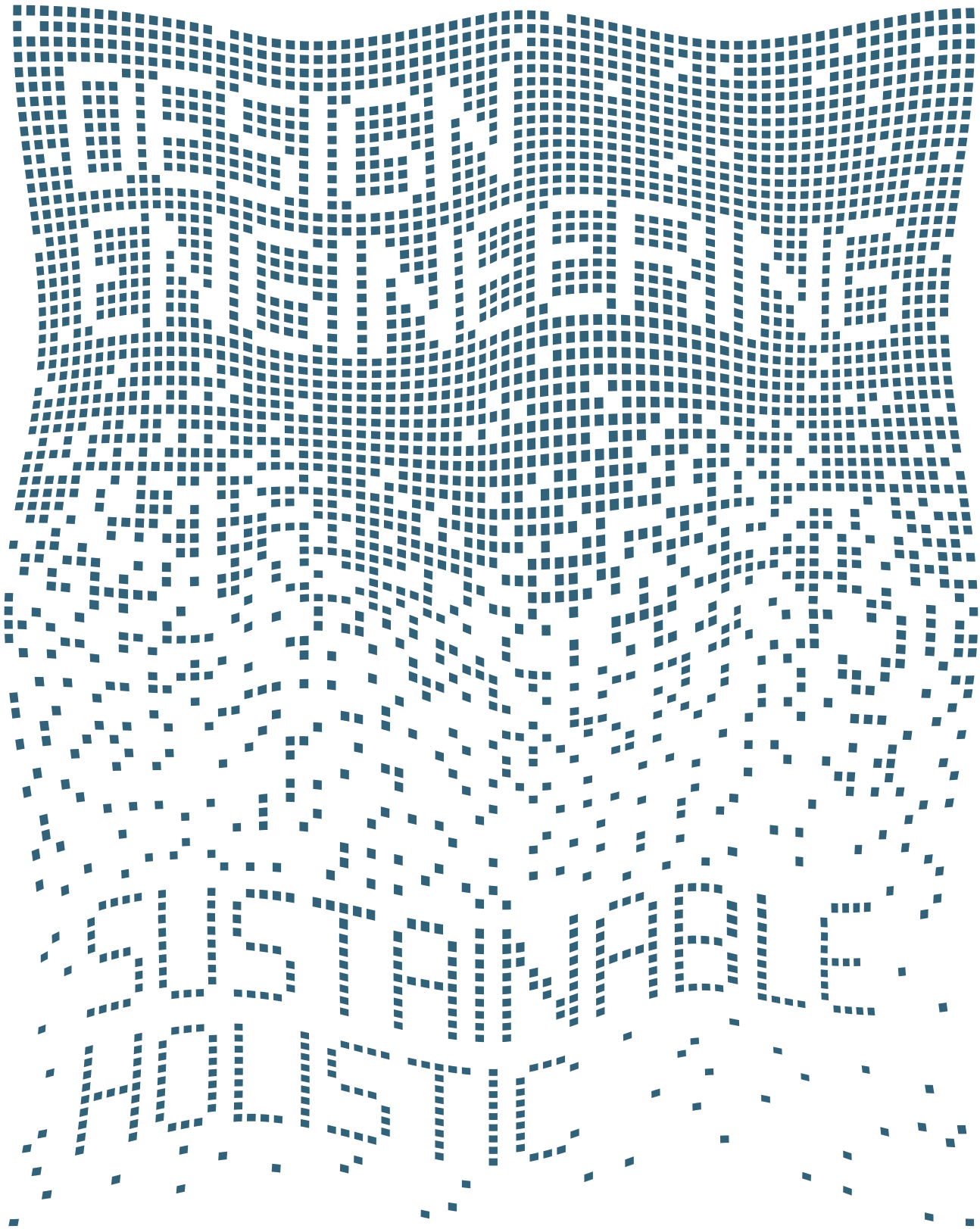


avedition

Marina-Elena Wachs

1.2 Five ways to read this book

The idea of so-called ‘skin in the game’[16], is a phrase coined by the entrepreneur Affentranger, who claims that designers need to fully invest: their knowledge, creativity, time AND their own capital. On the one hand, this can be interpreted from an economic perspective, in other words taking responsibility by investing private capital for all entrepreneurial affairs. On the other hand, this now also applies on the meta level and could thus be interpreted as a further development of the ‘lean in’ strategy by Sheryl Sandberg (2013), which refers to the metaphorical interpretation of taking responsibility for your actions, and your inventions. Having ‘skin in the game’ is more in demand and is more valuable than ever before. **Being motivated to act, and show dedication for enabling change in a *corporeal* way is what is needed today.**

This phenomenon is expanded upon in chapter 7, but based on this premise, you can benefit from this book, by reading it in a variety of ways. You can take these five paths to focus your aim on this postdoctoral thesis about ‘Design theory and interdisciplinary practise in design engineering and education in history, the present and the future’:

— You may first answer the interview questions (see the following list of questions from ‘December talks 2019’ by Wachs). Consider your thoughts as presented from your own personal point of view as well as a business perspective, to formulate the needs of design engineering processes in the future.
— You can use these questions to generate sustainable solutions in design concepts and for design education.
— You can discover how the structure’s common thread provides understanding: it guides you through a cultural – sometimes more anthropological – holistic, interdisciplinary view, yet remains based on industrial design and design engineering.
— You can follow the story of design education history as it relates to the development of design methods, and you can generally dig deeper into innovative advanced methods for your business – whether you are an (industrial) design nerd, driver of innovation, or an expert from another branch.
— You can enjoy the idea of a life that is designed better, or you can go to pre-school to play designing with our future generation of designers: This is always a gift and gives you quality time for sharing experiences and ideas with the best naïve minds we could wish for.

16
Affentranger, Anton, 2019, Baustellen, Innensichten eines Unternehmens, Münster-Verlag; please note: the term ‘skin in the game’ by Nassim N. Taleb in 2017.

1.3 Questioning the system: education, creative and economic systems

The following questions relate to the relationships between the elements and the pre-requisites of **Design – Art – Design Engineering – Creative Industries**, in terms of creating sustainable solutions. With the help of the questions, you may get a first impression, or develop some key thoughts for yourself. These questions were part of the ‘December Talks 2019’ by Marina-Elena Wachs, that were held in Germany and Great Britain.

