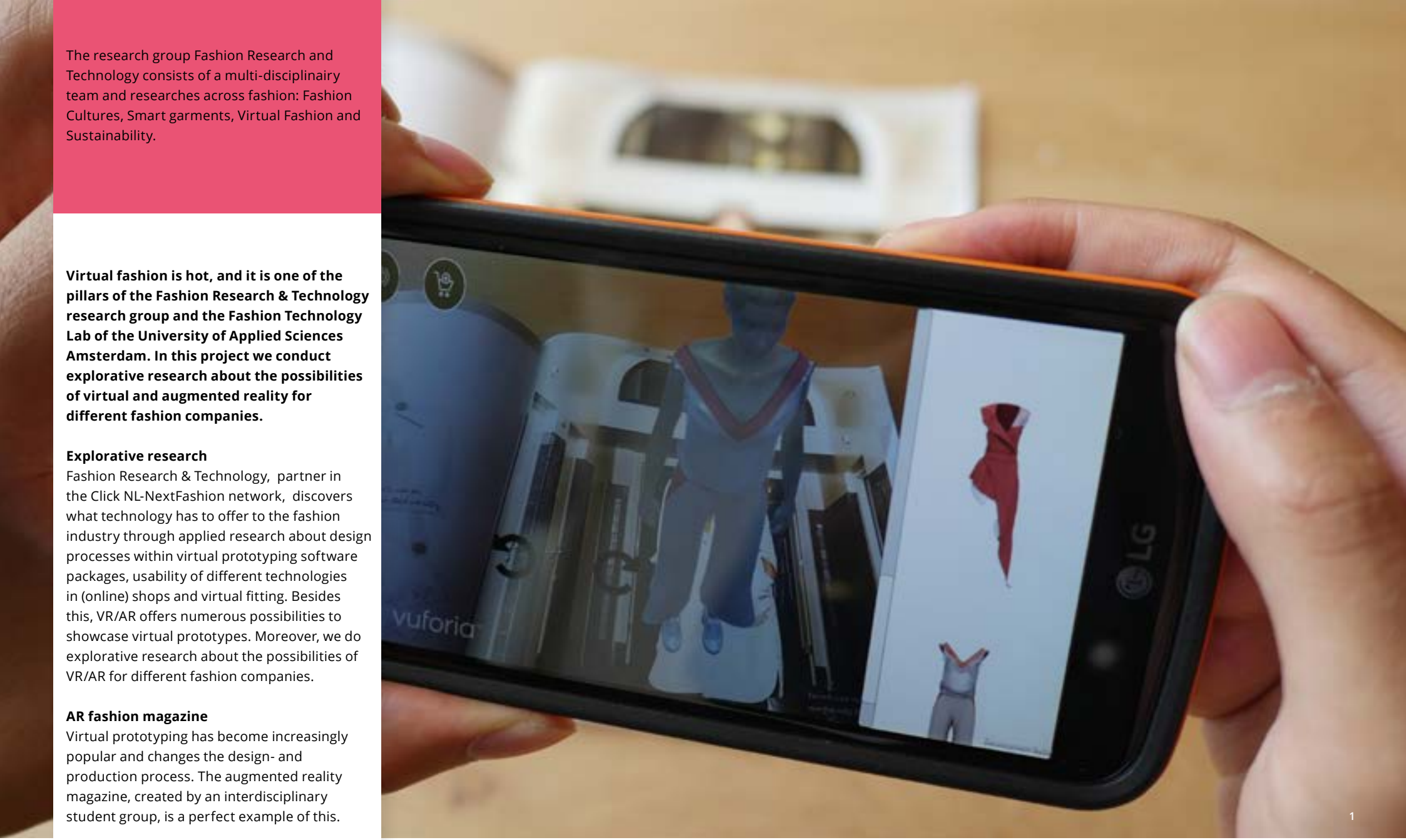
Funding
NRPO SIA, all participating project partners.

The research group Fashion Research and Technology consists of a multi-disciplinairy team and researches across fashion: Fashion Cultures, Smart garments, Virtual Fashion and Sustainability.

Virtual fashion is hot, and it is one of the pillars of the Fashion Research & Technology research group and the Fashion Technology Lab of the University of Applied Sciences Amsterdam. In this project we conduct explorative research about the possibilities of virtual and augmented reality for different fashion companies.

Explorative research
Fashion Research & Technology, partner in the Click NL-NextFashion network, discovers what technology has to offer to the fashion industry through applied research about design processes within virtual prototyping software packages, usability of different technologies in (online) shops and virtual fitting. Besides this, VR/AR offers numerous possibilities to showcase virtual prototypes. Moreover, we do explorative research about the possibilities of VR/AR for different fashion companies.