1. **How great of an impact do art and design have on economic structures and economic benefit in Europe, and how are design and art influencing the circular economy?**

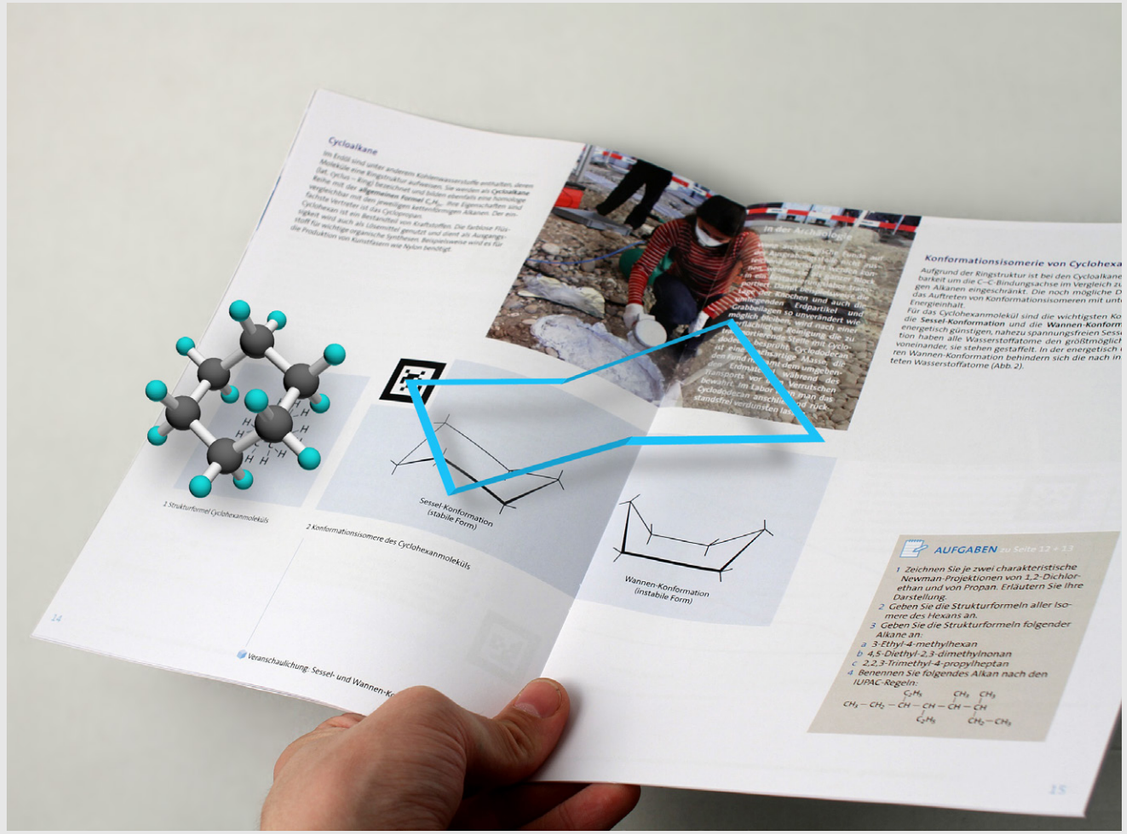
2. What **lessons can we learn from art and applied art in history?** How would you describe particular benefits?

3. During an interview with Inga Griese, for the magazine ‘Welt am Sonntag – ICON’ in October 2019[17], the director of the V & A Museum, London, Dr. Tristram Hunt was quoted as saying the following about the impact on design history: **The founder of the museum, Prince Albert, would pay more attention to ‘design education’ at school today.** What do you think about this as an **educational strategy**?

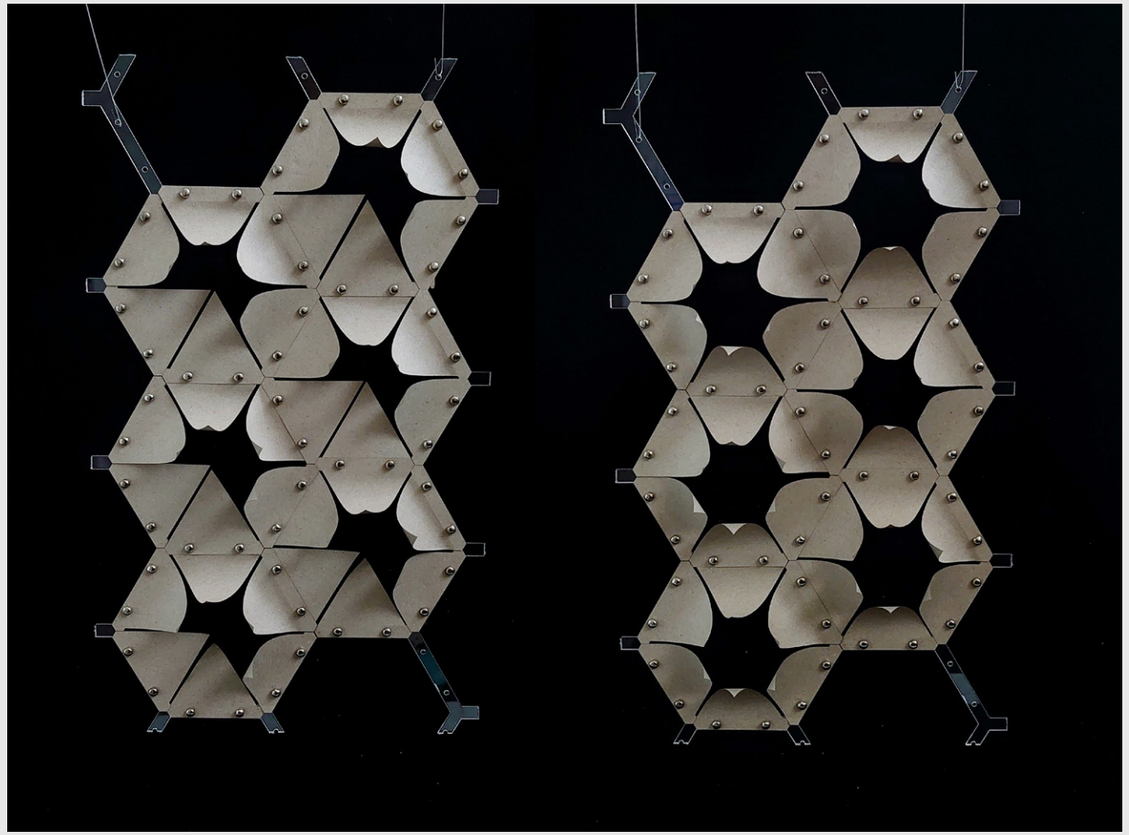
4. What do you think about the **currently increasing acceptance of design**? 100 years after the Bauhaus, what are the driving factors leading to more and more respect for design as objects and design as a discipline, in spite of the fact that it has been the ‘little brother’ of sciences of art for a long time?

5. In my opinion, **particular people and museums have been especially innovative in this field of thought**; e.g. Paola Antonelli and the Cooper Hewitt Museum in earlier times, and today’s curator at the MOMA in NY; the director of Cologne Fair Fine Arts, Daniel Claude Hug, for the ‘Cologne Fine Art & Design’ fair. Other important innovative drivers that are focal points include, for example, art and design at ‘Salone del Mobile – Milano’, the Victoria & Albert Museum in London, the Venice Biennale, the MOMA in New York, and the MOCCA in Cape Town. In this field of cultural involvement, another point of view is presented by individuals initiating museums for society, like the Frida Burda Museum or the Zentrum für Kunst und Medien (ZKM) Karlsruhe. Also, the Kunstmuseum Wolfsburg, whose primary aim is to draw in the regional population from the ‘working city’ of Wolfsburg, here, the foxus lies on the impact of cultural education.

17
See Hunt, Tristram, 2019, in: ICON October I 2019, supplement ‘Welt am Sonntag’, Issue, p. 78 f.



D



E

F

D
Chemistry textbook with augmented reality extensions for the Cornelsen publishing house.

E / F
Models for a shape-changing interface in the research project 'Smart Material Interface'. Photo: Linda Elsner/ Joanna Dauner

New interfaces will communicate directly through the material. Smart materials are the first step towards these 'material user interfaces'. The design of materials in terms of sustainability, interactivity and communication will be a new field for designers in the future.

C

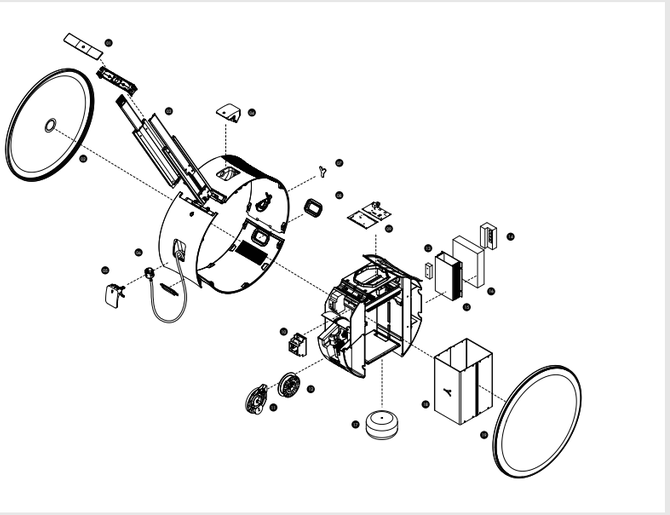
D

C
Karma SC2 interior sketch published by the show car launch, 2019.

D
Karma SC2, 2019.

Picture rights: (A – D)
Andre Franco Luis and in cooperation to each enterprise he worked for.

D



E

D / F
Cooperation: Werner Aisslinger & Nicole Losos, Berlin, Yill Produktfotos – CREDIT YOUNICOS.
Picture rights: Werner Aisslinger, Nicole Losos, product picture, credit YOUNICOS

E
Exploration sketch Nicole Losos.

F

3.2 Driver of sustainable (industrial) design culture – the ‘design shift’

3.2.1 What does high-quality product design mean?

Keywords
industrial design as a driver of sustainability, cultural behaviour – cultural changes and changes in design methods – design turnaround, the need for cross-scenario thinking in sustainable design education, sustainable thinking for complex and advanced industrial solutions; correlation between how people identify with objects, regions, changes in working conditions – reverse design: design shift.

The high-quality design of products is a consequence of sustainable design, and the investigation of origins, demands and additive design qualities – while simultaneously maintaining a focus on responsible cultural behaviour and material conduct. It is necessary to think, manufacture and invest in a sustainable manner, in order to produce responsibly and develop circular concept models for economic cycles. In addition, cultural education is the greatest investment in sustainable economies. All these factors are once again founded on our industrial heritage, and, of course, on the broad individuals produce over the course of their lifetime, as well as people showing great passion for design, it is expressing a commitment to saving the environment (see Wachs, M.-E., 2008)[41]. In terms of the digital revolution of the 21st century, we have to consider a ‘design shift’ (Wachs, M.-E., 2018, Conference Textile and Place, Manchester School of Art), comparable to the cultural ‘turns’ (see Bachmann-Medick, D., 2007)[42] of the 20th century, on the one hand. While, on the other hand, we have to take a look at the changing working conditions in industrial design engineering cycles – and the resulting **consequences for design and production processes, as well as education, of course. The following chapter discusses the impact of inter-scenario design**, related to the creative process and the impact of individual design power.

The term ‘industrial design’ – as described by the German industrial designer Dieter Rams –, first designates the functional needs from the consumer’s perspective; human beings and how they deal WITH products. This is viewed in relation to product design, as identified by the anthropologist Michael B. Schiffer: *‘The concept of life history is known in a variety of fields including engineering […] in which product design models are broken down into the major steps, such as procurement, manufacture, and use, to identify performance requirements for a technology’s various activities.’* (Skibo, J.M. and Schiffer, M.B., 2009)[43]

Secondly, the industrial design process is compared to the conventional design methods of sketching, and the phenomena of so-called ‘design driven by technology’ or ‘design driven by material’. Form and material in relation to product usage, are in line with production possibilities.

41
Wachs, Marina-Elena, 2008, Material Mind, Dr. Kovaç.

42
Bachmann-Medick, Doris, 2007, Cultural Turns, Rowohlt.

43
Skibo, James M., Schiffer, Michael Brain, 2009, People and Things – A Behavioral Approach to Material Culture, Springer, p. 9.

For example, the Braun razor, designed by Dieter Rams in the 1950s, is the result of a linear economy: Sketching a razor created the parameters for production, while the marketing strategy and retail possibilities were not considered until after having the industrial tools and the moulding dies made of metal.[44] Industrialisation created the basis for design management and a linear, sequential planning process. After the sustainability revolution at the end of the 1990s, when awareness grew regarding the lack of materials and that natural resources, such as mineral oil, were finite, the pressure to develop the circular economy – that is described below – became evident. Within all three pillars of the defined subject of ‘sustainability’, reaching beyond just materials, is not an invention of the 21st century, rather than the Brundtland report (1987) and the triple bottom line by John Elkington came to mind since the 1970s movements with the help of environmental engagement by the Club of Rome (found in 1968) for example. However, with regard to the economy and the interest of brand managers – as well as stakeholders, of course – it is proving hard to integrate into all business levels.

We have to regard the early design trigger points of the industrial design culture – rooted in the so-called linear economy – as a long-lasting standard, which has changed as a result of ‘design drivers’ for sustainable industrial design that are currently promoting the more favourable circular economy. As the digital revolution is now pushing us to new paradigms – forcing new process parameters and interlinked production teams – we have to think about redefining the field of ‘industry’, and respectively a new field of industrial design engineering and modified design methods, of course. As a result, the following question arises: How can we create a new term or expression for the word ‘industry’ that represents current phenomena and changes – indicating sustainability and a ‘decentralised economy’ at the same time (– as sign of the paradigm shift)?

We have to ask ourselves what is driving design for the next era of digital design generations, particularly when changing production conditions will be accompanied by new design drivers that do not follow any hierarchical structure. Ultimately, the potential impact will be discussed within the framework of a ‘design shift’ with regard to design and ‘production’ processes – and of course design engineering education. The following parameters are important considerations in this design process, for the industry and universities.

- changes in technological processes in relation to life patterns and their effects on identification
- media and cultural behaviour concerning objects as the driving factors for developments in design and societal innovations
- comparable design studies within the scope of historical, sociological and anthropological evaluation
- the correlation between design and engineering in the future
- sustainable education and working conditions as factors that influence changes in (and loss of) manual skills, and the need for analogue AND digitally-based fields of educational study.

44
See exhibition ‘BRAUN 100’ at Bröhan Museum Berlin, 04/2021 to 08/2021 https://www.broehan-museum.de/ausstellung/braun-100/)

Theresa Scholl

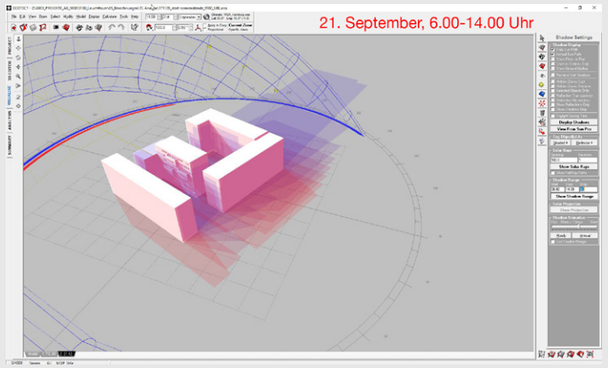
Color & Trim Designer
Volkswagen Nutzfahrzeuge

Theresa Scholl is a bespoken tailor and textile designer with a Masters degree from Hochschule Niederrhein. During her studies she created new textile materials such as smart textiles, textiles for lighting design and paper textiles. Additionally, she focused on the design theoretical investigation of textiles in architecture. After having had some touch points with the fashion industry, interior design and lighting design, she is currently working as a Colour & Trim designer in the automotive sector.