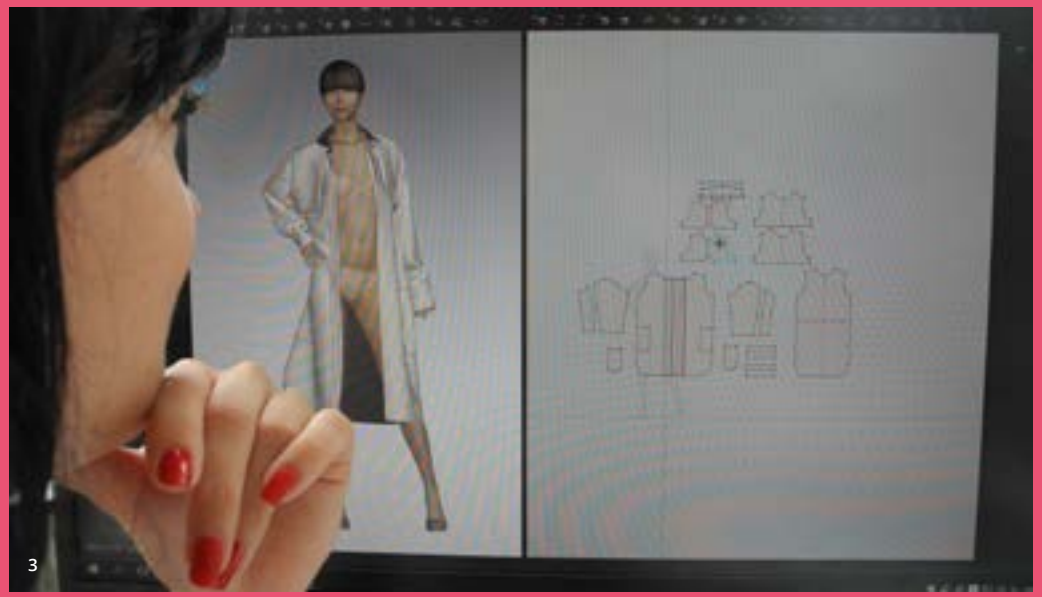
AR fashion magazine
Virtual prototyping has become increasingly popular and changes the design- and production process. The augmented reality magazine, created by an interdisciplinary student group, is a perfect example of this.



1

VIRTUAL FASHION
Design, realisation and experience of digital fashion

AMSTERDAM CREATIVE INDUSTRIES NETWORK



1 Magazine for Alchemist Fashion with conjoined augmented reality app with which the collection can be viewed in 3D, and also bought. Magazine and App created by interdiscipli nary student group (Lloyd Roije, Chanel Trapman, Tetiana Reshetnikova, Niomi Consten, Raoel Hulst)

2 The collection of fashion label Alchemist made accessible in virtual reality. Application created by by interdisciplinary student group (Lois Lucassen, Yannick Mulder, Dominique Hoogvliet, Hugo de Kruijf)

3 Student working on 3D virtual prototyping, using software application CLO3D; a program which allows for digitally designing garments, and fit them in a virtual environment.

4-5 Digital 3D visualisation of coat (iNDiViDUALS). Simulation by Floor Verhoeckx.

Project partners

Consortium RaakMKB online/offline passende mode and Alchemist Fashion

The Center for Healthcare and Technology brings together partners from education, health care and companies in Brabant. These organisations collaborate to better connect questions from health care practice with available technological solutions.

Health care professionals sometimes have to work in stressful situations. How can simulation through Virtual Reality (VR) help students and professionals prepare for this? To find out, the team brought together students, teachers and researchers from the departments of Nursing, Physiotherapy, Psychology and ICT in a multidisciplinary team.

Real-life scenarios

The team collected real-life scenarios from health care organisations about stressful situations: for example, resuscitating a patient in a crowded environment, or handling an aggressive patient. Based on these stories the team designed a number of interactive VR-simulations and tested these with health care students, to research the educational effects on a VR environment.

Useful experiences

The Virtual Reality experience allows health care students (or professionals) to experience and practice stressful health care situations in a realistic way. The level of stressfulness can be varied by changing the context of the experience and adapting other relevant stressors.

1

VIRTUAL REALITY FOR EXPERIENCE-BASED HEALTHCARE EDUCATION

Growth by experiencing stressful situations in healthcare.

Fontys

1 Performing resuscitation in a virtual environment.

2 Students experimenting in the Fontys Explore lab.

3 A scene with an aggressive client

Project partners
Fontys Hogescholen (Mens en Gezondheid, Paramedisch, HRM en Psychologie en ICT), GGzE, Catharina Ziekenhuis, 360 Verbeelding

Funding
SURF Innovation Challenge

The research group Art & Sustainability researches the role of the sustainable designer. An important focus is the continuing development of creative practices and relevant knowledge of materials, language, technical skills and new possibilities for making a living.

How do you systematically apply creativity for innovations that cause meaningful change? That is what the research group Art & Sustainability aims to find out.

Working together in the SDG Lab
For this project a Sustainable Development Goal Lab has been founded, to facilitate a co-creation process. In this Lab people work together based on the cooperative spirit. This collaboration stimulates the development of initiatives to create new opportunities.

Improved working and living
The impact of the lab consists of creating new prototypes, such as a climatically adaptive neighbourhood (Oosterparkwijk) with urban farming, improved social cohesion and climate-robust re-organisation of the living space. Other prototypes are a new business model for a 'short food supply chain', that brings together local farmers, consumers and the so-called 'factory campus'. This campus needs to bring value into the area based upon regionally produced raw materials. In this prototype the production industry, education, research and entrepreneurship come together to create new value-and knowledge intensive biobased products, based on re-using existing commodities as much as possible.