Contact
scholl.theresa@gmail.com
www.theresascholl.de

Diploma 2018
‘a textile sense of light’

‘a textile sense of light’ – this master thesis investigates the two disciplines, textile design and lighting design in architecture.
Technical planners often limit textiles on their decorative aspects and therefore, fail to consider the high potential of textiles in their construction projects. However, textiles can do much more than being decorative. Together with the Ulrike Brandi Licht GmbH, Theresa Scholl proved this by developing a modular concept for textile design solutions for architectural lighting design: Textile daylight systems are able to manage impact of daylight in a building through regulation of sunrays and shading. Based on an analysis of the building’s daylight situation and a matrix for textile design engineering, unique textile systems can be created customised to the building and its intended use. This concept was applied to the building project ‘Festland’ of Hamburg Leuchtfeuer FESTLAND GmbH.
Now, colourful textiles with different transparency do not only help to control the daylight impact in the building, they appear playful and underline the inviting character of this assisted living project.



A

B

C

D

A
Screenshot program Ecotect: Calculation and visualisation of the daylight impact on ‘Festland’ with its surrounding building; Image by Theresa Scholl for Ulrike Brandi GmbH (2017).

B
Architectural sketch by Theresa Scholl; Image by Theresa Scholl (2018).

C
Detail: Knitted curtain catching the sunlight, Design Theresa Scholl; Image by Theresa Scholl (2018).

B C

D

E

Katharina Grobheiser

M.Sc. Textile Product Design
Textile Design Engineer

Contact
katharina.grobheiser@gmail.com
Instagram: kaykaycreative

Diploma 2020
‘A Fuzzy Society with Fragile Freedom create a diverse Future through Design’

Textiles are made from fibers that represent their identity. In every mechanical washing and drying process some of these fibers get lost. The Master thesis ‘A Fuzzy Society with Fragile Freedom create a diverse Future through Design’ reflects the personal mindfulness and the social appreciation of the free existence. This theoretical topic is united with a practical and multiple diverse design processes.
The Basis of this textile material research were fibers that have been collected by textile drying machines. An important part of this material research was a daily mindful manual sketching process. During this process Katharina Grobheiser cultivated the ‘8 Theses of a mindful creation’ which helped her change the FUZZYS (dryer lint) identity from wasteful to a valuable textile and nontextile material and products.

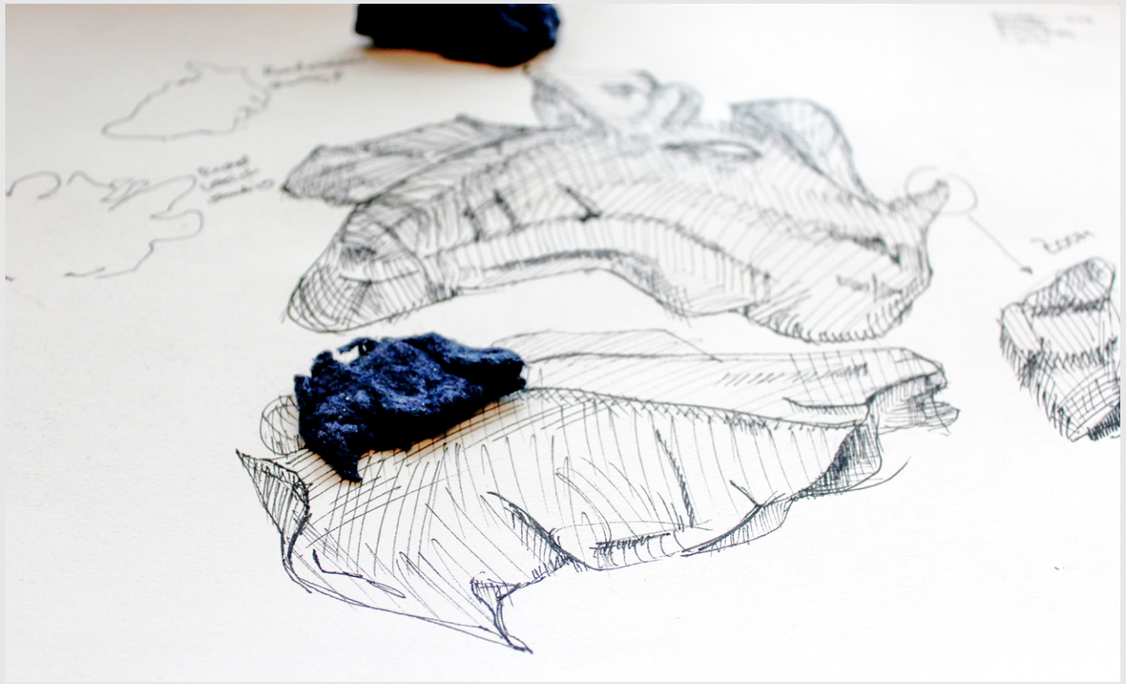
A
FUZZY Cover with
a sewn textile surface.
Picture by Daria Buch

B
Manual sketching process
of a dryer lint. Picture by
Katharina Grobheiser, 2020

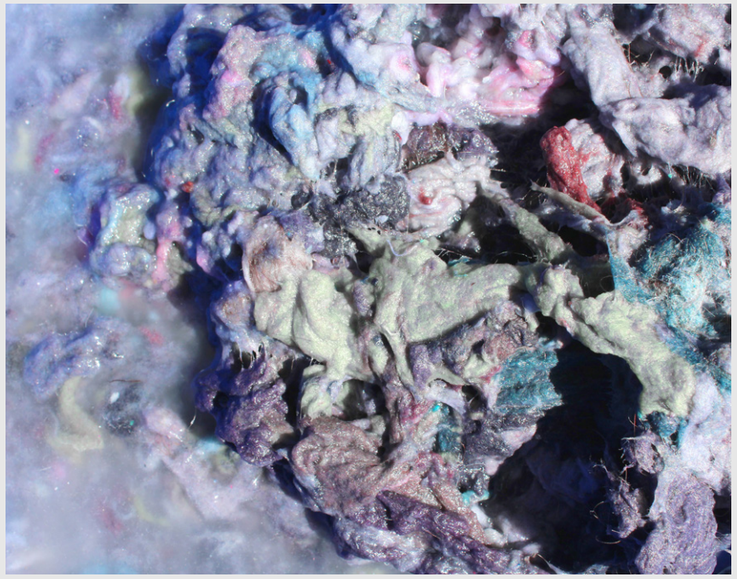
C
FUZZYS mixed with water.
Picture by Katharina Grobheiser,
2020

Design, production of the
outfit, management of shooting
and communication tools
by K. Grobheiser.

A



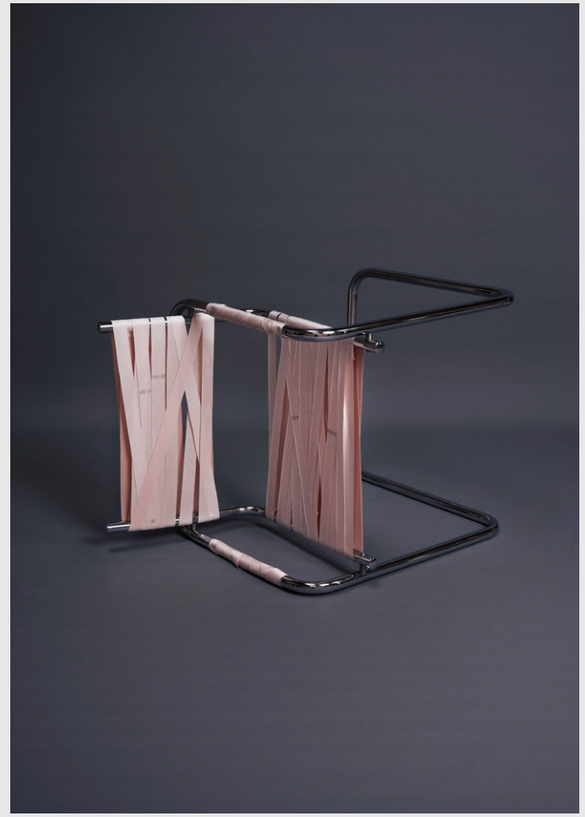
B



C

B

C D



E

B
Cargo pants made
of airbag fabric with
waterproof pockets.

C
Transportable raincape
made of waterproof airbag
fabric.

D
Waterproof rain vests
made of airbag fabric.
Once in colored version.

E
Re-interpretation of
'Marcel Breuer Chair' with
seat made of airbag fabric.

Marina-Elena Wachs

Designing ‘Cultural Resources’

Prof. Dr. phil., Dipl.-Des. Marina-Elena Wachs
is master tailor and industrial-designer and professor for design theory. 2007 she graduated at Braunschweig university of art with her doctoral thesis (‘material mind – new materials in design, art and architecture’, https://verlagdrkovac.de/978-3-8300-3292-2.htm). Since 2010 she held a professorship in theory of design at Hochschule Niederrhein. Marina’s present research focussing on > interdisciplinary projects in sustainable design<, >textile engineering in cross cultural learning landscapes< and >sketching the future: design and children<. Note: In the year 2020 Marina got a call for Professorship for ‘Designo’ (Italy)/Zeichnen (German)’ at the faculty of educational sciences, at Free University Bozen, she rejected the offer.

More research information
https://www.researchgate.net/profile/Marina-Elena-Wachs
https://www.linkedin.com/in/marina-elena-wachs-551662a5/
Next publication 2022, which is developing the research subject in this book further more: ‘The art of languages for good design – A didactic approach to art + design in pre-school education + Design engineering mentoring culture’, Wachs Marina-Elena.

‘A pan European transformation to bridge between tangible experience and virtual ideating spaces’, Marina-E. Wachs together with Theresa Scholl and Giulia D’Aleo in preparation for 2022. More information to PEM – Programme of European Mentoring, see website (see QR Code 08).

Contact
info@marinawachs.de
www.marinawachs.de

Sustainable design engineering – and nothing less. This begins early on, at preschool age, when designing, creating, working, to gestalt or shape things, imagining, constructing, and building with hands, mind and body, takes place. Also, it means collaborative, cross-cultural, synesthetic creating, with a holistic approach: involving art, music, poetry, and experiences with natural materials, while reflecting on historical and present-day narratives. But, to be able to do this, you need a solid foundation… one that allows for playful designing with self-confidence in stress-free learning spaces. (see pictures at p. 222 f).

It is my vision, that more designers and design entrepreneurs will dedicate themselves to more in-depth design mentoring – as part of university curricula, within enterprises and in social circles, like pre-schools. Let us train the next student generation to become mentors for children as well as industry managers, while they still have the opportunity to learn from the older generation of ‘golden’ mentors’. We must encourage new students to take the initiative to interact with these mentors and integrate them into design and cultural education – to cultivate a ‘culture of questioning’ is our goal.

After more than 30 years of creating as designer and more than 20 years of working as an educator – of which more than 10 years as professor for design theory – I have collected so many thoughts, activities, experiences, operations, projects, events, journeys, reflections, workshops, as well as interactions with friends, family and mentors. All of these have sparked questions about design engineering over the course of history, as well as in the present time and the future – and particularly in the field of design engineering education. With my German perspective – especially in comparison to the Northern Countries, such as Sweden, Denmark and Great Britain – I have to thank so many creatives and thinkers, who have collaborated together with me: Ultimately, I can say: It is not a question of struggling with and rethinking design objects, concepts and industrial processes. Instead, it is the human factor that inspires and enables creation; by examining the problems + tasks presented to us by our planet; by solving these issues together in cross-generational + cross-national + cross-discipline + cross cultural collaborations; by going beyond cultural behaviour and obligatory inherited behavioural patterns.

The present and urgent need for ‘Circular Process Management’ is represented by the ‘cycle of key factors needed for sustainable education development’ (see graphic 08, p. 207, by Wachs, M.-E., 2021). This circular process is a beneficial tool for education systems beyond schools and universities. It is also beneficial for self-education and coaching management in enterprises and industries, as well as for society as a whole. In the future, cultural education needs to embrace the HUMANITIES – sometimes derogatorily referred to as ‘the little courses’ in Germany – to the same degree as the STEM subjects. Please invest more in these ‘little courses’ – in the humanities and mentoring in human ‘personal intelligence concepts’. After all, these will train the emotional and cultural intelligences that will be essential as we move into the post-digital age, in which the motivation to act sustainably has begun to shift.

Cultural education + knowledge management are the biggest resources for humans + the planet – let us take a stand for the resources that are most important for developing future design engineering solutions. This can be achieved by investing in sustainable cultural education – by teaching future experts, children and other ‘knowledgeable creators’.

My graceful thank to all who participated in, and supported the creation of this book – to all who designed, reflected and discussed with me, making it such a valuable book to read – for gaining new sustainable and holistic insights and discoveries – with joy.

A few years ago, we started noticing that our Innovation Design Engineering postgraduate students were becoming increasingly risk-averse. The pressure of increasing fees and having to maintain good average grades for scholarships alongside disciplinary norms to avoid risk and keep to tried and tested formulae was having an impact. To address this, we decided to run a failure project where students would be graded in terms of their ability to fail, the better the failure the better the grade (Hall et al, 2016). At the heart of this was an effort to train failure resilience and to make failure a natural and desired part of the innovation process. Something that indicates work that is finding the cutting edge rather than avoiding getting it wrong. In education we should always reward brave failures rather than modest successes as that is what is at heart of great design led innovations. Edison said 'I have never failed, I found 10.000 ways that didn't work' and this captures the central place of finding edges in successful design, whether the edge is technology performance, public acceptance, economic or sustainable.

A large proportion of the global population live it cities with millions of people and hundreds of millions of products. Many of these products are directly related to our own safety and wellbeing yet we have few if any education programme dedicated to designing for safety. Why is this? We know that engineering considers safety factors and has effective practices for safety yet design is also a safety critical activity and cannot solely rely on engineering for safety. This is especially true as we move into more experiential types of design and start to design with increasingly complex systems including AI that go beyond human comprehension. We need to begin thinking about new ethical and safer relationships with this technology.

At the heart of this is designing resilience, the capability of flexing to cope with expected and unexpected future changes. A big part of this involves designing safer failure spaces and understanding more about how we educate designers to develop better methods for sophisticated ecosystem-smart solutions to wicked problems.