Hanze University of Applied Sciences Groningen
Research Centre Art & Society

1

PANARCHY POWER: FROM IDEA TO IMPACT

Systematically applying creativity to create successful innovations.

2

3

1 Jory Swart, Marterial research samples of hemp.

2 Rob van Haren, prototype of the grass protection layer of hemp.

3 Panarchy power is one of the sustainable goal labs related to developments goals of the United Nations.

Panarchy Power is the driving force of meaningful change in the era humanity itself has created: the Anthropocene, the period we currently live in. With Arts & Crafts we can create driving forces to create change. Communities face a different environment and a renewed climate: an environment for new opportunities.

Project partners
SDG-labs Future Earth, The SDG Labs are multi-stakeholder processes to catalyse transformation in institutions, systems and sectors of society, such as the global food system, international governance, inequality and poverty or ecosystem services. The goal of this effort is to build innovations that can fundamentally change the systems that created the problem in the first place. The labs may focus on social, ecological or technological innovations or, more likely, a combination of the three.
Municipality of Groningen.

Funding
N.a.

The 'Innovation Networks' research group offers expertise and tools that integrate insights, design and testing based on design-driven innovation. We address complex challenges and work in networks together with governments, non-profit organizations and companies to design solutions that make our society more futureproof.

1

POP-UP STORE: TO KISS OR NOT TO KISS?

New souvenirs for a multicultural country

The Netherlands has several well-known souvenirs that do not reflect its current cultural reality. The Hague University of Applied Sciences wants to find out if and how it is possible to co-create culturally reflective souvenirs together with users in a themed pop-up store.

Reflective design

The project aim is to re-design two Dutch souvenirs into a new version with a multicultural narrative: The Dutch 'Kissing Couple' (by lecturer IDE Gabriella Bustamante) and the 'Stroopwafel' cookie (graduation project of IDE student Aliana Bertolo). The souvenir prototypes and the 'To-kiss-or-not-to-kiss'pop-up store have been designed in a reflective process together with international students in The Netherlands.

A platform for co-creation

At the exhibition, different variations of the new souvenirs will be tested with visitors. The pop-up store itself will also be researched as a platform for co-creation (Anja Overdiek, research group Innovation Networks). The whole project contributes to the redefinition of touristic consumption and to the knowledge about user engagement in temporary spaces.

THE HAGUE
UNIVERSITY OF
APPLIED SCIENCES

2

3

1-2 Prototypes

3 Co-designing an engaging pop-up space together with IDE students. The pop-up store was themed "*to-kiss-or-not-to-kiss*" as kissing in public is, in itself, a cultural expression. The pop-up store needed to communicate this theme and immerse the visitor into a broader sensory experience as well as interaction with it.

Project partners
N.a.

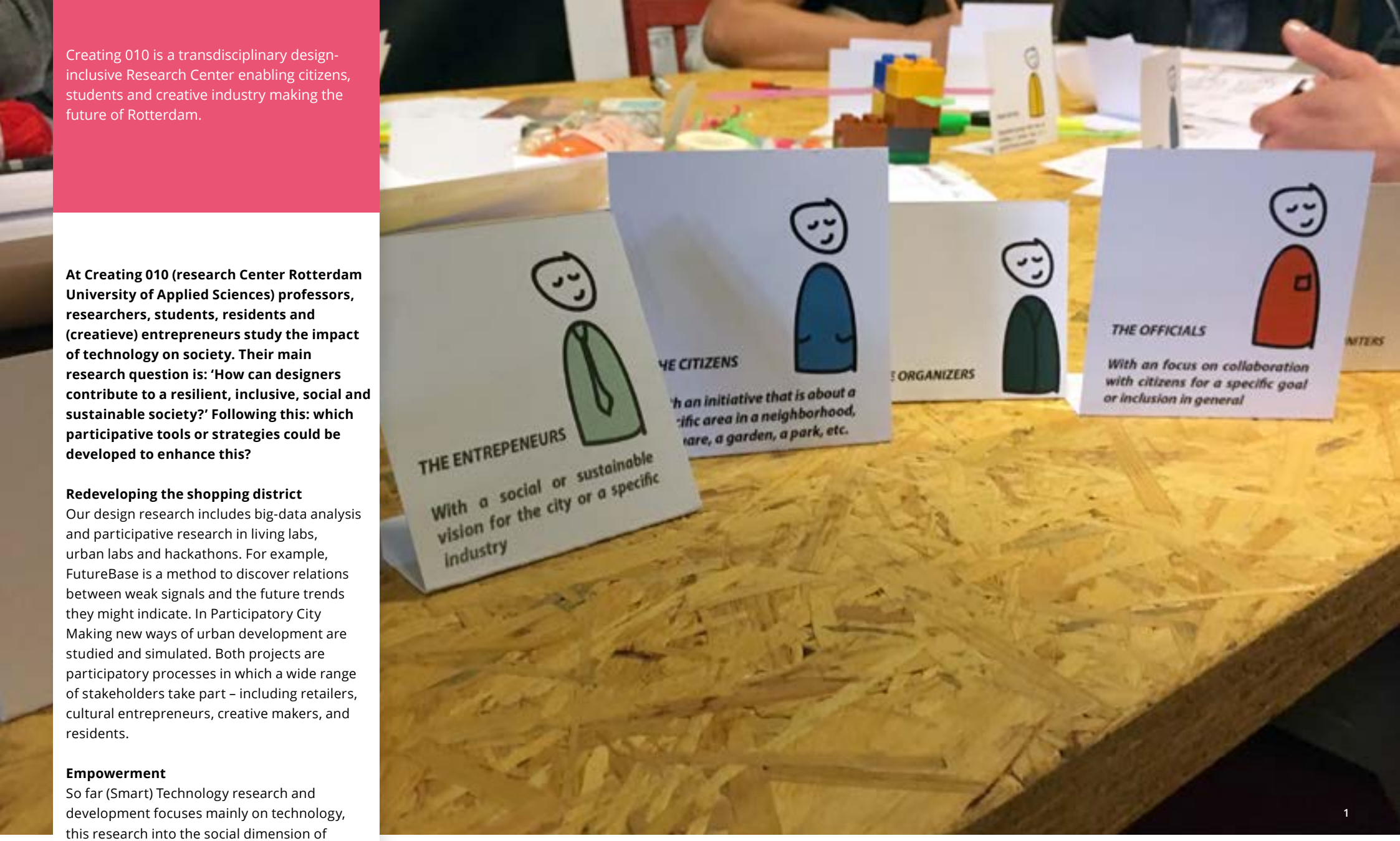
Funding
N.a.