Across design education we need more than ever to rebalance the society-technology gap through a better understanding of the relationship between designing safety and failure to build resilience against an increasing set of survival challenges for ourselves and our ecosystem. On our design products MA programme, we are looking at a new educational ethos to support designing for dematerialisation, subtraction, circularity, decolonisation, delimiting products and multi-species design to start asking the serious questions that will drive future design practice over the next decades and support the education of this new generation of designers. We know what we need to do to improve the future of design education, it's a new model for design.

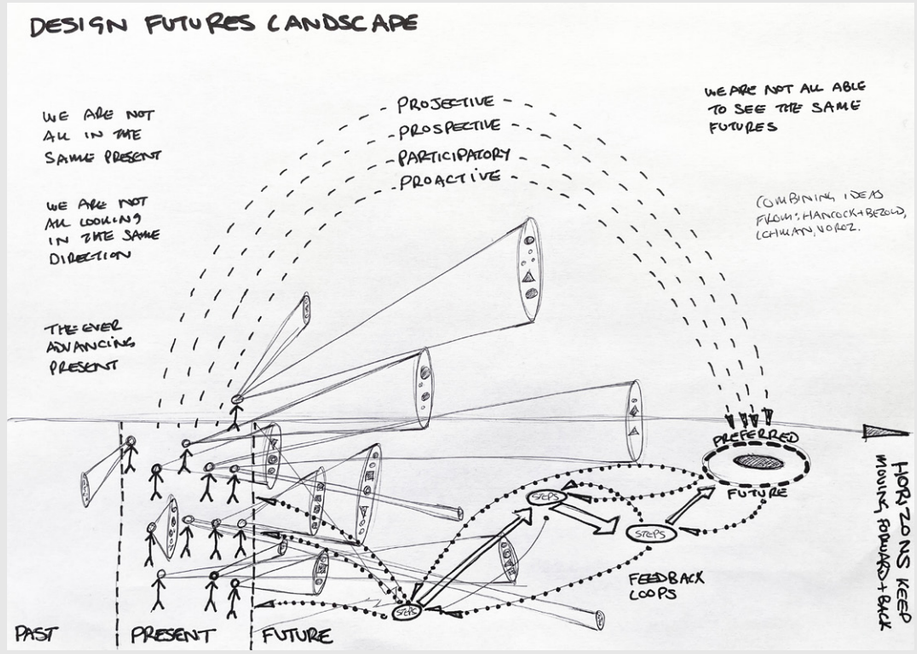
Prof. Ashley Hall
Prof. Ashley Hall PhD, RCA London, UK
Ashley is Professor of Design Innovation in the School of Design at the Royal College of Art in London. With a MA from the RCA and PhD from the University of Technology in Sydney he has a background in design practice, teaching and research. Hall leads post-graduate research for the School of Design and the MRes in Healthcare Design. Ashley researches in innovation methods, design thinking, design for safety, experimental design, design pedagogy, globalisation design and cultural transfer.

Contact
https://www.rca.ac.uk/more/staff/ashley-hall/

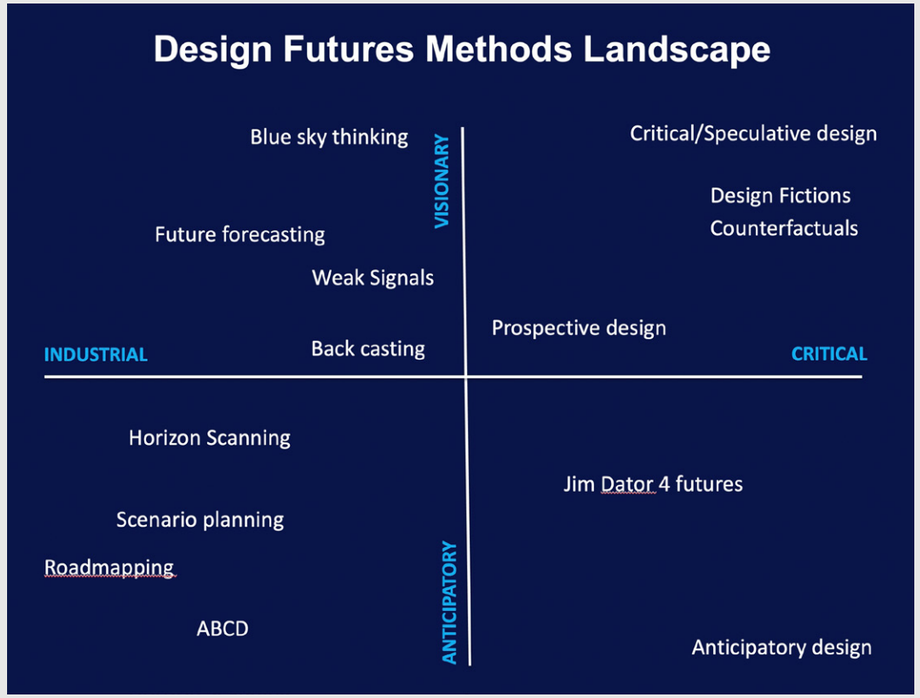
References
Fuller, B. (1992). Cosmography. USA: Hungry Minds Galdon, F., Hall, A., (2019) Prospective design: A future-led mixed-methodology to mitigate unintended consequences, International Association of Societies of Design Research, Manchester, UK
Chris Jones, J., (1992). Design methods. New York: Van Nostrand Reinhold. Glanville, Ranulph. (2005). 'Design Prepositions.' In: The Unthinkable Doctorate, 1-9. Brussels, UK and Australia: Cyberethics Research, American Society of Cybernetics. Hall, A., Bahk, Y., Gordon, L., Wright, J., (2016), The Elastic Octopus: A Catalogue of Failures for Disrupting Design Education, Engineering and Product Design Education Conference, Aalborg, Denmark, September 2016.

A
Design Futures Landscape, Ashley Hall, 2021.

B
Graphic Design Futures Methods Landscape, Ashley Hall, 2021.



A

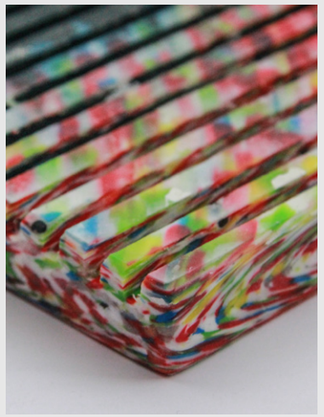


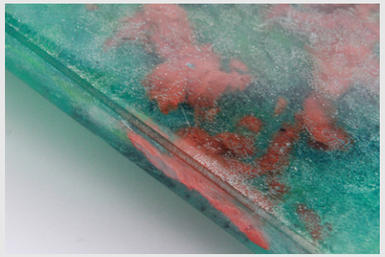
B

Louis Reigniez

A

‘... our eco-systems are infected with micro-plastics! – we need to act.’





We live in a world where today’s decisions will have an important impact on a fruitful and clean future. The world’s environments are changing fast and in unpredictable ways, the chances of us having a stable climate are slim if the right decisions are not made in the foreseeable future. Our eco-systems are suffering from the pollution of our daily consumption. Today, we dump more than 15 tonnes of plastic waste into the oceans every minute. In 2030, that number will go up ten fold. Most plastics don’t float and what we see on beaches is just the tip of the iceberg, our eco-systems are infected with micro-plastics. We have no idea yet what the impacts of these plastics are on our ecosystems. We must find a way to turn off the plastic waste tap, a short term solution to a long term problem. Our solution is definitely not the best one for the future but it’s one that will have an impact on the problem today and tomorrow this type of solution will develop into something more harmonious with nature’s needs.
The ideal solution is not to throw away plastics and develop a circular economy, but the problem of plastics is happening today and we need to act.

We manufacture a material made up of plastics that are not well recycled and are often buried, incinerated or exported to third world countries. These plastics have incredible and distinctive mechanical properties that can be useful in many sectors, these should not have just one lifecycle. Our transformation process is fairly straight forward, we identify, we clean and heat plastic into different sheet sizes to then be used for all sorts of purposes, such as furniture design, interior design, product design etc. These sheets can be mass produced and can have a real impact on the plastic waste problem.

We have to make a material that is not only easy to use, but also attractive. We want to make sustainable products look sexy, otherwise people won’t be inclined to use this type of material.

Here are some of the colors that we are testing made from plastic packaging found in restaurants. This plastic has amazing properties because it is very easy to work with, does not break when subjected to extreme torsion and has a marble like texture.

Louis Reigniez
I’m Louis Reigniez, the founder of Ocean One. I’m 28 years old and I live in the South West of France in a coastal town near Bordeaux. I have studied and worked in the Banking industry for 7 years in the U.K. and I couldn’t just watch the oceans being rekt. So I decided to make my way to the center of the environmental stage, I want to be part of the people who fight for our future.

Reference
Louis Reigniez, No 82, page 36 ff:
http://www.ville-lege-capferret.fr/wp-content/uploads/2021/07/LCF-Presquile-82_WEB.pdf
http://www.ville-lege-capferret.fr/actualites-et-agenda/publications/

Contact
Louis Reigniez
Foundateur
Ocean One
+ 33 7 49 01 60 91
contact@ocean-one.fr
ocean-one.fr

A
Rawmaterial of recycled ocean plastic for new products for the bathroom (soap dish) and plate as cape lifter, design and construction by Louis Reigniez.
Pic: M.-E. Wachs, 2021

Theresa Scholl

A

‘as a designer you don’t define yourself with the tools you use, you rather define yourself through your own thoughts, ideas and visions. The future in design is not the amount of digital services, advanced technologies or innovative materials, the future in design is the vision YOU have in mind and share with others of how the world would look like tomorrow’

Studying design engineering at a German University means being in a very forward-thinking space. University is heaven for a designer. Everyone is open-minded for innovation and thinking out of the box. Students have the opportunity and are even encouraged to work interdisciplinary. One can explore new materials, try various production methods and always has access to the newest software. Working close to research means being in touch with future scenarios and creating products, services and interfaces which aim to solve tomorrow’s problems and needs.

Leaving university and this bubble where production cost, sales figures and legal requirements didn’t really count that much and starting the first job in industry, the world suddenly looked quite different. Working in a modern start-up culture, for established brands or mega-companies, one doesn’t have the excess to all technologies or the possibilities one had at university. But no need to worry – as a designer you don’t define yourself with the tools you use, you rather define yourself through your own thoughts, ideas and visions. And while maybe having lost some tools, modern methods or technologies, the learning from university last for a lifetime. These learning combined with keeping the fearless student’s mind of not knowing but trying everything will help you to be successful in your job.

Thus, while entering the industry as a young design talent, you still want to keep up the willingness to learn new things. It is worth and important to respect the corporate culture and understand well-established techniques but at the same time always challenge the traditional thinking. Companies will win by complementing existing and established knowledge with fresh perspectives of young design talents. Especially in the field of product development, it is key to combine the deep understanding of experienced (but sometimes entrenched) colleagues with the fresh (and maybe naïve) view of the newbies to create visionary products.

The future in design is not the amount of digital services, advanced technologies or innovative materials, the future in design is the vision YOU have in mind and share with others of how the world would look like tomorrow.

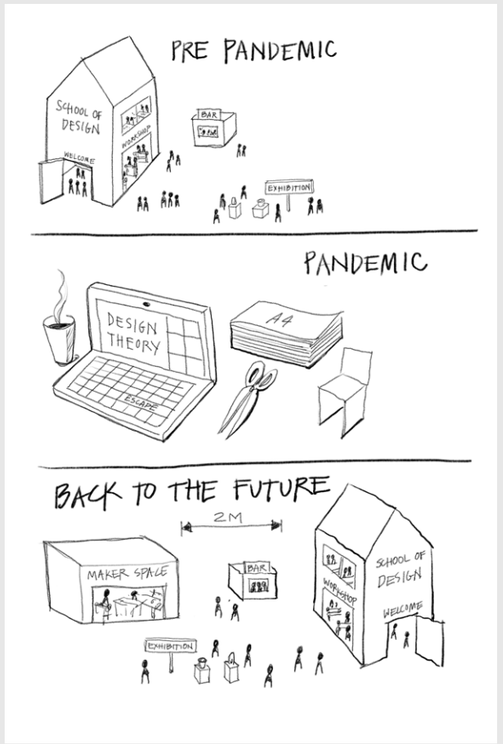
A
Three generations of industrial designer and design engineers, collaborating and designing with textile and light for a sensible usage with ressources; from left to right: Ulrike Brandi, Theresa Scholl, Marina-Elena Wachs, pic: M.-E. Wachs, 2018.

Theresa Scholl
Color & Trim Designer Volkswagen Nutzfahrzeuge, Theresa Scholl is a bespoken tailor and textile designer with a Masters degree from Hochschule Niederrhein. During her studies she created new textile materials such as smart textiles, textiles for lighting design and paper textiles. Additionally, she focused on the design theoretical investigation of textiles in architecture. After having had some touch points with the fashion industry, interior design and lighting design, she is currently working as a Colour & Trim designer in the automotive sector.

Contact
scholl.theresa@gmail.com
www.theresascholl.de

Charlotte Sjödell

‘anyone can have an opinion and an idea but making solid proposals that can be visualised, tried and evaluated requires years of training’



A

Who is the designer of the 21st century and what do they need to know? In difference to other professional titles, *designer* is not just owned by the educated designers but claimed by the many. Design, design thinking, and innovation is on everyone’s lips these days. Is a five-year education really needed or is an online course in design thinking enough to practice design?

When I graduated as a designer from Art Center College of Design in 1999 I claimed to be either a product designer or an industrial designer. Industrial designer, I thought, well described some of the specific knowledge and design skill required to work with mass production. Many educators have moved away from ‘industrial design’ to just ‘design’. ‘Industrial’ has almost become a dirty word and there seems to be a desire of removing oneself from anything related to *mass*. Mass production and mass consumption leaves a bitter taste and we long for small scale. This is in many ways a natural response to the changes we see in society.

The design occupation has broadened, and designers are now engaging in solving some of our times most pressing issues related to topics such as climate change, health, digitalisation, democracy etc. *Product* has more than ever come to include not only physical objects but systems and processes. Over the years we have seen an increased interest in understanding how the products we produce will impact society and the environment, both short and long term. Educators are struggling to introduce or extend topics to an already packed curriculum. We ask ourselves what is most important, and which are the essential skills of a designer. If we add something, what do we take away. Offering physical workshops for modelmaking and teachings is costly, and it is tempting to scrap the workshop, move to digital and up the numbers of students.