Creating 010 is a transdisciplinary design-inclusive Research Center enabling citizens, students and creative industry making the future of Rotterdam.

At Creating 010 (research Center Rotterdam University of Applied Sciences) professors, researchers, students, residents and (creatieve) entrepreneurs study the impact of technology on society. Their main research question is: 'How can designers contribute to a resilient, inclusive, social and sustainable society?' Following this: which participative tools or strategies could be developed to enhance this?

Redeveloping the shopping district
Our design research includes big-data analysis and participative research in living labs, urban labs and hackathons. For example, FutureBase is a method to discover relations between weak signals and the future trends they might indicate. In Participatory City Making new ways of urban development are studied and simulated. Both projects are participatory processes in which a wide range of stakeholders take part – including retailers, cultural entrepreneurs, creative makers, and residents.

Empowerment
So far (Smart) Technology research and development focuses mainly on technology, this research into the social dimension of things however, focuses on the empowerment of people in their daily technological living environment.



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THE SOCIAL DIMENSION OF THINGS
Citizens' empowerment in a networked society

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1 Workshop Participatory City Making at FairDesignPlein Rotterdam, June 2017

2 Idea and scenario generator

3 “How can … make … more transparent through … to whom” … in order to … ?

Project partners
PCM: TU Delft, Dutch Research Institute for Transition , Retail: Municipality of Rotterdam, Creating 010, Rotterdam University of Applied Sciences, LAB85: The Patching Zone, Municipality of Schiedam, ARD, Mooi werk, Nationaal Jenever Museum, Stedelijk Museum Schiedam

Funding
NWO/SIA, SIDN, Municipality of Rotterdam, Stimuleringsfonds Creative Industrie

Learn, innovate, apply and learn from that again. The Co-Design research group of HU University of Applied Sciences develops and evaluates methods and tools to involve all stakeholders in the design process. This will build a bridge between technological possibilities and complex social environments.

Self-reliance is an increasingly important skill for our society, also for people with an intellectual disability. Technology can support these people in conducting everyday tasks by themselves, so that their self-reliance is increased. How might clients and caregivers design technology, aimed at executing activities of daily life together, in such a way that the clients' self-reliance is increased?

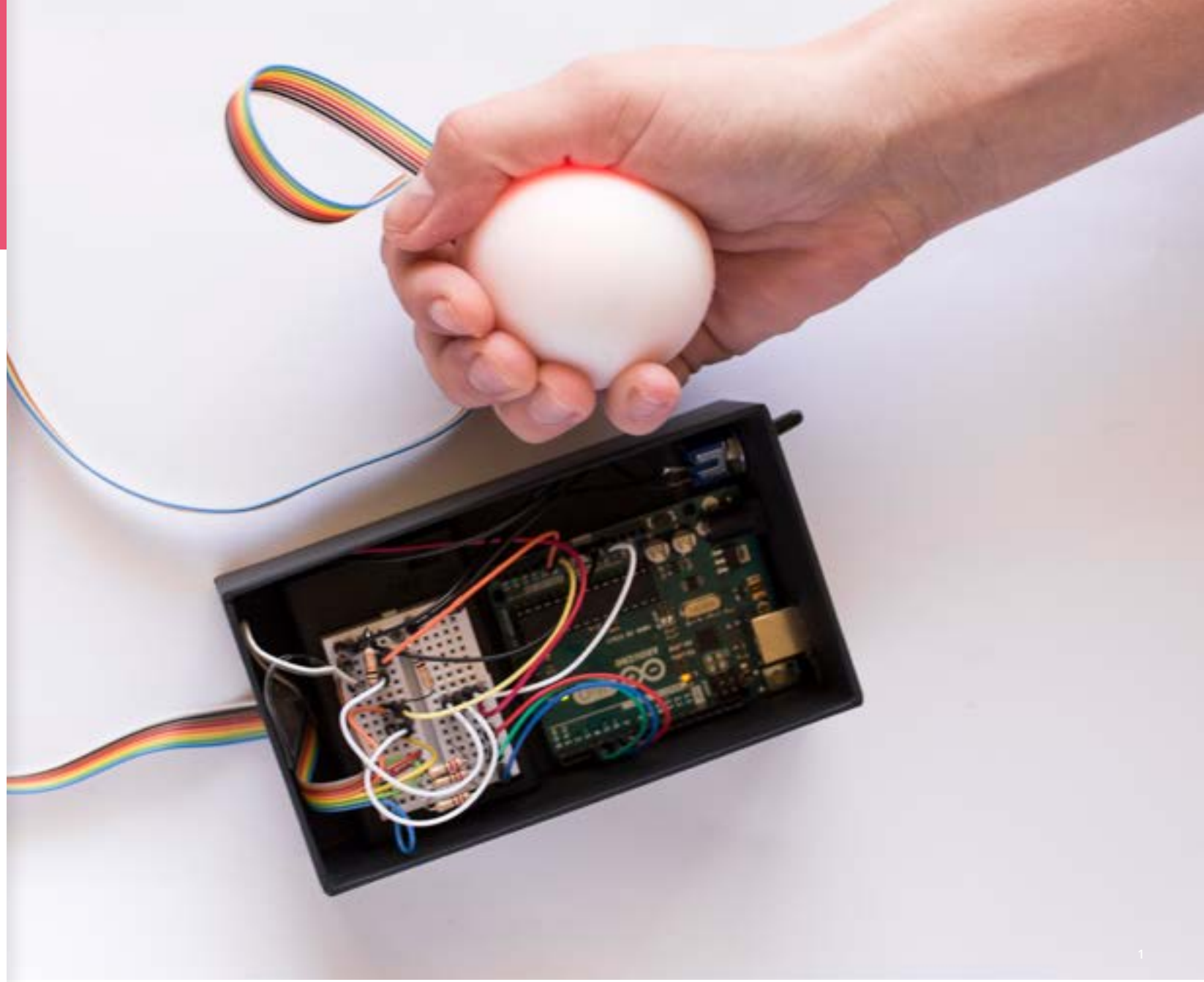
Participatory process

This project makes use of the participatory 'research through design' (RTD) approach, which centres around the development of empowering technologies together with clients and caregivers. While carrying out design cases at three facilities, new knowledge is developed about the content of the technology (design guidelines for this target group) and the participatory design process (applied design method).

Results

1 Design methods for participatory design of technology that will help empower people with an intellectual disability.
2 Guidelines for the professional practice of caregivers to facilitate the introduction of new empowering technology for their clients.
3 Technological tools aimed at making people with an intellectual disability better able to perform their activities of daily life more independently.

HU HOGESCHOOL UTRECHT



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POWERTOOLS
Designing for self-reliance

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1 Prototype of an interactive stress ball which can be squeezed or thrown against the wall, in a stressful situation. The changing colours of the ball help to guide you in reducing stress.

2 Co-creating with students, researchers and healthcare professionals is a returning event throughout the project.

3 Get Up, Stand Up is one of the concepts developed within the powertools project. Tangible reminders help to structure daily activities. For example at the location of a task a timer is placed which will vibrate or change colour at a self-appointed time.

Project partners
The Co-Design research group at HU University of Applied Sciences, the Zorg voor mensen met een verstandelijke beperking research group, the Lokale dienstverlening vanuit klantperspectief research group and the Levensloopbegeleiding bij autisme research group, all three at the HAN University of Applied Sciences, the Human Centred Design department at the University of Twente, TNO, Siza, Philadelphia, Intermetzo, Pluryn, Amerpoort, Kaliber, Oneseconds, NoXqs and U CREATE Centre of Expertise Creative Industries.

Funding
SIA and all project partners.

The research group Circular Design and Business of the Urban Technology research programme at the Amsterdam University of Applied Sciences (AUAS) performs applied research in the field of sustainable technologies and circular design and the associated products, services and business models in order to help introduce these technologies and designs in the market.

Amsterdam ArenA is replacing all stadium seats and wishes to discard the old seats in a socially responsible manner. The AUAS studies how to encourage the local re-use of this urban waste material. Which products can be made from the discarded stadium seats of Amsterdam ArenA, and how does the consumer appreciate these products?

Prior research

Recently the AUAS finished an exploration on the viability of two re-use scenarios:

1 Upcycling of stadium seats into new consumer chairs.
2 Possibilities for recycling at material level for various applications.

This study resulted in different chair designs that are evaluated by Amsterdam ArenA for production and it proved that the material could be processed into new products with techniques such as 3D printing.

Capturing emotional value

In the present project, Amsterdam based designers were asked to make a prototype for a circular design that also captures the emotional value of the Amsterdam ArenA material. This six-week design sprint resulted in the designs of the present exhibition. During the exhibition the appreciation for the products by the consumer will be evaluated.

Amsterdam University of Applied Sciences

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UPCYCLING AMSTERDAM ARENA STADIUM SEATS

Valuable second life: examples of circular design with a waste material

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1 Discarded plastic chair parts of Amsterdam ArenA stadium seats

2 Granulated Amsterdam ArenA plastic in a pressure mould. Prior research included testing different processing techniques as well as the quality of the samples to determine possible applications.
The tests included two common production processes for plastic – pressure and injection moulding – and one experimental technique, 3D printing.