During the pandemic we are now given an unplanned opportunity to review what happens when we remove some of the physical aspects of design education. The students that have been enrolled in the program since several years understand the importance of physical models and have responded by making prototypes in their parents’ kitchens and student dorms. Some first-year design students have never been in the building at their design school and have no experience of how to operate machines or have spontaneous discussions around the handling of an object, the tactile aspects of a material or its texture. What the effects of this will be, we might not know until some years from now.

It has become increasingly difficult for individuals to understand how products are being put together and how they are being made. Production is out of sight in another country and products are not made to be taken apart and be repaired. Kids spend less time around physical objects and more time as consumers attached to a glossy screen. During the pandemic many of us have realised the negative consequences of our screen time and have taken up new interest in the crafts or music to kill time in isolation. One of the few positive aspects of the limitations in our new lifestyle has been the time given to learn a new skill. We have become increasingly uncomfortable to take on anything that requires effort and focus over time. Time on task is one of the most essential aspects of learning especially in relation to skills that require some type of muscle memory.

Honing your skills in sketching and model making requires both think and doing and is nothing you learn over night. It is the combination of doing and thinking that makes design stand out from other fields. Thinking is simply not enough. Anyone can have an opinion and an idea but making solid proposals that can be visualised, tried and evaluated requires years of training. A lose concept or idea will change as you define it. When you visualise something, you are forced to define it and to take a stand. Knowing what good design is not the same as making good design. When moving into the future we must ensure that the doing is not lost and that the designer can offer a unique combination of skills and traits. When responding to change it is important that we do not lose our core. One visit to the workshop is simply not enough and an online course in design thinking will certainly not make you a designer, so let us hope we can soon get back to the building and do our thing.

Charlotte Sjödell
Charlotte Sjödell received her degree in Industrial Design at Art Center College of Design in Pasadena, USA. In 1999 Charlotte was hired by Ford Motor Company in the UK to work as a designer. When she left Ford in 2003 Charlotte was the Chief Designer of the European Colour and Materials Department located in Germany. She has over the years worked as a freelance designer working with projects for IKEA and other producers. Since 2004 Charlotte has worked as Senior lecturer in Industrial Design at Lund University, Sweden.

Contact
charlotte.sjodell@design.lth.se
https://www.lunduniversity.lu.se

A
Sketch by Charlotte Sjödell:
‘Back to the future in design’, 2021.

Maximilian Krummen

‘making the world
a tiny step better with my art
and performing, creating:
awareness, will and trust’

My core of making music / performace

**‘Music can bring peace /
brings souls together’**

**Making music / singing /
experiencing a live performance fills
the body with endorphins
Making music together strengthens
the awareness of being part in a
bigger group**

‘Before you sing, hear what you sing’

‘Playing the inner game is a matter of developing three skills: awareness, will and trust. These skills in turn help us to achieve relaxed concentration, the ‘master skill’ that allows us to balance…’
(from Barry Green with Timothy Gallwey ‘The inner game of music’)

‘Be in it with all of your heart’

*„He never denied his character: to cling with all his soul to what was in front of him: hoc agebat. He didn’t rest until he realized what he wanted to learn.
He did so with languages, arithmetic, mathematics, algebra…’
(Constanze Mozart about her husband Wolfgang Amadeus)*

Be prepared to listen to you soul, before you say something or create something, no matter what.

**‘Ah, tutti contenti saremo così’ /
‘Ah, we will all be happy like this.’**

*From the finale of
Mozart’s Le nozze di Figaro*

Music helps us to forgive and find respect for each other
The combination of music / lyrics / performance can lead us to our inner feelings, can access our soul.

Maximilian Krummen
Classical (opera-)singer Baritone
I am a classical singer in opera and also for art-songs and oratorios. As a vocal artist I not only try to entertain my audience, but also to encourage all of the above in them. I hope to make the world a tiny step better with my art and performing. I truly believe that music and text as well as the associated performances or visual arts can affect other people to hope for a better and sustainable future.
Rostock, September 13th 2021

Contact
www.maximiliankrummen.de

Imprint

Bibliographic Information published
by the German National Library.
The German National Library lists this
publication in the German National
Bibliography; detailed bibliographical data
are available on the internet at http://dnb.de

TEXTS AND DESIGN/GRAPHICS
Marina-Elena Wachs
ENGLISH LECTORATE
Louise Huber-Fennell
CONCEPT AND DESIGN
Eva Finkbeiner
TYPEFACE
RM Neue by CoType Foundry
PAPER
Magno Natural 150 Gr
PRINTING
Schleunungdruck, Marktheidenfeld
PUBLISHING AND DISTRIBUTION
av edition GmbH
Publishers for Architecture and Design

With special thank to Hochschule
Niederrhein – University of Applied
Sciences and the 'Gleichstellung
Kommission', for the idealistic support
of my international engagement.
We have done our best, about
the delcaration of data rights.
If anything different, please contact
Marina-Elena Wachs, thank you.

avedition

av edition GmbH
Publishers for Architecture and Design
Senefelderstr. 109
70176 Stuttgart
Tel. 0711 / 220 22 79 0
Fax: 0711 / 220 22 79 15
www.avedition.com
sales@avedition.de

Printed in Germany
ISBN 978-3-89986-362-8

The book 'Design Engineering – sustainable and holistic' describes the potential of both, design objects and concepts, and design as a process – with a particularly strong focus on the process of design engineering. To that extent it also draws attention to several terms that need to be re-evaluated: from design, design engineering, design shift, material-design, design methods (e.g., Materializing immateriality), all the way to terms like 'industry' for the post-digital era, which will be questioned and discussed in depth.

Hereby, the book claims its position by referring to historic and current design parameters in industry in relation to certain training methods. It compares these within Europe, explicitly the perspective taken by Germany, Great Britain and Scandinavia – and highlights best-practice examples. The range of design disciplines, especially an in-depth look at classic product and textile design, leads to new 'blueprint' possibilities and interactive design methods in the future. Today, textile engineering is as important to automobile design, as it is to medically relevant design. The holistic view (and education) will last important for designing the future.

The needs of the future will be identified by taking an interdisciplinary cross-cultural perspective: Precise examples of this are the design engineering requirements in the post-digitalization era, which focus on a range of topics: from sustainability, and material design, up to female empowerment and non-hierarchical learning landscapes for everyone, to sustainable architecture and to synaesthetic creating with music for example. International experts, in addition, showcasing the future with strong statements, underlined by images and tables.

The book's target audience manifests itself from this vantage point: whether it be talents, experts, or design 'drivers', who have a background in design management, architecture, or business ownership, or teaching at a university, college, high school through pre-school. Even representatives from scientific or political institutions may gain meaningful insides. The book asks its readers to recognise and utilise our human capital and cultural education, for the benefit of Europe's economy and society. In addition, it illustrates how cultural knowledge is one of society's most valuable assets for completely re-inventing knowledge management, and the use of enhanced knowledge banks and archives.

'Design engineering – sustainable and holistic' appears in English and – featuring full-colour images and graphics and high-quality printing – it shows the potential of society, cross-cultural knowledge and experiences, in ethics and engineering. This applies to European countries, as well as those beyond European borders, e.g. by adding extraordinary statements by experts, creators of the future. It aims to strengthen the European consciousness and understanding of design and design engineering processes – as well about 'textile engineering' – that will contribute to a sustainable and motivating economy. Let's stay curious! in designing, sketching future together: sustainable and holistic.

ISBN 978-3-89986-362-8

9 783899 863628

www.avedition.com