3 Large- scale 3D printing with a robotic arm (with the collaboration of HB3D), using a granulate version of the Amsterdam ArenA plastic. 3D printing was explored as a potential production technique because it would enable non-standard and local manufacturing in small batches. This digital production technology could contribute to circularity, suiting the criteria for local production using small amounts of recycled plastic.

Insights
This project allowed Dutch designers to become more familiar with the possibilities of circular design. Insight in consumer appreciation for the designed products will provide valuable information for circular design using waste streams.

Project partners
Amsterdam ArenA, Amsterdam Made, Urban Technology research programme, Amsterdam University of Applied Sciences.

Funding
SIA, KIEM-VANG arrangement, Urban Technology research programme, Amsterdam University of Applied Sciences.

The Open Innovation Research Group investigates how organizations develop sustainable system innovations. We work from a multi-level design perspective to map the relationship between new products and social change processes.

The library of the future is a focal point of knowledge, contact and culture. Library Service Fryslân has therefore developed Frysklab. This library truck on wheels has won the Presidential Citation for Innovative International Library Projects of the American Library Association in 2017.

As the library truck is big, the threshold for using it is high. Therefore, the NHL Frisian Design Factory was asked to develop a mobile miniature version of the makerspace for use in schools and festivals. Therefore, an interdisciplinary team of students - together with the D'Lab Fablab - developed a modular cargo-bike-lab based on an open source design of XYZ-Cargo. In this mobile lab, plastic waste can be converted into new products using a grinder, melter, 3D printer and web app that allows students to design their own product.

The accompanying curriculum helps schools to deploy the system for educational purposes. The mobile lab will be used in the summer of 2017 during the Welcome to the Village festival and with children's performances by the theater company Tryater.

The mobile makerspace will be shown at the European Parliament during the exhibition Generation Code: Born at the Library. During this event, the top innovative digital exhibits from public libraries across the EU will be presented.

1

MOBILE MINIATURE MAKERSPACE

The Library of the Future: A place for interdisciplinary co-creation

NHL
UNIVERSITY OF APPLIED SCIENCES

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1 Is it a cargo bike? Is it a laboratory? No, it's a miniature mobile makerspace!

2 Inside the original Frysklab, a library truck turned into a mobile makerspace.

3 Where it all happens: The former Blokhuispoort Prison in Leeuwarden. A regional innovation hub in which the Frisian Design Factory is located. From 2018 on, the local library will also be located in this building.

Project partners
NHL University of Applied Sciences - Frisian Design Factory, Library Service Fryslân - Knowledge- and Innovation Centre, Friesland College - D'lab Fablab, XYZ-Cargo, Open Sources design by N55 en Till Wolfer.

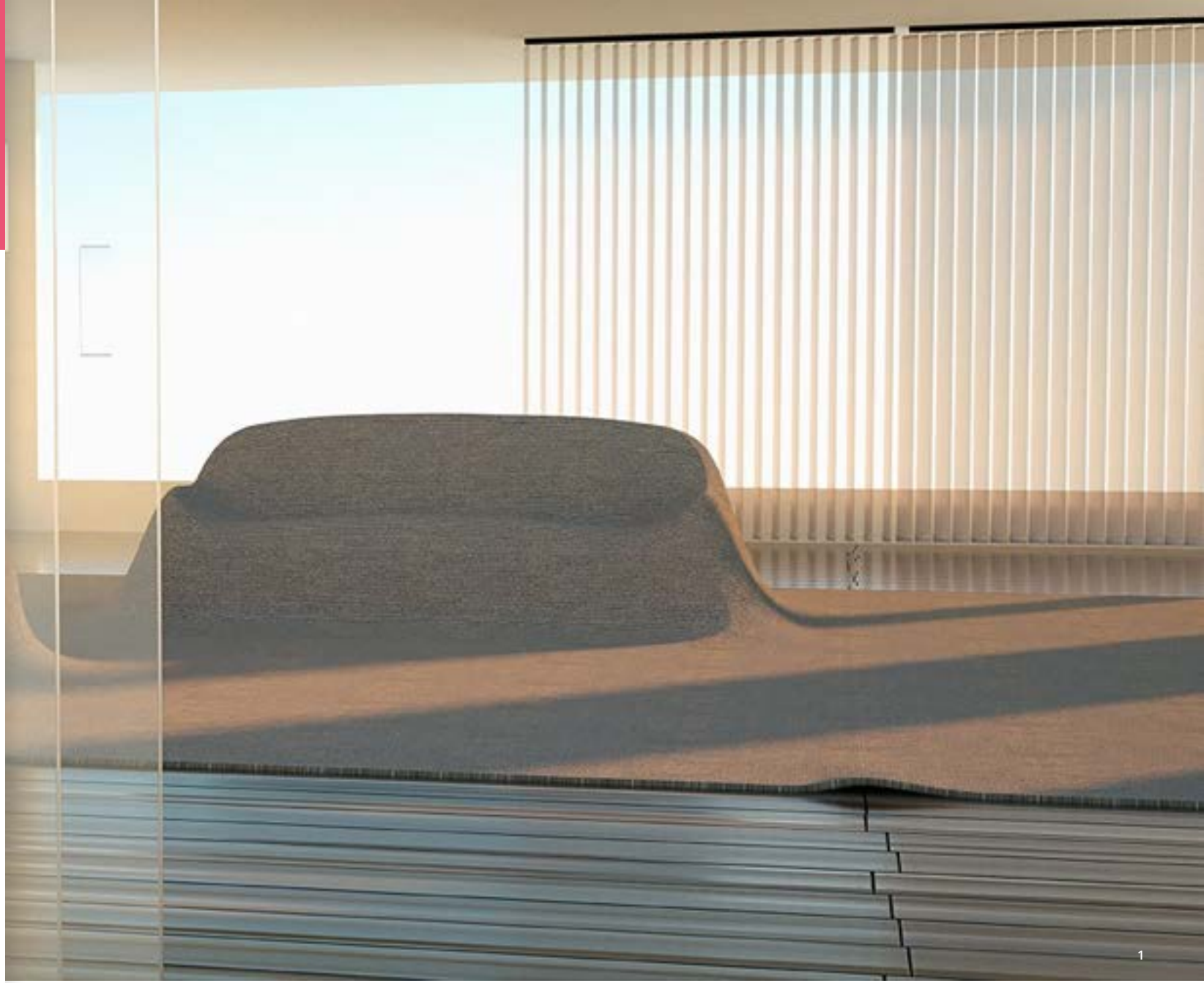
Funding
Library Service Fryslân - Knowledge- and Innovation Centre

The professorship E-scape focuses on research in the field of product design and interior architecture. The current complex, highly individualized and advanced technological society poses designers the essential question of how our living and working environment can be designed.

A team consisting of five designers and Product Design students has been working on a contribution to the Dutch carpet industry's innovation agenda. The motivation is the paper 'Routekaart Tapijt 2030', published five years ago by Modint, the Dutch trade association of the fashion, interior, carpet, and textile industries.

Innovation is necessary
The paper identifies opportunities and threats facing the carpet industry. It concludes that innovation is necessary in several areas. First of all, production needs to be sustainable, circular and flexible (on demand), and materials need to be biobased (preferably). Also, digital technology in carpets will enable new functionalities, as well as new three-dimensional applications for carpets and carpet waste.

Intertwining knowledge
Five designers and design students were asked to come up with new scenarios that would contribute to innovations in the carpet industry, based on their own knowledge and experience and in collaboration with companies. The research aims to achieve innovations in the carpet industry that will involve applying existing (natural) materials (e.g algae) and technologies (e.g 3D printing, smart textiles) in entirely new and innovative ways.



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COMPOSING THE NEW CARPET
Designers and carpet makers intertwine their expertise

ArtEZ University of the Arts

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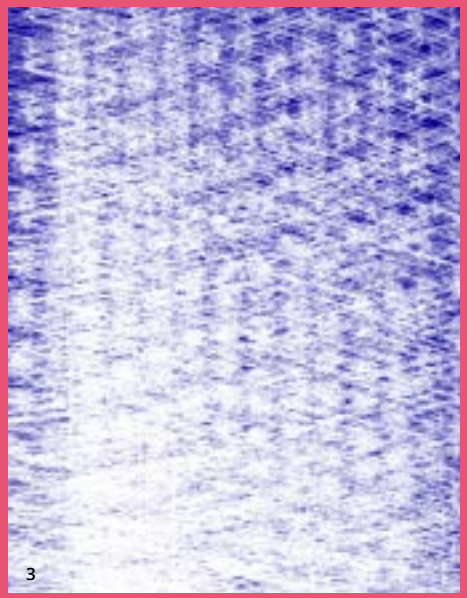

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1 Marcel Kronenburg - Carpets for Buildings - visualisation of carpets as furniture.

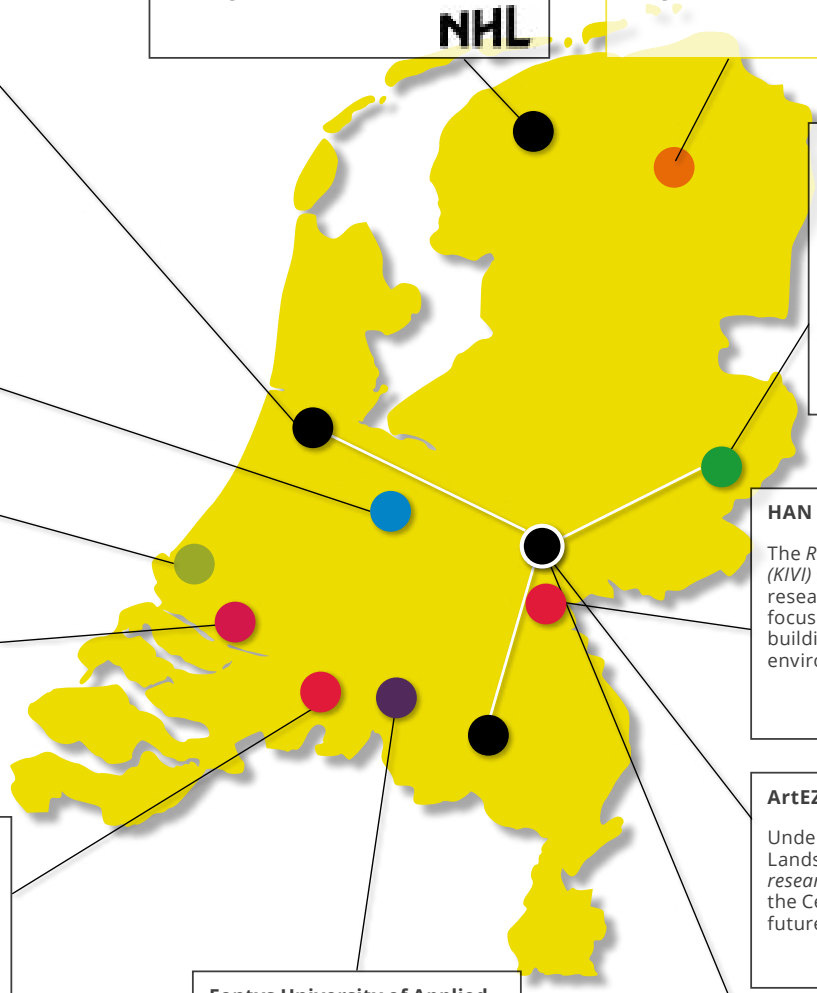
2 Marcel Kronenburg - Carpets for Buildings - Experimenting with 3D-applications in carpets.

3 Richard Vijgen - Design Studio for contemporary information culture - Visualisation of radio waves through thermochromatic yarns.

4 Eric Klarenbeek - Designers of the Unusual - print trial for 3D-printed carpet tile made out of seaweed.

Project partners
E-Scape, Future Makers, Carpets For Buildings, Designer of the Unusual, Studio for Object Oriented Information Design & Research, Studio Unitt, Studio Tjeerd Veenhoven, Low & Bonar, Industriepark Kleefse Waard, Modint, Weltevree, WUR/ Food & Biobased Research.

Funding
Province of Gelderland, ArtEZ University of the Arts, all project partners.



Amsterdam University of Applied Sciences (HvA)

The Technical Innovation & Enterprise research group does design-based research on circular materials, products, systems and business models that could help lead to the realisation of a circular city.

NHL University of Applied Sciences

The university-wide Open Innovation research group investigates how innovative 'non-design' professionals can develop new products and services in design-oriented ways within their own working environments.

Hanze University of Applied Sciences

The research group Art & Sustainability researches the role of the sustainable designer. An important focus is the continuing development of creative practices and relevant knowledge of materials, language, technical skills and new possibilities for making a living.

HU University of Applied Sciences Utrecht

The Co-Design research group develops and validates tools and methods for involving people throughout the process of designing people-product-service systems, with a focus on systemic innovations that empower people to care for themselves, for each other and for the environment.

Saxion University of Applied Sciences

The Industrial Design research group designs products based on applied research focused on target group centered design, innovative materials & technologies, and sustainability. Saxion FabLab Enschede is its experimentation lab.

HHS The Hague University of Applied Sciences

The research group *Innovation Networks* develops and offers expertise and tools that integrate research, design and testing based on design-driven innovation. We address complex challenges and work in networks together with governments, non-profit organizations and companies to design solutions that make our society more futureproof.

HAN University of Applied Sciences

The *Royal Netherlands Society of Engineers (KIVI)* sponsored chair and multidisciplinary research group Architecture in Health focuses on innovations in the area of building for health and for a smart living environment.

Rotterdam University of Applied Sciences

Creating *010 conducts practice-oriented research* on new types of knowledge created in transdisciplinary collaboration between artists, designers, ITers and other professions.

ArtEZ University of the Arts

Under the title Exploring the New Domestic Landscape, the *Product & Interior Design research group* researches, together with the Centre of Expertise Future Makers, future scenarios for living environments.

Avans University of Applied Sciences and the Centre of Expertise Biobased Economy

The Biobased Construction research group aims to collect, develop, valorise and disseminate knowledge about the application of biobased materials in construction and civil engineering. In doing so, they work closely together with the Centre of Expertise Biobased Economy (CoE BBE).

The Research group Innovation of the Building Process & Technology focuses on integrated building- and design processes and the required collaboration. It collaborates with the Centre of Expertise Sustainable Innovation of Avans.

Fontys University of Applied Sciences

The Health Innovations & Technology (HIT) research group are experts in designing technology and care concepts and in acceptance and implementation issues, always with a key role for the user.

CLICKNL | NextFashion Innovation Network

The *NextFashion Innovation Network* is responsible for the innovation agenda for the fashion sector within CLICKNL. The network focuses on the value of fashion, the relationship between fashion, technology and sustainability, and reinforcing the innovation system of the fashion sector.

COLOPHON
TEXT: GERT STAAL, JEROEN VAN DE EIJNDE, KARIN VAN BEURDEN, PETER JOORE, PETER TROXLER, REMKO VAN DER LUGT, INGE OSKAM, JANIENKE STURM, LUCIE HUISKENS, CHRISTINE DE LILLE/ANJA OVERDIEK, BOB VAN DER HEIJDEN/BOB VERHAREN, WOUTER WEIJERMARS
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WORK IN PROGRESS DUTCH DESIGN WEEK 2017